INTERIM RESIDUAL RISK ASSESSMENT

FERNALD CLOSURE PROJECT
FERNALD, OHIO

FEBRUARY 2007

U.S. DEPARTMENT OF ENERGY

50000-RP-0012
REVISION 0

TABLE OF CONTENTS

Page

List of Appendices ii
List of Tables and Figures ii
List of Acronyms and Abbreviations iv

Executive Summary ES-1

1.0 Introduction 1-1
1.1 Overview & Organization 1-2

2.0 Scope & Regulatory Criteria 2-1

3.0 Scenarios, Land Use Exposure Pathways, & Receptors 3-1
3.1 Undeveloped Park User 3-2
3.2 Site Workers 3-3

4.0 Technical Approach to Exposure Assessment 4-1
4.1 Exposure Zones 4-1
4.2 Contaminants of Concern 4-2
4.3 Residual Contaminant Concentrations 4-2
4.4 Cancer Slope Factors and Reference Doses 4-3
4.5 Risk Equations 4-4
4.6 Total risk and Background Risk 4-4
4.7 Uncertainty in Exposure Scenarios 4-5
4.8 HWMU Closure 4-6

5.0 Results for the Residual Risk Calculations 5-1
5.1 Undeveloped Park User 5-3
5.2 Museum Visitor 5-4
5.3 Museum Worker 5-5
5.4 Groundskeeper/Samper 5-6
5.5 Construction Worker 5-7
5.6 Building Maintenance 5-8
5.7 HWMU Evaluation 5-9
5.8 Uncertainlty analysis 5-10
5.9 Comparison to CRARE Results 5-14

6.0 Summary and Conclusions 6-1

References R-1

LIST OF APPENDICES

Appendix A Chronology of Soil Certification Reports

Appendix B Residual Contaminant Concentrations in Soil Certification Units and Exposure Zones

Appendix C Analytical Results and Derivation of Exposure Zone Values for Surface Waters

Appendix D References and Footnotes for Risk Assessment Toxicity Values and Cancer Slope Factors

Appendix E Risk Calculations (All tables are available on CD ROM.)

- Appendix E.0 Background
- Appendix E.1 Zone 1
- Appendix E.2 Zone 2
- Appendix E.3 Zone 3
- Appendix E.4 Zone 4
- Appendix E.5 Zone 5
- Appendix E.6 Zone 6
- Appendix E.7 Zone 7
- Appendix E.8 Zone 8
- Appendix E.9 HWMUs
- Appendix E.10 Uncertainty Analysis

LIST OF TABLES

Table 2-1 Chemicals and Radioactive Isotopes Evaluated in the Soil Certification Reports and the Interim Residual Risk Assessment

Table 3-1 Exposure Pathways and Parameters for the Undeveloped Park User
Table 3-2 Exposure Pathways and Parameters for the Museum Visitor
Table 3-3 Exposure Pathways and Parameters for the Site Workers

Table 4-1 Exposure Matrix for Site Receptors
Table 4-2 RCRA Contaminants Used to Evaluate HWMU Closure

Table 5-1 Risk Results for the Undeveloped Park User
Table 5-2 Risk Results for the Museum Visitor
Table 5-3 Risk Results for the Museum Worker
Table 5-4 Risk Results for the Groundskeeper/Sampler
Table 5-5 Risk Results for the Construction Worker
Table 5-6 Risk Results for the Building Maintenance
Table 5-7 Risk Results for the HWMU Closure Evaluation
Table 5-8 Risk Results for the Uncertainty Analysis

Table B-1 Soil Certification Data – HWMU
Table B-2 Soil Background Values

Table C-1 Water Samples for Uranium by Exposure Zone with Isotopic Calculation
Table C-2 Surface Water – Zone 1
Table C-3 Summary of Surface Water Values

Table D-1 Toxicity Values and Cancer Slope Factors with Associated References
Table D-2 Cancer Slope Factors for Radiological Constituents
Table D-3 Comparison of Non-radiological Values for CRARE and Present Risk Model
Table D-4 Comparison of Radiological Values for CRARE and Present Risk Model

Table E.0-1 Background – Construction Worker
Table E.0-2 Background – Groundskeeper/Sampler
Table E.0-3 Background – Undeveloped Park User
Table E.0-4 Background – Building Maintenance
Table E.0-5 Background – Museum Worker
Table E.0.6 Background – Museum Visitor
Table E.1-1 Zone 1 – Construction Worker
Table E.1-2 Zone 1 – Groundskeeper/Sampler
Table E.1-3 Zone 1 – Undeveloped Park User
Table E.2-1 Zone 2 – Construction Worker
Table E.2-2 Zone 2 – Groundskeeper/Sampler
Table E.2-3 Zone 2 – Undeveloped Park User
Table E.2-4 Zone 2 – Building Maintenance
Table E.3-1 Zone 3 – Construction Worker
Table E.3-2 Zone 3 – Groundskeeper/Sampler

LIST OF TABLES (CONT.)

Table E.3-3	Zone 3 – Undeveloped Park User
Table E.4-1	Zone 4 – Construction Worker
Table E.4-2	Zone 4 – Groundskeeper/Sampler
Table E.4-3	Zone 4 – Undeveloped Park User
Table E.5-1	Zone 5 – Construction Worker
Table E.5-2	Zone 5 – Groundskeeper/Sampler
Table E.5-3	Zone 5 – Undeveloped Park User
Table E.6-1	Zone 6 – Construction Worker
Table E.6-2	Zone 6 – Groundskeeper/Sampler
Table E.6-3	Zone 6 – Undeveloped Park User
Table E.6-5	Zone 6 – Museum Worker
Table E.6-6	Zone 6 – Museum Visitor
Table E.7-1	Zone 7 – Construction Worker
Table E.7-2	Zone 7 – Groundskeeper/Sampler
Table E.7-3	Zone 7 – Undeveloped Park User
Table E.7-4	Zone 7 – Building Maintenance
Table E.7-5	Zone 7 – Museum Worker
Table E.7.6	Zone 7 – Museum Visitor
Table E.8-1	Zone 8 – Construction Worker
Table E.8-2	Zone 8 – Groundskeeper/Sampler
Table E.8-4	Zone 8 – Building Maintenance
Table E.9-1	HWMUs – Construction Worker
Table E.9-2	HWMUs – Groundskeeper/Sampler
Table E.9-3	HWMUs – Undeveloped Park User
Table E.9-4	HWMUs – Building Maintenance
Table E.9-5	HWMUs – Museum Worker
Table E.9.6	HWMUs – Museum Visitor
Table E.10-1a	UPU1 – Uncertainty Analysis
Table E.10-1b	UPU1-BKG - Uncertainty Analysis
Table E.10-2a	UPU2 – Uncertainty Analysis
Table E.10-2b	UPU2-BKG - Uncertainty Analysis
Table E.10-3a	UPU3 – Uncertainty Analysis
Table E.10-3b	UPU3-BKG – Uncertainty Analysis
Table E.10-4	UPU4 – Uncertainty Analysis
Table E.10.5a	GS1 – Uncertainty Analysis
Table E.10-5b	GS1-BKG – Uncertainty Analysis
Table E.10-6	GS2 – Uncertainty Analysis

LIST OF FIGURES

Figure 4-1	Location of Former Hazardous Waste Units at the Fernald Site
Plate 1	Exposure Zones and Certification Units
Plate 2	Exposure Zones and Surface Water Bodies

LIST OF ACRONYMS AND ABBREVIATIONS

ABS	absorption factor
AF	Adherence Factor
AT_c	Averaging Time for carcinogens
AT_{nc}	Averaging Time for non-carcinogens
BW	body weight
CB	Chemical Background
CERCLA	Comprehensive Environmental Response, Compensation And Liability Act
CRARE	Comprehensive Response Action Risk Evaluation
CSF	Cancer Slope Factor
CSV	chemical specific value
CU	certification unit
CWWT	converted waste-water treatment
d/yr	days per year
DA	Dose Absorbed
DOE	U.S. Department of Energy
ED	Exposure Duration
EF	Exposure Frequency
EFH	Exposure Factors Handbook
EPA	U.S. Environmental Protection Agency
ET	Exposure Time
FCP	Fernald Closure Project
FI	Fraction of Ingested Soil
FMPC	Feed Material Production Center
FRL	final remediation level
GCN	general cleanup number
GS	Groundskeeper/Sampler
HEAST	Health Effects Assessment Summary Tables
HQ	hazard quotient
HWMU	hazardous waste management unit
IRIS	Integrated Risk Information System
IRRA	Interim Residual Risk Assessment
ILCR	incremental lifetime cancer risk
IR	Ingestion Rate
IR	Inhalation Rate
MG/KG	milligrams per kilogram
OSDF	On-Site Disposal Facility
OU	Operable Unit
pCi/g	picoCuries per gram
PPRTV	Provisional Peer Reviewed Toxicity values
RAIS	Risk Assessment Information System
RB	radionuclide background
RCRA	Resource Conservation Recovery Act
RfD	reference doses
RME	reasonable maximum exposure
RAGS	Risk Assessment Guidance for Superfund

LIST OF ACRONYMS AND ABBREVIATIONS (CONT.)

ROD	Record Of Decision
SA	Surface Area
SH	Shielding Factor
T	Table
µg/kg	micrograms per kilogram
UPU	Undeveloped Park User
WAC	waste acceptance criteria

EXECUTIVE SUMMARY

Results presented in this Interim Residual Risk Assessment (IRRA) Report show that the non-carcinogenic risk and carcinogenic risk to all evaluated site receptors complies with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) guidance limit of less than one for the hazard quotient (HQ) and less than 1.0E-04 for the incremental lifetime cancer risk (ILCR). This conclusion, along with the results in the soil certification reports, indicate that the remedial actions identified in the Operable Unit 5 Record of Decision were executed successfully and the soil on the Fernald Preserve has been restored to an acceptable risk level compatible with the final land use objective.

Remedial actions associated with the removal of the contaminated structures, soil, and waste materials at the former Feed Material Production Center (FMPC) are documented in the Records of Decision (RODs) for Operable Units 1, 2, 3, 4, and 5. The remedial actions were implemented under the Fernald Closure Project (FCP), and documentation of the completed remedial actions can be found in the Remedial Action Reports for Operable Units 1, 2, 3, 4, and 5.

Risk calculations in the Comprehensive Response Action Risk Evaluation (CRARE) for Operable Unit 5 were performed using *estimated* post-remediation contaminant concentrations in soil and surface-water media that reflected the preliminary remediation levels, which were based on the preliminary remediation goals developed from the Operable Unit 5 Baseline Risk Assessment. The IRRA evaluates the receptor risk due to exposure to *measured* post-remediation contaminant concentrations in the soil and surface water on the Fernald Preserve. In this context, the IRRA risk calculations reflect actual site conditions.

Target receptors in the CRARE were selected for the on-site undeveloped park and off-site farm land-use scenarios. The IRRA calculations deal only with the receptors for the on-site undeveloped park, as groundwater remediation is ongoing and the evaluation of the off-site farm scenario is dependent on the groundwater pathway for ingestion of water (humans and livestock) and irrigation of crops. Off-site receptors will be evaluated in a final risk assessment report that will be submitted after the Great Miami Aquifer has been restored to the final remediation levels listed in the Operable Unit 5 Record of Decision.

The IRRA calculations evaluated six human receptors in nine exposure zones. In line with the final land use of an undeveloped park, and the need for support staff to operate a museum, the converted waste-water treatment (CWWT) plant and the On-site Disposal Facility (OSDF) valve houses, the receptors reflect visitors and workers who recreate and labor at the site. Receptors include the undeveloped park user (also evaluated in the CRARE), museum visitor, museum worker, groundskeeper/sampler, construction worker, and a building maintenance worker. A receptor may spend as few as ten days a year at the site (museum visitor) or as many as 250 days a year (museum worker). The receptor exposure zones reflect soil footprints from historic operations at the site (e.g., production facilities, waste storage areas, etc) and a reasonably large area for the receptor to traverse when they visit and work at the site.

Reasonable maximum exposure (RME) scenarios were developed for the receptors to estimate the chemical and radionuclide intake via inhalation of particulate and gases, incidental ingestion of soil and surface water, dermal contact with soil and surface water, and exposure to external radiation. Ninety-five contaminants were evaluated and a subset of chemicals and radionuclides was compiled for each exposure zone to derive input concentrations for the air, soil, and surface-water pathways. Cancer slope factors (CSFs) and reference doses (RfDs) for the contaminants were compiled from the EPA (IRIS and HEAST tables) and Oak Ridge (RAIS) web sites. The intake values, CSFs, and RfDs are used to calculate HQ and ILCR.

Most of the risk to the receptors is driven by a small subset of chemicals and radionuclides. Arsenic, beryllium, uranium, aroclor-1254, aroclor-1260, uranium-238 and lead-210 are responsible for the majority of risk in the soil pathways. Benzo(a)pyrene and dibenzo(a,h)anthracene are key contaminants for the dermal surface-water pathway. Manganese and radon-222 contribute most of the risk to the inhalation pathway. After the radionuclide background is subtracted from the total risk, uranium-238 is the largest contributor to external radiation.

The highest carcinogenic risk occurs in Zone 5 (former production area) for the undeveloped park user (5.63E-05) and groundskeeper/sampler (4.70E-05), and it is driven primarily by dermal exposure to surface water containing benzo(a)pyrene and dibenzo(a,h)anthracene. However, the risk is largely an artifact of using one-half of the analytical detection limit for these compounds, and this conservative assumption would be less conservative (i.e., lower risk values) if lower analytical detection limits had been obtained for the compounds. This statement is supported by

an uncertainty analysis that concludes the greatest uncertainty in the risk calculations is knowing the true concentration of benzo(a)pyrene and dibenzo(a,h)anthracene in surface water.

One of the uncertainty scenarios used a 70-year exposure duration for the undeveloped park user and zero values for benzo(a)pyrene and dibenzo(a,h)anthracene in surface water to compare present risk results to CRARE results for the undeveloped park user. Carcinogenic risk for this uncertainty calculation (7.93E-06) was slightly higher than the CRARE result (4.9E-06), and this is due to higher residual arsenic and beryllium concentrations in the soil, relative to the estimated concentrations used in the CRARE. This comparison between present and CRARE results indicates that remedial actions at the Fernald Preserve were successful in reducing radionuclide concentrations in soil to values below the estimates used in the CRARE, while some chemical concentrations (e.g., arsenic and beryllium) in soil are measured to be greater than those used in the CRARE. However, when all chemicals and radionuclides are summed across all pathways, the risk analysis presented here produces results of the same magnitude as the CRARE and less than the CERCLA limit of 1.0E-04.

1.0 INTRODUCTION

The Interim Residual Risk Assessment (IRRA) estimates the human-health risks associated with the post-remediation contaminants in the air, soil, and surface-water media at the former Fernald Feed Material Production Center (FMPC). Groundwater remediation is ongoing, and a final risk assessment will be performed when the groundwater restoration goals have been achieved for the Great Miami Aquifer. Contaminated structures, soil, and waste materials associated with the FMPC site were demolished and removed for disposal under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as documented in the Records of Decision (RODs) for Operable Units 1, 2, 3, 4, and 5 (DOE 1995a, 1995b, 1996a,1996b, 2000, 2003) and the remedial action close-out reports (DOE 2006b, 2006c, 2006d, 2006e, 2006f). The remedial actions were implemented under the Fernald Closure Project (FCP), and the IRRA calculations document that the soil remedial actions at the Fernald site were adequate to reduce contaminant concentrations in soil and surface water to levels that are protective of human health and the environment.

CERCLA (a.k.a. superfund) requires that the actions selected to remedy hazardous waste sites be robust enough to reduce potential threats posed by the release of hazardous substance to the environment to limits that are protective of human health and the environment. Per the U.S. Environmental Protection Agency's (EPA) Risk Assessment Guidance for Superfund (RAGS, EPA 1989a), these criteria are evaluated with risk calculations to demonstrate that the risk to a receptor, defined as the "reasonable maximum exposure" (RME) individual, does not exceed an incremental lifetime cancer risk (ILCR) of 1 in 10,000 (1.0E-04) and a hazard quotient (HQ) of greater than one.

A variety of on-property receptors were assessed using the approach and methodology in RAGS (Part A, EPA 1989a; Supplement to Part A, EPA 1991a; Part E, EPA 2004), the Exposure Factors Handbook (EFH, EPA 1997) and supplemental guidance (EPA 1991a), and site-specific data on air, soil, and surface-water concentrations. The off-property farm receptor will be evaluated for the groundwater and food pathways in the final risk assessment, which will be submitted to the regulatory agencies after the aquifer certification process has been approved by the EPA and OEPA.

For each on-site receptor, risk was calculated at three contaminant concentration levels: total risk with no background correction; radiological background subtracted from the total risk; and all background

subtracted from the total risk. An uncertainty analysis was also performed to evaluate variation in risk due to different exposure zones, the exposure duration (exposure early in life versus late in life), modeled air concentrations versus measured air monitoring values, change in contaminant concentrations, and changes in cancer slope factors and reference doses. The tabulated calculations provide a useful comparison to the regulatory agencies and public on reasonable and background risk to the site visitors and workers.

1.1 OVERVIEW AND ORGANIZATION OF THE IRRA REPORT

The primary objective of the IRRA is to estimate the risk posed to on-site receptors by post-remediation (i.e., residual) contaminant concentrations in air, soil, and surface-water media within eight exposure zones that comprise the former FMPC site. Exposure pathways for the receptors include inhalation of gas and particulate, dermal contact with soil and surface water, ingestion of soil and surface water, and external radiation. Receptors, exposure parameters, reference doses, and cancer slope factors have been updated relative to values presented in the Comprehensive Response Action Risk Evaluation (CRARE) for Operable Unit 5 (OU5; DOE 1995d). Whereas this report evaluates the receptor risk due to exposure to *measured* post-remediation contaminant concentrations in air, soil, and surface water on the site, the CRARE evaluated risk using the OU5 Remedial Investigation (DOE 1995c) data set, background data (DOE 1994, 2001) and air models to *estimate* post-remediation contaminant concentrations in air, soil, and surface-water media. Target receptors in the CRARE were selected for the on-site undeveloped park and off-site farm land-use scenarios. The interim risk calculations presented in this report deal only with the receptors for the on-site undeveloped park, as groundwater remediation is ongoing and the evaluation of the off-site farm scenario is dependent on the groundwater pathway for ingestion of water by humans and livestock and irrigation of crops. Groundwater and food pathways for the off-site receptors will be covered when the final risk assessment report is submitted to the regulatory agencies.

The remainder of this report details the information and assumptions used to develop the risk scenarios and calculations. It is organized into the following six sections and five appendices:

Section 2.0 Describes the scope and regulatory criteria for the interim residual risk assessment.

Section 3.0 Explains the land use scenario, receptors, pathways, and exposure parameters.

Section 4.0 Provides technical detail on the eight exposure zones within the site boundaries, the list of contaminants considered in each exposure zone, calculation of residual

contaminant concentrations in air, soil and surface-water media, reference doses and cancer slope factors for each contaminant, the risk equation for each pathway, the utility of comparing total, total minus radiological background, and total minus all background, and the hazardous waste management unit (HWMU) closure evaluation.

Section 5.0 Discusses the risk results for each exposure zone, receptor and contaminant, the calculations that support HWMU closure, the uncertainty analysis, and a comparison of present risk results to those in the CRARE

Section 6.0 Summarizes the significance of the interim risk assessment, presents risk conclusions for the OU5 soil remedial actions, and discusses future risk calculations for the off-site receptors that will be evaluated in the final risk assessment report.

References - Lists the references cited in the report.

Appendix A Contains a list of all the soil certification reports that provide soil data for this assessment.

Appendix B Provides a summary of contaminants for each of the on-site soil certification units that comprise the exposure zones and the average contaminant value for each zone.

Appendix C Tabulates the surface-water sampling results and presents the average surface-water concentration for each exposure zone.

Appendix D Lists the reference doses and cancer slope factors for each contaminant and compares the present values to those used in the 1995 CRARE calculations.

Appendix E Presents the detailed pathway calculation sheets for each receptor.

2.0 SCOPE & REGULATORY CRITERIA

The Interim Residual Risk Assessment (IRRA)- examines human exposure to residual toxic chemicals and radionuclides present in the air, soil, and surface-water pathways at the time of completion of remedial actions for the removal of contaminated buildings and soil at the Fernald site. This assessment will evaluate the possibility that an individual (i.e., human receptor) has a greater than 1 in 10,000 (1.0E-04) chance to develop cancer in their lifetime as a result of exposure to residual carcinogen concentrations in the air, soil, and surface-water media at the site. As part of the clean-up criteria for superfund sites, EPA strives to manage the total incremental lifetime cancer risk (ILCR) to a receptor at the site to a value less than 1.0E-04 (EPA 1989a). Additionally, non-carcinogenic chemicals will be evaluated to determine if a receptor's exposure to residual chemicals will cause a toxic health effect. The potential for a chemical to have a toxic health effect is expressed as a hazard quotient (HQ), and the HQ for a receptor must be less than one for the sum of all chemicals along all pathways. A comprehensive discussion on ILCR and HQ calculations, and their application to receptors exposed to contaminants in soil, water and air media, can be found in the EPA Risk Assessment Guidance for Superfund (EPA 1989a, 1991a, 1991b, 1991c, 2004) and, with respect to the Fernald site, in Appendices C and H of the Operable Unit (OU) 5 Feasibility Study (DOE 1995d).

Per the OU 5 Record of Decision (ROD; DOE 1996b), remedial actions at the site were carried out to restore the site to a final land use compatible with an undeveloped park. Remedial actions were successful in removing and disposing of all historic facilities (OU 3 ROD; DOE 1996a) and waste forms (OU 1 ROD, DOE 1995a; OU 2 ROD, DOE 1995b; and OU 4 RODs, DOE 2000 & 2003), as well as excavating and disposing of all soil with contaminant concentrations above the OU 5 ROD final remediation levels (FRLs). Building rubble and contaminated soil were disposed of in the on-site disposal facility (OSDF), if the contaminant concentrations and size of the material met the OSDF waste acceptance criteria (WAC). Materials that did not meet the OSDF WAC were packaged and shipped off site for disposal.

Groundwater restoration has not been completed at the site, and this exposure pathway will be evaluated in the final risk assessment after groundwater has been certified as meeting the OU 5 ROD groundwater FRLs. Therefore, exposure pathways associated with ingesting groundwater, bathing with groundwater, ingesting crops irrigated with groundwater, and ingesting meat and dairy products derived from livestock watered with groundwater are not considered in the IRRA.

In line with the final land use of an undeveloped park, and operations support for a museum, the converted waste-water treatment (CWWT) plant and the OSDF, the IRRA will evaluate visitors and workers who recreate and labor at the site. Public activities at the undeveloped park will be restricted, and swimming, fishing or hunting will not be allowed on the site. Infrastructure at the park that will be off limits to the general public includes the extraction wells, piping, and the CWWT plant that supports groundwater restoration and valve houses associated with the OSDF. Visitors are assumed to cover the age groups of child, youth, adult, and senior adult, while workers are limited to the adult age group. The visitors spend time in the museum and hike the park trails. Workers support the museum, CWWT and OSDF operations, as well as grounds maintenance, sampling events and construction projects. Receptors and land-use scenarios are developed and discussed in detail in Section 3.0.

The footprint of the remediated Fernald site has been divided into eight exposure zones (Plate 1) that represent historic operations at the site (e.g., production facilities, waste storage areas, etc) and a reasonably large exposure area for the public when they visit and work at the park. A large exposure area is considered reasonable because most visitors or workers at the site are likely to traverse and explore a large area, rather than a small area of a few acres. Human health risk will be assessed in seven of the eight zones for the visitor (the OSDF zone will not be evaluated, as it is fenced and posted as no trespassing) and in all eight zones for some workers. Additional detail is provided on the receptors and exposure parameters in Section 3.0, and Section 4.0 develops the residual contaminant concentrations in the exposure zones.

Contaminants included in the risk calculations include every constituent that was evaluated in a soil certification report (Table 2-1). Several of the chemicals in Table 2-1 (lead, thallium, pentachlorodibenzofuran, phenanthrene, tetrachlorodibenzofuran, tetrachlorodibenzo-p-dioxin, and trifluorochloromethane) lack chemical toxicity and cancer morbidity data, and these constituents cannot be evaluated in the risk calculations due to the lack of this data. The remaining chemical constituents in Table 2-1 were evaluated for either chemical toxicity (non-carcinogen HQ) or cancer risk (carcinogen ILCR), and a subset of these chemicals could be assessed for both chemical toxicity and cancer risk, due to the availability of data on both non-carcinogen and carcinogen effects to body tissues and organs. Per EPA guidance (EPA 1989a\, radionclides are assessed as carcinogins only (i.e., ILCR only). Detailed summary sheets in Appendix E identify each constituent, the risk equations, exposure parameters, and corresponding

HQ and ILCR. If data are unavailable to calculate HQ or ILCR, it is noted as such in the summary tables.

Concentration data for contaminants in the soil and surface-water media represent measured values from physical samples (Section 4.3). Contaminant levels in soil (ug/g) are obtained from the certification reports listed in Appendix A, and the value for each certification unit is tabulated in Appendix B. Surface-water contamination was assessed after completion of soil remediation activities by collecting and analyzing a sample from every significant pond on the site (Plate 2). Analytical results for the surface-water samples are presented in Appendix C. Air concentrations are calculated as indicated in Section 4.3.

Risk calculations will be tabulated to show three sets of results: 1) total risk to a receptor, 2) total risk minus the background for radionuclides, and 3) total risk minus the background for all contaminants (chemicals and radionuclides). With respect to the regulatory criteria embodied in CERCLA, the appropriate calculation to assess the risk to receptors at the remediated Fernald site is total risk minus the background for radionuclides, and this calculation should result in an ILCR of less than 1 in 10,000 (1.0E-04) to the receptor when risk is summed over all pathways. Removing radionuclide background from the risk calculation is tied to the development of preliminary remediation goals for a superfund site (EPA 1991b), where the increment of radionuclide activity or concentration above background is used to assess the potential risk from exposure to radiocarcinogens.

The appropriateness of this EPA guidance is easily demonstrated through a background risk calculation. As presented in Section 4.6, the risk to a receptor exposed to background radon-222 levels is 60 to 90 percent of the receptor's total risk (sum of all pathways), and this background risk exceeds an ILCR of 1.0E-04 for several receptors. EPA recognizes that the average background air concentration for radon-222 in the United States exceeds a risk of 1.0E-04. Therefore, the risk assessment for a superfund site need only demonstrate that the sum of the risk from all radionuclides increments, across all pathways, is less than 1.0E-04 (where an increment is defined as the activity or concentration in excess of the radionuclide background value).

Table 2-1
Chemicals and Radioactive Isotopes Evaluated in the Soil Certification Reports
And the Interim Residual Risk Assessment

CHEMICALS			RADIONUCLIDES
INORGANIC	ORGANIC		
Antimony	Acetone	Ethyl ether	Cesium-137
Arsenic	Aroclor-1254	Heptachlorodibenzofuran	Lead-210
Barium	Aroclor-1260	Heptachlorodibenzo-p-dioxin	Neptunium-237
Beryllium	Benzene	Hexachlorodibenzofuran	Plutonium-238
Boron	Benzo(a)anthracene	Hexachlorodibenzo-p-dioxin	Plutonium-239/240
Cadmium	Benzo(a)pyrene	Indeno(1,2,3-cd)pyrene	Radium-226
Chromium (VI)	Benzo(b)fluoranthene	Methanol	Radium-228
Cobalt	Benzo(k)fluoranthene	Methyl-2-pentanone	Strontium-90
Copper	Bis(2-chloroisopropyl)ether	Methylene chloride	Technetium-99
Fluoride	Bis(2-ethylhexyl)phthalate	4-Methylphenol	Thorium-228
Lead	Bromodichloromethane	4-Nitroanaline	Thorium-230
Manganese	Bromoform	N-nitrosodiphenylamine	Thorium-232
Mercury	Bromomethane	N-nitrosodipropylamine	Uranium-234
Molybdenum	2-Butanone	Octachlorodibenzofuran	Uranium-235
Nickel	Carbazole	Octochlorodibenzo-p-dioxin	Uranium-238
Selenium	Carbon disulfide	Pentachlorodibenzofuran	
Silver	Carbon tetrachloride	Pentachlorodibenzo-p-dioxin	
Thallium	Chlordane	Pentachlorophenol	
Uranium	Chlorobenzene	Phenanthrene	
Vanadium	Chloroform	Tetrachlorodibenzofuran	
Zinc	Chrysene	Tetrachlorodibenzo-p-dioxin	
	Cyanide	Tetrachloroethylene	
	Cyclohexanone	Toluene	
	Dibenzo(a,h)anthracene	Tributyl phosphate	
	3,3-Dichlorobenzidine	1,1,2-Trichloroethane	
	1,2-Dichloroethane	Trichloroethylene	
	1,1-Dichloroethylene	Trifluorochloromethane	
	Dieldrin	Vinyl chloride	
	Di-n-octylphthalate	Xylenes	
	Ethylbenzene		

3.0 SCENARIOS, LAND USE EXPOSURE PATHWAYS & RECEPTORS

In the OU 5 FS (DOE 1995d), DOE evaluated remedial actions, human and ecological risk, and cost to determine which of four land use objectives would be selected for the end state of the Fernald site. Collaboration with the regulatory agencies and public resulted in the selection of Land Use Objective 3 – Maximum Consolidation of Contaminated Material to Free the Majority of the Fernald Site for Restricted Land Use. Land Use Objective 3 called for off-site shipment and disposal of the highest risk waste streams (e.g., OU 1 waste pits, OU 4 silo materials, etc.), and on-site disposal of soil, waste, and building rubble, if the materials met the OSDF waste acceptance criteria. Three alternatives were evaluated for Land Use Objective 3: A) industrial park; B) developed recreational park; and C) undeveloped recreational park. Through the FS process, Alternative 3C was selected for OU 5.

The undeveloped park envisioned in the FS had no rest rooms or developed recreational facilities, with the exception of hiking trails. Since the OU 5 FS was published, the vision of the undeveloped park has changed to accommodate an on-site museum with rest rooms, a parking lot, and continued operation of the CWWT facility to support ongoing groundwater restoration activities. Therefore, the present land use scenario is the undeveloped park with some infrastructure development to support the museum and CWWT operations.

Slight changes to the undeveloped park scenario presented in the FS dictates that the IRRA must consider additional receptors to account for daily workers that support the museum and CWWT operations and the general public that visits the museum. Receptors for the IRRA will include the undeveloped park user presented in the OU 5 FS, as well as a museum visitor, museum worker, groundskeeper/sampler, building maintenance, and construction worker. Each of these receptors is discussed below with respect to exposure pathways and parameters.

Exposure pathways for receptors evaluated in the IRRA are similar to those presented in the OU 5 FS, and they consist of inhalation of radon gas and soil particulate suspended by the wind, dermal contact with soil and surface water, incidental ingestion of soil and surface water, and exposure to external radiation. In contrast to the OU 5 CRARE exposure pathways, the groundwater, and food pathways will not be evaluated in the IRRA due to ongoing groundwater restoration activities. The groundwater and food pathways will be evaluated in a final risk assessment report

that will be published after the groundwater has been certified as meeting the OU 5 ROD groundwater FRLs.

3.1 UNDEVELOPED PARK USER

This target receptor is the child, youth, adult, and/or senior adult that visits the park to hike, picnic, and observe birds. These individuals inhale air that contains radon and soil particulate suspended by the wind, and they contact soil and surface water while hiking trails and sitting on the ground for a picnic. Contact with soil and surface water results in dermal exposure as well as incidental ingestion. The receptor is also exposed to external radiation from radioactive isotopes present in the environmental media. Exposure pathways and parameters are summarized in Table 3-1. The rationale and reference for each exposure parameter are discussed below:

- Exposure Frequency (EF): The number of days per year (d/yr) that a receptor visits the site is the EF. EF is assumed to be 20 d/yr, about every other week, for the child and adult. A higher frequency of 40 d/yr is assumed for the youth and senior adult to account for extra recreation time available to these age receptors. For example, the youth who can drive will be able to spend additional time at the park after school, relative to a working adult and young child.

- Exposure Duration (ED): The ED is the number of years over which an individual will visit the park. EPA (1989a) notes that national trends show individuals do not live in a region of the country for more than 30 years. Therefore, 30 years is used as the sum across the age groups, with the years partitioned into 3 years for child, 6 for youth, 14 for adult and 7 for senior adult.

- Body Weight (BW): EPA (1997) has tabulated BW for individuals. The adult and senior adult are equated to the mean BW in EPA Table 7-11, which is rounded to 70 kg. An average of mean values reported for ages 7 to 18 (EPA Table 7-3) is rounded to 47 kg for the youth. The child mean values reported for ages 0 to 6 (EPA Table 7-3) are used to derive an average weight of 15 kg.

- Averaging Time for non-carcinogens (AT_{nc}): Averaging time refers to the number of days over which the toxin acts on the body. EPA (1989a) defines the averaging time for non-carcinogen chemicals as the exposure duration multiplied by 365 days/yr.

- Averaging Time for carcinogens (AT_c): For carcinogenic compounds and radioactive isotopes, EPA (1989a) assumes the carcinogen acts over a 70-yr lifetime for the individual. Therefore, averaging time (days) for carcinogens is 70 yrs multiplied by 365 days/yr.

- Inhalation Rate (IR): The volume of air which an individual breathes each hour is the IR. EPA (1997) reports the same value (1.0 m^3/hr) for the child and adult receptors for short-term exposure and light activities (EPA Table 5-23). Therefore, this value is used for all age groups. Short-term exposure and light activities are applicable to a park visitor that spends an hour or two hiking trails and watching birds.

- Exposure Time (ET) for Air: The amount of time the receptor spends at the park each visit is the ET. As the park is undeveloped, the assumption is made that the receptor will spend a fraction of a normal day (two hours) inhaling dust and radon gas on each day they visit the undeveloped park.

- Ingestion Rate (IR) for Soil: The mass of soil that is ingested incidentally each day is the IR. EPA (1989b & 1997) estimates that a residential child will ingest 0.2 g/d, which is lowered to 0.1 g/d for the adult. The IR for the youth and senior adult is assumed to be similar to the adult.

- Fraction of Ingested Soil that is Contaminated (FI): In some risk exposure scenarios, a receptor may pass in and out of contaminated soil zones, and only a fraction of the ingested soil will contain contaminants. For the IRRA, the receptor is assumed to spend 100 percent of their park time in a contamination zone, and FI is set equal to 1.0.

- Surface Area (SA), Dermal Contact with Soil: The skin SA exposed to soil is assumed to be the head, hands, forearms and lower legs. All SA values for body parts are obtained from EPA (2004, Exhibit C-1), and the sum for these body parts appears in Table 3-1.

- Adherence Factor (AF): The AF for soil to skin is taken from EPA (2004). For a residential scenario, the AF value is 0.2 for child and youth, and 0.07 for adult and senior.

- Shielding Factor (SH): The SH accounts for material between the receptor and radiation source that can attenuate the external radiation received by an individual. For outdoor conditions on the site, the SH is taken as 0.25 to account for substantial surface-water coverage (water shields radiation emitted from the soil below the water) and the placement of clean topsoil over the remedial footprint (clean topsoil shields radiation emitted from soil below the topsoil).

- Ingestion Rate (IR) for Surface Water: The 1997 EPA Exposure Factors Handbook does not contain guidance on the surface-water pathway. An older version of the handbook (EPA 1989b) assigned 0.05 liter per hour (L/hr) for an adult swimmer. As swimming in the ponds on site is not allowed, the incidental ingestion is attributed to illegal wading and splashing in the water. This transient activity is assumed to generate an ingestion rate of 0.035 L/hr for the child and youth. The adult and senior adult receptors are assumed to receive approximately half this dose, or 0.015 L/hr.

- Exposure Time (ET) for Surface Water: As swimming is not allowed in the ponds on the site, contact with water will be a transient activity of short duration. It is assumed that the receptor will spend one hour wading and splashing on each summer day spent at the undeveloped park.

- Exposure Frequency (EF) for Surface Water: It is assumed that illegal wading in the surface water will take place only during the summer months. Therefore, all receptors spend one day each weekend of the 12 summer weeks (12 d/yr) contacting the water.

- Surface Area (SA), Dermal Contact with Surface Water: The skin SA exposed to soil is assumed to be the face, hands, forearms, feet and lower legs. All SA values for body parts are obtained from EPA (2004, Exhibit C-1), and the sum for these body parts appears in Table 3-1.

- Dose Absorbed (DA) per Event, Dermal Contact with Surface Water: This is a chemical specific value that is calculated from the permeability constant and chemical concentration in the water. All constants and chemical concentrations used in this calculation are tabulated in Appendix E.

3.2 MUSEUM VISITOR

This target receptor is the child, youth, adult, and/or senior adult that visits the museum and participates in an occasional field trip run by the museum. Although these individuals spend most of their time in the museum, they will inhale air that contains radon and soil particulate when they walk from the parking lot to the museum and when they participate in field trips. The receptor may contact soil and surface water when they participate in a museum field trip or if they wander through the grounds between the parking lot and museum. Contact with soil and surface water results in dermal exposure as well as incidental ingestion. The receptor is also exposed to external radiation from radioactive isotopes present in the environmental media. Exposure pathways and parameters are summarized in Table 3-2. The rationale and reference for each exposure parameter are discussed below:

- Exposure Frequency (EF): The number of days per year (d/yr) that a receptor visits the museum is the EF. EF is assumed to be 10 d/yr for the child, youth, and adult. A higher frequency of 20 d/yr is assumed for the senior adult to account for extra recreation time available to this age receptor.

- Exposure Duration (ED): The ED is the number of years over which an individual will visit the park. EPA (1989a) notes that national trends show individuals do not live in a region of the country for more than 30 years. Therefore, 30 years is used as the sum across the age groups, with the years partitioned into 3 years for child, 6 for youth, 14 for adult and 7 for senior adult.

- Body Weight (BW): EPA (1997) has tabulated BW for individuals. The adult and senior adult are equated to the mean BW in EPA Table 7-11, which is rounded to 70 kg. An average of mean values reported for ages 7 to 18 (EPA Table 7-3) is rounded to 47 kg for the youth. The child mean values reported for ages 0 to 6 (EPA Table 7-3) are used to derive an average weight of 15 kg.

- Averaging Time for non-carcinogens (AT_{nc}): Averaging time refers to the number of days over which the toxin acts on the body. EPA (1989a) defines the averaging time for non-carcinogen chemicals as the exposure duration multiplied by 365 days/yr.

- Averaging Time for carcinogens (AT_c): For carcinogenic compounds and radioactive isotopes, EPA (1989a) assumes the carcinogen acts over a 70-yr lifetime for the individual. Therefore, averaging time (days) for carcinogens is 70 yrs multiplied by 365 days/yr.

- Inhalation Rate (IR): The volume of air which an individual breathes each hour is the IR. EPA (1997) reports the same value (1.0 m^3/hr) for the child and adult receptors for short-term exposure and light activities (EPA Table 5-23). Therefore, this value is used for all age groups. Short-term exposure and light activities are applicable to a museum visitor that spends an hour or two in the museum.

- Exposure Time (ET) for Air: The amount of time the receptor spends outdoors on each visit to the museum is assumed to be one-half hour per each day they visit the museum. This time is allocated to walking between the parking lot and museum and participating in an occasional field trip.

- Ingestion Rate (IR) for Soil: The mass of soil that is ingested incidentally each day is the IR. EPA (1989b & 1997) estimates that a residential child will ingest 0.2 g/d, which is lowered to 0.1 g/d for the adult. However, there is very little time spent outdoors for the museum visitor, and the rate is decreased to 0.1 g/d for child, 0.075 g/d for youth and 0.05 g/d for the adult and senior adult.

- Fraction of Ingested Soil that is Contaminated (FI): In some risk exposure scenarios, a receptor may pass in and out of contaminated soil zones, and only a fraction of the ingested soil will contain contaminants. For the IRRA, the receptor is assumed to spend 100 percent of their outdoor time in a contamination zone, and FI is set equal to 1.0.

- Surface Area (SA), Dermal Contact with Soil: The skin SA exposed to soil is assumed to be the head, hands, forearms and lower legs. All SA values for body parts are obtained from EPA (2004, Exhibit C-1), and the sum for these body parts appears in Table 3-1.

- Adherence Factor (AF): The AF for soil to skin is taken from EPA (2004). For a residential scenario, the AF value is 0.2 for child and youth, and 0.07 for adult and senior.

- Shielding Factor (SH): The SH accounts for material between the receptor and radiation source that can attenuate the external radiation received by an individual. For outdoor conditions on the site, the SH is taken as 0.25 to account for substantial surface-water coverage (water shields radiation emitted from the soil below the water) and the placement of clean topsoil over the remedial footprint (clean topsoil shields radiation emitted from soil below the topsoil). For indoor conditions, SH is taken as 0.5 to account for the shielding properties of the building floor and walls.

- Ingestion Rate (IR) for Surface Water: This receptor is assumed to remain out of the water.

- Exposure Time (ET) for Surface Water: This receptor is assumed to remain out of the water.

- Exposure Frequency (EF) for Surface Water: This receptor is assumed to remain out of the water.

- Surface Area (SA), Dermal Contact with Surface Water: This receptor is assumed to remain out of the water.

- Dose Absorbed (DA) per Event, Dermal Contact with Surface Water: This receptor is assumed to remain out of the water.

3.3 SITE WORKERS

The site work force consists of museum support staff, a groundskeeper/sampler, a construction worker, and personnel for building maintenance. All of the worker receptors are adults.

Exposure pathways and parameters are summarized in Table 3-3. The rationale and reference for each exposure parameter are discussed below:

- Museum support represents a receptor that spends five days per week running the museum and leading short field trips. Work is performed indoors (7 hrs/day) and outdoors (1 hr/day). Outdoor activities include walking between the museum and parking lot, work breaks, and leading short field trips. As these outdoor activities are not as strenuous as other workers, the relative inhalation rate is lower. The museum worker is assumed to touch soil and surface water with the hands while conducting short field trips, which are assumed to take place once a month from April through November. Incidental ingestion of soil and surface water occur during these field trips.

- A groundskeeper/sampler receptor is assumed to work 2 days/wk mowing, landscaping, and collecting soil and water samples. As the site is designated as an undeveloped park, mowing and sample collection are infrequent events. The entire workday is spent outdoors (8 hrs/day) performing strenuous activities that result in an elevated inhalation rate. Activities involve soil contact with the head, hands, forearms, and lower legs, and surface water contact with the hands, forearms, lower legs, and feet. Incidental ingestion of soil is elevated due to labor activities that involve soil disturbance. Surface water contact and ingestion is limited to sampling events at the site ponds.

- The construction worker is an adult that spends 30 days per year on a construction job at the site (e.g., repairing roads, buildings, valve houses, pump houses, etc). This is considered to be a reasonable exposure frequency because major construction work on the site infrastructure occurs intermittently. The entire workday is spent outdoors (8 hrs/day) performing strenuous activities that result in an elevated inhalation rate. Activities involve soil contact with the head, hands, forearms and lower legs, and possible surface water contact with the hands, forearms, lower legs, and feet. Incidental ingestion of soil is elevated due to labor activities that involve soil disturbance. Surface water contact and ingestion is limited to intermittent work on culverts or buried pipelines.

- A building maintenance worker is assumed to perform custodian, janitorial, and minor repair jobs 5 days/wk. Work is predominantly indoors (7 hrs/day), with a portion of the

day spent outdoors (1 hr/day). A moderate inhalation rate is retained for this work, and the worker can contact soil with the hands and ingest soil while performing minor outdoor maintenance. There is no reasonable surface water pathway for this receptor.

- Exposure Frequency (EF): Museum support staff and building maintenance workers spend 5 days/wk and 50 wk/yr (250 days/yr) at the site. A receptor consisting of a groundskeeper and sampler is assumed to work 2 days/wk (100 days/yr) mowing, landscaping and collecting soil and water samples. The construction worker is an adult that spends 30 days/yr repairing structures at the site.

- Exposure Duration (ED): Per EPA (1991) protocol for workers, the museum support, groundskeeper/sampler, and building maintenance ED is taken as 25 years. However, construction worker ED is set to 1 year, as this is considered a reasonable ED because major construction work is likely to occur only once for a given worker. (EPA 2002; OEPA 2002)

- Body Weight (BW): The adult mean BW in Table 7-11 of EPA (1997) is rounded to 70 kg.

- Averaging Time for non-carcinogens (AT_{nc}): Averaging time refers to the number of days over which the toxin acts on the body. EPA (1989a) defines the averaging time for non-carcinogen chemicals as the exposure duration multiplied by 365 days/yr.

- Averaging Time for carcinogens (AT_c): For carcinogenic compounds and radioactive isotopes, EPA (1989a) assumes the carcinogen acts over a 70-yr lifetime for the individual. Therefore, averaging time (days) for carcinogens is 70 yrs multiplied by 365 days/yr.

- Inhalation Rate (IR): Short-term exposures for outdoor workers are taken from Table 5-23 in EPA (1997). A moderate rate of 1.5 m^3/hr is assumed for the museum and building maintenance workers, while the groundskeeper/sampler and construction personnel perform heavy activities at an elevated rate of 2.5 m^3/hr.

- Exposure Time (ET) for Air: Museum and building maintenance personnel are assumed to be outdoors 1 hr/day. Outdoor activities include walking between the museum and parking lot, work breaks, leading short field trips, and minor repairs on outdoor building equipment. For the groundskeeper/sampler and construction workers, the entire workday is spent outdoors (8 hrs/day).

- Ingestion Rate (IR) for Soil: The EPA (2002) standard industrial rate of 0.05 g/d for indoor workers is applied to the museum support and building maintenance staff, and the standard industrial rates of 0.1 g/d for groundskeeper/sampler and 0.33 g/d for a construction worker.

- Fraction of Ingested Soil that is Contaminated (FI): For the IRRA, the workers are assumed to spend 100 percent of their time in a contamination zone, and FI is set equal to 1.0.

- Surface Area (SA), Dermal Contact with Soil: EPA (2004, Exhibit C-1) has compiled SA values for body parts. The museum support staff is assumed to touch soil with their hands. Building maintenance has hands and forearms exposed to the soil. EPA (2002) has published standard industrial values for the groundskeeper/sampler and construction worker.

- Adherence Factor (AF) for Soil: Museum support is assumed to be similar to residential adult (EPA 2002). The groundskeeper/sampler and construction worker have elevated AF due to work performed in soil (EPA 2002). A standard industrial AF is used for the building maintenance staff (EPA 2004).

- Shielding Factor (SH): The SH accounts for material between the receptor and radiation source that can attenuate the external radiation received by an individual. For outdoor conditions on the site, the SH is taken as 0.25 to account for substantial surface-water coverage (water shields radiation emitted from the soil below the water) and the placement of clean topsoil over the remedial footprint (clean topsoil shields radiation emitted from soil below the topsoil). For indoor conditions, SH is taken as 0.5 to account for the shielding properties of the building floor and walls.

- Ingestion Rate (IR) for Surface Water: The 1997 EPA Exposure Factors Handbook does not contain guidance on the surface water pathway. An older version of the handbook (EPA 1989b) assigned 0.05 L/hr for an adult swimmer, but swimming is not pertinent to the workers. The incidental ingestion to the groundskeeper/sampler is attributed to placing hands and arms in the water, and repetitive touching of hands to the mouth is assumed to result in a rate of 0.01 L/hr. A construction worker is less likely to perform extensive work in surface water, and the rate is reduced to 0.005 L/hr. The museum worker that leads an occasional field trip may touch the water, and a rate of 0.001 L/hr is assigned to this scenario. It is assumed that the building maintenance worker will not touch the water.

- Exposure Time (ET) for Surface Water: It is assumed that the groundskeeper/sampler spends one hour wading and collecting surface water samples each day that samples are collected. The museum and construction workers are assumed to contact the water for 0.5 hours when they are performing activities near the water. It is assumed that the building maintenance worker will not touch the water.

- Exposure Frequency (EF) for Surface Water: The groundskeeper/sampler is assumed to collect samples once per month, or 12 days/yr. A museum worker is assumed to touch water on short field trips conducted once a month from April through November (8 days/yr). Construction work associated with the site ponds is limited to 6 days/yr, as significant construction work scope is not anticipated for the surface water pathway. It is assumed that the building maintenance worker will not touch the water.

- Surface Area (SA), Dermal Contact with Surface Water: EPA (2004, Exhibit C-1) has compiled SA values for body parts. The museum worker is assumed to touch surface water with the hands. A groundskeeper/sampler and construction worker are assumed to contact surface water with the hands, forearms, feet, and lower legs. It is assumed that the building maintenance worker will not touch the water.

TABLE 3-1
Exposure Pathways and Parameters for the Undeveloped Park User

Parameter (units)	Child (1 to 6 yr)	Youth (7 to 18 yr)	Adult (19 to 55 yr)	Senior Adult (56 to 70 yr)
Parameters applicable to all pathways, unless otherwise specified				
EF (day/yr)	20	40	20	40
ED (yr)	3	6	14	7
BW (kg)	15	47	70	70
AT_{nc} (day)	1095	2190	5110	2555
AT_c (day)	25550	25550	25550	25550
Pathway: inhalation of dust, volatiles & radon				
IR (m^3/hr)	1.0	1.0	1.0	1.0
ET (hr/day)	2	2	2	2
Pathway: incidental ingestion of soil				
IR (g/day)	0.2	0.1	0.1	0.1
FI (unitless)	1	1	1	1
Pathway: dermal contact with soil				
SA (cm^2)	2800	4370	5700	5700
AF (mg/cm^2)	0.2	0.2	0.07	0.07
ABS (unitless)	CSV	CSV	CSV	CSV
Pathway: external radiation				
$ET_{outdoors}$ (hr/day)	2	2	2	2
$ET_{indoors}$ (hr/day)	NA	NA	NA	NA
$SH_{outdoors}$ (unitless)	0.25	0.25	0.25	0.25
$SH_{indoors}$ (unitless)	NA	NA	NA	NA
Pathway: incidental ingestion of surface water				
IR (L/day)	0.035	0.035	0.015	0.015
EF (day/yr)	12	12	12	12
Pathway: dermal contact with surface water				
SA (cm^2)	2180	4470	6070	6070
DA (mg/cm^2/event)	CSV	CSV	CSV	CSV
EF (day/yr)	12	12	12	12
ET (hr/day)	1	1	1	1

EF = exposure frequency
ED = exposure duration
BW = body weight
AT_{nc} = averaging time for non-carcinogens
AT_c = averaging time for carcinogens
IR = inhalation or ingestion rate
ET = exposure time
FI = fraction of ingested soil that is contaminated
SA = surface area of skin
AF = adherence factor for soil to skin
ABS = absorption factor
SH = shielding factor
DA = dose absorbed per event
CSV = chemical specific value (see Appendix E)

TABLE 3-2
Exposure Pathways and Parameters for the Museum Visitor

Parameter (units)	Child (1 to 6 yr)	Youth (7 to 18 yr)	Adult (19 to 55 yr)	Senior Adult (56 to 70 yr)
Parameters applicable to all pathways, unless otherwise specified				
EF (day/yr)	10	10	10	20
ED (yr)	3	6	14	7
BW (kg)	15	47	70	70
AT_{nc} (day)	1095	2190	5110	2555
AT_c (day)	25550	25550	25550	25550
Pathway: inhalation of dust, volatiles & radon				
IR (m^3/hr)	1.0	1.0	1.0	1.0
ET (hr/day)	0.5	0.5	0.5	0.5
Pathway: incidental ingestion of soil				
IR (g/day)	0.1	0.075	0.05	0.05
FI (unitless)	1	1	1	1
Pathway: dermal contact with soil				
SA (cm^2)	2800	4370	5700	5700
AF (mg/cm^2)	0.2	0.2	0.07	0.07
ABS (unitless)	CSV	CSV	CSV	CSV
Pathway: external radiation				
$ET_{outdoors}$ (hr/day)	0.5	0.5	0.5	0.5
$ET_{indoors}$ (hr/day)	2	2	2	2
$SH_{outdoors}$ (unitless)	0.25	0.25	0.25	0.25
$SH_{indoors}$ (unitless)	0.5	0.5	0.5	0.5
Pathway: incidental ingestion of surface water while wading				
IR (L/day)	NA	NA	NA	NA
ET (hr/day)	NA	NA	NA	NA
EF (event/yr)	NA	NA	NA	NA
Pathway: dermal contact while wading				
SA (cm^2)	NA	NA	NA	NA
DA (mg/cm^2/event)	NA	NA	NA	NA
EF (event/yr)	NA	NA	NA	NA
ET (hr/day)	NA	NA	NA	NA

EF = exposure frequency
BW = body weight
AT_c = averaging time for carcinogens
ET = exposure time
SA = surface area of skin
ABS = absorption factor
DA = dose absorbed per event
NA = not applicable to this receptor

ED = exposure duration
AT_{nc} = averaging time for noncarcinogens
IR = inhalation rate
FI = fraction of contaminated soil ingested
AF = adherence factor for skin
SH = shielding factor
CSV = chemical specific value (see Appendix E)

TABLE 3-3
Exposure Pathways and Parameters for the Site Workers

Parameter (units)	Museum Support	Groundskeeper & Sampler	Construction Worker	Building Maintenance
Parameters applicable to all pathways, unless otherwise specified				
EF (day/yr)	250	100	30	250
ED (yr)	25	25	1	25
BW (kg)	70	70	70	70
AT_{nc} (day)	9125	9125	365	9125
AT_c (day)	25550	25550	25550	25550
Pathway: inhalation of dust, volatiles & radon				
IR (m^3/hr)	1.5	2.5	2.5	1.5
ET (hr/day)	1	8	8	1
Pathway: incidental ingestion of soil				
IR (g/day)	0.05	0.1	0.33	0.05
FI (unitless)	1	1	1	1
Pathway: dermal contact with soil				
SA (cm^2)	904	3300	3300	2077
AF (mg/cm^2)	0.07	0.3	0.3	0.2
ABS (unitless)	CSV	CSV	CSV	CSV
Pathway: external radiation				
$ET_{outdoors}$ (hr/day)	1	8	8	1
$ET_{indoors}$ (hr/day)	7	0	0	7
$SH_{outdoors}$ (unitless)	0.25	0.25	0.25	0.25
$SH_{indoors}$ (unitless)	0.5	0.5	0.5	0.5
Pathway: incidental ingestion of surface water				
IR (L/day)	0.001	0.01	0.005	NA
EF (day/yr)	8	12	6	NA
Pathway: dermal contact with surface water				
SA (cm^2)	904	5670	5670	NA
DA (mg/cm^2/event)	CSV	CSV	CSV	NA
EF (day/yr)	8	12	6	NA
ET (hr/day)	0.5	1	0.5	NA

EF = exposure frequency
ED = exposure duration
BW = body weight
AT_{nc} = averaging time for noncarcinogens
AT_c = averaging time for carcinogens
IR = inhalation/ingestion rate
ET = exposure time
FI = fraction of ingested soil that is contaminated
SA = surface area of skin exposed to soil or water
AF = adherence factor for skin
ABS = absorption factor
SH = shielding factor
DA = dose absorbed per event
CSV = chemical specific value (see Appendix E)

4.0 TECHNICAL APPROACH TO EXPOSURE ASSESSMENT

This section of the report discusses the risk equations, environmental data, cancer slope factors (CSFs), reference doses (RfDs), and assumptions that support the exposure assessment for receptors defined in Section 3.0. Additional narrative addresses background conditions, exposure zone boundaries, the closure of hazardous waste management units (HWMUs), uncertainty in the risk estimate, and comparison of present results to those in the CRARE (DOE 1995d).

4.1 EXPOSURE ZONES

Plate 1 shows the exposure zones for receptors that visit or work at the site. Boundaries between the exposure zones reflect former remedial operations associated with the clay borrow area (Zone 1), southern waste units (Zone 2), northern woods and wetlands (Zone 3), Paddys Run (Zone 4), production area (Zone 5), waste pits (Zone 6), K-65 silos and treatment facilities (Zone 7), and the on-site disposal facility (Zone 8). The exposure zone used to assess the closure of HWMUs (Section 4.8) is a hypothetical zone comprised of all the former HWMUs (Figure 4-1). The development of exposure zones takes into consideration similar contaminants within former remediation areas, creates a reasonably large area of attractions for a receptor to see (e.g., the ponds and wetlands in Zone 6), and helps to manage the number of risk calculations that are performed for each receptor.

Table 4-1 summarizes the exposure matrix for the site receptors, with every yes entry corresponding to a set of risk calculations. An undeveloped park user is assumed to visit every zone except the on-site disposal facility (Zone 8), as the perimeter of Zone 8 is fenced to prohibit trespassing. The museum visitor and museum worker will spend time in the museum (Zone 7), and they are assumed to take an occasional field trip to observe birds or other aquatic life in the adjacent ponds and wetlands of Zone 6. A groundskeeper/sampler will enter every zone to maintain the grounds and collect media samples. The worker performing building maintenance will enter zones where buildings are present (Zones 7 and 8). Construction work may be executed in any zone, so the construction worker is assumed to enter every zone. For assessment of HWMU closure, all receptors are assumed to enter the HWMU zone (Section 4.8).

4.2 CONTAMINANTS OF CONCERN

Risk calculations include all soil contaminants that have established final remediation levels (FRLs), as listed in Table 9-3 of the Operable Unit 5 Record of Decision (DOE 1996b).

Additional contaminants were added to this list if they appeared in a soil certification report (Appendix A) and were a concern for assessing human health risk. Ecological contaminants were not included in the risk assessment unless the contaminant was also a concern for human health. This list of contaminants used in this risk assessment is reproduced here as Table 2.1.

4.3 RESIDUAL CONTAMINANT CONCENTRATIONS

Residual contaminant concentrations in soil media are summarized by certification unit (CU) and exposure zone (Appendix B), and the individual certification units within an exposure zone are shown on Plate 1. Every CU shown on Plate 1 and tabulated in Appendix B has a list of contaminants that is derived from the certification reports listed in Appendix A. Contaminant concentrations in the soil media of each exposure zone are used in the risk calculations, and they were derived by calculating the average contaminant value for the set of CUs that comprise each exposure zone. The summary tables and detailed explanation of their derivation appear in Appendix B.

For surface-water media, post-remediation water samples were collected from all major site ponds and most minor ponds. Plate 2 shows the individual uranium sample points and the polygons that enclose the ponds that were sampled in each exposure area. The initial sampling event for Polygons 1 through 4 evaluated all contaminants listed in Table 2-1, with the exception of the dioxin and furan compounds. Based on the detections in this initial event, a subset of contaminants was evaluated in subsequent samples collected from the remaining ponds. Analytical results for all pond samples within an exposure zone were used to derive an average surface-water concentration for each exposure zone. The summary tables and detailed explanation of their derivation appear in Appendix C.

Contaminant concentrations in air media are calculated using the concentration values for soil (Appendix B) and the air particulate and radon-222 data collected from the AMS-12 background location, as reported in Tables 5-1 and 5-2 of the 2005 Site Environmental Report (DOE 2006a). The 2005 average air particulate concentration at the background location is 0.000026 g/m^3, and this value is multiplied by a contaminant soil concentration (ug/g) to obtain the contaminant air concentration (ug/m^3). To estimate the radon-222 concentration in air, a conversion factor is needed to relate the radon-222 concentration in air to the radium-226 concentration in soil, as radon-222 is produced by the radioactive decay of radium-226. The conversion factor can be calculated from the 2005 average background radon concentration (400 pCi/m^3) and the 95th

percentile background soil concentration for radium-226 (1.56 pCi/g), as reported in Table 4-2 of the Addendum to the CERCLA/RCRA Background Soil Study (DOE 2001). Dividing the background radon-222 air concentration by the radium-226 soil concentration yields the conversion factor of 256 g/m^3 (400 pCi/m^3/1.56 pCi/g). The conversion factor is multiplied by the radium-226 soil concentration in each exposure zone to estimate the radon-222 air concentration in each exposure zone.

4.4 CANCER SLOPE FACTORS AND REFERENCE DOSES

The Risk Assessment Information System (RAIS), maintained by the Department of Energy Oak Ridge Operations Office (www.rais.ornl.gov), was utilized to obtain the most recent CSFs and RfDs for each exposure pathway (i.e., inhalation, ingestion, and external radiation) and absorption factors and permeability factors for the dermal exposure pathway. This database is a comprehensive source for toxicity data compiled from the USEPA Integrated Risk Information System (IRIS), the USEPA Health Effects Assessment Summary Tables (radionuclide table), and the USEPA Provisional Peer Reviewed Toxicity Values (PPRTV). The RAIS toxicity values are reviewed monthly and updated as new values are added to the individual USEPA source databases. Toxicity values used in this risk assessment were extracted from RAIS on November 6, 2006.

Appendix D tabulates the November 6, 2006 values extracted from RAIS and compares them to the toxicity values used in the Comprehensive Response Action Risk Evaluation (CRARE) for Operable Unit 5 (DOE 1995d). This comparison is useful because carcinogenic studies dealing with radioactivity are performed intermittently to update CSF values, and risk calculations for radionuclide exposure are likely to change over the time frame of years simply due to the change in CSFs. For example, the CSF for inhalation of radon-222 has increased by a factor of 25, which results in a background inhalation risk of 3.59E-04 for the groundskeeper/sampler receptor. The background inhalation risk to this same receptor is 25 times less (i.e., 1.44E-05) if the CRARE CSF is used in the risk calculation. Therefore, the CRARE risk calculation indicates background conditions comply with the CERCLA guidance (i.e., risk being less than 1E-04), but the present background calculation exceeds the guidance limit due to an increase in the CSF for radon-222.

However, this elevated background risk is not a problem for compliance with the CERCLA guidance, as Section H.3.2.4 of the CRARE (DOE 1995d) notes that only the increment of radioactivity above background need be considered when evaluating compliance with the

CERCLA risk limit of 1.0E-04. Therefore, the background risk calculated for exposure to radionuclides can be subtracted from the total radionuclide risk to assess the effect of radionuclide-contaminated site media on the receptors. This is discussed further in Section 4.6.

4.5 EQUATIONS

All contaminant intake equations used for calculating receptor risk are taken from the Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual, Part A (EPA 1989a). The intake equations use the media concentrations discussed in Section 4.3 and the exposure parameters tabulated in Section 3.0 to calculate the amount of each contaminant that enters the body. This is referred to as the chemical intake for the receptor. The chemical intake is divided by the RfD to obtain the hazard quotient (HQ) for each contaminant, and the intake is multiplied by the CSF to obtain the incremental lifetime cancer risk (ILCR) for each contaminant. Individual HQ and ILCR values are summed for all contaminants across all pathways to arrive at the total HQ and total ILCR values, which are used to assess the overall risk to the receptor for a given exposure scenario. Appendix E contains the equations, media concentrations, exposure parameters, CSFs, RfDs, HQs and ILCRs for every receptor pathway.

4.6 TOTAL RISK AND BACKGROUND RISK

The health risk to an exposed receptor is calculated by summing all individual HQ and ILCR values across all pathways to arrive at the total HQ and total ILCR values. Total risk is derived by using measured residual contaminant concentrations in soil and surface water, with no correction for background. Background risk is calculated using established background concentrations for contaminants in soil (Appendix B) and surface water (Appendix C). Background and total risk calculations are tabulated in Appendix E, and these are used to summarize the health risk as follows: total risk; total risk minus radionuclide background; and total risk minus all background.

Total risk minus radionuclide background represents the risk to a receptor from the amount of radioactivity present above background. For example, if the radium-226 soil concentration is 1.7 pCi/g, the background value of 1.56 pCi/g is subtracted from the 1.7 to arrive at a radium-226 level of 0.14 pCi/g. Therefore, total risk minus radionuclide background represents risk from the increment of radioactivity above background plus the risk from carcinogenic chemicals, and this is the result that is used to evaluate compliance with the ILCR criterion of less than 1.0E-04. The

summary values presented in Section 5.0 for total risk minus radionuclide background are generated by subtracting the background risk for radionuclides from the total risk value.

Total risk minus all background represents the risk to a receptor after all chemical and radionuclide background levels have been removed from the exposure media. The summary values presented in Section 5.0 for total risk minus all background are generated by subtracting the background risk from the total risk.

4.7 UNCERTAINTY IN EXPOSURE SCENARIOS

The Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual, Part A (EPA 1989a) discusses uncertainty associated with risk equations and the derivation of RfDs and CSFs used in the risk calculations, and that discussion will not be summarized here. However, other sources of uncertainty in the risk values generated from the risk calculations are the exposure zone an individual spends time in and the set of exposure parameters for each receptor (Section 3.0). Uncertainty in the exposure zone that yields the highest risk to a receptor is dealt with by calculating the risk in every exposure zone that a receptor will visit (Table 4-1). For the exposure parameters, each exposure scenario (Tables 3-1, 3-2, and 3-3) was selected by the risk assessors and regulatory personnel to simulate the reasonable maximum exposure (RME) for the receptor. However, it is understood that some individuals who visit or work at the site will not fall into the exposure scenario of the RME, and some worse-case scenarios should be evaluated to understand the uncertainty associated with the RME results.

For example, the undeveloped park user is assumed to visit the park for 30 years of a 70 year life, and the visits take place as a child (3 years), youth (6 years), adult (14 years), and senior adult (7 years). A worse-case scenario for the undeveloped park user is to have this visitor spend 70 years of their life visiting the park, where additional exposure as a child (6 years), youth (12 years), adult (37 years) and senior adult (15 years) results in a greater risk to the receptor. Other scenarios will look at the additive effects associated with combining the risk for two or more receptors (e.g., a groundskeeper/sampler who is also an undeveloped park user). These worse-case scenarios are included with the uncertainty discussion in Section 5.8.

4.8 HWMU CLOSURE

Closure of the HWMUs was documented in the certification reports, where all RCRA compounds were screened using the general-cleanup-number (GCN) approach described in the Closure Plan

Review Guidance for RCRA Facilities (OEPA 2006). The GCN calculations indicated that a risk assessment was not required to close the HWMUs. However, the HWMUs will be evaluated with the receptors and exposure scenarios described in this report to validate that closure based on the GCN approach was sound and the closed HWMUs do not present a threat to human health.

The maximum soil concentrations observed for RCRA compounds (Table 4-2 and Appendix B) associated with the site HWMUs (Figure 4-1) were assumed to be present in a hypothetical HWMU that served as the exposure zone for all receptors. For surface water, the maximum value for samples obtained from all ponds in the former production area (Table 4-2 and Appendix C) where used to assess the surface-water pathways. If the maximum soil or surface-water concentration was a detection limit, the full detection limit was used in the risk calculations. Air concentrations were calculated as noted in Section 4.3. Risk results are presented in Section 5.7.

Although the groundwater pathway is not evaluated in this report, the soil FRLs were developed to be protective of the aquifer. The certification reports demonstrate that the RCRA contaminant concentrations in the soil footprints of the former HWMUs are all below their respective FRLs. Therefore, by default, risk from the groundwater pathway is acceptable.

TABLE 4-1

Exposure Matrix for Site Receptors

	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	Zone 7	Zone 8	HWMU
UPU	yes	yes	yes	yes	yes	yes	yes	no	yes
MV	no	no	no	no	no	yes	yes	no	yes
MW	no	no	no	no	no	yes	yes	no	yes
GS	yes	yes	yes	yes	yes	yes	yes	yes	yes
BM	no	yes	no	no	no	no	yes	yes	yes
CW	yes	yes	yes	yes	yes	yes	yes	yes	yes

UPU = undeveloped park user; MV = museum visitor; MW = museum worker;
GS = groundskeeper/sampler; BM = building maintenance; CW = construction worker

TABLE 4-2
RCRA Contaminants Used to Evaluate HWMU Closure

Contaminant	Soil (ug/g)	Surface Water (ug/L)
Barium	255	56.1
Chromium (VI)	19.9	1.8
Lead	52.4	1.2
Mercury	0.0347	0.06
Benzene	0.0017	1.0
2-Butanone	0.0072	5.0
Methylene chloride	0.0077	5.0
Tetrachloroethylene	0.0687	1.0
Toluene	0.0076	1.0
1,1,2-Trichloroethane	0.012	1.0
Xylenes	0.03	1.0

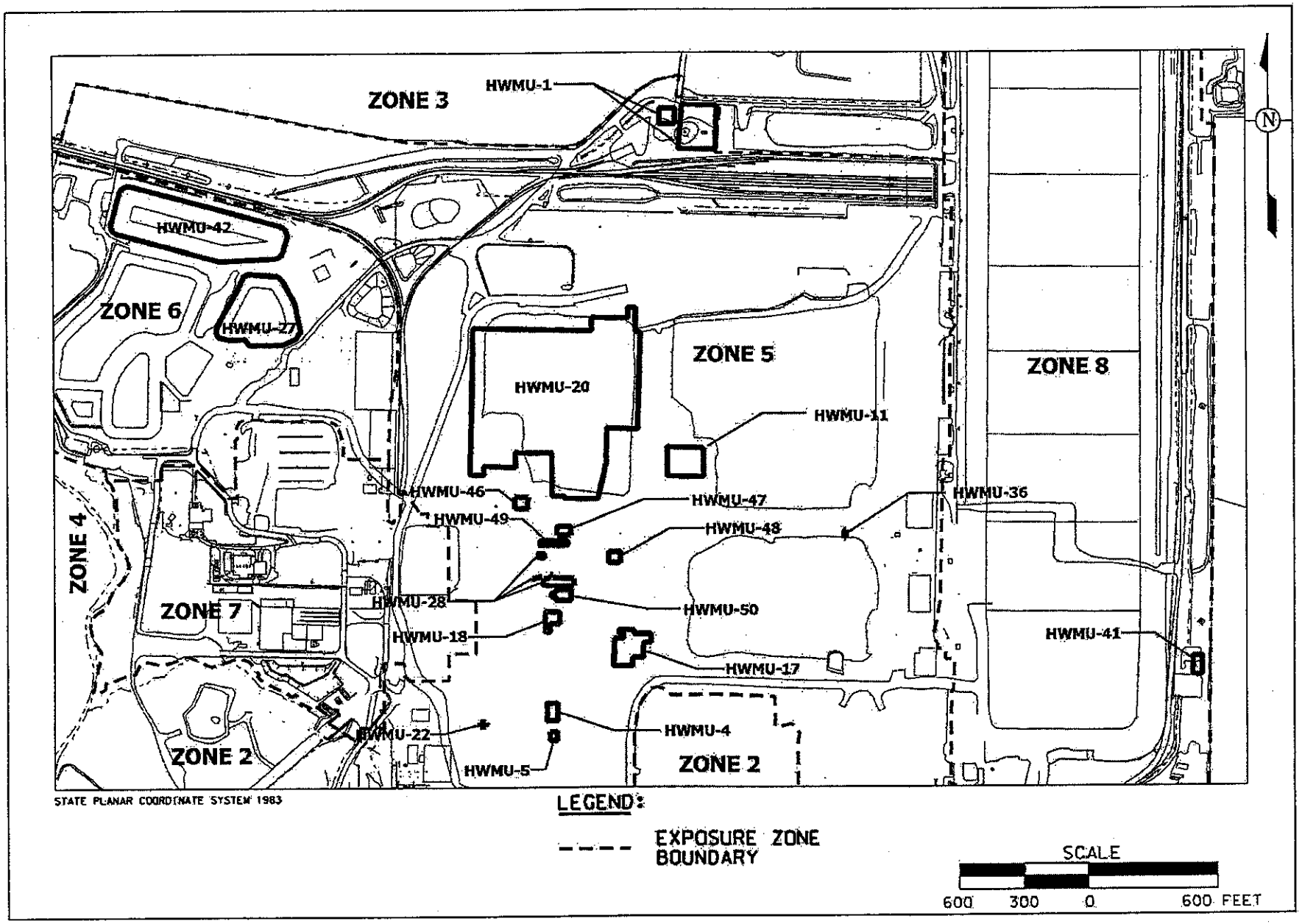

Figure 4-1 Location of Former Hazardous Waste Units at the Fernald Site

5.0 RESULTS FOR THE RESIDUAL RISK CALCULATIONS

Results for the risk calculations, summarized as hazard quotient (HQ) and incremental lifetime cancer risk (ILCR), are tabulated and discussed for each receptor. HQ values are displayed as background, total, and total minus chemical background (T-CB). Calculations for the incremental lifetime cancer risk (ILCR) are tabulated as background, total, total minus radionuclide background (T-RB), and total minus both chemical and radionuclide background (T-CRB).

Background represents the sum of results for all pathways using background concentrations for chemicals and radionuclides evaluated in each exposure zone. HQ background only considers chemicals, and ILCR background considers chemicals and radionuclides that are classified as carcinogens. Total refers to the sum of results for all pathways using the actual chemical and radionuclide concentrations in the air, soil, and surface water media of each exposure zone. For HQ results, total minus chemical background is obtained by subtracting the chemical background value for each contaminant from the total for each contaminant and summing the result for all contaminants [e.g., T-CB = $(T_{As}-CB_{As})+(T_{Be}-CB_{Be})+(T_U-CB_U)$+etc.]. Note that subtracting the sum of background contaminants from the sum of the total for each exposure zone will not produce the correct residual risk value [e.g., T-CB $\neq (T_{As}+T_{Be}+T_U+\text{etc}) - (CB_{As}+CB_{Be}+CB_U+\text{etc.})$]. Each contaminant must be evaluated independently before it is summed because remediation at the site reduced many contaminants to levels below their background values. For cases where the measured contaminant value is less than background (i.e., $T_{As}-CB_{As}$ is negative), the $T_{As}-CB_{As}$ value is set to zero before the contaminants are summed to prevent the negative value from subtracting risk from another contaminant. Therefore, the background and total values presented in the tables of this section (e.g., Table 5-1) cannot simply be subtracted from one another to produce the T-CB result discussed above. The path summary sheet for each detailed risk calculation (Appendix E) provides the T-CB and T-RB results for the values in Tables 5-1 through 5-8.

For ILCR results, total minus radionuclide background is obtained by subtracting the radionuclide background value for each isotope from the total for each isotope, summing the result for all isotopes, and adding this sum to the ILCR sum for chemical constituents [e.g., T-RB = $\{(T_{Ra\text{-}226}-RB_{Ra\text{-}226})+(T_{Th\text{-}230}-RB_{Th\text{-}230})+(T_{U\text{-}238}-RB_{U\text{-}238})+\text{etc}\} + (T_{As}+T_{Be}+T_{TCE})+\text{etc})$]. Total minus chemical and radionuclide background is obtained by subtracting the radionuclide background value for

each isotope from the total for each isotope, summing the result for all isotopes, subtracting the chemical background value for each contaminant from the total for each contaminant, summing the result for all chemicals and adding the two sums together [e.g., T-CRB = $\{(T_{Ra\text{-}226}\text{-}RB_{Ra\text{-}226}) + (T_{Th\text{-}230}\text{-}RB_{Th\text{-}230}) + (T_{U\text{-}238}\text{-}RB_{U\text{-}238}) + \text{etc}\} + \{(T_{As}\text{-}CB_{As}) + (T_{Be}\text{-}CB_{Be}) + (T_{TCE}\text{-}CB_{TCE}) + \text{etc}\}$]. Calculations used to derive the T-CB, T-RB, and T-CRB values in the tables of this section can be found in Appendix E.

As discussed above, the T-CB, T-RB, and T-CRB results in the tables of this section cannot be derived by subtracting the background from the total, as each contaminant must be evaluated independently to arrive at the residual risk from the contaminant increment that exceeds background (e.g., result of 12.6 minus background of 12 yields an increment above background of 0.6). The HQ T-CB results represent the risk poised to a receptor from chemicals present in the environment at increments above background levels. The ILCR values for T-RB and T-CRB represent, respectively, the risk to a receptor from radionuclides present at increments above background, and both chemicals and radionuclides present at increments above background.

The HQ results evaluate chemical toxicity to a receptor exposed to non-carcinogenic contaminants in the environment, and the HQ total values must be less than one to comply with CERCLA guidance. ILCR values estimate a receptors chance for an increase in developing cancer over a 70-year lifetime. CERCLA guidance discusses an acceptable ILCR as being less than one in ten thousand (1.0E-04). That is, a receptor will have less than one chance in ten thousand of increasing their risk of cancer when exposed to the carcinogenic contaminants in the environment. As discussed in Section 4.6, the ILCR values for total minus radionuclide background (T-RB) are used to evaluate compliance with CERCLA guidance.

When reviewing the results in this section, it is important to note the difference in exposure parameters for each receptor (Section 3.0). Risk values will increase for a receptor if exposure frequency, inhalation rates, and/or ingestion rates increase. For example, the museum worker has a higher exposure frequency than the construction worker, which results in a higher risk to the museum worker. The groundskeeper/sampler has a lower exposure frequency relative to the museum worker, but the higher inhalation and ingestion rates result in a higher risk to the groundskeeper/sampler.

Additionally, the reader must be aware that the list of contaminants evaluated in each exposure zone is different (Appendix B), and this will change the receptor risk in each zone. For example, manganese is a contaminant of concern only in Zones 3 and 8, and it produces an elevated HQ value for the inhalation pathway in Zones 3 and 8, relative to the same pathway in other zones.

5.1 UNDEVELOPED PARK USER

Estimates of risk to the undeveloped park user that visits exposure zones one through seven are summarized in Table 5-1. HQ results for each age group (child, youth, adult and senior adult) are averaged over the total exposure period of 30 years and then summed for this table [i.e., (child HQ * 3 yr/30 yr) + (youth HQ * 6 yr/30 yr) + (adult HQ 8 14 yr/30 yr) + senior adult HQ * 7 yr/14 yr)]. This is an acceptable form of summary when evaluating long-term exposure to non-carcinogenic toxins (RAGS, Part A, Section 6.4.1, EPA 1989). Tables in Appendix E show HQ results for individual age groups, and the child HQ values are the highest (about two times greater than HQ results in Table 5.1). For carcinogenic toxins, this time-weighted adjustment is not needed prior to summing the age groups because calculations for each age group are time weighted to a 70-year lifetime, rather than the averaging time for individual age groups (i.e., 3, 6, 14, and 7). Therefore, the ILCR results in Table 5-1 are the simple sum across all age groups without further correction.

The total column for HQ and the T-RB column for ILCR indicate that all values are in compliance with CERCLA guidance (i.e., HQ is less than one; ILCR is less than 1.0E-04). Note that the HQ values for the child receptor would be approximately twice as great as those in Table 5-1, but still well below a value of one. Although the total column for ILCR is not used to evaluate compliance with CERCLA guidance (Section 4.6), all ILCR values are also less than 1.0E-04. Note that background ILCR values exceed total values for all zones except Zones 5 and 6. This occurs because residual contaminant concentrations for many constituents are below background levels (i.e., the soil remediation process was very thorough in removing the contamination).

Total HQ reaches its highest value in Zone 6 (former waste pits), while the total ILCR is at its maximum in Zone 5 (former production area). Maximum HQ and ILCR values occur in these zones due to the number of contaminants evaluated in the risk calculations for Zones 5 and 6 and the residual concentration of the contaminant. As every contaminant is summed to obtain the total risk to the receptor, adding more contaminants to the calculation will increase the final risk

value. As discussed in Section 4.1, the list of contaminants for each exposure zone is determined by the number of contaminants that are evaluated in the soil certification reports for each exposure zone. Calculations for each pathway and every contaminant of concern are provided in Appendix E.

Table E.6-3 in Appendix E indicates that the most sensitive exposure pathways for the undeveloped park user are dermal contact with surface water and soil ingestion. Aroclor-1260, uranium, aroclor-1254, and arsenic are the principal contaminants in the identified Zone 6 pathways that contribute to the maximum total HQ value of 8.42E-02 (Table 5-1). Note that the maximum HQ value is well below the compliance limit of one, and that most of this maximum value (5.83E-02) is derived by using one-half of the detection limit value for aroclor-1260 and aroclor-1254 in the dermal surface-water pathway.

For the maximum total ILCR value in Zone 5 (7.11E-05, Table 5-1), Table E.5-3 in Appendix E shows the dermal surface water and inhalation pathways contribute most of the risk to the receptor (6.32E-05). Dibenzo(a,h)anthracene, benzo(a)pyrene, and indeno(1,2,3-cd)pyrene exposure, via the dermal surface-water pathway, account for most of this risk (4.93E-05), and inhalation of radon-222 (1.02E-05) is the major radionuclide contributor to the risk. The conservative assumption of using one-half of the analytical detection limit for the above listed organic compounds in surface water yields most of the estimated risk. For radon-222, the risk is due to background levels of radon. When radionuclide background is subtracted from the total ILCR result (T-RB in Table 5-1), the risk is reduced to 5.63E-05. The T-RB result is the value used to assess compliance with the criterion of less than 1.0E-04, and the T-RB result is primarily due to the receptor's dermal exposure to surface water containing the organic compounds noted above.

5.2 MUSEUM VISITOR

Estimates of risk to the museum visitor (child, youth, adult and senior adult) are restricted to Zones 6 and 7, as the museum is in Zone 7 and the visitor is assumed to participate in museum field trips to the adjacent wetlands in Zone 6. As the field trips will be lead by museum staff, the assumption is made that museum visitors will obey the site rules and not enter surface-water bodies. Therefore, surface-water pathways are not evaluated for this receptor.

Results in Table 5-2 for HQ total and ILCR T-RB indicate that all values are in compliance with CERCLA guidance (i.e., HQ is less than one; ILCR is less than 1.0E-04). As discussed above for the undeveloped park user, the child, youth adult, and senior adult are evaluated in the risk tables presented in Appendix E, and the HQ results for individual age groups indicate the child HQ values are the highest (about two times greater than HQ results in Table 5.2). Although the total column for ILCR is not used to evaluate compliance with CERCLA guidance (Section 4.6), all total ILCR values are also less than 1.0E-04. Note that background ILCR values exceed total values for both zones. This occurs because residual contaminant concentrations for many constituents are below background levels (i.e., the soil remediation process was very thorough in removing the contamination).

Table 5-2 indicates the total HQ reaches its highest value (5.89E-03) in Zone 6 (former waste pits). Table E.6-6 in Appendix E indicates that the most sensitive non-carcinogenic exposure pathway for the museum visitor is incidental ingestion of soil. Arsenic (1.54E-03) and uranium (2.89E-03) are the principal risk contaminants in the soil ingestion pathway. Note that the risk values are well below the HQ compliance limit of one.

The maximum T-RB ILCR value (9.32E-07, Table 5-2) is in Zone 7 (former silos area). Table E.7-6 in Appendix E shows the soil ingestion and dermal soil pathways contribute most of the risk to the receptor, and arsenic (4.68E-07), beryllium (1.52E-07) and lead-210 (1.57E-07) are the primary contaminants contributing to this risk. The risk value for lead-210 reflects the increment of lead-210 in the soil that is in excess of background. All ILCR values for the museum visitor are well below the compliance limit of 1.0E-04.

5.3 MUSEUM WORKER

Estimates of risk to the adult museum worker are restricted to Zones 6 and 7, as the museum is in Zone 7 and the worker is assumed to lead museum field trips to the adjacent wetlands in Zone 6. As the museum worker is an employee of the site, they may be required to collect aquatic specimens for the museum, and they are assumed to have limited contact with the ponds in Zone 6.

Results in Table 5-3 for HQ total and ILCR T-RB indicate that all values are in compliance with CERCLA guidance (i.e., HQ is less than one; ILCR is less than 1.0E-04). Although the total column for ILCR shows every zone exceeds the 1.0E-04 limit, these values are not used to

evaluate compliance with CERCLA guidance (Section 4.6). Note that background ILCR values exceed total values for all zones. This occurs because the radium-226 background concentration in soil exceeds the residual radium-226 level in soil (i.e., the soil remediation process was very thorough in removing the contamination). As radium-226 decays to radon-222, and inhalation of radon-222 is the primary driver of the total risk to the receptor, ILCR increases when the radium-226 soil concentration increases.

Table 5-3 indicates the total HQ reaches its highest value (5.71E-02) in Zone 6 (former waste pits). Table E.6-5 in Appendix E indicates that the most sensitive non-carcinogenic exposure pathway for the museum worker is incidental ingestion of soil. Arsenic (1.67E-02) and uranium (3.12E-02) are the principal risk contaminants in the soil ingestion pathway. Note that the risk values are well below the HQ compliance limit of one.

The maximum T-RB ILCR value (1.28E-05, Table 5-3) is in Zone 6 (former waste pits). Table E.6-5 in Appendix E shows the soil ingestion and external radiation pathways contribute most of the risk to the receptor. Uranium-238 (4.41E-06) provides the principal risk from external radiation. The risk value for uranium-238 reflects the increment of uranium-238 in the soil that is in excess of background. Arsenic (2.68E-06), dibenzo(a,h)anthracene (1.04E-06), benzo(a)pyrene (8.45E-07) and beryllium (9.68E-07) are the primary contaminants contributing to soil-ingestion risk.

5.4 GROUNDSKEEPER/SAMPLER

Estimates of risk to the groundskeeper/sampler that visits exposure zones one through eight are summarized in Table 5-4. The total column for HQ and the T-RB column for ILCR indicate that all values are in compliance with CERCLA guidance (i.e., HQ is less than one; ILCR is less than 1.0E-04). Although the total column for ILCR shows every zone exceeds the 1.0E-04 limit, these values are not used to evaluate compliance with CERCLA guidance (Section 4.6). Note that background ILCR values exceed total values for all zones. This occurs because the radium-226 background concentration in soil exceeds the residual radium-226 level in soil (i.e., the soil remediation process was very thorough in removing the contamination). As radium-226 decays to radon-222, and inhalation of radon-222 is the primary driver of the total risk to the receptor, ILCR increases when the radium-226 soil concentration increases.

Table 5-4 indicates the total HQ reaches its highest value (2.61E-01) in Zone 3 (northern woods and wetlands). Table E.3-2 in Appendix E indicates that the most sensitive non-carcinogenic exposure pathways for the groundskeeper/sampler are inhalation (1.87E-01), soil ingestion (4.31E-02) and dermal contact with soil (3.06E-02). Manganese inhalation is the primary driver (1.86E-01) for the total HQ value. Aroclor-1260 (1.23E-02), arsenic (1.43E-02) and uranium (1.22E-02) are the principal contaminants in the soil ingestion pathway. For dermal contact with soil, aroclor-1260 (1.89E-02) and arsenic (1.04E-02) are the main contaminants of concern. Note that the maximum HQ value is below the compliance limit of one, and that most of this maximum value (1.86E-01) is due to inhaling background levels of manganese. Manganese is a naturally occurring trace element in the carbonate minerals that are present in the soil.

For the maximum T-RB ILCR value in Zone 5 (4.70E-05, Table 5-4), Table E.5-2 in Appendix E shows the dermal surface water, soil ingestion, and dermal soil pathways contribute most of the risk to the receptor. Dermal contact with surface water containing benzo(a)pyrene and dibenzo(a,h)anthracene results in ILCRs of 1.59E-05 and 1.88E-05, respectively. The conservative assumption of using one-half of the analytical detection limit for the above listed organic compounds in surface water yields most of the estimated risk (i.e., 3.27E-05 = 1.59E-05 + 1.88E-05). Exposure to arsenic in the soil (dermal 1.69E-06 and ingestion 2.34E-06) provides the other significant risk to this receptor.

5.5 CONSTRUCTION WORKER

Estimates of risk to the construction worker that visits exposure zones one through eight are summarized in Table 5-5. The total column for HQ and the T-RB column for ILCR indicate that all values are in compliance with CERCLA guidance (i.e., HQ is less than one; ILCR is less than 1.0E-04). Although the total column for ILCR is not used to evaluate compliance with CERCLA guidance (Section 4.6), all total ILCR values are also less than 1.0E-04. Note that background ILCR values exceed total values for all zones. This occurs because the radium-226 background concentration in soil exceeds the residual radium-226 level in soil (i.e., the soil remediation process was very thorough in removing the contamination). As radium-226 decays to radon-222, and inhalation of radon-222 is the primary driver of the total risk to the receptor, ILCR increases when the radium-226 soil concentration increases.

Table 5-5 indicates the total HQ reaches its highest value (1.08E-01) in Zone 3 (northern woods and wetlands). Table E.3-1 in Appendix E indicates that the most sensitive non-carcinogenic

exposure pathways for the groundskeeper/sampler are inhalation (5.60E-02) and soil ingestion (4.27E-02). Manganese inhalation is the primary driver (5.59E-02) for the total HQ value. Aroclor-1260 (1.22E-02), arsenic (1.42E-02) and uranium (1.21E-02) are the principal contaminants in the soil ingestion pathway. Note that the maximum HQ value is below the compliance limit of one, and that most of this maximum value (5.59E-02) is due to inhaling background levels of manganese. Manganese is a naturally occurring trace element in the carbonate minerals that are present in the soil.

For the maximum T-RB ILCR value (5.98E-07, Table 5-5) in Zone 5 (former production area), Table E.5-1 in Appendix E shows the dermal surface water (3.80E-07) and soil ingestion (1.26E-07) contribute most of the risk to the receptor. Dermal contact with surface water containing benzo(a)pyrene (1.39E-07) and dibenzo(a,h)anthracene (1.88E-07) contributes most of the risk for this pathway. Incidental ingestion of arsenic (9.26E-08) and beryllium (2.79E-08) in the soil provides the other significant risk to this receptor. Note that the risk from dermal exposure to surface water results from the assumption to use one-half the detection limit for organic contaminants that are not detected in surface water.

5.6 BUILDING MAINTENANCE

Estimates of risk to the worker who performs maintenance and janitorial services in the buildings in Zones 2, 7, and 8 are summarized in Table 5-6. This worker walks through soil to access the buildings, but does not receive exposure from the surface-water pathways. The total column for HQ and the T-RB column for ILCR indicate that all values are in compliance with CERCLA guidance (i.e., HQ is less than one; ILCR is less than 1.0E-04). Although the total column for ILCR shows every zone exceeds the 1.0E-04 limit, these values are not used to evaluate compliance with CERCLA guidance (Section 4.6). Note that background ILCR values exceed total values for all zones. This occurs because the radium-226 background concentration in soil exceeds the residual radium-226 level in soil (i.e., the soil remediation process was very thorough in removing the contamination). As radium-226 decays to radon-222, and inhalation of radon-222 is the primary driver of the total risk to the receptor, ILCR increases when the radium-226 soil concentration increases.

Table 5-6 indicates the total HQ reaches its highest value (1.00E-01) in Zone 8 (OSDF). Table E.8-4 in Appendix E indicates that the most sensitive non-carcinogenic exposure pathways for the building maintenance worker are soil ingestion (4.95E-02), inhalation (3.63E-02) and dermal

contact with soil (1.42E-02). Arsenic (1.48E-02), chromium (4.06E-03), manganese (4.64E-03), and uranium (2.04E-02) are the principal contaminants in the soil ingestion pathway. Manganese is the driver (3.54E-02) for the inhalation pathway, and arsenic (8.98E-03) is the main contributor to the HQ value for dermal contact with soil. Note that the maximum HQ value is below the compliance limit of one.

For the maximum T-RB ILCR value (1.13E-05, Table 5-6) in Zone 7 (former silos area), Table E.7-4 in Appendix E shows the soil ingestion and dermal soil pathways contribute most of the risk to the receptor. Arsenic (2.69E-06), beryllium (7.73E-07), lead-210 (2.31E-06), and uranium-238 (1.46E-06) are the primary contaminants contributing to the ingestion pathway. For the dermal exposure, arsenic (1.64E-06) and beryllium (6.42E-07) are the prime contaminants contributing to the risk. The risk values for lead-210 and uranium-238 reflect the increment of these isotopes in soil that is in excess of background.

5.7 HWMU EVALUATION

Closure of the HWMUs was documented in the certification reports, where all RCRA compounds were screened using the general-cleanup-number (GCN) approach described in the Closure Plan Review Guidance for RCRA Facilities (OEPA 2006). The GCN calculations indicated that a risk assessment was not required to close the HWMUs. However, the receptors and exposure scenarios described in this report were used to validate that closure based on the GCN approach was sound, and that the closed HWMUs do not present a threat to human health. Section 4.7 describes the HWMU exposure zone and derivation of contaminant concentrations used in the risk calculations.

Table 5-7 summarizes the risk calculations for the six receptors and indicates that all HQ and ILCR values are in compliance with RCRA guidance (i.e., HQ is less than one; ILCR is less than 1.0E-04). The groundskeeper/sampler has the highest HQ (9.78E-03) and ILCR (6.41E-07) values, followed by the museum worker, building maintenance, undeveloped park user, construction worker and museum visitor. Exposure frequency, inhalation rate, and ingestion rate (Section 3.0) are the primary exposure parameters that account for the maximum dose being delivered to the groundskeeper/sampler.

For the groundskeeper/sampler, Table E.9-2 indicates that the HQ result is primarily due to exposure via the inhalation (5.05E-03), soil ingestion (3.14E-03), and dermal soil (1.36E-03)

pathways. The ILCR result is dominated by the inhalation pathway (6.08E-07). For the HQ total, inhalation of barium (3.63E-03) and chromium VI (1.42E-03), ingestion of chromium VI (2.60E-03), and dermal contact with chromium VI in soil (1.29E-03) account for the dose to the groundskeeper/sampler. Inhalation of chromium VI (6.08E-07) accounts for over 90 percent of the ILCR value. Note that the HQ and ILCR numbers are very conservative estimates, as total chromium in the soil is used as an estimate of chromium VI. The HQ and ILCR results would be much lower if the actual chromium VI concentration was used for this assessment, because chromium VI is only a fraction of the total chromium in the soil.

Appendix E.9 contains a summary of the risk calculations for the remaining receptors. In all receptor exposure scenarios, chromium VI is the primary contaminant that is responsible for the calculated HQ and ILCR results in Table 5.7.

5.8 UNCERTAINTY ANALYSIS

The Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual, Part A (EPA 1989) discusses uncertainty associated with the risk equations and derivation of RfDs and CSFs used in the calculations, and that discussion is not part of the uncertainty discussion in this section. Sources of uncertainty evaluated in this section deal with the exposure zone a receptor enters, the set of exposure parameters for each receptor (Section 3.0), the use of detection limit and maximum values for contaminants, and the risk to a person who may play the role of two receptors (e.g., the undeveloped park user who also is a museum worker).

Uncertainty in the exposure zone that yields the highest risk to a receptor is dealt with by calculating the risk in every exposure zone that a receptor will visit (Table 4-1). Results in Tables 5.1 through 5.6 show the receptor risk in every zone the receptor enters, and they indicate that Zones 5 and 6 pose the greatest risk for most receptors. Exceptions include the museum visitor and building maintenance worker who do not enter Zones 5 and 6 and receive the highest risk in Zone 7. Higher risk in Zones 5, 6, and 7 is attributed to a greater number of contaminants that are evaluated in these zones, rather than a significant difference in the concentration of contaminants between zones. As each contaminant is evaluated for the risk it poses to a receptor, increasing the number of contaminants evaluated will increase the risk to the receptor. Therefore, the uncertainty in the risk to a receptor in an exposure zone lies with the selection of contaminants for each exposure zone, and this is dictated by the contaminants that appear in the certification reports (Appendix A) for each exposure zone.

For the exposure parameters, each exposure scenario (Tables 3-1, 3-2, and 3-3) was selected by the risk assessors and regulatory personnel to simulate the reasonable maximum exposure (RME) for the receptor. However, it is understood that some individuals who visit or work at the site will not fall into the exposure scenario of the RME, and some worse-case scenarios should be evaluated to understand the uncertainty associated with the RME results (Tables 5-1 through 5-6). Therefore, risk to the undeveloped park user is evaluated for three uncertainty cases: UPU 1 - park visits for the first 30 years of life as a child (6 years), youth (12 years), and adult (12 years); UPU 2 - park visits for the last 30 years of life as a senior adult (15 years) and adult (15 years); and UPU 3 - park visits for a 70 year life as a child (6 years), youth (12 years), adult (37 years) and senior adult (15 years). For the groundskeeper/sampler, which is the receptor exposed to the most risk under the RME scenario, exposure frequency was doubled to assess the uncertainty in the number of days the groundskeeper/sampler will work at the site (case GS 1). All of the uncertainty cases are evaluated with the receptor in Zone 5, where the maximum number of contaminants is found and the highest risk exists. Detailed calculations are provided as Appendix E.10.

Table 5-8 summarizes the uncertainty in exposure duration for the undeveloped park user (UPU 1, UPU 2, UPU 3), with the RME case in Table 5-1 shown as UPU Zone 5. The principal chemicals and radionuclides that drive the risk are the same as those discussed in Section 5.1. A 30 year exposure duration over the first 30 years of a receptors life (UPU 1) results in a risk that is slightly higher than the base case (UPU Zone 5), but still acceptable with respect to HQ total less than one and T-RB ILCR less than 1.0E-04. This reflects a greater sensitivity to toxins for the child and youth receptors. Conversely, there is less sensitivity for the adult and senior adult receptors (UPU 2), relative to the base case. For the 70-year exposure duration (UPU 3), the T-RB ILCR value (1.29E-04) exceeds 1.0E-04, which is unacceptable from a CERCLA compliance position. However, this high value is an artifact of using surface-water concentrations for organic constituents that equate to one-half the detection limit value for the constituent. For the UPU 3 case, using one-half the detection limit value for benzo(a)pyrene and dibenzo(a,h)anthracene results in a risk to the receptor, via dermal contact with surface water, of 1.05E-04. This is greater than 80 percent of the T-RB ILCR value (1.29E-04), and removal of these compounds from the surface-water pathway (e.g., they were not detected in surface water) would result in an acceptable risk (i.e., 1.29E-04 – 1.05E-04 = 0.24E-04, which is less than 1E-04). This will be discussed below when uncertainty in contaminant concentrations is addressed.

Doubling the exposure frequency for the groundskeeper/sampler (GS 1 in Table 5-8) doubles the HQ and ILCR risk, relative to the base case (GS Zone 5). However, the increased risk values for HQ and T-RB ILCR still comply with the limits of less than one and less than 1.0E-04, respectively. The T-RB ILCR value of 9.40E-05 is very close to exceeding the limit of 1.0E-04, but this high value is due to the use of conservative concentrations for organic constituents in surface water. Using one-half the detection limit value for benzo(a)pyrene and dibenzo(a,h)anthracene results in a risk of 6.52E-05 to the receptor, via dermal contact with surface water. This is approximately 70 percent of the T-RB ILCR value (9.40E-05), and removal of these compounds from the surface-water pathway (e.g., they were not detected in surface water) would result in a much lower risk (i.e., 9.40E-05 – 6.52E-05 = 2.88E-05).

Uncertainty associated with the use of the maximum uranium surface-water concentration, rather than the average in the exposure zone, and one-half the detection limit values for organic contaminants, rather than assuming the organic contaminant is not present in surface water, is evaluated for the two receptors with the greatest RME risk. The maximum uranium concentration in surface water (0.879 mg/L) was entered into the risk calculation GS 1 for the groundskeeper/sampler, and the organic concentrations were maintained at one-half the detection limit value. Results for GS 2 show the HQ total increased by 2E-03 and the T-RB ILCR increased by a factor of 3E-07, relative to the GS 1 case, but the total HQ and T-RB ILCR values remain below the compliance levels of less than one and less than 1.0E-04, respectively. Therefore, the present maximum uranium surface-water concentration of 0.879 mg/L does not pose a significant risk to the groundskeeper/sampler. However, the source for this elevated uranium concentration (pond west of former Waste Pit 3) should be sampled during future monitoring activities to ensure that the uranium concentrations does not rise to a level that would create an unacceptable risk for a site receptor.

For the undeveloped park user, the UPU 3 exposure scenario (70-year exposure duration) resulted in a T-RB ILCR of 1.29E-04, which exceeds the CERCLA guidance limit because organic compounds are entered into the surface-water pathways at one-half their detection limit value. This uncertainty was evaluated by assuming zero, rather than one-half the detection limit, for organic compounds in surface water. Additionally, the uranium concentration in surface water was increased to the maximum value of 0.879 mg/L to evaluate the sensitivity of the child and

youth sub-receptors (undeveloped park user is comprised of the child, youth, adult, and senior adult) to water ingestion and dermal contact with surface water.

Results for the UPU 4 scenario, assuming 70-year exposure duration, can be compared to the results for UPU 3 (same exposure duration) to evaluate the change in HQ and ILCR values when contaminant concentrations change. Table 5-8 indicates that the HQ total for UPU 3 (7.90E-02) decreases to 4.86E-02 for the UPU 4 scenario. The T-RB ILCR value for UPU 4 decreases to 7.93E-06, relative to the UPU 3 case (1.29E-04). These results indicate that the use of one-half of the detection limit for organic compounds, such as benzo(a)pyrene and dibenzo(a,h)anthracene, is too conservative when long exposure durations are considered, and only true detections should be used in risk calculations. Therefore, benzo(a)pyrene and dibenzo(a,h)anthracene should be retained as contaminants of concern for future sampling of the surface water in Zones 5 and 6, and the lowest achievable detection limits should be requested when the samples are sent to the analytical laboratory.

As noted above using one-half the detection limit value for benzo(a)pyrene and dibenzo(a,h)anthracene results in a high uncertainty to the calculated risk to the receptors, whereas increasing the uranium surface-water concentration to the maximum observed value has no significant impact on the receptors. However, it is documented in the detailed calculation for UPU 3 and UPU 4 (Appendix E.10) that the child sub-receptor for the undeveloped park user does experience an increase in the HQ total from exposure to the maximum uranium concentration in surface water (2.93E-03 for UPU 3 increases to 1.20E-01 for UPU 4). Although there is an increase in the exposure to chemical toxins for the child sub-receptor, the overall HQ total for all chemicals remains below the compliance limit of one.

The risk to a hypothetical receptor that is a groundskeeper/sampler and an undeveloped park user (the two highest risk scenarios) can be evaluated by summing the total HQ and T-RB ILCR values for individual receptors. For the above hypothetical receptor in Zone 5, the total HQ is 1.88E-01 (8.15E-02 + 1.06E-01, Tables 5-1 and 5-4) and the T-RB ILCR value is 1.33E-04 (5.63E-05 + 4.70E-05, Tables 5-1 and 5-4). Total HQ is less than one, but the T-RB ILCR value exceeds 1.0E-04. However, recall that most of the T-RB ILCR risk is due to the exposure of the receptors to organic compounds in surface water, and the concentration of these compounds is assumed to be one-half the detection limit. Table 5-8 (UPU 3 and UPU 4) shows that the risk to the undeveloped park user is decreased by over 90 percent when the organic compounds are

assumed to be zero, rather than one-half of the detection limit. Therefore, there is a very high uncertainty, on the conservative side, with the T-RB ILCR result of 1.33E-04 for the hypothetical receptor. This result has a high probability of being an order of magnitude lower, which would result in compliance with CERCLA guidance. All additional combinations of two receptors results in acceptable HQ and ILCR results.

5.9 COMPARISON TO CRARE RESULTS

The uncertainty cases for UPU 3 and UPU 4 can be used to compare present risk calculations to those carried out in the CRARE (DOE 1995) for the undeveloped park user, because the exposure pathways and duration are identical for these three cases. In Table H.IV-4 of the CRARE, total ILCR is 2.1E-05, T-RB ILCR is 4.9E-06 and T-CRB ILCR is 4.1E-06. These values compare favorably with the Table 5-8 results for UPU 4, but not UPU 3. The principal difference between the CRARE and UPU 3 results is the present evaluation of receptor exposure to benzo(a)pyrene and dibenzo(a.h)anthracene in the dermal surface-water pathway (ILCR of 1.05E-04). These organic contaminants were not evaluated as part of the dermal pathway in the CRARE and, when the organic compounds are set to zero for the UPU 4 case, the CRARE results and UPU 4 results (Table 5-8) are similar. Results for the UPU 4 case are slightly higher for total ILCR and T-RB ILCR, and a bit lower for T-CRB ILCR, relative to the CRARE results.

The difference in the total ILCR result between the CRARE and UPU 4 is due to the ILCR value for the inhalation of radon-222. Inhalation of radon-222 in the CRARE resulted in an ILCR of 4.2E-08 (Table H.IV.1-3 in the CRARE), whereas the UPU 4 calculation for the inhalation of radon-222 produces an ILCR of 2.29E-05 (Table E.10-4 in this report). This large discrepancy in the radon-222 ILCR values is due to an increase in the CSF value for radon-222 (Section 4.4) and the failure of the CRARE air model to estimate radon air concentrations accurately. Air monitoring data collected for calendar year 2005 at background station AMS-12 (DOE 2006) indicate radon-222 levels average 400 pCi/m^3. This measured radon-222 level is used in the present report to calculate radon-222 air concentrations (Section 4.3), and it produces radon-222 air concentrations that are approximately 40 times greater than the radon-222 level estimated with the CRARE air model (11 pCi/m^3). When this radon-222 discrepancy is accounted for, adding the UPU 4 radon-222 ILCR to the CRARE total ILCR result (2.29E-05 + 2.1 E-05 = 4.39E-05) produces a total ILCR value nearly identical to the UPU 4 total ILCR (4.13E-05, Table 5-8).

The T-RB ILCR results for the UPU 4 case are greater than those of the CRARE case because many more chemicals are evaluated in this report and the residual concentrations of arsenic and beryllium in soil are greater than the concentrations used in the CRARE. The present ILCR results for arsenic (4.10E-06) and beryllium (1.53E-06) are in Table E.10-4, and this table can be compared to Table H.IV.1-4 of the CRARE to observe the differences in the list of contaminants and their ILCR values.

When chemical and radionuclide background values are subtracted from the total ILCR value (T-CRB), the UPU 4 result (2.22E-06; Table 5-8) is less than the CRARE result (4.1E-06; Table H.IV-4). This difference is due to the increment of concentration above background for radionuclide contaminants. Overall, the residual radionuclide concentrations in soil at the Fernald preserve are less than the radionuclide concentrations used in the CRARE. Therefore, when background radionuclide concentrations are subtracted from the present and CRARE concentrations, a higher increment above background is present for the CRARE calculations. This increment above background produces an ILCR of 3.6E-06 for the CRARE and 1.68E-06 for the present calculation. The difference in these values is nearly two, and if two is added to the UPU 4 result noted above it agrees quite well with the CRARE result.

The above analysis points out an interesting observation. Remedial actions at the Fernald preserve were successful in reducing radionuclide concentrations in soil to values below those used in the CRARE, while many chemical concentrations (e.g., arsenic and beryllium) used in the present risk calculations are greater than those used in the CRARE. However, when all chemicals and radionuclides are summed across all pathways to produce the total ILCR values, the UPU 4 and CRARE totals are of the same magnitude and less than the CERCLA limit of 1.0E-04.

TABLE 5-1
Risk Results for the Undeveloped Park User

	Hazard Quotient			Incremental Lifetime Cancer Risk			
	Background	Total	T – CB	Background	Total	T - RB	T - CRB
Zone 1	1.45E-02	1.53E-02	3.27E-03	2.01E-05	1.72E-05	2.67E-06	2.28E-07
Zone 2	1.76E-02	2.26E-02	7.23E-03	2.06E-05	2.19E-05	7.28E-06	4.77E-06
Zone 3	2.24E-02	3.67E-02	1.56E-02	2.02E-05	1.86E-05	3.13E-06	6.36E-07
Zone 4	1.53E-03	5.13E-03	3.59E-03	1.72E-05	1.34E-05	2.04E-07	2.04E-07
Zone 5	1.77E-02	8.15E-02	6.52E-02	2.06E-05	7.11E-05	5.63E-05	5.36E-05
Zone 6	1.55E-02	8.42E-02	7.14E-02	2.06E-05	6.72E-05	5.17E-05	4.92E-05
Zone 7	1.51E-02	1.71E-02	4.41E-03	2.06E-05	1.97E-05	3.57E-06	1.18E-06

T = total; CB = chemical background; RB = radionuclide background;
CRB = chemical and radionuclide background

TABLE 5-2
Risk Results for the Museum Visitor

	Hazard Quotient			Incremental Lifetime Cancer Risk			
	Background	Total	T – CB	Background	Total	T - RB	T - CRB
Zone 6	3.99E-03	5.89E-03	2.71E-03	4.02E-06	3.78E-06	9.09E-07	2.74E-07
Zone 7	3.93E-03	4.14E-03	9.16E-04	4.02E-06	3.90E-06	9.32E-07	3.12E-07

T = total; CB = chemical background; RB = radionuclide background;
CRB = chemical and radionuclide background

TABLE 5-3
Risk Results for the Museum Worker

	Hazard Quotient			Incremental Lifetime Cancer Risk			
	Background	Total	T – CB	Background	Total	T - RB	T - CRB
Zone 6	3.22E-02	5.71E-02	3.11E-02	1.64E-04	1.53E-04	1.28E-05	8.90E-06
Zone 7	3.12E-02	3.51E-02	9.31E-03	1.64E-04	1.54E-04	8.85E-06	5.01E-06

T = total; CB = chemical background; RB = radionuclide background;
CRB = chemical and radionuclide background

TABLE 5-4
Risk Results for the Groundskeeper/Sampler

	Hazard Quotient			Incremental Lifetime Cancer Risk			
	Background	Total	T - CB	Background	Total	T - RB	T - CRB
Zone 1	3.64E-02	3.63E-02	6.18E-03	4.17E-04	3.48E-04	6.49E-06	1.14E-06
Zone 2	4.77E-02	5.34E-02	1.24E-02	4.19E-04	3.72E-04	7.86E-06	2.15E-06
Zone 3	2.26E-01	2.61E-01	4.08E-02	4.18E-04	3.73E-04	8.63E-06	3.16E-06
Zone 4	3.03E-03	1.02E-02	7.16E-03	4.11E-04	3.14E-04	1.30E-06	1.30E-06
Zone 5	4.78E-02	1.06E-01	6.26E-02	4.19E-04	3.88E-04	4.70E-05	4.06E-05
Zone 6	4.09E-02	1.08E-01	7.47E-02	4.19E-04	4.06E-04	4.03E-05	3.50E-05
Zone 7	3.78E-02	3.94E-02	8.31E-03	4.19E-04	3.84E-04	9.39E-06	4.24E-06
Zone 8	2.42E-01	2.48E-01	1.42E-02	4.19E-04	3.79E-04	8.55E-06	2.89E-06

T = total; CB = chemical background; RB = radionuclide background;
CRB = chemical and radionuclide background

TABLE 5-5
Risk Results for the Construction Worker

	Hazard Quotient			Incremental Lifetime Cancer Risk			
	Background	Total	T - CB	Background	Total	T - RB	T - CRB
Zone 1	2.63E-02	2.78E-02	5.98E-03	5.14E-06	4.31E-06	1.65E-07	2.15E-08
Zone 2	3.29E-02	3.89E-02	1.08E-02	5.20E-06	4.61E-06	1.80E-07	4.17E-08
Zone 3	8.42E-02	1.08E-01	2.71E-02	5.15E-06	4.62E-06	2.06E-07	5.80E-08
Zone 4	2.96E-03	9.97E-03	7.00E-03	4.97E-06	3.81E-06	2.50E-08	2.50E-08
Zone 5	3.29E-02	5.23E-02	2.25E-02	5.20E-06	4.76E-06	5.98E-07	4.38E-07
Zone 6	2.85E-02	5.84E-02	3.55E-02	5.19E-06	4.99E-06	5.91E-07	4.49E-07
Zone 7	2.73E-02	3.01E-02	7.37E-03	5.19E-06	4.81E-06	2.55E-07	1.16E-07
Zone 8	9.36E-02	1.02E-01	1.36E-02	5.20E-06	4.72E-06	1.95E-07	5.45E-08

T = total; CB = chemical background; RB = radionuclide background;
CRB = chemical and radionuclide background

TABLE 5-6
Risk Results for the Building Maintenance

	Hazard Quotient			Incremental Lifetime Cancer Risk			
	Background	Total	T - CB	Background	Total	T - RB	T - CRB
Zone 2	5.08E-02	5.65E-02	1.37E-02	1.66E-04	1.51E-04	8.55E-06	3.11E-06
Zone 7	4.35E-02	4.57E-02	9.95E-03	1.66E-04	1.56E-04	1.13E-05	5.52E-06
Zone 8	9.19E-02	1.00E-01	4.31E-04	1.66E-04	1.57E-04	1.00E-05	4.39E-06

T = total; CB = chemical background; RB = radionuclide background;
CRB = chemical and radionuclide background

TABLE 5-7
Risk Results for the HWMU Closure Evaluation

	Hazard Quotient	Incremental Lifetime Cancer Risk
	Total	Total
Undeveloped Park User	2.35E-03	7.44E-08
Museum Visitor	5.08E-04	3.89E-09
Museum Worker	5.11E-03	1.22E-07
Groundskeeper/Sampler	9.78E-03	6.41E-07
Construction Worker	5.09E-03	7.78E-09
Building Maintenance	6.31E-03	1.21E-07

TABLE 5-8
Risk Results for Uncertainty Analysis

	Hazard Quotient			Incremental Lifetime Cancer Risk			
	Background	Total	T - CB	Background	Total	T - RB	T - CRB
UPU Zone 5	1.77E-02	8.15E-02	6.52E-02	2.06E-05	7.11E-05	5.63E-05	5.36E-05
UPU 1	2.51E-02	9.55E-02	7.25E-02	2.15E-05	7.63E-05	6.18E-05	5.80E-05
UPU 2	1.06E-02	6.77E-02	5.80E-02	2.01E-05	6.62E-05	5.08E-05	4.92E-05
UPU 3	1.63E-02	7.90E-02	6.41E-02	4.61E-05	1.63E-04	1.29E-04	1.24E-04
UPU 4	1.63E-02	4.86E-02	3.36E-02	4.61E-05	4.13E-05	7.93E-06	2.22E-06
GS Zone 5	4.78E-02	1.06E-01	6.26E-02	4.19E-04	3.88E-04	4.70E-05	4.06E-05
GS 1	9.55E-02	2.12E-01	1.25E-01	8.39E-04	7.76E-04	9.40E-05	8.12E-05
GS 2	9.55E-02	2.34E-01	1.48E-01	8.39E-04	7.77E-04	9.43E-05	8.15E-05

T = total;
CB = chemical background;
RB = radionuclide background;
CRB = chemical and radionuclide background;
UPU = undeveloped park user;
GS = groundskeeper/sampler

6.0 SUMMARY AND CONCLUSIONS

The risk calculations presented in this report evaluated six human receptors in nine exposure zones to assess health impacts from residual toxins in the air, soil, and surface-water media at the Fernald Preserve. Remedial activities that lead to the creation of the Fernald Preserve were completed in October of 2006, with the exception of groundwater remediation. Therefore, the groundwater pathway was not evaluated in this Interim Residual Risk Assessment Report. A final residual risk assessment will be performed to evaluate the groundwater and food pathways when the remedial objectives for the Great Miami Aquifer have been achieved and the groundwater certification report has been approved by the EPA and OEPA.

Receptors considered in this assessment include general members of the public (undeveloped park user and museum visitor) and site workers (museum worker, groundskeeper/sampler, construction worker, building maintenance) who spend as few as ten days a year at the site (museum visitor) or as many as 250 days a year (museum worker). Reasonable maximum exposure (RME) scenarios for the receptors (Section 3.0) are used to estimate the chemical and radionuclide intake via six exposure pathways: inhalation of particulate and gases (chemical and radionuclide), incidental ingestion of soil (chemical and radionuclide), dermal contact with soil (chemical), incidental ingestion of surface water (chemical and radionuclide), dermal contact with surface water (chemical), and exposure to external radiation. The intake values, reference dose, and cancer slope factors are used to calculate the hazard quotient (HQ) and incremental lifetime cancer risk (ILCR).

Ninety-five chemicals and radionuclides were evaluated and a subset of contaminants was compiled for each exposure zone to derive air, soil, and surface-water concentrations used in the risk calculations (Section 4.0). Contaminant concentrations in soil were derived from the soil certification reports. After the completion of soil remediation activities, hundreds of surface-water samples were collected across the site to obtain data to estimate the contaminant surface-water concentrations in each exposure zone. Contaminant concentrations in particulate matter suspended in the air were estimated using 2005 monitoring results for total suspended particulate collected at background location AMS-12 and the contaminant soil concentrations. Radon-222 activity in the air was calculated from radium-226 activity in the soil using a conversion factor derived from the air monitoring data for radon-222 (collected at background location AMS-12) and the background radium-226 activity in soil.

Cancer slope factor (CSF) and reference dose (RfD) values reported in Appendix D were compiled from the EPA (IRIS and HEAST tables) and Oak Ridge (RAIS) web sites. The values used in this report were compared to values used in the OU5 CRARE (DOE 1995d) to identify significant changes to CSF and RfD values. There were no significant changes to the RfD values, and two significant changes to the CSF values. The present CSF value for inhalation of radon-222 is 25 times greater than the CSF value used in the CRARE, and the present CSF value for external exposure to technetium-99 has increased by a factor of 136. As inhalation of radon-222 is the highest risk pathway for a receptor exposed to radionuclides in the environment (much greater than external exposure to technetium-99), EPAs increase in the CSF for radon-222 has increased the risk to all receptors evaluated in this report, relative to the CRARE.

Most of the risk to the receptors is driven by a small subset of chemicals and radionuclides. Arsenic, beryllium, uranium, aroclor-1254, aroclor-1260, uranium-238 and lead-210 are responsible for the majority of risk in the soil pathways. Benzo(a)pyrene and dibenzo(a,h)anthracene are key contaminants for the dermal surface-water pathway. Manganese and radon-222 contribute most of the risk to the inhalation pathway. Uranium-238 is the largest contributor to external radiation, after the radionuclide background is subtracted from the total risk.

The highest ILCR values (total minus radionuclide background) occur in Zone 5 (former production area) for the undeveloped park user (5.63E-05) and groundskeeper/sampler (4.70E-05), and the cited risk numbers are driven primarily by dermal exposure to surface water containing benzo(a)pyrene and dibenzo(a,h)anthracene (Sections 5.1 and 5.4). One-half of the analytical detection limit was used to estimate the benzo(a)pyrene and dibenzo(a,h)anthracene concentration in surface water, and this conservative assumption produces over 70 percent of the above cited risk values for the undeveloped park user and groundskeeper/sampler. Total ILCR values for these receptors are much higher, due to the background levels of radon-222 gas in the atmosphere. However, the risk due to background radionuclide levels is subtracted from the total ILCR value to arrive at the ILCR value (total minus radionuclide background) used to evaluate compliance with CERCLA.

An uncertainty analysis reveals that the greatest uncertainty in the risk calculations is knowing the true concentration of benzo(a)pyrene and dibenzo(a,h)anthracene in surface water. The conservative assumption used in the present calculations is to set the organic compounds to one-

half the analytical detection limit when they are not detected in surface-water samples. This assumption becomes too conservative when the exposure duration is increased to 70-years for the undeveloped park user. Therefore, benzo(a)pyrene and dibenzo(a,h)anthracene should be retained as contaminants of concern for future sampling of the surface water in Zones 5 and 6, and the lowest achievable detection limits should be requested to obtain meaningful results for the longer exposure durations.

The maximum uranium concentration in surface water (0.879 mg/L) was also evaluated in the uncertainty analysis, and results indicate it does not pose a significant risk to the highest risk receptors (undeveloped park user and groundskeeper/sampler). However, the source for this elevated uranium concentration (pond west of former Waste Pit 3) should be sampled during future monitoring activities to ensure that the uranium concentrations does not rise to a level that would create an unacceptable risk for a site receptor.

Two of the uncertainty calculations for the undeveloped park user were compared to the CRARE calculation for the undeveloped park user (Section 5.9), because these three cases consider the same 70-year exposure duration. One of the uncertainty calculations uses one-half the detection limit for organic compounds in surface water, and the other uncertainty calculation sets organic compounds to zero for the surface-water pathways. ILCR results for the second uncertainty calculation (i.e., organic compounds set to zero) agree well with the ILCR results published in the CRARE, while the first does not.

The discrepancy between the CRARE and first uncertainty calculation (i.e., one-half the detection limit for organic compounds in surface water) arises because ILCR values for benzo(a)pyrene and dibenzo(a,h)anthracene in the dermal surface-water pathway were not evaluated in the CRARE. When these values are set to zero for the second uncertainty analysis, the results are in good agreement and comply with the CERCLA limit of 1.0E-04.

In conclusion, results tabulated for all risk calculations show the HQ and ILCR values for the RME site receptors comply with the CERCLA guidance limit of less than one for HQ (total) and less than 1.0E-04 for ILCR (total minus radionuclide background). This conclusion, along with the results in the soil certification reports, indicate the remedial actions identified in the OU 5 ROD (DOE 1996b) were executed successful and the site soil has been restored to the final land use objective.

REFERENCES

Ohio Environmental Protection Agency, 2002, "Support Document for the Development of Generic Numerical Standards and Risk Assessment Procedures," The Voluntary Action Program (VAP), Division of Emergency and Remedial Response, Dayton, Ohio

Ohio Environmental Protection Agency, 2006, "Closure Plan Review Guidance for RCRA Facilities," OEPA Division of Hazardous Waste Management, Dayton, Ohio

U.S. Department of Energy, 1994, "Characterization of Background Water Quality for Streams and Groundwater," DOE Fernald Area Office, Cincinnati, Ohio.

U.S. Department of Energy, 1995a, "Final Record of Decision for Remedial Actions at Operable Unit 1," DOE Fernald Area Office, Cincinnati, Ohio.

U.S. Department of Energy, 1995b, "Record of Decision for Remedial Actions at Operable Unit 2," DOE Fernald Area Office, Cincinnati, Ohio.

U.S. Department of Energy 1995c, "Remedial Investigation Report for Operable Unit 5," DOE Fernald Area Office, Cincinnati, Ohio.

U.S. Department of Energy 1995d, "Feasibility Study Report, Operable Unit 5," DOE Fernald Area Office, Cincinnati, Ohio.

U.S. Department of Energy, 1996a, "Operable Unit 3 Record of Decision for Final Remedial Action," DOE Fernald Area Office, Cincinnati, Ohio.

U.S. Department of Energy, 1996b, "Record of Decision for Remedial Actions at Operable Unit 5," Final, DOE, Fernald Area Office, Cincinnati, Ohio.

U.S. Department of Energy, 2000, "Record of Decision Amendment for Operable Unit 4 -Silos 1 and 2 Remedial Actions," DOE Fernald Area Office, Cincinnati, Ohio.

U.S. Department of Energy, 2001, "Addendum to the CERCLA/RCRA Background Soil Study," DOE Fernald Area Office, Cincinnati, Ohio.

U.S. Department of Energy, 2003, "Record of Decision Amendment for Operable Unit 4 Silo 3 Remedial Action," DOE Fernald Area Office, Cincinnati, Ohio.

U.S. Department of Energy, 2006a, "Site Environmental Report," 51350-RP-0028, Ohio Field Office, Cincinnati, Ohio

U.S. Department of Energy, 2006b, "Final Remedial Action Report for Operable Unit 1 – Waste Pits Remedial Action Project," Final, DOE, Fernald Area Office, Cincinnati, Ohio.

U.S. Department of Energy, 2006c, "Final Remedial Action Report for Operable Unit 2 – Other Waste Units," DOE Fernald Area Office, Cincinnati, Ohio.

U.S. Department of Energy, 2006d, "Final Remedial Action Report for Operable Unit 3 at the Fernald Closure Project," DOE Fernald Area Office, Cincinnati, Ohio.

U.S. Department of Energy, 2006e, "Final Remedial Action Report for Operable Unit 4 – Silos 1 through 4," DOE Fernald Area Office, Cincinnati, Ohio.

U.S. Department of Energy, 2006f, "Interim Remedial Action Report for Operable Unit 5," DOE Fernald Area Office, Cincinnati, Ohio.

U.S. Environmental Protection Agency, 1989a, "Risk Assessment Guidance for Superfund," Volume I: Human Health Evaluation Manual, Part A, EPA/540/1-89/002, Office of Emergency and Remedial Response, USEPA, Washington D.C.

U.S. Environmental Protection Agency, 1989b, "Exposure Factors Handbook," Office of Health and Environmental Assessment, EPA/600/8-89/043, USEPA, Washington, D.C.

U.S. Environmental Protection Agency, 1991a, "Risk Assessment Guidance for Superfund," Volume I: Human Health Evaluation Manual, Supplemental Guidance, OSWER 9285.6-03, PB91-921314, Washington, DC.

U.S. Environmental Protection Agency, 1991b, "Risk Assessment Guidance for Superfund," Volume I: Human Health Evaluation Manual, Part B, Development of Preliminary Remediation Goals, 9285.7-01B, Office of Emergency and Remedial Response, Washington, DC.

U.S. Environmental Protection Agency, 1991c, "Risk Assessment Guidance for Superfund," Volume I: Human Health Evaluation Manual, Part C, Risk Evaluation of Remedial Alternatives, 9285.7-01C, Office of Emergency and Remedial Response, Washington, DC.

U.S. Environmental Protection Agency, 1997. "Exposure Factors Handbook, National Center for Environmental Assessment," Office of Research and Development, USEPA, Washington D.C.

U.S. Environmental Protection Agency, 2002. "Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites," Office of Solid Waste and Emergency Response OSWER 9355.4-24

U.S. Environmental Protection Agency, 2004, "Risk Assessment Guidance for Superfund," Volume I: Human Health Evaluation Manual, Part E, Supplemental Guidance for Dermal Risk Assessment, Final, EPA/540/R/99/005, OSWER 9285.7-02EP, PB99-963312, Office of Superfund Remediation and Technology Innovation, Washington D.C

APPENDIX A

APPENDIX A
Chronology of Soil Certification Reports

Approval	Report
June 1998	- Certification Report for A1PI
June 1998	- Certification Report for A1PII - Sector 1, 2A, and Conveyance Ditch
August 1998	- Certification Report for A8PI
March 1999	- Certification Report for A1PI Sediment Traps 2 and 3
May 1999	- Certification Report for A1PII - Sector 2B
September 1999	- Certification Report for A8PII and Area 6 Triangle Area
November 1999	- Certification Report for A2PIII Part One
March 2000	- Certification Report for A1PII - Sector 2 CUs West of Former North Access Road
September 2000	- Certification Report for A1PIII Part Two
September 2000	- Certification Report for A2PIII Part Two
September 2000	- Certification Report for A8PIII South
March 2001	- Certification Report for A1PII
March 2001	- Certification Report for A2PI Active Flyash Pile and Adjacent Area East of the South Construction Road
March 2001	- Certification Report for Former Soil Stockpile 3 Footprint
September 2001	- Certification Report for A1PIII Part One
March 2002	- Addendum 1 to Certification Report for A1PII for the Reuse Areas, Trap Range, Sector 2C and Sector 3
November 2002	- Certification Report for the Area 5 Eastern Field
January 2003	- Certification Report for A2PI Former Inactive Flyash Pile, South Field, Carolina Area, East-West Construction Road and Equipment Wheel Wash Facility
December 2003	- Certification Report for Area 6, Phase I - Part One
January 2004	- Certification Report for A8PIII North
April 2004	- Certification Report for Area 6, Phase I - Part Two
May 2004	- Certification Report for A1PIV Part One
June 2004	- Certification Report for A2PII Subareas 1, 2, and 4
September 2004	- Certification Report for A1PIV Parts Two and Three
January 2005	- Certification Report for Area 3A/3B
October 2005	- Certification Report for Area 4A
November 2005	- Certification Report for Stream Corridors Storm Sewer Outfall Ditch
January 2006	- Certification Report for Area 4B - Part One
March 2006	- Certification Report for Area 6 Waste Pits 4, 5, and 6
April 2006	- Certification Report for A2PII - Subarea 3 Equipment Wash Facility, Subcontractor Laydown Area, Trailer Complex Area, and Aquifer Project Laydown Area
July 2006	- Addendum to the Certification Report for A2PII Subareas 1, 2, and 4
August 2006	- Certification Report for Area 6 Former Production Area and Main Drainage Corridor Area
September 2006	- Addendum to the Certification Report for Area 4A
November 2006	- Addendum to Certification Report for A2PIII Part Two for Area Boundary
November 2006	- Certification Report for the Former Storm Water Retention Basin Area
November 2006	- Certification Report for Stream Corridors Pilot Plant Drainage Ditch and Paddys Run
December 2006	- Addendum 4 to Certification Report for A1PII for the Dissolved Oxygen Building Area
December 2006	- Addendum to the Certification Report for Area 4B - Part 1One
December 2006	- Certification Report for Area 6 General Area East
December 2006	- Addendum to Certification Report for Area 6 FPA and MDC Area for Soil Pile 8
December 2006	- Certification Report for Various Areas Outside of the Historically Radiologically Controlled Area
January 2007	- Certification Report for Area 1, Phase IV - Decontamination Facility Area
January 2007	- Certification Report for Area 4B - Part Two Production Area and Main Drainage Corridor Area - f[t] Street
January 2007	- Certification Report for Area 5 Administration Area and East and West Parking Lots
January 2007	- Certification Report for the Former Solid Waste Landfill and Soil Pile 7
January 2007	- Certification Report for Area 7 Silos and Support Areas
Pending	- Certification Report for Area 6E
Pending	- Certification Report for Area 6 General Area West
Pending	- Certification Report for Area 6 Sitewide Rail Line System
Pending	- Certification Report for Area 6 Waste Pits 1, 2, and 3, the Burn Pit, the Clearwell, and Areas West and North of the Waste Pits
Pending	- Certification Report for Area 7 Miscellaneous Areas

APPENDIX B

APPENDIX B

Residual Contaminant Concentrations in Soil Certification Units and Exposure Zones

This appendix summarizes data from all the soil certification reports to provide the basis for calculating the average residual contaminant concentrations in soil for the receptor exposure zones. A chronological list of certification reports is presented in Appendix A. The nine receptor exposure zones reflect past historic operations at the Fernald site (e.g., waste pit area, production area, OSDF, HWMUs, etc) and are discussed in Section 4.0 and shown on Plate 1 (Note that the HWMU exposure zone is not shown on Plate 1, as it is a hypothetical exposure zone comprised of all closed HWMUs).

Each exposure zone (Table B-1) contains contaminant concentrations in soil for every certification unit (CU) within the zone. For Zones 1 through 8, contaminant concentrations for each CU represent the 95 % upper confidence level or the maximum value if statistical calculations were not required for the contaminant. In the HWMU exposure zone, the maximum value for every contaminant is used to establish the most conservative case for closure of the HWMUs. If all analytical results for a contaminant are reported as non-detects in the certification report, the maximum non-detect is used to derive the average value for the exposure zone.

Table B-2 contains the soil background values established in the Addendum to CERCLA/RCRA Background Soil Study (based on 95th percentile in Table 4-2). Several constituents were not evaluated in this study (e.g. the isotopes of uranium were not individually evaluated – only total uranium was determined), therefore some constituents were calculated from known values to provide background information.

The list of contaminants for each exposure zone is a comprehensive list that covers every contaminant from every CU within the zone. If a contaminant is absent from every CU within the zone, it is not evaluated in the risk calculations for that exposure zone. As the exposure zone list of contaminants is comprehensive across all CUs, it will generally exceed the list of contaminants for an individual CU (e.g., several CUs have reported

results for technetium-99, while most CUs do not report results for this contaminant). This occurs because the list of contaminants for a specific CU is tied to the historic operations in the CU area (i.e., past uranium processing activities resulted in some contaminants being restricted to specific areas on the site). The Project Specific Plans and Certification Design Letters for each certification area contain the detailed rationale and logic for the list of contaminants reported in the Certification Reports.

Prior to performing the calculation to derive the average value for a contaminant in the exposure zone, a default contaminant value is inserted into CUs that do not contain a result for a contaminant reported in another CU within the exposure zone. For example, technetium-99 is reported for some CUs within the exposure zone but not for all. Those that do not have a reported result will have the default value inserted prior to calculating an average technetium-99 value for the exposure zone. The default value is the 95th percentile background value for the contaminant, as reported in Tables 4-1 and 4-2 of the Addendum to the CERCLA/RCRA Background Soil Study (DOE 2001). Inserting a background COC value into the subset of CUs within the exposure zone that do not have a result for the COC eliminates high bias in the contaminant concentration across the exposure zone, as demonstrated below.

In Table B-1, results are tabulated for the 51 CUs in Zone 1, and for technetium-99 a single result (1.52 pCi/g) exceeds zero. As noted in the summary rows at the bottom of the table, a single CU was evaluated for technetium-99 in Zone 1, and the remaining CUs had the background value of zero inserted prior to calculating an average for the exposure zone. As a receptor will not spend all their time in the CU that corresponds to the 1.52 pCi/g result, failure to insert the background value for technetium-99 would result in assigning a 1.52 pCi/g value to the entire exposure zone, which is not realistic. The technetium-99 average for 51 CUs, when the background value is inserted, is 0.03 pCi/g; and this reflects a realistic exposure to technetium-99 in soil when a receptor hikes over the area of Zone 1.

The number of CUs in each zone varies from 39 in Zone 7 (former silo area) to 154 in Zone 2 (southern waste units, SWRBs, and CWWT). Care was taken in delineating the

zone boundaries to minimize the mixing of Group I (smaller area) and Group II CUs within each exposure zone. In Zone 8 (OSDF), the CUs covered by the footprint of the cell have been replaced with the CUs from the borrow area, which is the source for the soil on the OSDF cap.

Each of the tables lists every contaminant evaluated across the site. When a contaminant was not evaluated for any CU in the exposure zone during certication, NA (not applicable) appears in the table for that contaminant. A contaminant that has the exact concentration reported for multiple CUs indicates that the repeated value is a default value. The number of contaminant results reported in the certification reports and the number of CUs with the default value are tabulated in the last two rows of the table. Above these last two rows are the maximum and average values for each contaminant within the exposure zone. The average values were used in the risk calculations for the soil exposure pathways.

TABLE B-1 - SOIL CERTIFICATION DATA - HWMU

HWMUs	Area sq ft	Cesium-137 pCi/g	Lead-210 pCi/g	Neptunium-237 pCi/g	Plutonium-238 pCi/g	Plutonium-239/240 pCi/g	Radium-226 pCi/g
A1P2S3-HW-01-H4	24609	NA	NA	NA	NA	NA	1.56E+00
A3B-C01-H20	12989	NA	NA	NA	NA	NA	9.58E-01
A3B-C02-H20	21204	NA	NA	NA	NA	NA	1.55E+00
A3B-C03-H20	35467	NA	NA	NA	NA	NA	1.63E+00
A3B-C04-H20	21680	NA	NA	NA	NA	NA	1.53E+00
A3B-C05-H20	34292	NA	NA	NA	NA	NA	1.38E+00
A3B-C06-H20	44404	NA	NA	NA	NA	NA	1.33E+00
A3B-C07-H20	35924	NA	NA	NA	NA	NA	1.02E+00
A3B-C08-H20	37157	NA	NA	NA	NA	NA	1.54E+00
A3B-C09-H20	62500	NA	NA	NA	NA	NA	1.61E+00
A3B-C10-H20	59089	NA	NA	NA	NA	NA	1.44E+00
A3B-C11-H20	59891	NA	NA	NA	NA	NA	1.64E+00
A3B-C12-H20	60100	NA	NA	NA	NA	NA	1.26E+00
MDC-C28-H36	300	NA	NA	NA	NA	NA	8.78E-01
MDC-C29-H48	2612	NA	NA	NA	NA	NA	9.30E-01
MDC-C30-H17	20081	6.74E-02	NA	NA	NA	NA	1.05E+00
MDC-C32-H11	pH only						
A4B-C01-H04	3860	NA	NA	NA	NA	NA	1.06E+00
A4B-C02-H18	4485	NA	NA	NA	NA	NA	1.02E+00
A4B-C03-H28	5013	NA	NA	NA	NA	NA	9.30E-01
A4B-C04-H46	3301	NA	NA	NA	NA	NA	1.09E+00
A4B-C05-H47	2572	NA	NA	NA	NA	NA	9.20E-01
A4B-C06-H49	2450	NA	NA	NA	NA	NA	9.84E-01
A4B-C07-H50	598	NA	NA	NA	NA	NA	9.60E-01
A4B2-C14-H22	550	NA	NA	NA	NA	NA	1.20E+00
A4B2-C15-H05	1299	NA	NA	NA	NA	NA	1.28E+00
A6P1-C01-H01	57088	NA	NA	NA	NA	NA	1.35E+00
A6WP-C01-H27	47540	8.31E-02	NA	NA	NA	NA	1.14E+00
A6WP-C02-H27	47482	8.37E-02	NA	NA	NA	NA	1.67E+00
A6WP-C03-H42	57525	1.70E-01	NA	NA	NA	NA	1.28E+00
A6WP-C04-H42	57525	9.30E-02	NA	NA	NA	NA	1.22E+00
A6WP-C05-H42	57525	9.30E-02	NA	NA	NA	NA	1.56E+00
max value >>		1.70E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.67E+00

TABLE B-1 - SOIL CERTIFICATION DATA - HWMU

HWMUs	Area sq ft	Radium-228 pCi/g	Strontium-90 pCi/g	Technetium-99 pCi/g	Thorium-228 pCi/g	Thorium-230 pCi/g	Thorium-232 pCi/g
A1P2S3-HW-01-H4	24609	1.30E+00	NA	2.56E+00	1.26E+00	NA	1.30E+00
A3B-C01-H20	12989	8.72E-01	NA	9.89E-01	8.85E-01	NA	8.72E-01
A3B-C02-H20	21204	1.41E+00	NA	7.74E-01	1.48E+00	NA	1.41E+00
A3B-C03-H20	35467	1.29E+00	NA	8.45E-01	1.29E+00	NA	1.29E+00
A3B-C04-H20	21680	1.29E+00	NA	8.69E-01	1.33E+00	NA	1.29E+00
A3B-C05-H20	34292	1.17E+00	NA	8.86E-01	1.20E+00	NA	1.17E+00
A3B-C06-H20	44404	1.07E+00	NA	7.93E-01	1.09E+00	NA	1.07E+00
A3B-C07-H20	35924	8.00E-01	NA	8.47E-01	7.94E-01	NA	8.00E-01
A3B-C08-H20	37157	1.26E+00	NA	7.58E-01	1.32E+00	NA	1.26E+00
A3B-C09-H20	62500	1.38E+00	NA	9.12E-01	1.38E+00	NA	1.38E+00
A3B-C10-H20	59089	1.12E+00	NA	8.64E-01	1.17E+00	NA	1.12E+00
A3B-C11-H20	59891	1.28E+00	NA	1.01E+00	1.29E+00	NA	1.28E+00
A3B-C12-H20	60100	1.03E+00	NA	1.16E+00	1.07E+00	NA	1.03E+00
MDC-C28-H36	300	7.24E-01	NA	1.58E+00	7.65E-01	NA	7.24E-01
MDC-C29-H48	2612	8.72E-01	NA	9.43E-01	8.82E-01	NA	8.72E-01
MDC-C30-H17	20081	8.85E-01	NA	8.14E-01	8.85E-01	NA	8.85E-01
MDC-C32-H11	pH only						
A4B-C01-H04	3860	8.69E-01	NA	8.38E-01	8.76E-01	NA	8.69E-01
A4B-C02-H18	4485	7.78E-01	NA	1.19E+00	8.23E-01	NA	7.78E-01
A4B-C03-H28	5013	7.28E-01	NA	1.26E+00	8.05E-01	NA	7.28E-01
A4B-C04-H46	3301	8.33E-01	NA	8.46E-01	8.62E-01	NA	8.33E-01
A4B-C05-H47	2572	7.33E-01	NA	2.44E+00	7.40E-01	NA	7.33E-01
A4B-C06-H49	2450	7.26E-01	NA	2.49E+01	7.39E-01	NA	7.26E-01
A4B-C07-H50	598	8.95E-01	NA	7.35E-01	8.97E-01	NA	8.95E-01
A4B2-C14-H22	550	9.84E-01	NA	8.24E-01	9.93E-01	NA	9.84E-01
A4B2-C15-H05	1299	1.08E+00	NA	9.18E-01	1.15E+00	NA	1.08E+00
A6P1-C01-H01	57088	1.18E+00	NA	2.12E+00	1.18E+00	1.49E+01	1.18E+00
A6WP-C01-H27	47540	1.41E+00	NA	1.07E+00	1.39E+00	5.68E+00	1.41E+00
A6WP-C02-H27	47482	1.29E+00	NA	8.81E-01	1.29E+00	5.89E+00	1.29E+00
A6WP-C03-H42	57525	7.93E-01	NA	7.23E+00	7.57E-01	4.51E+00	7.93E-01
A6WP-C04-H42	57525	8.15E-01	NA	1.31E+00	7.74E-01	3.29E+00	8.15E-01
A6WP-C05-H42	57525	8.94E-01	NA	1.06E+00	8.75E-01	2.31E+01	8.94E-01
max value >>		1.41E+00	0.00E+00	2.49E+01	1.48E+00	2.31E+01	1.41E+00

TABLE B-1 - SOIL CERTIFICATION DATA - HWMU

HWMUs	Area sq ft	Uranium-234 pCi/g	Uranium-235 pCi/g	Uranium-238 pCi/g	Antimony ug/g	Arsenic ug/g	Barium ug/g	Beryllium ug/g
A1P2S3-HW-01-H4	24609	6.35E+00	2.89E-01	6.20E+00	1.20E+00	9.14E+00	NA	1.00E+00
A3B-C01-H20	12989	3.58E+00	1.63E-01	3.50E+00	4.00E-01	NA	6.86E+01	NA
A3B-C02-H20	21204	2.06E+00	9.39E-02	2.01E+00	7.30E-01	NA	1.72E+02	NA
A3B-C03-H20	35467	2.49E+00	1.14E-01	2.43E+00	2.00E+00	NA	2.55E+02	NA
A3B-C04-H20	21680	2.72E+00	1.24E-01	2.65E+00	5.40E-01	NA	1.68E+02	NA
A3B-C05-H20	34292	4.68E+00	2.13E-01	4.57E+00	4.42E-01	NA	1.08E+02	NA
A3B-C06-H20	44404	6.45E+00	2.94E-01	6.30E+00	7.20E-01	NA	1.34E+02	NA
A3B-C07-H20	35924	5.73E+00	2.61E-01	5.60E+00	1.20E+00	NA	9.12E+01	NA
A3B-C08-H20	37157	3.45E+00	1.57E-01	3.37E+00	1.10E+00	NA	1.12E+02	NA
A3B-C09-H20	62500	2.66E+00	1.21E-01	2.60E+00	1.90E+00	NA	1.69E+02	NA
A3B-C10-H20	59089	5.53E+00	2.52E-01	5.40E+00	4.13E-01	NA	9.16E+01	NA
A3B-C11-H20	59891	3.99E+00	1.82E-01	3.90E+00	6.00E-03	NA	2.18E+02	NA
A3B-C12-H20	60100	2.87E+00	1.31E-01	2.80E+00	6.50E-01	NA	1.42E+02	NA
MDC-C28-H36	300	4.03E+00	1.84E-01	3.93E+00	NA	NA	NA	NA
MDC-C29-H48	2612	1.73E+00	7.88E-02	1.69E+00	NA	NA	5.77E+01	3.80E-01
MDC-C30-H17	20081	2.63E+00	1.20E-01	2.57E+00	NA	NA	NA	NA
MDC-C32-H11	pH only							
A4B-C01-H04	3860	1.61E+00	7.34E-02	1.57E+00	NA	NA	NA	4.59E-01
A4B-C02-H18	4485	2.15E+00	9.81E-02	2.10E+00	NA	NA	NA	4.87E-01
A4B-C03-H28	5013	6.18E+00	2.81E-01	6.03E+00	NA	NA	NA	5.56E-01
A4B-C04-H46	3301	2.79E+00	1.27E-01	2.72E+00	NA	NA	1.02E+02	7.19E-01
A4B-C05-H47	2572	1.98E+00	9.04E-02	1.94E+00	NA	NA	5.32E+01	5.86E-01
A4B-C06-H49	2450	6.79E+00	3.09E-01	6.63E+00	NA	NA	5.33E+01	3.61E-01
A4B-C07-H50	598	5.09E+00	2.32E-01	4.97E+00	NA	NA	6.99E+01	4.23E-01
A4B2-C14-H22	550	3.79E+00	1.73E-01	3.70E+00	NA	NA	1.06E+02	NA
A4B2-C15-H05	1299	3.03E+00	1.38E-01	2.96E+00	NA	NA	NA	NA
A6P1-C01-H01	57088	8.60E+00	3.92E-01	8.40E+00	NA	1.09E+01	NA	1.03E+00
A6WP-C01-H27	47540	1.83E+01	8.35E-01	1.79E+01	5.30E-01	6.40E+00	1.43E+02	1.30E+00
A6WP-C02-H27	47482	2.53E+01	1.15E+00	2.47E+01	5.30E-01	7.70E+00	1.08E+02	8.70E-01
A6WP-C03-H42	57525	4.33E+00	1.98E-01	4.23E+00	4.90E-01	9.00E+00	NA	7.60E-01
A6WP-C04-H42	57525	4.03E+00	1.84E-01	3.93E+00	4.40E-01	7.30E+00	NA	7.10E-01
A6WP-C05-H42	57525	1.11E+01	5.07E-01	1.09E+01	4.50E-01	7.80E+00	NA	7.60E-01
max value >>		2.53E+01	1.15E+00	2.47E+01	2.00E+00	1.09E+01	2.55E+02	1.30E+00

TABLE B-1 - SOIL CERTIFICATION DATA - HWMU

HWMUs	Area sq ft	Boron ug/g	Cadmium ug/g	Chromium (VI) ug/g	Cobalt ug/g	Copper ug/g	Fluoride ug/g	Lead ug/g	Manganese ug/g
A1P2S3-HW-01-H4	24609	NA	NA	NA	NA	NA	NA	2.54E+01	NA
A3B-C01-H20	12989	NA	3.00E-01	NA	NA	NA	NA	9.60E+00	NA
A3B-C02-H20	21204	NA	4.60E-01	NA	NA	NA	NA	1.89E+01	NA
A3B-C03-H20	35467	NA	1.40E+00	NA	NA	NA	NA	2.29E+01	NA
A3B-C04-H20	21680	NA	6.70E-01	NA	NA	NA	NA	2.10E+01	NA
A3B-C05-H20	34292	NA	4.60E-01	NA	NA	NA	NA	1.75E+01	NA
A3B-C06-H20	44404	NA	5.80E-01	NA	NA	NA	NA	5.24E+01	NA
A3B-C07-H20	35924	NA	5.20E-01	NA	NA	NA	NA	1.15E+01	NA
A3B-C08-H20	37157	NA	3.80E-01	NA	NA	NA	NA	1.47E+01	NA
A3B-C09-H20	62500	NA	6.60E-01	NA	NA	NA	NA	1.68E+01	NA
A3B-C10-H20	59089	NA	4.20E-01	NA	NA	NA	NA	1.19E+01	NA
A3B-C11-H20	59891	NA	3.80E-01	NA	NA	NA	NA	1.98E+01	NA
A3B-C12-H20	60100	NA	5.10E-01	NA	NA	NA	NA	1.27E+01	NA
MDC-C28-H36	300	NA	2.20E-01	NA	NA	NA	NA	1.33E+01	NA
MDC-C29-H48	2612	NA	NA	1.03E+01	NA	NA	NA	1.04E+01	NA
MDC-C30-H17	20081	NA	NA	NA	NA	NA	NA	1.50E+01	NA
MDC-C32-H11	pH only								
A4B-C01-H04	3860	NA	NA	NA	NA	NA	NA	NA	NA
A4B-C02-H18	4485	NA	NA	NA	NA	NA	NA	1.07E+01	NA
A4B-C03-H28	5013	NA	NA	NA	NA	NA	NA	7.93E+00	NA
A4B-C04-H46	3301	NA	NA	1.94E+01	NA	NA	NA	1.55E+01	NA
A4B-C05-H47	2572	NA	NA	1.73E+01	NA	NA	NA	1.04E+01	NA
A4B-C06-H49	2450	NA	NA	1.96E+01	NA	NA	NA	7.93E+00	NA
A4B-C07-H50	598	NA	NA	1.25E+01	NA	NA	NA	1.07E+01	NA
A4B2-C14-H22	550	NA	NA	1.99E+01	NA	NA	NA	1.30E+01	NA
A4B2-C15-H05	1299	NA	NA	NA	NA	NA	NA	2.52E+01	NA
A6P1-C01-H01	57088	NA	NA	NA	NA	NA	NA	NA	NA
A6WP-C01-H27	47540	NA	3.90E-01	NA	NA	NA	8.50E+00	NA	NA
A6WP-C02-H27	47482	NA	5.60E-01	NA	NA	NA	2.16E+01	NA	NA
A6WP-C03-H42	57525	NA	3.80E-01	NA	NA	NA	9.80E+00	NA	NA
A6WP-C04-H42	57525	NA	5.50E-01	NA	NA	NA	7.80E+00	NA	NA
A6WP-C05-H42	57525	NA	4.30E-01	NA	NA	NA	2.08E+01	NA	NA
max value >>		0.00E+00	1.40E+00	1.99E+01	0.00E+00	0.00E+00	2.16E+01	5.24E+01	0.00E+00

TABLE B-1 - SOIL CERTIFICATION DATA - HWMU

HWMUs	Area sq ft	Mercury ug/g	Molybdenum ug/g	Nickel ug/g	Selenium ug/g	Silver ug/g	Thallium ug/g	Uranium ug/g	Vanadium ug/g
A1P2S3-HW-01-H4	24609	NA	NA	NA	NA	NA	NA	1.86E+01	NA
A3B-C01-H20	12989	NA	1.80E+00	NA	NA	5.60E-02	NA	1.05E+01	NA
A3B-C02-H20	21204	NA	3.80E+00	NA	NA	8.00E-02	NA	6.04E+00	NA
A3B-C03-H20	35467	NA	4.60E+00	NA	NA	1.50E-01	NA	7.30E+00	NA
A3B-C04-H20	21680	NA	2.60E+00	NA	NA	1.30E-01	NA	7.96E+00	NA
A3B-C05-H20	34292	NA	2.10E+00	NA	NA	6.80E-02	NA	1.37E+01	NA
A3B-C06-H20	44404	NA	2.00E+00	NA	NA	8.50E-02	NA	1.89E+01	NA
A3B-C07-H20	35924	NA	2.60E+00	NA	NA	7.70E-02	NA	1.68E+01	NA
A3B-C08-H20	37157	NA	1.20E+00	NA	NA	7.30E-02	NA	1.01E+01	NA
A3B-C09-H20	62500	NA	1.60E+00	NA	NA	1.00E-01	NA	7.79E+00	NA
A3B-C10-H20	59089	NA	2.10E+00	NA	NA	7.20E-02	NA	1.62E+01	NA
A3B-C11-H20	59891	NA	4.60E+00	NA	NA	4.92E-01	NA	1.17E+01	NA
A3B-C12-H20	60100	NA	1.50E+00	NA	NA	9.40E-02	NA	8.40E+00	NA
MDC-C28-H36	300	NA	NA	NA	NA	NA	NA	1.18E+01	NA
MDC-C29-H48	2612	1.92E-02	NA	NA	NA	NA	NA	5.07E+00	NA
MDC-C30-H17	20081	NA	NA	NA	NA	NA	NA	7.70E+00	NA
MDC-C32-H11	pH only								
A4B-C01-H04	3860	NA	NA	NA	NA	NA	NA	4.72E+00	NA
A4B-C02-H18	4485	NA	NA	NA	NA	NA	NA	6.31E+00	NA
A4B-C03-H28	5013	NA	NA	NA	NA	NA	NA	1.81E+01	NA
A4B-C04-H46	3301	3.23E-02	NA	NA	NA	NA	NA	8.17E+00	NA
A4B-C05-H47	2572	1.68E-02	NA	NA	NA	NA	NA	5.81E+00	NA
A4B-C06-H49	2450	1.37E-02	NA	NA	NA	NA	NA	1.99E+01	NA
A4B-C07-H50	598	1.39E-02	NA	NA	NA	NA	NA	1.49E+01	NA
A4B2-C14-H22	550	3.47E-02	NA	NA	NA	NA	NA	1.11E+01	NA
A4B2-C15-H05	1299	2.82E-02	NA	NA	NA	NA	NA	8.87E+00	NA
A6P1-C01-H01	57088	NA	NA	NA	NA	NA	NA	2.52E+01	NA
A6WP-C01-H27	47540	NA	NA	NA	NA	1.80E-01	NA	5.37E+01	NA
A6WP-C02-H27	47482	NA	NA	NA	NA	1.90E-01	NA	7.42E+01	NA
A6WP-C03-H42	57525	NA	NA	NA	NA	1.70E-01	NA	1.27E+01	NA
A6WP-C04-H42	57525	NA	NA	NA	NA	1.50E-01	NA	1.18E+01	NA
A6WP-C05-H42	57525	NA	NA	NA	NA	1.90E-01	NA	3.26E+01	NA
max value >>		3.47E-02	4.60E+00	0.00E+00	0.00E+00	4.92E-01	0.00E+00	7.42E+01	0.00E+00

TABLE B-1 - SOIL CERTIFICATION DATA - HWMU

HWMUs	Area sq ft	Zinc ug/g	Acetone ug/g	Aroclor-1254 ug/g	Aroclor-1260 ug/g	Benzene ug/g	Benzo(a)anthracene ug/g
A1P2S3-HW-01-H4	24609	NA	NA	NA	NA	NA	NA
A3B-C01-H20	12989	NA	NA	NA	NA	NA	NA
A3B-C02-H20	21204	NA	NA	NA	NA	NA	NA
A3B-C03-H20	35467	NA	NA	NA	NA	NA	NA
A3B-C04-H20	21680	NA	NA	NA	NA	NA	NA
A3B-C05-H20	34292	NA	NA	NA	NA	NA	NA
A3B-C06-H20	44404	NA	NA	NA	NA	NA	NA
A3B-C07-H20	35924	NA	NA	NA	NA	NA	NA
A3B-C08-H20	37157	NA	NA	NA	NA	NA	NA
A3B-C09-H20	62500	NA	NA	NA	NA	NA	NA
A3B-C10-H20	59089	NA	NA	NA	NA	NA	NA
A3B-C11-H20	59891	NA	NA	NA	NA	NA	NA
A3B-C12-H20	60100	NA	NA	NA	NA	NA	NA
MDC-C28-H36	300	NA	NA	NA	NA	NA	NA
MDC-C29-H48	2612	NA	NA	1.53E-02	NA	NA	NA
MDC-C30-H17	20081	NA	NA	NA	NA	NA	NA
MDC-C32-H11	pH only						
A4B-C01-H04	3860	NA	NA	5.20E-03	NA	1.10E-03	NA
A4B-C02-H18	4485	NA	NA	1.40E-02	NA	NA	NA
A4B-C03-H28	5013	NA	NA	1.50E-03	NA	NA	NA
A4B-C04-H46	3301	NA	NA	4.20E-03	NA	NA	NA
A4B-C05-H47	2572	NA	NA	1.10E-02	NA	NA	NA
A4B-C06-H49	2450	NA	NA	1.10E-02	NA	NA	NA
A4B-C07-H50	598	NA	NA	8.00E-04	NA	NA	NA
A4B2-C14-H22	550	NA	NA	1.95E-02	6.80E-03	1.70E-03	NA
A4B2-C15-H05	1299	NA	NA	NA	NA	NA	NA
A6P1-C01-H01	57088	NA	NA	1.34E-02	1.53E-02	NA	5.20E-01
A6WP-C01-H27	47540	NA	NA	1.70E-02	1.70E-02	NA	NA
A6WP-C02-H27	47482	NA	NA	8.00E-03	8.00E-03	NA	NA
A6WP-C03-H42	57525	NA	NA	1.70E-02	1.70E-02	NA	NA
A6WP-C04-H42	57525	NA	NA	1.60E-02	1.60E-02	NA	NA
A6WP-C05-H42	57525	NA	NA	1.80E-02	7.75E-03	NA	NA
max value >>		0.00E+00	0.00E+00	1.95E-02	1.70E-02	1.70E-03	5.20E-01

TABLE B-1 - SOIL CERTIFICATION DATA - HWMU

HWMUs	Area sq ft	Benzo(a)pyrene ug/g	Benzo(b)fluoranthene ug/g	Benzo(k)fluoranthene ug/g	Bis(2-chloroisopropyl)ether ug/g
A1P2S3-HW-01-H4	24609	NA	NA	NA	NA
A3B-C01-H20	12989	NA	NA	NA	NA
A3B-C02-H20	21204	NA	NA	NA	NA
A3B-C03-H20	35467	NA	NA	NA	NA
A3B-C04-H20	21680	NA	NA	NA	NA
A3B-C05-H20	34292	NA	NA	NA	NA
A3B-C06-H20	44404	NA	NA	NA	NA
A3B-C07-H20	35924	NA	NA	NA	NA
A3B-C08-H20	37157	NA	NA	NA	NA
A3B-C09-H20	62500	NA	NA	NA	NA
A3B-C10-H20	59089	NA	NA	NA	NA
A3B-C11-H20	59891	NA	NA	NA	NA
A3B-C12-H20	60100	NA	NA	NA	NA
MDC-C28-H36	300	NA	NA	NA	NA
MDC-C29-H48	2612	NA	NA	NA	NA
MDC-C30-H17	20081	NA	NA	NA	NA
MDC-C32-H11	pH only				
A4B-C01-H04	3860	NA	NA	NA	NA
A4B-C02-H18	4485	NA	NA	NA	NA
A4B-C03-H28	5013	NA	NA	NA	NA
A4B-C04-H46	3301	NA	NA	NA	NA
A4B-C05-H47	2572	NA	NA	NA	NA
A4B-C06-H49	2450	NA	NA	NA	NA
A4B-C07-H50	598	NA	NA	NA	NA
A4B2-C14-H22	550	5.40E-02	NA	NA	NA
A4B2-C15-H05	1299	NA	NA	NA	NA
A6P1-C01-H01	57088	8.30E-01	9.20E-01	4.20E-01	NA
A6WP-C01-H27	47540	2.80E-01	2.20E-01	NA	NA
A6WP-C02-H27	47482	2.20E-01	1.80E-01	NA	NA
A6WP-C03-H42	57525	4.90E-02	5.30E-02	NA	NA
A6WP-C04-H42	57525	3.70E-02	3.30E-02	NA	NA
A6WP-C05-H42	57525	7.90E-02	6.50E-02	NA	NA
max value >>		8.30E-01	9.20E-01	4.20E-01	0.00E+00

TABLE B-1 - SOIL CERTIFICATION DATA - HWMU

HWMUs	Area sq ft	Bis(2-ethylhexyl)phthalate ug/g	Bromodichloromethane ug/g	Bromoform ug/g	Bromomethane ug/g	2-Butanone ug/g
A1P2S3-HW-01-H4	24609	NA	NA	NA	NA	NA
A3B-C01-H20	12989	NA	NA	NA	NA	NA
A3B-C02-H20	21204	NA	NA	NA	NA	NA
A3B-C03-H20	35467	NA	NA	NA	NA	NA
A3B-C04-H20	21680	NA	NA	NA	NA	NA
A3B-C05-H20	34292	NA	NA	NA	NA	NA
A3B-C06-H20	44404	NA	NA	NA	NA	NA
A3B-C07-H20	35924	NA	NA	NA	NA	NA
A3B-C08-H20	37157	NA	NA	NA	NA	NA
A3B-C09-H20	62500	NA	NA	NA	NA	NA
A3B-C10-H20	59089	NA	NA	NA	NA	NA
A3B-C11-H20	59891	NA	NA	NA	NA	NA
A3B-C12-H20	60100	NA	NA	NA	NA	NA
MDC-C28-H36	300	NA	NA	NA	NA	NA
MDC-C29-H48	2612	NA	NA	NA	NA	NA
MDC-C30-H17	20081	NA	NA	NA	NA	7.20E-03
MDC-C32-H11	pH only					
A4B-C01-H04	3860	NA	NA	NA	NA	NA
A4B-C02-H18	4485	NA	NA	NA	NA	5.60E-03
A4B-C03-H28	5013	NA	NA	NA	NA	NA
A4B-C04-H46	3301	NA	NA	NA	NA	NA
A4B-C05-H47	2572	NA	NA	NA	NA	NA
A4B-C06-H49	2450	NA	NA	NA	NA	NA
A4B-C07-H50	598	NA	NA	NA	NA	NA
A4B2-C14-H22	550	NA	NA	NA	NA	NA
A4B2-C15-H05	1299	NA	NA	NA	NA	NA
A6P1-C01-H01	57088	NA	NA	NA	NA	NA
A6WP-C01-H27	47540	NA	1.70E-03	NA	NA	NA
A6WP-C02-H27	47482	NA	1.80E-03	NA	NA	NA
A6WP-C03-H42	57525	NA	1.50E-03	NA	NA	NA
A6WP-C04-H42	57525	NA	6.00E-03	NA	NA	NA
A6WP-C05-H42	57525	NA	1.50E-03	NA	NA	NA
max value >>		0.00E+00	6.00E-03	0.00E+00	0.00E+00	7.20E-03

TABLE B-1 - SOIL CERTIFICATION DATA - HWMU

HWMUs	Area sq ft	Carbazole ug/g	Carbon disulfide ug/g	Carbon tetrachloride ug/g	Chlordane ug/g	Chlorobenzene ug/g	Chloroform ug/g
A1P2S3-HW-01-H4	24609	NA	NA	NA	NA	NA	NA
A3B-C01-H20	12989	NA	NA	NA	NA	NA	NA
A3B-C02-H20	21204	NA	NA	NA	NA	NA	NA
A3B-C03-H20	35467	NA	NA	NA	NA	NA	NA
A3B-C04-H20	21680	NA	NA	NA	NA	NA	NA
A3B-C05-H20	34292	NA	NA	NA	NA	NA	NA
A3B-C06-H20	44404	NA	NA	NA	NA	NA	NA
A3B-C07-H20	35924	NA	NA	NA	NA	NA	NA
A3B-C08-H20	37157	NA	NA	NA	NA	NA	NA
A3B-C09-H20	62500	NA	NA	NA	NA	NA	NA
A3B-C10-H20	59089	NA	NA	NA	NA	NA	NA
A3B-C11-H20	59891	NA	NA	NA	NA	NA	NA
A3B-C12-H20	60100	NA	NA	NA	NA	NA	NA
MDC-C28-H36	300	NA	NA	NA	NA	NA	NA
MDC-C29-H48	2612	NA	NA	NA	NA	NA	NA
MDC-C30-H17	20081	NA	NA	NA	NA	NA	NA
MDC-C32-H11	pH only						
A4B-C01-H04	3860	NA	NA	NA	NA	NA	NA
A4B-C02-H18	4485	NA	NA	NA	NA	NA	NA
A4B-C03-H28	5013	NA	NA	NA	NA	NA	NA
A4B-C04-H46	3301	NA	NA	NA	NA	NA	NA
A4B-C05-H47	2572	NA	NA	NA	NA	NA	NA
A4B-C06-H49	2450	NA	NA	NA	NA	NA	NA
A4B-C07-H50*	598	NA	NA	NA	NA	NA	NA
A4B2-C14-H22	550	NA	NA	NA	NA	NA	NA
A4B2-C15-H05	1299	NA	NA	NA	NA	NA	NA
A6P1-C01-H01	57088	NA	NA	NA	NA	NA	NA
A6WP-C01-H27	47540	NA	NA	NA	NA	NA	NA
A6WP-C02-H27	47482	NA	NA	NA	NA	NA	NA
A6WP-C03-H42	57525	NA	NA	NA	NA	NA	NA
A6WP-C04-H42	57525	NA	NA	NA	NA	NA	NA
A6WP-C05-H42	57525	NA	NA	NA	NA	NA	NA
max value >>		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TABLE B-1 - SOIL CERTIFICATION DATA - HWMU

HWMUs	Area sq ft	Chrysene ug/g	Cyanide ug/g	Cyclohexanone ug/g	Dibenzo(a,h)anthracene ug/g	3,3-Dichlorobenzidine ug/g
A1P2S3-HW-01-H4	24609	NA	NA	NA	NA	NA
A3B-C01-H20	12989	NA	NA	NA	NA	NA
A3B-C02-H20	21204	NA	NA	NA	NA	NA
A3B-C03-H20	35467	NA	NA	NA	NA	NA
A3B-C04-H20	21680	NA	NA	NA	NA	NA
A3B-C05-H20	34292	NA	NA	NA	NA	NA
A3B-C06-H20	44404	NA	NA	NA	NA	NA
A3B-C07-H20	35924	NA	NA	NA	NA	NA
A3B-C08-H20	37157	NA	NA	NA	NA	NA
A3B-C09-H20	62500	NA	NA	NA	NA	NA
A3B-C10-H20	59089	NA	NA	NA	NA	NA
A3B-C11-H20	59891	NA	NA	NA	NA	NA
A3B-C12-H20	60100	NA	NA	NA	NA	NA
MDC-C28-H36	300	NA	NA	NA	NA	NA
MDC-C29-H48	2612	NA	NA	NA	NA	NA
MDC-C30-H17	20081	NA	NA	NA	NA	NA
MDC-C32-H11	pH only					
A4B-C01-H04	3860	NA	NA	NA	NA	NA
A4B-C02-H18	4485	NA	NA	NA	NA	NA
A4B-C03-H28	5013	NA	NA	NA	NA	NA
A4B-C04-H46	3301	NA	NA	NA	NA	NA
A4B-C05-H47	2572	NA	NA	NA	NA	NA
A4B-C06-H49	2450	NA	NA	NA	NA	NA
A4B-C07-H50	598	NA	NA	NA	NA	NA
A4B2-C14-H22	550	NA	NA	NA	NA	NA
A4B2-C15-H05	1299	NA	NA	NA	NA	NA
A6P1-C01-H01	57088	4.50E-01	NA	NA	5.40E-02	NA
A6WP-C01-H27	47540	NA	NA	NA	4.50E-02	NA
A6WP-C02-H27	47482	NA	NA	NA	3.20E-02	NA
A6WP-C03-H42	57525	NA	NA	NA	3.80E-02	NA
A6WP-C04-H42	57525	NA	NA	NA	5.00E-03	NA
A6WP-C05-H42	57525	NA	NA	NA	1.00E-02	NA
max value >>		4.50E-01	0.00E+00	0.00E+00	5.40E-02	0.00E+00

TABLE B-1 - SOIL CERTIFICATION DATA - HWMU

HWMUs	Area sq ft	1,2-dichloroethane ug/g	1,1-Dichloroethylene ug/g	Dieldrin ug/g	Di-n-octylphthalate ug/g	Ethylbenzene ug/g
A1P2S3-HW-01-H4	24609	NA	NA	NA	NA	NA
A3B-C01-H20	12989	NA	NA	NA	NA	NA
A3B-C02-H20	21204	NA	NA	NA	NA	NA
A3B-C03-H20	35467	NA	NA	NA	NA	NA
A3B-C04-H20	21680	NA	NA	NA	NA	NA
A3B-C05-H20	34292	NA	NA	NA	NA	NA
A3B-C06-H20	44404	NA	NA	NA	NA	NA
A3B-C07-H20	35924	NA	NA	NA	NA	NA
A3B-C08-H20	37157	NA	NA	NA	NA	NA
A3B-C09-H20	62500	NA	NA	NA	NA	NA
A3B-C10-H20	59089	NA	NA	NA	NA	NA
A3B-C11-H20	59891	NA	NA	NA	NA	NA
A3B-C12-H20	60100	NA	NA	NA	NA	NA
MDC-C28-H36	300	NA	NA	NA	NA	NA
MDC-C29-H48	2612	NA	NA	NA	NA	NA
MDC-C30-H17	20081	NA	NA	NA	NA	NA
MDC-C32-H11	pH only					
A4B-C01-H04	3860	NA	NA	NA	NA	NA
A4B-C02-H18	4485	NA	NA	NA	NA	NA
A4B-C03-H28	5013	NA	NA	NA	NA	NA
A4B-C04-H46	3301	NA	NA	NA	NA	NA
A4B-C05-H47	2572	NA	NA	NA	NA	NA
A4B-C06-H49	2450	NA	NA	NA	NA	NA
A4B-C07-H50	598	NA	NA	NA	NA	NA
A4B2-C14-H22	550	NA	NA	NA	NA	NA
A4B2-C15-H05	1299	NA	NA	NA	NA	NA
A6P1-C01-H01	57088	NA	1.90E-03	NA	NA	NA
A6WP-C01-H27	47540	1.70E-03	3.90E-03	8.70E-03	NA	NA
A6WP-C02-H27	47482	1.80E-03	1.80E-03	3.95E-03	NA	NA
A6WP-C03-H42	57525	1.50E-03	7.40E-03	8.40E-03	NA	NA
A6WP-C04-H42	57525	6.00E-03	6.00E-03	8.00E-03	NA	NA
A6WP-C05-H42	57525	1.50E-03	1.40E-03	9.20E-03	NA	NA
max value >>		6.00E-03	7.40E-03	9.20E-03	0.00E+00	0.00E+00

TABLE B-1 - SOIL CERTIFICATION DATA - HWMU

HWMUs	Area sq ft	Ethyl ether ug/g	Heptachlorodibenzofuran ug/g	Heptachlorodibenzo-p-dioxin ug/g	Hexachlorodibenzofuran ug/g
A1P2S3-HW-01-H4	24609	NA	NA	NA	NA
A3B-C01-H20	12989	NA	NA	NA	NA
A3B-C02-H20	21204	NA	NA	NA	NA
A3B-C03-H20	35467	NA	NA	NA	NA
A3B-C04-H20	21680	NA	NA	NA	NA
A3B-C05-H20	34292	NA	NA	NA	NA
A3B-C06-H20	44404	NA	NA	NA	NA
A3B-C07-H20	35924	NA	NA	NA	NA
A3B-C08-H20	37157	NA	NA	NA	NA
A3B-C09-H20	62500	NA	NA	NA	NA
A3B-C10-H20	59089	NA	NA	NA	NA
A3B-C11-H20	59891	NA	NA	NA	NA
A3B-C12-H20	60100	NA	NA	NA	NA
MDC-C28-H36	300	NA	NA	NA	NA
MDC-C29-H48	2612	NA	NA	NA	NA
MDC-C30-H17	20081	NA	NA	NA	NA
MDC-C32-H11	pH only				
A4B-C01-H04	3860	NA	NA	NA	NA
A4B-C02-H18	4485	NA	NA	NA	NA
A4B-C03-H28	5013	NA	NA	NA	NA
A4B-C04-H46	3301	NA	NA	NA	NA
A4B-C05-H47	2572	NA	NA	NA	NA
A4B-C06-H49	2450	NA	NA	NA	NA
A4B-C07-H50	598	NA	NA	NA	NA
A4B2-C14-H22	550	NA	NA	NA	NA
A4B2-C15-H05	1299	NA	NA	NA	NA
A6P1-C01-H01	57088	NA	NA	NA	NA
A6WP-C01-H27	47540	NA	NA	6.86E-06	NA
A6WP-C02-H27	47482	NA	NA	1.04E-05	NA
A6WP-C03-H42	57525	NA	NA	9.79E-06	NA
A6WP-C04-H42	57525	NA	NA	4.26E-06	NA
A6WP-C05-H42	57525	NA	NA	4.53E-05	NA
max value >>		0.00E+00	0.00E+00	4.53E-05	0.00E+00

TABLE B-1 - SOIL CERTIFICATION DATA - HWMU

HWMUs	Area sq ft	Hexachlorodibenzo-p-dioxin ug/g	Indeno(1,2,3-cd)pyrene ug/g	Methanol ug/g	Methyl-2-pentanone ug/g
A1P2S3-HW-01-H4	24609	NA	NA	NA	NA
A3B-C01-H20	12989	NA	NA	NA	NA
A3B-C02-H20	21204	NA	NA	NA	NA
A3B-C03-H20	35467	NA	NA	NA	NA
A3B-C04-H20	21680	NA	NA	NA	NA
A3B-C05-H20	34292	NA	NA	NA	NA
A3B-C06-H20	44404	NA	NA	NA	NA
A3B-C07-H20	35924	NA	NA	NA	NA
A3B-C08-H20	37157	NA	NA	NA	NA
A3B-C09-H20	62500	NA	NA	NA	NA
A3B-C10-H20	59089	NA	NA	NA	NA
A3B-C11-H20	59891	NA	NA	NA	NA
A3B-C12-H20	60100	NA	NA	NA	NA
MDC-C28-H36	300	NA	NA	NA	NA
MDC-C29-H48	2612	NA	NA	NA	NA
MDC-C30-H17	20081	NA	NA	NA	NA
MDC-C32-H11	pH only				
A4B-C01-H04	3860	NA	NA	NA	NA
A4B-C02-H18	4485	NA	NA	NA	NA
A4B-C03-H28	5013	NA	NA	NA	NA
A4B-C04-H46	3301	NA	NA	NA	NA
A4B-C05-H47	2572	NA	NA	NA	NA
A4B-C06-H49	2450	NA	NA	NA	NA
A4B-C07-H50	598	NA	NA	NA	NA
A4B2-C14-H22	550	NA	NA	NA	NA
A4B2-C15-H05	1299	NA	NA	NA	NA
A6P1-C01-H01	57088	NA	3.60E-01	NA	NA
A6WP-C01-H27	47540	NA	1.50E-01	NA	NA
A6WP-C02-H27	47482	NA	1.50E-01	NA	NA
A6WP-C03-H42	57525	NA	4.70E-02	NA	NA
A6WP-C04-H42	57525	NA	2.90E-02	NA	NA
A6WP-C05-H42	57525	NA	7.70E-02	NA	NA
max value >>		0.00E+00	3.60E-01	0.00E+00	0.00E+00

TABLE B-1 - SOIL CERTIFICATION DATA - HWMU

HWMUs	Area sq ft	Methylene chloride ug/g	4-Methylphenol ug/g	4-Nitroanaline ug/g	N-nitrosodiphenylamine ug/g
A1P2S3-HW-01-H4	24609	NA	NA	NA	NA
A3B-C01-H20	12989	6.60E-03	NA	NA	NA
A3B-C02-H20	21204	6.00E-03	NA	NA	NA
A3B-C03-H20	35467	1.90E-03	NA	NA	NA
A3B-C04-H20	21680	1.40E-03	NA	NA	NA
A3B-C05-H20	34292	1.90E-03	NA	NA	NA
A3B-C06-H20	44404	6.90E-03	NA	NA	NA
A3B-C07-H20	35924	3.20E-03	NA	NA	NA
A3B-C08-H20	37157	2.30E-03	NA	NA	NA
A3B-C09-H20	62500	3.00E-03	NA	NA	NA
A3B-C10-H20	59089	6.00E-03	NA	NA	NA
A3B-C11-H20	59891	7.70E-03	NA	NA	NA
A3B-C12-H20	60100	1.60E-03	NA	NA	NA
MDC-C28-H36	300	NA	NA	NA	NA
MDC-C29-H48	2612	NA	NA	NA	NA
MDC-C30-H17	20081	NA	NA	NA	NA
MDC-C32-H11	pH only				
A4B-C01-H04	3860	NA	NA	NA	NA
A4B-C02-H18	4485	NA	NA	NA	NA
A4B-C03-H28	5013	NA	NA	NA	NA
A4B-C04-H46	3301	NA	NA	NA	NA
A4B-C05-H47	2572	NA	NA	NA	NA
A4B-C06-H49	2450	NA	NA	NA	NA
A4B-C07-H50	598	NA	NA	NA	NA
A4B2-C14-H22	550	NA	NA	NA	NA
A4B2-C15-H05	1299	NA	NA	NA	NA
A6P1-C01-H01	57088	NA	NA	NA	NA
A6WP-C01-H27	47540	NA	NA	NA	NA
A6WP-C02-H27	47482	NA	NA	NA	NA
A6WP-C03-H42	57525	NA	NA	NA	NA
A6WP-C04-H42	57525	NA	NA	NA	NA
A6WP-C05-H42	57525	NA	NA	NA	NA
max value >>		7.70E-03	0.00E+00	0.00E+00	0.00E+00

TABLE B-1 - SOIL CERTIFICATION DATA - HWMU

HWMUs	Area sq ft	N-nitrosodipropylamine ug/g	Octachlorodibenzofuran ug/g	Octochlorodibenzo-p-dioxin ug/g
A1P2S3-HW-01-H4	24609	NA	NA	NA
A3B-C01-H20	12989	NA	NA	NA
A3B-C02-H20	21204	NA	NA	NA
A3B-C03-H20	35467	NA	NA	NA
A3B-C04-H20	21680	NA	NA	NA
A3B-C05-H20	34292	NA	NA	NA
A3B-C06-H20	44404	NA	NA	NA
A3B-C07-H20	35924	NA	NA	NA
A3B-C08-H20	37157	NA	NA	NA
A3B-C09-H20	62500	NA	NA	NA
A3B-C10-H20	59089	NA	NA	NA
A3B-C11-H20	59891	NA	NA	NA
A3B-C12-H20	60100	NA	NA	NA
MDC-C28-H36	300	NA	NA	NA
MDC-C29-H48	2612	NA	NA	NA
MDC-C30-H17	20081	NA	NA	NA
MDC-C32-H11	pH only			
A4B-C01-H04	3860	NA	NA	NA
A4B-C02-H18	4485	NA	NA	NA
A4B-C03-H28	5013	NA	NA	NA
A4B-C04-H46	3301	NA	NA	NA
A4B-C05-H47	2572	NA	NA	NA
A4B-C06-H49	2450	NA	NA	NA
A4B-C07-H50	598	NA	NA	NA
A4B2-C14-H22	550	NA	NA	NA
A4B2-C15-H05	1299	NA	NA	NA
A6P1-C01-H01	57088	NA	NA	NA
A6WP-C01-H27	47540	NA	NA	8.59E-05
A6WP-C02-H27	47482	NA	NA	1.51E-04
A6WP-C03-H42	57525	NA	NA	2.13E-03
A6WP-C04-H42	57525	NA	NA	2.24E-04
A6WP-C05-H42	57525	NA	NA	1.04E-03
max value >>		0.00E+00	0.00E+00	2.13E-03

TABLE B-1 - SOIL CERTIFICATION DATA - HWMU

HWMUs	Area sq ft	Pentachlorodibenzofuran ug/g	Pentachlorodibenzo-p-dioxin ug/g	Pentachlorophenol ug/g	Phenanthrene ug/g
A1P2S3-HW-01-H4	24609	NA	NA	NA	NA
A3B-C01-H20	12989	NA	NA	NA	NA
A3B-C02-H20	21204	NA	NA	NA	NA
A3B-C03-H20	35467	NA	NA	NA	NA
A3B-C04-H20	21680	NA	NA	NA	NA
A3B-C05-H20	34292	NA	NA	NA	NA
A3B-C06-H20	44404	NA	NA	NA	NA
A3B-C07-H20	35924	NA	NA	NA	NA
A3B-C08-H20	37157	NA	NA	NA	NA
A3B-C09-H20	62500	NA	NA	NA	NA
A3B-C10-H20	59089	NA	NA	NA	NA
A3B-C11-H20	59891	NA	NA	NA	NA
A3B-C12-H20	60100	NA	NA	NA	NA
MDC-C28-H36	300	NA	NA	NA	NA
MDC-C29-H48	2612	NA	NA	NA	NA
MDC-C30-H17	20081	NA	NA	NA	NA
MDC-C32-H11	pH only				
A4B-C01-H04	3860	NA	NA	NA	NA
A4B-C02-H18	4485	NA	NA	NA	NA
A4B-C03-H28	5013	NA	NA	NA	NA
A4B-C04-H46	3301	NA	NA	NA	NA
A4B-C05-H47	2572	NA	NA	NA	NA
A4B-C06-H49	2450	NA	NA	NA	NA
A4B-C07-H50	598	NA	NA	NA	NA
A4B2-C14-H22	550	NA	NA	NA	NA
A4B2-C15-H05	1299	NA	NA	NA	NA
A6P1-C01-H01	57088	NA	NA	NA	1.50E-01
A6WP-C01-H27	47540	NA	NA	NA	NA
A6WP-C02-H27	47482	NA	NA	NA	NA
A6WP-C03-H42	57525	NA	NA	NA	NA
A6WP-C04-H42	57525	NA	NA	NA	NA
A6WP-C05-H42	57525	NA	NA	NA	NA
max value >>		0.00E+00	0.00E+00	0.00E+00	1.50E-01

TABLE B-1 - SOIL CERTIFICATION DATA - HWMU

HWMUs	Area sq ft	Tetrachlorodibenzofuran ug/g	Tetrachlorodibenzo-p-dioxin ug/g	Tetrachloroethylene ug/g	Toluene ug/g
A1P2S3-HW-01-H4	24609	NA	NA	6.87E-02	NA
A3B-C01-H20	12989	NA	NA	1.30E-03	NA
A3B-C02-H20	21204	NA	NA	1.20E-03	NA
A3B-C03-H20	35467	NA	NA	1.10E-03	NA
A3B-C04-H20	21680	NA	NA	1.40E-03	NA
A3B-C05-H20	34292	NA	NA	1.40E-03	NA
A3B-C06-H20	44404	NA	NA	1.40E-03	NA
A3B-C07-H20	35924	NA	NA	1.00E-03	NA
A3B-C08-H20	37157	NA	NA	1.10E-03	NA
A3B-C09-H20	62500	NA	NA	1.60E-03	NA
A3B-C10-H20	59089	NA	NA	1.60E-03	NA
A3B-C11-H20	59891	NA	NA	1.50E-03	NA
A3B-C12-H20	60100	NA	NA	1.10E-03	NA
MDC-C28-H36	300	NA	NA	NA	NA
MDC-C29-H48	2612	NA	NA	NA	NA
MDC-C30-H17	20081	NA	NA	NA	NA
MDC-C32-H11	pH only				
A4B-C01-H04	3860	NA	NA	4.20E-02	1.10E-03
A4B-C02-H18	4485	NA	NA	NA	NA
A4B-C03-H28	5013	NA	NA	NA	NA
A4B-C04-H46	3301	NA	NA	NA	NA
A4B-C05-H47	2572	NA	NA	NA	NA
A4B-C06-H49	2450	NA	NA	NA	NA
A4B-C07-H50	598	NA	NA	NA	NA
A4B2-C14-H22	550	NA	NA	2.00E-03	NA
A4B2-C15-H05	1299	NA	NA	NA	NA
A6P1-C01-H01	57088	NA	NA	1.90E-03	7.60E-03
A6WP-C01-H27	47540	NA	NA	1.70E-03	NA
A6WP-C02-H27	47482	NA	NA	1.80E-03	NA
A6WP-C03-H42	57525	NA	NA	1.50E-03	NA
A6WP-C04-H42	57525	NA	NA	6.00E-03	NA
A6WP-C05-H42	57525	NA	NA	1.50E-03	NA
max value >>		0.00E+00	0.00E+00	6.87E-02	7.60E-03

TABLE B-1 - SOIL CERTIFICATION DATA - HWMU

HWMUs	Area sq ft	Tributyl phosphate ug/g	1,1,2-Trichloroethane ug/g	Trichloroethylene ug/g	Trifluorochloromethane ug/g
A1P2S3-HW-01-H4	24609	NA	NA	NA	NA
A3B-C01-H20	12989	NA	1.30E-03	NA	NA
A3B-C02-H20	21204	NA	1.20E-03	NA	NA
A3B-C03-H20	35467	NA	1.10E-03	NA	NA
A3B-C04-H20	21680	NA	1.40E-03	NA	NA
A3B-C05-H20	34292	NA	1.40E-03	NA	NA
A3B-C06-H20	44404	NA	1.40E-03	NA	NA
A3B-C07-H20	35924	NA	1.00E-03	NA	NA
A3B-C08-H20	37157	NA	1.10E-03	NA	NA
A3B-C09-H20	62500	NA	1.60E-03	NA	NA
A3B-C10-H20	59089	NA	5.00E-04	NA	NA
A3B-C11-H20	59891	NA	1.50E-03	NA	NA
A3B-C12-H20	60100	NA	1.10E-03	NA	NA
MDC-C28-H36	300	NA	1.10E-03	NA	NA
MDC-C29-H48	2612	NA	NA	NA	NA
MDC-C30-H17	20081	NA	NA	NA	NA
MDC-C32-H11	pH only				
A4B-C01-H04	3860	NA	NA	NA	NA
A4B-C02-H18	4485	NA	NA	NA	NA
A4B-C03-H28	5013	NA	1.10E-03	NA	NA
A4B-C04-H46	3301	NA	NA	NA	NA
A4B-C05-H47	2572	NA	NA	NA	NA
A4B-C06-H49	2450	NA	NA	NA	NA
A4B-C07-H50	598	NA	NA	NA	NA
A4B2-C14-H22	550	NA	NA	1.70E-03	NA
A4B2-C15-H05	1299	NA	NA	NA	NA
A6P1-C01-H01	57088	NA	1.90E-03	NA	NA
A6WP-C01-H27	47540	NA	NA	1.70E-03	NA
A6WP-C02-H27	47482	NA	NA	1.80E-03	NA
A6WP-C03-H42	57525	NA	1.50E-03	1.50E-03	NA
A6WP-C04-H42	57525	NA	1.20E-02	6.00E-03	NA
A6WP-C05-H42	57525	NA	1.50E-03	1.50E-03	NA
max value >>		0.00E+00	1.20E-02	6.00E-03	0.00E+00

TABLE B-1 - SOIL CERTIFICATION DATA - HWMU

HWMUs	Area sq ft	Vinyl chloride ug/g	Xylenes ug/g
A1P2S3-HW-01-H4	24609	NA	NA
A3B-C01-H20	12989	NA	2.80E-02
A3B-C02-H20	21204	NA	1.90E-02
A3B-C03-H20	35467	NA	1.10E-02
A3B-C04-H20	21680	NA	8.40E-03
A3B-C05-H20	34292	NA	4.60E-03
A3B-C06-H20	44404	NA	4.90E-03
A3B-C07-H20	35924	NA	2.70E-02
A3B-C08-H20	37157	NA	3.00E-02
A3B-C09-H20	62500	NA	1.40E-02
A3B-C10-H20	59089	NA	1.10E-02
A3B-C11-H20	59891	NA	5.50E-03
A3B-C12-H20	60100	NA	7.50E-03
MDC-C28-H36	300	NA	NA
MDC-C29-H48	2612	NA	NA
MDC-C30-H17	20081	NA	NA
MDC-C32-H11	pH only		
A4B-C01-H04	3860	NA	NA
A4B-C02-H18	4485	NA	1.00E-03
A4B-C03-H28	5013	NA	NA
A4B-C04-H46	3301	NA	NA
A4B-C05-H47	2572	NA	NA
A4B-C06-H49	2450	NA	NA
A4B-C07-H50	598	NA	NA
A4B2-C14-H22	550	NA	NA
A4B2-C15-H05	1299	NA	NA
A6P1-C01-H01	57088	NA	NA
A6WP-C01-H27	47540	NA	NA
A6WP-C02-H27	47482	NA	NA
A6WP-C03-H42	57525	NA	NA
A6WP-C04-H42	57525	NA	NA
A6WP-C05-H42	57525	NA	NA
max value >>		0.00E+00	3.00E-02

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 1

Certification Units	Area sq ft	Cesium-137 pCi/g	Lead-210 pCi/g	Neptunium-237 pCi/g	Plutonium-238 pCi/g	Plutonium-239/240 pCi/g	Radium-226 pCi/g
A1P2-S1TR-01	46433	NA	NA	NA	NA	NA	1.69E+00
A1P2-S1TR-02	49161	NA	NA	NA	NA	NA	1.47E+00
A1P2-S1TR-03	51665	NA	NA	NA	NA	NA	1.49E+00
A1P2-S1TR-04	34561	NA	NA	NA	NA	NA	1.44E+00
A1P2-S1TR-05	62409	NA	NA	NA	NA	NA	1.46E+00
A1P2-S1TR-06	27745	NA	NA	NA	NA	NA	1.23E+00
A1P2-S1TR-07	40946	NA	NA	NA	NA	NA	1.23E+00
A1P2-S1TR-08	57991	NA	NA	NA	NA	NA	1.28E+00
A1P2-S1TR-09	47159	NA	NA	NA	NA	NA	1.31E+00
A1P2-S1TR-10	65031	NA	NA	NA	NA	NA	1.31E+00
A1P2-S1TR-11	6579	NA	NA	NA	NA	NA	1.21E+00
A1P2-S3CD-01	62172	NA	NA	NA	NA	NA	1.37E+00
A1P2-S3HR-01	21958	NA	NA	NA	NA	NA	1.50E+00
A1P2-S3NI-01	23953	NA	NA	NA	NA	NA	1.38E+00
A1PII-S1-02	117751	NA	NA	NA	NA	NA	1.40E+00
A1PII-S1-04	156761	NA	NA	NA	NA	NA	1.24E+00
A1PII-S1-05	161491	NA	NA	NA	NA	NA	1.17E+00
A1PII-S1-06	165940	NA	NA	NA	NA	NA	1.23E+00
A1PII-S1-07	201789	NA	NA	NA	NA	NA	1.30E+00
A1PII-S1-08	182288	NA	NA	NA	NA	NA	1.17E+00
A1PII-S1-09	228085	NA	NA	NA	NA	NA	1.25E+00
A1PII-S1-10	213319	NA	NA	NA	NA	NA	1.16E+00
A1PII-S1-11	202318	NA	NA	NA	NA	NA	1.29E+00
A1PII-S1-12	226814	NA	NA	NA	NA	NA	1.63E+00
A1PII-S1-13	270282	NA	NA	NA	NA	NA	1.30E+00
A1PII-S1-14	248031	NA	NA	NA	NA	NA	1.30E+00
A1PII-S1-15	243185	NA	NA	NA	NA	NA	1.30E+00
A1PII-S1-16	217834	NA	NA	NA	NA	NA	1.30E+00
A1PII-S1-17	224677	NA	NA	NA	NA	NA	1.14E+00
A1PII-S1-18	224966	NA	NA	NA	NA	NA	1.20E+00
A2P3-1SF	10894	NA	NA	NA	NA	NA	1.26E+00
A2P3-2SF	22527	NA	NA	NA	NA	NA	1.19E+00
A2P3-3SF	31332	NA	NA	NA	NA	NA	1.38E+00
A2P3-C-02	244175	NA	NA	NA	NA	NA	1.21E+00
A2P3-C-03	214148	NA	NA	NA	NA	NA	1.20E+00
A2P3-C-04	217300	NA	NA	NA	NA	NA	1.20E+00
A2P3-C-05	240708	NA	NA	NA	NA	NA	1.20E+00
A2P3-C-06	249392	NA	NA	NA	NA	NA	1.12E+00
A2P3-C-07	239437	NA	NA	NA	NA	NA	1.07E+00
A2P3-C-08	244408	NA	NA	NA	NA	NA	1.14E+00
A2P3-C-09	56868	NA	NA	NA	NA	NA	1.27E+00
A2P3-C-10	143056	NA	NA	NA	NA	NA	1.09E+00
A2P3-C-11	168791	NA	NA	NA	NA	NA	9.10E-01
A2P3-C-12	175937	NA	NA	NA	NA	NA	1.48E+00
A2P3-C-13	213679	NA	NA	NA	NA	NA	1.01E+00
A2P3-C-14	249699	NA	NA	NA	NA	NA	1.19E+00
A2P3-C-15	242375	NA	NA	NA	NA	NA	1.26E+00
A7SAR-C06	58805	NA	NA	NA	NA	NA	1.57E+00
A7SAR-C07	65453	NA	NA	NA	NA	NA	1.49E+00
A7SAR-C08	61127	NA	NA	NA	NA	NA	1.40E+00
Maximum Value		NA	NA	NA	NA	NA	1.69E+00
Average (*used in Risk Calc.*)		NA	NA	NA	NA	NA	1.29E+00
Number of Cert Results		NA	NA	NA	NA	NA	5.00E+01
Number of Inserted Values		NA	NA	NA	NA	NA	0.00E+00

NOTE:

If at least one CU in the zone has an anlytical result for a given COC, the background value is inserted for the COC in other CUs that have no reported analytical result to avoid a high bias for the COC in this zone.

Background is zero for all organic compounds. Background is not reported for neptunium, plutonium, strontium and technetium isotopes, and zero will be used.

NA = Chemical or radionuclide is not applicable to the assesment of risk in this zone because the COC was not evaluated in the certification reports for this zone.

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 1

Certification Units	Area sq ft	Radium-228 pCi/g	Strontium-90 pCi/g	Technetium-99 pCi/g	Thorium-228 pCi/g	Thorium-230 pCi/g	Thorium-232 pCi/g	Uranium-234 pCi/g
A1P2-S1TR-01	46433	1.31E+00	NA	0.00E+00	1.25E+00	NA	1.31E+00	2.33E+00
A1P2-S1TR-02	49161	1.13E+00	NA	0.00E+00	1.10E+00	NA	1.13E+00	3.18E+00
A1P2-S1TR-03	51665	1.30E+00	NA	0.00E+00	1.29E+00	NA	1.30E+00	3.55E+00
A1P2-S1TR-04	34561	1.15E+00	NA	0.00E+00	1.14E+00	NA	1.15E+00	5.43E+00
A1P2-S1TR-05	62409	1.31E+00	NA	0.00E+00	1.37E+00	NA	1.29E+00	6.11E+00
A1P2-S1TR-06	27745	1.15E+00	NA	0.00E+00	1.23E+00	NA	1.15E+00	4.68E+00
A1P2-S1TR-07	40946	1.15E+00	NA	0.00E+00	1.23E+00	NA	1.15E+00	4.68E+00
A1P2-S1TR-08	57991	1.31E+00	NA	0.00E+00	1.42E+00	NA	1.30E+00	7.20E+00
A1P2-S1TR-09	47159	1.08E+00	NA	0.00E+00	1.12E+00	NA	1.07E+00	6.21E+00
A1P2-S1TR-10	65031	1.08E+00	NA	0.00E+00	1.12E+00	NA	1.07E+00	6.21E+00
A1P2-S1TR-11	6579	1.05E+00	NA	0.00E+00	1.09E+00	NA	1.04E+00	4.54E+00
A1P2-S3CD-01	62172	9.80E-01	NA	1.52E+00	9.70E-01	NA	9.80E-01	3.75E+00
A1P2-S3HR-01	21958	1.26E+00	NA	0.00E+00	1.23E+00	NA	1.26E+00	1.04E+01
A1P2-S3NI-01	23953	1.07E+00	NA	0.00E+00	1.07E+00	NA	1.07E+00	5.53E+00
A1PII-S1-02	117751	1.11E+00	NA	0.00E+00	1.15E+00	NA	1.11E+00	5.46E+00
A1PII-S1-04	156761	1.23E+00	NA	0.00E+00	1.21E+00	NA	1.23E+00	8.24E+00
A1PII-S1-05	161491	1.02E+00	NA	0.00E+00	1.07E+00	NA	1.02E+00	3.76E+00
A1PII-S1-06	165940	1.14E+00	NA	0.00E+00	1.14E+00	NA	1.14E+00	4.64E+00
A1PII-S1-07	201789	1.20E+00	NA	0.00E+00	1.20E+00	NA	1.20E+00	3.12E+00
A1PII-S1-08	182288	1.05E+00	NA	0.00E+00	1.08E+00	NA	1.11E+00	3.37E+00
A1PII-S1-09	228085	1.27E+00	NA	0.00E+00	1.26E+00	NA	1.27E+00	4.74E+00
A1PII-S1-10	213319	1.19E+00	NA	0.00E+00	1.30E+00	NA	1.19E+00	3.02E+00
A1PII-S1-11	202318	1.23E+00	NA	0.00E+00	1.24E+00	NA	1.23E+00	4.13E+00
A1PII-S1-12	226814	1.38E+00	NA	0.00E+00	1.51E+00	NA	1.38E+00	3.00E+00
A1PII-S1-13	270282	1.16E+00	NA	0.00E+00	1.21E+00	NA	1.16E+00	2.74E+00
A1PII-S1-14	248031	1.12E+00	NA	0.00E+00	1.18E+00	NA	1.12E+00	2.46E+00
A1PII-S1-15	243185	1.17E+00	NA	0.00E+00	1.19E+00	NA	1.17E+00	2.53E+00
A1PII-S1-16	217834	1.10E+00	NA	0.00E+00	1.20E+00	NA	1.10E+00	2.37E+00
A1PII-S1-17	224677	1.08E+00	NA	0.00E+00	1.07E+00	NA	1.08E+00	3.27E+00
A1PII-S1-18	224966	1.13E+00	NA	0.00E+00	1.11E+00	NA	1.13E+00	5.98E+00
A2P3-1SF	10894	1.26E+00	NA	0.00E+00	1.25E+00	NA	1.26E+00	4.44E+00
A2P3-2SF	22527	1.32E+00	NA	0.00E+00	1.31E+00	NA	1.32E+00	4.88E+00
A2P3-3SF	31332	1.20E+00	NA	0.00E+00	1.18E+00	NA	1.20E+00	4.88E+00
A2P3-C-02	244175	1.13E+00	NA	0.00E+00	1.13E+00	NA	1.13E+00	5.80E+00
A2P3-C-03	214148	1.01E+00	NA	0.00E+00	9.70E-01	NA	1.01E+00	5.84E+00
A2P3-C-04	217300	1.07E+00	NA	0.00E+00	1.05E+00	NA	1.07E+00	3.89E+00
A2P3-C-05	240708	1.20E+00	NA	0.00E+00	1.18E+00	NA	1.20E+00	4.10E+00
A2P3-C-06	249392	1.04E+00	NA	0.00E+00	1.02E+00	NA	1.04E+00	5.19E+00
A2P3-C-07	239437	1.06E+00	NA	0.00E+00	1.07E+00	NA	1.06E+00	3.20E+00
A2P3-C-08	244408	1.14E+00	NA	0.00E+00	1.12E+00	NA	1.14E+00	3.52E+00
A2P3-C-09	56868	1.15E+00	NA	0.00E+00	1.13E+00	NA	1.15E+00	5.09E+00
A2P3-C-10	143056	1.05E+00	NA	0.00E+00	1.08E+00	NA	1.05E+00	4.10E+00
A2P3-C-11	168791	9.30E-01	NA	0.00E+00	8.90E-01	NA	9.30E-01	3.12E+00
A2P3-C-12	175937	1.34E+00	NA	0.00E+00	1.33E+00	NA	1.34E+00	3.02E+00
A2P3-C-13	213679	1.00E+00	NA	0.00E+00	1.01E+00	NA	1.00E+00	2.25E+00
A2P3-C-14	249699	1.11E+00	NA	0.00E+00	1.08E+00	NA	1.11E+00	2.47E+00
A2P3-C-15	242375	1.15E+00	NA	0.00E+00	1.11E+00	NA	1.15E+00	3.79E+00
A7SAR-C06	58805	1.18E+00	NA	0.00E+00	1.23E+00	NA	1.18E+00	9.62E+00
A7SAR-C07	65453	1.31E+00	NA	0.00E+00	1.35E+00	NA	1.31E+00	7.51E+00
A7SAR-C08	61127	1.21E+00	NA	0.00E+00	1.23E+00	NA	1.21E+00	1.04E+01
Maximum Value		1.38E+00	NA	1.52E+00	1.51E+00	NA	1.38E+00	1.04E+01
Average (*used in Risk Calc.*)		1.16E+00	NA	3.04E-02	1.17E+00	NA	1.16E+00	4.67E+00
Number of Cert Results		5.00E+01	NA	1.00E+00	5.00E+01	NA	5.00E+01	5.00E+01
Number of Inserted Values		0.00E+00	NA	4.90E+01	0.00E+00	NA	0.00E+00	0.00E+00

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 1

Certification Units	Area sq ft	Uranium-235 pCi/g	Uranium-238 pCi/g	Antimony ug/g	Arsenic ug/g	Barium ug/g	Beryllium ug/g	Boron ug/g	Cadmium ug/g
A1P2-S1TR-01	46433	1.06E-01	2.28E+00	2.87E+00	1.13E+01	NA	1.44E+00	NA	NA
A1P2-S1TR-02	49161	1.45E-01	3.11E+00	2.87E+00	9.42E+00	NA	1.44E+00	NA	NA
A1P2-S1TR-03	51665	1.62E-01	3.47E+00	2.87E+00	1.10E+01	NA	1.44E+00	NA	NA
A1P2-S1TR-04	34561	2.47E-01	5.30E+00	2.87E+00	9.10E+00	NA	1.44E+00	NA	NA
A1P2-S1TR-05	62409	2.78E-01	5.97E+00	2.87E+00	1.09E+01	NA	1.44E+00	NA	NA
A1P2-S1TR-06	27745	2.13E-01	4.57E+00	2.87E+00	1.16E+01	NA	1.44E+00	NA	NA
A1P2-S1TR-07	40946	2.13E-01	4.57E+00	2.87E+00	1.16E+01	NA	1.44E+00	NA	NA
A1P2-S1TR-08	57991	3.28E-01	7.03E+00	2.87E+00	1.19E+01	NA	1.44E+00	NA	NA
A1P2-S1TR-09	47159	2.83E-01	6.07E+00	2.87E+00	7.40E+00	NA	1.44E+00	NA	NA
A1P2-S1TR-10	65031	2.83E-01	6.07E+00	2.87E+00	7.40E+00	NA	1.44E+00	NA	NA
A1P2-S1TR-11	6579	2.07E-01	4.43E+00	2.87E+00	1.00E+01	NA	1.44E+00	NA	NA
A1P2-S3CD-01	62172	1.71E-01	3.67E+00	4.47E+00	9.59E+00	NA	1.46E+00	NA	NA
A1P2-S3HR-01	21958	4.73E-01	1.01E+01	2.87E+00	6.23E+00	NA	1.44E+00	NA	NA
A1P2-S3NI-01	23953	2.52E-01	5.40E+00	2.87E+00	8.30E+00	NA	1.44E+00	NA	NA
A1PII-S1-02	117751	2.49E-01	5.33E+00	2.87E+00	7.30E+00	NA	1.44E+00	NA	NA
A1PII-S1-04	156761	3.75E-01	8.04E+00	2.87E+00	6.69E+00	NA	1.44E+00	NA	NA
A1PII-S1-05	161491	1.72E-01	3.68E+00	2.87E+00	7.10E+00	NA	1.44E+00	NA	NA
A1PII-S1-06	165940	2.12E-01	4.53E+00	2.87E+00	5.75E+00	NA	1.44E+00	NA	NA
A1PII-S1-07	201789	1.42E-01	3.04E+00	2.87E+00	7.25E+00	NA	1.44E+00	NA	NA
A1PII-S1-08	182288	1.54E-01	3.29E+00	2.87E+00	5.66E+00	NA	1.44E+00	NA	NA
A1PII-S1-09	228085	2.16E-01	4.63E+00	2.87E+00	4.67E+00	NA	1.44E+00	NA	NA
A1PII-S1-10	213319	1.38E-01	2.95E+00	2.87E+00	8.40E+00	NA	1.44E+00	NA	NA
A1PII-S1-11	202318	1.88E-01	4.03E+00	2.87E+00	6.60E+00	NA	1.44E+00	NA	NA
A1PII-S1-12	226814	1.37E-01	2.93E+00	2.87E+00	4.80E+00	NA	1.44E+00	NA	NA
A1PII-S1-13	270282	1.25E-01	2.68E+00	2.87E+00	4.93E+00	NA	1.44E+00	NA	NA
A1PII-S1-14	248031	1.12E-01	2.40E+00	2.87E+00	7.17E+00	NA	1.44E+00	NA	NA
A1PII-S1-15	243185	1.15E-01	2.47E+00	2.87E+00	4.79E+00	NA	1.44E+00	NA	NA
A1PII-S1-16	217834	1.08E-01	2.31E+00	2.87E+00	4.54E+00	NA	1.44E+00	NA	NA
A1PII-S1-17	224677	1.49E-01	3.20E+00	2.87E+00	4.43E+00	NA	1.44E+00	NA	NA
A1PII-S1-18	224966	2.72E-01	5.84E+00	2.87E+00	5.58E+00	NA	1.44E+00	NA	NA
A2P3-1SF	10894	2.02E-01	4.33E+00	2.87E+00	1.24E+01	NA	1.44E+00	NA	NA
A2P3-2SF	22527	2.22E-01	4.76E+00	2.87E+00	1.24E+01	NA	1.44E+00	NA	NA
A2P3-3SF	31332	2.23E-01	4.77E+00	2.87E+00	1.24E+01	NA	1.44E+00	NA	NA
A2P3-C-02	244175	2.64E-01	5.67E+00	2.87E+00	1.24E+01	NA	1.44E+00	NA	NA
A2P3-C-03	214148	2.66E-01	5.70E+00	2.87E+00	1.24E+01	NA	1.44E+00	NA	NA
A2P3-C-04	217300	1.77E-01	3.80E+00	2.87E+00	1.24E+01	NA	1.44E+00	NA	NA
A2P3-C-05	240708	1.87E-01	4.00E+00	2.87E+00	1.24E+01	NA	1.44E+00	NA	NA
A2P3-C-06	249392	2.36E-01	5.07E+00	2.87E+00	1.24E+01	NA	1.44E+00	NA	NA
A2P3-C-07	239437	1.46E-01	3.13E+00	2.87E+00	1.24E+01	NA	1.44E+00	NA	NA
A2P3-C-08	244408	1.60E-01	3.43E+00	2.87E+00	1.24E+01	NA	1.44E+00	NA	NA
A2P3-C-09	56868	2.32E-01	4.97E+00	2.87E+00	1.24E+01	NA	1.44E+00	NA	NA
A2P3-C-10	143056	1.87E-01	4.00E+00	2.87E+00	1.24E+01	NA	1.44E+00	NA	NA
A2P3-C-11	168791	1.42E-01	3.04E+00	2.87E+00	1.24E+01	NA	1.44E+00	NA	NA
A2P3-C-12	175937	1.38E-01	2.95E+00	2.87E+00	1.24E+01	NA	1.44E+00	NA	NA
A2P3-C-13	213679	1.03E-01	2.20E+00	2.87E+00	1.24E+01	NA	1.44E+00	NA	NA
A2P3-C-14	249699	1.13E-01	2.42E+00	2.87E+00	1.24E+01	NA	1.44E+00	NA	NA
A2P3-C-15	242375	1.73E-01	3.70E+00	2.87E+00	1.24E+01	NA	1.44E+00	NA	NA
A7SAR-C06	58805	4.39E-01	9.40E+00	2.87E+00	1.24E+01	NA	1.44E+00	NA	NA
A7SAR-C07	65453	3.42E-01	7.33E+00	2.87E+00	1.24E+01	NA	1.44E+00	NA	NA
A7SAR-C08	61127	4.73E-01	1.01E+01	2.87E+00	1.24E+01	NA	1.31E+00	NA	NA
Maximum Value		4.73E-01	1.01E+01	4.47E+00	1.24E+01	NA	1.46E+00	NA	NA
Average (*used in Risk Calc.*)		2.13E-01	4.56E+00	2.90E+00	9.59E+00	NA	1.44E+00	NA	NA
Number of Cert Results		5.00E+01	5.00E+01	1.00E+00	3.00E+01	NA	2.00E+00	NA	NA
Number of Inserted Values		0.00E+00	0.00E+00	4.90E+01	2.00E+01	NA	4.80E+01	NA	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 1

Certification Units	Area sq ft	Chromium (VI) ug/g	Cobalt ug/g	Copper ug/g	Fluoride ug/g	Lead ug/g	Manganese ug/g	Mercury ug/g	Molybdenum ug/g
A1P2-S1TR-01	46433	NA	NA	NA	NA	1.76E+02	NA	NA	NA
A1P2-S1TR-02	49161	NA	NA	NA	NA	1.78E+02	NA	NA	NA
A1P2-S1TR-03	51665	NA	NA	NA	NA	3.17E+02	NA	NA	NA
A1P2-S1TR-04	34561	NA	NA	NA	NA	2.22E+02	NA	NA	NA
A1P2-S1TR-05	62409	NA	NA	NA	NA	1.40E+02	NA	NA	NA
A1P2-S1TR-06	27745	NA	NA	NA	NA	1.86E+01	NA	NA	NA
A1P2-S1TR-07	40946	NA	NA	NA	NA	1.86E+01	NA	NA	NA
A1P2-S1TR-08	57991	NA	NA	NA	NA	2.91E+01	NA	NA	NA
A1P2-S1TR-09	47159	NA	NA	NA	NA	3.43E+01	NA	NA	NA
A1P2-S1TR-10	65031	NA	NA	NA	NA	3.43E+01	NA	NA	NA
A1P2-S1TR-11	6579	NA	NA	NA	NA	9.14E+01	NA	NA	NA
A1P2-S3CD-01	62172	NA	NA	NA	NA	2.87E+01	NA	NA	NA
A1P2-S3HR-01	21958	NA	NA	NA	NA	2.92E+01	NA	NA	NA
A1P2-S3NI-01	23953	NA	NA	NA	NA	3.92E+01	NA	NA	NA
A1PII-S1-02	117751	NA	NA	NA	NA	2.07E+01	NA	NA	NA
A1PII-S1-04	156761	NA	NA	NA	NA	2.69E+01	NA	NA	NA
A1PII-S1-05	161491	NA	NA	NA	NA	3.06E+01	NA	NA	NA
A1PII-S1-06	165940	NA	NA	NA	NA	2.48E+01	NA	NA	NA
A1PII-S1-07	201789	NA	NA	NA	NA	1.95E+01	NA	NA	NA
A1PII-S1-08	182288	NA	NA	NA	NA	3.06E+01	NA	NA	NA
A1PII-S1-09	228085	NA	NA	NA	NA	3.06E+01	NA	NA	NA
A1PII-S1-10	213319	NA	NA	NA	NA	3.06E+01	NA	NA	NA
A1PII-S1-11	202318	NA	NA	NA	NA	3.06E+01	NA	NA	NA
A1PII-S1-12	226814	NA	NA	NA	NA	3.06E+01	NA	NA	NA
A1PII-S1-13	270282	NA	NA	NA	NA	3.06E+01	NA	NA	NA
A1PII-S1-14	248031	NA	NA	NA	NA	3.06E+01	NA	NA	NA
A1PII-S1-15	243185	NA	NA	NA	NA	3.06E+01	NA	NA	NA
A1PII-S1-16	217834	NA	NA	NA	NA	3.06E+01	NA	NA	NA
A1PII-S1-17	224677	NA	NA	NA	NA	3.06E+01	NA	NA	NA
A1PII-S1-18	224966	NA	NA	NA	NA	3.06E+01	NA	NA	NA
A2P3-1SF	10894	NA	NA	NA	NA	3.06E+01	NA	NA	NA
A2P3-2SF	22527	NA	NA	NA	NA	3.06E+01	NA	NA	NA
A2P3-3SF	31332	NA	NA	NA	NA	3.06E+01	NA	NA	NA
A2P3-C-02	244175	NA	NA	NA	NA	3.06E+01	NA	NA	NA
A2P3-C-03	214148	NA	NA	NA	NA	3.06E+01	NA	NA	NA
A2P3-C-04	217300	NA	NA	NA	NA	3.06E+01	NA	NA	NA
A2P3-C-05	240708	NA	NA	NA	NA	3.06E+01	NA	NA	NA
A2P3-C-06	249392	NA	NA	NA	NA	3.06E+01	NA	NA	NA
A2P3-C-07	239437	NA	NA	NA	NA	3.06E+01	NA	NA	NA
A2P3-C-08	244408	NA	NA	NA	NA	3.06E+01	NA	NA	NA
A2P3-C-09	56868	NA	NA	NA	NA	3.06E+01	NA	NA	NA
A2P3-C-10	143056	NA	NA	NA	NA	3.06E+01	NA	NA	NA
A2P3-C-11	168791	NA	NA	NA	NA	3.06E+01	NA	NA	NA
A2P3-C-12	175937	NA	NA	NA	NA	3.06E+01	NA	NA	NA
A2P3-C-13	213679	NA	NA	NA	NA	3.06E+01	NA	NA	NA
A2P3-C-14	249699	NA	NA	NA	NA	3.06E+01	NA	NA	NA
A2P3-C-15	242375	NA	NA	NA	NA	3.06E+01	NA	NA	NA
A7SAR-C06	58805	NA	NA	NA	NA	3.06E+01	NA	NA	NA
A7SAR-C07	65453	NA	NA	NA	NA	3.06E+01	NA	NA	NA
A7SAR-C08	61127	NA	NA	NA	NA	3.06E+01	NA	NA	NA
Maximum Value		NA	NA	NA	NA	3.17E+02	NA	NA	NA
Average (*used in Risk Calc.*)		NA	NA	NA	NA	4.85E+01	NA	NA	NA
Number of Cert Results		NA	NA	NA	NA	1.80E+01	NA	NA	NA
Number of Inserted Values		NA	NA	NA	NA	3.20E+01	NA	NA	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 1

Certification Units	Area sq ft	Nickel ug/g	Selenium ug/g	Silver ug/g	Thallium ug/g	Uranium ug/g	Vanadium ug/g	Zinc ug/g	Acetone ug/g	Aroclor-1254 ug/g
A1P2-S1TR-01	46433	NA	NA	NA	NA	6.84E+00	NA	NA	NA	NA
A1P2-S1TR-02	49161	NA	NA	NA	NA	9.32E+00	NA	NA	NA	NA
A1P2-S1TR-03	51665	NA	NA	NA	NA	1.04E+01	NA	NA	NA	NA
A1P2-S1TR-04	34561	NA	NA	NA	NA	1.59E+01	NA	NA	NA	NA
A1P2-S1TR-05	62409	NA	NA	NA	NA	1.79E+01	NA	NA	NA	NA
A1P2-S1TR-06	27745	NA	NA	NA	NA	1.37E+01	NA	NA	NA	NA
A1P2-S1TR-07	40946	NA	NA	NA	NA	1.37E+01	NA	NA	NA	NA
A1P2-S1TR-08	57991	NA	NA	NA	NA	2.11E+01	NA	NA	NA	NA
A1P2-S1TR-09	47159	NA	NA	NA	NA	1.82E+01	NA	NA	NA	NA
A1P2-S1TR-10	65031	NA	NA	NA	NA	1.82E+01	NA	NA	NA	NA
A1P2-S1TR-11	6579	NA	NA	NA	NA	1.33E+01	NA	NA	NA	NA
A1P2-S3CD-01	62172	NA	NA	NA	NA	1.10E+01	NA	NA	NA	NA
A1P2-S3HR-01	21958	NA	NA	NA	NA	3.04E+01	NA	NA	NA	NA
A1P2-S3NI-01	23953	NA	NA	NA	NA	1.62E+01	NA	NA	NA	NA
A1PII-S1-02	117751	NA	NA	NA	NA	1.60E+01	NA	NA	NA	NA
A1PII-S1-04	156761	NA	NA	NA	NA	2.41E+01	NA	NA	NA	NA
A1PII-S1-05	161491	NA	NA	NA	NA	1.10E+01	NA	NA	NA	NA
A1PII-S1-06	165940	NA	NA	NA	NA	1.36E+01	NA	NA	NA	NA
A1PII-S1-07	201789	NA	NA	NA	NA	9.13E+00	NA	NA	NA	NA
A1PII-S1-08	182288	NA	NA	NA	NA	9.88E+00	NA	NA	NA	NA
A1PII-S1-09	228085	NA	NA	NA	NA	1.39E+01	NA	NA	NA	NA
A1PII-S1-10	213319	NA	NA	NA	NA	8.85E+00	NA	NA	NA	NA
A1PII-S1-11	202318	NA	NA	NA	NA	1.21E+01	NA	NA	NA	NA
A1PII-S1-12	226814	NA	NA	NA	NA	8.79E+00	NA	NA	NA	NA
A1PII-S1-13	270282	NA	NA	NA	NA	8.03E+00	NA	NA	NA	NA
A1PII-S1-14	248031	NA	NA	NA	NA	7.21E+00	NA	NA	NA	NA
A1PII-S1-15	243185	NA	NA	NA	NA	7.42E+00	NA	NA	NA	NA
A1PII-S1-16	217834	NA	NA	NA	NA	6.94E+00	NA	NA	NA	NA
A1PII-S1-17	224677	NA	NA	NA	NA	9.59E+00	NA	NA	NA	NA
A1PII-S1-18	224966	NA	NA	NA	NA	1.75E+01	NA	NA	NA	NA
A2P3-1SF	10894	NA	NA	NA	NA	1.30E+01	NA	NA	NA	NA
A2P3-2SF	22527	NA	NA	NA	NA	1.43E+01	NA	NA	NA	NA
A2P3-3SF	31332	NA	NA	NA	NA	1.43E+01	NA	NA	NA	NA
A2P3-C-02	244175	NA	NA	NA	NA	1.70E+01	NA	NA	NA	NA
A2P3-C-03	214148	NA	NA	NA	NA	1.71E+01	NA	NA	NA	NA
A2P3-C-04	217300	NA	NA	NA	NA	1.14E+01	NA	NA	NA	NA
A2P3-C-05	240708	NA	NA	NA	NA	1.20E+01	NA	NA	NA	NA
A2P3-C-06	249392	NA	NA	NA	NA	1.52E+01	NA	NA	NA	NA
A2P3-C-07	239437	NA	NA	NA	NA	9.38E+00	NA	NA	NA	NA
A2P3-C-08	244408	NA	NA	NA	NA	1.03E+01	NA	NA	NA	NA
A2P3-C-09	56868	NA	NA	NA	NA	1.49E+01	NA	NA	NA	NA
A2P3-C-10	143056	NA	NA	NA	NA	1.20E+01	NA	NA	NA	NA
A2P3-C-11	168791	NA	NA	NA	NA	9.13E+00	NA	NA	NA	NA
A2P3-C-12	175937	NA	NA	NA	NA	8.85E+00	NA	NA	NA	NA
A2P3-C-13	213679	NA	NA	NA	NA	6.60E+00	NA	NA	NA	NA
A2P3-C-14	249699	NA	NA	NA	NA	7.25E+00	NA	NA	NA	NA
A2P3-C-15	242375	NA	NA	NA	NA	1.11E+01	NA	NA	NA	NA
A7SAR-C06	58805	NA	NA	NA	NA	2.82E+01	NA	NA	NA	NA
A7SAR-C07	65453	NA	NA	NA	NA	2.20E+01	NA	NA	NA	NA
A7SAR-C08	61127	NA	NA	NA	NA	3.04E+01	NA	NA	NA	NA
Maximum Value		NA	NA	NA	NA	3.04E+01	NA	NA	NA	NA
Average (*used in Risk Calc.*)		NA	NA	NA	NA	1.37E+01	NA	NA	NA	NA
Number of Cert Results		NA	NA	NA	NA	5.00E+01	NA	NA	NA	NA
Number of Inserted Values		NA	NA	NA	NA	0.00E+00	NA	NA	NA	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 1

Certification Units	Area sq ft	Aroclor-1260 ug/g	Benzene ug/g	Benzo(a)anthracene ug/g	Benzo(a)pyrene ug/g	Benzo(b)fluoranthene ug/g
A1P2-S1TR-01	46433	NA	NA	NA	NA	NA
A1P2-S1TR-02	49161	NA	NA	NA	NA	NA
A1P2-S1TR-03	51665	NA	NA	NA	NA	NA
A1P2-S1TR-04	34561	NA	NA	NA	NA	NA
A1P2-S1TR-05	62409	NA	NA	NA	NA	NA
A1P2-S1TR-06	27745	NA	NA	NA	NA	NA
A1P2-S1TR-07	40946	NA	NA	NA	NA	NA
A1P2-S1TR-08	57991	NA	NA	NA	NA	NA
A1P2-S1TR-09	47159	NA	NA	NA	NA	NA
A1P2-S1TR-10	65031	NA	NA	NA	NA	NA
A1P2-S1TR-11	6579	NA	NA	NA	NA	NA
A1P2-S3CD-01	62172	NA	NA	NA	NA	NA
A1P2-S3HR-01	21958	NA	NA	NA	NA	NA
A1P2-S3NI-01	23953	NA	NA	NA	NA	NA
A1PII-S1-02	117751	NA	NA	NA	NA	NA
A1PII-S1-04	156761	NA	NA	NA	NA	NA
A1PII-S1-05	161491	NA	NA	NA	NA	NA
A1PII-S1-06	165940	NA	NA	NA	NA	NA
A1PII-S1-07	201789	NA	NA	NA	NA	NA
A1PII-S1-08	182288	NA	NA	NA	NA	NA
A1PII-S1-09	228085	NA	NA	NA	NA	NA
A1PII-S1-10	213319	NA	NA	NA	NA	NA
A1PII-S1-11	202318	NA	NA	NA	NA	NA
A1PII-S1-12	226814	NA	NA	NA	NA	NA
A1PII-S1-13	270282	NA	NA	NA	NA	NA
A1PII-S1-14	248031	NA	NA	NA	NA	NA
A1PII-S1-15	243185	NA	NA	NA	NA	NA
A1PII-S1-16	217834	NA	NA	NA	NA	NA
A1PII-S1-17	224677	NA	NA	NA	NA	NA
A1PII-S1-18	224966	NA	NA	NA	NA	NA
A2P3-1SF	10894	NA	NA	NA	NA	NA
A2P3-2SF	22527	NA	NA	NA	NA	NA
A2P3-3SF	31332	NA	NA	NA	NA	NA
A2P3-C-02	244175	NA	NA	NA	NA	NA
A2P3-C-03	214148	NA	NA	NA	NA	NA
A2P3-C-04	217300	NA	NA	NA	NA	NA
A2P3-C-05	240708	NA	NA	NA	NA	NA
A2P3-C-06	249392	NA	NA	NA	NA	NA
A2P3-C-07	239437	NA	NA	NA	NA	NA
A2P3-C-08	244408	NA	NA	NA	NA	NA
A2P3-C-09	56868	NA	NA	NA	NA	NA
A2P3-C-10	143056	NA	NA	NA	NA	NA
A2P3-C-11	168791	NA	NA	NA	NA	NA
A2P3-C-12	175937	NA	NA	NA	NA	NA
A2P3-C-13	213679	NA	NA	NA	NA	NA
A2P3-C-14	249699	NA	NA	NA	NA	NA
A2P3-C-15	242375	NA	NA	NA	NA	NA
A7SAR-C06	58805	NA	NA	NA	NA	NA
A7SAR-C07	65453	NA	NA	NA	NA	NA
A7SAR-C08	61127	NA	NA	NA	NA	NA
Maximum Value		NA	NA	NA	NA	NA
Average (*used in Risk Calc.*)		NA	NA	NA	NA	NA
Number of Cert Results		NA	NA	NA	NA	NA
Number of Inserted Values		NA	NA	NA	NA	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 1

Certification Units	Area sq ft	Benzo(k)fluoranthene ug/g	Bis(2-chloroisopropyl)ether ug/g	Bis(2-ethylhexyl)phthalate ug/g
A1P2-S1TR-01	46433	NA	NA	NA
A1P2-S1TR-02	49161	NA	NA	NA
A1P2-S1TR-03	51665	NA	NA	NA
A1P2-S1TR-04	34561	NA	NA	NA
A1P2-S1TR-05	62409	NA	NA	NA
A1P2-S1TR-06	27745	NA	NA	NA
A1P2-S1TR-07	40946	NA	NA	NA
A1P2-S1TR-08	57991	NA	NA	NA
A1P2-S1TR-09	47159	NA	NA	NA
A1P2-S1TR-10	65031	NA	NA	NA
A1P2-S1TR-11	6579	NA	NA	NA
A1P2-S3CD-01	62172	NA	NA	NA
A1P2-S3HR-01	21958	NA	NA	NA
A1P2-S3NI-01	23953	NA	NA	NA
A1PII-S1-02	117751	NA	NA	NA
A1PII-S1-04	156761	NA	NA	NA
A1PII-S1-05	161491	NA	NA	NA
A1PII-S1-06	165940	NA	NA	NA
A1PII-S1-07	201789	NA	NA	NA
A1PII-S1-08	182288	NA	NA	NA
A1PII-S1-09	228085	NA	NA	NA
A1PII-S1-10	213319	NA	NA	NA
A1PII-S1-11	202318	NA	NA	NA
A1PII-S1-12	226814	NA	NA	NA
A1PII-S1-13	270282	NA	NA	NA
A1PII-S1-14	248031	NA	NA	NA
A1PII-S1-15	243185	NA	NA	NA
A1PII-S1-16	217834	NA	NA	NA
A1PII-S1-17	224677	NA	NA	NA
A1PII-S1-18	224966	NA	NA	NA
A2P3-1SF	10894	NA	NA	NA
A2P3-2SF	22527	NA	NA	NA
A2P3-3SF	31332	NA	NA	NA
A2P3-C-02	244175	NA	NA	NA
A2P3-C-03	214148	NA	NA	NA
A2P3-C-04	217300	NA	NA	NA
A2P3-C-05	240708	NA	NA	NA
A2P3-C-06	249392	NA	NA	NA
A2P3-C-07	239437	NA	NA	NA
A2P3-C-08	244408	NA	NA	NA
A2P3-C-09	56868	NA	NA	NA
A2P3-C-10	143056	NA	NA	NA
A2P3-C-11	168791	NA	NA	NA
A2P3-C-12	175937	NA	NA	NA
A2P3-C-13	213679	NA	NA	NA
A2P3-C-14	249699	NA	NA	NA
A2P3-C-15	242375	NA	NA	NA
A7SAR-C06	58805	NA	NA	NA
A7SAR-C07	65453	NA	NA	NA
A7SAR-C08	61127	NA	NA	NA
Maximum Value		NA	NA	NA
Average (*used in Risk Calc.*)		NA	NA	NA
Number of Cert Results		NA	NA	NA
Number of Inserted Values		NA	NA	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 1

Certification Units	Area sq ft	Bromodichloromethane ug/g	Bromoform ug/g	Bromomethane ug/g	2-Butanone ug/g	Carbazole ug/g	Carbon disulfide ug/g
A1P2-S1TR-01	46433	NA	NA	NA	NA	NA	NA
A1P2-S1TR-02	49161	NA	NA	NA	NA	NA	NA
A1P2-S1TR-03	51665	NA	NA	NA	NA	NA	NA
A1P2-S1TR-04	34561	NA	NA	NA	NA	NA	NA
A1P2-S1TR-05	62409	NA	NA	NA	NA	NA	NA
A1P2-S1TR-06	27745	NA	NA	NA	NA	NA	NA
A1P2-S1TR-07	40946	NA	NA	NA	NA	NA	NA
A1P2-S1TR-08	57991	NA	NA	NA	NA	NA	NA
A1P2-S1TR-09	47159	NA	NA	NA	NA	NA	NA
A1P2-S1TR-10	65031	NA	NA	NA	NA	NA	NA
A1P2-S1TR-11	6579	NA	NA	NA	NA	NA	NA
A1P2-S3CD-01	62172	NA	NA	NA	NA	NA	NA
A1P2-S3HR-01	21958	NA	NA	NA	NA	NA	NA
A1P2-S3NI-01	23953	NA	NA	NA	NA	NA	NA
A1PII-S1-02	117751	NA	NA	NA	NA	NA	NA
A1PII-S1-04	156761	NA	NA	NA	NA	NA	NA
A1PII-S1-05	161491	NA	NA	NA	NA	NA	NA
A1PII-S1-06	165940	NA	NA	NA	NA	NA	NA
A1PII-S1-07	201789	NA	NA	NA	NA	NA	NA
A1PII-S1-08	182288	NA	NA	NA	NA	NA	NA
A1PII-S1-09	228085	NA	NA	NA	NA	NA	NA
A1PII-S1-10	213319	NA	NA	NA	NA	NA	NA
A1PII-S1-11	202318	NA	NA	NA	NA	NA	NA
A1PII-S1-12	226814	NA	NA	NA	NA	NA	NA
A1PII-S1-13	270282	NA	NA	NA	NA	NA	NA
A1PII-S1-14	248031	NA	NA	NA	NA	NA	NA
A1PII-S1-15	243185	NA	NA	NA	NA	NA	NA
A1PII-S1-16	217834	NA	NA	NA	NA	NA	NA
A1PII-S1-17	224677	NA	NA	NA	NA	NA	NA
A1PII-S1-18	224966	NA	NA	NA	NA	NA	NA
A2P3-1SF	10894	NA	NA	NA	NA	NA	NA
A2P3-2SF	22527	NA	NA	NA	NA	NA	NA
A2P3-3SF	31332	NA	NA	NA	NA	NA	NA
A2P3-C-02	244175	NA	NA	NA	NA	NA	NA
A2P3-C-03	214148	NA	NA	NA	NA	NA	NA
A2P3-C-04	217300	NA	NA	NA	NA	NA	NA
A2P3-C-05	240708	NA	NA	NA	NA	NA	NA
A2P3-C-06	249392	NA	NA	NA	NA	NA	NA
A2P3-C-07	239437	NA	NA	NA	NA	NA	NA
A2P3-C-08	244408	NA	NA	NA	NA	NA	NA
A2P3-C-09	56868	NA	NA	NA	NA	NA	NA
A2P3-C-10	143056	NA	NA	NA	NA	NA	NA
A2P3-C-11	168791	NA	NA	NA	NA	NA	NA
A2P3-C-12	175937	NA	NA	NA	NA	NA	NA
A2P3-C-13	213679	NA	NA	NA	NA	NA	NA
A2P3-C-14	249699	NA	NA	NA	NA	NA	NA
A2P3-C-15	242375	NA	NA	NA	NA	NA	NA
A7SAR-C06	58805	NA	NA	NA	NA	NA	NA
A7SAR-C07	65453	NA	NA	NA	NA	NA	NA
A7SAR-C08	61127	NA	NA	NA	NA	NA	NA
Maximum Value		NA	NA	NA	NA	NA	NA
Average (*used in Risk Calc.*)		NA	NA	NA	NA	NA	NA
Number of Cert Results		NA	NA	NA	NA	NA	NA
Number of Inserted Values		NA	NA	NA	NA	NA	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 1

Certification Units	Area sq ft	Carbon tetrachloride ug/g	Chlordane ug/g	Chlorobenzene ug/g	Chloroform ug/g	Chrysene ug/g	Cyanide ug/g	Cyclohexanone ug/g
A1P2-S1TR-01	46433	NA	NA	NA	NA	NA	NA	NA
A1P2-S1TR-02	49161	NA	NA	NA	NA	NA	NA	NA
A1P2-S1TR-03	51665	NA	NA	NA	NA	NA	NA	NA
A1P2-S1TR-04	34561	NA	NA	NA	NA	NA	NA	NA
A1P2-S1TR-05	62409	NA	NA	NA	NA	NA	NA	NA
A1P2-S1TR-06	27745	NA	NA	NA	NA	NA	NA	NA
A1P2-S1TR-07	40946	NA	NA	NA	NA	NA	NA	NA
A1P2-S1TR-08	57991	NA	NA	NA	NA	NA	NA	NA
A1P2-S1TR-09	47159	NA	NA	NA	NA	NA	NA	NA
A1P2-S1TR-10	65031	NA	NA	NA	NA	NA	NA	NA
A1P2-S1TR-11	6579	NA	NA	NA	NA	NA	NA	NA
A1P2-S3CD-01	62172	NA	NA	NA	NA	NA	NA	NA
A1P2-S3HR-01	21958	NA	NA	NA	NA	NA	NA	NA
A1P2-S3NI-01	23953	NA	NA	NA	NA	NA	NA	NA
A1PII-S1-02	117751	NA	NA	NA	NA	NA	NA	NA
A1PII-S1-04	156761	NA	NA	NA	NA	NA	NA	NA
A1PII-S1-05	161491	NA	NA	NA	NA	NA	NA	NA
A1PII-S1-06	165940	NA	NA	NA	NA	NA	NA	NA
A1PII-S1-07	201789	NA	NA	NA	NA	NA	NA	NA
A1PII-S1-08	182288	NA	NA	NA	NA	NA	NA	NA
A1PII-S1-09	228085	NA	NA	NA	NA	NA	NA	NA
A1PII-S1-10	213319	NA	NA	NA	NA	NA	NA	NA
A1PII-S1-11	202318	NA	NA	NA	NA	NA	NA	NA
A1PII-S1-12	226814	NA	NA	NA	NA	NA	NA	NA
A1PII-S1-13	270282	NA	NA	NA	NA	NA	NA	NA
A1PII-S1-14	248031	NA	NA	NA	NA	NA	NA	NA
A1PII-S1-15	243185	NA	NA	NA	NA	NA	NA	NA
A1PII-S1-16	217834	NA	NA	NA	NA	NA	NA	NA
A1PII-S1-17	224677	NA	NA	NA	NA	NA	NA	NA
A1PII-S1-18	224966	NA	NA	NA	NA	NA	NA	NA
A2P3-1SF	10894	NA	NA	NA	NA	NA	NA	NA
A2P3-2SF	22527	NA	NA	NA	NA	NA	NA	NA
A2P3-3SF	31332	NA	NA	NA	NA	NA	NA	NA
A2P3-C-02	244175	NA	NA	NA	NA	NA	NA	NA
A2P3-C-03	214148	NA	NA	NA	NA	NA	NA	NA
A2P3-C-04	217300	NA	NA	NA	NA	NA	NA	NA
A2P3-C-05	240708	NA	NA	NA	NA	NA	NA	NA
A2P3-C-06	249392	NA	NA	NA	NA	NA	NA	NA
A2P3-C-07	239437	NA	NA	NA	NA	NA	NA	NA
A2P3-C-08	244408	NA	NA	NA	NA	NA	NA	NA
A2P3-C-09	56868	NA	NA	NA	NA	NA	NA	NA
A2P3-C-10	143056	NA	NA	NA	NA	NA	NA	NA
A2P3-C-11	168791	NA	NA	NA	NA	NA	NA	NA
A2P3-C-12	175937	NA	NA	NA	NA	NA	NA	NA
A2P3-C-13	213679	NA	NA	NA	NA	NA	NA	NA
A2P3-C-14	249699	NA	NA	NA	NA	NA	NA	NA
A2P3-C-15	242375	NA	NA	NA	NA	NA	NA	NA
A7SAR-C06	58805	NA	NA	NA	NA	NA	NA	NA
A7SAR-C07	65453	NA	NA	NA	NA	NA	NA	NA
A7SAR-C08	61127	NA	NA	NA	NA	NA	NA	NA
Maximum Value		NA	NA	NA	NA	NA	NA	NA
Average (*used in Risk Calc.*)		NA	NA	NA	NA	NA	NA	NA
Number of Cert Results		NA	NA	NA	NA	NA	NA	NA
Number of Inserted Values		NA	NA	NA	NA	NA	NA	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 1

Certification Units	Area sq ft	Dibenzo(a,h)anthracene ug/g	3,3-Dichlorobenzidine ug/g	1,2-dichloroethane ug/g	1,1-Dichloroethylene ug/g	Dieldrin ug/g
A1P2-S1TR-01	46433	NA	NA	NA	NA	NA
A1P2-S1TR-02	49161	NA	NA	NA	NA	NA
A1P2-S1TR-03	51665	NA	NA	NA	NA	NA
A1P2-S1TR-04	34561	NA	NA	NA	NA	NA
A1P2-S1TR-05	62409	NA	NA	NA	NA	NA
A1P2-S1TR-06	27745	NA	NA	NA	NA	NA
A1P2-S1TR-07	40946	NA	NA	NA	NA	NA
A1P2-S1TR-08	57991	NA	NA	NA	NA	NA
A1P2-S1TR-09	47159	NA	NA	NA	NA	NA
A1P2-S1TR-10	65031	NA	NA	NA	NA	NA
A1P2-S1TR-11	6579	NA	NA	NA	NA	NA
A1P2-S3CD-01	62172	NA	NA	NA	NA	NA
A1P2-S3HR-01	21958	NA	NA	NA	NA	NA
A1P2-S3NI-01	23953	NA	NA	NA	NA	NA
A1PII-S1-02	117751	NA	NA	NA	NA	NA
A1PII-S1-04	156761	NA	NA	NA	NA	NA
A1PII-S1-05	161491	NA	NA	NA	NA	NA
A1PII-S1-06	165940	NA	NA	NA	NA	NA
A1PII-S1-07	201789	NA	NA	NA	NA	NA
A1PII-S1-08	182288	NA	NA	NA	NA	NA
A1PII-S1-09	228085	NA	NA	NA	NA	NA
A1PII-S1-10	213319	NA	NA	NA	NA	NA
A1PII-S1-11	202318	NA	NA	NA	NA	NA
A1PII-S1-12	226814	NA	NA	NA	NA	NA
A1PII-S1-13	270282	NA	NA	NA	NA	NA
A1PII-S1-14	248031	NA	NA	NA	NA	NA
A1PII-S1-15	243185	NA	NA	NA	NA	NA
A1PII-S1-16	217834	NA	NA	NA	NA	NA
A1PII-S1-17	224677	NA	NA	NA	NA	NA
A1PII-S1-18	224966	NA	NA	NA	NA	NA
A2P3-1SF	10894	NA	NA	NA	NA	NA
A2P3-2SF	22527	NA	NA	NA	NA	NA
A2P3-3SF	31332	NA	NA	NA	NA	NA
A2P3-C-02	244175	NA	NA	NA	NA	NA
A2P3-C-03	214148	NA	NA	NA	NA	NA
A2P3-C-04	217300	NA	NA	NA	NA	NA
A2P3-C-05	240708	NA	NA	NA	NA	NA
A2P3-C-06	249392	NA	NA	NA	NA	NA
A2P3-C-07	239437	NA	NA	NA	NA	NA
A2P3-C-08	244408	NA	NA	NA	NA	NA
A2P3-C-09	56868	NA	NA	NA	NA	NA
A2P3-C-10	143056	NA	NA	NA	NA	NA
A2P3-C-11	168791	NA	NA	NA	NA	NA
A2P3-C-12	175937	NA	NA	NA	NA	NA
A2P3-C-13	213679	NA	NA	NA	NA	NA
A2P3-C-14	249699	NA	NA	NA	NA	NA
A2P3-C-15	242375	NA	NA	NA	NA	NA
A7SAR-C06	58805	NA	NA	NA	NA	NA
A7SAR-C07	65453	NA	NA	NA	NA	NA
A7SAR-C08	61127	NA	NA	NA	NA	NA
Maximum Value		NA	NA	NA	NA	NA
Average (*used in Risk Calc.*)		NA	NA	NA	NA	NA
Number of Cert Results		NA	NA	NA	NA	NA
Number of Inserted Values		NA	NA	NA	NA	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 1

Certification Units	Area sq ft	Di-n-octylphthalate ug/g	Ethylbenzene ug/g	Ethyl ether ug/g	Heptachlorodibenzofuran ug/g
A1P2-S1TR-01	46433	NA	NA	NA	NA
A1P2-S1TR-02	49161	NA	NA	NA	NA
A1P2-S1TR-03	51665	NA	NA	NA	NA
A1P2-S1TR-04	34561	NA	NA	NA	NA
A1P2-S1TR-05	62409	NA	NA	NA	NA
A1P2-S1TR-06	27745	NA	NA	NA	NA
A1P2-S1TR-07	40946	NA	NA	NA	NA
A1P2-S1TR-08	57991	NA	NA	NA	NA
A1P2-S1TR-09	47159	NA	NA	NA	NA
A1P2-S1TR-10	65031	NA	NA	NA	NA
A1P2-S1TR-11	6579	NA	NA	NA	NA
A1P2-S3CD-01	62172	NA	NA	NA	NA
A1P2-S3HR-01	21958	NA	NA	NA	NA
A1P2-S3NI-01	23953	NA	NA	NA	NA
A1PII-S1-02	117751	NA	NA	NA	NA
A1PII-S1-04	156761	NA	NA	NA	NA
A1PII-S1-05	161491	NA	NA	NA	NA
A1PII-S1-06	165940	NA	NA	NA	NA
A1PII-S1-07	201789	NA	NA	NA	NA
A1PII-S1-08	182288	NA	NA	NA	NA
A1PII-S1-09	228085	NA	NA	NA	NA
A1PII-S1-10	213319	NA	NA	NA	NA
A1PII-S1-11	202318	NA	NA	NA	NA
A1PII-S1-12	226814	NA	NA	NA	NA
A1PII-S1-13	270282	NA	NA	NA	NA
A1PII-S1-14	248031	NA	NA	NA	NA
A1PII-S1-15	243185	NA	NA	NA	NA
A1PII-S1-16	217834	NA	NA	NA	NA
A1PII-S1-17	224677	NA	NA	NA	NA
A1PII-S1-18	224966	NA	NA	NA	NA
A2P3-1SF	10894	NA	NA	NA	NA
A2P3-2SF	22527	NA	NA	NA	NA
A2P3-3SF	31332	NA	NA	NA	NA
A2P3-C-02	244175	NA	NA	NA	NA
A2P3-C-03	214148	NA	NA	NA	NA
A2P3-C-04	217300	NA	NA	NA	NA
A2P3-C-05	240708	NA	NA	NA	NA
A2P3-C-06	249392	NA	NA	NA	NA
A2P3-C-07	239437	NA	NA	NA	NA
A2P3-C-08	244408	NA	NA	NA	NA
A2P3-C-09	56868	NA	NA	NA	NA
A2P3-C-10	143056	NA	NA	NA	NA
A2P3-C-11	168791	NA	NA	NA	NA
A2P3-C-12	175937	NA	NA	NA	NA
A2P3-C-13	213679	NA	NA	NA	NA
A2P3-C-14	249699	NA	NA	NA	NA
A2P3-C-15	242375	NA	NA	NA	NA
A7SAR-C06	58805	NA	NA	NA	NA
A7SAR-C07	65453	NA	NA	NA	NA
A7SAR-C08	61127	NA	NA	NA	NA
Maximum Value		NA	NA	NA	NA
Average (*used in Risk Calc.*)		NA	NA	NA	NA
Number of Cert Results		NA	NA	NA	NA
Number of Inserted Values		NA	NA	NA	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 1

Certification Units	Area sq ft	Heptachlorodibenzo-p-dioxin ug/g	Hexachlorodibenzofuran ug/g	Hexachlorodibenzo-p-dioxin ug/g
A1P2-S1TR-01	46433	NA	NA	NA
A1P2-S1TR-02	49161	NA	NA	NA
A1P2-S1TR-03	51665	NA	NA	NA
A1P2-S1TR-04	34561	NA	NA	NA
A1P2-S1TR-05	62409	NA	NA	NA
A1P2-S1TR-06	27745	NA	NA	NA
A1P2-S1TR-07	40946	NA	NA	NA
A1P2-S1TR-08	57991	NA	NA	NA
A1P2-S1TR-09	47159	NA	NA	NA
A1P2-S1TR-10	65031	NA	NA	NA
A1P2-S1TR-11	6579	NA	NA	NA
A1P2-S3CD-01	62172	NA	NA	NA
A1P2-S3HR-01	21958	NA	NA	NA
A1P2-S3NI-01	23953	NA	NA	NA
A1PII-S1-02	117751	NA	NA	NA
A1PII-S1-04	156761	NA	NA	NA
A1PII-S1-05	161491	NA	NA	NA
A1PII-S1-06	165940	NA	NA	NA
A1PII-S1-07	201789	NA	NA	NA
A1PII-S1-08	182288	NA	NA	NA
A1PII-S1-09	228085	NA	NA	NA
A1PII-S1-10	213319	NA	NA	NA
A1PII-S1-11	202318	NA	NA	NA
A1PII-S1-12	226814	NA	NA	NA
A1PII-S1-13	270282	NA	NA	NA
A1PII-S1-14	248031	NA	NA	NA
A1PII-S1-15	243185	NA	NA	NA
A1PII-S1-16	217834	NA	NA	NA
A1PII-S1-17	224677	NA	NA	NA
A1PII-S1-18	224966	NA	NA	NA
A2P3-1SF	10894	NA	NA	NA
A2P3-2SF	22527	NA	NA	NA
A2P3-3SF	31332	NA	NA	NA
A2P3-C-02	244175	NA	NA	NA
A2P3-C-03	214148	NA	NA	NA
A2P3-C-04	217300	NA	NA	NA
A2P3-C-05	240708	NA	NA	NA
A2P3-C-06	249392	NA	NA	NA
A2P3-C-07	239437	NA	NA	NA
A2P3-C-08	244408	NA	NA	NA
A2P3-C-09	56868	NA	NA	NA
A2P3-C-10	143056	NA	NA	NA
A2P3-C-11	168791	NA	NA	NA
A2P3-C-12	175937	NA	NA	NA
A2P3-C-13	213679	NA	NA	NA
A2P3-C-14	249699	NA	NA	NA
A2P3-C-15	242375	NA	NA	NA
A7SAR-C06	58805	NA	NA	NA
A7SAR-C07	65453	NA	NA	NA
A7SAR-C08	61127	NA	NA	NA
Maximum Value		NA	NA	NA
Average (*used in Risk Calc.*)		NA	NA	NA
Number of Cert Results		NA	NA	NA
Number of Inserted Values		NA	NA	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 1

Certification Units	Area sq ft	Indeno(1,2,3-cd)pyrene ug/g	Methanol ug/g	Methyl-2-pentanone ug/g	Methylene chloride ug/g	4-Methylphenol ug/g
A1P2-S1TR-01	46433	NA	NA	NA	NA	NA
A1P2-S1TR-02	49161	NA	NA	NA	NA	NA
A1P2-S1TR-03	51665	NA	NA	NA	NA	NA
A1P2-S1TR-04	34561	NA	NA	NA	NA	NA
A1P2-S1TR-05	62409	NA	NA	NA	NA	NA
A1P2-S1TR-06	27745	NA	NA	NA	NA	NA
A1P2-S1TR-07	40946	NA	NA	NA	NA	NA
A1P2-S1TR-08	57991	NA	NA	NA	NA	NA
A1P2-S1TR-09	47159	NA	NA	NA	NA	NA
A1P2-S1TR-10	65031	NA	NA	NA	NA	NA
A1P2-S1TR-11	6579	NA	NA	NA	NA	NA
A1P2-S3CD-01	62172	NA	NA	NA	NA	NA
A1P2-S3HR-01	21958	NA	NA	NA	NA	NA
A1P2-S3NI-01	23953	NA	NA	NA	NA	NA
A1PII-S1-02	117751	NA	NA	NA	NA	NA
A1PII-S1-04	156761	NA	NA	NA	NA	NA
A1PII-S1-05	161491	NA	NA	NA	NA	NA
A1PII-S1-06	165940	NA	NA	NA	NA	NA
A1PII-S1-07	201789	NA	NA	NA	NA	NA
A1PII-S1-08	182288	NA	NA	NA	NA	NA
A1PII-S1-09	228085	NA	NA	NA	NA	NA
A1PII-S1-10	213319	NA	NA	NA	NA	NA
A1PII-S1-11	202318	NA	NA	NA	NA	NA
A1PII-S1-12	226814	NA	NA	NA	NA	NA
A1PII-S1-13	270282	NA	NA	NA	NA	NA
A1PII-S1-14	248031	NA	NA	NA	NA	NA
A1PII-S1-15	243185	NA	NA	NA	NA	NA
A1PII-S1-16	217834	NA	NA	NA	NA	NA
A1PII-S1-17	224677	NA	NA	NA	NA	NA
A1PII-S1-18	224966	NA	NA	NA	NA	NA
A2P3-1SF	10894	NA	NA	NA	NA	NA
A2P3-2SF	22527	NA	NA	NA	NA	NA
A2P3-3SF	31332	NA	NA	NA	NA	NA
A2P3-C-02	244175	NA	NA	NA	NA	NA
A2P3-C-03	214148	NA	NA	NA	NA	NA
A2P3-C-04	217300	NA	NA	NA	NA	NA
A2P3-C-05	240708	NA	NA	NA	NA	NA
A2P3-C-06	249392	NA	NA	NA	NA	NA
A2P3-C-07	239437	NA	NA	NA	NA	NA
A2P3-C-08	244408	NA	NA	NA	NA	NA
A2P3-C-09	56868	NA	NA	NA	NA	NA
A2P3-C-10	143056	NA	NA	NA	NA	NA
A2P3-C-11	168791	NA	NA	NA	NA	NA
A2P3-C-12	175937	NA	NA	NA	NA	NA
A2P3-C-13	213679	NA	NA	NA	NA	NA
A2P3-C-14	249699	NA	NA	NA	NA	NA
A2P3-C-15	242375	NA	NA	NA	NA	NA
A7SAR-C06	58805	NA	NA	NA	NA	NA
A7SAR-C07	65453	NA	NA	NA	NA	NA
A7SAR-C08	61127	NA	NA	NA	NA	NA
Maximum Value		NA	NA	NA	NA	NA
Average (*used in Risk Calc.*)		NA	NA	NA	NA	NA
Number of Cert Results		NA	NA	NA	NA	NA
Number of Inserted Values		NA	NA	NA	NA	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 1

Certification Units	Area sq ft	4-Nitroanaline ug/g	N-nitrosodiphenylamine ug/g	N-nitrosodipropylamine ug/g	Octachlorodibenzofuran ug/g
A1P2-S1TR-01	46433	NA	NA	NA	NA
A1P2-S1TR-02	49161	NA	NA	NA	NA
A1P2-S1TR-03	51665	NA	NA	NA	NA
A1P2-S1TR-04	34561	NA	NA	NA	NA
A1P2-S1TR-05	62409	NA	NA	NA	NA
A1P2-S1TR-06	27745	NA	NA	NA	NA
A1P2-S1TR-07	40946	NA	NA	NA	NA
A1P2-S1TR-08	57991	NA	NA	NA	NA
A1P2-S1TR-09	47159	NA	NA	NA	NA
A1P2-S1TR-10	65031	NA	NA	NA	NA
A1P2-S1TR-11	6579	NA	NA	NA	NA
A1P2-S3CD-01	62172	NA	NA	NA	NA
A1P2-S3HR-01	21958	NA	NA	NA	NA
A1P2-S3NI-01	23953	NA	NA	NA	NA
A1PII-S1-02	117751	NA	NA	NA	NA
A1PII-S1-04	156761	NA	NA	NA	NA
A1PII-S1-05	161491	NA	NA	NA	NA
A1PII-S1-06	165940	NA	NA	NA	NA
A1PII-S1-07	201789	NA	NA	NA	NA
A1PII-S1-08	182288	NA	NA	NA	NA
A1PII-S1-09	228085	NA	NA	NA	NA
A1PII-S1-10	213319	NA	NA	NA	NA
A1PII-S1-11	202318	NA	NA	NA	NA
A1PII-S1-12	226814	NA	NA	NA	NA
A1PII-S1-13	270282	NA	NA	NA	NA
A1PII-S1-14	248031	NA	NA	NA	NA
A1PII-S1-15	243185	NA	NA	NA	NA
A1PII-S1-16	217834	NA	NA	NA	NA
A1PII-S1-17	224677	NA	NA	NA	NA
A1PII-S1-18	224966	NA	NA	NA	NA
A2P3-1SF	10894	NA	NA	NA	NA
A2P3-2SF	22527	NA	NA	NA	NA
A2P3-3SF	31332	NA	NA	NA	NA
A2P3-C-02	244175	NA	NA	NA	NA
A2P3-C-03	214148	NA	NA	NA	NA
A2P3-C-04	217300	NA	NA	NA	NA
A2P3-C-05	240708	NA	NA	NA	NA
A2P3-C-06	249392	NA	NA	NA	NA
A2P3-C-07	239437	NA	NA	NA	NA
A2P3-C-08	244408	NA	NA	NA	NA
A2P3-C-09	56868	NA	NA	NA	NA
A2P3-C-10	143056	NA	NA	NA	NA
A2P3-C-11	168791	NA	NA	NA	NA
A2P3-C-12	175937	NA	NA	NA	NA
A2P3-C-13	213679	NA	NA	NA	NA
A2P3-C-14	249699	NA	NA	NA	NA
A2P3-C-15	242375	NA	NA	NA	NA
A7SAR-C06	58805	NA	NA	NA	NA
A7SAR-C07	65453	NA	NA	NA	NA
A7SAR-C08	61127	NA	NA	NA	NA
Maximum Value		NA	NA	NA	NA
Average (*used in Risk Calc.*)		NA	NA	NA	NA
Number of Cert Results		NA	NA	NA	NA
Number of Inserted Values		NA	NA	NA	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 1

Certification Units	Area sq ft	Octochlorodibenzo-p-dioxin ug/g	Pentachlorodibenzofuran ug/g	Pentachlorodibenzo-p-dioxin ug/g
A1P2-S1TR-01	46433	NA	NA	NA
A1P2-S1TR-02	49161	NA	NA	NA
A1P2-S1TR-03	51665	NA	NA	NA
A1P2-S1TR-04	34561	NA	NA	NA
A1P2-S1TR-05	62409	NA	NA	NA
A1P2-S1TR-06	27745	NA	NA	NA
A1P2-S1TR-07	40946	NA	NA	NA
A1P2-S1TR-08	57991	NA	NA	NA
A1P2-S1TR-09	47159	NA	NA	NA
A1P2-S1TR-10	65031	NA	NA	NA
A1P2-S1TR-11	6579	NA	NA	NA
A1P2-S3CD-01	62172	NA	NA	NA
A1P2-S3HR-01	21958	NA	NA	NA
A1P2-S3NI-01	23953	NA	NA	NA
A1PII-S1-02	117751	NA	NA	NA
A1PII-S1-04	156761	NA	NA	NA
A1PII-S1-05	161491	NA	NA	NA
A1PII-S1-06	165940	NA	NA	NA
A1PII-S1-07	201789	NA	NA	NA
A1PII-S1-08	182288	NA	NA	NA
A1PII-S1-09	228085	NA	NA	NA
A1PII-S1-10	213319	NA	NA	NA
A1PII-S1-11	202318	NA	NA	NA
A1PII-S1-12	226814	NA	NA	NA
A1PII-S1-13	270282	NA	NA	NA
A1PII-S1-14	248031	NA	NA	NA
A1PII-S1-15	243185	NA	NA	NA
A1PII-S1-16	217834	NA	NA	NA
A1PII-S1-17	224677	NA	NA	NA
A1PII-S1-18	224966	NA	NA	NA
A2P3-1SF	10894	NA	NA	NA
A2P3-2SF	22527	NA	NA	NA
A2P3-3SF	31332	NA	NA	NA
A2P3-C-02	244175	NA	NA	NA
A2P3-C-03	214148	NA	NA	NA
A2P3-C-04	217300	NA	NA	NA
A2P3-C-05	240708	NA	NA	NA
A2P3-C-06	249392	NA	NA	NA
A2P3-C-07	239437	NA	NA	NA
A2P3-C-08	244408	NA	NA	NA
A2P3-C-09	56868	NA	NA	NA
A2P3-C-10	143056	NA	NA	NA
A2P3-C-11	168791	NA	NA	NA
A2P3-C-12	175937	NA	NA	NA
A2P3-C-13	213679	NA	NA	NA
A2P3-C-14	249699	NA	NA	NA
A2P3-C-15	242375	NA	NA	NA
A7SAR-C06	58805	NA	NA	NA
A7SAR-C07	65453	NA	NA	NA
A7SAR-C08	61127	NA	NA	NA
Maximum Value		NA	NA	NA
Average (*used in Risk Calc.*)		NA	NA	NA
Number of Cert Results		NA	NA	NA
Number of Inserted Values		NA	NA	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 1

Certification Units	Area sq ft	Pentachlorophenol ug/g	Phenanthrene ug/g	Tetrachlorodibenzofuran ug/g	Tetrachlorodibenzo-p-dioxin ug/g
A1P2-S1TR-01	46433	NA	NA	NA	NA
A1P2-S1TR-02	49161	NA	NA	NA	NA
A1P2-S1TR-03	51665	NA	NA	NA	NA
A1P2-S1TR-04	34561	NA	NA	NA	NA
A1P2-S1TR-05	62409	NA	NA	NA	NA
A1P2-S1TR-06	27745	NA	NA	NA	NA
A1P2-S1TR-07	40946	NA	NA	NA	NA
A1P2-S1TR-08	57991	NA	NA	NA	NA
A1P2-S1TR-09	47159	NA	NA	NA	NA
A1P2-S1TR-10	65031	NA	NA	NA	NA
A1P2-S1TR-11	6579	NA	NA	NA	NA
A1P2-S3CD-01	62172	NA	NA	NA	NA
A1P2-S3HR-01	21958	NA	NA	NA	NA
A1P2-S3NI-01	23953	NA	NA	NA	NA
A1PII-S1-02	117751	NA	NA	NA	NA
A1PII-S1-04	156761	NA	NA	NA	NA
A1PII-S1-05	161491	NA	NA	NA	NA
A1PII-S1-06	165940	NA	NA	NA	NA
A1PII-S1-07	201789	NA	NA	NA	NA
A1PII-S1-08	182288	NA	NA	NA	NA
A1PII-S1-09	228085	NA	NA	NA	NA
A1PII-S1-10	213319	NA	NA	NA	NA
A1PII-S1-11	202318	NA	NA	NA	NA
A1PII-S1-12	226814	NA	NA	NA	NA
A1PII-S1-13	270282	NA	NA	NA	NA
A1PII-S1-14	248031	NA	NA	NA	NA
A1PII-S1-15	243185	NA	NA	NA	NA
A1PII-S1-16	217834	NA	NA	NA	NA
A1PII-S1-17	224677	NA	NA	NA	NA
A1PII-S1-18	224966	NA	NA	NA	NA
A2P3-1SF	10894	NA	NA	NA	NA
A2P3-2SF	22527	NA	NA	NA	NA
A2P3-3SF	31332	NA	NA	NA	NA
A2P3-C-02	244175	NA	NA	NA	NA
A2P3-C-03	214148	NA	NA	NA	NA
A2P3-C-04	217300	NA	NA	NA	NA
A2P3-C-05	240708	NA	NA	NA	NA
A2P3-C-06	249392	NA	NA	NA	NA
A2P3-C-07	239437	NA	NA	NA	NA
A2P3-C-08	244408	NA	NA	NA	NA
A2P3-C-09	56868	NA	NA	NA	NA
A2P3-C-10	143056	NA	NA	NA	NA
A2P3-C-11	168791	NA	NA	NA	NA
A2P3-C-12	175937	NA	NA	NA	NA
A2P3-C-13	213679	NA	NA	NA	NA
A2P3-C-14	249699	NA	NA	NA	NA
A2P3-C-15	242375	NA	NA	NA	NA
A7SAR-C06	58805	NA	NA	NA	NA
A7SAR-C07	65453	NA	NA	NA	NA
A7SAR-C08	61127	NA	NA	NA	NA
Maximum Value		NA	NA	NA	NA
Average (*used in Risk Calc.*)		NA	NA	NA	NA
Number of Cert Results		NA	NA	NA	NA
Number of Inserted Values		NA	NA	NA	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 1

Certification Units	Area sq ft	Tetrachloroethylene ug/g	Toluene ug/g	Tributyl phosphate ug/g	1,1,2-Trichloroethane ug/g	Trichloroethylene ug/g
A1P2-S1TR-01	46433	NA	NA	NA	NA	NA
A1P2-S1TR-02	49161	NA	NA	NA	NA	NA
A1P2-S1TR-03	51665	NA	NA	NA	NA	NA
A1P2-S1TR-04	34561	NA	NA	NA	NA	NA
A1P2-S1TR-05	62409	NA	NA	NA	NA	NA
A1P2-S1TR-06	27745	NA	NA	NA	NA	NA
A1P2-S1TR-07	40946	NA	NA	NA	NA	NA
A1P2-S1TR-08	57991	NA	NA	NA	NA	NA
A1P2-S1TR-09	47159	NA	NA	NA	NA	NA
A1P2-S1TR-10	65031	NA	NA	NA	NA	NA
A1P2-S1TR-11	6579	NA	NA	NA	NA	NA
A1P2-S3CD-01	62172	NA	NA	NA	NA	NA
A1P2-S3HR-01	21958	NA	NA	NA	NA	NA
A1P2-S3NI-01	23953	NA	NA	NA	NA	NA
A1PII-S1-02	117751	NA	NA	NA	NA	NA
A1PII-S1-04	156761	NA	NA	NA	NA	NA
A1PII-S1-05	161491	NA	NA	NA	NA	NA
A1PII-S1-06	165940	NA	NA	NA	NA	NA
A1PII-S1-07	201789	NA	NA	NA	NA	NA
A1PII-S1-08	182288	NA	NA	NA	NA	NA
A1PII-S1-09	228085	NA	NA	NA	NA	NA
A1PII-S1-10	213319	NA	NA	NA	NA	NA
A1PII-S1-11	202318	NA	NA	NA	NA	NA
A1PII-S1-12	226814	NA	NA	NA	NA	NA
A1PII-S1-13	270282	NA	NA	NA	NA	NA
A1PII-S1-14	248031	NA	NA	NA	NA	NA
A1PII-S1-15	243185	NA	NA	NA	NA	NA
A1PII-S1-16	217834	NA	NA	NA	NA	NA
A1PII-S1-17	224677	NA	NA	NA	NA	NA
A1PII-S1-18	224966	NA	NA	NA	NA	NA
A2P3-1SF	10894	NA	NA	NA	NA	NA
A2P3-2SF	22527	NA	NA	NA	NA	NA
A2P3-3SF	31332	NA	NA	NA	NA	NA
A2P3-C-02	244175	NA	NA	NA	NA	NA
A2P3-C-03	214148	NA	NA	NA	NA	NA
A2P3-C-04	217300	NA	NA	NA	NA	NA
A2P3-C-05	240708	NA	NA	NA	NA	NA
A2P3-C-06	249392	NA	NA	NA	NA	NA
A2P3-C-07	239437	NA	NA	NA	NA	NA
A2P3-C-08	244408	NA	NA	NA	NA	NA
A2P3-C-09	56868	NA	NA	NA	NA	NA
A2P3-C-10	143056	NA	NA	NA	NA	NA
A2P3-C-11	168791	NA	NA	NA	NA	NA
A2P3-C-12	175937	NA	NA	NA	NA	NA
A2P3-C-13	213679	NA	NA	NA	NA	NA
A2P3-C-14	249699	NA	NA	NA	NA	NA
A2P3-C-15	242375	NA	NA	NA	NA	NA
A7SAR-C06	58805	NA	NA	NA	NA	NA
A7SAR-C07	65453	NA	NA	NA	NA	NA
A7SAR-C08	61127	NA	NA	NA	NA	NA
Maximum Value		NA	NA	NA	NA	NA
Average (*used in Risk Calc.*)		NA	NA	NA	NA	NA
Number of Cert Results		NA	NA	NA	NA	NA
Number of Inserted Values		NA	NA	NA	NA	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 1

Certification Units	Area sq ft	Trifluorochloromethane ug/g	Vinyl chloride ug/g	Xylenes ug/g
A1P2-S1TR-01	46433	NA	NA	NA
A1P2-S1TR-02	49161	NA	NA	NA
A1P2-S1TR-03	51665	NA	NA	NA
A1P2-S1TR-04	34561	NA	NA	NA
A1P2-S1TR-05	62409	NA	NA	NA
A1P2-S1TR-06	27745	NA	NA	NA
A1P2-S1TR-07	40946	NA	NA	NA
A1P2-S1TR-08	57991	NA	NA	NA
A1P2-S1TR-09	47159	NA	NA	NA
A1P2-S1TR-10	65031	NA	NA	NA
A1P2-S1TR-11	6579	NA	NA	NA
A1P2-S3CD-01	62172	NA	NA	NA
A1P2-S3HR-01	21958	NA	NA	NA
A1P2-S3NI-01	23953	NA	NA	NA
A1PII-S1-02	117751	NA	NA	NA
A1PII-S1-04	156761	NA	NA	NA
A1PII-S1-05	161491	NA	NA	NA
A1PII-S1-06	165940	NA	NA	NA
A1PII-S1-07	201789	NA	NA	NA
A1PII-S1-08	182288	NA	NA	NA
A1PII-S1-09	228085	NA	NA	NA
A1PII-S1-10	213319	NA	NA	NA
A1PII-S1-11	202318	NA	NA	NA
A1PII-S1-12	226814	NA	NA	NA
A1PII-S1-13	270282	NA	NA	NA
A1PII-S1-14	248031	NA	NA	NA
A1PII-S1-15	243185	NA	NA	NA
A1PII-S1-16	217834	NA	NA	NA
A1PII-S1-17	224677	NA	NA	NA
A1PII-S1-18	224966	NA	NA	NA
A2P3-1SF	10894	NA	NA	NA
A2P3-2SF	22527	NA	NA	NA
A2P3-3SF	31332	NA	NA	NA
A2P3-C-02	244175	NA	NA	NA
A2P3-C-03	214148	NA	NA	NA
A2P3-C-04	217300	NA	NA	NA
A2P3-C-05	240708	NA	NA	NA
A2P3-C-06	249392	NA	NA	NA
A2P3-C-07	239437	NA	NA	NA
A2P3-C-08	244408	NA	NA	NA
A2P3-C-09	56868	NA	NA	NA
A2P3-C-10	143056	NA	NA	NA
A2P3-C-11	168791	NA	NA	NA
A2P3-C-12	175937	NA	NA	NA
A2P3-C-13	213679	NA	NA	NA
A2P3-C-14	249699	NA	NA	NA
A2P3-C-15	242375	NA	NA	NA
A7SAR-C06	58805	NA	NA	NA
A7SAR-C07	65453	NA	NA	NA
A7SAR-C08	61127	NA	NA	NA
Maximum Value		NA	NA	NA
Average (*used in Risk Calc.*)		NA	NA	NA
Number of Cert Results		NA	NA	NA
Number of Inserted Values		NA	NA	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 2

Certification Units	Area sq ft	Cesium-137 pCi/g	Lead-210 pCi/g	Neptunium-237 pCi/g	Plutonium-238 pCi/g	Plutonium-239/240 pCi/g	Radium-226 pCi/g	Radium-228 pCi/g	Strontium-90 pCi/g	Technetium-99 pCi/g
A1PII-S1-01	143889	6.60E-02	1.56E+00	NA	NA	NA	1.21E+00	1.09E+00	NA	0.00E+00
A2P1-AFP-C1	30642	6.60E-02	1.56E+00	NA	NA	NA	1.64E+00	1.26E+00	NA	0.00E+00
A2P1-AFP-C2	42234	6.60E-02	1.56E+00	NA	NA	NA	1.27E+00	1.20E+00	NA	0.00E+00
A2P1-AFP-C3	20842	6.60E-02	1.56E+00	NA	NA	NA	1.60E+00	1.24E+00	NA	0.00E+00
A2P1-AFP-C-4	22353	6.60E-02	1.56E+00	NA	NA	NA	1.36E+00	1.18E+00	NA	0.00E+00
A2P1-AFP-C-5	62286	6.60E-02	1.56E+00	NA	NA	NA	1.34E+00	9.80E-01	NA	0.00E+00
A2P1-AFP-C-6	35463	6.60E-02	1.56E+00	NA	NA	NA	1.29E+00	9.60E-01	NA	0.00E+00
A2P1-IFP-C-1	55241	6.60E-02	1.56E+00	NA	NA	NA	1.51E+00	1.15E+00	NA	0.00E+00
A2P1-IFP-C-2	60391	6.60E-02	1.56E+00	NA	NA	NA	1.21E+00	8.85E-01	NA	0.00E+00
A2P1-IFP-C-3	50948	6.60E-02	1.56E+00	NA	NA	NA	1.10E+00	8.46E-01	NA	0.00E+00
A2P1-IFP-C-4	61178	6.60E-02	1.56E+00	NA	NA	NA	1.37E+00	1.04E+00	NA	0.00E+00
A2P1-NWU-C-1	60760	6.60E-02	1.56E+00	NA	NA	NA	1.54E+00	1.15E+00	NA	0.00E+00
A2P1-NWU-C-10	26787	6.60E-02	1.56E+00	NA	NA	NA	1.52E+00	1.20E+00	NA	0.00E+00
A2P1-NWU-C-11	30203	6.60E-02	1.56E+00	NA	NA	NA	1.51E+00	1.40E+00	NA	0.00E+00
A2P1-NWU-C-12	26799	3.80E-02	1.56E+00	NA	NA	NA	1.25E+00	1.39E+00	NA	0.00E+00
A2P1-NWU-C-13	34010	6.60E-02	1.56E+00	NA	NA	NA	1.14E+00	7.29E-01	NA	0.00E+00
A2P1-NWU-C-2	53186	6.60E-02	1.56E+00	NA	NA	NA	1.33E+00	1.05E+00	NA	0.00E+00
A2P1-NWU-C-3	29234	6.60E-02	1.56E+00	NA	NA	NA	1.24E+00	9.65E-01	NA	0.00E+00
A2P1-NWU-C-4	35673	6.60E-02	1.56E+00	NA	NA	NA	1.33E+00	1.04E+00	NA	0.00E+00
A2P1-NWU-C-5	33550	6.60E-02	1.56E+00	NA	NA	NA	1.24E+00	8.70E-01	NA	0.00E+00
A2P1-NWU-C-6	60308	6.60E-02	1.56E+00	NA	NA	NA	1.30E+00	9.06E-01	NA	0.00E+00
A2P1-NWU-C-7	59182	6.60E-02	1.56E+00	NA	NA	NA	1.19E+00	1.03E+00	NA	0.00E+00
A2P1-NWU-C-8	41769	6.60E-02	1.56E+00	NA	NA	NA	1.31E+00	8.52E-01	NA	0.00E+00
A2P1-NWU-C-9	44757	6.60E-02	1.56E+00	NA	NA	NA	1.53E+00	1.07E+00	NA	0.00E+00
A2P1-SF-C-1	61667	6.60E-02	1.56E+00	NA	NA	NA	1.63E+00	1.05E+00	NA	0.00E+00
A2P1-SF-C-2	55717	6.60E-02	1.56E+00	NA	NA	NA	1.18E+00	1.03E+00	NA	0.00E+00
A2P1-SF-C-3	42617	6.60E-02	1.56E+00	NA	NA	NA	1.42E+00	1.10E+00	NA	0.00E+00
A2P1-SF-C-4	50911	6.60E-02	1.56E+00	NA	NA	NA	1.37E+00	1.26E+00	NA	0.00E+00
A2P1-SF-C-5	50629	6.60E-02	1.56E+00	NA	NA	NA	1.50E+00	1.04E+00	NA	0.00E+00
A2P1-SF-C-6	59470	6.60E-02	1.56E+00	NA	NA	NA	1.19E+00	9.04E-01	NA	0.00E+00
A2P1-SF-C-7	29993	6.60E-02	1.56E+00	NA	NA	NA	1.30E+00	1.01E+00	NA	0.00E+00
A2P2-C1	56964	6.60E-02	1.56E+00	NA	NA	NA	1.36E+00	1.25E+00	NA	0.00E+00
A2P2-C10	52688	6.60E-02	1.56E+00	NA	NA	NA	1.23E+00	9.24E-01	NA	0.00E+00
A2P2-C11	52690	6.60E-02	1.56E+00	NA	NA	NA	1.13E+00	1.01E+00	NA	0.00E+00
A2P2-C12	54964	6.60E-02	1.56E+00	NA	NA	NA	1.50E+00	1.21E+00	NA	0.00E+00
A2P2-C13	54958	6.60E-02	1.56E+00	NA	NA	NA	1.11E+00	1.05E+00	NA	0.00E+00
A2P2-C15	54963	6.60E-02	1.56E+00	NA	NA	NA	1.56E+00	1.64E+00	NA	0.00E+00
A2P2-C16	30689	6.60E-02	1.56E+00	NA	NA	NA	1.09E+00	1.09E+00	NA	0.00E+00
A2P2-C17	50085	6.60E-02	1.56E+00	NA	NA	NA	1.30E+00	1.13E+00	NA	0.00E+00
A2P2-C18	50092	6.60E-02	1.56E+00	NA	NA	NA	1.13E+00	1.28E+00	NA	0.00E+00
A2P2-C19	44521	6.60E-02	1.56E+00	NA	NA	NA	1.45E+00	1.22E+00	NA	0.00E+00
A2P2-C2	53738	6.60E-02	1.56E+00	NA	NA	NA	1.16E+00	9.98E-01	NA	0.00E+00
A2P2-C20	44556	6.60E-02	1.56E+00	NA	NA	NA	1.26E+00	1.22E+00	NA	0.00E+00
A2P2-C21	45012	6.60E-02	1.56E+00	NA	NA	NA	1.06E+00	8.19E-01	NA	0.00E+00
A2P2-C22	48805	6.60E-02	1.56E+00	NA	NA	NA	1.29E+00	9.67E-01	NA	0.00E+00
A2P2-C23	50097	6.60E-02	1.56E+00	NA	NA	NA	1.43E+00	1.37E+00	NA	0.00E+00
A2P2-C24	54356	6.60E-02	1.56E+00	NA	NA	NA	1.36E+00	1.32E+00	NA	0.00E+00
A2P2-C25	1980	6.60E-02	1.56E+00	NA	NA	NA	1.37E+00	1.23E+00	NA	0.00E+00
A2P2-C26	20560	6.60E-02	1.56E+00	NA	NA	NA	1.20E+00	1.21E+00	NA	0.00E+00
A2P2-C27	25946	6.60E-02	1.56E+00	NA	NA	NA	1.46E+00	1.18E+00	NA	0.00E+00
A2P2-C28	37956	6.60E-02	1.56E+00	NA	NA	NA	1.10E+00	1.21E+00	NA	0.00E+00
A2P2-C29	62411	6.60E-02	1.56E+00	NA	NA	NA	1.43E+00	1.40E+00	NA	0.00E+00
A2P2-C3	54521	6.60E-02	1.56E+00	NA	NA	NA	1.02E+00	1.17E+00	NA	0.00E+00
A2P2-C30	61405	6.60E-02	1.56E+00	NA	NA	NA	1.12E+00	1.01E+00	NA	0.00E+00
A2P2-C31	62153	6.60E-02	1.56E+00	NA	NA	NA	1.26E+00	1.14E+00	NA	0.00E+00
A2P2-C32	62238	6.60E-02	1.56E+00	NA	NA	NA	1.28E+00	1.16E+00	NA	0.00E+00
A2P2-C33	43319	6.60E-02	1.56E+00	NA	NA	NA	1.58E+00	1.34E+00	NA	0.00E+00
A2P2-C34	42378	6.60E-02	1.56E+00	NA	NA	NA	1.37E+00	1.29E+00	NA	0.00E+00
A2P2-C35	61027	6.60E-02	1.56E+00	NA	NA	NA	1.22E+00	1.09E+00	NA	0.00E+00
A2P2-C36	61138	6.60E-02	1.56E+00	NA	NA	NA	1.31E+00	1.14E+00	NA	0.00E+00
A2P2-C37	61979	6.60E-02	1.56E+00	NA	NA	NA	1.28E+00	1.07E+00	NA	0.00E+00
A2P2-C38	62500	6.60E-02	1.56E+00	NA	NA	NA	1.14E+00	1.17E+00	NA	0.00E+00
A2P2-C39	62424	6.60E-02	1.56E+00	NA	NA	NA	1.23E+00	1.15E+00	NA	0.00E+00
A2P2-C4	51181	6.60E-02	1.56E+00	NA	NA	NA	1.38E+00	1.19E+00	NA	0.00E+00
A2P2-C40	62251	6.60E-02	1.56E+00	NA	NA	NA	1.45E+00	1.53E+00	NA	0.00E+00
A2P2-C41	62316	6.60E-02	1.56E+00	NA	NA	NA	1.22E+00	1.17E+00	NA	0.00E+00
A2P2-C42	61667	6.60E-02	1.56E+00	NA	NA	NA	1.29E+00	1.18E+00	NA	0.00E+00
A2P2-C43	61780	6.60E-02	1.56E+00	NA	NA	NA	1.56E+00	1.24E+00	NA	0.00E+00
A2P2-C44	62335	6.60E-02	1.56E+00	NA	NA	NA	1.23E+00	1.17E+00	NA	0.00E+00
A2P2-C45	61746	6.60E-02	1.56E+00	NA	NA	NA	1.39E+00	1.20E+00	NA	0.00E+00
A2P2-C46	11770	6.60E-02	1.56E+00	NA	NA	NA	1.44E+00	1.16E+00	NA	0.00E+00
A2P2-C5	55598	6.60E-02	1.56E+00	NA	NA	NA	1.40E+00	1.15E+00	NA	0.00E+00
A2P2-C6	53729	6.60E-02	1.56E+00	NA	NA	NA	1.30E+00	1.22E+00	NA	0.00E+00
A2P2-C7	58080	6.60E-02	1.56E+00	NA	NA	NA	1.55E+00	1.18E+00	NA	0.00E+00
A2P2-C8	62229	6.60E-02	1.56E+00	NA	NA	NA	1.24E+00	1.22E+00	NA	0.00E+00
A2P2-C9	52690	6.60E-02	1.56E+00	NA	NA	NA	1.18E+00	1.16E+00	NA	0.00E+00
A2P2-CEWF	28161	6.60E-02	1.56E+00	NA	NA	NA	1.47E+00	1.28E+00	NA	0.00E+00
A2P2-CSUB1	86757	6.60E-02	1.56E+00	NA	NA	NA	1.27E+00	1.22E+00	NA	0.00E+00
A2P2-CSUB2	54465	6.60E-02	1.56E+00	NA	NA	NA	1.58E+00	1.15E+00	NA	0.00E+00
A2P2-CSUB3	42712	6.60E-02	1.56E+00	NA	NA	NA	1.53E+00	1.37E+00	NA	0.00E+00
A2P2-IHR1	48257	6.60E-02	1.56E+00	NA	NA	NA	1.47E+00	1.14E+00	NA	8.47E-01
A2P2-IHR2	15337	6.60E-02	1.56E+00	NA	NA	NA	1.53E+00	1.20E+00	NA	8.64E-01
A2P2-SP3-C-1	58391	6.60E-02	1.56E+00	NA	NA	NA	1.64E+00	1.19E+00	NA	0.00E+00
A2P2-SP3-C-2	55225	6.60E-02	1.56E+00	NA	NA	NA	1.35E+00	1.13E+00	NA	0.00E+00
A2P3-4SF	35433	6.60E-02	1.56E+00	NA	NA	NA	1.35E+00	1.16E+00	NA	0.00E+00
A2P3-PT2-C-1	54541	6.60E-02	1.56E+00	NA	NA	NA	1.35E+00	1.02E+00	NA	0.00E+00
A2P3-PT2-C-2	56488	6.60E-02	1.56E+00	NA	NA	NA	1.69E+00	1.19E+00	NA	0.00E+00
A2P3-PT2-C-3	104397	6.60E-02	1.56E+00	NA	NA	NA	1.27E+00	1.00E+00	NA	0.00E+00
A5A-PC01A	62493	6.60E-02	1.56E+00	NA	NA	NA	1.64E+00	1.28E+00	NA	0.00E+00
A5A-PC02A	62479	6.60E-02	1.56E+00	NA	NA	NA	1.68E+00	1.37E+00	NA	0.00E+00
A5A-PC03A	58386	6.60E-02	1.56E+00	NA	NA	NA	1.64E+00	1.13E+00	NA	0.00E+00
A5A-PC04A	62829	6.60E-02	1.56E+00	NA	NA	NA	1.40E+00	1.28E+00	NA	0.00E+00
A5A-PC05A	58386	6.60E-02	1.56E+00	NA	NA	NA	1.42E+00	1.34E+00	NA	0.00E+00
A5A-PC06A	58396	6.60E-02	1.56E+00	NA	NA	NA	1.39E+00	1.32E+00	NA	0.00E+00
A5-EF-01	49577	6.60E-02	1.56E+00	NA	NA	NA	1.37E+00	1.27E+00	NA	0.00E+00

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 2

Certification Units	Area sq ft	Cesium-137 pCi/g	Lead-210 pCi/g	Neptunium-237 pCi/g	Plutonium-238 pCi/g	Plutonium-239/240 pCi/g	Radium-226 pCi/g	Radium-228 pCi/g	Strontium-90 pCi/g	Technetium-99 pCi/g
A5-EF-02	46738	6.60E-02	1.56E+00	NA	NA	NA	1.20E+00	1.12E+00	NA	0.00E+00
A5-EF-03	46306	6.60E-02	1.56E+00	NA	NA	NA	1.40E+00	1.19E+00	NA	0.00E+00
A5-EPL-C01	44798	6.60E-02	1.56E+00	NA	NA	NA	1.46E+00	1.17E+00	NA	0.00E+00
A5-EPL-C02	45851	6.60E-02	1.56E+00	NA	NA	NA	1.10E+00	1.05E+00	NA	0.00E+00
A5-EPL-C03	49955	6.60E-02	1.56E+00	NA	NA	NA	1.48E+00	1.19E+00	NA	0.00E+00
A5-EPL-C04	49946	6.60E-02	1.56E+00	NA	NA	NA	1.50E+00	1.28E+00	NA	0.00E+00
A5WPL-PC01	61686	6.60E-02	1.56E+00	NA	NA	NA	1.21E+00	9.74E-01	NA	0.00E+00
A5WPL-PC02	61795	6.60E-02	1.56E+00	NA	NA	NA	1.22E+00	1.41E+00	NA	0.00E+00
A5WPL-PC03	61687	6.60E-02	1.56E+00	NA	NA	NA	1.51E+00	1.34E+00	NA	0.00E+00
A5WPL-PC04	61685	6.60E-02	1.56E+00	NA	NA	NA	1.65E+00	1.34E+00	NA	0.00E+00
A7MA-C03	59794	6.60E-02	1.56E+00	NA	NA	NA	1.29E+00	1.61E+00	NA	0.00E+00
A7MA-C04	61209	6.60E-02	1.56E+00	NA	NA	NA	1.50E+00	1.20E+00	NA	0.00E+00
A7MA-C05	61047	6.60E-02	1.56E+00	NA	NA	NA	1.30E+00	1.50E+00	NA	0.00E+00
A7MA-C06	38081	6.60E-02	1.56E+00	NA	NA	NA	1.24E+00	1.20E+00	NA	0.00E+00
A7MA-C07	8965	6.60E-02	1.56E+00	NA	NA	NA	1.21E+00	9.78E-01	NA	0.00E+00
A7MA-C08	43732	6.60E-02	1.56E+00	NA	NA	NA	1.26E+00	1.49E+00	NA	0.00E+00
A7MA-C09	46113	6.60E-02	1.56E+00	NA	NA	NA	1.18E+00	1.07E+00	NA	0.00E+00
A7MA-C10	46313	6.60E-02	1.56E+00	NA	NA	NA	1.44E+00	1.20E+00	NA	0.00E+00
A7MA-C11	48260	6.60E-02	1.56E+00	NA	NA	NA	1.20E+00	1.06E+00	NA	0.00E+00
A7MA-C12	50603	6.60E-02	1.56E+00	NA	NA	NA	1.17E+00	1.08E+00	NA	0.00E+00
A7MA-C13	60993	6.60E-02	1.56E+00	NA	NA	NA	1.53E+00	1.30E+00	NA	0.00E+00
A7MA-C14	61091	6.60E-02	1.56E+00	NA	NA	NA	1.31E+00	1.04E+00	NA	0.00E+00
A7MA-C15	61470	6.60E-02	1.56E+00	NA	NA	NA	1.56E+00	1.24E+00	NA	0.00E+00
A7MA-C16	39968	6.60E-02	1.56E+00	NA	NA	NA	1.65E+00	1.23E+00	NA	0.00E+00
A7MA-C17	21714	6.60E-02	1.56E+00	NA	NA	NA	1.54E+00	1.39E+00	NA	1.65E+00
A7SAR-C01	47418	6.60E-02	1.56E+00	NA	NA	NA	1.29E+00	1.38E+00	NA	0.00E+00
A7SAR-C02	61637	6.60E-02	1.56E+00	NA	NA	NA	1.68E+00	1.23E+00	NA	0.00E+00
A7SAR-C03	62210	6.60E-02	1.56E+00	NA	NA	NA	1.57E+00	1.21E+00	NA	0.00E+00
A7SAR-C04	62425	6.60E-02	1.56E+00	NA	NA	NA	1.44E+00	1.42E+00	NA	0.00E+00
A7SAR-C05	62467	6.60E-02	1.56E+00	NA	NA	NA	1.47E+00	1.32E+00	NA	0.00E+00
A7STSA-C01	49322	6.60E-02	1.56E+00	NA	NA	NA	1.23E+00	1.25E+00	NA	0.00E+00
A7STSA-C02	52337	6.60E-02	1.56E+00	NA	NA	NA	1.55E+00	1.42E+00	NA	0.00E+00
A7STSA-C03	62014	6.60E-02	1.56E+00	NA	NA	NA	1.43E+00	1.20E+00	NA	0.00E+00
A7STSA-C04	62398	6.60E-02	1.56E+00	NA	NA	NA	1.49E+00	1.12E+00	NA	0.00E+00
A7STSA-C05	42664	6.60E-02	1.56E+00	NA	NA	NA	1.57E+00	1.51E+00	NA	0.00E+00
A7STSA-C06	61954	6.60E-02	1.56E+00	NA	NA	NA	1.23E+00	1.14E+00	NA	0.00E+00
A7STSA-C07	61672	6.60E-02	1.56E+00	NA	NA	NA	1.32E+00	1.29E+00	NA	0.00E+00
SSOD-C1	49126	6.60E-02	1.56E+00	NA	NA	NA	1.54E+00	1.06E+00	NA	0.00E+00
SSOD-C2	60728	6.60E-02	1.56E+00	NA	NA	NA	1.39E+00	1.17E+00	NA	0.00E+00
SSOD-C3	61701	6.60E-02	1.56E+00	NA	NA	NA	1.60E+00	1.43E+00	NA	0.00E+00
SSOD-C4	55136	6.60E-02	1.56E+00	NA	NA	NA	1.60E+00	1.26E+00	NA	0.00E+00
SSOD-C5	46100	6.60E-02	1.56E+00	NA	NA	NA	1.34E+00	1.11E+00	NA	0.00E+00
SSOD-C6	51871	6.60E-02	1.56E+00	NA	NA	NA	1.14E+00	8.19E-01	NA	0.00E+00
SWRB-C01	36015	6.60E-02	1.56E+00	NA	NA	NA	1.27E+00	1.17E+00	NA	2.42E+00
SWRB-C02	43403	9.33E-02	2.17E+00	NA	NA	NA	1.63E+00	1.23E+00	NA	1.12E+00
SWRB-C03	48923	4.43E-02	2.07E+00	NA	NA	NA	1.45E+00	1.13E+00	NA	1.75E+00
SWRB-C04	55182	6.60E-02	1.56E+00	NA	NA	NA	1.58E+00	1.06E+00	NA	3.91E+00
SWRB-C05	50367	6.60E-02	1.56E+00	NA	NA	NA	1.41E+00	1.22E+00	NA	8.53E-01
SWRB-C06	40708	7.98E-02	4.51E+00	NA	NA	NA	1.56E+00	1.26E+00	NA	8.83E-01
SWRB-C07	41483	6.30E-02	1.45E+00	NA	NA	NA	1.47E+00	1.20E+00	NA	1.56E+00
SWRB-C08	44600	6.60E-02	1.56E+00	NA	NA	NA	1.48E+00	1.22E+00	NA	9.01E-01
SWRB-C09	24162	8.71E-02	1.46E+00	NA	NA	NA	1.28E+00	9.02E-01	NA	1.95E+00
SWRB-C10	19195	6.60E-02	1.56E+00	NA	NA	NA	1.15E+00	8.11E-01	NA	9.57E-01
TCA-C1	52136	6.60E-02	1.56E+00	NA	NA	NA	1.15E+00	1.29E+00	NA	0.00E+00
TCA-C2	58161	6.60E-02	1.56E+00	NA	NA	NA	1.55E+00	1.16E+00	NA	0.00E+00
TCA-C3	58162	6.60E-02	1.56E+00	NA	NA	NA	1.46E+00	1.16E+00	NA	0.00E+00
TCA-C4	52020	6.60E-02	1.56E+00	NA	NA	NA	1.49E+00	1.43E+00	NA	0.00E+00
TCA-C5	55882	6.60E-02	1.56E+00	NA	NA	NA	1.27E+00	1.05E+00	NA	0.00E+00
TCA-C6	52366	6.60E-02	1.56E+00	NA	NA	NA	1.29E+00	1.52E+00	NA	0.00E+00
Maximum Value		9.33E-02	4.51E+00	NA	NA	NA	1.69E+00	1.64E+00	NA	3.91E+00
Average (*used in Risk Calc.*)		6.61E-02	1.59E+00	NA	NA	NA	1.37E+00	1.17E+00	NA	1.28E-01
Number of Cert Results		6.00E+00	5.00E+00	NA	NA	NA	1.54E+02	1.54E+02	NA	1.30E+01
Number of Inserted Values		1.48E+02	1.49E+02	NA	NA	NA	0.00E+00	0.00E+00	NA	1.41E+02

NOTE:

If at least one CU in the zone has an anlytical result for a given COC, the background value is inserted for the COC in other CUs that have no reported analytical result to avoid a high bias for the COC in this zone.

Background is zero for all organic compounds. Background is not reported for neptunium, plutonium, strontium and technetium isotopes, and zero will be used.

NA = Chemical or radionuclide is not applicable to the assesment of risk in this zone because the COC was not evaluated in the certification reports for this zone.

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 2

Certification Units	Area sq ft	Thorium-228 pCi/g	Thorium-230 pCi/g	Thorium-232 pCi/g	Uranium-234 pCi/g	Uranium-235 pCi/g	Uranium-238 pCi/g	Antimony ug/g	Arsenic ug/g	Barium ug/g	Beryllium ug/g
A1PII-S1-01	143889	1.07E+00	1.56E+00	1.09E+00	6.48E+00	2.95E-01	6.33E+00	2.87E+00	4.80E+00	1.87E+02	1.44E+00
A2P1-AFP-C1	30642	1.23E+00	1.56E+00	1.21E+00	1.68E+00	7.67E-02	1.64E+00	6.40E+00	7.52E+00	1.87E+02	1.20E+00
A2P1-AFP-C2	42234	1.18E+00	1.56E+00	1.20E+00	1.19E+01	5.43E-01	1.16E+01	5.18E+00	7.96E+00	1.87E+02	5.10E-01
A2P1-AFP-C3	20842	1.20E+00	1.56E+00	1.24E+00	1.61E+00	7.34E-02	1.57E+00	5.72E+00	7.88E+00	1.87E+02	4.20E-01
A2P1-AFP-C-4	22353	1.17E+00	1.56E+00	1.18E+00	1.40E+00	6.38E-02	1.37E+00	6.02E+00	1.12E+01	1.87E+02	5.30E-01
A2P1-AFP-C-5	62286	9.80E-01	1.56E+00	9.80E-01	1.38E+00	6.30E-02	1.35E+00	6.02E+00	1.12E+01	1.87E+02	5.30E-01
A2P1-AFP-C-6	35463	9.60E-01	1.56E+00	9.60E-01	4.16E+00	1.90E-01	4.07E+00	4.73E+00	1.18E+01	1.87E+02	3.60E-01
A2P1-IFP-C-1	55241	1.14E+00	1.61E+00	1.15E+00	1.05E+00	4.79E-02	1.03E+00	2.87E+00	5.09E+00	1.87E+02	5.60E-01
A2P1-IFP-C-2	60391	8.76E-01	1.26E+00	8.85E-01	2.79E+00	1.27E-01	2.73E+00	2.87E+00	4.33E+00	1.87E+02	1.20E-01
A2P1-IFP-C-3	50948	8.44E-01	3.54E+00	8.46E-01	3.08E+00	1.40E-01	3.01E+00	2.87E+00	1.06E+01	1.87E+02	4.80E-01
A2P1-IFP-C-4	61178	1.01E+00	1.70E+00	1.04E+00	2.95E+00	1.34E-01	2.88E+00	2.87E+00	5.54E+00	1.87E+02	6.60E-01
A2P1-NWU-C-1	60760	1.14E+00	1.56E+00	1.15E+00	2.08E+00	9.47E-02	2.03E+00	2.87E+00	8.46E+00	1.87E+02	8.40E-01
A2P1-NWU-C-10	26787	1.17E+00	1.56E+00	1.20E+00	3.02E+00	1.37E-01	2.95E+00	2.87E+00	1.18E+01	1.87E+02	8.00E-01
A2P1-NWU-C-11	30203	1.40E+00	1.56E+00	1.40E+00	3.55E+00	1.62E-01	3.47E+00	2.87E+00	1.05E+01	1.87E+02	7.00E-01
A2P1-NWU-C-12	26799	1.37E+00	1.90E+00	1.39E+00	5.90E+00	2.69E-01	5.77E+00	2.87E+00	1.09E+01	1.87E+02	3.60E-01
A2P1-NWU-C-13	34010	7.15E-01	1.56E+00	7.29E-01	1.65E+00	7.50E-02	1.61E+00	2.87E+00	8.28E+00	1.87E+02	1.50E-01
A2P1-NWU-C-2	53186	1.03E+00	1.56E+00	1.05E+00	1.78E+00	8.12E-02	1.74E+00	2.87E+00	6.37E+00	1.87E+02	7.30E-01
A2P1-NWU-C-3	29234	9.55E-01	1.56E+00	9.65E-01	2.45E+00	1.12E-01	2.40E+00	2.87E+00	6.99E+00	1.87E+02	6.00E-01
A2P1-NWU-C-4	35673	1.04E+00	1.56E+00	1.04E+00	2.55E+00	1.16E-01	2.49E+00	2.87E+00	8.49E+00	1.87E+02	7.10E-01
A2P1-NWU-C-5	33550	8.83E-01	1.56E+00	8.70E-01	2.91E+00	1.33E-01	2.84E+00	2.87E+00	7.33E+00	1.87E+02	3.00E-01
A2P1-NWU-C-6	60308	9.05E-01	1.56E+00	9.06E-01	2.38E+00	1.09E-01	2.33E+00	2.87E+00	5.11E+00	1.87E+02	1.90E-01
A2P1-NWU-C-7	59182	1.04E+00	1.56E+00	1.03E+00	3.52E+00	1.60E-01	3.43E+00	2.87E+00	9.78E+00	1.87E+02	2.40E-01
A2P1-NWU-C-8	41769	8.52E-01	1.56E+00	8.52E-01	9.73E+00	4.43E-01	9.50E+00	2.87E+00	9.67E+00	1.87E+02	4.10E-01
A2P1-NWU-C-9	44757	1.09E+00	1.56E+00	1.09E+00	5.73E+00	2.61E-01	5.60E+00	2.87E+00	9.25E+00	1.87E+02	3.20E-01
A2P1-SF-C-1	61667	1.06E+00	2.23E+00	1.05E+00	1.97E+00	8.97E-02	1.92E+00	2.87E+00	8.60E+00	1.87E+02	4.10E-01
A2P1-SF-C-2	55717	1.02E+00	1.64E+00	1.03E+00	2.42E+00	1.10E-01	2.36E+00	2.87E+00	1.18E+01	1.87E+02	3.70E-01
A2P1-SF-C-3	42617	1.08E+00	1.66E+00	1.10E+00	1.45E+00	6.61E-02	1.42E+00	2.87E+00	7.15E+00	1.87E+02	6.70E-01
A2P1-SF-C-4	50911	1.25E+00	2.08E+00	1.26E+00	1.75E+00	7.99E-02	1.71E+00	2.87E+00	6.90E+00	1.87E+02	7.10E-01
A2P1-SF-C-5	50629	1.00E+00	2.91E+00	1.04E+00	9.25E-01	4.21E-02	9.03E-01	2.87E+00	8.89E+00	1.87E+02	5.00E-01
A2P1-SF-C-6	59470	8.97E-01	1.56E+00	9.04E-01	3.06E+00	1.40E-01	2.99E+00	2.87E+00	7.84E+00	1.87E+02	4.30E-01
A2P1-SF-C-7	29993	9.87E-01	1.54E+00	1.01E+00	8.94E-01	4.07E-02	8.73E-01	2.87E+00	7.03E+00	1.87E+02	2.30E-01
A2P2-C1	56964	1.27E+00	1.56E+00	1.25E+00	3.05E+00	1.39E-01	2.98E+00	2.87E+00	9.94E+00	1.87E+02	9.54E-01
A2P2-C10	52688	9.26E-01	1.56E+00	9.24E-01	6.25E+00	2.85E-01	6.10E+00	2.87E+00	1.14E+01	1.87E+02	9.66E-01
A2P2-C11	52690	1.03E+00	1.56E+00	1.01E+00	5.56E+00	2.53E-01	5.43E+00	2.87E+00	6.83E+00	1.87E+02	6.21E-01
A2P2-C12	54964	1.21E+00	1.56E+00	1.21E+00	1.06E+01	4.84E-01	1.04E+01	2.87E+00	9.63E+00	1.87E+02	8.31E-01
A2P2-C13	54958	1.08E+00	1.56E+00	1.05E+00	8.94E+00	4.07E-01	8.73E+00	2.87E+00	6.06E+00	1.87E+02	5.57E-01
A2P2-C15	54963	1.21E+00	1.56E+00	1.18E+00	2.03E+01	9.24E-01	1.98E+01	2.87E+00	7.52E+00	1.87E+02	9.62E-01
A2P2-C16	30689	1.11E+00	1.56E+00	1.09E+00	1.15E+01	5.26E-01	1.13E+01	2.87E+00	5.56E+00	1.87E+02	6.08E-01
A2P2-C17	50085	1.19E+00	1.56E+00	1.13E+00	1.44E+01	6.55E-01	1.40E+01	2.87E+00	7.45E+00	1.87E+02	5.83E-01
A2P2-C18	50092	1.31E+00	1.56E+00	1.28E+00	1.04E+01	4.73E-01	1.01E+01	2.87E+00	7.15E+00	1.87E+02	6.51E-01
A2P2-C19	44521	1.20E+00	1.56E+00	1.22E+00	8.29E+00	3.78E-01	8.10E+00	2.87E+00	9.70E+00	1.87E+02	7.61E-01
A2P2-C2	53738	1.03E+00	1.56E+00	9.98E-01	6.45E+00	2.94E-01	6.30E+00	2.87E+00	7.40E+00	1.87E+02	5.55E-01
A2P2-C20	44556	1.25E+00	1.56E+00	1.22E+00	9.49E+00	4.32E-01	9.27E+00	2.87E+00	1.09E+01	1.87E+02	7.56E-01
A2P2-C21	45012	8.08E-01	1.56E+00	8.19E-01	5.36E+00	2.44E-01	5.23E+00	2.87E+00	5.31E+00	1.87E+02	5.20E-01
A2P2-C22	48805	9.75E-01	1.56E+00	9.67E-01	5.87E+00	2.67E-01	5.73E+00	2.87E+00	7.66E+00	1.87E+02	6.47E-01
A2P2-C23	50097	1.36E+00	1.56E+00	1.37E+00	2.26E+01	1.03E+00	2.21E+01	2.87E+00	8.39E+00	1.87E+02	1.45E+00
A2P2-C24	54356	1.37E+00	1.56E+00	1.32E+00	7.58E+00	3.45E-01	7.40E+00	2.87E+00	1.04E+01	1.87E+02	8.07E-01
A2P2-C25	1980	1.29E+00	1.56E+00	1.23E+00	1.01E+01	4.59E-01	9.83E+00	2.87E+00	1.15E+01	1.87E+02	7.42E-01
A2P2-C26	20560	1.19E+00	1.56E+00	1.21E+00	1.31E+01	5.96E-01	1.28E+01	2.87E+00	8.89E+00	1.87E+02	6.42E-01
A2P2-C27	25946	1.22E+00	1.56E+00	1.18E+00	3.29E+00	1.50E-01	3.21E+00	2.87E+00	9.11E+00	1.87E+02	8.20E-01
A2P2-C28	37956	1.22E+00	1.56E+00	1.21E+00	2.77E+00	1.26E-01	2.71E+00	2.87E+00	1.07E+01	1.87E+02	8.27E-01
A2P2-C29	62411	1.42E+00	1.56E+00	1.40E+00	4.54E+00	2.07E-01	4.43E+00	2.87E+00	1.01E+01	1.87E+02	1.48E+00
A2P2-C3	54521	1.16E+00	1.56E+00	1.17E+00	9.76E+00	4.45E-01	9.53E+00	2.87E+00	9.91E+00	1.87E+02	8.39E-01
A2P2-C30	61405	1.04E+00	1.56E+00	1.01E+00	1.19E+01	5.43E-01	1.16E+01	2.87E+00	2.02E+00	1.87E+02	4.95E-01
A2P2-C31	62153	1.17E+00	1.56E+00	1.14E+00	7.85E+00	3.58E-01	7.67E+00	2.87E+00	9.93E+00	1.87E+02	6.86E-01
A2P2-C32	62238	1.19E+00	1.56E+00	1.16E+00	9.01E+00	4.11E-01	8.80E+00	2.87E+00	8.99E+00	1.87E+02	1.35E+00
A2P2-C33	43319	1.35E+00	1.56E+00	1.34E+00	3.82E+00	1.74E-01	3.73E+00	2.87E+00	1.08E+01	1.87E+02	1.00E+00
A2P2-C34	42378	1.32E+00	1.56E+00	1.29E+00	6.83E+00	3.11E-01	6.67E+00	2.87E+00	1.10E+01	1.87E+02	1.03E+00
A2P2-C35	61027	1.14E+00	1.56E+00	1.09E+00	7.00E+00	3.19E-01	6.83E+00	2.87E+00	1.04E+01	1.87E+02	7.44E-01
A2P2-C36	61138	1.18E+00	1.56E+00	1.14E+00	9.52E+00	4.34E-01	9.30E+00	2.87E+00	9.52E+00	1.87E+02	6.95E-01
A2P2-C37	61979	1.07E+00	1.56E+00	1.07E+00	8.23E+00	3.75E-01	8.03E+00	2.87E+00	8.45E+00	1.87E+02	6.26E-01
A2P2-C38	62500	1.17E+00	1.56E+00	1.17E+00	8.70E+00	3.97E-01	8.50E+00	2.87E+00	9.73E+00	1.87E+02	1.14E+00
A2P2-C39	62424	1.17E+00	1.56E+00	1.15E+00	9.32E+00	4.25E-01	9.10E+00	2.87E+00	8.16E+00	1.87E+02	8.19E-01
A2P2-C4	51181	1.20E+00	1.56E+00	1.19E+00	9.15E+00	4.17E-01	8.93E+00	2.87E+00	8.21E+00	1.87E+02	6.76E-01
A2P2-C40	62251	1.53E+00	1.56E+00	1.03E+00	2.07E+01	9.42E-01	2.02E+01	2.87E+00	8.86E+00	1.87E+02	6.36E-01
A2P2-C41	62316	1.17E+00	1.56E+00	1.17E+00	1.18E+01	5.40E-01	1.16E+01	2.87E+00	9.73E+00	1.87E+02	8.32E-01
A2P2-C42	61667	1.18E+00	1.56E+00	1.18E+00	1.29E+01	5.89E-01	1.26E+01	2.87E+00	8.65E+00	1.87E+02	7.69E-01
A2P2-C43	61780	1.30E+00	1.56E+00	1.24E+00	1.08E+01	4.91E-01	1.05E+01	2.87E+00	1.14E+01	1.87E+02	1.07E+00
A2P2-C44	62335	1.17E+00	1.56E+00	1.17E+00	1.50E+01	6.84E-01	1.47E+01	2.87E+00	7.57E+00	1.87E+02	8.70E-01
A2P2-C45	61746	1.20E+00	1.56E+00	1.20E+00	1.29E+01	5.86E-01	1.26E+01	2.87E+00	7.41E+00	1.87E+02	6.46E-01
A2P2-C46	11770	1.19E+00	1.56E+00	1.16E+00	2.79E+01	1.27E+00	2.72E+01	2.87E+00	9.63E+00	1.87E+02	7.94E-01
A2P2-C5	55598	1.16E+00	1.56E+00	1.15E+00	1.26E+01	5.74E-01	1.23E+01	2.87E+00	8.75E+00	1.87E+02	6.90E-01
A2P2-C6	53729	1.26E+00	1.56E+00	1.22E+00	1.61E+01	7.33E-01	1.57E+01	2.87E+00	8.51E+00	1.87E+02	7.35E-01
A2P2-C7	58080	1.19E+00	1.56E+00	1.18E+00	1.32E+01	6.03E-01	1.29E+01	2.87E+00	1.08E+01	1.87E+02	9.49E-01
A2P2-C8	62229	1.22E+00	1.56E+00	1.22E+00	1.44E+01	6.58E-01	1.41E+01	2.87E+00	9.70E+00	1.87E+02	7.40E-01
A2P2-C9	52690	1.14E+00	1.56E+00	1.16E+00	7.82E+00	3.56E-01	7.63E+00	2.87E+00	5.63E+00	1.87E+02	6.39E-01
A2P2-CEWF	28161	1.23E+00	1.56E+00	1.28E+00	3.25E+00	1.48E-01	3.17E+00	2.87E+00	1.24E+01	1.87E+02	1.44E+00
A2P2-CSUB1	86757	1.19E+00	1.56E+00	1.22E+00	1.28E+01	5.85E-01	1.25E+01	2.87E+00	1.24E+01	1.87E+02	1.44E+00
A2P2-CSUB2	54465	1.24E+00	1.56E+00	1.15E+00	6.93E+00	3.16E-01	6.77E+00	2.87E+00	1.24E+01	1.87E+02	1.44E+00
A2P2-CSUB3	42712	1.37E+00	1.56E+00	1.37E+00	5.73E+00	2.61E-01	5.60E+00	2.87E+00	1.24E+01	1.87E+02	1.44E+00
A2P2-IHR1	48257	1.11E+00	1.56E+00	1.14E+00	3.31E+00	1.51E-01	3.23E+00	2.87E+00	5.96E+00	1.87E+02	1.06E+00
A2P2-IHR2	15337	1.20E+00	1.56E+00	1.20E+00	3.72E+00	1.70E-01	3.63E+00	2.87E+00	1.16E+01	1.87E+02	9.11E-01
A2P2-SP3-C-1	58391	1.15E+00	1.56E+00	1.19E+00	6.72E+00	3.06E-01	6.57E+00	2.87E+00	6.35E+00	1.87E+02	5.50E-01
A2P2-SP3-C-2	55225	1.10E+00	1.56E+00	1.13E+00	3.37E+00	1.53E-01	3.29E+00	2.87E+00	9.63E+00	1.87E+02	3.20E-01
A2P3-4SF	35433	1.12E+00	1.56E+00	1.16E+00	5.60E+00	2.55E-01	5.47E+00	2.87E+00	1.24E+01	1.87E+02	1.44E+00
A2P3-PT2-C-1	54541	1.00E+00	1.56E+00	1.02E+00	1.02E+01	4.63E-01	9.93E+00	2.87E+00	1.24E+01	1.87E+02	1.44E+00
A2P3-PT2-C-2	56488	1.19E+00	1.56E+00	1.19E+00	2.02E+00	9.19E-02	1.97E+00	2.87E+00	1.24E+01	1.87E+02	1.44E+00
A2P3-PT2-C-3	104397	1.01E+00	1.56E+00	1.00E+00	6.83E+00	3.11E-01	6.67E+00	2.87E+00	1.24E+01	1.87E+02	1.44E+00
A5A-PC01A	62493	1.30E+00	1.56E+00	1.28E+00	1.77E+01	8.07E-01	1.73E+01	2.87E+00	8.98E+00	1.87E+02	6.98E-01
A5A-PC02A	62479	1.39E+00	1.56E+00	1.37E+00	4.98E+00	2.27E-01	4.87E+00	2.87E+00	9.45E+00	1.87E+02	9.70E-01
A5A-PC03A	58386	1.30E+00	1.56E+00	1.13E+00	6.72E+00	3.06E-01	6.57E+00	2.87E+00	7.83E+00	1.87E+02	1.00E+00
A5A-PC04A	62829	1.34E+00	1.56E+00	1.28E+00	1.61E+01	7.33E-01	1.57E+01	2.87E+00	7.60E+00	1.87E+02	8.36E-01
A5A-PC05A	58386	1.40E+00	1.56E+00	1.34E+00	2.55E+01	1.16E+00	2.49E+01	2.87E+00	8.24E+00	1.87E+02	1.16E+00
A5A-PC06A	58396	1.38E+00	1.56E+00	1.32E+00	4.78E+00	2.18E-01	4.67E+00	2.87E+00	8.12E+00	1.87E+02	9.86E-01
A5-EF-01	49577	1.44E+00	1.56E+00	1.27E+00	1.43E+01	6.53E-01	1.40E+01	2.87E+00	8.75E+00	1.87E+02	1.07E+00

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 2

Certification Units	Area sq ft	Thorium-228 pCi/g	Thorium-230 pCi/g	Thorium-232 pCi/g	Uranium-234 pCi/g	Uranium-235 pCi/g	Uranium-238 pCi/g	Antimony ug/g	Arsenic ug/g	Barium ug/g	Beryllium ug/g
A5-EF-02	46738	1.11E+00	1.56E+00	1.12E+00	1.11E+01	5.04E-01	1.08E+01	2.87E+00	8.98E+00	1.87E+02	9.17E-01
A5-EF-03	46306	1.18E+00	1.56E+00	1.19E+00	7.10E+00	3.23E-01	6.93E+00	2.87E+00	8.75E+00	1.87E+02	1.17E+00
A5-EPL-C01	44798	1.15E+00	1.56E+00	1.17E+00	2.16E+00	9.83E-02	2.11E+00	2.87E+00	7.24E+00	1.87E+02	1.44E+00
A5-EPL-C02	45851	1.03E+00	1.56E+00	1.05E+00	2.01E+00	9.16E-02	1.96E+00	2.87E+00	1.04E+01	1.87E+02	1.44E+00
A5-EPL-C03	49955	1.27E+00	1.56E+00	1.19E+00	2.27E+00	1.03E-01	2.22E+00	2.87E+00	7.49E+00	1.87E+02	1.44E+00
A5-EPL-C04	49946	1.25E+00	1.56E+00	1.28E+00	2.64E+00	1.20E-01	2.58E+00	2.87E+00	7.17E+00	1.87E+02	1.44E+00
A5WPL-PC01	61686	1.03E+00	1.56E+00	9.74E-01	4.64E+00	2.12E-01	4.53E+00	2.87E+00	1.24E+01	1.87E+02	1.44E+00
A5WPL-PC02	61795	1.47E+00	1.56E+00	1.41E+00	2.35E+00	1.07E-01	2.30E+00	2.87E+00	1.24E+01	1.87E+02	1.44E+00
A5WPL-PC03	61687	1.38E+00	1.56E+00	1.34E+00	5.63E+00	2.57E-01	5.50E+00	2.87E+00	1.24E+01	1.87E+02	1.44E+00
A5WPL-PC04	61685	1.33E+00	1.56E+00	1.34E+00	4.20E+00	1.91E-01	4.10E+00	2.87E+00	8.15E+00	1.87E+02	1.44E+00
A7MA-C03	59794	1.63E+00	1.56E+00	1.03E+00	7.17E+00	3.27E-01	7.00E+00	2.87E+00	9.62E+00	1.87E+02	1.04E+00
A7MA-C04	61209	1.22E+00	1.56E+00	1.20E+00	4.56E+00	2.08E-01	4.45E+00	2.87E+00	1.10E+01	1.87E+02	8.90E-01
A7MA-C05	61047	1.46E+00	1.56E+00	1.50E+00	9.69E+00	4.42E-01	9.47E+00	2.87E+00	8.45E+00	1.87E+02	1.20E+00
A7MA-C06	38081	1.21E+00	1.56E+00	1.20E+00	3.92E+00	1.79E-01	3.83E+00	2.87E+00	1.06E+01	1.87E+02	6.38E-01
A7MA-C07	8965	9.96E-01	1.56E+00	9.78E-01	4.51E+00	2.05E-01	4.40E+00	2.87E+00	8.69E+00	1.87E+02	8.43E-01
A7MA-C08	43732	1.53E+00	1.56E+00	1.49E+00	4.03E+00	1.84E-01	3.93E+00	2.87E+00	1.06E+01	1.87E+02	8.00E-01
A7MA-C09	46113	1.07E+00	1.56E+00	1.07E+00	6.08E+00	2.77E-01	5.93E+00	2.87E+00	1.02E+01	1.87E+02	8.20E-01
A7MA-C10	46313	1.18E+00	1.56E+00	1.20E+00	5.49E+00	2.50E-01	5.37E+00	2.87E+00	5.89E+00	1.87E+02	6.30E-01
A7MA-C11	48260	1.04E+00	1.56E+00	1.06E+00	8.26E+00	3.76E-01	8.07E+00	2.87E+00	1.11E+01	1.87E+02	8.90E-01
A7MA-C12	50603	1.08E+00	1.56E+00	1.08E+00	6.69E+00	3.05E-01	6.53E+00	2.87E+00	1.03E+01	1.87E+02	7.45E-01
A7MA-C13	60993	1.35E+00	1.56E+00	1.30E+00	6.21E+00	2.83E-01	6.07E+00	2.87E+00	1.10E+01	1.87E+02	1.28E+00
A7MA-C14	61091	1.03E+00	1.56E+00	1.04E+00	6.48E+00	2.95E-01	6.33E+00	2.87E+00	1.01E+01	1.87E+02	1.06E+00
A7MA-C15	61470	1.24E+00	1.56E+00	1.24E+00	2.60E+00	1.19E-01	2.54E+00	2.87E+00	5.90E+00	1.87E+02	9.10E-01
A7MA-C16	39968	1.24E+00	1.56E+00	1.23E+00	2.74E+00	1.25E-01	2.67E+00	2.87E+00	1.24E+01	1.87E+02	1.44E+00
A7MA-C17	21714	1.39E+00	1.56E+00	1.39E+00	3.35E+00	1.53E-01	3.27E+00	2.87E+00	1.24E+01	1.87E+02	1.44E+00
A7SAR-C01	47418	1.39E+00	1.56E+00	1.38E+00	2.91E+00	1.33E-01	2.85E+00	2.87E+00	1.24E+01	1.87E+02	1.44E+00
A7SAR-C02	61637	1.24E+00	1.56E+00	1.23E+00	6.72E+00	3.06E-01	6.57E+00	2.87E+00	1.24E+01	1.87E+02	1.44E+00
A7SAR-C03	62210	1.23E+00	1.56E+00	1.21E+00	8.50E+00	3.87E-01	8.30E+00	2.87E+00	1.24E+01	1.87E+02	1.44E+00
A7SAR-C04	62425	1.41E+00	1.56E+00	1.42E+00	5.97E+00	2.72E-01	5.83E+00	2.87E+00	1.24E+01	1.87E+02	1.44E+00
A7SAR-C05	62467	1.30E+00	1.56E+00	1.32E+00	3.55E+00	1.62E-01	3.47E+00	2.87E+00	1.24E+01	1.87E+02	1.16E+00
A7STSA-C01	49322	1.26E+00	1.56E+00	1.25E+00	6.79E+00	3.09E-01	6.63E+00	2.87E+00	1.24E+01	1.87E+02	1.44E+00
A7STSA-C02	52337	1.53E+00	1.56E+00	1.42E+00	2.65E+00	1.21E-01	2.59E+00	2.87E+00	1.24E+01	1.87E+02	1.44E+00
A7STSA-C03	62014	1.33E+00	1.56E+00	1.20E+00	3.99E+00	1.82E-01	3.90E+00	2.87E+00	1.24E+01	1.87E+02	1.44E+00
A7STSA-C04	62398	1.16E+00	1.56E+00	1.12E+00	4.88E+00	2.22E-01	4.77E+00	2.87E+00	1.24E+01	1.87E+02	1.44E+00
A7STSA-C05	42664	1.56E+00	1.56E+00	1.31E+00	4.88E+00	2.22E-01	4.77E+00	2.87E+00	1.24E+01	1.87E+02	1.44E+00
A7STSA-C06	61954	1.23E+00	1.56E+00	1.14E+00	6.08E+00	2.77E-01	5.93E+00	2.87E+00	1.24E+01	1.87E+02	1.44E+00
A7STSA-C07	61672	1.35E+00	1.56E+00	1.29E+00	4.23E+00	1.93E-01	4.13E+00	2.87E+00	1.24E+01	1.87E+02	1.44E+00
SSOD-C1	49126	1.06E+00	3.12E+00	1.06E+00	1.11E+01	5.04E-01	1.08E+01	2.87E+00	8.61E+00	1.87E+02	6.28E-01
SSOD-C2	60728	1.18E+00	1.84E+00	1.17E+00	1.30E+01	5.91E-01	1.27E+01	2.87E+00	9.39E+00	1.87E+02	8.79E-01
SSOD-C3	61701	1.43E+00	3.21E+00	1.43E+00	8.74E+00	3.98E-01	8.53E+00	2.87E+00	8.88E+00	1.87E+02	9.97E-01
SSOD-C4	55136	1.23E+00	1.85E+01	1.26E+00	5.97E+00	2.72E-01	5.83E+00	2.87E+00	6.03E+00	1.87E+02	7.17E-01
SSOD-C5	46100	1.17E+00	1.95E+01	1.11E+00	6.52E+00	2.97E-01	6.37E+00	2.87E+00	5.77E+00	1.87E+02	7.65E-01
SSOD-C6	51871	8.30E-01	1.94E+01	8.19E-01	4.06E+00	1.85E-01	3.97E+00	2.87E+00	8.35E+00	1.87E+02	5.55E-01
SWRB-C01	36015	1.17E+00	1.56E+00	1.17E+00	3.86E+00	1.76E-01	3.77E+00	2.87E+00	1.24E+01	1.87E+02	1.44E+00
SWRB-C02	43403	1.26E+00	1.88E+00	1.23E+00	3.96E+00	1.80E-01	3.87E+00	5.12E-01	8.33E+00	1.10E+02	8.64E-01
SWRB-C03	48923	1.23E+00	1.85E+00	1.13E+00	2.96E+00	1.35E-01	2.89E+00	2.54E+00	7.76E+00	1.13E+02	1.10E+00
SWRB-C04	55182	1.08E+00	1.56E+00	1.06E+00	1.66E+01	7.54E-01	1.62E+01	2.87E+00	1.24E+01	1.87E+02	1.44E+00
SWRB-C05	50367	1.22E+00	1.56E+00	1.22E+00	5.19E+00	2.36E-01	5.07E+00	2.87E+00	1.24E+01	1.87E+02	1.44E+00
SWRB-C06	40708	1.27E+00	1.91E+00	1.26E+00	2.95E+00	1.34E-01	2.88E+00	5.40E-01	8.99E+00	1.56E+02	6.58E-01
SWRB-C07	41483	8.31E-01	2.09E+00	1.20E+00	2.92E+00	1.33E-01	2.86E+00	2.30E+00	7.60E+00	1.60E+02	7.50E-01
SWRB-C08	44600	1.14E+00	1.56E+00	1.22E+00	6.25E+00	2.85E-01	6.10E+00	2.87E+00	1.24E+01	1.87E+02	1.44E+00
SWRB-C09	24162	9.20E-01	2.05E+00	9.02E-01	2.54E+00	1.16E-01	2.48E+00	2.15E+00	6.10E+00	1.20E+02	5.50E-01
SWRB-C10	19195	8.46E-01	1.56E+00	8.11E-01	2.28E+00	1.04E-01	2.22E+00	2.87E+00	1.24E+01	1.87E+02	1.44E+00
TCA-C1	52136	1.32E+00	1.56E+00	1.29E+00	5.09E+00	2.32E-01	4.97E+00	2.87E+00	1.24E+01	1.87E+02	1.44E+00
TCA-C2	58161	1.11E+00	1.56E+00	1.16E+00	2.59E+00	1.18E-01	2.53E+00	2.87E+00	1.24E+01	1.87E+02	1.44E+00
TCA-C3	58162	1.18E+00	1.56E+00	1.16E+00	3.52E+00	1.60E-01	3.43E+00	2.87E+00	1.24E+01	1.87E+02	1.44E+00
TCA-C4	52020	1.42E+00	1.56E+00	1.43E+00	5.32E+00	2.43E-01	5.20E+00	2.87E+00	1.24E+01	1.87E+02	1.44E+00
TCA-C5	55882	1.07E+00	1.56E+00	1.05E+00	5.63E+00	2.57E-01	5.50E+00	2.87E+00	1.24E+01	1.87E+02	1.44E+00
TCA-C6	52366	1.52E+00	1.56E+00	1.02E+00	4.68E+00	2.13E-01	4.57E+00	2.87E+00	1.24E+01	1.87E+02	1.44E+00
	Maximum Value	1.63E+00	1.95E+01	1.50E+00	2.79E+01	1.27E+00	2.72E+01	6.40E+00	1.24E+01	1.87E+02	1.48E+00
	Average (*used in Risk Calc.*)	1.18E+00	1.97E+00	1.16E+00	6.75E+00	3.07E-01	6.59E+00	2.94E+00	9.49E+00	1.85E+02	9.31E-01
	Number of Cert Results	1.54E+02	2.20E+01	1.54E+02	1.54E+02	1.54E+02	1.54E+02	1.10E+01	1.18E+02	5.00E+00	1.13E+02
	Number of Inserted Values	0.00E+00	1.32E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.43E+02	3.60E+01	1.49E+02	4.10E+01

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 2

Certification Units	Area sq ft	Boron ug/g	Cadmium ug/g	Chromium (VI) ug/g	Cobalt ug/g	Copper ug/g	Fluoride ug/g	Lead ug/g	Manganese ug/g	Mercury ug/g	Molybdenum ug/g	Nickel ug/g
A1PII-S1-01	143889	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A2P1-AFP-C1	30642	NA	1.34E+00	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	7.90E-01	NA
A2P1-AFP-C2	42234	NA	1.14E+00	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	2.20E+00	NA
A2P1-AFP-C3	20842	NA	1.15E+00	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	2.64E+00	NA
A2P1-AFP-C-4	22353	NA	9.40E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	1.15E+00	NA
A2P1-AFP-C-5	62286	NA	9.40E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	1.15E+00	NA
A2P1-AFP-C-6	35463	NA	9.20E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	1.44E+00	NA
A2P1-IFP-C-1	55241	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A2P1-IFP-C-2	60391	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A2P1-IFP-C-3	50948	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A2P1-IFP-C-4	61178	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A2P1-NWU-C-1	60760	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A2P1-NWU-C-10	26787	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A2P1-NWU-C-11	30203	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A2P1-NWU-C-12	26799	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A2P1-NWU-C-13	34010	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A2P1-NWU-C-2	53186	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A2P1-NWU-C-3	29234	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A2P1-NWU-C-4	35673	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A2P1-NWU-C-5	33550	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A2P1-NWU-C-6	60308	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A2P1-NWU-C-7	59182	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A2P1-NWU-C-8	41769	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A2P1-NWU-C-9	44757	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A2P1-SF-C-1	61667	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A2P1-SF-C-2	55717	NA	9.89E-01	2.47E+01	NA	NA	NA	1.80E+01	NA	7.00E-02	1.54E+00	NA
A2P1-SF-C-3	42617	NA	9.89E-01	2.47E+01	NA	NA	NA	1.52E+01	NA	7.00E-02	3.30E+00	NA
A2P1-SF-C-4	50911	NA	9.89E-01	2.47E+01	NA	NA	NA	2.01E+01	NA	7.00E-02	1.78E+00	NA
A2P1-SF-C-5	50629	NA	9.89E-01	2.47E+01	NA	NA	NA	4.97E+01	NA	7.00E-02	1.56E+00	NA
A2P1-SF-C-6	59470	NA	9.89E-01	2.47E+01	NA	NA	NA	2.02E+01	NA	7.00E-02	1.57E+00	NA
A2P1-SF-C-7	29993	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A2P2-C1	56964	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A2P2-C10	52688	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A2P2-C11	52690	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A2P2-C12	54964	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A2P2-C13	54958	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A2P2-C15	54963	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A2P2-C16	30689	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A2P2-C17	50085	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A2P2-C18	50092	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A2P2-C19	44521	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A2P2-C2	53738	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A2P2-C20	44556	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A2P2-C21	45012	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A2P2-C22	48805	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A2P2-C23	50097	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A2P2-C24	54356	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A2P2-C25	1980	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A2P2-C26	20560	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A2P2-C27	25946	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A2P2-C28	37956	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A2P2-C29	62411	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A2P2-C3	54521	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A2P2-C30	61405	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A2P2-C31	62153	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A2P2-C32	62238	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A2P2-C33	43319	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A2P2-C34	42378	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A2P2-C35	61027	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A2P2-C36	61138	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A2P2-C37	61979	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A2P2-C38	62500	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A2P2-C39	62424	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A2P2-C4	51181	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A2P2-C40	62251	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A2P2-C41	62316	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A2P2-C42	61667	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A2P2-C43	61780	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A2P2-C44	62335	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A2P2-C45	61746	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A2P2-C46	11770	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A2P2-C5	55598	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A2P2-C6	53729	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A2P2-C7	58080	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A2P2-C8	62229	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A2P2-C9	52690	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A2P2-CEWF	28161	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A2P2-CSUB1	86757	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A2P2-CSUB2	54465	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A2P2-CSUB3	42712	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A2P2-IHR1	48257	NA	9.89E-01	2.47E+01	NA	NA	NA	1.75E+01	NA	7.00E-02	5.24E+00	NA
A2P2-IHR2	15337	NA	9.89E-01	2.47E+01	NA	NA	NA	1.68E+01	NA	7.00E-02	5.24E+00	NA
A2P2-SP3-C-1	58391	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A2P2-SP3-C-2	55225	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A2P3-4SF	35433	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A2P3-PT2-C-1	54541	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A2P3-PT2-C-2	56488	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A2P3-PT2-C-3	104397	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A5A-PC01A	62493	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A5A-PC02A	62479	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A5A-PC03A	58386	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A5A-PC04A	62829	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A5A-PC05A	58386	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A5A-PC06A	58396	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A5-EF-01	49577	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 2

Certification Units	Area sq ft	Boron ug/g	Cadmium ug/g	Chromium (VI) ug/g	Cobalt ug/g	Copper ug/g	Fluoride ug/g	Lead ug/g	Manganese ug/g	Mercury ug/g	Molybdenum ug/g	Nickel ug/g
A5-EF-02	46738	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A5-EF-03	46306	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A5-EPL-C01	44798	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A5-EPL-C02	45851	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A5-EPL-C03	49955	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A5-EPL-C04	49946	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A5WPL-PC01	61686	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A5WPL-PC02	61795	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A5WPL-PC03	61687	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A5WPL-PC04	61685	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A7MA-C03	59794	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A7MA-C04	61209	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A7MA-C05	61047	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A7MA-C06	38081	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A7MA-C07	8965	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A7MA-C08	43732	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A7MA-C09	46113	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A7MA-C10	46313	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A7MA-C11	48260	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A7MA-C12	50603	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A7MA-C13	60993	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A7MA-C14	61091	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A7MA-C15	61470	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A7MA-C16	39968	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A7MA-C17	21714	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A7SAR-C01	47418	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A7SAR-C02	61637	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A7SAR-C03	62210	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A7SAR-C04	62425	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A7SAR-C05	62467	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A7STSA-C01	49322	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A7STSA-C02	52337	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A7STSA-C03	62014	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A7STSA-C04	62398	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A7STSA-C05	42664	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A7STSA-C06	61954	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
A7STSA-C07	61672	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
SSOD-C1	49126	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
SSOD-C2	60728	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
SSOD-C3	61701	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
SSOD-C4	55136	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
SSOD-C5	46100	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
SSOD-C6	51871	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
SWRB-C01	36015	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
SWRB-C02	43403	NA	2.72E-01	2.06E+01	NA	NA	NA	1.86E+01	NA	2.52E-02	2.11E+00	NA
SWRB-C03	48923	NA	2.50E-01	2.78E+01	NA	NA	NA	1.97E+01	NA	5.50E-02	1.70E+00	NA
SWRB-C04	55182	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
SWRB-C05	50367	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
SWRB-C06	40708	NA	3.67E-01	1.91E+01	NA	NA	NA	1.67E+01	NA	2.23E-02	2.16E+00	NA
SWRB-C07	41483	NA	3.00E-01	2.30E+01	NA	NA	NA	2.20E+01	NA	3.00E-02	2.50E+00	NA
SWRB-C08	44600	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
SWRB-C09	24162	NA	1.90E-01	1.83E+01	NA	NA	NA	1.36E+01	NA	1.70E-02	1.80E+00	NA
SWRB-C10	19195	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
TCA-C1	52136	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
TCA-C2	58161	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
TCA-C3	58162	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
TCA-C4	52020	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
TCA-C5	55882	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
TCA-C6	52366	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01	NA	7.00E-02	5.24E+00	NA
Maximum Value		NA	1.34E+00	2.78E+01	NA	NA	NA	4.97E+01	NA	7.00E-02	5.24E+00	NA
Average (*used in Risk Calc.*)		NA	9.69E-01	2.46E+01	NA	NA	NA	2.98E+01	NA	6.87E-02	4.89E+00	NA
Number of Cert Results		NA	1.10E+01	5.00E+00	NA	NA	NA	1.20E+01	NA	5.00E+00	1.60E+01	NA
Number of Inserted Values		NA	1.43E+02	1.49E+02	NA	NA	NA	1.42E+02	NA	1.49E+02	1.38E+02	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 2

Certification Units	Area sq ft	Selenium ug/g	Silver ug/g	Thallium ug/g	Uranium ug/g	Vanadium ug/g	Zinc ug/g	Acetone ug/g	Aroclor-1254 ug/g	Aroclor-1260 ug/g	Benzene ug/g	Benzo(a)anthracene ug/g
A1PII-S1-01	143889	1.19E+00	1.13E+00	NA	1.90E+01	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A2P1-AFP-C1	30642	1.19E+00	5.20E-01	NA	4.93E+00	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A2P1-AFP-C2	42234	1.19E+00	5.70E-01	NA	3.49E+01	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A2P1-AFP-C3	20842	1.19E+00	5.70E-01	NA	4.72E+00	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A2P1-AFP-C-4	22353	1.19E+00	5.20E-01	NA	4.10E+00	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A2P1-AFP-C-5	62286	1.19E+00	5.20E-01	NA	4.05E+00	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A2P1-AFP-C-6	35463	1.19E+00	5.20E-01	NA	1.22E+01	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A2P1-IFP-C-1	55241	1.19E+00	1.13E+00	NA	3.08E+00	NA	NA	0.00E+00	4.11E-02	4.11E-02	0.00E+00	0.00E+00
A2P1-IFP-C-2	60391	1.19E+00	1.13E+00	NA	8.18E+00	NA	NA	0.00E+00	3.96E-01	3.96E-02	0.00E+00	0.00E+00
A2P1-IFP-C-3	50948	1.19E+00	1.13E+00	NA	9.03E+00	NA	NA	0.00E+00	4.50E-02	4.50E-02	0.00E+00	0.00E+00
A2P1-IFP-C-4	61178	1.19E+00	1.13E+00	NA	8.64E+00	NA	NA	0.00E+00	4.29E-02	4.29E-02	0.00E+00	4.08E-01
A2P1-NWU-C-1	60760	1.19E+00	1.13E+00	NA	6.09E+00	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A2P1-NWU-C-10	26787	1.19E+00	1.13E+00	NA	8.84E+00	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A2P1-NWU-C-11	30203	1.19E+00	1.13E+00	NA	1.04E+01	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A2P1-NWU-C-12	26799	1.19E+00	1.13E+00	NA	1.73E+01	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A2P1-NWU-C-13	34010	1.19E+00	1.13E+00	NA	4.82E+00	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A2P1-NWU-C-2	53186	1.19E+00	1.13E+00	NA	5.22E+00	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A2P1-NWU-C-3	29234	1.19E+00	1.13E+00	NA	7.19E+00	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A2P1-NWU-C-4	35673	1.19E+00	1.13E+00	NA	7.46E+00	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A2P1-NWU-C-5	33550	1.19E+00	1.13E+00	NA	8.53E+00	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A2P1-NWU-C-6	60308	1.19E+00	1.13E+00	NA	6.98E+00	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A2P1-NWU-C-7	59182	1.19E+00	1.13E+00	NA	1.03E+01	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A2P1-NWU-C-8	41769	1.19E+00	1.13E+00	NA	2.85E+01	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A2P1-NWU-C-9	44757	1.19E+00	1.13E+00	NA	1.68E+01	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A2P1-SF-C-1	61667	1.19E+00	1.13E+00	NA	5.77E+00	NA	NA	0.00E+00	4.10E-02	8.78E-02	0.00E+00	0.00E+00
A2P1-SF-C-2	55717	1.19E+00	1.13E+00	NA	7.09E+00	NA	NA	0.00E+00	4.15E-02	4.15E-02	0.00E+00	0.00E+00
A2P1-SF-C-3	42617	1.19E+00	1.13E+00	NA	4.25E+00	NA	NA	0.00E+00	4.10E-02	4.10E-02	0.00E+00	0.00E+00
A2P1-SF-C-4	50911	1.19E+00	1.13E+00	NA	5.14E+00	NA	NA	0.00E+00	4.23E-02	4.23E-02	0.00E+00	0.00E+00
A2P1-SF-C-5	50629	1.19E+00	1.13E+00	NA	2.71E+00	NA	NA	0.00E+00	4.03E-02	4.03E-02	0.00E+00	0.00E+00
A2P1-SF-C-6	59470	1.19E+00	1.13E+00	NA	8.97E+00	NA	NA	0.00E+00	4.25E-02	4.25E-02	0.00E+00	0.00E+00
A2P1-SF-C-7	29993	1.19E+00	1.13E+00	NA	2.62E+00	NA	NA	0.00E+00	2.04E-02	3.97E-02	0.00E+00	0.00E+00
A2P2-C1	56964	1.19E+00	1.13E+00	NA	8.94E+00	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A2P2-C10	52688	1.19E+00	1.13E+00	NA	1.83E+01	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A2P2-C11	52690	1.19E+00	1.13E+00	NA	1.63E+01	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A2P2-C12	54964	1.19E+00	1.13E+00	NA	3.11E+01	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A2P2-C13	54958	1.19E+00	1.13E+00	NA	2.62E+01	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A2P2-C15	54963	1.19E+00	1.13E+00	NA	5.94E+01	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A2P2-C16	30689	1.19E+00	1.13E+00	NA	3.38E+01	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A2P2-C17	50085	1.19E+00	1.13E+00	NA	4.21E+01	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A2P2-C18	50092	1.19E+00	1.13E+00	NA	3.04E+01	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A2P2-C19	44521	1.19E+00	1.13E+00	NA	2.43E+01	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A2P2-C2	53738	1.19E+00	1.13E+00	NA	1.89E+01	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A2P2-C20	44556	1.19E+00	1.13E+00	NA	2.78E+01	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A2P2-C21	45012	1.19E+00	1.13E+00	NA	1.57E+01	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A2P2-C22	48805	1.19E+00	1.13E+00	NA	1.72E+01	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A2P2-C23	50097	1.19E+00	1.13E+00	NA	6.62E+01	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A2P2-C24	54356	1.19E+00	1.13E+00	NA	2.22E+01	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A2P2-C25	1980	1.19E+00	1.13E+00	NA	2.95E+01	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A2P2-C26	20560	1.19E+00	1.13E+00	NA	3.83E+01	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A2P2-C27	25946	1.19E+00	1.13E+00	NA	9.63E+00	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A2P2-C28	37956	1.19E+00	1.13E+00	NA	8.13E+00	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A2P2-C29	62411	1.19E+00	1.13E+00	NA	1.33E+01	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A2P2-C3	54521	1.19E+00	1.13E+00	NA	2.86E+01	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A2P2-C30	61405	1.19E+00	1.13E+00	NA	3.49E+01	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A2P2-C31	62153	1.19E+00	1.13E+00	NA	2.30E+01	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A2P2-C32	62238	1.19E+00	1.13E+00	NA	2.64E+01	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A2P2-C33	43319	1.19E+00	1.13E+00	NA	1.12E+01	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A2P2-C34	42378	1.19E+00	1.13E+00	NA	2.00E+01	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A2P2-C35	61027	1.19E+00	1.13E+00	NA	2.05E+01	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A2P2-C36	61138	1.19E+00	1.13E+00	NA	2.79E+01	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A2P2-C37	61979	1.19E+00	1.13E+00	NA	2.41E+01	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A2P2-C38	62500	1.19E+00	1.13E+00	NA	2.55E+01	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A2P2-C39	62424	1.19E+00	1.13E+00	NA	2.73E+01	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A2P2-C4	51181	1.19E+00	1.13E+00	NA	2.68E+01	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A2P2-C40	62251	1.19E+00	1.13E+00	NA	6.06E+01	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A2P2-C41	62316	1.19E+00	1.13E+00	NA	3.47E+01	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A2P2-C42	61667	1.19E+00	1.13E+00	NA	3.79E+01	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A2P2-C43	61780	1.19E+00	1.13E+00	NA	3.16E+01	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A2P2-C44	62335	1.19E+00	1.13E+00	NA	4.40E+01	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A2P2-C45	61746	1.19E+00	1.13E+00	NA	3.77E+01	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A2P2-C46	11770	1.19E+00	1.13E+00	NA	8.17E+01	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A2P2-C5	55598	1.19E+00	1.13E+00	NA	3.69E+01	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A2P2-C6	53729	1.19E+00	1.13E+00	NA	4.71E+01	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A2P2-C7	58080	1.19E+00	1.13E+00	NA	3.88E+01	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A2P2-C8	62229	1.19E+00	1.13E+00	NA	4.23E+01	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A2P2-C9	52690	1.19E+00	1.13E+00	NA	2.29E+01	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A2P2-CEWF	28161	1.19E+00	1.13E+00	NA	9.51E+00	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A2P2-CSUB1	86757	1.19E+00	1.13E+00	NA	3.76E+01	NA	NA	0.00E+00	3.30E-02	0.00E+00	0.00E+00	0.00E+00
A2P2-CSUB2	54465	1.19E+00	1.13E+00	NA	2.03E+01	NA	NA	0.00E+00	3.40E-03	0.00E+00	0.00E+00	0.00E+00
A2P2-CSUB3	42712	1.19E+00	1.13E+00	NA	1.68E+01	NA	NA	0.00E+00	1.40E-02	0.00E+00	0.00E+00	0.00E+00
A2P2-IHR1	48257	1.19E+00	1.13E+00	NA	9.70E+00	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A2P2-IHR2	15337	1.19E+00	1.13E+00	NA	1.09E+01	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A2P2-SP3-C-1	58391	1.19E+00	1.13E+00	NA	1.97E+01	NA	NA	0.00E+00	7.02E-02	4.50E-02	0.00E+00	0.00E+00
A2P2-SP3-C-2	55225	1.19E+00	1.13E+00	NA	9.86E+00	NA	NA	0.00E+00	8.00E-02	3.90E-02	0.00E+00	0.00E+00
A2P3-4SF	35433	1.19E+00	1.13E+00	NA	1.64E+01	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A2P3-PT2-C-1	54541	1.19E+00	1.13E+00	NA	2.98E+01	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A2P3-PT2-C-2	56488	1.19E+00	1.13E+00	NA	5.91E+00	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A2P3-PT2-C-3	104397	1.19E+00	1.13E+00	NA	2.00E+01	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A5A-PC01A	62493	1.19E+00	1.13E+00	NA	5.19E+01	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A5A-PC02A	62479	1.19E+00	1.13E+00	NA	1.46E+01	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A5A-PC03A	58386	1.19E+00	1.13E+00	NA	1.97E+01	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A5A-PC04A	62829	1.19E+00	1.13E+00	NA	4.71E+01	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A5A-PC05A	58386	1.19E+00	1.13E+00	NA	7.46E+01	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A5A-PC06A	58396	1.19E+00	1.13E+00	NA	1.40E+01	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A5-EF-01	49577	1.19E+00	1.13E+00	NA	4.20E+01	NA	NA	0.00E+00	1.13E-02	1.55E-02	0.00E+00	0.00E+00

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 2

Certification Units	Area sq ft	Selenium ug/g	Silver ug/g	Thallium ug/g	Uranium ug/g	Vanadium ug/g	Zinc ug/g	Acetone ug/g	Aroclor-1254 ug/g	Aroclor-1260 ug/g	Benzene ug/g	Benzo(a)anthracene ug/g
A5-EF-02	46738	1.19E+00	1.13E+00	NA	3.24E+01	NA	NA	0.00E+00	1.05E-02	1.52E-02	0.00E+00	0.00E+00
A5-EF-03	46306	1.19E+00	1.13E+00	NA	2.08E+01	NA	NA	0.00E+00	1.10E-02	1.51E-02	0.00E+00	0.00E+00
A5-EPL-C01	44798	1.19E+00	1.13E+00	NA	6.32E+00	NA	NA	0.00E+00	5.00E-03	0.00E+00	0.00E+00	0.00E+00
A5-EPL-C02	45851	1.19E+00	1.13E+00	NA	5.89E+00	NA	NA	0.00E+00	4.10E-03	0.00E+00	0.00E+00	0.00E+00
A5-EPL-C03	49955	1.19E+00	1.13E+00	NA	6.65E+00	NA	NA	0.00E+00	6.10E-02	0.00E+00	0.00E+00	0.00E+00
A5-EPL-C04	49946	1.19E+00	1.13E+00	NA	7.74E+00	NA	NA	0.00E+00	1.60E-02	0.00E+00	0.00E+00	0.00E+00
A5WPL-PC01	61686	1.19E+00	1.13E+00	NA	1.36E+01	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A5WPL-PC02	61795	1.19E+00	1.13E+00	NA	6.90E+00	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A5WPL-PC03	61687	1.19E+00	1.13E+00	NA	1.65E+01	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A5WPL-PC04	61685	1.19E+00	1.13E+00	NA	1.23E+01	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A7MA-C03	59794	1.19E+00	1.13E+00	NA	2.10E+01	NA	NA	0.00E+00	3.13E-02	1.67E-02	0.00E+00	0.00E+00
A7MA-C04	61209	1.19E+00	1.13E+00	NA	1.34E+01	NA	NA	0.00E+00	1.08E-02	6.70E-03	0.00E+00	0.00E+00
A7MA-C05	61047	1.19E+00	1.13E+00	NA	2.84E+01	NA	NA	0.00E+00	1.33E-02	5.60E-03	0.00E+00	0.00E+00
A7MA-C06	38081	1.19E+00	1.13E+00	NA	1.15E+01	NA	NA	0.00E+00	1.48E-02	9.70E-03	0.00E+00	0.00E+00
A7MA-C07	8965	1.19E+00	1.13E+00	NA	1.32E+01	NA	NA	0.00E+00	1.02E-02	3.90E-03	0.00E+00	0.00E+00
A7MA-C08	43732	1.19E+00	1.13E+00	NA	1.18E+01	NA	NA	0.00E+00	1.55E-02	6.90E-03	0.00E+00	0.00E+00
A7MA-C09	46113	1.19E+00	1.13E+00	NA	1.78E+01	NA	NA	0.00E+00	1.69E-02	5.70E-03	0.00E+00	0.00E+00
A7MA-C10	46313	1.19E+00	1.13E+00	NA	1.61E+01	NA	NA	0.00E+00	7.80E-03	4.10E-03	0.00E+00	0.00E+00
A7MA-C11	48260	1.19E+00	1.13E+00	NA	2.42E+01	NA	NA	0.00E+00	1.53E-02	6.90E-03	0.00E+00	0.00E+00
A7MA-C12	50603	1.19E+00	1.13E+00	NA	1.96E+01	NA	NA	0.00E+00	8.90E-03	3.80E-03	0.00E+00	0.00E+00
A7MA-C13	60993	1.19E+00	1.13E+00	NA	1.82E+01	NA	NA	0.00E+00	4.96E-02	2.90E-02	0.00E+00	0.00E+00
A7MA-C14	61091	1.19E+00	1.13E+00	NA	1.90E+01	NA	NA	0.00E+00	1.23E-02	8.80E-03	0.00E+00	0.00E+00
A7MA-C15	61470	1.19E+00	1.13E+00	NA	7.62E+00	NA	NA	0.00E+00	1.10E-02	7.60E-03	0.00E+00	0.00E+00
A7MA-C16	39968	1.19E+00	1.13E+00	NA	8.02E+00	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A7MA-C17	21714	1.19E+00	1.13E+00	NA	9.82E+00	NA	NA	0.00E+00	7.20E-03	5.10E-03	0.00E+00	0.00E+00
A7SAR-C01	47418	1.19E+00	1.13E+00	NA	8.54E+00	NA	NA	0.00E+00	2.00E-02	0.00E+00	0.00E+00	0.00E+00
A7SAR-C02	61637	1.19E+00	1.13E+00	NA	1.97E+01	NA	NA	0.00E+00	2.28E-02	0.00E+00	0.00E+00	0.00E+00
A7SAR-C03	62210	1.19E+00	1.13E+00	NA	2.49E+01	NA	NA	0.00E+00	1.60E-02	0.00E+00	0.00E+00	0.00E+00
A7SAR-C04	62425	1.19E+00	1.13E+00	NA	1.75E+01	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A7SAR-C05	62467	1.19E+00	1.13E+00	NA	1.04E+01	NA	NA	0.00E+00	4.30E-03	4.30E-03	0.00E+00	0.00E+00
A7STSA-C01	49322	1.19E+00	1.13E+00	NA	1.99E+01	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A7STSA-C02	52337	1.19E+00	1.13E+00	NA	7.77E+00	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A7STSA-C03	62014	1.19E+00	1.13E+00	NA	1.17E+01	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A7STSA-C04	62398	1.19E+00	1.13E+00	NA	1.43E+01	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A7STSA-C05	42664	1.19E+00	1.13E+00	NA	1.43E+01	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A7STSA-C06	61954	1.19E+00	1.13E+00	NA	1.78E+01	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A7STSA-C07	61672	1.19E+00	1.13E+00	NA	1.24E+01	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
SSOD-C1	49126	1.19E+00	1.13E+00	NA	3.24E+01	NA	NA	0.00E+00	3.40E-02	0.00E+00	0.00E+00	0.00E+00
SSOD-C2	60728	1.19E+00	1.13E+00	NA	3.80E+01	NA	NA	0.00E+00	1.60E-02	0.00E+00	0.00E+00	0.00E+00
SSOD-C3	61701	1.19E+00	1.13E+00	NA	2.56E+01	NA	NA	0.00E+00	1.50E-02	0.00E+00	0.00E+00	0.00E+00
SSOD-C4	55136	1.19E+00	1.13E+00	NA	1.75E+01	NA	NA	0.00E+00	1.60E-03	0.00E+00	0.00E+00	0.00E+00
SSOD-C5	46100	1.19E+00	1.13E+00	NA	1.91E+01	NA	NA	0.00E+00	5.40E-03	0.00E+00	0.00E+00	0.00E+00
SSOD-C6	51871	1.19E+00	1.13E+00	NA	1.19E+01	NA	NA	0.00E+00	5.51E-02	0.00E+00	0.00E+00	0.00E+00
SWRB-C01	36015	1.19E+00	1.13E+00	NA	1.13E+01	NA	NA	0.00E+00	1.99E-02	1.76E-02	0.00E+00	0.00E+00
SWRB-C02	43403	2.18E+00	5.58E+00	NA	1.16E+01	NA	NA	1.92E-02	2.99E-02	1.50E-02	1.30E-03	4.35E-02
SWRB-C03	48923	3.81E+00	8.60E-02	NA	8.66E+00	NA	NA	2.48E-02	4.20E-03	4.20E-03	1.20E-03	4.24E-02
SWRB-C04	55182	1.19E+00	1.13E+00	NA	4.85E+01	NA	NA	0.00E+00	1.00E-01	4.27E-02	0.00E+00	0.00E+00
SWRB-C05	50367	1.19E+00	1.13E+00	NA	1.52E+01	NA	NA	0.00E+00	1.29E-01	7.50E-02	0.00E+00	0.00E+00
SWRB-C06	40708	2.32E+00	2.14E-01	NA	8.64E+00	NA	NA	1.27E-02	1.09E-02	4.70E-03	1.40E-03	4.65E-02
SWRB-C07	41483	3.46E+00	9.70E-02	NA	8.57E+00	NA	NA	1.85E-02	6.20E-03	5.20E-03	1.10E-03	5.15E-02
SWRB-C08	44600	1.19E+00	1.13E+00	NA	1.83E+01	NA	NA	0.00E+00	6.90E-03	4.50E-03	0.00E+00	0.00E+00
SWRB-C09	24162	3.22E+00	6.50E-02	NA	7.43E+00	NA	NA	5.10E-03	9.20E-03	3.80E-03	1.00E-03	1.46E-01
SWRB-C10	19195	1.19E+00	1.13E+00	NA	6.67E+00	NA	NA	0.00E+00	4.30E-02	1.20E-02	0.00E+00	0.00E+00
TCA-C1	52136	1.19E+00	1.13E+00	NA	1.49E+01	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TCA-C2	58161	1.19E+00	1.13E+00	NA	7.58E+00	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TCA-C3	58162	1.19E+00	1.13E+00	NA	1.03E+01	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TCA-C4	52020	1.19E+00	1.13E+00	NA	1.56E+01	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TCA-C5	55882	1.19E+00	1.13E+00	NA	1.65E+01	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TCA-C6	52366	1.19E+00	1.13E+00	NA	1.37E+01	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Maximum Value		3.81E+00	5.58E+00	NA	8.17E+01	NA	NA	2.48E-02	3.96E-01	8.78E-02	1.40E-03	4.08E-01
Average (*used in Risk Calc.*)		1.25E+00	1.11E+00	NA	1.98E+01	NA	NA	5.21E-04	1.23E-02	6.12E-03	3.90E-05	4.79E-03
Number of Cert Results		5.00E+00	1.10E+01	NA	1.54E+02	NA	NA	5.00E+00	5.70E+01	4.10E+01	5.00E+00	6.00E+00
Number of Inserted Values		1.49E+02	1.43E+02	NA	0.00E+00	NA	NA	1.49E+02	9.70E+01	1.13E+02	1.49E+02	1.48E+02

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 2

Certification Units	Area sq ft	Benzo(a)pyrene ug/g	Benzo(b)fluoranthene ug/g	Benzo(k)fluoranthene ug/g	Bis(2-chloroisopropyl)ether ug/g	Bis(2-ethylhexyl)phthalate ug/g
A1PII-S1-01	143889	0.00E+00	0.00E+00	0.00E+00	NA	NA
A2P1-AFP-C1	30642	0.00E+00	0.00E+00	0.00E+00	NA	NA
A2P1-AFP-C2	42234	0.00E+00	0.00E+00	0.00E+00	NA	NA
A2P1-AFP-C3	20842	0.00E+00	0.00E+00	0.00E+00	NA	NA
A2P1-AFP-C-4	22353	0.00E+00	0.00E+00	0.00E+00	NA	NA
A2P1-AFP-C-5	62286	0.00E+00	0.00E+00	0.00E+00	NA	NA
A2P1-AFP-C-6	35463	0.00E+00	0.00E+00	0.00E+00	NA	NA
A2P1-IFP-C-1	55241	4.11E-01	0.00E+00	0.00E+00	NA	NA
A2P1-IFP-C-2	50391	3.96E-01	0.00E+00	0.00E+00	NA	NA
A2P1-IFP-C-3	50948	4.50E-01	0.00E+00	0.00E+00	NA	NA
A2P1-IFP-C-4	61178	0.00E+00	0.00E+00	0.00E+00	NA	NA
A2P1-NWU-C-1	60760	0.00E+00	0.00E+00	0.00E+00	NA	NA
A2P1-NWU-C-10	26787	0.00E+00	0.00E+00	0.00E+00	NA	NA
A2P1-NWU-C-11	30203	0.00E+00	0.00E+00	0.00E+00	NA	NA
A2P1-NWU-C-12	26799	0.00E+00	0.00E+00	0.00E+00	NA	NA
A2P1-NWU-C-13	34010	0.00E+00	0.00E+00	0.00E+00	NA	NA
A2P1-NWU-C-2	53186	0.00E+00	0.00E+00	0.00E+00	NA	NA
A2P1-NWU-C-3	29234	0.00E+00	0.00E+00	0.00E+00	NA	NA
A2P1-NWU-C-4	35673	0.00E+00	0.00E+00	0.00E+00	NA	NA
A2P1-NWU-C-5	33550	0.00E+00	0.00E+00	0.00E+00	NA	NA
A2P1-NWU-C-6	60308	0.00E+00	0.00E+00	0.00E+00	NA	NA
A2P1-NWU-C-7	59182	0.00E+00	0.00E+00	0.00E+00	NA	NA
A2P1-NWU-C-8	41769	0.00E+00	0.00E+00	0.00E+00	NA	NA
A2P1-NWU-C-9	44757	0.00E+00	0.00E+00	0.00E+00	NA	NA
A2P1-SF-C-1	61667	4.10E-01	0.00E+00	0.00E+00	NA	NA
A2P1-SF-C-2	55717	4.05E-01	0.00E+00	0.00E+00	NA	NA
A2P1-SF-C-3	42617	4.10E-01	0.00E+00	0.00E+00	NA	NA
A2P1-SF-C-4	50911	4.23E-01	0.00E+00	0.00E+00	NA	NA
A2P1-SF-C-5	50629	4.03E-01	0.00E+00	0.00E+00	NA	NA
A2P1-SF-C-6	59470	4.25E-01	0.00E+00	0.00E+00	NA	NA
A2P1-SF-C-7	29993	2.06E-01	0.00E+00	0.00E+00	NA	NA
A2P2-C1	56964	0.00E+00	0.00E+00	0.00E+00	NA	NA
A2P2-C10	52688	0.00E+00	0.00E+00	0.00E+00	NA	NA
A2P2-C11	52690	0.00E+00	0.00E+00	0.00E+00	NA	NA
A2P2-C12	54964	0.00E+00	0.00E+00	0.00E+00	NA	NA
A2P2-C13	54958	0.00E+00	0.00E+00	0.00E+00	NA	NA
A2P2-C15	54963	0.00E+00	0.00E+00	0.00E+00	NA	NA
A2P2-C16	30689	0.00E+00	0.00E+00	0.00E+00	NA	NA
A2P2-C17	50085	0.00E+00	0.00E+00	0.00E+00	NA	NA
A2P2-C18	50092	0.00E+00	0.00E+00	0.00E+00	NA	NA
A2P2-C19	44521	0.00E+00	0.00E+00	0.00E+00	NA	NA
A2P2-C2	53738	0.00E+00	0.00E+00	0.00E+00	NA	NA
A2P2-C20	44556	0.00E+00	0.00E+00	0.00E+00	NA	NA
A2P2-C21	45012	0.00E+00	0.00E+00	0.00E+00	NA	NA
A2P2-C22	48805	0.00E+00	0.00E+00	0.00E+00	NA	NA
A2P2-C23	50097	0.00E+00	0.00E+00	0.00E+00	NA	NA
A2P2-C24	54356	0.00E+00	0.00E+00	0.00E+00	NA	NA
A2P2-C25	1980	0.00E+00	0.00E+00	0.00E+00	NA	NA
A2P2-C26	20560	0.00E+00	0.00E+00	0.00E+00	NA	NA
A2P2-C27	25946	0.00E+00	0.00E+00	0.00E+00	NA	NA
A2P2-C28	37956	0.00E+00	0.00E+00	0.00E+00	NA	NA
A2P2-C29	62411	0.00E+00	0.00E+00	0.00E+00	NA	NA
A2P2-C3	54521	0.00E+00	0.00E+00	0.00E+00	NA	NA
A2P2-C30	61405	0.00E+00	0.00E+00	0.00E+00	NA	NA
A2P2-C31	62153	0.00E+00	0.00E+00	0.00E+00	NA	NA
A2P2-C32	62238	0.00E+00	0.00E+00	0.00E+00	NA	NA
A2P2-C33	43319	0.00E+00	0.00E+00	0.00E+00	NA	NA
A2P2-C34	42378	0.00E+00	0.00E+00	0.00E+00	NA	NA
A2P2-C35	61027	0.00E+00	0.00E+00	0.00E+00	NA	NA
A2P2-C36	61138	0.00E+00	0.00E+00	0.00E+00	NA	NA
A2P2-C37	61979	0.00E+00	0.00E+00	0.00E+00	NA	NA
A2P2-C38	62500	0.00E+00	0.00E+00	0.00E+00	NA	NA
A2P2-C39	62424	0.00E+00	0.00E+00	0.00E+00	NA	NA
A2P2-C4	51181	0.00E+00	0.00E+00	0.00E+00	NA	NA
A2P2-C40	62251	0.00E+00	0.00E+00	0.00E+00	NA	NA
A2P2-C41	62316	0.00E+00	0.00E+00	0.00E+00	NA	NA
A2P2-C42	61667	0.00E+00	0.00E+00	0.00E+00	NA	NA
A2P2-C43	61780	0.00E+00	0.00E+00	0.00E+00	NA	NA
A2P2-C44	62335	0.00E+00	0.00E+00	0.00E+00	NA	NA
A2P2-C45	61746	0.00E+00	0.00E+00	0.00E+00	NA	NA
A2P2-C46	11770	0.00E+00	0.00E+00	0.00E+00	NA	NA
A2P2-C5	55598	0.00E+00	0.00E+00	0.00E+00	NA	NA
A2P2-C6	53729	0.00E+00	0.00E+00	0.00E+00	NA	NA
A2P2-C7	58080	0.00E+00	0.00E+00	0.00E+00	NA	NA
A2P2-C8	62229	0.00E+00	0.00E+00	0.00E+00	NA	NA
A2P2-C9	52690	0.00E+00	0.00E+00	0.00E+00	NA	NA
A2P2-CEWF	28161	0.00E+00	0.00E+00	0.00E+00	NA	NA
A2P2-CSUB1	86757	0.00E+00	0.00E+00	0.00E+00	NA	NA
A2P2-CSUB2	54465	0.00E+00	0.00E+00	0.00E+00	NA	NA
A2P2-CSUB3	42712	0.00E+00	0.00E+00	0.00E+00	NA	NA
A2P2-IHR1	48257	8.15E-02	0.00E+00	0.00E+00	NA	NA
A2P2-IHR2	15337	8.22E-02	0.00E+00	0.00E+00	NA	NA
A2P2-SP3-C-1	58391	4.00E-01	4.00E-01	0.00E+00	NA	NA
A2P2-SP3-C-2	55225	3.90E-01	3.90E-01	0.00E+00	NA	NA
A2P3-4SF	35433	0.00E+00	0.00E+00	0.00E+00	NA	NA
A2P3-PT2-C-1	54541	0.00E+00	0.00E+00	0.00E+00	NA	NA
A2P3-PT2-C-2	56488	0.00E+00	0.00E+00	0.00E+00	NA	NA
A2P3-PT2-C-3	104397	0.00E+00	0.00E+00	0.00E+00	NA	NA
A5A-PC01A	62493	0.00E+00	0.00E+00	0.00E+00	NA	NA
A5A-PC02A	62479	0.00E+00	0.00E+00	0.00E+00	NA	NA
A5A-PC03A	58386	0.00E+00	0.00E+00	0.00E+00	NA	NA
A5A-PC04A	62829	0.00E+00	0.00E+00	0.00E+00	NA	NA
A5A-PC05A	58386	0.00E+00	0.00E+00	0.00E+00	NA	NA
A5A-PC06A	58396	0.00E+00	0.00E+00	0.00E+00	NA	NA
A5-EF-01	49577	0.00E+00	0.00E+00	0.00E+00	NA	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 2

Certification Units	Area sq ft	Benzo(a)pyrene ug/g	Benzo(b)fluoranthene ug/g	Benzo(k)fluoranthene ug/g	Bis(2-chloroisopropyl)ether ug/g	Bis(2-ethylhexyl)phthalate ug/g
A5-EF-02	46738	0.00E+00	0.00E+00	0.00E+00	NA	NA
A5-EF-03	46306	0.00E+00	0.00E+00	0.00E+00	NA	NA
A5-EPL-C01	44798	0.00E+00	0.00E+00	0.00E+00	NA	NA
A5-EPL-C02	45851	0.00E+00	0.00E+00	0.00E+00	NA	NA
A5-EPL-C03	49955	0.00E+00	0.00E+00	0.00E+00	NA	NA
A5-EPL-C04	49946	0.00E+00	0.00E+00	0.00E+00	NA	NA
A5WPL-PC01	61686	0.00E+00	0.00E+00	0.00E+00	NA	NA
A5WPL-PC02	61795	0.00E+00	0.00E+00	0.00E+00	NA	NA
A5WPL-PC03	61687	0.00E+00	0.00E+00	0.00E+00	NA	NA
A5WPL-PC04	61685	0.00E+00	0.00E+00	0.00E+00	NA	NA
A7MA-C03	59794	0.00E+00	0.00E+00	0.00E+00	NA	NA
A7MA-C04	61209	0.00E+00	0.00E+00	0.00E+00	NA	NA
A7MA-C05	61047	0.00E+00	0.00E+00	0.00E+00	NA	NA
A7MA-C06	38081	0.00E+00	0.00E+00	0.00E+00	NA	NA
A7MA-C07	8965	0.00E+00	0.00E+00	0.00E+00	NA	NA
A7MA-C08	43732	0.00E+00	0.00E+00	0.00E+00	NA	NA
A7MA-C09	46113	0.00E+00	0.00E+00	0.00E+00	NA	NA
A7MA-C10	46313	0.00E+00	0.00E+00	0.00E+00	NA	NA
A7MA-C11	48260	0.00E+00	0.00E+00	0.00E+00	NA	NA
A7MA-C12	50603	0.00E+00	0.00E+00	0.00E+00	NA	NA
A7MA-C13	60993	0.00E+00	0.00E+00	0.00E+00	NA	NA
A7MA-C14	61091	0.00E+00	0.00E+00	0.00E+00	NA	NA
A7MA-C15	61470	0.00E+00	0.00E+00	0.00E+00	NA	NA
A7MA-C16	39968	0.00E+00	0.00E+00	0.00E+00	NA	NA
A7MA-C17	21714	0.00E+00	0.00E+00	0.00E+00	NA	NA
A7SAR-C01	47418	0.00E+00	0.00E+00	0.00E+00	NA	NA
A7SAR-C02	61637	0.00E+00	0.00E+00	0.00E+00	NA	NA
A7SAR-C03	62210	0.00E+00	0.00E+00	0.00E+00	NA	NA
A7SAR-C04	62425	0.00E+00	0.00E+00	0.00E+00	NA	NA
A7SAR-C05	62467	0.00E+00	0.00E+00	0.00E+00	NA	NA
A7STSA-C01	49322	0.00E+00	0.00E+00	0.00E+00	NA	NA
A7STSA-C02	52337	0.00E+00	0.00E+00	0.00E+00	NA	NA
A7STSA-C03	62014	0.00E+00	0.00E+00	0.00E+00	NA	NA
A7STSA-C04	62398	0.00E+00	0.00E+00	0.00E+00	NA	NA
A7STSA-C05	42664	0.00E+00	0.00E+00	0.00E+00	NA	NA
A7STSA-C06	61954	0.00E+00	0.00E+00	0.00E+00	NA	NA
A7STSA-C07	61672	0.00E+00	0.00E+00	0.00E+00	NA	NA
SSOD-C1	49126	0.00E+00	0.00E+00	0.00E+00	NA	NA
SSOD-C2	60728	0.00E+00	0.00E+00	0.00E+00	NA	NA
SSOD-C3	61701	0.00E+00	0.00E+00	0.00E+00	NA	NA
SSOD-C4	55136	0.00E+00	0.00E+00	0.00E+00	NA	NA
SSOD-C5	46100	0.00E+00	0.00E+00	0.00E+00	NA	NA
SSOD-C6	51871	0.00E+00	0.00E+00	0.00E+00	NA	NA
SWRB-C01	36015	0.00E+00	0.00E+00	0.00E+00	NA	NA
SWRB-C02	43403	4.35E-02	4.35E-02	4.35E-02	NA	NA
SWRB-C03	48923	4.24E-02	4.24E-02	4.24E-02	NA	NA
SWRB-C04	55182	0.00E+00	0.00E+00	0.00E+00	NA	NA
SWRB-C05	50367	0.00E+00	0.00E+00	0.00E+00	NA	NA
SWRB-C06	40708	4.65E-02	4.65E-02	4.65E-02	NA	NA
SWRB-C07	41483	6.12E-02	8.29E-02	5.15E-02	NA	NA
SWRB-C08	44600	0.00E+00	0.00E+00	0.00E+00	NA	NA
SWRB-C09	24162	1.12E-01	1.85E-01	3.80E-02	NA	NA
SWRB-C10	19195	0.00E+00	0.00E+00	0.00E+00	NA	NA
TCA-C1	52136	0.00E+00	0.00E+00	0.00E+00	NA	NA
TCA-C2	58161	0.00E+00	0.00E+00	0.00E+00	NA	NA
TCA-C3	58162	0.00E+00	0.00E+00	0.00E+00	NA	NA
TCA-C4	52020	0.00E+00	0.00E+00	0.00E+00	NA	NA
TCA-C5	55882	0.00E+00	0.00E+00	0.00E+00	NA	NA
TCA-C6	52366	0.00E+00	0.00E+00	0.00E+00	NA	NA
Maximum Value		4.50E-01	4.00E-01	5.15E-02	NA	NA
Average (*used in Risk Calc.*)		3.38E-02	7.73E-03	1.44E-03	NA	NA
Number of Cert Results		1.90E+01	7.00E+00	5.00E+00	NA	NA
Number of Inserted Values		1.35E+02	1.47E+02	1.49E+02	NA	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 2

Certification Units	Area sq ft	Bromodichloromethane ug/g	Bromoform ug/g	Bromomethane ug/g	2-Butanone ug/g	Carbazole ug/g	Carbon disulfide ug/g	Carbon tetrachloride ug/g	Chlordane ug/g
A1PII-S1-01	143889	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A2P1-AFP-C1	30642	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A2P1-AFP-C2	42234	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A2P1-AFP-C3	20842	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A2P1-AFP-C-4	22353	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A2P1-AFP-C-5	62286	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A2P1-AFP-C-6	35463	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A2P1-IFP-C-1	55241	4.95E-01	NA	NA	NA	NA	NA	0.00E+00	NA
A2P1-IFP-C-2	60391	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A2P1-IFP-C-3	50948	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A2P1-IFP-C-4	61178	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A2P1-NWU-C-1	60760	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A2P1-NWU-C-10	26787	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A2P1-NWU-C-11	30203	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A2P1-NWU-C-12	26799	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A2P1-NWU-C-13	34010	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A2P1-NWU-C-2	53186	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A2P1-NWU-C-3	29234	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A2P1-NWU-C-4	35673	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A2P1-NWU-C-5	33550	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A2P1-NWU-C-6	60308	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A2P1-NWU-C-7	59182	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A2P1-NWU-C-8	41769	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A2P1-NWU-C-9	44757	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A2P1-SF-C-1	61667	4.99E-01	NA	NA	NA	NA	NA	0.00E+00	NA
A2P1-SF-C-2	55717	4.90E-01	NA	NA	NA	NA	NA	0.00E+00	NA
A2P1-SF-C-3	42617	4.89E-01	NA	NA	NA	NA	NA	0.00E+00	NA
A2P1-SF-C-4	50911	5.18E-01	NA	NA	NA	NA	NA	0.00E+00	NA
A2P1-SF-C-5	50629	4.95E-01	NA	NA	NA	NA	NA	0.00E+00	NA
A2P1-SF-C-6	59470	4.98E-01	NA	NA	NA	NA	NA	0.00E+00	NA
A2P1-SF-C-7	29993	2.52E-01	NA	NA	NA	NA	NA	0.00E+00	NA
A2P2-C1	56964	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A2P2-C10	52688	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A2P2-C11	52690	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A2P2-C12	54964	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A2P2-C13	54958	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A2P2-C15	54963	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A2P2-C16	30689	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A2P2-C17	50085	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A2P2-C18	50092	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A2P2-C19	44521	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A2P2-C2	53738	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A2P2-C20	44556	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A2P2-C21	45012	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A2P2-C22	48805	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A2P2-C23	50097	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A2P2-C24	54356	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A2P2-C25	1980	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A2P2-C26	20560	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A2P2-C27	25946	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A2P2-C28	37956	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A2P2-C29	62411	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A2P2-C3	54521	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A2P2-C30	61405	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A2P2-C31	62153	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A2P2-C32	62238	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A2P2-C33	43319	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A2P2-C34	42378	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A2P2-C35	61027	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A2P2-C36	61138	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A2P2-C37	61979	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A2P2-C38	62500	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A2P2-C39	62424	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A2P2-C4	51181	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A2P2-C40	62251	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A2P2-C41	62316	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A2P2-C42	61667	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A2P2-C43	61780	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A2P2-C44	62335	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A2P2-C45	61746	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A2P2-C46	11770	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A2P2-C5	55598	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A2P2-C6	53729	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A2P2-C7	58080	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A2P2-C8	62229	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A2P2-C9	52690	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A2P2-CEWF	28161	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A2P2-CSUB1	86757	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A2P2-CSUB2	54465	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A2P2-CSUB3	42712	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A2P2-IHR1	48257	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A2P2-IHR2	15337	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A2P2-SP3-C-1	58391	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A2P2-SP3-C-2	55225	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A2P3-4SF	35433	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A2P3-PT2-C-1	54541	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A2P3-PT2-C-2	56488	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A2P3-PT2-C-3	104397	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A5A-PC01A	62493	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A5A-PC02A	62479	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A5A-PC03A	58386	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A5A-PC04A	62829	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A5A-PC05A	58386	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A5A-PC06A	58396	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A5-EF-01	49577	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 2

Certification Units	Area sq ft	Bromodichloromethane ug/g	Bromoform ug/g	Bromomethane ug/g	2-Butanone ug/g	Carbazole ug/g	Carbon disulfide ug/g	Carbon tetrachloride ug/g	Chlordane ug/g
A5-EF-02	46738	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A5-EF-03	46306	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A5-EPL-C01	44798	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A5-EPL-C02	45851	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A5-EPL-C03	49955	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A5-EPL-C04	49946	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A5WPL-PC01	61686	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A5WPL-PC02	61795	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A5WPL-PC03	61687	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A5WPL-PC04	61685	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A7MA-C03	59794	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A7MA-C04	61209	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A7MA-C05	61047	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A7MA-C06	38081	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A7MA-C07	8965	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A7MA-C08	43732	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A7MA-C09	46113	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A7MA-C10	46313	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A7MA-C11	48260	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A7MA-C12	50603	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A7MA-C13	60993	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A7MA-C14	61091	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A7MA-C15	61470	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A7MA-C16	39968	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A7MA-C17	21714	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A7SAR-C01	47418	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A7SAR-C02	61637	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A7SAR-C03	62210	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A7SAR-C04	62425	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A7SAR-C05	62467	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A7STSA-C01	49322	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A7STSA-C02	52337	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A7STSA-C03	62014	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A7STSA-C04	62398	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A7STSA-C05	42664	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A7STSA-C06	61954	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
A7STSA-C07	61672	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
SSOD-C1	49126	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
SSOD-C2	60728	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
SSOD-C3	61701	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
SSOD-C4	55136	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
SSOD-C5	46100	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
SSOD-C6	51871	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
SWRB-C01	36015	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
SWRB-C02	43403	0.00E+00	NA	NA	NA	NA	NA	1.30E-03	NA
SWRB-C03	48923	0.00E+00	NA	NA	NA	NA	NA	1.20E-03	NA
SWRB-C04	55182	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
SWRB-C05	50367	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
SWRB-C06	40708	0.00E+00	NA	NA	NA	NA	NA	1.40E-03	NA
SWRB-C07	41483	0.00E+00	NA	NA	NA	NA	NA	1.10E-03	NA
SWRB-C08	44600	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
SWRB-C09	24162	0.00E+00	NA	NA	NA	NA	NA	1.00E-03	NA
SWRB-C10	19195	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
TCA-C1	52136	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
TCA-C2	58161	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
TCA-C3	58162	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
TCA-C4	52020	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
TCA-C5	55882	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
TCA-C6	52366	0.00E+00	NA	NA	NA	NA	NA	0.00E+00	NA
Maximum Value		5.18E-01	NA	NA	NA	NA	NA	1.40E-03	NA
Average (*used in Risk Calc.*)		2.43E-02	NA	NA	NA	NA	NA	3.90E-05	NA
Number of Cert Results		8.00E+00	NA	NA	NA	NA	NA	5.00E+00	NA
Number of Inserted Values		1.46E+02	NA	NA	NA	NA	NA	1.49E+02	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 2

Certification Units	Area sq ft	Chlorobenzene ug/g	Chloroform ug/g	Chrysene ug/g	Cyanide ug/g	Cyclohexanone ug/g	Dibenzo(a,h)anthracene ug/g	3,3-Dichlorobenzidine ug/g	1,2-dichloroethane ug/g
A1PII-S1-01	143889	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A2P1-AFP-C1	30642	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A2P1-AFP-C2	42234	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A2P1-AFP-C3	20842	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A2P1-AFP-C-4	22353	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A2P1-AFP-C-5	62286	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A2P1-AFP-C-6	35463	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A2P1-IFP-C-1	55241	NA	NA	0.00E+00	NA	NA	2.05E-03	NA	0.00E+00
A2P1-IFP-C-2	60391	NA	NA	0.00E+00	NA	NA	1.66E-03	NA	0.00E+00
A2P1-IFP-C-3	50948	NA	NA	0.00E+00	NA	NA	2.25E-03	NA	0.00E+00
A2P1-IFP-C-4	61178	NA	NA	0.00E+00	NA	NA	3.12E-03	NA	0.00E+00
A2P1-NWU-C-1	60760	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A2P1-NWU-C-10	26787	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A2P1-NWU-C-11	30203	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A2P1-NWU-C-12	26799	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A2P1-NWU-C-13	34010	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A2P1-NWU-C-2	53186	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A2P1-NWU-C-3	29234	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A2P1-NWU-C-4	35673	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A2P1-NWU-C-5	33550	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A2P1-NWU-C-6	60308	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A2P1-NWU-C-7	59182	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A2P1-NWU-C-8	41769	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A2P1-NWU-C-9	44757	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A2P1-SF-C-1	61667	NA	NA	0.00E+00	NA	NA	1.68E-02	NA	0.00E+00
A2P1-SF-C-2	55717	NA	NA	0.00E+00	NA	NA	2.08E-03	NA	0.00E+00
A2P1-SF-C-3	42617	NA	NA	0.00E+00	NA	NA	2.05E-03	NA	0.00E+00
A2P1-SF-C-4	50911	NA	NA	0.00E+00	NA	NA	2.11E-03	NA	0.00E+00
A2P1-SF-C-5	50629	NA	NA	0.00E+00	NA	NA	2.01E-03	NA	0.00E+00
A2P1-SF-C-6	59470	NA	NA	0.00E+00	NA	NA	2.12E-03	NA	0.00E+00
A2P1-SF-C-7	29993	NA	NA	0.00E+00	NA	NA	1.09E-03	NA	0.00E+00
A2P2-C1	56964	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A2P2-C10	52688	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A2P2-C11	52690	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A2P2-C12	54964	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A2P2-C13	54958	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A2P2-C15	54963	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A2P2-C16	30689	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A2P2-C17	50085	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A2P2-C18	50092	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A2P2-C19	44521	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A2P2-C2	53738	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A2P2-C20	44556	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A2P2-C21	45012	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A2P2-C22	48805	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A2P2-C23	50097	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A2P2-C24	54356	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A2P2-C25	1980	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A2P2-C26	20560	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A2P2-C27	25946	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A2P2-C28	37956	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A2P2-C29	62411	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A2P2-C3	54521	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A2P2-C30	61405	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A2P2-C31	62153	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A2P2-C32	62238	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A2P2-C33	43319	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A2P2-C34	42378	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A2P2-C35	61027	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A2P2-C36	61138	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A2P2-C37	61979	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A2P2-C38	62500	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A2P2-C39	62424	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A2P2-C4	51181	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A2P2-C40	62251	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A2P2-C41	62316	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A2P2-C42	61667	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A2P2-C43	61780	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A2P2-C44	62335	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A2P2-C45	61746	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A2P2-C46	11770	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A2P2-C5	55598	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A2P2-C6	53729	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A2P2-C7	58080	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A2P2-C8	62229	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A2P2-C9	52690	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A2P2-CEWF	28161	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A2P2-CSUB1	86757	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A2P2-CSUB2	54465	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A2P2-CSUB3	42712	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A2P2-IHR1	48257	NA	NA	0.00E+00	NA	NA	8.15E-02	NA	0.00E+00
A2P2-IHR2	15337	NA	NA	0.00E+00	NA	NA	8.22E-02	NA	0.00E+00
A2P2-SP3-C-1	58391	NA	NA	0.00E+00	NA	NA	4.60E-01	NA	0.00E+00
A2P2-SP3-C-2	55225	NA	NA	0.00E+00	NA	NA	3.90E-01	NA	0.00E+00
A2P3-4SF	35433	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A2P3-PT2-C-1	54541	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A2P3-PT2-C-2	56488	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A2P3-PT2-C-3	104397	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A5A-PC01A	62493	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A5A-PC02A	62479	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A5A-PC03A	58386	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A5A-PC04A	62829	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A5A-PC05A	58386	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A5A-PC06A	58396	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A5-EF-01	49577	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 2

Certification Units	Area sq ft	Chlorobenzene ug/g	Chloroform ug/g	Chrysene ug/g	Cyanide ug/g	Cyclohexanone ug/g	Dibenzo(a,h)anthracene ug/g	3,3-Dichlorobenzidine ug/g	1,2-dichloroethane ug/g
A5-EF-02	46738	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A5-EF-03	46306	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A5-EPL-C01	44798	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A5-EPL-C02	45851	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A5-EPL-C03	49955	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A5-EPL-C04	49946	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A5WPL-PC01	61686	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A5WPL-PC02	61795	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A5WPL-PC03	61687	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A5WPL-PC04	61685	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A7MA-C03	59794	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A7MA-C04	61209	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A7MA-C05	61047	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A7MA-C06	38081	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A7MA-C07	8965	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A7MA-C08	43732	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A7MA-C09	46113	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A7MA-C10	46313	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A7MA-C11	48260	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A7MA-C12	50603	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A7MA-C13	60993	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A7MA-C14	61091	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A7MA-C15	61470	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A7MA-C16	39968	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A7MA-C17	21714	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A7SAR-C01	47418	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A7SAR-C02	61637	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A7SAR-C03	62210	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A7SAR-C04	62425	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A7SAR-C05	62467	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A7STSA-C01	49322	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A7STSA-C02	52337	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A7STSA-C03	62014	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A7STSA-C04	62398	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A7STSA-C05	42664	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A7STSA-C06	61954	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A7STSA-C07	61672	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
SSOD-C1	49126	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
SSOD-C2	60728	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
SSOD-C3	61701	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
SSOD-C4	55136	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
SSOD-C5	46100	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
SSOD-C6	51871	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
SWRB-C01	36015	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
SWRB-C02	43403	NA	NA	4.35E-02	NA	NA	4.35E-02	NA	1.30E-03
SWRB-C03	48923	NA	NA	4.24E-02	NA	NA	4.24E-02	NA	1.20E-03
SWRB-C04	55182	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
SWRB-C05	50367	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
SWRB-C06	40708	NA	NA	4.65E-02	NA	NA	4.65E-02	NA	1.40E-03
SWRB-C07	41483	NA	NA	4.13E-02	NA	NA	5.15E-02	NA	1.10E-03
SWRB-C08	44600	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
SWRB-C09	24162	NA	NA	1.42E-01	NA	NA	3.80E-02	NA	1.00E-03
SWRB-C10	19195	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
TCA-C1	52136	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
TCA-C2	58161	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
TCA-C3	58162	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
TCA-C4	52020	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
TCA-C5	55882	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
TCA-C6	52366	NA	NA	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
Maximum Value		NA	NA	1.42E-01	NA	NA	4.60E-01	NA	1.40E-03
Average (*used in Risk Calc.*)		NA	NA	2.05E-03	NA	NA	8.27E-03	NA	3.90E-05
Number of Cert Results		NA	NA	5.00E+00	NA	NA	2.00E+01	NA	5.00E+00
Number of Inserted Values		NA	NA	1.49E+02	NA	NA	1.34E+02	NA	1.49E+02

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 2

Certification Units	Area sq ft	1,1-Dichloroethylene ug/g	Dieldrin ug/g	Di-n-octylphthalate ug/g	Ethylbenzene ug/g	Ethyl ether ug/g	Heptachlorodibenzofuran ug/g	Heptachlorodibenzo-p-dioxin ug/g
A1PII-S1-01	143889	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P1-AFP-C1	30642	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P1-AFP-C2	42234	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P1-AFP-C3	20842	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P1-AFP-C-4	22353	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P1-AFP-C-5	62286	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P1-AFP-C-6	35463	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P1-IFP-C-1	55241	5.08E-02	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P1-IFP-C-2	60391	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P1-IFP-C-3	50948	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P1-IFP-C-4	61178	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P1-NWU-C-1	60760	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P1-NWU-C-10	26787	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P1-NWU-C-11	30203	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P1-NWU-C-12	26799	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P1-NWU-C-13	34010	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P1-NWU-C-2	53186	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P1-NWU-C-3	29234	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P1-NWU-C-4	35673	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P1-NWU-C-5	33550	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P1-NWU-C-6	60308	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P1-NWU-C-7	59182	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P1-NWU-C-8	41769	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P1-NWU-C-9	44757	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P1-SF-C-1	61667	5.11E-02	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P1-SF-C-2	55717	5.03E-02	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P1-SF-C-3	42617	5.01E-02	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P1-SF-C-4	50911	5.31E-02	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P1-SF-C-5	50629	5.08E-02	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P1-SF-C-6	59470	5.11E-02	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P1-SF-C-7	29993	2.59E-02	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P2-C1	56964	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P2-C10	52688	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P2-C11	52690	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P2-C12	54964	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P2-C13	54958	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P2-C15	54963	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P2-C16	30689	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P2-C17	50085	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P2-C18	50092	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P2-C19	44521	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P2-C2	53738	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P2-C20	44556	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P2-C21	45012	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P2-C22	48805	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P2-C23	50097	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P2-C24	54356	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P2-C25	1980	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P2-C26	20560	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P2-C27	25946	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P2-C28	37956	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P2-C29	62411	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P2-C3	54521	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P2-C30	61405	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P2-C31	62153	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P2-C32	62238	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P2-C33	43319	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P2-C34	42378	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P2-C35	61027	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P2-C36	61138	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P2-C37	61979	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P2-C38	62500	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P2-C39	62424	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P2-C4	51181	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P2-C40	62251	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P2-C41	62316	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P2-C42	61667	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P2-C43	61780	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P2-C44	62335	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P2-C45	61746	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P2-C46	11770	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P2-C5	55598	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P2-C6	53729	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P2-C7	58080	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P2-C8	62229	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P2-C9	52690	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P2-CEWF	28161	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P2-CSUB1	86757	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P2-CSUB2	54465	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P2-CSUB3	42712	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P2-IHR1	48257	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P2-IHR2	15337	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P2-SP3-C-1	58391	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P2-SP3-C-2	55225	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P3-4SF	35433	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P3-PT2-C-1	54541	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P3-PT2-C-2	56488	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A2P3-PT2-C-3	104397	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A5A-PC01A	62493	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A5A-PC02A	62479	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A5A-PC03A	58386	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A5A-PC04A	62829	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A5A-PC05A	58386	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A5A-PC06A	58396	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A5-EF-01	49577	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 2

Certification Units	Area sq ft	1,1-Dichloroethylene ug/g	Dieldrin ug/g	Di-n-octylphthalate ug/g	Ethylbenzene ug/g	Ethyl ether ug/g	Heptachlorodibenzofuran ug/g	Heptachlorodibenzo-p-dioxin ug/g
"A5-EF-02"	"46738"	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A5-EF-03	46306	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A5-EPL-C01	44798	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A5-EPL-C02	45851	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A5-EPL-C03	49955	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A5-EPL-C04	49946	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A5WPL-PC01	61686	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A5WPL-PC02	61795	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A5WPL-PC03	61687	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A5WPL-PC04	61685	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A7MA-C03	59794	0.00E+00	1.60E-03	NA	0.00E+00	NA	NA	NA
A7MA-C04	61209	0.00E+00	1.60E-03	NA	0.00E+00	NA	NA	NA
A7MA-C05	61047	0.00E+00	1.70E-03	NA	0.00E+00	NA	NA	NA
A7MA-C06	38081	0.00E+00	9.70E-03	NA	0.00E+00	NA	NA	NA
A7MA-C07	8965	0.00E+00	1.60E-03	NA	0.00E+00	NA	NA	NA
A7MA-C08	43732	0.00E+00	1.60E-03	NA	0.00E+00	NA	NA	NA
A7MA-C09	46113	0.00E+00	1.60E-03	NA	0.00E+00	NA	NA	NA
A7MA-C10	46313	0.00E+00	7.00E-03	NA	0.00E+00	NA	NA	NA
A7MA-C11	48260	0.00E+00	1.60E-03	NA	0.00E+00	NA	NA	NA
A7MA-C12	50603	0.00E+00	7.40E-03	NA	0.00E+00	NA	NA	NA
A7MA-C13	60993	0.00E+00	1.70E-03	NA	0.00E+00	NA	NA	NA
A7MA-C14	61091	0.00E+00	1.70E-03	NA	0.00E+00	NA	NA	NA
A7MA-C15	61470	0.00E+00	1.60E-03	NA	0.00E+00	NA	NA	NA
A7MA-C16	39968	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A7MA-C17	21714	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A7SAR-C01	47418	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A7SAR-C02	61637	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A7SAR-C03	62210	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A7SAR-C04	62425	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A7SAR-C05	62467	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A7STSA-C01	49322	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A7STSA-C02	52337	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A7STSA-C03	62014	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A7STSA-C04	62398	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A7STSA-C05	42664	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A7STSA-C06	61954	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
A7STSA-C07	61672	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
SSOD-C1	49126	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
SSOD-C2	60728	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
SSOD-C3	61701	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
SSOD-C4	55136	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
SSOD-C5	46100	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
SSOD-C6	51871	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
SWRB-C01	36015	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
SWRB-C02	43403	1.30E-03	1.70E-03	NA	1.30E-03	NA	NA	NA
SWRB-C03	48923	1.20E-03	1.70E-03	NA	1.20E-03	NA	NA	NA
SWRB-C04	55182	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
SWRB-C05	50367	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
SWRB-C06	40708	1.40E-03	1.90E-03	NA	1.40E-03	NA	NA	NA
SWRB-C07	41483	1.10E-03	2.10E-03	NA	1.10E-03	NA	NA	NA
SWRB-C08	44600	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
SWRB-C09	24162	1.00E-03	1.50E-03	NA	1.00E-03	NA	NA	NA
SWRB-C10	19195	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
TCA-C1	52136	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
TCA-C2	58161	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
TCA-C3	58162	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
TCA-C4	52020	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
TCA-C5	55882	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
TCA-C6	52366	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA	NA
Maximum Value		5.31E-02	9.70E-03	NA	1.40E-03	NA	NA	NA
Average (*used in Risk Calc.*)		2.53E-03	3.20E-04	NA	3.90E-05	NA	NA	NA
Number of Cert Results		1.30E+01	1.80E+01	NA	5.00E+00	NA	NA	NA
Number of Inserted Values		1.41E+02	1.36E+02	NA	1.49E+02	NA	NA	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 2

Certification Units	Area sq ft	Hexachlorodibenzofuran ug/g	Hexachlorodibenzo-p-dioxin ug/g	Indeno(1,2,3-cd)pyrene ug/g	Methanol ug/g	Methyl-2-pentanone ug/g	Methylene chloride ug/g
A1PII-S1-01	143889	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A2P1-AFP-C1	30642	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A2P1-AFP-C2	42234	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A2P1-AFP-C3	20842	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A2P1-AFP-C-4	22353	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A2P1-AFP-C-5	62286	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A2P1-AFP-C-6	35463	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A2P1-IFP-C-1	55241	NA	NA	4.11E-01	NA	0.00E+00	0.00E+00
A2P1-IFP-C-2	60391	NA	NA	3.96E-01	NA	0.00E+00	0.00E+00
A2P1-IFP-C-3	50948	NA	NA	4.50E-01	NA	0.00E+00	0.00E+00
A2P1-IFP-C-4	61178	NA	NA	4.08E-01	NA	0.00E+00	0.00E+00
A2P1-NWU-C-1	60760	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A2P1-NWU-C-10	26787	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A2P1-NWU-C-11	30203	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A2P1-NWU-C-12	26799	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A2P1-NWU-C-13	34010	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A2P1-NWU-C-2	53186	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A2P1-NWU-C-3	29234	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A2P1-NWU-C-4	35673	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A2P1-NWU-C-5	33550	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A2P1-NWU-C-6	60308	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A2P1-NWU-C-7	59182	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A2P1-NWU-C-8	41769	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A2P1-NWU-C-9	44757	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A2P1-SF-C-1	61667	NA	NA	4.10E-01	NA	0.00E+00	0.00E+00
A2P1-SF-C-2	55717	NA	NA	4.05E-01	NA	0.00E+00	0.00E+00
A2P1-SF-C-3	42617	NA	NA	4.10E-01	NA	0.00E+00	0.00E+00
A2P1-SF-C-4	50911	NA	NA	4.23E-01	NA	0.00E+00	0.00E+00
A2P1-SF-C-5	50629	NA	NA	4.03E-01	NA	0.00E+00	0.00E+00
A2P1-SF-C-6	59470	NA	NA	4.25E-01	NA	0.00E+00	0.00E+00
A2P1-SF-C-7	29993	NA	NA	2.06E-01	NA	0.00E+00	0.00E+00
A2P2-C1	56964	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C10	52688	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C11	52690	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C12	54964	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C13	54958	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C15	54963	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C16	30689	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C17	50085	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C18	50092	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C19	44521	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C2	53738	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C20	44556	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C21	45012	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C22	48805	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C23	50097	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C24	54356	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C25	1980	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C26	20560	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C27	25946	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C28	37956	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C29	62411	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C3	54521	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C30	61405	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C31	62153	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C32	62238	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C33	43319	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C34	42378	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C35	61027	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C36	61138	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C37	61979	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C38	62500	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C39	62424	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C4	51181	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C40	62251	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C41	62316	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C42	61667	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C43	61780	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C44	62335	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C45	61746	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C46	11770	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C5	55598	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C6	53729	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C7	58080	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C8	62229	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C9	52690	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-CEWF	28161	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-CSUB1	86757	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-CSUB2	54465	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-CSUB3	42712	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-IHR1	48257	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-IHR2	15337	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-SP3-C-1	58391	NA	NA	4.10E-01	NA	0.00E+00	0.00E+00
A2P2-SP3-C-2	55225	NA	NA	3.90E-01	NA	0.00E+00	0.00E+00
A2P3-4SF	35433	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A2P3-PT2-C-1	54541	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A2P3-PT2-C-2	56488	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A2P3-PT2-C-3	104397	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A5A-PC01A	62493	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A5A-PC02A	62479	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A5A-PC03A	58386	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A5A-PC04A	62829	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A5A-PC05A	58386	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A5A-PC06A	58396	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A5-EF-01	49577	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 2

Certification Units	Area sq ft	Hexachlorodibenzofuran ug/g	Hexachlorodibenzo-p-dioxin ug/g	Indeno(1,2,3-cd)pyrene ug/g	Methanol ug/g	Methyl-2-pentanone ug/g	Methylene chloride ug/g
A5-EF-02	46738	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A5-EF-03	46306	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A5-EPL-C01	44798	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A5-EPL-C02	45851	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A5-EPL-C03	49955	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A5-EPL-C04	49946	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A5WPL-PC01	61686	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A5WPL-PC02	61795	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A5WPL-PC03	61687	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A5WPL-PC04	61685	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A7MA-C03	59794	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A7MA-C04	61209	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A7MA-C05	61047	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A7MA-C06	38081	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A7MA-C07	8965	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A7MA-C08	43732	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A7MA-C09	46113	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A7MA-C10	46313	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A7MA-C11	48260	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A7MA-C12	50603	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A7MA-C13	60993	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A7MA-C14	61091	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A7MA-C15	61470	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A7MA-C16	39968	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A7MA-C17	21714	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A7SAR-C01	47418	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A7SAR-C02	61637	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A7SAR-C03	62210	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A7SAR-C04	62425	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A7SAR-C05	62467	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A7STSA-C01	49322	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A7STSA-C02	52337	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A7STSA-C03	62014	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A7STSA-C04	62398	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A7STSA-C05	42664	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A7STSA-C06	61954	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
A7STSA-C07	61672	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
SSOD-C1	49126	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
SSOD-C2	60728	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
SSOD-C3	61701	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
SSOD-C4	55136	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
SSOD-C5	46100	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
SSOD-C6	51871	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
SWRB-C01	36015	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
SWRB-C02	43403	NA	NA	4.35E-02	NA	6.60E-03	6.60E-03
SWRB-C03	48923	NA	NA	4.24E-02	NA	6.00E-03	6.00E-03
SWRB-C04	55182	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
SWRB-C05	50367	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
SWRB-C06	40708	NA	NA	4.65E-02	NA	6.90E-03	6.90E-03
SWRB-C07	41483	NA	NA	5.15E-02	NA	5.70E-03	5.70E-03
SWRB-C08	44600	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
SWRB-C09	24162	NA	NA	5.05E-02	NA	5.10E-03	5.10E-03
SWRB-C10	19195	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
TCA-C1	52136	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
TCA-C2	58161	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
TCA-C3	58162	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
TCA-C4	52020	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
TCA-C5	55882	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
TCA-C6	52366	NA	NA	0.00E+00	NA	0.00E+00	0.00E+00
Maximum Value		NA	NA	4.50E-01	NA	6.90E-03	6.90E-03
Average (*used in Risk Calc.*)		NA	NA	3.49E-02	NA	1.97E-04	1.97E-04
Number of Cert Results		NA	NA	1.80E+01	NA	5.00E+00	5.00E+00
Number of Inserted Values		NA	NA	1.36E+02	NA	1.49E+02	1.49E+02

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 2

Certification Units	Area sq ft	4-Methylphenol ug/g	4-Nitroanaline ug/g	N-nitrosodiphenylamine ug/g	N-nitrosodipropylamine ug/g	Octachlorodibenzofuran ug/g	Octochlorodibenzo-p-dioxin ug/g
A1PII-S1-01	143889	NA	NA	NA	NA	NA	NA
A2P1-AFP-C1	30642	NA	NA	NA	NA	NA	NA
A2P1-AFP-C2	42234	NA	NA	NA	NA	NA	NA
A2P1-AFP-C3	20842	NA	NA	NA	NA	NA	NA
A2P1-AFP-C-4	22353	NA	NA	NA	NA	NA	NA
A2P1-AFP-C-5	62286	NA	NA	NA	NA	NA	NA
A2P1-AFP-C-6	35463	NA	NA	NA	NA	NA	NA
A2P1-IFP-C-1	55241	NA	NA	NA	NA	NA	NA
A2P1-IFP-C-2	60391	NA	NA	NA	NA	NA	NA
A2P1-IFP-C-3	50948	NA	NA	NA	NA	NA	NA
A2P1-IFP-C-4	61178	NA	NA	NA	NA	NA	NA
A2P1-NWU-C-1	60760	NA	NA	NA	NA	NA	NA
A2P1-NWU-C-10	26787	NA	NA	NA	NA	NA	NA
A2P1-NWU-C-11	30203	NA	NA	NA	NA	NA	NA
A2P1-NWU-C-12	26799	NA	NA	NA	NA	NA	NA
A2P1-NWU-C-13	34010	NA	NA	NA	NA	NA	NA
A2P1-NWU-C-2	53186	NA	NA	NA	NA	NA	NA
A2P1-NWU-C-3	29234	NA	NA	NA	NA	NA	NA
A2P1-NWU-C-4	35673	NA	NA	NA	NA	NA	NA
A2P1-NWU-C-5	33550	NA	NA	NA	NA	NA	NA
A2P1-NWU-C-6	60308	NA	NA	NA	NA	NA	NA
A2P1-NWU-C-7	59182	NA	NA	NA	NA	NA	NA
A2P1-NWU-C-8	41769	NA	NA	NA	NA	NA	NA
A2P1-NWU-C-9	44757	NA	NA	NA	NA	NA	NA
A2P1-SF-C-1	61667	NA	NA	NA	NA	NA	NA
A2P1-SF-C-2	55717	NA	NA	NA	NA	NA	NA
A2P1-SF-C-3	42617	NA	NA	NA	NA	NA	NA
A2P1-SF-C-4	50911	NA	NA	NA	NA	NA	NA
A2P1-SF-C-5	50629	NA	NA	NA	NA	NA	NA
A2P1-SF-C-6	59470	NA	NA	NA	NA	NA	NA
A2P1-SF-C-7	29993	NA	NA	NA	NA	NA	NA
A2P2-C1	56964	NA	NA	NA	NA	NA	NA
A2P2-C10	52688	NA	NA	NA	NA	NA	NA
A2P2-C11	52690	NA	NA	NA	NA	NA	NA
A2P2-C12	54964	NA	NA	NA	NA	NA	NA
A2P2-C13	54958	NA	NA	NA	NA	NA	NA
A2P2-C15	54963	NA	NA	NA	NA	NA	NA
A2P2-C16	30689	NA	NA	NA	NA	NA	NA
A2P2-C17	50085	NA	NA	NA	NA	NA	NA
A2P2-C18	50092	NA	NA	NA	NA	NA	NA
A2P2-C19	44521	NA	NA	NA	NA	NA	NA
A2P2-C2	53738	NA	NA	NA	NA	NA	NA
A2P2-C20	44556	NA	NA	NA	NA	NA	NA
A2P2-C21	45012	NA	NA	NA	NA	NA	NA
A2P2-C22	48805	NA	NA	NA	NA	NA	NA
A2P2-C23	50097	NA	NA	NA	NA	NA	NA
A2P2-C24	54356	NA	NA	NA	NA	NA	NA
A2P2-C25	1980	NA	NA	NA	NA	NA	NA
A2P2-C26	20560	NA	NA	NA	NA	NA	NA
A2P2-C27	25946	NA	NA	NA	NA	NA	NA
A2P2-C28	37956	NA	NA	NA	NA	NA	NA
A2P2-C29	62411	NA	NA	NA	NA	NA	NA
A2P2-C3	54521	NA	NA	NA	NA	NA	NA
A2P2-C30	61405	NA	NA	NA	NA	NA	NA
A2P2-C31	62153	NA	NA	NA	NA	NA	NA
A2P2-C32	62238	NA	NA	NA	NA	NA	NA
A2P2-C33	43319	NA	NA	NA	NA	NA	NA
A2P2-C34	42378	NA	NA	NA	NA	NA	NA
A2P2-C35	61027	NA	NA	NA	NA	NA	NA
A2P2-C36	61138	NA	NA	NA	NA	NA	NA
A2P2-C37	61979	NA	NA	NA	NA	NA	NA
A2P2-C38	62500	NA	NA	NA	NA	NA	NA
A2P2-C39	62424	NA	NA	NA	NA	NA	NA
A2P2-C4	51181	NA	NA	NA	NA	NA	NA
A2P2-C40	62251	NA	NA	NA	NA	NA	NA
A2P2-C41	62316	NA	NA	NA	NA	NA	NA
A2P2-C42	61667	NA	NA	NA	NA	NA	NA
A2P2-C43	61780	NA	NA	NA	NA	NA	NA
A2P2-C44	62335	NA	NA	NA	NA	NA	NA
A2P2-C45	61746	NA	NA	NA	NA	NA	NA
A2P2-C46	11770	NA	NA	NA	NA	NA	NA
A2P2-C5	55598	NA	NA	NA	NA	NA	NA
A2P2-C6	53729	NA	NA	NA	NA	NA	NA
A2P2-C7	58080	NA	NA	NA	NA	NA	NA
A2P2-C8	62229	NA	NA	NA	NA	NA	NA
A2P2-C9	52690	NA	NA	NA	NA	NA	NA
A2P2-CEWF	28161	NA	NA	NA	NA	NA	NA
A2P2-CSUB1	86757	NA	NA	NA	NA	NA	NA
A2P2-CSUB2	54465	NA	NA	NA	NA	NA	NA
A2P2-CSUB3	42712	NA	NA	NA	NA	NA	NA
A2P2-IHR1	48257	NA	NA	NA	NA	NA	NA
A2P2-IHR2	15337	NA	NA	NA	NA	NA	NA
A2P2-SP3-C-1	58391	NA	NA	NA	NA	NA	NA
A2P2-SP3-C-2	55225	NA	NA	NA	NA	NA	NA
A2P3-4SF	35433	NA	NA	NA	NA	NA	NA
A2P3-PT2-C-1	54541	NA	NA	NA	NA	NA	NA
A2P3-PT2-C-2	56488	NA	NA	NA	NA	NA	NA
A2P3-PT2-C-3	104397	NA	NA	NA	NA	NA	NA
A5A-PC01A	62493	NA	NA	NA	NA	NA	NA
A5A-PC02A	62479	NA	NA	NA	NA	NA	NA
A5A-PC03A	58386	NA	NA	NA	NA	NA	NA
A5A-PC04A	62829	NA	NA	NA	NA	NA	NA
A5A-PC05A	58386	NA	NA	NA	NA	NA	NA
A5A-PC06A	58396	NA	NA	NA	NA	NA	NA
A5-EF-01	49577	NA	NA	NA	NA	NA	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 2

Certification Units	Area sq ft	4-Methylphenol ug/g	4-Nitroaniline ug/g	N-nitrosodiphenylamine ug/g	N-nitrosodipropylamine ug/g	Octachlorodibenzofuran ug/g	Octochlorodibenzo-p-dioxin ug/g
A5-EF-02	46738	NA	NA	NA	NA	NA	NA
A5-EF-03	46306	NA	NA	NA	NA	NA	NA
A5-EPL-C01	44798	NA	NA	NA	NA	NA	NA
A5-EPL-C02	45851	NA	NA	NA	NA	NA	NA
A5-EPL-C03	49955	NA	NA	NA	NA	NA	NA
A5-EPL-C04	49946	NA	NA	NA	NA	NA	NA
A5WPL-PC01	61686	NA	NA	NA	NA	NA	NA
A5WPL-PC02	61795	NA	NA	NA	NA	NA	NA
A5WPL-PC03	61687	NA	NA	NA	NA	NA	NA
A5WPL-PC04	61685	NA	NA	NA	NA	NA	NA
A7MA-C03	59794	NA	NA	NA	NA	NA	NA
A7MA-C04	61209	NA	NA	NA	NA	NA	NA
A7MA-C05	61047	NA	NA	NA	NA	NA	NA
A7MA-C06	38081	NA	NA	NA	NA	NA	NA
A7MA-C07	8965	NA	NA	NA	NA	NA	NA
A7MA-C08	43732	NA	NA	NA	NA	NA	NA
A7MA-C09	46113	NA	NA	NA	NA	NA	NA
A7MA-C10	46313	NA	NA	NA	NA	NA	NA
A7MA-C11	48260	NA	NA	NA	NA	NA	NA
A7MA-C12	50603	NA	NA	NA	NA	NA	NA
A7MA-C13	60993	NA	NA	NA	NA	NA	NA
A7MA-C14	61091	NA	NA	NA	NA	NA	NA
A7MA-C15	61470	NA	NA	NA	NA	NA	NA
A7MA-C16	39968	NA	NA	NA	NA	NA	NA
A7MA-C17	21714	NA	NA	NA	NA	NA	NA
A7SAR-C01	47418	NA	NA	NA	NA	NA	NA
A7SAR-C02	61637	NA	NA	NA	NA	NA	NA
A7SAR-C03	62210	NA	NA	NA	NA	NA	NA
A7SAR-C04	62425	NA	NA	NA	NA	NA	NA
A7SAR-C05	62467	NA	NA	NA	NA	NA	NA
A7STSA-C01	49322	NA	NA	NA	NA	NA	NA
A7STSA-C02	52337	NA	NA	NA	NA	NA	NA
A7STSA-C03	62014	NA	NA	NA	NA	NA	NA
A7STSA-C04	62398	NA	NA	NA	NA	NA	NA
A7STSA-C05	42664	NA	NA	NA	NA	NA	NA
A7STSA-C06	61954	NA	NA	NA	NA	NA	NA
A7STSA-C07	61672	NA	NA	NA	NA	NA	NA
SSOD-C1	49126	NA	NA	NA	NA	NA	NA
SSOD-C2	60728	NA	NA	NA	NA	NA	NA
SSOD-C3	61701	NA	NA	NA	NA	NA	NA
SSOD-C4	55136	NA	NA	NA	NA	NA	NA
SSOD-C5	46100	NA	NA	NA	NA	NA	NA
SSOD-C6	51871	NA	NA	NA	NA	NA	NA
SWRB-C01	36015	NA	NA	NA	NA	NA	NA
SWRB-C02	43403	NA	NA	NA	NA	NA	NA
SWRB-C03	48923	NA	NA	NA	NA	NA	NA
SWRB-C04	55182	NA	NA	NA	NA	NA	NA
SWRB-C05	50367	NA	NA	NA	NA	NA	NA
SWRB-C06	40708	NA	NA	NA	NA	NA	NA
SWRB-C07	41483	NA	NA	NA	NA	NA	NA
SWRB-C08	44600	NA	NA	NA	NA	NA	NA
SWRB-C09	24162	NA	NA	NA	NA	NA	NA
SWRB-C10	19195	NA	NA	NA	NA	NA	NA
TCA-C1	52136	NA	NA	NA	NA	NA	NA
TCA-C2	58161	NA	NA	NA	NA	NA	NA
TCA-C3	58162	NA	NA	NA	NA	NA	NA
TCA-C4	52020	NA	NA	NA	NA	NA	NA
TCA-C5	55882	NA	NA	NA	NA	NA	NA
TCA-C6	52366	NA	NA	NA	NA	NA	NA
Maximum Value		NA	NA	NA	NA	NA	NA
Average (*used in Risk Calc.*)		NA	NA	NA	NA	NA	NA
Number of Cert Results		NA	NA	NA	NA	NA	NA
Number of Inserted Values		NA	NA	NA	NA	NA	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 2

Certification Units	Area sq ft	Pentachlorodibenzofuran ug/g	Pentachlorodibenzo-p-dioxin ug/g	Pentachlorophenol ug/g	Phenanthrene ug/g	Tetrachlorodibenzofuran ug/g
A1PII-S1-01	143889	NA	NA	NA	0.00E+00	NA
A2P1-AFP-C1	30642	NA	NA	NA	0.00E+00	NA
A2P1-AFP-C2	42234	NA	NA	NA	0.00E+00	NA
A2P1-AFP-C3	20842	NA	NA	NA	0.00E+00	NA
A2P1-AFP-C-4	22353	NA	NA	NA	0.00E+00	NA
A2P1-AFP-C-5	62286	NA	NA	NA	0.00E+00	NA
A2P1-AFP-C-6	35463	NA	NA	NA	0.00E+00	NA
A2P1-IFP-C-1	55241	NA	NA	NA	0.00E+00	NA
A2P1-IFP-C-2	60391	NA	NA	NA	0.00E+00	NA
A2P1-IFP-C-3	50948	NA	NA	NA	0.00E+00	NA
A2P1-IFP-C-4	61178	NA	NA	NA	0.00E+00	NA
A2P1-NWU-C-1	60760	NA	NA	NA	0.00E+00	NA
A2P1-NWU-C-10	26787	NA	NA	NA	0.00E+00	NA
A2P1-NWU-C-11	30203	NA	NA	NA	0.00E+00	NA
A2P1-NWU-C-12	26799	NA	NA	NA	0.00E+00	NA
A2P1-NWU-C-13	34010	NA	NA	NA	0.00E+00	NA
A2P1-NWU-C-2	53186	NA	NA	NA	0.00E+00	NA
A2P1-NWU-C-3	29234	NA	NA	NA	0.00E+00	NA
A2P1-NWU-C-4	35673	NA	NA	NA	0.00E+00	NA
A2P1-NWU-C-5	33550	NA	NA	NA	0.00E+00	NA
A2P1-NWU-C-6	60308	NA	NA	NA	0.00E+00	NA
A2P1-NWU-C-7	59182	NA	NA	NA	0.00E+00	NA
A2P1-NWU-C-8	41769	NA	NA	NA	0.00E+00	NA
A2P1-NWU-C-9	44757	NA	NA	NA	0.00E+00	NA
A2P1-SF-C-1	61667	NA	NA	NA	0.00E+00	NA
A2P1-SF-C-2	55717	NA	NA	NA	0.00E+00	NA
A2P1-SF-C-3	42617	NA	NA	NA	0.00E+00	NA
A2P1-SF-C-4	50911	NA	NA	NA	0.00E+00	NA
A2P1-SF-C-5	50629	NA	NA	NA	0.00E+00	NA
A2P1-SF-C-6	59470	NA	NA	NA	0.00E+00	NA
A2P1-SF-C-7	29993	NA	NA	NA	0.00E+00	NA
A2P2-C1	56964	NA	NA	NA	0.00E+00	NA
A2P2-C10	52688	NA	NA	NA	0.00E+00	NA
A2P2-C11	52690	NA	NA	NA	0.00E+00	NA
A2P2-C12	54964	NA	NA	NA	0.00E+00	NA
A2P2-C13	54958	NA	NA	NA	0.00E+00	NA
A2P2-C15	54963	NA	NA	NA	0.00E+00	NA
A2P2-C16	30689	NA	NA	NA	0.00E+00	NA
A2P2-C17	50085	NA	NA	NA	0.00E+00	NA
A2P2-C18	50092	NA	NA	NA	0.00E+00	NA
A2P2-C19	44521	NA	NA	NA	0.00E+00	NA
A2P2-C2	53738	NA	NA	NA	0.00E+00	NA
A2P2-C20	44556	NA	NA	NA	0.00E+00	NA
A2P2-C21	45012	NA	NA	NA	0.00E+00	NA
A2P2-C22	48805	NA	NA	NA	0.00E+00	NA
A2P2-C23	50097	NA	NA	NA	0.00E+00	NA
A2P2-C24	54356	NA	NA	NA	0.00E+00	NA
A2P2-C25	1980	NA	NA	NA	0.00E+00	NA
A2P2-C26	20560	NA	NA	NA	0.00E+00	NA
A2P2-C27	25946	NA	NA	NA	0.00E+00	NA
A2P2-C28	37956	NA	NA	NA	0.00E+00	NA
A2P2-C29	62411	NA	NA	NA	0.00E+00	NA
A2P2-C3	54521	NA	NA	NA	0.00E+00	NA
A2P2-C30	61405	NA	NA	NA	0.00E+00	NA
A2P2-C31	62153	NA	NA	NA	0.00E+00	NA
A2P2-C32	62238	NA	NA	NA	0.00E+00	NA
A2P2-C33	43319	NA	NA	NA	0.00E+00	NA
A2P2-C34	42378	NA	NA	NA	0.00E+00	NA
A2P2-C35	61027	NA	NA	NA	0.00E+00	NA
A2P2-C36	61138	NA	NA	NA	0.00E+00	NA
A2P2-C37	61979	NA	NA	NA	0.00E+00	NA
A2P2-C38	62500	NA	NA	NA	0.00E+00	NA
A2P2-C39	62424	NA	NA	NA	0.00E+00	NA
A2P2-C4	51181	NA	NA	NA	0.00E+00	NA
A2P2-C40	62251	NA	NA	NA	0.00E+00	NA
A2P2-C41	62316	NA	NA	NA	0.00E+00	NA
A2P2-C42	61667	NA	NA	NA	0.00E+00	NA
A2P2-C43	61780	NA	NA	NA	0.00E+00	NA
A2P2-C44	62335	NA	NA	NA	0.00E+00	NA
A2P2-C45	61746	NA	NA	NA	0.00E+00	NA
A2P2-C46	11770	NA	NA	NA	0.00E+00	NA
A2P2-C5	55598	NA	NA	NA	0.00E+00	NA
A2P2-C6	53729	NA	NA	NA	0.00E+00	NA
A2P2-C7	58080	NA	NA	NA	0.00E+00	NA
A2P2-C8	62229	NA	NA	NA	0.00E+00	NA
A2P2-C9	52690	NA	NA	NA	0.00E+00	NA
A2P2-CEWF	28161	NA	NA	NA	0.00E+00	NA
A2P2-CSUB1	86757	NA	NA	NA	0.00E+00	NA
A2P2-CSUB2	54465	NA	NA	NA	0.00E+00	NA
A2P2-CSUB3	42712	NA	NA	NA	0.00E+00	NA
A2P2-IHR1	48257	NA	NA	NA	0.00E+00	NA
A2P2-IHR2	15337	NA	NA	NA	0.00E+00	NA
A2P2-SP3-C-1	58391	NA	NA	NA	0.00E+00	NA
A2P2-SP3-C-2	55225	NA	NA	NA	0.00E+00	NA
A2P3-4SF	35433	NA	NA	NA	0.00E+00	NA
A2P3-PT2-C-1	54541	NA	NA	NA	0.00E+00	NA
A2P3-PT2-C-2	56488	NA	NA	NA	0.00E+00	NA
A2P3-PT2-C-3	104397	NA	NA	NA	0.00E+00	NA
A5A-PC01A	62493	NA	NA	NA	0.00E+00	NA
A5A-PC02A	62479	NA	NA	NA	0.00E+00	NA
A5A-PC03A	58386	NA	NA	NA	0.00E+00	NA
A5A-PC04A	62829	NA	NA	NA	0.00E+00	NA
A5A-PC05A	58386	NA	NA	NA	0.00E+00	NA
A5A-PC06A	58396	NA	NA	NA	0.00E+00	NA
A5-EF-01	49577	NA	NA	NA	0.00E+00	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 2

Certification Units	Area sq ft	Pentachlorodibenzofuran ug/g	Pentachlorodibenzo-p-dioxin ug/g	Pentachlorophenol ug/g	Phenanthrene ug/g	Tetrachlorodibenzofuran ug/g
A5-EF-02	46738	NA	NA	NA	0.00E+00	NA
A5-EF-03	46306	NA	NA	NA	0.00E+00	NA
A5-EPL-C01	44798	NA	NA	NA	0.00E+00	NA
A5-EPL-C02	45851	NA	NA	NA	0.00E+00	NA
A5-EPL-C03	49955	NA	NA	NA	0.00E+00	NA
A5-EPL-C04	49946	NA	NA	NA	0.00E+00	NA
A5WPL-PC01	61686	NA	NA	NA	0.00E+00	NA
A5WPL-PC02	61795	NA	NA	NA	0.00E+00	NA
A5WPL-PC03	61687	NA	NA	NA	0.00E+00	NA
A5WPL-PC04	61685	NA	NA	NA	0.00E+00	NA
A7MA-C03	59794	NA	NA	NA	0.00E+00	NA
A7MA-C04	61209	NA	NA	NA	0.00E+00	NA
A7MA-C05	61047	NA	NA	NA	0.00E+00	NA
A7MA-C06	38081	NA	NA	NA	0.00E+00	NA
A7MA-C07	8965	NA	NA	NA	0.00E+00	NA
A7MA-C08	43732	NA	NA	NA	0.00E+00	NA
A7MA-C09	46113	NA	NA	NA	0.00E+00	NA
A7MA-C10	46313	NA	NA	NA	0.00E+00	NA
A7MA-C11	48260	NA	NA	NA	0.00E+00	NA
A7MA-C12	50603	NA	NA	NA	0.00E+00	NA
A7MA-C13	60993	NA	NA	NA	0.00E+00	NA
A7MA-C14	61091	NA	NA	NA	0.00E+00	NA
A7MA-C15	61470	NA	NA	NA	0.00E+00	NA
A7MA-C16	39968	NA	NA	NA	0.00E+00	NA
A7MA-C17	21714	NA	NA	NA	0.00E+00	NA
A7SAR-C01	47418	NA	NA	NA	0.00E+00	NA
A7SAR-C02	61637	NA	NA	NA	0.00E+00	NA
A7SAR-C03	62210	NA	NA	NA	0.00E+00	NA
A7SAR-C04	62425	NA	NA	NA	0.00E+00	NA
A7SAR-C05	62467	NA	NA	NA	0.00E+00	NA
A7STSA-C01	49322	NA	NA	NA	0.00E+00	NA
A7STSA-C02	52337	NA	NA	NA	0.00E+00	NA
A7STSA-C03	62014	NA	NA	NA	0.00E+00	NA
A7STSA-C04	62398	NA	NA	NA	0.00E+00	NA
A7STSA-C05	42664	NA	NA	NA	0.00E+00	NA
A7STSA-C06	61954	NA	NA	NA	0.00E+00	NA
A7STSA-C07	61672	NA	NA	NA	0.00E+00	NA
SSOD-C1	49126	NA	NA	NA	0.00E+00	NA
SSOD-C2	60728	NA	NA	NA	0.00E+00	NA
SSOD-C3	61701	NA	NA	NA	0.00E+00	NA
SSOD-C4	55136	NA	NA	NA	0.00E+00	NA
SSOD-C5	46100	NA	NA	NA	0.00E+00	NA
SSOD-C6	51871	NA	NA	NA	0.00E+00	NA
SWRB-C01	36015	NA	NA	NA	0.00E+00	NA
SWRB-C02	43403	NA	NA	NA	4.35E-02	NA
SWRB-C03	48923	NA	NA	NA	4.24E-02	NA
SWRB-C04	55182	NA	NA	NA	0.00E+00	NA
SWRB-C05	50367	NA	NA	NA	0.00E+00	NA
SWRB-C06	40708	NA	NA	NA	4.65E-02	NA
SWRB-C07	41483	NA	NA	NA	5.15E-02	NA
SWRB-C08	44600	NA	NA	NA	0.00E+00	NA
SWRB-C09	24162	NA	NA	NA	5.73E-02	NA
SWRB-C10	19195	NA	NA	NA	0.00E+00	NA
TCA-C1	52136	NA	NA	NA	0.00E+00	NA
TCA-C2	58161	NA	NA	NA	0.00E+00	NA
TCA-C3	58162	NA	NA	NA	0.00E+00	NA
TCA-C4	52020	NA	NA	NA	0.00E+00	NA
TCA-C5	55882	NA	NA	NA	0.00E+00	NA
TCA-C6	52366	NA	NA	NA	0.00E+00	NA
Maximum Value		NA	NA	NA	5.73E-02	NA
Average (*used in Risk Calc.*)		NA	NA	NA	1.57E-03	NA
Number of Cert Results		NA	NA	NA	5.00E+00	NA
Number of Inserted Values		NA	NA	NA	1.49E+02	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 2

Certification Units	Area sq ft	Tetrachlorodibenzo-p-dioxin ug/g	Tetrachloroethylene ug/g	Toluene ug/g	Tributyl phosphate ug/g	1,1,2-Trichloroethane ug/g	Trichloroethylene ug/g
A1PII-S1-01	143889	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P1-AFP-C1	30642	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P1-AFP-C2	42234	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P1-AFP-C3	20842	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P1-AFP-C-4	22353	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P1-AFP-C-5	62286	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P1-AFP-C-6	35463	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P1-IFP-C-1	55241	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P1-IFP-C-2	60391	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P1-IFP-C-3	50948	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P1-IFP-C-4	61178	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P1-NWU-C-1	60760	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P1-NWU-C-10	26787	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P1-NWU-C-11	30203	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P1-NWU-C-12	26799	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P1-NWU-C-13	34010	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P1-NWU-C-2	53186	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P1-NWU-C-3	29234	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P1-NWU-C-4	35673	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P1-NWU-C-5	33550	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P1-NWU-C-6	60308	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P1-NWU-C-7	59182	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P1-NWU-C-8	41769	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P1-NWU-C-9	44757	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P1-SF-C-1	61667	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P1-SF-C-2	55717	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P1-SF-C-3	42617	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P1-SF-C-4	50911	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P1-SF-C-5	50629	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P1-SF-C-6	59470	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P1-SF-C-7	29993	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C1	56964	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C10	52688	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C11	52690	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C12	54964	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C13	54958	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C15	54963	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C16	30689	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C17	50085	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C18	50092	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C19	44521	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C2	53738	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C20	44556	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C21	45012	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C22	48805	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C23	50097	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C24	54356	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C25	1980	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C26	20560	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C27	25946	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C28	37956	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C29	62411	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C3	54521	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C30	61405	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C31	62153	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C32	62238	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C33	43319	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C34	42378	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C35	61027	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C36	61138	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C37	61979	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C38	62500	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C39	62424	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C4	51181	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C40	62251	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C41	62316	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C42	61667	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C43	61780	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C44	62335	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C45	61746	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C46	11770	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C5	55598	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C6	53729	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C7	58080	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C8	62229	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-C9	52690	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-CEWF	28161	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-CSUB1	86757	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-CSUB2	54465	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-CSUB3	42712	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-IHR1	48257	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-IHR2	15337	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-SP3-C-1	58391	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P2-SP3-C-2	55225	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P3-4SF	35433	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P3-PT2-C-1	54541	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P3-PT2-C-2	56488	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A2P3-PT2-C-3	104397	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A5A-PC01A	62493	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A5A-PC02A	62479	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A5A-PC03A	58386	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A5A-PC04A	62829	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A5A-PC05A	58386	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A5A-PC06A	58396	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A5-EF-01	49577	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 2

Certification Units	Area sq ft	Tetrachlorodibenzo-p-dioxin ug/g	Tetrachloroethylene ug/g	Toluene ug/g	Tributyl phosphate ug/g	1,1,2-Trichloroethane ug/g	Trichloroethylene ug/g
A5-EF-02	46738	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A5-EF-03	46306	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A5-EPL-C01	44798	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A5-EPL-C02	45851	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A5-EPL-C03	49955	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A5-EPL-C04	49946	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A5WPL-PC01	61686	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A5WPL-PC02	61795	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A5WPL-PC03	61687	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A5WPL-PC04	61685	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A7MA-C03	59794	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A7MA-C04	61209	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A7MA-C05	61047	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A7MA-C06	38081	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A7MA-C07	8965	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A7MA-C08	43732	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A7MA-C09	46113	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A7MA-C10	46313	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A7MA-C11	48260	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A7MA-C12	50603	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A7MA-C13	60993	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A7MA-C14	61091	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A7MA-C15	61470	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A7MA-C16	39968	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A7MA-C17	21714	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A7SAR-C01	47418	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A7SAR-C02	61637	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A7SAR-C03	62210	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A7SAR-C04	62425	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A7SAR-C05	62467	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A7STSA-C01	49322	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A7STSA-C02	52337	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A7STSA-C03	62014	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A7STSA-C04	62398	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A7STSA-C05	42664	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A7STSA-C06	61954	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A7STSA-C07	61672	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
SSOD-C1	49126	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
SSOD-C2	60728	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
SSOD-C3	61701	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
SSOD-C4	55136	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
SSOD-C5	46100	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
SSOD-C6	51871	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
SWRB-C01	36015	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
SWRB-C02	43403	NA	1.30E-03	3.80E-03	NA	1.30E-03	1.30E-03
SWRB-C03	48923	NA	1.20E-03	6.30E-03	NA	1.20E-03	1.20E-03
SWRB-C04	55182	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
SWRB-C05	50367	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
SWRB-C06	40708	NA	1.40E-03	3.30E-03	NA	1.40E-03	1.40E-03
SWRB-C07	41483	NA	1.10E-03	1.60E-03	NA	1.10E-03	1.10E-03
SWRB-C08	44600	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
SWRB-C09	24162	NA	1.00E-03	1.00E-03	NA	1.00E-03	1.00E-03
SWRB-C10	19195	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
TCA-C1	52136	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
TCA-C2	58161	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
TCA-C3	58162	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
TCA-C4	52020	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
TCA-C5	55882	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
TCA-C6	52366	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
Maximum Value		NA	1.40E-03	6.30E-03	NA	1.40E-03	1.40E-03
Average (*used in Risk Calc.*)		NA	3.90E-05	1.04E-04	NA	3.90E-05	3.90E-05
Number of Cert Results		NA	5.00E+00	5.00E+00	NA	5.00E+00	5.00E+00
Number of Inserted Values		NA	1.49E+02	1.49E+02	NA	1.49E+02	1.49E+02

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 2

Certification Units	Area sq ft	Trifluorochloromethane ug/g	Vinyl chloride ug/g	Xylenes ug/g
A1PII-S1-01	143889	NA	NA	0.00E+00
A2P1-AFP-C1	30642	NA	NA	0.00E+00
A2P1-AFP-C2	42234	NA	NA	0.00E+00
A2P1-AFP-C3	20842	NA	NA	0.00E+00
A2P1-AFP-C-4	22353	NA	NA	0.00E+00
A2P1-AFP-C-5	62286	NA	NA	0.00E+00
A2P1-AFP-C-6	35463	NA	NA	0.00E+00
A2P1-IFP-C-1	55241	NA	NA	0.00E+00
A2P1-IFP-C-2	60391	NA	NA	0.00E+00
A2P1-IFP-C-3	50948	NA	NA	0.00E+00
A2P1-IFP-C-4	61178	NA	NA	0.00E+00
A2P1-NWU-C-1	60760	NA	NA	0.00E+00
A2P1-NWU-C-10	26787	NA	NA	0.00E+00
A2P1-NWU-C-11	30203	NA	NA	0.00E+00
A2P1-NWU-C-12	26799	NA	NA	0.00E+00
A2P1-NWU-C-13	34010	NA	NA	0.00E+00
A2P1-NWU-C-2	53186	NA	NA	0.00E+00
A2P1-NWU-C-3	29234	NA	NA	0.00E+00
A2P1-NWU-C-4	35673	NA	NA	0.00E+00
A2P1-NWU-C-5	33550	NA	NA	0.00E+00
A2P1-NWU-C-6	60308	NA	NA	0.00E+00
A2P1-NWU-C-7	59182	NA	NA	0.00E+00
A2P1-NWU-C-8	41769	NA	NA	0.00E+00
A2P1-NWU-C-9	44757	NA	NA	0.00E+00
A2P1-SF-C-1	61667	NA	NA	0.00E+00
A2P1-SF-C-2	55717	NA	NA	0.00E+00
A2P1-SF-C-3	42617	NA	NA	0.00E+00
A2P1-SF-C-4	50911	NA	NA	0.00E+00
A2P1-SF-C-5	50629	NA	NA	0.00E+00
A2P1-SF-C-6	59470	NA	NA	0.00E+00
A2P1-SF-C-7	29993	NA	NA	0.00E+00
A2P2-C1	56964	NA	NA	0.00E+00
A2P2-C10	52688	NA	NA	0.00E+00
A2P2-C11	52690	NA	NA	0.00E+00
A2P2-C12	54964	NA	NA	0.00E+00
A2P2-C13	54958	NA	NA	0.00E+00
A2P2-C15	54963	NA	NA	0.00E+00
A2P2-C16	30689	NA	NA	0.00E+00
A2P2-C17	50085	NA	NA	0.00E+00
A2P2-C18	50092	NA	NA	0.00E+00
A2P2-C19	44521	NA	NA	0.00E+00
A2P2-C2	53738	NA	NA	0.00E+00
A2P2-C20	44556	NA	NA	0.00E+00
A2P2-C21	45012	NA	NA	0.00E+00
A2P2-C22	48805	NA	NA	0.00E+00
A2P2-C23	50097	NA	NA	0.00E+00
A2P2-C24	54356	NA	NA	0.00E+00
A2P2-C25	1980	NA	NA	0.00E+00
A2P2-C26	20560	NA	NA	0.00E+00
A2P2-C27	25946	NA	NA	0.00E+00
A2P2-C28	37956	NA	NA	0.00E+00
A2P2-C29	62411	NA	NA	0.00E+00
A2P2-C3	54521	NA	NA	0.00E+00
A2P2-C30	61405	NA	NA	0.00E+00
A2P2-C31	62153	NA	NA	0.00E+00
A2P2-C32	62238	NA	NA	0.00E+00
A2P2-C33	43319	NA	NA	0.00E+00
A2P2-C34	42378	NA	NA	0.00E+00
A2P2-C35	61027	NA	NA	0.00E+00
A2P2-C36	61138	NA	NA	0.00E+00
A2P2-C37	61979	NA	NA	0.00E+00
A2P2-C38	62500	NA	NA	0.00E+00
A2P2-C39	62424	NA	NA	0.00E+00
A2P2-C4	51181	NA	NA	0.00E+00
A2P2-C40	62251	NA	NA	0.00E+00
A2P2-C41	62316	NA	NA	0.00E+00
A2P2-C42	61667	NA	NA	0.00E+00
A2P2-C43	61780	NA	NA	0.00E+00
A2P2-C44	62335	NA	NA	0.00E+00
A2P2-C45	61746	NA	NA	0.00E+00
A2P2-C46	11770	NA	NA	0.00E+00
A2P2-C5	55598	NA	NA	0.00E+00
A2P2-C6	53729	NA	NA	0.00E+00
A2P2-C7	58080	NA	NA	0.00E+00
A2P2-C8	62229	NA	NA	0.00E+00
A2P2-C9	52690	NA	NA	0.00E+00
A2P2-CEWF	28161	NA	NA	0.00E+00
A2P2-CSUB1	86757	NA	NA	0.00E+00
A2P2-CSUB2	54465	NA	NA	0.00E+00
A2P2-CSUB3	42712	NA	NA	0.00E+00
A2P2-IHR1	48257	NA	NA	0.00E+00
A2P2-IHR2	15337	NA	NA	0.00E+00
A2P2-SP3-C-1	58391	NA	NA	0.00E+00
A2P2-SP3-C-2	55225	NA	NA	0.00E+00
A2P3-4SF	35433	NA	NA	0.00E+00
A2P3-PT2-C-1	54541	NA	NA	0.00E+00
A2P3-PT2-C-2	56488	NA	NA	0.00E+00
A2P3-PT2-C-3	104397	NA	NA	0.00E+00
A5A-PC01A	62493	NA	NA	0.00E+00
A5A-PC02A	62479	NA	NA	0.00E+00
A5A-PC03A	58386	NA	NA	0.00E+00
A5A-PC04A	62829	NA	NA	0.00E+00
A5A-PC05A	58386	NA	NA	0.00E+00
A5A-PC06A	58396	NA	NA	0.00E+00
A5-EF-01	49577	NA	NA	0.00E+00

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 2

Certification Units	Area sq ft	Trifluorochloromethane ug/g	Vinyl chloride ug/g	Xylenes ug/g
A5-EF-02	46738	NA	NA	0.00E+00
A5-EF-03	46306	NA	NA	0.00E+00
A5-EPL-C01	44798	NA	NA	0.00E+00
A5-EPL-C02	45851	NA	NA	0.00E+00
A5-EPL-C03	49955	NA	NA	0.00E+00
A5-EPL-C04	49946	NA	NA	0.00E+00
A5WPL-PC01	61686	NA	NA	0.00E+00
A5WPL-PC02	61795	NA	NA	0.00E+00
A5WPL-PC03	61687	NA	NA	0.00E+00
A5WPL-PC04	61685	NA	NA	0.00E+00
A7MA-C03	59794	NA	NA	0.00E+00
A7MA-C04	61209	NA	NA	0.00E+00
A7MA-C05	61047	NA	NA	0.00E+00
A7MA-C06	38081	NA	NA	0.00E+00
A7MA-C07	8965	NA	NA	0.00E+00
A7MA-C08	43732	NA	NA	0.00E+00
A7MA-C09	46113	NA	NA	0.00E+00
A7MA-C10	46313	NA	NA	0.00E+00
A7MA-C11	48260	NA	NA	0.00E+00
A7MA-C12	50603	NA	NA	0.00E+00
A7MA-C13	60993	NA	NA	0.00E+00
A7MA-C14	61091	NA	NA	0.00E+00
A7MA-C15	61470	NA	NA	0.00E+00
A7MA-C16	39968	NA	NA	0.00E+00
A7MA-C17	21714	NA	NA	0.00E+00
A7SAR-C01	47418	NA	NA	0.00E+00
A7SAR-C02	61637	NA	NA	0.00E+00
A7SAR-C03	62210	NA	NA	0.00E+00
A7SAR-C04	62425	NA	NA	0.00E+00
A7SAR-C05	62467	NA	NA	0.00E+00
A7STSA-C01	49322	NA	NA	0.00E+00
A7STSA-C02	52337	NA	NA	0.00E+00
A7STSA-C03	62014	NA	NA	0.00E+00
A7STSA-C04	62398	NA	NA	0.00E+00
A7STSA-C05	42664	NA	NA	0.00E+00
A7STSA-C06	61954	NA	NA	0.00E+00
A7STSA-C07	61672	NA	NA	0.00E+00
SSOD-C1	49126	NA	NA	0.00E+00
SSOD-C2	60728	NA	NA	0.00E+00
SSOD-C3	61701	NA	NA	0.00E+00
SSOD-C4	55136	NA	NA	0.00E+00
SSOD-C5	46100	NA	NA	0.00E+00
SSOD-C6	51871	NA	NA	0.00E+00
SWRB-C01	36015	NA	NA	0.00E+00
SWRB-C02	43403	NA	NA	1.40E-03
SWRB-C03	48923	NA	NA	1.90E-03
SWRB-C04	55182	NA	NA	0.00E+00
SWRB-C05	50367	NA	NA	0.00E+00
SWRB-C06	40708	NA	NA	1.90E-03
SWRB-C07	41483	NA	NA	1.10E-03
SWRB-C08	44600	NA	NA	0.00E+00
SWRB-C09	24162	NA	NA	1.00E-03
SWRB-C10	19195	NA	NA	0.00E+00
TCA-C1	52136	NA	NA	0.00E+00
TCA-C2	58161	NA	NA	0.00E+00
TCA-C3	58162	NA	NA	0.00E+00
TCA-C4	52020	NA	NA	0.00E+00
TCA-C5	55882	NA	NA	0.00E+00
TCA-C6	52366	NA	NA	0.00E+00
Maximum Value		NA	NA	1.90E-03
Average (*used in Risk Calc.*)		NA	NA	4.74E-05
Number of Cert Results		NA	NA	5.00E+00
Number of Inserted Values		NA	NA	1.49E+02

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 3

s in Zone 3 - Northern Perimeter Area

Certification Units	Area sq ft	Cesium-137 pCi/g	Lead-210 pCi/g	Neptunium-237 pCi/g	Plutonium-238 pCi/g	Plutonium-239/240 pCi/g	Radium-226 pCi/g	Radium-228 pCi/g	Strontium-90 pCi/g	Technetium-99 pCi/g
A1P1-ST2	43456	6.60E-02	NA	NA	NA	NA	1.50E+00	1.35E+00	NA	NA
A1P1-ST3	17510	6.60E-02	NA	NA	NA	NA	1.50E+00	1.36E+00	NA	NA
A1P3-C-01	546423	6.60E-02	NA	NA	NA	NA	1.33E+00	1.12E+00	NA	NA
A1P3-C-02	147927	6.60E-02	NA	NA	NA	NA	1.32E+00	1.08E+00	NA	NA
A1P3-C-03	157945	6.60E-02	NA	NA	NA	NA	1.33E+00	1.09E+00	NA	NA
A1P3-C-04	232761	6.60E-02	NA	NA	NA	NA	1.36E+00	1.12E+00	NA	NA
A1P3-C-05	187256	6.60E-02	NA	NA	NA	NA	1.23E+00	1.06E+00	NA	NA
A1P3-C-06	221362	6.60E-02	NA	NA	NA	NA	1.14E+00	9.20E-01	NA	NA
A1P3-C-07	239739	6.60E-02	NA	NA	NA	NA	1.51E+00	1.27E+00	NA	NA
A1P3-C-08	119688	6.60E-02	NA	NA	NA	NA	1.36E+00	1.05E+00	NA	NA
A1P3-C-09	242688	6.60E-02	NA	NA	NA	NA	1.36E+00	1.13E+00	NA	NA
A1P3-C-10	214351	6.60E-02	NA	NA	NA	NA	1.33E+00	1.13E+00	NA	NA
A1P3-C-11	238286	6.60E-02	NA	NA	NA	NA	1.39E+00	1.17E+00	NA	NA
A1P3-C-12	191015	6.60E-02	NA	NA	NA	NA	1.27E+00	1.06E+00	NA	NA
A1P3-C-13	132286	6.60E-02	NA	NA	NA	NA	1.31E+00	1.16E+00	NA	NA
A1P3-C-14	232859	6.60E-02	NA	NA	NA	NA	1.37E+00	1.13E+00	NA	NA
A1P3-C-15	245159	6.60E-02	NA	NA	NA	NA	1.50E+00	1.21E+00	NA	NA
A1P3-C-16	197495	6.60E-02	NA	NA	NA	NA	1.34E+00	1.17E+00	NA	NA
A1P3-C-17	245213	6.60E-02	NA	NA	NA	NA	1.29E+00	1.22E+00	NA	NA
A1P3-C-18	153695	6.60E-02	NA	NA	NA	NA	1.34E+00	1.10E+00	NA	NA
A1P3-C-19	243071	6.60E-02	NA	NA	NA	NA	1.28E+00	1.14E+00	NA	NA
A1P3-C-20	233658	6.60E-02	NA	NA	NA	NA	1.35E+00	1.20E+00	NA	NA
A1P3-C-21	65030	6.60E-02	NA	NA	NA	NA	1.36E+00	1.21E+00	NA	NA
A1P3-C-22	152150	6.60E-02	NA	NA	NA	NA	1.39E+00	1.15E+00	NA	NA
A1P3-C-23	116199	6.60E-02	NA	NA	NA	NA	1.36E+00	1.18E+00	NA	NA
A1P3-C-24	148051	6.60E-02	NA	NA	NA	NA	1.18E+00	1.09E+00	NA	NA
A1P3-C-25	77212	6.60E-02	NA	NA	NA	NA	1.27E+00	1.09E+00	NA	NA
A1P3P2-C-01	58051	6.60E-02	NA	NA	NA	NA	1.24E+00	1.14E+00	NA	NA
A1P3P2-C-02	40383	6.60E-02	NA	NA	NA	NA	1.42E+00	1.20E+00	NA	NA
A1P3P2-C-03	200422	6.60E-02	NA	NA	NA	NA	1.12E+00	1.10E+00	NA	NA
A1P3P2-C-04	15009	6.60E-02	NA	NA	NA	NA	1.12E+00	1.10E+00	NA	NA
A6P1-C-04	48492	6.60E-02	NA	NA	NA	NA	1.22E+00	1.44E+00	NA	NA
A6P1-C-14	11601	4.79E-01	NA	NA	NA	NA	1.41E+00	1.56E+00	NA	NA
N19	345649	9.60E-01	NA	NA	NA	NA	1.65E+00	1.47E+00	NA	NA
NAR-2	45710	6.60E-02	NA	NA	NA	NA	1.60E+00	1.46E+00	NA	NA
NAR-4	48883	6.60E-02	NA	NA	NA	NA	1.55E+00	1.49E+00	NA	NA
NAR-6	45172	6.60E-02	NA	NA	NA	NA	1.51E+00	1.36E+00	NA	NA
O18	312189	6.60E-02	NA	NA	NA	NA	1.20E+00	1.50E+00	NA	NA
O19	643686	6.60E-02	NA	NA	NA	NA	1.42E+00	1.50E+00	NA	NA
O20	315976	6.60E-02	NA	NA	NA	NA	1.38E+00	1.71E+00	NA	NA
P19	322132	6.60E-02	NA	NA	NA	NA	1.21E+00	1.33E+00	NA	NA
P19-40	160864	6.60E-02	NA	NA	NA	NA	1.39E+00	1.50E+00	NA	NA
P20-20	155779	6.60E-02	NA	NA	NA	NA	1.66E+00	1.55E+00	NA	NA
Q18-40	84090	6.60E-02	NA	NA	NA	NA	1.49E+00	1.57E+00	NA	NA
Q19-20	89815	6.60E-02	NA	NA	NA	NA	1.23E+00	1.43E+00	NA	NA
Q19-30	128546	6.60E-02	NA	NA	NA	NA	1.26E+00	1.31E+00	NA	NA
Q19-40	72358	6.60E-02	NA	NA	NA	NA	1.45E+00	1.54E+00	NA	NA
Q20-10	108612	6.60E-02	NA	NA	NA	NA	1.60E+00	1.70E+00	NA	NA
Q20-20	133345	6.60E-02	NA	NA	NA	NA	1.46E+00	1.70E+00	NA	NA
Q20-30	139140	6.60E-02	NA	NA	NA	NA	1.40E+00	1.50E+00	NA	NA
Q20-40	49764	6.60E-02	NA	NA	NA	NA	1.55E+00	1.46E+00	NA	NA
Maximum Value		9.60E-01	NA	NA	NA	NA	1.66E+00	1.71E+00	NA	NA
Average (*used in Risk Calc.*)		9.16E-02	NA	NA	NA	NA	1.37E+00	1.29E+00	NA	NA
Number of Cert Results		2.00E+00	NA	NA	NA	NA	5.10E+01	5.10E+01	NA	NA
Number of Inserted Values		4.90E+01	NA	NA	NA	NA	0.00E+00	0.00E+00	NA	NA

NOTE:

If at least one CU in the zone has an anlytical result for a given COC, the background value is inserted for the COC in other CUs that have no reported analytical result to avoid a high bias for the COC in this zone.

Background is zero for all organic compounds. Background is not reported for neptunium, plutonium, strontium and technetium isotopes, and zero will be used.

NA = Chemical or radionuclide is not applicable to the assesment of risk in this zone because the COC was not evaluated in the certification reports for this zone.

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 3

Thorium-228 pCi/g	Thorium-230 pCi/g	Thorium-232 pCi/g	Uranium-234 pCi/g	Uranium-235 pCi/g	Uranium-238 pCi/g	Antimony ug/g	Arsenic ug/g	Barium ug/g	Beryllium ug/g	Boron ug/g	Cadmium ug/g	Chromium (VI) ug/g
1.33E+00	1.56E+00	1.35E+00	4.10E+00	1.87E-01	4.00E+00	NA	1.03E+01	NA	1.00E+00	NA	NA	NA
1.32E+00	1.56E+00	1.36E+00	5.56E+00	2.53E-01	5.43E+00	NA	7.35E+00	NA	9.60E-01	NA	NA	NA
1.11E+00	1.56E+00	1.12E+00	5.89E+00	2.69E-01	5.76E+00	NA	1.24E+01	NA	1.44E+00	NA	NA	NA
1.07E+00	1.56E+00	1.08E+00	3.65E+00	1.66E-01	3.56E+00	NA	1.24E+01	NA	1.44E+00	NA	NA	NA
1.07E+00	1.56E+00	1.09E+00	5.28E+00	2.40E-01	5.15E+00	NA	1.24E+01	NA	1.44E+00	NA	NA	NA
1.10E+00	1.56E+00	1.12E+00	4.49E+00	2.05E-01	4.39E+00	NA	1.24E+01	NA	4.80E-01	NA	NA	NA
1.05E+00	1.56E+00	1.06E+00	5.31E+00	2.42E-01	5.19E+00	NA	1.24E+01	NA	1.80E-01	NA	NA	NA
9.00E-01	1.56E+00	9.20E-01	3.65E+00	1.66E-01	3.56E+00	NA	1.24E+01	NA	1.44E+00	NA	NA	NA
1.26E+00	1.56E+00	1.27E+00	3.62E+00	1.65E-01	3.53E+00	NA	1.24E+01	NA	1.44E+00	NA	NA	NA
1.04E+00	1.56E+00	1.05E+00	4.29E+00	1.96E-01	4.19E+00	NA	1.24E+01	NA	1.44E+00	NA	NA	NA
1.11E+00	1.56E+00	1.13E+00	2.83E+00	1.29E-01	2.76E+00	NA	1.24E+01	NA	1.44E+00	NA	NA	NA
1.12E+00	1.56E+00	1.13E+00	4.79E+00	2.18E-01	4.68E+00	NA	1.24E+01	NA	1.44E+00	NA	NA	NA
1.15E+00	1.56E+00	1.17E+00	4.19E+00	1.91E-01	4.10E+00	NA	1.24E+01	NA	1.44E+00	NA	NA	NA
1.03E+00	1.56E+00	1.06E+00	3.88E+00	1.77E-01	3.79E+00	NA	1.24E+01	NA	1.44E+00	NA	NA	NA
1.17E+00	1.56E+00	1.16E+00	5.50E+00	2.51E-01	5.37E+00	NA	1.24E+01	NA	1.44E+00	NA	NA	NA
1.14E+00	1.56E+00	1.13E+00	5.31E+00	2.42E-01	5.19E+00	NA	1.24E+01	NA	6.60E-01	NA	NA	NA
1.20E+00	1.56E+00	1.21E+00	7.05E+00	3.21E-01	6.89E+00	NA	1.24E+01	NA	5.00E-01	NA	NA	NA
1.15E+00	1.56E+00	1.17E+00	1.62E+01	7.39E-01	1.58E+01	NA	1.24E+01	NA	3.20E-01	NA	NA	NA
1.20E+00	1.56E+00	1.22E+00	5.88E+00	2.68E-01	5.75E+00	NA	1.24E+01	NA	1.44E+00	NA	NA	NA
1.10E+00	1.56E+00	1.10E+00	5.17E+00	2.35E-01	5.05E+00	NA	1.24E+01	NA	1.44E+00	NA	NA	NA
1.13E+00	1.56E+00	1.14E+00	8.06E+00	3.67E-01	7.88E+00	NA	1.24E+01	NA	5.40E-01	NA	NA	NA
1.18E+00	1.56E+00	1.20E+00	4.77E+00	2.18E-01	4.66E+00	NA	1.24E+01	NA	1.44E+00	NA	NA	NA
1.21E+00	1.56E+00	1.21E+00	4.09E+00	1.86E-01	3.99E+00	NA	1.24E+01	NA	1.44E+00	NA	NA	NA
1.14E+00	1.56E+00	1.15E+00	6.39E+00	2.91E-01	6.24E+00	NA	1.24E+01	NA	1.44E+00	NA	NA	NA
1.17E+00	1.56E+00	1.18E+00	1.04E+01	4.76E-01	1.02E+01	NA	1.24E+01	NA	5.50E-01	NA	NA	NA
1.06E+00	1.56E+00	1.09E+00	4.86E+00	2.21E-01	4.74E+00	NA	1.24E+01	NA	1.44E+00	NA	NA	NA
1.06E+00	1.56E+00	1.09E+00	1.25E+01	5.70E-01	1.22E+01	NA	1.24E+01	NA	4.00E-01	NA	NA	NA
1.13E+00	1.56E+00	1.14E+00	6.21E+00	2.83E-01	6.07E+00	NA	8.41E+00	NA	4.20E-01	NA	NA	NA
1.17E+00	1.56E+00	1.20E+00	8.84E+00	4.03E-01	8.63E+00	NA	1.24E+01	NA	1.44E+00	NA	NA	NA
1.08E+00	1.56E+00	1.10E+00	1.20E+00	5.46E-02	1.17E+00	NA	1.24E+01	NA	1.44E+00	NA	NA	NA
1.08E+00	1.56E+00	1.10E+00	1.20E+00	5.46E-02	1.17E+00	NA	1.24E+01	NA	1.44E+00	NA	NA	NA
1.44E+00	1.60E+01	1.44E+00	2.32E+00	1.06E-01	2.27E+00	NA	8.34E+00	NA	8.63E-01	NA	NA	NA
1.56E+00	1.56E+01	1.36E+00	3.96E+00	1.80E-01	3.87E+00	NA	4.50E+00	NA	1.10E+00	NA	NA	NA
1.61E+00	2.07E+00	1.30E+00	8.12E+00	3.70E-01	7.93E+00	NA	1.18E+01	NA	1.00E+00	NA	NA	NA
1.45E+00	1.56E+00	1.18E+00	3.65E+00	1.66E-01	3.57E+00	NA	1.10E+01	NA	1.07E+00	NA	NA	NA
1.55E+00	1.56E+00	1.30E+00	2.20E+00	1.00E-01	2.15E+00	NA	9.99E+00	NA	1.19E+00	NA	NA	NA
1.56E+00	1.56E+00	1.23E+00	2.78E+00	1.27E-01	2.72E+00	NA	9.10E+00	NA	1.03E+00	NA	NA	NA
1.44E+00	1.56E+00	1.34E+00	1.38E+01	6.30E-01	1.35E+01	NA	9.10E+00	NA	4.10E-01	NA	NA	NA
1.47E+00	1.56E+00	1.32E+00	1.23E+01	5.60E-01	1.20E+01	NA	7.30E+00	NA	4.90E-01	NA	NA	NA
1.66E+00	1.56E+00	1.37E+00	1.81E+01	8.24E-01	1.77E+01	NA	8.88E+00	NA	9.10E-01	NA	NA	NA
1.58E+00	1.56E+00	1.21E+00	1.30E+01	5.93E-01	1.27E+01	NA	8.40E+00	NA	1.20E+00	NA	NA	NA
1.54E+00	1.56E+00	1.28E+00	9.32E+00	4.25E-01	9.10E+00	NA	8.40E+00	NA	1.20E+00	NA	NA	NA
1.43E+00	1.56E+00	1.42E+00	9.18E+00	4.18E-01	8.97E+00	NA	1.24E+01	NA	1.44E+00	NA	NA	NA
1.33E+00	1.56E+00	1.32E+00	7.75E+00	3.53E-01	7.57E+00	NA	1.17E+01	NA	9.90E-01	NA	NA	NA
1.42E+00	1.56E+00	1.28E+00	4.81E+00	2.19E-01	4.70E+00	NA	1.09E+01	NA	9.60E-01	NA	NA	NA
1.46E+00	1.56E+00	1.27E+00	6.66E+00	3.03E-01	6.50E+00	NA	1.09E+01	NA	9.60E-01	NA	NA	NA
1.37E+00	1.56E+00	1.24E+00	5.87E+00	2.67E-01	5.73E+00	NA	1.09E+01	NA	9.60E-01	NA	NA	NA
1.61E+00	1.56E+00	1.45E+00	9.22E+00	4.20E-01	9.00E+00	NA	8.50E+00	NA	1.40E+00	NA	NA	NA
1.60E+00	1.56E+00	1.40E+00	7.88E+00	3.59E-01	7.70E+00	NA	8.50E+00	NA	1.40E+00	NA	NA	NA
1.49E+00	1.56E+00	1.40E+00	5.39E+00	2.46E-01	5.27E+00	NA	8.50E+00	NA	1.40E+00	NA	NA	NA
1.56E+00	1.56E+00	1.41E+00	4.47E+00	2.04E-01	4.37E+00	NA	8.50E+00	NA	1.40E+00	NA	NA	NA
1.66E+00	1.60E+01	1.45E+00	1.81E+01	8.24E-01	1.77E+01	NA	1.24E+01	NA	1.44E+00	NA	NA	NA
1.28E+00	2.13E+00	1.22E+00	6.39E+00	2.91E-01	6.24E+00	NA	1.10E+01	NA	1.10E+00	NA	NA	NA
5.10E+01	3.00E+00	5.10E+01	5.10E+01	5.10E+01	5.10E+01	NA	2.20E+01	NA	3.00E+01	NA	NA	NA
0.00E+00	4.80E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	2.90E+01	NA	2.10E+01	NA	NA	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 3

Cobalt ug/g	Copper ug/g	Fluoride ug/g	Lead ug/g	Manganese ug/g	Mercury ug/g	Molybdenum ug/g	Nickel ug/g	Selenium ug/g	Silver ug/g	Thallium ug/g	Uranium ug/g	Vanadium ug/g	Zinc ug/g	Acetone ug/g
NA	NA	NA	3.06E+01	1.33E+03	NA	5.24E+00	NA	NA	NA	NA	1.20E+01	NA	NA	NA
NA	NA	NA	3.06E+01	1.33E+03	NA	5.24E+00	NA	NA	NA	NA	1.63E+01	NA	NA	NA
NA	NA	NA	3.06E+01	1.33E+03	NA	5.24E+00	NA	NA	NA	NA	1.73E+01	NA	NA	NA
NA	NA	NA	3.06E+01	1.33E+03	NA	5.24E+00	NA	NA	NA	NA	1.07E+01	NA	NA	NA
NA	NA	NA	3.06E+01	1.33E+03	NA	5.24E+00	NA	NA	NA	NA	1.55E+01	NA	NA	NA
NA	NA	NA	3.06E+01	1.33E+03	NA	5.24E+00	NA	NA	NA	NA	1.32E+01	NA	NA	NA
NA	NA	NA	3.06E+01	1.33E+03	NA	5.24E+00	NA	NA	NA	NA	1.56E+01	NA	NA	NA
NA	NA	NA	3.06E+01	1.33E+03	NA	5.24E+00	NA	NA	NA	NA	1.07E+01	NA	NA	NA
NA	NA	NA	3.06E+01	1.33E+03	NA	5.24E+00	NA	NA	NA	NA	1.06E+01	NA	NA	NA
NA	NA	NA	3.06E+01	1.33E+03	NA	5.24E+00	NA	NA	NA	NA	1.26E+01	NA	NA	NA
NA	NA	NA	3.06E+01	1.33E+03	NA	5.24E+00	NA	NA	NA	NA	8.28E+00	NA	NA	NA
NA	NA	NA	3.06E+01	1.33E+03	NA	5.24E+00	NA	NA	NA	NA	1.40E+01	NA	NA	NA
NA	NA	NA	3.06E+01	1.33E+03	NA	5.24E+00	NA	NA	NA	NA	1.23E+01	NA	NA	NA
NA	NA	NA	3.06E+01	1.33E+03	NA	5.24E+00	NA	NA	NA	NA	1.14E+01	NA	NA	NA
NA	NA	NA	3.06E+01	1.33E+03	NA	5.24E+00	NA	NA	NA	NA	1.61E+01	NA	NA	NA
NA	NA	NA	3.06E+01	1.33E+03	NA	5.24E+00	NA	NA	NA	NA	1.56E+01	NA	NA	NA
NA	NA	NA	3.06E+01	1.33E+03	NA	5.24E+00	NA	NA	NA	NA	2.07E+01	NA	NA	NA
NA	NA	NA	3.06E+01	1.33E+03	NA	5.24E+00	NA	NA	NA	NA	4.75E+01	NA	NA	NA
NA	NA	NA	3.06E+01	1.33E+03	NA	5.24E+00	NA	NA	NA	NA	1.72E+01	NA	NA	NA
NA	NA	NA	3.06E+01	1.33E+03	NA	5.24E+00	NA	NA	NA	NA	1.51E+01	NA	NA	NA
NA	NA	NA	3.06E+01	1.33E+03	NA	5.24E+00	NA	NA	NA	NA	2.36E+01	NA	NA	NA
NA	NA	NA	3.06E+01	1.33E+03	NA	5.24E+00	NA	NA	NA	NA	1.40E+01	NA	NA	NA
NA	NA	NA	3.06E+01	1.33E+03	NA	5.24E+00	NA	NA	NA	NA	1.20E+01	NA	NA	NA
NA	NA	NA	3.06E+01	1.33E+03	NA	5.24E+00	NA	NA	NA	NA	1.87E+01	NA	NA	NA
NA	NA	NA	3.06E+01	1.33E+03	NA	5.24E+00	NA	NA	NA	NA	3.06E+01	NA	NA	NA
NA	NA	NA	3.06E+01	1.33E+03	NA	5.24E+00	NA	NA	NA	NA	1.42E+01	NA	NA	NA
NA	NA	NA	3.06E+01	1.33E+03	NA	5.24E+00	NA	NA	NA	NA	3.67E+01	NA	NA	NA
NA	NA	NA	3.06E+01	1.33E+03	NA	5.24E+00	NA	NA	NA	NA	1.82E+01	NA	NA	NA
NA	NA	NA	3.06E+01	1.33E+03	NA	5.24E+00	NA	NA	NA	NA	2.59E+01	NA	NA	NA
NA	NA	NA	3.06E+01	1.33E+03	NA	5.24E+00	NA	NA	NA	NA	3.51E+00	NA	NA	NA
NA	NA	NA	3.06E+01	1.33E+03	NA	5.24E+00	NA	NA	NA	NA	3.51E+00	NA	NA	NA
NA	NA	NA	3.06E+01	1.33E+03	NA	5.24E+00	NA	NA	NA	NA	6.80E+00	NA	NA	NA
NA	NA	NA	3.06E+01	1.33E+03	NA	5.24E+00	NA	NA	NA	NA	1.16E+01	NA	NA	NA
NA	NA	NA	3.04E+01	1.26E+03	NA	2.95E+00	NA	NA	NA	NA	2.38E+01	NA	NA	NA
NA	NA	NA	3.06E+01	8.71E+02	NA	2.40E+00	NA	NA	NA	NA	1.07E+01	NA	NA	NA
NA	NA	NA	3.06E+01	8.75E+02	NA	9.50E-01	NA	NA	NA	NA	6.46E+00	NA	NA	NA
NA	NA	NA	3.06E+01	1.12E+03	NA	1.80E+00	NA	NA	NA	NA	8.15E+00	NA	NA	NA
NA	NA	NA	3.01E+01	8.04E+02	NA	8.50E-01	NA	NA	NA	NA	4.05E+01	NA	NA	NA
NA	NA	NA	2.68E+01	1.47E+03	NA	4.60E-01	NA	NA	NA	NA	3.60E+01	NA	NA	NA
NA	NA	NA	3.61E+01	1.14E+03	NA	8.70E-01	NA	NA	NA	NA	5.30E+01	NA	NA	NA
NA	NA	NA	3.11E+01	1.20E+03	NA	2.40E+00	NA	NA	NA	NA	3.81E+01	NA	NA	NA
NA	NA	NA	3.11E+01	1.20E+03	NA	2.40E+00	NA	NA	NA	NA	2.73E+01	NA	NA	NA
NA	NA	NA	3.06E+01	1.33E+03	NA	5.24E+00	NA	NA	NA	NA	2.69E+01	NA	NA	NA
NA	NA	NA	2.29E+01	1.46E+03	NA	1.10E+00	NA	NA	NA	NA	2.27E+01	NA	NA	NA
NA	NA	NA	5.63E+01	1.59E+03	NA	1.70E+00	NA	NA	NA	NA	1.41E+01	NA	NA	NA
NA	NA	NA	5.63E+01	1.59E+03	NA	1.70E+00	NA	NA	NA	NA	1.95E+01	NA	NA	NA
NA	NA	NA	5.63E+01	1.59E+03	NA	1.70E+00	NA	NA	NA	NA	1.72E+01	NA	NA	NA
NA	NA	NA	3.19E+01	1.34E+03	NA	1.20E+00	NA	NA	NA	NA	2.70E+01	NA	NA	NA
NA	NA	NA	3.19E+01	1.34E+03	NA	1.20E+00	NA	NA	NA	NA	2.31E+01	NA	NA	NA
NA	NA	NA	3.19E+01	1.34E+03	NA	1.20E+00	NA	NA	NA	NA	1.58E+01	NA	NA	NA
NA	NA	NA	3.19E+01	1.34E+03	NA	1.20E+00	NA	NA	NA	NA	1.31E+01	NA	NA	NA
NA	NA	NA	5.63E+01	1.59E+03	NA	5.24E+00	NA	NA	NA	NA	5.30E+01	NA	NA	NA
NA	NA	NA	3.21E+01	1.31E+03	NA	4.00E+00	NA	NA	NA	NA	1.87E+01	NA	NA	NA
NA	NA	NA	1.40E+01	1.70E+01	NA	1.70E+01	NA	NA	NA	NA	5.10E+01	NA	NA	NA
NA	NA	NA	3.70E+01	3.40E+01	NA	3.40E+01	NA	NA	NA	NA	0.00E+00	NA	NA	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 3

Aroclor-1254 ug/g	Aroclor-1260 ug/g	Benzene ug/g	Benzo(a)anthracene ug/g	Benzo(a)pyrene ug/g	Benzo(b)fluoranthene ug/g	Benzo(k)fluoranthene ug/g	Bis(2-chloroisopropyl)ether ug/g
0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA
0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA
0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA
0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA
0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA
0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA
0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA
0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA
0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA
0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA
0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA
0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA
0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA
0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA
0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA
0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA
0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA
0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA
0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA
0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA
0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA
0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA
0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA
0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA
0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA
0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA
4.90E-02	4.90E-02	NA	4.40E+00	4.10E-01	6.20E+00	4.00E+00	NA
0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA
0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA
0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA
1.87E-02	4.10E-03	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA
7.00E-03	3.50E-03	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA
0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA
0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA
0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA
0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA
0.00E+00	3.20E+01	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA
0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA
0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA
0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA
0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA
0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA
0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA
0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA
0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA
0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA
0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA
0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA
0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA
0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA
0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA
4.90E-02	3.20E+01	NA	4.40E+00	4.10E-01	6.20E+00	4.00E+00	NA
1.46E-03	6.29E-01	NA	8.63E-02	8.04E-03	1.22E-01	7.84E-02	NA
3.00E+00	4.00E+00	NA	1.00E+00	1.00E+00	1.00E+00	1.00E+00	NA
4.80E+01	4.70E+01	NA	5.00E+01	5.00E+01	5.00E+01	5.00E+01	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 3

Bis(2-ethylhexyl)phthalate ug/g	Bromodichloromethane ug/g	Bromoform ug/g	Bromomethane ug/g	2-Butanone ug/g	Carbazole ug/g	Carbon disulfide ug/g	Carbon tetrachloride ug/g	Chlordane ug/g
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 3

Chlorobenzene ug/g	Chloroform ug/g	Chrysene ug/g	Cyanide ug/g	Cyclohexanone ug/g	Dibenzo(a,h)anthracene ug/g	3,3-Dichlorobenzidine ug/g	1,2-dichloroethane ug/g	1,1-Dichloroethylene ug/g	Dieldrin ug/g
NA	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA	NA
NA	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA	NA
NA	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA	NA
NA	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA	NA
NA	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA	NA
NA	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA	NA
NA	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA	NA
NA	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA	NA
NA	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA	NA
NA	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA	NA
NA	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA	NA
NA	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA	NA
NA	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA	NA
NA	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA	NA
NA	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA	NA
NA	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA	NA
NA	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA	NA
NA	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA	NA
NA	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA	NA
NA	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA	NA
NA	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA	NA
NA	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA	NA
NA	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA	NA
NA	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA	NA
NA	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA	NA
NA	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA	NA
NA	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA	NA
NA	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA	NA
NA	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA	NA
NA	NA	4.70E+00	NA	NA	1.20E+00	NA	NA	NA	NA
NA	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA	NA
NA	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA	NA
NA	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA	NA
NA	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA	NA
NA	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA	NA
NA	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA	NA
NA	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA	NA
NA	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA	NA
NA	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA	NA
NA	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA	NA
NA	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA	NA
NA	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA	NA
NA	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA	NA
NA	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA	NA
NA	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA	NA
NA	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA	NA
NA	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA	NA
NA	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA	NA
NA	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA	NA
NA	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA	NA
NA	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA	NA
NA	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA	NA
NA	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA	NA
NA	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA	NA
NA	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA	NA
NA	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA	NA
NA	NA	4.70E+00	NA	NA	1.20E+00	NA	NA	NA	NA
NA	NA	9.22E-02	NA	NA	2.35E-02	NA	NA	NA	NA
NA	NA	1.00E+00	NA	NA	1.00E+00	NA	NA	NA	NA
NA	NA	5.00E+01	NA	NA	5.00E+01	NA	NA	NA	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 3

Di-n-octylphthalate ug/g	Ethylbenzene ug/g	Ethyl ether ug/g	Heptachlorodibenzofuran ug/g	Heptachlorodibenzo-p-dioxin ug/g	Hexachlorodibenzofuran ug/g	Hexachlorodibenzo-p-dioxin ug/g	Indeno(1,2,3-cd)pyrene ug/g
NA	NA	NA	NA	NA	NA	NA	0.00E+00
NA	NA	NA	NA	NA	NA	NA	0.00E+00
NA	NA	NA	NA	NA	NA	NA	0.00E+00
NA	NA	NA	NA	NA	NA	NA	0.00E+00
NA	NA	NA	NA	NA	NA	NA	0.00E+00
NA	NA	NA	NA	NA	NA	NA	0.00E+00
NA	NA	NA	NA	NA	NA	NA	0.00E+00
NA	NA	NA	NA	NA	NA	NA	0.00E+00
NA	NA	NA	NA	NA	NA	NA	0.00E+00
NA	NA	NA	NA	NA	NA	NA	0.00E+00
NA	NA	NA	NA	NA	NA	NA	0.00E+00
NA	NA	NA	NA	NA	NA	NA	0.00E+00
NA	NA	NA	NA	NA	NA	NA	0.00E+00
NA	NA	NA	NA	NA	NA	NA	0.00E+00
NA	NA	NA	NA	NA	NA	NA	0.00E+00
NA	NA	NA	NA	NA	NA	NA	0.00E+00
NA	NA	NA	NA	NA	NA	NA	0.00E+00
NA	NA	NA	NA	NA	NA	NA	0.00E+00
NA	NA	NA	NA	NA	NA	NA	0.00E+00
NA	NA	NA	NA	NA	NA	NA	0.00E+00
NA	NA	NA	NA	NA	NA	NA	0.00E+00
NA	NA	NA	NA	NA	NA	NA	0.00E+00
NA	NA	NA	NA	NA	NA	NA	0.00E+00
NA	NA	NA	NA	NA	NA	NA	0.00E+00
NA	NA	NA	NA	NA	NA	NA	0.00E+00
NA	NA	NA	NA	NA	NA	NA	0.00E+00
NA	NA	NA	NA	NA	NA	NA	0.00E+00
NA	NA	NA	NA	NA	NA	NA	4.20E+00
NA	NA	NA	NA	NA	NA	NA	0.00E+00
NA	NA	NA	NA	NA	NA	NA	0.00E+00
NA	NA	NA	NA	NA	NA	NA	0.00E+00
NA	NA	NA	NA	NA	NA	NA	0.00E+00
NA	NA	NA	NA	NA	NA	NA	0.00E+00
NA	NA	NA	NA	NA	NA	NA	0.00E+00
NA	NA	NA	NA	NA	NA	NA	0.00E+00
NA	NA	NA	NA	NA	NA	NA	0.00E+00
NA	NA	NA	NA	NA	NA	NA	0.00E+00
NA	NA	NA	NA	NA	NA	NA	0.00E+00
NA	NA	NA	NA	NA	NA	NA	0.00E+00
NA	NA	NA	NA	NA	NA	NA	0.00E+00
NA	NA	NA	NA	NA	NA	NA	0.00E+00
NA	NA	NA	NA	NA	NA	NA	0.00E+00
NA	NA	NA	NA	NA	NA	NA	0.00E+00
NA	NA	NA	NA	NA	NA	NA	0.00E+00
NA	NA	NA	NA	NA	NA	NA	0.00E+00
NA	NA	NA	NA	NA	NA	NA	0.00E+00
NA	NA	NA	NA	NA	NA	NA	0.00E+00
NA	NA	NA	NA	NA	NA	NA	0.00E+00
NA	NA	NA	NA	NA	NA	NA	0.00E+00
NA	NA	NA	NA	NA	NA	NA	0.00E+00
NA	NA	NA	NA	NA	NA	NA	0.00E+00
NA	NA	NA	NA	NA	NA	NA	4.20E+00
NA	NA	NA	NA	NA	NA	NA	8.24E-02
NA	NA	NA	NA	NA	NA	NA	1.00E+00
NA	NA	NA	NA	NA	NA	NA	5.00E+01

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 3

Methanol ug/g	Methyl-2-pentanone ug/g	Methylene chloride ug/g	4-Methylphenol ug/g	4-Nitroanaline ug/g	N-nitrosodiphenylamine ug/g	N-nitrosodipropylamine ug/g	Octachlorodibenzofuran ug/g
NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 3

Octochlorodibenzo-p-dioxin ug/g	Pentachlorodibenzofuran ug/g	Pentachlorodibenzo-p-dioxin ug/g	Pentachlorophenol ug/g	Phenanthrene ug/g	Tetrachlorodibenzofuran ug/g
NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 3

Tetrachlorodibenzo-p-dioxin ug/g	Tetrachloroethylene ug/g	Toluene ug/g	Tributyl phosphate ug/g	1,1,2-Trichloroethane ug/g	Trichloroethylene ug/g	Trifluorochloromethane ug/g	Vinyl chloride ug/g	Xylenes ug/g
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 4

Certification Units	Area sq ft	Cesium-137 pCi/g	Lead-210 pCi/g	Neptunium-237 pCi/g	Plutonium-238 pCi/g	Plutonium-239/240 pCi/g	Radium-226 pCi/g
A6TA-01	163445	NA	NA	NA	NA	NA	1.14E+00
A8II-01	131352	NA	NA	NA	NA	NA	1.09E+00
A8II-02	248591	NA	NA	NA	NA	NA	1.02E+00
A8II-03	244412	NA	NA	NA	NA	NA	9.60E-01
A8II-04	184592	NA	NA	NA	NA	NA	8.60E-01
A8P1-C-01	212934	NA	NA	NA	NA	NA	1.30E+00
A8P1-C-02	131620	NA	NA	NA	NA	NA	1.31E+00
A8P1-C-03	133733	NA	NA	NA	NA	NA	1.29E+00
A8P1-C-04	67284	NA	NA	NA	NA	NA	1.48E+00
A8P3N-C1	51796	NA	NA	NA	NA	NA	7.24E-01
A8P3N-C10	125637	NA	NA	NA	NA	NA	1.08E+00
A8P3N-C2	60432	NA	NA	NA	NA	NA	1.17E+00
A8P3N-C3	128889	NA	NA	NA	NA	NA	1.13E+00
A8P3N-C4	244167	NA	NA	NA	NA	NA	9.44E-01
A8P3N-C5	247989	NA	NA	NA	NA	NA	8.40E-01
A8P3N-C6	242948	NA	NA	NA	NA	NA	1.12E+00
A8P3N-C7	230345	NA	NA	NA	NA	NA	1.34E+00
A8P3N-C8	136314	NA	NA	NA	NA	NA	9.81E-01
A8P3N-C9	217763	NA	NA	NA	NA	NA	1.04E+00
A8P3S-C-01	242016	NA	NA	NA	NA	NA	1.40E+00
A8P3S-C-02	249087	NA	NA	NA	NA	NA	1.15E+00
A8P3S-C-03	246420	NA	NA	NA	NA	NA	1.56E+00
A8P3S-C-04	195737	NA	NA	NA	NA	NA	1.38E+00
A8P3S-C-05	157162	NA	NA	NA	NA	NA	1.31E+00
A8P3S-C-06	179230	NA	NA	NA	NA	NA	1.15E+00
PR-C01	37930	NA	NA	NA	NA	NA	6.60E-01
PR-C06	60608	NA	NA	NA	NA	NA	1.11E+00
PR-C07	61775	NA	NA	NA	NA	NA	1.38E+00
PR-C08	60897	NA	NA	NA	NA	NA	6.86E-01
PR-C09	61681	NA	NA	NA	NA	NA	1.22E+00
PR-C10	61017	NA	NA	NA	NA	NA	1.46E+00
PR-C11	60411	NA	NA	NA	NA	NA	1.21E+00
PR-C12	61926	NA	NA	NA	NA	NA	1.25E+00
PR-C13	61976	NA	NA	NA	NA	NA	1.28E+00
PR-C14	61296	NA	NA	NA	NA	NA	1.30E+00
PR-C15	60916	NA	NA	NA	NA	NA	1.10E+00
PR-C16	55002	NA	NA	NA	NA	NA	1.36E+00
PR-C17	58801	NA	NA	NA	NA	NA	1.23E+00
PR-C18	60739	NA	NA	NA	NA	NA	1.20E+00
PR-C19	95552	NA	NA	NA	NA	NA	8.27E-01
PR-C20	69864	NA	NA	NA	NA	NA	7.00E-01
PR-C21	7673	NA	NA	NA	NA	NA	1.56E+00
RLS-C12	36639	NA	NA	NA	NA	NA	1.43E+00
RLS-C13	36635	NA	NA	NA	NA	NA	1.33E+00
RLS-C14	48973	NA	NA	NA	NA	NA	1.29E+00
RLS-C15	48972	NA	NA	NA	NA	NA	1.50E+00
RLS-C16	48971	NA	NA	NA	NA	NA	1.66E+00
Maximum Value		NA	NA	NA	NA	NA	1.66E+00
Average (*used in Risk Calc.*)		NA	NA	NA	NA	NA	1.18E+00
Number of Cert Results		NA	NA	NA	NA	NA	4.60E+01
Number of Inserted Values		NA	NA	NA	NA	NA	0.00E+00

NOTE:

If at least one CU in the zone has an anlytical result for a given COC, the background value is inserted for the COC in other CUs that have no reported analytical result to avoid a high bias for the COC in this zone.

Background is zero for all organic compounds. Background is not reported for neptunium, plutonium, strontium and technetium isotopes, and zero will be used.

NA = Chemical or radionuclide is not applicable to the assesment of risk in this zone because the COC was not evaluated in the certification reports for this zone.

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 4

Certification Units	Area sq ft	Radium-228 pCi/g	Strontium-90 pCi/g	Technetium-99 pCi/g	Thorium-228 pCi/g	Thorium-230 pCi/g	Thorium-232 pCi/g
A6TA-01	163445	1.10E+00	NA	NA	1.09E+00	NA	1.10E+00
A8II-01	131352	1.04E+00	NA	NA	1.02E+00	NA	1.04E+00
A8II-02	248591	9.20E-01	NA	NA	9.00E-01	NA	9.20E-01
A8II-03	244412	9.10E-01	NA	NA	9.10E-01	NA	9.10E-01
A8II-04	184592	9.70E-01	NA	NA	9.80E-01	NA	9.70E-01
A8P1-C-01	212934	1.12E+00	NA	NA	1.11E+00	NA	1.12E+00
A8P1-C-02	131620	1.32E+00	NA	NA	1.30E+00	NA	1.32E+00
A8P1-C-03	133733	1.21E+00	NA	NA	1.22E+00	NA	1.21E+00
A8P1-C-04	67284	1.56E+00	NA	NA	1.61E+00	NA	1.28E+00
A8P3N-C1	51796	9.54E-01	NA	NA	9.55E-01	NA	9.54E-01
A8P3N-C10	125637	8.92E-01	NA	NA	8.99E-01	NA	8.92E-01
A8P3N-C2	60432	1.21E+00	NA	NA	1.21E+00	NA	1.21E+00
A8P3N-C3	128889	1.08E+00	NA	NA	1.10E+00	NA	1.08E+00
A8P3N-C4	244167	1.06E+00	NA	NA	1.07E+00	NA	1.06E+00
A8P3N-C5	247989	1.02E+00	NA	NA	1.05E+00	NA	1.02E+00
A8P3N-C6	242948	1.02E+00	NA	NA	1.02E+00	NA	1.02E+00
A8P3N-C7	230345	1.10E+00	NA	NA	1.12E+00	NA	1.10E+00
A8P3N-C8	136314	8.99E-01	NA	NA	9.14E-01	NA	8.99E-01
A8P3N-C9	217763	9.58E-01	NA	NA	9.56E-01	NA	9.58E-01
A8P3S-C-01	242016	1.07E+00	NA	NA	1.06E+00	NA	1.07E+00
A8P3S-C-02	249087	8.60E-01	NA	NA	8.50E-01	NA	8.60E-01
A8P3S-C-03	246420	1.06E+00	NA	NA	1.05E+00	NA	1.06E+00
A8P3S-C-04	195737	1.00E+00	NA	NA	1.00E+00	NA	1.00E+00
A8P3S-C-05	157162	9.30E-01	NA	NA	9.20E-01	NA	9.30E-01
A8P3S-C-06	179230	9.20E-01	NA	NA	9.10E-01	NA	9.20E-01
PR-C01	37930	3.91E-01	NA	NA	3.99E-01	NA	3.91E-01
PR-C06	60608	8.77E-01	NA	NA	9.02E-01	NA	8.77E-01
PR-C07	61775	9.48E-01	NA	NA	9.93E-01	NA	9.48E-01
PR-C08	60897	1.02E+00	NA	NA	9.75E-01	NA	1.02E+00
PR-C09	61681	7.78E-01	NA	NA	7.77E-01	NA	7.78E-01
PR-C10	61017	1.18E+00	NA	NA	1.17E+00	NA	1.18E+00
PR-C11	60411	8.55E-01	NA	NA	8.56E-01	NA	8.55E-01
PR-C12	61926	9.35E-01	NA	NA	9.58E-01	NA	9.35E-01
PR-C13	61976	9.94E-01	NA	NA	1.02E+00	NA	9.94E-01
PR-C14	61296	1.13E+00	NA	NA	1.23E+00	NA	1.13E+00
PR-C15	60916	7.63E-01	NA	NA	7.57E-01	NA	7.63E-01
PR-C16	55002	1.07E+00	NA	NA	1.10E+00	NA	1.07E+00
PR-C17	58801	1.06E+00	NA	NA	1.10E+00	NA	1.06E+00
PR-C18	60739	1.11E+00	NA	NA	1.14E+00	NA	1.11E+00
PR-C19	95552	6.76E-01	NA	NA	6.23E-01	NA	6.76E-01
PR-C20	69864	5.79E-01	NA	NA	6.21E-01	NA	5.79E-01
PR-C21	7673	9.83E-01	NA	NA	9.53E-01	NA	9.83E-01
RLS-C12	36639	1.19E+00	NA	NA	1.24E+00	NA	1.19E+00
RLS-C13	36635	1.06E+00	NA	NA	1.10E+00	NA	1.06E+00
RLS-C14	48973	1.35E+00	NA	NA	1.39E+00	NA	1.35E+00
RLS-C15	48972	1.53E+00	NA	NA	1.25E+00	NA	1.22E+00
RLS-C16	48971	1.28E+00	NA	NA	1.32E+00	NA	1.28E+00
Maximum Value		1.56E+00	NA	NA	1.61E+00	NA	1.35E+00
Average (*used in Risk Calc.*)		1.02E+00	NA	NA	1.02E+00	NA	1.01E+00
Number of Cert Results		4.60E+01	NA	NA	4.60E+01	NA	4.60E+01
Number of Inserted Values		0.00E+00	NA	NA	0.00E+00	NA	0.00E+00

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 4

Certification Units	Area sq ft	Uranium-234 pCi/g	Uranium-235 pCi/g	Uranium-238 pCi/g	Antimony ug/g	Arsenic ug/g	Barium ug/g	Beryllium ug/g
A6TA-01	163445	2.79E+00	1.27E-01	2.72E+00	NA	NA	NA	NA
A8II-01	131352	2.47E+00	1.13E-01	2.42E+00	NA	NA	NA	NA
A8II-02	248591	1.82E+00	8.27E-02	1.77E+00	NA	NA	NA	NA
A8II-03	244412	1.74E+00	7.92E-02	1.70E+00	NA	NA	NA	NA
A8II-04	184592	2.17E+00	9.89E-02	2.12E+00	NA	NA	NA	NA
A8P1-C-01	212934	5.19E+00	2.36E-01	5.07E+00	NA	NA	NA	NA
A8P1-C-02	131620	9.49E+00	4.32E-01	9.27E+00	NA	NA	NA	NA
A8P1-C-03	133733	1.46E+01	6.67E-01	1.43E+01	NA	NA	NA	NA
A8P1-C-04	67284	7.34E+00	3.34E-01	7.17E+00	NA	NA	NA	NA
A8P3N-C1	51796	2.98E+00	1.36E-01	2.91E+00	NA	NA	NA	NA
A8P3N-C10	125637	4.54E+00	2.07E-01	4.43E+00	NA	NA	NA	NA
A8P3N-C2	60432	2.95E+00	1.35E-01	2.88E+00	NA	NA	NA	NA
A8P3N-C3	128889	2.92E+00	1.33E-01	2.85E+00	NA	NA	NA	NA
A8P3N-C4	244167	3.27E+00	1.49E-01	3.19E+00	NA	NA	NA	NA
A8P3N-C5	247989	3.48E+00	1.59E-01	3.40E+00	NA	NA	NA	NA
A8P3N-C6	242948	4.33E+00	1.98E-01	4.23E+00	NA	NA	NA	NA
A8P3N-C7	230345	1.17E+01	5.32E-01	1.14E+01	NA	NA	NA	NA
A8P3N-C8	136314	4.27E+00	1.94E-01	4.17E+00	NA	NA	NA	NA
A8P3N-C9	217763	6.31E+00	2.88E-01	6.17E+00	NA	NA	NA	NA
A8P3S-C-01	242016	2.72E+00	1.24E-01	2.65E+00	NA	NA	NA	NA
A8P3S-C-02	249087	3.86E+00	1.76E-01	3.77E+00	NA	NA	NA	NA
A8P3S-C-03	246420	4.78E+00	2.18E-01	4.67E+00	NA	NA	NA	NA
A8P3S-C-04	195737	4.51E+00	2.05E-01	4.40E+00	NA	NA	NA	NA
A8P3S-C-05	157162	2.90E+00	1.32E-01	2.83E+00	NA	NA	NA	NA
A8P3S-C-06	179230	3.75E+00	1.71E-01	3.67E+00	NA	NA	NA	NA
PR-C01	37930	1.30E+00	5.93E-02	1.27E+00	NA	NA	NA	NA
PR-C06	60608	4.54E+00	2.07E-01	4.43E+00	NA	NA	NA	NA
PR-C07	61775	1.03E+01	4.68E-01	1.00E+01	NA	NA	NA	NA
PR-C08	60897	5.60E+00	2.55E-01	5.47E+00	NA	NA	NA	NA
PR-C09	61681	5.02E+00	2.29E-01	4.90E+00	NA	NA	NA	NA
PR-C10	61017	1.75E+01	7.96E-01	1.71E+01	NA	NA	NA	NA
PR-C11	60411	8.33E+00	3.79E-01	8.13E+00	NA	NA	NA	NA
PR-C12	61926	6.42E+00	2.92E-01	6.27E+00	NA	NA	NA	NA
PR-C13	61976	2.39E+01	1.09E+00	2.34E+01	NA	NA	NA	NA
PR-C14	61296	5.90E+00	2.69E-01	5.77E+00	NA	NA	NA	NA
PR-C15	60916	3.82E+00	1.74E-01	3.73E+00	NA	NA	NA	NA
PR-C16	55002	6.93E+00	3.16E-01	6.77E+00	NA	NA	NA	NA
PR-C17	58801	4.64E+00	2.12E-01	4.53E+00	NA	NA	NA	NA
PR-C18	60739	2.54E+00	1.16E-01	2.48E+00	NA	NA	NA	NA
PR-C19	95552	1.23E+00	5.58E-02	1.20E+00	NA	NA	NA	NA
PR-C20	69864	1.13E+00	5.13E-02	1.10E+00	NA	NA	NA	NA
PR-C21	7673	6.31E+00	2.88E-01	6.17E+00	NA	NA	NA	NA
RLS-C12	36639	2.77E+00	1.26E-01	2.71E+00	NA	NA	NA	NA
RLS-C13	36635	2.95E+00	1.34E-01	2.88E+00	NA	NA	NA	NA
RLS-C14	48973	2.97E+00	1.35E-01	2.90E+00	NA	NA	NA	NA
RLS-C15	48972	2.97E+00	1.35E-01	2.90E+00	NA	NA	NA	NA
RLS-C16	48971	2.35E+00	1.07E-01	2.30E+00	NA	NA	NA	NA
Maximum Value		2.39E+01	1.09E+00	2.34E+01	NA	NA	NA	NA
Average (*used in Risk Calc.*)		5.24E+00	2.39E-01	5.12E+00	NA	NA	NA	NA
Number of Cert Results		4.60E+01	4.60E+01	4.60E+01	NA	NA	NA	NA
Number of Inserted Values		0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 4

Certification Units	Area sq ft	Boron ug/g	Cadmium ug/g	Chromium (VI) ug/g	Cobalt ug/g	Copper ug/g	Fluoride ug/g	Lead ug/g	Manganese ug/g
A6TA-01	163445	NA	NA	NA	NA	NA	NA	NA	NA
A8II-01	131352	NA	NA	NA	NA	NA	NA	NA	NA
A8II-02	248591	NA	NA	NA	NA	NA	NA	NA	NA
A8II-03	244412	NA	NA	NA	NA	NA	NA	NA	NA
A8II-04	184592	NA	NA	NA	NA	NA	NA	NA	NA
A8P1-C-01	212934	NA	NA	NA	NA	NA	NA	NA	NA
A8P1-C-02	131620	NA	NA	NA	NA	NA	NA	NA	NA
A8P1-C-03	133733	NA	NA	NA	NA	NA	NA	NA	NA
A8P1-C-04	67284	NA	NA	NA	NA	NA	NA	NA	NA
A8P3N-C1	51796	NA	NA	NA	NA	NA	NA	NA	NA
A8P3N-C10	125637	NA	NA	NA	NA	NA	NA	NA	NA
A8P3N-C2	60432	NA	NA	NA	NA	NA	NA	NA	NA
A8P3N-C3	128889	NA	NA	NA	NA	NA	NA	NA	NA
A8P3N-C4	244167	NA	NA	NA	NA	NA	NA	NA	NA
A8P3N-C5	247989	NA	NA	NA	NA	NA	NA	NA	NA
A8P3N-C6	242948	NA	NA	NA	NA	NA	NA	NA	NA
A8P3N-C7	230345	NA	NA	NA	NA	NA	NA	NA	NA
A8P3N-C8	136314	NA	NA	NA	NA	NA	NA	NA	NA
A8P3N-C9	217763	NA	NA	NA	NA	NA	NA	NA	NA
A8P3S-C-01	242016	NA	NA	NA	NA	NA	NA	NA	NA
A8P3S-C-02	249087	NA	NA	NA	NA	NA	NA	NA	NA
A8P3S-C-03	246420	NA	NA	NA	NA	NA	NA	NA	NA
A8P3S-C-04	195737	NA	NA	NA	NA	NA	NA	NA	NA
A8P3S-C-05	157162	NA	NA	NA	NA	NA	NA	NA	NA
A8P3S-C-06	179230	NA	NA	NA	NA	NA	NA	NA	NA
PR-C01	37930	NA	NA	NA	NA	NA	NA	NA	NA
PR-C06	60608	NA	NA	NA	NA	NA	NA	NA	NA
PR-C07	61775	NA	NA	NA	NA	NA	NA	NA	NA
PR-C08	60897	NA	NA	NA	NA	NA	NA	NA	NA
PR-C09	61681	NA	NA	NA	NA	NA	NA	NA	NA
PR-C10	61017	NA	NA	NA	NA	NA	NA	NA	NA
PR-C11	60411	NA	NA	NA	NA	NA	NA	NA	NA
PR-C12	61926	NA	NA	NA	NA	NA	NA	NA	NA
PR-C13	61976	NA	NA	NA	NA	NA	NA	NA	NA
PR-C14	61296	NA	NA	NA	NA	NA	NA	NA	NA
PR-C15	60916	NA	NA	NA	NA	NA	NA	NA	NA
PR-C16	55002	NA	NA	NA	NA	NA	NA	NA	NA
PR-C17	58801	NA	NA	NA	NA	NA	NA	NA	NA
PR-C18	60739	NA	NA	NA	NA	NA	NA	NA	NA
PR-C19	95552	NA	NA	NA	NA	NA	NA	NA	NA
PR-C20	69864	NA	NA	NA	NA	NA	NA	NA	NA
PR-C21	7673	NA	NA	NA	NA	NA	NA	NA	NA
RLS-C12	36639	NA	NA	NA	NA	NA	NA	NA	NA
RLS-C13	36635	NA	NA	NA	NA	NA	NA	NA	NA
RLS-C14	48973	NA	NA	NA	NA	NA	NA	NA	NA
RLS-C15	48972	NA	NA	NA	NA	NA	NA	NA	NA
RLS-C16	48971	NA	NA	NA	NA	NA	NA	NA	NA
Maximum Value		NA	NA	NA	NA	NA	NA	NA	NA
Average (*used in Risk Calc.*)		NA	NA	NA	NA	NA	NA	NA	NA
Number of Cert Results		NA	NA	NA	NA	NA	NA	NA	NA
Number of Inserted Values		NA	NA	NA	NA	NA	NA	NA	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 4

Certification Units	Area sq ft	Mercury ug/g	Molybdenum ug/g	Nickel ug/g	Selenium ug/g	Silver ug/g	Thallium ug/g	Uranium ug/g	Vanadium ug/g
A6TA-01	163445	NA	NA	NA	NA	NA	NA	8.17E+00	NA
A8II-01	131352	NA	NA	NA	NA	NA	NA	7.25E+00	NA
A8II-02	248591	NA	NA	NA	NA	NA	NA	5.32E+00	NA
A8II-03	244412	NA	NA	NA	NA	NA	NA	5.09E+00	NA
A8II-04	184592	NA	NA	NA	NA	NA	NA	6.36E+00	NA
A8P1-C-01	212934	NA	NA	NA	NA	NA	NA	1.52E+01	NA
A8P1-C-02	131620	NA	NA	NA	NA	NA	NA	2.78E+01	NA
A8P1-C-03	133733	NA	NA	NA	NA	NA	NA	4.29E+01	NA
A8P1-C-04	67284	NA	NA	NA	NA	NA	NA	2.15E+01	NA
A8P3N-C1	51796	NA	NA	NA	NA	NA	NA	8.74E+00	NA
A8P3N-C10	125637	NA	NA	NA	NA	NA	NA	1.33E+01	NA
A8P3N-C2	60432	NA	NA	NA	NA	NA	NA	8.65E+00	NA
A8P3N-C3	128889	NA	NA	NA	NA	NA	NA	8.55E+00	NA
A8P3N-C4	244167	NA	NA	NA	NA	NA	NA	9.57E+00	NA
A8P3N-C5	247989	NA	NA	NA	NA	NA	NA	1.02E+01	NA
A8P3N-C6	242948	NA	NA	NA	NA	NA	NA	1.27E+01	NA
A8P3N-C7	230345	NA	NA	NA	NA	NA	NA	3.42E+01	NA
A8P3N-C8	136314	NA	NA	NA	NA	NA	NA	1.25E+01	NA
A8P3N-C9	217763	NA	NA	NA	NA	NA	NA	1.85E+01	NA
A8P3S-C-01	242016	NA	NA	NA	NA	NA	NA	7.96E+00	NA
A8P3S-C-02	249087	NA	NA	NA	NA	NA	NA	1.13E+01	NA
A8P3S-C-03	246420	NA	NA	NA	NA	NA	NA	1.40E+01	NA
A8P3S-C-04	195737	NA	NA	NA	NA	NA	NA	1.32E+01	NA
A8P3S-C-05	157162	NA	NA	NA	NA	NA	NA	8.50E+00	NA
A8P3S-C-06	179230	NA	NA	NA	NA	NA	NA	1.10E+01	NA
PR-C01	37930	NA	NA	NA	NA	NA	NA	3.81E+00	NA
PR-C06	60608	NA	NA	NA	NA	NA	NA	1.33E+01	NA
PR-C07	61775	NA	NA	NA	NA	NA	NA	3.01E+01	NA
PR-C08	60897	NA	NA	NA	NA	NA	NA	1.64E+01	NA
PR-C09	61681	NA	NA	NA	NA	NA	NA	1.47E+01	NA
PR-C10	61017	NA	NA	NA	NA	NA	NA	5.12E+01	NA
PR-C11	60411	NA	NA	NA	NA	NA	NA	2.44E+01	NA
PR-C12	61926	NA	NA	NA	NA	NA	NA	1.88E+01	NA
PR-C13	61976	NA	NA	NA	NA	NA	NA	7.01E+01	NA
PR-C14	61296	NA	NA	NA	NA	NA	NA	1.73E+01	NA
PR-C15	60916	NA	NA	NA	NA	NA	NA	1.12E+01	NA
PR-C16	55002	NA	NA	NA	NA	NA	NA	2.03E+01	NA
PR-C17	58801	NA	NA	NA	NA	NA	NA	1.36E+01	NA
PR-C18	60739	NA	NA	NA	NA	NA	NA	7.45E+00	NA
PR-C19	95552	NA	NA	NA	NA	NA	NA	3.59E+00	NA
PR-C20	69864	NA	NA	NA	NA	NA	NA	3.30E+00	NA
PR-C21	7673	NA	NA	NA	NA	NA	NA	1.85E+01	NA
RLS-C12	36639	NA	NA	NA	NA	NA	NA	8.12E+00	NA
RLS-C13	36635	NA	NA	NA	NA	NA	NA	8.63E+00	NA
RLS-C14	48973	NA	NA	NA	NA	NA	NA	8.70E+00	NA
RLS-C15	48972	NA	NA	NA	NA	NA	NA	8.71E+00	NA
RLS-C16	48971	NA	NA	NA	NA	NA	NA	6.90E+00	NA
Maximum Value		NA	NA	NA	NA	NA	NA	7.01E+01	NA
Average (*used in Risk Calc.*)		NA	NA	NA	NA	NA	NA	1.54E+01	NA
Number of Cert Results		NA	NA	NA	NA	NA	NA	4.60E+01	NA
Number of Inserted Values		NA	NA	NA	NA	NA	NA	0.00E+00	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 4

Certification Units	Area sq ft	Zinc ug/g	Acetone ug/g	Aroclor-1254 ug/g	Aroclor-1260 ug/g	Benzene ug/g	Benzo(a)anthracene ug/g
A6TA-01	163445	NA	NA	NA	NA	NA	NA
A8II-01	131352	NA	NA	NA	NA	NA	NA
A8II-02	248591	NA	NA	NA	NA	NA	NA
A8II-03	244412	NA	NA	NA	NA	NA	NA
A8II-04	184592	NA	NA	NA	NA	NA	NA
A8P1-C-01	212934	NA	NA	NA	NA	NA	NA
A8P1-C-02	131620	NA	NA	NA	NA	NA	NA
A8P1-C-03	133733	NA	NA	NA	NA	NA	NA
A8P1-C-04	67284	NA	NA	NA	NA	NA	NA
A8P3N-C1	51796	NA	NA	NA	NA	NA	NA
A8P3N-C10	125637	NA	NA	NA	NA	NA	NA
A8P3N-C2	60432	NA	NA	NA	NA	NA	NA
A8P3N-C3	128889	NA	NA	NA	NA	NA	NA
A8P3N-C4	244167	NA	NA	NA	NA	NA	NA
A8P3N-C5	247989	NA	NA	NA	NA	NA	NA
A8P3N-C6	242948	NA	NA	NA	NA	NA	NA
A8P3N-C7	230345	NA	NA	NA	NA	NA	NA
A8P3N-C8	136314	NA	NA	NA	NA	NA	NA
A8P3N-C9	217763	NA	NA	NA	NA	NA	NA
A8P3S-C-01	242016	NA	NA	NA	NA	NA	NA
A8P3S-C-02	249087	NA	NA	NA	NA	NA	NA
A8P3S-C-03	246420	NA	NA	NA	NA	NA	NA
A8P3S-C-04	195737	NA	NA	NA	NA	NA	NA
A8P3S-C-05	157162	NA	NA	NA	NA	NA	NA
A8P3S-C-06	179230	NA	NA	NA	NA	NA	NA
PR-C01	37930	NA	NA	NA	NA	NA	NA
PR-C06	60608	NA	NA	NA	NA	NA	NA
PR-C07	61775	NA	NA	NA	NA	NA	NA
PR-C08	60897	NA	NA	NA	NA	NA	NA
PR-C09	61681	NA	NA	NA	NA	NA	NA
PR-C10	61017	NA	NA	NA	NA	NA	NA
PR-C11	60411	NA	NA	NA	NA	NA	NA
PR-C12	61926	NA	NA	NA	NA	NA	NA
PR-C13	61976	NA	NA	NA	NA	NA	NA
PR-C14	61296	NA	NA	NA	NA	NA	NA
PR-C15	60916	NA	NA	NA	NA	NA	NA
PR-C16	55002	NA	NA	NA	NA	NA	NA
PR-C17	58801	NA	NA	NA	NA	NA	NA
PR-C18	60739	NA	NA	NA	NA	NA	NA
PR-C19	95552	NA	NA	NA	NA	NA	NA
PR-C20	69864	NA	NA	NA	NA	NA	NA
PR-C21	7673	NA	NA	NA	NA	NA	NA
RLS-C12	36639	NA	NA	NA	NA	NA	NA
RLS-C13	36635	NA	NA	NA	NA	NA	NA
RLS-C14	48973	NA	NA	NA	NA	NA	NA
RLS-C15	48972	NA	NA	NA	NA	NA	NA
RLS-C16	48971	NA	NA	NA	NA	NA	NA
Maximum Value		NA	NA	NA	NA	NA	NA
Average (*used in Risk Calc.*)		NA	NA	NA	NA	NA	NA
Number of Cert Results		NA	NA	NA	NA	NA	NA
Number of Inserted Values		NA	NA	NA	NA	NA	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 4

Certification Units	Area sq ft	Benzo(a)pyrene ug/g	Benzo(b)fluoranthene ug/g	Benzo(k)fluoranthene ug/g	Bis(2-chloroisopropyl)ether ug/g
A6TA-01	163445	NA	NA	NA	NA
A8II-01	131352	NA	NA	NA	NA
A8II-02	248591	NA	NA	NA	NA
A8II-03	244412	NA	NA	NA	NA
A8II-04	184592	NA	NA	NA	NA
A8P1-C-01	212934	NA	NA	NA	NA
A8P1-C-02	131620	NA	NA	NA	NA
A8P1-C-03	133733	NA	NA	NA	NA
A8P1-C-04	67284	NA	NA	NA	NA
A8P3N-C1	51796	NA	NA	NA	NA
A8P3N-C10	125637	NA	NA	NA	NA
A8P3N-C2	60432	NA	NA	NA	NA
A8P3N-C3	128889	NA	NA	NA	NA
A8P3N-C4	244167	NA	NA	NA	NA
A8P3N-C5	247989	NA	NA	NA	NA
A8P3N-C6	242948	NA	NA	NA	NA
A8P3N-C7	230345	NA	NA	NA	NA
A8P3N-C8	136314	NA	NA	NA	NA
A8P3N-C9	217763	NA	NA	NA	NA
A8P3S-C-01	242016	NA	NA	NA	NA
A8P3S-C-02	249087	NA	NA	NA	NA
A8P3S-C-03	246420	NA	NA	NA	NA
A8P3S-C-04	195737	NA	NA	NA	NA
A8P3S-C-05	157162	NA	NA	NA	NA
A8P3S-C-06	179230	NA	NA	NA	NA
PR-C01	37930	NA	NA	NA	NA
PR-C06	60608	NA	NA	NA	NA
PR-C07	61775	NA	NA	NA	NA
PR-C08	60897	NA	NA	NA	NA
PR-C09	61681	NA	NA	NA	NA
PR-C10	61017	NA	NA	NA	NA
PR-C11	60411	NA	NA	NA	NA
PR-C12	61926	NA	NA	NA	NA
PR-C13	61976	NA	NA	NA	NA
PR-C14	61296	NA	NA	NA	NA
PR-C15	60916	NA	NA	NA	NA
PR-C16	55002	NA	NA	NA	NA
PR-C17	58801	NA	NA	NA	NA
PR-C18	60739	NA	NA	NA	NA
PR-C19	95552	NA	NA	NA	NA
PR-C20	69864	NA	NA	NA	NA
PR-C21	7673	NA	NA	NA	NA
RLS-C12	36639	NA	NA	NA	NA
RLS-C13	36635	NA	NA	NA	NA
RLS-C14	48973	NA	NA	NA	NA
RLS-C15	48972	NA	NA	NA	NA
RLS-C16	48971	NA	NA	NA	NA
Maximum Value		NA	NA	NA	NA
Average (*used in Risk Calc.*)		NA	NA	NA	NA
Number of Cert Results		NA	NA	NA	NA
Number of Inserted Values		NA	NA	NA	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 4

Certification Units	Area sq ft	Bis(2-ethylhexyl)phthalate ug/g	Bromodichloromethane ug/g	Bromoform ug/g	Bromomethane ug/g	2-Butanone ug/g
A6TA-01	163445	NA	NA	NA	NA	NA
A8II-01	131352	NA	NA	NA	NA	NA
A8II-02	248591	NA	NA	NA	NA	NA
A8II-03	244412	NA	NA	NA	NA	NA
A8II-04	184592	NA	NA	NA	NA	NA
A8P1-C-01	212934	NA	NA	NA	NA	NA
A8P1-C-02	131620	NA	NA	NA	NA	NA
A8P1-C-03	133733	NA	NA	NA	NA	NA
A8P1-C-04	67284	NA	NA	NA	NA	NA
A8P3N-C1	51796	NA	NA	NA	NA	NA
A8P3N-C10	125637	NA	NA	NA	NA	NA
A8P3N-C2	60432	NA	NA	NA	NA	NA
A8P3N-C3	128889	NA	NA	NA	NA	NA
A8P3N-C4	244167	NA	NA	NA	NA	NA
A8P3N-C5	247989	NA	NA	NA	NA	NA
A8P3N-C6	242948	NA	NA	NA	NA	NA
A8P3N-C7	230345	NA	NA	NA	NA	NA
A8P3N-C8	136314	NA	NA	NA	NA	NA
A8P3N-C9	217763	NA	NA	NA	NA	NA
A8P3S-C-01	242016	NA	NA	NA	NA	NA
A8P3S-C-02	249087	NA	NA	NA	NA	NA
A8P3S-C-03	246420	NA	NA	NA	NA	NA
A8P3S-C-04	195737	NA	NA	NA	NA	NA
A8P3S-C-05	157162	NA	NA	NA	NA	NA
A8P3S-C-06	179230	NA	NA	NA	NA	NA
PR-C01	37930	NA	NA	NA	NA	NA
PR-C06	60608	NA	NA	NA	NA	NA
PR-C07	61775	NA	NA	NA	NA	NA
PR-C08	60897	NA	NA	NA	NA	NA
PR-C09	61681	NA	NA	NA	NA	NA
PR-C10	61017	NA	NA	NA	NA	NA
PR-C11	60411	NA	NA	NA	NA	NA
PR-C12	61926	NA	NA	NA	NA	NA
PR-C13	61976	NA	NA	NA	NA	NA
PR-C14	61296	NA	NA	NA	NA	NA
PR-C15	60916	NA	NA	NA	NA	NA
PR-C16	55002	NA	NA	NA	NA	NA
PR-C17	58801	NA	NA	NA	NA	NA
PR-C18	60739	NA	NA	NA	NA	NA
PR-C19	95552	NA	NA	NA	NA	NA
PR-C20	69864	NA	NA	NA	NA	NA
PR-C21	7673	NA	NA	NA	NA	NA
RLS-C12	36639	NA	NA	NA	NA	NA
RLS-C13	36635	NA	NA	NA	NA	NA
RLS-C14	48973	NA	NA	NA	NA	NA
RLS-C15	48972	NA	NA	NA	NA	NA
RLS-C16	48971	NA	NA	NA	NA	NA
Maximum Value		NA	NA	NA	NA	NA
Average (*used in Risk Calc.*)		NA	NA	NA	NA	NA
Number of Cert Results		NA	NA	NA	NA	NA
Number of Inserted Values		NA	NA	NA	NA	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 4

Certification Units	Area sq ft	Carbazole ug/g	Carbon disulfide ug/g	Carbon tetrachloride ug/g	Chlordane ug/g	Chlorobenzene ug/g	Chloroform ug/g
A6TA-01	163445	NA	NA	NA	NA	NA	NA
A8II-01	131352	NA	NA	NA	NA	NA	NA
A8II-02	248591	NA	NA	NA	NA	NA	NA
A8II-03	244412	NA	NA	NA	NA	NA	NA
A8II-04	184592	NA	NA	NA	NA	NA	NA
A8P1-C-01	212934	NA	NA	NA	NA	NA	NA
A8P1-C-02	131620	NA	NA	NA	NA	NA	NA
A8P1-C-03	133733	NA	NA	NA	NA	NA	NA
A8P1-C-04	67284	NA	NA	NA	NA	NA	NA
A8P3N-C1	51796	NA	NA	NA	NA	NA	NA
A8P3N-C10	125637	NA	NA	NA	NA	NA	NA
A8P3N-C2	60432	NA	NA	NA	NA	NA	NA
A8P3N-C3	128889	NA	NA	NA	NA	NA	NA
A8P3N-C4	244167	NA	NA	NA	NA	NA	NA
A8P3N-C5	247989	NA	NA	NA	NA	NA	NA
A8P3N-C6	242948	NA	NA	NA	NA	NA	NA
A8P3N-C7	230345	NA	NA	NA	NA	NA	NA
A8P3N-C8	136314	NA	NA	NA	NA	NA	NA
A8P3N-C9	217763	NA	NA	NA	NA	NA	NA
A8P3S-C-01	242016	NA	NA	NA	NA	NA	NA
A8P3S-C-02	249087	NA	NA	NA	NA	NA	NA
A8P3S-C-03	246420	NA	NA	NA	NA	NA	NA
A8P3S-C-04	195737	NA	NA	NA	NA	NA	NA
A8P3S-C-05	157162	NA	NA	NA	NA	NA	NA
A8P3S-C-06	179230	NA	NA	NA	NA	NA	NA
PR-C01	37930	NA	NA	NA	NA	NA	NA
PR-C06	60608	NA	NA	NA	NA	NA	NA
PR-C07	61775	NA	NA	NA	NA	NA	NA
PR-C08	60897	NA	NA	NA	NA	NA	NA
PR-C09	61681	NA	NA	NA	NA	NA	NA
PR-C10	61017	NA	NA	NA	NA	NA	NA
PR-C11	60411	NA	NA	NA	NA	NA	NA
PR-C12	61926	NA	NA	NA	NA	NA	NA
PR-C13	61976	NA	NA	NA	NA	NA	NA
PR-C14	61296	NA	NA	NA	NA	NA	NA
PR-C15	60916	NA	NA	NA	NA	NA	NA
PR-C16	55002	NA	NA	NA	NA	NA	NA
PR-C17	58801	NA	NA	NA	NA	NA	NA
PR-C18	60739	NA	NA	NA	NA	NA	NA
PR-C19	95552	NA	NA	NA	NA	NA	NA
PR-C20	69864	NA	NA	NA	NA	NA	NA
PR-C21	7673	NA	NA	NA	NA	NA	NA
RLS-C12	36639	NA	NA	NA	NA	NA	NA
RLS-C13	36635	NA	NA	NA	NA	NA	NA
RLS-C14	48973	NA	NA	NA	NA	NA	NA
RLS-C15	48972	NA	NA	NA	NA	NA	NA
RLS-C16	48971	NA	NA	NA	NA	NA	NA
Maximum Value		NA	NA	NA	NA	NA	NA
Average (*used in Risk Calc.*)		NA	NA	NA	NA	NA	NA
Number of Cert Results		NA	NA	NA	NA	NA	NA
Number of Inserted Values		NA	NA	NA	NA	NA	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 4

Certification Units	Area sq ft	Chrysene ug/g	Cyanide ug/g	Cyclohexanone ug/g	Dibenzo(a,h)anthracene ug/g	3,3-Dichlorobenzidine ug/g
A6TA-01	163445	NA	NA	NA	NA	NA
A8II-01	131352	NA	NA	NA	NA	NA
A8II-02	248591	NA	NA	NA	NA	NA
A8II-03	244412	NA	NA	NA	NA	NA
A8II-04	184592	NA	NA	NA	NA	NA
A8P1-C-01	212934	NA	NA	NA	NA	NA
A8P1-C-02	131620	NA	NA	NA	NA	NA
A8P1-C-03	133733	NA	NA	NA	NA	NA
A8P1-C-04	67284	NA	NA	NA	NA	NA
A8P3N-C1	51796	NA	NA	NA	NA	NA
A8P3N-C10	125637	NA	NA	NA	NA	NA
A8P3N-C2	60432	NA	NA	NA	NA	NA
A8P3N-C3	128889	NA	NA	NA	NA	NA
A8P3N-C4	244167	NA	NA	NA	NA	NA
A8P3N-C5	247989	NA	NA	NA	NA	NA
A8P3N-C6	242948	NA	NA	NA	NA	NA
A8P3N-C7	230345	NA	NA	NA	NA	NA
A8P3N-C8	136314	NA	NA	NA	NA	NA
A8P3N-C9	217763	NA	NA	NA	NA	NA
A8P3S-C-01	242016	NA	NA	NA	NA	NA
A8P3S-C-02	249087	NA	NA	NA	NA	NA
A8P3S-C-03	246420	NA	NA	NA	NA	NA
A8P3S-C-04	195737	NA	NA	NA	NA	NA
A8P3S-C-05	157162	NA	NA	NA	NA	NA
A8P3S-C-06	179230	NA	NA	NA	NA	NA
PR-C01	37930	NA	NA	NA	NA	NA
PR-C06	60608	NA	NA	NA	NA	NA
PR-C07	61775	NA	NA	NA	NA	NA
PR-C08	60897	NA	NA	NA	NA	NA
PR-C09	61681	NA	NA	NA	NA	NA
PR-C10	61017	NA	NA	NA	NA	NA
PR-C11	60411	NA	NA	NA	NA	NA
PR-C12	61926	NA	NA	NA	NA	NA
PR-C13	61976	NA	NA	NA	NA	NA
PR-C14	61296	NA	NA	NA	NA	NA
PR-C15	60916	NA	NA	NA	NA	NA
PR-C16	55002	NA	NA	NA	NA	NA
PR-C17	58801	NA	NA	NA	NA	NA
PR-C18	60739	NA	NA	NA	NA	NA
PR-C19	95552	NA	NA	NA	NA	NA
PR-C20	69864	NA	NA	NA	NA	NA
PR-C21	7673	NA	NA	NA	NA	NA
RLS-C12	36639	NA	NA	NA	NA	NA
RLS-C13	36635	NA	NA	NA	NA	NA
RLS-C14	48973	NA	NA	NA	NA	NA
RLS-C15	48972	NA	NA	NA	NA	NA
RLS-C16	48971	NA	NA	NA	NA	NA
Maximum Value		NA	NA	NA	NA	NA
Average (*used in Risk Calc.*)		NA	NA	NA	NA	NA
Number of Cert Results		NA	NA	NA	NA	NA
Number of Inserted Values		NA	NA	NA	NA	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 4

Certification Units	Area sq ft	1,2-dichloroethane ug/g	1,1-Dichloroethylene ug/g	Dieldrin ug/g	Di-n-octylphthalate ug/g	Ethylbenzene ug/g
A6TA-01	163445	NA	NA	NA	NA	NA
A8II-01	131352	NA	NA	NA	NA	NA
A8II-02	248591	NA	NA	NA	NA	NA
A8II-03	244412	NA	NA	NA	NA	NA
A8II-04	184592	NA	NA	NA	NA	NA
A8P1-C-01	212934	NA	NA	NA	NA	NA
A8P1-C-02	131620	NA	NA	NA	NA	NA
A8P1-C-03	133733	NA	NA	NA	NA	NA
A8P1-C-04	67284	NA	NA	NA	NA	NA
A8P3N-C1	51796	NA	NA	NA	NA	NA
A8P3N-C10	125637	NA	NA	NA	NA	NA
A8P3N-C2	60432	NA	NA	NA	NA	NA
A8P3N-C3	128889	NA	NA	NA	NA	NA
A8P3N-C4	244167	NA	NA	NA	NA	NA
A8P3N-C5	247989	NA	NA	NA	NA	NA
A8P3N-C6	242948	NA	NA	NA	NA	NA
A8P3N-C7	230345	NA	NA	NA	NA	NA
A8P3N-C8	136314	NA	NA	NA	NA	NA
A8P3N-C9	217763	NA	NA	NA	NA	NA
A8P3S-C-01	242016	NA	NA	NA	NA	NA
A8P3S-C-02	249087	NA	NA	NA	NA	NA
A8P3S-C-03	246420	NA	NA	NA	NA	NA
A8P3S-C-04	195737	NA	NA	NA	NA	NA
A8P3S-C-05	157162	NA	NA	NA	NA	NA
A8P3S-C-06	179230	NA	NA	NA	NA	NA
PR-C01	37930	NA	NA	NA	NA	NA
PR-C06	60608	NA	NA	NA	NA	NA
PR-C07	61775	NA	NA	NA	NA	NA
PR-C08	60897	NA	NA	NA	NA	NA
PR-C09	61681	NA	NA	NA	NA	NA
PR-C10	61017	NA	NA	NA	NA	NA
PR-C11	60411	NA	NA	NA	NA	NA
PR-C12	61926	NA	NA	NA	NA	NA
PR-C13	61976	NA	NA	NA	NA	NA
PR-C14	61296	NA	NA	NA	NA	NA
PR-C15	60916	NA	NA	NA	NA	NA
PR-C16	55002	NA	NA	NA	NA	NA
PR-C17	58801	NA	NA	NA	NA	NA
PR-C18	60739	NA	NA	NA	NA	NA
PR-C19	95552	NA	NA	NA	NA	NA
PR-C20	69864	NA	NA	NA	NA	NA
PR-C21	7673	NA	NA	NA	NA	NA
RLS-C12	36639	NA	NA	NA	NA	NA
RLS-C13	36635	NA	NA	NA	NA	NA
RLS-C14	48973	NA	NA	NA	NA	NA
RLS-C15	48972	NA	NA	NA	NA	NA
RLS-C16	48971	NA	NA	NA	NA	NA
Maximum Value		NA	NA	NA	NA	NA
Average (*used in Risk Calc.*)		NA	NA	NA	NA	NA
Number of Cert Results		NA	NA	NA	NA	NA
Number of Inserted Values		NA	NA	NA	NA	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 4

Certification Units	Area sq ft	Ethyl ether ug/g	Heptachlorodibenzofuran ug/g	Heptachlorodibenzo-p-dioxin ug/g	Hexachlorodibenzofuran ug/g
A6TA-01	163445	NA	NA	NA	NA
A8II-01	131352	NA	NA	NA	NA
A8II-02	248591	NA	NA	NA	NA
A8II-03	244412	NA	NA	NA	NA
A8II-04	184592	NA	NA	NA	NA
A8P1-C-01	212934	NA	NA	NA	NA
A8P1-C-02	131620	NA	NA	NA	NA
A8P1-C-03	133733	NA	NA	NA	NA
A8P1-C-04	67284	NA	NA	NA	NA
A8P3N-C1	51796	NA	NA	NA	NA
A8P3N-C10	125637	NA	NA	NA	NA
A8P3N-C2	60432	NA	NA	NA	NA
A8P3N-C3	128889	NA	NA	NA	NA
A8P3N-C4	244167	NA	NA	NA	NA
A8P3N-C5	247989	NA	NA	NA	NA
A8P3N-C6	242948	NA	NA	NA	NA
A8P3N-C7	230345	NA	NA	NA	NA
A8P3N-C8	136314	NA	NA	NA	NA
A8P3N-C9	217763	NA	NA	NA	NA
A8P3S-C-01	242016	NA	NA	NA	NA
A8P3S-C-02	249087	NA	NA	NA	NA
A8P3S-C-03	246420	NA	NA	NA	NA
A8P3S-C-04	195737	NA	NA	NA	NA
A8P3S-C-05	157162	NA	NA	NA	NA
A8P3S-C-06	179230	NA	NA	NA	NA
PR-C01	37930	NA	NA	NA	NA
PR-C06	60608	NA	NA	NA	NA
PR-C07	61775	NA	NA	NA	NA
PR-C08	60897	NA	NA	NA	NA
PR-C09	61681	NA	NA	NA	NA
PR-C10	61017	NA	NA	NA	NA
PR-C11	60411	NA	NA	NA	NA
PR-C12	61926	NA	NA	NA	NA
PR-C13	61976	NA	NA	NA	NA
PR-C14	61296	NA	NA	NA	NA
PR-C15	60916	NA	NA	NA	NA
PR-C16	55002	NA	NA	NA	NA
PR-C17	58801	NA	NA	NA	NA
PR-C18	60739	NA	NA	NA	NA
PR-C19	95552	NA	NA	NA	NA
PR-C20	69864	NA	NA	NA	NA
PR-C21	7673	NA	NA	NA	NA
RLS-C12	36639	NA	NA	NA	NA
RLS-C13	36635	NA	NA	NA	NA
RLS-C14	48973	NA	NA	NA	NA
RLS-C15	48972	NA	NA	NA	NA
RLS-C16	48971	NA	NA	NA	NA
Maximum Value		NA	NA	NA	NA
Average (*used in Risk Calc.*)		NA	NA	NA	NA
Number of Cert Results		NA	NA	NA	NA
Number of Inserted Values		NA	NA	NA	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 4

Certification Units	Area sq ft	Hexachlorodibenzo-p-dioxin ug/g	Indeno(1,2,3-cd)pyrene ug/g	Methanol ug/g	Methyl-2-pentanone ug/g
A6TA-01	163445	NA	NA	NA	NA
A8II-01	131352	NA	NA	NA	NA
A8II-02	248591	NA	NA	NA	NA
A8II-03	244412	NA	NA	NA	NA
A8II-04	184592	NA	NA	NA	NA
A8P1-C-01	212934	NA	NA	NA	NA
A8P1-C-02	131620	NA	NA	NA	NA
A8P1-C-03	133733	NA	NA	NA	NA
A8P1-C-04	67284	NA	NA	NA	NA
A8P3N-C1	51796	NA	NA	NA	NA
A8P3N-C10	125637	NA	NA	NA	NA
A8P3N-C2	60432	NA	NA	NA	NA
A8P3N-C3	128889	NA	NA	NA	NA
A8P3N-C4	244167	NA	NA	NA	NA
A8P3N-C5	247989	NA	NA	NA	NA
A8P3N-C6	242948	NA	NA	NA	NA
A8P3N-C7	230345	NA	NA	NA	NA
A8P3N-C8	136314	NA	NA	NA	NA
A8P3N-C9	217763	NA	NA	NA	NA
A8P3S-C-01	242016	NA	NA	NA	NA
A8P3S-C-02	249087	NA	NA	NA	NA
A8P3S-C-03	246420	NA	NA	NA	NA
A8P3S-C-04	195737	NA	NA	NA	NA
A8P3S-C-05	157162	NA	NA	NA	NA
A8P3S-C-06	179230	NA	NA	NA	NA
PR-C01	37930	NA	NA	NA	NA
PR-C06	60608	NA	NA	NA	NA
PR-C07	61775	NA	NA	NA	NA
PR-C08	60897	NA	NA	NA	NA
PR-C09	61681	NA	NA	NA	NA
PR-C10	61017	NA	NA	NA	NA
PR-C11	60411	NA	NA	NA	NA
PR-C12	61926	NA	NA	NA	NA
PR-C13	61976	NA	NA	NA	NA
PR-C14	61296	NA	NA	NA	NA
PR-C15	60916	NA	NA	NA	NA
PR-C16	55002	NA	NA	NA	NA
PR-C17	58801	NA	NA	NA	NA
PR-C18	60739	NA	NA	NA	NA
PR-C19	95552	NA	NA	NA	NA
PR-C20	69864	NA	NA	NA	NA
PR-C21	7673	NA	NA	NA	NA
RLS-C12	36639	NA	NA	NA	NA
RLS-C13	36635	NA	NA	NA	NA
RLS-C14	48973	NA	NA	NA	NA
RLS-C15	48972	NA	NA	NA	NA
RLS-C16	48971	NA	NA	NA	NA
Maximum Value		NA	NA	NA	NA
Average (*used in Risk Calc.*)		NA	NA	NA	NA
Number of Cert Results		NA	NA	NA	NA
Number of Inserted Values		NA	NA	NA	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 4

Certification Units	Area sq ft	Methylene chloride ug/g	4-Methylphenol ug/g	4-Nitroanaline ug/g	N-nitrosodiphenylamine ug/g
A6TA-01	163445	NA	NA	NA	NA
A8II-01	131352	NA	NA	NA	NA
A8II-02	248591	NA	NA	NA	NA
A8II-03	244412	NA	NA	NA	NA
A8II-04	184592	NA	NA	NA	NA
A8P1-C-01	212934	NA	NA	NA	NA
A8P1-C-02	131620	NA	NA	NA	NA
A8P1-C-03	133733	NA	NA	NA	NA
A8P1-C-04	67284	NA	NA	NA	NA
A8P3N-C1	51796	NA	NA	NA	NA
A8P3N-C10	125637	NA	NA	NA	NA
A8P3N-C2	60432	NA	NA	NA	NA
A8P3N-C3	128889	NA	NA	NA	NA
A8P3N-C4	244167	NA	NA	NA	NA
A8P3N-C5	247989	NA	NA	NA	NA
A8P3N-C6	242948	NA	NA	NA	NA
A8P3N-C7	230345	NA	NA	NA	NA
A8P3N-C8	136314	NA	NA	NA	NA
A8P3N-C9	217763	NA	NA	NA	NA
A8P3S-C-01	242016	NA	NA	NA	NA
A8P3S-C-02	249087	NA	NA	NA	NA
A8P3S-C-03	246420	NA	NA	NA	NA
A8P3S-C-04	195737	NA	NA	NA	NA
A8P3S-C-05	157162	NA	NA	NA	NA
A8P3S-C-06	179230	NA	NA	NA	NA
PR-C01	37930	NA	NA	NA	NA
PR-C06	60608	NA	NA	NA	NA
PR-C07	61775	NA	NA	NA	NA
PR-C08	60897	NA	NA	NA	NA
PR-C09	61681	NA	NA	NA	NA
PR-C10	61017	NA	NA	NA	NA
PR-C11	60411	NA	NA	NA	NA
PR-C12	61926	NA	NA	NA	NA
PR-C13	61976	NA	NA	NA	NA
PR-C14	61296	NA	NA	NA	NA
PR-C15	60916	NA	NA	NA	NA
PR-C16	55002	NA	NA	NA	NA
PR-C17	58801	NA	NA	NA	NA
PR-C18	60739	NA	NA	NA	NA
PR-C19	95552	NA	NA	NA	NA
PR-C20	69864	NA	NA	NA	NA
PR-C21	7673	NA	NA	NA	NA
RLS-C12	36639	NA	NA	NA	NA
RLS-C13	36635	NA	NA	NA	NA
RLS-C14	48973	NA	NA	NA	NA
RLS-C15	48972	NA	NA	NA	NA
RLS-C16	48971	NA	NA	NA	NA
Maximum Value		NA	NA	NA	NA
Average (*used in Risk Calc.*)		NA	NA	NA	NA
Number of Cert Results		NA	NA	NA	NA
Number of Inserted Values		NA	NA	NA	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 4

Certification Units	Area sq ft	N-nitrosodipropylamine ug/g	Octachlorodibenzofuran ug/g	Octochlorodibenzo-p-dioxin ug/g
A6TA-01	163445	NA	NA	NA
A8II-01	131352	NA	NA	NA
A8II-02	248591	NA	NA	NA
A8II-03	244412	NA	NA	NA
A8II-04	184592	NA	NA	NA
A8P1-C-01	212934	NA	NA	NA
A8P1-C-02	131620	NA	NA	NA
A8P1-C-03	133733	NA	NA	NA
A8P1-C-04	67284	NA	NA	NA
A8P3N-C1	51796	NA	NA	NA
A8P3N-C10	125637	NA	NA	NA
A8P3N-C2	60432	NA	NA	NA
A8P3N-C3	128889	NA	NA	NA
A8P3N-C4	244167	NA	NA	NA
A8P3N-C5	247989	NA	NA	NA
A8P3N-C6	242948	NA	NA	NA
A8P3N-C7	230345	NA	NA	NA
A8P3N-C8	136314	NA	NA	NA
A8P3N-C9	217763	NA	NA	NA
A8P3S-C-01	242016	NA	NA	NA
A8P3S-C-02	249087	NA	NA	NA
A8P3S-C-03	246420	NA	NA	NA
A8P3S-C-04	195737	NA	NA	NA
A8P3S-C-05	157162	NA	NA	NA
A8P3S-C-06	179230	NA	NA	NA
PR-C01	37930	NA	NA	NA
PR-C06	60608	NA	NA	NA
PR-C07	61775	NA	NA	NA
PR-C08	60897	NA	NA	NA
PR-C09	61681	NA	NA	NA
PR-C10	61017	NA	NA	NA
PR-C11	60411	NA	NA	NA
PR-C12	61926	NA	NA	NA
PR-C13	61976	NA	NA	NA
PR-C14	61296	NA	NA	NA
PR-C15	60916	NA	NA	NA
PR-C16	55002	NA	NA	NA
PR-C17	58801	NA	NA	NA
PR-C18	60739	NA	NA	NA
PR-C19	95552	NA	NA	NA
PR-C20	69864	NA	NA	NA
PR-C21	7673	NA	NA	NA
RLS-C12	36639	NA	NA	NA
RLS-C13	36635	NA	NA	NA
RLS-C14	48973	NA	NA	NA
RLS-C15	48972	NA	NA	NA
RLS-C16	48971	NA	NA	NA
Maximum Value		NA	NA	NA
Average (*used in Risk Calc.*)		NA	NA	NA
Number of Cert Results		NA	NA	NA
Number of Inserted Values		NA	NA	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 4

Certification Units	Area sq ft	Pentachlorodibenzofuran ug/g	Pentachlorodibenzo-p-dioxin ug/g	Pentachlorophenol ug/g	Phenanthrene ug/g
A6TA-01	163445	NA	NA	NA	NA
A8II-01	131352	NA	NA	NA	NA
A8II-02	248591	NA	NA	NA	NA
A8II-03	244412	NA	NA	NA	NA
A8II-04	184592	NA	NA	NA	NA
A8P1-C-01	212934	NA	NA	NA	NA
A8P1-C-02	131620	NA	NA	NA	NA
A8P1-C-03	133733	NA	NA	NA	NA
A8P1-C-04	67284	NA	NA	NA	NA
A8P3N-C1	51796	NA	NA	NA	NA
A8P3N-C10	125637	NA	NA	NA	NA
A8P3N-C2	60432	NA	NA	NA	NA
A8P3N-C3	128889	NA	NA	NA	NA
A8P3N-C4	244167	NA	NA	NA	NA
A8P3N-C5	247989	NA	NA	NA	NA
A8P3N-C6	242948	NA	NA	NA	NA
A8P3N-C7	230345	NA	NA	NA	NA
A8P3N-C8	136314	NA	NA	NA	NA
A8P3N-C9	217763	NA	NA	NA	NA
A8P3S-C-01	242016	NA	NA	NA	NA
A8P3S-C-02	249087	NA	NA	NA	NA
A8P3S-C-03	246420	NA	NA	NA	NA
A8P3S-C-04	195737	NA	NA	NA	NA
A8P3S-C-05	157162	NA	NA	NA	NA
A8P3S-C-06	179230	NA	NA	NA	NA
PR-C01	37930	NA	NA	NA	NA
PR-C06	60608	NA	NA	NA	NA
PR-C07	61775	NA	NA	NA	NA
PR-C08	60897	NA	NA	NA	NA
PR-C09	61681	NA	NA	NA	NA
PR-C10	61017	NA	NA	NA	NA
PR-C11	60411	NA	NA	NA	NA
PR-C12	61926	NA	NA	NA	NA
PR-C13	61976	NA	NA	NA	NA
PR-C14	61296	NA	NA	NA	NA
PR-C15	60916	NA	NA	NA	NA
PR-C16	55002	NA	NA	NA	NA
PR-C17	58801	NA	NA	NA	NA
PR-C18	60739	NA	NA	NA	NA
PR-C19	95552	NA	NA	NA	NA
PR-C20	69864	NA	NA	NA	NA
PR-C21	7673	NA	NA	NA	NA
RLS-C12	36639	NA	NA	NA	NA
RLS-C13	36635	NA	NA	NA	NA
RLS-C14	48973	NA	NA	NA	NA
RLS-C15	48972	NA	NA	NA	NA
RLS-C16	48971	NA	NA	NA	NA
Maximum Value		NA	NA	NA	NA
Average (*used in Risk Calc.*)		NA	NA	NA	NA
Number of Cert Results		NA	NA	NA	NA
Number of Inserted Values		NA	NA	NA	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 4

Certification Units	Area sq ft	Tetrachlorodibenzofuran ug/g	Tetrachlorodibenzo-p-dioxin ug/g	Tetrachloroethylene ug/g	Toluene ug/g
A6TA-01	163445	NA	NA	NA	NA
A8II-01	131352	NA	NA	NA	NA
A8II-02	248591	NA	NA	NA	NA
A8II-03	244412	NA	NA	NA	NA
A8II-04	184592	NA	NA	NA	NA
A8P1-C-01	212934	NA	NA	NA	NA
A8P1-C-02	131620	NA	NA	NA	NA
A8P1-C-03	133733	NA	NA	NA	NA
A8P1-C-04	67284	NA	NA	NA	NA
A8P3N-C1	51796	NA	NA	NA	NA
A8P3N-C10	125637	NA	NA	NA	NA
A8P3N-C2	60432	NA	NA	NA	NA
A8P3N-C3	128889	NA	NA	NA	NA
A8P3N-C4	244167	NA	NA	NA	NA
A8P3N-C5	247989	NA	NA	NA	NA
A8P3N-C6	242948	NA	NA	NA	NA
A8P3N-C7	230345	NA	NA	NA	NA
A8P3N-C8	136314	NA	NA	NA	NA
A8P3N-C9	217763	NA	NA	NA	NA
A8P3S-C-01	242016	NA	NA	NA	NA
A8P3S-C-02	249087	NA	NA	NA	NA
A8P3S-C-03	246420	NA	NA	NA	NA
A8P3S-C-04	195737	NA	NA	NA	NA
A8P3S-C-05	157162	NA	NA	NA	NA
A8P3S-C-06	179230	NA	NA	NA	NA
PR-C01	37930	NA	NA	NA	NA
PR-C06	60608	NA	NA	NA	NA
PR-C07	61775	NA	NA	NA	NA
PR-C08	60897	NA	NA	NA	NA
PR-C09	61681	NA	NA	NA	NA
PR-C10	61017	NA	NA	NA	NA
PR-C11	60411	NA	NA	NA	NA
PR-C12	61926	NA	NA	NA	NA
PR-C13	61976	NA	NA	NA	NA
PR-C14	61296	NA	NA	NA	NA
PR-C15	60916	NA	NA	NA	NA
PR-C16	55002	NA	NA	NA	NA
PR-C17	58801	NA	NA	NA	NA
PR-C18	60739	NA	NA	NA	NA
PR-C19	95552	NA	NA	NA	NA
PR-C20	69864	NA	NA	NA	NA
PR-C21	7673	NA	NA	NA	NA
RLS-C12	36639	NA	NA	NA	NA
RLS-C13	36635	NA	NA	NA	NA
RLS-C14	48973	NA	NA	NA	NA
RLS-C15	48972	NA	NA	NA	NA
RLS-C16	48971	NA	NA	NA	NA
Maximum Value		NA	NA	NA	NA
Average (*used in Risk Calc.*)		NA	NA	NA	NA
Number of Cert Results		NA	NA	NA	NA
Number of Inserted Values		NA	NA	NA	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 4

Certification Units	Area sq ft	Tributyl phosphate ug/g	1,1,2-Trichloroethane ug/g	Trichloroethylene ug/g	Trifluorochloromethane ug/g
A6TA-01	163445	NA	NA	NA	NA
A8II-01	131352	NA	NA	NA	NA
A8II-02	248591	NA	NA	NA	NA
A8II-03	244412	NA	NA	NA	NA
A8II-04	184592	NA	NA	NA	NA
A8P1-C-01	212934	NA	NA	NA	NA
A8P1-C-02	131620	NA	NA	NA	NA
A8P1-C-03	133733	NA	NA	NA	NA
A8P1-C-04	67284	NA	NA	NA	NA
A8P3N-C1	51796	NA	NA	NA	NA
A8P3N-C10	125637	NA	NA	NA	NA
A8P3N-C2	60432	NA	NA	NA	NA
A8P3N-C3	128889	NA	NA	NA	NA
A8P3N-C4	244167	NA	NA	NA	NA
A8P3N-C5	247989	NA	NA	NA	NA
A8P3N-C6	242948	NA	NA	NA	NA
A8P3N-C7	230345	NA	NA	NA	NA
A8P3N-C8	136314	NA	NA	NA	NA
A8P3N-C9	217763	NA	NA	NA	NA
A8P3S-C-01	242016	NA	NA	NA	NA
A8P3S-C-02	249087	NA	NA	NA	NA
A8P3S-C-03	246420	NA	NA	NA	NA
A8P3S-C-04	195737	NA	NA	NA	NA
A8P3S-C-05	157162	NA	NA	NA	NA
A8P3S-C-06	179230	NA	NA	NA	NA
PR-C01	37930	NA	NA	NA	NA
PR-C06	60608	NA	NA	NA	NA
PR-C07	61775	NA	NA	NA	NA
PR-C08	60897	NA	NA	NA	NA
PR-C09	61681	NA	NA	NA	NA
PR-C10	61017	NA	NA	NA	NA
PR-C11	60411	NA	NA	NA	NA
PR-C12	61926	NA	NA	NA	NA
PR-C13	61976	NA	NA	NA	NA
PR-C14	61296	NA	NA	NA	NA
PR-C15	60916	NA	NA	NA	NA
PR-C16	55002	NA	NA	NA	NA
PR-C17	58801	NA	NA	NA	NA
PR-C18	60739	NA	NA	NA	NA
PR-C19	95552	NA	NA	NA	NA
PR-C20	69864	NA	NA	NA	NA
PR-C21	7673	NA	NA	NA	NA
RLS-C12	36639	NA	NA	NA	NA
RLS-C13	36635	NA	NA	NA	NA
RLS-C14	48973	NA	NA	NA	NA
RLS-C15	48972	NA	NA	NA	NA
RLS-C16	48971	NA	NA	NA	NA
Maximum Value		NA	NA	NA	NA
Average (*used in Risk Calc.*)		NA	NA	NA	NA
Number of Cert Results		NA	NA	NA	NA
Number of Inserted Values		NA	NA	NA	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 4

Certification Units	Area sq ft	Vinyl chloride ug/g	Xylenes ug/g
A6TA-01	163445	NA	NA
A8II-01	131352	NA	NA
A8II-02	248591	NA	NA
A8II-03	244412	NA	NA
A8II-04	184592	NA	NA
A8P1-C-01	212934	NA	NA
A8P1-C-02	131620	NA	NA
A8P1-C-03	133733	NA	NA
A8P1-C-04	67284	NA	NA
A8P3N-C1	51796	NA	NA
A8P3N-C10	125637	NA	NA
A8P3N-C2	60432	NA	NA
A8P3N-C3	128889	NA	NA
A8P3N-C4	244167	NA	NA
A8P3N-C5	247989	NA	NA
A8P3N-C6	242948	NA	NA
A8P3N-C7	230345	NA	NA
A8P3N-C8	136314	NA	NA
A8P3N-C9	217763	NA	NA
A8P3S-C-01	242016	NA	NA
A8P3S-C-02	249087	NA	NA
A8P3S-C-03	246420	NA	NA
A8P3S-C-04	195737	NA	NA
A8P3S-C-05	157162	NA	NA
A8P3S-C-06	179230	NA	NA
PR-C01	37930	NA	NA
PR-C06	60608	NA	NA
PR-C07	61775	NA	NA
PR-C08	60897	NA	NA
PR-C09	61681	NA	NA
PR-C10	61017	NA	NA
PR-C11	60411	NA	NA
PR-C12	61926	NA	NA
PR-C13	61976	NA	NA
PR-C14	61296	NA	NA
PR-C15	60916	NA	NA
PR-C16	55002	NA	NA
PR-C17	58801	NA	NA
PR-C18	60739	NA	NA
PR-C19	95552	NA	NA
PR-C20	69864	NA	NA
PR-C21	7673	NA	NA
RLS-C12	36639	NA	NA
RLS-C13	36635	NA	NA
RLS-C14	48973	NA	NA
RLS-C15	48972	NA	NA
RLS-C16	48971	NA	NA
Maximum Value		NA	NA
Average (*used in Risk Calc.*)		NA	NA
Number of Cert Results		NA	NA
Number of Inserted Values		NA	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 5

Certification Units	Area sq ft	Cesium-137 pCi/g	Lead-210 pCi/g	Neptunium-237 pCi/g	Plutonium-238 pCi/g	Plutonium-239/240 pCi/g	Radium-226 pCi/g
6E-C01	54860	5.95E-02	5.42E+00	0.00E+00	0.00E+00	NA	1.23E+00
6E-C02	61241	1.03E-01	3.44E+00	0.00E+00	0.00E+00	NA	1.48E+00
6E-C03	44952	6.14E-02	2.90E+00	0.00E+00	0.00E+00	NA	1.53E+00
6E-C04	45383	6.88E-02	1.15E+00	0.00E+00	0.00E+00	NA	1.21E+00
6E-C05	53943	7.89E-02	1.92E+00	0.00E+00	0.00E+00	NA	1.43E+00
6E-C06	60762	9.25E-02	3.56E+00	0.00E+00	0.00E+00	NA	1.44E+00
6E-C07	58798	8.15E-02	9.74E+00	0.00E+00	0.00E+00	NA	1.27E+00
6E-C08	61018	7.47E-02	2.07E+01	0.00E+00	0.00E+00	NA	1.67E+00
6E-C09	61907	4.39E-02	4.44E+00	0.00E+00	0.00E+00	NA	1.67E+00
6E-C10	47236	9.59E-02	1.05E+01	0.00E+00	0.00E+00	NA	1.45E+00
6E-C11	113659	1.09E-01	1.10E+01	0.00E+00	0.00E+00	NA	1.59E+00
6E-C12	95954	3.93E-01	1.09E+01	0.00E+00	0.00E+00	NA	1.18E+00
6E-C18	25562	1.08E-01	9.39E+00	0.00E+00	0.00E+00	NA	1.81E+00
6E-C19	45819	1.27E-01	2.29E+00	0.00E+00	0.00E+00	NA	1.45E+00
A3A-C01	43801	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	9.54E-01
A3A-C02	21413	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.32E+00
A3A-C03	19977	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.03E+00
A3A-C04	16324	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.02E+00
A3A-C05	42874	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.24E+00
A3A-C06	40377	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.28E+00
A3A-C07	62498	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.36E+00
A3A-C08	33698	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	9.48E-01
A3A-C09	62497	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.31E+00
A3A-C10	62478	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.14E+00
A3A-C11	61184	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	9.55E-01
A3A-C12	59032	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	9.11E-01
A3A-C13	46433	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.19E+00
A3A-C14	42299	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	8.45E-01
A3A-C15	56140	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	9.76E-01
A3A-C16	48979	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	8.56E-01
A3A-C17	46427	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.29E+00
A3A-C18	47482	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.04E+00
A3B-C01	12988	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	9.58E-01
A3B-C02	21204	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.55E+00
A3B-C03	35467	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.63E+00
A3B-C04	46128	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.53E+00
A3B-C05	34291	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.38E+00
A3B-C06	44405	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.33E+00
A3B-C07	35924	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.02E+00
A3B-C08	32223	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.54E+00
A3B-C09	62500	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.61E+00
A3B-C10	59088	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.44E+00
A3B-C11	59891	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.64E+00
A3B-C12	60100	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.26E+00
A4A-C1	54975	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.33E+00
A4A-C2	58661	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	9.79E-01
A4A-C3	59341	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.04E+00
A4A-C4	59340	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.65E+00
A4A-C5	59340	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	9.55E-01
A4A-C6	59318	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.05E+00
A4A-C7	54974	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.28E+00
A4A-C8	55208	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.17E+00
A4B2-C03	48771	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.57E+00

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 5

Certification Units	Area sq ft	Cesium-137 pCi/g	Lead-210 pCi/g	Neptunium-237 pCi/g	Plutonium-238 pCi/g	Plutonium-239/240 pCi/g	Radium-226 pCi/g
A4B2-C04	59541	4.19E-01	1.56E+00	0.00E+00	0.00E+00	NA	1.30E+00
A4B2-C05	62159	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.37E+00
A4B2-C06	60995	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.25E+00
A4B2-C07	62054	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.44E+00
A4B2-C08	51901	8.00E-02	1.56E+00	0.00E+00	3.69E-01	NA	1.10E+00
A4B2-C09	57551	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.45E+00
A4B2-C10	46565	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.35E+00
A4B2-C11	44162	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.14E+00
A4B2-C12	52826	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.20E+00
A4B2-C13	60981	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.25E+00
A4B2-C19	43570	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.36E+00
A4B-C08	61718	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.68E+00
A4B-C09	61721	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.11E+00
A4B-C10	61454	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.11E+00
A4B-C11	61860	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.09E+00
A4B-C12	48596	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.11E+00
A4B-C13	61132	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	9.61E-01
A4B-C14	59718	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.09E+00
A4B-C15	49531	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.23E+00
A4B-C16	49968	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	9.04E-01
A4B-C17	46341	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.25E+00
A4B-C18	59593	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.08E+00
A6GAE-C01	42605	7.94E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.17E+00
A6GAE-C02	45294	1.35E-01	1.56E+00	0.00E+00	0.00E+00	NA	1.36E+00
A6GAE-C03	45365	8.73E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.42E+00
A6GAE-C04	56793	1.84E-01	1.56E+00	0.00E+00	0.00E+00	NA	1.44E+00
A6GAE-C05	44959	1.08E-01	1.56E+00	0.00E+00	0.00E+00	NA	1.17E+00
A6GAE-C06	32461	7.78E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.24E+00
A6GAE-C07	45094	8.15E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.48E+00
A6GAE-C08	38422	7.35E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.35E+00
A6GAE-C09	60191	8.30E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.32E+00
A6GAE-C10	61472	9.00E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.34E+00
A6GAE-C11	41282	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.27E+00
A6GAE-C12	62502	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.17E+00
A6GAE-C13	38227	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.47E+00
A6GAE-C14	52259	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.43E+00
A6GAE-C15	50818	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.55E+00
A6GAE-C16	32855	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.17E+00
A6GAE-C17	33064	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.44E+00
A6GAE-C18	38040	1.22E-01	1.56E+00	0.00E+00	0.00E+00	NA	1.40E+00
A6P1-C-01	56631	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.35E+00
A6P1-C-03	35655	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.16E+00
A6P1-C-05	52569	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.14E+00
A6P1-C-06	59646	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.06E+00
A6P1-C-07	59654	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.10E+00
A6P1-C-08	59645	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.02E+00
A6P1-C-09	59646	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.57E+00
A6P1-C-10	59647	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.11E+00
A6P1-C-11	33328	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.14E+00
A6P2-PC01	61745	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.38E+00
A6P2-PC02	62262	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.43E+00
A6P2-PC03	61174	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	9.44E-01
A6P2-PC04	52308	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.20E+00
A6P2-PC05	62304	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.06E+00
A6-RDBA-C01	40199	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.35E+00
A6-RDBA-C02	48412	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.25E+00

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 5

Certification Units	Area sq ft	Cesium-137 pCi/g	Lead-210 pCi/g	Neptunium-237 pCi/g	Plutonium-238 pCi/g	Plutonium-239/240 pCi/g	Radium-226 pCi/g
A6-RDBA-C03	40823	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.35E+00
A6-SP7-C01	10478	6.18E-02	1.06E+00	2.63E-01	0.00E+00	NA	1.18E+00
A6-SP7-C02	23404	1.71E-01	1.57E+00	2.46E-01	0.00E+00	NA	1.66E+00
A6-SP7-C03	51377	7.98E-02	1.10E+01	2.18E-01	0.00E+00	NA	1.56E+00
A6-SP7-C04	51236	1.91E-01	7.98E+00	3.35E-02	0.00E+00	NA	1.42E+00
A6-SP7-C05	43105	8.19E-01	8.20E-01	6.24E-02	0.00E+00	NA	1.33E+00
A6-SP7-C06	61932	6.75E-02	1.58E+00	2.77E-02	0.00E+00	NA	1.57E+00
A6-SWL-C01	33854	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.21E+00
A6-SWL-C02	43705	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.12E+00
A6-SWL-C03	46278	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.35E+00
A6-SWL-C04	62483	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.14E+00
A6-SWMP-C01	39509	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.20E+00
MDC-C01	63140	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.65E+00
MDC-C02	49961	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.47E+00
MDC-C03	49959	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.36E+00
MDC-C04	49961	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.28E+00
MDC-C05	49961	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.52E+00
MDC-C06	49488	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.34E+00
MDC-C07	62072	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.60E+00
MDC-C08	60855	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.28E+00
MDC-C09	59378	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.03E+00
MDC-C10	62401	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.30E+00
MDC-C11	60583	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.03E+00
MDC-C12	60175	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.10E+00
MDC-C13	62130	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.01E+00
MDC-C14	62155	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	9.99E-01
MDC-C15	62090	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.04E+00
MDC-C16	61943	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	9.49E-01
MDC-C17	59422	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.14E+00
MDC-C18	60223	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.26E+00
MDC-C19	62477	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.40E+00
MDC-C20	62276	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.06E+00
MDC-C21	62495	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.50E+00
MDC-C22	62316	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.44E+00
MDC-C23	62353	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	9.75E-01
MDC-C24	60304	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.33E+00
MDC-C25	47898	4.34E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.39E+00
MDC-C26	30405	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.24E+00
RLS-C01	62047	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.68E+00
RLS-C02	61267	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.32E+00
RLS-C03	62187	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.66E+00
RLS-C04	38764	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.34E+00
RLS-C05	41328	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.47E+00
RLS-C06	35642	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.50E+00
RLS-C07	48286	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.34E+00
RLS-C08	54674	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.31E+00
RLS-C09	34834	6.60E-02	1.56E+00	0.00E+00	0.00E+00	NA	1.51E+00
RLS-C10	49499	2.22E-01	1.56E+00	0.00E+00	0.00E+00	NA	1.19E+00
Maximum Value		8.19E-01	2.07E+01	2.63E-01	3.69E-01	NA	1.81E+00
Average (*used In Risk Calc.*)		8.17E-02	2.13E+00	5.42E-03	2.35E-03	NA	1.28E+00
Number of Cert Results		3.50E+01	2.00E+01	6.00E+00	1.00E+00	NA	1.57E+02
Number of Inserted Values		1.22E+02	1.37E+02	1.51E+02	1.56E+02	NA	0.00E+00

NOTE:

If at least one CU in the zone has an anlytical result for a given COC, the background value is inserted for the COC in other CUs that have no reported analytical result to avoid a high bias for the COC in this zone.

Background is zero for all organic compounds. Background is not reported for neptunium, plutonium, strontium and technetium isotopes, and zero will be used.

NA = Chemical or radionuclide is not applicable to the assesment of risk in this zone because the COC was not evaluated in the certification reports for this zone.

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 5

Certification Units	Area sq ft	Radium-228 pCi/g	Strontium-90 pCi/g	Technetium-99 pCi/g	Thorium-228 pCi/g	Thorium-230 pCi/g	Thorium-232 pCi/g
6E-C01	54860	9.35E-01	NA	3.28E+00	9.43E-01	2.30E+00	9.35E-01
6E-C02	61241	1.24E+00	NA	2.70E+00	1.24E+00	2.25E+00	1.24E+00
6E-C03	44952	1.16E+00	NA	2.40E+00	1.16E+00	2.12E+00	1.16E+00
6E-C04	45383	1.29E+00	NA	2.33E+00	1.36E+00	1.81E+00	1.29E+00
6E-C05	53943	1.27E+00	NA	2.56E+00	1.30E+00	2.10E+00	1.27E+00
6E-C06	60762	1.09E+00	NA	2.49E+00	1.10E+00	2.08E+00	1.09E+00
6E-C07	58798	1.22E+00	NA	2.70E+00	1.21E+00	1.67E+00	1.22E+00
6E-C08	61018	1.08E+00	NA	2.64E+00	1.08E+00	2.38E+00	1.08E+00
6E-C09	61907	8.80E-01	NA	2.63E+00	8.97E-01	3.43E+00	8.80E-01
6E-C10	47236	9.73E-01	NA	8.04E-01	9.31E-01	2.01E+00	9.73E-01
6E-C11	113659	1.01E+00	NA	2.27E+00	1.02E+00	2.45E+00	1.01E+00
6E-C12	95954	1.11E+00	NA	1.23E+00	1.15E+00	1.99E+00	1.11E+00
6E-C18	25562	8.62E-01	NA	1.91E+00	8.97E-01	1.84E+00	8.62E-01
6E-C19	45819	9.45E-01	NA	3.91E+00	9.71E-01	1.98E+00	9.45E-01
A3A-C01	43801	7.51E-01	NA	9.17E-01	7.69E-01	1.56E+00	7.51E-01
A3A-C02	21413	1.03E+00	NA	8.82E-01	1.03E+00	1.56E+00	1.03E+00
A3A-C03	19977	8.49E-01	NA	9.01E-01	8.61E-01	1.56E+00	8.49E-01
A3A-C04	16324	8.88E-01	NA	9.24E-01	9.12E-01	1.56E+00	8.88E-01
A3A-C05	42874	1.04E+00	NA	1.09E+00	1.03E+00	1.56E+00	1.04E+00
A3A-C06	40377	1.13E+00	NA	4.10E+00	1.16E+00	1.56E+00	1.13E+00
A3A-C07	62498	1.07E+00	NA	1.08E+00	1.10E+00	1.56E+00	1.07E+00
A3A-C08	33698	7.60E-01	NA	1.46E+00	7.59E-01	1.56E+00	7.60E-01
A3A-C09	62497	1.06E+00	NA	8.82E-01	1.09E+00	1.56E+00	1.06E+00
A3A-C10	62478	1.03E+00	NA	8.70E-01	1.05E+00	1.56E+00	1.03E+00
A3A-C11	61184	9.04E-01	NA	4.38E+00	8.99E-01	1.56E+00	9.04E-01
A3A-C12	59032	7.90E-01	NA	1.02E+00	8.28E-01	1.56E+00	7.90E-01
A3A-C13	46433	1.12E+00	NA	9.47E-01	1.16E+00	1.56E+00	1.12E+00
A3A-C14	42299	8.40E-01	NA	9.61E-01	8.56E-01	1.56E+00	8.40E-01
A3A-C15	56140	9.40E-01	NA	1.17E+00	9.42E-01	1.56E+00	9.40E-01
A3A-C16	48979	7.08E-01	NA	9.55E-01	7.10E-01	1.56E+00	7.08E-01
A3A-C17	46427	9.22E-01	NA	8.91E-01	8.83E-01	1.56E+00	9.22E-01
A3A-C18	47482	1.02E+00	NA	2.12E+00	1.02E+00	1.56E+00	1.02E+00
A3B-C01	12988	8.72E-01	NA	9.89E-01	8.85E-01	1.56E+00	8.72E-01
A3B-C02	21204	1.41E+00	NA	7.74E-01	1.48E+00	1.56E+00	1.41E+00
A3B-C03	35467	1.29E+00	NA	8.45E-01	1.29E+00	1.56E+00	1.29E+00
A3B-C04	46128	1.29E+00	NA	8.69E-01	1.33E+00	1.56E+00	1.29E+00
A3B-C05	34291	1.17E+00	NA	8.86E-01	1.20E+00	1.56E+00	1.17E+00
A3B-C06	44405	1.07E+00	NA	7.93E-01	1.09E+00	1.56E+00	1.07E+00
A3B-C07	35924	8.00E-01	NA	8.47E-01	7.94E-01	1.56E+00	8.00E-01
A3B-C08	32223	1.26E+00	NA	7.58E-01	1.32E+00	1.56E+00	1.26E+00
A3B-C09	62500	1.38E+00	NA	9.12E-01	1.38E+00	1.56E+00	1.38E+00
A3B-C10	59088	1.12E+00	NA	8.64E-01	1.17E+00	1.56E+00	1.12E+00
A3B-C11	59891	1.28E+00	NA	1.01E+00	1.29E+00	1.56E+00	1.28E+00
A3B-C12	60100	1.03E+00	NA	1.16E+00	1.07E+00	1.56E+00	1.03E+00
A4A-C1	54975	1.28E+00	NA	8.93E-01	1.26E+00	1.56E+00	1.28E+00
A4A-C2	58661	8.32E-01	NA	1.15E+00	8.26E-01	1.56E+00	8.32E-01
A4A-C3	59341	8.87E-01	NA	8.28E-01	9.67E-01	1.56E+00	9.67E-01
A4A-C4	59340	1.47E+00	NA	1.54E+00	1.47E+00	1.56E+00	1.47E+00
A4A-C5	59340	8.98E-01	NA	1.04E+00	9.14E-01	1.56E+00	8.98E-01
A4A-C6	59318	9.53E-01	NA	1.03E+00	9.50E-01	1.56E+00	9.53E-01
A4A-C7	54974	1.33E+00	NA	8.83E-01	1.28E+00	1.56E+00	1.33E+00
A4A-C8	55208	9.22E-01	NA	9.16E-01	9.27E-01	1.56E+00	9.22E-01
A4B2-C03	48771	1.41E+00	NA	0.00E+00	1.46E+00	1.56E+00	1.41E+00

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 5

Certification Units	Area sq ft	Radium-228 pCi/g	Strontium-90 pCi/g	Technetium-99 pCi/g	Thorium-228 pCi/g	Thorium-230 pCi/g	Thorium-232 pCi/g
A4B2-C04	59541	1.09E+00	NA	1.99E+00	1.10E+00	1.56E+00	1.09E+00
A4B2-C05	62159	9.30E-01	NA	9.70E-01	9.48E-01	1.56E+00	9.30E-01
A4B2-C06	60995	1.04E+00	NA	1.95E+00	1.10E+00	1.56E+00	1.04E+00
A4B2-C07	62054	1.03E+00	NA	9.69E-01	1.04E+00	1.56E+00	1.03E+00
A4B2-C08	51901	9.88E-01	NA	2.21E+00	1.00E+00	1.56E+00	9.88E-01
A4B2-C09	57551	1.18E+00	NA	1.80E+00	1.13E+00	1.56E+00	1.18E+00
A4B2-C10	46565	9.55E-01	NA	9.54E-01	9.77E-01	1.56E+00	9.55E-01
A4B2-C11	44162	1.03E+00	NA	9.69E-01	1.09E+00	1.56E+00	1.03E+00
A4B2-C12	52826	1.23E+00	NA	1.84E+00	1.25E+00	1.56E+00	1.23E+00
A4B2-C13	60981	1.11E+00	NA	1.19E+00	1.11E+00	1.56E+00	1.11E+00
A4B2-C19	43570	1.10E+00	NA	1.00E+00	1.10E+00	1.56E+00	1.10E+00
A4B-C08	61718	1.38E+00	NA	8.50E-01	1.40E+00	1.56E+00	1.38E+00
A4B-C09	61721	8.54E-01	NA	7.60E-01	8.75E-01	1.56E+00	8.54E-01
A4B-C10	61454	8.66E-01	NA	1.89E+00	8.91E-01	1.56E+00	8.66E-01
A4B-C11	61860	8.11E-01	NA	1.52E+00	8.69E-01	1.56E+00	8.11E-01
A4B-C12	48596	7.93E-01	NA	9.75E-01	8.01E-01	1.56E+00	7.93E-01
A4B-C13	61132	8.44E-01	NA	7.64E-01	8.90E-01	1.56E+00	8.44E-01
A4B-C14	59718	8.76E-01	NA	2.14E+00	9.10E-01	1.56E+00	8.76E-01
A4B-C15	49531	1.03E+00	NA	1.17E+00	1.03E+00	1.56E+00	1.03E+00
A4B-C16	49968	8.04E-01	NA	6.89E+00	8.14E-01	1.56E+00	8.04E-01
A4B-C17	46341	1.01E+00	NA	8.66E-01	1.10E+00	1.56E+00	1.01E+00
A4B-C18	59593	9.92E-01	NA	1.27E+00	9.68E-01	1.56E+00	9.92E-01
A6GAE-C01	42605	1.20E+00	NA	9.03E-01	1.19E+00	1.56E+00	1.20E+00
A6GAE-C02	45294	1.04E+00	NA	0.00E+00	1.07E+00	1.56E+00	1.04E+00
A6GAE-C03	45365	1.30E+00	NA	0.00E+00	1.34E+00	1.56E+00	1.30E+00
A6GAE-C04	56793	1.24E+00	NA	0.00E+00	1.31E+00	1.56E+00	1.24E+00
A6GAE-C05	44959	1.27E+00	NA	0.00E+00	1.30E+00	1.56E+00	1.27E+00
A6GAE-C06	32461	1.18E+00	NA	0.00E+00	1.19E+00	1.56E+00	1.18E+00
A6GAE-C07	45094	1.09E+00	NA	4.27E+00	1.13E+00	1.56E+00	1.09E+00
A6GAE-C08	38422	1.23E+00	NA	1.23E+00	1.25E+00	1.56E+00	1.23E+00
A6GAE-C09	60191	1.45E+00	NA	1.19E+00	1.40E+00	1.56E+00	1.45E+00
A6GAE-C10	61472	1.10E+00	NA	1.29E+00	1.09E+00	1.76E+00	1.10E+00
A6GAE-C11	41282	1.26E+00	NA	2.31E+00	1.33E+00	2.19E+00	1.26E+00
A6GAE-C12	62502	1.22E+00	NA	2.09E+01	1.25E+00	1.56E+00	1.22E+00
A6GAE-C13	38227	1.22E+00	NA	1.32E+00	1.22E+00	1.56E+00	1.22E+00
A6GAE-C14	52259	1.35E+00	NA	0.00E+00	1.40E+00	3.09E+00	1.35E+00
A6GAE-C15	50818	1.34E+00	NA	0.00E+00	1.42E+00	3.02E+00	1.34E+00
A6GAE-C16	32855	1.38E+00	NA	1.94E+00	1.38E+00	3.35E+00	1.38E+00
A6GAE-C17	33064	1.22E+00	NA	7.69E-01	1.27E+00	1.56E+00	1.22E+00
A6GAE-C18	38040	1.50E+00	NA	0.00E+00	1.55E+00	1.56E+00	1.14E+00
A6P1-C-01	56631	1.18E+00	NA	2.12E+00	1.18E+00	1.49E+01	1.18E+00
A6P1-C-03	35655	1.16E+00	NA	1.83E+00	1.22E+00	1.21E+01	1.16E+00
A6P1-C-05	52569	1.24E+00	NA	0.00E+00	1.27E+00	1.41E+01	1.24E+00
A6P1-C-06	59646	1.24E+00	NA	0.00E+00	1.26E+00	9.24E+00	1.24E+00
A6P1-C-07	59654	1.16E+00	NA	0.00E+00	1.18E+00	1.46E+01	1.16E+00
A6P1-C-08	59645	1.26E+00	NA	0.00E+00	1.27E+00	1.45E+01	1.26E+00
A6P1-C-09	59646	1.17E+00	NA	0.00E+00	1.20E+00	1.29E+01	1.17E+00
A6P1-C-10	59647	1.03E+00	NA	0.00E+00	1.06E+00	1.69E+01	1.03E+00
A6P1-C-11	33328	1.15E+00	NA	0.00E+00	1.15E+00	1.28E+01	1.15E+00
A6P2-PC01	61745	1.09E+00	NA	0.00E+00	1.11E+00	2.22E+00	1.09E+00
A6P2-PC02	62262	1.06E+00	NA	0.00E+00	1.05E+00	2.16E+00	1.06E+00
A6P2-PC03	61174	1.00E+00	NA	0.00E+00	1.01E+00	2.07E+00	1.00E+00
A6P2-PC04	52308	1.29E+00	NA	0.00E+00	1.26E+00	2.72E+00	1.29E+00
A6P2-PC05	62304	1.05E+00	NA	1.93E+00	1.10E+00	1.95E+00	1.05E+00
A6-RDBA-C01	40199	1.32E+00	NA	0.00E+00	1.34E+00	1.56E+00	1.32E+00
A6-RDBA-C02	48412	1.25E+00	NA	0.00E+00	1.28E+00	1.56E+00	1.25E+00

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 5

Certification Units	Area sq ft	Radium-228 pCi/g	Strontium-90 pCi/g	Technetium-99 pCi/g	Thorium-228 pCi/g	Thorium-230 pCi/g	Thorium-232 pCi/g
A6-RDBA-C03	40823	1.21E+00	NA	0.00E+00	1.25E+00	1.56E+00	1.21E+00
A6-SP7-C01	10478	1.13E+00	NA	1.24E+00	1.13E+00	1.97E+00	1.13E+00
A6-SP7-C02	23404	1.66E+00	NA	2.10E+00	1.65E+00	3.82E+00	1.07E+00
A6-SP7-C03	51377	1.16E+00	NA	1.09E+01	1.26E+00	3.52E+00	1.16E+00
A6-SP7-C04	51236	1.38E+00	NA	2.37E+01	1.40E+00	5.26E+00	1.38E+00
A6-SP7-C05	43105	1.17E+00	NA	2.71E+00	1.28E+00	2.97E+00	1.17E+00
A6-SP7-C06	61932	1.51E+00	NA	1.39E+01	1.50E+00	3.77E+00	1.43E+00
A6-SWL-C01	33854	1.02E+00	NA	1.73E+00	1.04E+00	1.56E+00	1.02E+00
A6-SWL-C02	43705	1.20E+00	NA	2.16E+00	1.23E+00	1.56E+00	1.20E+00
A6-SWL-C03	46278	1.24E+00	NA	1.09E+00	1.26E+00	1.56E+00	1.24E+00
A6-SWL-C04	62483	1.10E+00	NA	9.68E-01	1.25E+00	1.56E+00	1.10E+00
A6-SWMP-C01	39509	1.06E+00	NA	0.00E+00	1.10E+00	1.56E+00	1.06E+00
MDC-C01	63140	1.43E+00	NA	0.00E+00	1.49E+00	1.56E+00	1.43E+00
MDC-C02	49961	1.43E+00	NA	0.00E+00	1.47E+00	1.56E+00	1.43E+00
MDC-C03	49959	1.01E+00	NA	0.00E+00	1.00E+00	1.56E+00	1.01E+00
MDC-C04	49961	9.57E-01	NA	0.00E+00	9.56E-01	1.56E+00	9.57E-01
MDC-C05	49961	1.03E+00	NA	0.00E+00	1.04E+00	1.56E+00	1.03E+00
MDC-C06	49488	1.71E+00	NA	0.00E+00	1.27E+00	1.56E+00	1.26E+00
MDC-C07	62072	1.28E+00	NA	0.00E+00	1.30E+00	1.56E+00	1.28E+00
MDC-C08	60855	1.19E+00	NA	0.00E+00	1.20E+00	1.56E+00	1.19E+00
MDC-C09	59378	9.58E-01	NA	0.00E+00	9.77E-01	1.56E+00	9.58E-01
MDC-C10	62401	1.18E+00	NA	0.00E+00	1.26E+00	1.56E+00	1.18E+00
MDC-C11	60583	8.41E-01	NA	9.67E-01	8.63E-01	1.56E+00	8.41E-01
MDC-C12	60175	7.63E-01	NA	8.72E-01	8.11E-01	1.56E+00	7.63E-01
MDC-C13	62130	8.13E-01	NA	8.42E-01	8.86E-01	1.56E+00	8.13E-01
MDC-C14	62155	8.21E-01	NA	1.68E+00	8.38E-01	1.56E+00	8.21E-01
MDC-C15	62090	9.13E-01	NA	9.71E-01	9.17E-01	1.56E+00	9.13E-01
MDC-C16	61943	8.16E-01	NA	2.29E+00	8.17E-01	1.56E+00	8.16E-01
MDC-C17	59422	9.65E-01	NA	1.61E+00	9.68E-01	1.56E+00	9.65E-01
MDC-C18	60223	1.07E+00	NA	1.30E+00	1.07E+00	1.56E+00	1.07E+00
MDC-C19	62477	1.15E+00	NA	0.00E+00	1.17E+00	1.56E+00	1.15E+00
MDC-C20	62276	1.03E+00	NA	0.00E+00	1.03E+00	1.56E+00	1.03E+00
MDC-C21	62495	1.32E+00	NA	0.00E+00	1.28E+00	1.56E+00	1.32E+00
MDC-C22	62316	1.21E+00	NA	0.00E+00	1.29E+00	1.56E+00	1.21E+00
MDC-C23	62353	9.05E-01	NA	9.52E-01	9.06E-01	1.56E+00	9.05E-01
MDC-C24	60304	8.80E-01	NA	2.59E+00	8.93E-01	1.56E+00	8.80E-01
MDC-C25	47898	9.07E-01	NA	8.15E-01	8.77E-01	1.56E+00	9.07E-01
MDC-C26	30405	9.33E-01	NA	9.90E+00	9.49E-01	1.56E+00	9.33E-01
RLS-C01	62047	1.29E+00	NA	0.00E+00	1.39E+00	1.56E+00	1.29E+00
RLS-C02	61267	1.46E+00	NA	0.00E+00	1.47E+00	1.56E+00	1.46E+00
RLS-C03	62187	1.29E+00	NA	0.00E+00	1.30E+00	1.56E+00	1.29E+00
RLS-C04	38764	1.13E+00	NA	2.19E+00	1.18E+00	2.10E+00	1.13E+00
RLS-C05	41328	1.32E+00	NA	1.93E+00	1.32E+00	2.01E+00	1.32E+00
RLS-C06	35642	1.21E+00	NA	1.94E+00	1.25E+00	1.56E+00	1.21E+00
RLS-C07	48286	1.13E+00	NA	2.72E+00	1.09E+00	1.56E+00	1.13E+00
RLS-C08	54674	1.52E+00	NA	2.03E+00	1.53E+00	2.72E+00	1.16E+00
RLS-C09	34834	1.13E+00	NA	2.41E+00	1.14E+00	1.56E+00	1.13E+00
RLS-C10	49499	1.16E+00	NA	3.56E+00	1.17E+00	2.87E+00	1.16E+00
Maximum Value		1.71E+00	NA	2.37E+01	1.65E+00	1.69E+01	1.47E+00
Average (*used in Risk Calc.*)		1.11E+00	NA	1.64E+00	1.13E+00	2.46E+00	1.10E+00
Number of Cert Results		1.57E+02	NA	1.16E+02	1.57E+02	4.30E+01	1.57E+02
Number of Inserted Values		0.00E+00	NA	4.10E+01	0.00E+00	1.14E+02	0.00E+00

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 5

Certification Units	Area sq ft	Uranium-234 pCi/g	Uranium-235 pCi/g	Uranium-238 pCi/g	Antimony ug/g	Arsenic ug/g	Barium ug/g	Beryllium ug/g
6E-C01	54860	5.80E+00	2.64E-01	5.67E+00	4.20E+00	7.63E+00	1.38E+02	7.10E-01
6E-C02	61241	4.85E+00	2.21E-01	4.73E+00	1.00E+00	8.60E+00	1.65E+02	8.20E-01
6E-C03	44952	4.85E+00	2.21E-01	4.73E+00	7.00E-01	6.50E+00	4.04E+02	1.10E+00
6E-C04	45383	6.08E+00	2.77E-01	5.93E+00	7.44E-01	1.06E+01	1.45E+02	1.19E+00
6E-C05	53943	1.29E+01	5.86E-01	1.26E+01	7.10E-01	8.51E+00	1.13E+02	9.00E-01
6E-C06	60762	6.83E+00	3.11E-01	6.67E+00	4.40E+00	1.14E+01	1.43E+02	1.10E+00
6E-C07	58798	1.66E+01	7.56E-01	1.62E+01	6.24E-01	9.07E+00	1.71E+02	1.13E+00
6E-C08	61018	1.39E+01	6.35E-01	1.36E+01	1.00E+00	7.20E+00	1.44E+02	8.20E-01
6E-C09	61907	5.29E+00	2.41E-01	5.17E+00	5.61E-01	8.02E+00	9.54E+01	6.68E-01
6E-C10	47236	4.51E+00	2.05E-01	4.40E+00	5.10E-01	7.78E+00	1.08E+02	9.42E-01
6E-C11	113659	5.02E+00	2.29E-01	4.90E+00	2.31E+00	8.40E+00	1.10E+02	7.90E-01
6E-C12	95954	1.23E+01	5.61E-01	1.20E+01	4.28E-01	8.51E+00	1.68E+02	9.59E-01
6E-C18	25562	5.49E+00	2.50E-01	5.37E+00	4.80E-01	7.01E+00	1.19E+02	6.97E-01
6E-C19	45819	5.36E+00	2.44E-01	5.23E+00	5.28E-01	8.63E+00	1.22E+02	7.79E-01
A3A-C01	43801	2.81E+00	1.28E-01	2.74E+00	2.87E+00	1.24E+01	1.87E+02	1.44E+00
A3A-C02	21413	6.04E+00	2.75E-01	5.90E+00	2.87E+00	7.40E+00	1.87E+02	8.00E-01
A3A-C03	19977	4.44E+00	2.02E-01	4.33E+00	2.87E+00	1.24E+01	1.87E+02	1.44E+00
A3A-C04	16324	3.44E+00	1.57E-01	3.36E+00	2.87E+00	1.24E+01	1.87E+02	1.44E+00
A3A-C05	42874	2.24E+00	1.02E-01	2.18E+00	2.87E+00	8.70E+00	1.87E+02	8.60E-01
A3A-C06	40377	5.16E+00	2.35E-01	5.04E+00	2.87E+00	1.24E+01	1.87E+02	8.00E-01
A3A-C07	62498	5.49E+00	2.50E-01	5.37E+00	2.87E+00	1.24E+01	1.87E+02	1.44E+00
A3A-C08	33698	2.94E+00	1.34E-01	2.87E+00	2.87E+00	1.24E+01	1.87E+02	1.44E+00
A3A-C09	62497	2.99E+00	1.36E-01	2.92E+00	2.87E+00	1.24E+01	1.87E+02	8.70E-01
A3A-C10	62478	4.81E+00	2.19E-01	4.70E+00	2.87E+00	1.24E+01	1.87E+02	1.44E+00
A3A-C11	61184	4.44E+00	2.02E-01	4.33E+00	2.87E+00	1.24E+01	1.87E+02	1.44E+00
A3A-C12	59032	2.36E+00	1.07E-01	2.30E+00	2.87E+00	1.24E+01	1.87E+02	1.44E+00
A3A-C13	46433	8.09E+00	3.69E-01	7.90E+00	2.87E+00	1.24E+01	1.87E+02	1.44E+00
A3A-C14	42299	4.37E+00	1.99E-01	4.27E+00	2.87E+00	1.24E+01	1.87E+02	1.44E+00
A3A-C15	56140	3.41E+00	1.55E-01	3.33E+00	2.87E+00	1.24E+01	1.87E+02	1.44E+00
A3A-C16	48979	3.04E+00	1.39E-01	2.97E+00	2.87E+00	1.24E+01	1.87E+02	1.44E+00
A3A-C17	46427	3.17E+00	1.45E-01	3.10E+00	2.87E+00	1.24E+01	1.87E+02	1.44E+00
A3A-C18	47482	2.62E+00	1.19E-01	2.56E+00	2.87E+00	1.24E+01	1.87E+02	1.44E+00
A3B-C01	12988	3.58E+00	1.63E-01	3.50E+00	4.00E-01	1.24E+01	6.86E+01	1.44E+00
A3B-C02	21204	2.06E+00	9.39E-02	2.01E+00	7.30E-01	1.24E+01	1.72E+02	1.44E+00
A3B-C03	35467	2.49E+00	1.14E-01	2.43E+00	2.00E+00	1.24E+01	2.55E+02	1.44E+00
A3B-C04	46128	2.72E+00	1.24E-01	2.65E+00	5.40E-01	1.24E+01	1.68E+02	1.44E+00
A3B-C05	34291	4.68E+00	2.13E-01	4.57E+00	4.42E-01	1.24E+01	1.08E+02	1.44E+00
A3B-C06	44405	6.45E+00	2.94E-01	6.30E+00	7.20E-01	1.24E+01	1.34E+02	1.44E+00
A3B-C07	35924	5.73E+00	2.61E-01	5.60E+00	1.20E+00	1.24E+01	9.12E+01	1.44E+00
A3B-C08	32223	3.45E+00	1.57E-01	3.37E+00	1.10E+00	1.24E+01	1.12E+02	1.44E+00
A3B-C09	62500	2.66E+00	1.21E-01	2.60E+00	1.90E+00	1.24E+01	1.69E+02	1.44E+00
A3B-C10	59088	5.53E+00	2.52E-01	5.40E+00	4.13E-01	1.24E+01	9.16E+01	1.44E+00
A3B-C11	59891	3.99E+00	1.82E-01	3.90E+00	6.00E-03	1.24E+01	2.18E+02	1.44E+00
A3B-C12	60100	2.87E+00	1.31E-01	2.80E+00	6.50E-01	1.24E+01	1.42E+02	1.44E+00
A4A-C1	54975	1.00E+01	4.57E-01	9.80E+00	2.87E+00	1.24E+01	1.87E+02	1.44E+00
A4A-C2	58661	3.65E+00	1.66E-01	3.57E+00	2.87E+00	1.24E+01	1.87E+02	1.44E+00
A4A-C3	59341	8.60E+00	3.92E-01	8.40E+00	2.87E+00	1.24E+01	1.87E+02	1.44E+00
A4A-C4	59340	6.25E+00	2.85E-01	6.10E+00	2.87E+00	1.24E+01	1.87E+02	1.44E+00
A4A-C5	59340	4.85E+00	2.21E-01	4.73E+00	2.87E+00	1.24E+01	1.87E+02	1.44E+00
A4A-C6	59318	2.51E+00	1.14E-01	2.45E+00	2.87E+00	1.24E+01	1.87E+02	1.44E+00
A4A-C7	54974	4.47E+00	2.04E-01	4.37E+00	2.87E+00	1.24E+01	1.87E+02	1.44E+00
A4A-C8	55208	6.86E+00	3.13E-01	6.70E+00	2.87E+00	1.24E+01	1.87E+02	1.44E+00
A4B2-C03	48771	3.62E+00	1.65E-01	3.53E+00	2.87E+00	1.24E+01	1.87E+02	1.44E+00

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 5

Certification Units	Area sq ft	Uranium-234 pCi/g	Uranium-235 pCi/g	Uranium-238 pCi/g	Antimony ug/g	Arsenic ug/g	Barium ug/g	Beryllium ug/g
A4B2-C04	59541	6.45E+00	2.94E-01	6.30E+00	2.87E+00	6.80E+00	1.87E+02	1.44E+00
A4B2-C05	62159	4.71E+00	2.15E-01	4.60E+00	2.87E+00	6.98E+00	1.87E+02	1.44E+00
A4B2-C06	60995	3.72E+00	1.70E-01	3.63E+00	2.87E+00	7.91E+00	1.87E+02	1.44E+00
A4B2-C07	62054	5.90E+00	2.69E-01	5.77E+00	2.87E+00	9.26E+00	1.87E+02	1.44E+00
A4B2-C08	51901	3.22E+00	1.47E-01	3.14E+00	2.87E+00	9.50E+00	1.87E+02	7.60E-01
A4B2-C09	57551	4.40E+00	2.01E-01	4.30E+00	2.87E+00	1.24E+01	1.87E+02	1.44E+00
A4B2-C10	46565	5.53E+00	2.52E-01	5.40E+00	2.87E+00	1.24E+01	1.87E+02	1.44E+00
A4B2-C11	44162	5.19E+00	2.36E-01	5.07E+00	2.87E+00	1.24E+01	1.87E+02	1.44E+00
A4B2-C12	52826	5.09E+00	2.32E-01	4.97E+00	2.87E+00	1.24E+01	1.87E+02	1.44E+00
A4B2-C13	60981	1.10E+01	5.02E-01	1.08E+01	2.87E+00	1.24E+01	1.87E+02	1.44E+00
A4B2-C19	43570	8.74E+00	3.98E-01	8.53E+00	2.87E+00	1.24E+01	1.87E+02	1.44E+00
A4B-C08	61718	4.98E+00	2.27E-01	4.87E+00	2.87E+00	1.24E+01	1.87E+02	1.04E+00
A4B-C09	61721	2.59E+00	1.18E-01	2.53E+00	2.87E+00	1.24E+01	1.87E+02	6.38E-01
A4B-C10	61454	4.47E+00	2.04E-01	4.37E+00	2.87E+00	1.24E+01	1.87E+02	4.96E-01
A4B-C11	61860	5.63E+00	2.57E-01	5.50E+00	2.87E+00	1.24E+01	1.87E+02	5.94E-01
A4B-C12	48596	3.19E+00	1.45E-01	3.12E+00	2.87E+00	1.24E+01	1.87E+02	5.66E-01
A4B-C13	61132	4.16E+00	1.90E-01	4.07E+00	2.87E+00	1.24E+01	1.87E+02	5.48E-01
A4B-C14	59718	5.84E+00	2.66E-01	5.70E+00	2.87E+00	1.24E+01	1.87E+02	7.10E-01
A4B-C15	49531	5.67E+00	2.58E-01	5.53E+00	2.87E+00	1.24E+01	1.87E+02	6.50E-01
A4B-C16	49968	5.49E+00	2.50E-01	5.37E+00	2.87E+00	1.24E+01	1.87E+02	5.80E-01
A4B-C17	46341	5.49E+00	2.50E-01	5.37E+00	2.87E+00	1.24E+01	1.87E+02	6.50E-01
A4B-C18	59593	3.33E+00	1.52E-01	3.26E+00	2.87E+00	1.24E+01	1.87E+02	9.10E-01
A6GAE-C01	42605	6.48E+00	2.95E-01	6.33E+00	7.05E-01	1.24E+01	1.87E+02	8.47E-01
A6GAE-C02	45294	6.14E+00	2.80E-01	6.00E+00	9.75E-01	1.24E+01	1.87E+02	5.46E-01
A6GAE-C03	45365	4.74E+00	2.16E-01	4.63E+00	5.06E-01	1.24E+01	1.87E+02	7.70E-01
A6GAE-C04	56793	9.35E+00	4.26E-01	9.13E+00	7.84E-01	1.24E+01	1.87E+02	8.67E-01
A6GAE-C05	44959	3.69E+00	1.68E-01	3.60E+00	2.80E+00	1.24E+01	1.87E+02	8.80E-01
A6GAE-C06	32461	3.62E+00	1.65E-01	3.53E+00	3.10E+00	1.24E+01	1.87E+02	9.70E-01
A6GAE-C07	45094	5.63E+00	2.57E-01	5.50E+00	5.80E-01	1.24E+01	1.87E+02	8.90E-01
A6GAE-C08	38422	4.37E+00	1.99E-01	4.27E+00	2.40E+00	1.24E+01	1.87E+02	9.60E-01
A6GAE-C09	60191	2.85E+00	1.30E-01	2.78E+00	8.03E-01	1.24E+01	1.87E+02	8.31E-01
A6GAE-C10	61472	3.48E+00	1.59E-01	3.40E+00	7.47E-01	1.24E+01	1.87E+02	1.44E+00
A6GAE-C11	41282	4.40E+00	2.01E-01	4.30E+00	7.49E-01	1.24E+01	1.87E+02	1.44E+00
A6GAE-C12	62502	4.71E+00	2.15E-01	4.60E+00	2.25E+00	1.24E+01	1.87E+02	1.44E+00
A6GAE-C13	38227	6.25E+00	2.85E-01	6.10E+00	1.00E+00	1.24E+01	1.87E+02	1.44E+00
A6GAE-C14	52259	6.01E+00	2.74E-01	5.87E+00	2.49E+00	1.24E+01	1.87E+02	9.10E-01
A6GAE-C15	50818	2.78E+00	1.27E-01	2.72E+00	7.89E-01	1.24E+01	1.87E+02	1.02E+00
A6GAE-C16	32855	1.51E+01	6.87E-01	1.47E+01	2.36E+00	1.24E+01	1.87E+02	1.10E+00
A6GAE-C17	33064	4.74E+00	2.16E-01	4.63E+00	7.95E-01	1.24E+01	1.87E+02	1.44E+00
A6GAE-C18	38040	5.26E+00	2.40E-01	5.13E+00	1.60E+00	1.24E+01	1.87E+02	8.70E-01
A6P1-C-01	56631	8.60E+00	3.92E-01	8.40E+00	2.87E+00	1.09E+01	1.87E+02	1.03E+00
A6P1-C-03	35655	4.16E+00	1.90E-01	4.07E+00	2.87E+00	8.09E+00	1.87E+02	8.00E-01
A6P1-C-05	52569	2.73E+00	1.24E-01	2.66E+00	2.87E+00	7.87E+00	1.87E+02	9.33E-01
A6P1-C-06	59646	6.69E+00	3.05E-01	6.53E+00	2.87E+00	1.06E+01	1.87E+02	8.92E-01
A6P1-C-07	59654	7.51E+00	3.42E-01	7.33E+00	2.87E+00	7.78E+00	1.87E+02	1.04E+00
A6P1-C-08	59645	2.37E+00	1.08E-01	2.32E+00	2.87E+00	7.94E+00	1.87E+02	8.55E-01
A6P1-C-09	59646	5.36E+00	2.44E-01	5.23E+00	2.87E+00	7.67E+00	1.87E+02	9.70E-01
A6P1-C-10	59647	2.65E+00	1.21E-01	2.59E+00	2.87E+00	9.20E+00	1.87E+02	8.10E-01
A6P1-C-11	33328	6.62E+00	3.02E-01	6.47E+00	2.87E+00	7.17E+00	1.87E+02	8.19E-01
A6P2-PC01	61745	5.22E+00	2.38E-01	5.10E+00	2.87E+00	1.24E+01	1.87E+02	1.44E+00
A6P2-PC02	62262	5.97E+00	2.72E-01	5.83E+00	2.87E+00	1.24E+01	1.87E+02	1.44E+00
A6P2-PC03	61174	7.71E+00	3.51E-01	7.53E+00	2.87E+00	1.24E+01	1.87E+02	1.44E+00
A6P2-PC04	52308	2.88E+00	1.31E-01	2.82E+00	2.87E+00	1.24E+01	1.87E+02	1.44E+00
A6P2-PC05	62304	3.55E+00	1.62E-01	3.47E+00	2.87E+00	1.24E+01	1.87E+02	8.60E-01
A6-RDBA-C01	40199	7.20E+00	3.28E-01	7.03E+00	6.17E-01	1.24E+01	1.87E+02	1.44E+00
A6-RDBA-C02	48412	8.57E+00	3.90E-01	8.37E+00	6.77E-01	1.24E+01	1.87E+02	1.44E+00

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 5

Certification Units	Area sq ft	Uranium-234 pCi/g	Uranium-235 pCi/g	Uranium-238 pCi/g	Antimony ug/g	Arsenic ug/g	Barium ug/g	Beryllium ug/g
A6-RDBA-C03	40823	5.46E+00	2.49E-01	5.33E+00	7.85E-01	1.24E+01	1.87E+02	1.44E+00
A6-SP7-C01	10478	3.75E+00	1.71E-01	3.67E+00	4.00E+00	7.00E+00	1.92E+02	8.70E-01
A6-SP7-C02	23404	5.94E+00	2.71E-01	5.80E+00	9.90E-01	1.04E+01	2.32E+02	1.10E+00
A6-SP7-C03	51377	2.25E+01	1.02E+00	2.19E+01	7.66E-01	9.84E+00	1.21E+02	8.16E-01
A6-SP7-C04	51236	2.48E+01	1.13E+00	2.43E+01	1.43E+00	8.25E+00	2.09E+02	1.49E+00
A6-SP7-C05	43105	1.68E+01	7.65E-01	1.64E+01	1.10E+00	1.03E+01	9.84E+01	6.40E-01
A6-SP7-C06	61932	2.16E+01	9.86E-01	2.11E+01	9.50E-01	1.01E+01	1.31E+02	1.00E+00
A6-SWL-C01	33854	3.75E+00	1.71E-01	3.67E+00	8.66E-01	9.90E+00	1.87E+02	9.17E-01
A6-SWL-C02	43705	1.07E+01	4.88E-01	1.05E+01	2.22E+00	9.60E+00	1.87E+02	1.10E+00
A6-SWL-C03	46278	4.51E+00	2.05E-01	4.40E+00	8.84E-01	1.08E+01	1.87E+02	8.75E-01
A6-SWL-C04	62483	1.32E+01	6.00E-01	1.29E+01	5.94E-01	9.21E+00	1.87E+02	6.70E-01
A6-SWMP-C01	39509	5.49E+00	2.50E-01	5.37E+00	6.16E-01	1.24E+01	1.87E+02	1.44E+00
MDC-C01	63140	4.78E+00	2.18E-01	4.67E+00	2.87E+00	1.24E+01	1.87E+02	1.44E+00
MDC-C02	49961	3.41E+00	1.55E-01	3.33E+00	2.87E+00	9.45E+00	1.87E+02	1.44E+00
MDC-C03	49959	3.75E+00	1.71E-01	3.67E+00	2.87E+00	1.24E+01	1.87E+02	1.44E+00
MDC-C04	49961	4.03E+00	1.84E-01	3.93E+00	2.87E+00	1.24E+01	1.87E+02	1.44E+00
MDC-C05	49961	8.43E+00	3.84E-01	8.23E+00	2.87E+00	9.35E+00	1.87E+02	1.44E+00
MDC-C06	49488	6.35E+00	2.89E-01	6.20E+00	2.87E+00	1.24E+01	1.87E+02	1.44E+00
MDC-C07	62072	4.91E+00	2.24E-01	4.80E+00	2.87E+00	8.57E+00	1.87E+02	1.08E+00
MDC-C08	60855	3.92E+00	1.79E-01	3.83E+00	2.87E+00	1.24E+01	1.87E+02	1.44E+00
MDC-C09	59378	4.10E+00	1.87E-01	4.00E+00	2.87E+00	1.24E+01	1.87E+02	1.44E+00
MDC-C10	62401	4.37E+00	1.99E-01	4.27E+00	2.87E+00	1.24E+01	1.87E+02	1.44E+00
MDC-C11	60583	3.62E+00	1.65E-01	3.53E+00	2.40E+00	1.24E+01	1.87E+02	1.44E+00
MDC-C12	60175	2.13E+00	9.69E-02	2.08E+00	1.10E+00	1.24E+01	1.87E+02	1.44E+00
MDC-C13	62130	1.81E+00	8.23E-02	1.76E+00	4.79E-01	1.24E+01	1.87E+02	1.44E+00
MDC-C14	62155	3.20E+00	1.46E-01	3.12E+00	5.00E+00	1.24E+01	1.87E+02	1.44E+00
MDC-C15	62090	3.09E+00	1.41E-01	3.02E+00	7.45E-01	1.24E+01	1.87E+02	1.44E+00
MDC-C16	61943	3.96E+00	1.80E-01	3.87E+00	2.87E+00	1.24E+01	1.87E+02	5.80E-01
MDC-C17	59422	4.71E+00	2.15E-01	4.60E+00	2.87E+00	1.24E+01	1.87E+02	1.44E+00
MDC-C18	60223	5.73E+00	2.61E-01	5.60E+00	2.87E+00	1.24E+01	1.87E+02	6.55E-01
MDC-C19	62477	8.09E+00	3.69E-01	7.90E+00	2.87E+00	1.24E+01	1.87E+02	1.44E+00
MDC-C20	62276	3.48E+00	1.59E-01	3.40E+00	2.87E+00	1.24E+01	1.87E+02	1.44E+00
MDC-C21	62495	8.16E+00	3.72E-01	7.97E+00	2.87E+00	1.24E+01	1.87E+02	1.44E+00
MDC-C22	62316	6.72E+00	3.06E-01	6.57E+00	2.87E+00	9.26E+00	1.87E+02	1.44E+00
MDC-C23	62353	6.62E+00	3.02E-01	6.47E+00	2.87E+00	1.24E+01	1.87E+02	1.44E+00
MDC-C24	60304	4.88E+00	2.22E-01	4.77E+00	2.87E+00	5.06E+00	1.87E+02	1.44E+00
MDC-C25	47898	2.45E+00	1.12E-01	2.39E+00	2.87E+00	1.24E+01	1.87E+02	1.44E+00
MDC-C26	30405	2.89E+00	1.32E-01	2.82E+00	2.87E+00	1.24E+01	1.87E+02	1.44E+00
RLS-C01	62047	3.65E+00	1.66E-01	3.57E+00	2.87E+00	7.70E+00	1.87E+02	9.42E-01
RLS-C02	61267	2.24E+00	1.02E-01	2.19E+00	2.87E+00	9.50E+00	1.87E+02	1.20E+00
RLS-C03	62187	2.80E+00	1.28E-01	2.74E+00	2.87E+00	7.59E+00	1.87E+02	1.10E+00
RLS-C04	38764	3.28E+00	1.50E-01	3.21E+00	2.87E+00	8.60E+00	1.87E+02	1.10E+00
RLS-C05	41328	2.05E+00	9.36E-02	2.01E+00	2.87E+00	9.00E+00	1.87E+02	9.10E-01
RLS-C06	35642	2.26E+00	1.03E-01	2.21E+00	7.80E-01	1.13E+01	1.87E+02	1.10E+00
RLS-C07	48286	2.58E+00	1.18E-01	2.52E+00	3.60E+00	9.50E+00	1.87E+02	9.88E-01
RLS-C08	54674	4.68E+00	2.13E-01	4.57E+00	2.46E+00	1.24E+01	1.87E+02	1.44E+00
RLS-C09	34834	3.69E+00	1.68E-01	3.60E+00	6.10E+00	1.24E+01	1.87E+02	1.03E+00
RLS-C10	49499	4.33E+00	1.98E-01	4.23E+00	5.51E-01	8.51E+00	1.87E+02	1.10E+00
Maximum Value		2.48E+01	1.13E+00	2.43E+01	6.10E+00	1.24E+01	4.04E+02	1.49E+00
Average (*used in Risk Calc.*)		5.55E+00	2.53E-01	5.42E+00	2.22E+00	1.11E+01	1.80E+02	1.17E+00
Number of Cert Results		1.57E+02	1.57E+02	1.57E+02	6.80E+01	5.30E+01	3.20E+01	7.50E+01
Number of Inserted Values		0.00E+00	0.00E+00	0.00E+00	8.90E+01	1.04E+02	1.25E+02	8.20E+01

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 5

Certification Units	Area sq ft	Boron ug/g	Cadmium ug/g	Chromium (VI) ug/g	Cobalt ug/g	Copper ug/g	Fluoride ug/g	Lead ug/g	Manganese ug/g
6E-C01	54860	NA	3.30E-01	1.90E+01	NA	NA	3.20E+00	2.05E+01	NA
6E-C02	61241	NA	4.70E-01	3.09E+01	NA	NA	3.20E+00	2.42E+01	NA
6E-C03	44952	NA	4.60E-01	2.63E+01	NA	NA	3.20E+00	1.79E+01	NA
6E-C04	45383	NA	3.73E-01	2.30E+01	NA	NA	3.20E+00	1.86E+01	NA
6E-C05	53943	NA	3.50E-01	2.28E+01	NA	NA	3.20E+00	1.60E+01	NA
6E-C06	60762	NA	5.30E-01	2.29E+01	NA	NA	3.20E+00	1.10E+02	NA
6E-C07	58798	NA	2.19E-01	2.56E+01	NA	NA	3.20E+00	1.73E+01	NA
6E-C08	61018	NA	6.20E-01	2.63E+01	NA	NA	3.20E+00	2.07E+01	NA
6E-C09	61907	NA	2.36E-01	1.50E+01	NA	NA	3.20E+00	1.54E+01	NA
6E-C10	47236	NA	2.40E-01	1.45E+01	NA	NA	3.20E+00	1.63E+01	NA
6E-C11	113659	NA	4.50E-01	3.93E+01	NA	NA	3.20E+00	6.01E+01	NA
6E-C12	95954	NA	3.22E-01	2.39E+01	NA	NA	3.20E+00	2.76E+01	NA
6E-C18	25562	NA	2.51E-01	1.74E+01	NA	NA	3.20E+00	2.02E+01	NA
6E-C19	45819	NA	2.23E-01	1.39E+01	NA	NA	3.20E+00	3.83E+01	NA
A3A-C01	43801	NA	3.70E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
A3A-C02	21413	NA	5.20E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
A3A-C03	19977	NA	3.70E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
A3A-C04	16324	NA	4.60E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
A3A-C05	42874	NA	3.90E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
A3A-C06	40377	NA	4.50E-01	2.47E+01	NA	NA	3.20E+00	1.63E+01	NA
A3A-C07	62498	NA	5.50E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
A3A-C08	33698	NA	5.60E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
A3A-C09	62497	NA	4.50E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
A3A-C10	62478	NA	4.80E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
A3A-C11	61184	NA	4.20E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
A3A-C12	59032	NA	4.70E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
A3A-C13	46433	NA	6.30E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
A3A-C14	42299	NA	4.00E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
A3A-C15	56140	NA	5.20E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
A3A-C16	48979	NA	4.10E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
A3A-C17	46427	NA	6.20E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
A3A-C18	47482	NA	2.90E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
A3B-C01	12988	NA	3.00E-01	2.47E+01	NA	NA	3.20E+00	9.60E+00	NA
A3B-C02	21204	NA	4.60E-01	2.47E+01	NA	NA	3.20E+00	1.89E+01	NA
A3B-C03	35467	NA	1.40E+00	2.47E+01	NA	NA	3.20E+00	2.29E+01	NA
A3B-C04	46128	NA	6.70E-01	2.47E+01	NA	NA	3.20E+00	2.10E+01	NA
A3B-C05	34291	NA	4.60E-01	2.47E+01	NA	NA	3.20E+00	1.75E+01	NA
A3B-C06	44405	NA	5.80E-01	2.47E+01	NA	NA	3.20E+00	5.24E+01	NA
A3B-C07	35924	NA	5.20E-01	2.47E+01	NA	NA	3.20E+00	1.15E+01	NA
A3B-C08	32223	NA	3.80E-01	2.47E+01	NA	NA	3.20E+00	1.47E+01	NA
A3B-C09	62500	NA	6.60E-01	2.47E+01	NA	NA	3.20E+00	1.68E+01	NA
A3B-C10	59088	NA	4.20E-01	2.47E+01	NA	NA	3.20E+00	1.19E+01	NA
A3B-C11	59891	NA	3.80E-01	2.47E+01	NA	NA	3.20E+00	1.98E+01	NA
A3B-C12	60100	NA	5.10E-01	2.47E+01	NA	NA	3.20E+00	1.27E+01	NA
A4A-C1	54975	NA	9.89E-01	2.47E+01	NA	NA	4.26E+00	3.06E+01	NA
A4A-C2	58661	NA	9.89E-01	2.47E+01	NA	NA	6.60E+00	3.06E+01	NA
A4A-C3	59341	NA	9.89E-01	2.47E+01	NA	NA	4.63E+00	3.06E+01	NA
A4A-C4	59340	NA	9.89E-01	2.47E+01	NA	NA	7.75E+00	3.06E+01	NA
A4A-C5	59340	NA	9.89E-01	2.47E+01	NA	NA	4.34E+00	3.06E+01	NA
A4A-C6	59318	NA	9.89E-01	2.47E+01	NA	NA	2.55E+00	3.06E+01	NA
A4A-C7	54974	NA	9.89E-01	2.47E+01	NA	NA	4.74E+00	3.06E+01	NA
A4A-C8	55208	NA	9.89E-01	2.47E+01	NA	NA	5.94E+00	3.06E+01	NA
A4B2-C03	48771	NA	9.89E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 5

Certification Units	Area sq ft	Boron ug/g	Cadmium ug/g	Chromium (VI) ug/g	Cobalt ug/g	Copper ug/g	Fluoride ug/g	Lead ug/g	Manganese ug/g
A4B2-C04	59541	NA	9.89E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
A4B2-C05	62159	NA	9.89E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
A4B2-C06	60995	NA	9.89E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
A4B2-C07	62054	NA	9.89E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
A4B2-C08	51901	NA	9.89E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
A4B2-C09	57551	NA	9.89E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
A4B2-C10	46565	NA	9.89E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
A4B2-C11	44162	NA	9.89E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
A4B2-C12	52826	NA	9.89E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
A4B2-C13	60981	NA	9.89E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
A4B2-C19	43570	NA	9.89E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
A4B-C08	61718	NA	9.89E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
A4B-C09	61721	NA	9.89E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
A4B-C10	61454	NA	9.89E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
A4B-C11	61860	NA	9.89E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
A4B-C12	48596	NA	9.89E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
A4B-C13	61132	NA	9.89E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
A4B-C14	59718	NA	9.89E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
A4B-C15	49531	NA	9.89E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
A4B-C16	49968	NA	9.89E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
A4B-C17	46341	NA	9.89E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
A4B-C18	59593	NA	9.89E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
A6GAE-C01	42605	NA	3.31E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
A6GAE-C02	45294	NA	2.65E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
A6GAE-C03	45365	NA	6.33E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
A6GAE-C04	56793	NA	2.94E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
A6GAE-C05	44959	NA	9.89E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
A6GAE-C06	32461	NA	9.89E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
A6GAE-C07	45094	NA	9.89E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
A6GAE-C08	38422	NA	9.89E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
A6GAE-C09	60191	NA	3.25E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
A6GAE-C10	61472	NA	3.07E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
A6GAE-C11	41282	NA	1.82E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
A6GAE-C12	62502	NA	5.63E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
A6GAE-C13	38227	NA	1.90E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
A6GAE-C14	52259	NA	6.22E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
A6GAE-C15	50818	NA	3.89E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
A6GAE-C16	32855	NA	5.89E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
A6GAE-C17	33064	NA	2.55E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
A6GAE-C18	38040	NA	8.20E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
A6P1-C-01	56631	NA	9.89E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
A6P1-C-03	35655	NA	9.89E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
A6P1-C-05	52569	NA	9.89E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
A6P1-C-06	59646	NA	9.89E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
A6P1-C-07	59654	NA	9.89E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
A6P1-C-08	59645	NA	9.89E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
A6P1-C-09	59646	NA	9.89E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
A6P1-C-10	59647	NA	9.89E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
A6P1-C-11	33328	NA	9.89E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
A6P2-PC01	61745	NA	9.89E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
A6P2-PC02	62262	NA	9.89E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
A6P2-PC03	61174	NA	9.89E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
A6P2-PC04	52308	NA	9.89E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
A6P2-PC05	62304	NA	9.89E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
A6-RDBA-C01	40199	NA	2.08E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
A6-RDBA-C02	48412	NA	3.65E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 5

Certification Units	Area sq ft	Boron ug/g	Cadmium ug/g	Chromium (VI) ug/g	Cobalt ug/g	Copper ug/g	Fluoride ug/g	Lead ug/g	Manganese ug/g
A6-RDBA-C03	40823	NA	4.72E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
A6-SP7-C01	10478	NA	4.90E-01	3.38E+01	NA	NA	3.20E+00	1.92E+01	NA
A6-SP7-C02	23404	NA	5.30E-01	2.86E+01	NA	NA	3.20E+00	1.86E+01	NA
A6-SP7-C03	51377	NA	2.49E-01	1.52E+01	NA	NA	3.20E+00	2.47E+01	NA
A6-SP7-C04	51236	NA	2.78E-01	2.00E+01	NA	NA	3.20E+00	7.06E+01	NA
A6-SP7-C05	43105	NA	6.10E-01	2.17E+01	NA	NA	3.20E+00	4.09E+01	NA
A6-SP7-C06	61932	NA	8.70E-01	2.45E+01	NA	NA	3.20E+00	2.48E+01	NA
A6-SWL-C01	33854	NA	2.98E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
A6-SWL-C02	43705	NA	4.70E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
A6-SWL-C03	46278	NA	4.52E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
A6-SWL-C04	62483	NA	2.53E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
A6-SWMP-C01	39509	NA	2.01E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
MDC-C01	63140	NA	9.89E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
MDC-C02	49961	NA	9.89E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
MDC-C03	49959	NA	9.89E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
MDC-C04	49961	NA	9.89E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
MDC-C05	49961	NA	9.89E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
MDC-C06	49488	NA	4.54E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
MDC-C07	62072	NA	7.46E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
MDC-C08	60855	NA	9.89E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
MDC-C09	59378	NA	9.89E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
MDC-C10	62401	NA	9.89E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
MDC-C11	60583	NA	3.30E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
MDC-C12	60175	NA	1.90E+00	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
MDC-C13	62130	NA	1.80E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
MDC-C14	62155	NA	6.70E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
MDC-C15	62090	NA	3.19E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
MDC-C16	61943	NA	9.89E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
MDC-C17	59422	NA	3.10E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
MDC-C18	60223	NA	2.81E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
MDC-C19	62477	NA	9.89E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
MDC-C20	62276	NA	9.89E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
MDC-C21	62495	NA	9.89E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
MDC-C22	62316	NA	9.89E-01	2.47E+01	NA	NA	3.20E+00	1.80E+01	NA
MDC-C23	62353	NA	9.89E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
MDC-C24	60304	NA	9.89E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
MDC-C25	47898	NA	9.89E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
MDC-C26	30405	NA	9.89E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
RLS-C01	62047	NA	9.89E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
RLS-C02	61267	NA	9.89E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
RLS-C03	62187	NA	9.89E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
RLS-C04	38764	NA	9.89E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
RLS-C05	41328	NA	9.89E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
RLS-C06	35642	NA	9.89E-01	2.47E+01	NA	NA	2.71E+00	3.06E+01	NA
RLS-C07	48286	NA	5.60E-01	2.47E+01	NA	NA	3.46E+00	3.06E+01	NA
RLS-C08	54674	NA	4.20E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
RLS-C09	34834	NA	9.89E-01	2.47E+01	NA	NA	3.20E+00	3.06E+01	NA
RLS-C10	49499	NA	9.89E-01	2.47E+01	NA	NA	2.34E+00	3.06E+01	NA
Maximum Value		NA	1.90E+00	3.93E+01	NA	NA	7.75E+00	1.10E+02	NA
Average (*used in Risk Calc.*)		NA	7.07E-01	2.45E+01	NA	NA	3.29E+00	2.96E+01	NA
Number of Cert Results		NA	8.30E+01	2.00E+01	NA	NA	1.10E+01	3.40E+01	NA
Number of Inserted Values		NA	7.40E+01	1.37E+02	NA	NA	1.46E+02	1.23E+02	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 5

Certification Units	Area sq ft	Mercury ug/g	Molybdenum ug/g	Nickel ug/g	Selenium ug/g	Silver ug/g	Thallium ug/g	Uranium ug/g	Vanadium ug/g
6E-C01	54860	5.20E-02	1.73E+00	NA	2.13E+00	1.00E-01	NA	1.70E+01	NA
6E-C02	61241	4.40E-02	3.40E+00	NA	5.80E-01	1.60E-01	NA	1.42E+01	NA
6E-C03	44952	4.00E-02	1.70E+00	NA	1.95E+00	9.30E-02	NA	1.42E+01	NA
6E-C04	45383	4.61E-02	1.85E+00	NA	2.18E+00	6.50E-02	NA	1.78E+01	NA
6E-C05	53943	4.30E-02	3.00E+00	NA	2.47E+00	1.20E-01	NA	3.77E+01	NA
6E-C06	60762	4.00E-02	2.70E+00	NA	6.90E-01	1.40E-01	NA	2.00E+01	NA
6E-C07	58798	4.25E-02	1.84E+00	NA	2.19E+00	1.62E-01	NA	4.86E+01	NA
6E-C08	61018	1.20E-01	1.60E+00	NA	5.85E-01	1.50E-01	NA	4.08E+01	NA
6E-C09	61907	5.47E-02	1.86E+00	NA	2.19E+00	1.62E-01	NA	1.55E+01	NA
6E-C10	47236	4.09E-01	2.05E+00	NA	2.04E+00	1.51E-01	NA	1.32E+01	NA
6E-C11	113659	3.80E-02	1.50E+00	NA	6.02E-01	2.80E-01	NA	1.47E+01	NA
6E-C12	95954	4.48E-02	3.40E+00	NA	2.21E+00	1.67E-01	NA	3.61E+01	NA
6E-C18	25562	4.58E-02	2.19E+00	NA	2.06E+00	3.17E-01	NA	1.61E+01	NA
6E-C19	45819	4.67E-02	1.80E+00	NA	2.05E+00	1.51E-01	NA	1.57E+01	NA
A3A-C01	43801	7.00E-02	2.10E+00	NA	1.19E+00	7.00E-02	NA	8.22E+00	NA
A3A-C02	21413	7.00E-02	1.70E+00	NA	1.19E+00	7.20E-02	NA	1.77E+01	NA
A3A-C03	19977	7.00E-02	1.80E+00	NA	1.19E+00	7.30E-02	NA	1.30E+01	NA
A3A-C04	16324	7.00E-02	1.50E+00	NA	1.19E+00	7.30E-02	NA	1.01E+01	NA
A3A-C05	42874	7.00E-02	2.60E+00	NA	1.19E+00	5.80E-02	NA	6.55E+00	NA
A3A-C06	40377	7.00E-02	1.90E+00	NA	1.19E+00	8.50E-02	NA	1.51E+01	NA
A3A-C07	62498	7.00E-02	2.20E+00	NA	1.19E+00	8.10E-02	NA	1.61E+01	NA
A3A-C08	33698	7.00E-02	2.70E+00	NA	1.19E+00	8.10E-02	NA	8.61E+00	NA
A3A-C09	62497	7.00E-02	1.60E+00	NA	1.19E+00	7.70E-02	NA	8.76E+00	NA
A3A-C10	62478	7.00E-02	5.30E+00	NA	1.19E+00	6.40E-02	NA	1.41E+01	NA
A3A-C11	61184	7.00E-02	1.70E+00	NA	1.19E+00	9.10E-02	NA	1.30E+01	NA
A3A-C12	59032	7.00E-02	3.10E+00	NA	1.19E+00	9.60E-02	NA	6.91E+00	NA
A3A-C13	46433	7.00E-02	1.80E+00	NA	1.19E+00	9.10E-02	NA	2.37E+01	NA
A3A-C14	42299	7.00E-02	2.30E+00	NA	1.19E+00	6.00E-02	NA	1.28E+01	NA
A3A-C15	56140	7.00E-02	1.90E+00	NA	1.19E+00	8.30E-02	NA	9.99E+00	NA
A3A-C16	48979	7.00E-02	1.80E+00	NA	1.19E+00	7.00E-02	NA	8.92E+00	NA
A3A-C17	46427	7.00E-02	1.80E+00	NA	1.19E+00	9.20E-02	NA	9.30E+00	NA
A3A-C18	47482	7.00E-02	1.50E+00	NA	1.19E+00	5.60E-02	NA	7.67E+00	NA
A3B-C01	12988	7.00E-02	1.80E+00	NA	1.19E+00	5.60E-02	NA	1.05E+01	NA
A3B-C02	21204	7.00E-02	3.80E+00	NA	1.19E+00	8.00E-02	NA	6.04E+00	NA
A3B-C03	35467	7.00E-02	4.60E+00	NA	1.19E+00	1.50E-01	NA	7.30E+00	NA
A3B-C04	46128	7.00E-02	2.60E+00	NA	1.19E+00	1.30E-01	NA	7.96E+00	NA
A3B-C05	34291	7.00E-02	2.10E+00	NA	1.19E+00	6.80E-02	NA	1.37E+01	NA
A3B-C06	44405	7.00E-02	2.00E+00	NA	1.19E+00	8.50E-02	NA	1.89E+01	NA
A3B-C07	35924	7.00E-02	2.60E+00	NA	1.19E+00	7.70E-02	NA	1.68E+01	NA
A3B-C08	32223	7.00E-02	1.20E+00	NA	1.19E+00	7.30E-02	NA	1.01E+01	NA
A3B-C09	62500	7.00E-02	1.60E+00	NA	1.19E+00	1.00E-01	NA	7.79E+00	NA
A3B-C10	59088	7.00E-02	2.10E+00	NA	1.19E+00	7.20E-02	NA	1.62E+01	NA
A3B-C11	59891	7.00E-02	4.60E+00	NA	1.19E+00	4.92E-01	NA	1.17E+01	NA
A3B-C12	60100	7.00E-02	1.50E+00	NA	1.19E+00	9.40E-02	NA	8.40E+00	NA
A4A-C1	54975	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	2.94E+01	NA
A4A-C2	58661	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	1.07E+01	NA
A4A-C3	59341	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	2.52E+01	NA
A4A-C4	59340	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	1.83E+01	NA
A4A-C5	59340	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	1.42E+01	NA
A4A-C6	59318	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	7.35E+00	NA
A4A-C7	54974	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	1.31E+01	NA
A4A-C8	55208	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	2.01E+01	NA
A4B2-C03	48771	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	1.06E+01	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 5

Certification Units	Area sq ft	Mercury ug/g	Molybdenum ug/g	Nickel ug/g	Selenium ug/g	Silver ug/g	Thallium ug/g	Uranium ug/g	Vanadium ug/g
A4B2-C04	59541	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	1.89E+01	NA
A4B2-C05	62159	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	1.38E+01	NA
A4B2-C06	60995	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	1.09E+01	NA
A4B2-C07	62054	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	1.73E+01	NA
A4B2-C08	51901	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	9.43E+00	NA
A4B2-C09	57551	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	1.29E+01	NA
A4B2-C10	46565	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	1.62E+01	NA
A4B2-C11	44162	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	1.52E+01	NA
A4B2-C12	52826	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	1.49E+01	NA
A4B2-C13	60981	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	3.23E+01	NA
A4B2-C19	43570	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	2.56E+01	NA
A4B-C08	61718	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	1.46E+01	NA
A4B-C09	61721	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	7.59E+00	NA
A4B-C10	61454	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	1.31E+01	NA
A4B-C11	61860	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	1.65E+01	NA
A4B-C12	48596	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	9.35E+00	NA
A4B-C13	61132	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	1.22E+01	NA
A4B-C14	59718	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	1.71E+01	NA
A4B-C15	49531	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	1.66E+01	NA
A4B-C16	49968	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	1.61E+01	NA
A4B-C17	46341	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	1.61E+01	NA
A4B-C18	59593	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	9.77E+00	NA
A6GAE-C01	42605	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	1.90E+01	NA
A6GAE-C02	45294	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	1.80E+01	NA
A6GAE-C03	45365	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	1.39E+01	NA
A6GAE-C04	56793	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	2.74E+01	NA
A6GAE-C05	44959	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	1.08E+01	NA
A6GAE-C06	32461	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	1.06E+01	NA
A6GAE-C07	45094	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	1.65E+01	NA
A6GAE-C08	38422	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	1.28E+01	NA
A6GAE-C09	60191	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	8.35E+00	NA
A6GAE-C10	61472	7.00E-02	2.08E+00	NA	1.19E+00	1.06E+00	NA	1.02E+01	NA
A6GAE-C11	41282	7.00E-02	2.01E+00	NA	1.19E+00	2.40E+00	NA	1.29E+01	NA
A6GAE-C12	62502	7.00E-02	2.20E+00	NA	1.19E+00	1.21E-01	NA	1.38E+01	NA
A6GAE-C13	38227	7.00E-02	1.30E+00	NA	1.19E+00	1.24E-01	NA	1.83E+01	NA
A6GAE-C14	52259	7.00E-02	3.00E+00	NA	1.19E+00	1.24E-01	NA	1.76E+01	NA
A6GAE-C15	50818	7.00E-02	1.53E+00	NA	1.19E+00	7.40E-01	NA	8.15E+00	NA
A6GAE-C16	32855	7.00E-02	1.40E+00	NA	1.19E+00	5.76E-01	NA	4.42E+01	NA
A6GAE-C17	33064	7.00E-02	2.17E+00	NA	1.19E+00	1.13E+00	NA	1.39E+01	NA
A6GAE-C18	38040	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	1.54E+01	NA
A6P1-C-01	56631	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	2.52E+01	NA
A6P1-C-03	35655	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	1.22E+01	NA
A6P1-C-05	52569	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	7.99E+00	NA
A6P1-C-06	59646	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	1.96E+01	NA
A6P1-C-07	59654	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	2.20E+01	NA
A6P1-C-08	59645	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	6.95E+00	NA
A6P1-C-09	59646	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	1.57E+01	NA
A6P1-C-10	59647	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	7.77E+00	NA
A6P1-C-11	33328	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	1.94E+01	NA
A6P2-PC01	61745	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	1.53E+01	NA
A6P2-PC02	62262	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	1.75E+01	NA
A6P2-PC03	61174	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	2.26E+01	NA
A6P2-PC04	52308	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	8.45E+00	NA
A6P2-PC05	62304	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	1.04E+01	NA
A6-RDBA-C01	40199	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	2.11E+01	NA
A6-RDBA-C02	48412	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	2.51E+01	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 5

Certification Units	Area sq ft	Mercury ug/g	Molybdenum ug/g	Nickel ug/g	Selenium ug/g	Silver ug/g	Thallium ug/g	Uranium ug/g	Vanadium ug/g
A6-RDBA-C03	40823	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	1.60E+01	NA
A6-SP7-C01	10478	3.70E-02	1.70E+00	NA	3.52E+00	1.17E-01	NA	1.10E+01	NA
A6-SP7-C02	23404	7.80E-02	1.50E+00	NA	8.30E-01	1.00E-01	NA	1.74E+01	NA
A6-SP7-C03	51377	7.16E-02	1.65E+00	NA	2.13E+00	3.04E-01	NA	6.58E+01	NA
A6-SP7-C04	51236	1.07E-01	1.54E+00	NA	2.23E+00	2.90E-01	NA	7.28E+01	NA
A6-SP7-C05	43105	4.30E-02	1.60E+00	NA	2.22E+00	1.91E-01	NA	4.92E+01	NA
A6-SP7-C06	61932	1.00E-01	1.50E+00	NA	7.22E-01	2.00E-01	NA	6.34E+01	NA
A6-SWL-C01	33854	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	1.10E+01	NA
A6-SWL-C02	43705	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	3.14E+01	NA
A6-SWL-C03	46278	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	1.32E+01	NA
A6-SWL-C04	62483	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	3.86E+01	NA
A6-SWMP-C01	39509	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	1.61E+01	NA
MDC-C01	63140	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	1.40E+01	NA
MDC-C02	49961	7.00E-02	2.29E+00	NA	1.19E+00	1.13E+00	NA	9.99E+00	NA
MDC-C03	49959	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	1.10E+01	NA
MDC-C04	49961	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	1.18E+01	NA
MDC-C05	49961	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	2.47E+01	NA
MDC-C06	49488	7.00E-02	1.68E+00	NA	1.19E+00	2.99E-01	NA	1.86E+01	NA
MDC-C07	62072	7.00E-02	2.11E+00	NA	1.19E+00	7.50E-01	NA	1.44E+01	NA
MDC-C08	60855	7.00E-02	5.24E+00	NA	1.19E+00	8.30E-02	NA	1.15E+01	NA
MDC-C09	59378	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	1.20E+01	NA
MDC-C10	62401	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	1.28E+01	NA
MDC-C11	60583	7.00E-02	2.00E+00	NA	1.19E+00	6.40E-02	NA	1.06E+01	NA
MDC-C12	60175	7.00E-02	2.10E+00	NA	1.19E+00	4.40E-02	NA	6.23E+00	NA
MDC-C13	62130	7.00E-02	1.70E+00	NA	1.19E+00	4.83E-02	NA	5.29E+00	NA
MDC-C14	62155	7.00E-02	1.50E+00	NA	1.19E+00	8.70E-02	NA	9.37E+00	NA
MDC-C15	62090	7.00E-02	6.14E+00	NA	1.19E+00	6.75E-01	NA	9.05E+00	NA
MDC-C16	61943	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	1.16E+01	NA
MDC-C17	59422	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	1.38E+01	NA
MDC-C18	60223	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	1.68E+01	NA
MDC-C19	62477	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	2.37E+01	NA
MDC-C20	62276	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	1.02E+01	NA
MDC-C21	62495	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	2.39E+01	NA
MDC-C22	62316	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	1.97E+01	NA
MDC-C23	62353	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	1.94E+01	NA
MDC-C24	60304	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	1.43E+01	NA
MDC-C25	47898	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	7.17E+00	NA
MDC-C26	30405	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	8.47E+00	NA
RLS-C01	62047	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	1.07E+01	NA
RLS-C02	61267	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	6.57E+00	NA
RLS-C03	62187	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	8.21E+00	NA
RLS-C04	38764	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	9.62E+00	NA
RLS-C05	41328	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	6.02E+00	NA
RLS-C06	35642	7.00E-02	5.24E+00	NA	1.19E+00	6.70E-02	NA	6.62E+00	NA
RLS-C07	48286	7.00E-02	5.24E+00	NA	1.19E+00	6.90E-02	NA	7.57E+00	NA
RLS-C08	54674	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	1.37E+01	NA
RLS-C09	34834	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	1.08E+01	NA
RLS-C10	49499	7.00E-02	5.24E+00	NA	1.19E+00	8.00E-02	NA	1.27E+01	NA
Maximum Value		4.09E-01	6.14E+00	NA	3.52E+00	2.40E+00	NA	7.28E+01	NA
Average (*used in Risk Calc.*)		7.07E-02	3.96E+00	NA	1.27E+00	7.28E-01	NA	1.62E+01	NA
Number of Cert Results		2.00E+01	6.60E+01	NA	2.00E+01	6.80E+01	NA	1.57E+02	NA
Number of Inserted Values		1.37E+02	9.10E+01	NA	1.37E+02	8.90E+01	NA	0.00E+00	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 5

Certification Units	Area sq ft	Zinc ug/g	Acetone ug/g	Aroclor-1254 ug/g	Aroclor-1260 ug/g	Benzene ug/g	Benzo(a)anthracene ug/g
6E-C01	54860	NA	2.13E-02	1.92E-02	5.30E-03	1.80E-03	1.47E-01
6E-C02	61241	NA	1.12E-02	3.72E-02	9.20E-03	1.30E-03	1.64E-01
6E-C03	44952	NA	2.29E-01	3.91E-02	1.70E-02	1.40E-03	3.40E-01
6E-C04	45383	NA	5.52E-02	1.51E-02	6.40E-03	1.40E-03	3.94E-02
6E-C05	53943	NA	2.68E-02	1.28E-02	9.70E-03	2.60E-03	1.16E+00
6E-C06	60762	NA	1.67E-02	1.10E-02	4.70E-03	1.50E-03	9.92E-02
6E-C07	58798	NA	8.60E-03	3.46E-02	3.53E-02	1.50E-03	9.21E-02
6E-C08	61018	NA	8.00E-02	1.42E-02	4.10E-03	1.30E-03	2.29E-01
6E-C09	61907	NA	2.03E-02	3.56E-02	6.40E-03	1.80E-03	3.73E+00
6E-C10	47236	NA	6.44E-02	2.08E-02	8.00E-03	1.10E-03	3.40E-01
6E-C11	113659	NA	5.09E-02	1.81E-02	6.10E-03	2.20E-03	7.38E-01
6E-C12	95954	NA	5.90E-03	2.15E-02	1.49E-02	1.20E-03	4.44E-02
6E-C18	25562	NA	3.72E-02	1.66E-02	4.40E-03	1.10E-03	2.40E-01
6E-C19	45819	NA	1.64E-01	2.67E-02	3.10E-02	1.40E-03	5.03E-01
A3A-C01	43801	NA	0.00E+00	8.74E-02	8.60E-02	0.00E+00	1.30E+00
A3A-C02	21413	NA	0.00E+00	6.70E-02	1.50E-02	0.00E+00	0.00E+00
A3A-C03	19977	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A3A-C04	16324	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A3A-C05	42874	NA	0.00E+00	1.52E-02	4.90E-03	0.00E+00	0.00E+00
A3A-C06	40377	NA	0.00E+00	2.20E-02	1.40E-02	0.00E+00	2.40E-01
A3A-C07	62498	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A3A-C08	33698	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A3A-C09	62497	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A3A-C10	62478	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A3A-C11	61184	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A3A-C12	59032	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.70E+00
A3A-C13	46433	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.60E-01
A3A-C14	42299	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A3A-C15	56140	NA	0.00E+00	3.30E-02	1.30E-02	0.00E+00	5.60E-02
A3A-C16	48979	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.60E-02
A3A-C17	46427	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A3A-C18	47482	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A3B-C01	12988	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A3B-C02	21204	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A3B-C03	35467	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A3B-C04	46128	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A3B-C05	34291	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A3B-C06	44405	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A3B-C07	35924	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A3B-C08	32223	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
~~A3B-C09~~	~~62500~~	~~NA~~	~~0.00E+00~~	~~0.00E+00~~	~~0.00E+00~~	~~0.00E+00~~	~~0.00E+00~~
A3B-C10	59088	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A3B-C11	59891	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A3B-C12	60100	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A4A-C1	54975	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A4A-C2	58661	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A4A-C3	59341	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A4A-C4	59340	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A4A-C5	59340	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A4A-C6	59318	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A4A-C7	54974	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A4A-C8	55208	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A4B2-C03	48771	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 5

Certification Units	Area sq ft	Zinc ug/g	Acetone ug/g	Aroclor-1254 ug/g	Aroclor-1260 ug/g	Benzene ug/g	Benzo(a)anthracene ug/g
A4B2-C04	59541	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A4B2-C05	62159	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A4B2-C06	60995	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A4B2-C07	62054	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A4B2-C08	51901	NA	0.00E+00	1.80E-02	0.00E+00	0.00E+00	0.00E+00
A4B2-C09	57551	NA	0.00E+00	9.80E-03	0.00E+00	0.00E+00	0.00E+00
A4B2-C10	46565	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A4B2-C11	44162	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A4B2-C12	52826	NA	0.00E+00	8.60E+00	0.00E+00	0.00E+00	0.00E+00
A4B2-C13	60981	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A4B2-C19	43570	NA	0.00E+00	1.20E-02	0.00E+00	0.00E+00	0.00E+00
A4B-C08	61718	NA	0.00E+00	3.70E-03	0.00E+00	0.00E+00	0.00E+00
A4B-C09	61721	NA	0.00E+00	6.80E-03	0.00E+00	0.00E+00	0.00E+00
A4B-C10	61454	NA	0.00E+00	3.40E-03	0.00E+00	0.00E+00	0.00E+00
A4B-C11	61860	NA	0.00E+00	3.30E-03	0.00E+00	0.00E+00	0.00E+00
A4B-C12	48596	NA	0.00E+00	1.00E-03	0.00E+00	0.00E+00	0.00E+00
A4B-C13	61132	NA	0.00E+00	3.40E-03	0.00E+00	0.00E+00	0.00E+00
A4B-C14	59718	NA	0.00E+00	7.80E-03	0.00E+00	0.00E+00	0.00E+00
A4B-C15	49531	NA	0.00E+00	4.10E-03	0.00E+00	0.00E+00	0.00E+00
A4B-C16	49968	NA	0.00E+00	3.10E-02	0.00E+00	0.00E+00	0.00E+00
A4B-C17	46341	NA	0.00E+00	4.50E-03	0.00E+00	0.00E+00	0.00E+00
A4B-C18	59593	NA	0.00E+00	3.20E-03	0.00E+00	0.00E+00	0.00E+00
A6GAE-C01	42605	NA	0.00E+00	7.20E-02	3.92E-02	0.00E+00	0.00E+00
A6GAE-C02	45294	NA	0.00E+00	1.25E-01	4.19E-02	0.00E+00	0.00E+00
A6GAE-C03	45365	NA	0.00E+00	5.11E-02	2.19E-02	0.00E+00	0.00E+00
A6GAE-C04	56793	NA	0.00E+00	4.88E-02	1.41E-02	0.00E+00	0.00E+00
A6GAE-C05	44959	NA	0.00E+00	2.39E-02	1.37E-02	0.00E+00	0.00E+00
A6GAE-C06	32461	NA	0.00E+00	1.44E-02	5.70E-03	0.00E+00	0.00E+00
A6GAE-C07	45094	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A6GAE-C08	38422	NA	0.00E+00	1.04E-02	4.60E-03	0.00E+00	0.00E+00
A6GAE-C09	60191	NA	0.00E+00	1.06E-02	5.40E-03	0.00E+00	0.00E+00
A6GAE-C10	61472	NA	0.00E+00	4.11E-02	4.10E-03	0.00E+00	0.00E+00
A6GAE-C11	41282	NA	0.00E+00	9.84E-02	5.81E-02	0.00E+00	0.00E+00
A6GAE-C12	62502	NA	0.00E+00	2.48E-02	1.54E-02	0.00E+00	0.00E+00
A6GAE-C13	38227	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A6GAE-C14	52259	NA	0.00E+00	3.72E-02	1.00E-02	0.00E+00	0.00E+00
A6GAE-C15	50818	NA	0.00E+00	2.55E-02	1.12E-02	0.00E+00	0.00E+00
A6GAE-C16	32855	NA	0.00E+00	3.11E-02	3.28E-02	0.00E+00	0.00E+00
A6GAE-C17	33064	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A6GAE-C18	38040	NA	0.00E+00	4.78E-02	3.08E-02	0.00E+00	0.00E+00
A6P1-C-01	56631	NA	0.00E+00	1.34E-02	1.53E-02	0.00E+00	5.20E-01
A6P1-C-03	35655	NA	0.00E+00	4.08E-02	9.50E-03	0.00E+00	4.10E-02
A6P1-C-05	52569	NA	0.00E+00	4.40E-03	2.58E-02	0.00E+00	0.00E+00
A6P1-C-06	59646	NA	0.00E+00	1.84E-02	6.40E-03	0.00E+00	0.00E+00
A6P1-C-07	59654	NA	0.00E+00	3.10E-03	2.10E-03	0.00E+00	0.00E+00
A6P1-C-08	59645	NA	0.00E+00	4.60E-03	4.60E-03	0.00E+00	0.00E+00
A6P1-C-09	59646	NA	0.00E+00	2.50E-03	4.70E-03	0.00E+00	0.00E+00
A6P1-C-10	59647	NA	0.00E+00	4.50E-03	1.93E-02	0.00E+00	0.00E+00
A6P1-C-11	33328	NA	0.00E+00	4.10E-03	1.60E-03	0.00E+00	0.00E+00
A6P2-PC01	61745	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A6P2-PC02	62262	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A6P2-PC03	61174	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A6P2-PC04	52308	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A6P2-PC05	62304	NA	0.00E+00	4.20E-03	4.20E-03	0.00E+00	4.04E-01
A6-RDBA-C01	40199	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.03E-02
A6-RDBA-C02	48412	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.21E-01

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 5

Certification Units	Area sq ft	Zinc ug/g	Acetone ug/g	Aroclor-1254 ug/g	Aroclor-1260 ug/g	Benzene ug/g	Benzo(a)anthracene ug/g
A6-RDBA-C03	40823	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.59E-01
A6-SP7-C01	10478	NA	0.00E+00	1.25E-02	4.80E-03	0.00E+00	0.00E+00
A6-SP7-C02	23404	NA	0.00E+00	2.24E-02	6.20E-03	0.00E+00	0.00E+00
A6-SP7-C03	51377	NA	0.00E+00	4.89E-02	7.85E-02	0.00E+00	0.00E+00
A6-SP7-C04	51236	NA	0.00E+00	6.05E-02	2.54E-02	0.00E+00	0.00E+00
A6-SP7-C05	43105	NA	0.00E+00	4.88E-02	2.86E-02	0.00E+00	0.00E+00
A6-SP7-C06	61932	NA	0.00E+00	6.90E-02	2.90E-02	0.00E+00	0.00E+00
A6-SWL-C01	33854	NA	0.00E+00	1.91E-02	1.20E-02	0.00E+00	0.00E+00
A6-SWL-C02	43705	NA	0.00E+00	2.30E-02	1.24E-02	0.00E+00	0.00E+00
A6-SWL-C03	46278	NA	0.00E+00	1.61E-02	5.10E-03	0.00E+00	0.00E+00
A6-SWL-C04	62483	NA	0.00E+00	9.80E-03	4.10E-03	0.00E+00	0.00E+00
A6-SWMP-C01	39509	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MDC-C01	63140	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MDC-C02	49961	NA	0.00E+00	4.80E-03	0.00E+00	0.00E+00	0.00E+00
MDC-C03	49959	NA	0.00E+00	2.12E-02	0.00E+00	0.00E+00	0.00E+00
MDC-C04	49961	NA	0.00E+00	3.21E-02	0.00E+00	0.00E+00	0.00E+00
MDC-C05	49961	NA	0.00E+00	6.42E-02	1.59E-02	0.00E+00	0.00E+00
MDC-C06	49488	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MDC-C07	62072	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MDC-C08	60855	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MDC-C09	59378	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MDC-C10	62401	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MDC-C11	60583	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MDC-C12	60175	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MDC-C13	62130	NA	0.00E+00	9.10E-03	0.00E+00	0.00E+00	4.02E-02
MDC-C14	62155	NA	0.00E+00	8.30E-03	0.00E+00	0.00E+00	3.98E-02
MDC-C15	62090	NA	0.00E+00	1.08E-02	0.00E+00	0.00E+00	0.00E+00
MDC-C16	61943	NA	0.00E+00	6.00E-03	3.90E-03	0.00E+00	0.00E+00
MDC-C17	59422	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MDC-C18	60223	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MDC-C19	62477	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MDC-C20	62276	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MDC-C21	62495	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MDC-C22	62316	NA	0.00E+00	5.35E-02	0.00E+00	0.00E+00	0.00E+00
MDC-C23	62353	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MDC-C24	60304	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MDC-C25	47898	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MDC-C26	30405	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RLS-C01	62047	NA	0.00E+00	4.50E-03	4.50E-03	0.00E+00	0.00E+00
RLS-C02	61267	NA	0.00E+00	4.20E-03	4.20E-03	0.00E+00	0.00E+00
RLS-C03	62187	NA	0.00E+00	4.30E-03	4.30E-03	0.00E+00	0.00E+00
RLS-C04	38764	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.95E-02
RLS-C05	41328	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.58E-02
RLS-C06	35642	NA	0.00E+00	4.10E-03	4.10E-03	0.00E+00	4.06E-02
RLS-C07	48286	NA	0.00E+00	4.10E-03	4.10E-03	0.00E+00	4.09E-02
RLS-C08	54674	NA	0.00E+00	6.10E-03	4.10E-03	0.00E+00	0.00E+00
RLS-C09	34834	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RLS-C10	49499	NA	0.00E+00	4.30E-03	4.30E-03	0.00E+00	0.00E+00
Maximum Value		NA	2.29E-01	8.60E+00	8.60E-02	2.60E-03	3.73E+00
Average (*used in Risk Calc.*)		NA	5.04E-03	6.75E-02	6.07E-03	1.38E-04	8.60E-02
Number of Cert Results		NA	1.40E+01	8.50E+01	6.30E+01	1.40E+01	3.20E+01
Number of Inserted Values		NA	1.43E+02	7.20E+01	9.40E+01	1.43E+02	1.25E+02

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 5

Certification Units	Area sq ft	Benzo(a)pyrene ug/g	Benzo(b)fluoranthene ug/g	Benzo(k)fluoranthene ug/g	Bis(2-chloroisopropyl)ether ug/g
6E-C01	54860	1.82E-01	2.46E-01	4.95E-02	NA
6E-C02	61241	1.67E-01	1.52E-01	8.03E-02	NA
6E-C03	44952	2.79E-01	5.10E-01	1.50E-01	NA
6E-C04	45383	1.40E-01	1.68E-01	3.94E-02	NA
6E-C05	53943	8.45E-01	1.32E+00	4.43E-02	NA
6E-C06	60762	1.24E-01	2.53E-01	2.40E-01	NA
6E-C07	58798	1.70E-01	3.06E-01	9.12E-02	NA
6E-C08	61018	2.31E-01	3.92E-01	7.89E-02	NA
6E-C09	61907	1.38E-01	4.27E+00	1.33E+00	NA
6E-C10	47236	3.14E-01	5.23E-01	1.06E-01	NA
6E-C11	113659	5.65E-01	8.11E-01	4.03E-02	NA
6E-C12	95954	1.51E-01	1.77E-01	3.34E-01	NA
6E-C18	25562	1.99E-01	3.17E-01	9.33E-02	NA
6E-C19	45819	5.10E-01	8.02E-01	1.54E-01	NA
A3A-C01	43801	1.30E+00	1.70E+00	6.50E-01	NA
A3A-C02	21413	0.00E+00	0.00E+00	0.00E+00	NA
A3A-C03	19977	0.00E+00	0.00E+00	0.00E+00	NA
A3A-C04	16324	0.00E+00	0.00E+00	0.00E+00	NA
A3A-C05	42874	0.00E+00	0.00E+00	0.00E+00	NA
A3A-C06	40377	2.10E-01	3.00E-01	1.20E-01	NA
A3A-C07	62498	0.00E+00	0.00E+00	0.00E+00	NA
A3A-C08	33698	0.00E+00	0.00E+00	0.00E+00	NA
A3A-C09	62497	0.00E+00	0.00E+00	0.00E+00	NA
A3A-C10	62478	0.00E+00	0.00E+00	0.00E+00	NA
A3A-C11	61184	0.00E+00	0.00E+00	0.00E+00	NA
A3A-C12	59032	1.40E+00	2.40E+00	7.00E-02	NA
A3A-C13	46433	4.60E-01	8.40E-01	3.60E-02	NA
A3A-C14	42299	0.00E+00	0.00E+00	0.00E+00	NA
A3A-C15	56140	4.50E-02	5.50E-02	8.60E-02	NA
A3A-C16	48979	4.70E-02	7.00E-02	3.60E-02	NA
A3A-C17	46427	0.00E+00	0.00E+00	0.00E+00	NA
A3A-C18	47482	0.00E+00	0.00E+00	0.00E+00	NA
A3B-C01	12988	0.00E+00	0.00E+00	0.00E+00	NA
A3B-C02	21204	0.00E+00	0.00E+00	0.00E+00	NA
A3B-C03	35467	0.00E+00	0.00E+00	0.00E+00	NA
A3B-C04	46128	0.00E+00	0.00E+00	0.00E+00	NA
A3B-C05	34291	0.00E+00	0.00E+00	0.00E+00	NA
A3B-C06	44405	0.00E+00	0.00E+00	0.00E+00	NA
A3B-C07	35924	0.00E+00	0.00E+00	0.00E+00	NA
A3B-C08	32223	0.00E+00	0.00E+00	0.00E+00	NA
A3B-C09	62500	0.00E+00	0.00E+00	0.00E+00	NA
A3B-C10	59088	0.00E+00	0.00E+00	0.00E+00	NA
A3B-C11	59891	0.00E+00	0.00E+00	0.00E+00	NA
A3B-C12	60100	0.00E+00	0.00E+00	0.00E+00	NA
A4A-C1	54975	0.00E+00	0.00E+00	0.00E+00	NA
A4A-C2	58661	0.00E+00	0.00E+00	0.00E+00	NA
A4A-C3	59341	0.00E+00	0.00E+00	0.00E+00	NA
A4A-C4	59340	0.00E+00	0.00E+00	0.00E+00	NA
A4A-C5	59340	0.00E+00	0.00E+00	0.00E+00	NA
A4A-C6	59318	0.00E+00	0.00E+00	0.00E+00	NA
A4A-C7	54974	0.00E+00	0.00E+00	0.00E+00	NA
A4A-C8	55208	0.00E+00	0.00E+00	0.00E+00	NA
A4B2-C03	48771	0.00E+00	0.00E+00	0.00E+00	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 5

Certification Units	Area sq ft	Benzo(a)pyrene ug/g	Benzo(b)fluoranthene ug/g	Benzo(k)fluoranthene ug/g	Bis(2-chloroisopropyl)ether ug/g
A4B2-C04	59541	0.00E+00	0.00E+00	0.00E+00	NA
A4B2-C05	62159	0.00E+00	0.00E+00	0.00E+00	NA
A4B2-C06	60995	0.00E+00	0.00E+00	0.00E+00	NA
A4B2-C07	62054	0.00E+00	0.00E+00	0.00E+00	NA
A4B2-C08	51901	0.00E+00	0.00E+00	0.00E+00	NA
A4B2-C09	57551	0.00E+00	0.00E+00	0.00E+00	NA
A4B2-C10	46565	0.00E+00	0.00E+00	0.00E+00	NA
A4B2-C11	44162	0.00E+00	0.00E+00	0.00E+00	NA
A4B2-C12	52826	0.00E+00	0.00E+00	0.00E+00	NA
A4B2-C13	60981	0.00E+00	0.00E+00	0.00E+00	NA
A4B2-C19	43570	0.00E+00	0.00E+00	0.00E+00	NA
A4B-C08	61718	0.00E+00	0.00E+00	0.00E+00	NA
A4B-C09	61721	0.00E+00	0.00E+00	0.00E+00	NA
A4B-C10	61454	0.00E+00	0.00E+00	0.00E+00	NA
A4B-C11	61860	0.00E+00	0.00E+00	0.00E+00	NA
A4B-C12	48596	0.00E+00	0.00E+00	0.00E+00	NA
A4B-C13	61132	0.00E+00	0.00E+00	0.00E+00	NA
A4B-C14	59718	0.00E+00	0.00E+00	0.00E+00	NA
A4B-C15	49531	0.00E+00	0.00E+00	0.00E+00	NA
A4B-C16	49968	0.00E+00	0.00E+00	0.00E+00	NA
A4B-C17	46341	0.00E+00	0.00E+00	0.00E+00	NA
A4B-C18	59593	0.00E+00	0.00E+00	0.00E+00	NA
A6GAE-C01	42605	0.00E+00	0.00E+00	0.00E+00	NA
A6GAE-C02	45294	0.00E+00	0.00E+00	0.00E+00	NA
A6GAE-C03	45365	0.00E+00	0.00E+00	0.00E+00	NA
A6GAE-C04	56793	0.00E+00	0.00E+00	0.00E+00	NA
A6GAE-C05	44959	0.00E+00	0.00E+00	0.00E+00	NA
A6GAE-C06	32461	0.00E+00	0.00E+00	0.00E+00	NA
A6GAE-C07	45094	0.00E+00	0.00E+00	0.00E+00	NA
A6GAE-C08	38422	0.00E+00	0.00E+00	0.00E+00	NA
A6GAE-C09	60191	0.00E+00	0.00E+00	0.00E+00	NA
A6GAE-C10	61472	0.00E+00	0.00E+00	0.00E+00	NA
A6GAE-C11	41282	0.00E+00	0.00E+00	0.00E+00	NA
A6GAE-C12	62502	0.00E+00	0.00E+00	0.00E+00	NA
A6GAE-C13	38227	0.00E+00	0.00E+00	0.00E+00	NA
A6GAE-C14	52259	4.22E-02	0.00E+00	0.00E+00	NA
A6GAE-C15	50818	4.21E-02	0.00E+00	0.00E+00	NA
A6GAE-C16	32855	6.04E-02	0.00E+00	0.00E+00	NA
A6GAE-C17	33064	0.00E+00	0.00E+00	0.00E+00	NA
A6GAE-C18	38040	0.00E+00	0.00E+00	0.00E+00	NA
A6P1-C-01	56631	8.30E-01	9.20E-01	4.20E-01	NA
A6P1-C-03	35655	1.50E-01	1.80E-01	3.40E-02	NA
A6P1-C-05	52569	0.00E+00	0.00E+00	0.00E+00	NA
A6P1-C-06	59646	0.00E+00	0.00E+00	0.00E+00	NA
A6P1-C-07	59654	0.00E+00	0.00E+00	0.00E+00	NA
A6P1-C-08	59645	0.00E+00	0.00E+00	0.00E+00	NA
A6P1-C-09	59646	0.00E+00	0.00E+00	0.00E+00	NA
A6P1-C-10	59647	0.00E+00	0.00E+00	0.00E+00	NA
A6P1-C-11	33328	0.00E+00	0.00E+00	0.00E+00	NA
A6P2-PC01	61745	0.00E+00	0.00E+00	0.00E+00	NA
A6P2-PC02	62262	0.00E+00	0.00E+00	0.00E+00	NA
A6P2-PC03	61174	0.00E+00	0.00E+00	0.00E+00	NA
A6P2-PC04	52308	0.00E+00	0.00E+00	0.00E+00	NA
A6P2-PC05	62304	4.43E-01	4.57E-02	4.21E-02	NA
A6-RDBA-C01	40199	1.05E-01	1.43E-01	7.08E-02	NA
A6-RDBA-C02	48412	1.40E-01	2.78E-01	3.77E-02	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 5

Certification Units	Area sq ft	Benzo(a)pyrene ug/g	Benzo(b)fluoranthene ug/g	Benzo(k)fluoranthene ug/g	Bis(2-chloroisopropyl)ether ug/g
A6-RDBA-C03	40823	3.10E-01	3.73E-01	1.76E-01	NA
A6-SP7-C01	10478	8.19E-02	1.34E-01	0.00E+00	NA
A6-SP7-C02	23404	2.89E-01	5.24E-01	0.00E+00	NA
A6-SP7-C03	51377	7.28E-01	9.91E-01	0.00E+00	NA
A6-SP7-C04	51236	2.97E-01	4.25E-01	0.00E+00	NA
A6-SP7-C05	43105	5.66E-01	9.00E-01	0.00E+00	NA
A6-SP7-C06	61932	3.55E-01	5.06E-01	0.00E+00	NA
A6-SWL-C01	33854	1.01E-01	0.00E+00	0.00E+00	NA
A6-SWL-C02	43705	3.91E-01	0.00E+00	0.00E+00	NA
A6-SWL-C03	46278	2.81E-01	0.00E+00	0.00E+00	NA
A6-SWL-C04	62483	1.66E-01	0.00E+00	0.00E+00	NA
A6-SWMP-C01	39509	0.00E+00	0.00E+00	0.00E+00	NA
MDC-C01	63140	0.00E+00	0.00E+00	0.00E+00	NA
MDC-C02	49961	4.43E-02	0.00E+00	0.00E+00	NA
MDC-C03	49959	4.21E-02	0.00E+00	0.00E+00	NA
MDC-C04	49961	0.00E+00	0.00E+00	0.00E+00	NA
MDC-C05	49961	0.00E+00	0.00E+00	0.00E+00	NA
MDC-C06	49488	0.00E+00	0.00E+00	0.00E+00	NA
MDC-C07	62072	0.00E+00	0.00E+00	0.00E+00	NA
MDC-C08	60855	0.00E+00	0.00E+00	0.00E+00	NA
MDC-C09	59378	0.00E+00	0.00E+00	0.00E+00	NA
MDC-C10	62401	0.00E+00	0.00E+00	0.00E+00	NA
MDC-C11	60583	0.00E+00	0.00E+00	0.00E+00	NA
MDC-C12	60175	0.00E+00	0.00E+00	0.00E+00	NA
MDC-C13	62130	1.44E-01	4.02E-02	4.02E-02	NA
MDC-C14	62155	3.98E-02	3.98E-02	3.98E-02	NA
MDC-C15	62090	0.00E+00	0.00E+00	0.00E+00	NA
MDC-C16	61943	1.29E-01	0.00E+00	0.00E+00	NA
MDC-C17	59422	0.00E+00	0.00E+00	0.00E+00	NA
MDC-C18	60223	0.00E+00	0.00E+00	0.00E+00	NA
MDC-C19	62477	0.00E+00	0.00E+00	0.00E+00	NA
MDC-C20	62276	0.00E+00	0.00E+00	0.00E+00	NA
MDC-C21	62495	0.00E+00	0.00E+00	0.00E+00	NA
MDC-C22	62316	0.00E+00	0.00E+00	0.00E+00	NA
MDC-C23	62353	0.00E+00	0.00E+00	0.00E+00	NA
MDC-C24	60304	0.00E+00	0.00E+00	0.00E+00	NA
MDC-C25	47898	0.00E+00	0.00E+00	0.00E+00	NA
MDC-C26	30405	0.00E+00	0.00E+00	0.00E+00	NA
RLS-C01	62047	0.00E+00	0.00E+00	0.00E+00	NA
RLS-C02	61267	0.00E+00	0.00E+00	0.00E+00	NA
RLS-C03	62187	0.00E+00	0.00E+00	0.00E+00	NA
RLS-C04	38764	6.28E-02	4.95E-02	4.95E-02	NA
RLS-C05	41328	5.42E-02	4.58E-02	4.58E-02	NA
RLS-C06	35642	4.06E-02	4.06E-02	0.00E+00	NA
RLS-C07	48286	4.91E-02	4.09E-02	0.00E+00	NA
RLS-C08	54674	0.00E+00	0.00E+00	0.00E+00	NA
RLS-C09	34834	0.00E+00	0.00E+00	0.00E+00	NA
RLS-C10	49499	1.90E-01	2.05E-01	0.00E+00	NA
Maximum Value		1.40E+00	4.27E+00	1.33E+00	NA
Average (*used in Risk Calc.*)		8.70E-02	1.37E-01	3.05E-02	NA
Number of Cert Results		4.90E+01	3.90E+01	3.00E+01	NA
Number of Inserted Values		1.08E+02	1.18E+02	1.27E+02	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 5

Certification Units	Area sq ft	Bis(2-ethylhexyl)phthalate ug/g	Bromodichloromethane ug/g	Bromoform ug/g	Bromomethane ug/g	2-Butanone ug/g
6E-C01	54860	NA	0.00E+00	NA	NA	NA
6E-C02	61241	NA	0.00E+00	NA	NA	NA
6E-C03	44952	NA	0.00E+00	NA	NA	NA
6E-C04	45383	NA	0.00E+00	NA	NA	NA
6E-C05	53943	NA	0.00E+00	NA	NA	NA
6E-C06	60762	NA	0.00E+00	NA	NA	NA
6E-C07	58798	NA	0.00E+00	NA	NA	NA
6E-C08	61018	NA	0.00E+00	NA	NA	NA
6E-C09	61907	NA	0.00E+00	NA	NA	NA
6E-C10	47236	NA	0.00E+00	NA	NA	NA
6E-C11	113659	NA	0.00E+00	NA	NA	NA
6E-C12	95954	NA	0.00E+00	NA	NA	NA
6E-C18	25562	NA	0.00E+00	NA	NA	NA
6E-C19	45819	NA	0.00E+00	NA	NA	NA
A3A-C01	43801	NA	0.00E+00	NA	NA	NA
A3A-C02	21413	NA	0.00E+00	NA	NA	NA
A3A-C03	19977	NA	0.00E+00	NA	NA	NA
A3A-C04	16324	NA	0.00E+00	NA	NA	NA
A3A-C05	42874	NA	0.00E+00	NA	NA	NA
A3A-C06	40377	NA	0.00E+00	NA	NA	NA
A3A-C07	62498	NA	0.00E+00	NA	NA	NA
A3A-C08	33698	NA	0.00E+00	NA	NA	NA
A3A-C09	62497	NA	0.00E+00	NA	NA	NA
A3A-C10	62478	NA	0.00E+00	NA	NA	NA
A3A-C11	61184	NA	0.00E+00	NA	NA	NA
A3A-C12	59032	NA	0.00E+00	NA	NA	NA
A3A-C13	46433	NA	0.00E+00	NA	NA	NA
A3A-C14	42299	NA	0.00E+00	NA	NA	NA
A3A-C15	56140	NA	0.00E+00	NA	NA	NA
A3A-C16	48979	NA	0.00E+00	NA	NA	NA
A3A-C17	46427	NA	0.00E+00	NA	NA	NA
A3A-C18	47482	NA	0.00E+00	NA	NA	NA
A3B-C01	12988	NA	0.00E+00	NA	NA	NA
A3B-C02	21204	NA	0.00E+00	NA	NA	NA
A3B-C03	35467	NA	0.00E+00	NA	NA	NA
A3B-C04	46128	NA	0.00E+00	NA	NA	NA
A3B-C05	34291	NA	0.00E+00	NA	NA	NA
A3B-C06	44405	NA	0.00E+00	NA	NA	NA
A3B-C07	35924	NA	0.00E+00	NA	NA	NA
A3B-C08	32223	NA	0.00E+00	NA	NA	NA
A3B-C09	62500	NA	0.00E+00	NA	NA	NA
A3B-C10	59088	NA	0.00E+00	NA	NA	NA
A3B-C11	59891	NA	0.00E+00	NA	NA	NA
A3B-C12	60100	NA	0.00E+00	NA	NA	NA
A4A-C1	54975	NA	0.00E+00	NA	NA	NA
A4A-C2	58661	NA	0.00E+00	NA	NA	NA
A4A-C3	59341	NA	0.00E+00	NA	NA	NA
A4A-C4	59340	NA	0.00E+00	NA	NA	NA
A4A-C5	59340	NA	0.00E+00	NA	NA	NA
A4A-C6	59318	NA	0.00E+00	NA	NA	NA
A4A-C7	54974	NA	0.00E+00	NA	NA	NA
A4A-C8	55208	NA	0.00E+00	NA	NA	NA
A4B2-C03	48771	NA	0.00E+00	NA	NA	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 5

Certification Units	Area sq ft	Bis(2-ethylhexyl)phthalate ug/g	Bromodichloromethane ug/g	Bromoform ug/g	Bromomethane ug/g	2-Butanone ug/g
A4B2-C04	59541	NA	0.00E+00	NA	NA	NA
A4B2-C05	62159	NA	0.00E+00	NA	NA	NA
A4B2-C06	60995	NA	0.00E+00	NA	NA	NA
A4B2-C07	62054	NA	0.00E+00	NA	NA	NA
A4B2-C08	51901	NA	0.00E+00	NA	NA	NA
A4B2-C09	57551	NA	0.00E+00	NA	NA	NA
A4B2-C10	46565	NA	0.00E+00	NA	NA	NA
A4B2-C11	44162	NA	0.00E+00	NA	NA	NA
A4B2-C12	52826	NA	0.00E+00	NA	NA	NA
A4B2-C13	60981	NA	0.00E+00	NA	NA	NA
A4B2-C19	43570	NA	0.00E+00	NA	NA	NA
A4B-C08	61718	NA	0.00E+00	NA	NA	NA
A4B-C09	61721	NA	0.00E+00	NA	NA	NA
A4B-C10	61454	NA	0.00E+00	NA	NA	NA
A4B-C11	61860	NA	0.00E+00	NA	NA	NA
A4B-C12	48596	NA	0.00E+00	NA	NA	NA
A4B-C13	61132	NA	0.00E+00	NA	NA	NA
A4B-C14	59718	NA	0.00E+00	NA	NA	NA
A4B-C15	49531	NA	0.00E+00	NA	NA	NA
A4B-C16	49968	NA	0.00E+00	NA	NA	NA
A4B-C17	46341	NA	0.00E+00	NA	NA	NA
A4B-C18	59593	NA	0.00E+00	NA	NA	NA
A6GAE-C01	42605	NA	0.00E+00	NA	NA	NA
A6GAE-C02	45294	NA	0.00E+00	NA	NA	NA
A6GAE-C03	45365	NA	0.00E+00	NA	NA	NA
A6GAE-C04	56793	NA	0.00E+00	NA	NA	NA
A6GAE-C05	44959	NA	0.00E+00	NA	NA	NA
A6GAE-C06	32461	NA	0.00E+00	NA	NA	NA
A6GAE-C07	45094	NA	0.00E+00	NA	NA	NA
A6GAE-C08	38422	NA	0.00E+00	NA	NA	NA
A6GAE-C09	60191	NA	0.00E+00	NA	NA	NA
A6GAE-C10	61472	NA	1.60E-03	NA	NA	NA
A6GAE-C11	41282	NA	1.20E-03	NA	NA	NA
A6GAE-C12	62502	NA	0.00E+00	NA	NA	NA
A6GAE-C13	38227	NA	0.00E+00	NA	NA	NA
A6GAE-C14	52259	NA	1.40E-03	NA	NA	NA
A6GAE-C15	50818	NA	1.30E-03	NA	NA	NA
A6GAE-C16	32855	NA	1.50E-03	NA	NA	NA
A6GAE-C17	33064	NA	0.00E+00	NA	NA	NA
A6GAE-C18	38040	NA	0.00E+00	NA	NA	NA
A6P1-C-01	56631	NA	0.00E+00	NA	NA	NA
A6P1-C-03	35655	NA	0.00E+00	NA	NA	NA
A6P1-C-05	52569	NA	0.00E+00	NA	NA	NA
A6P1-C-06	59646	NA	0.00E+00	NA	NA	NA
A6P1-C-07	59654	NA	0.00E+00	NA	NA	NA
A6P1-C-08	59645	NA	0.00E+00	NA	NA	NA
A6P1-C-09	59646	NA	0.00E+00	NA	NA	NA
A6P1-C-10	59647	NA	0.00E+00	NA	NA	NA
A6P1-C-11	33328	NA	0.00E+00	NA	NA	NA
A6P2-PC01	61745	NA	0.00E+00	NA	NA	NA
A6P2-PC02	62262	NA	0.00E+00	NA	NA	NA
A6P2-PC03	61174	NA	0.00E+00	NA	NA	NA
A6P2-PC04	52308	NA	0.00E+00	NA	NA	NA
A6P2-PC05	62304	NA	0.00E+00	NA	NA	NA
A6-RDBA-C01	40199	NA	0.00E+00	NA	NA	NA
A6-RDBA-C02	48412	NA	0.00E+00	NA	NA	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 5

Certification Units	Area sq ft	Bis(2-ethylhexyl)phthalate ug/g	Bromodichloromethane ug/g	Bromoform ug/g	Bromomethane ug/g	2-Butanone ug/g
A6-RDBA-C03	40823	NA	0.00E+00	NA	NA	NA
A6-SP7-C01	10478	NA	1.10E-03	NA	NA	NA
A6-SP7-C02	23404	NA	1.40E-03	NA	NA	NA
A6-SP7-C03	51377	NA	1.20E-03	NA	NA	NA
A6-SP7-C04	51236	NA	1.10E-03	NA	NA	NA
A6-SP7-C05	43105	NA	1.20E-03	NA	NA	NA
A6-SP7-C06	61932	NA	1.20E-03	NA	NA	NA
A6-SWL-C01	33854	NA	0.00E+00	NA	NA	NA
A6-SWL-C02	43705	NA	0.00E+00	NA	NA	NA
A6-SWL-C03	46278	NA	0.00E+00	NA	NA	NA
A6-SWL-C04	62483	NA	0.00E+00	NA	NA	NA
A6-SWMP-C01	39509	NA	0.00E+00	NA	NA	NA
MDC-C01	63140	NA	0.00E+00	NA	NA	NA
MDC-C02	49961	NA	0.00E+00	NA	NA	NA
MDC-C03	49959	NA	0.00E+00	NA	NA	NA
MDC-C04	49961	NA	0.00E+00	NA	NA	NA
MDC-C05	49961	NA	0.00E+00	NA	NA	NA
MDC-C06	49488	NA	0.00E+00	NA	NA	NA
MDC-C07	62072	NA	0.00E+00	NA	NA	NA
MDC-C08	60855	NA	0.00E+00	NA	NA	NA
MDC-C09	59378	NA	0.00E+00	NA	NA	NA
MDC-C10	62401	NA	0.00E+00	NA	NA	NA
MDC-C11	60583	NA	0.00E+00	NA	NA	NA
MDC-C12	60175	NA	0.00E+00	NA	NA	NA
MDC-C13	62130	NA	0.00E+00	NA	NA	NA
MDC-C14	62155	NA	0.00E+00	NA	NA	NA
MDC-C15	62090	NA	0.00E+00	NA	NA	NA
MDC-C16	61943	NA	0.00E+00	NA	NA	NA
MDC-C17	59422	NA	0.00E+00	NA	NA	NA
MDC-C18	60223	NA	0.00E+00	NA	NA	NA
MDC-C19	62477	NA	0.00E+00	NA	NA	NA
MDC-C20	62276	NA	0.00E+00	NA	NA	NA
MDC-C21	62495	NA	0.00E+00	NA	NA	NA
MDC-C22	62316	NA	0.00E+00	NA	NA	NA
MDC-C23	62353	NA	0.00E+00	NA	NA	NA
MDC-C24	60304	NA	0.00E+00	NA	NA	NA
MDC-C25	47898	NA	0.00E+00	NA	NA	NA
MDC-C26	30405	NA	0.00E+00	NA	NA	NA
RLS-C01	62047	NA	0.00E+00	NA	NA	NA
RLS-C02	61267	NA	0.00E+00	NA	NA	NA
RLS-C03	62187	NA	0.00E+00	NA	NA	NA
RLS-C04	38764	NA	1.10E-03	NA	NA	NA
RLS-C05	41328	NA	1.30E-03	NA	NA	NA
RLS-C06	35642	NA	0.00E+00	NA	NA	NA
RLS-C07	48286	NA	0.00E+00	NA	NA	NA
RLS-C08	54674	NA	0.00E+00	NA	NA	NA
RLS-C09	34834	NA	0.00E+00	NA	NA	NA
RLS-C10	49499	NA	1.50E-03	NA	NA	NA
Maximum Value		NA	1.60E-03	NA	NA	NA
Average (*used in Risk Calc.*)		NA	1.15E-04	NA	NA	NA
Number of Cert Results		NA	1.40E+01	NA	NA	NA
Number of Inserted Values		NA	1.43E+02	NA	NA	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 5

Certification Units	Area sq ft	Carbazole ug/g	Carbon disulfide ug/g	Carbon tetrachloride ug/g	Chlordane ug/g	Chlorobenzene ug/g	Chloroform ug/g
6E-C01	54860	NA	NA	1.80E-03	NA	NA	NA
6E-C02	61241	NA	NA	1.30E-03	NA	NA	NA
6E-C03	44952	NA	NA	1.40E-03	NA	NA	NA
6E-C04	45383	NA	NA	1.40E-03	NA	NA	NA
6E-C05	53943	NA	NA	2.60E-03	NA	NA	NA
6E-C06	60762	NA	NA	1.50E-03	NA	NA	NA
6E-C07	58798	NA	NA	1.50E-03	NA	NA	NA
6E-C08	61018	NA	NA	1.30E-03	NA	NA	NA
6E-C09	61907	NA	NA	1.50E-03	NA	NA	NA
6E-C10	47236	NA	NA	1.10E-03	NA	NA	NA
6E-C11	113659	NA	NA	2.20E-03	NA	NA	NA
6E-C12	95954	NA	NA	1.20E-03	NA	NA	NA
6E-C18	25562	NA	NA	1.10E-03	NA	NA	NA
6E-C19	45819	NA	NA	1.40E-03	NA	NA	NA
A3A-C01	43801	NA	NA	0.00E+00	NA	NA	NA
A3A-C02	21413	NA	NA	0.00E+00	NA	NA	NA
A3A-C03	19977	NA	NA	0.00E+00	NA	NA	NA
A3A-C04	16324	NA	NA	0.00E+00	NA	NA	NA
A3A-C05	42874	NA	NA	0.00E+00	NA	NA	NA
A3A-C06	40377	NA	NA	0.00E+00	NA	NA	NA
A3A-C07	62498	NA	NA	0.00E+00	NA	NA	NA
A3A-C08	33698	NA	NA	0.00E+00	NA	NA	NA
A3A-C09	62497	NA	NA	0.00E+00	NA	NA	NA
A3A-C10	62478	NA	NA	0.00E+00	NA	NA	NA
A3A-C11	61184	NA	NA	0.00E+00	NA	NA	NA
A3A-C12	59032	NA	NA	0.00E+00	NA	NA	NA
A3A-C13	46433	NA	NA	0.00E+00	NA	NA	NA
A3A-C14	42299	NA	NA	0.00E+00	NA	NA	NA
A3A-C15	56140	NA	NA	0.00E+00	NA	NA	NA
A3A-C16	48979	NA	NA	0.00E+00	NA	NA	NA
A3A-C17	46427	NA	NA	0.00E+00	NA	NA	NA
A3A-C18	47482	NA	NA	0.00E+00	NA	NA	NA
A3B-C01	12988	NA	NA	0.00E+00	NA	NA	NA
A3B-C02	21204	NA	NA	0.00E+00	NA	NA	NA
A3B-C03	35467	NA	NA	0.00E+00	NA	NA	NA
A3B-C04	46128	NA	NA	0.00E+00	NA	NA	NA
A3B-C05	34291	NA	NA	0.00E+00	NA	NA	NA
A3B-C06	44405	NA	NA	0.00E+00	NA	NA	NA
A3B-C07	35924	NA	NA	0.00E+00	NA	NA	NA
A3B-C08	32223	NA	NA	0.00E+00	NA	NA	NA
A3B-C09	62500	NA	NA	0.00E+00	NA	NA	NA
A3B-C10	59088	NA	NA	0.00E+00	NA	NA	NA
A3B-C11	59891	NA	NA	0.00E+00	NA	NA	NA
A3B-C12	60100	NA	NA	0.00E+00	NA	NA	NA
A4A-C1	54975	NA	NA	0.00E+00	NA	NA	NA
A4A-C2	58661	NA	NA	0.00E+00	NA	NA	NA
A4A-C3	59341	NA	NA	0.00E+00	NA	NA	NA
A4A-C4	59340	NA	NA	0.00E+00	NA	NA	NA
A4A-C5	59340	NA	NA	0.00E+00	NA	NA	NA
A4A-C6	59318	NA	NA	0.00E+00	NA	NA	NA
A4A-C7	54974	NA	NA	0.00E+00	NA	NA	NA
A4A-C8	55208	NA	NA	0.00E+00	NA	NA	NA
A4B2-C03	48771	NA	NA	0.00E+00	NA	NA	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 5

Certification Units	Area sq ft	Carbazole ug/g	Carbon disulfide ug/g	Carbon tetrachloride ug/g	Chlordane ug/g	Chlorobenzene ug/g	Chloroform ug/g
A4B2-C04	59541	NA	NA	0.00E+00	NA	NA	NA
A4B2-C05	62159	NA	NA	0.00E+00	NA	NA	NA
A4B2-C06	60995	NA	NA	0.00E+00	NA	NA	NA
A4B2-C07	62054	NA	NA	0.00E+00	NA	NA	NA
A4B2-C08	51901	NA	NA	0.00E+00	NA	NA	NA
A4B2-C09	57551	NA	NA	0.00E+00	NA	NA	NA
A4B2-C10	46565	NA	NA	0.00E+00	NA	NA	NA
A4B2-C11	44162	NA	NA	0.00E+00	NA	NA	NA
A4B2-C12	52826	NA	NA	0.00E+00	NA	NA	NA
A4B2-C13	60981	NA	NA	0.00E+00	NA	NA	NA
A4B2-C19	43570	NA	NA	0.00E+00	NA	NA	NA
A4B-C08	61718	NA	NA	0.00E+00	NA	NA	NA
A4B-C09	61721	NA	NA	0.00E+00	NA	NA	NA
A4B-C10	61454	NA	NA	0.00E+00	NA	NA	NA
A4B-C11	61860	NA	NA	0.00E+00	NA	NA	NA
A4B-C12	48596	NA	NA	0.00E+00	NA	NA	NA
A4B-C13	61132	NA	NA	0.00E+00	NA	NA	NA
A4B-C14	59718	NA	NA	0.00E+00	NA	NA	NA
A4B-C15	49531	NA	NA	0.00E+00	NA	NA	NA
A4B-C16	49968	NA	NA	0.00E+00	NA	NA	NA
A4B-C17	46341	NA	NA	0.00E+00	NA	NA	NA
A4B-C18	59593	NA	NA	0.00E+00	NA	NA	NA
A6GAE-C01	42605	NA	NA	0.00E+00	NA	NA	NA
A6GAE-C02	45294	NA	NA	0.00E+00	NA	NA	NA
A6GAE-C03	45365	NA	NA	0.00E+00	NA	NA	NA
A6GAE-C04	56793	NA	NA	0.00E+00	NA	NA	NA
A6GAE-C05	44959	NA	NA	0.00E+00	NA	NA	NA
A6GAE-C06	32461	NA	NA	0.00E+00	NA	NA	NA
A6GAE-C07	45094	NA	NA	0.00E+00	NA	NA	NA
A6GAE-C08	38422	NA	NA	0.00E+00	NA	NA	NA
A6GAE-C09	60191	NA	NA	0.00E+00	NA	NA	NA
A6GAE-C10	61472	NA	NA	0.00E+00	NA	NA	NA
A6GAE-C11	41282	NA	NA	0.00E+00	NA	NA	NA
A6GAE-C12	62502	NA	NA	0.00E+00	NA	NA	NA
A6GAE-C13	38227	NA	NA	0.00E+00	NA	NA	NA
A6GAE-C14	52259	NA	NA	0.00E+00	NA	NA	NA
A6GAE-C15	50818	NA	NA	0.00E+00	NA	NA	NA
A6GAE-C16	32855	NA	NA	0.00E+00	NA	NA	NA
A6GAE-C17	33064	NA	NA	0.00E+00	NA	NA	NA
A6GAE-C18	38040	NA	NA	0.00E+00	NA	NA	NA
A6P1-C-01	56631	NA	NA	0.00E+00	NA	NA	NA
A6P1-C-03	35655	NA	NA	0.00E+00	NA	NA	NA
A6P1-C-05	52569	NA	NA	0.00E+00	NA	NA	NA
A6P1-C-06	59646	NA	NA	0.00E+00	NA	NA	NA
A6P1-C-07	59654	NA	NA	0.00E+00	NA	NA	NA
A6P1-C-08	59645	NA	NA	0.00E+00	NA	NA	NA
A6P1-C-09	59646	NA	NA	0.00E+00	NA	NA	NA
A6P1-C-10	59647	NA	NA	0.00E+00	NA	NA	NA
A6P1-C-11	33328	NA	NA	0.00E+00	NA	NA	NA
A6P2-PC01	61745	NA	NA	0.00E+00	NA	NA	NA
A6P2-PC02	62262	NA	NA	0.00E+00	NA	NA	NA
A6P2-PC03	61174	NA	NA	0.00E+00	NA	NA	NA
A6P2-PC04	52308	NA	NA	0.00E+00	NA	NA	NA
A6P2-PC05	62304	NA	NA	0.00E+00	NA	NA	NA
A6-RDBA-C01	40199	NA	NA	0.00E+00	NA	NA	NA
A6-RDBA-C02	48412	NA	NA	0.00E+00	NA	NA	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 5

Certification Units	Area sq ft	Carbazole ug/g	Carbon disulfide ug/g	Carbon tetrachloride ug/g	Chlordane ug/g	Chlorobenzene ug/g	Chloroform ug/g
A6-RDBA-C03	40823	NA	NA	0.00E+00	NA	NA	NA
A6-SP7-C01	10478	NA	NA	0.00E+00	NA	NA	NA
A6-SP7-C02	23404	NA	NA	0.00E+00	NA	NA	NA
A6-SP7-C03	51377	NA	NA	0.00E+00	NA	NA	NA
A6-SP7-C04	51236	NA	NA	0.00E+00	NA	NA	NA
A6-SP7-C05	43105	NA	NA	0.00E+00	NA	NA	NA
A6-SP7-C06	61932	NA	NA	0.00E+00	NA	NA	NA
A6-SWL-C01	33854	NA	NA	0.00E+00	NA	NA	NA
A6-SWL-C02	43705	NA	NA	0.00E+00	NA	NA	NA
A6-SWL-C03	46278	NA	NA	0.00E+00	NA	NA	NA
A6-SWL-C04	62483	NA	NA	0.00E+00	NA	NA	NA
A6-SWMP-C01	39509	NA	NA	0.00E+00	NA	NA	NA
MDC-C01	63140	NA	NA	0.00E+00	NA	NA	NA
MDC-C02	49961	NA	NA	0.00E+00	NA	NA	NA
MDC-C03	49959	NA	NA	0.00E+00	NA	NA	NA
MDC-C04	49961	NA	NA	0.00E+00	NA	NA	NA
MDC-C05	49961	NA	NA	0.00E+00	NA	NA	NA
MDC-C06	49488	NA	NA	0.00E+00	NA	NA	NA
MDC-C07	62072	NA	NA	0.00E+00	NA	NA	NA
MDC-C08	60855	NA	NA	0.00E+00	NA	NA	NA
MDC-C09	59378	NA	NA	0.00E+00	NA	NA	NA
MDC-C10	62401	NA	NA	0.00E+00	NA	NA	NA
MDC-C11	60583	NA	NA	0.00E+00	NA	NA	NA
MDC-C12	60175	NA	NA	0.00E+00	NA	NA	NA
MDC-C13	62130	NA	NA	0.00E+00	NA	NA	NA
MDC-C14	62155	NA	NA	0.00E+00	NA	NA	NA
MDC-C15	62090	NA	NA	0.00E+00	NA	NA	NA
MDC-C16	61943	NA	NA	0.00E+00	NA	NA	NA
MDC-C17	59422	NA	NA	0.00E+00	NA	NA	NA
MDC-C18	60223	NA	NA	0.00E+00	NA	NA	NA
MDC-C19	62477	NA	NA	0.00E+00	NA	NA	NA
MDC-C20	62276	NA	NA	0.00E+00	NA	NA	NA
MDC-C21	62495	NA	NA	0.00E+00	NA	NA	NA
MDC-C22	62316	NA	NA	0.00E+00	NA	NA	NA
MDC-C23	62353	NA	NA	0.00E+00	NA	NA	NA
MDC-C24	60304	NA	NA	0.00E+00	NA	NA	NA
MDC-C25	47898	NA	NA	0.00E+00	NA	NA	NA
MDC-C26	30405	NA	NA	0.00E+00	NA	NA	NA
RLS-C01	62047	NA	NA	0.00E+00	NA	NA	NA
RLS-C02	61267	NA	NA	0.00E+00	NA	NA	NA
RLS-C03	62187	NA	NA	0.00E+00	NA	NA	NA
RLS-C04	38764	NA	NA	0.00E+00	NA	NA	NA
RLS-C05	41328	NA	NA	0.00E+00	NA	NA	NA
RLS-C06	35642	NA	NA	0.00E+00	NA	NA	NA
RLS-C07	48286	NA	NA	0.00E+00	NA	NA	NA
RLS-C08	54674	NA	NA	0.00E+00	NA	NA	NA
RLS-C09	34834	NA	NA	0.00E+00	NA	NA	NA
RLS-C10	49499	NA	NA	0.00E+00	NA	NA	NA
Maximum Value		NA	NA	2.60E-03	NA	NA	NA
Average (*used in Risk Calc.*)		NA	NA	1.36E-04	NA	NA	NA
Number of Cert Results		NA	NA	1.40E+01	NA	NA	NA
Number of Inserted Values		NA	NA	1.43E+02	NA	NA	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 5

Certification Units	Area sq ft	Chrysene ug/g	Cyanide ug/g	Cyclohexanone ug/g	Dibenzo(a,h)anthracene ug/g	3,3-Dichlorobenzidine ug/g
6E-C01	54860	1.48E-01	NA	NA	4.95E-02	NA
6E-C02	61241	1.71E-01	NA	NA	3.82E-01	NA
6E-C03	44952	3.56E-01	NA	NA	1.50E-01	NA
6E-C04	45383	1.31E-01	NA	NA	4.26E-02	NA
6E-C05	53943	1.03E+00	NA	NA	4.43E-02	NA
6E-C06	60762	1.48E-01	NA	NA	8.42E-02	NA
6E-C07	58798	2.05E-01	NA	NA	4.38E-02	NA
6E-C08	61018	2.34E-01	NA	NA	1.40E-01	NA
6E-C09	61907	3.48E+00	NA	NA	4.09E-02	NA
6E-C10	47236	3.07E-01	NA	NA	3.98E-02	NA
6E-C11	113659	6.03E-01	NA	NA	4.03E-02	NA
6E-C12	95954	2.14E-01	NA	NA	4.44E-02	NA
6E-C18	25562	2.48E-01	NA	NA	3.85E-02	NA
6E-C19	45819	6.14E-01	NA	NA	1.54E-01	NA
A3A-C01	43801	1.20E+00	NA	NA	3.60E-02	NA
A3A-C02	21413	0.00E+00	NA	NA	0.00E+00	NA
A3A-C03	19977	0.00E+00	NA	NA	0.00E+00	NA
A3A-C04	16324	0.00E+00	NA	NA	0.00E+00	NA
A3A-C05	42874	0.00E+00	NA	NA	0.00E+00	NA
A3A-C06	40377	2.70E-01	NA	NA	2.10E-02	NA
A3A-C07	62498	0.00E+00	NA	NA	0.00E+00	NA
A3A-C08	33698	0.00E+00	NA	NA	0.00E+00	NA
A3A-C09	62497	0.00E+00	NA	NA	0.00E+00	NA
A3A-C10	62478	0.00E+00	NA	NA	0.00E+00	NA
A3A-C11	61184	0.00E+00	NA	NA	0.00E+00	NA
A3A-C12	59032	1.50E+00	NA	NA	3.50E-02	NA
A3A-C13	46433	6.40E-01	NA	NA	1.80E-02	NA
A3A-C14	42299	0.00E+00	NA	NA	0.00E+00	NA
A3A-C15	56140	5.90E-02	NA	NA	2.80E-02	NA
A3A-C16	48979	7.10E-02	NA	NA	1.80E-02	NA
A3A-C17	46427	0.00E+00	NA	NA	0.00E+00	NA
A3A-C18	47482	0.00E+00	NA	NA	0.00E+00	NA
A3B-C01	12988	0.00E+00	NA	NA	0.00E+00	NA
A3B-C02	21204	0.00E+00	NA	NA	0.00E+00	NA
A3B-C03	35467	0.00E+00	NA	NA	0.00E+00	NA
A3B-C04	46128	0.00E+00	NA	NA	0.00E+00	NA
A3B-C05	34291	0.00E+00	NA	NA	0.00E+00	NA
A3B-C06	44405	0.00E+00	NA	NA	0.00E+00	NA
A3B-C07	35924	0.00E+00	NA	NA	0.00E+00	NA
A3B-C08	32223	0.00E+00	NA	NA	0.00E+00	NA
A3B-C09	62500	0.00E+00	NA	NA	0.00E+00	NA
A3B-C10	59088	0.00E+00	NA	NA	0.00E+00	NA
A3B-C11	59891	0.00E+00	NA	NA	0.00E+00	NA
A3B-C12	60100	0.00E+00	NA	NA	0.00E+00	NA
A4A-C1	54975	0.00E+00	NA	NA	0.00E+00	NA
A4A-C2	58661	0.00E+00	NA	NA	0.00E+00	NA
A4A-C3	59341	0.00E+00	NA	NA	0.00E+00	NA
A4A-C4	59340	0.00E+00	NA	NA	0.00E+00	NA
A4A-C5	59340	0.00E+00	NA	NA	0.00E+00	NA
A4A-C6	59318	0.00E+00	NA	NA	0.00E+00	NA
A4A-C7	54974	0.00E+00	NA	NA	0.00E+00	NA
A4A-C8	55208	0.00E+00	NA	NA	0.00E+00	NA
A4B2-C03	48771	0.00E+00	NA	NA	0.00E+00	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 5

Certification Units	Area sq ft	Chrysene ug/g	Cyanide ug/g	Cyclohexanone ug/g	Dibenzo(a,h)anthracene ug/g	3,3-Dichlorobenzidine ug/g
A4B2-C04	59541	0.00E+00	NA	NA	0.00E+00	NA
A4B2-C05	62159	0.00E+00	NA	NA	0.00E+00	NA
A4B2-C06	60995	0.00E+00	NA	NA	0.00E+00	NA
A4B2-C07	62054	0.00E+00	NA	NA	0.00E+00	NA
A4B2-C08	51901	0.00E+00	NA	NA	0.00E+00	NA
A4B2-C09	57551	0.00E+00	NA	NA	0.00E+00	NA
A4B2-C10	46565	0.00E+00	NA	NA	0.00E+00	NA
A4B2-C11	44162	0.00E+00	NA	NA	0.00E+00	NA
A4B2-C12	52826	0.00E+00	NA	NA	0.00E+00	NA
A4B2-C13	60981	0.00E+00	NA	NA	0.00E+00	NA
A4B2-C19	43570	0.00E+00	NA	NA	0.00E+00	NA
A4B-C08	61718	0.00E+00	NA	NA	0.00E+00	NA
A4B-C09	61721	0.00E+00	NA	NA	0.00E+00	NA
A4B-C10	61454	0.00E+00	NA	NA	0.00E+00	NA
A4B-C11	61860	0.00E+00	NA	NA	0.00E+00	NA
A4B-C12	48596	0.00E+00	NA	NA	0.00E+00	NA
A4B-C13	61132	0.00E+00	NA	NA	0.00E+00	NA
A4B-C14	59718	0.00E+00	NA	NA	0.00E+00	NA
A4B-C15	49531	0.00E+00	NA	NA	0.00E+00	NA
A4B-C16	49968	0.00E+00	NA	NA	0.00E+00	NA
A4B-C17	46341	0.00E+00	NA	NA	0.00E+00	NA
A4B-C18	59593	0.00E+00	NA	NA	0.00E+00	NA
A6GAE-C01	42605	0.00E+00	NA	NA	0.00E+00	NA
A6GAE-C02	45294	0.00E+00	NA	NA	0.00E+00	NA
A6GAE-C03	45365	0.00E+00	NA	NA	0.00E+00	NA
A6GAE-C04	56793	0.00E+00	NA	NA	0.00E+00	NA
A6GAE-C05	44959	0.00E+00	NA	NA	0.00E+00	NA
A6GAE-C06	32461	0.00E+00	NA	NA	0.00E+00	NA
A6GAE-C07	45094	0.00E+00	NA	NA	0.00E+00	NA
A6GAE-C08	38422	0.00E+00	NA	NA	0.00E+00	NA
A6GAE-C09	60191	0.00E+00	NA	NA	0.00E+00	NA
A6GAE-C10	61472	0.00E+00	NA	NA	0.00E+00	NA
A6GAE-C11	41282	0.00E+00	NA	NA	0.00E+00	NA
A6GAE-C12	62502	0.00E+00	NA	NA	0.00E+00	NA
A6GAE-C13	38227	0.00E+00	NA	NA	0.00E+00	NA
A6GAE-C14	52259	0.00E+00	NA	NA	4.22E-02	NA
A6GAE-C15	50818	0.00E+00	NA	NA	4.21E-02	NA
A6GAE-C16	32855	0.00E+00	NA	NA	4.05E-02	NA
A6GAE-C17	33064	0.00E+00	NA	NA	0.00E+00	NA
A6GAE-C18	38040	0.00E+00	NA	NA	0.00E+00	NA
A6P1-C-01	56631	4.50E-01	NA	NA	5.40E-02	NA
A6P1-C-03	35655	1.40E-01	NA	NA	4.10E-02	NA
A6P1-C-05	52569	0.00E+00	NA	NA	0.00E+00	NA
A6P1-C-06	59646	0.00E+00	NA	NA	0.00E+00	NA
A6P1-C-07	59654	0.00E+00	NA	NA	0.00E+00	NA
A6P1-C-08	59645	0.00E+00	NA	NA	0.00E+00	NA
A6P1-C-09	59646	0.00E+00	NA	NA	0.00E+00	NA
A6P1-C-10	59647	0.00E+00	NA	NA	0.00E+00	NA
A6P1-C-11	33328	0.00E+00	NA	NA	0.00E+00	NA
A6P2-PC01	61745	0.00E+00	NA	NA	0.00E+00	NA
A6P2-PC02	62262	0.00E+00	NA	NA	0.00E+00	NA
A6P2-PC03	61174	0.00E+00	NA	NA	0.00E+00	NA
A6P2-PC04	52308	0.00E+00	NA	NA	0.00E+00	NA
A6P2-PC05	62304	4.11E-01	NA	NA	4.21E-02	NA
A6-RDBA-C01	40199	1.11E-01	NA	NA	4.03E-02	NA
A6-RDBA-C02	48412	2.18E-01	NA	NA	4.84E-02	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 5

Certification Units	Area sq ft	Chrysene ug/g	Cyanide ug/g	Cyclohexanone ug/g	Dibenzo(a,h)anthracene ug/g	3,3-Dichlorobenzidine ug/g
A6-RDBA-C03	40823	2.47E-01	NA	NA	4.25E-02	NA
A6-SP7-C01	10478	0.00E+00	NA	NA	3.99E-02	NA
A6-SP7-C02	23404	0.00E+00	NA	NA	4.11E-02	NA
A6-SP7-C03	51377	0.00E+00	NA	NA	4.18E-02	NA
A6-SP7-C04	51236	0.00E+00	NA	NA	4.09E-02	NA
A6-SP7-C05	43105	0.00E+00	NA	NA	4.47E-02	NA
A6-SP7-C06	61932	0.00E+00	NA	NA	4.20E-02	NA
A6-SWL-C01	33854	0.00E+00	NA	NA	0.00E+00	NA
A6-SWL-C02	43705	0.00E+00	NA	NA	0.00E+00	NA
A6-SWL-C03	46278	0.00E+00	NA	NA	0.00E+00	NA
A6-SWL-C04	62483	0.00E+00	NA	NA	0.00E+00	NA
A6-SWMP-C01	39509	0.00E+00	NA	NA	0.00E+00	NA
MDC-C01	63140	0.00E+00	NA	NA	0.00E+00	NA
MDC-C02	49961	0.00E+00	NA	NA	0.00E+00	NA
MDC-C03	49959	0.00E+00	NA	NA	0.00E+00	NA
MDC-C04	49961	0.00E+00	NA	NA	0.00E+00	NA
MDC-C05	49961	0.00E+00	NA	NA	0.00E+00	NA
MDC-C06	49488	0.00E+00	NA	NA	0.00E+00	NA
MDC-C07	62072	0.00E+00	NA	NA	0.00E+00	NA
MDC-C08	60855	0.00E+00	NA	NA	0.00E+00	NA
MDC-C09	59378	0.00E+00	NA	NA	0.00E+00	NA
MDC-C10	62401	0.00E+00	NA	NA	0.00E+00	NA
MDC-C11	60583	0.00E+00	NA	NA	0.00E+00	NA
MDC-C12	60175	0.00E+00	NA	NA	0.00E+00	NA
MDC-C13	62130	5.13E-02	NA	NA	4.02E-02	NA
MDC-C14	62155	3.98E-02	NA	NA	3.98E-02	NA
MDC-C15	62090	0.00E+00	NA	NA	0.00E+00	NA
MDC-C16	61943	0.00E+00	NA	NA	0.00E+00	NA
MDC-C17	59422	0.00E+00	NA	NA	0.00E+00	NA
MDC-C18	60223	0.00E+00	NA	NA	0.00E+00	NA
MDC-C19	62477	0.00E+00	NA	NA	0.00E+00	NA
MDC-C20	62276	0.00E+00	NA	NA	0.00E+00	NA
MDC-C21	62495	0.00E+00	NA	NA	0.00E+00	NA
MDC-C22	62316	0.00E+00	NA	NA	0.00E+00	NA
MDC-C23	62353	0.00E+00	NA	NA	0.00E+00	NA
MDC-C24	60304	0.00E+00	NA	NA	0.00E+00	NA
MDC-C25	47898	0.00E+00	NA	NA	0.00E+00	NA
MDC-C26	30405	0.00E+00	NA	NA	0.00E+00	NA
RLS-C01	62047	0.00E+00	NA	NA	0.00E+00	NA
RLS-C02	61267	0.00E+00	NA	NA	0.00E+00	NA
RLS-C03	62187	0.00E+00	NA	NA	0.00E+00	NA
RLS-C04	38764	4.95E-02	NA	NA	4.95E-02	NA
RLS-C05	41328	4.58E-02	NA	NA	4.58E-02	NA
RLS-C06	35642	0.00E+00	NA	NA	4.06E-02	NA
RLS-C07	48286	0.00E+00	NA	NA	4.09E-02	NA
RLS-C08	54674	0.00E+00	NA	NA	0.00E+00	NA
RLS-C09	34834	0.00E+00	NA	NA	0.00E+00	NA
RLS-C10	49499	0.00E+00	NA	NA	4.27E-02	NA
Maximum Value		3.48E+00	NA	NA	3.82E-01	NA
Average (*used in Risk Calc.*)		8.53E-02	NA	NA	1.52E-02	NA
Number of Cert Results		3.00E+01	NA	NA	4.20E+01	NA
Number of Inserted Values		1.27E+02	NA	NA	1.15E+02	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 5

Certification Units	Area sq ft	1,2-dichloroethane ug/g	1,1-Dichloroethylene ug/g	Dieldrin ug/g	Di-n-octylphthalate ug/g	Ethylbenzene ug/g
6E-C01	54860	1.80E-03	2.10E-03	5.90E-03	NA	1.80E-03
6E-C02	61241	1.30E-03	2.40E-03	1.70E-03	NA	1.30E-03
6E-C03	44952	1.40E-03	3.10E-03	1.70E-03	NA	1.40E-03
6E-C04	45383	1.40E-03	2.80E-03	1.70E-03	NA	1.40E-03
6E-C05	53943	2.60E-03	2.60E-03	5.30E-03	NA	2.60E-03
6E-C06	60762	1.50E-03	1.70E-03	1.69E-03	NA	1.50E-03
6E-C07	58798	1.50E-03	1.50E-03	1.80E-03	NA	1.50E-03
6E-C08	61018	1.30E-03	1.30E-03	1.60E-03	NA	1.30E-03
6E-C09	61907	2.00E-03	3.40E-03	1.60E-03	NA	1.80E-03
6E-C10	47236	1.10E-03	1.10E-03	1.60E-03	NA	1.10E-03
6E-C11	113659	2.20E-03	3.20E-03	1.60E-03	NA	2.20E-03
6E-C12	95954	1.20E-03	1.20E-03	1.80E-03	NA	1.20E-03
6E-C18	25562	1.10E-03	1.10E-03	1.50E-03	NA	1.10E-03
6E-C19	45819	1.40E-03	1.40E-03	1.50E-03	NA	1.40E-03
A3A-C01	43801	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
A3A-C02	21413	1.20E-03	7.20E-03	0.00E+00	NA	0.00E+00
A3A-C03	19977	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
A3A-C04	16324	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
A3A-C05	42874	1.10E-03	5.40E-03	0.00E+00	NA	0.00E+00
A3A-C06	40377	1.70E-03	4.40E-03	0.00E+00	NA	0.00E+00
A3A-C07	62498	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
A3A-C08	33698	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
A3A-C09	62497	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
A3A-C10	62478	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
A3A-C11	61184	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
A3A-C12	59032	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
A3A-C13	46433	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
A3A-C14	42299	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
A3A-C15	56140	1.20E-03	0.00E+00	0.00E+00	NA	0.00E+00
A3A-C16	48979	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
A3A-C17	46427	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
A3A-C18	47482	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
A3B-C01	12988	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
A3B-C02	21204	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
A3B-C03	35467	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
A3B-C04	46128	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
A3B-C05	34291	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
A3B-C06	44405	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
A3B-C07	35924	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
A3B-C08	32223	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
A3B-C09	62500	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
A3B-C10	59088	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
A3B-C11	59891	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
A3B-C12	60100	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
A4A-C1	54975	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
A4A-C2	58661	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
A4A-C3	59341	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
A4A-C4	59340	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
A4A-C5	59340	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
A4A-C6	59318	1.00E-03	5.80E-03	0.00E+00	NA	0.00E+00
A4A-C7	54974	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
A4A-C8	55208	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
A4B2-C03	48771	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 5

Certification Units	Area sq ft	1,2-dichloroethane ug/g	1,1-Dichloroethylene ug/g	Dieldrin ug/g	Di-n-octylphthalate ug/g	Ethylbenzene ug/g
A4B2-C04	59541	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
A4B2-C05	62159	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
A4B2-C06	60995	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
A4B2-C07	62054	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
A4B2-C08	51901	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
A4B2-C09	57551	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
A4B2-C10	46565	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
A4B2-C11	44162	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
A4B2-C12	52826	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
A4B2-C13	60981	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
A4B2-C19	43570	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
A4B-C08	61718	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
A4B-C09	61721	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
A4B-C10	61454	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
A4B-C11	61860	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
A4B-C12	48596	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
A4B-C13	61132	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
A4B-C14	59718	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
A4B-C15	49531	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
A4B-C16	49968	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
A4B-C17	46341	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
A4B-C18	59593	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
A6GAE-C01	42605	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
A6GAE-C02	45294	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
A6GAE-C03	45365	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
A6GAE-C04	56793	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
A6GAE-C05	44959	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
A6GAE-C06	32461	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
A6GAE-C07	45094	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
A6GAE-C08	38422	0.00E+00	0.00E+00	1.60E-03	NA	0.00E+00
A6GAE-C09	60191	0.00E+00	0.00E+00	1.80E-03	NA	0.00E+00
A6GAE-C10	61472	1.60E-03	6.80E-03	1.70E-03	NA	0.00E+00
A6GAE-C11	41282	1.20E-03	1.90E-03	1.70E-03	NA	0.00E+00
A6GAE-C12	62502	0.00E+00	0.00E+00	1.60E-03	NA	0.00E+00
A6GAE-C13	38227	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
A6GAE-C14	52259	1.40E-03	2.30E-03	1.70E-03	NA	0.00E+00
A6GAE-C15	50818	1.30E-03	5.50E-03	1.70E-03	NA	0.00E+00
A6GAE-C16	32855	1.50E-03	1.50E-03	1.60E-03	NA	0.00E+00
A6GAE-C17	33064	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
A6GAE-C18	38040	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
A6P1-C-01	56631	0.00E+00	1.90E-03	0.00E+00	NA	0.00E+00
A6P1-C-03	35655	1.20E-03	0.00E+00	0.00E+00	NA	0.00E+00
A6P1-C-05	52569	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
A6P1-C-06	59646	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
A6P1-C-07	59654	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
A6P1-C-08	59645	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
A6P1-C-09	59646	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
A6P1-C-10	59647	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
A6P1-C-11	33328	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
A6P2-PC01	61745	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
A6P2-PC02	62262	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
A6P2-PC03	61174	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
A6P2-PC04	52308	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
A6P2-PC05	62304	0.00E+00	1.60E-03	1.70E-03	NA	0.00E+00
A6-RDBA-C01	40199	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
A6-RDBA-C02	48412	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 5

Certification Units	Area sq ft	1,2-dichloroethane ug/g	1,1-Dichloroethylene ug/g	Dieldrin ug/g	Di-n-octylphthalate ug/g	Ethylbenzene ug/g
A6-RDBA-C03	40823	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
A6-SP7-C01	10478	1.10E-03	1.10E-03	1.60E-03	NA	0.00E+00
A6-SP7-C02	23404	1.40E-03	1.90E-03	1.60E-03	NA	0.00E+00
A6-SP7-C03	51377	1.20E-03	1.20E-03	2.96E-02	NA	0.00E+00
A6-SP7-C04	51236	1.10E-03	2.60E-03	1.60E-03	NA	0.00E+00
A6-SP7-C05	43105	1.20E-03	1.20E-03	1.80E-03	NA	0.00E+00
A6-SP7-C06	61932	1.20E-03	2.50E-03	1.70E-03	NA	0.00E+00
A6-SWL-C01	33854	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
A6-SWL-C02	43705	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
A6-SWL-C03	46278	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
A6-SWL-C04	62483	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
A6-SWMP-C01	39509	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
MDC-C01	63140	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
MDC-C02	49961	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
MDC-C03	49959	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
MDC-C04	49961	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
MDC-C05	49961	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
MDC-C06	49488	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
MDC-C07	62072	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
MDC-C08	60855	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
MDC-C09	59378	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
MDC-C10	62401	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
MDC-C11	60583	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
MDC-C12	60175	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
MDC-C13	62130	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
MDC-C14	62155	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
MDC-C15	62090	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
MDC-C16	61943	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
MDC-C17	59422	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
MDC-C18	60223	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
MDC-C19	62477	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
MDC-C20	62276	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
MDC-C21	62495	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
MDC-C22	62316	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
MDC-C23	62353	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
MDC-C24	60304	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
MDC-C25	47898	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
MDC-C26	30405	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
RLS-C01	62047	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
RLS-C02	61267	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
RLS-C03	62187	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
RLS-C04	38764	0.00E+00	1.10E-03	0.00E+00	NA	0.00E+00
RLS-C05	41328	0.00E+00	1.30E-03	0.00E+00	NA	0.00E+00
RLS-C06	35642	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
RLS-C07	48286	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
RLS-C08	54674	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
RLS-C09	34834	0.00E+00	0.00E+00	0.00E+00	NA	0.00E+00
RLS-C10	49499	0.00E+00	1.50E-03	1.70E-03	NA	0.00E+00
Maximum Value		2.60E-03	7.20E-03	2.96E-02	NA	2.60E-03
Average (*used in Risk Calc.*)		2.76E-04	5.58E-04	5.46E-04	NA	1.38E-04
Number of Cert Results		3.10E+01	3.40E+01	3.00E+01	NA	1.40E+01
Number of Inserted Values		1.26E+02	1.23E+02	1.27E+02	NA	1.43E+02

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 5

Certification Units	Area sq ft	Ethyl ether ug/g	Heptachlorodibenzofuran ug/g	Heptachlorodibenzo-p-dioxin ug/g	Hexachlorodibenzofuran ug/g
6E-C01	54860	NA	NA	NA	NA
6E-C02	61241	NA	NA	NA	NA
6E-C03	44952	NA	NA	NA	NA
6E-C04	45383	NA	NA	NA	NA
6E-C05	53943	NA	NA	NA	NA
6E-C06	60762	NA	NA	NA	NA
6E-C07	58798	NA	NA	NA	NA
6E-C08	61018	NA	NA	NA	NA
6E-C09	61907	NA	NA	NA	NA
6E-C10	47236	NA	NA	NA	NA
6E-C11	113659	NA	NA	NA	NA
6E-C12	95954	NA	NA	NA	NA
6E-C18	25562	NA	NA	NA	NA
6E-C19	45819	NA	NA	NA	NA
A3A-C01	43801	NA	NA	NA	NA
A3A-C02	21413	NA	NA	NA	NA
A3A-C03	19977	NA	NA	NA	NA
A3A-C04	16324	NA	NA	NA	NA
A3A-C05	42874	NA	NA	NA	NA
A3A-C06	40377	NA	NA	NA	NA
A3A-C07	62498	NA	NA	NA	NA
A3A-C08	33698	NA	NA	NA	NA
A3A-C09	62497	NA	NA	NA	NA
A3A-C10	62478	NA	NA	NA	NA
A3A-C11	61184	NA	NA	NA	NA
A3A-C12	59032	NA	NA	NA	NA
A3A-C13	46433	NA	NA	NA	NA
A3A-C14	42299	NA	NA	NA	NA
A3A-C15	56140	NA	NA	NA	NA
A3A-C16	48979	NA	NA	NA	NA
A3A-C17	46427	NA	NA	NA	NA
A3A-C18	47482	NA	NA	NA	NA
A3B-C01	12988	NA	NA	NA	NA
A3B-C02	21204	NA	NA	NA	NA
A3B-C03	35467	NA	NA	NA	NA
A3B-C04	46128	NA	NA	NA	NA
A3B-C05	34291	NA	NA	NA	NA
A3B-C06	44405	NA	NA	NA	NA
A3B-C07	35924	NA	NA	NA	NA
A3B-C08	32223	NA	NA	NA	NA
A3B-C09	62500	NA	NA	NA	NA
A3B-C10	59088	NA	NA	NA	NA
A3B-C11	59891	NA	NA	NA	NA
A3B-C12	60100	NA	NA	NA	NA
A4A-C1	54975	NA	NA	NA	NA
A4A-C2	58661	NA	NA	NA	NA
A4A-C3	59341	NA	NA	NA	NA
A4A-C4	59340	NA	NA	NA	NA
A4A-C5	59340	NA	NA	NA	NA
A4A-C6	59318	NA	NA	NA	NA
A4A-C7	54974	NA	NA	NA	NA
A4A-C8	55208	NA	NA	NA	NA
A4B2-C03	48771	NA	NA	NA	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 5

Certification Units	Area sq ft	Ethyl ether ug/g	Heptachlorodibenzofuran ug/g	Heptachlorodibenzo-p-dioxin ug/g	Hexachlorodibenzofuran ug/g
A4B2-C04	59541	NA	NA	NA	NA
A4B2-C05	62159	NA	NA	NA	NA
A4B2-C06	60995	NA	NA	NA	NA
A4B2-C07	62054	NA	NA	NA	NA
A4B2-C08	51901	NA	NA	NA	NA
A4B2-C09	57551	NA	NA	NA	NA
A4B2-C10	46565	NA	NA	NA	NA
A4B2-C11	44162	NA	NA	NA	NA
A4B2-C12	52826	NA	NA	NA	NA
A4B2-C13	60981	NA	NA	NA	NA
A4B2-C19	43570	NA	NA	NA	NA
A4B-C08	61718	NA	NA	NA	NA
A4B-C09	61721	NA	NA	NA	NA
A4B-C10	61454	NA	NA	NA	NA
A4B-C11	61860	NA	NA	NA	NA
A4B-C12	48596	NA	NA	NA	NA
A4B-C13	61132	NA	NA	NA	NA
A4B-C14	59718	NA	NA	NA	NA
A4B-C15	49531	NA	NA	NA	NA
A4B-C16	49968	NA	NA	NA	NA
A4B-C17	46341	NA	NA	NA	NA
A4B-C18	59593	NA	NA	NA	NA
A6GAE-C01	42605	NA	NA	NA	NA
A6GAE-C02	45294	NA	NA	NA	NA
A6GAE-C03	45365	NA	NA	NA	NA
A6GAE-C04	56793	NA	NA	NA	NA
A6GAE-C05	44959	NA	NA	NA	NA
A6GAE-C06	32461	NA	NA	NA	NA
A6GAE-C07	45094	NA	NA	NA	NA
A6GAE-C08	38422	NA	NA	NA	NA
A6GAE-C09	60191	NA	NA	NA	NA
A6GAE-C10	61472	NA	NA	NA	NA
A6GAE-C11	41282	NA	NA	NA	NA
A6GAE-C12	62502	NA	NA	NA	NA
A6GAE-C13	38227	NA	NA	NA	NA
A6GAE-C14	52259	NA	NA	NA	NA
A6GAE-C15	50818	NA	NA	NA	NA
A6GAE-C16	32855	NA	NA	NA	NA
A6GAE-C17	33064	NA	NA	NA	NA
A6GAE-C18	38040	NA	NA	NA	NA
A6P1-C-01	56631	NA	NA	NA	NA
A6P1-C-03	35655	NA	NA	NA	NA
A6P1-C-05	52569	NA	NA	NA	NA
A6P1-C-06	59646	NA	NA	NA	NA
A6P1-C-07	59654	NA	NA	NA	NA
A6P1-C-08	59645	NA	NA	NA	NA
A6P1-C-09	59646	NA	NA	NA	NA
A6P1-C-10	59647	NA	NA	NA	NA
A6P1-C-11	33328	NA	NA	NA	NA
A6P2-PC01	61745	NA	NA	NA	NA
A6P2-PC02	62262	NA	NA	NA	NA
A6P2-PC03	61174	NA	NA	NA	NA
A6P2-PC04	52308	NA	NA	NA	NA
A6P2-PC05	62304	NA	NA	NA	NA
A6-RDBA-C01	40199	NA	NA	NA	NA
A6-RDBA-C02	48412	NA	NA	NA	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 5

Certification Units	Area sq ft	Ethyl ether ug/g	Heptachlorodibenzofuran ug/g	Heptachlorodibenzo-p-dioxin ug/g	Hexachlorodibenzofuran ug/g
A6-RDBA-C03	40823	NA	NA	NA	NA
A6-SP7-C01	10478	NA	NA	NA	NA
A6-SP7-C02	23404	NA	NA	NA	NA
A6-SP7-C03	51377	NA	NA	NA	NA
A6-SP7-C04	51236	NA	NA	NA	NA
A6-SP7-C05	43105	NA	NA	NA	NA
A6-SP7-C06	61932	NA	NA	NA	NA
A6-SWL-C01	33854	NA	NA	NA	NA
A6-SWL-C02	43705	NA	NA	NA	NA
A6-SWL-C03	46278	NA	NA	NA	NA
A6-SWL-C04	62483	NA	NA	NA	NA
A6-SWMP-C01	39509	NA	NA	NA	NA
MDC-C01	63140	NA	NA	NA	NA
MDC-C02	49961	NA	NA	NA	NA
MDC-C03	49959	NA	NA	NA	NA
MDC-C04	49961	NA	NA	NA	NA
MDC-C05	49961	NA	NA	NA	NA
MDC-C06	49488	NA	NA	NA	NA
MDC-C07	62072	NA	NA	NA	NA
MDC-C08	60855	NA	NA	NA	NA
MDC-C09	59378	NA	NA	NA	NA
MDC-C10	62401	NA	NA	NA	NA
MDC-C11	60583	NA	NA	NA	NA
MDC-C12	60175	NA	NA	NA	NA
MDC-C13	62130	NA	NA	NA	NA
MDC-C14	62155	NA	NA	NA	NA
MDC-C15	62090	NA	NA	NA	NA
MDC-C16	61943	NA	NA	NA	NA
MDC-C17	59422	NA	NA	NA	NA
MDC-C18	60223	NA	NA	NA	NA
MDC-C19	62477	NA	NA	NA	NA
MDC-C20	62276	NA	NA	NA	NA
MDC-C21	62495	NA	NA	NA	NA
MDC-C22	62316	NA	NA	NA	NA
MDC-C23	62353	NA	NA	NA	NA
MDC-C24	60304	NA	NA	NA	NA
MDC-C25	47898	NA	NA	NA	NA
MDC-C26	30405	NA	NA	NA	NA
RLS-C01	62047	NA	NA	NA	NA
RLS-C02	61267	NA	NA	NA	NA
RLS-C03	62187	NA	NA	NA	NA
RLS-C04	38764	NA	NA	NA	NA
RLS-C05	41328	NA	NA	NA	NA
RLS-C06	35642	NA	NA	NA	NA
RLS-C07	48286	NA	NA	NA	NA
RLS-C08	54674	NA	NA	NA	NA
RLS-C09	34834	NA	NA	NA	NA
RLS-C10	49499	NA	NA	NA	NA
Maximum Value		NA	NA	NA	NA
Average (*used in Risk Calc.*)		NA	NA	NA	NA
Number of Cert Results		NA	NA	NA	NA
Number of Inserted Values		NA	NA	NA	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 5

Certification Units	Area sq ft	Hexachlorodibenzo-p-dioxin ug/g	Indeno(1,2,3-cd)pyrene ug/g	Methanol ug/g	Methyl-2-pentanone ug/g
6E-C01	54860	NA	1.92E-01	NA	9.00E-03
6E-C02	61241	NA	1.40E-01	NA	6.50E-03
6E-C03	44952	NA	1.54E-01	NA	7.20E-03
6E-C04	45383	NA	1.46E-01	NA	7.00E-03
6E-C05	53943	NA	3.64E-01	NA	1.28E-02
6E-C06	60762	NA	2.15E-01	NA	7.40E-03
6E-C07	58798	NA	1.02E-01	NA	7.60E-03
6E-C08	61018	NA	2.14E-01	NA	6.30E-03
6E-C09	61907	NA	1.27E+00	NA	1.26E-02
6E-C10	47236	NA	2.05E-01	NA	5.60E-03
6E-C11	113659	NA	2.99E-01	NA	1.08E-02
6E-C12	95954	NA	1.12E-01	NA	5.90E-03
6E-C18	25562	NA	1.51E-01	NA	5.70E-03
6E-C19	45819	NA	2.65E-01	NA	6.80E-03
A3A-C01	43801	NA	5.50E-01	NA	0.00E+00
A3A-C02	21413	NA	0.00E+00	NA	0.00E+00
A3A-C03	19977	NA	0.00E+00	NA	0.00E+00
A3A-C04	16324	NA	0.00E+00	NA	0.00E+00
A3A-C05	42874	NA	0.00E+00	NA	0.00E+00
A3A-C06	40377	NA	1.10E-01	NA	0.00E+00
A3A-C07	62498	NA	0.00E+00	NA	0.00E+00
A3A-C08	33698	NA	0.00E+00	NA	0.00E+00
A3A-C09	62497	NA	0.00E+00	NA	0.00E+00
A3A-C10	62478	NA	0.00E+00	NA	0.00E+00
A3A-C11	61184	NA	0.00E+00	NA	0.00E+00
A3A-C12	59032	NA	6.40E-01	NA	0.00E+00
A3A-C13	46433	NA	2.70E-01	NA	0.00E+00
A3A-C14	42299	NA	0.00E+00	NA	0.00E+00
A3A-C15	56140	NA	2.20E-02	NA	0.00E+00
A3A-C16	48979	NA	2.40E-02	NA	0.00E+00
A3A-C17	46427	NA	0.00E+00	NA	0.00E+00
A3A-C18	47482	NA	0.00E+00	NA	0.00E+00
A3B-C01	12988	NA	0.00E+00	NA	0.00E+00
A3B-C02	21204	NA	0.00E+00	NA	0.00E+00
A3B-C03	35467	NA	0.00E+00	NA	0.00E+00
A3B-C04	46128	NA	0.00E+00	NA	0.00E+00
A3B-C05	34291	NA	0.00E+00	NA	0.00E+00
A3B-C06	44405	NA	0.00E+00	NA	0.00E+00
A3B-C07	35924	NA	0.00E+00	NA	0.00E+00
A3B-C08	32223	NA	0.00E+00	NA	0.00E+00
A3B-C09	62500	NA	0.00E+00	NA	0.00E+00
A3B-C10	59088	NA	0.00E+00	NA	0.00E+00
A3B-C11	59891	NA	0.00E+00	NA	0.00E+00
A3B-C12	60100	NA	0.00E+00	NA	0.00E+00
A4A-C1	54975	NA	0.00E+00	NA	0.00E+00
A4A-C2	58661	NA	0.00E+00	NA	0.00E+00
A4A-C3	59341	NA	0.00E+00	NA	0.00E+00
A4A-C4	59340	NA	0.00E+00	NA	0.00E+00
A4A-C5	59340	NA	0.00E+00	NA	0.00E+00
A4A-C6	59318	NA	0.00E+00	NA	0.00E+00
A4A-C7	54974	NA	0.00E+00	NA	0.00E+00
A4A-C8	55208	NA	0.00E+00	NA	0.00E+00
A4B2-C03	48771	NA	0.00E+00	NA	0.00E+00

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 5

Certification Units	Area sq ft	Hexachlorodibenzo-p-dioxin ug/g	Indeno(1,2,3-cd)pyrene ug/g	Methanol ug/g	Methyl-2-pentanone ug/g
A4B2-C04	59541	NA	0.00E+00	NA	0.00E+00
A4B2-C05	62159	NA	0.00E+00	NA	0.00E+00
A4B2-C06	60995	NA	0.00E+00	NA	0.00E+00
A4B2-C07	62054	NA	0.00E+00	NA	0.00E+00
A4B2-C08	51901	NA	0.00E+00	NA	0.00E+00
A4B2-C09	57551	NA	0.00E+00	NA	0.00E+00
A4B2-C10	46565	NA	0.00E+00	NA	0.00E+00
A4B2-C11	44162	NA	0.00E+00	NA	0.00E+00
A4B2-C12	52826	NA	0.00E+00	NA	0.00E+00
A4B2-C13	60981	NA	0.00E+00	NA	0.00E+00
A4B2-C19	43570	NA	0.00E+00	NA	0.00E+00
A4B-C08	61718	NA	0.00E+00	NA	0.00E+00
A4B-C09	61721	NA	0.00E+00	NA	0.00E+00
A4B-C10	61454	NA	0.00E+00	NA	0.00E+00
A4B-C11	61860	NA	0.00E+00	NA	0.00E+00
A4B-C12	48596	NA	0.00E+00	NA	0.00E+00
A4B-C13	61132	NA	0.00E+00	NA	0.00E+00
A4B-C14	59718	NA	0.00E+00	NA	0.00E+00
A4B-C15	49531	NA	0.00E+00	NA	0.00E+00
A4B-C16	49968	NA	0.00E+00	NA	0.00E+00
A4B-C17	46341	NA	0.00E+00	NA	0.00E+00
A4B-C18	59593	NA	0.00E+00	NA	0.00E+00
A6GAE-C01	42605	NA	0.00E+00	NA	0.00E+00
A6GAE-C02	45294	NA	0.00E+00	NA	0.00E+00
A6GAE-C03	45365	NA	0.00E+00	NA	0.00E+00
A6GAE-C04	56793	NA	0.00E+00	NA	0.00E+00
A6GAE-C05	44959	NA	0.00E+00	NA	0.00E+00
A6GAE-C06	32461	NA	0.00E+00	NA	0.00E+00
A6GAE-C07	45094	NA	0.00E+00	NA	0.00E+00
A6GAE-C08	38422	NA	0.00E+00	NA	0.00E+00
A6GAE-C09	60191	NA	0.00E+00	NA	0.00E+00
A6GAE-C10	61472	NA	0.00E+00	NA	0.00E+00
A6GAE-C11	41282	NA	0.00E+00	NA	0.00E+00
A6GAE-C12	62502	NA	0.00E+00	NA	0.00E+00
A6GAE-C13	38227	NA	0.00E+00	NA	0.00E+00
A6GAE-C14	52259	NA	0.00E+00	NA	0.00E+00
A6GAE-C15	50818	NA	0.00E+00	NA	0.00E+00
A6GAE-C16	32855	NA	0.00E+00	NA	0.00E+00
A6GAE-C17	33064	NA	0.00E+00	NA	0.00E+00
A6GAE-C18	38040	NA	0.00E+00	NA	0.00E+00
A6P1-C-01	56631	NA	3.60E-01	NA	0.00E+00
A6P1-C-03	35655	NA	1.00E-01	NA	0.00E+00
A6P1-C-05	52569	NA	0.00E+00	NA	0.00E+00
A6P1-C-06	59646	NA	0.00E+00	NA	0.00E+00
A6P1-C-07	59654	NA	0.00E+00	NA	0.00E+00
A6P1-C-08	59645	NA	0.00E+00	NA	0.00E+00
A6P1-C-09	59646	NA	0.00E+00	NA	0.00E+00
A6P1-C-10	59647	NA	0.00E+00	NA	0.00E+00
A6P1-C-11	33328	NA	0.00E+00	NA	0.00E+00
A6P2-PC01	61745	NA	0.00E+00	NA	0.00E+00
A6P2-PC02	62262	NA	0.00E+00	NA	0.00E+00
A6P2-PC03	61174	NA	0.00E+00	NA	0.00E+00
A6P2-PC04	52308	NA	0.00E+00	NA	0.00E+00
A6P2-PC05	62304	NA	2.26E-01	NA	0.00E+00
A6-RDBA-C01	40199	NA	8.10E-02	NA	0.00E+00
A6-RDBA-C02	48412	NA	7.86E-02	NA	0.00E+00

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 5

Certification Units	Area sq ft	Hexachlorodibenzo-p-dioxin ug/g	Indeno(1,2,3-cd)pyrene ug/g	Methanol ug/g	Methyl-2-pentanone ug/g
A6-RDBA-C03	40823	NA	2.13E-01	NA	0.00E+00
A6-SP7-C01	10478	NA	3.99E-02	NA	0.00E+00
A6-SP7-C02	23404	NA	1.78E-01	NA	0.00E+00
A6-SP7-C03	51377	NA	4.68E-01	NA	0.00E+00
A6-SP7-C04	51236	NA	1.75E-01	NA	0.00E+00
A6-SP7-C05	43105	NA	4.41E-01	NA	0.00E+00
A6-SP7-C06	61932	NA	3.15E-01	NA	0.00E+00
A6-SWL-C01	33854	NA	0.00E+00	NA	0.00E+00
A6-SWL-C02	43705	NA	0.00E+00	NA	0.00E+00
A6-SWL-C03	46278	NA	0.00E+00	NA	0.00E+00
A6-SWL-C04	62483	NA	0.00E+00	NA	0.00E+00
A6-SWMP-C01	39509	NA	0.00E+00	NA	0.00E+00
MDC-C01	63140	NA	0.00E+00	NA	0.00E+00
MDC-C02	49961	NA	0.00E+00	NA	0.00E+00
MDC-C03	49959	NA	0.00E+00	NA	0.00E+00
MDC-C04	49961	NA	0.00E+00	NA	0.00E+00
MDC-C05	49961	NA	0.00E+00	NA	0.00E+00
MDC-C06	49488	NA	0.00E+00	NA	0.00E+00
MDC-C07	62072	NA	0.00E+00	NA	0.00E+00
MDC-C08	60855	NA	0.00E+00	NA	0.00E+00
MDC-C09	59378	NA	0.00E+00	NA	0.00E+00
MDC-C10	62401	NA	0.00E+00	NA	0.00E+00
MDC-C11	60583	NA	0.00E+00	NA	0.00E+00
MDC-C12	60175	NA	0.00E+00	NA	0.00E+00
MDC-C13	62130	NA	1.37E-01	NA	0.00E+00
MDC-C14	62155	NA	3.98E-02	NA	0.00E+00
MDC-C15	62090	NA	0.00E+00	NA	0.00E+00
MDC-C16	61943	NA	0.00E+00	NA	0.00E+00
MDC-C17	59422	NA	0.00E+00	NA	0.00E+00
MDC-C18	60223	NA	0.00E+00	NA	0.00E+00
MDC-C19	62477	NA	0.00E+00	NA	0.00E+00
MDC-C20	62276	NA	0.00E+00	NA	0.00E+00
MDC-C21	62495	NA	0.00E+00	NA	0.00E+00
MDC-C22	62316	NA	0.00E+00	NA	0.00E+00
MDC-C23	62353	NA	0.00E+00	NA	0.00E+00
MDC-C24	60304	NA	0.00E+00	NA	0.00E+00
MDC-C25	47898	NA	0.00E+00	NA	0.00E+00
MDC-C26	30405	NA	0.00E+00	NA	0.00E+00
RLS-C01	62047	NA	0.00E+00	NA	0.00E+00
RLS-C02	61267	NA	0.00E+00	NA	0.00E+00
RLS-C03	62187	NA	0.00E+00	NA	0.00E+00
RLS-C04	38764	NA	4.95E-02	NA	0.00E+00
RLS-C05	41328	NA	1.54E-01	NA	0.00E+00
RLS-C06	35642	NA	4.06E-02	NA	0.00E+00
RLS-C07	48286	NA	4.09E-02	NA	0.00E+00
RLS-C08	54674	NA	0.00E+00	NA	0.00E+00
RLS-C09	34834	NA	0.00E+00	NA	0.00E+00
RLS-C10	49499	NA	2.92E-01	NA	0.00E+00
Maximum Value		NA	1.27E+00	NA	1.28E-02
Average (*used in Risk Calc.*)		NA	5.65E-02	NA	7.08E-04
Number of Cert Results		NA	3.90E+01	NA	1.40E+01
Number of Inserted Values		NA	1.18E+02	NA	1.43E+02

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 5

Certification Units	Area sq ft	Methylene chloride ug/g	4-Methylphenol ug/g	4-Nitroanaline ug/g	N-nitrosodiphenylamine ug/g
6E-C01	54860	9.00E-03	NA	NA	NA
6E-C02	61241	6.50E-03	NA	NA	NA
6E-C03	44952	7.20E-03	NA	NA	NA
6E-C04	45383	7.00E-03	NA	NA	NA
6E-C05	53943	1.28E-02	NA	NA	NA
6E-C06	60762	7.40E-03	NA	NA	NA
6E-C07	58798	7.60E-03	NA	NA	NA
6E-C08	61018	6.30E-03	NA	NA	NA
6E-C09	61907	6.00E-03	NA	NA	NA
6E-C10	47236	5.60E-03	NA	NA	NA
6E-C11	113659	1.08E-02	NA	NA	NA
6E-C12	95954	5.90E-03	NA	NA	NA
6E-C18	25562	5.70E-03	NA	NA	NA
6E-C19	45819	6.80E-03	NA	NA	NA
A3A-C01	43801	0.00E+00	NA	NA	NA
A3A-C02	21413	0.00E+00	NA	NA	NA
A3A-C03	19977	0.00E+00	NA	NA	NA
A3A-C04	16324	0.00E+00	NA	NA	NA
A3A-C05	42874	0.00E+00	NA	NA	NA
A3A-C06	40377	0.00E+00	NA	NA	NA
A3A-C07	62498	0.00E+00	NA	NA	NA
A3A-C08	33698	0.00E+00	NA	NA	NA
A3A-C09	62497	0.00E+00	NA	NA	NA
A3A-C10	62478	0.00E+00	NA	NA	NA
A3A-C11	61184	0.00E+00	NA	NA	NA
A3A-C12	59032	0.00E+00	NA	NA	NA
A3A-C13	46433	0.00E+00	NA	NA	NA
A3A-C14	42299	0.00E+00	NA	NA	NA
A3A-C15	56140	0.00E+00	NA	NA	NA
A3A-C16	48979	0.00E+00	NA	NA	NA
A3A-C17	46427	0.00E+00	NA	NA	NA
A3A-C18	47482	0.00E+00	NA	NA	NA
A3B-C01	12988	6.60E-03	NA	NA	NA
A3B-C02	21204	6.00E-03	NA	NA	NA
A3B-C03	35467	1.90E-03	NA	NA	NA
A3B-C04	46128	1.40E-03	NA	NA	NA
A3B-C05	34291	1.90E-03	NA	NA	NA
A3B-C06	44405	6.90E-03	NA	NA	NA
A3B-C07	35924	3.20E-03	NA	NA	NA
A3B-C08	32223	2.30E-03	NA	NA	NA
A3B-C09	62500	3.00E-03	NA	NA	NA
A3B-C10	59088	6.00E-03	NA	NA	NA
A3B-C11	59891	7.70E-03	NA	NA	NA
A3B-C12	60100	1.60E-03	NA	NA	NA
A4A-C1	54975	0.00E+00	NA	NA	NA
A4A-C2	58661	0.00E+00	NA	NA	NA
A4A-C3	59341	0.00E+00	NA	NA	NA
A4A-C4	59340	0.00E+00	NA	NA	NA
A4A-C5	59340	0.00E+00	NA	NA	NA
A4A-C6	59318	0.00E+00	NA	NA	NA
A4A-C7	54974	0.00E+00	NA	NA	NA
A4A-C8	55208	0.00E+00	NA	NA	NA
A4B2-C03	48771	0.00E+00	NA	NA	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 5

Certification Units	Area sq ft	Methylene chloride ug/g	4-Methylphenol ug/g	4-Nitroanaline ug/g	N-nitrosodiphenylamine ug/g
A4B2-C04	59541	0.00E+00	NA	NA	NA
A4B2-C05	62159	0.00E+00	NA	NA	NA
A4B2-C06	60995	0.00E+00	NA	NA	NA
A4B2-C07	62054	0.00E+00	NA	NA	NA
A4B2-C08	51901	0.00E+00	NA	NA	NA
A4B2-C09	57551	0.00E+00	NA	NA	NA
A4B2-C10	46565	0.00E+00	NA	NA	NA
A4B2-C11	44162	0.00E+00	NA	NA	NA
A4B2-C12	52826	0.00E+00	NA	NA	NA
A4B2-C13	60981	0.00E+00	NA	NA	NA
A4B2-C19	43570	0.00E+00	NA	NA	NA
A4B-C08	61718	0.00E+00	NA	NA	NA
A4B-C09	61721	0.00E+00	NA	NA	NA
A4B-C10	61454	0.00E+00	NA	NA	NA
A4B-C11	61860	0.00E+00	NA	NA	NA
A4B-C12	48596	0.00E+00	NA	NA	NA
A4B-C13	61132	0.00E+00	NA	NA	NA
A4B-C14	59718	0.00E+00	NA	NA	NA
A4B-C15	49531	0.00E+00	NA	NA	NA
A4B-C16	49968	0.00E+00	NA	NA	NA
A4B-C17	46341	0.00E+00	NA	NA	NA
A4B-C18	59593	0.00E+00	NA	NA	NA
A6GAE-C01	42605	0.00E+00	NA	NA	NA
A6GAE-C02	45294	0.00E+00	NA	NA	NA
A6GAE-C03	45365	0.00E+00	NA	NA	NA
A6GAE-C04	56793	0.00E+00	NA	NA	NA
A6GAE-C05	44959	0.00E+00	NA	NA	NA
A6GAE-C06	32461	0.00E+00	NA	NA	NA
A6GAE-C07	45094	0.00E+00	NA	NA	NA
A6GAE-C08	38422	0.00E+00	NA	NA	NA
A6GAE-C09	60191	0.00E+00	NA	NA	NA
A6GAE-C10	61472	0.00E+00	NA	NA	NA
A6GAE-C11	41282	0.00E+00	NA	NA	NA
A6GAE-C12	62502	0.00E+00	NA	NA	NA
A6GAE-C13	38227	0.00E+00	NA	NA	NA
A6GAE-C14	52259	7.10E-03	NA	NA	NA
A6GAE-C15	50818	9.00E-03	NA	NA	NA
A6GAE-C16	32855	7.50E-03	NA	NA	NA
A6GAE-C17	33064	0.00E+00	NA	NA	NA
A6GAE-C18	38040	0.00E+00	NA	NA	NA
A6P1-C-01	56631	0.00E+00	NA	NA	NA
A6P1-C-03	35655	0.00E+00	NA	NA	NA
A6P1-C-05	52569	0.00E+00	NA	NA	NA
A6P1-C-06	59646	0.00E+00	NA	NA	NA
A6P1-C-07	59654	0.00E+00	NA	NA	NA
A6P1-C-08	59645	0.00E+00	NA	NA	NA
A6P1-C-09	59646	0.00E+00	NA	NA	NA
A6P1-C-10	59647	0.00E+00	NA	NA	NA
A6P1-C-11	33328	0.00E+00	NA	NA	NA
A6P2-PC01	61745	0.00E+00	NA	NA	NA
A6P2-PC02	62262	0.00E+00	NA	NA	NA
A6P2-PC03	61174	0.00E+00	NA	NA	NA
A6P2-PC04	52308	0.00E+00	NA	NA	NA
A6P2-PC05	62304	0.00E+00	NA	NA	NA
A6-RDBA-C01	40199	0.00E+00	NA	NA	NA
A6-RDBA-C02	48412	0.00E+00	NA	NA	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 5

Certification Units	Area sq ft	Methylene chloride ug/g	4-Methylphenol ug/g	4-Nitroanaline ug/g	N-nitrosodiphenylamine ug/g
A6-RDBA-C03	40823	0.00E+00	NA	NA	NA
A6-SP7-C01	10478	5.60E-03	NA	NA	NA
A6-SP7-C02	23404	6.80E-03	NA	NA	NA
A6-SP7-C03	51377	5.90E-03	NA	NA	NA
A6-SP7-C04	51236	5.60E-03	NA	NA	NA
A6-SP7-C05	43105	6.00E-03	NA	NA	NA
A6-SP7-C06	61932	6.00E-03	NA	NA	NA
A6-SWL-C01	33854	0.00E+00	NA	NA	NA
A6-SWL-C02	43705	0.00E+00	NA	NA	NA
A6-SWL-C03	46278	0.00E+00	NA	NA	NA
A6-SWL-C04	62483	0.00E+00	NA	NA	NA
A6-SWMP-C01	39509	0.00E+00	NA	NA	NA
MDC-C01	63140	0.00E+00	NA	NA	NA
MDC-C02	49961	0.00E+00	NA	NA	NA
MDC-C03	49959	0.00E+00	NA	NA	NA
MDC-C04	49961	0.00E+00	NA	NA	NA
MDC-C05	49961	0.00E+00	NA	NA	NA
MDC-C06	49488	0.00E+00	NA	NA	NA
MDC-C07	62072	0.00E+00	NA	NA	NA
MDC-C08	60855	0.00E+00	NA	NA	NA
MDC-C09	59378	0.00E+00	NA	NA	NA
MDC-C10	62401	0.00E+00	NA	NA	NA
MDC-C11	60583	0.00E+00	NA	NA	NA
MDC-C12	60175	0.00E+00	NA	NA	NA
MDC-C13	62130	0.00E+00	NA	NA	NA
MDC-C14	62155	0.00E+00	NA	NA	NA
MDC-C15	62090	0.00E+00	NA	NA	NA
MDC-C16	61943	0.00E+00	NA	NA	NA
MDC-C17	59422	0.00E+00	NA	NA	NA
MDC-C18	60223	0.00E+00	NA	NA	NA
MDC-C19	62477	0.00E+00	NA	NA	NA
MDC-C20	62276	0.00E+00	NA	NA	NA
MDC-C21	62495	0.00E+00	NA	NA	NA
MDC-C22	62316	0.00E+00	NA	NA	NA
MDC-C23	62353	0.00E+00	NA	NA	NA
MDC-C24	60304	0.00E+00	NA	NA	NA
MDC-C25	47898	0.00E+00	NA	NA	NA
MDC-C26	30405	0.00E+00	NA	NA	NA
RLS-C01	62047	0.00E+00	NA	NA	NA
RLS-C02	61267	0.00E+00	NA	NA	NA
RLS-C03	62187	0.00E+00	NA	NA	NA
RLS-C04	38764	0.00E+00	NA	NA	NA
RLS-C05	41328	0.00E+00	NA	NA	NA
RLS-C06	35642	0.00E+00	NA	NA	NA
RLS-C07	48286	0.00E+00	NA	NA	NA
RLS-C08	54674	0.00E+00	NA	NA	NA
RLS-C09	34834	0.00E+00	NA	NA	NA
RLS-C10	49499	0.00E+00	NA	NA	NA
Maximum Value		1.28E-02	NA	NA	NA
Average (*used in Risk Calc.*)		1.35E-03	NA	NA	NA
Number of Cert Results		3.50E+01	NA	NA	NA
Number of Inserted Values		1.22E+02	NA	NA	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 5

Certification Units	Area sq ft	N-nitrosodipropylamine ug/g	Octachlorodibenzofuran ug/g	Octochlorodibenzo-p-dioxin ug/g
6E-C01	54860	NA	NA	NA
6E-C02	61241	NA	NA	NA
6E-C03	44952	NA	NA	NA
6E-C04	45383	NA	NA	NA
6E-C05	53943	NA	NA	NA
6E-C06	60762	NA	NA	NA
6E-C07	58798	NA	NA	NA
6E-C08	61018	NA	NA	NA
6E-C09	61907	NA	NA	NA
6E-C10	47236	NA	NA	NA
6E-C11	113659	NA	NA	NA
6E-C12	95954	NA	NA	NA
6E-C18	25562	NA	NA	NA
6E-C19	45819	NA	NA	NA
A3A-C01	43801	NA	NA	NA
A3A-C02	21413	NA	NA	NA
A3A-C03	19977	NA	NA	NA
A3A-C04	16324	NA	NA	NA
A3A-C05	42874	NA	NA	NA
A3A-C06	40377	NA	NA	NA
A3A-C07	62498	NA	NA	NA
A3A-C08	33698	NA	NA	NA
A3A-C09	62497	NA	NA	NA
A3A-C10	62478	NA	NA	NA
A3A-C11	61184	NA	NA	NA
A3A-C12	59032	NA	NA	NA
A3A-C13	46433	NA	NA	NA
A3A-C14	42299	NA	NA	NA
A3A-C15	56140	NA	NA	NA
A3A-C16	48979	NA	NA	NA
A3A-C17	46427	NA	NA	NA
A3A-C18	47482	NA	NA	NA
A3B-C01	12988	NA	NA	NA
A3B-C02	21204	NA	NA	NA
A3B-C03	35467	NA	NA	NA
A3B-C04	46128	NA	NA	NA
A3B-C05	34291	NA	NA	NA
A3B-C06	44405	NA	NA	NA
A3B-C07	35924	NA	NA	NA
A3B-C08	32223	NA	NA	NA
A3B-C09	62500	NA	NA	NA
A3B-C10	59088	NA	NA	NA
A3B-C11	59891	NA	NA	NA
A3B-C12	60100	NA	NA	NA
A4A-C1	54975	NA	NA	NA
A4A-C2	58661	NA	NA	NA
A4A-C3	59341	NA	NA	NA
A4A-C4	59340	NA	NA	NA
A4A-C5	59340	NA	NA	NA
A4A-C6	59318	NA	NA	NA
A4A-C7	54974	NA	NA	NA
A4A-C8	55208	NA	NA	NA
A4B2-C03	48771	NA	NA	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 5

Certification Units	Area sq ft	N-nitrosodipropylamine ug/g	Octachlorodibenzofuran ug/g	Octochlorodibenzo-p-dioxin ug/g
A4B2-C04	59541	NA	NA	NA
A4B2-C05	62159	NA	NA	NA
A4B2-C06	60995	NA	NA	NA
A4B2-C07	62054	NA	NA	NA
A4B2-C08	51901	NA	NA	NA
A4B2-C09	57551	NA	NA	NA
A4B2-C10	46565	NA	NA	NA
A4B2-C11	44162	NA	NA	NA
A4B2-C12	52826	NA	NA	NA
A4B2-C13	60981	NA	NA	NA
A4B2-C19	43570	NA	NA	NA
A4B-C08	61718	NA	NA	NA
A4B-C09	61721	NA	NA	NA
A4B-C10	61454	NA	NA	NA
A4B-C11	61860	NA	NA	NA
A4B-C12	48596	NA	NA	NA
A4B-C13	61132	NA	NA	NA
A4B-C14	59718	NA	NA	NA
A4B-C15	49531	NA	NA	NA
A4B-C16	49968	NA	NA	NA
A4B-C17	46341	NA	NA	NA
A4B-C18	59593	NA	NA	NA
A6GAE-C01	42605	NA	NA	NA
A6GAE-C02	45294	NA	NA	NA
A6GAE-C03	45365	NA	NA	NA
A6GAE-C04	56793	NA	NA	NA
A6GAE-C05	44959	NA	NA	NA
A6GAE-C06	32461	NA	NA	NA
A6GAE-C07	45094	NA	NA	NA
A6GAE-C08	38422	NA	NA	NA
A6GAE-C09	60191	NA	NA	NA
A6GAE-C10	61472	NA	NA	NA
A6GAE-C11	41282	NA	NA	NA
A6GAE-C12	62502	NA	NA	NA
A6GAE-C13	38227	NA	NA	NA
A6GAE-C14	52259	NA	NA	NA
A6GAE-C15	50818	NA	NA	NA
A6GAE-C16	32855	NA	NA	NA
A6GAE-C17	33064	NA	NA	NA
A6GAE-C18	38040	NA	NA	NA
A6P1-C-01	56631	NA	NA	NA
A6P1-C-03	35655	NA	NA	NA
A6P1-C-05	52569	NA	NA	NA
A6P1-C-06	59646	NA	NA	NA
A6P1-C-07	59654	NA	NA	NA
A6P1-C-08	59645	NA	NA	NA
A6P1-C-09	59646	NA	NA	NA
A6P1-C-10	59647	NA	NA	NA
A6P1-C-11	33328	NA	NA	NA
A6P2-PC01	61745	NA	NA	NA
A6P2-PC02	62262	NA	NA	NA
A6P2-PC03	61174	NA	NA	NA
A6P2-PC04	52308	NA	NA	NA
A6P2-PC05	62304	NA	NA	NA
A6-RDBA-C01	40199	NA	NA	NA
A6-RDBA-C02	48412	NA	NA	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 5

Certification Units	Area sq ft	N-nitrosodipropylamine ug/g	Octachlorodibenzofuran ug/g	Octochlorodibenzo-p-dioxin ug/g
A6-RDBA-C03	40823	NA	NA	NA
A6-SP7-C01	10478	NA	NA	NA
A6-SP7-C02	23404	NA	NA	NA
A6-SP7-C03	51377	NA	NA	NA
A6-SP7-C04	51236	NA	NA	NA
A6-SP7-C05	43105	NA	NA	NA
A6-SP7-C06	61932	NA	NA	NA
A6-SWL-C01	33854	NA	NA	NA
A6-SWL-C02	43705	NA	NA	NA
A6-SWL-C03	46278	NA	NA	NA
A6-SWL-C04	62483	NA	NA	NA
A6-SWMP-C01	39509	NA	NA	NA
MDC-C01	63140	NA	NA	NA
MDC-C02	49961	NA	NA	NA
MDC-C03	49959	NA	NA	NA
MDC-C04	49961	NA	NA	NA
MDC-C05	49961	NA	NA	NA
MDC-C06	49488	NA	NA	NA
MDC-C07	62072	NA	NA	NA
MDC-C08	60855	NA	NA	NA
MDC-C09	59378	NA	NA	NA
MDC-C10	62401	NA	NA	NA
MDC-C11	60583	NA	NA	NA
MDC-C12	60175	NA	NA	NA
MDC-C13	62130	NA	NA	NA
MDC-C14	62155	NA	NA	NA
MDC-C15	62090	NA	NA	NA
MDC-C16	61943	NA	NA	NA
MDC-C17	59422	NA	NA	NA
MDC-C18	60223	NA	NA	NA
MDC-C19	62477	NA	NA	NA
MDC-C20	62276	NA	NA	NA
MDC-C21	62495	NA	NA	NA
MDC-C22	62316	NA	NA	NA
MDC-C23	62353	NA	NA	NA
MDC-C24	60304	NA	NA	NA
MDC-C25	47898	NA	NA	NA
MDC-C26	30405	NA	NA	NA
RLS-C01	62047	NA	NA	NA
RLS-C02	61267	NA	NA	NA
RLS-C03	62187	NA	NA	NA
RLS-C04	38764	NA	NA	NA
RLS-C05	41328	NA	NA	NA
RLS-C06	35642	NA	NA	NA
RLS-C07	48286	NA	NA	NA
RLS-C08	54674	NA	NA	NA
RLS-C09	34834	NA	NA	NA
RLS-C10	49499	NA	NA	NA
Maximum Value		NA	NA	NA
Average (*used in Risk Calc.*)		NA	NA	NA
Number of Cert Results		NA	NA	NA
Number of Inserted Values		NA	NA	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 5

Certification Units	Area sq ft	Pentachlorodibenzofuran ug/g	Pentachlorodibenzo-p-dioxin ug/g	Pentachlorophenol ug/g	Phenanthrene ug/g
6E-C01	54860	NA	NA	NA	1.21E-01
6E-C02	61241	NA	NA	NA	8.59E-01
6E-C03	44952	NA	NA	NA	5.52E-01
6E-C04	45383	NA	NA	NA	4.69E-02
6E-C05	53943	NA	NA	NA	6.54E-01
6E-C06	60762	NA	NA	NA	7.92E-02
6E-C07	58798	NA	NA	NA	2.17E-01
6E-C08	61018	NA	NA	NA	3.62E-01
6E-C09	61907	NA	NA	NA	4.49E+00
6E-C10	47236	NA	NA	NA	5.37E-01
6E-C11	113659	NA	NA	NA	2.33E+00
6E-C12	95954	NA	NA	NA	1.15E-01
6E-C18	25562	NA	NA	NA	7.36E-01
6E-C19	45819	NA	NA	NA	1.24E+00
A3A-C01	43801	NA	NA	NA	1.80E+00
A3A-C02	21413	NA	NA	NA	0.00E+00
A3A-C03	19977	NA	NA	NA	0.00E+00
A3A-C04	16324	NA	NA	NA	0.00E+00
A3A-C05	42874	NA	NA	NA	0.00E+00
A3A-C06	40377	NA	NA	NA	4.00E-01
A3A-C07	62498	NA	NA	NA	0.00E+00
A3A-C08	33698	NA	NA	NA	0.00E+00
A3A-C09	62497	NA	NA	NA	0.00E+00
A3A-C10	62478	NA	NA	NA	0.00E+00
A3A-C11	61184	NA	NA	NA	0.00E+00
A3A-C12	59032	NA	NA	NA	3.00E+00
A3A-C13	46433	NA	NA	NA	9.80E-01
A3A-C14	42299	NA	NA	NA	0.00E+00
A3A-C15	56140	NA	NA	NA	3.60E-02
A3A-C16	48979	NA	NA	NA	6.00E-02
A3A-C17	46427	NA	NA	NA	0.00E+00
A3A-C18	47482	NA	NA	NA	0.00E+00
A3B-C01	12988	NA	NA	NA	0.00E+00
A3B-C02	21204	NA	NA	NA	0.00E+00
A3B-C03	35467	NA	NA	NA	0.00E+00
A3B-C04	46128	NA	NA	NA	0.00E+00
A3B-C05	34291	NA	NA	NA	0.00E+00
A3B-C06	44405	NA	NA	NA	0.00E+00
A3B-C07	35924	NA	NA	NA	0.00E+00
A3B-C08	32223	NA	NA	NA	0.00E+00
A3B-C09	62500	NA	NA	NA	0.00E+00
A3B-C10	59088	NA	NA	NA	0.00E+00
A3B-C11	59891	NA	NA	NA	0.00E+00
A3B-C12	60100	NA	NA	NA	0.00E+00
A4A-C1	54975	NA	NA	NA	0.00E+00
A4A-C2	58661	NA	NA	NA	0.00E+00
A4A-C3	59341	NA	NA	NA	0.00E+00
A4A-C4	59340	NA	NA	NA	0.00E+00
A4A-C5	59340	NA	NA	NA	0.00E+00
A4A-C6	59318	NA	NA	NA	0.00E+00
A4A-C7	54974	NA	NA	NA	0.00E+00
A4A-C8	55208	NA	NA	NA	0.00E+00
A4B2-C03	48771	NA	NA	NA	0.00E+00

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 5

Certification Units	Area sq ft	Pentachlorodibenzofuran ug/g	Pentachlorodibenzo-p-dioxin ug/g	Pentachlorophenol ug/g	Phenanthrene ug/g
A4B2-C04	59541	NA	NA	NA	0.00E+00
A4B2-C05	62159	NA	NA	NA	0.00E+00
A4B2-C06	60995	NA	NA	NA	0.00E+00
A4B2-C07	62054	NA	NA	NA	0.00E+00
A4B2-C08	51901	NA	NA	NA	0.00E+00
A4B2-C09	57551	NA	NA	NA	0.00E+00
A4B2-C10	46565	NA	NA	NA	0.00E+00
A4B2-C11	44162	NA	NA	NA	0.00E+00
A4B2-C12	52826	NA	NA	NA	0.00E+00
A4B2-C13	60981	NA	NA	NA	0.00E+00
A4B2-C19	43570	NA	NA	NA	0.00E+00
A4B-C08	61718	NA	NA	NA	0.00E+00
A4B-C09	61721	NA	NA	NA	0.00E+00
A4B-C10	61454	NA	NA	NA	0.00E+00
A4B-C11	61860	NA	NA	NA	0.00E+00
A4B-C12	48596	NA	NA	NA	0.00E+00
A4B-C13	61132	NA	NA	NA	0.00E+00
A4B-C14	59718	NA	NA	NA	0.00E+00
A4B-C15	49531	NA	NA	NA	0.00E+00
A4B-C16	49968	NA	NA	NA	0.00E+00
A4B-C17	46341	NA	NA	NA	0.00E+00
A4B-C18	59593	NA	NA	NA	0.00E+00
A6GAE-C01	42605	NA	NA	NA	0.00E+00
A6GAE-C02	45294	NA	NA	NA	0.00E+00
A6GAE-C03	45365	NA	NA	NA	0.00E+00
A6GAE-C04	56793	NA	NA	NA	0.00E+00
A6GAE-C05	44959	NA	NA	NA	0.00E+00
A6GAE-C06	32461	NA	NA	NA	0.00E+00
A6GAE-C07	45094	NA	NA	NA	0.00E+00
A6GAE-C08	38422	NA	NA	NA	0.00E+00
A6GAE-C09	60191	NA	NA	NA	0.00E+00
A6GAE-C10	61472	NA	NA	NA	0.00E+00
A6GAE-C11	41282	NA	NA	NA	0.00E+00
A6GAE-C12	62502	NA	NA	NA	0.00E+00
A6GAE-C13	38227	NA	NA	NA	0.00E+00
A6GAE-C14	52259	NA	NA	NA	0.00E+00
A6GAE-C15	50818	NA	NA	NA	0.00E+00
A6GAE-C16	32855	NA	NA	NA	0.00E+00
A6GAE-C17	33064	NA	NA	NA	0.00E+00
A6GAE-C18	38040	NA	NA	NA	0.00E+00
A6P1-C-01	56631	NA	NA	NA	1.50E-01
A6P1-C-03	35655	NA	NA	NA	7.40E-02
A6P1-C-05	52569	NA	NA	NA	0.00E+00
A6P1-C-06	59646	NA	NA	NA	0.00E+00
A6P1-C-07	59654	NA	NA	NA	0.00E+00
A6P1-C-08	59645	NA	NA	NA	0.00E+00
A6P1-C-09	59646	NA	NA	NA	0.00E+00
A6P1-C-10	59647	NA	NA	NA	0.00E+00
A6P1-C-11	33328	NA	NA	NA	0.00E+00
A6P2-PC01	61745	NA	NA	NA	0.00E+00
A6P2-PC02	62262	NA	NA	NA	0.00E+00
A6P2-PC03	61174	NA	NA	NA	0.00E+00
A6P2-PC04	52308	NA	NA	NA	0.00E+00
A6P2-PC05	62304	NA	NA	NA	3.18E-01
A6-RDBA-C01	40199	NA	NA	NA	5.07E-02
A6-RDBA-C02	48412	NA	NA	NA	3.77E-02

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 5

Certification Units	Area sq ft	Pentachlorodibenzofuran ug/g	Pentachlorodibenzo-p-dioxin ug/g	Pentachlorophenol ug/g	Phenanthrene ug/g
A6-RDBA-C03	40823	NA	NA	NA	9.27E-02
A6-SP7-C01	10478	NA	NA	NA	0.00E+00
A6-SP7-C02	23404	NA	NA	NA	0.00E+00
A6-SP7-C03	51377	NA	NA	NA	0.00E+00
A6-SP7-C04	51236	NA	NA	NA	0.00E+00
A6-SP7-C05	43105	NA	NA	NA	0.00E+00
A6-SP7-C06	61932	NA	NA	NA	0.00E+00
A6-SWL-C01	33854	NA	NA	NA	0.00E+00
A6-SWL-C02	43705	NA	NA	NA	0.00E+00
A6-SWL-C03	46278	NA	NA	NA	0.00E+00
A6-SWL-C04	62483	NA	NA	NA	0.00E+00
A6-SWMP-C01	39509	NA	NA	NA	0.00E+00
MDC-C01	63140	NA	NA	NA	0.00E+00
MDC-C02	49961	NA	NA	NA	0.00E+00
MDC-C03	49959	NA	NA	NA	0.00E+00
MDC-C04	49961	NA	NA	NA	0.00E+00
MDC-C05	49961	NA	NA	NA	0.00E+00
MDC-C06	49488	NA	NA	NA	0.00E+00
MDC-C07	62072	NA	NA	NA	0.00E+00
MDC-C08	60855	NA	NA	NA	0.00E+00
MDC-C09	59378	NA	NA	NA	0.00E+00
MDC-C10	62401	NA	NA	NA	0.00E+00
MDC-C11	60583	NA	NA	NA	0.00E+00
MDC-C12	60175	NA	NA	NA	0.00E+00
MDC-C13	62130	NA	NA	NA	4.02E-02
MDC-C14	62155	NA	NA	NA	3.98E-02
MDC-C15	62090	NA	NA	NA	0.00E+00
MDC-C16	61943	NA	NA	NA	0.00E+00
MDC-C17	59422	NA	NA	NA	0.00E+00
MDC-C18	60223	NA	NA	NA	0.00E+00
MDC-C19	62477	NA	NA	NA	0.00E+00
MDC-C20	62276	NA	NA	NA	0.00E+00
MDC-C21	62495	NA	NA	NA	0.00E+00
MDC-C22	62316	NA	NA	NA	0.00E+00
MDC-C23	62353	NA	NA	NA	0.00E+00
MDC-C24	60304	NA	NA	NA	0.00E+00
MDC-C25	47898	NA	NA	NA	0.00E+00
MDC-C26	30405	NA	NA	NA	0.00E+00
RLS-C01	62047	NA	NA	NA	0.00E+00
RLS-C02	61267	NA	NA	NA	0.00E+00
RLS-C03	62187	NA	NA	NA	0.00E+00
RLS-C04	38764	NA	NA	NA	4.95E-02
RLS-C05	41328	NA	NA	NA	4.58E-02
RLS-C06	35642	NA	NA	NA	0.00E+00
RLS-C07	48286	NA	NA	NA	0.00E+00
RLS-C08	54674	NA	NA	NA	0.00E+00
RLS-C09	34834	NA	NA	NA	0.00E+00
RLS-C10	49499	NA	NA	NA	0.00E+00
Maximum Value		NA	NA	NA	4.49E+00
Average (*used in Risk Calc.*)		NA	NA	NA	1.24E-01
Number of Cert Results		NA	NA	NA	3.00E+01
Number of Inserted Values		NA	NA	NA	1.27E+02

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 5

Certification Units	Area sq ft	Tetrachlorodibenzofuran ug/g	Tetrachlorodibenzo-p-dioxin ug/g	Tetrachloroethylene ug/g	Toluene ug/g
6E-C01	54860	NA	NA	1.10E-03	3.70E-03
6E-C02	61241	NA	NA	1.60E-03	1.70E-03
6E-C03	44952	NA	NA	3.61E-02	4.30E-03
6E-C04	45383	NA	NA	1.40E-03	1.90E-03
6E-C05	53943	NA	NA	2.60E-03	4.62E-02
6E-C06	60762	NA	NA	1.50E-03	3.10E-03
6E-C07	58798	NA	NA	1.50E-03	1.50E-03
6E-C08	61018	NA	NA	1.30E-03	1.30E-03
6E-C09	61907	NA	NA	2.00E-03	2.20E-03
6E-C10	47236	NA	NA	1.10E-03	1.10E-03
6E-C11	113659	NA	NA	2.20E-03	1.70E-03
6E-C12	95954	NA	NA	1.20E-03	1.20E-03
6E-C18	25562	NA	NA	1.10E-03	1.10E-03
6E-C19	45819	NA	NA	1.40E-03	2.10E-03
A3A-C01	43801	NA	NA	2.80E-03	0.00E+00
A3A-C02	21413	NA	NA	1.20E-03	0.00E+00
A3A-C03	19977	NA	NA	0.00E+00	0.00E+00
A3A-C04	16324	NA	NA	0.00E+00	0.00E+00
A3A-C05	42874	NA	NA	8.00E-04	0.00E+00
A3A-C06	40377	NA	NA	1.70E-03	0.00E+00
A3A-C07	62498	NA	NA	0.00E+00	0.00E+00
A3A-C08	33698	NA	NA	0.00E+00	0.00E+00
A3A-C09	62497	NA	NA	0.00E+00	0.00E+00
A3A-C10	62478	NA	NA	0.00E+00	0.00E+00
A3A-C11	61184	NA	NA	0.00E+00	0.00E+00
A3A-C12	59032	NA	NA	0.00E+00	0.00E+00
A3A-C13	46433	NA	NA	0.00E+00	0.00E+00
A3A-C14	42299	NA	NA	0.00E+00	0.00E+00
A3A-C15	56140	NA	NA	0.00E+00	0.00E+00
A3A-C16	48979	NA	NA	0.00E+00	0.00E+00
A3A-C17	46427	NA	NA	0.00E+00	0.00E+00
A3A-C18	47482	NA	NA	0.00E+00	0.00E+00
A3B-C01	12988	NA	NA	1.30E-03	0.00E+00
A3B-C02	21204	NA	NA	1.20E-03	0.00E+00
A3B-C03	35467	NA	NA	1.10E-03	0.00E+00
A3B-C04	46128	NA	NA	1.40E-03	0.00E+00
A3B-C05	34291	NA	NA	1.40E-03	0.00E+00
A3B-C06	44405	NA	NA	1.40E-03	0.00E+00
A3B-C07	35924	NA	NA	1.00E-03	0.00E+00
A3B-C08	32223	NA	NA	1.10E-03	0.00E+00
A3B-C09	62500	NA	NA	1.60E-03	0.00E+00
A3B-C10	59088	NA	NA	1.60E-03	0.00E+00
A3B-C11	59891	NA	NA	1.50E-03	0.00E+00
A3B-C12	60100	NA	NA	1.10E-03	0.00E+00
A4A-C1	54975	NA	NA	0.00E+00	0.00E+00
A4A-C2	58661	NA	NA	0.00E+00	0.00E+00
A4A-C3	59341	NA	NA	0.00E+00	0.00E+00
A4A-C4	59340	NA	NA	0.00E+00	0.00E+00
A4A-C5	59340	NA	NA	0.00E+00	0.00E+00
A4A-C6	59318	NA	NA	1.00E-03	0.00E+00
A4A-C7	54974	NA	NA	0.00E+00	0.00E+00
A4A-C8	55208	NA	NA	0.00E+00	0.00E+00
A4B2-C03	48771	NA	NA	0.00E+00	0.00E+00

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 5

Certification Units	Area sq ft	Tetrachlorodibenzofuran ug/g	Tetrachlorodibenzo-p-dioxin ug/g	Tetrachloroethylene ug/g	Toluene ug/g
A4B2-C04	59541	NA	NA	1.30E-03	0.00E+00
A4B2-C05	62159	NA	NA	0.00E+00	0.00E+00
A4B2-C06	60995	NA	NA	0.00E+00	0.00E+00
A4B2-C07	62054	NA	NA	0.00E+00	0.00E+00
A4B2-C08	51901	NA	NA	0.00E+00	0.00E+00
A4B2-C09	57551	NA	NA	0.00E+00	0.00E+00
A4B2-C10	46565	NA	NA	0.00E+00	0.00E+00
A4B2-C11	44162	NA	NA	0.00E+00	0.00E+00
A4B2-C12	52826	NA	NA	0.00E+00	0.00E+00
A4B2-C13	60981	NA	NA	0.00E+00	0.00E+00
A4B2-C19	43570	NA	NA	0.00E+00	0.00E+00
A4B-C08	61718	NA	NA	0.00E+00	0.00E+00
A4B-C09	61721	NA	NA	0.00E+00	0.00E+00
A4B-C10	61454	NA	NA	0.00E+00	0.00E+00
A4B-C11	61860	NA	NA	0.00E+00	0.00E+00
A4B-C12	48596	NA	NA	0.00E+00	0.00E+00
A4B-C13	61132	NA	NA	0.00E+00	0.00E+00
A4B-C14	59718	NA	NA	0.00E+00	0.00E+00
A4B-C15	49531	NA	NA	0.00E+00	0.00E+00
A4B-C16	49968	NA	NA	0.00E+00	0.00E+00
A4B-C17	46341	NA	NA	0.00E+00	0.00E+00
A4B-C18	59593	NA	NA	0.00E+00	0.00E+00
A6GAE-C01	42605	NA	NA	0.00E+00	0.00E+00
A6GAE-C02	45294	NA	NA	0.00E+00	0.00E+00
A6GAE-C03	45365	NA	NA	0.00E+00	0.00E+00
A6GAE-C04	56793	NA	NA	0.00E+00	0.00E+00
A6GAE-C05	44959	NA	NA	0.00E+00	0.00E+00
A6GAE-C06	32461	NA	NA	0.00E+00	0.00E+00
A6GAE-C07	45094	NA	NA	0.00E+00	0.00E+00
A6GAE-C08	38422	NA	NA	0.00E+00	0.00E+00
A6GAE-C09	60191	NA	NA	0.00E+00	0.00E+00
A6GAE-C10	61472	NA	NA	2.11E-02	0.00E+00
A6GAE-C11	41282	NA	NA	1.20E-03	0.00E+00
A6GAE-C12	62502	NA	NA	0.00E+00	0.00E+00
A6GAE-C13	38227	NA	NA	0.00E+00	0.00E+00
A6GAE-C14	52259	NA	NA	1.40E-03	1.40E-03
A6GAE-C15	50818	NA	NA	1.30E-03	3.20E-03
A6GAE-C16	32855	NA	NA	1.50E-03	1.50E-03
A6GAE-C17	33064	NA	NA	0.00E+00	0.00E+00
A6GAE-C18	38040	NA	NA	0.00E+00	0.00E+00
A6P1-C-01	56631	NA	NA	1.90E-03	7.60E-03
A6P1-C-03	35655	NA	NA	1.20E-03	0.00E+00
A6P1-C-05	52569	NA	NA	0.00E+00	0.00E+00
A6P1-C-06	59646	NA	NA	0.00E+00	0.00E+00
A6P1-C-07	59654	NA	NA	0.00E+00	0.00E+00
A6P1-C-08	59645	NA	NA	0.00E+00	0.00E+00
A6P1-C-09	59646	NA	NA	0.00E+00	0.00E+00
A6P1-C-10	59647	NA	NA	0.00E+00	0.00E+00
A6P1-C-11	33328	NA	NA	0.00E+00	0.00E+00
A6P2-PC01	61745	NA	NA	0.00E+00	0.00E+00
A6P2-PC02	62262	NA	NA	0.00E+00	0.00E+00
A6P2-PC03	61174	NA	NA	0.00E+00	0.00E+00
A6P2-PC04	52308	NA	NA	0.00E+00	0.00E+00
A6P2-PC05	62304	NA	NA	1.50E-03	0.00E+00
A6-RDBA-C01	40199	NA	NA	0.00E+00	0.00E+00
A6-RDBA-C02	48412	NA	NA	0.00E+00	0.00E+00

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 5

Certification Units	Area sq ft	Tetrachlorodibenzofuran ug/g	Tetrachlorodibenzo-p-dioxin ug/g	Tetrachloroethylene ug/g	Toluene ug/g
A6-RDBA-C03	40823	NA	NA	0.00E+00	0.00E+00
A6-SP7-C01	10478	NA	NA	1.10E-03	1.10E-03
A6-SP7-C02	23404	NA	NA	1.40E-03	1.40E-03
A6-SP7-C03	51377	NA	NA	1.20E-03	1.20E-03
A6-SP7-C04	51236	NA	NA	1.10E-03	1.50E-03
A6-SP7-C05	43105	NA	NA	1.08E-02	1.40E-03
A6-SP7-C06	61932	NA	NA	1.48E-02	1.60E-03
A6-SWL-C01	33854	NA	NA	0.00E+00	0.00E+00
A6-SWL-C02	43705	NA	NA	0.00E+00	0.00E+00
A6-SWL-C03	46278	NA	NA	0.00E+00	0.00E+00
A6-SWL-C04	62483	NA	NA	0.00E+00	0.00E+00
A6-SWMP-C01	39509	NA	NA	0.00E+00	0.00E+00
MDC-C01	63140	NA	NA	0.00E+00	0.00E+00
MDC-C02	49961	NA	NA	0.00E+00	0.00E+00
MDC-C03	49959	NA	NA	0.00E+00	0.00E+00
MDC-C04	49961	NA	NA	0.00E+00	0.00E+00
MDC-C05	49961	NA	NA	0.00E+00	0.00E+00
MDC-C06	49488	NA	NA	0.00E+00	0.00E+00
MDC-C07	62072	NA	NA	0.00E+00	0.00E+00
MDC-C08	60855	NA	NA	0.00E+00	0.00E+00
MDC-C09	59378	NA	NA	0.00E+00	0.00E+00
MDC-C10	62401	NA	NA	0.00E+00	0.00E+00
MDC-C11	60583	NA	NA	0.00E+00	0.00E+00
MDC-C12	60175	NA	NA	0.00E+00	0.00E+00
MDC-C13	62130	NA	NA	0.00E+00	0.00E+00
MDC-C14	62155	NA	NA	0.00E+00	0.00E+00
MDC-C15	62090	NA	NA	0.00E+00	0.00E+00
MDC-C16	61943	NA	NA	0.00E+00	0.00E+00
MDC-C17	59422	NA	NA	0.00E+00	0.00E+00
MDC-C18	60223	NA	NA	0.00E+00	0.00E+00
MDC-C19	62477	NA	NA	0.00E+00	0.00E+00
MDC-C20	62276	NA	NA	0.00E+00	0.00E+00
MDC-C21	62495	NA	NA	0.00E+00	0.00E+00
MDC-C22	62316	NA	NA	0.00E+00	0.00E+00
MDC-C23	62353	NA	NA	0.00E+00	0.00E+00
MDC-C24	60304	NA	NA	0.00E+00	0.00E+00
MDC-C25	47898	NA	NA	0.00E+00	0.00E+00
MDC-C26	30405	NA	NA	0.00E+00	0.00E+00
RLS-C01	62047	NA	NA	0.00E+00	0.00E+00
RLS-C02	61267	NA	NA	0.00E+00	0.00E+00
RLS-C03	62187	NA	NA	0.00E+00	0.00E+00
RLS-C04	38764	NA	NA	1.10E-03	0.00E+00
RLS-C05	41328	NA	NA	1.30E-03	0.00E+00
RLS-C06	35642	NA	NA	0.00E+00	0.00E+00
RLS-C07	48286	NA	NA	0.00E+00	0.00E+00
RLS-C08	54674	NA	NA	0.00E+00	0.00E+00
RLS-C09	34834	NA	NA	0.00E+00	0.00E+00
RLS-C10	49499	NA	NA	1.50E-03	0.00E+00
Maximum Value		NA	NA	3.61E-02	4.62E-02
Average (*used in Risk Calc.*)		NA	NA	9.30E-04	6.05E-04
Number of Cert Results		NA	NA	4.90E+01	2.40E+01
Number of Inserted Values		NA	NA	1.08E+02	1.33E+02

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 5

Certification Units	Area sq ft	Tributyl phosphate ug/g	1,1,2-Trichloroethane ug/g	Trichloroethylene ug/g	Trifluorochloromethane ug/g
6E-C01	54860	NA	2.50E-03	6.90E-03	NA
6E-C02	61241	NA	1.30E-03	1.30E-03	NA
6E-C03	44952	NA	1.90E-03	1.30E-03	NA
6E-C04	45383	NA	1.40E-03	1.40E-03	NA
6E-C05	53943	NA	2.60E-03	2.60E-03	NA
6E-C06	60762	NA	1.50E-03	1.50E-03	NA
6E-C07	58798	NA	1.50E-03	1.50E-03	NA
6E-C08	61018	NA	1.30E-03	1.30E-03	NA
6E-C09	61907	NA	1.70E-03	2.30E-03	NA
6E-C10	47236	NA	1.10E-03	1.10E-03	NA
6E-C11	113659	NA	2.20E-03	2.20E-03	NA
6E-C12	95954	NA	1.20E-03	1.20E-03	NA
6E-C18	25562	NA	1.10E-03	1.10E-03	NA
6E-C19	45819	NA	1.40E-03	1.40E-03	NA
A3A-C01	43801	NA	0.00E+00	1.30E-02	NA
A3A-C02	21413	NA	0.00E+00	1.20E-03	NA
A3A-C03	19977	NA	0.00E+00	0.00E+00	NA
A3A-C04	16324	NA	0.00E+00	0.00E+00	NA
A3A-C05	42874	NA	0.00E+00	1.10E-03	NA
A3A-C06	40377	NA	0.00E+00	1.70E-03	NA
A3A-C07	62498	NA	0.00E+00	0.00E+00	NA
A3A-C08	33698	NA	0.00E+00	0.00E+00	NA
A3A-C09	62497	NA	0.00E+00	0.00E+00	NA
A3A-C10	62478	NA	0.00E+00	0.00E+00	NA
A3A-C11	61184	NA	0.00E+00	0.00E+00	NA
A3A-C12	59032	NA	0.00E+00	0.00E+00	NA
A3A-C13	46433	NA	0.00E+00	0.00E+00	NA
A3A-C14	42299	NA	0.00E+00	0.00E+00	NA
A3A-C15	56140	NA	0.00E+00	0.00E+00	NA
A3A-C16	48979	NA	0.00E+00	0.00E+00	NA
A3A-C17	46427	NA	0.00E+00	0.00E+00	NA
A3A-C18	47482	NA	0.00E+00	0.00E+00	NA
A3B-C01	12988	NA	1.30E-03	0.00E+00	NA
A3B-C02	21204	NA	1.20E-03	0.00E+00	NA
A3B-C03	35467	NA	1.10E-03	0.00E+00	NA
A3B-C04	46128	NA	1.40E-03	0.00E+00	NA
A3B-C05	34291	NA	1.40E-03	0.00E+00	NA
A3B-C06	44405	NA	1.40E-03	0.00E+00	NA
A3B-C07	35924	NA	1.00E-03	0.00E+00	NA
A3B-C08	32223	NA	1.10E-03	0.00E+00	NA
A3B-C09	62500	NA	1.60E-03	0.00E+00	NA
A3B-C10	59088	NA	5.00E-04	0.00E+00	NA
A3B-C11	59891	NA	1.50E-03	0.00E+00	NA
A3B-C12	60100	NA	1.10E-03	0.00E+00	NA
A4A-C1	54975	NA	0.00E+00	0.00E+00	NA
A4A-C2	58661	NA	0.00E+00	0.00E+00	NA
A4A-C3	59341	NA	0.00E+00	0.00E+00	NA
A4A-C4	59340	NA	0.00E+00	0.00E+00	NA
A4A-C5	59340	NA	0.00E+00	0.00E+00	NA
A4A-C6	59318	NA	0.00E+00	0.00E+00	NA
A4A-C7	54974	NA	0.00E+00	0.00E+00	NA
A4A-C8	55208	NA	0.00E+00	0.00E+00	NA
A4B2-C03	48771	NA	0.00E+00	0.00E+00	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 5

Certification Units	Area sq ft	Tributyl phosphate ug/g	1,1,2-Trichloroethane ug/g	Trichloroethylene ug/g	Trifluorochloromethane ug/g
A4B2-C04	59541	NA	0.00E+00	0.00E+00	NA
A4B2-C05	62159	NA	0.00E+00	0.00E+00	NA
A4B2-C06	60995	NA	0.00E+00	0.00E+00	NA
A4B2-C07	62054	NA	0.00E+00	0.00E+00	NA
A4B2-C08	51901	NA	0.00E+00	0.00E+00	NA
A4B2-C09	57551	NA	0.00E+00	0.00E+00	NA
A4B2-C10	46565	NA	0.00E+00	0.00E+00	NA
A4B2-C11	44162	NA	0.00E+00	0.00E+00	NA
A4B2-C12	52826	NA	0.00E+00	0.00E+00	NA
A4B2-C13	60981	NA	0.00E+00	0.00E+00	NA
A4B2-C19	43570	NA	0.00E+00	0.00E+00	NA
A4B-C08	61718	NA	0.00E+00	0.00E+00	NA
A4B-C09	61721	NA	0.00E+00	0.00E+00	NA
A4B-C10	61454	NA	0.00E+00	0.00E+00	NA
A4B-C11	61860	NA	0.00E+00	0.00E+00	NA
A4B-C12	48596	NA	0.00E+00	0.00E+00	NA
A4B-C13	61132	NA	0.00E+00	0.00E+00	NA
A4B-C14	59718	NA	0.00E+00	0.00E+00	NA
A4B-C15	49531	NA	0.00E+00	0.00E+00	NA
A4B-C16	49968	NA	0.00E+00	0.00E+00	NA
A4B-C17	46341	NA	0.00E+00	0.00E+00	NA
A4B-C18	59593	NA	0.00E+00	0.00E+00	NA
A6GAE-C01	42605	NA	0.00E+00	0.00E+00	NA
A6GAE-C02	45294	NA	0.00E+00	0.00E+00	NA
A6GAE-C03	45365	NA	0.00E+00	0.00E+00	NA
A6GAE-C04	56793	NA	0.00E+00	0.00E+00	NA
A6GAE-C05	44959	NA	0.00E+00	0.00E+00	NA
A6GAE-C06	32461	NA	0.00E+00	0.00E+00	NA
A6GAE-C07	45094	NA	0.00E+00	0.00E+00	NA
A6GAE-C08	38422	NA	0.00E+00	0.00E+00	NA
A6GAE-C09	60191	NA	0.00E+00	0.00E+00	NA
A6GAE-C10	61472	NA	0.00E+00	1.60E-03	NA
A6GAE-C11	41282	NA	0.00E+00	1.20E-03	NA
A6GAE-C12	62502	NA	0.00E+00	0.00E+00	NA
A6GAE-C13	38227	NA	0.00E+00	0.00E+00	NA
A6GAE-C14	52259	NA	1.40E-03	1.40E-03	NA
A6GAE-C15	50818	NA	1.30E-03	1.30E-03	NA
A6GAE-C16	32855	NA	1.50E-03	1.50E-03	NA
A6GAE-C17	33064	NA	0.00E+00	0.00E+00	NA
A6GAE-C18	38040	NA	0.00E+00	0.00E+00	NA
A6P1-C-01	56631	NA	1.90E-03	0.00E+00	NA
A6P1-C-03	35655	NA	0.00E+00	0.00E+00	NA
A6P1-C-05	52569	NA	0.00E+00	0.00E+00	NA
A6P1-C-06	59646	NA	0.00E+00	0.00E+00	NA
A6P1-C-07	59654	NA	0.00E+00	0.00E+00	NA
A6P1-C-08	59645	NA	0.00E+00	0.00E+00	NA
A6P1-C-09	59646	NA	0.00E+00	0.00E+00	NA
A6P1-C-10	59647	NA	0.00E+00	0.00E+00	NA
A6P1-C-11	33328	NA	0.00E+00	0.00E+00	NA
A6P2-PC01	61745	NA	0.00E+00	0.00E+00	NA
A6P2-PC02	62262	NA	0.00E+00	0.00E+00	NA
A6P2-PC03	61174	NA	0.00E+00	0.00E+00	NA
A6P2-PC04	52308	NA	0.00E+00	0.00E+00	NA
A6P2-PC05	62304	NA	0.00E+00	0.00E+00	NA
A6-RDBA-C01	40199	NA	0.00E+00	0.00E+00	NA
A6-RDBA-C02	48412	NA	0.00E+00	0.00E+00	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 5

Certification Units	Area sq ft	Tributyl phosphate ug/g	1,1,2-Trichloroethane ug/g	Trichloroethylene ug/g	Trifluorochloromethane ug/g
A6-RDBA-C03	40823	NA	0.00E+00	0.00E+00	NA
A6-SP7-C01	10478	NA	1.10E-03	1.10E-03	NA
A6-SP7-C02	23404	NA	1.40E-03	1.40E-03	NA
A6-SP7-C03	51377	NA	1.20E-03	1.20E-03	NA
A6-SP7-C04	51236	NA	1.10E-03	1.10E-03	NA
A6-SP7-C05	43105	NA	1.20E-03	1.20E-03	NA
A6-SP7-C06	61932	NA	1.20E-03	1.20E-03	NA
A6-SWL-C01	33854	NA	0.00E+00	0.00E+00	NA
A6-SWL-C02	43705	NA	0.00E+00	0.00E+00	NA
A6-SWL-C03	46278	NA	0.00E+00	0.00E+00	NA
A6-SWL-C04	62483	NA	0.00E+00	0.00E+00	NA
A6-SWMP-C01	39509	NA	0.00E+00	0.00E+00	NA
MDC-C01	63140	NA	0.00E+00	0.00E+00	NA
MDC-C02	49961	NA	0.00E+00	0.00E+00	NA
MDC-C03	49959	NA	0.00E+00	0.00E+00	NA
MDC-C04	49961	NA	0.00E+00	0.00E+00	NA
MDC-C05	49961	NA	0.00E+00	0.00E+00	NA
MDC-C06	49488	NA	0.00E+00	0.00E+00	NA
MDC-C07	62072	NA	0.00E+00	0.00E+00	NA
MDC-C08	60855	NA	0.00E+00	0.00E+00	NA
MDC-C09	59378	NA	0.00E+00	0.00E+00	NA
MDC-C10	62401	NA	0.00E+00	0.00E+00	NA
MDC-C11	60583	NA	0.00E+00	0.00E+00	NA
MDC-C12	60175	NA	0.00E+00	0.00E+00	NA
MDC-C13	62130	NA	0.00E+00	0.00E+00	NA
MDC-C14	62155	NA	0.00E+00	0.00E+00	NA
MDC-C15	62090	NA	0.00E+00	0.00E+00	NA
MDC-C16	61943	NA	0.00E+00	0.00E+00	NA
MDC-C17	59422	NA	0.00E+00	0.00E+00	NA
MDC-C18	60223	NA	0.00E+00	0.00E+00	NA
MDC-C19	62477	NA	0.00E+00	0.00E+00	NA
MDC-C20	62276	NA	0.00E+00	0.00E+00	NA
MDC-C21	62495	NA	0.00E+00	0.00E+00	NA
MDC-C22	62316	NA	0.00E+00	0.00E+00	NA
MDC-C23	62353	NA	0.00E+00	0.00E+00	NA
MDC-C24	60304	NA	0.00E+00	0.00E+00	NA
MDC-C25	47898	NA	0.00E+00	0.00E+00	NA
MDC-C26	30405	NA	0.00E+00	0.00E+00	NA
RLS-C01	62047	NA	0.00E+00	0.00E+00	NA
RLS-C02	61267	NA	0.00E+00	0.00E+00	NA
RLS-C03	62187	NA	0.00E+00	0.00E+00	NA
RLS-C04	38764	NA	0.00E+00	0.00E+00	NA
RLS-C05	41328	NA	0.00E+00	0.00E+00	NA
RLS-C06	35642	NA	0.00E+00	0.00E+00	NA
RLS-C07	48286	NA	0.00E+00	0.00E+00	NA
RLS-C08	54674	NA	0.00E+00	0.00E+00	NA
RLS-C09	34834	NA	0.00E+00	0.00E+00	NA
RLS-C10	49499	NA	0.00E+00	0.00E+00	NA
Maximum Value		NA	2.60E-03	1.30E-02	NA
Average (*used in Risk Calc.*)		NA	3.22E-04	3.71E-04	NA
Number of Cert Results		NA	3.60E+01	2.90E+01	NA
Number of Inserted Values		NA	1.21E+02	1.28E+02	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 5

Certification Units	Area sq ft	Vinyl chloride ug/g	Xylenes ug/g
6E-C01	54860	NA	1.80E-03
6E-C02	61241	NA	1.00E-03
6E-C03	44952	NA	2.20E-03
6E-C04	45383	NA	1.40E-03
6E-C05	53943	NA	1.40E-03
6E-C06	60762	NA	1.50E-03
6E-C07	58798	NA	1.50E-03
6E-C08	61018	NA	1.30E-03
6E-C09	61907	NA	5.30E-03
6E-C10	47236	NA	1.10E-03
6E-C11	113659	NA	1.10E-03
6E-C12	95954	NA	1.20E-03
6E-C18	25562	NA	1.10E-03
6E-C19	45819	NA	1.80E-03
A3A-C01	43801	NA	0.00E+00
A3A-C02	21413	NA	0.00E+00
A3A-C03	19977	NA	0.00E+00
A3A-C04	16324	NA	0.00E+00
A3A-C05	42874	NA	0.00E+00
A3A-C06	40377	NA	0.00E+00
A3A-C07	62498	NA	0.00E+00
A3A-C08	33698	NA	0.00E+00
A3A-C09	62497	NA	0.00E+00
A3A-C10	62478	NA	0.00E+00
A3A-C11	61184	NA	0.00E+00
A3A-C12	59032	NA	0.00E+00
A3A-C13	46433	NA	0.00E+00
A3A-C14	42299	NA	0.00E+00
A3A-C15	56140	NA	0.00E+00
A3A-C16	48979	NA	0.00E+00
A3A-C17	46427	NA	0.00E+00
A3A-C18	47482	NA	0.00E+00
A3B-C01	12988	NA	2.80E-02
A3B-C02	21204	NA	1.90E-02
A3B-C03	35467	NA	1.10E-02
A3B-C04	46128	NA	8.40E-03
A3B-C05	34291	NA	4.60E-03
A3B-C06	44405	NA	4.90E-03
A3B-C07	35924	NA	2.70E-02
A3B-C08	32223	NA	3.00E-02
A3B-C09	62500	NA	1.40E-02
A3B-C10	59088	NA	1.10E-02
A3B-C11	59891	NA	5.50E-03
A3B-C12	60100	NA	7.50E-03
A4A-C1	54975	NA	0.00E+00
A4A-C2	58661	NA	0.00E+00
A4A-C3	59341	NA	0.00E+00
A4A-C4	59340	NA	0.00E+00
A4A-C5	59340	NA	0.00E+00
A4A-C6	59318	NA	0.00E+00
A4A-C7	54974	NA	0.00E+00
A4A-C8	55208	NA	0.00E+00
A4B2-C03	48771	NA	0.00E+00

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 5

Certification Units	Area sq ft	Vinyl chloride ug/g	Xylenes ug/g
A4B2-C04	59541	NA	0.00E+00
A4B2-C05	62159	NA	0.00E+00
A4B2-C06	60995	NA	0.00E+00
A4B2-C07	62054	NA	0.00E+00
A4B2-C08	51901	NA	0.00E+00
A4B2-C09	57551	NA	0.00E+00
A4B2-C10	46565	NA	0.00E+00
A4B2-C11	44162	NA	0.00E+00
A4B2-C12	52826	NA	0.00E+00
A4B2-C13	60981	NA	0.00E+00
A4B2-C19	43570	NA	0.00E+00
A4B-C08	61718	NA	0.00E+00
A4B-C09	61721	NA	0.00E+00
A4B-C10	61454	NA	0.00E+00
A4B-C11	61860	NA	0.00E+00
A4B-C12	48596	NA	0.00E+00
A4B-C13	61132	NA	0.00E+00
A4B-C14	59718	NA	0.00E+00
A4B-C15	49531	NA	0.00E+00
A4B-C16	49968	NA	0.00E+00
A4B-C17	46341	NA	0.00E+00
A4B-C18	59593	NA	0.00E+00
A6GAE-C01	42605	NA	0.00E+00
A6GAE-C02	45294	NA	0.00E+00
A6GAE-C03	45365	NA	0.00E+00
A6GAE-C04	56793	NA	0.00E+00
A6GAE-C05	44959	NA	0.00E+00
A6GAE-C06	32461	NA	0.00E+00
A6GAE-C07	45094	NA	0.00E+00
A6GAE-C08	38422	NA	0.00E+00
A6GAE-C09	60191	NA	0.00E+00
A6GAE-C10	61472	NA	0.00E+00
A6GAE-C11	41282	NA	0.00E+00
A6GAE-C12	62502	NA	0.00E+00
A6GAE-C13	38227	NA	0.00E+00
A6GAE-C14	52259	NA	1.40E-03
A6GAE-C15	50818	NA	1.30E-03
A6GAE-C16	32855	NA	1.50E-03
A6GAE-C17	33064	NA	0.00E+00
A6GAE-C18	38040	NA	0.00E+00
A6P1-C-01	56631	NA	0.00E+00
A6P1-C-03	35655	NA	0.00E+00
A6P1-C-05	52569	NA	0.00E+00
A6P1-C-06	59646	NA	0.00E+00
A6P1-C-07	59654	NA	0.00E+00
A6P1-C-08	59645	NA	0.00E+00
A6P1-C-09	59646	NA	0.00E+00
A6P1-C-10	59647	NA	0.00E+00
A6P1-C-11	33328	NA	0.00E+00
A6P2-PC01	61745	NA	0.00E+00
A6P2-PC02	62262	NA	0.00E+00
A6P2-PC03	61174	NA	0.00E+00
A6P2-PC04	52308	NA	0.00E+00
A6P2-PC05	62304	NA	0.00E+00
A6-RDBA-C01	40199	NA	0.00E+00
A6-RDBA-C02	48412	NA	0.00E+00

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 5

Certification Units	Area sq ft	Vinyl chloride ug/g	Xylenes ug/g
A6-RDBA-C03	40823	NA	0.00E+00
A6-SP7-C01	10478	NA	1.10E-03
A6-SP7-C02	23404	NA	1.40E-03
A6-SP7-C03	51377	NA	1.20E-03
A6-SP7-C04	51236	NA	1.50E-03
A6-SP7-C05	43105	NA	2.10E-03
A6-SP7-C06	61932	NA	1.00E-03
A6-SWL-C01	33854	NA	0.00E+00
A6-SWL-C02	43705	NA	0.00E+00
A6-SWL-C03	46278	NA	0.00E+00
A6-SWL-C04	62483	NA	0.00E+00
A6-SWMP-C01	39509	NA	0.00E+00
MDC-C01	63140	NA	0.00E+00
MDC-C02	49961	NA	0.00E+00
MDC-C03	49959	NA	0.00E+00
MDC-C04	49961	NA	0.00E+00
MDC-C05	49961	NA	0.00E+00
MDC-C06	49488	NA	0.00E+00
MDC-C07	62072	NA	0.00E+00
MDC-C08	60855	NA	0.00E+00
MDC-C09	59378	NA	0.00E+00
MDC-C10	62401	NA	0.00E+00
MDC-C11	60583	NA	0.00E+00
MDC-C12	60175	NA	0.00E+00
MDC-C13	62130	NA	0.00E+00
MDC-C14	62155	NA	0.00E+00
MDC-C15	62090	NA	0.00E+00
MDC-C16	61943	NA	0.00E+00
MDC-C17	59422	NA	0.00E+00
MDC-C18	60223	NA	0.00E+00
MDC-C19	62477	NA	0.00E+00
MDC-C20	62276	NA	0.00E+00
MDC-C21	62495	NA	0.00E+00
MDC-C22	62316	NA	0.00E+00
MDC-C23	62353	NA	0.00E+00
MDC-C24	60304	NA	0.00E+00
MDC-C25	47898	NA	0.00E+00
MDC-C26	30405	NA	0.00E+00
RLS-C01	62047	NA	0.00E+00
RLS-C02	61267	NA	0.00E+00
RLS-C03	62187	NA	0.00E+00
RLS-C04	38764	NA	0.00E+00
RLS-C05	41328	NA	0.00E+00
RLS-C06	35642	NA	0.00E+00
RLS-C07	48286	NA	0.00E+00
RLS-C08	54674	NA	0.00E+00
RLS-C09	34834	NA	0.00E+00
RLS-C10	49499	NA	0.00E+00
Maximum Value		NA	3.00E-02
Average (*used in Risk Calc.*)		NA	1.32E-03
Number of Cert Results		NA	3.50E+01
Number of Inserted Values		NA	1.22E+02

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 6

Certification Units	Area sq ft	Cesium-137 pCi/g	Lead-210 pCi/g	Neptunium-237 pCi/g	Plutonium-238 pCi/g	Plutonium-239/240 pCi/g	Radium-226 pCi/g
A6GAW-C04	56554	6.60E-02	1.56E+00	NA	NA	NA	1.38E+00
A6GAW-C05	60572	6.60E-02	1.56E+00	NA	NA	NA	1.19E+00
A6GAW-C06	43699	6.60E-02	1.56E+00	NA	NA	NA	1.34E+00
A6GAW-C07	60875	6.60E-02	1.56E+00	NA	NA	NA	1.25E+00
A6GAW-C08	57572	6.60E-02	1.56E+00	NA	NA	NA	1.16E+00
A6GAW-C09	55834	6.60E-02	1.56E+00	NA	NA	NA	1.12E+00
A6GAW-C10	57214	6.60E-02	1.56E+00	NA	NA	NA	1.30E+00
A6GAW-C11	53643	6.60E-02	1.56E+00	NA	NA	NA	1.04E+00
A6GAW-C14	58328	6.60E-02	1.56E+00	NA	NA	NA	1.36E+00
A6GAW-C15	17664	6.60E-02	1.56E+00	NA	NA	NA	1.48E+00
A6GAW-C16	60550	6.60E-02	1.56E+00	NA	NA	NA	1.60E+00
A6GAW-C17	56376	1.12E-01	1.61E+00	NA	NA	NA	1.45E+00
A6GAW-C18	59124	9.16E-02	1.71E+00	NA	NA	NA	1.41E+00
A6P1-C-12	44299	6.60E-02	1.56E+00	NA	NA	NA	9.15E-01
A6P1-C-13	44285	6.60E-02	1.56E+00	NA	NA	NA	9.13E-01
A6WP-C01	47542	8.31E-02	1.56E+00	NA	NA	NA	1.14E+00
A6WP-C02	47530	8.37E-02	1.56E+00	NA	NA	NA	1.67E+00
A6WP-C03	57524	1.70E-01	1.56E+00	NA	NA	NA	1.28E+00
A6WP-C04	57525	9.30E-02	1.56E+00	NA	NA	NA	1.22E+00
A6WP-C05	57526	9.30E-02	1.56E+00	NA	NA	NA	1.56E+00
A6WP-C06	35718	1.24E-01	1.56E+00	NA	NA	NA	1.61E+00
A6WP-C07	60380	9.10E-02	1.56E+00	NA	NA	NA	1.11E+00
A6WP-C08	54572	9.40E-02	1.56E+00	NA	NA	NA	1.70E+00
A6WP-C09	62403	6.97E-02	1.56E+00	NA	NA	NA	1.12E+00
A6WP-C10	62342	1.07E-01	1.56E+00	NA	NA	NA	1.24E+00
A6WP-C11	62452	1.61E-01	1.56E+00	NA	NA	NA	3.25E+00
A6WP-C12	62414	1.37E-01	1.56E+00	NA	NA	NA	1.57E+00
A6WP-C13	20267	9.30E-01	1.56E+00	NA	NA	NA	1.38E+00
A6WP-C14	39754	9.41E-02	1.56E+00	NA	NA	NA	1.20E+00
A6WP-C15	39666	6.47E-02	1.56E+00	NA	NA	NA	1.69E+00
A6WP-C16	53537	7.05E-02	1.56E+00	NA	NA	NA	1.82E+00
A6WP-C17	24906	8.16E-02	1.56E+00	NA	NA	NA	1.60E+00
A6WP-C18	53022	7.89E-02	1.56E+00	NA	NA	NA	1.60E+00
A6WP-C19	52670	7.93E-02	1.56E+00	NA	NA	NA	1.27E+00
A6WP-C20	43030	1.08E-01	1.56E+00	NA	NA	NA	1.39E+00
A6WP-C21	61583	6.60E-02	1.56E+00	NA	NA	NA	1.51E+00
A6WP-C22	60507	6.60E-02	1.56E+00	NA	NA	NA	1.09E+00
A6WP-C23	60115	6.60E-02	1.56E+00	NA	NA	NA	1.42E+00
A6WP-C24	60292	6.60E-02	1.56E+00	NA	NA	NA	1.09E+00
A6WP-C25	50719	6.60E-02	1.56E+00	NA	NA	NA	1.15E+00
A6WP-C26	50063	6.60E-02	1.56E+00	NA	NA	NA	1.20E+00
PR-C02	25470	6.60E-02	1.56E+00	NA	NA	NA	1.36E+00
PR-C03	41923	6.60E-02	1.56E+00	NA	NA	NA	1.22E+00
PR-C04	61463	6.60E-02	1.56E+00	NA	NA	NA	1.04E+00
PR-C05	59320	6.60E-02	1.56E+00	NA	NA	NA	9.84E-01
RLS-C11	19159	7.30E-02	1.56E+00	NA	NA	NA	1.35E+00
Maximum Value		9.30E-01	1.71E+00	NA	NA	NA	3.25E+00
Average (*used in Risk Calc.*)		1.00E-01	1.56E+00	NA	NA	NA	1.36E+00
Number of Cert Results		2.30E+01	2.00E+00	NA	NA	NA	4.60E+01
Number of Inserted Values		2.30E+01	4.40E+01	NA	NA	NA	0.00E+00

NOTE:

If at least one CU in the zone has an anlytical result for a given COC, the background value is inserted for the COC in other CUs that have no reported analytical result to avoid a high bias for the COC in this zone.

Background is zero for all organic compounds. Background is not reported for neptunium, plutonium, strontium and technetium isotopes, and zero will be used.

NA = Chemical or radionuclide is not applicable to the assesment of risk in this zone because the COC was not evaluated in the certification reports for this zone.

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 6

Certification Units	Area sq ft	Radium-228 pCi/g	Strontium-90 pCi/g	Technetium-99 pCi/g	Thorium-228 pCi/g	Thorium-230 pCi/g	Thorium-232 pCi/g
A6GAW-C04	56554	1.08E+00	NA	9.07E-01	1.07E+00	3.83E+00	1.08E+00
A6GAW-C05	60572	1.17E+00	NA	5.71E+00	1.28E+00	4.41E+00	1.17E+00
A6GAW-C06	43699	1.18E+00	NA	2.09E+00	1.16E+00	3.12E+00	1.18E+00
A6GAW-C07	60875	9.00E-01	NA	8.27E-01	9.42E-01	5.54E+00	9.00E-01
A6GAW-C08	57572	1.02E+00	NA	1.84E+00	1.02E+00	3.03E+00	1.02E+00
A6GAW-C09	55834	9.28E-01	NA	1.78E+00	9.18E-01	2.48E+00	9.28E-01
A6GAW-C10	57214	1.06E+00	NA	1.66E+00	1.06E+00	2.82E+00	1.06E+00
A6GAW-C11	53643	1.03E+00	NA	2.20E+00	1.00E+00	2.46E+00	1.03E+00
A6GAW-C14	58328	1.19E+00	NA	1.88E+00	1.19E+00	4.36E+01	1.19E+00
A6GAW-C15	17664	1.09E+00	NA	8.15E-01	1.15E+00	8.03E+00	1.09E+00
A6GAW-C16	60550	1.16E+00	NA	2.23E+00	1.16E+00	3.73E+00	1.16E+00
A6GAW-C17	56376	8.72E-01	NA	1.04E+00	8.84E-01	3.84E+00	8.72E-01
A6GAW-C18	59124	1.03E+00	NA	2.39E+00	1.04E+00	1.55E+01	1.03E+00
A6P1-C-12	44299	1.13E+00	NA	0.00E+00	1.15E+00	2.57E+01	1.13E+00
A6P1-C-13	44285	8.77E-01	NA	0.00E+00	9.11E-01	1.08E+01	8.77E-01
A6WP-C01	47542	1.41E+00	NA	1.07E+00	1.39E+00	5.68E+00	1.41E+00
A6WP-C02	47530	1.29E+00	NA	8.81E-01	1.29E+00	5.89E+00	1.29E+00
A6WP-C03	57524	7.93E-01	NA	7.23E+00	7.57E-01	4.51E+00	7.93E-01
A6WP-C04	57525	8.15E-01	NA	1.31E+00	7.74E-01	3.29E+00	8.15E-01
A6WP-C05	57526	8.94E-01	NA	1.06E+00	8.75E-01	2.31E+01	8.94E-01
A6WP-C06	35718	1.30E+00	NA	9.64E-01	1.33E+00	1.74E+00	1.30E+00
A6WP-C07	60380	8.16E-01	NA	4.86E+00	7.94E-01	2.90E+00	8.16E-01
A6WP-C08	54572	1.03E+00	NA	1.36E+00	1.02E+00	1.36E+01	1.03E+00
A6WP-C09	62403	1.04E+00	NA	1.87E+01	1.07E+00	4.71E+00	1.04E+00
A6WP-C10	62342	1.24E+00	NA	3.82E+00	1.30E+00	1.04E+01	1.24E+00
A6WP-C11	62452	1.50E+00	NA	3.92E+00	1.63E+00	1.89E+01	1.50E+00
A6WP-C12	62414	1.04E+00	NA	1.48E+01	1.10E+00	1.68E+01	1.04E+00
A6WP-C13	20267	1.16E+00	NA	2.85E+01	1.13E+00	1.80E+01	1.32E+00
A6WP-C14	39754	9.64E-01	NA	2.30E+00	9.75E-01	2.84E+00	9.64E-01
A6WP-C15	39666	1.12E+00	NA	9.26E-01	1.21E+00	6.81E+00	1.12E+00
A6WP-C16	53537	1.42E+00	NA	9.26E-01	1.45E+00	8.34E+00	1.42E+00
A6WP-C17	24906	1.07E+00	NA	1.69E+00	1.07E+00	8.97E+00	1.07E+00
A6WP-C18	53022	1.78E+00	NA	4.55E+00	1.03E+00	1.03E+01	1.13E+00
A6WP-C19	52670	1.15E+00	NA	3.06E+00	1.20E+00	2.29E+01	1.15E+00
A6WP-C20	43030	1.48E+00	NA	4.24E+00	1.51E+00	4.92E+00	1.48E+00
A6WP-C21	61583	1.49E+00	NA	0.00E+00	1.51E+00	1.56E+00	1.49E+00
A6WP-C22	60507	1.11E+00	NA	0.00E+00	1.15E+00	1.56E+00	1.11E+00
A6WP-C23	60115	1.02E+00	NA	0.00E+00	1.10E+00	1.56E+00	1.02E+00
A6WP-C24	60292	9.50E-01	NA	0.00E+00	9.45E-01	1.56E+00	9.50E-01
A6WP-C25	50719	9.59E-01	NA	0.00E+00	9.86E-01	1.56E+00	9.59E-01
A6WP-C26	50063	1.32E+00	NA	2.73E+00	1.37E+00	1.56E+00	1.32E+00
PR-C02	25470	1.44E+00	NA	0.00E+00	1.45E+00	1.56E+00	1.44E+00
PR-C03	41923	1.02E+00	NA	0.00E+00	1.07E+00	1.56E+00	1.02E+00
PR-C04	61463	8.92E-01	NA	0.00E+00	8.67E-01	1.56E+00	8.92E-01
PR-C05	59320	9.78E-01	NA	0.00E+00	9.60E-01	1.56E+00	9.78E-01
RLS-C11	19159	1.25E+00	NA	1.90E+00	1.25E+00	3.28E+00	1.25E+00
Maximum Value		1.78E+00	NA	2.85E+01	1.63E+00	4.36E+01	1.50E+00
Average (*used in Risk Calc.*)		1.12E+00	NA	2.96E+00	1.12E+00	7.66E+00	1.11E+00
Number of Cert Results		4.60E+01	NA	3.50E+01	4.60E+01	3.60E+01	4.60E+01
Number of Inserted Values		0.00E+00	NA	1.10E+01	0.00E+00	1.00E+01	0.00E+00

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 6

Certification Units	Area sq ft	Uranium-234 pCi/g	Uranium-235 pCi/g	Uranium-238 pCi/g	Antimony ug/g	Arsenic ug/g	Barium ug/g	Beryllium ug/g
A6GAW-C04	56554	1.17E+01	5.33E-01	1.14E+01	4.73E-01	1.24E+01	1.87E+02	1.44E+00
A6GAW-C05	60572	1.71E+01	7.79E-01	1.67E+01	7.53E-01	1.24E+01	1.87E+02	1.44E+00
A6GAW-C06	43699	1.65E+01	7.50E-01	1.61E+01	2.90E+00	1.24E+01	1.87E+02	1.44E+00
A6GAW-C07	60875	8.87E+00	4.04E-01	8.67E+00	8.40E-01	1.24E+01	1.87E+02	1.44E+00
A6GAW-C08	57572	1.25E+01	5.69E-01	1.22E+01	2.70E+00	1.24E+01	1.87E+02	1.44E+00
A6GAW-C09	55834	4.54E+00	2.07E-01	4.43E+00	7.30E-01	1.24E+01	1.87E+02	1.44E+00
A6GAW-C10	57214	5.77E+00	2.63E-01	5.63E+00	5.10E+00	1.24E+01	1.87E+02	1.44E+00
A6GAW-C11	53643	5.15E+00	2.35E-01	5.03E+00	2.25E+00	1.24E+01	1.87E+02	1.44E+00
A6GAW-C14	58328	1.89E+01	8.63E-01	1.85E+01	8.80E-01	1.24E+01	1.87E+02	1.44E+00
A6GAW-C15	17664	1.76E+01	8.01E-01	1.72E+01	5.40E-01	1.24E+01	1.87E+02	1.44E+00
A6GAW-C16	60550	1.06E+01	4.84E-01	1.04E+01	4.80E+00	1.05E+01	1.87E+02	1.44E+00
A6GAW-C17	56376	8.40E+00	3.83E-01	8.20E+00	4.86E-01	1.24E+01	1.87E+02	1.44E+00
A6GAW-C18	59124	2.08E+01	9.47E-01	2.03E+01	7.20E-01	1.24E+01	1.87E+02	1.44E+00
A6P1-C-12	44299	1.08E+01	4.90E-01	1.05E+01	2.87E+00	6.35E+00	1.87E+02	6.05E-01
A6P1-C-13	44285	4.20E+00	1.91E-01	4.10E+00	2.87E+00	6.22E+00	1.87E+02	5.74E-01
A6WP-C01	47542	1.83E+01	8.35E-01	1.79E+01	5.30E-01	6.40E+00	1.43E+02	1.30E+00
A6WP-C02	47530	2.53E+01	1.15E+00	2.47E+01	5.30E-01	7.70E+00	1.08E+02	8.70E-01
A6WP-C03	57524	4.33E+00	1.98E-01	4.23E+00	4.90E-01	9.00E+00	1.87E+02	7.60E-01
A6WP-C04	57525	4.03E+00	1.84E-01	3.93E+00	4.40E-01	7.30E+00	1.87E+02	7.10E-01
A6WP-C05	57526	1.11E+01	5.07E-01	1.09E+01	4.50E-01	7.80E+00	1.87E+02	7.60E-01
A6WP-C06	35718	2.59E+01	1.18E+00	2.53E+01	4.70E-01	1.35E+01	1.87E+02	1.30E+00
A6WP-C07	60380	2.75E+01	1.25E+00	2.69E+01	1.10E+00	9.20E+00	1.87E+02	1.00E+00
A6WP-C08	54572	2.69E+01	1.22E+00	2.62E+01	4.90E-01	8.80E+00	1.87E+02	1.00E+00
A6WP-C09	62403	5.15E+00	2.35E-01	5.03E+00	7.00E-01	8.70E+00	1.87E+02	6.80E-01
A6WP-C10	62342	1.98E+01	9.00E-01	1.93E+01	7.18E-01	6.93E+00	1.87E+02	4.88E-01
A6WP-C11	62452	4.81E+00	2.19E-01	4.70E+00	7.42E-01	5.09E+00	1.87E+02	6.35E-01
A6WP-C12	62414	2.34E+01	1.07E+00	2.29E+01	1.10E+00	1.09E+01	1.87E+02	7.30E-01
A6WP-C13	20267	2.45E+01	1.12E+00	2.40E+01	8.60E-01	6.40E+00	1.87E+02	6.80E-01
A6WP-C14	39754	1.71E+01	7.79E-01	1.67E+01	2.27E+00	7.78E+00	1.87E+02	8.30E-01
A6WP-C15	39666	5.36E+00	2.44E-01	5.23E+00	7.20E-01	7.60E+00	1.87E+02	5.09E-01
A6WP-C16	53537	1.71E+01	7.78E-01	1.67E+01	1.92E+00	1.00E+01	1.87E+02	1.14E+00
A6WP-C17	24906	1.44E+01	6.58E-01	1.41E+01	4.90E-01	6.40E+00	1.87E+02	7.10E-01
A6WP-C18	53022	1.03E+01	4.71E-01	1.01E+01	8.60E-01	7.90E+00	1.87E+02	1.00E+00
A6WP-C19	52670	2.69E+01	1.22E+00	2.62E+01	4.30E-01	1.04E+01	1.87E+02	9.90E-01
A6WP-C20	43030	2.42E+01	1.10E+00	2.36E+01	2.33E+00	7.40E+00	1.87E+02	9.90E-01
A6WP-C21	61583	1.87E+01	8.54E-01	1.83E+01	7.40E-01	1.24E+01	1.87E+02	1.44E+00
A6WP-C22	60507	6.83E+00	3.11E-01	6.67E+00	6.60E-01	1.24E+01	1.87E+02	1.44E+00
A6WP-C23	60115	7.44E+00	3.39E-01	7.27E+00	7.79E-01	1.24E+01	1.87E+02	1.44E+00
A6WP-C24	60292	1.60E+01	7.28E-01	1.56E+01	8.92E-01	1.24E+01	1.87E+02	1.44E+00
A6WP-C25	50719	9.28E+00	4.23E-01	9.07E+00	7.50E-01	1.24E+01	1.87E+02	1.44E+00
A6WP-C26	50063	1.40E+01	6.38E-01	1.37E+01	8.34E-01	1.24E+01	1.87E+02	1.44E+00
PR-C02	25470	3.82E+00	1.74E-01	3.73E+00	2.87E+00	1.24E+01	1.87E+02	1.44E+00
PR-C03	41923	4.16E+00	1.90E-01	4.07E+00	2.87E+00	1.24E+01	1.87E+02	1.44E+00
PR-C04	61463	4.13E+00	1.88E-01	4.03E+00	2.87E+00	1.24E+01	1.87E+02	1.44E+00
PR-C05	59320	4.98E+00	2.27E-01	4.87E+00	2.87E+00	1.24E+01	1.87E+02	1.44E+00
RLS-C11	19159	2.38E+00	1.08E-01	2.32E+00	1.20E+00	9.14E+00	1.87E+02	9.40E-01
Maximum Value		2.75E+01	1.25E+00	2.69E+01	5.10E+00	1.35E+01	1.87E+02	1.44E+00
Average (*used in Risk Calc.*)		1.31E+01	5.96E-01	1.28E+01	1.39E+00	1.02E+01	1.84E+02	1.14E+00
Number of Cert Results		4.60E+01	4.60E+01	4.60E+01	4.00E+01	2.40E+01	2.00E+00	2.30E+01
Number of Inserted Values		0.00E+00	0.00E+00	0.00E+00	6.00E+00	2.20E+01	4.40E+01	2.30E+01

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 6

Certification Units	Area sq ft	Boron ug/g	Cadmium ug/g	Chromium (VI) ug/g	Cobalt ug/g	Copper ug/g	Fluoride ug/g	Lead ug/g	Manganese ug/g
A6GAW-C04	56554	NA	2.70E-01	NA	NA	NA	3.20E+00	NA	NA
A6GAW-C05	60572	NA	2.47E-01	NA	NA	NA	3.20E+00	NA	NA
A6GAW-C06	43699	NA	3.50E-01	NA	NA	NA	3.20E+00	NA	NA
A6GAW-C07	60875	NA	3.90E-01	NA	NA	NA	3.20E+00	NA	NA
A6GAW-C08	57572	NA	2.50E-01	NA	NA	NA	3.20E+00	NA	NA
A6GAW-C09	55834	NA	9.89E-01	NA	NA	NA	3.20E+00	NA	NA
A6GAW-C10	57214	NA	4.30E-01	NA	NA	NA	3.20E+00	NA	NA
A6GAW-C11	53643	NA	9.89E-01	NA	NA	NA	3.20E+00	NA	NA
A6GAW-C14	58328	NA	4.30E-01	NA	NA	NA	3.20E+00	NA	NA
A6GAW-C15	17664	NA	2.40E-01	NA	NA	NA	3.20E+00	NA	NA
A6GAW-C16	60550	NA	3.52E-01	NA	NA	NA	3.20E+00	NA	NA
A6GAW-C17	56376	NA	2.50E-01	NA	NA	NA	3.20E+00	NA	NA
A6GAW-C18	59124	NA	3.30E-01	NA	NA	NA	3.20E+00	NA	NA
A6P1-C-12	44299	NA	9.89E-01	NA	NA	NA	3.20E+00	NA	NA
A6P1-C-13	44285	NA	9.89E-01	NA	NA	NA	3.20E+00	NA	NA
A6WP-C01	47542	NA	3.90E-01	NA	NA	NA	8.50E+00	NA	NA
A6WP-C02	47530	NA	5.60E-01	NA	NA	NA	2.16E+01	NA	NA
A6WP-C03	57524	NA	3.80E-01	NA	NA	NA	9.80E+00	NA	NA
A6WP-C04	57525	NA	5.50E-01	NA	NA	NA	7.80E+00	NA	NA
A6WP-C05	57526	NA	4.30E-01	NA	NA	NA	2.08E+01	NA	NA
A6WP-C06	35718	NA	3.80E-01	NA	NA	NA	1.01E+01	NA	NA
A6WP-C07	60380	NA	4.10E-01	NA	NA	NA	1.40E+01	NA	NA
A6WP-C08	54572	NA	3.70E-01	NA	NA	NA	3.30E+01	NA	NA
A6WP-C09	62403	NA	3.20E-01	NA	NA	NA	9.90E+00	NA	NA
A6WP-C10	62342	NA	2.80E-01	NA	NA	NA	5.70E+00	NA	NA
A6WP-C11	62452	NA	4.12E-01	NA	NA	NA	6.22E+00	NA	NA
A6WP-C12	62414	NA	2.90E-01	NA	NA	NA	1.66E+01	NA	NA
A6WP-C13	20267	NA	2.90E-01	NA	NA	NA	4.58E+00	NA	NA
A6WP-C14	39754	NA	5.66E-01	NA	NA	NA	9.55E+00	NA	NA
A6WP-C15	39666	NA	2.08E-01	NA	NA	NA	2.28E+00	NA	NA
A6WP-C16	53537	NA	3.00E-01	NA	NA	NA	1.71E+01	NA	NA
A6WP-C17	24906	NA	1.10E+00	NA	NA	NA	1.23E+01	NA	NA
A6WP-C18	53022	NA	2.60E-01	NA	NA	NA	5.05E+00	NA	NA
A6WP-C19	52670	NA	5.89E-01	NA	NA	NA	1.47E+01	NA	NA
A6WP-C20	43030	NA	6.10E-01	NA	NA	NA	1.25E+01	NA	NA
A6WP-C21	61583	NA	2.49E-01	NA	NA	NA	3.20E+00	NA	NA
A6WP-C22	60507	NA	2.30E-01	NA	NA	NA	3.20E+00	NA	NA
A6WP-C23	60115	NA	2.47E-01	NA	NA	NA	3.20E+00	NA	NA
A6WP-C24	60292	NA	2.98E-01	NA	NA	NA	3.20E+00	NA	NA
A6WP-C25	50719	NA	1.59E-01	NA	NA	NA	3.20E+00	NA	NA
A6WP-C26	50063	NA	1.97E-01	NA	NA	NA	3.20E+00	NA	NA
PR-C02	25470	NA	9.89E-01	NA	NA	NA	3.20E+00	NA	NA
PR-C03	41923	NA	9.89E-01	NA	NA	NA	3.20E+00	NA	NA
PR-C04	61463	NA	9.89E-01	NA	NA	NA	3.20E+00	NA	NA
PR-C05	59320	NA	9.89E-01	NA	NA	NA	3.20E+00	NA	NA
RLS-C11	19159	NA	9.89E-01	NA	NA	NA	2.33E+00	NA	NA
Maximum Value		NA	1.10E+00	NA	NA	NA	3.30E+01	NA	NA
Average (*used in Risk Calc.*)		NA	4.89E-01	NA	NA	NA	7.05E+00	NA	NA
Number of Cert Results		NA	3.70E+01	NA	NA	NA	2.10E+01	NA	NA
Number of Inserted Values		NA	9.00E+00	NA	NA	NA	2.50E+01	NA	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 6

Certification Units	Area sq ft	Mercury ug/g	Molybdenum ug/g	Nickel ug/g	Selenium ug/g	Silver ug/g	Thallium ug/g	Uranium ug/g	Vanadium ug/g
A6GAW-C04	56554	NA	5.24E+00	NA	NA	1.76E-01	NA	3.43E+01	NA
A6GAW-C05	60572	NA	5.24E+00	NA	NA	2.60E-01	NA	5.01E+01	NA
A6GAW-C06	43699	NA	5.24E+00	NA	NA	9.50E-02	NA	4.82E+01	NA
A6GAW-C07	60875	NA	5.24E+00	NA	NA	5.39E-01	NA	2.60E+01	NA
A6GAW-C08	57572	NA	5.24E+00	NA	NA	7.50E-02	NA	3.66E+01	NA
A6GAW-C09	55834	NA	5.24E+00	NA	NA	1.13E+00	NA	1.33E+01	NA
A6GAW-C10	57214	NA	5.24E+00	NA	NA	1.10E-01	NA	1.69E+01	NA
A6GAW-C11	53643	NA	5.24E+00	NA	NA	1.13E+00	NA	1.51E+01	NA
A6GAW-C14	58328	NA	5.24E+00	NA	NA	1.20E-01	NA	5.55E+01	NA
A6GAW-C15	17664	NA	2.04E+00	NA	NA	1.56E-01	NA	5.15E+01	NA
A6GAW-C16	60550	NA	2.28E+00	NA	NA	7.50E-02	NA	3.11E+01	NA
A6GAW-C17	56376	NA	3.49E+00	NA	NA	5.70E-02	NA	2.46E+01	NA
A6GAW-C18	59124	NA	2.00E+00	NA	NA	7.20E-02	NA	6.09E+01	NA
A6P1-C-12	44299	NA	5.24E+00	NA	NA	1.13E+00	NA	3.15E+01	NA
A6P1-C-13	44285	NA	5.24E+00	NA	NA	1.13E+00	NA	1.23E+01	NA
A6WP-C01	47542	NA	5.24E+00	NA	NA	1.80E-01	NA	5.37E+01	NA
A6WP-C02	47530	NA	5.24E+00	NA	NA	1.90E-01	NA	7.42E+01	NA
A6WP-C03	57524	NA	5.24E+00	NA	NA	1.70E-01	NA	1.27E+01	NA
A6WP-C04	57525	NA	5.24E+00	NA	NA	1.50E-01	NA	1.18E+01	NA
A6WP-C05	57526	NA	5.24E+00	NA	NA	1.90E-01	NA	3.26E+01	NA
A6WP-C06	35718	NA	5.24E+00	NA	NA	1.60E-01	NA	7.59E+01	NA
A6WP-C07	60380	NA	5.24E+00	NA	NA	1.60E-01	NA	8.06E+01	NA
A6WP-C08	54572	NA	5.24E+00	NA	NA	1.70E-01	NA	7.87E+01	NA
A6WP-C09	62403	NA	5.24E+00	NA	NA	1.19E-01	NA	1.51E+01	NA
A6WP-C10	62342	NA	5.24E+00	NA	NA	1.17E+00	NA	5.79E+01	NA
A6WP-C11	62452	NA	5.24E+00	NA	NA	2.78E-01	NA	1.41E+01	NA
A6WP-C12	62414	NA	5.24E+00	NA	NA	1.19E-01	NA	6.87E+01	NA
A6WP-C13	20267	NA	7.40E+00	NA	NA	1.14E-01	NA	7.19E+01	NA
A6WP-C14	39754	NA	3.60E+00	NA	NA	1.13E-01	NA	5.01E+01	NA
A6WP-C15	39666	NA	2.40E+00	NA	NA	6.75E-01	NA	1.57E+01	NA
A6WP-C16	53537	NA	5.24E+00	NA	NA	7.20E-01	NA	5.00E+01	NA
A6WP-C17	24906	NA	5.24E+00	NA	NA	6.12E-01	NA	4.23E+01	NA
A6WP-C18	53022	NA	5.24E+00	NA	NA	1.23E-01	NA	3.03E+01	NA
A6WP-C19	52670	NA	2.60E+00	NA	NA	1.20E-01	NA	7.87E+01	NA
A6WP-C20	43030	NA	5.24E+00	NA	NA	1.17E-01	NA	7.09E+01	NA
A6WP-C21	61583	NA	5.24E+00	NA	NA	7.83E-01	NA	5.49E+01	NA
A6WP-C22	60507	NA	5.24E+00	NA	NA	2.48E-01	NA	2.00E+01	NA
A6WP-C23	60115	NA	5.24E+00	NA	NA	5.43E-01	NA	2.18E+01	NA
A6WP-C24	60292	NA	5.24E+00	NA	NA	1.62E+00	NA	4.68E+01	NA
A6WP-C25	50719	NA	5.24E+00	NA	NA	6.66E-01	NA	2.72E+01	NA
A6WP-C26	50063	NA	5.24E+00	NA	NA	2.85E-01	NA	4.10E+01	NA
PR-C02	25470	NA	5.24E+00	NA	NA	1.13E+00	NA	1.12E+01	NA
PR-C03	41923	NA	5.24E+00	NA	NA	1.13E+00	NA	1.22E+01	NA
PR-C04	61463	NA	5.24E+00	NA	NA	1.13E+00	NA	1.21E+01	NA
PR-C05	59320	NA	5.24E+00	NA	NA	1.13E+00	NA	1.46E+01	NA
RLS-C11	19159	NA	5.24E+00	NA	NA	1.13E+00	NA	6.96E+00	NA
Maximum Value		NA	7.40E+00	NA	NA	1.62E+00	NA	8.06E+01	NA
Average (*used in Risk Calc.*)		NA	4.89E+00	NA	NA	4.72E-01	NA	3.83E+01	NA
Number of Cert Results		NA	8.00E+00	NA	NA	3.70E+01	NA	4.60E+01	NA
Number of Inserted Values		NA	3.80E+01	NA	NA	9.00E+00	NA	0.00E+00	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 6

Certification Units	Area sq ft	Zinc ug/g	Acetone ug/g	Aroclor-1254 ug/g	Aroclor-1260 ug/g	Benzene ug/g	Benzo(a)anthracene ug/g
A6GAW-C04	56554	NA	NA	0.00E+00	0.00E+00	NA	0.00E+00
A6GAW-C05	60572	NA	NA	0.00E+00	0.00E+00	NA	0.00E+00
A6GAW-C06	43699	NA	NA	0.00E+00	0.00E+00	NA	0.00E+00
A6GAW-C07	60875	NA	NA	0.00E+00	0.00E+00	NA	0.00E+00
A6GAW-C08	57572	NA	NA	0.00E+00	0.00E+00	NA	0.00E+00
A6GAW-C09	55834	NA	NA	0.00E+00	0.00E+00	NA	0.00E+00
A6GAW-C10	57214	NA	NA	0.00E+00	0.00E+00	NA	0.00E+00
A6GAW-C11	53643	NA	NA	0.00E+00	0.00E+00	NA	0.00E+00
A6GAW-C14	58328	NA	NA	0.00E+00	0.00E+00	NA	0.00E+00
A6GAW-C15	17664	NA	NA	0.00E+00	0.00E+00	NA	3.91E-02
A6GAW-C16	60550	NA	NA	0.00E+00	0.00E+00	NA	8.65E-02
A6GAW-C17	56376	NA	NA	1.52E-02	0.00E+00	NA	3.83E-02
A6GAW-C18	59124	NA	NA	1.88E-02	0.00E+00	NA	1.43E-01
A6P1-C-12	44299	NA	NA	3.30E-03	4.10E-03	NA	0.00E+00
A6P1-C-13	44285	NA	NA	3.90E-03	4.20E-03	NA	0.00E+00
A6WP-C01	47542	NA	NA	1.70E-02	1.70E-02	NA	0.00E+00
A6WP-C02	47530	NA	NA	8.00E-03	8.00E-03	NA	0.00E+00
A6WP-C03	57524	NA	NA	1.70E-02	1.70E-02	NA	0.00E+00
A6WP-C04	57525	NA	NA	1.60E-02	1.60E-02	NA	0.00E+00
A6WP-C05	57526	NA	NA	1.80E-02	7.75E-03	NA	0.00E+00
A6WP-C06	35718	NA	NA	1.60E-02	1.60E-02	NA	0.00E+00
A6WP-C07	60380	NA	NA	3.30E-01	1.60E-02	NA	0.00E+00
A6WP-C08	54572	NA	NA	3.60E-02	1.70E-02	NA	0.00E+00
A6WP-C09	62403	NA	NA	8.61E-03	4.02E-03	NA	0.00E+00
A6WP-C10	62342	NA	NA	2.56E-02	1.17E-02	NA	0.00E+00
A6WP-C11	62452	NA	NA	4.60E-03	3.93E-03	NA	0.00E+00
A6WP-C12	62414	NA	NA	1.09E-01	6.19E-02	NA	0.00E+00
A6WP-C13	20267	NA	NA	1.60E-02	6.80E-03	NA	0.00E+00
A6WP-C14	39754	NA	NA	4.08E-02	2.69E-02	NA	0.00E+00
A6WP-C15	39666	NA	NA	2.92E-02	1.33E-02	NA	0.00E+00
A6WP-C16	53537	NA	NA	9.27E-02	4.38E-02	NA	0.00E+00
A6WP-C17	24906	NA	NA	9.30E-03	6.00E-03	NA	0.00E+00
A6WP-C18	53022	NA	NA	8.40E-03	5.00E-03	NA	0.00E+00
A6WP-C19	52670	NA	NA	7.66E-02	1.86E-02	NA	0.00E+00
A6WP-C20	43030	NA	NA	8.90E-03	5.50E-03	NA	0.00E+00
A6WP-C21	61583	NA	NA	0.00E+00	0.00E+00	NA	0.00E+00
A6WP-C22	60507	NA	NA	0.00E+00	0.00E+00	NA	0.00E+00
A6WP-C23	60115	NA	NA	0.00E+00	0.00E+00	NA	0.00E+00
A6WP-C24	60292	NA	NA	0.00E+00	0.00E+00	NA	0.00E+00
A6WP-C25	50719	NA	NA	0.00E+00	0.00E+00	NA	0.00E+00
A6WP-C26	50063	NA	NA	0.00E+00	0.00E+00	NA	0.00E+00
PR-C02	25470	NA	NA	0.00E+00	0.00E+00	NA	0.00E+00
PR-C03	41923	NA	NA	0.00E+00	0.00E+00	NA	0.00E+00
PR-C04	61463	NA	NA	0.00E+00	0.00E+00	NA	0.00E+00
PR-C05	59320	NA	NA	0.00E+00	0.00E+00	NA	0.00E+00
RLS-C11	19159	NA	NA	5.80E-03	4.30E-03	NA	0.00E+00
Maximum Value		NA	NA	3.30E-01	6.19E-02	NA	1.43E-01
Average (*used in Risk Calc.*)		NA	NA	2.03E-02	7.28E-03	NA	6.67E-03
Number of Cert Results		NA	NA	2.50E+01	2.30E+01	NA	4.00E+00
Number of Inserted Values		NA	NA	2.10E+01	2.30E+01	NA	4.20E+01

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 6

Certification Units	Area sq ft	Benzo(a)pyrene ug/g	Benzo(b)fluoranthene ug/g	Benzo(k)fluoranthene ug/g	Bis(2-chloroisopropyl)ether ug/g
A6GAW-C04	56554	0.00E+00	0.00E+00	0.00E+00	NA
A6GAW-C05	60572	0.00E+00	0.00E+00	0.00E+00	NA
A6GAW-C06	43699	0.00E+00	0.00E+00	0.00E+00	NA
A6GAW-C07	60875	0.00E+00	0.00E+00	0.00E+00	NA
A6GAW-C08	57572	0.00E+00	0.00E+00	0.00E+00	NA
A6GAW-C09	55834	0.00E+00	0.00E+00	0.00E+00	NA
A6GAW-C10	57214	0.00E+00	0.00E+00	0.00E+00	NA
A6GAW-C11	53643	0.00E+00	0.00E+00	0.00E+00	NA
A6GAW-C14	58328	0.00E+00	0.00E+00	0.00E+00	NA
A6GAW-C15	17664	3.91E-02	5.39E-02	3.91E-02	NA
A6GAW-C16	60550	1.21E-01	1.89E-01	7.44E-02	NA
A6GAW-C17	56376	3.83E-02	3.83E-02	3.83E-02	NA
A6GAW-C18	59124	2.83E-01	4.45E-01	3.91E-02	NA
A6P1-C-12	44299	0.00E+00	0.00E+00	0.00E+00	NA
A6P1-C-13	44285	0.00E+00	0.00E+00	0.00E+00	NA
A6WP-C01	47542	2.80E-01	2.20E-01	0.00E+00	NA
A6WP-C02	47530	2.20E-01	1.80E-01	0.00E+00	NA
A6WP-C03	57524	4.90E-02	5.30E-02	0.00E+00	NA
A6WP-C04	57525	3.70E-02	3.30E-02	0.00E+00	NA
A6WP-C05	57526	7.90E-02	6.50E-02	0.00E+00	NA
A6WP-C06	35718	1.20E-02	1.30E-02	0.00E+00	NA
A6WP-C07	60380	2.20E-01	6.30E-02	0.00E+00	NA
A6WP-C08	54572	1.10E-01	1.90E-01	0.00E+00	NA
A6WP-C09	62403	2.57E-01	4.02E-02	0.00E+00	NA
A6WP-C10	62342	1.18E-01	1.06E-01	0.00E+00	NA
A6WP-C11	62452	4.50E-02	1.20E-01	0.00E+00	NA
A6WP-C12	62414	4.03E-02	4.03E-02	0.00E+00	NA
A6WP-C13	20267	3.94E-02	3.94E-02	0.00E+00	NA
A6WP-C14	39754	3.81E-02	3.81E-02	0.00E+00	NA
A6WP-C15	39666	9.02E-02	3.87E-02	0.00E+00	NA
A6WP-C16	53537	7.47E-02	8.35E-02	0.00E+00	NA
A6WP-C17	24906	4.15E-02	4.15E-02	0.00E+00	NA
A6WP-C18	53022	1.12E-01	9.31E-02	0.00E+00	NA
A6WP-C19	52670	3.93E-02	3.93E-02	0.00E+00	NA
A6WP-C20	43030	4.02E-02	4.02E-02	0.00E+00	NA
A6WP-C21	61583	0.00E+00	0.00E+00	0.00E+00	NA
A6WP-C22	60507	0.00E+00	0.00E+00	0.00E+00	NA
A6WP-C23	60115	0.00E+00	0.00E+00	0.00E+00	NA
A6WP-C24	60292	0.00E+00	0.00E+00	0.00E+00	NA
A6WP-C25	50719	0.00E+00	0.00E+00	0.00E+00	NA
A6WP-C26	50063	0.00E+00	0.00E+00	0.00E+00	NA
PR-C02	25470	0.00E+00	0.00E+00	0.00E+00	NA
PR-C03	41923	0.00E+00	0.00E+00	0.00E+00	NA
PR-C04	61463	0.00E+00	0.00E+00	0.00E+00	NA
PR-C05	59320	0.00E+00	0.00E+00	0.00E+00	NA
RLS-C11	19159	1.19E-01	1.31E-01	0.00E+00	NA
Maximum Value		2.83E-01	4.45E-01	7.44E-02	NA
Average (*used in Risk Calc.*)		5.53E-02	5.21E-02	4.15E-03	NA
Number of Cert Results		2.50E+01	2.50E+01	4.00E+00	NA
Number of Inserted Values		2.10E+01	2.10E+01	4.20E+01	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 6

Certification Units	Area sq ft	Bis(2-ethylhexyl)phthalate ug/g	Bromodichloromethane ug/g	Bromoform ug/g	Bromomethane ug/g	2-Butanone ug/g
A6GAW-C04	56554	NA	0.00E+00	NA	NA	NA
A6GAW-C05	60572	NA	0.00E+00	NA	NA	NA
A6GAW-C06	43699	NA	0.00E+00	NA	NA	NA
A6GAW-C07	60875	NA	0.00E+00	NA	NA	NA
A6GAW-C08	57572	NA	0.00E+00	NA	NA	NA
A6GAW-C09	55834	NA	0.00E+00	NA	NA	NA
A6GAW-C10	57214	NA	0.00E+00	NA	NA	NA
A6GAW-C11	53643	NA	0.00E+00	NA	NA	NA
A6GAW-C14	58328	NA	0.00E+00	NA	NA	NA
A6GAW-C15	17664	NA	0.00E+00	NA	NA	NA
A6GAW-C16	60550	NA	0.00E+00	NA	NA	NA
A6GAW-C17	56376	NA	0.00E+00	NA	NA	NA
A6GAW-C18	59124	NA	0.00E+00	NA	NA	NA
A6P1-C-12	44299	NA	0.00E+00	NA	NA	NA
A6P1-C-13	44285	NA	0.00E+00	NA	NA	NA
A6WP-C01	47542	NA	1.70E-03	NA	NA	NA
A6WP-C02	47530	NA	1.80E-03	NA	NA	NA
A6WP-C03	57524	NA	1.50E-03	NA	NA	NA
A6WP-C04	57525	NA	6.00E-03	NA	NA	NA
A6WP-C05	57526	NA	1.50E-03	NA	NA	NA
A6WP-C06	35718	NA	6.00E-03	NA	NA	NA
A6WP-C07	60380	NA	6.00E-03	NA	NA	NA
A6WP-C08	54572	NA	6.00E-03	NA	NA	NA
A6WP-C09	62403	NA	1.10E-03	NA	NA	NA
A6WP-C10	62342	NA	1.10E-03	NA	NA	NA
A6WP-C11	62452	NA	1.30E-03	NA	NA	NA
A6WP-C12	62414	NA	1.10E-03	NA	NA	NA
A6WP-C13	20267	NA	1.20E-03	NA	NA	NA
A6WP-C14	39754	NA	1.40E-03	NA	NA	NA
A6WP-C15	39666	NA	1.30E-03	NA	NA	NA
A6WP-C16	53537	NA	1.20E-03	NA	NA	NA
A6WP-C17	24906	NA	1.20E-03	NA	NA	NA
A6WP-C18	53022	NA	1.20E-03	NA	NA	NA
A6WP-C19	52670	NA	1.30E-03	NA	NA	NA
A6WP-C20	43030	NA	1.20E-03	NA	NA	NA
A6WP-C21	61583	NA	0.00E+00	NA	NA	NA
A6WP-C22	60507	NA	0.00E+00	NA	NA	NA
A6WP-C23	60115	NA	0.00E+00	NA	NA	NA
A6WP-C24	60292	NA	0.00E+00	NA	NA	NA
A6WP-C25	50719	NA	0.00E+00	NA	NA	NA
A6WP-C26	50063	NA	0.00E+00	NA	NA	NA
PR-C02	25470	NA	0.00E+00	NA	NA	NA
PR-C03	41923	NA	0.00E+00	NA	NA	NA
PR-C04	61463	NA	0.00E+00	NA	NA	NA
PR-C05	59320	NA	0.00E+00	NA	NA	NA
RLS-C11	19159	NA	1.20E-03	NA	NA	NA
Maximum Value		NA	6.00E-03	NA	NA	NA
Average (*used in Risk Calc.*)		NA	1.01E-03	NA	NA	NA
Number of Cert Results		NA	2.10E+01	NA	NA	NA
Number of Inserted Values		NA	2.50E+01	NA	NA	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 6

Certification Units	Area sq ft	Carbazole ug/g	Carbon disulfide ug/g	Carbon tetrachloride ug/g	Chlordane ug/g	Chlorobenzene ug/g	Chloroform ug/g
A6GAW-C04	56554	NA	NA	NA	NA	NA	NA
A6GAW-C05	60572	NA	NA	NA	NA	NA	NA
A6GAW-C06	43699	NA	NA	NA	NA	NA	NA
A6GAW-C07	60875	NA	NA	NA	NA	NA	NA
A6GAW-C08	57572	NA	NA	NA	NA	NA	NA
A6GAW-C09	55834	NA	NA	NA	NA	NA	NA
A6GAW-C10	57214	NA	NA	NA	NA	NA	NA
A6GAW-C11	53643	NA	NA	NA	NA	NA	NA
A6GAW-C14	58328	NA	NA	NA	NA	NA	NA
A6GAW-C15	17664	NA	NA	NA	NA	NA	NA
A6GAW-C16	60550	NA	NA	NA	NA	NA	NA
A6GAW-C17	56376	NA	NA	NA	NA	NA	NA
A6GAW-C18	59124	NA	NA	NA	NA	NA	NA
A6P1-C-12	44299	NA	NA	NA	NA	NA	NA
A6P1-C-13	44285	NA	NA	NA	NA	NA	NA
A6WP-C01	47542	NA	NA	NA	NA	NA	NA
A6WP-C02	47530	NA	NA	NA	NA	NA	NA
A6WP-C03	57524	NA	NA	NA	NA	NA	NA
A6WP-C04	57525	NA	NA	NA	NA	NA	NA
A6WP-C05	57526	NA	NA	NA	NA	NA	NA
A6WP-C06	35718	NA	NA	NA	NA	NA	NA
A6WP-C07	60380	NA	NA	NA	NA	NA	NA
A6WP-C08	54572	NA	NA	NA	NA	NA	NA
A6WP-C09	62403	NA	NA	NA	NA	NA	NA
A6WP-C10	62342	NA	NA	NA	NA	NA	NA
A6WP-C11	62452	NA	NA	NA	NA	NA	NA
A6WP-C12	62414	NA	NA	NA	NA	NA	NA
A6WP-C13	20267	NA	NA	NA	NA	NA	NA
A6WP-C14	39754	NA	NA	NA	NA	NA	NA
A6WP-C15	39666	NA	NA	NA	NA	NA	NA
A6WP-C16	53537	NA	NA	NA	NA	NA	NA
A6WP-C17	24906	NA	NA	NA	NA	NA	NA
A6WP-C18	53022	NA	NA	NA	NA	NA	NA
A6WP-C19	52670	NA	NA	NA	NA	NA	NA
A6WP-C20	43030	NA	NA	NA	NA	NA	NA
A6WP-C21	61583	NA	NA	NA	NA	NA	NA
A6WP-C22	60507	NA	NA	NA	NA	NA	NA
A6WP-C23	60115	NA	NA	NA	NA	NA	NA
A6WP-C24	60292	NA	NA	NA	NA	NA	NA
A6WP-C25	50719	NA	NA	NA	NA	NA	NA
A6WP-C26	50063	NA	NA	NA	NA	NA	NA
PR-C02	25470	NA	NA	NA	NA	NA	NA
PR-C03	41923	NA	NA	NA	NA	NA	NA
PR-C04	61463	NA	NA	NA	NA	NA	NA
PR-C05	59320	NA	NA	NA	NA	NA	NA
RLS-C11	19159	NA	NA	NA	NA	NA	NA
Maximum Value		NA	NA	NA	NA	NA	NA
Average (*used in Risk Calc.*)		NA	NA	NA	NA	NA	NA
Number of Cert Results		NA	NA	NA	NA	NA	NA
Number of Inserted Values		NA	NA	NA	NA	NA	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 6

Certification Units	Area sq ft	Chrysene ug/g	Cyanide ug/g	Cyclohexanone ug/g	Dibenzo(a,h)anthracene ug/g	3,3-Dichlorobenzidine ug/g
A6GAW-C04	56554	0.00E+00	NA	NA	0.00E+00	NA
A6GAW-C05	60572	0.00E+00	NA	NA	0.00E+00	NA
A6GAW-C06	43699	0.00E+00	NA	NA	0.00E+00	NA
A6GAW-C07	60875	0.00E+00	NA	NA	0.00E+00	NA
A6GAW-C08	57572	0.00E+00	NA	NA	0.00E+00	NA
A6GAW-C09	55834	0.00E+00	NA	NA	0.00E+00	NA
A6GAW-C10	57214	0.00E+00	NA	NA	0.00E+00	NA
A6GAW-C11	53643	0.00E+00	NA	NA	0.00E+00	NA
A6GAW-C14	58328	0.00E+00	NA	NA	0.00E+00	NA
A6GAW-C15	17664	1.02E-01	NA	NA	3.91E-02	NA
A6GAW-C16	60550	1.80E-01	NA	NA	4.13E-02	NA
A6GAW-C17	56376	3.83E-02	NA	NA	3.83E-02	NA
A6GAW-C18	59124	1.41E-01	NA	NA	3.91E-02	NA
A6P1-C-12	44299	0.00E+00	NA	NA	0.00E+00	NA
A6P1-C-13	44285	0.00E+00	NA	NA	0.00E+00	NA
A6WP-C01	47542	0.00E+00	NA	NA	4.50E-02	NA
A6WP-C02	47530	0.00E+00	NA	NA	3.20E-02	NA
A6WP-C03	57524	0.00E+00	NA	NA	3.80E-02	NA
A6WP-C04	57525	0.00E+00	NA	NA	5.00E-03	NA
A6WP-C05	57526	0.00E+00	NA	NA	1.00E-02	NA
A6WP-C06	35718	0.00E+00	NA	NA	4.05E-03	NA
A6WP-C07	60380	0.00E+00	NA	NA	3.00E-02	NA
A6WP-C08	54572	0.00E+00	NA	NA	1.70E-02	NA
A6WP-C09	62403	0.00E+00	NA	NA	1.06E-01	NA
A6WP-C10	62342	0.00E+00	NA	NA	3.96E-02	NA
A6WP-C11	62452	0.00E+00	NA	NA	3.93E-02	NA
A6WP-C12	62414	0.00E+00	NA	NA	4.03E-02	NA
A6WP-C13	20267	0.00E+00	NA	NA	3.94E-02	NA
A6WP-C14	39754	0.00E+00	NA	NA	3.81E-02	NA
A6WP-C15	39666	0.00E+00	NA	NA	3.87E-02	NA
A6WP-C16	53537	0.00E+00	NA	NA	4.11E-02	NA
A6WP-C17	24906	0.00E+00	NA	NA	4.15E-02	NA
A6WP-C18	53022	0.00E+00	NA	NA	4.25E-02	NA
A6WP-C19	52670	0.00E+00	NA	NA	3.93E-02	NA
A6WP-C20	43030	0.00E+00	NA	NA	4.02E-02	NA
A6WP-C21	61583	0.00E+00	NA	NA	0.00E+00	NA
A6WP-C22	60507	0.00E+00	NA	NA	0.00E+00	NA
A6WP-C23	60115	0.00E+00	NA	NA	0.00E+00	NA
A6WP-C24	60292	0.00E+00	NA	NA	0.00E+00	NA
A6WP-C25	50719	0.00E+00	NA	NA	0.00E+00	NA
A6WP-C26	50063	0.00E+00	NA	NA	0.00E+00	NA
PR-C02	25470	0.00E+00	NA	NA	0.00E+00	NA
PR-C03	41923	0.00E+00	NA	NA	0.00E+00	NA
PR-C04	61463	0.00E+00	NA	NA	0.00E+00	NA
PR-C05	59320	0.00E+00	NA	NA	0.00E+00	NA
RLS-C11	19159	0.00E+00	NA	NA	4.26E-02	NA
Maximum Value		1.80E-01	NA	NA	1.06E-01	NA
Average (*used in Risk Calc.*)		1.00E-02	NA	NA	2.02E-02	NA
Number of Cert Results		4.00E+00	NA	NA	2.50E+01	NA
Number of Inserted Values		4.20E+01	NA	NA	2.10E+01	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 6

Certification Units	Area sq ft	1,2-dichloroethane ug/g	1,1-Dichloroethylene ug/g	Dieldrin ug/g	Di-n-octylphthalate ug/g	Ethylbenzene ug/g
A6GAW-C04	56554	0.00E+00	0.00E+00	0.00E+00	NA	NA
A6GAW-C05	60572	0.00E+00	0.00E+00	0.00E+00	NA	NA
A6GAW-C06	43699	0.00E+00	0.00E+00	0.00E+00	NA	NA
A6GAW-C07	60875	0.00E+00	0.00E+00	0.00E+00	NA	NA
A6GAW-C08	57572	0.00E+00	0.00E+00	0.00E+00	NA	NA
A6GAW-C09	55834	0.00E+00	0.00E+00	0.00E+00	NA	NA
A6GAW-C10	57214	0.00E+00	0.00E+00	0.00E+00	NA	NA
A6GAW-C11	53643	0.00E+00	0.00E+00	0.00E+00	NA	NA
A6GAW-C14	58328	0.00E+00	0.00E+00	0.00E+00	NA	NA
A6GAW-C15	17664	0.00E+00	0.00E+00	0.00E+00	NA	NA
A6GAW-C16	60550	0.00E+00	0.00E+00	0.00E+00	NA	NA
A6GAW-C17	56376	0.00E+00	0.00E+00	0.00E+00	NA	NA
A6GAW-C18	59124	0.00E+00	0.00E+00	0.00E+00	NA	NA
A6P1-C-12	44299	0.00E+00	0.00E+00	0.00E+00	NA	NA
A6P1-C-13	44285	0.00E+00	0.00E+00	0.00E+00	NA	NA
A6WP-C01	47542	1.70E-03	3.90E-03	8.70E-03	NA	NA
A6WP-C02	47530	1.80E-03	1.80E-03	3.95E-03	NA	NA
A6WP-C03	57524	1.50E-03	7.40E-03	8.40E-03	NA	NA
A6WP-C04	57525	6.00E-03	6.00E-03	8.00E-03	NA	NA
A6WP-C05	57526	1.50E-03	1.40E-03	9.20E-03	NA	NA
A6WP-C06	35718	6.00E-03	6.00E-03	8.10E-03	NA	NA
A6WP-C07	60380	6.00E-03	6.00E-03	8.20E-03	NA	NA
A6WP-C08	54572	6.00E-03	6.00E-03	8.60E-03	NA	NA
A6WP-C09	62403	1.10E-03	1.10E-03	1.61E-03	NA	NA
A6WP-C10	62342	1.10E-03	1.10E-03	1.58E-03	NA	NA
A6WP-C11	62452	1.30E-03	1.30E-03	1.57E-03	NA	NA
A6WP-C12	62414	1.10E-03	1.10E-03	1.61E-03	NA	NA
A6WP-C13	20267	1.20E-03	1.20E-03	1.58E-03	NA	NA
A6WP-C14	39754	1.40E-03	2.80E-03	1.52E-03	NA	NA
A6WP-C15	39666	1.30E-03	1.30E-03	1.55E-03	NA	NA
A6WP-C16	53537	1.20E-03	1.20E-03	1.64E-03	NA	NA
A6WP-C17	24906	1.20E-03	1.20E-03	1.66E-03	NA	NA
A6WP-C18	53022	1.20E-03	1.20E-03	1.70E-03	NA	NA
A6WP-C19	52670	1.30E-03	1.30E-03	1.57E-03	NA	NA
A6WP-C20	43030	1.20E-03	1.20E-03	1.61E-03	NA	NA
A6WP-C21	61583	0.00E+00	0.00E+00	0.00E+00	NA	NA
A6WP-C22	60507	0.00E+00	0.00E+00	0.00E+00	NA	NA
A6WP-C23	60115	0.00E+00	0.00E+00	0.00E+00	NA	NA
A6WP-C24	60292	0.00E+00	0.00E+00	0.00E+00	NA	NA
A6WP-C25	50719	0.00E+00	0.00E+00	0.00E+00	NA	NA
A6WP-C26	50063	0.00E+00	0.00E+00	0.00E+00	NA	NA
PR-C02	25470	0.00E+00	0.00E+00	0.00E+00	NA	NA
PR-C03	41923	0.00E+00	0.00E+00	0.00E+00	NA	NA
PR-C04	61463	0.00E+00	0.00E+00	0.00E+00	NA	NA
PR-C05	59320	0.00E+00	0.00E+00	0.00E+00	NA	NA
RLS-C11	19159	0.00E+00	1.20E-03	1.70E-03	NA	NA
Maximum Value		6.00E-03	7.40E-03	9.20E-03	NA	NA
Average (*used in Risk Calc.*)		9.80E-04	1.21E-03	1.83E-03	NA	NA
Number of Cert Results		2.00E+01	2.10E+01	2.10E+01	NA	NA
Number of Inserted Values		2.60E+01	2.50E+01	2.50E+01	NA	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 6

Certification Units	Area sq ft	Ethyl ether ug/g	Heptachlorodibenzofuran ug/g	Heptachlorodibenzo-p-dioxin ug/g	Hexachlorodibenzofuran ug/g
A6GAW-C04	56554	NA	NA	0.00E+00	NA
A6GAW-C05	60572	NA	NA	0.00E+00	NA
A6GAW-C06	43699	NA	NA	0.00E+00	NA
A6GAW-C07	60875	NA	NA	0.00E+00	NA
A6GAW-C08	57572	NA	NA	0.00E+00	NA
A6GAW-C09	55834	NA	NA	0.00E+00	NA
A6GAW-C10	57214	NA	NA	0.00E+00	NA
A6GAW-C11	53643	NA	NA	0.00E+00	NA
A6GAW-C14	58328	NA	NA	0.00E+00	NA
A6GAW-C15	17664	NA	NA	0.00E+00	NA
A6GAW-C16	60550	NA	NA	0.00E+00	NA
A6GAW-C17	56376	NA	NA	0.00E+00	NA
A6GAW-C18	59124	NA	NA	0.00E+00	NA
A6P1-C-12	44299	NA	NA	0.00E+00	NA
A6P1-C-13	44285	NA	NA	0.00E+00	NA
A6WP-C01	47542	NA	NA	6.86E-06	NA
A6WP-C02	47530	NA	NA	1.04E-05	NA
A6WP-C03	57524	NA	NA	9.79E-06	NA
A6WP-C04	57525	NA	NA	4.26E-06	NA
A6WP-C05	57526	NA	NA	4.53E-05	NA
A6WP-C06	35718	NA	NA	6.09E-06	NA
A6WP-C07	60380	NA	NA	6.39E-05	NA
A6WP-C08	54572	NA	NA	2.43E-05	NA
A6WP-C09	62403	NA	NA	7.14E-06	NA
A6WP-C10	62342	NA	NA	1.50E-05	NA
A6WP-C11	62452	NA	NA	1.84E-04	NA
A6WP-C12	62414	NA	NA	1.63E-05	NA
A6WP-C13	20267	NA	NA	1.83E-04	NA
A6WP-C14	39754	NA	NA	4.83E-06	NA
A6WP-C15	39666	NA	NA	1.87E-05	NA
A6WP-C16	53537	NA	NA	6.51E-06	NA
A6WP-C17	24906	NA	NA	1.67E-05	NA
A6WP-C18	53022	NA	NA	9.09E-05	NA
A6WP-C19	52670	NA	NA	2.39E-05	NA
A6WP-C20	43030	NA	NA	3.59E-05	NA
A6WP-C21	61583	NA	NA	0.00E+00	NA
A6WP-C22	60507	NA	NA	0.00E+00	NA
A6WP-C23	60115	NA	NA	0.00E+00	NA
A6WP-C24	60292	NA	NA	0.00E+00	NA
A6WP-C25	50719	NA	NA	0.00E+00	NA
A6WP-C26	50063	NA	NA	0.00E+00	NA
PR-C02	25470	NA	NA	0.00E+00	NA
PR-C03	41923	NA	NA	0.00E+00	NA
PR-C04	61463	NA	NA	0.00E+00	NA
PR-C05	59320	NA	NA	0.00E+00	NA
RLS-C11	19159	NA	NA	0.00E+00	NA
Maximum Value		NA	NA	1.84E-04	NA
Average (*used in Risk Calc.*)		NA	NA	1.68E-05	NA
Number of Cert Results		NA	NA	2.00E+01	NA
Number of Inserted Values		NA	NA	2.60E+01	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 6

Certification Units	Area sq ft	Hexachlorodibenzo-p-dioxin ug/g	Indeno(1,2,3-cd)pyrene ug/g	Methanol ug/g	Methyl-2-pentanone ug/g
A6GAW-C04	56554	NA	0.00E+00	NA	NA
A6GAW-C05	60572	NA	0.00E+00	NA	NA
A6GAW-C06	43699	NA	0.00E+00	NA	NA
A6GAW-C07	60875	NA	0.00E+00	NA	NA
A6GAW-C08	57572	NA	0.00E+00	NA	NA
A6GAW-C09	55834	NA	0.00E+00	NA	NA
A6GAW-C10	57214	NA	0.00E+00	NA	NA
A6GAW-C11	53643	NA	0.00E+00	NA	NA
A6GAW-C14	58328	NA	0.00E+00	NA	NA
A6GAW-C15	17664	NA	1.96E-01	NA	NA
A6GAW-C16	60550	NA	0.00E+00	NA	NA
A6GAW-C17	56376	NA	1.02E-01	NA	NA
A6GAW-C18	59124	NA	1.84E-01	NA	NA
A6P1-C-12	44299	NA	0.00E+00	NA	NA
A6P1-C-13	44285	NA	0.00E+00	NA	NA
A6WP-C01	47542	NA	1.50E-01	NA	NA
A6WP-C02	47530	NA	1.50E-01	NA	NA
A6WP-C03	57524	NA	4.70E-02	NA	NA
A6WP-C04	57525	NA	2.90E-02	NA	NA
A6WP-C05	57526	NA	7.70E-02	NA	NA
A6WP-C06	35718	NA	1.80E-02	NA	NA
A6WP-C07	60380	NA	1.50E-01	NA	NA
A6WP-C08	54572	NA	9.80E-02	NA	NA
A6WP-C09	62403	NA	1.92E-01	NA	NA
A6WP-C10	62342	NA	3.96E-02	NA	NA
A6WP-C11	62452	NA	3.93E-02	NA	NA
A6WP-C12	62414	NA	4.03E-02	NA	NA
A6WP-C13	20267	NA	3.94E-02	NA	NA
A6WP-C14	39754	NA	3.81E-02	NA	NA
A6WP-C15	39666	NA	3.87E-02	NA	NA
A6WP-C16	53537	NA	4.79E-02	NA	NA
A6WP-C17	24906	NA	4.15E-02	NA	NA
A6WP-C18	53022	NA	4.25E-02	NA	NA
A6WP-C19	52670	NA	9.55E-02	NA	NA
A6WP-C20	43030	NA	4.02E-02	NA	NA
A6WP-C21	61583	NA	0.00E+00	NA	NA
A6WP-C22	60507	NA	0.00E+00	NA	NA
A6WP-C23	60115	NA	0.00E+00	NA	NA
A6WP-C24	60292	NA	0.00E+00	NA	NA
A6WP-C25	50719	NA	0.00E+00	NA	NA
A6WP-C26	50063	NA	0.00E+00	NA	NA
PR-C02	25470	NA	0.00E+00	NA	NA
PR-C03	41923	NA	0.00E+00	NA	NA
PR-C04	61463	NA	0.00E+00	NA	NA
PR-C05	59320	NA	0.00E+00	NA	NA
RLS-C11	19159	NA	4.26E-02	NA	NA
Maximum Value		NA	1.96E-01	NA	NA
Average (*used in Risk Calc.*)		NA	4.21E-02	NA	NA
Number of Cert Results		NA	2.40E+01	NA	NA
Number of Inserted Values		NA	2.20E+01	NA	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 6

Certification Units	Area sq ft	Methylene chloride ug/g	4-Methylphenol ug/g	4-Nitroanaline ug/g	N-nitrosodiphenylamine ug/g
A6GAW-C04	56554	NA	NA	NA	NA
A6GAW-C05	60572	NA	NA	NA	NA
A6GAW-C06	43699	NA	NA	NA	NA
A6GAW-C07	60875	NA	NA	NA	NA
A6GAW-C08	57572	NA	NA	NA	NA
A6GAW-C09	55834	NA	NA	NA	NA
A6GAW-C10	57214	NA	NA	NA	NA
A6GAW-C11	53643	NA	NA	NA	NA
A6GAW-C14	58328	NA	NA	NA	NA
A6GAW-C15	17664	NA	NA	NA	NA
A6GAW-C16	60550	NA	NA	NA	NA
A6GAW-C17	56376	NA	NA	NA	NA
A6GAW-C18	59124	NA	NA	NA	NA
A6P1-C-12	44299	NA	NA	NA	NA
A6P1-C-13	44285	NA	NA	NA	NA
A6WP-C01	47542	NA	NA	NA	NA
A6WP-C02	47530	NA	NA	NA	NA
A6WP-C03	57524	NA	NA	NA	NA
A6WP-C04	57525	NA	NA	NA	NA
A6WP-C05	57526	NA	NA	NA	NA
A6WP-C06	35718	NA	NA	NA	NA
A6WP-C07	60380	NA	NA	NA	NA
A6WP-C08	54572	NA	NA	NA	NA
A6WP-C09	62403	NA	NA	NA	NA
A6WP-C10	62342	NA	NA	NA	NA
A6WP-C11	62452	NA	NA	NA	NA
A6WP-C12	62414	NA	NA	NA	NA
A6WP-C13	20267	NA	NA	NA	NA
A6WP-C14	39754	NA	NA	NA	NA
A6WP-C15	39666	NA	NA	NA	NA
A6WP-C16	53537	NA	NA	NA	NA
A6WP-C17	24906	NA	NA	NA	NA
A6WP-C18	53022	NA	NA	NA	NA
A6WP-C19	52670	NA	NA	NA	NA
A6WP-C20	43030	NA	NA	NA	NA
A6WP-C21	61583	NA	NA	NA	NA
A6WP-C22	60507	NA	NA	NA	NA
A6WP-C23	60115	NA	NA	NA	NA
A6WP-C24	60292	NA	NA	NA	NA
A6WP-C25	50719	NA	NA	NA	NA
A6WP-C26	50063	NA	NA	NA	NA
PR-C02	25470	NA	NA	NA	NA
PR-C03	41923	NA	NA	NA	NA
PR-C04	61463	NA	NA	NA	NA
PR-C05	59320	NA	NA	NA	NA
RLS-C11	19159	NA	NA	NA	NA
Maximum Value		NA	NA	NA	NA
Average (*used in Risk Calc.*)		NA	NA	NA	NA
Number of Cert Results		NA	NA	NA	NA
Number of Inserted Values		NA	NA	NA	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 6

Certification Units	Area sq ft	N-nitrosodipropylamine ug/g	Octachlorodibenzofuran ug/g	Octochlorodibenzo-p-dioxin ug/g
A6GAW-C04	56554	NA	NA	0.00E+00
A6GAW-C05	60572	NA	NA	0.00E+00
A6GAW-C06	43699	NA	NA	0.00E+00
A6GAW-C07	60875	NA	NA	0.00E+00
A6GAW-C08	57572	NA	NA	0.00E+00
A6GAW-C09	55834	NA	NA	0.00E+00
A6GAW-C10	57214	NA	NA	0.00E+00
A6GAW-C11	53643	NA	NA	0.00E+00
A6GAW-C14	58328	NA	NA	0.00E+00
A6GAW-C15	17664	NA	NA	0.00E+00
A6GAW-C16	60550	NA	NA	0.00E+00
A6GAW-C17	56376	NA	NA	0.00E+00
A6GAW-C18	59124	NA	NA	0.00E+00
A6P1-C-12	44299	NA	NA	0.00E+00
A6P1-C-13	44285	NA	NA	0.00E+00
A6WP-C01	47542	NA	NA	8.59E-05
A6WP-C02	47530	NA	NA	1.51E-04
A6WP-C03	57524	NA	NA	2.13E-03
A6WP-C04	57525	NA	NA	2.24E-04
A6WP-C05	57526	NA	NA	1.04E-03
A6WP-C06	35718	NA	NA	8.86E-05
A6WP-C07	60380	NA	NA	5.42E-04
A6WP-C08	54572	NA	NA	2.80E-04
A6WP-C09	62403	NA	NA	1.31E-04
A6WP-C10	62342	NA	NA	2.56E-04
A6WP-C11	62452	NA	NA	2.23E-03
A6WP-C12	62414	NA	NA	3.69E-04
A6WP-C13	20267	NA	NA	1.45E-03
A6WP-C14	39754	NA	NA	1.41E-04
A6WP-C15	39666	NA	NA	2.96E-04
A6WP-C16	53537	NA	NA	2.09E-04
A6WP-C17	24906	NA	NA	1.85E-04
A6WP-C18	53022	NA	NA	1.20E-03
A6WP-C19	52670	NA	NA	4.02E-04
A6WP-C20	43030	NA	NA	5.13E-04
A6WP-C21	61583	NA	NA	0.00E+00
A6WP-C22	60507	NA	NA	0.00E+00
A6WP-C23	60115	NA	NA	0.00E+00
A6WP-C24	60292	NA	NA	0.00E+00
A6WP-C25	50719	NA	NA	0.00E+00
A6WP-C26	50063	NA	NA	0.00E+00
PR-C02	25470	NA	NA	0.00E+00
PR-C03	41923	NA	NA	0.00E+00
PR-C04	61463	NA	NA	0.00E+00
PR-C05	59320	NA	NA	0.00E+00
RLS-C11	19159	NA	NA	0.00E+00
Maximum Value		NA	NA	2.23E-03
Average (*used in Risk Calc.*)		NA	NA	2.59E-04
Number of Cert Results		NA	NA	2.00E+01
Number of Inserted Values		NA	NA	2.60E+01

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 6

Certification Units	Area sq ft	Pentachlorodibenzofuran ug/g	Pentachlorodibenzo-p-dioxin ug/g	Pentachlorophenol ug/g	Phenanthrene ug/g
A6GAW-C04	56554	NA	NA	NA	0.00E+00
A6GAW-C05	60572	NA	NA	NA	0.00E+00
A6GAW-C06	43699	NA	NA	NA	0.00E+00
A6GAW-C07	60875	NA	NA	NA	0.00E+00
A6GAW-C08	57572	NA	NA	NA	0.00E+00
A6GAW-C09	55834	NA	NA	NA	0.00E+00
A6GAW-C10	57214	NA	NA	NA	0.00E+00
A6GAW-C11	53643	NA	NA	NA	0.00E+00
A6GAW-C14	58328	NA	NA	NA	0.00E+00
A6GAW-C15	17664	NA	NA	NA	9.01E-02
A6GAW-C16	60550	NA	NA	NA	0.00E+00
A6GAW-C17	56376	NA	NA	NA	4.11E-02
A6GAW-C18	59124	NA	NA	NA	2.08E-01
A6P1-C-12	44299	NA	NA	NA	0.00E+00
A6P1-C-13	44285	NA	NA	NA	0.00E+00
A6WP-C01	47542	NA	NA	NA	0.00E+00
A6WP-C02	47530	NA	NA	NA	0.00E+00
A6WP-C03	57524	NA	NA	NA	0.00E+00
A6WP-C04	57525	NA	NA	NA	0.00E+00
A6WP-C05	57526	NA	NA	NA	0.00E+00
A6WP-C06	35718	NA	NA	NA	0.00E+00
A6WP-C07	60380	NA	NA	NA	0.00E+00
A6WP-C08	54572	NA	NA	NA	0.00E+00
A6WP-C09	62403	NA	NA	NA	0.00E+00
A6WP-C10	62342	NA	NA	NA	0.00E+00
A6WP-C11	62452	NA	NA	NA	0.00E+00
A6WP-C12	62414	NA	NA	NA	0.00E+00
A6WP-C13	20267	NA	NA	NA	0.00E+00
A6WP-C14	39754	NA	NA	NA	0.00E+00
A6WP-C15	39666	NA	NA	NA	0.00E+00
A6WP-C16	53537	NA	NA	NA	0.00E+00
A6WP-C17	24906	NA	NA	NA	0.00E+00
A6WP-C18	53022	NA	NA	NA	0.00E+00
A6WP-C19	52670	NA	NA	NA	0.00E+00
A6WP-C20	43030	NA	NA	NA	0.00E+00
A6WP-C21	61583	NA	NA	NA	0.00E+00
A6WP-C22	60507	NA	NA	NA	0.00E+00
A6WP-C23	60115	NA	NA	NA	0.00E+00
A6WP-C24	60292	NA	NA	NA	0.00E+00
A6WP-C25	50719	NA	NA	NA	0.00E+00
A6WP-C26	50063	NA	NA	NA	0.00E+00
PR-C02	25470	NA	NA	NA	0.00E+00
PR-C03	41923	NA	NA	NA	0.00E+00
PR-C04	61463	NA	NA	NA	0.00E+00
PR-C05	59320	NA	NA	NA	0.00E+00
RLS-C11	19159	NA	NA	NA	0.00E+00
Maximum Value		NA	NA	NA	2.08E-01
Average (*used in Risk Calc.*)		NA	NA	NA	7.37E-03
Number of Cert Results		NA	NA	NA	3.00E+00
Number of Inserted Values		NA	NA	NA	4.30E+01

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 6

Certification Units	Area sq ft	Tetrachlorodibenzofuran ug/g	Tetrachlorodibenzo-p-dioxin ug/g	Tetrachloroethylene ug/g	Toluene ug/g
A6GAW-C04	56554	NA	NA	0.00E+00	NA
A6GAW-C05	60572	NA	NA	0.00E+00	NA
A6GAW-C06	43699	NA	NA	0.00E+00	NA
A6GAW-C07	60875	NA	NA	0.00E+00	NA
A6GAW-C08	57572	NA	NA	0.00E+00	NA
A6GAW-C09	55834	NA	NA	0.00E+00	NA
A6GAW-C10	57214	NA	NA	0.00E+00	NA
A6GAW-C11	53643	NA	NA	0.00E+00	NA
A6GAW-C14	58328	NA	NA	0.00E+00	NA
A6GAW-C15	17664	NA	NA	0.00E+00	NA
A6GAW-C16	60550	NA	NA	0.00E+00	NA
A6GAW-C17	56376	NA	NA	0.00E+00	NA
A6GAW-C18	59124	NA	NA	0.00E+00	NA
A6P1-C-12	44299	NA	NA	0.00E+00	NA
A6P1-C-13	44285	NA	NA	0.00E+00	NA
A6WP-C01	47542	NA	NA	1.70E-03	NA
A6WP-C02	47530	NA	NA	1.80E-03	NA
A6WP-C03	57524	NA	NA	1.50E-03	NA
A6WP-C04	57525	NA	NA	6.00E-03	NA
A6WP-C05	57526	NA	NA	1.50E-03	NA
A6WP-C06	35718	NA	NA	6.00E-03	NA
A6WP-C07	60380	NA	NA	6.00E-03	NA
A6WP-C08	54572	NA	NA	6.00E-03	NA
A6WP-C09	62403	NA	NA	1.10E-03	NA
A6WP-C10	62342	NA	NA	1.10E-03	NA
A6WP-C11	62452	NA	NA	1.30E-03	NA
A6WP-C12	62414	NA	NA	1.10E-03	NA
A6WP-C13	20267	NA	NA	7.00E-03	NA
A6WP-C14	39754	NA	NA	1.40E-03	NA
A6WP-C15	39666	NA	NA	1.30E-03	NA
A6WP-C16	53537	NA	NA	1.20E-03	NA
A6WP-C17	24906	NA	NA	1.20E-03	NA
A6WP-C18	53022	NA	NA	1.20E-03	NA
A6WP-C19	52670	NA	NA	1.30E-03	NA
A6WP-C20	43030	NA	NA	1.20E-03	NA
A6WP-C21	61583	NA	NA	0.00E+00	NA
A6WP-C22	60507	NA	NA	0.00E+00	NA
A6WP-C23	60115	NA	NA	0.00E+00	NA
A6WP-C24	60292	NA	NA	0.00E+00	NA
A6WP-C25	50719	NA	NA	0.00E+00	NA
A6WP-C26	50063	NA	NA	0.00E+00	NA
PR-C02	25470	NA	NA	0.00E+00	NA
PR-C03	41923	NA	NA	0.00E+00	NA
PR-C04	61463	NA	NA	0.00E+00	NA
PR-C05	59320	NA	NA	0.00E+00	NA
RLS-C11	19159	NA	NA	1.20E-03	NA
Maximum Value		NA	NA	7.00E-03	NA
Average (*used in Risk Calc.*)		NA	NA	1.13E-03	NA
Number of Cert Results		NA	NA	2.10E+01	NA
Number of Inserted Values		NA	NA	2.50E+01	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 6

Certification Units	Area sq ft	Tributyl phosphate ug/g	1,1,2-Trichloroethane ug/g	Trichloroethylene ug/g	Trifluorochloromethane ug/g
A6GAW-C04	56554	NA	0.00E+00	0.00E+00	NA
A6GAW-C05	60572	NA	0.00E+00	0.00E+00	NA
A6GAW-C06	43699	NA	0.00E+00	0.00E+00	NA
A6GAW-C07	60875	NA	0.00E+00	0.00E+00	NA
A6GAW-C08	57572	NA	0.00E+00	0.00E+00	NA
A6GAW-C09	55834	NA	0.00E+00	0.00E+00	NA
A6GAW-C10	57214	NA	0.00E+00	0.00E+00	NA
A6GAW-C11	53643	NA	0.00E+00	0.00E+00	NA
A6GAW-C14	58328	NA	0.00E+00	0.00E+00	NA
A6GAW-C15	17664	NA	0.00E+00	0.00E+00	NA
A6GAW-C16	60550	NA	0.00E+00	0.00E+00	NA
A6GAW-C17	56376	NA	0.00E+00	0.00E+00	NA
A6GAW-C18	59124	NA	0.00E+00	0.00E+00	NA
A6P1-C-12	44299	NA	0.00E+00	0.00E+00	NA
A6P1-C-13	44285	NA	0.00E+00	0.00E+00	NA
A6WP-C01	47542	NA	0.00E+00	1.70E-03	NA
A6WP-C02	47530	NA	0.00E+00	1.80E-03	NA
A6WP-C03	57524	NA	1.50E-03	1.50E-03	NA
A6WP-C04	57525	NA	1.20E-02	6.00E-03	NA
A6WP-C05	57526	NA	1.50E-03	1.50E-03	NA
A6WP-C06	35718	NA	0.00E+00	6.00E-03	NA
A6WP-C07	60380	NA	0.00E+00	6.00E-03	NA
A6WP-C08	54572	NA	0.00E+00	6.00E-03	NA
A6WP-C09	62403	NA	0.00E+00	4.60E-03	NA
A6WP-C10	62342	NA	0.00E+00	2.55E-02	NA
A6WP-C11	62452	NA	0.00E+00	1.30E-03	NA
A6WP-C12	62414	NA	0.00E+00	3.50E-03	NA
A6WP-C13	20267	NA	0.00E+00	1.20E-03	NA
A6WP-C14	39754	NA	0.00E+00	1.40E-03	NA
A6WP-C15	39666	NA	0.00E+00	1.30E-03	NA
A6WP-C16	53537	NA	0.00E+00	1.20E-03	NA
A6WP-C17	24906	NA	0.00E+00	9.90E-03	NA
A6WP-C18	53022	NA	0.00E+00	1.20E-03	NA
A6WP-C19	52670	NA	0.00E+00	1.30E-03	NA
A6WP-C20	43030	NA	0.00E+00	1.20E-03	NA
A6WP-C21	61583	NA	0.00E+00	0.00E+00	NA
A6WP-C22	60507	NA	0.00E+00	0.00E+00	NA
A6WP-C23	60115	NA	0.00E+00	0.00E+00	NA
A6WP-C24	60292	NA	0.00E+00	0.00E+00	NA
A6WP-C25	50719	NA	0.00E+00	0.00E+00	NA
A6WP-C26	50063	NA	0.00E+00	0.00E+00	NA
PR-C02	25470	NA	0.00E+00	0.00E+00	NA
PR-C03	41923	NA	0.00E+00	0.00E+00	NA
PR-C04	61463	NA	0.00E+00	0.00E+00	NA
PR-C05	59320	NA	0.00E+00	0.00E+00	NA
RLS-C11	19159	NA	0.00E+00	0.00E+00	NA
Maximum Value		NA	1.20E-02	2.55E-02	NA
Average (*used in Risk Calc.*)		NA	3.26E-04	1.83E-03	NA
Number of Cert Results		NA	3.00E+00	2.00E+01	NA
Number of Inserted Values		NA	4.30E+01	2.60E+01	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 6

Certification Units	Area sq ft	Vinyl chloride ug/g	Xylenes ug/g
A6GAW-C04	56554	NA	NA
A6GAW-C05	60572	NA	NA
A6GAW-C06	43699	NA	NA
A6GAW-C07	60875	NA	NA
A6GAW-C08	57572	NA	NA
A6GAW-C09	55834	NA	NA
A6GAW-C10	57214	NA	NA
A6GAW-C11	53643	NA	NA
A6GAW-C14	58328	NA	NA
A6GAW-C15	17664	NA	NA
A6GAW-C16	60550	NA	NA
A6GAW-C17	56376	NA	NA
A6GAW-C18	59124	NA	NA
A6P1-C-12	44299	NA	NA
A6P1-C-13	44285	NA	NA
A6WP-C01	47542	NA	NA
A6WP-C02	47530	NA	NA
A6WP-C03	57524	NA	NA
A6WP-C04	57525	NA	NA
A6WP-C05	57526	NA	NA
A6WP-C06	35718	NA	NA
A6WP-C07	60380	NA	NA
A6WP-C08	54572	NA	NA
A6WP-C09	62403	NA	NA
A6WP-C10	62342	NA	NA
A6WP-C11	62452	NA	NA
A6WP-C12	62414	NA	NA
A6WP-C13	20267	NA	NA
A6WP-C14	39754	NA	NA
A6WP-C15	39666	NA	NA
A6WP-C16	53537	NA	NA
A6WP-C17	24906	NA	NA
A6WP-C18	53022	NA	NA
A6WP-C19	52670	NA	NA
A6WP-C20	43030	NA	NA
A6WP-C21	61583	NA	NA
A6WP-C22	60507	NA	NA
A6WP-C23	60115	NA	NA
A6WP-C24	60292	NA	NA
A6WP-C25	50719	NA	NA
A6WP-C26	50063	NA	NA
PR-C02	25470	NA	NA
PR-C03	41923	NA	NA
PR-C04	61463	NA	NA
PR-C05	59320	NA	NA
RLS-C11	19159	NA	NA
Maximum Value		NA	NA
Average (*used in Risk Calc.*)		NA	NA
Number of Cert Results		NA	NA
Number of Inserted Values		NA	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 7

Certification Units	Area sq ft	Cesium-137 pCi/g	Lead-210 pCi/g	Neptunium-237 pCi/g	Plutonium-238 pCi/g	Plutonium-239/240 pCi/g	Radium-226 pCi/g
A4B2-C01	46937	9.60E-02	1.56E+00	NA	NA	NA	1.63E+00
A4B2-C02	47560	2.38E-01	1.56E+00	NA	NA	NA	1.43E+00
A6GAW-C12	53645	6.60E-02	1.56E+00	NA	NA	NA	1.05E+00
A6GAW-C13	545368	6.60E-02	1.56E+00	NA	NA	NA	1.16E+00
A6GAW-C19	56663	2.31E-01	2.30E+00	NA	NA	NA	1.26E+00
A6GAW-C20	60993	6.90E-02	2.47E+00	NA	NA	NA	1.64E+00
A6GAW-C21	61161	7.01E-02	5.85E+00	NA	NA	NA	1.65E+00
A6GAW-C22	49461	4.31E-01	1.74E+00	NA	NA	NA	1.40E+00
A6GAW-C23	53337	3.87E-01	2.23E+00	NA	NA	NA	1.17E+00
A6GAW-C23P	4671	3.57E-02	1.59E+00	NA	NA	NA	1.40E+00
A6GAW-C24	29531	3.30E-02	7.24E+00	NA	NA	NA	1.51E+00
A7MA-C01	60299	6.60E-02	1.56E+00	NA	NA	NA	1.63E+00
A7MA-C02	55570	6.60E-02	1.56E+00	NA	NA	NA	1.36E+00
A7SSA-C01	18478	7.30E-02	1.36E+00	NA	NA	NA	1.43E+00
A7SSA-C02	22412	6.69E-02	9.48E-01	NA	NA	NA	1.40E+00
A7SSA-C03	24334	1.31E-01	9.04E+00	NA	NA	NA	1.55E+00
A7SSA-C04	28641	8.93E-02	1.06E+01	NA	NA	NA	1.17E+00
A7SSA-C05	37184	8.14E-02	1.02E+01	NA	NA	NA	1.23E+00
A7SSA-C06	45184	1.53E-01	2.03E+00	NA	NA	NA	1.23E+00
A7SSA-C07	39754	6.52E-02	9.92E+00	NA	NA	NA	1.11E+00
A7SSA-C08	166065	6.60E-02	1.56E+00	NA	NA	NA	1.26E+00
A7SSA-C09	58493	1.85E-01	1.38E+00	NA	NA	NA	1.43E+00
A7SSA-C10	54452	2.44E-01	6.47E+00	NA	NA	NA	1.45E+00
A7SSA-C11	50746	7.82E-02	1.82E+01	NA	NA	NA	1.65E+00
A7SSA-C12	57267	1.44E-01	7.05E+00	NA	NA	NA	1.57E+00
A7SSA-C13	16112	7.96E-02	7.88E+00	NA	NA	NA	1.56E+00
A7SSA-C14	65248	6.60E-02	1.56E+00	NA	NA	NA	1.23E+00
A7SSA-C15	58254	6.27E-02	1.33E+01	NA	NA	NA	1.59E+00
A7SSA-C16	53607	6.05E-02	1.04E+00	NA	NA	NA	1.38E+00
BSL-C01	61703	6.60E-02	1.56E+00	NA	NA	NA	1.44E+00
BSL-C02	61873	6.60E-02	1.56E+00	NA	NA	NA	1.61E+00
BSL-C03	49944	6.60E-02	1.56E+00	NA	NA	NA	1.51E+00
BSL-C04	49642	6.60E-02	1.56E+00	NA	NA	NA	1.55E+00
Maximum Value		4.31E-01	1.82E+01	NA	NA	NA	1.65E+00
Average (*used in Risk Calc.*)		1.14E-01	4.29E+00	NA	NA	NA	1.41E+00
Number of Cert Results		2.30E+01	2.10E+01	NA	NA	NA	3.30E+01
Number of Inserted Values		1.00E+01	1.20E+01	NA	NA	NA	0.00E+00

NOTE:

If at least one CU in the zone has an anlytical result for a given COC, the background value is inserted for the COC in other CUs that have no reported analytical result to avoid a high bias for the COC in this zone.

Background is zero for all organic compounds. Background is not reported for neptunium, plutonium, strontium and technetium isotopes, and zero will be used.

NA = Chemical or radionuclide is not applicable to the assesment of risk in this zone because the COC was not evaluated in the certification reports for this zone.

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 7

Certification Units	Area sq ft	Radium-228 pCi/g	Strontium-90 pCi/g	Technetium-99 pCi/g	Thorium-228 pCi/g	Thorium-230 pCi/g	Thorium-232 pCi/g	Uranium-234 pCi/g	Uranium-235 pCi/g
A4B2-C01	46937	1.11E+00	NA	0.00E+00	1.13E+00	1.56E+00	1.11E+00	4.06E+00	1.85E-01
A4B2-C02	47560	1.05E+00	NA	0.00E+00	1.07E+00	1.56E+00	1.05E+00	2.51E+00	1.14E-01
A6GAW-C12	53645	9.69E-01	NA	1.93E+00	9.86E-01	1.99E+00	9.69E-01	6.14E+00	2.80E-01
A6GAW-C13	545368	9.32E-01	NA	2.12E+00	9.28E-01	5.51E+00	9.32E-01	7.03E+00	3.20E-01
A6GAW-C19	56663	1.05E+00	NA	8.15E-01	1.11E+00	2.78E+00	1.05E+00	4.68E+00	2.13E-01
A6GAW-C20	60993	1.12E+00	NA	1.81E+00	1.14E+00	2.49E+00	1.12E+00	4.71E+00	2.15E-01
A6GAW-C21	61161	7.74E-01	NA	7.69E-01	7.83E-01	2.09E+00	7.74E-01	3.48E+00	1.59E-01
A6GAW-C22	49461	1.12E+00	NA	1.91E+00	1.13E+00	2.21E+00	1.12E+00	6.62E+00	3.02E-01
A6GAW-C23	53337	1.00E+00	NA	2.26E+00	1.02E+00	2.03E+00	1.00E+00	9.73E+00	4.43E-01
A6GAW-C23P	4671	1.13E+00	NA	8.77E-01	1.13E+00	1.94E+00	1.13E+00	3.36E+00	1.53E-01
A6GAW-C24	29531	1.32E+00	NA	7.99E-01	1.35E+00	2.02E+00	1.32E+00	4.51E+00	2.05E-01
A7MA-C01	60299	1.16E+00	NA	0.00E+00	1.18E+00	1.56E+00	1.16E+00	5.29E+00	2.41E-01
A7MA-C02	55570	1.12E+00	NA	0.00E+00	1.19E+00	1.56E+00	1.12E+00	8.50E+00	3.87E-01
A7SSA-C01	18478	1.01E+00	NA	3.02E+00	1.05E+00	1.45E+00	1.01E+00	4.13E+00	1.88E-01
A7SSA-C02	22412	8.77E-01	NA	2.32E+00	8.73E-01	1.79E+00	8.77E-01	2.60E+00	1.19E-01
A7SSA-C03	24334	1.45E+00	NA	8.53E-01	1.55E+00	2.61E+00	1.45E+00	3.99E+00	1.82E-01
A7SSA-C04	28641	1.07E+00	NA	2.23E+00	1.10E+00	1.34E+00	1.07E+00	2.15E+00	9.78E-02
A7SSA-C05	37184	1.13E+00	NA	5.31E+00	1.17E+00	1.53E+00	1.13E+00	2.19E+00	9.97E-02
A7SSA-C06	45184	9.58E-01	NA	1.90E+00	9.42E-01	5.32E+00	9.58E-01	8.98E+00	4.09E-01
A7SSA-C07	39754	1.12E+00	NA	9.76E-01	1.08E+00	3.13E+00	1.12E+00	4.37E+00	1.99E-01
A7SSA-C08	166065	1.04E+00	NA	8.38E-01	1.06E+00	1.56E+00	1.04E+00	7.24E+00	3.30E-01
A7SSA-C09	58493	1.10E+00	NA	9.84E-01	1.19E+00	3.59E+00	1.10E+00	4.13E+00	1.88E-01
A7SSA-C10	54452	1.26E+00	NA	1.92E+00	1.31E+00	5.85E+00	1.26E+00	3.17E+00	1.45E-01
A7SSA-C11	50746	1.47E+00	NA	1.07E+00	1.48E+00	3.11E+00	1.47E+00	3.89E+00	1.77E-01
A7SSA-C12	57267	1.34E+00	NA	2.15E+00	1.37E+00	1.15E+01	1.34E+00	1.69E+01	7.70E-01
A7SSA-C13	16112	1.14E+00	NA	2.48E+00	1.14E+00	5.77E+00	1.14E+00	3.21E+00	1.46E-01
A7SSA-C14	65248	1.19E+00	NA	2.11E+00	1.20E+00	1.56E+00	1.19E+00	2.49E+00	1.14E-01
A7SSA-C15	58254	1.32E+00	NA	1.23E+00	1.33E+00	7.95E+00	1.32E+00	2.59E+00	1.18E-01
A7SSA-C16	53607	1.09E+00	NA	9.03E-01	1.11E+00	2.27E+00	1.09E+00	3.38E+00	1.54E-01
BSL-C01	61703	1.44E+00	NA	2.03E+01	1.47E+00	3.88E+00	1.44E+00	9.15E+00	4.17E-01
BSL-C02	61873	1.15E+00	NA	1.66E+01	1.18E+00	2.07E+00	1.15E+00	2.64E+00	1.20E-01
BSL-C03	49944	1.43E+00	NA	1.38E+01	1.51E+00	3.41E+00	1.43E+00	7.75E+00	3.53E-01
BSL-C04	49642	1.32E+00	NA	1.32E+01	1.42E+00	2.70E+00	1.32E+00	5.22E+00	2.38E-01
Maximum Value		1.47E+00	NA	2.03E+01	1.55E+00	1.15E+01	1.47E+00	1.69E+01	7.70E-01
Average (*used in Risk Calc.*)		1.14E+00	NA	3.26E+00	1.17E+00	3.08E+00	1.14E+00	5.18E+00	2.36E-01
Number of Cert Results		3.30E+01	NA	2.90E+01	3.30E+01	2.70E+01	3.30E+01	3.30E+01	3.30E+01
Number of Inserted Values		0.00E+00	NA	4.00E+00	0.00E+00	6.00E+00	0.00E+00	0.00E+00	0.00E+00

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 7

Certification Units	Area sq ft	Uranium-238 pCi/g	Antimony ug/g	Arsenic ug/g	Barium ug/g	Beryllium ug/g	Boron ug/g	Cadmium ug/g	Chromium (VI) ug/g	Cobalt ug/g	Copper ug/g
A4B2-C01	46937	3.97E+00	5.53E-01	1.10E+01	NA	1.14E+00	NA	9.89E-01	NA	NA	NA
A4B2-C02	47560	2.45E+00	6.78E-01	1.07E+01	NA	8.17E-01	NA	9.89E-01	NA	NA	NA
A6GAW-C12	53645	6.00E+00	7.50E+00	1.24E+01	NA	1.44E+00	NA	9.89E-01	NA	NA	NA
A6GAW-C13	545368	6.87E+00	7.90E-01	1.24E+01	NA	1.44E+00	NA	5.30E-01	NA	NA	NA
A6GAW-C19	56663	4.57E+00	6.72E-01	1.24E+01	NA	1.44E+00	NA	2.22E-01	NA	NA	NA
A6GAW-C20	60993	4.60E+00	7.20E-01	1.24E+01	NA	1.44E+00	NA	3.19E-01	NA	NA	NA
A6GAW-C21	61161	3.40E+00	7.80E-01	1.24E+01	NA	1.44E+00	NA	2.40E-01	NA	NA	NA
A6GAW-C22	49461	6.47E+00	2.87E+00	1.24E+01	NA	5.30E-01	NA	9.89E-01	NA	NA	NA
A6GAW-C23	53337	9.50E+00	2.87E+00	1.24E+01	NA	6.72E-01	NA	9.89E-01	NA	NA	NA
A6GAW-C23P	4671	3.28E+00	2.87E+00	1.24E+01	NA	4.57E-01	NA	9.89E-01	NA	NA	NA
A6GAW-C24	29531	4.40E+00	2.87E+00	1.24E+01	NA	1.03E+00	NA	9.89E-01	NA	NA	NA
A7MA-C01	60299	5.17E+00	4.84E-01	1.02E+01	NA	1.07E+00	NA	9.89E-01	NA	NA	NA
A7MA-C02	55570	8.30E+00	2.87E+00	1.16E+01	NA	7.71E-01	NA	9.89E-01	NA	NA	NA
A7SSA-C01	18478	4.03E+00	6.00E-01	5.46E+00	NA	8.08E-01	NA	9.89E-01	NA	NA	NA
A7SSA-C02	22412	2.54E+00	1.10E+00	5.70E+00	NA	6.60E-01	NA	9.89E-01	NA	NA	NA
A7SSA-C03	24334	3.90E+00	7.28E-01	9.68E+00	NA	3.88E-01	NA	2.63E-01	NA	NA	NA
A7SSA-C04	28641	2.10E+00	5.15E-01	6.56E+00	NA	7.55E-01	NA	4.22E-01	NA	NA	NA
A7SSA-C05	37184	2.14E+00	2.30E+00	8.63E+00	NA	8.90E-01	NA	4.40E-01	NA	NA	NA
A7SSA-C06	45184	8.77E+00	4.60E+00	7.80E+00	NA	7.30E-01	NA	2.80E-01	NA	NA	NA
A7SSA-C07	39754	4.27E+00	5.21E-01	8.84E+00	NA	9.08E-01	NA	3.23E-01	NA	NA	NA
A7SSA-C08	166065	7.07E+00	5.25E-01	7.57E+00	NA	7.60E-01	NA	9.89E-01	NA	NA	NA
A7SSA-C09	58493	4.03E+00	6.63E-01	7.08E+00	NA	9.28E-01	NA	2.87E-01	NA	NA	NA
A7SSA-C10	54452	3.10E+00	7.20E-01	7.90E+00	NA	1.33E+00	NA	2.40E-01	NA	NA	NA
A7SSA-C11	50746	3.80E+00	1.83E+00	1.00E+01	NA	1.33E+00	NA	5.09E-01	NA	NA	NA
A7SSA-C12	57267	1.65E+01	4.40E+00	9.13E+00	NA	1.20E+00	NA	3.80E-01	NA	NA	NA
A7SSA-C13	16112	3.14E+00	5.60E+00	1.06E+01	NA	7.80E-01	NA	3.10E-01	NA	NA	NA
A7SSA-C14	65248	2.44E+00	9.00E-01	1.02E+01	NA	1.14E+00	NA	9.89E-01	NA	NA	NA
A7SSA-C15	58254	2.53E+00	6.50E-01	1.07E+01	NA	1.20E+00	NA	3.60E-01	NA	NA	NA
A7SSA-C16	53607	3.30E+00	7.84E-01	8.09E+00	NA	6.93E-01	NA	3.05E-01	NA	NA	NA
BSL-C01	61703	8.93E+00	2.70E+00	1.24E+01	NA	1.44E+00	NA	9.89E-01	NA	NA	NA
BSL-C02	61873	2.58E+00	4.50E+00	1.24E+01	NA	1.44E+00	NA	9.89E-01	NA	NA	NA
BSL-C03	49944	7.57E+00	4.50E+00	1.24E+01	NA	1.44E+00	NA	9.89E-01	NA	NA	NA
BSL-C04	49642	5.10E+00	6.55E-01	1.24E+01	NA	1.44E+00	NA	9.89E-01	NA	NA	NA
Maximum Value		1.65E+01	7.50E+00	1.24E+01	NA	1.44E+00	NA	9.89E-01	NA	NA	NA
Average (*used in Risk Calc.*)		5.05E+00	1.98E+00	1.03E+01	NA	1.03E+00	NA	6.74E-01	NA	NA	NA
Number of Cert Results		3.30E+01	2.80E+01	2.00E+01	NA	2.40E+01	NA	1.60E+01	NA	NA	NA
Number of Inserted Values		0.00E+00	5.00E+00	1.30E+01	NA	9.00E+00	NA	1.70E+01	NA	NA	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 7

Certification Units	Area sq ft	Fluoride ug/g	Lead ug/g	Manganese ug/g	Mercury ug/g	Molybdenum ug/g	Nickel ug/g	Selenium ug/g	Silver ug/g	Thallium ug/g	Uranium ug/g
A4B2-C01	46937	NA	NA	NA	NA	5.24E+00	NA	NA	1.13E+00	NA	1.19E+01
A4B2-C02	47560	NA	NA	NA	NA	5.24E+00	NA	NA	1.13E+00	NA	7.35E+00
A6GAW-C12	53645	NA	NA	NA	NA	5.24E+00	NA	NA	1.13E+00	NA	1.80E+01
A6GAW-C13	545368	NA	NA	NA	NA	2.70E+00	NA	NA	9.30E-02	NA	2.06E+01
A6GAW-C19	56663	NA	NA	NA	NA	2.85E+00	NA	NA	1.55E-01	NA	1.37E+01
A6GAW-C20	60993	NA	NA	NA	NA	3.80E+00	NA	NA	6.00E-02	NA	1.38E+01
A6GAW-C21	61161	NA	NA	NA	NA	2.80E+00	NA	NA	7.20E-02	NA	1.02E+01
A6GAW-C22	49461	NA	NA	NA	NA	5.24E+00	NA	NA	1.13E+00	NA	1.94E+01
A6GAW-C23	53337	NA	NA	NA	NA	5.24E+00	NA	NA	1.13E+00	NA	2.85E+01
A6GAW-C23P	4671	NA	NA	NA	NA	5.24E+00	NA	NA	1.13E+00	NA	9.84E+00
A6GAW-C24	29531	NA	NA	NA	NA	5.24E+00	NA	NA	1.13E+00	NA	1.32E+01
A7MA-C01	60299	NA	NA	NA	NA	5.24E+00	NA	NA	1.13E+00	NA	1.55E+01
A7MA-C02	55570	NA	NA	NA	NA	5.24E+00	NA	NA	1.13E+00	NA	2.49E+01
A7SSA-C01	18478	NA	NA	NA	NA	5.24E+00	NA	NA	1.13E+00	NA	1.21E+01
A7SSA-C02	22412	NA	NA	NA	NA	5.24E+00	NA	NA	1.13E+00	NA	7.63E+00
A7SSA-C03	24334	NA	NA	NA	NA	6.26E+00	NA	NA	8.21E+00	NA	1.17E+01
A7SSA-C04	28641	NA	NA	NA	NA	3.18E+00	NA	NA	1.64E-01	NA	6.29E+00
A7SSA-C05	37184	NA	NA	NA	NA	2.79E+00	NA	NA	1.10E-01	NA	6.41E+00
A7SSA-C06	45184	NA	NA	NA	NA	1.90E+00	NA	NA	7.10E-02	NA	2.63E+01
A7SSA-C07	39754	NA	NA	NA	NA	2.35E+00	NA	NA	1.65E-01	NA	1.28E+01
A7SSA-C08	166065	NA	NA	NA	NA	5.24E+00	NA	NA	1.13E+00	NA	2.12E+01
A7SSA-C09	58493	NA	NA	NA	NA	1.49E+00	NA	NA	2.11E-01	NA	1.21E+01
A7SSA-C10	54452	NA	NA	NA	NA	1.71E+00	NA	NA	6.50E-02	NA	9.30E+00
A7SSA-C11	50746	NA	NA	NA	NA	1.76E+00	NA	NA	1.59E-01	NA	1.14E+01
A7SSA-C12	57267	NA	NA	NA	NA	2.70E+00	NA	NA	8.60E-02	NA	4.95E+01
A7SSA-C13	16112	NA	NA	NA	NA	1.40E+00	NA	NA	8.70E-02	NA	9.41E+00
A7SSA-C14	65248	NA	NA	NA	NA	5.24E+00	NA	NA	1.13E+00	NA	7.31E+00
A7SSA-C15	58254	NA	NA	NA	NA	1.70E+00	NA	NA	9.30E-02	NA	7.59E+00
A7SSA-C16	53607	NA	NA	NA	NA	2.55E+00	NA	NA	1.54E-01	NA	9.91E+00
BSL-C01	61703	NA	NA	NA	NA	5.24E+00	NA	NA	1.13E+00	NA	2.68E+01
BSL-C02	61873	NA	NA	NA	NA	5.24E+00	NA	NA	1.13E+00	NA	7.74E+00
BSL-C03	49944	NA	NA	NA	NA	5.24E+00	NA	NA	1.13E+00	NA	2.27E+01
BSL-C04	49642	NA	NA	NA	NA	5.24E+00	NA	NA	1.13E+00	NA	1.53E+01
Maximum Value		NA	NA	NA	NA	6.26E+00	NA	NA	8.21E+00	NA	4.95E+01
Average (*used in Risk Calc.*)		NA	NA	NA	NA	3.97E+00	NA	NA	8.84E-01	NA	1.52E+01
Number of Cert Results		NA	NA	NA	NA	1.60E+01	NA	NA	1.60E+01	NA	3.30E+01
Number of Inserted Values		NA	NA	NA	NA	1.70E+01	NA	NA	1.70E+01	NA	0.00E+00

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 7

Certification Units	Area sq ft	Vanadium ug/g	Zinc ug/g	Acetone ug/g	Aroclor-1254 ug/g	Aroclor-1260 ug/g	Benzene ug/g	Benzo(a)anthracene ug/g	Benzo(a)pyrene ug/g
A4B2-C01	46937	NA	NA	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A4B2-C02	47560	NA	NA	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A6GAW-C12	53645	NA	NA	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A6GAW-C13	545368	NA	NA	NA	0.00E+00	0.00E+00	NA	4.26E-02	4.26E-02
A6GAW-C19	56663	NA	NA	NA	8.10E-03	0.00E+00	NA	2.49E+00	1.22E-01
A6GAW-C20	60993	NA	NA	NA	6.20E-03	0.00E+00	NA	5.93E-02	8.69E-02
A6GAW-C21	61161	NA	NA	NA	4.10E-03	0.00E+00	NA	4.14E-02	4.14E-02
A6GAW-C22	49461	NA	NA	NA	6.70E-03	0.00E+00	NA	0.00E+00	0.00E+00
A6GAW-C23	53337	NA	NA	NA	1.18E-02	0.00E+00	NA	0.00E+00	0.00E+00
A6GAW-C23P	4671	NA	NA	NA	4.13E-03	0.00E+00	NA	0.00E+00	0.00E+00
A6GAW-C24	29531	NA	NA	NA	1.08E-02	0.00E+00	NA	0.00E+00	0.00E+00
A7MA-C01	60299	NA	NA	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A7MA-C02	55570	NA	NA	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
A7SSA-C01	18478	NA	NA	NA	2.63E-02	0.00E+00	NA	0.00E+00	0.00E+00
A7SSA-C02	22412	NA	NA	NA	4.30E-03	0.00E+00	NA	0.00E+00	0.00E+00
A7SSA-C03	24334	NA	NA	NA	3.18E-02	9.60E-03	NA	1.23E-01	1.23E-01
A7SSA-C04	28641	NA	NA	NA	5.01E-02	2.19E-02	NA	4.34E-02	4.34E-02
A7SSA-C05	37184	NA	NA	NA	4.40E-03	4.40E-03	NA	4.38E-02	4.38E-02
A7SSA-C06	45184	NA	NA	NA	1.36E-02	6.70E-03	NA	2.24E-01	3.02E-01
A7SSA-C07	39754	NA	NA	NA	5.66E-02	6.70E-03	NA	1.81E-01	2.40E-01
A7SSA-C08	166065	NA	NA	NA	1.62E-02	0.00E+00	NA	0.00E+00	0.00E+00
A7SSA-C09	58493	NA	NA	NA	6.90E-03	5.40E-03	NA	5.35E-02	5.35E-02
A7SSA-C10	54452	NA	NA	NA	1.18E-01	1.98E-03	NA	1.99E-02	2.01E-02
A7SSA-C11	50746	NA	NA	NA	3.12E-02	4.25E-03	NA	4.25E-02	4.25E-02
A7SSA-C12	57267	NA	NA	NA	1.37E-02	6.20E-03	NA	1.98E-01	2.97E-01
A7SSA-C13	16112	NA	NA	NA	2.88E-02	1.27E-01	NA	6.94E-02	8.96E-02
A7SSA-C14	65248	NA	NA	NA	1.65E-02	0.00E+00	NA	0.00E+00	0.00E+00
A7SSA-C15	58254	NA	NA	NA	4.30E-03	4.30E-03	NA	1.51E-01	1.52E-01
A7SSA-C16	53607	NA	NA	NA	3.40E-02	1.09E-02	NA	4.19E-02	4.19E-02
BSL-C01	61703	NA	NA	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
BSL-C02	61873	NA	NA	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
BSL-C03	49944	NA	NA	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
BSL-C04	49642	NA	NA	NA	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00
Maximum Value		NA	NA	NA	1.18E-01	1.27E-01	NA	2.49E+00	3.02E-01
Average (*used in Risk Calc.*)		NA	NA	NA	1.54E-02	6.34E-03	NA	1.16E-01	5.28E-02
Number of Cert Results		NA	NA	NA	2.30E+01	1.20E+01	NA	1.60E+01	1.60E+01
Number of Inserted Values		NA	NA	NA	1.00E+01	2.10E+01	NA	1.70E+01	1.70E+01

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 7

Certification Units	Area sq ft	Benzo(b)fluoranthene ug/g	Benzo(k)fluoranthene ug/g	Bis(2-chloroisopropyl)ether ug/g	Bis(2-ethylhexyl)phthalate ug/g
A4B2-C01	46937	0.00E+00	0.00E+00	NA	NA
A4B2-C02	47560	0.00E+00	0.00E+00	NA	NA
A6GAW-C12	53645	0.00E+00	0.00E+00	NA	NA
A6GAW-C13	545368	3.95E-02	4.26E-02	NA	NA
A6GAW-C19	56663	3.91E+00	3.04E-01	NA	NA
A6GAW-C20	60993	1.16E-01	6.61E-02	NA	NA
A6GAW-C21	61161	4.14E-02	4.14E-02	NA	NA
A6GAW-C22	49461	0.00E+00	0.00E+00	NA	NA
A6GAW-C23	53337	0.00E+00	0.00E+00	NA	NA
A6GAW-C23P	4671	0.00E+00	0.00E+00	NA	NA
A6GAW-C24	29531	0.00E+00	0.00E+00	NA	NA
A7MA-C01	60299	0.00E+00	0.00E+00	NA	NA
A7MA-C02	55570	0.00E+00	0.00E+00	NA	NA
A7SSA-C01	18478	0.00E+00	0.00E+00	NA	NA
A7SSA-C02	22412	0.00E+00	0.00E+00	NA	NA
A7SSA-C03	24334	1.23E-01	1.23E-01	NA	NA
A7SSA-C04	28641	4.34E-02	4.34E-02	NA	NA
A7SSA-C05	37184	4.38E-02	4.38E-02	NA	NA
A7SSA-C06	45184	3.99E-01	4.11E-02	NA	NA
A7SSA-C07	39754	3.00E-01	4.21E-02	NA	NA
A7SSA-C08	166065	0.00E+00	0.00E+00	NA	NA
A7SSA-C09	58493	5.35E-02	5.35E-02	NA	NA
A7SSA-C10	54452	1.54E-01	7.30E-01	NA	NA
A7SSA-C11	50746	1.60E-01	4.25E-02	NA	NA
A7SSA-C12	57267	4.04E-01	9.30E-02	NA	NA
A7SSA-C13	16112	1.42E-01	3.96E-02	NA	NA
A7SSA-C14	65248	0.00E+00	0.00E+00	NA	NA
A7SSA-C15	58254	1.47E-01	9.13E-02	NA	NA
A7SSA-C16	53607	4.19E-02	4.19E-02	NA	NA
BSL-C01	61703	0.00E+00	0.00E+00	NA	NA
BSL-C02	61873	0.00E+00	0.00E+00	NA	NA
BSL-C03	49944	0.00E+00	0.00E+00	NA	NA
BSL-C04	49642	0.00E+00	0.00E+00	NA	NA
Maximum Value		3.91E+00	7.30E-01	NA	NA
Average (*used in Risk Calc.*)		1.85E-01	5.57E-02	NA	NA
Number of Cert Results		1.60E+01	1.60E+01	NA	NA
Number of Inserted Values		1.70E+01	1.70E+01	NA	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 7

Certification Units	Area sq ft	Bromodichloromethane ug/g	Bromoform ug/g	Bromomethane ug/g	2-Butanone ug/g	Carbazole ug/g	Carbon disulfide ug/g
A4B2-C01	46937	NA	NA	NA	NA	NA	NA
A4B2-C02	47560	NA	NA	NA	NA	NA	NA
A6GAW-C12	53645	NA	NA	NA	NA	NA	NA
A6GAW-C13	545368	NA	NA	NA	NA	NA	NA
A6GAW-C19	56663	NA	NA	NA	NA	NA	NA
A6GAW-C20	60993	NA	NA	NA	NA	NA	NA
A6GAW-C21	61161	NA	NA	NA	NA	NA	NA
A6GAW-C22	49461	NA	NA	NA	NA	NA	NA
A6GAW-C23	53337	NA	NA	NA	NA	NA	NA
A6GAW-C23P	4671	NA	NA	NA	NA	NA	NA
A6GAW-C24	29531	NA	NA	NA	NA	NA	NA
A7MA-C01	60299	NA	NA	NA	NA	NA	NA
A7MA-C02	55570	NA	NA	NA	NA	NA	NA
A7SSA-C01	18478	NA	NA	NA	NA	NA	NA
A7SSA-C02	22412	NA	NA	NA	NA	NA	NA
A7SSA-C03	24334	NA	NA	NA	NA	NA	NA
A7SSA-C04	28641	NA	NA	NA	NA	NA	NA
A7SSA-C05	37184	NA	NA	NA	NA	NA	NA
A7SSA-C06	45184	NA	NA	NA	NA	NA	NA
A7SSA-C07	39754	NA	NA	NA	NA	NA	NA
A7SSA-C08	166065	NA	NA	NA	NA	NA	NA
A7SSA-C09	58493	NA	NA	NA	NA	NA	NA
A7SSA-C10	54452	NA	NA	NA	NA	NA	NA
A7SSA-C11	50746	NA	NA	NA	NA	NA	NA
A7SSA-C12	57267	NA	NA	NA	NA	NA	NA
A7SSA-C13	16112	NA	NA	NA	NA	NA	NA
A7SSA-C14	65248	NA	NA	NA	NA	NA	NA
A7SSA-C15	58254	NA	NA	NA	NA	NA	NA
A7SSA-C16	53607	NA	NA	NA	NA	NA	NA
BSL-C01	61703	NA	NA	NA	NA	NA	NA
BSL-C02	61873	NA	NA	NA	NA	NA	NA
BSL-C03	49944	NA	NA	NA	NA	NA	NA
BSL-C04	49642	NA	NA	NA	NA	NA	NA
Maximum Value		NA	NA	NA	NA	NA	NA
Average (*used in Risk Calc.*)		NA	NA	NA	NA	NA	NA
Number of Cert Results		NA	NA	NA	NA	NA	NA
Number of Inserted Values		NA	NA	NA	NA	NA	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 7

Certification Units	Area sq ft	Carbon tetrachloride ug/g	Chlordane ug/g	Chlorobenzene ug/g	Chloroform ug/g	Chrysene ug/g	Cyanide ug/g	Cyclohexanone ug/g
A4B2-C01	46937	NA	NA	NA	NA	0.00E+00	NA	NA
A4B2-C02	47560	NA	NA	NA	NA	0.00E+00	NA	NA
A6GAW-C12	53645	NA	NA	NA	NA	0.00E+00	NA	NA
A6GAW-C13	545368	NA	NA	NA	NA	4.26E-02	NA	NA
A6GAW-C19	56663	NA	NA	NA	NA	2.08E+00	NA	NA
A6GAW-C20	60993	NA	NA	NA	NA	8.46E-02	NA	NA
A6GAW-C21	61161	NA	NA	NA	NA	4.14E-02	NA	NA
A6GAW-C22	49461	NA	NA	NA	NA	0.00E+00	NA	NA
A6GAW-C23	53337	NA	NA	NA	NA	0.00E+00	NA	NA
A6GAW-C23P	4671	NA	NA	NA	NA	0.00E+00	NA	NA
A6GAW-C24	29531	NA	NA	NA	NA	0.00E+00	NA	NA
A7MA-C01	60299	NA	NA	NA	NA	0.00E+00	NA	NA
A7MA-C02	55570	NA	NA	NA	NA	0.00E+00	NA	NA
A7SSA-C01	18478	NA	NA	NA	NA	0.00E+00	NA	NA
A7SSA-C02	22412	NA	NA	NA	NA	0.00E+00	NA	NA
A7SSA-C03	24334	NA	NA	NA	NA	1.23E-01	NA	NA
A7SSA-C04	28641	NA	NA	NA	NA	4.34E-02	NA	NA
A7SSA-C05	37184	NA	NA	NA	NA	4.38E-02	NA	NA
A7SSA-C06	45184	NA	NA	NA	NA	2.48E-01	NA	NA
A7SSA-C07	39754	NA	NA	NA	NA	1.27E-01	NA	NA
A7SSA-C08	166065	NA	NA	NA	NA	0.00E+00	NA	NA
A7SSA-C09	58493	NA	NA	NA	NA	5.35E-02	NA	NA
A7SSA-C10	54452	NA	NA	NA	NA	1.73E+01	NA	NA
A7SSA-C11	50746	NA	NA	NA	NA	4.25E-02	NA	NA
A7SSA-C12	57267	NA	NA	NA	NA	1.95E-01	NA	NA
A7SSA-C13	16112	NA	NA	NA	NA	8.58E-02	NA	NA
A7SSA-C14	65248	NA	NA	NA	NA	0.00E+00	NA	NA
A7SSA-C15	58254	NA	NA	NA	NA	1.51E-01	NA	NA
A7SSA-C16	53607	NA	NA	NA	NA	4.19E-02	NA	NA
BSL-C01	61703	NA	NA	NA	NA	0.00E+00	NA	NA
BSL-C02	61873	NA	NA	NA	NA	0.00E+00	NA	NA
BSL-C03	49944	NA	NA	NA	NA	0.00E+00	NA	NA
BSL-C04	49642	NA	NA	NA	NA	0.00E+00	NA	NA
Maximum Value		NA	NA	NA	NA	1.73E+01	NA	NA
Average (*used in Risk Calc.*)		NA	NA	NA	NA	6.27E-01	NA	NA
Number of Cert Results		NA	NA	NA	NA	1.60E+01	NA	NA
Number of Inserted Values		NA	NA	NA	NA	1.70E+01	NA	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 7

Certification Units	Area sq ft	Dibenzo(a,h)anthracene ug/g	3,3-Dichlorobenzidine ug/g	1,2-dichloroethane ug/g	1,1-Dichloroethylene ug/g	Dieldrin ug/g
A4B2-C01	46937	0.00E+00	NA	NA	NA	NA
A4B2-C02	47560	0.00E+00	NA	NA	NA	NA
A6GAW-C12	53645	0.00E+00	NA	NA	NA	NA
A6GAW-C13	545368	4.26E-02	NA	NA	NA	NA
A6GAW-C19	56663	1.44E-01	NA	NA	NA	NA
A6GAW-C20	60993	3.93E-02	NA	NA	NA	NA
A6GAW-C21	61161	4.14E-02	NA	NA	NA	NA
A6GAW-C22	49461	0.00E+00	NA	NA	NA	NA
A6GAW-C23	53337	0.00E+00	NA	NA	NA	NA
A6GAW-C23P	4671	0.00E+00	NA	NA	NA	NA
A6GAW-C24	29531	0.00E+00	NA	NA	NA	NA
A7MA-C01	60299	0.00E+00	NA	NA	NA	NA
A7MA-C02	55570	0.00E+00	NA	NA	NA	NA
A7SSA-C01	18478	0.00E+00	NA	NA	NA	NA
A7SSA-C02	22412	0.00E+00	NA	NA	NA	NA
A7SSA-C03	24334	1.23E-01	NA	NA	NA	NA
A7SSA-C04	28641	4.34E-02	NA	NA	NA	NA
A7SSA-C05	37184	4.38E-02	NA	NA	NA	NA
A7SSA-C06	45184	4.11E-02	NA	NA	NA	NA
A7SSA-C07	39754	4.21E-02	NA	NA	NA	NA
A7SSA-C08	166065	0.00E+00	NA	NA	NA	NA
A7SSA-C09	58493	5.35E-02	NA	NA	NA	NA
A7SSA-C10	54452	1.95E-02	NA	NA	NA	NA
A7SSA-C11	50746	4.25E-02	NA	NA	NA	NA
A7SSA-C12	57267	4.16E-02	NA	NA	NA	NA
A7SSA-C13	16112	3.96E-02	NA	NA	NA	NA
A7SSA-C14	65248	0.00E+00	NA	NA	NA	NA
A7SSA-C15	58254	1.51E-01	NA	NA	NA	NA
A7SSA-C16	53607	4.19E-02	NA	NA	NA	NA
BSL-C01	61703	0.00E+00	NA	NA	NA	NA
BSL-C02	61873	0.00E+00	NA	NA	NA	NA
BSL-C03	49944	0.00E+00	NA	NA	NA	NA
BSL-C04	49642	0.00E+00	NA	NA	NA	NA
Maximum Value		1.51E-01	NA	NA	NA	NA
Average (*used in Risk Calc.*)		2.88E-02	NA	NA	NA	NA
Number of Cert Results		1.60E+01	NA	NA	NA	NA
Number of Inserted Values		1.70E+01	NA	NA	NA	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 7

Certification Units	Area sq ft	Di-n-octylphthalate ug/g	Ethylbenzene ug/g	Ethyl ether ug/g	Heptachlorodibenzofuran ug/g	Heptachlorodibenzo-p-dioxin ug/g
A4B2-C01	46937	NA	NA	NA	NA	NA
A4B2-C02	47560	NA	NA	NA	NA	NA
A6GAW-C12	53645	NA	NA	NA	NA	NA
A6GAW-C13	545368	NA	NA	NA	NA	NA
A6GAW-C19	56663	NA	NA	NA	NA	NA
A6GAW-C20	60993	NA	NA	NA	NA	NA
A6GAW-C21	61161	NA	NA	NA	NA	NA
A6GAW-C22	49461	NA	NA	NA	NA	NA
A6GAW-C23	53337	NA	NA	NA	NA	NA
A6GAW-C23P	4671	NA	NA	NA	NA	NA
A6GAW-C24	29531	NA	NA	NA	NA	NA
A7MA-C01	60299	NA	NA	NA	NA	NA
A7MA-C02	55570	NA	NA	NA	NA	NA
A7SSA-C01	18478	NA	NA	NA	NA	NA
A7SSA-C02	22412	NA	NA	NA	NA	NA
A7SSA-C03	24334	NA	NA	NA	NA	NA
A7SSA-C04	28641	NA	NA	NA	NA	NA
A7SSA-C05	37184	NA	NA	NA	NA	NA
A7SSA-C06	45184	NA	NA	NA	NA	NA
A7SSA-C07	39754	NA	NA	NA	NA	NA
A7SSA-C08	166065	NA	NA	NA	NA	NA
A7SSA-C09	58493	NA	NA	NA	NA	NA
A7SSA-C10	54452	NA	NA	NA	NA	NA
A7SSA-C11	50746	NA	NA	NA	NA	NA
A7SSA-C12	57267	NA	NA	NA	NA	NA
A7SSA-C13	16112	NA	NA	NA	NA	NA
A7SSA-C14	65248	NA	NA	NA	NA	NA
A7SSA-C15	58254	NA	NA	NA	NA	NA
A7SSA-C16	53607	NA	NA	NA	NA	NA
BSL-C01	61703	NA	NA	NA	NA	NA
BSL-C02	61873	NA	NA	NA	NA	NA
BSL-C03	49944	NA	NA	NA	NA	NA
BSL-C04	49642	NA	NA	NA	NA	NA
Maximum Value		NA	NA	NA	NA	NA
Average (*used in Risk Calc.*)		NA	NA	NA	NA	NA
Number of Cert Results		NA	NA	NA	NA	NA
Number of Inserted Values		NA	NA	NA	NA	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 7

Certification Units	Area sq ft	Hexachlorodibenzofuran ug/g	Hexachlorodibenzo-p-dioxin ug/g	Indeno(1,2,3-cd)pyrene ug/g	Methanol ug/g	Methyl-2-pentanone ug/g
A4B2-C01	46937	NA	NA	0.00E+00	NA	NA
A4B2-C02	47560	NA	NA	0.00E+00	NA	NA
A6GAW-C12	53645	NA	NA	0.00E+00	NA	NA
A6GAW-C13	545368	NA	NA	4.26E-02	NA	NA
A6GAW-C19	56663	NA	NA	1.95E+00	NA	NA
A6GAW-C20	60993	NA	NA	4.94E-02	NA	NA
A6GAW-C21	61161	NA	NA	4.14E-02	NA	NA
A6GAW-C22	49461	NA	NA	0.00E+00	NA	NA
A6GAW-C23	53337	NA	NA	0.00E+00	NA	NA
A6GAW-C23P	4671	NA	NA	0.00E+00	NA	NA
A6GAW-C24	29531	NA	NA	0.00E+00	NA	NA
A7MA-C01	60299	NA	NA	0.00E+00	NA	NA
A7MA-C02	55570	NA	NA	0.00E+00	NA	NA
A7SSA-C01	18478	NA	NA	0.00E+00	NA	NA
A7SSA-C02	22412	NA	NA	0.00E+00	NA	NA
A7SSA-C03	24334	NA	NA	1.23E-01	NA	NA
A7SSA-C04	28641	NA	NA	4.34E-02	NA	NA
A7SSA-C05	37184	NA	NA	4.38E-02	NA	NA
A7SSA-C06	45184	NA	NA	1.86E-01	NA	NA
A7SSA-C07	39754	NA	NA	1.65E-01	NA	NA
A7SSA-C08	166065	NA	NA	0.00E+00	NA	NA
A7SSA-C09	58493	NA	NA	5.35E-02	NA	NA
A7SSA-C10	54452	NA	NA	3.87E+00	NA	NA
A7SSA-C11	50746	NA	NA	4.25E-02	NA	NA
A7SSA-C12	57267	NA	NA	2.11E-01	NA	NA
A7SSA-C13	16112	NA	NA	5.96E-02	NA	NA
A7SSA-C14	65248	NA	NA	0.00E+00	NA	NA
A7SSA-C15	58254	NA	NA	1.51E-01	NA	NA
A7SSA-C16	53607	NA	NA	4.19E-02	NA	NA
BSL-C01	61703	NA	NA	0.00E+00	NA	NA
BSL-C02	61873	NA	NA	0.00E+00	NA	NA
BSL-C03	49944	NA	NA	0.00E+00	NA	NA
BSL-C04	49642	NA	NA	0.00E+00	NA	NA
Maximum Value		NA	NA	3.87E+00	NA	NA
Average (*used in Risk Calc.*)		NA	NA	2.14E-01	NA	NA
Number of Cert Results		NA	NA	1.60E+01	NA	NA
Number of Inserted Values		NA	NA	1.70E+01	NA	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 7

Certification Units	Area sq ft	Methylene chloride ug/g	4-Methylphenol ug/g	4-Nitroanaline ug/g	N-nitrosodiphenylamine ug/g	N-nitrosodipropylamine ug/g
A4B2-C01	46937	NA	NA	NA	NA	NA
A4B2-C02	47560	NA	NA	NA	NA	NA
A6GAW-C12	53645	NA	NA	NA	NA	NA
A6GAW-C13	545368	NA	NA	NA	NA	NA
A6GAW-C19	56663	NA	NA	NA	NA	NA
A6GAW-C20	60993	NA	NA	NA	NA	NA
A6GAW-C21	61161	NA	NA	NA	NA	NA
A6GAW-C22	49461	NA	NA	NA	NA	NA
A6GAW-C23	53337	NA	NA	NA	NA	NA
A6GAW-C23P	4671	NA	NA	NA	NA	NA
A6GAW-C24	29531	NA	NA	NA	NA	NA
A7MA-C01	60299	NA	NA	NA	NA	NA
A7MA-C02	55570	NA	NA	NA	NA	NA
A7SSA-C01	18478	NA	NA	NA	NA	NA
A7SSA-C02	22412	NA	NA	NA	NA	NA
A7SSA-C03	24334	NA	NA	NA	NA	NA
A7SSA-C04	28641	NA	NA	NA	NA	NA
A7SSA-C05	37184	NA	NA	NA	NA	NA
A7SSA-C06	45184	NA	NA	NA	NA	NA
A7SSA-C07	39754	NA	NA	NA	NA	NA
A7SSA-C08	166065	NA	NA	NA	NA	NA
A7SSA-C09	58493	NA	NA	NA	NA	NA
A7SSA-C10	54452	NA	NA	NA	NA	NA
A7SSA-C11	50746	NA	NA	NA	NA	NA
A7SSA-C12	57267	NA	NA	NA	NA	NA
A7SSA-C13	16112	NA	NA	NA	NA	NA
A7SSA-C14	65248	NA	NA	NA	NA	NA
A7SSA-C15	58254	NA	NA	NA	NA	NA
A7SSA-C16	53607	NA	NA	NA	NA	NA
BSL-C01	61703	NA	NA	NA	NA	NA
BSL-C02	61873	NA	NA	NA	NA	NA
BSL-C03	49944	NA	NA	NA	NA	NA
BSL-C04	49642	NA	NA	NA	NA	NA
Maximum Value		NA	NA	NA	NA	NA
Average (*used in Risk Calc.*)		NA	NA	NA	NA	NA
Number of Cert Results		NA	NA	NA	NA	NA
Number of Inserted Values		NA	NA	NA	NA	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 7

Certification Units	Area sq ft	Octachlorodibenzofuran ug/g	Octochlorodibenzo-p-dioxin ug/g	Pentachlorodibenzofuran ug/g	Pentachlorodibenzo-p-dioxin ug/g
A4B2-C01	46937	NA	NA	NA	NA
A4B2-C02	47560	NA	NA	NA	NA
A6GAW-C12	53645	NA	NA	NA	NA
A6GAW-C13	545368	NA	NA	NA	NA
A6GAW-C19	56663	NA	NA	NA	NA
A6GAW-C20	60993	NA	NA	NA	NA
A6GAW-C21	61161	NA	NA	NA	NA
A6GAW-C22	49461	NA	NA	NA	NA
A6GAW-C23	53337	NA	NA	NA	NA
A6GAW-C23P	4671	NA	NA	NA	NA
A6GAW-C24	29531	NA	NA	NA	NA
A7MA-C01	60299	NA	NA	NA	NA
A7MA-C02	55570	NA	NA	NA	NA
A7SSA-C01	18478	NA	NA	NA	NA
A7SSA-C02	22412	NA	NA	NA	NA
A7SSA-C03	24334	NA	NA	NA	NA
A7SSA-C04	28641	NA	NA	NA	NA
A7SSA-C05	37184	NA	NA	NA	NA
A7SSA-C06	45184	NA	NA	NA	NA
A7SSA-C07	39754	NA	NA	NA	NA
A7SSA-C08	166065	NA	NA	NA	NA
A7SSA-C09	58493	NA	NA	NA	NA
A7SSA-C10	54452	NA	NA	NA	NA
A7SSA-C11	50746	NA	NA	NA	NA
A7SSA-C12	57267	NA	NA	NA	NA
A7SSA-C13	16112	NA	NA	NA	NA
A7SSA-C14	65248	NA	NA	NA	NA
A7SSA-C15	58254	NA	NA	NA	NA
A7SSA-C16	53607	NA	NA	NA	NA
BSL-C01	61703	NA	NA	NA	NA
BSL-C02	61873	NA	NA	NA	NA
BSL-C03	49944	NA	NA	NA	NA
BSL-C04	49642	NA	NA	NA	NA
Maximum Value		NA	NA	NA	NA
Average (*used in Risk Calc.*)		NA	NA	NA	NA
Number of Cert Results		NA	NA	NA	NA
Number of Inserted Values		NA	NA	NA	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 7

Certification Units	Area sq ft	Pentachlorophenol ug/g	Phenanthrene ug/g	Tetrachlorodibenzofuran ug/g	Tetrachlorodibenzo-p-dioxin ug/g	Tetrachloroethylene ug/g
A4B2-C01	46937	NA	0.00E+00	NA	NA	NA
A4B2-C02	47560	NA	0.00E+00	NA	NA	NA
A6GAW-C12	53645	NA	0.00E+00	NA	NA	NA
A6GAW-C13	545368	NA	4.26E-02	NA	NA	NA
A6GAW-C19	56663	NA	3.79E-01	NA	NA	NA
A6GAW-C20	60993	NA	4.25E-02	NA	NA	NA
A6GAW-C21	61161	NA	3.62E-02	NA	NA	NA
A6GAW-C22	49461	NA	0.00E+00	NA	NA	NA
A6GAW-C23	53337	NA	0.00E+00	NA	NA	NA
A6GAW-C23P	4671	NA	0.00E+00	NA	NA	NA
A6GAW-C24	29531	NA	0.00E+00	NA	NA	NA
A7MA-C01	60299	NA	0.00E+00	NA	NA	NA
A7MA-C02	55570	NA	0.00E+00	NA	NA	NA
A7SSA-C01	18478	NA	0.00E+00	NA	NA	NA
A7SSA-C02	22412	NA	0.00E+00	NA	NA	NA
A7SSA-C03	24334	NA	1.23E-01	NA	NA	NA
A7SSA-C04	28641	NA	4.34E-02	NA	NA	NA
A7SSA-C05	37184	NA	4.38E-02	NA	NA	NA
A7SSA-C06	45184	NA	2.54E-01	NA	NA	NA
A7SSA-C07	39754	NA	3.56E-01	NA	NA	NA
A7SSA-C08	166065	NA	0.00E+00	NA	NA	NA
A7SSA-C09	58493	NA	5.35E-02	NA	NA	NA
A7SSA-C10	54452	NA	2.03E-02	NA	NA	NA
A7SSA-C11	50746	NA	4.25E-02	NA	NA	NA
A7SSA-C12	57267	NA	2.87E-01	NA	NA	NA
A7SSA-C13	16112	NA	7.15E-02	NA	NA	NA
A7SSA-C14	65248	NA	0.00E+00	NA	NA	NA
A7SSA-C15	58254	NA	1.51E-01	NA	NA	NA
A7SSA-C16	53607	NA	4.19E-02	NA	NA	NA
BSL-C01	61703	NA	0.00E+00	NA	NA	NA
BSL-C02	61873	NA	0.00E+00	NA	NA	NA
BSL-C03	49944	NA	0.00E+00	NA	NA	NA
BSL-C04	49642	NA	0.00E+00	NA	NA	NA
Maximum Value		NA	3.79E-01	NA	NA	NA
Average (*used in Risk Calc.*)		NA	6.02E-02	NA	NA	NA
Number of Cert Results		NA	1.60E+01	NA	NA	NA
Number of Inserted Values		NA	1.70E+01	NA	NA	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 7

Certification Units	Area sq ft	Toluene ug/g	Tributyl phosphate ug/g	1,1,2-Trichloroethane ug/g	Trichloroethylene ug/g	Trifluorochloromethane ug/g	Vinyl chloride ug/g	Xylenes ug/g
A4B2-C01	46937	NA	NA	NA	NA	NA	NA	NA
A4B2-C02	47560	NA	NA	NA	NA	NA	NA	NA
A6GAW-C12	53645	NA	NA	NA	NA	NA	NA	NA
A6GAW-C13	545368	NA	NA	NA	NA	NA	NA	NA
A6GAW-C19	56663	NA	NA	NA	NA	NA	NA	NA
A6GAW-C20	60993	NA	NA	NA	NA	NA	NA	NA
A6GAW-C21	61161	NA	NA	NA	NA	NA	NA	NA
A6GAW-C22	49461	NA	NA	NA	NA	NA	NA	NA
A6GAW-C23	53337	NA	NA	NA	NA	NA	NA	NA
A6GAW-C23P	4671	NA	NA	NA	NA	NA	NA	NA
A6GAW-C24	29531	NA	NA	NA	NA	NA	NA	NA
A7MA-C01	60299	NA	NA	NA	NA	NA	NA	NA
A7MA-C02	55570	NA	NA	NA	NA	NA	NA	NA
A7SSA-C01	18478	NA	NA	NA	NA	NA	NA	NA
A7SSA-C02	22412	NA	NA	NA	NA	NA	NA	NA
A7SSA-C03	24334	NA	NA	NA	NA	NA	NA	NA
A7SSA-C04	28641	NA	NA	NA	NA	NA	NA	NA
A7SSA-C05	37184	NA	NA	NA	NA	NA	NA	NA
A7SSA-C06	45184	NA	NA	NA	NA	NA	NA	NA
A7SSA-C07	39754	NA	NA	NA	NA	NA	NA	NA
A7SSA-C08	166065	NA	NA	NA	NA	NA	NA	NA
A7SSA-C09	58493	NA	NA	NA	NA	NA	NA	NA
A7SSA-C10	54452	NA	NA	NA	NA	NA	NA	NA
A7SSA-C11	50746	NA	NA	NA	NA	NA	NA	NA
A7SSA-C12	57267	NA	NA	NA	NA	NA	NA	NA
A7SSA-C13	16112	NA	NA	NA	NA	NA	NA	NA
A7SSA-C14	65248	NA	NA	NA	NA	NA	NA	NA
A7SSA-C15	58254	NA	NA	NA	NA	NA	NA	NA
A7SSA-C16	53607	NA	NA	NA	NA	NA	NA	NA
BSL-C01	61703	NA	NA	NA	NA	NA	NA	NA
BSL-C02	61873	NA	NA	NA	NA	NA	NA	NA
BSL-C03	49944	NA	NA	NA	NA	NA	NA	NA
BSL-C04	49642	NA	NA	NA	NA	NA	NA	NA
Maximum Value		NA	NA	NA	NA	NA	NA	NA
Average (*used in Risk Calc.*)		NA	NA	NA	NA	NA	NA	NA
Number of Cert Results		NA	NA	NA	NA	NA	NA	NA
Number of Inserted Values		NA	NA	NA	NA	NA	NA	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 8

Certification Units	Area sq ft	Cesium-137 pCi/g	Lead-210 pCi/g	Neptunium-237 pCi/g	Plutonium-238 pCi/g	Plutonium-239/240 pCi/g	Radium-226 pCi/g	Radium-228 pCi/g	Strontium-90 pCi/g
A1P2-S2LL-02	31139	6.60E-02	1.56E+00	NA	NA	NA	1.35E+00	1.18E+00	NA
A1P2-S2NI-02	30784	6.60E-02	1.56E+00	NA	NA	NA	1.46E+00	1.09E+00	NA
A1P2-S2NI-07	36908	6.60E-02	1.56E+00	NA	NA	NA	1.25E+00	1.10E+00	NA
A1P2-S2NI-08	51381	6.60E-02	1.56E+00	NA	NA	NA	1.62E+00	1.15E+00	NA
A1P2-S2SB-01	41279	6.60E-02	1.56E+00	NA	NA	NA	1.40E+00	1.35E+00	NA
A1P2-S2SB-02	36230	6.60E-02	1.56E+00	NA	NA	NA	1.34E+00	1.07E+00	NA
A1P2-S2SB-04	23976	6.60E-02	1.56E+00	NA	NA	NA	1.48E+00	1.24E+00	NA
A1P2-S2SP-01	62156	6.60E-02	1.56E+00	NA	NA	NA	1.22E+00	1.13E+00	NA
A1P2-S2SP-02	47783	6.60E-02	1.56E+00	NA	NA	NA	1.39E+00	1.18E+00	NA
A1P2-S2SP-04	45288	6.60E-02	1.56E+00	NA	NA	NA	1.54E+00	1.26E+00	NA
A1P2-S3CD-02	57491	6.60E-02	1.56E+00	NA	NA	NA	1.45E+00	1.09E+00	NA
A1P2-S3DP-01	62481	6.60E-02	1.56E+00	NA	NA	NA	1.47E+00	1.17E+00	NA
A1P2-S3DP-02	37681	6.60E-02	1.56E+00	NA	NA	NA	1.54E+00	1.28E+00	NA
A1P2-S3HR-02	24116	6.60E-02	1.56E+00	NA	NA	NA	1.42E+00	1.12E+00	NA
A1P2-S3HR-03	60951	6.60E-02	1.56E+00	NA	NA	NA	1.42E+00	1.44E+00	NA
A1P2-S3HR-04	33119	6.60E-02	1.56E+00	NA	NA	NA	1.43E+00	1.10E+00	NA
A1P2-S3HW-01	24608	6.60E-02	1.56E+00	NA	NA	NA	1.56E+00	1.30E+00	NA
A1P2-S3NI-02	87575	6.60E-02	1.56E+00	NA	NA	NA	1.33E+00	1.19E+00	NA
A1P2-S3NI-03	100437	6.60E-02	1.56E+00	NA	NA	NA	1.50E+00	1.24E+00	NA
A1P2-S3NI-04	20969	6.60E-02	1.56E+00	NA	NA	NA	1.34E+00	1.09E+00	NA
A1P2-S3NI-05	101977	6.60E-02	1.56E+00	NA	NA	NA	1.53E+00	1.39E+00	NA
A1P2-S3NI-06	200809	6.60E-02	1.56E+00	NA	NA	NA	1.35E+00	1.28E+00	NA
A1P2-S3SA-02	62171	6.60E-02	1.56E+00	NA	NA	NA	1.53E+00	1.02E+00	NA
A1P2-S3SA-07	61894	6.60E-02	1.56E+00	NA	NA	NA	1.37E+00	1.19E+00	NA
A1P2-S3SA-08	64124	6.60E-02	1.56E+00	NA	NA	NA	1.47E+00	1.26E+00	NA
A1P2-S3SA-09	28944	6.60E-02	1.56E+00	NA	NA	NA	1.70E+00	1.23E+00	NA
A1P2-S3SA-10	32259	6.60E-02	1.56E+00	NA	NA	NA	1.55E+00	1.33E+00	NA
A1P2-DO	32854	6.60E-02	1.56E+00	NA	NA	NA	1.23E+00	1.38E+00	NA
A1P4-C1	40349	6.60E-02	1.56E+00	NA	NA	NA	1.30E+00	1.11E+00	NA
A1P4-C2	34514	6.60E-02	1.56E+00	NA	NA	NA	1.09E+00	1.20E+00	NA
A1P4-C3	34571	6.60E-02	1.56E+00	NA	NA	NA	1.02E+00	1.28E+00	NA
A1P4-C4	15537	6.60E-02	1.56E+00	NA	NA	NA	1.04E+00	1.21E+00	NA
A1P4-C5	44524	2.79E-01	5.94E+00	NA	NA	NA	1.05E+00	1.31E+00	NA
P17-31	34286	6.60E-02	1.56E+00	NA	NA	NA	1.60E+00	1.60E+00	NA
P17-33	33802	6.60E-02	1.56E+00	NA	NA	NA	1.40E+00	1.40E+00	NA
P17-40	112775	6.60E-02	1.56E+00	NA	NA	NA	1.52E+00	1.67E+00	NA
P18	198368	6.60E-02	1.56E+00	NA	NA	NA	1.60E+00	1.28E+00	NA
P18-11	38307	6.60E-02	1.56E+00	NA	NA	NA	1.40E+00	1.20E+00	NA
P19-20	77527	6.60E-02	1.56E+00	NA	NA	NA	1.46E+00	1.40E+00	NA
P19-23	53648	6.60E-02	1.56E+00	NA	NA	NA	1.60E+00	1.45E+00	NA
Q16-34	49426	6.60E-02	1.56E+00	NA	NA	NA	1.47E+00	1.57E+00	NA
Q17-10	178763	4.60E-01	1.56E+00	NA	NA	NA	1.37E+00	1.58E+00	NA
Q17-30	179941	4.30E-01	1.56E+00	NA	NA	NA	1.49E+00	1.65E+00	NA
Q18-10	182499	6.50E-01	1.56E+00	NA	NA	NA	1.50E+00	1.55E+00	NA
Q18-30	159688	6.60E-02	1.56E+00	NA	NA	NA	1.53E+00	1.48E+00	NA
Q19-10	158231	6.60E-02	1.56E+00	NA	NA	NA	1.67E+00	1.53E+00	NA
A1PII-S1-07	201789	6.60E-02	1.56E+00	NA	NA	NA	1.30E+00	1.20E+00	NA
A1PII-S1-08	182288	6.60E-02	1.56E+00	NA	NA	NA	1.17E+00	1.05E+00	NA
A1PII-S1-09	228085	6.60E-02	1.56E+00	NA	NA	NA	1.25E+00	1.27E+00	NA
A1PII-S1-10	213319	6.60E-02	1.56E+00	NA	NA	NA	1.16E+00	1.19E+00	NA
A1PII-S1-11	202318	6.60E-02	1.56E+00	NA	NA	NA	1.29E+00	1.23E+00	NA
A1PII-S1-12	226814	6.60E-02	1.56E+00	NA	NA	NA	1.63E+00	1.38E+00	NA
A1PII-S1-13	270282	6.60E-02	1.56E+00	NA	NA	NA	1.30E+00	1.16E+00	NA
A1PII-S1-14	248031	6.60E-02	1.56E+00	NA	NA	NA	1.30E+00	1.12E+00	NA
A1PII-S1-15	243185	6.60E-02	1.56E+00	NA	NA	NA	1.30E+00	1.17E+00	NA
A1PII-S1-16	217834	6.60E-02	1.56E+00	NA	NA	NA	1.30E+00	1.10E+00	NA
A1PII-S1-17	224677	6.60E-02	1.56E+00	NA	NA	NA	1.14E+00	1.08E+00	NA
A1PII-S1-18	224966	6.60E-02	1.56E+00	NA	NA	NA	1.20E+00	1.13E+00	NA
Maximum Value		6.50E-01	5.94E+00	NA	NA	NA	1.70E+00	1.67E+00	NA
Average (*used in Risk Calc.*)		9.28E-02	1.64E+00	NA	NA	NA	1.39E+00	1.27E+00	NA
Number of Cert Results		4.00E+00	1.00E+00	NA	NA	NA	5.80E+01	5.80E+01	NA
Number of Inserted Values		5.40E+01	5.70E+01	NA	NA	NA	0.00E+00	0.00E+00	NA

NOTE 1:

If at least one CU in the zone has an anlytical result for a given COC, the background value is inserted for the COC in other CUs that have no reported analytical result to avoid a high bias for the COC in this zone.

Background is zero for all organic compounds. Background is not reported for neptunium, plutonium, strontium and technetium isotopes, and zero will be used.

NA = Chemical or radionuclide is not applicable to the assesment of risk in this zone because the COC was not evaluated in the certification reports for this zone.

NOTE 2: CUs underlying the capped cells have been replaced with CUs from the borrow area (A1PII-S1-07 through -18), as the borrow area CUs comprise the capping soil.

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 8

Certification Units	Area sq ft	Technetium-99 pCi/g	Thorium-228 pCi/g	Thorium-230 pCi/g	Thorium-232 pCi/g	Uranium-234 pCi/g	Uranium-235 pCi/g	Uranium-238 pCi/g	Antimony ug/g
A1P2-S2LL-02	31139	0.00E+00	1.14E+00	1.56E+00	1.18E+00	1.83E+01	8.35E-01	1.79E+01	2.87E+00
A1P2-S2NI-02	30784	0.00E+00	1.08E+00	1.56E+00	1.09E+00	7.34E+00	3.34E-01	7.17E+00	2.87E+00
A1P2-S2NI-07	36908	0.00E+00	1.08E+00	1.56E+00	1.10E+00	2.95E+00	1.34E-01	2.88E+00	2.87E+00
A1P2-S2NI-08	51381	0.00E+00	1.12E+00	1.56E+00	1.15E+00	1.95E+01	8.90E-01	1.91E+01	2.87E+00
A1P2-S2SB-01	41279	0.00E+00	1.32E+00	1.56E+00	1.35E+00	2.03E+00	9.27E-02	1.99E+00	2.87E+00
A1P2-S2SB-02	36230	0.00E+00	1.05E+00	1.56E+00	1.07E+00	2.27E+00	1.03E-01	2.21E+00	2.87E+00
A1P2-S2SB-04	23976	0.00E+00	1.22E+00	1.56E+00	1.24E+00	3.72E+00	1.70E-01	3.63E+00	2.87E+00
A1P2-S2SP-01	62156	0.00E+00	1.10E+00	1.56E+00	1.13E+00	8.29E+00	3.78E-01	8.10E+00	2.87E+00
A1P2-S2SP-02	47783	0.00E+00	1.14E+00	1.56E+00	1.18E+00	1.11E+01	5.05E-01	1.08E+01	2.87E+00
A1P2-S2SP-04	45288	0.00E+00	1.23E+00	1.56E+00	1.26E+00	6.04E+00	2.75E-01	5.90E+00	2.87E+00
A1P2-S3CD-02	57491	1.66E+00	1.06E+00	1.56E+00	1.09E+00	1.38E+01	6.28E-01	1.35E+01	5.01E+00
A1P2-S3DP-01	62481	1.80E+00	1.15E+00	1.56E+00	1.17E+00	4.20E+00	1.91E-01	4.10E+00	9.00E-01
A1P2-S3DP-02	37681	2.17E+00	1.26E+00	1.56E+00	1.28E+00	2.80E+00	1.28E-01	2.73E+00	3.90E+00
A1P2-S3HR-02	24116	0.00E+00	1.07E+00	1.56E+00	1.12E+00	6.93E+00	3.16E-01	6.77E+00	2.87E+00
A1P2-S3HR-03	60951	1.52E+00	1.46E+00	1.56E+00	1.44E+00	1.37E+01	6.22E-01	1.33E+01	3.84E+00
A1P2-S3HR-04	33119	0.00E+00	1.12E+00	1.56E+00	1.10E+00	8.70E+00	3.97E-01	8.50E+00	2.87E+00
A1P2-S3HW-01	24608	2.56E+00	1.26E+00	1.56E+00	1.30E+00	6.35E+00	2.89E-01	6.20E+00	1.20E+00
A1P2-S3NI-02	87575	0.00E+00	1.23E+00	1.56E+00	1.19E+00	1.85E+01	8.43E-01	1.81E+01	2.87E+00
A1P2-S3NI-03	100437	0.00E+00	1.26E+00	1.56E+00	1.23E+00	1.33E+01	6.05E-01	1.30E+01	2.87E+00
A1P2-S3NI-04	20969	0.00E+00	1.21E+00	1.56E+00	1.09E+00	1.56E+01	7.11E-01	1.52E+01	2.87E+00
A1P2-S3NI-05	101977	0.00E+00	1.67E+00	1.56E+00	1.34E+00	2.22E+01	1.01E+00	2.16E+01	2.87E+00
A1P2-S3NI-06	200809	0.00E+00	1.33E+00	1.56E+00	1.26E+00	1.95E+01	8.86E-01	1.90E+01	2.87E+00
A1P2-S3SA-02	62171	1.52E+00	1.00E+00	1.56E+00	1.02E+00	8.60E+00	3.92E-01	8.40E+00	1.69E+00
A1P2-S3SA-07	61894	1.55E+00	1.18E+00	1.56E+00	1.19E+00	2.01E+01	9.14E-01	1.96E+01	1.80E+00
A1P2-S3SA-08	64124	2.51E+00	1.24E+00	1.56E+00	1.26E+00	2.48E+01	1.13E+00	2.42E+01	3.00E+00
A1P2-S3SA-09	28944	1.45E+00	1.20E+00	1.56E+00	1.23E+00	5.97E+00	2.72E-01	5.83E+00	2.19E+00
A1P2-S3SA-10	32259	0.00E+00	1.37E+00	1.56E+00	1.32E+00	1.04E+01	4.76E-01	1.02E+01	2.87E+00
A1P2-DO	32854	8.76E-01	1.36E+00	1.56E+00	1.38E+00	5.12E+00	2.33E-01	5.00E+00	1.59E+00
A1P4-C1	40349	0.00E+00	1.12E+00	1.56E+00	1.11E+00	9.83E+00	4.48E-01	9.60E+00	2.87E+00
A1P4-C2	34514	2.21E+00	1.19E+00	1.56E+00	1.20E+00	5.02E+00	2.29E-01	4.90E+00	2.87E+00
A1P4-C3	34571	0.00E+00	1.26E+00	2.08E+01	1.28E+00	5.67E+00	2.58E-01	5.53E+00	2.87E+00
A1P4-C4	15537	0.00E+00	1.20E+00	1.56E+00	1.21E+00	1.05E+01	4.77E-01	1.02E+01	2.87E+00
A1P4-C5	44524	4.04E+00	1.31E+00	2.08E+00	1.31E+00	1.02E+01	4.65E-01	9.97E+00	2.87E+00
P17-31	34286	0.00E+00	1.44E+00	1.56E+00	1.30E+00	8.53E+00	3.89E-01	8.33E+00	2.87E+00
P17-33	33802	0.00E+00	1.20E+00	1.56E+00	1.20E+00	3.99E+00	1.82E-01	3.90E+00	2.87E+00
P17-40	112775	0.00E+00	1.50E+00	1.56E+00	1.40E+00	4.71E+00	2.15E-01	4.60E+00	2.87E+00
P18	198368	0.00E+00	1.59E+00	1.56E+00	1.40E+00	1.33E+01	6.05E-01	1.30E+01	2.87E+00
P18-11	38307	0.00E+00	1.60E+00	1.56E+00	1.40E+00	6.35E+00	2.89E-01	6.20E+00	2.87E+00
P19-20	77527	0.00E+00	1.63E+00	1.56E+00	1.30E+00	1.10E+01	4.99E-01	1.07E+01	2.87E+00
P19-23	53648	0.00E+00	1.60E+00	1.56E+00	1.31E+00	1.38E+01	6.30E-01	1.35E+01	2.87E+00
Q16-34	49426	0.00E+00	1.45E+00	1.56E+00	1.32E+00	1.13E+01	5.13E-01	1.10E+01	2.87E+00
Q17-10	178763	0.00E+00	1.29E+00	1.68E+00	1.27E+00	1.28E+01	5.85E-01	1.25E+01	2.87E+00
Q17-30	179941	0.00E+00	1.34E+00	1.80E+00	1.32E+00	7.95E+00	3.62E-01	7.77E+00	2.87E+00
Q18-10	182499	0.00E+00	1.55E+00	1.70E+00	1.38E+00	7.44E+00	3.39E-01	7.27E+00	2.87E+00
Q18-30	159688	0.00E+00	1.22E+00	1.56E+00	1.26E+00	4.54E+00	2.07E-01	4.43E+00	2.87E+00
Q19-10	158231	0.00E+00	1.40E+00	1.56E+00	1.31E+00	5.73E+00	2.61E-01	5.60E+00	2.87E+00
A1PII-S1-07	201789	0.00E+00	1.20E+00	1.56E+00	1.20E+00	3.12E+00	1.42E-01	3.04E+00	2.87E+00
A1PII-S1-08	182288	0.00E+00	1.08E+00	1.56E+00	1.11E+00	3.37E+00	1.54E-01	3.29E+00	2.87E+00
A1PII-S1-09	228085	0.00E+00	1.26E+00	1.56E+00	1.27E+00	4.74E+00	2.16E-01	4.63E+00	2.87E+00
A1PII-S1-10	213319	0.00E+00	1.30E+00	1.56E+00	1.19E+00	3.02E+00	1.38E-01	2.95E+00	2.87E+00
A1PII-S1-11	202318	0.00E+00	1.24E+00	1.56E+00	1.23E+00	4.13E+00	1.88E-01	4.03E+00	2.87E+00
A1PII-S1-12	226814	0.00E+00	1.51E+00	1.56E+00	1.38E+00	3.00E+00	1.37E-01	2.93E+00	2.87E+00
A1PII-S1-13	270282	0.00E+00	1.21E+00	1.56E+00	1.16E+00	2.74E+00	1.25E-01	2.68E+00	2.87E+00
A1PII-S1-14	248031	0.00E+00	1.18E+00	1.56E+00	1.12E+00	2.46E+00	1.12E-01	2.40E+00	2.87E+00
A1PII-S1-15	243185	0.00E+00	1.19E+00	1.56E+00	1.17E+00	2.53E+00	1.15E-01	2.47E+00	2.87E+00
A1PII-S1-16	217834	0.00E+00	1.20E+00	1.56E+00	1.10E+00	2.37E+00	1.08E-01	2.31E+00	2.87E+00
A1PII-S1-17	224677	0.00E+00	1.07E+00	1.56E+00	1.08E+00	3.27E+00	1.49E-01	3.20E+00	2.87E+00
A1PII-S1-18	224966	0.00E+00	1.11E+00	1.56E+00	1.13E+00	5.98E+00	2.72E-01	5.84E+00	2.87E+00
Maximum Value		4.04E+00	1.67E+00	2.08E+01	1.44E+00	2.48E+01	1.13E+00	2.42E+01	5.01E+00
Average (*used in Risk Calc.*)		4.11E-01	1.26E+00	1.91E+00	1.23E+00	8.54E+00	3.89E-01	8.34E+00	2.81E+00
Number of Cert Results		1.20E+01	5.80E+01	5.00E+00	5.80E+01	5.80E+01	5.80E+01	5.80E+01	1.00E+01
Number of Inserted Values		4.60E+01	0.00E+00	5.30E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.80E+01

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 8

Certification Units	Area sq ft	Arsenic ug/g	Barium ug/g	Beryllium ug/g	Boron ug/g	Cadmium ug/g	Chromium (VI) ug/g	Cobalt ug/g	Copper ug/g	Fluoride ug/g	Lead ug/g
A1P2-S2LL-02	31139	8.47E+00	1.87E+02	1.44E+00	NA	9.89E-01	2.47E+01	NA	NA	NA	7.13E+01
A1P2-S2NI-02	30784	1.07E+01	1.87E+02	1.44E+00	NA	9.89E-01	2.47E+01	NA	NA	NA	3.10E+01
A1P2-S2NI-07	36908	1.10E+01	1.87E+02	1.44E+00	NA	9.89E-01	2.47E+01	NA	NA	NA	2.48E+01
A1P2-S2NI-08	51381	1.16E+01	1.87E+02	1.44E+00	NA	9.89E-01	2.47E+01	NA	NA	NA	4.07E+01
A1P2-S2SB-01	41279	1.05E+01	1.87E+02	1.44E+00	NA	9.89E-01	2.47E+01	NA	NA	NA	2.51E+01
A1P2-S2SB-02	36230	7.12E+00	1.87E+02	1.44E+00	NA	9.89E-01	2.47E+01	NA	NA	NA	1.96E+01
A1P2-S2SB-04	23976	9.92E+00	1.87E+02	1.44E+00	NA	9.89E-01	2.47E+01	NA	NA	NA	2.72E+01
A1P2-S2SP-01	62156	8.59E+00	1.87E+02	1.44E+00	NA	9.89E-01	2.47E+01	NA	NA	NA	2.62E+01
A1P2-S2SP-02	47783	8.95E+00	1.87E+02	1.44E+00	NA	9.89E-01	2.47E+01	NA	NA	NA	2.45E+01
A1P2-S2SP-04	45288	1.04E+01	1.87E+02	1.44E+00	NA	9.89E-01	2.47E+01	NA	NA	NA	4.19E+01
A1P2-S3CD-02	57491	8.40E+00	1.87E+02	6.40E-01	NA	9.89E-01	2.47E+01	NA	NA	NA	3.04E+01
A1P2-S3DP-01	62481	7.50E+00	1.87E+02	9.80E-01	NA	9.89E-01	2.47E+01	NA	NA	NA	1.88E+02
A1P2-S3DP-02	37681	3.50E+00	1.87E+02	1.10E+00	NA	9.89E-01	2.47E+01	NA	NA	NA	1.98E+01
A1P2-S3HR-02	24116	8.73E+00	1.87E+02	1.44E+00	NA	9.89E-01	2.47E+01	NA	NA	NA	2.22E+01
A1P2-S3HR-03	60951	1.10E+01	1.87E+02	5.80E-01	NA	9.89E-01	2.47E+01	NA	NA	NA	2.30E+01
A1P2-S3HR-04	33119	9.13E+00	1.87E+02	1.44E+00	NA	9.89E-01	2.47E+01	NA	NA	NA	2.48E+01
A1P2-S3HW-01	24608	9.14E+00	1.87E+02	1.00E+00	NA	9.89E-01	2.47E+01	NA	NA	NA	2.54E+01
A1P2-S3NI-02	87575	8.90E+00	1.87E+02	1.44E+00	NA	9.89E-01	2.47E+01	NA	NA	NA	4.30E+01
A1P2-S3NI-03	100437	1.00E+01	1.87E+02	1.44E+00	NA	9.89E-01	2.47E+01	NA	NA	NA	2.69E+01
A1P2-S3NI-04	20969	1.16E+01	1.87E+02	1.44E+00	NA	9.89E-01	2.47E+01	NA	NA	NA	5.20E+01
A1P2-S3NI-05	101977	1.17E+01	1.87E+02	1.44E+00	NA	9.89E-01	2.47E+01	NA	NA	NA	3.26E+01
A1P2-S3NI-06	200809	9.33E+00	1.87E+02	1.44E+00	NA	9.89E-01	2.47E+01	NA	NA	NA	3.21E+01
A1P2-S3SA-02	62171	8.20E+00	1.87E+02	2.40E-01	NA	9.89E-01	2.47E+01	NA	NA	NA	3.24E+01
A1P2-S3SA-07	61894	7.35E+00	1.87E+02	1.29E+00	NA	9.89E-01	2.47E+01	NA	NA	NA	2.63E+01
A1P2-S3SA-08	64124	8.47E+00	1.87E+02	5.40E-01	NA	9.89E-01	2.47E+01	NA	NA	NA	2.96E+01
A1P2-S3SA-09	28944	9.09E+00	1.87E+02	8.70E-01	NA	9.89E-01	2.47E+01	NA	NA	NA	2.67E+01
A1P2-S3SA-10	32259	1.06E+01	1.87E+02	1.44E+00	NA	9.89E-01	2.47E+01	NA	NA	NA	2.56E+01
A1P2-DO	32854	1.15E+01	1.87E+02	1.28E+00	NA	9.89E-01	2.47E+01	NA	NA	NA	2.40E+01
A1P4-C1	40349	1.24E+01	1.87E+02	1.44E+00	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01
A1P4-C2	34514	1.24E+01	1.87E+02	1.44E+00	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01
A1P4-C3	34571	1.24E+01	1.87E+02	1.44E+00	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01
A1P4-C4	15537	1.24E+01	1.87E+02	1.44E+00	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01
A1P4-C5	44524	1.05E+01	1.20E+02	7.92E-01	NA	1.70E+00	3.55E+01	NA	NA	NA	3.06E+01
P17-31	34286	1.08E+01	1.87E+02	3.80E-01	NA	9.89E-01	2.47E+01	NA	NA	NA	1.97E+01
P17-33	33802	8.80E+00	1.87E+02	8.70E-01	NA	9.89E-01	2.47E+01	NA	NA	NA	1.91E+01
P17-40	112775	1.07E+01	1.87E+02	8.60E-01	NA	9.89E-01	2.47E+01	NA	NA	NA	2.16E+01
P18	198368	1.03E+01	1.87E+02	1.10E+00	NA	9.89E-01	2.47E+01	NA	NA	NA	3.70E+01
P18-11	38307	9.56E+00	1.87E+02	4.00E-01	NA	9.89E-01	2.47E+01	NA	NA	NA	1.87E+01
P19-20	77527	8.40E+00	1.87E+02	1.20E+00	NA	9.89E-01	2.47E+01	NA	NA	NA	3.11E+01
P19-23	53648	8.40E+00	1.87E+02	1.20E+00	NA	9.89E-01	2.47E+01	NA	NA	NA	3.11E+01
Q16-34	49426	1.24E+01	1.87E+02	1.44E+00	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01
Q17-10	178763	1.08E+01	1.87E+02	1.10E+00	NA	9.89E-01	2.47E+01	NA	NA	NA	2.02E+01
Q17-30	179941	1.08E+01	1.87E+02	1.10E+00	NA	9.89E-01	2.47E+01	NA	NA	NA	2.02E+01
Q18-10	182499	1.17E+01	1.87E+02	9.90E-01	NA	9.89E-01	2.47E+01	NA	NA	NA	2.29E+01
Q18-30	159688	1.17E+01	1.87E+02	9.90E-01	NA	9.89E-01	2.47E+01	NA	NA	NA	2.29E+01
Q19-10	158231	1.09E+01	1.87E+02	9.60E-01	NA	9.89E-01	2.47E+01	NA	NA	NA	5.63E+01
A1PII-S1-07	201789	7.25E+00	1.87E+02	1.44E+00	NA	9.89E-01	2.47E+01	NA	NA	NA	1.95E+01
A1PII-S1-08	182288	5.66E+00	1.87E+02	1.44E+00	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01
A1PII-S1-09	228085	4.67E+00	1.87E+02	1.44E+00	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01
A1PII-S1-10	213319	8.40E+00	1.87E+02	1.44E+00	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01
A1PII-S1-11	202318	6.60E+00	1.87E+02	1.44E+00	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01
A1PII-S1-12	226814	4.80E+00	1.87E+02	1.44E+00	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01
A1PII-S1-13	270282	4.93E+00	1.87E+02	1.44E+00	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01
A1PII-S1-14	248031	7.17E+00	1.87E+02	1.44E+00	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01
A1PII-S1-15	243185	4.79E+00	1.87E+02	1.44E+00	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01
A1PII-S1-16	217834	4.54E+00	1.87E+02	1.44E+00	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01
A1PII-S1-17	224677	4.43E+00	1.87E+02	1.44E+00	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01
A1PII-S1-18	224966	5.58E+00	1.87E+02	1.44E+00	NA	9.89E-01	2.47E+01	NA	NA	NA	3.06E+01
Maximum Value		1.24E+01	1.87E+02	1.44E+00	NA	1.70E+00	3.55E+01	NA	NA	NA	1.88E+02
Average (*used in Risk Calc.*)		9.06E+00	1.86E+02	1.22E+00	NA	1.00E+00	2.49E+01	NA	NA	NA	3.24E+01
Number of Cert Results		5.30E+01	1.00E+00	2.30E+01	NA	1.00E+00	1.00E+00	NA	NA	NA	4.10E+01
Number of Inserted Values		5.00E+00	5.70E+01	3.50E+01	NA	5.70E+01	5.70E+01	NA	NA	NA	1.70E+01

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 8

Certification Units	Area sq ft	Manganese ug/g	Mercury ug/g	Molybdenum ug/g	Nickel ug/g	Selenium ug/g	Silver ug/g	Thallium ug/g	Uranium ug/g	Vanadium ug/g	Zinc ug/g
A1P2-S2LL-02	31139	1.33E+03	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	5.37E+01	NA	NA
A1P2-S2NI-02	30784	1.33E+03	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	2.15E+01	NA	NA
A1P2-S2NI-07	36908	1.33E+03	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	8.64E+00	NA	NA
A1P2-S2NI-08	51381	1.33E+03	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	5.72E+01	NA	NA
A1P2-S2SB-01	41279	1.33E+03	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	5.96E+00	NA	NA
A1P2-S2SB-02	36230	1.33E+03	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	6.64E+00	NA	NA
A1P2-S2SB-04	23976	1.33E+03	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	1.09E+01	NA	NA
A1P2-S2SP-01	62156	1.33E+03	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	2.43E+01	NA	NA
A1P2-S2SP-02	47783	1.33E+03	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	3.25E+01	NA	NA
A1P2-S2SP-04	45288	1.33E+03	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	1.77E+01	NA	NA
A1P2-S3CD-02	57491	1.33E+03	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	4.04E+01	NA	NA
A1P2-S3DP-01	62481	1.33E+03	7.00E-02	1.70E+00	NA	1.19E+00	1.13E+00	NA	1.23E+01	NA	NA
A1P2-S3DP-02	37681	1.33E+03	7.00E-02	1.70E+00	NA	1.19E+00	1.13E+00	NA	8.20E+00	NA	NA
A1P2-S3HR-02	24116	1.33E+03	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	2.03E+01	NA	NA
A1P2-S3HR-03	60951	1.33E+03	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	4.00E+01	NA	NA
A1P2-S3HR-04	33119	1.33E+03	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	2.55E+01	NA	NA
A1P2-S3HW-01	24608	1.33E+03	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	1.86E+01	NA	NA
A1P2-S3NI-02	87575	1.33E+03	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	5.42E+01	NA	NA
A1P2-S3NI-03	100437	1.33E+03	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	3.89E+01	NA	NA
A1P2-S3NI-04	20969	1.33E+03	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	4.57E+01	NA	NA
A1P2-S3NI-05	101977	1.33E+03	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	6.49E+01	NA	NA
A1P2-S3NI-06	200809	1.33E+03	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	5.70E+01	NA	NA
A1P2-S3SA-02	62171	1.33E+03	7.00E-02	1.65E+00	NA	1.19E+00	1.13E+00	NA	2.52E+01	NA	NA
A1P2-S3SA-07	61894	1.33E+03	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	5.88E+01	NA	NA
A1P2-S3SA-08	64124	1.33E+03	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	7.26E+01	NA	NA
A1P2-S3SA-09	28944	1.33E+03	7.00E-02	1.15E+00	NA	1.19E+00	1.13E+00	NA	1.75E+01	NA	NA
A1P2-S3SA-10	32259	1.33E+03	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	3.06E+01	NA	NA
A1P2-DO	32854	1.33E+03	7.00E-02	2.07E+00	NA	1.19E+00	1.13E+00	NA	1.50E+01	NA	NA
A1P4-C1	40349	1.33E+03	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	2.88E+01	NA	NA
A1P4-C2	34514	1.33E+03	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	1.47E+01	NA	NA
A1P4-C3	34571	1.33E+03	3.10E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	1.66E+01	NA	NA
A1P4-C4	15537	1.33E+03	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	3.07E+01	NA	NA
A1P4-C5	44524	1.33E+03	4.40E-02	5.24E+00	NA	3.09E+00	1.00E-01	NA	2.99E+01	NA	NA
P17-31	34286	9.16E+02	7.00E-02	2.20E+00	NA	1.19E+00	1.13E+00	NA	2.50E+01	NA	NA
P17-33	33802	8.64E+02	7.00E-02	2.20E+00	NA	1.19E+00	1.13E+00	NA	1.17E+01	NA	NA
P17-40	112775	1.13E+03	7.00E-02	5.50E-01	NA	1.19E+00	1.13E+00	NA	1.38E+01	NA	NA
P18	198368	1.73E+03	7.00E-02	2.20E+00	NA	1.19E+00	1.13E+00	NA	3.89E+01	NA	NA
P18-11	38307	1.24E+03	7.00E-02	3.10E+00	NA	1.19E+00	1.13E+00	NA	1.86E+01	NA	NA
P19-20	77527	1.20E+03	7.00E-02	2.40E+00	NA	1.19E+00	1.13E+00	NA	3.21E+01	NA	NA
P19-23	53648	1.20E+03	7.00E-02	2.40E+00	NA	1.19E+00	1.13E+00	NA	4.05E+01	NA	NA
Q16-34	49426	1.33E+03	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	3.30E+01	NA	NA
Q17-10	178763	1.50E+03	7.00E-02	4.60E+00	NA	1.19E+00	1.13E+00	NA	3.76E+01	NA	NA
Q17-30	179941	1.50E+03	7.00E-02	4.60E+00	NA	1.19E+00	1.13E+00	NA	2.33E+01	NA	NA
Q18-10	182499	1.46E+03	7.00E-02	1.10E+00	NA	1.19E+00	1.13E+00	NA	2.18E+01	NA	NA
Q18-30	159688	1.46E+03	7.00E-02	1.10E+00	NA	1.19E+00	1.13E+00	NA	1.33E+01	NA	NA
Q19-10	158231	1.59E+03	7.00E-02	1.70E+00	NA	1.19E+00	1.13E+00	NA	1.68E+01	NA	NA
A1PII-S1-07	201789	1.33E+03	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	9.13E+00	NA	NA
A1PII-S1-08	182288	1.33E+03	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	9.88E+00	NA	NA
A1PII-S1-09	228085	1.33E+03	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	1.39E+01	NA	NA
A1PII-S1-10	213319	1.33E+03	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	8.85E+00	NA	NA
A1PII-S1-11	202318	1.33E+03	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	1.21E+01	NA	NA
A1PII-S1-12	226814	1.33E+03	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	8.79E+00	NA	NA
A1PII-S1-13	270282	1.33E+03	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	8.03E+00	NA	NA
A1PII-S1-14	248031	1.33E+03	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	7.21E+00	NA	NA
A1PII-S1-15	243185	1.33E+03	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	7.42E+00	NA	NA
A1PII-S1-16	217834	1.33E+03	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	6.94E+00	NA	NA
A1PII-S1-17	224677	1.33E+03	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	9.59E+00	NA	NA
A1PII-S1-18	224966	1.33E+03	7.00E-02	5.24E+00	NA	1.19E+00	1.13E+00	NA	1.75E+01	NA	NA
Maximum Value		1.73E+03	7.00E-02	5.24E+00	NA	3.09E+00	1.13E+00	NA	7.26E+01	NA	NA
Average (*used in Risk Calc.*)		1.33E+03	6.89E-02	4.33E+00	NA	1.22E+00	1.11E+00	NA	2.50E+01	NA	NA
Number of Cert Results		1.20E+01	2.00E+00	1.70E+01	NA	1.00E+00	1.00E+00	NA	5.80E+01	NA	NA
Number of Inserted Values		4.60E+01	5.60E+01	4.10E+01	NA	5.70E+01	5.70E+01	NA	0.00E+00	NA	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 8

Certification Units	Area sq ft	Acetone ug/g	Aroclor-1254 ug/g	Aroclor-1260 ug/g	Benzene ug/g	Benzo(a)anthracene ug/g	Benzo(a)pyrene ug/g	Benzo(b)fluoranthene ug/g
A1P2-S2LL-02	31139	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA
A1P2-S2NI-02	30784	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA
A1P2-S2NI-07	36908	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA
A1P2-S2NI-08	51381	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA
A1P2-S2SB-01	41279	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA
A1P2-S2SB-02	36230	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA
A1P2-S2SB-04	23976	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA
A1P2-S2SP-01	62156	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA
A1P2-S2SP-02	47783	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA
A1P2-S2SP-04	45288	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA
A1P2-S3CD-02	57491	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA
A1P2-S3DP-01	62481	0.00E+00	6.54E-02	6.54E-02	0.00E+00	NA	NA	NA
A1P2-S3DP-02	37681	0.00E+00	4.85E-02	4.85E-02	0.00E+00	NA	NA	NA
A1P2-S3HR-02	24116	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA
A1P2-S3HR-03	60951	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA
A1P2-S3HR-04	33119	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA
A1P2-S3HW-01	24608	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA
A1P2-S3NI-02	87575	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA
A1P2-S3NI-03	100437	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA
A1P2-S3NI-04	20969	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA
A1P2-S3NI-05	101977	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA
A1P2-S3NI-06	200809	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA
A1P2-S3SA-02	62171	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA
A1P2-S3SA-07	61894	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA
A1P2-S3SA-08	64124	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA
A1P2-S3SA-09	28944	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA
A1P2-S3SA-10	32259	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA
A1P2-DO	32854	0.00E+00	1.70E-03	3.10E-03	0.00E+00	NA	NA	NA
A1P4-C1	40349	0.00E+00	0.00E+00	0.00E+00	1.20E-03	NA	NA	NA
A1P4-C2	34514	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA
A1P4-C3	34571	0.00E+00	4.50E-03	2.50E-03	0.00E+00	NA	NA	NA
A1P4-C4	15537	0.00E+00	2.90E-02	3.50E-02	0.00E+00	NA	NA	NA
A1P4-C5	44524	6.94E-02	4.20E-03	4.20E-03	1.30E-03	4.22E-02	9.39E-02	1.44E-01
P17-31	34286	0.00E+00	0.00E+00	2.50E-02	0.00E+00	NA	NA	NA
P17-33	33802	0.00E+00	0.00E+00	2.45E-02	0.00E+00	NA	NA	NA
P17-40	112775	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA
P18	198368	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA
P18-11	38307	0.00E+00	0.00E+00	2.50E-02	0.00E+00	NA	NA	NA
P19-20	77527	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA
P19-23	53648	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA
Q16-34	49426	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA
Q17-10	178763	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA
Q17-30	179941	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA
Q18-10	182499	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA
Q18-30	159688	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA
Q19-10	158231	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA
A1PII-S1-07	201789	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA
A1PII-S1-08	182288	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA
A1PII-S1-09	228085	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA
A1PII-S1-10	213319	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA
A1PII-S1-11	202318	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA
A1PII-S1-12	226814	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA
A1PII-S1-13	270282	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA
A1PII-S1-14	248031	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA
A1PII-S1-15	243185	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA
A1PII-S1-16	217834	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA
A1PII-S1-17	224677	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA
A1PII-S1-18	224966	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA
Maximum Value		6.94E-02	6.54E-02	6.54E-02	1.30E-03	NA	NA	NA
Average (*used in Risk Calc.*)		1.20E-03	2.64E-03	4.02E-03	4.31E-05	NA	NA	NA
Number of Cert Results		1.00E+00	6.00E+00	9.00E+00	2.00E+00	NA	NA	NA
Number of Inserted Values		5.70E+01	5.20E+01	4.90E+01	5.60E+01	NA	NA	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 8

Certification Units	Area sq ft	Benzo(k)fluoranthene ug/g	Bis(2-chloroisopropyl)ether ug/g	Bis(2-ethylhexyl)phthalate ug/g	Bromodichloromethane ug/g	Bromoform ug/g
A1P2-S2LL-02	31139	NA	NA	NA	0.00E+00	NA
A1P2-S2NI-02	30784	NA	NA	NA	0.00E+00	NA
A1P2-S2NI-07	36908	NA	NA	NA	0.00E+00	NA
A1P2-S2NI-08	51381	NA	NA	NA	0.00E+00	NA
A1P2-S2SB-01	41279	NA	NA	NA	0.00E+00	NA
A1P2-S2SB-02	36230	NA	NA	NA	0.00E+00	NA
A1P2-S2SB-04	23976	NA	NA	NA	0.00E+00	NA
A1P2-S2SP-01	62156	NA	NA	NA	0.00E+00	NA
A1P2-S2SP-02	47783	NA	NA	NA	0.00E+00	NA
A1P2-S2SP-04	45288	NA	NA	NA	0.00E+00	NA
A1P2-S3CD-02	57491	NA	NA	NA	0.00E+00	NA
A1P2-S3DP-01	62481	NA	NA	NA	0.00E+00	NA
A1P2-S3DP-02	37681	NA	NA	NA	0.00E+00	NA
A1P2-S3HR-02	24116	NA	NA	NA	0.00E+00	NA
A1P2-S3HR-03	60951	NA	NA	NA	0.00E+00	NA
A1P2-S3HR-04	33119	NA	NA	NA	0.00E+00	NA
A1P2-S3HW-01	24608	NA	NA	NA	0.00E+00	NA
A1P2-S3NI-02	87575	NA	NA	NA	0.00E+00	NA
A1P2-S3NI-03	100437	NA	NA	NA	0.00E+00	NA
A1P2-S3NI-04	20969	NA	NA	NA	0.00E+00	NA
A1P2-S3NI-05	101977	NA	NA	NA	0.00E+00	NA
A1P2-S3NI-06	200809	NA	NA	NA	0.00E+00	NA
A1P2-S3SA-02	62171	NA	NA	NA	0.00E+00	NA
A1P2-S3SA-07	61894	NA	NA	NA	0.00E+00	NA
A1P2-S3SA-08	64124	NA	NA	NA	0.00E+00	NA
A1P2-S3SA-09	28944	NA	NA	NA	0.00E+00	NA
A1P2-S3SA-10	32259	NA	NA	NA	0.00E+00	NA
A1P2-DO	32854	NA	NA	NA	0.00E+00	NA
A1P4-C1	40349	NA	NA	NA	0.00E+00	NA
A1P4-C2	34514	NA	NA	NA	0.00E+00	NA
A1P4-C3	34571	NA	NA	NA	0.00E+00	NA
A1P4-C4	15537	NA	NA	NA	0.00E+00	NA
A1P4-C5	44524	4.22E-02	NA	NA	1.30E-03	NA
P17-31	34286	NA	NA	NA	0.00E+00	NA
P17-33	33802	NA	NA	NA	0.00E+00	NA
P17-40	112775	NA	NA	NA	0.00E+00	NA
P18	198368	NA	NA	NA	0.00E+00	NA
P18-11	38307	NA	NA	NA	0.00E+00	NA
P19-20	77527	NA	NA	NA	0.00E+00	NA
P19-23	53648	NA	NA	NA	0.00E+00	NA
Q16-34	49426	NA	NA	NA	0.00E+00	NA
Q17-10	178763	NA	NA	NA	0.00E+00	NA
Q17-30	179941	NA	NA	NA	0.00E+00	NA
Q18-10	182499	NA	NA	NA	0.00E+00	NA
Q18-30	159688	NA	NA	NA	0.00E+00	NA
Q19-10	158231	NA	NA	NA	0.00E+00	NA
A1PII-S1-07	201789	NA	NA	NA	0.00E+00	NA
A1PII-S1-08	182288	NA	NA	NA	0.00E+00	NA
A1PII-S1-09	228085	NA	NA	NA	0.00E+00	NA
A1PII-S1-10	213319	NA	NA	NA	0.00E+00	NA
A1PII-S1-11	202318	NA	NA	NA	0.00E+00	NA
A1PII-S1-12	226814	NA	NA	NA	0.00E+00	NA
A1PII-S1-13	270282	NA	NA	NA	0.00E+00	NA
A1PII-S1-14	248031	NA	NA	NA	0.00E+00	NA
A1PII-S1-15	243185	NA	NA	NA	0.00E+00	NA
A1PII-S1-16	217834	NA	NA	NA	0.00E+00	NA
A1PII-S1-17	224677	NA	NA	NA	0.00E+00	NA
A1PII-S1-18	224966	NA	NA	NA	0.00E+00	NA
Maximum Value		NA	NA	NA	1.30E-03	NA
Average (*used in Risk Calc.*)		NA	NA	NA	2.24E-05	NA
Number of Cert Results		NA	NA	NA	1.00E+00	NA
Number of Inserted Values		NA	NA	NA	5.70E+01	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 8

Certification Units	Area sq ft	Bromomethane ug/g	2-Butanone ug/g	Carbazole ug/g	Carbon disulfide ug/g	Carbon tetrachloride ug/g	Chlordane ug/g	Chlorobenzene ug/g	Chloroform ug/g
A1P2-S2LL-02	31139	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA
A1P2-S2NI-02	30784	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA
A1P2-S2NI-07	36908	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA
A1P2-S2NI-08	51381	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA
A1P2-S2SB-01	41279	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA
A1P2-S2SB-02	36230	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA
A1P2-S2SB-04	23976	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA
A1P2-S2SP-01	62156	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA
A1P2-S2SP-02	47783	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA
A1P2-S2SP-04	45288	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA
A1P2-S3CD-02	57491	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA
A1P2-S3DP-01	62481	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA
A1P2-S3DP-02	37681	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA
A1P2-S3HR-02	24116	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA
A1P2-S3HR-03	60951	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA
A1P2-S3HR-04	33119	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA
A1P2-S3HW-01	24608	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA
A1P2-S3NI-02	87575	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA
A1P2-S3NI-03	100437	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA
A1P2-S3NI-04	20969	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA
A1P2-S3NI-05	101977	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA
A1P2-S3NI-06	200809	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA
A1P2-S3SA-02	62171	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA
A1P2-S3SA-07	61894	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA
A1P2-S3SA-08	64124	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA
A1P2-S3SA-09	28944	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA
A1P2-S3SA-10	32259	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA
A1P2-DO	32854	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA
A1P4-C1	40349	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA
A1P4-C2	34514	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA
A1P4-C3	34571	NA	0.00E+00	NA	NA	2.10E-03	NA	NA	NA
A1P4-C4	15537	NA	0.00E+00	NA	NA	2.10E-03	NA	NA	NA
A1P4-C5	44524	NA	1.83E-02	NA	NA	0.00E+00	NA	NA	NA
P17-31	34286	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA
P17-33	33802	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA
P17-40	112775	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA
P18	198368	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA
P18-11	38307	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA
P19-20	77527	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA
P19-23	53648	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA
Q16-34	49426	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA
Q17-10	178763	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA
Q17-30	179941	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA
Q18-10	182499	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA
Q18-30	159688	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA
Q19-10	158231	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA
A1PII-S1-07	201789	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA
A1PII-S1-08	182288	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA
A1PII-S1-09	228085	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA
A1PII-S1-10	213319	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA
A1PII-S1-11	202318	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA
A1PII-S1-12	226814	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA
A1PII-S1-13	270282	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA
A1PII-S1-14	248031	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA
A1PII-S1-15	243185	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA
A1PII-S1-16	217834	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA
A1PII-S1-17	224677	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA
A1PII-S1-18	224966	NA	0.00E+00	NA	NA	0.00E+00	NA	NA	NA
Maximum Value		NA	1.83E-02	NA	NA	2.10E-03	NA	NA	NA
Average (*used in Risk Calc.*)		NA	3.16E-04	NA	NA	7.24E-05	NA	NA	NA
Number of Cert Results		NA	1.00E+00	NA	NA	2.00E+00	NA	NA	NA
Number of Inserted Values		NA	5.70E+01	NA	NA	5.60E+01	NA	NA	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 8

Certification Units	Area sq ft	Chrysene ug/g	Cyanide ug/g	Cyclohexanone ug/g	Dibenzo(a,h)anthracene ug/g	3,3-Dichlorobenzidine ug/g	1,2-dichloroethane ug/g
A1P2-S2LL-02	31139	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A1P2-S2NI-02	30784	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A1P2-S2NI-07	36908	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A1P2-S2NI-08	51381	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A1P2-S2SB-01	41279	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A1P2-S2SB-02	36230	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A1P2-S2SB-04	23976	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A1P2-S2SP-01	62156	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A1P2-S2SP-02	47783	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A1P2-S2SP-04	45288	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A1P2-S3CD-02	57491	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A1P2-S3DP-01	62481	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A1P2-S3DP-02	37681	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A1P2-S3HR-02	24116	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A1P2-S3HR-03	60951	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A1P2-S3HR-04	33119	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A1P2-S3HW-01	24608	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A1P2-S3NI-02	87575	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A1P2-S3NI-03	100437	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A1P2-S3NI-04	20969	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A1P2-S3NI-05	101977	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A1P2-S3NI-06	200809	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A1P2-S3SA-02	62171	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A1P2-S3SA-07	61894	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A1P2-S3SA-08	64124	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A1P2-S3SA-09	28944	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A1P2-S3SA-10	32259	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A1P2-DO	32854	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A1P4-C1	40349	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A1P4-C2	34514	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A1P4-C3	34571	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A1P4-C4	15537	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A1P4-C5	44524	4.22E-02	NA	NA	4.22E-02	NA	1.30E-03
P17-31	34286	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
P17-33	33802	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
P17-40	112775	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
P18	198368	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
P18-11	38307	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
P19-20	77527	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
P19-23	53648	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
Q16-34	49426	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
Q17-10	178763	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
Q17-30	179941	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
Q18-10	182499	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
Q18-30	159688	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
Q19-10	158231	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A1PII-S1-07	201789	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A1PII-S1-08	182288	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A1PII-S1-09	228085	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A1PII-S1-10	213319	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A1PII-S1-11	202318	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A1PII-S1-12	226814	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A1PII-S1-13	270282	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A1PII-S1-14	248031	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A1PII-S1-15	243185	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A1PII-S1-16	217834	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A1PII-S1-17	224677	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
A1PII-S1-18	224966	0.00E+00	NA	NA	0.00E+00	NA	0.00E+00
Maximum Value		4.22E-02	NA	NA	4.22E-02	NA	1.30E-03
Average (*used in Risk Calc.*)		7.28E-04	NA	NA	7.28E-04	NA	2.24E-05
Number of Cert Results		1.00E+00	NA	NA	1.00E+00	NA	1.00E+00
Number of Inserted Values		5.70E+01	NA	NA	5.70E+01	NA	5.70E+01

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 8

Certification Units	Area sq ft	1,1-Dichloroethylene ug/g	Dieldrin ug/g	Di-n-octylphthalate ug/g	Ethylbenzene ug/g	Ethyl ether ug/g	Heptachlorodibenzofuran ug/g
A1P2-S2LL-02	31139	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA
A1P2-S2NI-02	30784	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA
A1P2-S2NI-07	36908	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA
A1P2-S2NI-08	51381	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA
A1P2-S2SB-01	41279	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA
A1P2-S2SB-02	36230	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA
A1P2-S2SB-04	23976	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA
A1P2-S2SP-01	62156	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA
A1P2-S2SP-02	47783	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA
A1P2-S2SP-04	45288	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA
A1P2-S3CD-02	57491	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA
A1P2-S3DP-01	62481	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA
A1P2-S3DP-02	37681	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA
A1P2-S3HR-02	24116	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA
A1P2-S3HR-03	60951	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA
A1P2-S3HR-04	33119	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA
A1P2-S3HW-01	24608	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA
A1P2-S3NI-02	87575	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA
A1P2-S3NI-03	100437	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA
A1P2-S3NI-04	20969	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA
A1P2-S3NI-05	101977	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA
A1P2-S3NI-06	200809	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA
A1P2-S3SA-02	62171	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA
A1P2-S3SA-07	61894	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA
A1P2-S3SA-08	64124	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA
A1P2-S3SA-09	28944	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA
A1P2-S3SA-10	32259	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA
A1P2-DO	32854	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA
A1P4-C1	40349	0.00E+00	0.00E+00	NA	2.70E-03	NA	NA
A1P4-C2	34514	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA
A1P4-C3	34571	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA
A1P4-C4	15537	0.00E+00	1.70E-03	NA	0.00E+00	NA	NA
A1P4-C5	44524	1.90E-03	4.60E-03	NA	1.30E-03	NA	NA
P17-31	34286	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA
P17-33	33802	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA
P17-40	112775	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA
P18	198368	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA
P18-11	38307	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA
P19-20	77527	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA
P19-23	53648	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA
Q16-34	49426	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA
Q17-10	178763	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA
Q17-30	179941	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA
Q18-10	182499	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA
Q18-30	159688	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA
Q19-10	158231	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA
A1PII-S1-07	201789	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA
A1PII-S1-08	182288	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA
A1PII-S1-09	228085	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA
A1PII-S1-10	~~213319~~	~~0.00E+00~~	~~0.00E+00~~	~~NA~~	~~0.00E+00~~	~~NA~~	~~NA~~
A1PII-S1-11	202318	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA
A1PII-S1-12	226814	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA
A1PII-S1-13	270282	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA
A1PII-S1-14	248031	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA
A1PII-S1-15	243185	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA
A1PII-S1-16	217834	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA
A1PII-S1-17	224677	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA
A1PII-S1-18	224966	0.00E+00	0.00E+00	NA	0.00E+00	NA	NA
Maximum Value		1.90E-03	4.60E-03	NA	2.70E-03	NA	NA
Average (*used in Risk Calc.*)		3.28E-05	1.09E-04	NA	6.90E-05	NA	NA
Number of Cert Results		1.00E+00	2.00E+00	NA	2.00E+00	NA	NA
Number of Inserted Values		5.70E+01	5.60E+01	NA	5.60E+01	NA	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 8

Certification Units	Area sq ft	Heptachlorodibenzo-p-dioxin ug/g	Hexachlorodibenzofuran ug/g	Hexachlorodibenzo-p-dioxin ug/g	Indeno(1,2,3-cd)pyrene ug/g	Methanol ug/g
A1P2-S2LL-02	31139	NA	NA	NA	0.00E+00	NA
A1P2-S2NI-02	30784	NA	NA	NA	0.00E+00	NA
A1P2-S2NI-07	36908	NA	NA	NA	0.00E+00	NA
A1P2-S2NI-08	51381	NA	NA	NA	0.00E+00	NA
A1P2-S2SB-01	41279	NA	NA	NA	0.00E+00	NA
A1P2-S2SB-02	36230	NA	NA	NA	0.00E+00	NA
A1P2-S2SB-04	23976	NA	NA	NA	0.00E+00	NA
A1P2-S2SP-01	62156	NA	NA	NA	0.00E+00	NA
A1P2-S2SP-02	47783	NA	NA	NA	0.00E+00	NA
A1P2-S2SP-04	45288	NA	NA	NA	0.00E+00	NA
A1P2-S3CD-02	57491	NA	NA	NA	0.00E+00	NA
A1P2-S3DP-01	62481	NA	NA	NA	0.00E+00	NA
A1P2-S3DP-02	37681	NA	NA	NA	0.00E+00	NA
A1P2-S3HR-02	24116	NA	NA	NA	0.00E+00	NA
A1P2-S3HR-03	60951	NA	NA	NA	0.00E+00	NA
A1P2-S3HR-04	33119	NA	NA	NA	0.00E+00	NA
A1P2-S3HW-01	24608	NA	NA	NA	0.00E+00	NA
A1P2-S3NI-02	87575	NA	NA	NA	0.00E+00	NA
A1P2-S3NI-03	100437	NA	NA	NA	0.00E+00	NA
A1P2-S3NI-04	20969	NA	NA	NA	0.00E+00	NA
A1P2-S3NI-05	101977	NA	NA	NA	0.00E+00	NA
A1P2-S3NI-06	200809	NA	NA	NA	0.00E+00	NA
A1P2-S3SA-02	62171	NA	NA	NA	0.00E+00	NA
A1P2-S3SA-07	61894	NA	NA	NA	0.00E+00	NA
A1P2-S3SA-08	64124	NA	NA	NA	0.00E+00	NA
A1P2-S3SA-09	28944	NA	NA	NA	0.00E+00	NA
A1P2-S3SA-10	32259	NA	NA	NA	0.00E+00	NA
A1P2-DO	32854	NA	NA	NA	0.00E+00	NA
A1P4-C1	40349	NA	NA	NA	0.00E+00	NA
A1P4-C2	34514	NA	NA	NA	0.00E+00	NA
A1P4-C3	34571	NA	NA	NA	0.00E+00	NA
A1P4-C4	15537	NA	NA	NA	0.00E+00	NA
A1P4-C5	44524	NA	NA	NA	6.40E-02	NA
P17-31	34286	NA	NA	NA	0.00E+00	NA
P17-33	33802	NA	NA	NA	0.00E+00	NA
P17-40	112775	NA	NA	NA	0.00E+00	NA
P18	198368	NA	NA	NA	0.00E+00	NA
P18-11	38307	NA	NA	NA	0.00E+00	NA
P19-20	77527	NA	NA	NA	0.00E+00	NA
P19-23	53648	NA	NA	NA	0.00E+00	NA
Q16-34	49426	NA	NA	NA	0.00E+00	NA
Q17-10	178763	NA	NA	NA	0.00E+00	NA
Q17-30	179941	NA	NA	NA	0.00E+00	NA
Q18-10	182499	NA	NA	NA	0.00E+00	NA
Q18-30	159688	NA	NA	NA	0.00E+00	NA
Q19-10	158231	NA	NA	NA	0.00E+00	NA
A1PII-S1-07	201789	NA	NA	NA	0.00E+00	NA
A1PII-S1-08	182288	NA	NA	NA	0.00E+00	NA
A1PII-S1-09	228085	NA	NA	NA	0.00E+00	NA
A1PII-S1-10	213319	NA	NA	NA	0.00E+00	NA
A1PII-S1-11	202318	NA	NA	NA	0.00E+00	NA
A1PII-S1-12	226814	NA	NA	NA	0.00E+00	NA
A1PII-S1-13	270282	NA	NA	NA	0.00E+00	NA
A1PII-S1-14	248031	NA	NA	NA	0.00E+00	NA
A1PII-S1-15	243185	NA	NA	NA	0.00E+00	NA
A1PII-S1-16	217834	NA	NA	NA	0.00E+00	NA
A1PII-S1-17	224677	NA	NA	NA	0.00E+00	NA
A1PII-S1-18	224966	NA	NA	NA	0.00E+00	NA
Maximum Value		NA	NA	NA	6.40E-02	NA
Average (*used in Risk Calc.*)		NA	NA	NA	1.10E-03	NA
Number of Cert Results		NA	NA	NA	1.00E+00	NA
Number of Inserted Values		NA	NA	NA	5.70E+01	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 8

Certification Units	Area sq ft	Methyl-2-pentanone ug/g	Methylene chloride ug/g	4-Methylphenol ug/g	4-Nitroanaline ug/g	N-nitrosodiphenylamine ug/g
A1P2-S2LL-02	31139	0.00E+00	0.00E+00	NA	NA	NA
A1P2-S2NI-02	30784	0.00E+00	0.00E+00	NA	NA	NA
A1P2-S2NI-07	36908	0.00E+00	0.00E+00	NA	NA	NA
A1P2-S2NI-08	51381	0.00E+00	0.00E+00	NA	NA	NA
A1P2-S2SB-01	41279	0.00E+00	0.00E+00	NA	NA	NA
A1P2-S2SB-02	36230	0.00E+00	0.00E+00	NA	NA	NA
A1P2-S2SB-04	23976	0.00E+00	0.00E+00	NA	NA	NA
A1P2-S2SP-01	62156	0.00E+00	0.00E+00	NA	NA	NA
A1P2-S2SP-02	47783	0.00E+00	0.00E+00	NA	NA	NA
A1P2-S2SP-04	45288	0.00E+00	0.00E+00	NA	NA	NA
A1P2-S3CD-02	57491	0.00E+00	0.00E+00	NA	NA	NA
A1P2-S3DP-01	62481	0.00E+00	0.00E+00	NA	NA	NA
A1P2-S3DP-02	37681	0.00E+00	0.00E+00	NA	NA	NA
A1P2-S3HR-02	24116	0.00E+00	0.00E+00	NA	NA	NA
A1P2-S3HR-03	60951	0.00E+00	0.00E+00	NA	NA	NA
A1P2-S3HR-04	33119	0.00E+00	0.00E+00	NA	NA	NA
A1P2-S3HW-01	24608	0.00E+00	0.00E+00	NA	NA	NA
A1P2-S3NI-02	87575	0.00E+00	0.00E+00	NA	NA	NA
A1P2-S3NI-03	100437	0.00E+00	0.00E+00	NA	NA	NA
A1P2-S3NI-04	20969	0.00E+00	0.00E+00	NA	NA	NA
A1P2-S3NI-05	101977	0.00E+00	0.00E+00	NA	NA	NA
A1P2-S3NI-06	200809	0.00E+00	0.00E+00	NA	NA	NA
A1P2-S3SA-02	62171	0.00E+00	0.00E+00	NA	NA	NA
A1P2-S3SA-07	61894	0.00E+00	0.00E+00	NA	NA	NA
A1P2-S3SA-08	64124	0.00E+00	0.00E+00	NA	NA	NA
A1P2-S3SA-09	28944	0.00E+00	0.00E+00	NA	NA	NA
A1P2-S3SA-10	32259	0.00E+00	0.00E+00	NA	NA	NA
A1P2-DO	32854	0.00E+00	0.00E+00	NA	NA	NA
A1P4-C1	40349	0.00E+00	0.00E+00	NA	NA	NA
A1P4-C2	34514	0.00E+00	0.00E+00	NA	NA	NA
A1P4-C3	34571	0.00E+00	0.00E+00	NA	NA	NA
A1P4-C4	15537	0.00E+00	0.00E+00	NA	NA	NA
A1P4-C5	44524	6.20E-03	6.20E-03	NA	NA	NA
P17-31	34286	0.00E+00	0.00E+00	NA	NA	NA
P17-33	33802	0.00E+00	0.00E+00	NA	NA	NA
P17-40	112775	0.00E+00	0.00E+00	NA	NA	NA
P18	198368	0.00E+00	0.00E+00	NA	NA	NA
P18-11	38307	0.00E+00	0.00E+00	NA	NA	NA
P19-20	77527	0.00E+00	0.00E+00	NA	NA	NA
P19-23	53648	0.00E+00	0.00E+00	NA	NA	NA
Q16-34	49426	0.00E+00	0.00E+00	NA	NA	NA
Q17-10	178763	0.00E+00	0.00E+00	NA	NA	NA
Q17-30	179941	0.00E+00	0.00E+00	NA	NA	NA
Q18-10	182499	0.00E+00	0.00E+00	NA	NA	NA
Q18-30	159688	0.00E+00	0.00E+00	NA	NA	NA
Q19-10	158231	0.00E+00	0.00E+00	NA	NA	NA
A1PII-S1-07	201789	0.00E+00	0.00E+00	NA	NA	NA
A1PII-S1-08	182288	0.00E+00	0.00E+00	NA	NA	NA
A1PII-S1-09	228085	0.00E+00	0.00E+00	NA	NA	NA
A1PII-S1-10	213319	0.00E+00	0.00E+00	NA	NA	NA
A1PII-S1-11	202318	0.00E+00	0.00E+00	NA	NA	NA
A1PII-S1-12	226814	0.00E+00	0.00E+00	NA	NA	NA
A1PII-S1-13	270282	0.00E+00	0.00E+00	NA	NA	NA
A1PII-S1-14	248031	0.00E+00	0.00E+00	NA	NA	NA
A1PII-S1-15	243185	0.00E+00	0.00E+00	NA	NA	NA
A1PII-S1-16	217834	0.00E+00	0.00E+00	NA	NA	NA
A1PII-S1-17	224677	0.00E+00	0.00E+00	NA	NA	NA
A1PII-S1-18	224966	0.00E+00	0.00E+00	NA	NA	NA
Maximum Value		6.20E-03	6.20E-03	NA	NA	NA
Average (*used in Risk Calc.*)		1.07E-04	1.07E-04	NA	NA	NA
Number of Cert Results		1.00E+00	1.00E+00	NA	NA	NA
Number of Inserted Values		5.70E+01	5.70E+01	NA	NA	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 8

Certification Units	Area sq ft	N-nitrosodipropylamine ug/g	Octachlorodibenzofuran ug/g	Octochlorodibenzo-p-dioxin ug/g	Pentachlorodibenzofuran ug/g
A1P2-S2LL-02	31139	NA	NA	NA	NA
A1P2-S2NI-02	30784	NA	NA	NA	NA
A1P2-S2NI-07	36908	NA	NA	NA	NA
A1P2-S2NI-08	51381	NA	NA	NA	NA
A1P2-S2SB-01	41279	NA	NA	NA	NA
A1P2-S2SB-02	36230	NA	NA	NA	NA
A1P2-S2SB-04	23976	NA	NA	NA	NA
A1P2-S2SP-01	62156	NA	NA	NA	NA
A1P2-S2SP-02	47783	NA	NA	NA	NA
A1P2-S2SP-04	45288	NA	NA	NA	NA
A1P2-S3CD-02	57491	NA	NA	NA	NA
A1P2-S3DP-01	62481	NA	NA	NA	NA
A1P2-S3DP-02	37681	NA	NA	NA	NA
A1P2-S3HR-02	24116	NA	NA	NA	NA
A1P2-S3HR-03	60951	NA	NA	NA	NA
A1P2-S3HR-04	33119	NA	NA	NA	NA
A1P2-S3HW-01	24608	NA	NA	NA	NA
A1P2-S3NI-02	87575	NA	NA	NA	NA
A1P2-S3NI-03	100437	NA	NA	NA	NA
A1P2-S3NI-04	20969	NA	NA	NA	NA
A1P2-S3NI-05	101977	NA	NA	NA	NA
A1P2-S3NI-06	200809	NA	NA	NA	NA
A1P2-S3SA-02	62171	NA	NA	NA	NA
A1P2-S3SA-07	61894	NA	NA	NA	NA
A1P2-S3SA-08	64124	NA	NA	NA	NA
A1P2-S3SA-09	28944	NA	NA	NA	NA
A1P2-S3SA-10	32259	NA	NA	NA	NA
A1P2-DO	32854	NA	NA	NA	NA
A1P4-C1	40349	NA	NA	NA	NA
A1P4-C2	34514	NA	NA	NA	NA
A1P4-C3	34571	NA	NA	NA	NA
A1P4-C4	15537	NA	NA	NA	NA
A1P4-C5	44524	NA	NA	NA	NA
P17-31	34286	NA	NA	NA	NA
P17-33	33802	NA	NA	NA	NA
P17-40	112775	NA	NA	NA	NA
P18	198368	NA	NA	NA	NA
P18-11	38307	NA	NA	NA	NA
P19-20	77527	NA	NA	NA	NA
P19-23	53648	NA	NA	NA	NA
Q16-34	49426	NA	NA	NA	NA
Q17-10	178763	NA	NA	NA	NA
Q17-30	179941	NA	NA	NA	NA
Q18-10	182499	NA	NA	NA	NA
Q18-30	159688	NA	NA	NA	NA
Q19-10	158231	NA	NA	NA	NA
A1PII-S1-07	201789	NA	NA	NA	NA
A1PII-S1-08	182288	NA	NA	NA	NA
A1PII-S1-09	228085	NA	NA	NA	NA
A1PII-S1-10	213319	NA	NA	NA	NA
A1PII-S1-11	202318	NA	NA	NA	NA
A1PII-S1-12	226814	NA	NA	NA	NA
A1PII-S1-13	270282	NA	NA	NA	NA
A1PII-S1-14	248031	NA	NA	NA	NA
A1PII-S1-15	243185	NA	NA	NA	NA
A1PII-S1-16	217834	NA	NA	NA	NA
A1PII-S1-17	224677	NA	NA	NA	NA
A1PII-S1-18	224966	NA	NA	NA	NA
Maximum Value		NA	NA	NA	NA
Average (*used in Risk Calc.*)		NA	NA	NA	NA
Number of Cert Results		NA	NA	NA	NA
Number of Inserted Values		NA	NA	NA	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 8

Certification Units	Area sq ft	Pentachlorodibenzo-p-dioxin ug/g	Pentachlorophenol ug/g	Phenanthrene ug/g	Tetrachlorodibenzofuran ug/g	Tetrachlorodibenzo-p-dioxin ug/g
A1P2-S2LL-02	31139	NA	NA	0.00E+00	NA	NA
A1P2-S2NI-02	30784	NA	NA	0.00E+00	NA	NA
A1P2-S2NI-07	36908	NA	NA	0.00E+00	NA	NA
A1P2-S2NI-08	51381	NA	NA	0.00E+00	NA	NA
A1P2-S2SB-01	41279	NA	NA	0.00E+00	NA	NA
A1P2-S2SB-02	36230	NA	NA	0.00E+00	NA	NA
A1P2-S2SB-04	23976	NA	NA	0.00E+00	NA	NA
A1P2-S2SP-01	62156	NA	NA	0.00E+00	NA	NA
A1P2-S2SP-02	47783	NA	NA	0.00E+00	NA	NA
A1P2-S2SP-04	45288	NA	NA	0.00E+00	NA	NA
A1P2-S3CD-02	57491	NA	NA	0.00E+00	NA	NA
A1P2-S3DP-01	62481	NA	NA	0.00E+00	NA	NA
A1P2-S3DP-02	37681	NA	NA	0.00E+00	NA	NA
A1P2-S3HR-02	24116	NA	NA	0.00E+00	NA	NA
A1P2-S3HR-03	60951	NA	NA	0.00E+00	NA	NA
A1P2-S3HR-04	33119	NA	NA	0.00E+00	NA	NA
A1P2-S3HW-01	24608	NA	NA	0.00E+00	NA	NA
A1P2-S3NI-02	87575	NA	NA	0.00E+00	NA	NA
A1P2-S3NI-03	100437	NA	NA	0.00E+00	NA	NA
A1P2-S3NI-04	20969	NA	NA	0.00E+00	NA	NA
A1P2-S3NI-05	101977	NA	NA	0.00E+00	NA	NA
A1P2-S3NI-06	200809	NA	NA	0.00E+00	NA	NA
A1P2-S3SA-02	62171	NA	NA	0.00E+00	NA	NA
A1P2-S3SA-07	61894	NA	NA	0.00E+00	NA	NA
A1P2-S3SA-08	64124	NA	NA	0.00E+00	NA	NA
A1P2-S3SA-09	28944	NA	NA	0.00E+00	NA	NA
A1P2-S3SA-10	32259	NA	NA	0.00E+00	NA	NA
A1P2-DO	32854	NA	NA	0.00E+00	NA	NA
A1P4-C1	40349	NA	NA	0.00E+00	NA	NA
A1P4-C2	34514	NA	NA	0.00E+00	NA	NA
A1P4-C3	34571	NA	NA	0.00E+00	NA	NA
A1P4-C4	15537	NA	NA	0.00E+00	NA	NA
A1P4-C5	44524	NA	NA	1.25E-01	NA	NA
P17-31	34286	NA	NA	0.00E+00	NA	NA
P17-33	33802	NA	NA	0.00E+00	NA	NA
P17-40	112775	NA	NA	0.00E+00	NA	NA
P18	198368	NA	NA	0.00E+00	NA	NA
P18-11	38307	NA	NA	0.00E+00	NA	NA
P19-20	77527	NA	NA	0.00E+00	NA	NA
P19-23	53648	NA	NA	0.00E+00	NA	NA
Q16-34	49426	NA	NA	0.00E+00	NA	NA
Q17-10	178763	NA	NA	0.00E+00	NA	NA
Q17-30	179941	NA	NA	0.00E+00	NA	NA
Q18-10	182499	NA	NA	0.00E+00	NA	NA
Q18-30	159688	NA	NA	0.00E+00	NA	NA
Q19-10	158231	NA	NA	0.00E+00	NA	NA
A1PII-S1-07	201789	NA	NA	0.00E+00	NA	NA
A1PII-S1-08	182288	NA	NA	0.00E+00	NA	NA
A1PII-S1-09	228085	NA	NA	0.00E+00	NA	NA
A1PII-S1-10	213319	NA	NA	0.00E+00	NA	NA
A1PII-S1-11	202318	NA	NA	0.00E+00	NA	NA
A1PII-S1-12	226814	NA	NA	0.00E+00	NA	NA
A1PII-S1-13	270282	NA	NA	0.00E+00	NA	NA
A1PII-S1-14	248031	NA	NA	0.00E+00	NA	NA
A1PII-S1-15	243185	NA	NA	0.00E+00	NA	NA
A1PII-S1-16	217834	NA	NA	0.00E+00	NA	NA
A1PII-S1-17	224677	NA	NA	0.00E+00	NA	NA
A1PII-S1-18	224966	NA	NA	0.00E+00	NA	NA
Maximum Value		NA	NA	1.25E-01	NA	NA
Average (*used in Risk Calc.*)		NA	NA	2.16E-03	NA	NA
Number of Cert Results		NA	NA	1.00E+00	NA	NA
Number of Inserted Values		NA	NA	5.70E+01	NA	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 8

Certification Units	Area sq ft	Tetrachloroethylene ug/g	Toluene ug/g	Tributyl phosphate ug/g	1,1,2-Trichloroethane ug/g	Trichloroethylene ug/g	Trifluorochloromethane ug/g
A1P2-S2LL-02	31139	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	NA
A1P2-S2NI-02	30784	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	NA
A1P2-S2NI-07	36908	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	NA
A1P2-S2NI-08	51381	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	NA
A1P2-S2SB-01	41279	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	NA
A1P2-S2SB-02	36230	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	NA
A1P2-S2SB-04	23976	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	NA
A1P2-S2SP-01	62156	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	NA
A1P2-S2SP-02	47783	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	NA
A1P2-S2SP-04	45288	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	NA
A1P2-S3CD-02	57491	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	NA
A1P2-S3DP-01	62481	2.18E-02	0.00E+00	NA	0.00E+00	0.00E+00	NA
A1P2-S3DP-02	37681	8.90E-03	0.00E+00	NA	0.00E+00	0.00E+00	NA
A1P2-S3HR-02	24116	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	NA
A1P2-S3HR-03	60951	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	NA
A1P2-S3HR-04	33119	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	NA
A1P2-S3HW-01	24608	6.87E-02	0.00E+00	NA	0.00E+00	0.00E+00	NA
A1P2-S3NI-02	87575	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	NA
A1P2-S3NI-03	100437	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	NA
A1P2-S3NI-04	20969	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	NA
A1P2-S3NI-05	101977	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	NA
A1P2-S3NI-06	200809	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	NA
A1P2-S3SA-02	62171	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	NA
A1P2-S3SA-07	61894	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	NA
A1P2-S3SA-08	64124	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	NA
A1P2-S3SA-09	28944	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	NA
A1P2-S3SA-10	32259	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	NA
A1P2-DO	32854	1.10E-03	0.00E+00	NA	0.00E+00	0.00E+00	NA
A1P4-C1	40349	0.00E+00	2.40E-03	NA	0.00E+00	0.00E+00	NA
A1P4-C2	34514	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	NA
A1P4-C3	34571	0.00E+00	0.00E+00	NA	2.10E-03	2.10E-03	NA
A1P4-C4	15537	0.00E+00	0.00E+00	NA	2.10E-03	2.10E-03	NA
A1P4-C5	44524	1.30E-03	1.90E-03	NA	1.30E-03	1.30E-03	NA
P17-31	34286	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	NA
P17-33	33802	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	NA
P17-40	112775	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	NA
P18	198368	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	NA
P18-11	38307	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	NA
P19-20	77527	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	NA
P19-23	53648	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	NA
Q16-34	49426	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	NA
Q17-10	178763	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	NA
Q17-30	179941	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	NA
Q18-10	182499	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	NA
Q18-30	159688	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	NA
Q19-10	158231	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	NA
A1PII-S1-07	201789	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	NA
A1PII-S1-08	182288	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	NA
A1PII-S1-09	228085	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	NA
A1PII-S1-10	213319	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	NA
A1PII-S1-11	202318	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	NA
A1PII-S1-12	226814	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	NA
A1PII-S1-13	270282	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	NA
A1PII-S1-14	248031	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	NA
A1PII-S1-15	243185	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	NA
A1PII-S1-16	217834	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	NA
A1PII-S1-17	224677	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	NA
A1PII-S1-18	224966	0.00E+00	0.00E+00	NA	0.00E+00	0.00E+00	NA
Maximum Value		6.87E-02	2.40E-03	NA	2.10E-03	2.10E-03	NA
Average (*used in Risk Calc.*)		1.76E-03	7.41E-05	NA	9.48E-05	9.48E-05	NA
Number of Cert Results		5.00E+00	2.00E+00	NA	3.00E+00	3.00E+00	NA
Number of Inserted Values		5.30E+01	5.60E+01	NA	5.50E+01	5.50E+01	NA

TABLE B-1 - SOIL CERTIFICATION DATA - Zone 8

Certification Units	Area sq ft	Vinyl chloride ug/g	Xylenes ug/g
A1P2-S2LL-02	31139	NA	0.00E+00
A1P2-S2NI-02	30784	NA	0.00E+00
A1P2-S2NI-07	36908	NA	0.00E+00
A1P2-S2NI-08	51381	NA	0.00E+00
A1P2-S2SB-01	41279	NA	0.00E+00
A1P2-S2SB-02	36230	NA	0.00E+00
A1P2-S2SB-04	23976	NA	0.00E+00
A1P2-S2SP-01	62156	NA	0.00E+00
A1P2-S2SP-02	47783	NA	0.00E+00
A1P2-S2SP-04	45288	NA	0.00E+00
A1P2-S3CD-02	57491	NA	0.00E+00
A1P2-S3DP-01	62481	NA	0.00E+00
A1P2-S3DP-02	37681	NA	0.00E+00
A1P2-S3HR-02	24116	NA	0.00E+00
A1P2-S3HR-03	60951	NA	0.00E+00
A1P2-S3HR-04	33119	NA	0.00E+00
A1P2-S3HW-01	24608	NA	0.00E+00
A1P2-S3NI-02	87575	NA	0.00E+00
A1P2-S3NI-03	100437	NA	0.00E+00
A1P2-S3NI-04	20969	NA	0.00E+00
A1P2-S3NI-05	101977	NA	0.00E+00
A1P2-S3NI-06	200809	NA	0.00E+00
A1P2-S3SA-02	62171	NA	0.00E+00
A1P2-S3SA-07	61894	NA	0.00E+00
A1P2-S3SA-08	64124	NA	0.00E+00
A1P2-S3SA-09	28944	NA	0.00E+00
A1P2-S3SA-10	32259	NA	0.00E+00
A1P2-DO	32854	NA	0.00E+00
A1P4-C1	40349	NA	1.46E-02
A1P4-C2	34514	NA	0.00E+00
A1P4-C3	34571	NA	0.00E+00
A1P4-C4	15537	NA	0.00E+00
A1P4-C5	44524	NA	1.30E-03
P17-31	34286	NA	0.00E+00
P17-33	33802	NA	0.00E+00
P17-40	112775	NA	0.00E+00
P18	198368	NA	0.00E+00
P18-11	38307	NA	0.00E+00
P19-20	77527	NA	0.00E+00
P19-23	53648	NA	0.00E+00
Q16-34	49426	NA	0.00E+00
Q17-10	178763	NA	0.00E+00
Q17-30	179941	NA	0.00E+00
Q18-10	182499	NA	0.00E+00
Q18-30	159688	NA	0.00E+00
Q19-10	158231	NA	0.00E+00
A1PII-S1-07	201789	NA	0.00E+00
A1PII-S1-08	182288	NA	0.00E+00
A1PII-S1-09	228085	NA	0.00E+00
A1PII-S1-10	213319	NA	0.00E+00
A1PII-S1-11	202318	NA	0.00E+00
A1PII-S1-12	226814	NA	0.00E+00
A1PII-S1-13	270282	NA	0.00E+00
A1PII-S1-14	248031	NA	0.00E+00
A1PII-S1-15	243185	NA	0.00E+00
A1PII-S1-16	217834	NA	0.00E+00
A1PII-S1-17	224677	NA	0.00E+00
A1PII-S1-18	224966	NA	0.00E+00
Maximum Value		NA	1.46E-02
Average (*used in Risk Calc.*)		NA	2.74E-04
Number of Cert Results		NA	2.00E+00
Number of Inserted Values		NA	5.60E+01

TABLE B-2 SOIL BACKGROUND VALUES

Soil Background for Excavated Areas1			Soil FRL2
COC	Unit	Value	Value
Cesium-137	pCi/g	6.60E-02	1.40E+00
Lead-210	pCi/g	1.56E+00	3.80E+01
Neptunium-237	pCi/g	0.00E+00	3.20E+00
Plutonium-238	pCi/g	0.00E+00	7.80E+01
Plutonium-239/240	pCi/g	0.00E+00	7.70E+01
Radium-226	pCi/g	1.56E+00	1.70E+00
Radium-228	pCi/g	1.27E+00	1.80E+00
Strontium-90	pCi/g	0.00E+00	1.40E+01
Technetium-99	pCi/g	0.00E+00	3.00E+01
Thorium-228	pCi/g	1.25E+00	1.70E+00
Thorium-230	pCi/g	1.56E+00	2.80E+02
Thorium-232	pCi/g	1.27E+00	1.50E+00
Uranium-234	pCi/g	1.56E+00	2.80E+01
Uranium-235	pCi/g	7.09E-02	1.28E+00
Uranium-238	pCi/g	1.52E+00	2.73E+01
Antimony	ug/g	2.87E+00	9.60E+01
Arsenic	ug/g	1.24E+01	1.20E+01
Barium	ug/g	1.87E+02	6.80E+04
Beryllium	ug/g	1.44E+00	1.50E+00
Boron	ug/g	2.56E+00	7.40E+03
Cadmium	ug/g	9.89E-01	8.20E+01
Chromium (VI)	ug/g	2.47E+01	3.00E+02
Cobalt	ug/g	2.14E+01	7.40E+02
Copper	ug/g	3.13E+01	2.20E+05
Fluoride	ug/g	3.20E+00	7.80E+04
Lead	ug/g	3.06E+01	4.00E+02
Manganese	ug/g	1.33E+03	4.60E+03
Mercury	ug/g	7.00E-02	7.50E+00
Molybdenum	ug/g	5.24E+00	2.90E+03
Nickel	ug/g	4.56E+01	1.50E+04
Selenium	ug/g	1.19E+00	5.40E+03
Silver	ug/g	1.13E+00	2.90E+04
Thallium	ug/g	5.80E-01	9.10E+01
Uranium	ug/g	4.56E+00	8.20E+01
Vanadium	ug/g	4.14E+01	5.10E+03
Zinc	ug/g	8.93E+01	1.20E+05
Acetone	ug/g	0.00E+00	4.30E+04
Aroclor-1254	ug/g	0.00E+00	1.30E-01
Aroclor-1260	ug/g	0.00E+00	1.30E-01
Benzene	ug/g	0.00E+00	8.50E+02
Benzo(a)anthracene	ug/g	0.00E+00	2.00E+01
Benzo(a)pyrene	ug/g	0.00E+00	2.00E+00
Benzo(b)fluoranthene	ug/g	0.00E+00	2.00E+01
Benzo(k)fluoranthene	ug/g	0.00E+00	2.00E+01
Bis(2-chloroisopropyl)ether	ug/g	0.00E+00	4.20E+02
Bis(2-ethylhexyl)phthalate	ug/g	0.00E+00	8.20E+02
Bromodichloromethane	ug/g	0.00E+00	4.00E+00
Bromoform	ug/g	0.00E+00	3.10E+01
Bromomethane	ug/g	0.00E+00	8.20E+02
2-Butanone	ug/g	0.00E+00	NA
Carbazole	ug/g	0.00E+00	1.20E+01
Carbon disulfide	ug/g	0.00E+00	5.00E+02
Carbon tetrachloride	ug/g	0.00E+00	2.10E+00
Chlordane	ug/g	0.00E+00	1.90E-01
Chlorobenzene	ug/g	0.00E+00	3.40E+02
Chloroform	ug/g	0.00E+00	4.50E+01
Chrysene	ug/g	0.00E+00	2.00E+03
Cyanide	ug/g	0.00E+00	1.20E+05
Cyclohexanone	ug/g	0.00E+00	NA

TABLE B-2 SOIL BACKGROUND VALUES

Dibenzo(a,h)anthracene	ug/g	0.00E+00	2.00E+00
3,3-Dichlorobenzidine	ug/g	0.00E+00	5.50E-01
1,2-Dichloroethane	ug/g	0.00E+00	1.60E-01
1,1-Dichloroethylene	ug/g	0.00E+00	4.10E-01
Dieldrin	ug/g	0.00E+00	1.50E-02
Di-n-octylphthalate	ug/g	0.00E+00	1.10E+03
Ethylbenzene	ug/g	0.00E+00	5.10E+03
Ethyl ether	ug/g	0.00E+00	NA
Heptachlorodibenzofuran	ug/g	0.00E+00	8.80E-04
Heptachlorodibenzo-p-dioxin	ug/g	0.00E+00	8.80E-04
Hexachlorodibenzofuran	ug/g	0.00E+00	NA
Hexachlorodibenzo-p-dioxin	ug/g	0.00E+00	NA
Indeno(1,2,3-cd)pyrene	ug/g	0.00E+00	2.00E+01
Methanol	ug/g	0.00E+00	NA
Methyl-2-pentanone	ug/g	0.00E+00	2.50E+03
Methylene chloride	ug/g	0.00E+00	3.70E+01
4-Methylphenol	ug/g	0.00E+00	2.50E+02
4-Nitroanaline	ug/g	0.00E+00	1.50E+02
N-nitrosodiphenylamine	ug/g	0.00E+00	5.10E+01
N-nitrosodipropylamine	ug/g	0.00E+00	2.00E-01
Octachlorodibenzofuran	ug/g	0.00E+00	8.80E-03
Octochlorodibenzo-p-dioxin	ug/g	0.00E+00	8.80E-03
Pentachlorodibenzofuran	ug/g	0.00E+00	NA
Pentachlorodibenzo-p-dioxin	ug/g	0.00E+00	NA
Pentachlorophenol	ug/g	0.00E+00	2.30E+00
Phenanthrene	ug/g	0.00E+00	NA
Tetrachlorodibenzofuran	ug/g	0.00E+00	NA
Tetrachlorodibenzo-p-dioxin	ug/g	0.00E+00	NA
Tetrachloroethylene	ug/g	0.00E+00	3.60E+00
Toluene	ug/g	0.00E+00	1.00E+05
Tributyl phosphate	ug/g	0.00E+00	2.50E+02
1,1,2-Trichloroethane	ug/g	0.00E+00	4.30E+00
Trichloroethylene	ug/g	0.00E+00	2.50E+01
Trifluorochloromethane	ug/g	0.00E+00	NA
Vinyl chloride	ug/g	0.00E+00	1.30E-01
Xylenes	ug/g	0.00E+00	9.20E+05

1 (based on 95th percentile in Table 4-2 of the Addendum to CERCLA/RCRA Background Soil Study - or as indicat
1a if 95th percentile is detection limit, reported limit is used
1b 0 = result not available, zero assumed.
1c Th-230 value assumed to be in secular equilibrium with U-234, as no result was reported in the background st
1d F value is 95 percentile result from A9 soil certification samples.
1e Uranium isotope activities calculated from total U value
1f List of COCs taken from Table 9-3 of the OU5 ROD, and supplemented with COCs (blue) from the certificatior

2 values from Table 1-4 of SEP

APPENDIX C

APPENDIX C

Analytical Results and Derivation of Exposure Zone Values for Surface Waters

This appendix summarizes data for surface-water samples collected across the site after the completion of activities associated with soil remediation. Plate 2 shows the collection locations for over 190 uranium samples (red dots with corresponding location number), large ponds in former contaminated areas (blue polygons numbered 1 through 30), and small and large ponds outside the former production and waste-storage areas (blue polygons lettered A through J). A large number of uranium samples (Table C-1) were collected because this is the primary contaminant at the Fernald site and a compilation of uranium levels in puddles and ponds would provide a chemical snapshot that indirectly reflects the efficacy of the soil remediation process (i.e., uranium levels are expected to be below the surface-water final remediation level). As a conservative measure, the uranium result for each blue polygon location was derived by averaging the results for every uranium sample within the blue polygon (i.e., all the red-dot locations within the polygon). This is conservative because it removes some of the low bias associated with dilution of the uranium concentration in large volume ponds. Not all surface water samples shown on Plate 2 and Table C-1 were used to in the surface water calculations as many of the samples fell far away from large ponding areas and do not contribute significantly to the Sitewide surface water volume. However, as discussed in Section 5-8, uncertainty calculations considered the highest uranium value obtained from all surface water samples regardless of its inclusion in a polygon or not. Specifically, the result of 877 ug/L (from sample location 196, which falls outside of a defined polygon) was used as the surface water concentration in the uncertainty calculations. This represents the worst case scenario for the chemical contribution to risk from surface water.

Initially, four surface-water samples (blue polygons 1 through 4) were collected and characterized for soil contaminants that were detected and reported in the site certification reports (15 radionuclides, 21 inorganic chemicals and 48 organic compounds). Samples collected from most of the remaining ponds were analyzed for a

subset of this large COC list that was derived by including contaminants that were detected in the initial four samples. However, many ponds in the former production and waste-pit areas were sampled and analyzed for most of the contaminants that had reported detection limits. The results presented in Table C-2 provide the contaminant details for each sample location.

As there is not a surface water background available for this site, all surface-water results were evaluated and the minimum value for each contaminant was assumed to represent background surface-water conditions on the site. If the minimum value was a detection limit, the detection limit was used as the background for inorganic elements and radionuclides, but not for organic compounds. When the minimum corresponded to a detection limit value for an organic compound, the background was set to zero for the compound. Background surface-water results for Paddys Run, as reported in the Integrated Environmental Monitoring Plan (DOE 2005), were not used to represent background conditions for the ponds because of differences in dynamic hydraulic conditions (flowing versus stagnant) and the detection limits used to establish the Paddys Run background values were higher than the detection limits reported for the ponds. In general, the background results reported for Paddys Run are higher than those calculated using the minimum values (Table C-3).

Surface-water results for each polygon were grouped into the exposure zones shown on Plate 1 and contaminant values were averaged to derive a set of exposure values for each zone (Table C-2). Detection limits were used to derive the average result for all contaminants, but if the average equaled the detection limit for an organic compound (i.e., all reported results for the compound were at the detection limit), one-half of the average was used for the organic compound in the risk assessment calculations. This approach was required because the dermal exposure pathway for surface water is very sensitive to the presence of organic compounds, and an overly conservative approach (i.e., using the detection limit, rather than one-half of the limit) may bias results too high and produce an unacceptable risk to the receptor. The dermal exposure pathway for inorganic compounds is not as sensitive, and the dermal pathway for radionuclides is not

evaluated in risk assessments. Therefore, the full detection limits were used in the risk calculations carried out with inorganic elements and radionuclides.

In each exposure zone, if the list of surface-water contaminants did not match the list of soil contaminants in the zone, the surface-water list was modified to make it match the soil list. When a contaminant is present in the surface water but not the soil, it is dropped from the surface-water pathway. Whereas, when a contaminant is present in the soil but not the surface water, default values were inserted into the surface-water contaminant list to ensure that all the contaminants evaluated for the soil pathway were carried over to the surface-water pathway. The default values are the background values reported for the ponds (Table C-3).

For the HWMU exposure zone, the maximum surface-water result for each RCRA COC was obtained from ponds sampled in the former production and waste pit areas. If the maximum result was a detection limit, the detection limit was used as reported for all contaminants (i.e., it was not halved for organic compounds as noted for other exposure areas). This ensured that the most conservative concentrations were used for the assessment of HWMU closures.

WATER SAMPLES FOR URANIUM BY EXPOSURE ZONE WITH ISOTOPIC CALCULATION

Uranium results for site ponds (sampled Nov 7 through Jan 24, 2007; and analyzed at CWWT lab)

Location	Uranium mg/L	Uranium-234 pCi/L	Uranium-235 pCi/L	Uranium-238 pCi/L	Exposure Zone	SW Zone
1	2.80E-03	9.56E-01	4.36E-02	9.34E-01	2	F
2	7.80E-03	2.66E+00	1.21E-01	2.60E+00	2	F
3	7.20E-03	2.46E+00	1.12E-01	2.40E+00	2	F
4	8.30E-03	2.83E+00	1.29E-01	2.77E+00	2	F
5	2.52E-02	8.61E+00	3.92E-01	8.40E+00	2	F
6	8.10E-03	2.77E+00	1.26E-01	2.70E+00	2	F
7	7.90E-03	2.70E+00	1.23E-01	2.63E+00	2	F
8	4.88E-02	1.67E+01	7.59E-01	1.63E+01	2	--
9	4.50E-03	1.54E+00	7.00E-02	1.50E+00	2	--
10	7.00E-03	2.39E+00	1.09E-01	2.33E+00	2	--
11	5.00E-03	1.71E+00	7.78E-02	1.67E+00	2	E
12	1.31E-02	4.47E+00	2.04E-01	4.37E+00	2	E
13	6.70E-03	2.29E+00	1.04E-01	2.23E+00	2	E
14	8.70E-03	2.97E+00	1.35E-01	2.90E+00	2	E
15	1.02E-02	3.48E+00	1.59E-01	3.40E+00	2	--
16	1.83E-02	6.25E+00	2.85E-01	6.10E+00	2	E
17	1.27E-02	4.34E+00	1.98E-01	4.24E+00	2	E
18	4.70E-03	1.61E+00	7.31E-02	1.57E+00	2	E
19	3.70E-03	1.26E+00	5.76E-02	1.23E+00	2	E
20	3.69E-02	1.26E+01	5.74E-01	1.23E+01	2	E
21	3.48E-02	1.19E+01	5.41E-01	1.16E+01	2	E
22	1.65E-02	5.63E+00	2.57E-01	5.50E+00	2	9
23	1.61E-02	5.50E+00	2.50E-01	5.37E+00	2	9
24	1.93E-02	6.59E+00	3.00E-01	6.44E+00	2	29
25	2.93E-02	1.00E+01	4.56E-01	9.77E+00	2	--
26	5.40E-03	1.84E+00	8.40E-02	1.80E+00	1	A
27	1.16E-02	3.96E+00	1.80E-01	3.87E+00	1	A
28	1.27E-02	4.34E+00	1.98E-01	4.24E+00	1	A
29	3.70E-03	1.26E+00	5.76E-02	1.23E+00	1	A
30	2.50E-03	8.54E-01	3.89E-02	8.34E-01	1	A
31	2.50E-03	8.54E-01	3.89E-02	8.34E-01	1	A
32	1.32E-02	4.51E+00	2.05E-01	4.40E+00	1	A
33	9.80E-03	3.35E+00	1.52E-01	3.27E+00	1	A
34	1.27E-02	4.34E+00	1.98E-01	4.24E+00	1	A
35	4.90E-03	1.67E+00	7.62E-02	1.63E+00	1	A
36	1.80E-03	6.15E-01	2.80E-02	6.00E-01	1	--
37	1.10E-03	3.76E-01	1.71E-02	3.67E-01	1	--
38	2.00E-03	6.83E-01	3.11E-02	6.67E-01	1	--
39	6.10E-03	2.08E+00	9.49E-02	2.03E+00	1	--
40	1.28E-02	4.37E+00	1.99E-01	4.27E+00	2	28
41	5.10E-03	1.74E+00	7.93E-02	1.70E+00	1	--
42	1.03E-02	3.52E+00	1.60E-01	3.44E+00	1	--
43	6.80E-03	2.32E+00	1.06E-01	2.27E+00	1	--
44	1.61E-02	5.50E+00	2.50E-01	5.37E+00	1	--
45	2.00E-03	6.83E-01	3.11E-02	6.67E-01	2	E
46	2.12E-02	7.24E+00	3.30E-01	7.07E+00	2	--
47	5.27E-02	1.80E+01	8.20E-01	1.76E+01	6	21
48	1.74E-02	5.94E+00	2.71E-01	5.80E+00	7	24
49	3.56E-02	1.22E+01	5.54E-01	1.19E+01	7	24
50	3.03E-02	1.03E+01	4.71E-01	1.01E+01	7	24
51	1.76E-02	6.01E+00	2.74E-01	5.87E+00	7	--
52	1.29E-02	4.41E+00	2.01E-01	4.30E+00	7	--
53	2.08E-02	7.10E+00	3.24E-01	6.94E+00	7	--
54	8.90E-03	3.04E+00	1.38E-01	2.97E+00	7	--
55	1.05E-02	3.59E+00	1.63E-01	3.50E+00	7	--
56	5.40E-03	1.84E+00	8.40E-02	1.80E+00	7	22
57	1.24E-02	4.23E+00	1.93E-01	4.14E+00	7	22
58	1.11E-02	3.79E+00	1.73E-01	3.70E+00	6	21
59	3.58E-02	1.22E+01	5.57E-01	1.19E+01	6	21
60	4.30E-03	1.47E+00	6.69E-02	1.43E+00	7	24
61	5.00E-03	1.71E+00	7.78E-02	1.67E+00	6	20
62	1.82E-02	6.22E+00	2.83E-01	6.07E+00	6	20
63	2.64E-02	9.02E+00	4.11E-01	8.80E+00	6	19
64	1.62E-02	5.53E+00	2.52E-01	5.40E+00	6	19
65*	6.63E-01	2.26E+02	1.03E+01	2.21E+02	6	--
66	1.23E-01	4.18E+01	1.91E+00	4.09E+01	6	--
67	1.79E-02	6.11E+00	2.78E-01	5.97E+00	5	--
68	1.84E-02	6.28E+00	2.86E-01	6.14E+00	5	--
69	2.32E-02	7.92E+00	3.61E-01	7.74E+00	6	14
70	1.93E-01	6.59E+01	3.00E+00	6.44E+01	6	--
71	3.75E-01	1.28E+02	5.83E+00	1.25E+02	6	15
72	6.18E-02	2.11E+01	9.61E-01	2.06E+01	6	17
73	1.43E-02	4.88E+00	2.22E-01	4.77E+00	6	17
74	2.13E-02	7.27E+00	3.31E-01	7.10E+00	6	18
75	1.17E-02	4.00E+00	1.82E-01	3.90E+00	5	12
76	4.42E-02	1.51E+01	6.88E-01	1.47E+01	6	16

WATER SAMPLES FOR URANIUM BY EXPOSURE ZONE WITH ISOTOPIC CALCULATION

Uranium results for site ponds (sampled Nov 7 through Jan 24, 2007; and analyzed at CWWT lab)

Location	Uranium mg/L	Uranium-234 pCi/L	Uranium-235 pCi/L	Uranium-238 pCi/L	Exposure Zone	SW Zone
77	4.20E-03	1.43E+00	6.53E-02	1.40E+00	6	16
78	4.85E-02	1.66E+01	7.54E-01	1.62E+01	5	26
79	2.77E-02	9.46E+00	4.31E-01	9.24E+00	5	26
80	1.74E-02	5.94E+00	2.71E-01	5.80E+00	2	26
81	6.18E-02	2.11E+01	9.61E-01	2.06E+01	7	24
82	9.57E-02	3.27E+01	1.49E+00	3.19E+01	6	--
83	2.47E-02	8.43E+00	3.84E-01	8.24E+00	5	13
84	1.09E-02	3.72E+00	1.70E-01	3.64E+00	5	13
85	4.20E-03	1.43E+00	6.53E-02	1.40E+00	5	13
86	3.47E-02	1.18E+01	5.40E-01	1.16E+01	5	--
87	4.63E-02	1.58E+01	7.20E-01	1.54E+01	5	11
88	5.81E-02	1.98E+01	9.04E-01	1.94E+01	5	8
89	1.94E-02	6.62E+00	3.02E-01	6.47E+00	7	8
90	3.34E-02	1.14E+01	5.20E-01	1.11E+01	7	--
91	1.24E-02	4.23E+00	1.93E-01	4.14E+00	7	--
92	2.57E-02	8.78E+00	4.00E-01	8.57E+00	7	--
93	4.40E-03	1.50E+00	6.84E-02	1.47E+00	2	--
94	3.80E-03	1.30E+00	5.91E-02	1.27E+00	2	23
95	4.43E-02	1.51E+01	6.89E-01	1.48E+01	5	26
96	3.06E-02	1.04E+01	4.76E-01	1.02E+01	2	26
97	2.79E-02	9.53E+00	4.34E-01	9.31E+00	5	26
98	2.37E-02	8.09E+00	3.69E-01	7.90E+00	5	26
99	2.16E-02	7.38E+00	3.36E-01	7.20E+00	5	26
100	3.07E-02	1.05E+01	4.78E-01	1.02E+01	5	26
101	1.18E-02	4.03E+00	1.84E-01	3.94E+00	8	30
102	4.80E-03	1.64E+00	7.47E-02	1.60E+00	3	B
103	1.60E-03	5.46E-01	2.49E-02	5.34E-01	3	B
104	5.10E-03	1.74E+00	7.93E-02	1.70E+00	3	B
105	1.20E-02	4.10E+00	1.87E-01	4.00E+00	3	B
106	2.20E-03	7.51E-01	3.42E-02	7.34E-01	3	B
107	1.90E-03	6.49E-01	2.96E-02	6.34E-01	3	B
108	1.20E-02	4.10E+00	1.87E-01	4.00E+00	3	B
109	6.60E-03	2.25E+00	1.03E-01	2.20E+00	3	B
110	1.00E-03	3.41E-01	1.56E-02	3.34E-01	3	B
111	1.00E-03	3.41E-01	1.56E-02	3.34E-01	3	B
112	1.11E-02	3.79E+00	1.73E-01	3.70E+00	3	B
113	1.57E-02	5.36E+00	2.44E-01	5.24E+00	3	B
114	5.90E-03	2.01E+00	9.18E-02	1.97E+00	5	D
115	5.00E-03	1.71E+00	7.78E-02	1.67E+00	5	D
116	1.13E-02	3.86E+00	1.76E-01	3.77E+00	5	D
117	1.19E-02	4.06E+00	1.85E-01	3.97E+00	5	D
118	sample location not used					
119	sample location not used					
120	sample location not used					
121	3.19E-02	1.09E+01	4.96E-01	1.06E+01	5	26
122	1.11E-02	3.79E+00	1.73E-01	3.70E+00	5	27
123	1.90E-02	6.49E+00	2.96E-01	6.34E+00	5	--
124	2.29E-02	7.82E+00	3.56E-01	7.64E+00	5	--
125	1.87E-02	6.39E+00	2.91E-01	6.24E+00	5	3
126	3.65E-02	1.25E+01	5.68E-01	1.22E+01	5	2
127	1.91E-02	6.52E+00	2.97E-01	6.37E+00	5	2
128	1.47E-02	5.02E+00	2.29E-01	4.90E+00	5	2
129	3.83E-02	1.31E+01	5.96E-01	1.28E+01	5	--
130	1.53E-02	5.22E+00	2.38E-01	5.10E+00	5	--
131	3.02E-02	1.03E+01	4.70E-01	1.01E+01	5	10
132	2.93E-02	1.00E+01	4.56E-01	9.77E+00	5	26
133	3.35E-02	1.14E+01	5.21E-01	1.12E+01	5	1
134	2.30E-01	7.85E+01	3.58E+00	7.67E+01	5	1
135	1.35E-01	4.61E+01	2.10E+00	4.50E+01	5	1
136	2.31E-01	7.89E+01	3.59E+00	7.70E+01	5	1

TABLE C-1
WATER SAMPLES FOR URANIUM BY EXPOSURE ZONE WITH ISOTOPIC CALCULATION

Uranium results for site ponds (sampled Nov 7 through Jan 24, 2007; and analyzed at CWWT lab)

Location	Uranium mg/L	Uranium-234 pCi/L	Uranium-235 pCi/L	Uranium-238 pCi/L	Exposure Zone	SW Zone
137	1.12E-02	3.82E+00	1.74E-01	3.74E+00	5	1
138	7.10E-03	2.42E+00	1.10E-01	2.37E+00	5	1
139	6.00E-03	2.05E+00	9.33E-02	2.00E+00	5	1
140	8.10E-03	2.77E+00	1.26E-01	2.70E+00	5	1
141	2.60E-03	8.88E-01	4.04E-02	8.67E-01	5	1
142	3.65E-02	1.25E+01	5.68E-01	1.22E+01	5	1
143	2.19E-02	7.48E+00	3.41E-01	7.30E+00	5	1
144	7.38E-02	2.52E+01	1.15E+00	2.46E+01	5	1
145	3.65E-02	1.25E+01	5.68E-01	1.22E+01	5	1
146	2.87E-01	9.80E+01	4.46E+00	9.57E+01	5	1
147	1.32E-02	4.51E+00	2.05E-01	4.40E+00	5	3
148	7.40E-03	2.53E+00	1.15E-01	2.47E+00	5	4
149	1.90E-03	6.49E-01	2.96E-02	6.34E-01	5	6
150	9.10E-03	3.11E+00	1.42E-01	3.04E+00	5	5
151	9.60E-03	3.28E+00	1.49E-01	3.20E+00	5	5
152	9.00E-03	3.07E+00	1.40E-01	3.00E+00	5	5
153	4.32E-02	1.48E+01	6.72E-01	1.44E+01	5	5
154	7.63E-02	2.61E+01	1.19E+00	2.54E+01	5	1
155	6.66E-02	2.27E+01	1.04E+00	2.22E+01	5	1
156	1.00E-01	3.41E+01	1.56E+00	3.34E+01	5	1
157	4.60E-02	1.57E+01	7.16E-01	1.53E+01	5	1
158	1.93E-01	6.59E+01	3.00E+00	6.44E+01	5	26
159	6.95E-02	2.37E+01	1.08E+00	2.32E+01	5	26
160	4.44E-02	1.52E+01	6.91E-01	1.48E+01	5	26
161	2.86E-02	9.77E+00	4.45E-01	9.54E+00	5	7
162	2.28E-02	7.79E+00	3.55E-01	7.60E+00	5	7
163	1.10E-02	3.76E+00	1.71E-01	3.67E+00	5	25
164	9.50E-03	3.24E+00	1.48E-01	3.17E+00	5	5
165	9.00E-03	3.07E+00	1.40E-01	3.00E+00	5	--
166	6.90E-03	2.36E+00	1.07E-01	2.30E+00	5	6
167	3.60E-03	1.23E+00	5.60E-02	1.20E+00	5	6
168	1.04E-02	3.55E+00	1.62E-01	3.47E+00	5	--
169	6.60E-03	2.25E+00	1.03E-01	2.20E+00	5	4
170	3.05E-02	1.04E+01	4.74E-01	1.02E+01	5	10
171	1.26E-02	4.30E+00	1.96E-01	4.20E+00	5	4
172	3.91E-02	1.34E+01	6.08E-01	1.30E+01	5	--
173	2.15E-02	7.34E+00	3.34E-01	7.17E+00	5	11
174	5.00E-02	1.71E+01	7.78E-01	1.67E+01	5	11
175	1.80E-02	6.15E+00	2.80E-01	6.00E+00	5	J
176	1.06E-02	3.62E+00	1.65E-01	3.54E+00	5	6
177	2.06E-02	7.03E+00	3.20E-01	6.87E+00	5	6
178	1.81E-02	6.18E+00	2.82E-01	6.04E+00	5	--
179	1.86E-02	6.35E+00	2.89E-01	6.20E+00	5	--
180	2.50E-02	8.54E+00	3.89E-01	8.34E+00	2	E
181	4.76E-02	1.63E+01	7.40E-01	1.59E+01	2	E
182	2.86E-02	9.77E+00	4.45E-01	9.54E+00	8	26
183	9.40E-03	3.21E+00	1.46E-01	3.14E+00	3	C
184	1.54E-02	5.26E+00	2.40E-01	5.14E+00	3	C
185	1.70E-02	5.81E+00	2.64E-01	5.67E+00	3	C
186	1.70E-03	5.81E-01	2.64E-02	5.67E-01	4	H
187	7.80E-03	2.66E+00	1.21E-01	2.60E+00	4	G
188	1.02E-02	3.48E+00	1.59E-01	3.40E+00	1	A
189	1.99E-02	6.80E+00	3.10E-01	6.64E+00	1	A
190	3.31E-02	1.13E+01	5.15E-01	1.10E+01	5	1
191	7.00E-03	2.39E+00	1.09E-01	2.33E+00	2	--
192	2.70E-03	9.22E-01	4.20E-02	9.01E-01	2	--
193*	8.32E-01	2.84E+02	1.29E+01	2.78E+02	6	--
194*	8.56E-01	2.92E+02	1.33E+01	2.86E+02	6	--
195*	7.90E-01	2.70E+02	1.23E+01	2.64E+02	6	--
196*	8.77E-01	3.00E+02	1.36E+01	2.93E+02	6	--
197*	4.76E-01	1.62E+02	7.40E+00	1.59E+02	6	--
198*	5.11E-01	1.75E+02	7.95E+00	1.71E+02	6	--
199*	6.63E-01	2.26E+02	1.03E+01	2.21E+02	6	--
200*	6.64E-01	2.27E+02	1.03E+01	2.21E+02	6	--

BOLD values are reported detection limits

* These locations were continuously sampled to investigate elevated uranium concentrations.
This value represents the highest result as 1-24-07.
(65 had results in mg/l of 0.372, 0.166, 0.199, 0.663, 0.438, 0.434, 0.448)
(193 had results in mg/l of 0.650, 0.832, 0.466, 0.762, 0.606, 0.519, 0.628)
(194 had results in mg/l of 0.856, 0.771, 0.832, 0.613, 0.752, 0.765)
(195 had results in mg/l of 0.155, 0.244, 0.790, 0.554, 0.127, 0.134, 0.255, 0.427, 0.420, 0.492)
(196 had results in mg/l of 0.877, 0.740, 0.837, 0.669, 0.097, 0.395, 0.467, 0.476)
(197 had results in mg/l of 0.454, 0.411, 0.432, 0.300, 0.397, 0.475)
(198 had results in mg/l of 0.460, 0.503, 0.511, 0.470, 0.480, 0.509)
(199 had results in mg/l of 0.379, 0.662, 0.057)
(200 had results in mg/l of 0.639, 0.457, 0.557, 0.640.9, 0.663)

TABLE C-2 - SURFACE WATER - Zone 1

Constituent	unit	Polygon A	risk values
Cesium-137	pCi/L	NA	NA
Lead-210	pCi/L	NA	NA
Neptunium-237	pCi/L	NA	NA
Plutonium-238	pCi/L	**4.67E-02**	NA
Plutonium-239/240	pCi/L	NA	NA
Radium-226	pCi/L	3.53E-01	3.53E-01
Radium-228	pCi/L	**2.52E+00**	2.52E+00
Strontium-90	pCi/L	NA	NA
Technetium-99	pCi/L	**7.44E+00**	7.44E+00
Thorium-228	pCi/L	2.58E+00	2.58E+00
Thorium-230	pCi/L	**1.25E-01**	NA
Thorium-232	pCi/L	**2.52E+00**	2.52E+00
Uranium-234	pCi/L	3.10E+00	3.10E+00
Uranium-235	pCi/L	1.41E-01	1.41E-01
Uranium-238	pCi/L	3.03E+00	3.03E+00
[illegible]	[illegible]	[illegible]	[illegible]
Antimony	mg/L	NA	5.00E-04
Arsenic	mg/L	**1.50E-03**	1.50E-03
Barium	mg/L	1.02E-01	NA
Beryllium	mg/L	1.90E-04	1.90E-04
Boron	mg/L	4.68E-02	NA
Cadmium	mg/L	NA	NA
Chromium (VI)	mg/L	4.09E-02	NA
Cobalt	mg/L	2.20E-03	NA
Copper	mg/L	1.22E-02	NA
Fluoride	mg/L	2.80E-01	NA
Lead	mg/L	2.00E-03	2.00E-03
Manganese	mg/L	1.50E-01	NA
Mercury	mg/L	NA	NA
Molybdenum	mg/L	1.25E-02	NA
Nickel	mg/L	2.12E-02	NA
Selenium	mg/L	NA	NA
Silver	mg/L	NA	NA
Thallium	mg/L	**4.00E-04**	NA
Uranium	mg/L	9.09E-03	9.09E-03
Vanadium	mg/L	1.10E-02	NA
Zinc	mg/L	5.55E-02	NA
Acetone	mg/L	NA	NA
Aroclor-1254	mg/L	NA	NA
Aroclor-1260	mg/L	NA	NA
Benzene	mg/L	NA	NA
Benzo(a)anthracene	mg/L	NA	NA
Benzo(a)pyrene	mg/L	NA	NA
Benzo(b)fluoranthene	mg/L	NA	NA
Benzo(k)fluoranthene	mg/L	NA	NA
Bis(2-chloroisopropyl)ether	mg/L	NA	NA
Bis(2-ethylhexyl)phthalate	mg/L	NA	NA
Bromodichloromethane	mg/L	NA	NA

Constituent	unit	Polygon A	risk values
Bromoform	mg/L	NA	NA
Bromomethane	mg/L	NA	NA
2-Butanone	mg/L	NA	NA
Carbazole	mg/L	NA	NA
Carbon disulfide	mg/L	NA	NA
Carbon tetrachloride	mg/L	NA	NA
Chlordane	mg/L	NA	NA
Chlorobenzene	mg/L	NA	NA
Chloroform	mg/L	NA	NA
Chrysene	mg/L	NA	NA
Cyanide	mg/L	NA	NA
Cyclohexanone	mg/L	NA	NA
Dibenzo(a,h)anthracene	mg/L	NA	NA
3,3-Dichlorobenzidine	mg/L	NA	NA
1,2-dichloroethane	mg/L	NA	NA
1,1-Dichloroethylene	mg/L	NA	NA
Dieldrin	mg/L	NA	NA
Di-n-octylphthalate	mg/L	NA	NA
Ethylbenzene	mg/L	NA	NA
Ethyl ether	mg/L	NA	NA
Heptachlorodibenzofuran	mg/L	NA	NA
Heptachlorodibenzo-p-dioxin	mg/L	NA	NA
Hexachlorodibenzofuran	mg/L	NA	NA
Hexachlorodibenzo-p-dioxin	mg/L	NA	NA
Indeno(1,2,3-cd)pyrene	mg/L	NA	NA
Methanol	mg/L	NA	NA
Methyl-2-pentanone	mg/L	NA	NA
Methylene chloride	mg/L	NA	NA
4-Methylphenol	mg/L	NA	NA
4-Nitroanaline	mg/L	NA	NA
N-nitrosodiphenylamine	mg/L	NA	NA
N-nitrosodipropylamine	mg/L	NA	NA
Octachlorodibenzofuran	mg/L	NA	NA
Octochlorodibenzo-p-dioxin	mg/L	NA	NA
Pentachlorodibenzofuran	mg/L	NA	NA
Pentachlorodibenzo-p-dioxin	mg/L	NA	NA
Pentachlorophenol	mg/L	NA	NA
Phenanthrene	mg/L	NA	NA
Tetrachlorodibenzofuran	mg/L	NA	NA
Tetrachlorodibenzo-p-dioxin	mg/L	NA	NA
Tetrachloroethylene	mg/L	NA	NA
Toluene	mg/L	NA	NA
Tributyl phosphate	mg/L	NA	NA
1,1,2-Trichloroethane	mg/L	NA	NA
Trichloroethylene	mg/L	NA	NA
Trifluorochloromethane	mg/L	NA	NA
Vinyl chloride	mg/L	NA	NA
Xylenes	mg/L	NA	NA

Bold values are reported detection limits.

Risk values are Polygon A values modified as noted below:

Detection limit values are used in the risk calculations for rad and inorganic COCs. If an organic COC value is a detection limit, one-half of the detection limit is used in the risk calculations, due to sensititivy of dermal exposure to organic COCs.

If COC is not evaluated for the soil pathway, it is also eliminated for the surface-water pathway

If COC is evaluated for the soil pathway and a result for this COC is not available (NA) for surface water, the background surface-water value is used in risk calculations.

TABLE C-2 - SURFACE WATER - Zone 2

Constituent	unit	Polygon							max value	avg value	risk value
		9	23	27	28	29	E	F			
Cesium-137	pCi/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.70E+00
Lead-210	pCi/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.99E-01
Neptunium-237	pCi/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Plutonium-238	pCi/L	**2.80E-02**	**3.00E-02**	**4.13E-02**	**4.86E-02**	**2.10E-02**	**2.87E-02**	**5.55E-02**	**5.55E-02**	**3.62E-02**	NA
Plutonium-239/240	pCi/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Radium-226	pCi/L	3.84E-01	4.02E-01	2.81E-01	2.43E-01	5.22E-01	2.43E-01	2.03E-01	5.22E-01	3.25E-01	3.25E-01
Radium-228	pCi/L	**3.54E+00**	**3.49E+00**	**3.40E+00**	**3.54E+00**	**2.96E+00**	2.89E+00	3.57E+00	3.57E+00	3.34E+00	3.34E+00
Strontium-90	pCi/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Technetium-99	pCi/L	1.29E+01	6.69E+00	**7.45E+00**	**7.64E+00**	1.35E+01	**7.55E+00**	**7.47E+00**	1.35E+01	9.03E+00	9.03E+00
Thorium-228	pCi/L	**3.54E+00**	**3.49E+00**	**3.40E+00**	**3.54E+00**	**2.96E+00**	**2.89E+00**	**3.57E+00**	**3.57E+00**	**3.34E+00**	3.34E+00
Thorium-230	pCi/L	1.12E-01	**8.30E-02**	**3.94E-02**	1.52E-01	**8.10E-02**	**8.30E-02**	**2.93E-01**	**2.93E-01**	1.20E-01	1.20E-01
Thorium-232	pCi/L	**3.54E+00**	**3.49E+00**	**3.40E+00**	**3.54E+00**	**2.96E+00**	2.89E+00	3.57E+00	3.57E+00	3.34E+00	3.34E+00
Uranium-234	pCi/L	5.57E+00	1.30E+00	3.79E+00	4.37E+00	6.59E+00	5.17E+00	3.28E+00	6.59E+00	4.30E+00	4.30E+00
Uranium-235	pCi/L	2.54E-01	5.91E-02	1.73E-01	1.99E-01	3.00E-01	2.35E-01	1.50E-01	3.00E-01	1.96E-01	1.96E-01
Uranium-238	pCi/L	5.44E+00	1.27E+00	3.70E+00	4.27E+00	6.44E+00	5.05E+00	3.21E+00	6.44E+00	4.19E+00	4.19E+00
Antimony	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.00E-04
Arsenic	mg/L	4.00E-03	1.88E-02	2.40E-03	**1.50E-03**	4.30E-03	2.00E-03	**1.50E-03**	1.88E-02	4.93E-03	4.93E-03
Barium	mg/L	6.71E-02	3.67E-01	7.13E-02	5.58E-02	5.30E-02	5.54E-02	2.51E-02	3.67E-01	9.92E-02	9.92E-02
Beryllium	mg/L	1.30E-04	3.60E-03	3.60E-04	1.20E-04	1.80E-04	**1.00E-04**	**1.00E-04**	3.60E-03	6.56E-04	6.56E-04
Boron	mg/L	1.32E-01	7.14E-02	5.20E-02	1.90E-01	1.49E-01	4.91E-02	1.58E-02	1.90E-01	NA	NA
Cadmium	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.00E-04
Chromium (VI)	mg/L	5.70E-03	7.93E-02	8.70E-03	3.30E-03	5.10E-03	1.30E-03	**1.00E-03**	7.93E-02	1.49E-02	1.49E-02
Cobalt	mg/L	1.60E-03	3.55E-02	3.10E-03	1.80E-03	4.10E-03	6.70E-04	2.90E-04	3.55E-02	6.72E-03	NA
Copper	mg/L	5.50E-03	6.91E-02	8.30E-03	7.80E-03	6.90E-03	3.10E-03	2.10E-03	6.91E-02	1.47E-02	NA
Fluoride	mg/L	3.82E-01	1.92E-01	5.01E-01	3.33E-01	3.82E-01	2.94E-01	3.62E-01	5.01E-01	3.49E-01	NA
Lead	mg/L	1.90E-03	6.99E-02	3.80E-03	1.40E-03	3.00E-03	5.90E-04	**5.00E-04**	6.99E-02	1.16E-02	1.16E-02
Manganese	mg/L	5.74E-02	1.82E+00	1.34E-01	1.29E-01	1.22E-01	7.82E-02	2.60E-02	1.82E+00	3.38E-01	NA
Mercury	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.00E-05
Molybdenum	mg/L	8.60E-03	4.10E-03	5.20E-03	3.20E-03	8.20E-03	3.30E-03	**1.50E-03**	8.60E-03	4.87E-03	4.87E-03
Nickel	mg/L	7.70E-03	8.15E-02	9.30E-03	7.70E-03	1.06E-02	4.10E-03	1.90E-03	8.15E-02	1.75E-02	NA
Selenium	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.50E-03
Silver	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.00E-04
Thallium	mg/L	**4.00E-04**	1.10E-03	**4.00E-04**	**4.00E-04**	**4.00E-04**	**4.00E-04**	**4.00E-04**	1.10E-03	5.00E-04	NA
Uranium	mg/L	1.63E-02	3.80E-03	1.11E-02	1.28E-02	1.93E-02	1.51E-02	9.61E-03	1.93E-02	1.26E-02	1.26E-02
Vanadium	mg/L	5.90E-03	1.46E-01	1.29E-02	4.00E-03	6.50E-03	**2.00E-03**	**2.00E-03**	1.46E-01	2.56E-02	NA

TABLE C-2 - SURFACE WATER - Zone 2

Constituent	unit	Polygon							max value	avg value	risk value
		9	23	27	28	29	E	F			
Zinc	mg/L	1.34E-02	2.87E-01	2.48E-02	3.08E-02	1.93E-02	5.20E-03	4.10E-03	2.87E-01	5.49E-02	NA
Acetone	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.00E+00
Aroclor-1254	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.00E+00
Aroclor-1260	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.00E+00
Benzene	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.00E+00
Benzo(a)anthracene	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.00E+00
Benzo(a)pyrene	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.00E+00
Benzo(b)fluoranthene	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.00E+00
Benzo(k)fluoranthene	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.00E+00
Bis(2-chloroisopropyl)ether	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.00E+00
Bromoform	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.00E+00
Chlordane	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.00E+00
Cyanide	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexanone	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.00E+00
3,3-Dichlorobenzidine	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-dichloroethane	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.00E+00
1,1-Dichloroethylene	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.00E+00
Dieldrin	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.00E+00
Di-n-octylphthalate	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.00E+00
Ethyl ether	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlorodibenzofuran	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlorodibenzo-p-dioxin	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorodibenzofuran	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE C-2 - SURFACE WATER - Zone 2

Constituent	unit	Polygon							max value	avg value	risk value
		9	23	27	28	29	E	F			
Hexachlorodibenzo-p-dioxin	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.00E+00
Methanol	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl-2-pentanone	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.00E+00
Methylene chloride	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.00E+00
4-Methylphenol	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroanaline	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-nitrosodipropylamine	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Octachlorodibenzofuran	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Octochlorodibenzo-p-dioxin	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorodibenzofuran	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorodibenzo-p-dioxin	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.00E+00
Tetrachlorodibenzofuran	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachlorodibenzo-p-dioxin	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethylene	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.00E+00
Toluene	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.00E+00
Tributyl phosphate	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.00E+00
Trichloroethylene	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.00E+00
Trifluorochloromethane	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.00E+00

Bold values are reported detection limits

Risk values are average values modified as noted below:

Detection limit values are used in the risk calculations for rad and inorganic COCs. If an organic COC value is a detection limit, one-half of the detection limit is used in the risk calculations, due to sensititivy of dermal exposure to organic COCs.

If COC is not evaluated for the soil pathway, it is also eliminated for the surface-water pathway

If COC is evaluated for the soil pathway and a result for this COC is not available (NA) for surface water, the background surface-water value is used in risk calculations.

TABLE C-2 - SURFACE WATER - Zone 3

Constituent	unit	Polygon		max value	avg value	risk value
		B	C			
Cesium-137	pCi/L	NA	NA	NA	NA	1.70E+00
Lead-210	pCi/L	NA	NA	NA	NA	NA
Neptunium-237	pCi/L	NA	NA	NA	NA	NA
Plutonium-238	pCi/L	**5.63E-02**	**7.80E-02**	**7.80E-02**	**6.72E-02**	NA
Plutonium-239/240	pCi/L	NA	NA	NA	NA	NA
Radium-226	pCi/L	**1.98E-01**	3.02E-01	3.02E-01	2.50E-01	2.50E-01
Radium-228	pCi/L	**3.31E+00**	**3.13E+00**	**3.31E+00**	**3.22E+00**	3.22E+00
Strontium-90	pCi/L	NA	NA	NA	NA	NA
Technetium-99	pCi/L	**7.30E+00**	**7.38E+00**	**7.38E+00**	**7.34E+00**	NA
Thorium-228	pCi/L	**3.31E+00**	**3.13E+00**	**3.31E+00**	**3.22E+00**	3.22E+00
Thorium-230	pCi/L	2.66E-01	5.97E-01	5.97E-01	4.32E-01	4.32E-01
Thorium-232	pCi/L	**3.31E+00**	**3.13E+00**	**3.31E+00**	**3.22E+00**	3.22E+00
Uranium-234	pCi/L	2.13E+00	4.76E+00	4.76E+00	3.45E+00	3.45E+00
Uranium-235	pCi/L	9.72E-02	2.17E-01	2.17E-01	1.57E-01	1.57E-01
Uranium-238	pCi/L	2.08E+00	4.65E+00	4.65E+00	3.37E+00	3.37E+00
Antimony	mg/L	NA	NA	NA	NA	NA
Arsenic	mg/L	**1.50E-03**	**1.50E-03**	**1.50E-03**	**1.50E-03**	1.50E-03
Barium	mg/L	3.78E-02	4.69E-02	4.69E-02	4.24E-02	NA
Beryllium	mg/L	**1.00E-04**	**1.00E-04**	**1.00E-04**	**1.00E-04**	1.00E-04
Boron	mg/L	2.35E-02	9.32E-02	9.32E-02	5.84E-02	NA
Cadmium	mg/L	NA	NA	NA	NA	NA
Chromium (VI)	mg/L	1.60E-03	2.00E-03	2.00E-03	1.80E-03	NA
Cobalt	mg/L	5.60E-04	7.10E-04	7.10E-04	6.35E-04	NA
Copper	mg/L	1.40E-03	3.10E-03	3.10E-03	2.25E-03	NA
Fluoride	mg/L	2.62E-01	2.42E-01	2.62E-01	2.52E-01	NA
Lead	mg/L	**5.00E-04**	6.10E-04	6.10E-04	5.55E-04	5.55E-04
Manganese	mg/L	2.01E-01	1.78E-01	2.01E-01	1.90E-01	1.90E-01
Mercury	mg/L	NA	NA	NA	NA	NA
Molybdenum	mg/L	**1.60E-03**	**9.70E-04**	**1.60E-03**	**1.29E-03**	1.29E-03
Nickel	mg/L	2.20E-03	3.60E-03	3.60E-03	2.90E-03	NA
Selenium	mg/L	NA	NA	NA	NA	NA
Silver	mg/L	NA	NA	NA	NA	NA
Thallium	mg/L	**4.00E-04**	**4.00E-04**	**4.00E-04**	**4.00E-04**	NA
Uranium	mg/L	6.25E-03	1.39E-02	1.39E-02	1.01E-02	1.01E-02
Vanadium	mg/L	2.10E-03	2.50E-03	2.50E-03	2.30E-03	NA
Zinc	mg/L	4.30E-03	2.41E-02	2.41E-02	1.42E-02	NA
Acetone	mg/L	NA	NA	NA	NA	NA
Aroclor-1254	mg/L	NA	NA	NA	NA	0.00E+00
Aroclor-1260	mg/L	NA	NA	NA	NA	0.00E+00
Benzene	mg/L	NA	NA	NA	NA	NA
Benzo(a)anthracene	mg/L	NA	NA	NA	NA	0.00E+00
Benzo(a)pyrene	mg/L	NA	NA	NA	NA	0.00E+00
Benzo(b)fluoranthene	mg/L	NA	NA	NA	NA	0.00E+00
Benzo(k)fluoranthene	mg/L	NA	NA	NA	NA	0.00E+00
Bis(2-chloroisopropyl)ether	mg/L	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	mg/L	NA	NA	NA	NA	NA
Bromodichloromethane	mg/L	NA	NA	NA	NA	NA
Bromoform	mg/L	NA	NA	NA	NA	NA
Bromomethane	mg/L	NA	NA	NA	NA	NA
2-Butanone	mg/L	NA	NA	NA	NA	NA
Carbazole	mg/L	NA	NA	NA	NA	NA
Carbon disulfide	mg/L	NA	NA	NA	NA	NA
Carbon tetrachloride	mg/L	NA	NA	NA	NA	NA

TABLE C-2 - SURFACE WATER - Zone 3

Constituent	unit	Polygon		max value	avg value	risk value
		B	C			
Chlordane	mg/L	NA	NA	NA	NA	NA
Chlorobenzene	mg/L	NA	NA	NA	NA	NA
Chloroform	mg/L	NA	NA	NA	NA	NA
Chrysene	mg/L	NA	NA	NA	NA	0.00E+00
Cyanide	mg/L	NA	NA	NA	NA	NA
Cyclohexanone	mg/L	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	mg/L	NA	NA	NA	NA	0.00E+00
3,3-Dichlorobenzidine	mg/L	NA	NA	NA	NA	NA
1,2-dichloroethane	mg/L	NA	NA	NA	NA	NA
1,1-Dichloroethylene	mg/L	NA	NA	NA	NA	NA
Dieldrin	mg/L	NA	NA	NA	NA	NA
Di-n-octylphthalate	mg/L	NA	NA	NA	NA	NA
Ethylbenzene	mg/L	NA	NA	NA	NA	NA
Ethyl ether	mg/L	NA	NA	NA	NA	NA
Heptachlorodibenzofuran	mg/L	NA	NA	NA	NA	NA
Heptachlorodibenzo-p-	mg/L	NA	NA	NA	NA	NA
Hexachlorodibenzofuran	mg/L	NA	NA	NA	NA	NA
Hexachlorodibenzo-p-dioxin	mg/L	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	mg/L	NA	NA	NA	NA	0.00E+00
Methanol	mg/L	NA	NA	NA	NA	NA
Methyl-2-pentanone	mg/L	NA	NA	NA	NA	NA
Methylene chloride	mg/L	NA	NA	NA	NA	NA
4-Methylphenol	mg/L	NA	NA	NA	NA	NA
4-Nitroanaline	mg/L	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	mg/L	NA	NA	NA	NA	NA
N-nitrosodipropylamine	mg/L	NA	NA	NA	NA	NA
Octachlorodibenzofuran	mg/L	NA	NA	NA	NA	NA
Octochlorodibenzo-p-dioxin	mg/L	NA	NA	NA	NA	NA
Pentachlorodibenzofuran	mg/L	NA	NA	NA	NA	NA
Pentachlorodibenzo-p-	mg/L	NA	NA	NA	NA	NA
Pentachlorophenol	mg/L	NA	NA	NA	NA	NA
Phenanthrene	mg/L	NA	NA	NA	NA	NA
Tetrachlorodibenzofuran	mg/L	NA	NA	NA	NA	NA
Tetrachlorodibenzo-p-dioxin	mg/L	NA	NA	NA	NA	NA
Tetrachloroethylene	mg/L	NA	NA	NA	NA	NA
Toluene	mg/L	NA	NA	NA	NA	NA
Tributyl phosphate	mg/L	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	mg/L	NA	NA	NA	NA	NA
Trichloroethylene	mg/L	NA	NA	NA	NA	NA
Trifluorochloromethane	mg/L	NA	NA	NA	NA	NA
Vinyl chloride	mg/L	NA	NA	NA	NA	NA
Xylenes	mg/L	NA	NA	NA	NA	NA

Bold values are reported detection limits

Risk values are average values modified as noted below:

Detection limit values are used in the risk calculations for rad and inorganic COCs. If an organic COC value is a detection limit, one-half of the detection limit is used in the risk calculations, due to sensititivy of dermal exposure to organic COCs.

If COC is not evaluated for the soil pathway, it is also eliminated for the surface-water pathway

If COC is evaluated for the soil pathway and a result for this COC is not available (NA) for surface water, the background surface-water value is used in risk calculations.

TABLE C-2 - SURFACE WATER - Zone 4

Constituent	unit	Polygon		max value	avg value	risk value
		G	H			
Cesium-137	pCi/L	NA	NA	NA	NA	NA
Lead-210	pCi/L	NA	NA	NA	NA	NA
Neptunium-237	pCi/L	NA	NA	NA	NA	NA
Plutonium-238	pCi/L	**1.14E-01**	**1.18E-01**	**1.18E-01**	**1.16E-01**	NA
Plutonium-239/240	pCi/L	NA	NA	NA	NA	NA
Radium-226	pCi/L	**1.89E-01**	6.69E-01	6.69E-01	4.29E-01	4.29E-01
Radium-228	pCi/L	**3.35E+00**	3.89E+00	3.89E+00	3.62E+00	3.62E+00
Strontium-90	pCi/L	NA	NA	NA	NA	NA
Technetium-99	pCi/L	**7.40E+00**	**7.58E+00**	**7.58E+00**	**7.49E+00**	NA
Thorium-228	pCi/L	**3.35E+00**	**3.89E+00**	**3.89E+00**	**3.62E+00**	3.62E+00
Thorium-230	pCi/L	**1.78E-01**	**1.36E-01**	**1.78E-01**	**1.57E-01**	NA
Thorium-232	pCi/L	**3.35E+00**	3.89E+00	3.89E+00	3.62E+00	3.62E+00
Uranium-234	pCi/L	2.66E+00	5.81E-01	2.66E+00	1.62E+00	1.62E+00
Uranium-235	pCi/L	1.21E-01	2.64E-02	1.21E-01	7.39E-02	7.39E-02
Uranium-238	pCi/L	2.60E+00	5.67E-01	2.60E+00	1.58E+00	1.58E+00
Antimony	mg/L	NA	NA	NA	NA	NA
Arsenic	mg/L	3.80E-03	4.90E-03	4.90E-03	4.35E-03	NA
Barium	mg/L	1.40E-01	1.12E-01	1.40E-01	1.26E-01	NA
Beryllium	mg/L	4.00E-04	3.00E-04	4.00E-04	3.50E-04	NA
Boron	mg/L	3.61E-02	2.51E-02	3.61E-02	3.06E-02	NA
Cadmium	mg/L	NA	NA	NA	NA	NA
Chromium (VI)	mg/L	8.70E-03	7.60E-03	8.70E-03	8.15E-03	NA
Cobalt	mg/L	4.90E-03	5.10E-03	5.10E-03	5.00E-03	NA
Copper	mg/L	9.50E-03	8.50E-03	9.50E-03	9.00E-03	NA
Fluoride	mg/L	2.18E-01	1.46E-01	2.18E-01	1.82E-01	NA
Lead	mg/L	7.10E-03	8.70E-03	8.70E-03	7.90E-03	NA
Manganese	mg/L	1.92E+00	1.90E+00	1.92E+00	1.91E+00	NA
Mercury	mg/L	NA	NA	NA	NA	NA
Molybdenum	mg/L	**1.10E-03**	**9.80E-04**	**1.10E-03**	**1.04E-03**	NA
Nickel	mg/L	1.02E-02	7.40E-03	1.02E-02	8.80E-03	NA
Selenium	mg/L	NA	NA	NA	NA	NA
Silver	mg/L	NA	NA	NA	NA	NA
Thallium	mg/L	**4.00E-04**	**4.00E-04**	**4.00E-04**	**4.00E-04**	NA
Uranium	mg/L	7.80E-03	1.70E-03	7.80E-03	4.75E-03	4.75E-03
Vanadium	mg/L	3.44E-02	1.28E-02	3.44E-02	2.36E-02	NA
Zinc	mg/L	6.90E-03	4.70E-02	4.70E-02	2.70E-02	NA
Acetone	mg/L	NA	NA	NA	NA	NA
Aroclor-1254	mg/L	NA	NA	NA	NA	NA
Aroclor-1260	mg/L	NA	NA	NA	NA	NA
Benzene	mg/L	NA	NA	NA	NA	NA
Benzo(a)anthracene	mg/L	NA	NA	NA	NA	NA
Benzo(a)pyrene	mg/L	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	mg/L	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	mg/L	NA	NA	NA	NA	NA
Bis(2-	mg/L	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	mg/L	NA	NA	NA	NA	NA
Bromodichloromethane	mg/L	NA	NA	NA	NA	NA
Bromoform	mg/L	NA	NA	NA	NA	NA
Bromomethane	mg/L	NA	NA	NA	NA	NA
2-Butanone	mg/L	NA	NA	NA	NA	NA
Carbazole	mg/L	NA	NA	NA	NA	NA

TABLE C-2 - SURFACE WATER - Zone 4

Constituent	unit	Polygon		max value	avg value	risk value
		G	H			
Carbon disulfide	mg/L	NA	NA	NA	NA	NA
Carbon tetrachloride	mg/L	NA	NA	NA	NA	NA
Chlordane	mg/L	NA	NA	NA	NA	NA
Chlorobenzene	mg/L	NA	NA	NA	NA	NA
Chloroform	mg/L	NA	NA	NA	NA	NA
Chrysene	mg/L	NA	NA	NA	NA	NA
Cyanide	mg/L	NA	NA	NA	NA	NA
Cyclohexanone	mg/L	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	mg/L	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	mg/L	NA	NA	NA	NA	NA
1,2-dichloroethane	mg/L	NA	NA	NA	NA	NA
1,1-Dichloroethylene	mg/L	NA	NA	NA	NA	NA
Dieldrin	mg/L	NA	NA	NA	NA	NA
Di-n-octylphthalate	mg/L	NA	NA	NA	NA	NA
Ethylbenzene	mg/L	NA	NA	NA	NA	NA
Ethyl ether	mg/L	NA	NA	NA	NA	NA
Heptachlorodibenzofuran	mg/L	NA	NA	NA	NA	NA
Heptachlorodibenzo-p-	mg/L	NA	NA	NA	NA	NA
Hexachlorodibenzofuran	mg/L	NA	NA	NA	NA	NA
Hexachlorodibenzo-p-	mg/L	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	mg/L	NA	NA	NA	NA	NA
Methanol	mg/L	NA	NA	NA	NA	NA
Methyl-2-pentanone	mg/L	NA	NA	NA	NA	NA
Methylene chloride	mg/L	NA	NA	NA	NA	NA
4-Methylphenol	mg/L	NA	NA	NA	NA	NA
4-Nitroanaline	mg/L	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	mg/L	NA	NA	NA	NA	NA
N-nitrosodipropylamine	mg/L	NA	NA	NA	NA	NA
Octachlorodibenzofuran	mg/L	NA	NA	NA	NA	NA
Octochlorodibenzo-p-	mg/L	NA	NA	NA	NA	NA
Pentachlorodibenzofuran	mg/L	NA	NA	NA	NA	NA
Pentachlorodibenzo-p-	mg/L	NA	NA	NA	NA	NA
Pentachlorophenol	mg/L	NA	NA	NA	NA	NA
Phenanthrene	mg/L	NA	NA	NA	NA	NA
Tetrachlorodibenzofuran	mg/L	NA	NA	NA	NA	NA
Tetrachlorodibenzo-p-	mg/L	NA	NA	NA	NA	NA
Tetrachloroethylene	mg/L	NA	NA	NA	NA	NA
Toluene	mg/L	NA	NA	NA	NA	NA
Tributyl phosphate	mg/L	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	mg/L	NA	NA	NA	NA	NA
Trichloroethylene	mg/L	NA	NA	NA	NA	NA
Trifluorochloromethane	mg/L	NA	NA	NA	NA	NA
Vinyl chloride	mg/L	NA	NA	NA	NA	NA
Xylenes	mg/L	NA	NA	NA	NA	NA

Bold values are reported detection limits

Risk values are average values modified as noted below:

Detection limit values are used in the risk calculations for rad and inorganic COCs. If an organic COC value is a detection limit, one-half of the detection limit is used in the risk calculations, due to sensititivy of dermal exposure to organic COCs.

If COC is not evaluated for the soil pathway, it is also eliminated for the surface-water pathway

If COC is evaluated for the soil pathway and a result for this COC is not available (NA) for surface water, the background surface-water value is used in risk calculations.

TABLE C-2 - SURFACE WATER - Zone 5

Constituent	unit	Polygon																max value	avg value	risk value
		1	2	3	4	5	6	7	8	10	11	12	13	25	26	D	J			
Cesium-137	pCi/L	2.30E+00	2.30E+00	1.72E+00	1.73E+00	NA	NA	NA	NA	NA	1.72E+00	2.17E+00	NA	NA	NA	NA	NA	2.30E+00	1.99E+00	1.99E+00
Lead-210	pCi/L	7.53E-01	6.99E-01	8.07E-01	8.60E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	8.60E-01	7.80E-01	7.80E-01
Neptunium-237	pCi/L	4.32E-01	3.16E-01	2.69E-01	3.12E-01	NA	NA	NA	NA	NA	1.33E-01	1.36E-01	NA	NA	NA	NA	NA	4.32E-01	2.66E-01	2.66E-01
Plutonium-238	pCi/L	1.68E-02	1.40E-02	3.36E-02	4.37E-02	8.24E-02	3.56E-02	6.18E-02	2.50E-02	2.40E-02	2.61E-02	2.82E-02	4.60E-02	4.50E-02	2.52E-02	4.25E-02	4.38E-02	8.24E-02	3.71E-02	3.71E-02
Plutonium-239/240	pCi/L	4.75E-02	3.17E-02	3.36E-02	3.85E-02	NA	NA	NA	NA	NA	3.68E-02	3.53E-02	NA	NA	NA	NA	NA	4.75E-02	3.72E-02	NA
Radium-226	pCi/L	3.05E-01	3.24E-01	4.36E-01	5.01E-01	1.56E-01	2.14E-01	1.88E-01	2.84E-01	2.67E-01	1.45E-01	2.44E-01	3.97E-01	3.97E-01	4.50E-01	2.76E-01	2.35E-01	5.01E-01	3.01E-01	3.01E-01
Radium-228	pCi/L	3.54E+00	3.73E+00	3.61E+00	3.06E+00	3.40E+00	3.25E+00	3.02E+00	3.60E+00	2.50E+00	2.75E+00	3.51E+00	2.58E+00	2.58E+00	3.25E+00	3.04E+00	3.24E+00	3.73E+00	3.17E+00	3.17E+00
Strontium-90	pCi/L	7.26E-01	4.80E-01	4.66E-01	7.15E-01	NA	NA	NA	NA	NA	7.14E-01	6.48E-01	NA	NA	NA	NA	NA	7.26E-01	6.25E-01	NA
Technetium-99	pCi/L	1.42E+01	8.44E+00	1.06E+01	8.15E+00	7.49E+00	7.50E+00	7.46E+00	7.97E+00	2.64E+01	7.17E+00	6.84E+00	7.54E+00	7.54E+00	7.55E+00	7.40E+00	7.29E+00	2.64E+01	9.35E+00	9.35E+00
Thorium-228	pCi/L	3.54E+00	2.58E+00	3.51E+00	2.65E+00	3.40E+00	3.25E+00	3.02E+00	3.60E+00	2.50E+00	2.55E+00	3.51E+00	2.80E+00	2.80E+00	3.25E+00	2.95E+00	3.24E+00	3.60E+00	3.07E+00	3.07E+00
Thorium-230	pCi/L	3.14E-01	2.30E-01	2.90E-01	2.34E-01	1.04E-01	9.81E-02	7.88E-02	2.21E-01	1.11E-01	7.86E-02	6.11E-02	1.76E-01	1.76E-01	1.23E-01	1.18E-01	7.67E+00	7.67E+00	6.30E-01	6.30E-01
Thorium-232	pCi/L	3.54E+00	3.73E+00	3.61E+00	3.06E+00	3.40E+00	3.25E+00	3.02E+00	3.60E+00	2.50E+00	2.75E+00	3.51E+00	2.58E+00	2.58E+00	3.25E+00	3.04E+00	3.24E+00	3.73E+00	3.17E+00	3.17E+00
Uranium-234	pCi/L	1.05E+01	7.00E+00	4.30E+00	4.03E+00	5.49E+00	2.98E+00	8.78E+00	1.32E+01	1.04E+01	1.34E+01	4.00E+00	4.53E+00	3.76E+00	1.52E+01	2.91E+00	6.15E+00	1.52E+01	7.29E+00	7.29E+00
Uranium-235	pCi/L	4.79E-01	3.19E-01	1.96E-01	1.84E-01	2.50E-01	1.36E-01	4.00E-01	6.03E-01	4.72E-01	6.11E-01	1.82E-01	2.06E-01	1.71E-01	6.94E-01	1.33E-01	2.80E-01	6.94E-01	3.32E-01	3.32E-01
Uranium-238	pCi/L	1.03E+01	6.84E+00	4.20E+00	3.94E+00	5.36E+00	2.91E+00	8.57E+00	1.29E+01	1.01E+01	1.31E+01	3.90E+00	4.42E+00	3.67E+00	1.49E+01	2.84E+00	6.00E+00	1.49E+01	7.12E+00	7.12E+00
Antimony	mg/L	5.00E-04	5.00E-04	5.00E-04	5.00E-04	NA	NA	NA	NA	NA	5.00E-04	5.00E-04	NA	NA	NA	NA	NA	5.00E-04	5.00E-04	5.00E-04
Arsenic	mg/L	5.10E-03	1.50E-03	4.40E-03	2.60E-03	3.30E-03	2.00E-03	1.60E-03	2.20E-03	4.90E-03	1.50E-03	1.60E-03	5.60E-03	5.60E-03	7.70E-03	1.50E-03	1.50E-03	7.70E-03	3.29E-03	3.29E-03
Barium	mg/L	3.06E-02	5.61E-02	1.31E-02	2.83E-02	5.57E-02	3.63E-02	3.28E-02	6.92E-02	5.67E-02	2.56E-02	3.44E-02	6.75E-02	6.75E-02	1.74E-01	3.78E-02	5.63E-02	1.74E-01	5.26E-02	5.26E-02
Beryllium	mg/L	1.00E-04	1.00E-04	1.00E-04	1.00E-04	1.00E-04	1.00E-04	1.00E-04	1.20E-04	1.00E-04	1.00E-04	1.00E-04	1.00E-04	1.00E-04	1.00E-03	1.00E-04	1.00E-04	1.00E-03	1.58E-04	1.58E-04
Boron	mg/L	1.50E-01	6.74E-02	1.50E-01	1.48E-01	2.31E-01	9.86E-02	2.78E-01	8.80E-02	1.22E-01	2.29E-02	2.70E-02	1.92E-01	1.92E-01	8.71E-02	3.58E-02	7.52E-02	2.78E-01	1.23E-01	NA
Cadmium	mg/L	1.00E-04	1.00E-04	1.00E-04	1.00E-04	NA	NA	NA	NA	NA	1.00E-04	1.00E-04	NA	NA	NA	NA	NA	1.00E-04	1.00E-04	1.00E-04
Chromium (VI)	mg/L	1.00E-03	1.80E-03	1.00E-03	1.00E-03	1.40E-03	1.30E-03	1.40E-03	2.60E-03	1.50E-03	3.80E-03	3.70E-03	2.90E-03	2.90E-03	2.37E-02	1.00E-03	2.30E-03	2.37E-02	3.33E-03	3.33E-03
Cobalt	mg/L	8.00E-04	1.50E-03	7.20E-04	5.30E-04	8.80E-04	5.10E-04	1.30E-03	1.10E-03	8.70E-04	3.60E-04	5.50E-04	1.90E-03	1.90E-03	9.90E-03	2.90E-04	1.20E-03	9.90E-03	1.52E-03	NA
Copper	mg/L	1.70E-03	7.90E-03	2.20E-03	1.50E-03	3.10E-03	2.20E-03	5.20E-03	5.00E-03	3.10E-03	2.50E-03	3.20E-03	5.00E-03	5.00E-03	2.00E-02	1.50E-03	3.90E-03	2.00E-02	4.56E-03	NA
Fluoride	mg/L	4.25E-01	4.24E-01	4.17E-01	3.72E-01	3.02E-01	3.91E-01	2.54E-01	5.00E-01	4.96E-01	7.38E-01	5.07E-01	3.69E-01	3.69E-01	4.81E-01	2.65E-01	2.26E-01	7.38E-01	4.09E-01	4.09E-01
Lead	mg/L	5.00E-04	1.20E-03	5.00E-04	5.00E-04	5.00E-04	5.00E-04	1.10E-03	1.20E-03	1.60E-03	5.00E-04	5.00E-04	1.60E-03	1.60E-03	1.37E-02	5.00E-04	8.80E-04	1.37E-02	1.68E-03	1.68E-03
Manganese	mg/L	1.28E-01	2.77E-02	5.87E-02	4.32E-02	6.04E-02	2.65E-02	1.77E-01	3.03E-02	8.95E-02	6.50E-03	7.40E-03	1.36E-01	1.36E-01	6.54E-01	2.55E-02	1.51E-01	6.54E-01	1.10E-01	NA
Mercury	mg/L	6.00E-05	6.00E-05	6.00E-05	6.00E-05	NA	NA	NA	NA	NA	6.00E-05	6.00E-05	NA	NA	NA	NA	NA	6.00E-05	6.00E-05	6.00E-05
Molybdenum	mg/L	8.10E-03	1.17E-02	8.80E-03	6.10E-03	6.10E-03	7.30E-03	3.80E-03	7.20E-03	5.90E-03	5.30E-03	1.02E-02	1.59E-02	1.59E-02	1.21E-02	2.70E-03	1.30E-03	1.59E-02	8.03E-03	8.03E-03
Nickel	mg/L	4.50E-03	6.10E-03	5.10E-03	2.60E-03	7.10E-03	3.50E-03	6.20E-03	7.20E-03	5.50E-03	1.70E-03	1.90E-03	9.90E-03	9.90E-03	2.45E-02	2.10E-03	5.20E-03	2.45E-02	6.44E-03	NA
Selenium	mg/L	2.50E-03	2.50E-03	2.50E-03	2.50E-03	NA	NA	NA	NA	NA	2.50E-03	2.50E-03	NA	NA	NA	NA	NA	2.50E-03	2.50E-03	2.50E-03
Silver	mg/L	2.00E-04	2.00E-04	2.00E-04	2.00E-04	NA	NA	NA	NA	NA	2.00E-04	2.00E-04	NA	NA	NA	NA	NA	2.00E-04	2.00E-04	2.00E-04
Thallium	mg/L	4.00E-04	4.00E-04	4.00E-04	8.80E-04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	8.80E-04	5.20E-04	NA
Uranium	mg/L	3.08E-02	2.05E-02	1.26E-02	1.18E-02	1.61E-02	8.72E-03	2.57E-02	3.88E-02	3.04E-02	3.93E-02	1.17E-02	1.33E-02	1.10E-02	4.46E-02	8.53E-03	1.80E-02	4.46E-02	2.14E-02	2.14E-02
Vanadium	mg/L	2.00E-03	3.20E-03	2.00E-03	2.00E-03	2.00E-03	2.40E-03	2.00E-03	3.80E-03	2.00E-03	2.00E-03	2.00E-03	4.20E-03	4.20E-03	3.63E-02	2.00E-03	2.00E-03	3.63E-02	4.63E-03	NA
Zinc	mg/L	8.40E-03	1.58E-02	4.80E-03	7.20E-03	6.90E-03	5.10E-03	1.02E-02	9.90E-03	7.50E-03	3.70E-03	3.70E-03	1.13E-02	1.13E-02	7.45E-02	4.10E-03	4.10E-03	7.45E-02	1.18E-02	NA
Acetone	mg/L	5.00E-03	5.00E-03	5.00E-03	5.00E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.00E-03	5.00E-03	2.50E-03
Aroclor-1254	mg/L	1.00E-04	1.00E-04	1.00E-04	1.00E-04	NA	NA	NA	NA	NA	1.00E-04	1.00E-04	NA	NA	NA	NA	NA	1.00E-04	1.00E-04	5.00E-05
Aroclor-1260	mg/L	1.00E-04	1.00E-04	1.00E-04	1.00E-04	NA	NA	NA	NA	NA	1.00E-04	1.00E-04	NA	NA	NA	NA	NA	1.00E-04	1.00E-04	5.00E-05
Benzene	mg/L	1.00E-03	1.00E-03	1.00E-03	1.00E-03	NA	NA	NA	NA	NA	1.00E-03	1.00E-03	NA	NA	NA	NA	NA	1.00E-03	1.00E-03	5.00E-04
Benzo(a)anthracene	mg/L	1.00E-03	1.00E-03	1.00E-03	1.00E-03	NA	NA	NA	NA	NA	1.00E-03	1.00E-03	NA	NA	NA	NA	NA	1.00E-03	1.00E-03	5.00E-04
Benzo(a)pyrene	mg/L	1.00E-03	1.00E-03	1.00E-03	1.00E-03	NA	NA	NA	NA	NA	1.00E-03	1.00E-03	NA	NA	NA	NA	NA	1.00E-03	1.00E-03	5.00E-04
Benzo(b)fluoranthene	mg/L	1.00E-03	1.00E-03	1.00E-03	1.00E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.00E-03	1.00E-03	5.00E-04
Benzo(k)fluoranthene	mg/L	1.00E-03	1.00E-03	1.00E-03	1.00E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.00E-03	1.00E-03	5.00E-04
Bis(2-chloroisopropyl)ether	mg/L	1.00E-02	1.00E-02	1.00E-02	1.00E-02	NA	NA	NA	NA	NA	1.00E-02	1.00E-02	NA	NA	NA	NA	NA	1.00E-02	1.00E-02	NA
Bis(2-ethylhexyl)phthalate	mg/L	1.00E-02	1.00E-02	1.00E-02	1.00E-02	NA	NA	NA	NA	NA	1.00E-02	1.00E-02	NA	NA	NA	NA	NA	1.00E-02	1.00E-02	NA
Bromodichloromethane	mg/L	1.00E-03	1.00E-03	1.00E-03	1.00E-03	NA	NA	NA	NA	NA	1.00E-03	1.00E-03	NA	NA	NA	NA	NA	1.00E-03	1.00E-03	5.00E-04
Bromoform	mg/L	1.00E-03	1.00E-03	1.00E-03	1.00E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.00E-03	1.00E-03	NA
Bromomethane	mg/L	1.00E-03	1.00E-03	1.00E-03	1.00E-03	NA	NA	NA	NA	NA	1.00E-03	1.00E-03	NA	NA	NA	NA	NA	1.00E-03	1.00E-03	NA
2-Butanone	mg/L	5.00E-03	5.00E-03	5.00E-03	5.00E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.00E-03	5.00E-03	NA
Carbazole	mg/L	1.00E-02	1.00E-02	1.00E-02	1.00E-02	NA	NA	NA	NA	NA	1.00E-02	1.00E-02	NA	NA	NA	NA	NA	1.00E-02	1.00E-02	NA
Carbon disulfide	mg/L	5.00E-03	5.00E-03	5.00E-03	5.00E-03	NA	NA	NA	NA	NA	5.00E-03	5.00E-03	NA	NA	NA	NA	NA	5.00E-03	5.00E-03	NA
Carbon tetrachloride	mg/L	1.00E-03	1.00E-03	1.00E-03	1.00E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.00E-03	1.00E-03	5.00E-04
Chlordane	mg/L	2.00E-05	2.00E-05	2.00E-05	2.00E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.00E-05	2.00E-05	NA
Chlorobenzene	mg/L	1.00E-03	1.00E-03	1.00E-03	1.00E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.00E-03	1.00E-03	NA
Chloroform	mg/L	1.00E-03	1.00E-03	1.00E-03	1.00E-03	NA	NA	NA	NA	NA	1.00E-03	1.00E-03	NA	NA	NA	NA	NA	1.00E-03	1.00E-03	NA
Chrysene	mg/L	1.00E-03	1.00E-03	1.00E-03	1.00E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.00E-03	1.00E-03	5.00E-04
Cyanide	mg/L	1.50E-03	1.50E-03	1.50E-03	1.50E-03	NA	NA	NA	NA	NA	1.50E-03	1.50E-03	NA	NA	NA	NA	NA	1.50E-03	1.50E-03	NA
Cyclohexanone	mg/L	5.00E-02	5.00E-02	5.00E-02	5.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.00E-02	5.00E-02	NA
Dibenzo(a,h)anthracene	mg/L	1.00E-03	1.00E-03	1.00E-03	1.00E-03	NA	NA	NA	NA	NA	1.00E-03	1.00E-03	NA	NA	NA	NA	NA	1.00E-03	1.00E-03	5.00E-04
3,3-Dichlorobenzidine	mg/L	1.00E-02	1.00E-02	1.00E-02	1.00E-02	NA	NA	NA	NA	NA	1.00E-02	1.00E-02	NA	NA	NA	NA	NA	1.00E-02	1.00E-02	NA
1,2-dichloroethane	mg/L	1.00E-03	1.00E-03	1.00E-03	1.00E-03	NA	NA	NA	NA	NA	1.00E-03	1.00E-03	NA	NA	NA	NA	NA	1.00E-03	1.00E-03	5.00E-04
1,1-Dichloroethylene	mg/L	1.00E-03	1.00E-03	1.00E-03	1.00E-03	NA	NA	NA	NA	NA	1.00E-03	1.00E-03	NA	NA	NA	NA	NA	1.00E-03	1.00E-03	5.00E-04
Dieldrin	mg/L	4.00E-05	4.00E-05	4.00E-05	4.00E-05	NA	NA	NA	NA	NA	4.00E-05	4.00E-05	NA	NA	NA	NA	NA	4.00E-05	4.00E-05	2.00E-05
Di-n-octylphthalate	mg/L	1.00E-02	1.00E-02	1.00E-02	1.00E-02	NA	NA	NA	NA	NA	1.00E-02	1.00E-02	NA	NA	NA	NA	NA	1.00E-02	1.00E-02	NA
Ethylbenzene	mg/L	1.00E-03	1.00E-03	1.00E-03	1.00E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.00E-03	1.00E-03	5.00E-04
Ethyl ether	mg/L	1.00E-03	1.00E-03	1.00E-03	1.00E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.00E-03	1.00E-03	NA

TABLE C-2 - SURFACE WATER - Zone 5

Constituent	unit	Polygon																max value	avg value	risk value
		1	2	3	4	5	6	7	8	10	11	12	13	25	26	D	J			
Heptachlorodibenzofuran	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlorodibenzo-p-dioxin	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorodibenzofuran	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorodibenzo-p-dioxin	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	mg/L	**1.00E-03**	**1.00E-03**	**1.00E-03**	**1.00E-03**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**1.00E-03**	**1.00E-03**	5.00E-04
Methanol	mg/L	**1.00E+00**	**1.00E+00**	**1.00E+00**	**1.00E+00**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**1.00E+00**	**1.00E+00**	NA
Methyl-2-pentanone	mg/L	**5.00E-03**	**5.00E-03**	**5.00E-03**	**5.00E-03**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**5.00E-03**	**5.00E-03**	2.50E-03
Methylene chloride	mg/L	**5.00E-03**	**5.00E-03**	**5.00E-03**	**5.00E-03**	NA	NA	NA	NA	NA	**5.00E-03**	**5.00E-03**	NA	NA	NA	NA	NA	**5.00E-03**	**5.00E-03**	2.50E-03
4-Methylphenol	mg/L	**1.00E-02**	**1.00E-02**	**1.00E-02**	**1.00E-02**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**1.00E-02**	**1.00E-02**	NA
4-Nitroanaline	mg/L	**1.00E-02**	**1.00E-02**	**1.00E-02**	**1.00E-02**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**1.00E-02**	**1.00E-02**	NA
N-nitrosodiphenylamine	mg/L	**1.00E-02**	**1.00E-02**	**1.00E-02**	**1.00E-02**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**1.00E-02**	**1.00E-02**	NA
N-nitrosodipropylamine	mg/L	**1.00E-02**	**1.00E-02**	**1.00E-02**	**1.00E-02**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**1.00E-02**	**1.00E-02**	NA
Octachlorodibenzofuran	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Octochlorodibenzo-p-dioxin	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorodibenzofuran	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorodibenzo-p-dioxin	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	mg/L	**1.00E-02**	**1.00E-02**	**1.00E-02**	**1.00E-02**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**1.00E-02**	**1.00E-02**	NA
Phenanthrene	mg/L	**1.00E-03**	**1.00E-03**	**1.00E-03**	**1.00E-03**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**1.00E-03**	**1.00E-03**	5.00E-04
Tetrachlorodibenzofuran	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachlorodibenzo-p-dioxin	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethylene	mg/L	**1.00E-03**	**1.00E-03**	**1.00E-03**	**1.00E-03**	NA	NA	NA	NA	NA	**1.00E-03**	**1.00E-03**	NA	NA	NA	NA	NA	**1.00E-03**	**1.00E-03**	5.00E-04
Toluene	mg/L	**1.00E-03**	**1.00E-03**	**1.00E-03**	**1.00E-03**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**1.00E-03**	**1.00E-03**	5.00E-04
Tributyl phosphate	mg/L	**1.00E-02**	**1.00E-02**	**1.00E-02**	**1.00E-02**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**1.00E-02**	**1.00E-02**	NA
1,1,2-Trichloroethane	mg/L	**1.00E-03**	**1.00E-03**	**1.00E-03**	**1.00E-03**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**1.00E-03**	**1.00E-03**	5.00E-04
Trichloroethylene	mg/L	**1.00E-03**	**1.00E-03**	**1.00E-03**	**1.00E-03**	NA	NA	NA	NA	NA	**1.00E-03**	**1.00E-03**	NA	NA	NA	NA	NA	**1.00E-03**	**1.00E-03**	5.00E-04
Trifluorochloromethane	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	mg/L	**1.00E-03**	**1.00E-03**	**1.00E-03**	**1.00E-03**	NA	NA	NA	NA	NA	**1.00E-03**	**1.00E-03**	NA	NA	NA	NA	NA	**1.00E-03**	**1.00E-03**	NA
Xylenes	mg/L	**1.00E-03**	**1.00E-03**	**1.00E-03**	**1.00E-03**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**1.00E-03**	**1.00E-03**	5.00E-04

Bold values are reported detection limits

Risk values are average values modified as noted below:

Detection limit values are used in the risk calculations for rad and inorganic COCs. If an organic COC value is a detection limit, one-half of the detection limit is used in the risk calculations, due to sensititivy of dermal exposure to organic COCs.

If COC is not evaluated for the soil pathway, it is also eliminated for the surface-water pathway

If COC is evaluated for the soil pathway and a result for this COC is not available (NA) for surface water, the background surface-water value is used in risk calculations.

TABLE C-2 - SURFACE WATER - Zone 6

Constituent	unit	Polygon								max value	avg value	risk value
		14	15	16	17	18	19	20	21			
Cesium-137	pCi/L	**2.16E+00**	**2.06E+00**	NA	**2.07E+00**	NA	NA	**1.70E+00**	NA	**2.16E+00**	**2.00E+00**	2.00E+00
Lead-210	pCi/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.99E-01
Neptunium-237	pCi/L	**1.50E-01**	**1.72E-01**	NA	**2.42E-01**	NA	NA	**1.19E-01**	NA	**2.42E-01**	**1.71E-01**	NA
Plutonium-238	pCi/L	**4.39E-02**	**2.13E-02**	**3.10E-02**	**2.97E-02**	**1.07E-01**	**5.70E-02**	**3.27E-02**	1.62E-02	**1.07E-01**	4.24E-02	NA
Plutonium-239/240	pCi/L	**3.27E-02**	**3.48E-02**	NA	**4.34E-02**	NA	NA	**3.60E-02**	NA	**4.34E-02**	**3.67E-02**	NA
Radium-226	pCi/L	4.36E-01	2.19E-01	1.96E-01	2.67E-01	4.23E-01	4.34E-01	7.68E-01	5.19E-01	7.68E-01	4.08E-01	4.08E-01
Radium-228	pCi/L	**2.93E+00**	**3.42E+00**	**3.65E+00**	**3.29E+00**	**3.20E+00**	**3.16E+00**	**3.08E+00**	**3.28E+00**	**3.65E+00**	**3.25E+00**	3.25E+00
Strontium-90	pCi/L	**8.89E-01**	**6.05E-01**	NA	1.10E+00	NA	NA	**8.47E-01**	NA	1.10E+00	8.60E-01	NA
Technetium-99	pCi/L	2.30E+01	1.01E+01	**6.20E+00**	9.73E+00	2.17E+01	1.17E+01	**6.82E+00**	1.06E+01	2.30E+01	1.25E+01	1.25E+01
Thorium-228	pCi/L	**2.93E+00**	**3.42E+00**	**3.65E+00**	**3.29E+00**	**2.65E+00**	**3.16E+00**	**3.08E+00**	**3.28E+00**	**3.65E+00**	**3.18E+00**	3.18E+00
Thorium-230	pCi/L	**9.98E-02**	**1.45E-01**	**6.30E-02**	**1.17E-01**	**7.80E-02**	2.62E-01	1.56E-01	1.41E-01	2.62E-01	1.33E-01	1.33E-01
Thorium-232	pCi/L	**2.93E+00**	**3.42E+00**	**3.65E+00**	**3.29E+00**	**3.20E+00**	**3.16E+00**	**3.08E+00**	**3.28E+00**	**3.65E+00**	**3.25E+00**	3.25E+00
Uranium-234	pCi/L	7.92E+00	1.32E+01	2.75E+00	1.23E+01	7.27E+00	7.27E+00	3.96E+00	1.13E+01	1.32E+01	8.25E+00	8.25E+00
Uranium-235	pCi/L	3.61E-01	6.00E-01	1.25E-01	5.62E-01	3.31E-01	3.31E-01	1.80E-01	5.16E-01	6.00E-01	3.76E-01	3.76E-01
Uranium-238	pCi/L	7.74E+00	1.29E+01	2.68E+00	1.20E+01	7.10E+00	7.10E+00	3.87E+00	1.11E+01	1.29E+01	8.06E+00	8.06E+00
Antimony	mg/L	**5.00E-04**	**5.00E-04**	NA	**5.00E-04**	NA	NA	**5.00E-04**	NA	**5.00E-04**	**5.00E-04**	5.00E-04
Arsenic	mg/L	**1.50E-03**	**2.40E-03**	**1.50E-03**	**5.60E-03**	1.17E-02	1.27E-02	**6.70E-03**	4.00E-03	1.27E-02	5.76E-03	5.76E-03
Barium	mg/L	2.77E-02	3.64E-02	3.62E-02	1.10E-01	4.84E-02	1.31E-01	1.11E-01	5.09E-02	1.31E-01	6.90E-02	6.90E-02
Beryllium	mg/L	**1.00E-04**	**1.00E-04**	**1.00E-04**	**1.00E-04**	**1.00E-04**	7.30E-04	1.90E-04	1.30E-04	7.30E-04	1.94E-04	1.94E-04
Boron	mg/L	3.72E-02	2.75E-02	2.65E-02	1.99E-01	2.45E-01	2.37E-01	1.89E-01	8.15E-02	2.45E-01	1.30E-01	NA
Cadmium	mg/L	**1.00E-04**	**1.00E-04**	NA	**1.00E-04**	NA	NA	1.30E-04	NA	1.30E-04	1.08E-04	1.08E-04
Chromium (VI)	mg/L	**3.70E-03**	**4.40E-03**	3.00E-03	**4.00E-03**	1.60E-03	1.99E-02	**5.70E-03**	3.40E-03	1.99E-02	5.71E-03	NA
Cobalt	mg/L	4.20E-04	6.60E-04	9.90E-04	1.50E-03	1.80E-03	8.00E-03	3.30E-03	1.40E-03	8.00E-03	2.26E-03	NA
Copper	mg/L	3.10E-03	4.50E-03	3.00E-03	3.30E-03	4.30E-03	2.55E-02	5.00E-03	4.40E-03	2.55E-02	6.64E-03	NA
Fluoride	mg/L	4.96E-01	5.52E-01	5.65E-01	4.36E-01	4.49E-01	3.86E-01	3.61E-01	5.35E-01	5.65E-01	4.73E-01	4.73E-01
Lead	mg/L	**5.00E-04**	1.30E-03	8.60E-04	1.20E-03	1.30E-03	4.43E-02	6.60E-03	1.90E-03	4.43E-02	7.25E-03	NA
Manganese	mg/L	9.30E-03	2.81E-02	2.52E-02	9.88E-01	2.16E-01	7.52E-01	8.41E-01	9.10E-02	9.88E-01	3.69E-01	NA
Mercury	mg/L	**6.00E-05**	**6.00E-05**	NA	**6.00E-05**	NA	NA	**6.00E-05**	NA	**6.00E-05**	**6.00E-05**	NA
Molybdenum	mg/L	6.00E-03	6.20E-03	8.20E-03	2.40E-03	1.45E-02	9.90E-03	**1.60E-03**	7.10E-03	1.45E-02	6.99E-03	6.99E-03
Nickel	mg/L	2.10E-03	2.40E-03	2.70E-03	1.14E-02	1.12E-02	2.40E-02	9.70E-03	6.00E-03	2.40E-02	8.69E-03	NA
Selenium	mg/L	**2.50E-03**	**2.50E-03**	NA	**2.50E-03**	NA	NA	2.50E-03	NA	**2.50E-03**	**2.50E-03**	NA
Silver	mg/L	**2.00E-04**	**2.00E-04**	NA	**2.00E-04**	NA	NA	**2.00E-04**	NA	**2.00E-04**	**2.00E-04**	2.00E-04
Thallium	mg/L	**4.00E-04**	**4.00E-04**	**4.00E-04**	**4.00E-04**	**4.00E-04**	**4.00E-04**	**4.00E-04**	**4.00E-04**	**4.00E-04**	**4.00E-04**	NA
Uranium	mg/L	2.32E-02	3.86E-02	8.05E-03	3.61E-02	2.13E-02	2.13E-02	1.16E-02	3.32E-02	3.86E-02	2.42E-02	2.42E-02
Vanadium	mg/L	**2.00E-03**	2.60E-03	3.60E-03	2.60E-03	**2.00E-03**	2.39E-02	7.00E-03	5.80E-03	2.39E-02	6.19E-03	NA
Zinc	mg/L	4.50E-03	1.04E-02	7.10E-03	6.50E-03	9.30E-03	1.25E-01	2.08E-02	1.28E-02	1.25E-01	2.46E-02	NA
Acetone	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	mg/L	**1.00E-04**	**1.00E-04**	NA	**1.00E-04**	NA	NA	**1.00E-04**	NA	**1.00E-04**	**1.00E-04**	5.00E-05
Aroclor-1260	mg/L	**1.00E-04**	**1.00E-04**	NA	**1.00E-04**	NA	NA	**1.00E-04**	NA	**1.00E-04**	**1.00E-04**	5.00E-05
Benzene	mg/L	**1.00E-03**	**1.00E-03**	NA	**1.00E-03**	NA	NA	**1.00E-03**	NA	**1.00E-03**	**1.00E-03**	NA
Benzo(a)anthracene	mg/L	**1.00E-03**	**1.00E-03**	NA	**1.00E-03**	NA	NA	**1.00E-03**	NA	**1.00E-03**	**1.00E-03**	5.00E-04
Benzo(a)pyrene	mg/L	**1.00E-03**	**1.00E-03**	NA	**1.00E-03**	NA	NA	**1.00E-03**	NA	**1.00E-03**	**1.00E-03**	5.00E-04

TABLE C-2 - SURFACE WATER - Zone 6

Constituent	unit	Polygon								max value	avg value	risk value
		14	15	16	17	18	19	20	21			
Benzo(b)fluoranthene	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.00E+0
Benzo(k)fluoranthene	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.00E+0
Bis(2-chloroisopropyl)ether	mg/L	1.00E-02	1.00E-02	NA	1.00E-02	NA	NA	1.00E-02	NA	1.00E-02	1.00E-02	NA
Bis(2-ethylhexyl)phthalate	mg/L	1.00E-02	1.00E-02	NA	1.00E-02	NA	NA	1.00E-02	NA	1.00E-02	1.00E-02	NA
Bromodichloromethane	mg/L	1.00E-03	1.00E-03	NA	1.00E-03	NA	NA	1.00E-03	NA	1.00E-03	1.00E-03	5.00E-0
Bromoform	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	mg/L	1.00E-03	1.00E-03	NA	1.00E-03	NA	NA	1.00E-03	NA	1.00E-03	1.00E-03	NA
2-Butanone	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	mg/L	1.00E-02	1.00E-02	NA	1.00E-02	NA	NA	1.00E-02	NA	1.00E-02	1.00E-02	NA
Carbon disulfide	mg/L	5.00E-03	5.00E-03	NA	5.00E-03	NA	NA	5.00E-03	NA	5.00E-03	5.00E-03	NA
Carbon tetrachloride	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlordane	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	mg/L	1.00E-03	1.00E-03	NA	1.00E-03	NA	NA	1.00E-03	NA	1.00E-03	1.00E-03	NA
Chrysene	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.00E+0
Cyanide	mg/L	1.50E-03	1.50E-03	NA	1.50E-03	NA	NA	1.50E-03	NA	1.50E-03	1.50E-03	NA
Cyclohexanone	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	mg/L	1.00E-03	1.00E-03	NA	1.00E-03	NA	NA	1.00E-03	NA	1.00E-03	1.00E-03	5.00E-0
3,3-Dichlorobenzidine	mg/L	1.00E-02	1.00E-02	NA	1.00E-02	NA	NA	1.00E-02	NA	1.00E-02	1.00E-02	NA
1,2-dichloroethane	mg/L	1.00E-03	1.00E-03	NA	1.00E-03	NA	NA	1.00E-03	NA	1.00E-03	1.00E-03	5.00E-0
1,1-Dichloroethylene	mg/L	1.00E-03	1.00E-03	NA	1.00E-03	NA	NA	1.00E-03	NA	1.00E-03	1.00E-03	5.00E-0
Dieldrin	mg/L	4.00E-05	4.00E-05	NA	4.00E-05	NA	NA	4.00E-05	NA	4.00E-05	4.00E-05	2.00E-0
Di-n-octylphthalate	mg/L	1.00E-02	1.00E-02	NA	1.00E-02	NA	NA	1.00E-02	NA	1.00E-02	1.00E-02	NA
Ethylbenzene	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethyl ether	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlorodibenzofuran	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlorodibenzo-p-dioxin	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.00E+0
Hexachlorodibenzofuran	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorodibenzo-p-dioxin	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.00E+0
Methanol	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl-2-pentanone	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene chloride	mg/L	5.00E-03	5.00E-03	NA	5.00E-03	NA	NA	5.00E-03	NA	5.00E-03	5.00E-03	NA
4-Methylphenol	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroanaline	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-nitrosodipropylamine	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Octachlorodibenzofuran	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.00E+0
Octochlorodibenzo-p-dioxin	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorodibenzofuran	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorodibenzo-p-dioxin	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE C-2 - SURFACE WATER - Zone 6

Constituent	unit	Polygon								max value	avg value	risk value
		14	15	16	17	18	19	20	21			
Phenanthrene	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.00E+00
Tetrachlorodibenzofuran	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachlorodibenzo-p-dioxin	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethylene	mg/L	**1.00E-03**	**1.00E-03**	NA	**1.00E-03**	NA	NA	**1.00E-03**	NA	**1.00E-03**	**1.00E-03**	5.00E-04
Toluene	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tributyl phosphate	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.00E+00
Trichloroethylene	mg/L	**1.00E-03**	**1.00E-03**	NA	**1.00E-03**	NA	NA	**1.00E-03**	NA	**1.00E-03**	**1.00E-03**	5.00E-04
Trifluorochloromethane	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	mg/L	**1.00E-03**	**1.00E-03**	NA	**1.00E-03**	NA	NA	**1.00E-03**	NA	**1.00E-03**	**1.00E-03**	NA
Xylenes	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Bold values are reported detection limits

Risk values are average values modified as noted below:

Detection limit values are used in the risk calculations for rad and inorganic COCs. If an organic COC value is a detection limit, one-half of the detection limit is used in the risk calculations, due to sensititivy of dermal exposure to organic COCs.

If COC is not evaluated for the soil pathway, it is also eliminated for the surface-water pathway

If COC is evaluated for the soil pathway and a result for this COC is not available (NA) for surface water, the background surface-water value is used in risk calculations.

TABLE C-2 - SURFACE WATER - Zone 7

Constituent	unit	Polygon		max value	avg value	risk value
		22	24			
Cesium-137	pCi/L	NA	NA	NA	NA	1.70E+00
Lead-210	pCi/L	NA	NA	NA	NA	6.99E-01
Neptunium-	pCi/L	NA	NA	NA	NA	NA
Plutonium-238	pCi/L	**6.20E-02**	**1.10E-02**	**6.20E-02**	**3.65E-02**	NA
Plutonium-	pCi/L	NA	NA	NA	NA	NA
Radium-226	pCi/L	4.99E-01	2.69E-01	4.99E-01	3.84E-01	3.84E-01
Radium-228	pCi/L	**2.57E+00**	**3.07E+00**	**3.07E+00**	**2.82E+00**	2.82E+00
Strontium-90	pCi/L	NA	NA	NA	NA	NA
Technetium-99	pCi/L	8.38E+00	**7.54E+00**	8.38E+00	7.96E+00	7.96E+00
Thorium-228	pCi/L	2.77E+00	**3.07E+00**	3.07E+00	2.92E+00	2.92E+00
Thorium-230	pCi/L	**1.15E-01**	2.91E-01	2.91E-01	2.03E-01	2.03E-01
Thorium-232	pCi/L	**2.57E+00**	**3.07E+00**	**3.07E+00**	**2.82E+00**	2.82E+00
Uranium-234	pCi/L	3.04E+00	1.02E+01	1.02E+01	6.62E+00	6.62E+00
Uranium-235	pCi/L	1.38E-01	4.65E-01	4.65E-01	3.02E-01	3.02E-01
Uranium-238	pCi/L	2.97E+00	9.97E+00	9.97E+00	6.47E+00	6.47E+00
Antimony	mg/L	NA	NA	NA	NA	5.00E-04
Arsenic	mg/L	4.50E-03	**1.50E-03**	4.50E-03	3.00E-03	3.00E-03
Barium	mg/L	5.28E-02	4.68E-02	5.28E-02	4.98E-02	NA
Beryllium	mg/L	1.10E-04	2.10E-04	2.10E-04	1.60E-04	1.60E-04
Boron	mg/L	8.65E-02	3.07E-02	8.65E-02	5.86E-02	NA
Cadmium	mg/L	NA	NA	NA	NA	1.00E-04
Chromium (VI)	mg/L	3.60E-03	4.90E-03	4.90E-03	4.25E-03	NA
Cobalt	mg/L	1.70E-03	1.90E-03	1.90E-03	1.80E-03	NA
Copper	mg/L	6.00E-03	5.20E-03	6.00E-03	5.60E-03	NA
Fluoride	mg/L	3.82E-01	4.65E-01	4.65E-01	4.24E-01	NA
Lead	mg/L	1.70E-03	2.00E-03	2.00E-03	1.85E-03	NA
Manganese	mg/L	6.83E-02	9.13E-02	9.13E-02	7.98E-02	NA
Mercury	mg/L	NA	NA	NA	NA	NA
Molybdenum	mg/L	1.06E-02	4.70E-03	1.06E-02	7.65E-03	7.65E-03
Nickel	mg/L	7.60E-03	6.10E-03	7.60E-03	6.85E-03	NA
Selenium	mg/L	NA	NA	NA	NA	NA
Silver	mg/L	NA	NA	NA	NA	2.00E-04
Thallium	mg/L	**4.00E-04**	**4.00E-04**	**4.00E-04**	**4.00E-04**	NA
Uranium	mg/L	8.90E-03	2.99E-02	2.99E-02	1.94E-02	1.94E-02
Vanadium	mg/L	5.30E-03	7.60E-03	7.60E-03	6.45E-03	NA
Zinc	mg/L	1.24E-02	1.41E-02	1.41E-02	1.33E-02	NA
Acetone	mg/L	NA	NA	NA	NA	NA
Aroclor-1254	mg/L	NA	NA	NA	NA	0.00E+00
Aroclor-1260	mg/L	NA	NA	NA	NA	0.00E+00
Benzene	mg/L	NA	NA	NA	NA	NA
Benzo(a)anthr	mg/L	NA	NA	NA	NA	0.00E+00
Benzo(a)pyren	mg/L	NA	NA	NA	NA	0.00E+00
Benzo(b)fluora	mg/L	NA	NA	NA	NA	0.00E+00
Benzo(k)fluora	mg/L	NA	NA	NA	NA	0.00E+00
Bis(2-	mg/L	NA	NA	NA	NA	NA
Bis(2-	mg/L	NA	NA	NA	NA	NA
Bromodichloro	mg/L	NA	NA	NA	NA	NA
Bromoform	mg/L	NA	NA	NA	NA	NA
Bromomethan	mg/L	NA	NA	NA	NA	NA
2-Butanone	mg/L	NA	NA	NA	NA	NA
Carbazole	mg/L	NA	NA	NA	NA	NA
Carbon	mg/L	NA	NA	NA	NA	NA
Carbon	mg/L	NA	NA	NA	NA	NA
Chlordane	mg/L	NA	NA	NA	NA	NA
Chlorobenzen	mg/L	NA	NA	NA	NA	NA
Chloroform	mg/L	NA	NA	NA	NA	NA
Chrysene	mg/L	NA	NA	NA	NA	0.00E+00

TABLE C-2 - SURFACE WATER - Zone 7

Constituent	unit	Polygon		max value	avg value	risk value
		22	24			
Cyanide	mg/L	NA	NA	NA	NA	NA
Cyclohexanon	mg/L	NA	NA	NA	NA	NA
Dibenzo(a,h)a	mg/L	NA	NA	NA	NA	0.00E+00
3,3-	mg/L	NA	NA	NA	NA	NA
1,2-	mg/L	NA	NA	NA	NA	NA
1,1-	mg/L	NA	NA	NA	NA	NA
Dieldrin	mg/L	NA	NA	NA	NA	NA
Di-n-	mg/L	NA	NA	NA	NA	NA
Ethylbenzene	mg/L	NA	NA	NA	NA	NA
Ethyl ether	mg/L	NA	NA	NA	NA	NA
Heptachlorodi	mg/L	NA	NA	NA	NA	NA
Heptachlorodi	mg/L	NA	NA	NA	NA	NA
Hexachlorodib	mg/L	NA	NA	NA	NA	NA
Hexachlorodib	mg/L	NA	NA	NA	NA	NA
Indeno(1,2,3-	mg/L	NA	NA	NA	NA	0.00E+00
Methanol	mg/L	NA	NA	NA	NA	NA
Methyl-2-	mg/L	NA	NA	NA	NA	NA
Methylene	mg/L	NA	NA	NA	NA	NA
4-	mg/L	NA	NA	NA	NA	NA
4-Nitroanaline	mg/L	NA	NA	NA	NA	NA
N-	mg/L	NA	NA	NA	NA	NA
N-	mg/L	NA	NA	NA	NA	NA
Octachlorodib	mg/L	NA	NA	NA	NA	NA
Octochlorodib	mg/L	NA	NA	NA	NA	NA
Pentachlorodib	mg/L	NA	NA	NA	NA	NA
Pentachlorodib	mg/L	NA	NA	NA	NA	NA
Pentachloroph	mg/L	NA	NA	NA	NA	NA
Phenanthrene	mg/L	NA	NA	NA	NA	0.00E+00
Tetrachlorodib	mg/L	NA	NA	NA	NA	NA
Tetrachlorodib	mg/L	NA	NA	NA	NA	NA
Tetrachloroeth	mg/L	NA	NA	NA	NA	NA
Toluene	mg/L	NA	NA	NA	NA	NA
Tributyl	mg/L	NA	NA	NA	NA	NA
1,1,2-	mg/L	NA	NA	NA	NA	NA
Trichloroethyle	mg/L	NA	NA	NA	NA	NA
Trifluorochloro	mg/L	NA	NA	NA	NA	NA
Vinyl chloride	mg/L	NA	NA	NA	NA	NA
Xylenes	mg/L	NA	NA	NA	NA	NA

Bold values are reported detection limits

Risk values are average values modified as noted below:

Detection limit values are used in the risk calculations for rad and inorganic COCs. If an organic value is a detection limit, one-half of the detection limit is used in the risk calculations, due to sensititivy of dermal exposure to organic COCs.

If COC is not evaluated for the soil pathway, it is also eliminated for the surface-water pathway

If COC is evaluated for the soil pathway and a result for this COC is not available (NA) for surface water, the background surface-water value is used in risk calculations.

TABLE C-2 - SURFACE WATER - Zone 8

Constituent	unit	Polygon 30	risk values
Cesium-137	pCi/L	NA	1.70E+00
Lead-210	pCi/L	NA	6.99E-01
Neptunium-237	pCi/L	NA	NA
Plutonium-238	pCi/L	**3.20E-02**	NA
Plutonium-239/240	pCi/L	NA	NA
Radium-226	pCi/L	2.60E-01	2.60E-01
Radium-228	pCi/L	**3.21E+00**	3.21E+00
Strontium-90	pCi/L	NA	NA
Technetium-99	pCi/L	**8.57E+00**	8.57E+00
Thorium-228	pCi/L	**3.21E+00**	3.21E+00
Thorium-230	pCi/L	**1.08E-01**	1.08E-01
Thorium-232	pCi/L	**3.21E+00**	3.21E+00
Uranium-234	pCi/L	4.03E+00	4.03E+00
Uranium-235	pCi/L	1.84E-01	1.84E-01
Uranium-238	pCi/L	3.94E+00	3.94E+00
Antimony	mg/L	NA	5.00E-04
Arsenic	mg/L	**1.50E-03**	1.50E-03
Barium	mg/L	5.21E-02	5.21E-02
Beryllium	mg/L	1.30E-04	1.30E-04
Boron	mg/L	6.36E-02	NA
Cadmium	mg/L	NA	1.00E-04
Chromium (VI)	mg/L	3.10E-03	3.10E-03
Cobalt	mg/L	1.30E-03	NA
Copper	mg/L	5.90E-03	NA
Fluoride	mg/L	2.53E-01	NA
Lead	mg/L	1.60E-03	1.60E-03
Manganese	mg/L	6.83E-02	6.83E-02
Mercury	mg/L	NA	6.00E-05
Molybdenum	mg/L	**1.50E-03**	1.50E-03
Nickel	mg/L	4.70E-03	NA
Selenium	mg/L	NA	2.50E-03
Silver	mg/L	NA	2.00E-04
Thallium	mg/L	**4.00E-04**	NA
Uranium	mg/L	1.18E-02	1.18E-02
Vanadium	mg/L	3.80E-03	NA
Zinc	mg/L	1.25E-02	NA
Acetone	mg/L	NA	0.00E+00
Aroclor-1254	mg/L	NA	0.00E+00
Aroclor-1260	mg/L	NA	0.00E+00
Benzene	mg/L	NA	0.00E+00
Benzo(a)anthracene	mg/L	NA	NA
Benzo(a)pyrene	mg/L	NA	NA
Benzo(b)fluoranthene	mg/L	NA	NA
Benzo(k)fluoranthene	mg/L	NA	NA
Bis(2-chloroisopropyl)ether	mg/L	NA	NA
Bis(2-ethylhexyl)phthalate	mg/L	NA	NA
Bromodichloromethane	mg/L	NA	0.00E+00

Constituent	unit	Polygon 30	risk values
Bromoform	mg/L	NA	NA
Bromomethane	mg/L	NA	NA
2-Butanone	mg/L	NA	0.00E+00
Carbazole	mg/L	NA	NA
Carbon disulfide	mg/L	NA	NA
Carbon tetrachloride	mg/L	NA	0.00E+00
Chlordane	mg/L	NA	NA
Chlorobenzene	mg/L	NA	NA
Chloroform	mg/L	NA	NA
Chrysene	mg/L	NA	0.00E+00
Cyanide	mg/L	NA	NA
Cyclohexanone	mg/L	NA	NA
Dibenzo(a,h)anthracene	mg/L	NA	0.00E+00
3,3-Dichlorobenzidine	mg/L	NA	NA
1,2-dichloroethane	mg/L	NA	0.00E+00
1,1-Dichloroethylene	mg/L	NA	0.00E+00
Dieldrin	mg/L	NA	0.00E+00
Di-n-octylphthalate	mg/L	NA	NA
Ethylbenzene	mg/L	NA	0.00E+00
Ethyl ether	mg/L	NA	NA
Heptachlorodibenzofuran	mg/L	NA	NA
Heptachlorodibenzo-p-dioxin	mg/L	NA	NA
Hexachlorodibenzofuran	mg/L	NA	NA
Hexachlorodibenzo-p-dioxin	mg/L	NA	NA
Indeno(1,2,3-cd)pyrene	mg/L	NA	0.00E+00
Methanol	mg/L	NA	NA
Methyl-2-pentanone	mg/L	NA	0.00E+00
Methylene chloride	mg/L	NA	0.00E+00
4-Methylphenol	mg/L	NA	NA
4-Nitroanaline	mg/L	NA	NA
N-nitrosodiphenylamine	mg/L	NA	NA
N-nitrosodipropylamine	mg/L	NA	NA
Octachlorodibenzofuran	mg/L	NA	NA
Octochlorodibenzo-p-dioxin	mg/L	NA	NA
Pentachlorodibenzofuran	mg/L	NA	NA
Pentachlorodibenzo-p-dioxin	mg/L	NA	NA
Pentachlorophenol	mg/L	NA	NA
Phenanthrene	mg/L	NA	0.00E+00
Tetrachlorodibenzofuran	mg/L	NA	NA
Tetrachlorodibenzo-p-dioxin	mg/L	NA	NA
Tetrachloroethylene	mg/L	NA	0.00E+00
Toluene	mg/L	NA	0.00E+00
Tributyl phosphate	mg/L	NA	NA
1,1,2-Trichloroethane	mg/L	NA	0.00E+00
Trichloroethylene	mg/L	NA	0.00E+00
Trifluorochloromethane	mg/L	NA	NA
Vinyl chloride	mg/L	NA	NA
Xylenes	mg/L	NA	0.00E+00

Bold values are reported detection limits.

Risk values are Polygon A values modified as noted below:

Detection limit values are used in the risk calculations for rad and inorganic COCs. If an organic COC value is a detection limit, one-half of the detection limit is used in the risk calculations, due to sensititivy of dermal exposure to organic COCs.

If COC is not evaluated for the soil pathway, it is also eliminated for the surface-water pathway

If COC is evaluated for the soil pathway and a result for this COC is not available (NA) for surface water, the background surface-water value is used in risk calculations.

TABLE C-3 SUMMARY OF SURFACE WATER VALUES

Surface Water Background for Paddys Run[1]		
COC	Unit	Value
Cesium-137	pCi/L	3.10E+00
Lead-210	pCi/L	NA
Neptunium-237	pCi/L	NA
Plutonium-238	pCi/L	**4.00E-02**
Plutonium-239/240	pCi/L	9.30E-02
Radium-226	pCi/L	3.50E-01
Radium-228	pCi/L	2.10E+00
Strontium-90	pCi/L	9.60E-01
Technetium-99	pCi/L	**1.46E+01**
Thorium-228	pCi/L	**2.00E-01**
Thorium-230	pCi/L	**4.00E-01**
Thorium-232	pCi/L	**3.00E-01**
Uranium-234	pCi/L	3.76E-01
Uranium-235	pCi/L	1.71E-02
Uranium-238	pCi/L	3.67E-01
Antimony	mg/L	**1.40E-02**
Arsenic	mg/L	**2.00E-03**
Barium	mg/L	5.34E-02
Beryllium	mg/L	**2.00E-03**
Boron	mg/L	NA
Cadmium	mg/L	**5.00E-03**
Chromium (VI)	mg/L	**1.00E-02**
Cobalt	mg/L	**1.00E-02**
Copper	mg/L	**1.00E-02**
Fluoride	mg/L	2.20E-01
Lead	mg/L	**4.00E-03**
Manganese	mg/L	3.50E-02
Mercury	mg/L	**2.00E-04**
Molybdenum	mg/L	**2.00E-02**
Nickel	mg/L	**2.00E-02**
Selenium	mg/L	**2.00E-03**
Silver	mg/L	**1.00E-02**
Thallium	mg/L	**2.00E-03**
Uranium	mg/L	1.10E-03
Vanadium	mg/L	**1.00E-02**
Zinc	mg/L	**5.00E-03**
Acetone	mg/L	NA
Aroclor-1254	mg/L	NA
Aroclor-1260	mg/L	NA
Benzene	mg/L	NA
Benzo(a)anthracene	mg/L	NA
Benzo(a)pyrene	mg/L	NA
Benzo(b)fluoranthene	mg/L	NA
Benzo(k)fluoranthene	mg/L	NA
Bis(2-chloroisopropyl)ether	mg/L	NA
Bis(2-ethylhexyl)phthalate	mg/L	NA
Bromodichloromethane	mg/L	NA
Bromoform	mg/L	NA
Bromomethane	mg/L	NA
2-Butanone	mg/L	NA
Carbazole	mg/L	NA
Carbon disulfide	mg/L	NA
Carbon tetrachloride	mg/L	NA
Chlordane	mg/L	NA

Updated Background Values for Surface Waters[2]		
COC	Unit	Value
Cesium-137	pCi/L	4.74E+00
Lead-210	pCi/L	2.97E+00
Neptunium-237	pCi/L	5.40E-02
Plutonium-238	pCi/L	**8.25E-09**
Plutonium-239/240	pCi/L	9.30E-02
Radium-226	pCi/L	9.50E-01
Radium-228	pCi/L	3.49E+00
Strontium-90	pCi/L	3.34E+00
Technetium-99	pCi/L	4.65E+00
Thorium-228	pCi/L	2.38E-01
Thorium-230	pCi/L	4.83E-01
Thorium-232	pCi/L	1.33E-01
Uranium-234	pCi/L	5.19E-01
Uranium-235	pCi/L	2.36E-02
Uranium-238	pCi/L	5.07E-01
Antimony	mg/L	1.20E-03
Arsenic	mg/L	6.50E-03
Barium	mg/L	5.46E-02
Beryllium	mg/L	3.00E-04
Boron	mg/L	NA
Cadmium	mg/L	8.70E-04
Chromium (VI)	mg/L	7.40E-03
Cobalt	mg/L	NA
Copper	mg/L	8.41E-03
Fluoride	mg/L	2.72E-01
Lead	mg/L	6.23E-03
Manganese	mg/L	1.95E-01
Mercury	mg/L	1.85E-04
Molybdenum	mg/L	3.56E-03
Nickel	mg/L	8.44E-03
Selenium	mg/L	2.60E-03
Silver	mg/L	6.64E-04
Thallium	mg/L	NA
Uranium	mg/L	1.52E-03
Vanadium	mg/L	2.04E-02
Zinc	mg/L	4.47E-02
Acetone	mg/L	NA
Aroclor-1254	mg/L	**1.00E-04**
Aroclor-1260	mg/L	**1.00E-04**
Benzene	mg/L	**1.00E-03**
Benzo(a)anthracene	mg/L	**3.00E-04**
Benzo(a)pyrene	mg/L	**3.00E-04**
Benzo(b)fluoranthene	mg/L	NA
Benzo(k)fluoranthene	mg/L	NA
Bis(2-chloroisopropyl)ether	mg/L	**5.00E-03**
Bis(2-ethylhexyl)phthalate	mg/L	**5.00E-03**
Bromodichloromethane	mg/L	**1.00E-03**
Bromoform	mg/L	NA
Bromomethane	mg/L	**2.00E-03**
2-Butanone	mg/L	NA
Carbazole	mg/L	NA
Carbon disulfide	mg/L	**1.00E-03**
Carbon tetrachloride	mg/L	NA
Chlordane	mg/L	NA

Minimum Values for Ponds Sampled on the Fernald Site		
COC	Unit	Value
Cesium-137	pCi/L	**1.70E+00**
Lead-210	pCi/L	**6.99E-01**
Neptunium-237	pCi/L	**1.19E-01**
Plutonium-238	pCi/L	**1.10E-02**
Plutonium-239/240	pCi/L	**3.17E-02**
Radium-226	pCi/L	1.45E-01
Radium-228	pCi/L	**2.50E+00**
Strontium-90	pCi/L	**4.66E-01**
Technetium-99	pCi/L	**6.20E+00**
Thorium-228	pCi/L	**2.50E+00**
Thorium-230	pCi/L	3.94E-02
Thorium-232	pCi/L	**2.50E+00**
Uranium-234	pCi/L	5.81E-01
Uranium-235	pCi/L	2.64E-02
Uranium-238	pCi/L	5.67E-01
Antimony	mg/L	**5.00E-04**
Arsenic	mg/L	**1.50E-03**
Barium	mg/L	1.31E-02
Beryllium	mg/L	**1.00E-04**
Boron	mg/L	1.58E-02
Cadmium	mg/L	**1.00E-04**
Chromium (VI)	mg/L	**1.00E-03**
Cobalt	mg/L	2.90E-04
Copper	mg/L	1.40E-03
Fluoride	mg/L	1.46E-01
Lead	mg/L	**5.00E-04**
Manganese	mg/L	6.50E-03
Mercury	mg/L	**6.00E-05**
Molybdenum	mg/L	**9.70E-04**
Nickel	mg/L	1.70E-03
Selenium	mg/L	**2.50E-03**
Silver	mg/L	**2.00E-04**
Thallium	mg/L	**4.00E-04**
Uranium	mg/L	1.70E-03
Vanadium	mg/L	**2.00E-03**
Zinc	mg/L	3.70E-03
Acetone	mg/L	**5.00E-03**
Aroclor-1254	mg/L	**1.00E-04**
Aroclor-1260	mg/L	**1.00E-04**
Benzene	mg/L	**1.00E-03**
Benzo(a)anthracene	mg/L	**1.00E-03**
Benzo(a)pyrene	mg/L	**1.00E-03**
Benzo(b)fluoranthene	mg/L	**1.00E-03**
Benzo(k)fluoranthene	mg/L	**1.00E-03**
Bis(2-chloroisopropyl)ether	mg/L	**1.00E-02**
Bis(2-ethylhexyl)phthalate	mg/L	**1.00E-02**
Bromodichloromethane	mg/L	**1.00E-03**
Bromoform	mg/L	**1.00E-03**
Bromomethane	mg/L	**1.00E-03**
2-Butanone	mg/L	**5.00E-03**
Carbazole	mg/L	**1.00E-02**
Carbon disulfide	mg/L	**5.00E-03**
Carbon tetrachloride	mg/L	**1.00E-03**
Chlordane	mg/L	**2.00E-05**

Established Background for Surface Waters on the Fernald Site[2]		
COC	Unit	Value
Cesium-137	pCi/L	1.70E+00
Lead-210	pCi/L	6.99E-01
Neptunium-237	pCi/L	1.19E-01
Plutonium-238	pCi/L	1.10E-02
Plutonium-239/240	pCi/L	3.17E-02
Radium-226	pCi/L	1.45E-01
Radium-228	pCi/L	2.50E+00
Strontium-90	pCi/L	4.66E-01
Technetium-99	pCi/L	6.20E+00
Thorium-228	pCi/L	2.50E+00
Thorium-230	pCi/L	3.94E-02
Thorium-232	pCi/L	2.50E+00
Uranium-234	pCi/L	5.81E-01
Uranium-235	pCi/L	2.64E-02
Uranium-238	pCi/L	5.67E-01
Antimony	mg/L	5.00E-04
Arsenic	mg/L	1.50E-03
Barium	mg/L	1.31E-02
Beryllium	mg/L	1.00E-04
Boron	mg/L	1.58E-02
Cadmium	mg/L	1.00E-04
Chromium (VI)	mg/L	1.00E-03
Cobalt	mg/L	2.90E-04
Copper	mg/L	1.40E-03
Fluoride	mg/L	1.46E-01
Lead	mg/L	5.00E-04
Manganese	mg/L	6.50E-03
Mercury	mg/L	6.00E-05
Molybdenum	mg/L	9.70E-04
Nickel	mg/L	1.70E-03
Selenium	mg/L	2.50E-03
Silver	mg/L	2.00E-04
Thallium	mg/L	4.00E-04
Uranium	mg/L	1.70E-03
Vanadium	mg/L	2.00E-03
Zinc	mg/L	3.70E-03
Acetone	mg/L	0.00E+00
Aroclor-1254	mg/L	0.00E+00
Aroclor-1260	mg/L	0.00E+00
Benzene	mg/L	0.00E+00
Benzo(a)anthracene	mg/L	0.00E+00
Benzo(a)pyrene	mg/L	0.00E+00
Benzo(b)fluoranthene	mg/L	0.00E+00
Benzo(k)fluoranthene	mg/L	0.00E+00
Bis(2-chloroisopropyl)ether	mg/L	0.00E+00
Bis(2-ethylhexyl)phthalate	mg/L	0.00E+00
Bromodichloromethane	mg/L	0.00E+00
Bromoform	mg/L	0.00E+00
Bromomethane	mg/L	0.00E+00
2-Butanone	mg/L	0.00E+00
Carbazole	mg/L	0.00E+00
Carbon disulfide	mg/L	0.00E+00
Carbon tetrachloride	mg/L	0.00E+00
Chlordane	mg/L	0.00E+00

TABLE C-3 SUMMARY OF SURFACE WATER VALUES

Surface Water Background for Paddys Run[1]		
Chlorobenzene	mg/L	NA
Chloroform	mg/L	NA
Chrysene	mg/L	NA
Cyanide	mg/L	NA
Cyclohexanone	mg/L	NA
Dibenzo(a,h)anthracene	mg/L	NA
3,3-Dichlorobenzidine	mg/L	NA
1,2-dichloroethane	mg/L	NA
1,1-Dichloroethylene	mg/L	NA
Dieldrin	mg/L	NA
Di-n-octylphthalate	mg/L	NA
Ethylbenzene	mg/L	NA
Ethyl ether	mg/L	NA
Heptachlorodibenzofuran	mg/L	NA
Heptachlorodibenzo-p-dioxin	mg/L	NA
Hexachlorodibenzofuran	mg/L	NA
Hexachlorodibenzo-p-dioxin	mg/L	NA
Indeno(1,2,3-cd)pyrene	mg/L	NA
Methanol	mg/L	NA
Methyl-2-pentanone	mg/L	NA
Methylene chloride	mg/L	NA
4-Methylphenol	mg/L	NA
4-Nitroanaline	mg/L	NA
N-nitrosodiphenylamine	mg/L	NA
N-nitrosodipropylamine	mg/L	NA
Octachlorodibenzofuran	mg/L	NA
Octochlorodibenzo-p-dioxin	mg/L	NA
Pentachlorodibenzofuran	mg/L	NA
Pentachlorodibenzo-p-dioxin	mg/L	NA
Pentachlorophenol	mg/L	NA
Phenanthrene	mg/L	NA
Tetrachlorodibenzofuran	mg/L	NA
Tetrachlorodibenzo-p-dioxin	mg/L	NA
Tetrachloroethylene	mg/L	NA
Toluene	mg/L	NA
Tributyl phosphate	mg/L	NA
1,1,2-Trichloroethane	mg/L	NA
Trichloroethylene	mg/L	NA
Trifluorochloromethane	mg/L	NA
Vinyl chloride	mg/L	NA
Xylenes	mg/L	NA

Updated Background Values for Surface Waters[2]		
Chlorobenzene	mg/L	NA
Chloroform	mg/L	7.82E-04
Chrysene	mg/L	NA
Cyanide	mg/L	**2.60E-03**
Cyclohexanone	mg/L	NA
Dibenzo(a,h)anthracene	mg/L	**5.00E-04**
3,3-Dichlorobenzidine	mg/L	**5.00E-03**
1,2-dichloroethane	mg/L	**1.00E-03**
1,1-Dichloroethylene	mg/L	**1.00E-03**
Dieldrin	mg/L	**8.00E-06**
Di-n-octylphthalate	mg/L	1.75E-03
Ethylbenzene	mg/L	NA
Ethyl ether	mg/L	NA
Heptachlorodibenzofuran	mg/L	NA
Heptachlorodibenzo-p-dioxin	mg/L	NA
Hexachlorodibenzofuran	mg/L	NA
Hexachlorodibenzo-p-dioxin	mg/L	NA
Indeno(1,2,3-cd)pyrene	mg/L	NA
Methanol	mg/L	NA
Methyl-2-pentanone	mg/L	NA
Methylene chloride	mg/L	1.00E-03
4-Methylphenol	mg/L	NA
4-Nitroanaline	mg/L	NA
N-nitrosodiphenylamine	mg/L	NA
N-nitrosodipropylamine	mg/L	NA
Octachlorodibenzofuran	mg/L	NA
Octochlorodibenzo-p-dioxin	mg/L	NA
Pentachlorodibenzofuran	mg/L	NA
Pentachlorodibenzo-p-dioxin	mg/L	NA
Pentachlorophenol	mg/L	NA
Phenanthrene	mg/L	NA
Tetrachlorodibenzofuran	mg/L	NA
Tetrachlorodibenzo-p-dioxin	mg/L	NA
Tetrachloroethylene	mg/L	3.67E-04
Toluene	mg/L	NA
Tributyl phosphate	mg/L	NA
1,1,2-Trichloroethane	mg/L	**1.00E-03**
Trichloroethylene	mg/L	**1.00E-03**
Trifluorochloromethane	mg/L	NA
Vinyl chloride	mg/L	NA
Xylenes	mg/L	NA

Minimum Values for Ponds Sampled on the Fernald Site		
Chlorobenzene	mg/L	**1.00E-03**
Chloroform	mg/L	**1.00E-03**
Chrysene	mg/L	**1.00E-03**
Cyanide	mg/L	**1.50E-03**
Cyclohexanone	mg/L	**5.00E-02**
Dibenzo(a,h)anthracene	mg/L	**1.00E-03**
3,3-Dichlorobenzidine	mg/L	**1.00E-02**
1,2-dichloroethane	mg/L	**1.00E-03**
1,1-Dichloroethylene	mg/L	**1.00E-03**
Dieldrin	mg/L	**4.00E-05**
Di-n-octylphthalate	mg/L	**1.00E-02**
Ethylbenzene	mg/L	**1.00E-03**
Ethyl ether	mg/L	**1.00E-03**
Heptachlorodibenzofuran	mg/L	NA
Heptachlorodibenzo-p-dioxin	mg/L	NA
Hexachlorodibenzofuran	mg/L	NA
Hexachlorodibenzo-p-dioxin	mg/L	NA
Indeno(1,2,3-cd)pyrene	mg/L	**1.00E-03**
Methanol	mg/L	**1.00E+00**
Methyl-2-pentanone	mg/L	**5.00E-03**
Methylene chloride	mg/L	**5.00E-03**
4-Methylphenol	mg/L	**1.00E-02**
4-Nitroanaline	mg/L	**1.00E-02**
N-nitrosodiphenylamine	mg/L	**1.00E-02**
N-nitrosodipropylamine	mg/L	**1.00E-02**
Octachlorodibenzofuran	mg/L	NA
Octochlorodibenzo-p-dioxin	mg/L	NA
Pentachlorodibenzofuran	mg/L	NA
Pentachlorodibenzo-p-dioxin	mg/L	NA
Pentachlorophenol	mg/L	**1.00E-02**
Phenanthrene	mg/L	**1.00E-03**
Tetrachlorodibenzofuran	mg/L	NA
Tetrachlorodibenzo-p-dioxin	mg/L	NA
Tetrachloroethylene	mg/L	**1.00E-03**
Toluene	mg/L	**1.00E-03**
Tributyl phosphate	mg/L	**1.00E-02**
1,1,2-Trichloroethane	mg/L	**1.00E-03**
Trichloroethylene	mg/L	**1.00E-03**
Trifluorochloromethane	mg/L	NA
Vinyl chloride	mg/L	**1.00E-03**
Xylenes	mg/L	**1.00E-03**

Established Background for Surface Waters on the Fernald Site[2]		
Chlorobenzene	mg/L	0.00E+00
Chloroform	mg/L	0.00E+00
Chrysene	mg/L	0.00E+00
Cyanide	mg/L	0.00E+00
Cyclohexanone	mg/L	0.00E+00
Dibenzo(a,h)anthracene	mg/L	0.00E+00
3,3-Dichlorobenzidine	mg/L	0.00E+00
1,2-dichloroethane	mg/L	0.00E+00
1,1-Dichloroethylene	mg/L	0.00E+00
Dieldrin	mg/L	0.00E+00
Di-n-octylphthalate	mg/L	0.00E+00
Ethylbenzene	mg/L	0.00E+00
Ethyl ether	mg/L	0.00E+00
Heptachlorodibenzofuran	mg/L	NA
Heptachlorodibenzo-p-dioxin	mg/L	NA
Hexachlorodibenzofuran	mg/L	NA
Hexachlorodibenzo-p-dioxin	mg/L	NA
Indeno(1,2,3-cd)pyrene	mg/L	0.00E+00
Methanol	mg/L	0.00E+00
Methyl-2-pentanone	mg/L	0.00E+00
Methylene chloride	mg/L	0.00E+00
4-Methylphenol	mg/L	0.00E+00
4-Nitroanaline	mg/L	0.00E+00
N-nitrosodiphenylamine	mg/L	0.00E+00
N-nitrosodipropylamine	mg/L	0.00E+00
Octachlorodibenzofuran	mg/L	NA
Octochlorodibenzo-p-dioxin	mg/L	NA
Pentachlorodibenzofuran	mg/L	NA
Pentachlorodibenzo-p-dioxin	mg/L	NA
Pentachlorophenol	mg/L	0.00E+00
Phenanthrene	mg/L	0.00E+00
Tetrachlorodibenzofuran	mg/L	NA
Tetrachlorodibenzo-p-dioxin	mg/L	NA
Tetrachloroethylene	mg/L	0.00E+00
Toluene	mg/L	0.00E+00
Tributyl phosphate	mg/L	0.00E+00
1,1,2-Trichloroethane	mg/L	0.00E+00
Trichloroethylene	mg/L	0.00E+00
Trifluorochloromethane	mg/L	NA
Vinyl chloride	mg/L	0.00E+00
Xylenes	mg/L	0.00E+00

1 (based on 95th percentile in Tables 8-2 and 8-5 of the Characterization of Background Water Quality for Streams and Groundwater - or as indicated in notes)

2 (based on 95th percentile in Table 4-2 of IEMP, Rev 4)
- 2a **BOLD** is detection limit value (for updated values, detection limit was taken from database, as it was not reported in IEMP)
- 2b if 95th percentile is detection limit, reported limit is used
- 2c unfiltered results are reported
- 2d Uranium isotope activities calculated from total U value

3 Site background is taken as the minimum for each COC. If minimum is a detection limit value, it is used as background for rad and inorganic. For organic COCs, if the minimum is a detection limit value, zero is used for the background.

APPENDIX D

APPENDIX D

References and Footnotes for Risk Assessment Toxicity Values and Cancer Slope Factors

SUMMARY

This Appendix includes four separate tables. The first table (Table D-1) is a summary of the toxicity values and cancer slope factors with their associated references for the non-radiological parameters as obtained from the Risk Assessment Information System (RAIS). The (RAIS), which is maintained by the Department of Energy Oak Ridge Operations Office, was utilized to obtain the most recent chemical and radionuclide-specific toxicity values needed for the risk assessment calculations. These parameters include the cancer slope factors and reference doses for each exposure pathway (i.e., inhalation, ingestion and external radiation) and absorption factors and permeability factors for the dermal exposure pathway. The toxicity values were extracted from the RAIS database on November 6, 2006.

The RAIS database is a comprehensive source of risk assessment and hazard values that combines toxicity values from the USEPA Integrated Risk Information System (IRIS) database, the USEPA Health Effects Assessment Summary Tables (HEAST, radionuclide table), and the USEPA Provisional Peer Reviewed Toxicity Values (PPRTVs) into a single database. The RAIS toxicity values are reviewed monthly and updated as new values are added to the individual EPA source databases. In the case of multiple values for the same chemical, the RAIS incorporates the toxicity value hierarchy utilized by the USEPA using the following order: IRIS, PPRTV, and other sources such as the HEAST tables, the Agency for Toxic Substances and Disease Registry (ASTDR) Minimal Risk Levels, and the California Environmental Protection Agency toxicity values. To verify the toxicity values taken from the RAIS database, several constituents were queried in the IRIS and HEAST tables to confirm the accuracy of the RAIS values prior to performing the interim risk assessment calculations.

The RAIS database is available at **www.rais.ornl.gov**.

The second table (Table D-2) is a summary of the cancer slope factors with their associated references for the radionuclides as obtained from the EPA's Health Effects Assessment Summary Tables found at http://www.epa.gov/radiation/heast/.

The third table (Table D-3) is a three-part table that presents the non-radiological toxicity values and cancer slope factors used for the CRARE for the exposure routes, the non-radiological toxicity values and cancer slope factors used in this present risk model (only accounting for the parameters in the CRARE), and a comparison table, which contains a ratio of the present values/factors as compared to the values/factors used in the CRARE.

The fourth table (Table D-4) is also a three-part table that presents the same type of information as Table D-2 except the parameters are the radionuclides.

Table D-3 and Table D-4 are being presented to demonstrate that there have been changes to these values/factors over the years some of which are extremely significant. Most notably is the cancer slope factor for radon-222, which has increased by a factor of 24.7 (from 7.30E-13/pci in the CRARE to 1.80E-11/pCi as listed in the present HEAST). Rn-222 is a constituent that contributes to the risk in every zone. The other most notable increase is that of technetium-99, which increased by a factor of 136 (from 6.00E-13/pci in the CRARE to 8.14E-11/pCi as listed in the present HEAST) but technetium-99 is not evaluated as a contaminant of concern in ever exposure zone.

TABLE D-1 Toxicity Values and Cancer Slope Factors with Associated References

Chemical	CAS No.	Absorption Factor Oral	Ref	Oral RfD Chronic mg/kg-day	Ref	Dermal SF mg/kg-day	Ref	Permeability Constant cm/hr	Ref	Inhalation RfD Chronic mg/kg-day	Ref	Oral RfD Chronic mg/kg-day	Ref	Inhalation SF mg/kg-day	Ref	Oral SF mg/kg-day	Ref
Trichloroethane, 1,1,2-	79005	0.01	14 1	3.24E-03	CALC	7.04E-02	CALC	0.00643	6 5	–	–	4.00E-03	IRIS	5.60E-02 u	–	5.70E-02	IRIS
Dichloroethylene, 1,1-	75354	0.01	14 1	5.00E-02	CALC	6.00E-01 w	CALC	0.0159	6 5	5.71E-02	CALC	5.00E-02	IRIS	1.75E-01 u	–	6.00E-01 w	–
Dichloroethane, 1,2-	107062	0.01	14 1	2.00E-02	CALC	9.10E-02	CALC	0.00534	6 5	–	–	2.00E-02	PROV	9.10E-02 u	–	9.10E-02	IRIS
Methyl Ethyl Ketone	78933	0.01	14 1	4.80E-01	CALC	–	–	0.00111	6 5	1.43E+00	CALC	6.00E-01	IRIS	–	–	–	–
Dichlorobenzidine, 3,3'-	91941	0.01	14 1	–	–	9.00E-01	CALC	0.0169	6 5	–	–	–	–	–	–	4.50E-01	IRIS
Cresol, p-	106445	0.01	14 1	3.25E-03	CALC	–	–	0.00995	6 5	–	–	5.00E-03	HEAST	–	–	–	–
Nitroaniline, 4-	100016	0.01	14 1	2.40E-03 ag	CALC	2.63E-02 ag	CALC	0.00266	6 5	1.14E-03 ag	CALC	3.00E-03 ag	PROV	–	–	2.10E-02 ag	PROV
Acetone	67641	0.01	14 1	7.47E-01	CALC	–	–	0.000569	6 5	–	–	9.00E-01	IRIS	–	–	–	–
Antimony (metallic)	7440360	0.001	14 1	8.00E-06	CALC	–	–	0.001	6 6	–	–	4.00E-04	IRIS	–	–	–	–
Aroclor 1254 (exposure to soil or food)	11097691	0.14	14 4	1.80E-05	CALC	2.22E+00 n	CALC	1.29	6 5	–	–	2.00E-05	IRIS	2.00E+00 u	–	2.00E+00 n	–
Aroclor 1254 (exposure to water)	11097691	0.14	14 4	1.80E-05	CALC	4.44E-01 o	CALC	1.29	6 5	–	–	2.00E-05	IRIS	3.50E-01 u	–	4.00E-01 o	–
Aroclor 1260 (exposure to soil or food)	11096825	0.14	14 4	1.80E-05 ak	CALC	2.22E+00 n	CALC	5.48	6 5	–	–	2.00E-05 ak	IRIS	2.00E+00 u	–	2.00E+00 n	–
Aroclor 1260 (exposure to water)	11096825	0.14	14 4	1.80E-05 ak	CALC	4.44E-01 o	CALC	5.48	6 5	–	–	2.00E-05 ak	IRIS	3.50E-01 u	–	4.00E-01 o	–
Arsenic, Inorganic	7440382	0.03	14 4	1.23E-04	CALC	3.66E+00	CALC	0.001	6 6	–	–	3.00E-04	IRIS	1.51E+01 u	–	1.50E+00	IRIS
Barium	7440393	0.001	14 1	1.40E-02	CALC	–	–	0.001	6 6	1.43E-04 c	CALC	2.00E-01	IRIS	–	–	–	–
Benz[a]anthracene	56553	0.13	14 4	–	–	2.35E+00 r	CALC	0.948	6 5	–	–	–	–	3.08E-01 u	–	7.30E-01 r	–
Benzene	71432	0.01	14 1	3.88E-03	CALC	5.67E-02	CALC	0.0207	6 5	8.57E-03	CALC	4.00E-03	IRIS	2.73E-02 u	–	5.50E-02	IRIS
Benzo[a]pyrene	50328	0.13	14 4	–	–	2.35E+01	CALC	1.24	6 5	–	–	–	–	3.08E+00 u	–	7.30E+00	IRIS
Benzo[b]fluoranthene	205992	0.13	14 4	–	–	2.35E+00 r	CALC	0.699	6 5	–	–	–	–	3.08E-01 u	–	7.30E-01 r	–
Benzo[k]fluoranthene	207089	0.13	14 4	–	–	2.35E-01 r	CALC	1.2	6 5	–	–	–	–	3.08E-02 u	–	7.30E-02 r	–
Beryllium and compounds	7440417	0.001	14 1	2.00E-05	CALC	4.30E+02 w	CALC	0.001	6 6	5.71E-06	CALC	2.00E-03	IRIS	8.40E+00 u	–	4.30E+00 w	–
Bis(2-chloroisopropyl)ether	39638329	0.01	14 1	2.00E-02	CALC	–	–	0.0763	6 5	–	–	4.00E-02	IRIS	–	–	–	–
Bis(2-ethylhexyl)phthalate	117817	0.01	14 1	3.80E-03	CALC	7.37E-02	CALC	1.97	6 5	–	–	2.00E-02	IRIS	–	–	1.40E-02	IRIS
Boron And Borates Only	7440428	0.001	14 1	1.80E-01	CALC	–	–	0.001	6 6	5.71E-03	CALC	2.00E-01	IRIS	–	–	–	–
Bromodichloromethane	75274	0.01	14 1	1.96E-02	CALC	6.33E-02	CALC	0.00502	6 5	–	–	2.00E-02	IRIS	–	–	6.20E-02	IRIS
Bromoform	75252	0.01	14 1	1.20E-02	CALC	1.32E-02	CALC	0.00277	6 5	–	–	2.00E-02	IRIS	3.85E-03 u	–	7.90E-03	IRIS
Bromomethane	74839	0.01	14 1	1.12E-03	CALC	–	–	0.00351	6 5	1.43E-03	CALC	1.40E-03	IRIS	–	–	–	–

TABLE D-1 Toxicity Values and Cancer Slope Factors with Associated References

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Cadmium (Diet)	7440439	0.001	14 4	1.00E-05 j	CALC	–	–	0.001	6 6	–	–	1.00E-03 j	IRIS	6.30E+00 u	–	–	–
Cadmium (Water)	7440439	0.001	14 4	5.00E-06 j	CALC	–	–	0.001	6 6	–	–	5.00E-04 j	IRIS	6.30E+00 u	–	–	–
Carbazole	86748	0.01	14 1	–	–	2.86E-02	CALC	0.0797	6 5	–	–	–	–	–	–	2.00E-02	HEAST
Carbon Disulfide	75150	0.25	14 3	6.30E-02	CALC	–	–	0.0156	6 5	2.00E-01	CALC	1.00E-01	IRIS	–	–	–	–
Carbon Tetrachloride	56235	0.01	14 1	4.55E-04	CALC	2.00E-01	CALC	0.0224	6 5	–	–	7.00E-04	IRIS	5.25E-02 u	–	1.30E-01	IRIS
Chlordane	57749	0.04	14 4	2.50E-04	CALC	7.00E-01	CALC	0.157	6 5	2.00E-04	CALC	5.00E-04	IRIS	3.50E-01 u	–	3.50E-01	IRIS
Chlorobenzene	108907	0.01	14 1	6.20E-03	CALC	–	–	0.0407	6 5	1.43E-02	CALC	2.00E-02	IRIS	–	–	–	–
Chloroform	67663	0.01	14 1	2.00E-03	CALC	3.05E-02 w	CALC	0.00892	6 5	–	–	1.00E-02	IRIS	8.05E-02 u	–	6.10E-03 w	–
Chromium VI (particulates)	18540299	0.001	14 1	6.00E-05	CALC	–	–	0.002	6 6	2.86E-05	CALC	3.00E-03	IRIS	4.20E+01 u	–	–	–
Chrysene	218019	0.13	14 4	–	–	2.35E-02 r	CALC	1.03	6 5	–	–	–	–	3.08E-03 u	–	7.30E-03 r	–
Cobalt	7440484	0.001	14 1	1.60E-02	CALC	–	–	0.0004	6 6	5.71E-06	CALC	2.00E-02	PROV	9.80E+00 u	–	–	–
Copper	7440508	0.001	14 1	1.20E-02 f	CALC	–	–	0.001	6 6	–	–	4.00E-02 f	HEAST	–	–	–	–
Cyanide (CN-)	57125	0.01	14 1	3.40E-03	CALC	–	–	0.001	6 6	–	–	2.00E-02	IRIS	–	–	–	–
Cyclohexanone	108941	0.01	14 1	4.00E+00	CALC	–	–	0.0018	6 5	–	–	5.00E+00	IRIS	–	–	–	–
Dibenz[a,h]anthracene	53703	0.13	14 4	–	–	2.35E+01 r	CALC	1.68	6 5	–	–	–	–	3.08E+00 u	–	7.30E+00 r	–
Dieldrin	60571	0.01	14 1	2.50E-05	CALC	3.20E+01	CALC	0.0445	6 5	–	–	5.00E-05	IRIS	1.61E+01 u	–	1.60E+01	IRIS
Ethyl Ether	60297	0.01	14 1	1.60E-01	CALC	–	–	0.00288	6 5	–	–	2.00E-01	IRIS	–	–	–	–
Ethylbenzene	100414	0.01	14 1	9.70E-02 v,w	CALC	–	–	0.0739	6 5	2.86E-01 v,w	CALC	1.00E-01 v,w	IRIS	3.85E-03 u	–	–	–
Fluorine (Soluble Fluoride)	7782414	0.001	14 1	5.82E-02	CALC	–	–	0.001	6 6	–	–	6.00E-02	IRIS	–	–	–	–
HpCDD, 2,3,7,8-	37871004	0.03	14 2	–	–	3.00E+03 r	CALC	3.22	6 5	–	–	–	–	1.16E+03 u	–	1.50E+03 r	–
HpCDF, 2,3,7,8-	38998753	0.01	14 1	–	–	3.00E+03 r	CALC	2.55	6 5	–	–	–	–	1.16E+03 u	–	1.50E+03 r	–
HxCDD, 2,3,7,8-	34465468	0.03	14 2	–	–	3.00E+04 r	CALC	5.29	6 5	–	–	–	–	1.16E+04 u	–	1.50E+04 r	–
HxCDF, 2,3,7,8-	55684941	0.01	14 1	–	–	3.00E+04 r	CALC	2.38	6 5	–	–	–	–	1.16E+04 u	–	1.50E+04 r	–
Indeno[1,2,3-cd]pyrene	193395	0.13	14 4	–	–	2.35E+00 r	CALC	2.23	6 5	–	–	–	–	3.08E-01 u	–	7.30E-01 r	–
Lead And Compounds	7439921	0.001	14 1	–	–	–	–	0.0001	6 6	–	–	–	–	–	–	–	–
Manganese (Diet)	7439965	0.001	14 1	5.60E-03 m	CALC	–	–	0.001	6 6	1.43E-05	CALC	1.40E-01 m	IRIS	–	–	–	–
Manganese (Water)	7439965	0.001	14 1	1.84E-03 m	CALC	–	–	0.001	6 6	1.43E-05	CALC	4.60E-02 m	–	–	–	–	–
Mercury, Inorganic Salts	7439976	0.001	14 1	2.10E-05 s	CALC	–	–	0.001	6 6	–	–	3.00E-04 s	–	–	–	–	–
Methanol	67561	0.01	14 1	4.00E-01	CALC	–	–	0.000345	6 5	–	–	5.00E-01	IRIS	–	–	–	–

TABLE D-1 Toxicity Values and Cancer Slope Factors with Associated References

Chemical	CAS	Absorption Fraction	Ref	Dermal RfD Chronic (mg/kg-day)	Ref	Dermal SF (mg/kg-day)-1	Ref	Permeability Constant (cm/hr)	Ref	Inhalation RfD Chronic (mg/kg-day)	Ref	Oral RfD Chronic (mg/kg-day)	Ref	Inhalation SF (mg/kg-day)-1	Ref	Oral SF (mg/kg-day)-1	Ref
Methyl Isobutyl Ketone	108101	0.01	14 1	6.40E-02	CALC	–	–	0.00397	6 5	8.57E-01	CALC	8.00E-02	HEAST	–	–	–	–
Methylene Chloride	75092	0.01	14 1	5.70E-02	CALC	7.89E-03	CALC	0.00446	6 5	8.57E-01	CALC	6.00E-02	IRIS	1.65E-03 u	–	7.50E-03	IRIS
Molybdenum	7439987	0.001	14 1	1.90E-03	CALC	–	–	0.001	6 6	–	–	5.00E-03	IRIS	–	–	–	–
Nickel Soluble Salts	7440020	0.001	14 1	5.40E-03 t	CALC	–	–	0.0002	6 6	–	–	2.00E-02 t	IRIS	–	–	–	–
Nitroso-di-N-propylamine, N-	621647	0.01	14 1	–	–	2.80E+01	CALC	0.00283	6 5	–	–	–	–	–	–	7.00E+00	IRIS
Nitrosodiphenylamine, N-	86306	0.01	14 1	5.00E-03	CALC	1.96E-02	CALC	0.0196	6 5	–	–	2.00E-02	PROV	–	–	4.90E-03	IRIS
OCDD	3268879	0.03	14 2	–	–	3.00E+02 r	CALC	16.5	6 5	–	–	–	–	1.16E+02 u	–	1.50E+02 r	–
OCDF	39001020	0.01	14 1	–	–	3.00E+02 r	CALC	4.78	6 5	–	–	–	–	1.16E+02 u	–	1.50E+02 r	–
Octyl Phthalate, di-N-	117840	0.01	14 1	3.60E-02	CALC	–	–	4.45	6 5	–	–	4.00E-02	PROV	–	–	–	–
PeCDD, 2,3,7,8-	36088229	0.03	14 2	–	–	1.50E+05 r	CALC	0.379	6 5	–	–	–	–	5.78E+04 u	–	7.50E+04 r	–
PeCDF, 2,3,4,7,8-	57117314	0.01	14 1	–	–	1.50E+04 r	CALC	1.06	6 5	–	–	–	–	5.78E+03 u	–	7.50E+03 r	–
Pentachlorophenol	87865	0.25	14 4	3.00E-02	CALC	1.20E-01	CALC	0.195	6 5	–	–	3.00E-02	IRIS	–	–	1.20E-01	IRIS
Phenanthrene	85018	0.01	14 1	–	–	–	–	0.229	6 5	–	–	–	–	–	–	–	–
Selenium	7782492	0.001	14 1	2.20E-03	CALC	–	–	0.001	6 6	–	–	5.00E-03	IRIS	–	–	–	–
Silver	7440224	0.001	14 1	9.00E-04	CALC	–	–	0.0006	6 6	–	–	5.00E-03	IRIS	–	–	–	–
TCDD, 2,3,7,8-	1746016	0.03	14 4	–	–	3.00E+05	CALC	1.39	6 5	–	–	–	–	1.16E+05 u	–	1.50E+05	HEAST
TCDF, 2,3,7,8-	51207319	0.01	14 1	–	–	3.00E+04 r	CALC	1.12	6 5	–	–	–	–	1.16E+04 u	–	1.50E+04 r	–
Tetrachloroethylene	127184	0.01	14 1	1.00E-02	CALC	5.40E-01 ai	CALC	0.0481	6 5	1.71E-01 v	CALC	1.00E-02	IRIS	2.07E-02 u	–	5.40E-01 ai	R9/CA
Thallium (I) Nitrate	10102451	0.001	14 1	1.80E-05	CALC	–	–	0.001	6 6	–	–	9.00E-05	IRIS	–	–	–	–
Toluene	108883	0.01	14 1	6.40E-02	CALC	–	–	0.0453	6 5	1.43E+00	CALC	8.00E-02	IRIS	–	–	–	–
Tributyl Phosphate	126738	0.01	14 1	1.00E-01	CALC	1.08E-02	CALC	0.0313	6 5	–	–	2.00E-01	PROV	–	–	5.40E-03	PROV
Trichloroethylene	79016	0.01	14 1	4.50E-05 ah	CALC	2.67E+00 ah	CALC	0.0157	6 5	1.14E-02 ah	CALC	3.00E-04 ah	PROV	4.00E-01 u	–	4.00E-01 ah	PROV
Trichlorofluoromethane	75694	0.01	14 1	6.90E-02	CALC	–	–	0.0173	6 5	2.00E-01 c	CALC	3.00E-01	IRIS	–	–	–	–
Uranium (Soluble Salts)	238	0.001	14 1	5.10E-04 ae	CALC	–	–	0.001	6 6	–	–	6.00E-04 ae	–	–	–	–	–
Vanadium, Metallic	7440622	0.001	14 1	7.00E-05	CALC	–	–	0.001	6 6	–	–	7.00E-03	HEAST	–	–	–	–
Vinyl Chloride	75014	0.01	14 1	3.00E-03	CALC	1.50E+00	CALC	0.0113	6 5	2.86E-02	CALC	3.00E-03	IRIS	3.08E-02 u	–	1.50E+00	IRIS
Xylene, Mixture	1330207	0.01	14 1	1.84E-01	CALC	–	–	0.0704	6 5	2.86E-02	CALC	2.00E-01	IRIS	–	–	–	–
Zinc (Metallic)	7440666	0.001	14 1	6.00E-02	CALC	–	–	0.0006	6 6	–	–	3.00E-01	IRIS	–	–	–	–

References for Nonradionuclides

c These subchronic and chronic non-cancer toxicity values are found in Agency documents, but were calculated by alternative methods that are not currently practiced by the RfD/RfC Work Group. These values are considered to be adequate provisional values for risk assessment purposes at Superfund and RCRA sites, but are subject to be reviewed by the RfD/RfC Work Group and revised when necessary to reflect current work group practices.

f HEAST concluded that toxicity data were inadequate for calculation of oral RfDs for copper and substituted the current drinking water standard (MCLG) of 1.3 mg/L. The RAIS converts this MCLG to an RfD for chronic and subchronic oral exposure.

j The oral toxicity values for 'Cadmium (Diet)' are to be used for soil and food uses while the oral toxicity values for 'Cadmium (Water)' are to be used for water uses only.

m IRIS no longer separates manganese values for chronic oral RfDs into water and diet RfDs. The chronic oral RfD for the total oral intake of manganese is 1.40E-01. However, when assessing exposure to manganese from drinking water or soil, IRIS recommends using a modifying factor of 3, thereby lowering the RfD to 4.67E-02, which has been rounded to 4.6E-02. Rounding to 4.7E-02 is more accurate, but makes the value less conservative. HEAST values remain separated into water and diet subchronic RfDs.

n The cancer potency of PCB mixtures is determined using a three tiered approach that depends on the information available. Criteria for use of the High Risk and Persistence Tier include: food chain exposure; sediment or soil ingestion; dust or aerosol inhalation; dermal exposure if an absorption factor has been applied; any early-life exposure; and the presence of dioxin-like, tumor-promoting, or persistent congeners. This value, 2.00e+00 per (mg/kg)/day, is the upper-bound slope factor for the High Risk and Persistence Tier. The central-estimate slope factor for this tier is 1.00+00 per (mg/kg)/day.

o Criteria for use of the Low Risk and Persistence Tier includes: ingestion of water-soluble congeners; inhalation of evaporated congeners; and dermal exposure if no absorption factor has been applied. The value of 4.00E-01 per (mg/kg/day) is the upper-bound Oral Slope Factor for the Low Risk and Persistence Tier. The central-estimate Oral Slope Factor for the Low Risk and Persistence Tier is 3.00E-01 per (mg/kg/day). For ingestion of water-soluble congeners, the middle tier upper-bound slope factor can be converted to a unit risk of 1.00E-05 per (ug/L/day).

r Van den Berg et al. (2006) presents the WHO 2005 TEFs for carcinogenic dioxins and furans and polychlorinated biphenyls. Ahlborg et al. (1994) presents the WHO 1994 TEFs for carcinogenic polychlorinated biphenyls 170 and 180 in

Toxic equivalency factors for dioxin-like PCBs: Report on a WHO-ECEH and IPCS consultation, December 1993. Chemosphere, Vol. 28, No. 6, 1049-1067. Polycyclic aromatic hydrocarbon TEFs are presented in *Provisional Guidance for Quantitative Risk Assessment of Polycyclic Aromatic Hydrocarbons*.

s The chemical name 'Mercury (inorganic)' was replaced with the name 'Mercury (elemental)' in 9/95; both have the same CAS number as 'Mercury (elemental)' and a GIABS of 0.01%. Note: because 'Mercuric Chloride' was used in the studies from which the toxicity values for 'Mercury (inorganic)' were derived and because 'Mercuric Chloride' is a specific inorganic form/compound of 'Mercury (inorganic)', the oral RfD values have been assigned to 'Mercuric Chloride'. *The FCP will use these values for Mercury (inorganic).*

t This entry was formerly listed as Nickel (metallic) with the CAS number 7440-02-0. The chemical name was changed so that it more accurately indicates the chemicals used in the studies from which the values were derived. Several different nickel salts were used, so the listing of one CAS number is not appropriate and has been replaced with the work VARIOUS. The values remain unchanged. Risk Assessment Program assigns these values to Nickel (metallic), although they are no longer listed with that chemical name.

u The Inhalation Slope Factor was calculated from inhalation unit risk as described in Supplemental Guidance from *RAGS: Region 4 Bulletins, Human Health Risk Assessment* (Interim Guidance) (November 1995).

v The Risk Assessment Program has contacted Superfund and been given provisional values which should be used for DOE-ORR projects. This value should be clearly documented as provisional. For other projects, Superfund Health Risk Technical Support Center should be contacted directly (513) 569-7300.

w This value was withdrawn by NCEA. "The cancer slope factor was withdrawn because of the re-evaluation of the rodent data which does not support genotoxic mode of action based on our proposed cancer guidelines. This chemical is now being reassessed for IRIS which automatically flags further use of any provisional cancer or non-cancer assessments." If this chemical is identified as a risk driver, the risk assessor should consult The EPA Superfund Technical Support Center. All withdrawn values should be clearly documented when used in any risk assessment activity.

ae Source: Federal Register, (very large file) Thursday December 7, 2000. Part II, Environmental Protection Agency. 40 CFR Parts 9, 141, and 142 - National Primary Drinking Water Regulations; Radionuclides; Final Rule. p 76713. [PDF] Also see Soil Screening Guidance for Radionuclides: User's Guide pg 1-6.

ag The 3-Nitroaniline RfC, RfD, and oral slope factor toxicity values are based on analogy to 4-Nitroaniline. This information is presented in *SRC SF 01-025{a,b,c}/11-01-02 "Risk Assessment Issue Paper for: Provisional {RfD, RfC,*

and Carcinogenicity Assessment} for 3-Nitroaniline (CASRN 99-09-2) by Analogy to 4-Nitroaniline (CASRN 100-01-6)".

ah These toxicity values present EPA's most current evaluation of the potential health risks from exposure to trichloroethylene (TCE). The citation presented is as follows: *2001. Trichloroethylene Health Risk Assessment: Synhtesis and characterization (External Review Draft). USEPA EPA/600/P-01/002A. 01 AUGUST 2001. U.S. Environmental Protection Agency, Office of Research and Development, National Center for Environmental Assessment, Washington Office, Washington, DC.* This NCEA report can be viewed at http://oaspub.epa.gov/eims/eimsapi.dispdetail?deid=23249 . EPA Region IX and Region III have adopted these toxicity values as well.

ai Tetrachloroethylene cancer toxicity values are taken from California EPA and EPA Region 9. Please see the letter justifying the use of these values. EPA Regions VI and III have adopted these toxicity values as well.

ak The oral RfD and dermal RfD values for Aroclor-1254 were used for Aroclor-1260 at the request of USEPA during the December 6, 2006 meeting.

Chronic Dermal Reference Dose and Dermal Slope Factor References

HEAST - Values listed were taken from the EPA's Health Effects Assessment Summary Tables found at **http://www.epa.gov/radiation/heast/** .

IRIS - Values listed were taken from the EPA's Integrated Risk Information System found at http://www.epa.gov/IRIS/subst/index.html.

PROV - Values listed are provisional. Other occurring sources are Superfund Health Risk Technical Support Center or draft IRIS assessments.

R9/CA - Values listed are provisional and are taken from California EPA and EPA Region 9.

CALC - These calculations are performed when there isn't a reference for the desired toxicity value.

1) Oral Slope Factor (OSF) to Dermal Slope Factor (DSF):
   OSF / GIABS = DSF.

2) Oral Reference Dose (RfDo) to Dermal Reference Dose (RfDd):
   RfDo* GIABS = RfDd.

3) Inhalation Reference Concentration (RfCi) to Inhalation Reference Dose:
   (RfDi). RfCi / (70 kg/20 m^3) = RfDi.

4) Oral Unit Risk (OUR) to OSF:
   OUR*(70 kg/2L/d) = OSF.

5) Inhalation Unit Risk (IUR) to Inhalation Slope Factor (ISF):
   IUR*(70 kg/20 m^3) = ISF.

Note: These work for chronic and subchronic. GIABS is the gastrointestinal absorption factor (unitless).

Absorption Factor, Dermal References

14_1 United States Environmental Protection Agency. 1995. Supplemental Guidance to RAGS: Region 4 Bulletins, Human Health Risk Assessment (Interim Guidance). Waste Management Division, Office of Health Assessment.

14_2 United States Environmental Protection Agency. 1992. Dermal Exposure Assessment: Principles and Application. Interim Report. EPA/600/8-91/011B. Office of Research and Development, Washington, D.C.

14_3 ATSDR (Agency for Toxic Substances and Disease Registry). 1992. Toxicological Profile for Carbon Disulfide. ATSDR/U.S. Public Health Service.

14_4 Risk Assessment Guidance for Superfund Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment) Final. July 2004. See Exhibit 3-4 at:
http://www.epa.gov/oswer/riskassessment/ragse/pdf/chapter3.pdf.
Also on the RAGs Part E homepage:
http://www.epa.gov/oswer/riskassessment/ragse/.

Permeability Constant (K_p) (cm/hr) References

6_5 Values were taken from http://www.epa.gov/opptintr/exposure/pubs/episuite.htm. The Dermal Permeability Coefficient Program (DERMWIN) estimates the dermal permeability coefficient (Kp) and the dermally absorbed dose per event (DAevent) of organic compounds. Chemical Abstract Service (CAS) Registry numbers may be used to enter compounds. The Kp and DAevent estimation methodology was taken directly from the U.S. EPA document "Dermal Exposure Assessment: Principles and Applications" (USEPA, 1992).
DERMWIN estimates a log Kow for every compound by using the estimation engine from the KOWWIN Program (SRC, 1999). DERMWIN also automatically retrieves experimental log Kow values from a database containing more than 13200 organic compounds with reliably measured values. When a structure matches a database structure (via an exact atom-to-atom connection match), the experimental log Kow value is retrieved and used to predict Kp, rather than the estimated value.

6_6 EPA 2004. Risk Assessment Guidance for Superfund. Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment) Final. EPA/540/R/99/005. Exhibit 3-1, page 3-5. Available online at http://www.epa.gov/oswer/riskassessment/ragse/pdf/2004_1101_part_e.pdf

TABLE D-2 CANCER SLOPE FACTORS FOR RADIOLOGICAL CONSTITUENTS

Chemical	CAS #	Soil Ingestion SF (risk/pCi)	Ref.	Water Ingestion SF (risk/pCi)	Ref.	Inhalation SF (risk/pCi)	Ref.	External SF (risk/yr per pCi/g soil)	Ref.
Cs-137+D	10045973	4.33E-11	HEAST	3.04E-11	HEAST	1.19E-11	HEAST	2.55E-06	HEAST
Np-237+D	13994202	1.62E-10	HEAST	6.74E-11	HEAST	1.77E-08	HEAST	7.97E-07	HEAST
Pb-210+D	14255040	2.66E-09	HEAST	1.27E-09	HEAST	1.39E-08	HEAST	4.21E-09	HEAST
Pu-238	13981163	2.72E-10	HEAST	1.31E-10	HEAST	3.36E-08	HEAST	7.22E-11	HEAST
Pu-239	15117483	2.76E-10	HEAST	1.35E-10	HEAST	3.33E-08	HEAST	2.00E-10	HEAST
Pu-240	14119336	2.77E-10	HEAST	1.35E-10	HEAST	3.33E-08	HEAST	6.98E-11	HEAST
Ra-226+D	13982633	7.30E-10	HEAST	3.86E-10	HEAST	1.16E-08	HEAST	8.49E-06	HEAST
Ra-228+D	15262201	2.29E-09	HEAST	1.04E-09	HEAST	5.23E-09	HEAST	4.53E-06	HEAST
Rn-222+D	14859677	NA		NA		1.80E-11	HEAST	NA	
Sr-90+D	10098972	1.44E-10	HEAST	7.40E-11	HEAST	1.13E-10	HEAST	1.96E-08	HEAST
Tc-99	14133767	7.66E-12	HEAST	2.75E-12	HEAST	1.41E-11	HEAST	8.14E-11	HEAST
Th-228+D	14274829	8.09E-10	HEAST	3.00E-10	HEAST	1.43E-07	HEAST	7.76E-06	HEAST
Th-230	14269637	2.02E-10	HEAST	9.10E-11	HEAST	2.85E-08	HEAST	8.19E-10	HEAST
Th-232	7440291	2.31E-10	HEAST	1.01E-10	HEAST	4.33E-08	HEAST	3.42E-10	HEAST
U-234	13966295	1.58E-10	HEAST	7.07E-11	HEAST	1.14E-08	HEAST	2.52E-10	HEAST
U-235+D	15117961	1.63E-10	HEAST	7.18E-11	HEAST	1.01E-08	HEAST	5.43E-07	HEAST
U-238+D	7440611	2.10E-10	HEAST	8.71E-11	HEAST	9.35E-09	HEAST	1.14E-07	HEAST

Note: D = associated daughter radionuclides

HEAST - Values listed were taken from the EPA's Health Effects Assessment Summary Tables found at http://www.epa.gov/radiation/heast/ .

Table D-3 - Comparison of Non-radiological Values for CRARE and Present Risk Model

	CRARE values												
	Inhale		Ingest Soil		Ingest SW		Dermal Soil			Dermal SW			
	RfD mg/kgday	CSF kgday/mg	RfD mg/kgday	CSF kgday/mg	RfD mg/kgday	CSF kgday/mg	AB unitless	RfD mg/kgday	CSF kgday/mg	Kp cm/hr	DA mg/cm2day	RfD mg/kgday	CSF kgday/mg
antimony	NA	NA	4.00E-04	NA	4.00E-04	NA	1.00E-02	6.00E-05	NA	1.00E-03	1.04E-09	6.00E-05	NA
aroclor-1254	NA	NA	NA	7.70E+00	NA	7.70E+00	6.00E-02	NA	1.03E+01	7.10E-01	NA	NA	1.03E+01
aroclor-1260	NA	NA	NA	7.70E+00	NA	7.70E+00	6.00E-02	NA	1.03E+01	7.10E-01	NA	NA	1.03E+01
arsenic	NA	1.50E+01	3.00E-04	1.75E+00	3.00E-04	1.75E+00	1.00E-03	2.85E-04	1.84E+00	1.00E-03	1.14E-08	2.85E-04	1.84E+00
benzo(a)pyrene	NA	6.10E+00	NA	7.30E+00	NA	7.30E+00	3.00E-01	NA	NA	1.20E+00	7.29E-10	NA	NA
beryllium	NA	8.40E+00	5.00E-03	4.30E+00	5.00E-03	4.30E+00	1.00E-02	5.00E-03	4.30E+00	1.00E-03	2.38E-10	5.00E-03	4.30E+00
cadmium	NA	6.30E+00	1.00E-03	NA	1.00E-03	NA	1.00E-02	5.00E-05	NA	1.00E-03	NA	5.00E-05	NA
copper	NA	NA	3.70E-02	NA	3.70E-02	NA	1.00E-03	NA	NA	1.00E-03	NA	NA	NA
cyanide	NA	NA	2.00E-02	NA	2.00E-02	NA	1.00E-02	NA	NA	1.00E-03	NA	NA	NA
1,2-dichloroethane	2.90E-03	9.10E-02	NA	9.10E-02	5.00E-03	9.10E-02	3.00E-01	NA	1.01E-01	5.30E-03	NA	NA	1.01E-01
manganese	1.43E-05	NA	1.40E-01	NA	1.40E-01	NA	1.00E-02	4.20E-03	NA	1.00E-03	1.42E-06	4.20E-03	NA
mercury	8.57E-05	NA	3.00E-04	NA	3.00E-04	NA	5.00E-02	4.50E-05	NA	1.00E-03	1.01E-08	4.50E-05	NA
molybdenum	NA	NA	5.00E-03	NA	5.00E-03	NA	1.00E-02	1.90E-03	NA	1.00E-03	NA	1.90E-03	NA
silver	NA	NA	5.00E-03	NA	5.00E-03	NA	1.00E-02	NA	NA	1.00E-03	NA	NA	NA
uranium	NA	NA	3.00E-03	NA	3.00E-03	NA	1.00E-02	1.50E-04	NA	1.00E-03	5.04E-09	1.50E-04	NA
zinc	NA	NA	3.00E-01	NA	3.00E-01	NA	1.00E-02	7.50E-02	NA	1.00E-03	NA	7.50E-02	NA

	Present Values												
	Inhale		Ingest Soil		Ingest SW		Dermal Soil			Dermal SW			
	RfD* mg/kgday	CSF kgday/mg	RfD mg/kgday	CSF kgday/mg	RfD mg/kgday	CSF kgday/mg	AB unitless	RfD** mg/kgday	CSF** kgday/mg	Kp cm/hr	DA mg/cm2day	RfD*** mg/kgday	CSF*** kgday/mg
antimony	NA	NA	4.00E-04	NA	4.00E-04	NA	1.00E-02	6.00E-05	NA	1.00E-03	1.04E-09	6.00E-05	NA
aroclor-1254	NA	NA	0.00002	NA	NA	NA	6.00E-02	NA	NA	7.10E-01	NA	NA	NA
aroclor-1260	NA	NA	NA	NA	NA	NA	6.00E-02	NA	NA	7.10E-01	NA	NA	NA
arsenic	NA	1.50E+00	3.00E-04	1.50E+00	3.00E-04	1.50E+00	1.00E-03	2.84E-04	1.58E+00	1.00E-03	1.14E-08	2.84E-04	1.58E+00
benzo(a)pyrene	NA	7.30E+00	NA	7.30E+00	NA	7.30E+00	3.00E-01	NA	NA	1.20E+00	7.29E-10	NA	NA
beryllium	5.7143E-06	8.40E+00	2.00E-03	4.30E+00	2.00E-03	4.30E+00	1.00E-02	2.00E-03	4.30E+02	1.00E-03	2.38E-10	2.00E-03	NA
cadmium	NA	NA	5.00E-04	NA	5.00E-04	NA	1.00E-02	2.50E-05	NA	1.00E-03	NA	2.50E-05	NA
copper	NA	NA	NA	NA	NA	NA	1.00E-03	NA	NA	1.00E-03	NA	NA	NA
cyanide	NA	NA	2.00E-02	NA	2.00E-02	NA	1.00E-02	NA	NA	1.00E-03	NA	NA	NA
1,2-dichloroethane	NA	9.10E-02	NA	9.10E-02	NA	9.10E-02	3.00E-01	NA	1.01E-01	5.30E-03	NA	NA	1.01E-01
manganese	1.43E-05	NA	1.40E-01	NA	1.40E-01	NA	1.00E-02	4.20E-03	NA	1.00E-03	1.42E-06	4.20E-03	NA
mercury	8.57E-05	NA	NA	NA	NA	NA	5.00E-02	NA	NA	1.00E-03	1.01E-08	NA	NA
molybdenum	NA	NA	5.00E-03	NA	5.00E-03	NA	1.00E-02	1.90E-03	NA	1.00E-03	NA	1.90E-03	NA
silver	NA	NA	5.00E-03	NA	5.00E-03	NA	1.00E-02	0.00025	NA	1.00E-03	NA	0.00025	NA
uranium	NA	NA	NA	NA	NA	NA	1.00E-02	NA	NA	1.00E-03	5.04E-09	NA	NA
zinc	NA	NA	3.00E-01	NA	3.00E-01	NA	1.00E-02	7.50E-02	NA	1.00E-03	NA	7.50E-02	NA

*RfD calculated from RfC values (mg/m^3) using 70 kg and 20 m^3/day (see page C-4-2 in Appendix C of OU5 FS, June 1995)
**RfD and CSF are calculated by multiplying oral RfD and dividing CSF by the GI absorption factor used in CRARE. (see page C-4-6 in Appendix C of the OU5 FS, June 1995)
***RfD and CSF are calculated by multiplying oral RfD and dividing CSF by the GI absorption factor used in CRARE.

Table D-3 - Comparison of Non-radiological Values for CRARE and Present Risk Model

(continued)

	Present/CRARE												
	Inhale		Ingest Soil		Ingest SW		Dermal Soil			Dermal SW			
	RfD*	CSF	RfD	CSF	RfD	CSF	AB	RfD**	CSF**	Kp	DA	RfD***	CSF***
antimony			1.00E+00		1.00E+00		1.00E+00	1.00E+00		1.00E+00	1.00E+00	1.00E+00	
aroclor-1254							1.00E+00			1.00E+00			
aroclor-1260							1.00E+00			1.00E+00			
arsenic		1.00E-01	1.00E+00	8.57E-01	1.00E+00	8.57E-01	1.00E+00	9.97E-01	8.61E-01	1.00E+00	1.00E+00	9.97E-01	8.61E-01
benzo(a)pyrene		1.20E+00		1.00E+00		1.00E+00	1.00E+00			1.00E+00	1.00E+00		
beryllium		1.00E+00	4.00E-01	1.00E+00	4.00E-01	1.00E+00	1.00E+00	4.00E-01	1.00E+02	1.00E+00	1.00E+00	4.00E-01	
cadmium			5.00E-01		5.00E-01		1.00E+00	5.00E-01		1.00E+00		5.00E-01	
copper							1.00E+00			1.00E+00			
cyanide			1.00E+00		1.00E+00		1.00E+00			1.00E+00			
1,2-dichloroethane		1.00E+00		1.00E+00		1.00E+00	1.00E+00		1.00E+00	1.00E+00			1.00E+00
manganese	9.99E-01		1.00E+00		1.00E+00		1.00E+00	1.00E+00		1.00E+00	1.00E+00	1.00E+00	
mercury	1.00E+00						1.00E+00			1.00E+00	1.00E+00		
molybdenum			1.00E+00		1.00E+00		1.00E+00	1.00E+00		1.00E+00		1.00E+00	
silver			1.00E+00		1.00E+00		1.00E+00			1.00E+00			
uranium							1.00E+00			1.00E+00	1.00E+00		
zinc			1.00E+00		1.00E+00		1.00E+00	1.00E+00		1.00E+00		1.00E+00	

Table D-4 - Comparison of Radiological Values for CRARE and Present Risk Model

	CRARE CSFs		
	inhale 1/pCi	oral 1/pCi	external g/pCi yr
Cs-137 + 1d	1.90E-11	2.80E-11	2.00E-06
Ra-226 + 8d	7.00E-09	7.80E-10	6.00E-06
Rn-222	7.30E-13	1.40E-12	1.20E-09
Sr-90 + 1d	6.20E-11	3.60E-11	NA
Tc-99	8.30E-12	1.30E-12	6.00E-13
Th-228 + 7d	7.80E-08	5.50E-11	5.60E-06
Th-232 + 10d	1.10E-07	1.70E-10	8.50E-06
U-234	2.60E-08	1.60E-11	3.00E-11
U-235/236	2.50E-08	1.60E-11	2.40E-07
U-238 + 2d	2.40E-08	2.00E-11	5.10E-08

	Present CSFs		
	inhale 1/pCi	oral 1/pCi	external g/pCi yr
Cs-137 + D	1.19E-11	4.33E-11	2.55E-06
Ra-226 + D	1.16E-08	7.30E-10	8.49E-06
Rn-222+ D	1.80E-11	NA	NA
Sr-90 + D	1.13E-10	1.44E-10	1.96E-08
Tc-99	1.41E-11	7.66E-12	8.14E-11
Th-228 + D	1.43E-07	8.09E-10	7.76E-06
Th-232	4.33E-08	2.31E-10	3.42E-10
U-234	1.14E-08	1.58E-10	2.52E-10
U-235 + D	1.01E-08	1.63E-10	5.43E-07
U-238 + D	9.35E-09	2.10E-10	1.14E-07

	Ratio of CSFs (Present/CRARE)		
	inhale	oral	external
Cs-137 + D	6.26E-01	1.55E+00	1.28E+00
Ra-226 + D	1.66E+00	9.36E-01	1.42E+00
Rn-222+ D	**2.47E+01**	NA	NA
Sr-90 + D	1.82E+00	4.00E+00	NA
Tc-99	1.70E+00	5.89E+00	**1.36E+02**
Th-228 + D	1.83E+00	1.47E+01	1.39E+00
Th-232	3.94E-01	1.36E+00	*
U-234	4.38E-01	9.88E+00	8.40E+00
U-235 + D	4.04E-01	1.02E+01	2.26E+00
U-238 + D	3.90E-01	1.05E+01	2.24E+00

Bold are significant increases

* This comparison is not valid because Th232 + D was evaluated in the CRARE and Th-232 without daughters is evaluated in the Present Model. However, Ra228 + D and Th228 + D are evaluated in the present to account for all daughters in the Th232 decay.

APPENDIX E

APPENDIX E

Risk Calculations

This appendix presents summary tables of calculations made to identify the risk to various receptors in the exposure zones identified on Plates 1 and 2. Each receptor was evaluated for its potential to enter an exposure zone (Section 4.0), and a calculation matrix was derived from this evaluation (Table 4-1). Every exposure zone a receptor enters has an associated risk calculation. Also, background and HWMU tables were created for all receptors. All calculations are presented on the CD ROM, and a subset consisting of all background, highest exposure zone for each receptor, HWMU, and uncertainty calculations are reproduced in this appendix.

Data used for these calculations were compiled from soil certification sampling results (Appendix B and Plate 1), surface water sampling results (Appendix C and Plate 2), and the toxicity values and cancer slope factors presented in Appendix D. The formulae for all calculations are presented in the summary tables.

Each table contains the pathways for the receptor and a summary page that tabulates the hazard quotient (HQ) and incremental lifetime cancer risk (ILCR) by pathway and by individual contaminant. All receptor tables have pathways for inhalation, incidental ingestion of soil, dermal contact with soil, and external radiation. Most receptors have pathways for incidental ingestion of surface water and dermal contact with surface water, but the museum visitor and building maintenance receptors do not because these receptors do not enter the water.

The tabulated results on the summary page of each table (SumPaths) are used to generate the data presented in the receptor summary tables included in Section 5.0. Tables 5-1 through 5-6 present the risk results for HQ as background, total, and total minus chemical background, while the ILCR results are presented as background, total, total minus radionuclide background, and total minus chemical and radionuclide background. The derivation of each is discussed below.

- Background results for both the HQ and the ILCR have been extracted from the background SumPaths sheet for reach receptor. For example, the construction worker (Table E.0-1, pages 10, 11, 12) shows a summary block for the pathways, a summary for the isotopes in each zone, and a summary for the chemicals for each zone. The pathway summary block and first summary columns for the radionuclides and chemicals represent the background risk for every contaminant, while the zone columns summarize risk only for those contaminants present in the zone. Background HQ for each table in Section 5.0 is obtained from the HQ sum below the chemicals. For the construction worker in Zone 5, 3.29E-02 is the background HQ and it is found on page 12 of Table E.0-1. The ILCR for Zone 5 is obtained by adding the sum ILCR for radionuclide (5.20E-06, page 10) to the sum ILCR for the chemicals (1.81E-07, page 12), which yields 5.20E-06. These values for HQ and ILCR are found in Table 5-4 under Zone 5 background.

- The total HQ and total ILCR represent the sum of all paths as they are presented in the SumPaths sheet for each receptor. For example, the pathway summary block for the construction worker in Zone 5 (Table E.5-1, page 10) shows the total HQ (5.23E-02) and total ILCR (4.76E-06), which are found in Table 5-4 under Zone 5 total. Note that the total HQ value is also obtained from the chemical sum for HQ (5.23E-02, page 12) and the total ILCR is obtained by adding the radionuclide total ILCR (4.21E-06, page 10) to the chemical total ILCR (5.53E-07, page 12).

- The total HQ minus the chemical background represents the difference between the total HQ as outlined above minus the sum of all background HQs for chemical constituents. For example, the chemical summary block for the construction worker in Zone 5 (Table E.5-1, page 12) shows the Total-BKGD column for HQ, and the sum for this column (2.25E-02) represents total HQ minus chemical background. This result appears in Table 5-4 as T-CB for Zone 5. Note that if the background exceeds the chemical value in the exposure zone, a zero is placed in the Total-BKGD HQ column (Table E.5-1, page 12).

- The total ILCR minus the radionuclide background represents the difference between the total ILCR, as outlined above, minus the sum of all background ILCRs for radionuclide constituents. For example, the radionuclide summary block for the construction worker in Zone 5 (Table E.5-1, page 10) shows the Total-BKGD column for ILCR has a sum of 4.57E-08, and this represents the radionuclide risk above background. Note that if the background exceeds the radionuclide value in the exposure zone, a zero is placed in the Total-BKGD ILCR column (Table E.5-1, page 10). This value is added to the total ILCR value for chemicals (5.53E-07, page 12) to obtain the total ILCR minus radionuclide background (4.57E-08 + 5.53E-07 = 5.98E-07). This value appears in Table 5-4 as T-RB for Zone 5.

- The total ILCR minus the chemical and radionuclide background represents the difference between the total ILCR, as outlined above, minus the sum of all background ILCRs (chemicals and radionuclides). For example, the radionuclide summary block for the construction worker in Zone 5 (Table E.5-1, page 10) shows the Total-BKGD column for ILCR has a sum of 4.57E-08, and this represents the radionuclide risk above background. The chemical summary block (Table E.5-1, page 12) shows the Total-BKGD column for ILCR has a sum of 3.92 E-07, and this represents the chemical risk above background. These values are added together to yield total ILCR minus chemical and radionuclide background (3.92E-07 + 4.57E-08 = 4.38E-07). This value appears in Table 5-4 as T-CRB for Zone 5.

Additionally, uncertainty analyses for two receptors (Undeveloped Park User and Groundskeeper/Sampler) are presented in Appendix E-10. Because of the new exposure parameters used, it was necessary to recalculate the background for the affected receptors. This information is included in Appendix E-10 as well.

APPENDIX E.0
Background

Table

E.0-1	Construction Worker	- Hard copy provided in this appendix, also available on CD ROM.
E.0-2	Groundskeeper / Sampler	- Hard copy provided in this appendix, also available on CD ROM.
E.0-3	Undeveloped Park User	- Hard copy provided in this appendix, also available on CD ROM.
E.0-4	Building Maintenance	- Hard copy provided in this appendix, also available on CD ROM.
E.0-5	Museum Worker	- Hard copy provided in this appendix, also available on CD ROM.
E.0-6	Museum Visitor	- Hard copy provided in this appendix, also available on CD ROM.

TABLE E.0-1
Construction Worker - BKGD - InhaleChem

Construction Worker - Inhalation of Gases & Particulates
Risk calculation for background

Intake Equation:			UNITS	adult
	CDI =	(CS*EF*ED*IR*ET)/(BW*AT)		
	CDI =	Chronic Daily Intake	mg/kgday	calculated below
	CA =	Concentration of chemical in air	mg/m^3	see COC list below
	EF =	Exposure frequency	days/yr	30
	ED =	Exposure duration	yrs	1
	IR =	Inhalation rate	m^3/hr	2.5
	ET =	Exposure time	hrs/day	8
	BW =	Body weight	kg	70
	ATc =	Average time for carcinogens	days	25550
	ATn =	Average time for non-carcinogens	days	365

COC	conc	RfDi	CSFi	ADULT CDI	HQ	CDI	ILCR
	mg/m^3	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	0.00E+00	NA	5.60E-02	NA	NA	0.00E+00	0.00E+00
1,1-Dichloroethylene	0.00E+00	5.71E-02	1.75E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,2-dichloroethane	0.00E+00	NA	9.10E-02	NA	NA	0.00E+00	0.00E+00
2-Butanone	0.00E+00	1.43E+00	NA	0.00E+00	0.00E+00	NA	NA
3,3-Dichlorobenzidine	0.00E+00	NA	NA	NA	NA	NA	NA
4-Methylphenol	0.00E+00	NA	NA	NA	NA	NA	NA
4-Nitroaniline	0.00E+00	1.14E-03	NA	0.00E+00	0.00E+00	NA	NA
Acetone	0.00E+00	NA	NA	NA	NA	NA	NA
Antimony	7.48E-08	NA	NA	NA	NA	NA	NA
Aroclor-1254	0.00E+00	NA	2.00E+00	NA	NA	0.00E+00	0.00E+00
Aroclor-1260	0.00E+00	NA	2.00E+00	NA	NA	0.00E+00	0.00E+00
Arsenic	3.22E-07	NA	1.51E+01	NA	NA	1.08E-10	1.63E-09
Barium	4.86E-06	1.43E-04	NA	1.14E-07	7.98E-04	NA	NA
Benzene	0.00E+00	8.57E-03	2.73E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Benzo(a)anthracene	0.00E+00	NA	3.08E-01	NA	NA	0.00E+00	0.00E+00
Benzo(a)pyrene	0.00E+00	NA	3.08E-01	NA	NA	0.00E+00	0.00E+00
Benzo(b)fluoranthene	0.00E+00	NA	3.08E+00	NA	NA	0.00E+00	0.00E+00
Benzo(k)fluoranthene	0.00E+00	NA	3.08E-02	NA	NA	0.00E+00	0.00E+00
Beryllium	3.74E-08	5.71E-06	8.40E+00	8.79E-10	1.54E-04	1.26E-11	1.06E-10
Bis(2-chloroisopropyl)ether	0.00E+00	NA	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	0.00E+00	NA	NA	NA	NA	NA	NA
Boron	6.66E-08	5.71E-03	NA	1.56E-09	2.74E-07	NA	NA
Bromodichloromethane	0.00E+00	NA	NA	NA	NA	NA	NA
Bromoform	0.00E+00	NA	3.85E-03	NA	NA	0.00E+00	0.00E+00
Bromomethane	0.00E+00	1.43E-03	NA	0.00E+00	0.00E+00	NA	NA
Cadmium	2.57E-08	NA	6.30E+00	NA	NA	8.63E-12	5.43E-11
Carbazole	0.00E+00	NA	NA	NA	NA	NA	NA
Carbon disulfide	0.00E+00	2.00E-01	NA	0.00E+00	0.00E+00	NA	NA
Carbon tetrachloride	0.00E+00	NA	5.25E-02	NA	NA	0.00E+00	0.00E+00
Chlordane	0.00E+00	2.00E-04	3.50E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chlorobenzene	0.00E+00	1.43E-02	NA	0.00E+00	0.00E+00	NA	NA
Chloroform	0.00E+00	NA	8.05E-02	NA	NA	0.00E+00	0.00E+00
Chromium (VI)	6.42E-07	2.86E-05	4.20E+01	1.51E-08	5.27E-04	2.15E-10	9.05E-09
Chrysene	0.00E+00	NA	3.08E-03	NA	NA	0.00E+00	0.00E+00
Cobalt	5.56E-07	5.71E-06	9.80E+00	1.31E-08	2.29E-03	1.87E-10	1.83E-09
Copper	8.14E-07	NA	NA	NA	NA	NA	NA
Cyanide	0.00E+00	NA	NA	NA	NA	NA	NA
Cyclohexanone	0.00E+00	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	0.00E+00	NA	3.08E+00	NA	NA	0.00E+00	0.00E+00
Dieldrin	0.00E+00	NA	1.61E+01	NA	NA	0.00E+00	0.00E+00
Di-n-octylphthalate	0.00E+00	NA	NA	NA	NA	NA	NA
Ethyl ether	0.00E+00	NA	NA	NA	NA	NA	NA
Ethylbenzene	0.00E+00	2.86E-01	3.85E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Fluoride	8.32E-08	NA	NA	NA	NA	NA	NA
Heptachlorodibenzofuran	0.00E+00	NA	1.16E+03	NA	NA	0.00E+00	0.00E+00
Heptachlorodibenzo-p-dioxin	0.00E+00	NA	1.16E+03	NA	NA	0.00E+00	0.00E+00
Hexachlorodibenzofuran	0.00E+00	NA	1.16E+04	NA	NA	0.00E+00	0.00E+00
Hexachlorodibenzo-p-dioxin	0.00E+00	NA	1.16E+04	NA	NA	0.00E+00	0.00E+00
Indeno(1,2,3-cd)pyrene	0.00E+00	NA	3.08E-01	NA	NA	0.00E+00	0.00E+00
Lead	7.96E-07	NA	NA	NA	NA	NA	NA
Manganese	3.46E-05	1.43E-05	NA	8.12E-07	5.66E-02	NA	NA
Mercury	1.82E-09	NA	NA	NA	NA	NA	NA
Methanol	0.00E+00	NA	NA	NA	NA	NA	NA
Methyl-2-pentanone	0.00E+00	8.57E-01	NA	0.00E+00	0.00E+00	NA	NA
Methylene chloride	0.00E+00	8.57E-01	1.65E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Molybdenum	1.36E-07	NA	NA	NA	NA	NA	NA
Nickel	1.19E-06	NA	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	0.00E+00	NA	NA	NA	NA	NA	NA
N-nitrosodipropylamine	0.00E+00	NA	NA	NA	NA	NA	NA
Octochlorodibenzofuran	0.00E+00	NA	1.16E+02	NA	NA	0.00E+00	0.00E+00
Octochlorodibenzo-p-dioxin	0.00E+00	NA	1.16E+02	NA	NA	0.00E+00	0.00E+00
Pentachlorodibenzofuran	0.00E+00	NA	5.78E+03	NA	NA	0.00E+00	0.00E+00
Pentachlorodibenzo-p-dioxin	0.00E+00	NA	5.78E+04	NA	NA	0.00E+00	0.00E+00
Pentachlorophenol	0.00E+00	NA	NA	NA	NA	NA	NA
Phenanthrene	0.00E+00	NA	NA	NA	NA	NA	NA
Selenium	3.09E-08	NA	NA	NA	NA	NA	NA
Silver	2.94E-08	NA	NA	NA	NA	NA	NA
Tetrachlorodibenzofuran	0.00E+00	NA	1.16E+04	NA	NA	0.00E+00	0.00E+00
Tetrachlorodibenzo-p-dioxin	0.00E+00	NA	1.16E+05	NA	NA	0.00E+00	0.00E+00
Tetrachloroethylene	0.00E+00	1.71E-01	2.07E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Thallium	1.51E-08	NA	NA	NA	NA	NA	NA
Toluene	0.00E+00	1.43E+00	NA	0.00E+00	0.00E+00	NA	NA
Tributyl phosphate	0.00E+00	NA	NA	NA	NA	NA	NA
Trichloroethylene	0.00E+00	1.14E-02	4.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Trifluorochloromethane	0.00E+00	NA	NA	NA	NA	NA	NA
Uranium	1.19E-07	NA	NA	NA	NA	NA	NA
Vanadium	1.08E-06	NA	NA	NA	NA	NA	NA
Vinyl chloride	0.00E+00	2.86E-02	3.08E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xylenes	0.00E+00	2.86E-02	NA	0.00E+00	0.00E+00	NA	NA
Zinc	2.32E-06	NA	NA	NA	NA	NA	NA
				total =	6.06E-02	total =	1.27E-08

Air concentration is derived using air particulate value of 26 ug/m^3 (2005 SER background average from monitor AMS-12) multiplied by the soil concentration.

TABLE E.0-1
Construction Worker - BKGD - DermalSoilChem

Construction Worker - Dermal Contact with Soil/Sediment
Risk calculation for background

Intake Equation: CDI = (CS*AB*SA*EF*ED*AF*CF)/(BW*AT)

		UNITS	adult
CDI =	Chronic Daily Intake	mg/kgday	calculated below
CS =	Concentration of chemical in soil	mg/kg	see COC list below
AB	Absorption factor	–	see COC list below
SA	Surface area of exposed skin	cm^2/day	3300
EF =	Exposure frequency	days/yr	30
ED =	Exposure duration	yrs	1
AF =	Adherence factor	mg/cm^2	0.3
CF =	Conversion factor	kg/mg	1.00E-06
BW =	Body weight	kg	70
ATc =	Average time for carcinogens	days	25550
ATn =	Average time for non-carcinogens	days	365

COC	conc	AB	RfDd	CSFd	ADULT CDI	ADULT HQ	ADULT CDI	ADULT ILCR
	mg/kg	unitless	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	0.00E+00	1.00E-02	3.24E-03	7.04E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,1-Dichloroethylene	0.00E+00	1.00E-02	5.00E-02	6.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,2-dichloroethane	0.00E+00	1.00E-02	2.00E-02	9.10E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2-Butanone	0.00E+00	1.00E-02	4.80E-01	NA	0.00E+00	0.00E+00	NA	NA
3,3-Dichlorobenzidine	0.00E+00	1.00E-02	NA	9.00E-01	NA	NA	0.00E+00	0.00E+00
4-Methylphenol	0.00E+00	1.00E-02	3.25E-03	NA	0.00E+00	0.00E+00	NA	NA
4-Nitroanaline	0.00E+00	1.00E-02	2.40E-03	2.63E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Acetone	0.00E+00	1.00E-02	7.47E-01	NA	0.00E+00	0.00E+00	NA	NA
Antimony	2.87E+00	1.00E-03	8.00E-06	NA	3.34E-09	4.17E-04	NA	NA
Aroclor-1254	0.00E+00	1.40E-01	1.80E-05	2.22E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Aroclor-1260	0.00E+00	1.40E-01	1.80E-05	2.22E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Arsenic	1.24E+01	3.00E-02	1.23E-04	3.66E+00	4.32E-07	3.52E-03	6.18E-09	2.26E-08
Barium	1.87E+02	1.00E-03	1.40E-02	NA	2.17E-07	1.55E-05	NA	NA
Benzene	0.00E+00	1.00E-02	3.88E-03	5.67E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Benzo(a)anthracene	0.00E+00	1.30E-01	NA	2.35E+00	NA	NA	0.00E+00	0.00E+00
Benzo(a)pyrene	0.00E+00	1.30E-01	NA	2.35E+01	NA	NA	0.00E+00	0.00E+00
Benzo(b)fluoranthene	0.00E+00	1.30E-01	NA	2.35E+00	NA	NA	0.00E+00	0.00E+00
Benzo(k)fluoranthene	0.00E+00	1.30E-01	NA	2.35E-01	NA	NA	0.00E+00	0.00E+00
Beryllium	1.44E+00	1.00E-03	2.00E-05	4.30E+02	1.67E-09	8.37E-05	2.39E-11	1.03E-08
Bis(2-chloroisopropyl)ether	0.00E+00	1.00E-02	2.00E-02	NA	0.00E+00	0.00E+00	NA	NA
Bis(2-ethylhexyl)phthalate	0.00E+00	1.00E-02	3.80E-03	7.37E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Boron	2.58E+00	1.00E-03	1.60E-01	NA	2.98E-09	1.65E-08	NA	NA
Bromodichloromethane	0.00E+00	1.00E-02	1.96E-02	6.33E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Bromoform	0.00E+00	1.00E-02	1.20E-02	1.32E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Bromomethane	0.00E+00	1.00E-02	1.12E-03	NA	0.00E+00	0.00E+00	NA	NA
Cadmium	9.89E-01	1.00E-03	1.00E-05	NA	1.15E-09	1.15E-04	NA	NA
Carbazole	0.00E+00	1.00E-02	NA	2.86E-02	NA	NA	0.00E+00	0.00E+00
Carbon disulfide	0.00E+00	2.50E-01	6.30E-02	NA	0.00E+00	0.00E+00	NA	NA
Carbon tetrachloride	0.00E+00	1.00E-02	4.65E-04	2.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chlordane	0.00E+00	4.00E-02	2.50E-04	7.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chlorobenzene	0.00E+00	1.00E-02	6.20E-03	NA	0.00E+00	0.00E+00	NA	NA
Chloroform	0.00E+00	1.00E-02	2.00E-03	3.05E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chromium (VI)	2.47E+01	1.00E-03	6.00E-05	NA	2.87E-08	4.79E-04	NA	NA
Chrysene	0.00E+00	1.30E-01	NA	2.35E-02	NA	NA	0.00E+00	0.00E+00
Cobalt	2.14E+01	1.00E-03	1.60E-02	NA	2.49E-08	1.55E-06	NA	NA
Copper	3.13E+01	1.00E-03	1.20E-02	NA	3.64E-08	3.03E-06	NA	NA
Cyanide	0.00E+00	1.00E-02	3.40E-03	NA	0.00E+00	0.00E+00	NA	NA
Cyclohexanone	0.00E+00	1.00E-02	4.00E+00	NA	0.00E+00	0.00E+00	NA	NA
Dibenzo(a,h)anthracene	0.00E+00	1.30E-01	NA	2.35E+01	NA	NA	0.00E+00	0.00E+00
Dieldrin	0.00E+00	1.00E-02	2.50E-05	3.20E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Di-n-octylphthalate	0.00E+00	1.00E-02	3.60E-02	NA	0.00E+00	0.00E+00	NA	NA
Ethyl ether	0.00E+00	1.00E-02	1.60E-01	NA	0.00E+00	0.00E+00	NA	NA
Ethylbenzene	0.00E+00	1.00E-02	9.70E-02	NA	0.00E+00	0.00E+00	NA	NA
Fluoride	3.20E+00	1.00E-03	5.82E-02	NA	3.72E-09	6.39E-08	NA	NA
Heptachlorodibenzofuran	0.00E+00	1.00E-02	NA	3.00E+03	NA	NA	0.00E+00	0.00E+00
Heptachlorodibenzo-p-dioxin	0.00E+00	3.00E-02	NA	3.00E+03	NA	NA	0.00E+00	0.00E+00
Hexachlorodibenzofuran	0.00E+00	1.00E-02	NA	3.00E+04	NA	NA	0.00E+00	0.00E+00
Hexachlorodibenzo-p-dioxin	0.00E+00	3.00E-02	NA	3.00E+04	NA	NA	0.00E+00	0.00E+00
Indeno(1,2,3-cd)pyrene	0.00E+00	1.30E-01	NA	2.35E+00	NA	NA	0.00E+00	0.00E+00
Lead	3.06E+01	1.00E-03	NA	NA	NA	NA	NA	NA
Manganese	1.33E+03	1.00E-03	5.60E-03	NA	1.55E-06	2.76E-04	NA	NA
Mercury	7.00E-02	1.00E-03	2.10E-05	NA	8.14E-11	3.87E-06	NA	NA
Methanol	0.00E+00	1.00E-02	4.00E-01	NA	0.00E+00	0.00E+00	NA	NA
Methyl-2-pentanone	0.00E+00	1.00E-02	6.40E-02	NA	0.00E+00	0.00E+00	NA	NA
Methylene chloride	0.00E+00	1.00E-02	5.70E-02	7.89E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Molybdenum	5.24E+00	1.00E-03	1.90E-03	NA	6.09E-09	3.21E-06	NA	NA
Nickel	4.56E+01	1.00E-03	5.40E-03	NA	5.30E-08	9.82E-06	NA	NA
N-nitrosodiphenylamine	0.00E+00	1.00E-02	5.00E-03	1.98E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
N-nitrosodipropylamine	0.00E+00	1.00E-02	NA	2.80E+01	NA	NA	0.00E+00	0.00E+00
Octachlorodibenzofuran	0.00E+00	1.00E-02	NA	3.00E+02	NA	NA	0.00E+00	0.00E+00
Octochlorodibenzo-p-dioxin	0.00E+00	3.00E-02	NA	3.00E+02	NA	NA	0.00E+00	0.00E+00
Pentachlorodibenzofuran	0.00E+00	1.00E-02	NA	1.50E+04	NA	NA	0.00E+00	0.00E+00
Pentachlorodibenzo-p-dioxin	0.00E+00	3.00E-02	NA	1.50E+05	NA	NA	0.00E+00	0.00E+00
Pentachlorophenol	0.00E+00	2.50E-01	3.00E-02	1.20E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Phenanthrene	0.00E+00	1.00E-02	NA	NA	NA	NA	NA	NA
Selenium	1.19E+00	1.00E-03	2.20E-03	NA	1.38E-09	6.29E-07	NA	NA
Silver	1.13E+00	1.00E-03	9.00E-04	NA	1.31E-09	1.46E-06	NA	NA
Tetrachlorodibenzofuran	0.00E+00	1.00E-02	NA	3.00E+04	NA	NA	0.00E+00	0.00E+00
Tetrachlorodibenzo-p-dioxin	0.00E+00	3.00E-02	NA	3.00E+05	NA	NA	0.00E+00	0.00E+00
Tetrachloroethylene	0.00E+00	1.00E-02	1.00E-02	5.40E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Thallium	5.80E-01	1.00E-03	1.80E-05	NA	6.74E-10	3.75E-05	NA	NA
Toluene	0.00E+00	1.00E-02	6.40E-02	NA	0.00E+00	0.00E+00	NA	NA
Tributyl phosphate	0.00E+00	1.00E-02	1.00E-01	1.08E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Trichloroethylene	0.00E+00	1.00E-02	4.50E-05	2.67E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Trifluorochloromethane	0.00E+00	NA	NA	NA	NA	NA	NA	NA
Uranium	4.56E+00	1.00E-03	5.10E-04	NA	5.30E-09	1.04E-05	NA	NA
Vanadium	4.14E+01	1.00E-03	7.00E-05	NA	4.81E-08	6.87E-04	NA	NA
Vinyl chloride	0.00E+00	1.00E-02	3.00E-03	1.50E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xylenes	0.00E+00	1.00E-02	1.84E-01	NA	0.00E+00	0.00E+00	NA	NA
Zinc	8.93E+01	1.00E-03	6.00E-02	NA	1.04E-07	1.73E-06	NA	NA
					total =	5.66E-03	total =	3.29E-08

TABLE E.0-1
Construction Worker - BKGD - IngestSoilChem

Construction Worker - Ingestion of Soil
Risk calculation for background

Intake Equation:			UNITS	adult
	CDI =	(CS*EF*ED*IR*FI*CF)/(BW*AT)		
	CDI =	Chronic Daily Intake	mg/kgday	calculated below
	CS =	Concentration of chemical in soil	mg/kg	see COC list below
	EF =	Exposure frequency	days/yr	30
	ED =	Exposure duration	yrs	1
	IR =	Ingestion rate	mg/day	330
	FI =	Fraction of contaminated soil	unitless	1
	CF =	Conversion factor	kg/mg	1.00E-06
	BW =	Body weight	kg	70
	ATc =	Average time for carcinogens	days	25550
	ATn =	Average time for non-carcinogens	days	365

COC	conc	RfDo	CSFo	ADULT CDI	ADULT HQ	ADULT CDI	ADULT ILCR
	mg/kg	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	0.00E+00	4.00E-03	5.70E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,1-Dichloroethylene	0.00E+00	5.00E-02	6.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,2-dichloroethane	0.00E+00	2.00E-02	9.10E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2-Butanone	0.00E+00	6.00E-01	NA	0.00E+00	0.00E+00	NA	NA
3,3-Dichlorobenzidine	0.00E+00	NA	4.50E-01	NA	NA	0.00E+00	0.00E+00
4-Methylphenol	0.00E+00	5.00E-03	NA	0.00E+00	0.00E+00	NA	NA
4-Nitroanaline	0.00E+00	3.00E-03	2.10E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Acetone	0.00E+00	9.00E-01	NA	0.00E+00	0.00E+00	NA	NA
Antimony	2.87E+00	4.00E-04	NA	1.11E-06	2.78E-03	NA	NA
Aroclor-1254	0.00E+00	2.00E-05	2.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Aroclor-1260	0.00E+00	2.00E-05	2.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Arsenic	1.24E+01	3.00E-04	1.50E+00	4.80E-06	1.60E-02	6.86E-08	1.03E-07
Barium	1.87E+02	2.00E-01	NA	7.25E-05	3.62E-04	NA	NA
Benzene	0.00E+00	4.00E-03	5.50E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Benzo(a)anthracene	0.00E+00	NA	7.30E-01	NA	NA	0.00E+00	0.00E+00
Benzo(a)pyrene	0.00E+00	NA	7.30E+00	NA	NA	0.00E+00	0.00E+00
Benzo(b)fluoranthene	0.00E+00	NA	7.30E-01	NA	NA	0.00E+00	0.00E+00
Benzo(k)fluoranthene	0.00E+00	NA	7.30E-02	NA	NA	0.00E+00	0.00E+00
Beryllium	1.44E+00	2.00E-03	4.30E+00	5.58E-07	2.79E-04	7.97E-09	3.43E-08
Bis(2-chloroisopropyl)ether	0.00E+00	4.00E-02	NA	0.00E+00	0.00E+00	NA	NA
Bis(2-ethylhexyl)phthalate	0.00E+00	2.00E-02	1.40E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Boron	2.56E+00	2.00E-01	NA	9.92E-07	4.96E-06	NA	NA
Bromodichloromethane	0.00E+00	2.00E-02	6.20E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Bromoform	0.00E+00	2.00E-02	7.90E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Bromomethane	0.00E+00	1.40E-03	NA	0.00E+00	0.00E+00	NA	NA
Cadmium	9.89E-01	1.00E-03	NA	3.83E-07	3.83E-04	NA	NA
Carbazole	0.00E+00	NA	2.00E-03	NA	NA	0.00E+00	0.00E+00
Carbon disulfide	0.00E+00	1.00E-01	NA	0.00E+00	0.00E+00	NA	NA
Carbon tetrachloride	0.00E+00	7.00E-04	1.30E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chlordane	0.00E+00	5.00E-04	3.50E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chlorobenzene	0.00E+00	2.00E-02	NA	0.00E+00	0.00E+00	NA	NA
Chloroform	0.00E+00	1.00E-02	6.10E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chromium (VI)	2.47E+01	3.00E-03	NA	9.57E-06	3.19E-03	NA	NA
Chrysene	0.00E+00	NA	7.30E-03	NA	NA	0.00E+00	0.00E+00
Cobalt	2.14E+01	2.00E-02	NA	8.29E-06	4.15E-04	NA	NA
Copper	3.13E+01	4.00E-02	NA	1.21E-05	3.03E-04	NA	NA
Cyanide	0.00E+00	2.00E-02	NA	0.00E+00	0.00E+00	NA	NA
Cyclohexanone	0.00E+00	5.00E+00	NA	0.00E+00	0.00E+00	NA	NA
Dibenzo(a,h)anthracene	0.00E+00	NA	7.30E+00	NA	NA	0.00E+00	0.00E+00
Dieldrin	0.00E+00	5.00E-05	1.60E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Di-n-octylphthalate	0.00E+00	4.00E-02	NA	0.00E+00	0.00E+00	NA	NA
Ethyl ether	0.00E+00	2.00E-01	NA	0.00E+00	0.00E+00	NA	NA
Ethylbenzene	0.00E+00	1.00E-01	NA	0.00E+00	0.00E+00	NA	NA
Fluoride	3.20E+00	6.00E-02	NA	1.24E-06	2.07E-05	NA	NA
Heptachlorodibenzofuran	0.00E+00	NA	1.50E+03	NA	NA	0.00E+00	0.00E+00
Heptachlorodibenzo-p-dioxin	0.00E+00	NA	1.50E+03	NA	NA	0.00E+00	0.00E+00
Hexachlorodibenzofuran	0.00E+00	NA	1.50E+03	NA	NA	0.00E+00	0.00E+00
Hexachlorodibenzo-p-dioxin	0.00E+00	NA	1.50E+04	NA	NA	0.00E+00	0.00E+00
Indeno(1,2,3-cd)pyrene	0.00E+00	NA	7.30E-01	NA	NA	0.00E+00	0.00E+00
Lead	3.06E+01	NA	NA	NA	NA	NA	NA
Manganese	1.33E+03	1.40E-01	NA	5.15E-04	3.68E-03	NA	NA
Mercury	7.00E-02	3.00E-04	NA	2.71E-08	9.04E-05	NA	NA
Methanol	0.00E+00	5.00E-01	NA	0.00E+00	0.00E+00	NA	NA
Methyl-2-pentanone	0.00E+00	8.00E-02	NA	0.00E+00	0.00E+00	NA	NA
Methylene chloride	0.00E+00	6.00E-02	7.50E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Molybdenum	5.24E+00	5.00E-03	NA	2.03E-06	4.06E-04	NA	NA
Nickel	4.56E+01	2.00E-02	NA	1.77E-05	8.83E-04	NA	NA
N-nitrosodiphenylamine	0.00E+00	2.00E-02	4.90E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00
N-nitrosodipropylamine	0.00E+00	NA	7.00E+00	NA	NA	0.00E+00	0.00E+00
Octachlorodibenzofuran	0.00E+00	NA	1.50E+02	NA	NA	0.00E+00	0.00E+00
Octochlorodibenzo-p-dioxin	0.00E+00	NA	1.50E+02	NA	NA	0.00E+00	0.00E+00
Pentachlorodibenzofuran	0.00E+00	NA	7.50E+03	NA	NA	0.00E+00	0.00E+00
Pentachlorodibenzo-p-dioxin	0.00E+00	NA	7.50E+04	NA	NA	0.00E+00	0.00E+00
Pentachlorophenol	0.00E+00	3.00E-02	1.20E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Phenanthrene	0.00E+00	NA	NA	NA	NA	NA	NA
Selenium	1.19E+00	5.00E-03	NA	4.61E-07	9.22E-05	NA	NA
Silver	1.13E+00	5.00E-03	NA	4.38E-07	8.76E-05	NA	NA
Tetrachlorodibenzofuran	0.00E+00	NA	1.50E+04	NA	NA	0.00E+00	0.00E+00
Tetrachlorodibenzo-p-dioxin	0.00E+00	NA	1.50E+05	NA	NA	0.00E+00	0.00E+00
Tetrachloroethylene	0.00E+00	1.00E-02	5.40E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Thallium	5.80E-01	9.00E-05	NA	2.25E-07	2.50E-03	NA	NA
Toluene	0.00E+00	8.00E-02	NA	0.00E+00	0.00E+00	NA	NA
Tributyl phosphate	0.00E+00	2.00E-01	5.40E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Trichloroethylene	0.00E+00	3.00E-04	4.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Trifluorochloromethane	0.00E+00	NA	NA	NA	NA	NA	NA
Uranium	4.56E+00	6.00E-04	NA	1.77E-06	2.94E-03	NA	NA
Vanadium	4.14E+01	7.00E-03	NA	1.60E-05	2.29E-03	NA	NA
Vinyl chloride	0.00E+00	3.00E-03	1.50E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xylenes	0.00E+00	2.00E-01	NA	0.00E+00	0.00E+00	NA	NA
Zinc	8.93E+01	3.00E-01	NA	3.46E-05	1.15E-04	NA	NA
				total =	3.68E-02	total =	1.37E-07

TABLE E.0-1
Construction Worker - BKGD - DermalSWchem

Construction Worker - Dermal Contact with Surface Water
Risk calculation for background

			UNITS	adult
Intake Equation:	CDI =	(DA*EF*ED*SA)/(BW*AT)		
	CDI =	Chronic Daily Intake	mg/kgday	calculated below
	DA =	Dermal absorption dose	mg/cm²day	see COC list below
	EF =	Exposure frequency	days/yr	6
	ED =	Exposure duration	yrs	1
	SA =	Surface area of skin	cm²	5670
	BW =	Body weight	kg	70
	ATc =	Average time for carcinogens	days	25550
	ATn =	Average time for non-carcinogens	days	365
where:	DA = C_v*K_p*CF*ET			
	C_v =	concentation of ith contaminant in surface water	mg/L	see COC list below
	K_p =	permeability constant for ith contaminant	cm/hr	see COC list below
	CF =	conversion factor	L/cm³	0.001
	ET =	exposure time	hr/d	0.5

COC	C_v mg/L	K_p cm/hr	DA mg/cm²day	RfD mg/kgday	CSF kgday/mg	ADULT CDI mg/kgday	ADULT HQ CDI/RfD	ADULT CDI mg/kgday	ADULT ILCR CDI*CSF
1,1,2-Trichloroethane	0.00E+00	6.43E-03	0.00E+00	3.24E-03	7.04E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,1-Dichloroethylene	0.00E+00	1.59E-02	0.00E+00	5.00E-02	6.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,2-dichloroethane	0.00E+00	5.34E-03	0.00E+00	2.00E-02	9.10E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2-Butanone	0.00E+00	1.11E-03	0.00E+00	4.80E-01	NA	0.00E+00	0.00E+00	NA	NA
3,3-Dichlorobenzidine	0.00E+00	1.69E-02	0.00E+00	NA	9.00E-01	NA	NA	0.00E+00	0.00E+00
4-Methylphenol	0.00E+00	9.95E-03	0.00E+00	3.25E-03	NA	0.00E+00	0.00E+00	NA	NA
4-Nitroanaline	0.00E+00	2.66E-03	0.00E+00	2.40E-03	2.63E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Acetone	0.00E+00	5.69E-04	0.00E+00	7.47E-01	NA	0.00E+00	0.00E+00	NA	NA
Antimony	5.00E-04	1.00E-03	2.50E-10	8.00E-06	NA	3.33E-10	4.16E-05	NA	NA
Aroclor-1254	0.00E+00	1.29E+00	0.00E+00	1.80E-05	2.22E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Aroclor-1260	0.00E+00	5.48E+00	0.00E+00	1.80E-05	2.22E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Arsenic	1.50E-03	1.00E-03	7.50E-10	1.23E-04	3.66E+00	9.99E-10	8.12E-06	1.43E-11	5.22E-11
Barium	1.31E-02	1.00E-03	6.55E-09	1.40E-02	NA	8.72E-09	6.23E-07	NA	NA
Benzene	0.00E+00	2.07E-02	0.00E+00	3.88E-03	5.67E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Benzo(a)anthracene	0.00E+00	9.48E-01	0.00E+00	NA	2.35E+00	NA	NA	0.00E+00	0.00E+00
Benzo(a)pyrene	0.00E+00	1.24E+00	0.00E+00	NA	2.35E+01	NA	NA	0.00E+00	0.00E+00
Benzo(b)fluoranthene	0.00E+00	6.99E-01	0.00E+00	NA	2.35E+00	NA	NA	0.00E+00	0.00E+00
Benzo(k)fluoranthene	0.00E+00	1.20E+00	0.00E+00	NA	2.35E-01	NA	NA	0.00E+00	0.00E+00
Beryllium	1.00E-04	1.00E-03	5.00E-11	2.00E-05	4.30E+02	6.66E-11	3.33E-06	9.51E-13	4.09E-10
Bis(2-chloroisopropyl)ether	0.00E+00	7.63E-02	0.00E+00	2.00E-02	NA	0.00E+00	0.00E+00	NA	NA
Bis(2-ethylhexyl)phthalate	0.00E+00	1.97E+00	0.00E+00	3.80E-03	7.37E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Boron	1.58E-02	1.00E-03	7.90E-09	1.80E-01	NA	1.05E-08	5.84E-08	NA	NA
Bromodichloromethane	0.00E+00	5.02E-03	0.00E+00	1.96E-02	6.33E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Bromoform	0.00E+00	2.77E-03	0.00E+00	1.20E-02	1.32E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Bromomethane	0.00E+00	3.51E-03	0.00E+00	1.12E-03	NA	0.00E+00	0.00E+00	NA	NA
Cadmium	1.00E-04	1.00E-03	5.00E-11	1.00E-05	NA	6.66E-11	6.66E-06	NA	NA
Carbazole	0.00E+00	7.97E-02	0.00E+00	NA	2.86E-02	NA	NA	0.00E+00	0.00E+00
Carbon disulfide	0.00E+00	1.56E-02	0.00E+00	6.30E-02	NA	0.00E+00	0.00E+00	NA	NA
Carbon tetrachloride	0.00E+00	2.24E-02	0.00E+00	4.55E-04	2.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chlordane	0.00E+00	1.57E-01	0.00E+00	2.50E-04	7.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chlorobenzene	0.00E+00	4.07E-02	0.00E+00	6.20E-03	NA	0.00E+00	0.00E+00	NA	NA
Chloroform	0.00E+00	6.92E-03	0.00E+00	2.00E-03	3.05E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chromium (VI)	1.00E-03	2.00E-03	1.00E-09	6.00E-05	NA	1.33E-09	2.22E-05	NA	NA
Chrysene	0.00E+00	1.03E+00	0.00E+00	NA	2.35E-02	NA	NA	0.00E+00	0.00E+00
Cobalt	2.90E-04	4.00E-04	5.80E-11	1.60E-02	NA	7.72E-11	4.83E-09	NA	NA
Copper	1.40E-03	1.00E-03	7.00E-10	1.20E-02	NA	9.32E-10	7.77E-08	NA	NA
Cyanide	0.00E+00	1.00E-03	0.00E+00	3.40E-03	NA	0.00E+00	0.00E+00	NA	NA
Cyclohexanone	0.00E+00	1.80E-03	0.00E+00	4.00E+00	NA	0.00E+00	0.00E+00	NA	NA
Dibenzo(a,h)anthracene	0.00E+00	1.68E+00	0.00E+00	NA	2.35E+01	NA	NA	0.00E+00	0.00E+00
Dieldrin	0.00E+00	4.45E-02	0.00E+00	2.50E-05	3.20E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Di-n-octylphthalate	0.00E+00	4.45E+00	0.00E+00	3.60E-02	NA	0.00E+00	0.00E+00	NA	NA
Ethyl ether	0.00E+00	2.88E-03	0.00E+00	1.60E-01	NA	0.00E+00	0.00E+00	NA	NA
Ethylbenzene	0.00E+00	7.39E-02	0.00E+00	9.70E-02	NA	0.00E+00	0.00E+00	NA	NA
Fluoride	1.46E-01	1.00E-03	7.30E-08	5.82E-02	NA	9.72E-08	1.67E-06	NA	NA
Heptachlorodibenzofuran	0.00E+00	2.55E+00	0.00E+00	NA	3.00E+03	NA	NA	0.00E+00	0.00E+00
Heptachlorodibenzo-p-dioxin	0.00E+00	3.22E+00	0.00E+00	NA	3.00E+03	NA	NA	0.00E+00	0.00E+00
Hexachlorodibenzofuran	0.00E+00	2.38E+00	0.00E+00	NA	3.00E+04	NA	NA	0.00E+00	0.00E+00
Hexachlorodibenzo-p-dioxin	0.00E+00	5.29E+00	0.00E+00	NA	3.00E+04	NA	NA	0.00E+00	0.00E+00
Indeno(1,2,3-cd)pyrene	0.00E+00	2.23E+00	0.00E+00	NA	2.35E+00	NA	NA	0.00E+00	0.00E+00
Lead	5.00E-04	1.00E-04	2.50E-11	NA	NA	NA	NA	NA	NA
Manganese	6.50E-03	1.00E-03	3.25E-09	1.84E-03	NA	4.33E-09	2.35E-06	NA	NA
Mercury	6.00E-05	1.00E-03	3.00E-11	2.10E-05	NA	3.99E-11	1.90E-06	NA	NA
Methanol	0.00E+00	3.45E-04	0.00E+00	4.00E-01	NA	0.00E+00	0.00E+00	NA	NA
4-Methyl-2-pentanone	0.00E+00	3.97E-03	0.00E+00	6.40E-02	NA	0.00E+00	0.00E+00	NA	NA
Methylene chloride	0.00E+00	4.46E-03	0.00E+00	5.70E-02	7.89E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Molybdenum	9.70E-04	1.00E-03	4.85E-10	1.90E-03	NA	6.46E-10	3.40E-07	NA	NA
Nickel	1.70E-03	2.00E-04	1.70E-10	5.40E-03	NA	2.26E-10	4.19E-08	NA	NA
N-nitrosodiphenylamine	0.00E+00	1.96E-02	0.00E+00	5.00E-03	1.96E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
N-nitrosodipropylamine	0.00E+00	2.63E-03	0.00E+00	NA	2.80E+01	NA	NA	0.00E+00	0.00E+00
Octachlorodibenzofuran	0.00E+00	4.78E+00	0.00E+00	NA	3.00E+02	NA	NA	0.00E+00	0.00E+00
Octochlorodibenzo-p-dioxin	0.00E+00	1.65E+01	0.00E+00	NA	3.00E+02	NA	NA	0.00E+00	0.00E+00
Pentachlorodibenzofuran	0.00E+00	1.08E+00	0.00E+00	NA	1.50E+04	NA	NA	0.00E+00	0.00E+00
Pentachlorodibenzo-p-dioxin	0.00E+00	3.79E-01	0.00E+00	NA	1.50E+05	NA	NA	0.00E+00	0.00E+00
Pentachlorophenol	0.00E+00	1.95E-01	0.00E+00	3.00E-02	1.20E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Phenanthrene	0.00E+00	2.29E-01	0.00E+00	NA	NA	NA	NA	NA	NA
Selenium	2.50E-03	1.00E-03	1.25E-09	2.20E-03	NA	1.66E-09	7.57E-07	NA	NA
Silver	2.00E-04	6.00E-04	6.00E-11	9.00E-04	NA	7.99E-11	8.88E-08	NA	NA
Tetrachlorodibenzofuran	0.00E+00	1.12E+00	0.00E+00	NA	3.00E+04	NA	NA	0.00E+00	0.00E+00
Tetrachlorodibenzo-p-dioxin	0.00E+00	1.39E+00	0.00E+00	NA	3.00E+05	NA	NA	0.00E+00	0.00E+00
Tetrachloroethylene	0.00E+00	4.81E-02	0.00E+00	1.00E-02	5.40E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Thallium	4.00E-04	1.00E-03	2.00E-10	1.80E-05	NA	2.66E-10	1.48E-05	NA	NA
Toluene	0.00E+00	4.53E-02	0.00E+00	6.40E-02	NA	0.00E+00	0.00E+00	NA	NA
Tributyl phosphate	0.00E+00	3.13E-02	0.00E+00	1.00E-01	1.08E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Trichloroethylene	0.00E+00	1.57E-02	0.00E+00	4.50E-05	2.67E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Trifluorochloromethane	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA
Uranium	1.70E-03	1.00E-03	8.50E-10	5.10E-04	NA	1.13E-09	2.22E-06	NA	NA
Vanadium	2.00E-03	1.00E-03	1.00E-09	7.00E-05	NA	1.33E-09	1.90E-05	NA	NA
Vinyl chloride	0.00E+00	1.13E-02	0.00E+00	3.00E-03	1.50E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xylenes	0.00E+00	7.04E-02	0.00E+00	1.84E-01	NA	0.00E+00	0.00E+00	NA	NA
Zinc	3.70E-03	6.00E-04	1.11E-09	6.00E-02	NA	1.48E-09	2.46E-08	NA	NA
						total =	1.26E-04	total =	4.81E-10

TABLE E.0-1
Construction Worker - BKGD - IngestSWchem

Construction Worker - Ingestion of Surface Water
Risk calculation for background

Intake Equation:			UNITS	Assigned Values
	CDI =	(CW*EF*ED*IR)/(BW*AT)		
	CDI =	Chronic Daily Intake	mg/kgday	adult
	CW =	Concentration of chemical in water	mg/L	see COC table below
	EF =	Exposure frequency	days/yr	6
	ED =	Exposure duration	yrs	1
	IR =	Ingestion rate	L/day	0.005
	BW =	Body weight	kg	70
	ATc =	Average time for carcinogens	days	25550
	ATn =	Average time for non-carcinogens	days	365

COC	CW	RfDo	CSFo	ADULT CDI	ADULT HQ	ADULT CDI	ADULT ILCR
	mg/L	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	0.00E+00	4.00E-03	5.70E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,1-Dichloroethylene	0.00E+00	5.00E-02	6.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,2-dichloroethane	0.00E+00	2.00E-02	9.10E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2-Butanone	0.00E+00	6.00E-01	NA	0.00E+00	0.00E+00	NA	NA
3,3-Dichlorobenzidine	0.00E+00	NA	4.50E-01	NA	NA	0.00E+00	0.00E+00
4-Methylphenol	0.00E+00	5.00E-03	NA	0.00E+00	0.00E+00	NA	NA
4-Nitroanaline	0.00E+00	3.00E-03	2.10E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Acetone	0.00E+00	9.00E-01	NA	0.00E+00	0.00E+00	NA	NA
Antimony	5.00E-04	4.00E-04	NA	5.87E-10	1.47E-06	NA	NA
Aroclor-1254	0.00E+00	2.00E-05	4.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Aroclor-1260	0.00E+00	2.00E-05	4.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Arsenic	1.50E-03	3.00E-04	1.50E+00	1.76E-09	5.87E-06	2.52E-11	3.77E-11
Barium	1.31E-02	2.00E-01	NA	1.54E-08	7.69E-08	NA	NA
Benzene	0.00E+00	4.00E-03	5.50E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Benzo(a)anthracene	0.00E+00	NA	7.30E-01	NA	NA	0.00E+00	0.00E+00
Benzo(a)pyrene	0.00E+00	NA	7.30E+00	NA	NA	0.00E+00	0.00E+00
Benzo(b)fluoranthene	0.00E+00	NA	7.30E-01	NA	NA	0.00E+00	0.00E+00
Benzo(k)fluoranthene	0.00E+00	NA	7.30E-02	NA	NA	0.00E+00	0.00E+00
Beryllium	1.00E-04	2.00E-03	4.30E+00	1.17E-10	5.87E-08	1.68E-12	7.21E-12
Bis(2-chloroisopropyl)ether	0.00E+00	4.00E-02	NA	0.00E+00	0.00E+00	NA	NA
Bis(2-ethylhexyl)phthalate	0.00E+00	2.00E-02	1.40E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Boron	1.58E-02	2.00E-01	NA	1.86E-08	9.28E-08	NA	NA
Bromodichloromethane	0.00E+00	2.00E-02	6.20E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Bromoform	0.00E+00	2.00E-02	7.90E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Bromomethane	0.00E+00	1.40E-03	NA	0.00E+00	0.00E+00	NA	NA
Cadmium	1.00E-04	1.00E-03	NA	1.17E-10	1.17E-07	NA	NA
Carbazole	0.00E+00	NA	2.00E-03	NA	NA	0.00E+00	0.00E+00
Carbon disulfide	0.00E+00	1.00E-01	NA	0.00E+00	0.00E+00	NA	NA
Carbon tetrachloride	0.00E+00	7.00E-04	1.30E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chlordane	0.00E+00	5.00E-04	3.50E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chlorobenzene	0.00E+00	2.00E-02	NA	0.00E+00	0.00E+00	NA	NA
Chloroform	0.00E+00	1.00E-02	6.10E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chromium (VI)	1.00E-03	3.00E-03	NA	1.17E-09	3.91E-07	NA	NA
Chrysene	0.00E+00	NA	7.30E-03	NA	NA	0.00E+00	0.00E+00
Cobalt	2.90E-04	2.00E-02	NA	3.41E-10	1.70E-08	NA	NA
Copper	1.40E-03	4.00E-02	NA	1.64E-09	4.11E-08	NA	NA
Cyanide	0.00E+00	2.00E-02	NA	0.00E+00	0.00E+00	NA	NA
Cyclohexanone	0.00E+00	5.00E+00	NA	0.00E+00	0.00E+00	NA	NA
Dibenzo(a,h)anthracene	0.00E+00	NA	7.30E+00	NA	NA	0.00E+00	0.00E+00
Dieldrin	0.00E+00	5.00E-05	1.60E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Di-n-octylphthalate	0.00E+00	4.00E-02	NA	0.00E+00	0.00E+00	NA	NA
Ethyl ether	0.00E+00	2.00E-01	NA	0.00E+00	0.00E+00	NA	NA
Ethylbenzene	0.00E+00	1.00E-01	NA	0.00E+00	0.00E+00	NA	NA
Fluoride	1.46E-01	6.00E-02	NA	1.71E-07	2.86E-06	NA	NA
Heptachlorodibenzofuran	0.00E+00	NA	1.50E+03	NA	NA	0.00E+00	0.00E+00
Heptachlorodibenzo-p-dioxin	0.00E+00	NA	1.50E+03	NA	NA	0.00E+00	0.00E+00
Hexachlorodibenzofuran	0.00E+00	NA	1.50E+03	NA	NA	0.00E+00	0.00E+00
Hexachlorodibenzo-p-dioxin	0.00E+00	NA	1.50E+04	NA	NA	0.00E+00	0.00E+00
Indeno(1,2,3-cd)pyrene	0.00E+00	NA	7.30E-01	NA	NA	0.00E+00	0.00E+00
Lead	5.00E-04	NA	NA	NA	NA	NA	NA
Manganese	6.50E-03	4.60E-02	NA	7.63E-09	1.66E-07	NA	NA
Mercury	6.00E-05	3.00E-04	NA	7.05E-11	2.35E-07	NA	NA
Methanol	0.00E+00	5.00E-01	NA	0.00E+00	0.00E+00	NA	NA
4-Methyl-2-pentanone	0.00E+00	8.00E-02	NA	0.00E+00	0.00E+00	NA	NA
Methylene chloride	0.00E+00	6.00E-02	7.50E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Molybdenum	9.70E-04	5.00E-03	NA	1.14E-09	2.28E-07	NA	NA
Nickel	1.70E-03	2.00E-02	NA	2.00E-09	9.98E-08	NA	NA
N-nitrosodiphenylamine	0.00E+00	2.00E-02	4.90E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00
N-nitrosodipropylamine	0.00E+00	NA	7.00E+00	NA	NA	0.00E+00	0.00E+00
Octachlorodibenzofuran	0.00E+00	NA	1.50E+02	NA	NA	0.00E+00	0.00E+00
Octochlorodibenzo-p-dioxin	0.00E+00	NA	1.50E+02	NA	NA	0.00E+00	0.00E+00
Pentachlorodibenzofuran	0.00E+00	NA	7.50E+03	NA	NA	0.00E+00	0.00E+00
Pentachlorodibenzo-p-dioxin	0.00E+00	NA	7.50E+04	NA	NA	0.00E+00	0.00E+00
Pentachlorophenol	0.00E+00	3.00E-02	1.20E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Phenanthrene	0.00E+00	NA	NA	NA	NA	NA	NA
Selenium	2.50E-03	5.00E-03	NA	2.94E-09	5.87E-07	NA	NA
Silver	2.00E-04	5.00E-03	NA	2.35E-10	4.70E-08	NA	NA
Tetrachlorodibenzofuran	0.00E+00	NA	1.50E+04	NA	NA	0.00E+00	0.00E+00
Tetrachlorodibenzo-p-dioxin	0.00E+00	NA	1.50E+05	NA	NA	0.00E+00	0.00E+00
Tetrachloroethylene	0.00E+00	1.00E-02	5.40E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Thallium	4.00E-04	9.00E-05	NA	4.70E-10	5.22E-06	NA	NA
Toluene	0.00E+00	8.00E-02	NA	0.00E+00	0.00E+00	NA	NA
Tributyl phosphate	0.00E+00	2.00E-01	5.40E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Trichloroethylene	0.00E+00	3.00E-04	4.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Trifluorochloromethane	0.00E+00	NA	NA	NA	NA	NA	NA
Uranium	1.70E-03	6.00E-04	NA	2.00E-09	3.33E-06	NA	NA
Vanadium	2.00E-03	7.00E-03	NA	2.35E-09	3.35E-07	NA	NA
Vinyl chloride	0.00E+00	3.00E-03	1.50E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xylenes	0.00E+00	2.00E-01	NA	0.00E+00	0.00E+00	NA	NA
Zinc	3.70E-03	3.00E-01	NA	4.34E-09	1.45E-08	NA	NA
				total =	2.12E-05	total =	4.50E-11

TABLE E.0-1
Construction Worker - BKGD - InhaleRad

Construction Worker - Inhalation of Gases & Particulates
Risk calculation for background

Intake Equation:			UNITS	adult
	CDI =	(CA*EF*ED*IR*ET)	pCi	calculated below
	CDI =	Chronic Daily Intake	pCi/m^3	see COC list below
	CA =	Concentration of radionuclide in air	days/yr	30
	EF =	Exposure frequency	yrs	1
	ED =	Exposure duration	m^3/hr	2.5
	IR =	Inhalation rate	hrs/day	8
	ET =	Exposure time		

COC	conc	CSFI	ADULT	
			CDI	ILCR
	pCi/m^3	1/pCi	pCi	CDI*CSF
Cesium-137 + D	1.72E-06	1.19E-11	1.03E-03	1.23E-14
Lead-210 + D	4.06E-05	1.39E-08	2.43E-02	3.38E-10
Neptunium-237 + D	0.00E+00	1.77E-08	0.00E+00	0.00E+00
Plutonium-238	0.00E+00	3.36E-08	0.00E+00	0.00E+00
Plutonium-239/240	0.00E+00	3.33E-08	0.00E+00	0.00E+00
Radium-226 + D	4.06E-05	1.16E-08	2.43E-02	2.82E-10
Radium-228 + D	3.30E-05	5.23E-09	1.98E-02	1.04E-10
Radon-222+ D	3.99E+02	1.80E-11	2.40E+05	4.31E-06
Strontium-90 + D	0.00E+00	1.13E-10	0.00E+00	0.00E+00
Technetium-99	0.00E+00	1.41E-11	0.00E+00	0.00E+00
Thorium-228 + D	3.25E-05	1.43E-07	1.95E-02	2.79E-09
Thorium-230	4.06E-05	2.85E-08	2.43E-02	6.94E-10
Thorium-232	3.30E-05	4.33E-08	1.98E-02	8.58E-10
Uranium-234	4.05E-05	1.14E-08	2.43E-02	2.77E-10
Uranium-235 + D	1.84E-06	1.01E-08	1.11E-03	1.12E-11
Uranium-238 + D	3.95E-05	9.35E-09	2.37E-02	2.22E-10
			total =	**4.32E-06**

Air concentration is derived using air particulate value of 26 ug/m^3 (2005 SER background average from monitor AMS-12) multiplied by the soil concentration.
Rn-222 is derived by multiplying the soil Ra-226 value by 256 g/m^3. This conversion factor is based on Rn-222 air background and Ra-226 soil background (i.e., 400 pCi/m^3 divided by 1.56 pCi/g)

TABLE E.0-1
Construction Worker - BKGD - IngestSoilRad

Construction Worker - Ingestion of Soil
Risk calculation for background

Intake Equation:			UNITS	adult
	CDI =	(CS*EF*ED*IR*FI)		
	CDI =	Chronic Daily Intake	pCi	calculated below
	CS =	Concentration of radionuclide in soil	pCi/g	see COC list below
	EF =	Exposure frequency	days/yr	30
	ED =	Exposure duration	yrs	1
	IR =	Ingestion rate	g/day	0.33
	FI =	Fraction of contaminated soil	unitless	1

COC	conc	CSFos	ADULT	
			CDI	ILCR
	pCi/g	1/pCi	pCi	CDI*CSF
Cesium-137 + D	6.60E-02	4.33E-11	6.53E-01	2.83E-11
Lead-210 + D	1.56E+00	2.66E-09	1.54E+01	4.11E-08
Neptunium-237 + D	0.00E+00	1.62E-10	0.00E+00	0.00E+00
Plutonium-238	0.00E+00	2.72E-10	0.00E+00	0.00E+00
Plutonium-239/240	0.00E+00	2.76E-10	0.00E+00	0.00E+00
Radium-226 + D	1.56E+00	7.30E-10	1.54E+01	1.13E-08
Radium-228 + D	1.27E+00	2.29E-09	1.26E+01	2.88E-08
Radon-222+ D	NA	NA	NA	NA
Strontium-90 + D	0.00E+00	1.44E-10	0.00E+00	0.00E+00
Technetium-99	0.00E+00	7.66E-12	0.00E+00	0.00E+00
Thorium-228 + D	1.25E+00	8.09E-10	1.24E+01	1.00E-08
Thorium-230	1.56E+00	2.02E-10	1.54E+01	3.12E-09
Thorium-232	1.27E+00	2.31E-10	1.26E+01	2.90E-09
Uranium-234	1.56E+00	1.58E-10	1.54E+01	2.43E-09
Uranium-235 + D	7.09E-02	1.63E-10	7.02E-01	1.14E-10
Uranium-238 + D	1.52E+00	2.10E-10	1.50E+01	3.16E-09
			total =	**1.03E-07**

TABLE E.0-1
Construction Worker - BKGD - IngestSWrad

Construction Worker - Ingestion of Surface Water
Risk calculation for background

Intake Equation:			UNITS	Assigned Values
	CDI =	(CW*EF*ED*IR)		
	CDI =	Chronic Daily Intake	pCi	adult
	CW =	Concentration of radionuclide in water	pCi/L	see COC table below
	EF =	Exposure frequency	days/yr	6
	ED =	Exposure duration	yrs	1
	IR =	Ingestion rate	L/day	0.005

COC	conc	CSFow	ADULT	
			CDI	ILCR
	pCi/L	1/pCi	pCi	CDI*CSF
Cesium-137 + D	1.70E+00	3.04E-11	5.10E-02	1.55E-12
Lead-210 + D	6.99E-01	1.27E-09	2.10E-02	2.66E-11
Neptunium-237 + D	1.19E-01	6.74E-11	3.57E-03	2.41E-13
Plutonium-238	1.10E-02	1.31E-10	3.30E-04	4.32E-14
Plutonium-239/240	3.17E-02	1.35E-10	9.51E-04	1.28E-13
Radium-226 + D	1.45E-01	3.86E-10	4.35E-03	1.68E-12
Radium-228 + D	2.50E+00	1.04E-09	7.50E-02	7.80E-11
Radon-222+ D	NA	NA	NA	NA
Strontium-90 + D	4.66E-01	7.40E-11	1.40E-02	1.03E-12
Technetium-99	6.20E+00	2.75E-12	1.86E-01	5.12E-13
Thorium-228 + D	2.50E+00	3.00E-10	7.50E-02	2.25E-11
Thorium-230	3.94E-02	9.10E-11	1.18E-03	1.08E-13
Thorium-232	2.50E+00	1.01E-10	7.50E-02	7.58E-12
Uranium-234	5.81E-01	7.07E-11	1.74E-02	1.23E-12
Uranium-235 + D	2.64E-02	7.18E-11	7.93E-04	5.70E-14
Uranium-238 + D	5.67E-01	8.71E-11	1.70E-02	1.48E-12
			total =	**1.43E-10**

TABLE E.0-1
Construction Worker - BKGD - ExternalRad

Constrcution Worker - External Radiation
Risk calculation for background

Intake Equation:			UNITS	adult
	CDI =	$(CS*EF*ED*ET_o*(1-SH_o))+(CS*EF*ED*ET_i*(1-SH_i))$		
	CDI =	Chronic Daily Intake	yr pCi/g	calculated below
	CS =	Concentration of radionuclide in soil	pCi/g	see COC list below
	EF =	Fraction of year exposed to radiation	--	0.08
	ED =	Exposure duration	yrs	1
	ET_o =	Fraction of day spent outdoors	--	0.33
	ET_i =	Fraction of day spent indoors	--	0.00
	SH_o =	Shield factor outdoors	--	0.25
	SH_i =	Shield factor indoors	--	0.5

COC	conc pCi/g	CSFx g/pCi yr	ADULT CDI yr pCi/g	ADULT ILCR CDI*CSF
Cesium-137 + D	6.60E-02	2.55E-06	1.36E-03	3.46E-09
Lead-210 + D	1.56E+00	4.21E-09	3.20E-02	1.35E-10
Neptunium-237 + D	0.00E+00	7.97E-07	0.00E+00	0.00E+00
Plutonium-238	0.00E+00	7.22E-11	0.00E+00	0.00E+00
Plutonium-239/240	0.00E+00	2.00E-10	0.00E+00	0.00E+00
Radium-226 + D	1.56E+00	8.49E-06	3.20E-02	2.72E-07
Radium-228 + D	1.27E+00	4.53E-06	2.61E-02	1.18E-07
Radon-222+ D	NA	NA	NA	NA
Strontium-90 + D	0.00E+00	1.96E-08	0.00E+00	0.00E+00
Technetium-99	0.00E+00	8.14E-11	0.00E+00	0.00E+00
Thorium-228 + D	1.25E+00	7.76E-06	2.57E-02	1.99E-07
Thorium-230	1.56E+00	8.19E-10	3.20E-02	2.62E-11
Thorium-232	1.27E+00	3.42E-10	2.61E-02	8.92E-12
Uranium-234	1.56E+00	2.52E-10	3.20E-02	8.05E-12
Uranium-235 + D	7.09E-02	5.43E-07	1.46E-03	7.91E-10
Uranium-238 + D	1.52E+00	1.14E-07	3.12E-02	3.56E-09
			total =	**5.97E-07**

TABLE E.0-1
Construction Worker - BKGD - SumPaths

Construction Worker - Summation of all Pathways
Risk calculation for background

	HQ	ILCR	rad only ILCR
Inhale	6.06E-02	4.33E-06	4.32E-06
Dermal Soil	5.66E-03	3.29E-08	NA
Ingest Soil	3.68E-02	2.40E-07	1.03E-07
Dermal Surface Water	1.26E-04	4.61E-10	NA
Ingest Surface Water	2.12E-05	1.88E-10	1.43E-10
External Radiation	NA	5.97E-07	5.97E-07
SUM	**1.03E-01**	**5.20E-06**	**5.02E-06**

Summation of all paths for individual nuclides

		Background Values as Applicable to Each Zone							
	Background ILCR	**Zone 1 ILCR**	**Zone 2 ILCR**	**Zone 3 ILCR**	**Zone 4 ILCR**	**Zone 5 ILCR**	**Zone 6 ILCR**	**Zone 7 ILCR**	**Zone 8 ILCR**
Cesium-137 + D	3.49E-09	NA	3.49E-09	3.49E-09	NA	3.49E-09	3.49E-09	3.49E-09	3.49E-09
Lead-210 + D	4.16E-08	NA	4.16E-08	NA	NA	4.16E-08	4.16E-08	4.16E-08	4.16E-08
Neptunium-237 + D	2.41E-13	NA	NA	NA	NA	2.41E-13	NA	NA	NA
Plutonium-238	4.32E-14	NA	NA	NA	NA	4.32E-14	NA	NA	NA
Plutonium-239/240	1.28E-13	NA	NA	NA	NA	NA	NA	NA	NA
Radium-226 + D	2.84E-07	2.84E-07	2.84E-07	2.84E-07	2.84E-07	2.84E-07	2.84E-07	2.84E-07	2.84E-07
Radium-228 + D	1.47E-07	1.47E-07	1.47E-07	1.47E-07	1.47E-07	1.47E-07	1.47E-07	1.47E-07	1.47E-07
Radon-222+ D	4.31E-06	4.31E-06	4.31E-06	4.31E-06	4.31E-06	4.31E-06	4.31E-06	4.31E-06	4.31E-06
Strontium-90 + D	1.03E-12	NA	NA	NA	NA	NA	NA	NA	NA
Technetium-99	5.12E-13	5.12E-13	5.12E-13	NA	NA	5.12E-13	5.12E-13	5.12E-13	5.12E-13
Thorium-228 + D	2.12E-07	2.12E-07	2.12E-07	2.12E-07	2.12E-07	2.12E-07	2.12E-07	2.12E-07	2.12E-07
Thorium-230	3.84E-09	NA	3.84E-09	3.84E-09	NA	3.84E-09	3.84E-09	3.84E-09	3.84E-09
Thorium-232	3.78E-09	3.78E-09	3.78E-09	3.78E-09	3.78E-09	3.78E-09	3.78E-09	3.78E-09	3.78E-09
Uranium-234	2.72E-09	2.72E-09	2.72E-09	2.72E-09	2.72E-09	2.72E-09	2.72E-09	2.72E-09	2.72E-09
Uranium-235 + D	9.16E-10	9.16E-10	9.16E-10	9.16E-10	9.16E-10	9.16E-10	9.16E-10	9.16E-10	9.16E-10
Uranium-238 + D	6.94E-09	6.94E-09	6.94E-09	6.94E-09	6.94E-09	6.94E-09	6.94E-09	6.94E-09	6.94E-09
SUM	**5.02E-06**	**4.97E-06**	**5.02E-06**	**4.98E-06**	**4.97E-06**	**5.02E-06**	**5.02E-06**	**5.02E-06**	**5.02E-06**

TABLE E.0-1
Construction Worker - BKGD - SumPaths

Summation of all paths for individual chemicals			Background Values as Applicable to Each Zone															
	Background		Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6		Zone 7		Zone 8	
	ILCR	HQ	ILCR	HQ	ILCR	HQ	ILCR	HQ	ILCR	HQ	ILCR	HQ	ILCR	HQ	ILCR	HQ	ILCR	HQ
1,1,2-Trichloroethane	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
1,1-Dichloroethylene	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
1,2-dichloroethane	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
2-Butanone	No CSFs	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	No CSFs	0.00E+00
3,3-Dichlorobenzidine	0.00E+00	No RfDs	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	No CSFs	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroanaline	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	No CSFs	0.00E+00	NA	NA	No CSFs	0.00E+00	NA	NA	NA	NA	No CSFs	0.00E+00	NA	NA	NA	NA	No CSFs	0.00E+00
Antimony	No CSFs	3.24E-03	No CSFs	3.24E-03	No CSFs	3.24E-03	NA	NA	NA	NA	No CSFs	3.24E-03	No CSFs	3.24E-03	No CSFs	3.24E-03	No CSFs	3.24E-03
Aroclor-1254	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Aroclor-1260	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Arsenic	1.27E-07	1.95E-02	1.27E-07	1.95E-02	1.27E-07	1.95E-02	1.27E-07	1.95E-02	NA	NA	1.27E-07	1.95E-02	1.27E-07	1.95E-02	1.27E-07	1.95E-02	1.27E-07	1.95E-02
Barium	No CSFs	1.18E-03	NA	NA	No CSFs	1.18E-03	NA	NA	NA	NA	No CSFs	1.18E-03	No CSFs	1.18E-03	NA	NA	No CSFs	1.18E-03
Benzene	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	NA	NA	0.00E+00	0.00E+00	NA	NA	NA	NA	0.00E+00	0.00E+00
Benzo(a)anthracene	0.00E+00	No RfDs	NA	NA	0.00E+00	No RfDs	0.00E+00	No RfDs	NA	NA	0.00E+00	No RfDs	0.00E+00	No RfDs	0.00E+00	No RfDs	NA	NA
Benzo(a)pyrene	0.00E+00	No RfDs	NA	NA	0.00E+00	No RfDs	0.00E+00	No RfDs	NA	NA	0.00E+00	No RfDs	0.00E+00	No RfDs	0.00E+00	No RfDs	NA	NA
Benzo(b)fluoranthene	0.00E+00	No RfDs	NA	NA	0.00E+00	No RfDs	0.00E+00	No RfDs	NA	NA	0.00E+00	No RfDs	0.00E+00	No RfDs	0.00E+00	No RfDs	NA	NA
Benzo(k)fluoranthene	0.00E+00	No RfDs	NA	NA	0.00E+00	No RfDs	0.00E+00	No RfDs	NA	NA	0.00E+00	No RfDs	0.00E+00	No RfDs	0.00E+00	No RfDs	NA	NA
Beryllium	4.51E-08	5.20E-04	4.51E-08	5.20E-04	4.51E-08	5.20E-04	4.51E-08	5.20E-04	NA	NA	4.51E-08	5.20E-04	4.51E-08	5.20E-04	4.51E-08	5.20E-04	4.51E-08	5.20E-04
Bis(2-chloroisopropyl)ether	No CSFs	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Boron	No CSFs	5.40E-06	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Bromoform	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	No CSFs	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	5.43E-11	5.05E-04	NA	NA	5.43E-11	5.05E-04	NA	NA	NA	NA	5.43E-11	5.05E-04	5.43E-11	5.05E-04	5.43E-11	5.05E-04	5.43E-11	5.05E-04
Carbazole	0.00E+00	No RfDs	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	No CSFs	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	NA	NA	0.00E+00	0.00E+00	NA	NA	NA	NA	0.00E+00	0.00E+00
Chlordane	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	No CSFs	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (VI)	9.05E-09	4.22E-03	NA	NA	9.05E-09	4.22E-03	NA	NA	NA	NA	9.05E-09	4.22E-03	NA	NA	NA	NA	9.05E-09	4.22E-03
Chrysene	0.00E+00	No RfDs	NA	NA	0.00E+00	No RfDs	0.00E+00	No RfDs	NA	NA	0.00E+00	No RfDs	0.00E+00	No RfDs	0.00E+00	No RfDs	0.00E+00	No RfDs
Cobalt	1.83E-09	2.70E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	No CSFs	3.06E-04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	No CSFs	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexanone	No CSFs	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	0.00E+00	No RfDs	NA	NA	0.00E+00	No RfDs	0.00E+00	No RfDs	NA	NA	0.00E+00	No RfDs	0.00E+00	No RfDs	0.00E+00	No RfDs	0.00E+00	No RfDs
Dieldrin	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Di-n-octylphthalate	No CSFs	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE E.0-1
Construction Worker - BKGD - SumPaths

Summation of all paths for individual chemicals (continued)

	Background		Background Values as Applicable to Each Zone															
			Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6		Zone 7		Zone 8	
	ILCR	HQ	ILCR	HQ	ILCR	HQ	ILCR	HQ	ILCR	HQ	ILCR	HQ	ILCR	HQ	ILCR	HQ	ILCR	HQ
Ethyl ether	No CSFs	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	NA	NA	0.00E+00	0.00E+00	NA	NA	NA	NA	0.00E+00	0.00E+00
Fluoride	No CSFs	2.53E-05	NA	NA	NA	NA	NA	NA	NA	NA	No CSFs	2.53E-05	No CSFs	2.53E-05	NA	NA	NA	NA
Heptachlorodibenzofuran	0.00E+00	No RfDs	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlorodibenzo-p-dioxin	0.00E+00	No RfDs	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.00E+00	No RfDs	NA	NA	NA	NA
Hexachlorodibenzofuran	0.00E+00	No RfDs	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorodibenzo-p-dioxin	0.00E+00	No RfDs	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	0.00E+00	No RfDs	NA	NA	0.00E+00	No RfDs	0.00E+00	No RfDs	NA	NA	0.00E+00	No RfDs	0.00E+00	No RfDs	0.00E+00	No RfDs	0.00E+00	No RfDs
Lead	No CSFs	No RfDs	No CSFs	No RfDs	No CSFs	No RfDs	No CSFs	No RfDs	NA	NA	No CSFs	No RfDs	NA	NA	NA	NA	No CSFs	No RfDs
Manganese	No CSFs	6.07E-02	NA	NA	NA	NA	No CSFs	6.07E-02	NA	NA	NA	NA	NA	NA	NA	NA	No CSFs	6.07E-02
Mercury	No CSFs	9.64E-05	NA	NA	No CSFs	9.64E-05	NA	NA	NA	NA	No CSFs	9.64E-05	NA	NA	NA	NA	No CSFs	9.64E-05
Methanol	No CSFs	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone	No CSFs	0.00E+00	NA	NA	No CSFs	0.00E+00	NA	NA	NA	NA	No CSFs	0.00E+00	NA	NA	NA	NA	No CSFs	0.00E+00
Methylene chloride	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	NA	NA	0.00E+00	0.00E+00	NA	NA	NA	NA	0.00E+00	0.00E+00
Molybdenum	No CSFs	4.10E-04	NA	NA	No CSFs	4.10E-04	No CSFs	4.10E-04	NA	NA	No CSFs	4.10E-04	No CSFs	4.10E-04	No CSFs	4.10E-04	No CSFs	4.10E-04
Nickel	No CSFs	8.93E-04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-nitrosodipropylamine	0.00E+00	No RfDs	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Octachlorodibenzofuran	0.00E+00	No RfDs	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Octochlorodibenzo-p-dioxin	0.00E+00	No RfDs	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.00E+00	No RfDs	NA	NA	NA	NA
Pentachlorodibenzofuran	No CSFs	No RfDs	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorodibenzo-p-dioxin	0.00E+00	No RfDs	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	No CSFs	No RfDs	NA	NA	No CSFs	No RfDs	NA	NA	NA	NA	No CSFs	No RfDs	No CSFs	No RfDs	No CSFs	No RfDs	No CSFs	No RfDs
Selenium	No CSFs	9.42E-05	NA	NA	No CSFs	9.42E-05	NA	NA	NA	NA	No CSFs	9.42E-05	NA	NA	NA	NA	No CSFs	9.42E-05
Silver	No CSFs	8.92E-05	NA	NA	No CSFs	8.92E-05	NA	NA	NA	NA	No CSFs	8.92E-05	No CSFs	8.92E-05	No CSFs	8.92E-05	No CSFs	8.92E-05
Tetrachlorodibenzofuran	No CSFs	No RfDs	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachlorodibenzo-p-dioxin	No CSFs	No RfDs	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethylene	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Thallium	No CSFs	2.55E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	No CSFs	0.00E+00	NA	NA	No CSFs	0.00E+00	NA	NA	NA	NA	No CSFs	0.00E+00	NA	NA	NA	NA	No CSFs	0.00E+00
Tributyl phosphate	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethylene	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Trifluorochloromethane	No CSFs	No RfDs	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Uranium	No CSFs	2.96E-03	No CSFs	2.96E-03	No CSFs	2.96E-03	No CSFs	2.96E-03	No CSFs	2.96E-03	No CSFs	2.96E-03	No CSFs	2.96E-03	No CSFs	2.96E-03	No CSFs	2.96E-03
Vanadium	No CSFs	3.00E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes	No CSFs	0.00E+00	NA	NA	No CSFs	0.00E+00	NA	NA	NA	NA	No CSFs	0.00E+00	NA	NA	NA	NA	No CSFs	0.00E+00
Zinc	No CSFs	1.17E-04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SUM	**1.83E-07**	**1.03E-01**	**1.72E-07**	**2.63E-02**	**1.81E-07**	**3.29E-02**	**1.72E-07**	**8.42E-02**	**0.00E+00**	**2.96E-03**	**1.81E-07**	**3.29E-02**	**1.72E-07**	**2.85E-02**	**1.72E-07**	**2.73E-02**	**1.81E-07**	**9.36E-02**

TABLE E.0-2
Groundskeeper / Sampler - BKGD - InhaleChem

Groundskeeper/Sampler - Inhalation of Gases & Particulates
Risk calculation for background

Intake Equation:			UNITS	adult
	CDI =	(CS*EF*ED*IR*ET)/(BW*AT)		
	CDI =	Chronic Daily Intake	mg/kgday	calculated below
	CA =	Concentration of chemical in air	mg/m^3	see COC list below
	EF =	Exposure frequency	days/yr	100
	ED =	Exposure duration	yrs	25
	IR =	Inhalation rate	m^3/hr	2.5
	ET =	Exposure time	hrs/day	8
	BW =	Body weight	kg	70
	ATc =	Average time for carcinogens	days	25550
	ATn =	Average time for non-carcinogens	days	9125

COC	conc	RfDI	CSFI	ADULT CDI	HQ	CDI	ILCR
	mg/m^3	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	0.00E+00	NA	5.60E-02	NA	NA	0.00E+00	0.00E+00
1,1-Dichloroethylene	0.00E+00	5.71E-02	1.75E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,2-dichloroethane	0.00E+00	NA	9.10E-02	NA	NA	0.00E+00	0.00E+00
2-Butanone	0.00E+00	1.43E+00	NA	0.00E+00	0.00E+00	NA	NA
3,3-Dichlorobenzidine	0.00E+00	NA	NA	NA	NA	NA	NA
4-Methylphenol	0.00E+00	NA	NA	NA	NA	NA	NA
4-Nitroanaline	0.00E+00	1.14E-03	NA	0.00E+00	0.00E+00	NA	NA
Acetone	0.00E+00	NA	NA	NA	NA	NA	NA
Antimony	7.46E-08	NA	NA	NA	NA	NA	NA
Aroclor-1254	0.00E+00	NA	2.00E+00	NA	NA	0.00E+00	0.00E+00
Aroclor-1260	0.00E+00	NA	2.00E+00	NA	NA	0.00E+00	0.00E+00
Arsenic	3.22E-07	NA	1.51E+01	NA	NA	9.01E-09	1.36E-07
Barium	4.86E-06	1.43E-04	NA	3.81E-07	2.66E-03	NA	NA
Benzene	0.00E+00	8.57E-03	2.73E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Benzo(a)anthracene	0.00E+00	NA	3.08E-01	NA	NA	0.00E+00	0.00E+00
Benzo(a)pyrene	0.00E+00	NA	3.08E-01	NA	NA	0.00E+00	0.00E+00
Benzo(b)fluoranthene	0.00E+00	NA	3.08E+00	NA	NA	0.00E+00	0.00E+00
Benzo(k)fluoranthene	0.00E+00	NA	3.08E-02	NA	NA	0.00E+00	0.00E+00
Beryllium	3.74E-08	5.71E-06	8.40E+00	2.93E-09	5.13E-04	1.05E-09	8.79E-09
Bis(2-chloroisopropyl)ether	0.00E+00	NA	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	0.00E+00	NA	NA	NA	NA	NA	NA
Boron	6.66E-08	5.71E-03	NA	5.21E-09	9.12E-07	NA	NA
Bromodichloromethane	0.00E+00	NA	NA	NA	NA	NA	NA
Bromoform	0.00E+00	NA	3.85E-03	NA	NA	0.00E+00	0.00E+00
Bromomethane	0.00E+00	1.43E-03	NA	0.00E+00	0.00E+00	NA	NA
Cadmium	2.57E-08	NA	6.30E+00	NA	NA	7.19E-10	4.53E-09
Carbazole	0.00E+00	NA	NA	NA	NA	NA	NA
Carbon disulfide	0.00E+00	2.00E-01	NA	0.00E+00	0.00E+00	NA	NA
Carbon tetrachloride	0.00E+00	NA	5.25E-02	NA	NA	0.00E+00	0.00E+00
Chlordane	0.00E+00	2.00E-04	3.50E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chlorobenzene	0.00E+00	1.43E-02	NA	0.00E+00	0.00E+00	NA	NA
Chloroform	0.00E+00	NA	8.05E-02	NA	NA	0.00E+00	0.00E+00
Chromium (VI)	6.42E-07	2.86E-05	4.20E+01	5.03E-08	1.76E-03	1.80E-08	7.54E-07
Chrysene	0.00E+00	NA	3.08E-03	NA	NA	0.00E+00	0.00E+00
Cobalt	5.56E-07	5.71E-06	9.80E+00	4.36E-08	7.63E-03	1.56E-08	1.52E-07
Copper	8.14E-07	NA	NA	NA	NA	NA	NA
Cyanide	0.00E+00	NA	NA	NA	NA	NA	NA
Cyclohexanone	0.00E+00	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	0.00E+00	NA	3.08E+00	NA	NA	0.00E+00	0.00E+00
Dieldrin	0.00E+00	NA	1.61E+01	NA	NA	0.00E+00	0.00E+00
Di-n-octylphthalate	0.00E+00	NA	NA	NA	NA	NA	NA
Ethyl ether	0.00E+00	NA	NA	NA	NA	NA	NA
Ethylbenzene	0.00E+00	2.86E-01	3.85E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Fluoride	8.32E-08	NA	NA	NA	NA	NA	NA
Heptachlorodibenzofuran	0.00E+00	NA	1.16E+03	NA	NA	0.00E+00	0.00E+00
Heptachlorodibenzo-p-dioxin	0.00E+00	NA	1.16E+03	NA	NA	0.00E+00	0.00E+00
Hexachlorodibenzofuran	0.00E+00	NA	1.16E+04	NA	NA	0.00E+00	0.00E+00
Hexachlorodibenzo-p-dioxin	0.00E+00	NA	1.16E+04	NA	NA	0.00E+00	0.00E+00
Indeno(1,2,3-cd)pyrene	0.00E+00	NA	3.08E-01	NA	NA	0.00E+00	0.00E+00
Lead	7.96E-07	NA	NA	NA	NA	NA	NA
Manganese	3.46E-05	1.43E-05	NA	2.71E-06	1.89E-01	NA	NA
Mercury	1.82E-09	NA	NA	NA	NA	NA	NA
Methanol	0.00E+00	NA	NA	NA	NA	NA	NA
Methyl-2-pentanone	0.00E+00	8.57E-01	NA	0.00E+00	0.00E+00	NA	NA
Methylene chloride	0.00E+00	8.57E-01	1.65E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Molybdenum	1.36E-07	NA	NA	NA	NA	NA	NA
Nickel	1.19E-06	NA	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	0.00E+00	NA	NA	NA	NA	NA	NA
N-nitrosodipropylamine	0.00E+00	NA	NA	NA	NA	NA	NA
Octochlorodibenzofuran	0.00E+00	NA	1.16E+02	NA	NA	0.00E+00	0.00E+00
Octochlorodibenzo-p-dioxin	0.00E+00	NA	1.16E+02	NA	NA	0.00E+00	0.00E+00
Pentachlorodibenzofuran	0.00E+00	NA	5.78E+03	NA	NA	0.00E+00	0.00E+00
Pentachlorodibenzo-p-dioxin	0.00E+00	NA	5.78E+04	NA	NA	0.00E+00	0.00E+00
Pentachlorophenol	0.00E+00	NA	NA	NA	NA	NA	NA
Phenanthrene	0.00E+00	NA	NA	NA	NA	NA	NA
Selenium	3.09E-08	NA	NA	NA	NA	NA	NA
Silver	2.94E-08	NA	NA	NA	NA	NA	NA
Tetrachlorodibenzofuran	0.00E+00	NA	1.16E+04	NA	NA	0.00E+00	0.00E+00
Tetrachlorodibenzo-p-dioxin	0.00E+00	NA	1.16E+05	NA	NA	0.00E+00	0.00E+00
Tetrachloroethylene	0.00E+00	1.71E-01	2.07E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Thallium	1.51E-08	NA	NA	NA	NA	NA	NA
Toluene	0.00E+00	1.43E+00	NA	0.00E+00	0.00E+00	NA	NA
Tributyl phosphate	0.00E+00	NA	NA	NA	NA	NA	NA
Trichloroethylene	0.00E+00	1.14E-02	4.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Trifluorochloromethane	0.00E+00	NA	NA	NA	NA	NA	NA
Uranium	1.19E-07	NA	NA	NA	NA	NA	NA
Vanadium	1.08E-06	NA	NA	NA	NA	NA	NA
Vinyl chloride	0.00E+00	2.86E-02	3.08E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xylenes	0.00E+00	2.86E-02	NA	0.00E+00	0.00E+00	NA	NA
Zinc	2.32E-06	NA	NA	NA	NA	NA	NA
				total =	2.02E-01	total =	1.06E-06

Air concentration is derived using air particulate value of 26 ug/m^3 (2005 SER background average from monitor AMS-12) multiplied by the soil concentration.

TABLE E.0-2
Groundskeeper / Sampler - BKGD - DermalSoilChem

Groundskeeper/Sampler - Dermal Contact with Soil/Sediment
Risk calculation for background

Intake Equation:

			UNITS	adult
CDI =	(CS*AB*SA*EF*ED*AF*CF)/(BW*AT)			
CDI =	Chronic Daily Intake		mg/kgday	calculated below
CS =	Concentration of chemical in soil		mg/kg	see COC list below
AB	Absorption factor		–	see COC list below
SA	Surface area of exposed skin		cm^2/day	3300
EF =	Exposure frequency		days/yr	100
ED =	Exposure duration		yrs	25
AF =	Adherence factor		mg/cm^2	0.3
CF =	Conversion factor		kg/mg	1.00E-06
BW =	Body weight		kg	70
ATc =	Average time for carcinogens		days	25550
ATn =	Average time for non-carcinogens		days	9125

COC	conc	AB	RfDd	CSFd	ADULT CDI	HQ	CDI	ILCR
	mg/kg	unitless	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	0.00E+00	1.00E-02	3.24E-03	7.04E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,1-Dichloroethylene	0.00E+00	1.00E-02	5.00E-02	6.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,2-dichloroethane	0.00E+00	1.00E-02	2.00E-02	9.10E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2-Butanone	0.00E+00	1.00E-02	4.80E-01	NA	0.00E+00	0.00E+00	NA	NA
3,3-Dichlorobenzidine	0.00E+00	1.00E-02	NA	9.00E-01	NA	NA	0.00E+00	0.00E+00
4-Methylphenol	0.00E+00	1.00E-02	3.25E-03	NA	0.00E+00	0.00E+00	NA	NA
4-Nitroanaline	0.00E+00	1.00E-02	2.40E-03	2.63E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Acetone	0.00E+00	1.00E-02	7.47E-01	NA	0.00E+00	0.00E+00	NA	NA
Antimony	2.87E+00	1.00E-03	8.00E-06	NA	1.11E-08	1.39E-03	NA	NA
Aroclor-1254	0.00E+00	1.40E-01	1.80E-05	2.22E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Aroclor-1260	0.00E+00	1.40E-01	1.80E-05	2.22E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Arsenic	1.24E+01	3.00E-02	1.23E-04	3.66E+00	1.44E-06	1.17E-02	5.15E-07	1.88E-06
Barium	1.87E+02	1.00E-03	1.40E-02	NA	7.25E-07	5.18E-05	NA	NA
Benzene	0.00E+00	1.00E-02	3.88E-03	5.67E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Benzo(a)anthracene	0.00E+00	1.30E-01	NA	2.35E+00	NA	NA	0.00E+00	0.00E+00
Benzo(a)pyrene	0.00E+00	1.30E-01	NA	2.35E+01	NA	NA	0.00E+00	0.00E+00
Benzo(b)fluoranthene	0.00E+00	1.30E-01	NA	2.35E+00	NA	NA	0.00E+00	0.00E+00
Benzo(k)fluoranthene	0.00E+00	1.30E-01	NA	2.35E-01	NA	NA	0.00E+00	0.00E+00
Beryllium	1.44E+00	1.00E-03	2.00E-05	4.30E+02	5.58E-09	2.79E-04	1.99E-09	8.57E-07
Bis(2-chloroisopropyl)ether	0.00E+00	1.00E-02	2.00E-02	NA	0.00E+00	0.00E+00	NA	NA
Bis(2-ethylhexyl)phthalate	0.00E+00	1.00E-02	3.80E-03	7.37E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Boron	2.56E+00	1.00E-03	1.80E-01	NA	9.92E-09	5.51E-08	NA	NA
Bromodichloromethane	0.00E+00	1.00E-02	1.96E-02	6.33E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Bromoform	0.00E+00	1.00E-02	1.20E-02	1.32E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Bromomethane	0.00E+00	1.00E-02	1.12E-03	NA	0.00E+00	0.00E+00	NA	NA
Cadmium	9.89E-01	1.00E-03	1.00E-05	NA	3.83E-09	3.83E-04	NA	NA
Carbazole	0.00E+00	1.00E-02	NA	2.86E-02	NA	NA	0.00E+00	0.00E+00
Carbon disulfide	0.00E+00	2.50E-01	6.30E-02	NA	0.00E+00	0.00E+00	NA	NA
Carbon tetrachloride	0.00E+00	1.00E-02	4.55E-04	2.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chlordane	0.00E+00	4.00E-02	2.50E-04	7.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chlorobenzene	0.00E+00	1.00E-02	6.20E-03	NA	0.00E+00	0.00E+00	NA	NA
Chloroform	0.00E+00	1.00E-02	2.00E-03	3.05E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chromium (VI)	2.47E+01	1.00E-03	6.00E-05	NA	9.57E-08	1.60E-03	NA	NA
Chrysene	0.00E+00	1.30E-01	NA	2.35E-02	NA	NA	0.00E+00	0.00E+00
Cobalt	2.14E+01	1.00E-03	1.60E-02	NA	8.29E-08	5.18E-06	NA	NA
Copper	3.13E+01	1.00E-03	1.20E-02	NA	1.21E-07	1.01E-05	NA	NA
Cyanide	0.00E+00	1.00E-02	3.40E-03	NA	0.00E+00	0.00E+00	NA	NA
Cyclohexanone	0.00E+00	1.00E-02	4.00E+00	NA	0.00E+00	0.00E+00	NA	NA
Dibenzo(a,h)anthracene	0.00E+00	1.30E-01	NA	2.35E+01	NA	NA	0.00E+00	0.00E+00
Dieldrin	0.00E+00	1.00E-02	2.50E-05	3.20E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Di-n-octylphthalate	0.00E+00	1.00E-02	3.60E-02	NA	0.00E+00	0.00E+00	NA	NA
Ethyl ether	0.00E+00	1.00E-02	1.60E-01	NA	0.00E+00	0.00E+00	NA	NA
Ethylbenzene	0.00E+00	1.00E-02	9.70E-02	NA	0.00E+00	0.00E+00	NA	NA
Fluoride	3.20E+00	1.00E-03	5.82E-02	NA	1.24E-08	2.13E-07	NA	NA
Heptachlorodibenzofuran	0.00E+00	1.00E-02	NA	3.00E+03	NA	NA	0.00E+00	0.00E+00
Heptachlorodibenzo-p-dioxin	0.00E+00	3.00E-02	NA	3.00E+03	NA	NA	0.00E+00	0.00E+00
Hexachlorodibenzofuran	0.00E+00	1.00E-02	NA	3.00E+04	NA	NA	0.00E+00	0.00E+00
Hexachlorodibenzo-p-dioxin	0.00E+00	3.00E-02	NA	3.00E+04	NA	NA	0.00E+00	0.00E+00
Indeno(1,2,3-cd)pyrene	0.00E+00	1.30E-01	NA	2.35E+00	NA	NA	0.00E+00	0.00E+00
Lead	3.06E+01	1.00E-03	NA	NA	NA	NA	NA	NA
Manganese	1.33E+03	1.00E-03	5.60E-03	NA	5.15E-06	9.20E-04	NA	NA
Mercury	7.00E-02	1.00E-03	2.10E-05	NA	2.71E-10	1.29E-05	NA	NA
Methanol	0.00E+00	1.00E-02	4.00E-01	NA	0.00E+00	0.00E+00	NA	NA
Methyl-2-pentanone	0.00E+00	1.00E-02	6.40E-02	NA	0.00E+00	0.00E+00	NA	NA
Methylene chloride	0.00E+00	1.00E-02	5.70E-02	7.89E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Molybdenum	5.24E+00	1.00E-03	1.90E-03	NA	2.03E-08	1.07E-05	NA	NA
Nickel	4.56E+01	1.00E-03	5.40E-03	NA	1.77E-07	3.27E-05	NA	NA
N-nitrosodiphenylamine	0.00E+00	1.00E-02	5.00E-03	1.96E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
N-nitrosodipropylamine	0.00E+00	1.00E-02	NA	2.80E+01	NA	NA	0.00E+00	0.00E+00
Octachlorodibenzofuran	0.00E+00	1.00E-02	NA	3.00E+02	NA	NA	0.00E+00	0.00E+00
Octochlorodibenzo-p-dioxin	0.00E+00	3.00E-02	NA	3.00E+02	NA	NA	0.00E+00	0.00E+00
Pentachlorodibenzofuran	0.00E+00	1.00E-02	NA	1.50E+04	NA	NA	0.00E+00	0.00E+00
Pentachlorodibenzo-p-dioxin	0.00E+00	3.00E-02	NA	1.50E+05	NA	NA	0.00E+00	0.00E+00
Pentachlorophenol	0.00E+00	2.50E-01	3.00E-02	1.20E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Phenanthrene	0.00E+00	1.00E-02	NA	NA	NA	NA	NA	NA
Selenium	1.19E+00	1.00E-03	2.20E-03	NA	4.61E-09	2.10E-06	NA	NA
Silver	1.13E+00	1.00E-03	9.00E-04	NA	4.38E-09	4.86E-06	NA	NA
Tetrachlorodibenzofuran	0.00E+00	1.00E-02	NA	3.00E+04	NA	NA	0.00E+00	0.00E+00
Tetrachlorodibenzo-p-dioxin	0.00E+00	3.00E-02	NA	3.00E+05	NA	NA	0.00E+00	0.00E+00
Tetrachloroethylene	0.00E+00	1.00E-02	1.00E-02	5.40E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Thallium	5.80E-01	1.00E-03	1.80E-05	NA	2.25E-09	1.25E-04	NA	NA
Toluene	0.00E+00	1.00E-02	6.40E-02	NA	0.00E+00	0.00E+00	NA	NA
Tributyl phosphate	0.00E+00	1.00E-02	1.00E-01	1.08E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Trichloroethylene	0.00E+00	1.00E-02	4.50E-05	2.67E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Trifluorochloromethane	0.00E+00	NA	NA	NA	NA	NA	NA	NA
Uranium	4.56E+00	1.00E-03	5.10E-04	NA	1.77E-08	3.46E-05	NA	NA
Vanadium	4.14E+01	1.00E-03	7.00E-05	NA	1.60E-07	2.29E-03	NA	NA
Vinyl chloride	0.00E+00	1.00E-02	3.00E-03	1.50E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xylenes	0.00E+00	1.00E-02	1.84E-01	NA	0.00E+00	0.00E+00	NA	NA
Zinc	8.93E+01	1.00E-03	6.00E-02	NA	3.46E-07	5.77E-06	NA	NA
					total =	1.89E-02	total =	2.74E-06

TABLE E.0-2
Groundskeeper / Sampler - BKGD - IngestSoilChem

Groundskeeper/Sampler - Ingestion of Soil
Risk calculation for background

Intake Equation:			UNITS	adult
	CDI =	(CS*EF*ED*IR*FI*CF)/(BW*AT)		
	CDI =	Chronic Daily Intake	mg/kgday	calculated below
	CS =	Concentration of chemical in soil	mg/kg	see COC list below
	EF =	Exposure frequency	days/yr	100
	ED =	Exposure duration	yrs	25
	IR =	Ingestion rate	mg/day	100
	FI =	Fraction of contaminated soil	unitless	1
	CF =	Conversion factor	kg/mg	1.00E-06
	BW =	Body weight	kg	70
	ATc =	Average time for carcinogens	days	25550
	ATn =	Average time for non-carcinogens	days	9125

COC	conc	RfDo	CSFo	ADULT CDI	ADULT HQ	ADULT CDI	ADULT ILCR
	mg/kg	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	0.00E+00	4.00E-03	5.70E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,1-Dichloroethylene	0.00E+00	5.00E-02	6.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,2-dichloroethane	0.00E+00	2.00E-02	9.10E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2-Butanone	0.00E+00	6.00E-01	NA	0.00E+00	0.00E+00	NA	NA
3,3-Dichlorobenzidine	0.00E+00	NA	4.50E-01	NA	NA	0.00E+00	0.00E+00
4-Methylphenol	0.00E+00	5.00E-03	NA	0.00E+00	0.00E+00	NA	NA
4-Nitroanaline	0.00E+00	3.00E-03	2.10E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Acetone	0.00E+00	9.00E-01	NA	0.00E+00	0.00E+00	NA	NA
Antimony	2.87E+00	4.00E-04	NA	1.12E-06	2.81E-03	NA	NA
Aroclor-1254	0.00E+00	2.00E-05	2.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Aroclor-1260	0.00E+00	2.00E-05	2.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Arsenic	1.24E+01	3.00E-04	1.50E+00	4.85E-06	1.62E-02	1.73E-06	2.60E-06
Barium	1.87E+02	2.00E-01	NA	7.32E-05	3.66E-04	NA	NA
Benzene	0.00E+00	4.00E-03	5.50E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Benzo(a)anthracene	0.00E+00	NA	7.30E-01	NA	NA	0.00E+00	0.00E+00
Benzo(a)pyrene	0.00E+00	NA	7.30E+00	NA	NA	0.00E+00	0.00E+00
Benzo(b)fluoranthene	0.00E+00	NA	7.30E-01	NA	NA	0.00E+00	0.00E+00
Benzo(k)fluoranthene	0.00E+00	NA	7.30E-02	NA	NA	0.00E+00	0.00E+00
Beryllium	1.44E+00	2.00E-03	4.30E+00	5.64E-07	2.82E-04	2.01E-07	8.66E-07
Bis(2-chloroisopropyl)ether	0.00E+00	4.00E-02	NA	0.00E+00	0.00E+00	NA	NA
Bis(2-ethylhexyl)phthalate	0.00E+00	2.00E-02	1.40E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Boron	2.56E+00	2.00E-01	NA	1.00E-06	5.01E-06	NA	NA
Bromodichloromethane	0.00E+00	2.00E-02	6.20E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Bromoform	0.00E+00	2.00E-02	7.90E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Bromomethane	0.00E+00	1.40E-03	NA	0.00E+00	0.00E+00	NA	NA
Cadmium	9.89E-01	1.00E-03	NA	3.87E-07	3.87E-04	NA	NA
Carbazole	0.00E+00	NA	2.00E-03	NA	NA	0.00E+00	0.00E+00
Carbon disulfide	0.00E+00	1.00E-01	NA	0.00E+00	0.00E+00	NA	NA
Carbon tetrachloride	0.00E+00	7.00E-04	1.30E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chlordane	0.00E+00	5.00E-04	3.50E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chlorobenzene	0.00E+00	2.00E-02	NA	0.00E+00	0.00E+00	NA	NA
Chloroform	0.00E+00	1.00E-02	6.10E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chromium (VI)	2.47E+01	3.00E-03	NA	9.67E-06	3.22E-03	NA	NA
Chrysene	0.00E+00	NA	7.30E-03	NA	NA	0.00E+00	0.00E+00
Cobalt	2.14E+01	2.00E-02	NA	8.38E-06	4.19E-04	NA	NA
Copper	3.13E+01	4.00E-02	NA	1.23E-05	3.06E-04	NA	NA
Cyanide	0.00E+00	2.00E-02	NA	0.00E+00	0.00E+00	NA	NA
Cyclohexanone	0.00E+00	5.00E+00	NA	0.00E+00	0.00E+00	NA	NA
Dibenzo(a,h)anthracene	0.00E+00	NA	7.30E+00	NA	NA	0.00E+00	0.00E+00
Dieldrin	0.00E+00	5.00E-05	1.60E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Di-n-octylphthalate	0.00E+00	4.00E-02	NA	0.00E+00	0.00E+00	NA	NA
Ethyl ether	0.00E+00	2.00E-01	NA	0.00E+00	0.00E+00	NA	NA
Ethylbenzene	0.00E+00	1.00E-01	NA	0.00E+00	0.00E+00	NA	NA
Fluoride	3.20E+00	6.00E-02	NA	1.25E-06	2.09E-05	NA	NA
Heptachlorodibenzofuran	0.00E+00	NA	1.50E+03	NA	NA	0.00E+00	0.00E+00
Heptachlorodibenzo-p-dioxin	0.00E+00	NA	1.50E+03	NA	NA	0.00E+00	0.00E+00
Hexachlorodibenzofuran	0.00E+00	NA	1.50E+03	NA	NA	0.00E+00	0.00E+00
Hexachlorodibenzo-p-dioxin	0.00E+00	NA	1.50E+04	NA	NA	0.00E+00	0.00E+00
Indeno(1,2,3-cd)pyrene	0.00E+00	NA	7.30E-01	NA	NA	0.00E+00	0.00E+00
Lead	3.06E+01	NA	NA	NA	NA	NA	NA
Manganese	1.33E+03	1.40E-01	NA	5.21E-04	3.72E-03	NA	NA
Mercury	7.00E-02	3.00E-04	NA	2.74E-08	9.13E-05	NA	NA
Methanol	0.00E+00	5.00E-01	NA	0.00E+00	0.00E+00	NA	NA
Methyl-2-pentanone	0.00E+00	8.00E-02	NA	0.00E+00	0.00E+00	NA	NA
Methylene chloride	0.00E+00	6.00E-02	7.50E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Molybdenum	5.24E+00	5.00E-03	NA	2.05E-06	4.10E-04	NA	NA
Nickel	4.56E+01	2.00E-02	NA	1.78E-05	8.92E-04	NA	NA
N-nitrosodiphenylamine	0.00E+00	2.00E-02	4.90E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00
N-nitrosodipropylamine	0.00E+00	NA	7.00E+00	NA	NA	0.00E+00	0.00E+00
Octachlorodibenzofuran	0.00E+00	NA	1.50E+02	NA	NA	0.00E+00	0.00E+00
Octochlorodibenzo-p-dioxin	0.00E+00	NA	1.50E+02	NA	NA	0.00E+00	0.00E+00
Pentachlorodibenzofuran	0.00E+00	NA	7.50E+03	NA	NA	0.00E+00	0.00E+00
Pentachlorodibenzo-p-dioxin	0.00E+00	NA	7.50E+04	NA	NA	0.00E+00	0.00E+00
Pentachlorophenol	0.00E+00	3.00E-02	1.20E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Phenanthrene	0.00E+00	NA	NA	NA	NA	NA	NA
Selenium	1.19E+00	5.00E-03	NA	4.66E-07	9.32E-05	NA	NA
Silver	1.13E+00	5.00E-03	NA	4.42E-07	8.85E-05	NA	NA
Tetrachlorodibenzofuran	0.00E+00	NA	1.50E+04	NA	NA	0.00E+00	0.00E+00
Tetrachlorodibenzo-p-dioxin	0.00E+00	NA	1.50E+05	NA	NA	0.00E+00	0.00E+00
Tetrachloroethylene	0.00E+00	1.00E-02	5.40E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Thallium	5.80E-01	9.00E-05	NA	2.27E-07	2.52E-03	NA	NA
Toluene	0.00E+00	8.00E-02	NA	0.00E+00	0.00E+00	NA	NA
Tributyl phosphate	0.00E+00	2.00E-01	5.40E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Trichloroethylene	0.00E+00	3.00E-04	4.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Trifluorochloromethane	0.00E+00	NA	NA	NA	NA	NA	NA
Uranium	4.58E+00	6.00E-04	NA	1.78E-06	2.97E-03	NA	NA
Vanadium	4.14E+01	7.00E-03	NA	1.62E-05	2.31E-03	NA	NA
Vinyl chloride	0.00E+00	3.00E-03	1.50E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xylenes	0.00E+00	2.00E-01	NA	0.00E+00	0.00E+00	NA	NA
Zinc	8.93E+01	3.00E-01	NA	3.50E-05	1.17E-04	NA	NA
				total =	3.72E-02	total =	3.47E-06

TABLE E.0-2
Groundskeeper / Sampler - BKGD - DermalSWchem

Groundskeeper/Sampler - Dermal Contact with Surface Water
Risk calculation for background

			UNITS	adult
Intake Equation:	CDI =	(DA*EF*ED*SA)/(BW*AT)		
	CDI =	Chronic Daily Intake	mg/kgday	calculated below
	DA =	Dermal absorption dose	mg/cm²day	see COC list below
	EF =	Exposure frequency	days/yr	12
	ED =	Exposure duration	yrs	25
	SA =	Surface area of skin	cm²	5670
	BW =	Body weight	kg	70
	ATc =	Average time for carcinogens	days	25550
	ATn =	Average time for non-carcinogens	days	9125
where:	DA = C_v*K_p*CF*ET			
	C_v =	concentation of ith contaminant in surface water	mg/L	see COC list below
	K_p =	permeability constant for ith contaminant	cm/hr	see COC list below
	CF =	conversion factor	L/cm³	0.001
	ET =	exposure time	hr/d	1

COC	C_v	K_p	DA	RfDd	CSFd	ADULT CDI	ADULT HQ	ADULT CDI	ADULT ILCR
	mg/L	cm/hr	mg/cm²day	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	0.00E+00	6.43E-03	0.00E+00	3.24E-03	7.04E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,1-Dichloroethylene	0.00E+00	1.59E-02	0.00E+00	5.00E-02	6.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,2-dichloroethane	0.00E+00	5.34E-03	0.00E+00	2.00E-02	9.10E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2-Butanone	0.00E+00	1.11E-03	0.00E+00	4.80E-01	NA	0.00E+00	0.00E+00	NA	NA
3,3-Dichlorobenzidine	0.00E+00	1.69E-02	0.00E+00	NA	9.00E-01	NA	NA	0.00E+00	0.00E+00
4-Methylphenol	0.00E+00	9.95E-03	0.00E+00	3.25E-03	NA	0.00E+00	0.00E+00	NA	NA
4-Nitroanaline	0.00E+00	2.66E-03	0.00E+00	2.40E-03	2.63E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Acetone	0.00E+00	5.69E-04	0.00E+00	7.47E-01	NA	0.00E+00	0.00E+00	NA	NA
Antimony	5.00E-04	1.00E-03	5.00E-10	8.00E-06	NA	1.33E-09	1.66E-04	NA	NA
Aroclor-1254	0.00E+00	1.29E+00	0.00E+00	1.80E-05	2.22E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Aroclor-1260	0.00E+00	5.48E+00	0.00E+00	1.80E-05	2.22E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Arsenic	1.50E-03	1.00E-03	1.50E-09	1.23E-04	3.66E+00	3.99E-09	3.25E-05	1.43E-09	5.22E-09
Barium	1.31E-02	1.00E-03	1.31E-08	1.40E-02	NA	3.49E-08	2.49E-06	NA	NA
Benzene	0.00E+00	2.07E-02	0.00E+00	3.88E-03	5.87E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Benzo(a)anthracene	0.00E+00	9.48E-01	0.00E+00	NA	2.35E+00	NA	NA	0.00E+00	0.00E+00
Benzo(a)pyrene	0.00E+00	1.24E+00	0.00E+00	NA	2.35E+01	NA	NA	0.00E+00	0.00E+00
Benzo(b)fluoranthene	0.00E+00	6.99E-01	0.00E+00	NA	2.35E+00	NA	NA	0.00E+00	0.00E+00
Benzo(k)fluoranthene	0.00E+00	1.20E+00	0.00E+00	NA	2.35E-01	NA	NA	0.00E+00	0.00E+00
Beryllium	1.00E-04	1.00E-03	1.00E-10	2.00E-05	4.30E+02	2.66E-10	1.33E-05	9.51E-11	4.09E-08
Bis(2-chloroisopropyl)ether	0.00E+00	7.63E-02	0.00E+00	2.00E-02	NA	0.00E+00	0.00E+00	NA	NA
Bis(2-ethylhexyl)phthalate	0.00E+00	1.97E+00	0.00E+00	3.80E-03	7.37E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Boron	1.58E-02	1.00E-03	1.58E-08	1.80E-01	NA	4.21E-08	2.34E-07	NA	NA
Bromodichloromethane	0.00E+00	5.02E-03	0.00E+00	1.96E-02	6.33E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Bromoform	0.00E+00	2.77E-03	0.00E+00	1.20E-02	1.32E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Bromomethane	0.00E+00	3.51E-03	0.00E+00	1.12E-03	NA	0.00E+00	0.00E+00	NA	NA
Cadmium	1.00E-04	1.00E-03	1.00E-10	1.00E-05	NA	2.66E-10	2.66E-05	NA	NA
Carbazole	0.00E+00	7.97E-02	0.00E+00	NA	2.86E-02	NA	NA	0.00E+00	0.00E+00
Carbon disulfide	0.00E+00	1.56E-02	0.00E+00	8.30E-02	NA	0.00E+00	0.00E+00	NA	NA
Carbon tetrachloride	0.00E+00	2.24E-02	0.00E+00	4.55E-04	2.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chlordane	0.00E+00	1.57E-01	0.00E+00	2.50E-04	7.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chlorobenzene	0.00E+00	4.07E-02	0.00E+00	6.20E-03	NA	0.00E+00	0.00E+00	NA	NA
Chloroform	0.00E+00	8.92E-03	0.00E+00	2.00E-03	3.05E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chromium (VI)	1.00E-03	2.00E-03	2.00E-09	6.00E-05	NA	5.33E-09	8.88E-05	NA	NA
Chrysene	0.00E+00	1.03E+00	0.00E+00	NA	2.35E-02	NA	NA	0.00E+00	0.00E+00
Cobalt	2.90E-04	4.00E-04	1.16E-10	1.60E-02	NA	3.09E-10	1.93E-08	NA	NA
Copper	1.40E-03	1.00E-03	1.40E-09	1.20E-02	NA	3.73E-09	3.11E-07	NA	NA
Cyanide	0.00E+00	1.00E-03	0.00E+00	3.40E-03	NA	0.00E+00	0.00E+00	NA	NA
Cyclohexanone	0.00E+00	1.80E-03	0.00E+00	4.00E+00	NA	0.00E+00	0.00E+00	NA	NA
Dibenzo(a,h)anthracene	0.00E+00	1.88E+00	0.00E+00	NA	2.35E+01	NA	NA	0.00E+00	0.00E+00
Dieldrin	0.00E+00	4.45E-02	0.00E+00	2.50E-05	3.20E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Di-n-octylphthalate	0.00E+00	4.45E+00	0.00E+00	3.60E-02	NA	0.00E+00	0.00E+00	NA	NA
Ethyl ether	0.00E+00	2.88E-03	0.00E+00	1.60E-01	NA	0.00E+00	0.00E+00	NA	NA
Ethylbenzene	0.00E+00	7.39E-02	0.00E+00	9.70E-02	NA	0.00E+00	0.00E+00	NA	NA
Fluoride	1.46E-01	1.00E-03	1.46E-07	5.82E-02	NA	3.89E-07	6.68E-06	NA	NA
Heptachlorodibenzofuran	0.00E+00	2.55E+00	0.00E+00	NA	3.00E+03	NA	NA	0.00E+00	0.00E+00
Heptachlorodibenzo-p-dioxin	0.00E+00	3.22E+00	0.00E+00	NA	3.00E+03	NA	NA	0.00E+00	0.00E+00
Hexachlorodibenzofuran	0.00E+00	2.38E+00	0.00E+00	NA	3.00E+04	NA	NA	0.00E+00	0.00E+00
Hexachlorodibenzo-p-dioxin	0.00E+00	5.29E+00	0.00E+00	NA	3.00E+04	NA	NA	0.00E+00	0.00E+00
Indeno(1,2,3-cd)pyrene	0.00E+00	2.23E+00	0.00E+00	NA	2.35E+00	NA	NA	0.00E+00	0.00E+00
Lead	5.00E-04	1.00E-04	5.00E-11	NA	NA	NA	NA	NA	NA
Manganese	6.50E-03	1.00E-03	6.50E-09	1.84E-03	NA	1.73E-08	9.41E-06	NA	NA
Mercury	6.00E-05	1.00E-03	6.00E-11	2.10E-05	NA	1.60E-10	7.61E-06	NA	NA
Methanol	0.00E+00	3.45E-04	0.00E+00	4.00E-01	NA	0.00E+00	0.00E+00	NA	NA
4-Methyl-2-pentanone	0.00E+00	3.97E-03	0.00E+00	6.40E-02	NA	0.00E+00	0.00E+00	NA	NA
Methylene chloride	0.00E+00	4.46E-03	0.00E+00	5.70E-02	7.89E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Molybdenum	9.70E-04	1.00E-03	9.70E-10	1.90E-03	NA	2.58E-09	1.36E-06	NA	NA
Nickel	1.70E-03	2.00E-04	3.40E-10	5.40E-03	NA	9.05E-10	1.68E-07	NA	NA
N-nitrosodiphenylamine	0.00E+00	1.96E-02	0.00E+00	5.00E-03	1.96E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
N-nitrosodipropylamine	0.00E+00	2.83E-03	0.00E+00	NA	2.80E+01	NA	NA	0.00E+00	0.00E+00
Octachlorodibenzofuran	0.00E+00	4.78E+00	0.00E+00	NA	3.00E+02	NA	NA	0.00E+00	0.00E+00
Octochlorodibenzo-p-dioxin	0.00E+00	1.65E+01	0.00E+00	NA	3.00E+02	NA	NA	0.00E+00	0.00E+00
Pentachlorodibenzofuran	0.00E+00	1.06E+00	0.00E+00	NA	1.50E+04	NA	NA	0.00E+00	0.00E+00
Pentachlorodibenzo-p-dioxin	0.00E+00	3.79E-01	0.00E+00	NA	1.50E+05	NA	NA	0.00E+00	0.00E+00
Pentachlorophenol	0.00E+00	1.95E-01	0.00E+00	3.00E-02	1.20E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Phenanthrene	0.00E+00	2.29E-01	0.00E+00	NA	NA	NA	NA	NA	NA
Selenium	2.50E-03	1.00E-03	2.50E-09	2.20E-03	NA	6.66E-09	3.03E-06	NA	NA
Silver	2.00E-04	6.00E-04	1.20E-10	9.00E-04	NA	3.20E-10	3.55E-07	NA	NA
Tetrachlorodibenzofuran	0.00E+00	1.12E+00	0.00E+00	NA	3.00E+04	NA	NA	0.00E+00	0.00E+00
Tetrachlorodibenzo-p-dioxin	0.00E+00	1.39E+00	0.00E+00	NA	3.00E+05	NA	NA	0.00E+00	0.00E+00
Tetrachloroethylene	0.00E+00	4.81E-02	0.00E+00	1.00E-02	5.40E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Thallium	4.00E-04	1.00E-03	4.00E-10	1.80E-05	NA	1.07E-09	5.92E-05	NA	NA
Toluene	0.00E+00	4.53E-02	0.00E+00	6.40E-02	NA	0.00E+00	0.00E+00	NA	NA
Tributyl phosphate	0.00E+00	3.13E-02	0.00E+00	1.00E-01	1.08E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Trichloroethylene	0.00E+00	1.57E-02	0.00E+00	4.50E-05	2.67E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Trifluorochloromethane	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA
Uranium	1.70E-03	1.00E-03	1.70E-09	5.10E-04	NA	4.53E-09	8.88E-06	NA	NA
Vanadium	2.00E-03	1.00E-03	2.00E-09	7.00E-05	NA	5.33E-09	7.61E-05	NA	NA
Vinyl chloride	0.00E+00	1.13E-02	0.00E+00	3.00E-03	1.50E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xylenes	0.00E+00	7.04E-02	0.00E+00	1.84E-01	NA	0.00E+00	0.00E+00	NA	NA
Zinc	3.70E-03	6.00E-04	2.22E-09	6.00E-02	NA	5.91E-09	9.85E-08	NA	NA
						total =	5.04E-04	total =	4.61E-08

TABLE E.0-2
Groundskeeper / Sampler - BKGD - IngestSWchem

Groundskeeper/Sampler - Ingestion of Surface Water
Risk calculation for background

Intake Equation:			UNITS	Assigned Values
	CDI =	(CW*EF*ED*IR)/(BW*AT)		
	CDI =	Chronic Daily Intake	mg/kgday	adult
	CW =	Concentration of chemical in water	mg/L	see COC table below
	EF =	Exposure frequency	days/yr	12
	ED =	Exposure duration	yrs	25
	IR =	Ingestion rate	L/day	0.01
	BW =	Body weight	kg	70
	ATc =	Average time for carcinogens	days	25550
	ATn =	Average time for non-carcinogens	days	9125

COC	CW	RfDo	CSFo	ADULT CDI	HQ	CDI	ILCR
	mg/L	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	0.00E+00	4.00E-03	5.70E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,1-Dichloroethylene	0.00E+00	5.00E-02	6.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,2-dichloroethane	0.00E+00	2.00E-02	9.10E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2-Butanone	0.00E+00	6.00E-01	NA	0.00E+00	0.00E+00	NA	NA
3,3-Dichlorobenzidine	0.00E+00	NA	4.50E-01	NA	NA	0.00E+00	0.00E+00
4-Methylphenol	0.00E+00	5.00E-03	NA	0.00E+00	0.00E+00	NA	NA
4-Nitroanaline	0.00E+00	3.00E-03	2.10E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Acetone	0.00E+00	9.00E-01	NA	0.00E+00	0.00E+00	NA	NA
Antimony	5.00E-04	4.00E-04	NA	2.35E-09	5.87E-06	NA	NA
Aroclor-1254	0.00E+00	2.00E-05	4.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Aroclor-1260	0.00E+00	2.00E-05	4.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Arsenic	1.50E-03	3.00E-04	1.50E+00	7.05E-09	2.35E-05	2.52E-09	3.77E-09
Barium	1.31E-02	2.00E-01	NA	6.15E-08	3.08E-07	NA	NA
Benzene	0.00E+00	4.00E-03	5.50E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Benzo(a)anthracene	0.00E+00	NA	7.30E-01	NA	NA	0.00E+00	0.00E+00
Benzo(a)pyrene	0.00E+00	NA	7.30E+00	NA	NA	0.00E+00	0.00E+00
Benzo(b)fluoranthene	0.00E+00	NA	7.30E-01	NA	NA	0.00E+00	0.00E+00
Benzo(k)fluoranthene	0.00E+00	NA	7.30E-02	NA	NA	0.00E+00	0.00E+00
Beryllium	1.00E-04	2.00E-03	4.30E+00	4.70E-10	2.35E-07	1.68E-10	7.21E-10
Bis(2-chloroisopropyl)ether	0.00E+00	4.00E-02	NA	0.00E+00	0.00E+00	NA	NA
Bis(2-ethylhexyl)phthalate	0.00E+00	2.00E-02	1.40E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Boron	1.58E-02	2.00E-01	NA	7.42E-08	3.71E-07	NA	NA
Bromodichloromethane	0.00E+00	2.00E-02	6.20E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Bromoform	0.00E+00	2.00E-02	7.90E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Bromomethane	0.00E+00	1.40E-03	NA	0.00E+00	0.00E+00	NA	NA
Cadmium	1.00E-04	1.00E-03	NA	4.70E-10	4.70E-07	NA	NA
Carbazole	0.00E+00	NA	2.00E-03	NA	NA	0.00E+00	0.00E+00
Carbon disulfide	0.00E+00	1.00E-01	NA	0.00E+00	0.00E+00	NA	NA
Carbon tetrachloride	0.00E+00	7.00E-04	1.30E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chlordane	0.00E+00	5.00E-04	3.50E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chlorobenzene	0.00E+00	2.00E-02	NA	0.00E+00	0.00E+00	NA	NA
Chloroform	0.00E+00	1.00E-02	6.10E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chromium (VI)	1.00E-03	3.00E-03	NA	4.70E-09	1.57E-06	NA	NA
Chrysene	0.00E+00	NA	7.30E-03	NA	NA	0.00E+00	0.00E+00
Cobalt	2.90E-04	2.00E-02	NA	1.36E-09	6.81E-08	NA	NA
Copper	1.40E-03	4.00E-02	NA	6.58E-09	1.64E-07	NA	NA
Cyanide	0.00E+00	2.00E-02	NA	0.00E+00	0.00E+00	NA	NA
Cyclohexanone	0.00E+00	5.00E+00	NA	0.00E+00	0.00E+00	NA	NA
Dibenzo(a,h)anthracene	0.00E+00	NA	7.30E+00	NA	NA	0.00E+00	0.00E+00
Dieldrin	0.00E+00	5.00E-05	1.60E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Di-n-octylphthalate	0.00E+00	4.00E-02	NA	0.00E+00	0.00E+00	NA	NA
Ethyl ether	0.00E+00	2.00E-01	NA	0.00E+00	0.00E+00	NA	NA
Ethylbenzene	0.00E+00	1.00E-01	NA	0.00E+00	0.00E+00	NA	NA
Fluoride	1.46E-01	6.00E-02	NA	6.86E-07	1.14E-05	NA	NA
Heptachlorodibenzofuran	0.00E+00	NA	1.50E+03	NA	NA	0.00E+00	0.00E+00
Heptachlorodibenzo-p-dioxin	0.00E+00	NA	1.50E+03	NA	NA	0.00E+00	0.00E+00
Hexachlorodibenzofuran	0.00E+00	NA	1.50E+03	NA	NA	0.00E+00	0.00E+00
Hexachlorodibenzo-p-dioxin	0.00E+00	NA	1.50E+04	NA	NA	0.00E+00	0.00E+00
Indeno(1,2,3-cd)pyrene	0.00E+00	NA	7.30E-01	NA	NA	0.00E+00	0.00E+00
Lead	5.00E-04	NA	NA	NA	NA	NA	NA
Manganese	6.50E-03	4.60E-02	NA	3.05E-08	6.64E-07	NA	NA
Mercury	6.00E-05	3.00E-04	NA	2.82E-10	9.39E-07	NA	NA
Methanol	0.00E+00	5.00E-01	NA	0.00E+00	0.00E+00	NA	NA
4-Methyl-2-pentanone	0.00E+00	8.00E-02	NA	0.00E+00	0.00E+00	NA	NA
Methylene chloride	0.00E+00	6.00E-02	7.50E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Molybdenum	9.70E-04	5.00E-03	NA	4.56E-09	9.11E-07	NA	NA
Nickel	1.70E-03	2.00E-02	NA	7.98E-09	3.99E-07	NA	NA
N-nitrosodiphenylamine	0.00E+00	2.00E-02	4.90E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00
N-nitrosodipropylamine	0.00E+00	NA	7.00E+00	NA	NA	0.00E+00	0.00E+00
Octachlorodibenzofuran	0.00E+00	NA	1.50E+02	NA	NA	0.00E+00	0.00E+00
Octochlorodibenzo-p-dioxin	0.00E+00	NA	1.50E+02	NA	NA	0.00E+00	0.00E+00
Pentachlorodibenzofuran	0.00E+00	NA	7.50E+03	NA	NA	0.00E+00	0.00E+00
Pentachlorodibenzo-p-dioxin	0.00E+00	NA	7.50E+04	NA	NA	0.00E+00	0.00E+00
Pentachlorophenol	0.00E+00	3.00E-02	1.20E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Phenanthrene	0.00E+00	NA	NA	NA	NA	NA	NA
Selenium	2.50E-03	5.00E-03	NA	1.17E-08	2.35E-06	NA	NA
Silver	2.00E-04	5.00E-03	NA	9.39E-10	1.88E-07	NA	NA
Tetrachlorodibenzofuran	0.00E+00	NA	1.50E+04	NA	NA	0.00E+00	0.00E+00
Tetrachlorodibenzo-p-dioxin	0.00E+00	NA	1.50E+05	NA	NA	0.00E+00	0.00E+00
Tetrachloroethylene	0.00E+00	1.00E-02	5.40E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Thallium	4.00E-04	9.00E-05	NA	1.88E-09	2.09E-05	NA	NA
Toluene	0.00E+00	8.00E-02	NA	0.00E+00	0.00E+00	NA	NA
Tributyl phosphate	0.00E+00	2.00E-01	5.40E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Trichloroethylene	0.00E+00	3.00E-04	4.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Trifluorochloromethane	0.00E+00	NA	NA	NA	NA	NA	NA
Uranium	1.70E-03	6.00E-04	NA	7.98E-09	1.33E-05	NA	NA
Vanadium	2.00E-03	7.00E-03	NA	9.39E-09	1.34E-06	NA	NA
Vinyl chloride	0.00E+00	3.00E-03	1.50E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xylenes	0.00E+00	2.00E-01	NA	0.00E+00	0.00E+00	NA	NA
Zinc	3.70E-03	3.00E-01	NA	1.74E-08	5.79E-08	NA	NA
				total =	8.50E-05	total =	4.50E-09

TABLE E.0-2
Groundskeeper / Sampler - BKGD - InhaleRad

Groundskeeper/Sampler - Inhalation of Gases & Particulates
Risk calculation for background

Intake Equation:

			UNITS	adult
CDI =	(CA*EF*ED*IR*ET)		pCi	calculated below
CDI =	Chronic Daily Intake		pCi/m^3	see COC list below
CA =	Concentration of radionuclide in air		days/yr	100
EF =	Exposure frequency		yrs	25
ED =	Exposure duration		m^3/hr	2.5
IR =	Inhalation rate		hrs/day	8
ET =	Exposure time			

COC	conc	CSFi	ADULT	
			CDI	ILCR
	pCi/m^3	1/pCi	pCi	CDI*CSF
Cesium-137 + D	1.72E-06	1.19E-11	8.58E-02	1.02E-12
Lead-210 + D	4.06E-05	1.39E-08	2.03E+00	2.82E-08
Neptunium-237 + D	0.00E+00	1.77E-08	0.00E+00	0.00E+00
Plutonium-238	0.00E+00	3.36E-08	0.00E+00	0.00E+00
Plutonium-239/240	0.00E+00	3.33E-08	0.00E+00	0.00E+00
Radium-226 + D	4.06E-05	1.16E-08	2.03E+00	2.35E-08
Radium-228 + D	3.30E-05	5.23E-09	1.65E+00	8.63E-09
Radon-222+ D	3.99E+02	1.80E-11	2.00E+07	3.59E-04
Strontium-90 + D	0.00E+00	1.13E-10	0.00E+00	0.00E+00
Technetium-99	0.00E+00	1.41E-11	0.00E+00	0.00E+00
Thorium-228 + D	3.25E-05	1.43E-07	1.63E+00	2.32E-07
Thorium-230	4.06E-05	2.85E-08	2.03E+00	5.78E-08
Thorium-232	3.30E-05	4.33E-08	1.65E+00	7.15E-08
Uranium-234	4.05E-05	1.14E-08	2.02E+00	2.31E-08
Uranium-235 + D	1.84E-06	1.01E-08	9.22E-02	9.31E-10
Uranium-238 + D	3.95E-05	9.35E-09	1.98E+00	1.85E-08
			total =	**3.60E-04**

Air concentration is derived using air particulate value of 26 ug/m^3 (2005 SER background average from monitor AMS-12) multiplied by the soil concentration. Rn-222 is derived by multiplying the soil Ra-226 value by 256 g/m^3. This conversion factor is based on Rn-222 air background and Ra-226 soil background (i.e., 400 pCi/m^3 divided by 1.56 pCi/g)

TABLE E.0-2
Groundskeeper / Sampler - BKGD - IngestSoilRad

Groundskeep/Sampler - Ingestion of Soil
Risk calculation for background

Intake Equation:			UNITS	adult
	CDI =	(CS*EF*ED*IR*FI)		
	CDI =	Chronic Daily Intake	pCi	calculated below
	CS =	Concentration of radionuclide in soil	pCi/g	see COC list below
	EF =	Exposure frequency	days/yr	100
	ED =	Exposure duration	yrs	25
	IR =	Ingestion rate	g/day	0.1
	FI =	Fraction of contaminated soil	unitless	1

COC	conc pCi/g	CSFos 1/pCi	ADULT CDI pCi	ADULT ILCR CDI*CSF
Cesium-137 + D	6.60E-02	4.33E-11	1.65E+01	7.14E-10
Lead-210 + D	1.56E+00	2.66E-09	3.90E+02	1.04E-06
Neptunium-237 + D	0.00E+00	1.62E-10	0.00E+00	0.00E+00
Plutonium-238	0.00E+00	2.72E-10	0.00E+00	0.00E+00
Plutonium-239/240	0.00E+00	2.76E-10	0.00E+00	0.00E+00
Radium-226 + D	1.56E+00	7.30E-10	3.90E+02	2.85E-07
Radium-228 + D	1.27E+00	2.29E-09	3.18E+02	7.27E-07
Radon-222+ D	NA	NA	NA	NA
Strontium-90 + D	0.00E+00	1.44E-10	0.00E+00	0.00E+00
Technetium-99	0.00E+00	7.66E-12	0.00E+00	0.00E+00
Thorium-228 + D	1.25E+00	8.09E-10	3.13E+02	2.53E-07
Thorium-230	1.56E+00	2.02E-10	3.90E+02	7.88E-08
Thorium-232	1.27E+00	2.31E-10	3.18E+02	7.33E-08
Uranium-234	1.56E+00	1.58E-10	3.89E+02	6.15E-08
Uranium-235 + D	7.09E-02	1.63E-10	1.77E+01	2.89E-09
Uranium-238 + D	1.52E+00	2.10E-10	3.80E+02	7.98E-08
			total =	**2.60E-06**

TABLE E.0-2
Groundskeeper / Sampler - BKGD - IngestSWrad

Groundskeeper/Sampler - Ingestion of Surface Water
Risk calculation for background

Intake Equation:		
	CDI =	(CW*EF*ED*IR)
	CDI =	Chronic Daily Intake
	CW =	Concentration of radionuclide in water
	EF =	Exposure frequency
	ED =	Exposure duration
	IR =	Ingestion rate

UNITS	Assigned Values
pCi	adult
pCi/L	see COC table below
days/yr	12
yrs	25
L/day	0.01

COC	conc	CSFow	ADULT	
			CDI	ILCR
	pCi/L	1/pCi	pCi	CDI*CSF
Cesium-137 + D	1.70E+00	3.04E-11	5.10E+00	1.55E-10
Lead-210 + D	6.99E-01	1.27E-09	2.10E+00	2.66E-09
Neptunium-237 + D	1.19E-01	6.74E-11	3.57E-01	2.41E-11
Plutonium-238	1.10E-02	1.31E-10	3.30E-02	4.32E-12
Plutonium-239/240	3.17E-02	1.35E-10	9.51E-02	1.28E-11
Radium-226 + D	1.45E-01	3.86E-10	4.35E-01	1.68E-10
Radium-228 + D	2.50E+00	1.04E-09	7.50E+00	7.80E-09
Radon-222+ D	NA	NA	NA	NA
Strontium-90 + D	4.66E-01	7.40E-11	1.40E+00	1.03E-10
Technetium-99	6.20E+00	2.75E-12	1.86E+01	5.12E-11
Thorium-228 + D	2.50E+00	3.00E-10	7.50E+00	2.25E-09
Thorium-230	3.94E-02	9.10E-11	1.18E-01	1.08E-11
Thorium-232	2.50E+00	1.01E-10	7.50E+00	7.58E-10
Uranium-234	5.81E-01	7.07E-11	1.74E+00	1.23E-10
Uranium-235 + D	2.64E-02	7.18E-11	7.93E-02	5.70E-12
Uranium-238 + D	5.67E-01	8.71E-11	1.70E+00	1.48E-10
			total =	**1.43E-08**

TABLE E.0-2
Groundskeeper / Sampler - BKGD - ExternalRad

Groundskeeper/Sampler - External Radiation
Risk calculation for background

Intake Equation:			UNITS	adult
	CDI =	$(CS*EF*ED*ET_o*(1-SH_o))+(CS*EF*ED*ET_i*(1-SH_i))$		
	CDI =	Chronic Daily Intake	yr pCi/g	calculated below
	CS =	Concentration of radionuclide in soil	pCi/g	see COC list below
	EF =	Fraction of year exposed to radiation	--	0.27
	ED =	Exposure duration	yrs	25
	ET_o =	Fraction of day spent outdoors	--	0.33
	ET_i =	Fraction of day spent indoors	--	0.00
	SH_o =	Shield factor outdoors	--	0.25
	SH_i =	Shield factor indoors	--	0.5

COC	conc pCi/g	CSFx g/pCi yr	ADULT CDI yr pCi/g	ADULT ILCR CDI*CSF
Cesium-137 + D	6.60E-02	2.55E-06	1.13E-01	2.88E-07
Lead-210 + D	1.56E+00	4.21E-09	2.67E+00	1.12E-08
Neptunium-237 + D	0.00E+00	7.97E-07	0.00E+00	0.00E+00
Plutonium-238	0.00E+00	7.22E-11	0.00E+00	0.00E+00
Plutonium-239/240	0.00E+00	2.00E-10	0.00E+00	0.00E+00
Radium-226 + D	1.56E+00	8.49E-06	2.67E+00	2.27E-05
Radium-228 + D	1.27E+00	4.53E-06	2.17E+00	9.84E-06
Radon-222+ D	NA	NA	NA	NA
Strontium-90 + D	0.00E+00	1.96E-08	0.00E+00	0.00E+00
Technetium-99	0.00E+00	8.14E-11	0.00E+00	0.00E+00
Thorium-228 + D	1.25E+00	7.76E-06	2.14E+00	1.66E-05
Thorium-230	1.56E+00	8.19E-10	2.67E+00	2.19E-09
Thorium-232	1.27E+00	3.42E-10	2.17E+00	7.43E-10
Uranium-234	1.56E+00	2.52E-10	2.66E+00	6.71E-10
Uranium-235 + D	7.09E-02	5.43E-07	1.21E-01	6.59E-08
Uranium-238 + D	1.52E+00	1.14E-07	2.60E+00	2.97E-07
			total =	**4.98E-05**

TABLE E.0-2
Groundskeeper / Sampler - BKGD - SumPaths

Groundskeeper/Sampler - Summation of all Pathways
Risk calculation for background

	HQ	ILCR	rad only ILCR
Inhale	2.02E-01	3.61E-04	3.60E-04
Dermal Soil	1.89E-02	2.74E-06	NA
Ingest Soil	3.72E-02	6.06E-06	2.60E-06
Dermal Surface Water	5.04E-04	4.61E-08	NA
Ingest Surface Water	8.50E-05	1.88E-08	1.43E-08
External Radiation	NA	4.98E-05	4.98E-05
SUM	**2.59E-01**	**4.20E-04**	**4.12E-04**

Summation of all paths for individual nuclides

		Background Values as Applicable to Each Zone							
	Background ILCR	**Zone 1 ILCR**	**Zone 2 ILCR**	**Zone 3 ILCR**	**Zone 4 ILCR**	**Zone 5 ILCR**	**Zone 6 ILCR**	**Zone 7 ILCR**	**Zone 8 ILCR**
Cesium-137 + D	2.89E-07	NA	2.89E-07	2.89E-07	NA	2.89E-07	2.89E-07	2.89E-07	2.89E-07
Lead-210 + D	1.08E-06	NA	1.08E-06	NA	NA	1.08E-06	1.08E-06	1.08E-06	1.08E-06
Neptunium-237 + D	2.41E-11	NA	NA	NA	NA	2.41E-11	NA	NA	NA
Plutonium-238	4.32E-12	NA	NA	NA	NA	4.32E-12	NA	NA	NA
Plutonium-239/240	1.28E-11	NA	NA	NA	NA	NA	NA	NA	NA
Radium-226 + D	2.30E-05	2.30E-05	2.30E-05	2.30E-05	2.30E-05	2.30E-05	2.30E-05	2.30E-05	2.30E-05
Radium-228 + D	1.06E-05	1.06E-05	1.06E-05	1.06E-05	1.06E-05	1.06E-05	1.06E-05	1.06E-05	1.06E-05
Radon-222+ D	3.59E-04	3.59E-04	3.59E-04	3.59E-04	3.59E-04	3.59E-04	3.59E-04	3.59E-04	3.59E-04
Strontium-90 + D	1.03E-10	NA	NA	NA	NA	NA	NA	NA	NA
Technetium-99	5.12E-11	5.12E-11	5.12E-11	NA	NA	5.12E-11	5.12E-11	5.12E-11	5.12E-11
Thorium-228 + D	1.71E-05	1.71E-05	1.71E-05	1.71E-05	1.71E-05	1.71E-05	1.71E-05	1.71E-05	1.71E-05
Thorium-230	1.39E-07	NA	1.39E-07	1.39E-07	NA	1.39E-07	1.39E-07	1.39E-07	1.39E-07
Thorium-232	1.46E-07	1.46E-07	1.46E-07	1.46E-07	1.46E-07	1.46E-07	1.46E-07	1.46E-07	1.46E-07
Uranium-234	8.53E-08	8.53E-08	8.53E-08	8.53E-08	8.53E-08	8.53E-08	8.53E-08	8.53E-08	8.53E-08
Uranium-235 + D	6.97E-08	6.97E-08	6.97E-08	6.97E-08	6.97E-08	6.97E-08	6.97E-08	6.97E-08	6.97E-08
Uranium-238 + D	3.95E-07	3.95E-07	3.95E-07	3.95E-07	3.95E-07	3.95E-07	3.95E-07	3.95E-07	3.95E-07
SUM	**4.12E-04**	**4.11E-04**	**4.12E-04**	**4.11E-04**	**4.11E-04**	**4.12E-04**	**4.12E-04**	**4.12E-04**	**4.12E-04**

TABLE E.0-2
Groundskeeper / Sampler - BKGD - SumPaths

Summation of all paths for individual chemicals	Background		Background Values as Applicable to Each Zone															
			Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6		Zone 7		Zone 8	
	ILCR	HQ	ILCR	HQ	ILCR	HQ	ILCR	HQ	ILCR	HQ	ILCR	HQ	ILCR	HQ	ILCR	HQ	ILCR	HQ
1,1,2-Trichloroethane	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
1,1-Dichloroethylene	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
1,2-dichloroethane	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
2-Butanone	No CSFs	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	No CSFs	0.00E+00
3,3-Dichlorobenzidine	0.00E+00	No RfDs	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	No CSFs	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroanaline	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	No CSFs	0.00E+00	NA	NA	No CSFs	0.00E+00	NA	NA	NA	NA	No CSFs	0.00E+00	NA	NA	NA	NA	No CSFs	0.00E+00
Antimony	No CSFs	4.37E-03	No CSFs	4.37E-03	No CSFs	4.37E-03	NA	NA	NA	NA	No CSFs	4.37E-03	No CSFs	4.37E-03	No CSFs	4.37E-03	No CSFs	4.37E-03
Aroclor-1254	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Aroclor-1260	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Arsenic	4.63E-06	2.80E-02	4.63E-06	2.80E-02	4.63E-06	2.80E-02	4.63E-06	2.80E-02	NA	NA	4.63E-06	2.80E-02	4.63E-06	2.80E-02	4.63E-06	2.80E-02	4.63E-06	2.80E-02
Barium	No CSFs	3.08E-03	NA	NA	No CSFs	3.08E-03	NA	NA	NA	NA	No CSFs	3.08E-03	No CSFs	3.08E-03	NA	NA	No CSFs	3.08E-03
Benzene	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	NA	NA	0.00E+00	0.00E+00	NA	NA	NA	NA	0.00E+00	0.00E+00
Benzo(a)anthracene	0.00E+00	No RfDs	NA	NA	0.00E+00	No RfDs	0.00E+00	No RfDs	NA	NA	0.00E+00	No RfDs	0.00E+00	No RfDs	0.00E+00	No RfDs	NA	NA
Benzo(a)pyrene	0.00E+00	No RfDs	NA	NA	0.00E+00	No RfDs	0.00E+00	No RfDs	NA	NA	0.00E+00	No RfDs	0.00E+00	No RfDs	0.00E+00	No RfDs	NA	NA
Benzo(b)fluoranthene	0.00E+00	No RfDs	NA	NA	0.00E+00	No RfDs	0.00E+00	No RfDs	NA	NA	0.00E+00	No RfDs	0.00E+00	No RfDs	0.00E+00	No RfDs	NA	NA
Benzo(k)fluoranthene	0.00E+00	No RfDs	NA	NA	0.00E+00	No RfDs	0.00E+00	No RfDs	NA	NA	0.00E+00	No RfDs	0.00E+00	No RfDs	0.00E+00	No RfDs	NA	NA
Beryllium	1.77E-06	1.09E-03	1.77E-06	1.09E-03	1.77E-06	1.09E-03	1.77E-06	1.09E-03	NA	NA	1.77E-06	1.09E-03	1.77E-06	1.09E-03	1.77E-06	1.09E-03	1.77E-06	1.09E-03
Bis(2-chloroisopropyl)ether	No CSFs	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Boron	No CSFs	6.58E-06	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Bromoform	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	No CSFs	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	4.53E-09	7.97E-04	NA	NA	4.53E-09	7.97E-04	NA	NA	NA	NA	4.53E-09	7.97E-04	4.53E-09	7.97E-04	4.53E-09	7.97E-04	4.53E-09	7.97E-04
Carbazole	0.00E+00	No RfDs	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	No CSFs	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	NA	NA	0.00E+00	0.00E+00	NA	NA	NA	NA	0.00E+00	0.00E+00
Chlordane	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	No CSFs	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (VI)	7.54E-07	6.67E-03	NA	NA	7.54E-07	6.67E-03	NA	NA	NA	NA	7.54E-07	6.67E-03	NA	NA	NA	NA	7.54E-07	6.67E-03
Chrysene	0.00E+00	No RfDs	NA	NA	0.00E+00	No RfDs	0.00E+00	No RfDs	NA	NA	0.00E+00	No RfDs	0.00E+00	No RfDs	0.00E+00	No RfDs	0.00E+00	No RfDs
Cobalt	1.52E-07	8.05E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	No CSFs	3.17E-04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	No CSFs	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexanone	No CSFs	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	0.00E+00	No RfDs	NA	NA	0.00E+00	No RfDs	0.00E+00	No RfDs	NA	NA	0.00E+00	No RfDs	0.00E+00	No RfDs	0.00E+00	No RfDs	0.00E+00	No RfDs
Dieldrin	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Di-n-octylphthalate	No CSFs	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE E.0-2
Groundskeeper / Sampler - BKGD - SumPaths

Summation of all paths for individual chemicals (continued)

	Background		Background Values as Applicable to Each Zone															
			Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6		Zone 7		Zone 8	
	ILCR	HQ	ILCR	HQ	ILCR	HQ	ILCR	HQ	ILCR	HQ	ILCR	HQ	ILCR	HQ	ILCR	HQ	ILCR	HQ
Ethyl ether	No CSFs	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	NA	NA	0.00E+00	0.00E+00	NA	NA	NA	NA	0.00E+00	0.00E+0
Fluoride	No CSFs	3.92E-05	NA	NA	NA	NA	NA	NA	NA	NA	No CSFs	3.92E-05	No CSFs	3.92E-05	NA	NA	NA	NA
Heptachlorodibenzofuran	0.00E+00	No RfDs	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlorodibenzo-p-dioxin	0.00E+00	No RfDs	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.00E+00	No RfDs	NA	NA	NA	NA
Hexachlorodibenzofuran	0.00E+00	No RfDs	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorodibenzo-p-dioxin	0.00E+00	No RfDs	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	0.00E+00	No RfDs	NA	NA	0.00E+00	No RfDs	0.00E+00	No RfDs	NA	NA	0.00E+00	No RfDs	0.00E+00	No RfDs	0.00E+00	No RfDs	0.00E+00	No RfDs
Lead	No CSFs	No RfDs	No CSFs	No RfDs	No CSFs	No RfDs	No CSFs	No RfDs	NA	NA	No CSFs	No RfDs	NA	NA	NA	NA	No CSFs	No RfDs
Manganese	No CSFs	1.94E-01	NA	NA	NA	NA	No CSFs	1.94E-01	NA	NA	NA	NA	NA	NA	NA	NA	No CSFs	1.94E-01
Mercury	No CSFs	1.13E-04	NA	NA	No CSFs	1.13E-04	NA	NA	NA	NA	No CSFs	1.13E-04	NA	NA	NA	NA	No CSFs	1.13E-04
Methanol	No CSFs	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone	No CSFs	0.00E+00	NA	NA	No CSFs	0.00E+00	NA	NA	NA	NA	No CSFs	0.00E+00	NA	NA	NA	NA	No CSFs	0.00E+0
Methylene chloride	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	NA	NA	0.00E+00	0.00E+00	NA	NA	NA	NA	0.00E+00	0.00E+0
Molybdenum	No CSFs	4.23E-04	NA	NA	No CSFs	4.23E-04	No CSFs	4.23E-04	NA	NA	No CSFs	4.23E-04	No CSFs	4.23E-04	No CSFs	4.23E-04	No CSFs	4.23E-04
Nickel	No CSFs	9.26E-04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-nitrosodipropylamine	0.00E+00	No RfDs	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Octachlorodibenzofuran	0.00E+00	No RfDs	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Octochlorodibenzo-p-dioxin	0.00E+00	No RfDs	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.00E+00	No RfDs	NA	NA	NA	NA
Pentachlorodibenzofuran	No CSFs	No RfDs	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorodibenzo-p-dioxin	0.00E+00	No RfDs	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	No CSFs	No RfDs	NA	NA	No CSFs	No RfDs	NA	NA	NA	NA	No CSFs	No RfDs	No CSFs	No RfDs	No CSFs	No RfDs	No CSFs	No RfDs
Selenium	No CSFs	1.01E-04	NA	NA	No CSFs	1.01E-04	NA	NA	NA	NA	No CSFs	1.01E-04	NA	NA	NA	NA	No CSFs	1.01E-04
Silver	No CSFs	9.39E-05	NA	NA	No CSFs	9.39E-05	NA	NA	NA	NA	No CSFs	9.39E-05	No CSFs	9.39E-05	No CSFs	9.39E-05	No CSFs	9.39E-05
Tetrachlorodibenzofuran	No CSFs	No RfDs	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachlorodibenzo-p-dioxin	No CSFs	No RfDs	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethylene	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Thallium	No CSFs	2.73E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	No CSFs	0.00E+00	NA	NA	No CSFs	0.00E+00	NA	NA	NA	NA	No CSFs	0.00E+00	NA	NA	NA	NA	No CSFs	0.00E+00
Tributyl phosphate	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethylene	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Trifluorochloromethane	No CSFs	No RfDs	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Uranium	No CSFs	3.03E-03	No CSFs	3.03E-03	No CSFs	3.03E-03	No CSFs	3.03E-03	No CSFs	3.03E-03	No CSFs	3.03E-03	No CSFs	3.03E-03	No CSFs	3.03E-03	No CSFs	3.03E-03
Vanadium	No CSFs	4.68E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes	No CSFs	0.00E+00	NA	NA	No CSFs	0.00E+00	NA	NA	NA	NA	No CSFs	0.00E+00	NA	NA	NA	NA	No CSFs	0.00E+00
Zinc	No CSFs	1.22E-04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SUM	**7.31E-06**	**2.59E-01**	**6.40E-06**	**3.64E-02**	**7.16E-06**	**4.77E-02**	**6.40E-06**	**2.26E-01**	**0.00E+00**	**3.03E-03**	**7.16E-06**	**4.78E-02**	**6.41E-06**	**4.09E-02**	**6.41E-06**	**3.78E-02**	**7.16E-06**	**2.42E-01**

TABLE E.0-3
Undeveloped Park User - BKGD - InhaleChem

Undeveloped Park User - Inhalation of Gases & Particulates
Risk calculation for background

Intake Equation:

			UNITS	Assigned Values			
				child	youth	adult	senior
CDI =	(CA*EF*ED*IR*ET)/(BW*AT)						
CDI =	Chronic Daily Intake		mg/kgday				
CA =	Concentration of chemical in air		mg/m^3	see table of COCs below			
EF =	Exposure frequency		days/yr	20	40	20	40
ED =	Exposure duration		yrs	3	6	14	7
IR =	Inhalation rate		m^3/hr	1	1	1	1
ET =	Exposure time		hrs/day	2	2	2	2
BW =	Body weight		kg	15	47	70	70
ATc =	Average time for carcinogens		days	25550	25550	25550	25550
ATn =	Average time for non-carcinogens		days	1095	2190	5110	2555

COC	conc	RfDI	CSFI	CHILD				YOUTH				ADULT				SENIOR				SUM			
				CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR
	mg/m^3	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	0.00E+00	NA	5.60E-02	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
1,1-Dichloroethylene	0.00E+00	5.71E-02	1.75E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,2-dichloroethane	0.00E+00	NA	9.10E-02	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
2-Butanone	0.00E+00	1.43E+00	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
3,3-Dichlorobenzidine	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroanaline	0.00E+00	1.14E-03	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Acetone	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	7.46E-08	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	0.00E+00	NA	2.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Aroclor-1260	0.00E+00	NA	2.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Arsenic	3.22E-07	NA	1.51E+01	NA	NA	1.01E-10	1.52E-09	NA	NA	1.29E-10	1.95E-09	NA	NA	1.01E-10	1.52E-09	NA	NA	1.01E-10	1.52E-09	NA	NA	4.32E-10	6.52E-09
Barium	4.86E-06	1.43E-04	NA	3.55E-08	2.48E-04	NA	NA	2.27E-08	1.59E-04	NA	NA	7.61E-09	5.32E-05	NA	NA	1.52E-08	1.06E-04	NA	NA	1.52E-08	1.06E-04	NA	NA
Benzene	0.00E+00	8.57E-03	2.73E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Benzo(a)anthracene	0.00E+00	NA	3.08E-01	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Benzo(a)pyrene	0.00E+00	NA	3.08E-01	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Benzo(b)fluoranthene	0.00E+00	NA	3.08E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Benzo(k)fluoranthene	0.00E+00	NA	3.08E-02	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Beryllium	3.74E-08	5.71E-06	8.40E+00	2.74E-10	4.79E-05	1.17E-11	9.85E-11	1.75E-10	3.06E-05	1.50E-11	1.26E-10	5.86E-11	1.03E-05	1.17E-11	9.85E-11	1.17E-10	2.05E-05	1.17E-11	9.85E-11	1.17E-10	2.05E-05	5.01E-11	4.21E-10
Bis(2-chloroisopropyl)ether	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Boron	6.66E-08	5.71E-03	NA	4.86E-10	8.52E-08	NA	NA	3.10E-10	5.44E-08	NA	NA	1.04E-10	1.82E-08	NA	NA	2.08E-10	3.65E-08	NA	NA	2.08E-10	3.64E-08	NA	NA
Bromodichloromethane	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	0.00E+00	NA	3.85E-03	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Bromomethane	0.00E+00	1.43E-03	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Cadmium	2.57E-08	NA	6.30E+00	NA	NA	8.05E-12	5.07E-11	NA	NA	1.03E-11	6.48E-11	NA	NA	8.05E-12	5.07E-11	NA	NA	8.05E-12	5.07E-11	NA	NA	3.44E-11	2.17E-10
Carbazole	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	0.00E+00	2.00E-01	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Carbon tetrachloride	0.00E+00	NA	5.25E-02	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Chlordane	0.00E+00	2.00E-04	3.50E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chlorobenzene	0.00E+00	1.43E-02	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Chloroform	0.00E+00	NA	8.05E-02	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Chromium (VI)	6.42E-07	2.86E-05	4.20E+01	4.69E-09	1.64E-04	2.01E-10	8.45E-09	2.99E-09	1.05E-04	2.57E-10	1.08E-08	1.01E-09	3.52E-05	2.01E-10	8.45E-09	2.01E-09	7.03E-05	2.01E-10	8.45E-09	2.01E-09	7.02E-05	8.60E-10	3.61E-08
Chrysene	0.00E+00	NA	3.08E-03	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Cobalt	5.56E-07	5.71E-06	9.80E+00	4.07E-09	7.12E-04	1.74E-10	1.71E-09	2.59E-09	4.54E-04	2.22E-10	2.18E-09	8.71E-10	1.53E-04	1.74E-10	1.71E-09	1.74E-09	3.05E-04	1.74E-10	1.71E-09	1.74E-09	3.04E-04	7.45E-10	7.30E-09
Copper	8.14E-07	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexanone	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	0.00E+00	NA	3.08E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Dieldrin	0.00E+00	NA	1.61E+01	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Di-n-octylphthalate	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE E.0-3
Undeveloped Park User - BKGD - InhaleChem

Undeveloped Park User - Inhalation of Gases & Particulates
Risk calculation for background

Intake Equation:

			UNITS	Assigned Values			
				child	youth	adult	senior
CDI =	(CA*EF*ED*IR*ET)/(BW*AT)		mg/kgday				
CDI =	Chronic Daily Intake						
CA =	Concentration of chemical in air		mg/m³	see table of COCs below			
EF =	Exposure frequency		days/yr	20	40	20	40
ED =	Exposure duration		yrs	3	6	14	7
IR =	Inhalation rate		m³/hr	1	1	1	1
ET =	Exposure time		hrs/day	2	2	2	2
BW =	Body weight		kg	15	47	70	70
ATc =	Average time for carcinogens		days	25550	25550	25550	25550
ATn =	Average time for non-carcinogens		days	1095	2190	5110	2555

COC	conc	RfDi	CSFi	CHILD				YOUTH				ADULT				SENIOR				SUM			
				CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR
	mg/m³	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
Ethyl ether	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	0.00E+00	2.86E-01	3.85E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Fluoride	8.32E-08	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlorodibenzofuran	0.00E+00	NA	1.16E+03	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Heptachlorodibenzo-p-dioxin	0.00E+00	NA	1.16E+03	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Hexachlorodibenzofuran	0.00E+00	NA	1.16E+04	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Hexachlorodibenzo-p-dioxin	0.00E+00	NA	1.16E+04	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Indeno(1,2,3-cd)pyrene	0.00E+00	NA	3.08E-01	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Lead	7.96E-07	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	3.46E-05	1.43E-05	NA	2.53E-07	1.77E-02	NA	NA	1.61E-07	1.13E-02	NA	NA	5.41E-08	3.79E-03	NA	NA	1.08E-07	7.57E-03	NA	NA	1.08E-07	7.56E-03	NA	NA
Mercury	1.82E-09	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methanol	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl-2-pentanone	0.00E+00	8.57E-01	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Methylene chloride	0.00E+00	8.57E-01	1.65E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Molybdenum	1.36E-07	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	1.19E-06	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-nitrosodipropylamine	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Octochlorodibenzofuran	0.00E+00	NA	1.16E+02	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Octochlorodibenzo-p-dioxin	0.00E+00	NA	1.16E+02	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Pentachlorodibenzofuran	0.00E+00	NA	5.78E+03	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Pentachlorodibenzo-p-dioxin	0.00E+00	NA	5.78E+04	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Pentachlorophenol	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	3.09E-08	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	2.94E-08	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachlorodibenzofuran	0.00E+00	NA	1.16E+04	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Tetrachlorodibenzo-p-dioxin	0.00E+00	NA	1.16E+05	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Tetrachloroethylene	0.00E+00	1.71E-01	2.07E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Thallium	1.51E-08	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	0.00E+00	1.43E+00	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Tributyl phosphate	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethylene	0.00E+00	1.14E-02	4.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Trifluorochloromethane	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Uranium	1.19E-07	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	1.08E-06	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	0.00E+00	2.86E-02	3.08E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xylenes	0.00E+00	2.86E-02	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Zinc	2.32E-06	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
																				total =	8.06E-03	total =	5.06E-08

Air concentration is derived from air particulate value of 26 ug/m³ (2005 SER background average from monitor AMS-12) multiplied by soil concentration.

TABLE E.0-3
Undeveloped Park User - BKGD - DermalSoilChem

Undeveloped Park User - Dermal Contact with Soil/Sediment
Risk calculation for background

Intake Equation:

		UNITS	Assigned Values			
			child	youth	adult	senior
CDI =	(CS*AB*SA*EF*ED*AF*CF)/(BW*AT)					
CDI =	Chronic Daily Intake	mg/kgday				
CS =	Concentration of chemical in soil	mg/kg	see table of COCs below			
AB	Absorption factor	--	see table of COCs below			
SA	Surface area of exposed skin	cm^2/day	2800	4370	5700	5700
EF =	Exposure frequency	days/yr	20	40	20	40
ED =	Exposure duration	yrs	3	6	14	7
AF =	Adherence factor	mg/cm^2	0.2	0.2	0.07	0.07
CF =	Conversion factor	kg/mg	1.00E-06	1.00E-06	1.00E-06	1.00E-06
BW =	Body weight	kg	15	47	70	70
ATc =	Average time for carcinogens	days	25550	25550	25550	25550
ATn =	Average time for non-carcinogens	days	1095	2190	5110	2555

COC	conc	AB	RfDd	CSFd	CHILD				YOUTH				ADULT				SENIOR				SUM			
					CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR
	mg/kg	unitless	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	0.00E+00	1.00E-02	3.24E-03	7.04E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,1-Dichloroethylene	0.00E+00	1.00E-02	5.00E-02	6.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,2-dichloroethane	0.00E+00	1.00E-02	2.00E-02	9.10E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2-Butanone	0.00E+00	1.00E-02	4.80E-01	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
3,3-Dichlorobenzidine	0.00E+00	1.00E-02	NA	9.00E-01	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
4-Methylphenol	0.00E+00	1.00E-02	3.25E-03	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
4-Nitroanaline	0.00E+00	1.00E-02	2.40E-03	2.63E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Acetone	0.00E+00	1.00E-02	7.47E-01	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Antimony	2.87E+00	1.00E-03	8.00E-06	NA	5.87E-09	7.34E-04	NA	NA	5.85E-09	7.31E-04	NA	NA	8.96E-10	1.12E-04	NA	NA	1.79E-09	2.24E-04	NA	NA	2.59E-09	3.24E-04	NA	NA
Aroclor-1254	0.00E+00	1.40E-01	1.80E-05	2.22E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Aroclor-1260	0.00E+00	1.40E-01	1.80E-05	2.22E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Arsenic	1.24E+01	3.00E-02	1.23E-04	3.66E+00	7.61E-07	6.19E-03	3.26E-08	1.19E-07	7.58E-07	6.16E-03	6.50E-08	2.38E-07	1.16E-07	9.45E-04	2.32E-08	8.50E-08	2.32E-07	1.89E-03	2.32E-08	8.50E-08	3.36E-07	2.73E-03	1.44E-07	5.27E-07
Barium	1.87E+02	1.00E-03	1.40E-02	NA	3.83E-07	2.73E-05	NA	NA	3.81E-07	2.72E-05	NA	NA	5.84E-08	4.17E-06	NA	NA	1.17E-07	8.34E-06	NA	NA	1.69E-07	1.21E-05	NA	NA
Benzene	0.00E+00	1.00E-02	3.88E-03	5.87E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Benzo(a)anthracene	0.00E+00	1.30E-01	NA	2.35E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Benzo(a)pyrene	0.00E+00	1.30E-01	NA	2.35E+01	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Benzo(b)fluoranthene	0.00E+00	1.30E-01	NA	2.35E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Benzo(k)fluoranthene	0.00E+00	1.30E-01	NA	2.35E-01	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Beryllium	1.44E+00	1.00E-03	2.00E-05	4.30E+02	2.95E-09	1.47E-04	1.26E-10	5.43E-08	2.93E-09	1.47E-04	2.52E-10	1.08E-07	4.50E-10	2.25E-05	9.00E-11	3.87E-08	9.00E-10	4.50E-05	9.00E-11	3.87E-08	1.30E-09	6.51E-05	5.58E-10	2.40E-07
Bis(2-chloroisopropyl)ether	0.00E+00	1.00E-02	2.00E-02	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Bis(2-ethylhexyl)phthalate	0.00E+00	1.00E-02	3.80E-03	7.37E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Boron	2.56E+00	1.00E-03	1.80E-01	NA	5.24E-09	2.91E-08	NA	NA	5.22E-09	2.90E-08	NA	NA	8.00E-10	4.44E-09	NA	NA	1.60E-09	8.88E-09	NA	NA	2.31E-09	1.29E-08	NA	NA
Bromodichloromethane	0.00E+00	1.00E-02	1.96E-02	6.33E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Bromoform	0.00E+00	1.00E-02	1.20E-02	1.32E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Bromomethane	0.00E+00	1.00E-02	1.12E-03	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Cadmium	9.89E-01	1.00E-03	1.00E-05	NA	2.02E-09	2.02E-04	NA	NA	2.02E-09	2.02E-04	NA	NA	3.09E-10	3.09E-05	NA	NA	6.18E-10	6.18E-05	NA	NA	8.94E-10	8.94E-05	NA	NA
Carbazole	0.00E+00	1.00E-02	NA	2.86E-02	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Carbon disulfide	0.00E+00	2.50E-01	6.30E-02	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Carbon tetrachloride	0.00E+00	1.00E-02	4.55E-04	2.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chlordane	0.00E+00	4.00E-02	2.50E-04	7.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chlorobenzene	0.00E+00	1.00E-02	6.20E-03	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Chloroform	0.00E+00	1.00E-02	2.00E-03	3.05E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chromium (VI)	2.47E+01	1.00E-03	6.00E-05	NA	5.05E-08	8.42E-04	NA	NA	5.03E-08	8.39E-04	NA	NA	7.71E-09	1.29E-04	NA	NA	1.54E-08	2.57E-04	NA	NA	2.23E-08	3.72E-04	NA	NA
Chrysene	0.00E+00	1.30E-01	NA	2.35E-02	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Cobalt	2.14E+01	1.00E-03	1.60E-02	NA	4.38E-08	2.74E-06	NA	NA	4.36E-08	2.73E-06	NA	NA	6.68E-09	4.18E-07	NA	NA	1.34E-08	8.35E-07	NA	NA	1.93E-08	1.21E-06	NA	NA
Copper	3.13E+01	1.00E-03	1.20E-02	NA	6.40E-08	5.34E-06	NA	NA	6.38E-08	5.32E-06	NA	NA	9.78E-09	8.15E-07	NA	NA	1.96E-08	1.63E-06	NA	NA	2.83E-08	2.36E-06	NA	NA
Cyanide	0.00E+00	1.00E-02	3.40E-03	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Cyclohexanone	0.00E+00	1.00E-02	4.00E+00	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Dibenzo(a,h)anthracene	0.00E+00	1.30E-01	NA	2.35E+01	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Dieldrin	0.00E+00	1.00E-02	2.50E-05	3.20E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Di-n-octylphthalate	0.00E+00	1.00E-02	3.60E-02	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA

TABLE E.0-3
Undeveloped Park User - BKGD - DermalSoilChem

Undeveloped Park User - Dermal Contact with Soil/Sediment
Risk calculation for background

Intake Equation:

CDI =	(CS*AB*SA*EF*ED*AF*CF)/(BW*AT)	
CDI =	Chronic Daily Intake	
CS =	Concentration of chemical in soil	
AB	Absorption factor	
SA	Surface area of exposed skin	
EF =	Exposure frequency	
ED =	Exposure duration	
AF =	Adherence factor	
CF =	Conversion factor	
BW =	Body weight	
ATc =	Average time for carcinogens	
ATn =	Average time for non-carcinogens	

UNITS	Assigned Values			
	child	youth	adult	senior
mg/kgday				
mg/kg	see table of COCs below			
--	see table of COCs below			
cm^2/day	2800	4370	5700	5700
days/yr	20	40	20	40
yrs	3	6	14	7
mg/cm^2	0.2	0.2	0.07	0.07
kg/mg	1.00E-06	1.00E-06	1.00E-06	1.00E-06
kg	15	47	70	70
days	25550	25550	25550	25550
days	1095	2190	5110	2555

COC	conc	AB	RfDd	CSFd	CHILD				YOUTH				ADULT				SENIOR				SUM			
					CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR
	mg/kg	unitless	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
Ethyl ether	0.00E+00	1.00E-02	1.60E-01	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Ethylbenzene	0.00E+00	1.00E-02	9.70E-02	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Fluoride	3.20E+00	1.00E-03	5.82E-02	NA	6.55E-09	1.12E-07	NA	NA	6.52E-09	1.12E-07	NA	NA	9.99E-10	1.72E-08	NA	NA	2.00E-09	3.43E-08	NA	NA	2.89E-09	4.97E-08	NA	NA
Heptachlorodibenzofuran	0.00E+00	1.00E-02	NA	3.00E+03	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Heptachlorodibenzo-p-dioxin	0.00E+00	3.00E-02	NA	3.00E+03	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Hexachlorodibenzofuran	0.00E+00	1.00E-02	NA	3.00E+04	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Hexachlorodibenzo-p-dioxin	0.00E+00	3.00E-02	NA	3.00E+04	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Indeno(1,2,3-cd)pyrene	0.00E+00	1.30E-01	NA	2.35E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Lead	3.06E+01	1.00E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	1.33E+03	1.00E-03	5.60E-03	NA	2.72E-06	4.86E-04	NA	NA	2.71E-06	4.84E-04	NA	NA	4.15E-07	7.42E-05	NA	NA	8.31E-07	1.48E-04	NA	NA	1.20E-06	2.15E-04	NA	NA
Mercury	7.00E-02	1.00E-03	2.10E-05	NA	1.43E-10	6.82E-06	NA	NA	1.43E-10	6.79E-06	NA	NA	2.19E-11	1.04E-06	NA	NA	4.37E-11	2.08E-06	NA	NA	6.33E-11	3.01E-06	NA	NA
Methanol	0.00E+00	1.00E-02	4.00E-01	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Methyl-2-pentanone	0.00E+00	1.00E-02	6.40E-02	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Methylene chloride	0.00E+00	1.00E-02	5.70E-02	7.89E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Molybdenum	5.24E+00	1.00E-03	1.90E-03	NA	1.07E-08	5.64E-06	NA	NA	1.07E-08	5.62E-06	NA	NA	1.64E-09	8.61E-07	NA	NA	3.27E-09	1.72E-06	NA	NA	4.74E-09	2.49E-06	NA	NA
Nickel	4.56E+01	1.00E-03	5.40E-03	NA	9.33E-08	1.73E-05	NA	NA	9.29E-08	1.72E-05	NA	NA	1.42E-08	2.64E-06	NA	NA	2.85E-08	5.27E-06	NA	NA	4.12E-08	7.63E-06	NA	NA
N-nitrosodiphenylamine	0.00E+00	1.00E-02	5.00E-03	1.96E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
N-nitrosodipropylamine	0.00E+00	1.00E-02	NA	2.80E+01	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Octachlorodibenzofuran	0.00E+00	1.00E-02	NA	3.00E+02	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Octochlorodibenzo-p-dioxin	0.00E+00	3.00E-02	NA	3.00E+02	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Pentachlorodibenzofuran	0.00E+00	1.00E-02	NA	1.50E+04	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Pentachlorodibenzo-p-dioxin	0.00E+00	3.00E-02	NA	1.50E+05	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Pentachlorophenol	0.00E+00	2.50E-01	3.00E-02	1.20E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Phenanthrene	0.00E+00	1.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	1.19E+00	1.00E-03	2.20E-03	NA	2.43E-09	1.11E-06	NA	NA	2.43E-09	1.10E-06	NA	NA	3.72E-10	1.69E-07	NA	NA	7.43E-10	3.38E-07	NA	NA	1.08E-09	4.89E-07	NA	NA
Silver	1.13E+00	1.00E-03	9.00E-04	NA	2.31E-09	2.57E-06	NA	NA	2.30E-09	2.56E-06	NA	NA	3.53E-10	3.92E-07	NA	NA	7.06E-10	7.84E-07	NA	NA	1.02E-09	1.13E-06	NA	NA
Tetrachlorodibenzofuran	0.00E+00	1.00E-02	NA	3.00E+04	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Tetrachlorodibenzo-p-dioxin	0.00E+00	3.00E-02	NA	3.00E+05	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Tetrachloroethylene	0.00E+00	1.00E-02	1.00E-02	5.40E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Thallium	5.80E-01	1.00E-03	1.80E-05	NA	1.19E-09	6.59E-05	NA	NA	1.18E-09	6.57E-05	NA	NA	1.81E-10	1.01E-05	NA	NA	3.62E-10	2.01E-05	NA	NA	5.24E-10	2.91E-05	NA	NA
Toluene	0.00E+00	1.00E-02	6.40E-02	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Tributyl phosphate	0.00E+00	1.00E-02	1.00E-01	1.08E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Trichloroethylene	0.00E+00	1.00E-02	4.50E-05	2.67E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Trifluorochloromethane	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Uranium	4.56E+00	1.00E-03	5.10E-04	NA	9.33E-09	1.83E-05	NA	NA	9.29E-09	1.82E-05	NA	NA	1.42E-09	2.79E-06	NA	NA	2.85E-09	5.59E-06	NA	NA	4.12E-09	8.08E-06	NA	NA
Vanadium	4.14E+01	1.00E-03	7.00E-05	NA	8.47E-08	1.21E-03	NA	NA	8.44E-08	1.21E-03	NA	NA	1.29E-08	1.85E-04	NA	NA	2.59E-08	3.69E-04	NA	NA	3.74E-08	5.34E-04	NA	NA
Vinyl chloride	0.00E+00	1.00E-02	3.00E-03	1.50E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xylenes	0.00E+00	1.00E-02	1.84E-01	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Zinc	8.93E+01	1.00E-03	6.00E-02	NA	1.83E-07	3.04E-06	NA	NA	1.82E-07	3.03E-06	NA	NA	2.79E-08	4.65E-07	NA	NA	5.58E-08	9.30E-07	NA	NA	8.07E-08	1.34E-06	NA	NA
																					total =	4.40E-03	total =	7.67E-07

TABLE E.0-3
Undeveloped Park User - BKGD - IngestSoilChem

Undeveloped Park User - Ingestion of Soil
Risk calculation for background

Intake Equation:

			UNITS	Assigned Values			
				child	youth	adult	senior
CDI =	(CS*EF*ED*IR*FI*CF)/(BW*AT)						
CDI =	Chronic Daily Intake		mg/kgday				
CS =	Concentration of chemical in soil		mg/kg	see table of COCs below			
EF =	Exposure frequency		days/yr	20	40	20	40
ED =	Exposure duration		yrs	3	6	14	7
IR =	Ingestion rate		mg/day	200	100	100	100
FI =	Fraction of contaminated soil		unitless	1	1	1	1
CF =	Conversion factor		kg/mg	1.00E-06	1.00E-06	1.00E-06	1.00E-06
BW =	Body weight		kg	15	47	70	70
ATc =	Average time for carcinogens		days	25550	25550	25550	25550
ATn =	Average time for non-carcinogens		days	1095	2190	5110	2555

COC	conc	RfDo	CSFo	CHILD				YOUTH				ADULT				SENIOR				SUM			
				CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR
	mg/kg	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	0.00E+00	4.00E-03	5.70E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,1-Dichloroethylene	0.00E+00	5.00E-02	6.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,2-dichloroethane	0.00E+00	2.00E-02	9.10E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2-Butanone	0.00E+00	6.00E-01	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
3,3-Dichlorobenzidine	0.00E+00	NA	4.50E-01	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
4-Methylphenol	0.00E+00	5.00E-03	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
4-Nitroanaline	0.00E+00	3.00E-03	2.10E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Acetone	0.00E+00	9.00E-01	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Antimony	2.87E+00	4.00E-04	NA	2.10E-06	5.24E-03	NA	NA	6.69E-07	1.67E-03	NA	NA	2.25E-07	5.62E-04	NA	NA	4.49E-07	1.12E-03	NA	NA	5.53E-07	1.38E-03	NA	NA
Aroclor-1254	0.00E+00	2.00E-05	2.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Aroclor-1260	0.00E+00	2.00E-05	2.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Arsenic	1.24E+01	3.00E-04	1.50E+00	9.06E-06	3.02E-02	3.88E-07	5.82E-07	2.89E-06	9.64E-03	2.48E-07	3.72E-07	9.71E-07	3.24E-03	1.94E-07	2.91E-07	1.94E-06	6.47E-03	1.94E-07	2.91E-07	2.39E-06	7.97E-03	1.02E-06	1.54E-06
Barium	1.87E+02	2.00E-01	NA	1.37E-04	6.83E-04	NA	NA	4.36E-05	2.18E-04	NA	NA	1.46E-05	7.32E-05	NA	NA	2.93E-05	1.46E-04	NA	NA	3.60E-05	1.80E-04	NA	NA
Benzene	0.00E+00	4.00E-03	5.50E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Benzo(a)anthracene	0.00E+00	NA	7.30E-01	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Benzo(a)pyrene	0.00E+00	NA	7.30E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Benzo(b)fluoranthene	0.00E+00	NA	7.30E-01	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Benzo(k)fluoranthene	0.00E+00	NA	7.30E-02	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Beryllium	1.44E+00	2.00E-03	4.30E+00	1.05E-06	5.26E-04	4.51E-08	1.94E-07	3.36E-07	1.68E-04	2.88E-08	1.24E-07	1.13E-07	5.64E-05	2.25E-08	9.69E-08	2.25E-07	1.13E-04	2.25E-08	9.69E-08	2.78E-07	1.39E-04	1.19E-07	5.12E-07
Bis(2-chloroisopropyl)ether	0.00E+00	4.00E-02	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Bis(2-ethylhexyl)phthalate	0.00E+00	2.00E-02	1.40E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Boron	2.58E+00	2.00E-01	NA	1.87E-06	9.35E-06	NA	NA	5.97E-07	2.98E-06	NA	NA	2.00E-07	1.00E-06	NA	NA	4.01E-07	2.00E-06	NA	NA	4.93E-07	2.47E-06	NA	NA
Bromodichloromethane	0.00E+00	2.00E-02	6.20E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Bromoform	0.00E+00	2.00E-02	7.90E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Bromomethane	0.00E+00	1.40E-03	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Cadmium	9.89E-01	1.00E-03	NA	7.23E-07	7.23E-04	NA	NA	2.31E-07	2.31E-04	NA	NA	7.74E-08	7.74E-05	NA	NA	1.55E-07	1.55E-04	NA	NA	1.91E-07	1.91E-04	NA	NA
Carbazole	0.00E+00	NA	2.00E-03	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Carbon disulfide	0.00E+00	1.00E-01	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Carbon tetrachloride	0.00E+00	7.00E-04	1.30E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chlordane	0.00E+00	5.00E-04	3.50E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chlorobenzene	0.00E+00	2.00E-02	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Chloroform	0.00E+00	1.00E-02	6.10E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chromium (VI)	2.47E+01	3.00E-03	NA	1.80E-05	6.02E-03	NA	NA	5.76E-06	1.92E-03	NA	NA	1.93E-06	6.44E-04	NA	NA	3.87E-06	1.29E-03	NA	NA	4.76E-06	1.59E-03	NA	NA
Chrysene	0.00E+00	NA	7.30E-03	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Cobalt	2.14E+01	2.00E-02	NA	1.56E-05	7.82E-04	NA	NA	4.99E-06	2.49E-04	NA	NA	1.68E-06	8.38E-05	NA	NA	3.35E-06	1.68E-04	NA	NA	4.12E-06	2.06E-04	NA	NA
Copper	3.13E+01	4.00E-02	NA	2.29E-05	5.72E-04	NA	NA	7.30E-06	1.82E-04	NA	NA	2.45E-06	6.13E-05	NA	NA	4.90E-06	1.23E-04	NA	NA	6.03E-06	1.51E-04	NA	NA
Cyanide	0.00E+00	2.00E-02	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Cyclohexanone	0.00E+00	5.00E+00	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Dibenzo(a,h)anthracene	0.00E+00	NA	7.30E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Dieldrin	0.00E+00	5.00E-05	1.60E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Di-n-octylphthalate	0.00E+00	4.00E-02	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA

TABLE E.0-3
Undeveloped Park User - BKGD - IngestSoilChem

Undeveloped Park User - Ingestion of Soil
Risk calculation for background

Intake Equation:

		UNITS	Assigned Values			
			child	youth	adult	senior
CDI =	(CS*EF*ED*IR*FI*CF)/(BW*AT)	mg/kgday				
CDI =	Chronic Daily Intake	mg/kgday				
CS =	Concentration of chemical in soil	mg/kg	see table of COCs below			
EF =	Exposure frequency	days/yr	20	40	20	40
ED =	Exposure duration	yrs	3	6	14	7
IR =	Ingestion rate	mg/day	200	100	100	100
FI =	Fraction of contaminated soil	unitless	1	1	1	1
CF =	Conversion factor	kg/mg	1.00E-06	1.00E-06	1.00E-06	1.00E-06
BW =	Body weight	kg	15	47	70	70
ATc =	Average time for carcinogens	days	25550	25550	25550	25550
ATn =	Average time for non-carcinogens	days	1095	2190	5110	2555

COC	conc	RfDo	CSFo	CHILD				YOUTH				ADULT				SENIOR				SUM			
				CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR
	mg/kg	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
Ethyl ether	0.00E+00	2.00E-01	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Ethylbenzene	0.00E+00	1.00E-01	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Fluoride	3.20E+00	6.00E-02	NA	2.34E-06	3.90E-05	NA	NA	7.46E-07	1.24E-05	NA	NA	2.50E-07	4.17E-06	NA	NA	5.01E-07	8.35E-06	NA	NA	8.17E-07	1.03E-05	NA	NA
Heptachlorodibenzofuran	0.00E+00	NA	1.50E+03	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Heptachlorodibenzo-p-dioxin	0.00E+00	NA	1.50E+03	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Hexachlorodibenzofuran	0.00E+00	NA	1.50E+03	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Hexachlorodibenzo-p-dioxin	0.00E+00	NA	1.50E+04	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Indeno(1,2,3-cd)pyrene	0.00E+00	NA	7.30E-01	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Lead	3.08E+01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	1.33E+03	1.40E-01	NA	9.72E-04	6.94E-03	NA	NA	3.10E-04	2.22E-03	NA	NA	1.04E-04	7.44E-04	NA	NA	2.08E-04	1.49E-03	NA	NA	2.56E-04	1.83E-03	NA	NA
Mercury	7.00E-02	3.00E-04	NA	5.11E-08	1.70E-04	NA	NA	1.63E-08	5.44E-05	NA	NA	5.48E-09	1.83E-05	NA	NA	1.10E-08	3.65E-05	NA	NA	1.35E-08	4.50E-05	NA	NA
Methanol	0.00E+00	5.00E-01	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Methyl-2-pentanone	0.00E+00	8.00E-02	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Methylene chloride	0.00E+00	6.00E-02	7.50E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Molybdenum	5.24E+00	5.00E-03	NA	3.83E-06	7.66E-04	NA	NA	1.22E-06	2.44E-04	NA	NA	4.10E-07	8.20E-05	NA	NA	8.20E-07	1.64E-04	NA	NA	1.01E-06	2.02E-04	NA	NA
Nickel	4.56E+01	2.00E-02	NA	3.33E-05	1.67E-03	NA	NA	1.06E-05	5.32E-04	NA	NA	3.57E-06	1.78E-04	NA	NA	7.14E-06	3.57E-04	NA	NA	8.79E-06	4.39E-04	NA	NA
N-nitrosodiphenylamine	0.00E+00	2.00E-02	4.90E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
N-nitrosodipropylamine	0.00E+00	NA	7.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Octachlorodibenzofuran	0.00E+00	NA	1.50E+02	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Octochlorodibenzo-p-dioxin	0.00E+00	NA	1.50E+02	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Pentachlorodibenzofuran	0.00E+00	NA	7.50E+03	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Pentachlorodibenzo-p-dioxin	0.00E+00	NA	7.50E+04	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Pentachlorophenol	0.00E+00	3.00E-02	1.20E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Phenanthrene	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	1.19E+00	5.00E-03	NA	8.69E-07	1.74E-04	NA	NA	2.77E-07	5.55E-05	NA	NA	9.32E-08	1.86E-05	NA	NA	1.86E-07	3.73E-05	NA	NA	2.29E-07	4.59E-05	NA	NA
Silver	1.13E+00	5.00E-03	NA	8.26E-07	1.65E-04	NA	NA	2.63E-07	5.27E-05	NA	NA	8.85E-08	1.77E-05	NA	NA	1.77E-07	3.54E-05	NA	NA	2.18E-07	4.36E-05	NA	NA
Tetrachlorodibenzofuran	0.00E+00	NA	1.50E+04	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Tetrachlorodibenzo-p-dioxin	0.00E+00	NA	1.50E+05	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Tetrachloroethylene	0.00E+00	1.00E-02	5.40E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Thallium	5.80E-01	9.00E-05	NA	4.24E-07	4.71E-03	NA	NA	1.35E-07	1.50E-03	NA	NA	4.54E-08	5.04E-04	NA	NA	9.08E-08	1.01E-03	NA	NA	1.12E-07	1.24E-03	NA	NA
Toluene	0.00E+00	8.00E-02	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Tributyl phosphate	0.00E+00	2.00E-01	5.40E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Trichloroethylene	0.00E+00	3.00E-04	4.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Trifluorochloromethane	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Uranium	4.56E+00	6.00E-04	NA	3.33E-06	5.55E-03	NA	NA	1.06E-06	1.77E-03	NA	NA	3.57E-07	5.95E-04	NA	NA	7.14E-07	1.19E-03	NA	NA	8.79E-07	1.46E-03	NA	NA
Vanadium	4.14E+01	7.00E-03	NA	3.02E-05	4.32E-03	NA	NA	9.65E-06	1.38E-03	NA	NA	3.24E-06	4.63E-04	NA	NA	6.48E-06	9.26E-04	NA	NA	7.98E-06	1.14E-03	NA	NA
Vinyl chloride	0.00E+00	3.00E-03	1.50E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xylenes	0.00E+00	2.00E-01	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Zinc	8.93E+01	3.00E-01	NA	6.52E-05	2.17E-04	NA	NA	2.08E-05	6.94E-05	NA	NA	6.99E-06	2.33E-05	NA	NA	1.40E-05	4.66E-05	NA	NA	1.72E-05	5.74E-05	NA	NA
																				total =	1.83E-02	total =	2.05E-06

TABLE E.0-3
Undeveloped Park User - BKGD - DermalSWchem

Undeveloped Park User - Dermal Contact with Surface Water
Risk calculation for background

			UNITS	Assigned Values: child	youth	adult	senior
Intake Equation:	CDI =	(DA*EF*ED*SA)/(BW*AT)					
	CDI =	Chronic Daily Intake	mg/kgday	calculated below			
	DA =	Dermal absorption dose	mg/cm²day	see COC list below			
	EF =	Exposure frequency	days/yr	12	12	12	12
	ED =	Exposure duration	yrs	3	6	14	7
	SA =	Surface area of skin	cm²	2180	4470	6070	6070
	BW =	Body weight	kg	15	47	70	70
	ATc =	Average time for carcinogens	days	25550	25550	25550	25550
	ATn =	Average time for non-carcinogens	days	1095	2190	5110	2555
where:	DA = C_v*K_p*CF*ET						
	C_v =	concentation of ith contaminant in surface water	mg/L	see COC list below			
	K_p =	permeability constant for ith contaminant	cm/hr	see COC list below			
	CF =	conversion factor	L/cm³	0.001	0.001	0.001	0.001
	ET =	exposure time	hr/d	1	1	1	1

COC	C_v	K_p	DA	RfDd	CSFd	CHILD CDI	CHILD HQ	CHILD CDI	CHILD ILCR	YOUTH CDI	YOUTH HQ	YOUTH CDI	YOUTH ILCR	ADULT CDI	ADULT HQ	ADULT CDI	ADULT ILCR	SENIOR CDI	SENIOR HQ	SENIOR CDI	SENIOR ILCR	SUM CDI	SUM HQ	SUM CDI	SUM ILCR
	mg/L	cm/hr	mg/cm²day	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	0.00E+00	6.43E-03	0.00E+00	3.24E-03	7.04E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,1-Dichloroethylene	0.00E+00	1.59E-02	0.00E+00	5.00E-02	6.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,2-dichloroethane	0.00E+00	5.34E-03	0.00E+00	2.00E-02	9.10E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2-Butanone	0.00E+00	1.11E-03	0.00E+00	4.80E-01	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
3,3-Dichlorobenzidine	0.00E+00	1.69E-02	0.00E+00	NA	9.00E-01	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
4-Methylphenol	0.00E+00	9.95E-03	0.00E+00	3.25E-03	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
4-Nitroanaline	0.00E+00	2.66E-03	0.00E+00	2.40E-03	2.63E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Acetone	0.00E+00	5.69E-04	0.00E+00	7.47E-01	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Antimony	5.00E-04	1.00E-03	5.00E-10	8.00E-06	NA	2.39E-09	2.99E-04	NA	NA	1.56E-09	1.95E-04	NA	NA	1.43E-09	1.78E-04	NA	NA	1.43E-09	1.78E-04	NA	NA	1.55E-09	1.94E-04	NA	NA
Aroclor-1254	0.00E+00	1.29E+00	0.00E+00	1.80E-05	2.22E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Aroclor-1260	0.00E+00	5.48E+00	0.00E+00	1.80E-05	2.22E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Arsenic	1.50E-03	1.00E-03	1.50E-09	1.23E-04	3.66E+00	7.17E-09	5.83E-05	3.07E-10	1.12E-09	4.69E-09	3.81E-05	4.02E-10	1.47E-09	4.28E-09	3.48E-05	8.55E-10	3.13E-09	4.28E-09	3.48E-05	4.28E-10	1.57E-09	4.65E-09	3.78E-05	1.99E-09	7.29E-09
Barium	1.31E-02	1.00E-03	1.31E-08	1.40E-02	NA	6.26E-08	4.47E-06	NA	NA	4.10E-08	2.93E-06	NA	NA	3.73E-08	2.67E-06	NA	NA	3.73E-08	2.67E-06	NA	NA	4.06E-08	2.90E-06	NA	NA
Benzene	0.00E+00	2.07E-02	0.00E+00	3.88E-03	5.67E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Benzo(a)anthracene	0.00E+00	9.48E-01	0.00E+00	NA	2.35E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Benzo(a)pyrene	0.00E+00	1.24E+00	0.00E+00	NA	2.35E+01	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Benzo(b)fluoranthene	0.00E+00	6.99E-01	0.00E+00	NA	2.35E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Benzo(k)fluoranthene	0.00E+00	1.20E+00	0.00E+00	NA	2.35E-01	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Beryllium	1.00E-04	1.00E-03	1.00E-10	2.00E-05	4.30E+02	4.78E-10	2.39E-05	2.05E-11	8.81E-09	3.13E-10	1.56E-05	2.68E-11	1.15E-08	2.85E-10	1.43E-05	5.70E-11	2.45E-08	2.85E-10	1.43E-05	2.85E-11	1.23E-08	3.10E-10	1.55E-05	1.33E-10	5.71E-08
Bis(2-chloroisopropyl)ether	0.00E+00	7.63E-02	0.00E+00	2.00E-02	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Bis(2-ethylhexyl)phthalate	0.00E+00	1.97E+00	0.00E+00	3.80E-03	7.37E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Boron	1.58E-02	1.00E-03	1.58E-08	1.80E-01	NA	7.55E-08	4.19E-07	NA	NA	4.94E-08	2.74E-07	NA	NA	4.50E-08	2.50E-07	NA	NA	4.50E-08	2.50E-07	NA	NA	4.90E-08	2.72E-07	NA	NA
Bromodichloromethane	0.00E+00	5.02E-03	0.00E+00	1.96E-02	6.33E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Bromoform	0.00E+00	2.77E-03	0.00E+00	1.20E-02	1.32E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Bromomethane	0.00E+00	3.51E-03	0.00E+00	1.12E-03	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Cadmium	1.00E-04	1.00E-03	1.00E-10	1.00E-05	NA	4.78E-10	4.78E-05	NA	NA	3.13E-10	3.13E-05	NA	NA	2.85E-10	2.85E-05	NA	NA	2.85E-10	2.85E-05	NA	NA	3.10E-10	3.10E-05	NA	NA
Carbazole	0.00E+00	7.97E-02	0.00E+00	NA	2.86E-02	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Carbon disulfide	0.00E+00	1.56E-02	0.00E+00	6.30E-02	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Carbon tetrachloride	0.00E+00	2.24E-02	0.00E+00	4.55E-04	2.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chlordane	0.00E+00	1.57E-01	0.00E+00	2.50E-04	7.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chlorobenzene	0.00E+00	4.07E-02	0.00E+00	6.20E-03	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Chloroform	0.00E+00	8.92E-03	0.00E+00	2.00E-03	3.05E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chromium (VI)	1.00E-03	2.00E-03	2.00E-09	6.00E-05	NA	9.56E-09	1.59E-04	NA	NA	6.25E-09	1.04E-04	NA	NA	5.70E-09	9.50E-05	NA	NA	5.70E-09	9.50E-05	NA	NA	6.20E-09	1.03E-04	NA	NA
Chrysene	0.00E+00	1.03E+00	0.00E+00	NA	2.35E-02	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Cobalt	2.90E-04	4.00E-04	1.16E-10	1.60E-02	NA	5.54E-10	3.46E-08	NA	NA	3.63E-10	2.27E-08	NA	NA	3.31E-10	2.07E-08	NA	NA	3.31E-10	2.07E-08	NA	NA	3.59E-10	2.25E-08	NA	NA
Copper	1.40E-03	1.00E-03	1.40E-09	1.20E-02	NA	6.69E-09	5.57E-07	NA	NA	4.36E-09	3.65E-07	NA	NA	3.99E-09	3.33E-07	NA	NA	3.99E-09	3.33E-07	NA	NA	4.34E-09	3.62E-07	NA	NA
Cyanide	0.00E+00	1.00E-03	0.00E+00	3.40E-03	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Cyclohexanone	0.00E+00	1.80E-03	0.00E+00	4.00E+00	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Dibenzo(a,h)anthracene	0.00E+00	1.68E+00	0.00E+00	NA	2.35E+01	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Dieldrin	0.00E+00	4.45E-02	0.00E+00	2.50E-05	3.20E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Di-n-octylphthalate	0.00E+00	4.45E+00	0.00E+00	3.60E-02	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA

TABLE E.0-3
Undeveloped Park User - BKGD - DermalSWchem

Undeveloped Park User - Dermal Contact with Surface Water
Risk calculation for background

Intake Equation:

		UNITS	Assigned Values: child	youth	adult	senior
CDI =	(DA*EF*ED*SA)/(BW*AT)					
CDI =	Chronic Daily Intake	mg/kgday	calculated below			
DA =	Dermal absorption dose	mg/cm²day	see COC list below			
EF =	Exposure frequency	days/yr	12	12	12	12
ED =	Exposure duration	yrs	3	6	14	7
SA =	Surface area of skin	cm²	2180	4470	6070	6070
BW =	Body weight	kg	15	47	70	70
ATc =	Average time for carcinogens	days	25550	25550	25550	25550
ATn =	Average time for non-carcinogens	days	1095	2190	5110	2555
where: DA = C_v*K_p*CF*ET						
C_v =	concentation of ith contaminant in surface water	mg/L	see COC list below			
K_p =	permeability constant for ith contaminant	cm/hr	see COC list below			
CF =	conversion factor	L/cm³	0.001	0.001	0.001	0.001
ET =	exposure time	hr/d	1	1	1	1

COC	C_v	K_p	DA	RfDd	CSFd	CHILD CDI	CHILD HQ	CHILD CDI	CHILD ILCR	YOUTH CDI	YOUTH HQ	YOUTH CDI	YOUTH ILCR
	mg/L	cm/hr	mg/cm²day	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
Ethyl ether	0.00E+00	2.88E-03	0.00E+00	1.60E-01	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Ethylbenzene	0.00E+00	7.39E-02	0.00E+00	9.70E-02	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Fluoride	1.46E-01	1.00E-03	1.46E-07	5.82E-02	NA	8.98E-07	1.20E-05	NA	NA	4.57E-07	7.84E-06	NA	NA
Heptachlorodibenzofuran	0.00E+00	2.55E+00	0.00E+00	NA	3.00E+03	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Heptachlorodibenzo-p-dioxin	0.00E+00	3.22E+00	0.00E+00	NA	3.00E+03	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Hexachlorodibenzofuran	0.00E+00	2.38E+00	0.00E+00	NA	3.00E+04	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Hexachlorodibenzo-p-dioxin	0.00E+00	5.29E+00	0.00E+00	NA	3.00E+04	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Indeno(1,2,3-cd)pyrene	0.00E+00	2.23E+00	0.00E+00	NA	2.35E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Lead	5.00E-04	1.00E-04	5.00E-11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	6.50E-03	1.00E-03	6.50E-09	1.84E-03	NA	3.11E-08	1.69E-05	NA	NA	2.03E-08	1.10E-05	NA	NA
Mercury	6.00E-05	1.00E-03	6.00E-11	2.10E-05	NA	2.87E-10	1.37E-05	NA	NA	1.88E-10	8.93E-06	NA	NA
Methanol	0.00E+00	3.45E-04	0.00E+00	4.00E-01	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
4-Methyl-2-pentanone	0.00E+00	3.97E-03	0.00E+00	6.40E-02	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Methylene chloride	0.00E+00	4.46E-03	0.00E+00	5.70E-02	7.89E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Molybdenum	9.70E-04	1.00E-03	9.70E-10	1.90E-03	NA	4.63E-09	2.44E-06	NA	NA	3.03E-09	1.60E-06	NA	NA
Nickel	1.70E-03	2.00E-04	3.40E-10	5.40E-03	NA	1.62E-09	3.01E-07	NA	NA	1.06E-09	1.97E-07	NA	NA
N-nitrosodiphenylamine	0.00E+00	1.96E-02	0.00E+00	5.00E-03	1.96E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
N-nitrosodipropylamine	0.00E+00	2.63E-03	0.00E+00	NA	2.80E+01	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Octachlorodibenzofuran	0.00E+00	4.78E+00	0.00E+00	NA	3.00E+02	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Octochlorodibenzo-p-dioxin	0.00E+00	1.65E+01	0.00E+00	NA	3.00E+02	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Pentachlorodibenzofuran	0.00E+00	1.06E+00	0.00E+00	NA	1.50E+04	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Pentachlorodibenzo-p-dioxin	0.00E+00	3.79E-01	0.00E+00	NA	1.50E+05	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Pentachlorophenol	0.00E+00	1.95E-01	0.00E+00	3.00E-02	1.20E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Phenanthrene	0.00E+00	2.29E-01	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	2.50E-03	1.00E-03	2.50E-09	2.20E-03	NA	1.19E-08	5.43E-06	NA	NA	7.82E-09	3.55E-06	NA	NA
Silver	2.00E-04	6.00E-04	1.20E-10	9.00E-04	NA	5.73E-10	6.37E-07	NA	NA	3.75E-10	4.17E-07	NA	NA
Tetrachlorodibenzofuran	0.00E+00	1.12E+00	0.00E+00	NA	3.00E+04	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Tetrachlorodibenzo-p-dioxin	0.00E+00	1.39E+00	0.00E+00	NA	3.00E+05	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Tetrachloroethylene	0.00E+00	4.81E-02	0.00E+00	1.00E-02	5.40E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Thallium	4.00E-04	1.00E-03	4.00E-10	1.80E-05	NA	1.91E-09	1.06E-04	NA	NA	1.25E-09	6.95E-05	NA	NA
Toluene	0.00E+00	4.53E-02	0.00E+00	6.40E-02	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Tributyl phosphate	0.00E+00	3.13E-02	0.00E+00	1.00E-01	1.08E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Trichloroethylene	0.00E+00	1.57E-02	0.00E+00	4.50E-05	2.67E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Trifluorochloromethane	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Uranium	1.70E-03	1.00E-03	1.70E-09	5.10E-04	NA	8.12E-09	1.59E-05	NA	NA	5.32E-09	1.04E-05	NA	NA
Vanadium	2.00E-03	1.00E-03	2.00E-09	7.00E-05	NA	9.56E-09	1.37E-04	NA	NA	6.25E-09	8.93E-05	NA	NA
Vinyl chloride	0.00E+00	1.13E-02	0.00E+00	3.00E-03	1.50E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xylenes	0.00E+00	7.04E-02	0.00E+00	1.84E-01	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Zinc	3.70E-03	6.00E-04	2.22E-09	6.00E-02	NA	1.06E-08	1.77E-07	NA	NA	6.94E-09	1.16E-07	NA	NA

COC	ADULT CDI	ADULT HQ	ADULT CDI	ADULT ILCR	SENIOR CDI	SENIOR HQ	SENIOR CDI	SENIOR ILCR	SUM CDI	SUM HQ	SUM CDI	SUM ILCR
	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
Ethyl ether	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Ethylbenzene	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Fluoride	4.16E-07	7.15E-06	NA	NA	4.16E-07	7.15E-06	NA	NA	4.52E-07	7.77E-06	NA	NA
Heptachlorodibenzofuran	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Heptachlorodibenzo-p-dioxin	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Hexachlorodibenzofuran	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Hexachlorodibenzo-p-dioxin	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Indeno(1,2,3-cd)pyrene	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Lead	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	1.85E-08	1.01E-05	NA	NA	1.85E-08	1.01E-05	NA	NA	2.01E-08	1.09E-05	NA	NA
Mercury	1.71E-10	8.15E-06	NA	NA	1.71E-10	8.15E-06	NA	NA	1.86E-10	8.85E-06	NA	NA
Methanol	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
4-Methyl-2-pentanone	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Methylene chloride	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Molybdenum	2.77E-09	1.46E-06	NA	NA	2.77E-09	1.46E-06	NA	NA	3.01E-09	1.58E-06	NA	NA
Nickel	9.69E-10	1.79E-07	NA	NA	9.69E-10	1.79E-07	NA	NA	1.05E-09	1.95E-07	NA	NA
N-nitrosodiphenylamine	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
N-nitrosodipropylamine	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Octachlorodibenzofuran	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Octochlorodibenzo-p-dioxin	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Pentachlorodibenzofuran	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Pentachlorodibenzo-p-dioxin	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Pentachlorophenol	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Phenanthrene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Selenium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	7.13E-09	3.24E-06	NA	NA	7.13E-09	3.24E-06	NA	NA	7.75E-09	3.52E-06	NA	NA
Tetrachlorodibenzofuran	3.42E-10	3.80E-07	NA	NA	3.42E-10	3.80E-07	NA	NA	3.72E-10	4.13E-07	NA	NA
Tetrachlorodibenzo-p-dioxin	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Tetrachloroethylene	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Thallium	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Toluene	1.14E-09	6.34E-05	NA	NA	1.14E-09	6.34E-05	NA	NA	1.24E-09	6.89E-05	NA	NA
Tributyl phosphate	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Trichloroethylene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Trifluorochloromethane	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Uranium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	4.85E-09	9.50E-06	NA	NA	4.85E-09	9.50E-06	NA	NA	5.27E-09	1.03E-05	NA	NA
Vinyl chloride	5.70E-09	8.15E-05	NA	NA	5.70E-09	8.15E-05	NA	NA	6.20E-09	8.85E-05	NA	NA
Xylenes	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Zinc	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
	6.33E-09	1.05E-07	NA	NA	6.33E-09	1.05E-07	NA	NA	6.88E-09	1.15E-07	NA	NA
									total =	5.86E-04	total =	6.44E-08

TABLE E.0-3
Undeveloped Park User - BKGD - IngestSWchem

Undeveloped Park User - Ingestion of Surface Water
Risk calculation for background

Intake Equation:			UNITS	Assigned Values			
			mg/kgday	child	youth	adult	senior
	CDI =	(CW*EF*ED*IR)/(BW*AT)	mg/L	see COC table below			
	CDI =	Chronic Daily Intake	days/yr	12	12	12	12
	CW =	Concentration of chemical in water	yrs	3	6	14	7
	EF =	Exposure frequency	L/day	0.035	0.035	0.015	0.015
	ED =	Exposure duration	kg	15	47	70	70
	IR =	Ingestion rate	days	25550	25550	25550	25550
	BW =	Body weight	days	1095	2190	5110	2555
	ATc =	Average time for carcinogens					
	ATn =	Average time for non-carcinogens					

COC	CW	RfDo	CSFo	CHILD				YOUTH				ADULT				SENIOR				SUM			
				CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR
	mg/L	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	0.00E+00	4.00E-03	5.70E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,1-Dichloroethylene	0.00E+00	5.00E-02	6.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,2-dichloroethane	0.00E+00	2.00E-02	9.10E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2-Butanone	0.00E+00	6.00E-01	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
3,3-Dichlorobenzidine	0.00E+00	NA	4.50E-01	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
4-Methylphenol	0.00E+00	5.00E-03	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
4-Nitroanaline	0.00E+00	3.00E-03	2.10E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Acetone	0.00E+00	9.00E-01	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Antimony	5.00E-04	4.00E-04	NA	3.84E-08	9.59E-05	NA	NA	1.22E-08	3.06E-05	NA	NA	3.52E-09	8.81E-06	NA	NA	3.52E-09	8.81E-06	NA	NA	8.75E-09	2.19E-05	NA	NA
Aroclor-1254	0.00E+00	2.00E-05	4.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Aroclor-1260	0.00E+00	2.00E-05	4.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Arsenic	1.50E-03	3.00E-04	1.50E+00	1.15E-07	3.84E-04	4.93E-09	7.40E-09	3.67E-08	1.22E-04	3.15E-09	4.72E-09	1.06E-08	3.52E-05	2.11E-09	3.17E-09	1.06E-08	3.52E-05	1.06E-09	1.59E-09	2.62E-08	8.75E-05	1.12E-08	1.69E-08
Barium	1.31E-02	2.00E-01	NA	1.00E-06	5.02E-06	NA	NA	3.21E-07	1.60E-06	NA	NA	9.23E-08	4.61E-07	NA	NA	9.23E-08	4.61E-07	NA	NA	2.29E-07	1.15E-06	NA	NA
Benzene	0.00E+00	4.00E-03	5.50E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Benzo(a)anthracene	0.00E+00	NA	7.30E-01	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Benzo(a)pyrene	0.00E+00	NA	7.30E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Benzo(b)fluoranthene	0.00E+00	NA	7.30E-01	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Benzo(k)fluoranthene	0.00E+00	NA	7.30E-02	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Beryllium	1.00E-04	2.00E-03	4.30E+00	7.67E-09	3.84E-06	3.29E-10	1.41E-09	2.45E-09	1.22E-06	2.10E-10	9.02E-10	7.05E-10	3.52E-07	1.41E-10	6.06E-10	7.05E-10	3.52E-07	7.05E-11	3.03E-10	1.75E-09	8.75E-07	7.50E-10	3.22E-09
Bis(2-chloroisopropyl)ether	0.00E+00	4.00E-02	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Bis(2-ethylhexyl)phthalate	0.00E+00	2.00E-02	1.40E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Boron	1.58E-02	2.00E-01	NA	1.21E-06	6.06E-06	NA	NA	3.87E-07	1.93E-06	NA	NA	1.11E-07	5.57E-07	NA	NA	1.11E-07	5.57E-07	NA	NA	2.76E-07	1.38E-06	NA	NA
Bromodichloromethane	0.00E+00	2.00E-02	6.20E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Bromoform	0.00E+00	2.00E-02	7.90E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Bromomethane	0.00E+00	1.40E-03	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Cadmium	1.00E-04	1.00E-03	NA	7.67E-09	7.67E-06	NA	NA	2.45E-09	2.45E-06	NA	NA	7.05E-10	7.05E-07	NA	NA	7.05E-10	7.05E-07	NA	NA	1.75E-09	1.75E-06	NA	NA
Carbazole	0.00E+00	NA	2.00E-03	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Carbon disulfide	0.00E+00	1.00E-01	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Carbon tetrachloride	0.00E+00	7.00E-04	1.30E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chlordane	0.00E+00	5.00E-04	3.50E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chlorobenzene	0.00E+00	2.00E-02	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Chloroform	0.00E+00	1.00E-02	6.10E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chromium (VI)	1.00E-03	3.00E-03	NA	7.67E-08	2.56E-05	NA	NA	2.45E-08	8.16E-06	NA	NA	7.05E-09	2.35E-06	NA	NA	7.05E-09	2.35E-06	NA	NA	1.75E-08	5.83E-06	NA	NA
Chrysene	0.00E+00	NA	7.30E-03	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Cobalt	2.90E-04	2.00E-02	NA	2.22E-08	1.11E-06	NA	NA	7.10E-09	3.55E-07	NA	NA	2.04E-09	1.02E-07	NA	NA	2.04E-09	1.02E-07	NA	NA	5.07E-09	2.54E-07	NA	NA
Copper	1.40E-03	4.00E-02	NA	1.07E-07	2.68E-06	NA	NA	3.43E-08	8.57E-07	NA	NA	9.86E-09	2.47E-07	NA	NA	9.86E-09	2.47E-07	NA	NA	2.45E-08	6.12E-07	NA	NA
Cyanide	0.00E+00	2.00E-02	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Cyclohexanone	0.00E+00	5.00E+00	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Dibenzo(a,h)anthracene	0.00E+00	NA	7.30E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Dieldrin	0.00E+00	5.00E-05	1.60E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Di-n-octylphthalate	0.00E+00	4.00E-02	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA

TABLE E.0-3
Undeveloped Park User - BKGD - IngestSWchem

Undeveloped Park User - Ingestion of Surface Water
Risk calculation for background

Intake Equation:			UNITS	Assigned Values			
				child	youth	adult	senior
	CDI =	(CW*EF*ED*IR)/(BW*AT)	mg/kgday				
	CDI =	Chronic Daily Intake					
	CW =	Concentration of chemical in water	mg/L	see COC table below			
	EF =	Exposure frequency	days/yr	12	12	12	12
	ED =	Exposure duration	yrs	3	6	14	7
	IR =	Ingestion rate	L/day	0.035	0.035	0.015	0.015
	BW =	Body weight	kg	15	47	70	70
	ATc =	Average time for carcinogens	days	25550	25550	25550	25550
	ATn =	Average time for non-carcinogens	days	1095	2190	5110	2555

COC	CW	RfDo	CSFo	CHILD				YOUTH				ADULT				SENIOR				SUM			
				CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR
	mg/L	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
Ethyl ether	0.00E+00	2.00E-01	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Ethylbenzene	0.00E+00	1.00E-01	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Fluoride	1.46E-01	6.00E-02	NA	1.12E-05	1.87E-04	NA	NA	3.57E-06	5.96E-05	NA	NA	1.03E-06	1.71E-05	NA	NA	1.03E-06	1.71E-05	NA	NA	2.55E-06	4.26E-05	NA	NA
Heptachlorodibenzofuran	0.00E+00	NA	1.50E+03	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Heptachlorodibenzo-p-dioxin	0.00E+00	NA	1.50E+03	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Hexachlorodibenzofuran	0.00E+00	NA	1.50E+03	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Hexachlorodibenzo-p-dioxin	0.00E+00	NA	1.50E+04	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Indeno(1,2,3-cd)pyrene	0.00E+00	NA	7.30E-01	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Lead	5.00E-04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	6.50E-03	4.60E-02	NA	4.99E-07	1.08E-05	NA	NA	1.59E-07	3.46E-06	NA	NA	4.58E-08	9.95E-07	NA	NA	4.58E-08	9.95E-07	NA	NA	1.14E-07	2.47E-06	NA	NA
Mercury	6.00E-05	3.00E-04	NA	4.60E-09	1.53E-05	NA	NA	1.47E-09	4.90E-06	NA	NA	4.23E-10	1.41E-06	NA	NA	4.23E-10	1.41E-06	NA	NA	1.05E-09	3.50E-06	NA	NA
Methanol	0.00E+00	5.00E-01	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
4-Methyl-2-pentanone	0.00E+00	8.00E-02	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Methylene chloride	0.00E+00	6.00E-02	7.50E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Molybdenum	9.70E-04	5.00E-03	NA	7.44E-08	1.49E-05	NA	NA	2.37E-08	4.75E-06	NA	NA	6.83E-09	1.37E-06	NA	NA	6.83E-09	1.37E-06	NA	NA	1.70E-08	3.39E-06	NA	NA
Nickel	1.70E-03	2.00E-02	NA	1.30E-07	6.52E-06	NA	NA	4.16E-08	2.08E-06	NA	NA	1.20E-08	5.99E-07	NA	NA	1.20E-08	5.99E-07	NA	NA	2.97E-08	1.49E-06	NA	NA
N-nitrosodiphenylamine	0.00E+00	2.00E-02	4.90E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
N-nitrosodipropylamine	0.00E+00	NA	7.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Octachlorodibenzofuran	0.00E+00	NA	1.50E+02	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Octochlorodibenzo-p-dioxin	0.00E+00	NA	1.50E+02	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Pentachlorodibenzofuran	0.00E+00	NA	7.50E+03	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Pentachlorodibenzo-p-dioxin	0.00E+00	NA	7.50E+04	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Pentachlorophenol	0.00E+00	3.00E-02	1.20E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Phenanthrene	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	2.50E-03	5.00E-03	NA	1.92E-07	3.84E-05	NA	NA	6.12E-08	1.22E-05	NA	NA	1.76E-08	3.52E-06	NA	NA	1.76E-08	3.52E-06	NA	NA	4.37E-08	8.75E-06	NA	NA
Silver	2.00E-04	5.00E-03	NA	1.53E-08	3.07E-06	NA	NA	4.90E-09	9.79E-07	NA	NA	1.41E-09	2.82E-07	NA	NA	1.41E-09	2.82E-07	NA	NA	3.50E-09	7.00E-07	NA	NA
Tetrachlorodibenzofuran	0.00E+00	NA	1.50E+04	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Tetrachlorodibenzo-p-dioxin	0.00E+00	NA	1.50E+05	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Tetrachloroethylene	0.00E+00	1.00E-02	5.40E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Thallium	4.00E-04	9.00E-05	NA	3.07E-08	3.41E-04	NA	NA	9.79E-09	1.09E-04	NA	NA	2.82E-09	3.13E-05	NA	NA	2.82E-09	3.13E-05	NA	NA	7.00E-09	7.78E-05	NA	NA
Toluene	0.00E+00	8.00E-02	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Tributyl phosphate	0.00E+00	2.00E-01	5.40E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Trichloroethylene	0.00E+00	3.00E-04	4.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Trifluorochloromethane	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Uranium	1.70E-03	6.00E-04	NA	1.30E-07	2.17E-04	NA	NA	4.16E-08	6.94E-05	NA	NA	1.20E-08	2.00E-05	NA	NA	1.20E-08	2.00E-05	NA	NA	2.97E-08	4.96E-05	NA	NA
Vanadium	2.00E-03	7.00E-03	NA	1.53E-07	2.19E-05	NA	NA	4.90E-08	7.00E-06	NA	NA	1.41E-08	2.01E-06	NA	NA	1.41E-08	2.01E-06	NA	NA	3.50E-08	5.00E-06	NA	NA
Vinyl chloride	0.00E+00	3.00E-03	1.50E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xylenes	0.00E+00	2.00E-01	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Zinc	3.70E-03	3.00E-01	NA	2.84E-07	9.46E-07	NA	NA	9.06E-08	3.02E-07	NA	NA	2.61E-08	8.69E-08	NA	NA	2.61E-08	8.69E-08	NA	NA	6.47E-08	2.16E-07	NA	NA
																				total =	3.17E-04	total =	2.01E-08

TABLE E.0-3
Undeveloped Park User - BKGD - InhaleRad

Undeveloped Park User - Inhalation of Gases & Particulates
Risk calculation for background

Intake Equation:			UNITS	Assigned Values			
				child	youth	adult	senior
	CDI =	(CA*EF*ED*IR*ET)					
	CDI =	Chronic Daily Intake	pCi				
	CA =	Concentration of radionuclide in air	pCi/m^3	see table of COCs below			
	EF =	Exposure frequency	days/yr	20	40	20	40
	ED =	Exposure duration	yrs	3	6	14	7
	IR =	Inhalation rate	m^3/hr	1.0	1.0	1.0	1.0
	ET =	Exposure time	hrs/day	2	2	2	2

COC	conc	CSFi	CHILD		YOUTH		ADULT		SENIOR		SUM	
			CDI	ILCR	CDI	ILCR	CDI	ILCR	CDI	ILCR	CDI	ILCR
	pCi/m^3	1/pCi	pCi	CDI*CSF	pCi	CDI*CSF	pCi	CDI*CSF	pCi	CDI*CSF	pCi	CDI*CSF
Cesium-137 + D	1.72E-06	1.19E-11	2.06E-04	2.45E-15	8.24E-04	9.80E-15	9.61E-04	1.14E-14	9.61E-04	1.14E-14	2.95E-03	3.51E-14
Lead-210 + D	4.06E-05	1.39E-08	4.87E-03	6.77E-11	1.95E-02	2.71E-10	2.27E-02	3.16E-10	2.27E-02	3.16E-10	6.98E-02	9.70E-10
Neptunium-237 + D	0.00E+00	1.77E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Plutonium-238	0.00E+00	3.36E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Plutonium-239/240	0.00E+00	3.33E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Radium-226 + D	4.06E-05	1.16E-08	4.87E-03	5.65E-11	1.95E-02	2.26E-10	2.27E-02	2.63E-10	2.27E-02	2.63E-10	6.98E-02	8.09E-10
Radium-228 + D	3.30E-05	5.23E-09	3.96E-03	2.07E-11	1.58E-02	8.29E-11	1.85E-02	9.67E-11	1.85E-02	9.67E-11	5.68E-02	2.97E-10
Radon-222+ D	3.99E+02	1.80E-11	4.79E+04	8.63E-07	1.92E+05	3.45E-06	2.24E+05	4.03E-06	2.24E+05	4.03E-06	6.87E+05	1.24E-05
Strontium-90 + D	0.00E+00	1.13E-10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Technetium-99	0.00E+00	1.41E-11	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Thorium-228 + D	3.25E-05	1.43E-07	3.90E-03	5.58E-10	1.56E-02	2.23E-09	1.82E-02	2.60E-09	1.82E-02	2.60E-09	5.59E-02	7.99E-09
Thorium-230	4.06E-05	2.85E-08	4.87E-03	1.39E-10	1.95E-02	5.55E-10	2.27E-02	6.47E-10	2.27E-02	6.47E-10	6.98E-02	1.99E-09
Thorium-232	3.30E-05	4.33E-08	3.96E-03	1.72E-10	1.58E-02	6.86E-10	1.85E-02	8.01E-10	1.85E-02	8.01E-10	5.68E-02	2.46E-09
Uranium-234	4.05E-05	1.14E-08	4.86E-03	5.54E-11	1.94E-02	2.21E-10	2.27E-02	2.58E-10	2.27E-02	2.58E-10	6.96E-02	7.93E-10
Uranium-235 + D	1.84E-06	1.01E-08	2.21E-04	2.23E-12	8.85E-04	8.94E-12	1.03E-03	1.04E-11	1.03E-03	1.04E-11	3.17E-03	3.20E-11
Uranium-238 + D	3.95E-05	9.35E-09	4.74E-03	4.43E-11	1.90E-02	1.77E-10	2.21E-02	2.07E-10	2.21E-02	2.07E-10	6.80E-02	6.36E-10
											total =	**1.24E-05**

Air concentration is derived from air particulate value of 26 ug/m^3 (2005 SER background average from monitor AMS-12) multiplied by soil concentration.
Rn-222 is derived by multiplying the soil Ra-226 value by 256 g/m^3. This conversion factor is based on Rn-222 air background and Ra-226 soil background (i.e., 400 pCi/m^3 divided by 1.56 pCi/g)

TABLE E.0-3
Undeveloped Park User - BKGD - IngestSoilRad

Undeveloped Park User - Ingestion of Soil
Risk calculation for background

Intake Equation:

CDI =	(CS*EF*ED*IR*FI)	
CDI =	Chronic Daily Intake	
CS =	Concentration of radionuclide in soil	
EF =	Exposure frequency	
ED =	Exposure duration	
IR =	Ingestion rate	
FI =	Fraction of contaminated soil	

UNITS	Assigned Values			
	child	youth	adult	senior
pCi				
pCi/g	see table of COCs below			
days/yr	20	40	20	40
yrs	3	6	14	7
g/day	0.2	0.1	0.1	0.1
unitless	1	1	1	1

COC	conc	CSFos	CHILD		YOUTH		ADULT		SENIOR		SUM	
			CDI	ILCR	CDI	ILCR	CDI	ILCR	CDI	ILCR	CDI	ILCR
	pCi/g	1/pCi	pCi	CDI*CSF	pCi	CDI*CSF	pCi	CDI*CSF	pCi	CDI*CSF	pCi	CDI*CSF
Cesium-137 + D	6.60E-02	4.33E-11	7.92E-01	3.43E-11	1.58E+00	6.86E-11	1.85E+00	8.00E-11	1.85E+00	8.00E-11	6.07E+00	2.63E-10
Lead-210 + D	1.56E+00	2.66E-09	1.87E+01	4.98E-08	3.74E+01	9.96E-08	4.37E+01	1.16E-07	4.37E+01	1.16E-07	1.44E+02	3.82E-07
Neptunium-237 + D	0.00E+00	1.62E-10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Plutonium-238	0.00E+00	2.72E-10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Plutonium-239/240	0.00E+00	2.76E-10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Radium-226 + D	1.56E+00	7.30E-10	1.87E+01	1.37E-08	3.74E+01	2.73E-08	4.37E+01	3.19E-08	4.37E+01	3.19E-08	1.44E+02	1.05E-07
Radium-228 + D	1.27E+00	2.29E-09	1.52E+01	3.49E-08	3.05E+01	6.98E-08	3.56E+01	8.14E-08	3.56E+01	8.14E-08	1.17E+02	2.68E-07
Radon-222+ D	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Strontium-90 + D	0.00E+00	1.44E-10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Technetium-99	0.00E+00	7.66E-12	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Thorium-228 + D	1.25E+00	8.09E-10	1.50E+01	1.21E-08	3.00E+01	2.43E-08	3.50E+01	2.83E-08	3.50E+01	2.83E-08	1.15E+02	9.30E-08
Thorium-230	1.56E+00	2.02E-10	1.87E+01	3.78E-09	3.74E+01	7.56E-09	4.37E+01	8.82E-09	4.37E+01	8.82E-09	1.44E+02	2.90E-08
Thorium-232	1.27E+00	2.31E-10	1.52E+01	3.52E-09	3.05E+01	7.04E-09	3.56E+01	8.21E-09	3.56E+01	8.21E-09	1.17E+02	2.70E-08
Uranium-234	1.56E+00	1.58E-10	1.87E+01	2.95E-09	3.74E+01	5.90E-09	4.36E+01	6.89E-09	4.36E+01	6.89E-09	1.43E+02	2.26E-08
Uranium-235 + D	7.09E-02	1.63E-10	8.51E-01	1.39E-10	1.70E+00	2.77E-10	1.99E+00	3.24E-10	1.99E+00	3.24E-10	6.52E+00	1.06E-09
Uranium-238 + D	1.52E+00	2.10E-10	1.82E+01	3.83E-09	3.65E+01	7.66E-09	4.26E+01	8.94E-09	4.26E+01	8.94E-09	1.40E+02	2.94E-08

total = 9.56E-07

TABLE E.0-3
Undeveloped Park User - BKGD - IngestSWrad

Undeveloped Park User - Ingestion of Surface Water
Risk calculation for background

Intake Equation:			UNITS	Assigned Values			
				child	youth	adult	senior
	CDI =	(CW*EF*ED*IR)/(BW*AT)	pCi				
	CDI =	Chronic Daily Intake	pCi/L	see COC table below			
	CW =	Concentration of radionuclide in water	days/yr	12	12	12	12
	EF =	Exposure frequency	yrs	3	6	14	7
	ED =	Exposure duration	L/day	0.035	0.035	0.015	0.015
	IR =	Ingestion rate					

COC	conc	CSF	CHILD		YOUTH		ADULT		SENIOR		SUM	
			CDI	ILCR	CDI	ILCR	CDI	ILCR	CDI	ILCR	CDI	ILCR
	pCi/L	1/pCi	pCi	CDI*CSF	pCi	CDI*CSF	pCi	CDI*CSF	pCi	CDI*CSF	pCi	CDI*CSF
Cesium-137 + D	1.70E+00	3.04E-11	2.14E+00	6.51E-11	4.28E+00	1.30E-10	4.28E+00	1.30E-10	2.14E+00	6.51E-11	1.29E+01	3.91E-10
Lead-210 + D	6.99E-01	1.27E-09	8.81E-01	1.12E-09	1.76E+00	2.24E-09	1.76E+00	2.24E-09	8.81E-01	1.12E-09	5.28E+00	6.71E-09
Neptunium-237 + D	1.19E-01	6.74E-11	1.50E-01	1.01E-11	3.00E-01	2.02E-11	3.00E-01	2.02E-11	1.50E-01	1.01E-11	9.00E-01	6.06E-11
Plutonium-238	1.10E-02	1.31E-10	1.39E-02	1.82E-12	2.77E-02	3.63E-12	2.77E-02	3.63E-12	1.39E-02	1.82E-12	8.32E-02	1.09E-11
Plutonium-239/240	3.17E-02	1.35E-10	3.99E-02	5.39E-12	7.99E-02	1.08E-11	7.99E-02	1.08E-11	3.99E-02	5.39E-12	2.40E-01	3.24E-11
Radium-226 + D	1.45E-01	3.86E-10	1.83E-01	7.05E-11	3.65E-01	1.41E-10	3.65E-01	1.41E-10	1.83E-01	7.05E-11	1.10E+00	4.23E-10
Radium-228 + D	2.50E+00	1.04E-09	3.15E+00	3.28E-09	6.30E+00	6.55E-09	6.30E+00	6.55E-09	3.15E+00	3.28E-09	1.89E+01	1.97E-08
Radon-222+ D	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Strontium-90 + D	4.66E-01	7.40E-11	5.87E-01	4.34E-11	1.17E+00	8.69E-11	1.17E+00	8.69E-11	5.87E-01	4.34E-11	3.52E+00	2.61E-10
Technetium-99	6.20E+00	2.75E-12	7.81E+00	2.15E-11	1.56E+01	4.30E-11	1.56E+01	4.30E-11	7.81E+00	2.15E-11	4.69E+01	1.29E-10
Thorium-228 + D	2.50E+00	3.00E-10	3.15E+00	9.45E-10	6.30E+00	1.89E-09	6.30E+00	1.89E-09	3.15E+00	9.45E-10	1.89E+01	5.67E-09
Thorium-230	3.94E-02	9.10E-11	4.96E-02	4.52E-12	9.93E-02	9.04E-12	9.93E-02	9.04E-12	4.96E-02	4.52E-12	2.98E-01	2.71E-11
Thorium-232	2.50E+00	1.01E-10	3.15E+00	3.18E-10	6.30E+00	6.36E-10	6.30E+00	6.36E-10	3.15E+00	3.18E-10	1.89E+01	1.91E-09
Uranium-234	5.81E-01	7.07E-11	7.31E-01	5.17E-11	1.46E+00	1.03E-10	1.46E+00	1.03E-10	7.31E-01	5.17E-11	4.39E+00	3.10E-10
Uranium-235 + D	2.64E-02	7.18E-11	3.33E-02	2.39E-12	6.66E-02	4.78E-12	6.66E-02	4.78E-12	3.33E-02	2.39E-12	2.00E-01	1.44E-11
Uranium-238 + D	5.67E-01	8.71E-11	7.14E-01	6.22E-11	1.43E+00	1.24E-10	1.43E+00	1.24E-10	7.14E-01	6.22E-11	4.29E+00	3.73E-10
											total =	**3.60E-08**

TABLE E.0-3
Undeveloped Park User - BKGD - ExternalRad

Undeveloped Park User - External Radiation
Risk calculation for background

Intake Equation:

CDI =	$(CS*EF*ED*ET_o*(1-SH_o))$	
CDI =	Chronic Daily Intake	
CS =	Concentration of radionuclide in soil	
EF =	Fraction of year exposed to radiation	
ED =	Exposure duration	
ET_o =	Fraction of day spent outdoors	
ET_i =	Fraction of day spent indoors	
SH_o =	Shield factor outdoors	
SH_i =	Shield factor indoors	

UNITS	Assigned Values			
	child	youth	adult	senior
yr pCi/g	see table of COCs below			
pCi/g				
--	0.055	0.11	0.055	0.11
yrs	3	6	14	7
--	0.083	0.083	0.083	0.083
--	NA	NA	NA	NA
--	0.25	0.25	0.25	0.25
--	NA	NA	NA	NA

COC	conc pCi/g	CSFx g/pCi yr	CHILD CDI yr pCi/g	CHILD ILCR CDI*CSF	YOUTH CDI yr pCi/g	YOUTH ILCR CDI*CSF	ADULT CDI yr pCi/g	ADULT ILCR CDI*CSF	SENIOR CDI yr pCi/g	SENIOR ILCR CDI*CSF	SUM CDI yr pCi/g	SUM ILCR CDI*CSF
Cesium-137 + D	6.60E-02	2.55E-06	6.78E-04	1.73E-09	2.71E-03	6.92E-09	3.16E-03	8.07E-09	3.16E-03	8.07E-09	9.72E-03	2.48E-08
Lead-210 + D	1.56E+00	4.21E-09	1.60E-02	6.75E-11	6.41E-02	2.70E-10	7.48E-02	3.15E-10	7.48E-02	3.15E-10	2.30E-01	9.67E-10
Neptunium-237 + D	0.00E+00	7.97E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Plutonium-238	0.00E+00	7.22E-11	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Plutonium-239/240	0.00E+00	2.00E-10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Radium-226 + D	1.56E+00	8.49E-06	1.60E-02	1.36E-07	6.41E-02	5.44E-07	7.48E-02	6.35E-07	7.48E-02	6.35E-07	2.30E-01	1.95E-06
Radium-228 + D	1.27E+00	4.53E-06	1.30E-02	5.91E-08	5.22E-02	2.36E-07	6.09E-02	2.76E-07	6.09E-02	2.76E-07	1.87E-01	8.47E-07
Radon-222+ D	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Strontium-90 + D	0.00E+00	1.96E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Technetium-99	0.00E+00	8.14E-11	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Thorium-228 + D	1.25E+00	7.76E-06	1.28E-02	9.97E-08	5.14E-02	3.99E-07	5.99E-02	4.65E-07	5.99E-02	4.65E-07	1.84E-01	1.43E-06
Thorium-230	1.56E+00	8.19E-10	1.60E-02	1.31E-11	6.41E-02	5.25E-11	7.48E-02	6.13E-11	7.48E-02	6.13E-11	2.30E-01	1.88E-10
Thorium-232	1.27E+00	3.42E-10	1.30E-02	4.46E-12	5.22E-02	1.78E-11	6.09E-02	2.08E-11	6.09E-02	2.08E-11	1.87E-01	6.40E-11
Uranium-234	1.56E+00	2.52E-10	1.60E-02	4.03E-12	6.40E-02	1.61E-11	7.46E-02	1.88E-11	7.46E-02	1.88E-11	2.29E-01	5.78E-11
Uranium-235 + D	7.09E-02	5.43E-07	7.29E-04	3.96E-10	2.91E-03	1.58E-09	3.40E-03	1.85E-09	3.40E-03	1.85E-09	1.04E-02	5.67E-09
Uranium-238 + D	1.52E+00	1.14E-07	1.56E-02	1.78E-09	6.25E-02	7.12E-09	7.29E-02	8.31E-09	7.29E-02	8.31E-09	2.24E-01	2.55E-08

total = 4.28E-06

TABLE E.0-3
Undeveloped Park User - BKGD - SumPaths

Undeveloped Park User - Summation of all Pathways
Risk calculation for background

	HQ	ILCR	rad only ILCR
Inhale	8.06E-03	1.24E-05	1.24E-05
Dermal Soil	4.40E-03	7.67E-07	NA
Ingest Soil	1.83E-02	3.00E-06	9.56E-07
Dermal Surface Water	5.86E-04	6.44E-08	NA
Ingest Surface Water	3.17E-04	2.01E-08	3.60E-08
External Radiation	NA	4.32E-06	4.28E-06
SUM	3.17E-02	2.06E-05	1.77E-05

Summation of all paths for individual nuclides

		Background Values as Applicable to Each Zone						
	Background ILCR	Zone 1 ILCR	Zone 2 ILCR	Zone 3 ILCR	Zone 4 ILCR	Zone 5 ILCR	Zone 6 ILCR	Zone 7 ILCR
Cesium-137 + D	2.54E-08	NA	2.54E-08	2.54E-08	NA	2.54E-08	2.54E-08	2.54E-08
Lead-210 + D	3.90E-07	NA	3.90E-07	NA	NA	3.90E-07	3.90E-07	3.90E-07
Neptunium-237 + D	6.06E-11	NA	NA	NA	NA	6.06E-11	NA	NA
Plutonium-238	1.09E-11	NA	NA	NA	NA	1.09E-11	NA	NA
Plutonium-239/240	3.24E-11	NA	NA	NA	NA	NA	NA	NA
Radium-226 + D	2.06E-06	2.06E-06	2.06E-06	2.06E-06	2.06E-06	2.06E-06	2.06E-06	2.06E-06
Radium-228 + D	1.13E-06	1.13E-06	1.13E-06	1.13E-06	1.13E-06	1.13E-06	1.13E-06	1.13E-06
Radon-222+ D	1.24E-05	1.24E-05	1.24E-05	1.24E-05	1.24E-05	1.24E-05	1.24E-05	1.24E-05
Strontium-90 + D	2.61E-10	NA	NA	NA	NA	NA	NA	NA
Technetium-99	1.29E-10	1.29E-10	1.29E-10	NA	NA	1.29E-10	1.29E-10	1.29E-10
Thorium-228 + D	1.54E-06	1.54E-06	1.54E-06	1.54E-06	1.54E-06	1.54E-06	1.54E-06	1.54E-06
Thorium-230	3.12E-08	NA	3.12E-08	3.12E-08	NA	3.12E-08	3.12E-08	3.12E-08
Thorium-232	3.14E-08	3.14E-08	3.14E-08	3.14E-08	3.14E-08	3.14E-08	3.14E-08	3.14E-08
Uranium-234	2.38E-08	2.38E-08	2.38E-08	2.38E-08	2.38E-08	2.38E-08	2.38E-08	2.38E-08
Uranium-235 + D	6.78E-09	6.78E-09	6.78E-09	6.78E-09	6.78E-09	6.78E-09	6.78E-09	6.78E-09
Uranium-238 + D	5.59E-08	5.59E-08	5.59E-08	5.59E-08	5.59E-08	5.59E-08	5.59E-08	5.59E-08
SUM	1.77E-05	1.72E-05	1.77E-05	1.73E-05	1.72E-05	1.77E-05	1.77E-05	1.77E-05

TABLE E.0-3
Undeveloped Park User - BKGD - SumPaths

Summation of all paths for individual chemicals

	Background		Background Values as Applicable to Each Zone													
			Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6		Zone 7	
	ILCR	HQ	ILCR	HQ	ILCR	HQ	ILCR	HQ	ILCR	HQ	ILCR	HQ	ILCR	HQ	ILCR	HQ
1,1,2-Trichloroethane	3.91E-10	0.00E+00	NA	NA	3.91E-10	0.00E+00	NA	NA	NA	NA	3.91E-10	0.00E+00	3.91E-10	0.00E+00	NA	NA
1,1-Dichloroethylene	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA
1,2-dichloroethane	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA
2-Butanone	no CSFs	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	0.00E+00	no RfDs	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	no CSFs	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroanaline	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	no CSFs	0.00E+00	NA	NA	no CSFs	0.00E+00	NA	NA	NA	NA	no CSFs	0.00E+00	NA	NA	NA	NA
Antimony	no CSFs	1.92E-03	no CSFs	1.92E-03	no CSFs	1.92E-03	NA	NA	NA	NA	no CSFs	1.92E-03	no CSFs	1.92E-03	no CSFs	1.92E-03
Aroclor-1254	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Aroclor-1260	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Arsenic	2.09E-06	1.08E-02	2.09E-06	1.08E-02	2.09E-06	1.08E-02	2.09E-06	1.08E-02	NA	NA	2.09E-06	1.08E-02	2.09E-06	1.08E-02	2.09E-06	1.08E-02
Barium	no CSFs	3.03E-04	NA	NA	no CSFs	3.03E-04	NA	NA	NA	NA	no CSFs	3.03E-04	no CSFs	3.03E-04	NA	NA
Benzene	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	NA	NA	0.00E+00	0.00E+00	NA	NA	NA	NA
Benzo(a)anthracene	0.00E+00	no RfDs	NA	NA	0.00E+00	no RfDs	0.00E+00	no RfDs	NA	NA	0.00E+00	no RfDs	0.00E+00	no RfDs	0.00E+00	no RfDs
Benzo(a)pyrene	0.00E+00	no RfDs	NA	NA	0.00E+00	no RfDs	0.00E+00	no RfDs	NA	NA	0.00E+00	no RfDs	0.00E+00	no RfDs	0.00E+00	no RfDs
Benzo(b)fluoranthene	0.00E+00	no RfDs	NA	NA	0.00E+00	no RfDs	0.00E+00	no RfDs	NA	NA	0.00E+00	no RfDs	0.00E+00	no RfDs	0.00E+00	no RfDs
Benzo(k)fluoranthene	0.00E+00	no RfDs	NA	NA	0.00E+00	no RfDs	0.00E+00	no RfDs	NA	NA	0.00E+00	no RfDs	0.00E+00	no RfDs	0.00E+00	no RfDs
Beryllium	8.12E-07	2.41E-04	8.12E-07	2.41E-04	8.12E-07	2.41E-04	8.12E-07	2.41E-04	NA	NA	8.12E-07	2.41E-04	8.12E-07	2.41E-04	8.12E-07	2.41E-04
Bis(2-chloroisopropyl)ether	no CSFs	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Boron	no CSFs	4.17E-06	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA
Bromoform	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	no CSFs	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	2.17E-10	3.13E-04	NA	NA	2.17E-10	3.13E-04	NA	NA	NA	NA	2.17E-10	3.13E-04	2.17E-10	3.13E-04	2.17E-10	3.13E-04
Carbazole	0.00E+00	no RfDs	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	no CSFs	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	NA	NA	0.00E+00	0.00E+00	NA	NA	NA	NA
Chlordane	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	no CSFs	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (VI)	3.61E-08	2.14E-03	NA	NA	3.61E-08	2.14E-03	NA	NA	NA	NA	3.61E-08	2.14E-03	NA	NA	NA	NA
Chrysene	0.00E+00	no RfDs	NA	NA	0.00E+00	no RfDs	0.00E+00	no RfDs	NA	NA	0.00E+00	no RfDs	0.00E+00	no RfDs	0.00E+00	no RfDs
Cobalt	7.30E-09	5.12E-04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	no CSFs	1.54E-04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	no CSFs	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexanone	no CSFs	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	0.00E+00	no RfDs	NA	NA	0.00E+00	no RfDs	0.00E+00	no RfDs	NA	NA	0.00E+00	no RfDs	0.00E+00	no RfDs	0.00E+00	no RfDs
Dieldrin	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA
Di-n-octylphthalate	no CSFs	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE E.0-3
Undeveloped Park User - BKGD - SumPaths

Summation of all paths for individual chemicals (continued)

	Background		Background Values as Applicable to Each Zone													
			Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6		Zone 7	
	ILCR	HQ	ILCR	HQ	ILCR	HQ	ILCR	HQ	ILCR	HQ	ILCR	HQ	ILCR	HQ	ILCR	HQ
Ethyl ether	no CSFs	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	NA	NA	0.00E+00	0.00E+00	NA	NA	NA	NA
Fluoride	no CSFs	6.07E-05	NA	NA	NA	NA	NA	NA	NA	NA	no CSFs	6.07E-05	no CSFs	6.07E-05	NA	NA
Heptachlorodibenzofuran	0.00E+00	no RfDs	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlorodibenzo-p-dioxin	0.00E+00	no RfDs	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.00E+00	no RfDs	NA	NA
Hexachlorodibenzofuran	0.00E+00	no RfDs	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorodibenzo-p-dioxin	0.00E+00	no RfDs	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	0.00E+00	no RfDs	NA	NA	0.00E+00	no RfDs	0.00E+00	no RfDs	NA	NA	0.00E+00	no RfDs	0.00E+00	no RfDs	0.00E+00	no RfDs
Lead	no CSFs	no RfDs	no CSFs	no RfDs	no CSFs	no RfDs	no CSFs	no RfDs	NA	NA	no CSFs	no RfDs	NA	NA	NA	NA
Manganese	no CSFs	9.61E-03	NA	NA	NA	NA	no CSFs	9.61E-03	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	no CSFs	6.03E-05	NA	NA	no CSFs	6.03E-05	NA	NA	NA	NA	no CSFs	6.03E-05	NA	NA	NA	NA
Methanol	no CSFs	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl-2-pentanone	no CSFs	0.00E+00	NA	NA	no CSFs	0.00E+00	NA	NA	NA	NA	no CSFs	0.00E+00	NA	NA	NA	NA
Methylene chloride	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	NA	NA	0.00E+00	0.00E+00	NA	NA	NA	NA
Molybdenum	no CSFs	2.09E-04	NA	NA	no CSFs	2.09E-04	no CSFs	2.09E-04	NA	NA	no CSFs	2.09E-04	no CSFs	2.09E-04	no CSFs	2.09E-04
Nickel	no CSFs	4.49E-04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-nitrosodipropylamine	0.00E+00	no RfDs	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Octachlorodibenzofuran	0.00E+00	no RfDs	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Octochlorodibenzo-p-dioxin	0.00E+00	no RfDs	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.00E+00	no RfDs	NA	NA
Pentachlorodibenzofuran	no CSFs	no RfDs	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorodibenzo-p-dioxin	0.00E+00	no RfDs	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	no CSFs	no RfDs	NA	NA	no CSFs	no RfDs	NA	NA	NA	NA	no CSFs	no RfDs	no CSFs	no RfDs	no CSFs	no RfDs
Selenium	no CSFs	5.86E-05	NA	NA	no CSFs	5.86E-05	NA	NA	NA	NA	no CSFs	5.86E-05	NA	NA	NA	NA
Silver	no CSFs	4.58E-05	NA	NA	no CSFs	4.58E-05	NA	NA	NA	NA	no CSFs	4.58E-05	no CSFs	4.58E-05	no CSFs	4.58E-05
Tetrachlorodibenzofuran	no CSFs	no RfDs	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachlorodibenzo-p-dioxin	no CSFs	no RfDs	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethylene	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA
Thallium	no CSFs	1.42E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	no CSFs	0.00E+00	NA	NA	no CSFs	0.00E+00	NA	NA	NA	NA	no CSFs	0.00E+00	NA	NA	NA	NA
Tributyl phosphate	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethylene	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	NA	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA
Trifluorochloromethane	no CSFs	no RfDs	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Uranium	no CSFs	1.53E-03	no CSFs	1.53E-03	no CSFs	1.53E-03	no CSFs	1.53E-03	no CSFs	1.53E-03	no CSFs	1.53E-03	no CSFs	1.53E-03	no CSFs	1.53E-03
Vanadium	no CSFs	1.77E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes	no CSFs	0.00E+00	NA	NA	no CSFs	0.00E+00	NA	NA	NA	NA	no CSFs	0.00E+00	NA	NA	NA	NA
Zinc	no CSFs	5.91E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SUM	**2.95E-06**	**3.17E-02**	**2.91E-06**	**1.45E-02**	**2.94E-06**	**1.76E-02**	**2.91E-06**	**2.24E-02**	**0.00E+00**	**1.53E-03**	**2.94E-06**	**1.77E-02**	**2.91E-06**	**1.55E-02**	**2.91E-06**	**1.51E-02**

TABLE E.0-4
Building Maintenance - BKGD - InhaleChem

Building Maintenance - Inhalation of Gases & Particulates
Risk calculation for background

Intake Equation:			UNITS	adult
	CDI =	(CS*EF*ED*IR*ET)/(BW*AT)		
	CDI =	Chronic Daily Intake	mg/kgday	calculated below
	CA =	Concentration of chemical in air	mg/m^3	see COC list below
	EF =	Exposure frequency	days/yr	250
	ED =	Exposure duration	yrs	25
	IR =	Inhalation rate	m^3/hr	1.5
	ET =	Exposure time	hrs/day	1
	BW =	Body weight	kg	70
	ATc =	Average time for carcinogens	days	25550
	ATn =	Average time for non-carcinogens	days	9125

COC	conc	RfDi	CSFi	ADULT CDI	HQ	CDI	ILCR
	mg/m^3	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	0.00E+00	NA	5.60E-02	NA	NA	0.00E+00	0.00E+00
1,1-Dichloroethylene	0.00E+00	5.71E-02	1.75E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,2-dichloroethane	0.00E+00	NA	9.10E-02	NA	NA	0.00E+00	0.00E+00
2-Butanone	0.00E+00	1.43E+00	NA	0.00E+00	0.00E+00	NA	NA
3,3-Dichlorobenzidine	0.00E+00	NA	NA	NA	NA	NA	NA
4-Methylphenol	0.00E+00	NA	NA	NA	NA	NA	NA
4-Nitroanaline	0.00E+00	1.14E-03	NA	0.00E+00	0.00E+00	NA	NA
Acetone	0.00E+00	NA	NA	NA	NA	NA	NA
Antimony	7.46E-08	NA	NA	NA	NA	NA	NA
Aroclor-1254	0.00E+00	NA	2.00E+00	NA	NA	0.00E+00	0.00E+00
Aroclor-1260	0.00E+00	NA	2.00E+00	NA	NA	0.00E+00	0.00E+00
Arsenic	3.22E-07	NA	1.51E+01	NA	NA	1.69E-09	2.55E-08
Barium	4.86E-06	1.43E-04	NA	7.14E-08	4.99E-04	NA	NA
Benzene	0.00E+00	8.57E-03	2.73E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Benzo(a)anthracene	0.00E+00	NA	3.08E-01	NA	NA	0.00E+00	0.00E+00
Benzo(a)pyrene	0.00E+00	NA	3.08E-01	NA	NA	0.00E+00	0.00E+00
Benzo(b)fluoranthene	0.00E+00	NA	3.08E+00	NA	NA	0.00E+00	0.00E+00
Benzo(k)fluoranthene	0.00E+00	NA	3.08E-02	NA	NA	0.00E+00	0.00E+00
Beryllium	3.74E-08	5.71E-06	8.40E+00	5.50E-10	9.62E-05	1.96E-10	1.65E-09
Bis(2-chloroisopropyl)ether	0.00E+00	NA	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	0.00E+00	NA	NA	NA	NA	NA	NA
Boron	6.66E-08	5.71E-03	NA	9.77E-10	1.71E-07	NA	NA
Bromodichloromethane	0.00E+00	NA	NA	NA	NA	NA	NA
Bromoform	0.00E+00	NA	3.85E-03	NA	NA	0.00E+00	0.00E+00
Bromomethane	0.00E+00	1.43E-03	NA	0.00E+00	0.00E+00	NA	NA
Cadmium	2.57E-08	NA	6.30E+00	NA	NA	1.35E-10	8.49E-10
Carbazole	0.00E+00	NA	NA	NA	NA	NA	NA
Carbon disulfide	0.00E+00	2.00E-01	NA	0.00E+00	0.00E+00	NA	NA
Carbon tetrachloride	0.00E+00	NA	5.25E-02	NA	NA	0.00E+00	0.00E+00
Chlordane	0.00E+00	2.00E-04	3.50E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chlorobenzene	0.00E+00	1.43E-02	NA	0.00E+00	0.00E+00	NA	NA
Chloroform	0.00E+00	NA	8.05E-02	NA	NA	0.00E+00	0.00E+00
Chromium (VI)	6.42E-07	2.86E-05	4.20E+01	9.43E-09	3.30E-04	3.37E-09	1.41E-07
Chrysene	0.00E+00	NA	3.08E-03	NA	NA	0.00E+00	0.00E+00
Cobalt	5.56E-07	5.71E-06	9.80E+00	8.17E-09	1.43E-03	2.92E-09	2.86E-08
Copper	8.14E-07	NA	NA	NA	NA	NA	NA
Cyanide	0.00E+00	NA	NA	NA	NA	NA	NA
Cyclohexanone	0.00E+00	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	0.00E+00	NA	3.08E+00	NA	NA	0.00E+00	0.00E+00
Dieldrin	0.00E+00	NA	1.61E+01	NA	NA	0.00E+00	0.00E+00
Di-n-octylphthalate	0.00E+00	NA	NA	NA	NA	NA	NA
Ethyl ether	0.00E+00	NA	NA	NA	NA	NA	NA
Ethylbenzene	0.00E+00	2.86E-01	3.85E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Fluoride	8.32E-08	NA	NA	NA	NA	NA	NA
Heptachlorodibenzofuran	0.00E+00	NA	1.16E+03	NA	NA	0.00E+00	0.00E+00
Heptachlorodibenzo-p-dioxin	0.00E+00	NA	1.16E+03	NA	NA	0.00E+00	0.00E+00
Hexachlorodibenzofuran	0.00E+00	NA	1.16E+04	NA	NA	0.00E+00	0.00E+00
Hexachlorodibenzo-p-dioxin	0.00E+00	NA	1.16E+04	NA	NA	0.00E+00	0.00E+00
Indeno(1,2,3-cd)pyrene	0.00E+00	NA	3.08E-01	NA	NA	0.00E+00	0.00E+00
Lead	7.96E-07	NA	NA	NA	NA	NA	NA
Manganese	3.46E-05	1.43E-05	NA	5.08E-07	3.55E-02	NA	NA
Mercury	1.82E-09	NA	NA	NA	NA	NA	NA
Methanol	0.00E+00	NA	NA	NA	NA	NA	NA
Methyl-2-pentanone	0.00E+00	8.57E-01	NA	0.00E+00	0.00E+00	NA	NA
Methylene chloride	0.00E+00	8.57E-01	1.65E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Molybdenum	1.36E-07	NA	NA	NA	NA	NA	NA
Nickel	1.19E-06	NA	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	0.00E+00	NA	NA	NA	NA	NA	NA
N-nitrosodipropylamine	0.00E+00	NA	NA	NA	NA	NA	NA
Octochlorodibenzofuran	0.00E+00	NA	1.16E+02	NA	NA	0.00E+00	0.00E+00
Octochlorodibenzo-p-dioxin	0.00E+00	NA	1.16E+02	NA	NA	0.00E+00	0.00E+00
Pentachlorodibenzofuran	0.00E+00	NA	5.78E+03	NA	NA	0.00E+00	0.00E+00
Pentachlorodibenzo-p-dioxin	0.00E+00	NA	5.78E+04	NA	NA	0.00E+00	0.00E+00
Pentachlorophenol	0.00E+00	NA	NA	NA	NA	NA	NA
Phenanthrene	0.00E+00	NA	NA	NA	NA	NA	NA
Selenium	3.09E-08	NA	NA	NA	NA	NA	NA
Silver	2.94E-08	NA	NA	NA	NA	NA	NA
Tetrachlorodibenzofuran	0.00E+00	NA	1.16E+04	NA	NA	0.00E+00	0.00E+00
Tetrachlorodibenzo-p-dioxin	0.00E+00	NA	1.16E+05	NA	NA	0.00E+00	0.00E+00
Tetrachloroethylene	0.00E+00	1.71E-01	2.07E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Thallium	1.51E-08	NA	NA	NA	NA	NA	NA
Toluene	0.00E+00	1.43E+00	NA	0.00E+00	0.00E+00	NA	NA
Tributyl phosphate	0.00E+00	NA	NA	NA	NA	NA	NA
Trichloroethylene	0.00E+00	1.14E-02	4.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Trifluorochloromethane	0.00E+00	NA	NA	NA	NA	NA	NA
Uranium	1.19E-07	NA	NA	NA	NA	NA	NA
Vanadium	1.08E-06	NA	NA	NA	NA	NA	NA
Vinyl chloride	0.00E+00	2.86E-02	3.08E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xylenes	0.00E+00	2.86E-02	NA	0.00E+00	0.00E+00	NA	NA
Zinc	2.32E-06	NA	NA	NA	NA	NA	NA
				total =	3.76E-02	total =	1.98E-07

Air concentration is derived using air particulate value of 26 ug/m^3 (2005 SER background average from monitor AMS-12) multiplied by the soil concentration.

TABLE E.0-4
Building Maintenance - BKGD - DermalSoilChem

Building Maintenance - Dermal Contact with Soil/Sediment
Risk calculation for background

Intake Equation:

			UNITS	adult
CDI =	(CS*AB*SA*EF*ED*AF*CF)/(BW*AT)			
CDI =	Chronic Daily Intake		mg/kgday	calculated below
CS =	Concentration of chemical in soil		mg/kg	see COC list below
AB	Absorption factor		–	see COC list below
SA	Surface area of exposed skin		cm^2/day	2077
EF =	Exposure frequency		days/yr	250
ED =	Exposure duration		yrs	25
AF =	Adherence factor		mg/cm^2	0.2
CF =	Conversion factor		kg/mg	1.00E-06
BW =	Body weight		kg	70
ATc =	Average time for carcinogens		days	25550
ATn =	Average time for non-carcinogens		days	9125

COC	conc	AB	RfDd	CSFd	ADULT CDI	ADULT HQ	ADULT CDI	ADULT ILCR
	mg/kg	unitless	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	0.00E+00	1.00E-02	3.24E-03	7.04E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,1-Dichloroethylene	0.00E+00	1.00E-02	5.00E-02	6.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,2-dichloroethane	0.00E+00	1.00E-02	2.00E-02	9.10E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2-Butanone	0.00E+00	1.00E-02	4.80E-01	NA	0.00E+00	0.00E+00	NA	NA
3,3-Dichlorobenzidine	0.00E+00	1.00E-02	NA	9.00E-01	NA	NA	0.00E+00	0.00E+00
4-Methylphenol	0.00E+00	1.00E-02	3.25E-03	NA	0.00E+00	0.00E+00	NA	NA
4-Nitroanaline	0.00E+00	1.00E-02	2.40E-03	2.63E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Acetone	0.00E+00	1.00E-02	7.47E-01	NA	0.00E+00	0.00E+00	NA	NA
Antimony	2.87E+00	1.00E-03	8.00E-06	NA	1.17E-08	1.46E-03	NA	NA
Aroclor-1254	0.00E+00	1.40E-01	1.80E-05	2.22E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Aroclor-1260	0.00E+00	1.40E-01	1.80E-05	2.22E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Arsenic	1.24E+01	3.00E-02	1.23E-04	3.66E+00	1.51E-06	1.23E-02	5.40E-07	1.98E-06
Barium	1.87E+02	1.00E-03	1.40E-02	NA	7.60E-07	5.43E-05	NA	NA
Benzene	0.00E+00	1.00E-02	3.88E-03	5.67E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Benzo(a)anthracene	0.00E+00	1.30E-01	NA	2.35E+00	NA	NA	0.00E+00	0.00E+00
Benzo(a)pyrene	0.00E+00	1.30E-01	NA	2.35E+01	NA	NA	0.00E+00	0.00E+00
Benzo(b)fluoranthene	0.00E+00	1.30E-01	NA	2.35E+00	NA	NA	0.00E+00	0.00E+00
Benzo(k)fluoranthene	0.00E+00	1.30E-01	NA	2.35E-01	NA	NA	0.00E+00	0.00E+00
Beryllium	1.44E+00	1.00E-03	2.00E-05	4.30E+02	5.85E-09	2.93E-04	2.09E-09	8.99E-07
Bis(2-chloroisopropyl)ether	0.00E+00	1.00E-02	2.00E-02	NA	0.00E+00	0.00E+00	NA	NA
Bis(2-ethylhexyl)phthalate	0.00E+00	1.00E-02	3.80E-03	7.37E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Boron	2.56E+00	1.00E-03	1.60E-01	NA	1.04E-08	5.78E-08	NA	NA
Bromodichloromethane	0.00E+00	1.00E-02	1.98E-02	6.33E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Bromoform	0.00E+00	1.00E-02	1.20E-02	1.32E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Bromomethane	0.00E+00	1.00E-02	1.12E-03	NA	0.00E+00	0.00E+00	NA	NA
Cadmium	9.89E-01	1.00E-03	1.00E-05	NA	4.02E-09	4.02E-04	NA	NA
Carbazole	0.00E+00	1.00E-02	NA	2.86E-02	NA	NA	0.00E+00	0.00E+00
Carbon disulfide	0.00E+00	2.50E-01	6.30E-02	NA	0.00E+00	0.00E+00	NA	NA
Carbon tetrachloride	0.00E+00	1.00E-02	4.55E-04	2.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chlordane	0.00E+00	4.00E-02	2.50E-04	7.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chlorobenzene	0.00E+00	1.00E-02	6.20E-03	NA	0.00E+00	0.00E+00	NA	NA
Chloroform	0.00E+00	1.00E-02	2.00E-03	3.05E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chromium (VI)	2.47E+01	1.00E-03	6.00E-05	NA	1.00E-07	1.67E-03	NA	NA
Chrysene	0.00E+00	1.30E-01	NA	2.35E-02	NA	NA	0.00E+00	0.00E+00
Cobalt	2.14E+01	1.00E-03	1.60E-02	NA	8.70E-08	5.44E-06	NA	NA
Copper	3.13E+01	1.00E-03	1.20E-02	NA	1.27E-07	1.06E-05	NA	NA
Cyanide	0.00E+00	1.00E-02	3.40E-03	NA	0.00E+00	0.00E+00	NA	NA
Cyclohexanone	0.00E+00	1.00E-02	4.00E+00	NA	0.00E+00	0.00E+00	NA	NA
Dibenzo(a,h)anthracene	0.00E+00	1.30E-01	NA	2.35E+01	NA	NA	0.00E+00	0.00E+00
Dieldrin	0.00E+00	1.00E-02	2.50E-05	3.20E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Di-n-octylphthalate	0.00E+00	1.00E-02	3.60E-02	NA	0.00E+00	0.00E+00	NA	NA
Ethyl ether	0.00E+00	1.00E-02	1.60E-01	NA	0.00E+00	0.00E+00	NA	NA
Ethylbenzene	0.00E+00	1.00E-02	9.70E-02	NA	0.00E+00	0.00E+00	NA	NA
Fluoride	3.20E+00	1.00E-03	5.82E-02	NA	1.30E-08	2.23E-07	NA	NA
Heptachlorodibenzofuran	0.00E+00	1.00E-02	NA	3.00E+03	NA	NA	0.00E+00	0.00E+00
Heptachlorodibenzo-p-dioxin	0.00E+00	3.00E-02	NA	3.00E+03	NA	NA	0.00E+00	0.00E+00
Hexachlorodibenzofuran	0.00E+00	1.00E-02	NA	3.00E+04	NA	NA	0.00E+00	0.00E+00
Hexachlorodibenzo-p-dioxin	0.00E+00	3.00E-02	NA	3.00E+04	NA	NA	0.00E+00	0.00E+00
Indeno(1,2,3-cd)pyrene	0.00E+00	1.30E-01	NA	2.35E+00	NA	NA	0.00E+00	0.00E+00
Lead	3.06E+01	1.00E-03	NA	NA	NA	NA	NA	NA
Manganese	1.33E+03	1.00E-03	5.60E-03	NA	5.41E-06	9.65E-04	NA	NA
Mercury	7.00E-02	1.00E-03	2.10E-05	NA	2.85E-10	1.35E-05	NA	NA
Methanol	0.00E+00	1.00E-02	4.00E-01	NA	0.00E+00	0.00E+00	NA	NA
Methyl-2-pentanone	0.00E+00	1.00E-02	8.40E-02	NA	0.00E+00	0.00E+00	NA	NA
Methylene chloride	0.00E+00	1.00E-02	5.70E-02	7.89E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Molybdenum	5.24E+00	1.00E-03	1.90E-03	NA	2.13E-08	1.12E-05	NA	NA
Nickel	4.56E+01	1.00E-03	5.40E-03	NA	1.85E-07	3.43E-05	NA	NA
N-nitrosodiphenylamine	0.00E+00	1.00E-02	5.00E-03	1.96E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
N-nitrosodipropylamine	0.00E+00	1.00E-02	NA	2.80E+01	NA	NA	0.00E+00	0.00E+00
Octachlorodibenzofuran	0.00E+00	1.00E-02	NA	3.00E+02	NA	NA	0.00E+00	0.00E+00
Octochlorodibenzo-p-dioxin	0.00E+00	3.00E-02	NA	3.00E+02	NA	NA	0.00E+00	0.00E+00
Pentachlorodibenzofuran	0.00E+00	1.00E-02	NA	1.50E+04	NA	NA	0.00E+00	0.00E+00
Pentachlorodibenzo-p-dioxin	0.00E+00	3.00E-02	NA	1.50E+05	NA	NA	0.00E+00	0.00E+00
Pentachlorophenol	0.00E+00	2.50E-01	3.00E-02	1.20E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Phenanthrene	0.00E+00	1.00E-02	NA	NA	NA	NA	NA	NA
Selenium	1.19E+00	1.00E-03	2.20E-03	NA	4.84E-09	2.20E-06	NA	NA
Silver	1.13E+00	1.00E-03	9.00E-04	NA	4.59E-09	5.10E-06	NA	NA
Tetrachlorodibenzofuran	0.00E+00	1.00E-02	NA	3.00E+04	NA	NA	0.00E+00	0.00E+00
Tetrachlorodibenzo-p-dioxin	0.00E+00	3.00E-02	NA	3.00E+05	NA	NA	0.00E+00	0.00E+00
Tetrachloroethylene	0.00E+00	1.00E-02	1.00E-02	5.40E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Thallium	5.80E-01	1.00E-03	1.80E-05	NA	2.36E-09	1.31E-04	NA	NA
Toluene	0.00E+00	1.00E-02	6.40E-02	NA	0.00E+00	0.00E+00	NA	NA
Tributyl phosphate	0.00E+00	1.00E-02	1.00E-01	1.08E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Trichloroethylene	0.00E+00	1.00E-02	4.50E-05	2.67E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Trifluorochloromethane	0.00E+00	NA	NA	NA	NA	NA	NA	NA
Uranium	4.56E+00	1.00E-03	5.10E-04	NA	1.85E-08	3.63E-05	NA	NA
Vanadium	4.14E+01	1.00E-03	7.00E-05	NA	1.68E-07	2.40E-03	NA	NA
Vinyl chloride	0.00E+00	1.00E-02	3.00E-03	1.50E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xylenes	0.00E+00	1.00E-02	1.84E-01	NA	0.00E+00	0.00E+00	NA	NA
Zinc	8.93E+01	1.00E-03	6.00E-02	NA	3.63E-07	6.05E-06	NA	NA
					total =	1.98E-02	total =	2.88E-06

TABLE E.0-4
Building Maintenance - BKGD - IngestSoilChem

Building Maintenance - Ingestion of Soil
Risk calculation for background

Intake Equation:

		UNITS	adult
CDI =	(CS*EF*ED*IR*FI*CF)/(BW*AT)		
CDI =	Chronic Daily Intake	mg/kgday	calculated below
CS =	Concentration of chemical in soil	mg/kg	see COC list below
EF =	Exposure frequency	days/yr	250
ED =	Exposure duration	yrs	25
IR =	Ingestion rate	mg/day	50
FI =	Fraction of contaminated soil	unitless	1
CF =	Conversion factor	kg/mg	1.00E-06
BW =	Body weight	kg	70
ATc =	Average time for carcinogens	days	25550
ATn =	Average time for non-carcinogens	days	9125

COC	conc	RfDo	CSFo	ADULT CDI	ADULT HQ	ADULT CDI	ADULT ILCR
	mg/kg	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	0.00E+00	4.00E-03	5.70E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,1-Dichloroethylene	0.00E+00	5.00E-02	6.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,2-dichloroethane	0.00E+00	2.00E-02	9.10E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2-Butanone	0.00E+00	6.00E-01	NA	0.00E+00	0.00E+00	NA	NA
3,3-Dichlorobenzidine	0.00E+00	NA	4.50E-01	NA	NA	0.00E+00	0.00E+00
4-Methylphenol	0.00E+00	5.00E-03	NA	0.00E+00	0.00E+00	NA	NA
4-Nitroanaline	0.00E+00	3.00E-03	2.10E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Acetone	0.00E+00	9.00E-01	NA	0.00E+00	0.00E+00	NA	NA
Antimony	2.87E+00	4.00E-04	NA	1.40E-06	3.51E-03	NA	NA
Aroclor-1254	0.00E+00	2.00E-05	2.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Aroclor-1260	0.00E+00	2.00E-05	2.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Arsenic	1.24E+01	3.00E-04	1.50E+00	6.07E-06	2.02E-02	2.17E-06	3.25E-06
Barium	1.87E+02	2.00E-01	NA	9.15E-05	4.57E-04	NA	NA
Benzene	0.00E+00	4.00E-03	5.50E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Benzo(a)anthracene	0.00E+00	NA	7.30E-01	NA	NA	0.00E+00	0.00E+00
Benzo(a)pyrene	0.00E+00	NA	7.30E+00	NA	NA	0.00E+00	0.00E+00
Benzo(b)fluoranthene	0.00E+00	NA	7.30E-01	NA	NA	0.00E+00	0.00E+00
Benzo(k)fluoranthene	0.00E+00	NA	7.30E-02	NA	NA	0.00E+00	0.00E+00
Beryllium	1.44E+00	2.00E-03	4.30E+00	7.05E-07	3.52E-04	2.52E-07	1.08E-06
Bis(2-chloroisopropyl)ether	0.00E+00	4.00E-02	NA	0.00E+00	0.00E+00	NA	NA
Bis(2-ethylhexyl)phthalate	0.00E+00	2.00E-02	1.40E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Boron	2.56E+00	2.00E-01	NA	1.25E-06	6.26E-06	NA	NA
Bromodichloromethane	0.00E+00	2.00E-02	6.20E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Bromoform	0.00E+00	2.00E-02	7.90E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Bromomethane	0.00E+00	1.40E-03	NA	0.00E+00	0.00E+00	NA	NA
Cadmium	9.89E-01	1.00E-03	NA	4.84E-07	4.84E-04	NA	NA
Carbazole	0.00E+00	NA	2.00E-03	NA	NA	0.00E+00	0.00E+00
Carbon disulfide	0.00E+00	1.00E-01	NA	0.00E+00	0.00E+00	NA	NA
Carbon tetrachloride	0.00E+00	7.00E-04	1.30E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chlordane	0.00E+00	5.00E-04	3.50E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chlorobenzene	0.00E+00	2.00E-02	NA	0.00E+00	0.00E+00	NA	NA
Chloroform	0.00E+00	1.00E-02	6.10E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chromium (VI)	2.47E+01	3.00E-03	NA	1.21E-05	4.03E-03	NA	NA
Chrysene	0.00E+00	NA	7.30E-03	NA	NA	0.00E+00	0.00E+00
Cobalt	2.14E+01	2.00E-02	NA	1.05E-05	5.23E-04	NA	NA
Copper	3.13E+01	4.00E-02	NA	1.53E-05	3.83E-04	NA	NA
Cyanide	0.00E+00	2.00E-02	NA	0.00E+00	0.00E+00	NA	NA
Cyclohexanone	0.00E+00	5.00E+00	NA	0.00E+00	0.00E+00	NA	NA
Dibenzo(a,h)anthracene	0.00E+00	NA	7.30E+00	NA	NA	0.00E+00	0.00E+00
Dieldrin	0.00E+00	5.00E-05	1.60E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Di-n-octylphthalate	0.00E+00	4.00E-02	NA	0.00E+00	0.00E+00	NA	NA
Ethyl ether	0.00E+00	2.00E-01	NA	0.00E+00	0.00E+00	NA	NA
Ethylbenzene	0.00E+00	1.00E-01	NA	0.00E+00	0.00E+00	NA	NA
Fluoride	3.20E+00	6.00E-02	NA	1.57E-06	2.61E-05	NA	NA
Heptachlorodibenzofuran	0.00E+00	NA	1.50E+03	NA	NA	0.00E+00	0.00E+00
Heptachlorodibenzo-p-dioxin	0.00E+00	NA	1.50E+03	NA	NA	0.00E+00	0.00E+00
Hexachlorodibenzofuran	0.00E+00	NA	1.50E+03	NA	NA	0.00E+00	0.00E+00
Hexachlorodibenzo-p-dioxin	0.00E+00	NA	1.50E+04	NA	NA	0.00E+00	0.00E+00
Indeno(1,2,3-cd)pyrene	0.00E+00	NA	7.30E-01	NA	NA	0.00E+00	0.00E+00
Lead	3.06E+01	NA	NA	NA	NA	NA	NA
Manganese	1.33E+03	1.40E-01	NA	6.51E-04	4.65E-03	NA	NA
Mercury	7.00E-02	3.00E-04	NA	3.42E-08	1.14E-04	NA	NA
Methanol	0.00E+00	5.00E-01	NA	0.00E+00	0.00E+00	NA	NA
Methyl-2-pentanone	0.00E+00	8.00E-02	NA	0.00E+00	0.00E+00	NA	NA
Methylene chloride	0.00E+00	6.00E-02	7.50E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Molybdenum	5.24E+00	5.00E-03	NA	2.56E-06	5.13E-04	NA	NA
Nickel	4.66E+01	2.00E-02	NA	2.23E-05	1.12E-03	NA	NA
N-nitrosodiphenylamine	0.00E+00	2.00E-02	4.90E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00
N-nitrosodipropylamine	0.00E+00	NA	7.00E+00	NA	NA	0.00E+00	0.00E+00
Octachlorodibenzofuran	0.00E+00	NA	1.50E+02	NA	NA	0.00E+00	0.00E+00
Octochlorodibenzo-p-dioxin	0.00E+00	NA	1.50E+02	NA	NA	0.00E+00	0.00E+00
Pentachlorodibenzofuran	0.00E+00	NA	7.50E+03	NA	NA	0.00E+00	0.00E+00
Pentachlorodibenzo-p-dioxin	0.00E+00	NA	7.50E+04	NA	NA	0.00E+00	0.00E+00
Pentachlorophenol	0.00E+00	3.00E-02	1.20E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Phenanthrene	0.00E+00	NA	NA	NA	NA	NA	NA
Selenium	1.19E+00	5.00E-03	NA	5.82E-07	1.16E-04	NA	NA
Silver	1.13E+00	5.00E-03	NA	5.53E-07	1.11E-04	NA	NA
Tetrachlorodibenzofuran	0.00E+00	NA	1.50E+04	NA	NA	0.00E+00	0.00E+00
Tetrachlorodibenzo-p-dioxin	0.00E+00	NA	1.50E+05	NA	NA	0.00E+00	0.00E+00
Tetrachloroethylene	0.00E+00	1.00E-02	5.40E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Thallium	5.80E-01	9.00E-05	NA	2.84E-07	3.15E-03	NA	NA
Toluene	0.00E+00	8.00E-02	NA	0.00E+00	0.00E+00	NA	NA
Tributyl phosphate	0.00E+00	2.00E-01	5.40E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Trichloroethylene	0.00E+00	3.00E-04	4.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Trifluorochloromethane	0.00E+00	NA	NA	NA	NA	NA	NA
Uranium	4.56E+00	6.00E-04	NA	2.23E-06	3.72E-03	NA	NA
Vanadium	4.14E+01	7.00E-03	NA	2.03E-05	2.89E-03	NA	NA
Vinyl chloride	0.00E+00	3.00E-03	1.50E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xylenes	0.00E+00	2.00E-01	NA	0.00E+00	0.00E+00	NA	NA
Zinc	8.93E+01	3.00E-01	NA	4.37E-05	1.46E-04	NA	NA
				total =	4.65E-02	total =	4.33E-06

TABLE E.0-4
Building Maintenance - BKGD - DermalSWchem

Building Maintenance - Dermal Contact with Surface Water
Risk calculation for background

			UNITS	adult
Intake Equation:	CDI =	(DA*EF*ED*SA)/(BW*AT)		
	CDI =	Chronic Daily Intake	mg/kgday	calculated below
	DA =	Dermal absorption dose	mg/cm²day	NA
	EF =	Exposure frequency	days/yr	NA
	ED =	Exposure duration	yrs	NA
	SA =	Surface area of skin	cm²	NA
	BW =	Body weight	kg	NA
	ATc =	Average time for carcinogens	days	NA
	ATn =	Average time for non-carcinogens	days	NA
where:	DA = C_v*K_p*CF*ET			
	C_v =	concentation of ith contaminant in surface water	mg/L	see COC list below
	K_p =	permeability constant for ith contaminant	cm/hr	see COC list below
	CF =	conversion factor	L/cm³	NA
	ET =	exposure time	hr/d	NA

COC	C_v	K_p	DA	RfD	CSF	ADULT CDI	ADULT HQ	ADULT CDI	ADULT ILCR
	mg/L	cm/hr	mg/cm²day	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	0	6.43E-03	NA	3.24E-03	7.04E-02	NA	NA	NA	NA
1,1-Dichloroethylene	0	1.59E-02	NA	5.00E-02	6.00E-01	NA	NA	NA	NA
1,2-dichloroethane	0	5.34E-03	NA	2.00E-02	9.10E-02	NA	NA	NA	NA
2-Butanone	0	1.11E-03	NA	4.80E-01	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	0	1.69E-02	NA	NA	9.00E-01	NA	NA	NA	NA
4-Methylphenol	0	9.95E-03	NA	3.25E-03	NA	NA	NA	NA	NA
4-Nitroanaline	0	2.66E-03	NA	2.40E-03	2.63E-02	NA	NA	NA	NA
Acetone	0	5.69E-04	NA	7.47E-01	NA	NA	NA	NA	NA
Antimony	5.00E-04	1.00E-03	NA	8.00E-06	NA	NA	NA	NA	NA
Aroclor-1254	0	1.29E+00	NA	1.80E-05	2.22E+00	NA	NA	NA	NA
Aroclor-1260	0	5.48E+00	NA	1.80E-05	2.22E+00	NA	NA	NA	NA
Arsenic	1.50E-03	1.00E-03	NA	1.23E-04	3.66E+00	NA	NA	NA	NA
Barium	1.31E-02	1.00E-03	NA	1.40E-02	NA	NA	NA	NA	NA
Benzene	0	2.07E-02	NA	3.88E-03	5.87E-02	NA	NA	NA	NA
Benzo(a)anthracene	0	9.46E-01	NA	NA	2.35E+00	NA	NA	NA	NA
Benzo(a)pyrene	0	1.24E+00	NA	NA	2.35E+01	NA	NA	NA	NA
Benzo(b)fluoranthene	0	6.99E-01	NA	NA	2.35E+00	NA	NA	NA	NA
Benzo(k)fluoranthene	0	1.20E+00	NA	NA	2.35E-01	NA	NA	NA	NA
Beryllium	1.00E-04	1.00E-03	NA	2.00E-05	4.30E+02	NA	NA	NA	NA
Bis(2-chloroisopropyl)ether	0	7.63E-02	NA	2.00E-02	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	0	1.97E+00	NA	3.60E-03	7.37E-02	NA	NA	NA	NA
Boron	1.58E-02	1.00E-03	NA	1.80E-01	NA	NA	NA	NA	NA
Bromodichloromethane	0	5.02E-03	NA	1.96E-02	6.33E-02	NA	NA	NA	NA
Bromoform	0	2.77E-03	NA	1.20E-02	1.32E-02	NA	NA	NA	NA
Bromomethane	0	3.51E-03	NA	1.12E-03	NA	NA	NA	NA	NA
Cadmium	1.00E-04	1.00E-03	NA	1.00E-05	NA	NA	NA	NA	NA
Carbazole	0	7.97E-02	NA	NA	2.86E-02	NA	NA	NA	NA
Carbon disulfide	0	1.58E-02	NA	6.30E-02	NA	NA	NA	NA	NA
Carbon tetrachloride	0	2.24E-02	NA	4.55E-04	2.00E-01	NA	NA	NA	NA
Chlordane	0	1.57E-01	NA	2.50E-04	7.00E-01	NA	NA	NA	NA
Chlorobenzene	0	4.07E-02	NA	6.20E-03	NA	NA	NA	NA	NA
Chloroform	0	8.92E-03	NA	2.00E-03	3.05E-02	NA	NA	NA	NA
Chromium (VI)	1.00E-03	2.00E-03	NA	6.00E-05	NA	NA	NA	NA	NA
Chrysene	0	1.03E+00	NA	NA	2.35E-02	NA	NA	NA	NA
Cobalt	2.90E-04	4.00E-04	NA	1.60E-02	NA	NA	NA	NA	NA
Copper	1.40E-03	1.00E-03	NA	1.20E-02	NA	NA	NA	NA	NA
Cyanide	0	1.00E-03	NA	3.40E-03	NA	NA	NA	NA	NA
Cyclohexanone	0	1.80E-03	NA	4.00E+00	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	0	1.68E+00	NA	NA	2.35E+01	NA	NA	NA	NA
Dieldrin	0	4.45E-02	NA	2.50E-05	3.20E+01	NA	NA	NA	NA
Di-n-octylphthalate	0	4.45E+00	NA	3.60E-02	NA	NA	NA	NA	NA
Ethyl ether	0	2.88E-03	NA	1.60E-01	NA	NA	NA	NA	NA
Ethylbenzene	0	7.39E-02	NA	9.70E-02	NA	NA	NA	NA	NA
Fluoride	1.46E-01	1.00E-03	NA	5.82E-02	NA	NA	NA	NA	NA
Heptachlorodibenzofuran	0	2.55E+00	NA	NA	3.00E+03	NA	NA	NA	NA
Heptachlorodibenzo-p-dioxin	0	3.22E+00	NA	NA	3.00E+03	NA	NA	NA	NA
Hexachlorodibenzofuran	0	2.38E+00	NA	NA	3.00E+04	NA	NA	NA	NA
Hexachlorodibenzo-p-dioxin	0	5.29E+00	NA	NA	3.00E+04	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	0	2.23E+00	NA	NA	2.35E+00	NA	NA	NA	NA
Lead	5.00E-04	1.00E-04	NA	NA	NA	NA	NA	NA	NA
Manganese	6.50E-03	1.00E-03	NA	1.84E-03	NA	NA	NA	NA	NA
Mercury	6.00E-05	1.00E-03	NA	2.10E-05	NA	NA	NA	NA	NA
Methanol	0	3.45E-04	NA	4.00E-01	NA	NA	NA	NA	NA
4-Methyl-2-pentanone	0	3.97E-03	NA	6.40E-02	NA	NA	NA	NA	NA
Methylene chloride	0	4.46E-03	NA	5.70E-02	7.89E-03	NA	NA	NA	NA
Molybdenum	9.70E-04	1.00E-03	NA	1.90E-03	NA	NA	NA	NA	NA
Nickel	1.70E-03	2.00E-04	NA	5.40E-03	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	0	1.96E-02	NA	5.00E-03	1.96E-02	NA	NA	NA	NA
N-nitrosodipropylamine	0	2.83E-03	NA	NA	2.80E+01	NA	NA	NA	NA
Octachlorodibenzofuran	0	4.78E+00	NA	NA	3.00E+02	NA	NA	NA	NA
Octochlorodibenzo-p-dioxin	0	1.65E+01	NA	NA	3.00E+02	NA	NA	NA	NA
Pentachlorodibenzofuran	0	1.06E+00	NA	NA	1.50E+04	NA	NA	NA	NA
Pentachlorodibenzo-p-dioxin	0	3.79E-01	NA	NA	1.50E+05	NA	NA	NA	NA
Pentachlorophenol	0	1.95E-01	NA	3.00E-02	1.20E-01	NA	NA	NA	NA
Phenanthrene	0	2.29E-01	NA	NA	NA	NA	NA	NA	NA
Selenium	2.50E-03	1.00E-03	NA	2.20E-03	NA	NA	NA	NA	NA
Silver	2.00E-04	6.00E-04	NA	9.00E-04	NA	NA	NA	NA	NA
Tetrachlorodibenzofuran	0	1.12E+00	NA	NA	3.00E+04	NA	NA	NA	NA
Tetrachlorodibenzo-p-dioxin	0	1.39E+00	NA	NA	3.00E+05	NA	NA	NA	NA
Tetrachloroethylene	0	4.81E-02	NA	1.00E-02	5.40E-01	NA	NA	NA	NA
Thallium	4.00E-04	1.00E-03	NA	1.80E-05	NA	NA	NA	NA	NA
Toluene	0	4.53E-02	NA	6.40E-02	NA	NA	NA	NA	NA
Tributyl phosphate	0	3.13E-02	NA	1.00E-01	1.08E-02	NA	NA	NA	NA
Trichloroethylene	0	1.57E-02	NA	4.50E-05	2.67E+00	NA	NA	NA	NA
Trifluorochloromethane	0	NA	NA	NA	NA	NA	NA	NA	NA
Uranium	1.70E-03	1.00E-03	NA	5.10E-04	NA	NA	NA	NA	NA
Vanadium	2.00E-03	1.00E-03	NA	7.00E-05	NA	NA	NA	NA	NA
Vinyl chloride	0	1.13E-02	NA	3.00E-03	1.50E+00	NA	NA	NA	NA
Xylenes	0	7.04E-02	NA	1.84E-01	NA	NA	NA	NA	NA
Zinc	3.70E-03	6.00E-04	NA	6.00E-02	NA	NA	NA	NA	NA
						total =	0.00E+00	total =	0.00E+00

TABLE E.0-4
Building Maintenance - BKGD - IngestSWchem

Building Maintenance - Ingestion of Surface Water
Risk calculation for background

Intake Equation:			UNITS	Assigned Values
	CDI =	(CW*EF*ED*IR)/(BW*AT)		
	CDI =	Chronic Daily Intake	mg/kgday	adult
	CW =	Concentration of chemical in water	mg/L	see COC table below
	EF =	Exposure frequency	days/yr	NA
	ED =	Exposure duration	yrs	NA
	IR =	Ingestion rate	L/day	NA
	BW =	Body weight	kg	NA
	ATc =	Average time for carcinogens	days	NA
	ATn =	Average time for non-carcinogens	days	NA

COC	CW	RfDo	CSFo	ADULT CDI	HQ	CDI	ILCR
	mg/L	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	0.00E+00	4.00E-03	5.70E-02	NA	NA	NA	NA
1,1-Dichloroethylene	0.00E+00	5.00E-02	6.00E-01	NA	NA	NA	NA
1,2-dichloroethane	0.00E+00	2.00E-02	9.10E-02	NA	NA	NA	NA
2-Butanone	0.00E+00	6.00E-01	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	0.00E+00	NA	4.50E-01	NA	NA	NA	NA
4-Methylphenol	0.00E+00	5.00E-03	NA	NA	NA	NA	NA
4-Nitroanaline	0.00E+00	3.00E-03	2.10E-02	NA	NA	NA	NA
Acetone	0.00E+00	9.00E-01	NA	NA	NA	NA	NA
Antimony	5.00E-04	4.00E-04	NA	NA	NA	NA	NA
Aroclor-1254	0.00E+00	2.00E-05	4.00E-01	NA	NA	NA	NA
Aroclor-1260	0.00E+00	2.00E-05	4.00E-01	NA	NA	NA	NA
Arsenic	1.50E-03	3.00E-04	1.50E+00	NA	NA	NA	NA
Barium	1.31E-02	2.00E-01	NA	NA	NA	NA	NA
Benzene	0.00E+00	4.00E-03	5.50E-02	NA	NA	NA	NA
Benzo(a)anthracene	0.00E+00	NA	7.30E-01	NA	NA	NA	NA
Benzo(a)pyrene	0.00E+00	NA	7.30E+00	NA	NA	NA	NA
Benzo(b)fluoranthene	0.00E+00	NA	7.30E-01	NA	NA	NA	NA
Benzo(k)fluoranthene	0.00E+00	NA	7.30E-02	NA	NA	NA	NA
Beryllium	1.00E-04	2.00E-03	4.30E+00	NA	NA	NA	NA
Bis(2-chlorolsopropyl)ether	0.00E+00	4.00E-02	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	0.00E+00	2.00E-02	1.40E-02	NA	NA	NA	NA
Boron	1.58E-02	2.00E-01	NA	NA	NA	NA	NA
Bromodichloromethane	0.00E+00	2.00E-02	6.20E-02	NA	NA	NA	NA
Bromoform	0.00E+00	2.00E-02	7.90E-03	NA	NA	NA	NA
Bromomethane	0.00E+00	1.40E-03	NA	NA	NA	NA	NA
Cadmium	1.00E-04	1.00E-03	NA	NA	NA	NA	NA
Carbazole	0.00E+00	NA	2.00E-03	NA	NA	NA	NA
Carbon disulfide	0.00E+00	1.00E-01	NA	NA	NA	NA	NA
Carbon tetrachloride	0.00E+00	7.00E-04	1.30E-01	NA	NA	NA	NA
Chlordane	0.00E+00	5.00E-04	3.50E-01	NA	NA	NA	NA
Chlorobenzene	0.00E+00	2.00E-02	NA	NA	NA	NA	NA
Chloroform	0.00E+00	1.00E-02	6.10E-03	NA	NA	NA	NA
Chromium (VI)	1.00E-03	3.00E-03	NA	NA	NA	NA	NA
Chrysene	0.00E+00	NA	7.30E-03	NA	NA	NA	NA
Cobalt	2.90E-04	2.00E-02	NA	NA	NA	NA	NA
Copper	1.40E-03	4.00E-02	NA	NA	NA	NA	NA
Cyanide	0.00E+00	2.00E-02	NA	NA	NA	NA	NA
Cyclohexanone	0.00E+00	5.00E+00	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	0.00E+00	NA	7.30E+00	NA	NA	NA	NA
Dieldrin	0.00E+00	5.00E-05	1.60E+01	NA	NA	NA	NA
Di-n-octylphthalate	0.00E+00	4.00E-02	NA	NA	NA	NA	NA
Ethyl ether	0.00E+00	2.00E-01	NA	NA	NA	NA	NA
Ethylbenzene	0.00E+00	1.00E-01	NA	NA	NA	NA	NA
Fluoride	1.46E-01	6.00E-02	NA	NA	NA	NA	NA
Heptachlorodibenzofuran	0.00E+00	NA	1.50E+03	NA	NA	NA	NA
Heptachlorodibenzo-p-dioxin	0.00E+00	NA	1.50E+03	NA	NA	NA	NA
Hexachlorodibenzofuran	0.00E+00	NA	1.50E+03	NA	NA	NA	NA
Hexachlorodibenzo-p-dioxin	0.00E+00	NA	1.50E+04	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	0.00E+00	NA	7.30E-01	NA	NA	NA	NA
Lead	5.00E-04	NA	NA	NA	NA	NA	NA
Manganese	6.50E-03	4.60E-02	NA	NA	NA	NA	NA
Mercury	6.00E-05	3.00E-04	NA	NA	NA	NA	NA
Methanol	0.00E+00	5.00E-01	NA	NA	NA	NA	NA
4-Methyl-2-pentanone	0.00E+00	8.00E-02	NA	NA	NA	NA	NA
Methylene chloride	0.00E+00	6.00E-02	7.50E-03	NA	NA	NA	NA
Molybdenum	9.70E-04	5.00E-03	NA	NA	NA	NA	NA
Nickel	1.70E-03	2.00E-02	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	0.00E+00	2.00E-02	4.90E-03	NA	NA	NA	NA
N-nitrosodipropylamine	0.00E+00	NA	7.00E+00	NA	NA	NA	NA
Octachlorodibenzofuran	0.00E+00	NA	1.50E+02	NA	NA	NA	NA
Octochlorodibenzo-p-dioxin	0.00E+00	NA	1.50E+02	NA	NA	NA	NA
Pentachlorodibenzofuran	0.00E+00	NA	7.50E+03	NA	NA	NA	NA
Pentachlorodibenzo-p-dioxin	0.00E+00	NA	7.50E+04	NA	NA	NA	NA
Pentachlorophenol	0.00E+00	3.00E-02	1.20E-01	NA	NA	NA	NA
Phenanthrene	0.00E+00	NA	NA	NA	NA	NA	NA
Selenium	2.50E-03	5.00E-03	NA	NA	NA	NA	NA
Silver	2.00E-04	5.00E-03	NA	NA	NA	NA	NA
Tetrachlorodibenzofuran	0.00E+00	NA	1.50E+04	NA	NA	NA	NA
Tetrachlorodibenzo-p-dioxin	0.00E+00	NA	1.50E+05	NA	NA	NA	NA
Tetrachloroethylene	0.00E+00	1.00E-02	5.40E-01	NA	NA	NA	NA
Thallium	4.00E-04	9.00E-05	NA	NA	NA	NA	NA
Toluene	0.00E+00	8.00E-02	NA	NA	NA	NA	NA
Tributyl phosphate	0.00E+00	2.00E-01	5.40E-03	NA	NA	NA	NA
Trichloroethylene	0.00E+00	3.00E-04	4.00E-01	NA	NA	NA	NA
Trifluorochloromethane	0.00E+00	NA	NA	NA	NA	NA	NA
Uranium	1.70E-03	6.00E-04	NA	NA	NA	NA	NA
Vanadium	2.00E-03	7.00E-03	NA	NA	NA	NA	NA
Vinyl chloride	0.00E+00	3.00E-03	1.50E+00	NA	NA	NA	NA
Xylenes	0.00E+00	2.00E-01	NA	NA	NA	NA	NA
Zinc	3.70E-03	3.00E-01	NA	NA	NA	NA	NA
				total =	0.00E+00	total =	0.00E+00

TABLE E.0-4
Building Maintenance - BKGD - InhaleRad

Building Maintenance - Inhalation of Gases & Particulates
Risk calculation for background

Intake Equation:

CDI =	(CA*EF*ED*IR*ET)
CDI =	Chronic Daily Intake
CA =	Concentration of radionuclide in air
EF =	Exposure frequency
ED =	Exposure duration
IR =	Inhalation rate
ET =	Exposure time

UNITS	adult
pCi	calculated below
pCi/m^3	see COC list below
days/yr	250
yrs	25
m^3/hr	1.5
hrs/day	1

COC	conc pCi/m^3	CSFI 1/pCi	ADULT CDI pCi	ADULT ILCR CDI*CSF
Cesium-137 + D	1.72E-06	1.19E-11	1.61E-02	1.91E-13
Lead-210 + D	4.06E-05	1.39E-08	3.80E-01	5.29E-09
Neptunium-237 + D	0.00E+00	1.77E-08	0.00E+00	0.00E+00
Plutonium-238	0.00E+00	3.36E-08	0.00E+00	0.00E+00
Plutonium-239/240	0.00E+00	3.33E-08	0.00E+00	0.00E+00
Radium-226 + D	4.06E-05	1.16E-08	3.80E-01	4.41E-09
Radium-228 + D	3.30E-05	5.23E-09	3.10E-01	1.62E-09
Radon-222+ D	3.99E+02	1.80E-11	3.74E+06	6.74E-05
Strontium-90 + D	0.00E+00	1.13E-10	0.00E+00	0.00E+00
Technetium-99	0.00E+00	1.41E-11	0.00E+00	0.00E+00
Thorium-228 + D	3.25E-05	1.43E-07	3.05E-01	4.36E-08
Thorium-230	4.06E-05	2.85E-08	3.80E-01	1.08E-08
Thorium-232	3.30E-05	4.33E-08	3.10E-01	1.34E-08
Uranium-234	4.05E-05	1.14E-08	3.79E-01	4.32E-09
Uranium-235 + D	1.84E-06	1.01E-08	1.73E-02	1.75E-10
Uranium-238 + D	3.95E-05	9.35E-09	3.71E-01	3.46E-09
			total =	**6.75E-05**

Air concentration is derived using air particulate value of 26 ug/m^3 (2005 SER background average from monitor AMS-12) multiplied by the soil concentration.
Rn-222 is derived by multiplying the soil Ra-226 value by 256 g/m^3. This conversion factor is based on Rn-222 air background and Ra-226 soil background (i.e., 400 pCi/m^3 divided by 1.56 pCi/g)

TABLE E.0-4
Building Maintenance - BKGD - IngestSoilRad

Building Maintenance - Ingestion of Soil
Risk calculation for background

Intake Equation:

CDI =	(CS*EF*ED*IR*FI)	UNITS	adult
CDI =	Chronic Daily Intake	pCi	calculated below
CS =	Concentration of radionuclide in soil	pCi/g	see COC list below
EF =	Exposure frequency	days/yr	250
ED =	Exposure duration	yrs	25
IR =	Ingestion rate	g/day	0.05
FI =	Fraction of contaminated soil	unitless	1

COC	conc pCi/g	CSFos 1/pCi	ADULT CDI pCi	ADULT ILCR CDI*CSF
Cesium-137 + D	6.60E-02	4.33E-11	2.06E+01	8.93E-10
Lead-210 + D	1.56E+00	2.66E-09	4.88E+02	1.30E-06
Neptunium-237 + D	0.00E+00	1.62E-10	0.00E+00	0.00E+00
Plutonium-238	0.00E+00	2.72E-10	0.00E+00	0.00E+00
Plutonium-239/240	0.00E+00	2.76E-10	0.00E+00	0.00E+00
Radium-226 + D	1.56E+00	7.30E-10	4.88E+02	3.56E-07
Radium-228 + D	1.27E+00	2.29E-09	3.97E+02	9.09E-07
Radon-222+ D	NA	NA	NA	NA
Strontium-90 + D	0.00E+00	1.44E-10	0.00E+00	0.00E+00
Technetium-99	0.00E+00	7.66E-12	0.00E+00	0.00E+00
Thorium-228 + D	1.25E+00	8.09E-10	3.91E+02	3.16E-07
Thorium-230	1.56E+00	2.02E-10	4.88E+02	9.85E-08
Thorium-232	1.27E+00	2.31E-10	3.97E+02	9.17E-08
Uranium-234	1.56E+00	1.58E-10	4.86E+02	7.68E-08
Uranium-235 + D	7.09E-02	1.63E-10	2.22E+01	3.61E-09
Uranium-238 + D	1.52E+00	2.10E-10	4.75E+02	9.98E-08
			total =	**3.25E-06**

TABLE E.0-4
Building Maintenance - BKGD - IngestSWrad

Building Maintenance - Ingestion of Surface Water
Risk calculation for background

Intake Equation:

CDI =	(CW*EF*ED*IR)	
CDI =	Chronic Daily Intake	
CW =	Concentration of radionuclide in water	
EF =	Exposure frequency	
ED =	Exposure duration	
IR =	Ingestion rate	

UNITS	Assigned Values
pCi	adult
pCi/L	see COC table below
days/yr	NA
yrs	NA
L/day	NA

COC	conc pCi/L	CSFow 1/pCi	ADULT CDI pCi	ADULT ILCR CDI*CSF
Cesium-137 + D	1.70E+00	3.04E-11	NA	NA
Lead-210 + D	6.99E-01	1.27E-09	NA	NA
Neptunium-237 + D	1.19E-01	6.74E-11	NA	NA
Plutonium-238	1.10E-02	1.31E-10	NA	NA
Plutonium-239/240	3.17E-02	1.35E-10	NA	NA
Radium-226 + D	1.45E-01	3.86E-10	NA	NA
Radium-228 + D	2.50E+00	1.04E-09	NA	NA
Radon-222+ D	NA	NA	NA	NA
Strontium-90 + D	4.66E-01	7.40E-11	NA	NA
Technetium-99	6.20E+00	2.75E-12	NA	NA
Thorium-228 + D	2.50E+00	3.00E-10	NA	NA
Thorium-230	3.94E-02	9.10E-11	NA	NA
Thorium-232	2.50E+00	1.01E-10	NA	NA
Uranium-234	5.81E-01	7.07E-11	NA	NA
Uranium-235 + D	2.64E-02	7.18E-11	NA	NA
Uranium-238 + D	5.67E-01	8.71E-11	NA	NA
			total =	**0.00E+00**

TABLE E.0-4
Building Maintenance - BKGD - ExternalRad

Building Maintenance - External Radiation
Risk calculation for background

Intake Equation:

		UNITS	adult
CDI =	$(CS*EF*ED*ET_o*(1-SH_o))+(CS*EF*ED*ET_i*(1-SH_i))$		
CDI =	Chronic Daily Intake	yr pCi/g	calculated below
CS =	Concentration of radionuclide in soil	pCi/g	see COC list below
EF =	Fraction of year exposed to radiation	--	0.68
ED =	Exposure duration	yrs	25
ET_o =	Fraction of day spent outdoors	--	0.04
ET_i =	Fraction of day spent indoors	--	0.29
SH_o =	Shield factor outdoors	--	0.25
SH_i =	Shield factor indoors	--	0.5

COC	conc	CSFx	ADULT	
			CDI	ILCR
	pCi/g	g/pCi yr	yr pCi/g	CDI*CSF
Cesium-137 + D	6.60E-02	2.55E-06	2.00E-01	5.10E-07
Lead-210 + D	1.56E+00	4.21E-09	4.73E+00	1.99E-08
Neptunium-237 + D	0.00E+00	7.97E-07	0.00E+00	0.00E+00
Plutonium-238	0.00E+00	7.22E-11	0.00E+00	0.00E+00
Plutonium-239/240	0.00E+00	2.00E-10	0.00E+00	0.00E+00
Radium-226 + D	1.56E+00	8.49E-06	4.73E+00	4.01E-05
Radium-228 + D	1.27E+00	4.53E-06	3.85E+00	1.74E-05
Radon-222+ D	NA	NA	NA	NA
Strontium-90 + D	0.00E+00	1.96E-08	0.00E+00	0.00E+00
Technetium-99	0.00E+00	8.14E-11	0.00E+00	0.00E+00
Thorium-228 + D	1.25E+00	7.76E-06	3.79E+00	2.94E-05
Thorium-230	1.56E+00	8.19E-10	4.73E+00	3.87E-09
Thorium-232	1.27E+00	3.42E-10	3.85E+00	1.32E-09
Uranium-234	1.56E+00	2.52E-10	4.72E+00	1.19E-09
Uranium-235 + D	7.09E-02	5.43E-07	2.15E-01	1.17E-07
Uranium-238 + D	1.52E+00	1.14E-07	4.61E+00	5.25E-07
			total =	**8.81E-05**

TABLE E.0-4
Building Maintenance - BKGD - SumPaths

Building Maintenance - Summation of all Pathways
Risk calculation for background

	HQ	ILCR	rad only ILCR
Inhale	3.78E-02	6.77E-05	6.75E-05
Dermal Soil	1.98E-02	2.88E-06	NA
Ingest Soil	4.65E-02	7.58E-06	3.25E-06
Dermal Surface Water	NA	NA	NA
Ingest Surface Water	NA	NA	0.00E+00
External Radiation	NA	8.81E-05	8.81E-05
SUM	**1.04E-01**	**1.66E-04**	**1.59E-04**

Summation of all paths for individual nuclides

		Background Values as Applicable to Each Zone		
	Background ILCR	**Zone 2 ILCR**	**Zone 7 ILCR**	**Zone 8 ILCR**
Cesium-137 + D	5.11E-07	5.11E-07	5.11E-07	5.11E-07
Lead-210 + D	1.32E-06	1.32E-06	1.32E-06	1.32E-06
Neptunium-237 + D	0.00E+00	NA	NA	NA
Plutonium-238	0.00E+00	NA	NA	NA
Plutonium-239/240	0.00E+00	NA	NA	NA
Radium-226 + D	4.05E-05	4.05E-05	4.05E-05	4.05E-05
Radium-228 + D	1.83E-05	1.83E-05	1.83E-05	1.83E-05
Radon-222+ D	6.74E-05	6.74E-05	6.74E-05	6.74E-05
Strontium-90 + D	0.00E+00	NA	NA	NA
Technetium-99	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Thorium-228 + D	2.98E-05	2.98E-05	2.98E-05	2.98E-05
Thorium-230	1.13E-07	1.13E-07	1.13E-07	1.13E-07
Thorium-232	1.06E-07	1.06E-07	1.06E-07	1.06E-07
Uranium-234	8.24E-08	8.24E-08	8.24E-08	8.24E-08
Uranium-235 + D	1.20E-07	1.20E-07	1.20E-07	1.20E-07
Uranium-238 + D	6.28E-07	6.28E-07	6.28E-07	6.28E-07
SUM	**1.59E-04**	**1.59E-04**	**1.59E-04**	**1.59E-04**

TABLE E.0-4
Building Maintenance - BKGD - SumPaths

Summation of all paths for individual chemicals

	Background		Background Values as Applicable to Each Zone					
			Zone 2		Zone 7		Zone 8	
	ILCR	HQ	ILCR	HQ	ILCR	HQ	ILCR	HQ
1,1,2-Trichloroethane	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
1,1-Dichloroethylene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
1,2-dichloroethane	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
2-Butanone	No CSFs	0.00E+00	NA	NA	NA	NA	No CSFs	0.00E+00
3,3-Dichlorobenzidine	0.00E+00	No RfDs	NA	NA	NA	NA	NA	NA
4-Methylphenol	No CSFs	0.00E+00	NA	NA	NA	NA	NA	NA
4-Nitroanaline	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA
Acetone	No CSFs	0.00E+00	No CSFs	0.00E+00	NA	NA	No CSFs	0.00E+00
Antimony	No CSFs	4.97E-03	No CSFs	4.97E-03	No CSFs	4.97E-03	No CSFs	4.97E-03
Aroclor-1254	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Aroclor-1260	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Arsenic	5.25E-06	3.25E-02	5.25E-06	3.25E-02	5.25E-06	3.25E-02	5.25E-06	3.25E-02
Barium	No CSFs	1.01E-03	No CSFs	1.01E-03	NA	NA	No CSFs	1.01E-03
Benzene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Benzo(a)anthracene	0.00E+00	No RfDs	0.00E+00	No RfDs	0.00E+00	No RfDs	NA	NA
Benzo(a)pyrene	0.00E+00	No RfDs	0.00E+00	No RfDs	0.00E+00	No RfDs	NA	NA
Benzo(b)fluoranthene	0.00E+00	No RfDs	0.00E+00	No RfDs	0.00E+00	No RfDs	NA	NA
Benzo(k)fluoranthene	0.00E+00	No RfDs	0.00E+00	No RfDs	0.00E+00	No RfDs	NA	NA
Beryllium	1.98E-06	7.41E-04	1.98E-06	7.41E-04	1.98E-06	7.41E-04	1.98E-06	7.41E-04
Bis(2-chloroisopropyl)ether	No CSFs	0.00E+00	NA	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA
Boron	No CSFs	6.49E-06	NA	NA	NA	NA	NA	NA
Bromodichloromethane	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Bromoform	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA
Bromomethane	No CSFs	0.00E+00	NA	NA	NA	NA	NA	NA
Cadmium	8.49E-10	8.86E-04	8.49E-10	8.86E-04	8.49E-10	8.86E-04	8.49E-10	8.86E-04
Carbazole	0.00E+00	No RfDs	NA	NA	NA	NA	NA	NA
Carbon disulfide	No CSFs	0.00E+00	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Chlordane	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA
Chlorobenzene	No CSFs	0.00E+00	NA	NA	NA	NA	NA	NA
Chloroform	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA
Chromium (VI)	1.41E-07	6.03E-03	1.41E-07	6.03E-03	NA	NA	1.41E-07	6.03E-03
Chrysene	0.00E+00	No RfDs	0.00E+00	No RfDs	0.00E+00	No RfDs	0.00E+00	No RfDs
Cobalt	2.86E-08	1.96E-03	NA	NA	NA	NA	NA	NA
Copper	No CSFs	3.93E-04	NA	NA	NA	NA	NA	NA
Cyanide	No CSFs	0.00E+00	NA	NA	NA	NA	NA	NA
Cyclohexanone	No CSFs	0.00E+00	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	0.00E+00	No RfDs	0.00E+00	No RfDs	0.00E+00	No RfDs	0.00E+00	No RfDs
Dieldrin	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Di-n-octylphthalate	No CSFs	0.00E+00	NA	NA	NA	NA	NA	NA

TABLE E.0-4
Building Maintenance - BKGD - SumPaths

Summation of all paths for individual chemicals (continued)

	Background		Background Values as Applicable to Each Zone					
			Zone 2		Zone 7		Zone 8	
	ILCR	HQ	ILCR	HQ	ILCR	HQ	ILCR	HQ
Ethyl ether	No CSFs	0.00E+00	NA	NA	NA	NA	NA	NA
Ethylbenzene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Fluoride	No CSFs	2.63E-05	NA	NA	NA	NA	NA	NA
Heptachlorodibenzofuran	0.00E+00	No RfDs	NA	NA	NA	NA	NA	NA
Heptachlorodibenzo-p-dioxin	0.00E+00	No RfDs	NA	NA	NA	NA	NA	NA
Hexachlorodibenzofuran	0.00E+00	No RfDs	NA	NA	NA	NA	NA	NA
Hexachlorodibenzo-p-dioxin	0.00E+00	No RfDs	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	0.00E+00	No RfDs	0.00E+00	No RfDs	0.00E+00	No RfDs	0.00E+00	No RfDs
Lead	No CSFs	No RfDs	No CSFs	No RfDs	NA	NA	No CSFs	No RfDs
Manganese	No CSFs	4.11E-02	NA	NA	NA	NA	No CSFs	4.11E-02
Mercury	No CSFs	1.28E-04	No CSFs	1.28E-04	NA	NA	No CSFs	1.28E-04
Methanol	No CSFs	0.00E+00	NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone	No CSFs	0.00E+00	No CSFs	0.00E+00	NA	NA	No CSFs	0.00E+00
Methylene chloride	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Molybdenum	No CSFs	5.24E-04	No CSFs	5.24E-04	No CSFs	5.24E-04	No CSFs	5.24E-04
Nickel	No CSFs	1.15E-03	NA	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA
N-nitrosodipropylamine	0.00E+00	No RfDs	NA	NA	NA	NA	NA	NA
Octachlorodibenzofuran	0.00E+00	No RfDs	NA	NA	NA	NA	NA	NA
Octochlorodibenzo-p-dioxin	0.00E+00	No RfDs	NA	NA	NA	NA	NA	NA
Pentachlorodibenzofuran	No CSFs	No RfDs	NA	NA	NA	NA	NA	NA
Pentachlorodibenzo-p-dioxin	0.00E+00	No RfDs	NA	NA	NA	NA	NA	NA
Pentachlorophenol	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA
Phenanthrene	No CSFs	No RfDs	No CSFs	No RfDs	No CSFs	No RfDs	No CSFs	No RfDs
Selenium	No CSFs	1.19E-04	No CSFs	1.19E-04	NA	NA	No CSFs	1.19E-04
Silver	No CSFs	1.16E-04	No CSFs	1.16E-04	No CSFs	1.16E-04	No CSFs	1.16E-04
Tetrachlorodibenzofuran	No CSFs	No RfDs	NA	NA	NA	NA	NA	NA
Tetrachlorodibenzo-p-dioxin	No CSFs	No RfDs	NA	NA	NA	NA	NA	NA
Tetrachloroethylene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Thallium	No CSFs	3.28E-03	NA	NA	NA	NA	NA	NA
Toluene	No CSFs	0.00E+00	No CSFs	0.00E+00	NA	NA	No CSFs	0.00E+00
Tributyl phosphate	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA
Trichloroethylene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Trifluorochloromethane	No CSFs	No RfDs	NA	NA	NA	NA	NA	NA
Uranium	No CSFs	3.75E-03	No CSFs	3.75E-03	No CSFs	3.75E-03	No CSFs	3.75E-03
Vanadium	No CSFs	5.30E-03	NA	NA	NA	NA	NA	NA
Vinyl chloride	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA
Xylenes	No CSFs	0.00E+00	No CSFs	0.00E+00	NA	NA	No CSFs	0.00E+00
Zinc	No CSFs	1.52E-04	NA	NA	NA	NA	NA	NA
SUM	**7.41E-06**	**1.04E-01**	**7.38E-06**	**5.08E-02**	**7.24E-06**	**4.35E-02**	**7.38E-06**	**9.19E-02**

TABLE E.0-5
Museum Worker - BKGD - InhaleChem

Museum Worker - Inhalation of Gases & Particulates
Risk calculation for background

Intake Equation:			UNITS	adult
	CDI =	(CS*EF*ED*IR*ET)/(BW*AT)		
	CDI =	Chronic Daily Intake	mg/kgday	calculated below
	CA =	Concentration of chemical in air	mg/m^3	see COC list below
	EF =	Exposure frequency	days/yr	250
	ED =	Exposure duration	yrs	25
	IR =	Inhalation rate	m^3/hr	1.5
	ET =	Exposure time	hrs/day	1
	BW =	Body weight	kg	70
	ATc =	Average time for carcinogens	days	25550
	ATn =	Average time for non-carcinogens	days	9125

COC	conc	RfDI	CSFI	ADULT			
				CDI	HQ	CDI	ILCR
	mg/m^3	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	0.00E+00	NA	5.60E-02	NA	NA	0.00E+00	0.00E+00
1,1-Dichloroethylene	0.00E+00	5.71E-02	1.75E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,2-dichloroethane	0.00E+00	NA	9.10E-02	NA	NA	0.00E+00	0.00E+00
2-Butanone	0.00E+00	1.43E+00	NA	0.00E+00	0.00E+00	NA	NA
3,3-Dichlorobenzidine	0.00E+00	NA	NA	NA	NA	NA	NA
4-Methylphenol	0.00E+00	NA	NA	NA	NA	NA	NA
4-Nitroanaline	0.00E+00	1.14E-03	NA	0.00E+00	0.00E+00	NA	NA
Acetone	0.00E+00	NA	NA	NA	NA	NA	NA
Antimony	7.46E-08	NA	NA	NA	NA	NA	NA
Aroclor-1254	0.00E+00	NA	2.00E+00	NA	NA	0.00E+00	0.00E+00
Aroclor-1260	0.00E+00	NA	2.00E+00	NA	NA	0.00E+00	0.00E+00
Arsenic	3.22E-07	NA	1.51E+01	NA	NA	1.69E-09	2.55E-08
Barium	4.86E-06	1.43E-04	NA	7.14E-08	4.99E-04	NA	NA
Benzene	0.00E+00	8.57E-03	2.73E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Benzo(a)anthracene	0.00E+00	NA	3.08E-01	NA	NA	0.00E+00	0.00E+00
Benzo(a)pyrene	0.00E+00	NA	3.08E-01	NA	NA	0.00E+00	0.00E+00
Benzo(b)fluoranthene	0.00E+00	NA	3.08E+00	NA	NA	0.00E+00	0.00E+00
Benzo(k)fluoranthene	0.00E+00	NA	3.08E-02	NA	NA	0.00E+00	0.00E+00
Beryllium	3.74E-08	5.71E-06	8.40E+00	5.50E-10	9.62E-05	1.96E-10	1.65E-09
Bis(2-chloroisopropyl)ether	0.00E+00	NA	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	0.00E+00	NA	NA	NA	NA	NA	NA
Boron	6.66E-08	5.71E-03	NA	9.77E-10	1.71E-07	NA	NA
Bromodichloromethane	0.00E+00	NA	NA	NA	NA	NA	NA
Bromoform	0.00E+00	NA	3.85E-03	NA	NA	0.00E+00	0.00E+00
Bromomethane	0.00E+00	1.43E-03	NA	0.00E+00	0.00E+00	NA	NA
Cadmium	2.57E-08	NA	6.30E+00	NA	NA	1.35E-10	8.49E-10
Carbazole	0.00E+00	NA	NA	NA	NA	NA	NA
Carbon disulfide	0.00E+00	2.00E-01	NA	0.00E+00	0.00E+00	NA	NA
Carbon tetrachloride	0.00E+00	NA	5.25E-02	NA	NA	0.00E+00	0.00E+00
Chlordane	0.00E+00	2.00E-04	3.50E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chlorobenzene	0.00E+00	1.43E-02	NA	0.00E+00	0.00E+00	NA	NA
Chloroform	0.00E+00	NA	8.05E-02	NA	NA	0.00E+00	0.00E+00
Chromium (VI)	6.42E-07	2.86E-05	4.20E+01	9.43E-09	3.30E-04	3.37E-09	1.41E-07
Chrysene	0.00E+00	NA	3.08E-03	NA	NA	0.00E+00	0.00E+00
Cobalt	5.56E-07	5.71E-06	9.80E+00	8.17E-09	1.43E-03	2.92E-09	2.86E-08
Copper	8.14E-07	NA	NA	NA	NA	NA	NA
Cyanide	0.00E+00	NA	NA	NA	NA	NA	NA
Cyclohexanone	0.00E+00	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	0.00E+00	NA	3.08E+00	NA	NA	0.00E+00	0.00E+00
Dieldrin	0.00E+00	NA	1.61E+01	NA	NA	0.00E+00	0.00E+00
Di-n-octylphthalate	0.00E+00	NA	NA	NA	NA	NA	NA
Ethyl ether	0.00E+00	NA	NA	NA	NA	NA	NA
Ethylbenzene	0.00E+00	2.86E-01	3.85E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Fluoride	8.32E-08	NA	NA	NA	NA	NA	NA
Heptachlorodibenzofuran	0.00E+00	NA	1.16E+03	NA	NA	0.00E+00	0.00E+00
Heptachlorodibenzo-p-dioxin	0.00E+00	NA	1.16E+03	NA	NA	0.00E+00	0.00E+00
Hexachlorodibenzofuran	0.00E+00	NA	1.16E+04	NA	NA	0.00E+00	0.00E+00
Hexachlorodibenzo-p-dioxin	0.00E+00	NA	1.16E+04	NA	NA	0.00E+00	0.00E+00
Indeno(1,2,3-cd)pyrene	0.00E+00	NA	3.08E-01	NA	NA	0.00E+00	0.00E+00
Lead	7.96E-07	NA	NA	NA	NA	NA	NA
Manganese	3.46E-05	1.43E-05	NA	5.08E-07	3.55E-02	NA	NA
Mercury	1.82E-09	NA	NA	NA	NA	NA	NA
Methanol	0.00E+00	NA	NA	NA	NA	NA	NA
Methyl-2-pentanone	0.00E+00	8.57E-01	NA	0.00E+00	0.00E+00	NA	NA
Methylene chloride	0.00E+00	8.57E-01	1.65E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Molybdenum	1.36E-07	NA	NA	NA	NA	NA	NA
Nickel	1.19E-06	NA	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	0.00E+00	NA	NA	NA	NA	NA	NA
N-nitrosodipropylamine	0.00E+00	NA	NA	NA	NA	NA	NA
Octochlorodibenzofuran	0.00E+00	NA	1.16E+02	NA	NA	0.00E+00	0.00E+00
Octochlorodibenzo-p-dioxin	0.00E+00	NA	1.16E+02	NA	NA	0.00E+00	0.00E+00
Pentachlorodibenzofuran	0.00E+00	NA	5.78E+03	NA	NA	0.00E+00	0.00E+00
Pentachlorodibenzo-p-dioxin	0.00E+00	NA	5.78E+04	NA	NA	0.00E+00	0.00E+00
Pentachlorophenol	0.00E+00	NA	NA	NA	NA	NA	NA
Phenanthrene	0.00E+00	NA	NA	NA	NA	NA	NA
Selenium	3.09E-08	NA	NA	NA	NA	NA	NA
Silver	2.94E-08	NA	NA	NA	NA	NA	NA
Tetrachlorodibenzofuran	0.00E+00	NA	1.16E+04	NA	NA	0.00E+00	0.00E+00
Tetrachlorodibenzo-p-dioxin	0.00E+00	NA	1.16E+05	NA	NA	0.00E+00	0.00E+00
Tetrachloroethylene	0.00E+00	1.71E-01	2.07E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Thallium	1.51E-08	NA	NA	NA	NA	NA	NA
Toluene	0.00E+00	1.43E+00	NA	0.00E+00	0.00E+00	NA	NA
Tributyl phosphate	0.00E+00	NA	NA	NA	NA	NA	NA
Trichloroethylene	0.00E+00	1.14E-02	4.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Trifluorochloromethane	0.00E+00	NA	NA	NA	NA	NA	NA
Uranium	1.19E-07	NA	NA	NA	NA	NA	NA
Vanadium	1.08E-06	NA	NA	NA	NA	NA	NA
Vinyl chloride	0.00E+00	2.86E-02	3.08E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xylenes	0.00E+00	2.86E-02	NA	0.00E+00	0.00E+00	NA	NA
Zinc	2.32E-06	NA	NA	NA	NA	NA	NA
				total =	3.78E-02	total =	1.98E-07

Air concentration is derived using air particulate value of 26 ug/m^3 (2005 SER background average from monitor AMS-12) multiplied by the soil concentration.

TABLE E.0-5
Museum Worker - BKGD - DermalSoilChem

Museum Worker - Dermal Contact with Soil/Sediment
Risk calculation for background

Intake Equation:			UNITS	adult
	CDI =	(CS*AB*SA*EF*ED*AF*CF)/(BW*AT)		
	CDI =	Chronic Daily Intake	mg/kgday	calculated below
	CS =	Concentration of chemical in soil	mg/kg	see COC list below
	AB	Absorption factor	--	see COC list below
	SA	Surface area of exposed skin	cm^2/day	904
	EF =	Exposure frequency	days/yr	250
	ED =	Exposure duration	yrs	25
	AF =	Adherence factor	mg/cm^2	0.07
	CF =	Conversion factor	kg/mg	1.00E-06
	BW =	Body weight	kg	70
	ATc =	Average time for carcinogens	days	25550
	ATn =	Average time for non-carcinogens	days	9125

COC	conc	AB	RfDd	CSFd	ADULT			
					CDI	HQ	CDI	ILCR
	mg/kg	unitless	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	0.00E+00	1.00E-02	3.24E-03	7.04E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,1-Dichloroethylene	0.00E+00	1.00E-02	5.00E-02	6.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,2-dichloroethane	0.00E+00	1.00E-02	2.00E-02	9.10E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2-Butanone	0.00E+00	1.00E-02	4.80E-01	NA	0.00E+00	0.00E+00	NA	NA
3,3-Dichlorobenzidine	0.00E+00	1.00E-02	NA	9.00E-01	NA	NA	0.00E+00	0.00E+00
4-Methylphenol	0.00E+00	1.00E-02	3.25E-03	NA	0.00E+00	0.00E+00	NA	NA
4-Nitroanaline	0.00E+00	1.00E-02	2.40E-03	2.63E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Acetone	0.00E+00	1.00E-02	7.47E-01	NA	0.00E+00	0.00E+00	NA	NA
Antimony	2.87E+00	1.00E-03	8.00E-06	NA	1.78E-09	2.22E-04	NA	NA
Aroclor-1254	0.00E+00	1.40E-01	1.80E-05	2.22E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Aroclor-1260	0.00E+00	1.40E-01	1.80E-05	2.22E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Arsenic	1.24E+01	3.00E-02	1.23E-04	3.66E+00	2.30E-07	1.87E-03	8.23E-08	3.01E-07
Barium	1.87E+02	1.00E-03	1.40E-02	NA	1.16E-07	8.27E-06	NA	NA
Benzene	0.00E+00	1.00E-02	3.88E-03	5.67E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Benzo(a)anthracene	0.00E+00	1.30E-01	NA	2.35E+00	NA	NA	0.00E+00	0.00E+00
Benzo(a)pyrene	0.00E+00	1.30E-01	NA	2.35E+01	NA	NA	0.00E+00	0.00E+00
Benzo(b)fluoranthene	0.00E+00	1.30E-01	NA	2.35E+00	NA	NA	0.00E+00	0.00E+00
Benzo(k)fluoranthene	0.00E+00	1.30E-01	NA	2.35E-01	NA	NA	0.00E+00	0.00E+00
Beryllium	1.44E+00	1.00E-03	2.00E-05	4.30E+02	8.92E-10	4.46E-05	3.18E-10	1.37E-07
Bis(2-chloroisopropyl)ether	0.00E+00	1.00E-02	2.00E-02	NA	0.00E+00	0.00E+00	NA	NA
Bis(2-ethylhexyl)phthalate	0.00E+00	1.00E-02	3.80E-03	7.37E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Boron	2.56E+00	1.00E-03	1.80E-01	NA	1.59E-09	8.81E-09	NA	NA
Bromodichloromethane	0.00E+00	1.00E-02	1.98E-02	6.33E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Bromoform	0.00E+00	1.00E-02	1.20E-02	1.32E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Bromomethane	0.00E+00	1.00E-02	1.12E-03	NA	0.00E+00	0.00E+00	NA	NA
Cadmium	9.89E-01	1.00E-03	1.00E-05	NA	6.12E-10	6.12E-05	NA	NA
Carbazole	0.00E+00	1.00E-02	NA	2.86E-02	NA	NA	0.00E+00	0.00E+00
Carbon disulfide	0.00E+00	2.50E-01	6.30E-02	NA	0.00E+00	0.00E+00	NA	NA
Carbon tetrachloride	0.00E+00	1.00E-02	4.55E-04	2.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chlordane	0.00E+00	4.00E-02	2.50E-04	7.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chlorobenzene	0.00E+00	1.00E-02	6.20E-03	NA	0.00E+00	0.00E+00	NA	NA
Chloroform	0.00E+00	1.00E-02	2.00E-03	3.05E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chromium (VI)	2.47E+01	1.00E-03	6.00E-05	NA	1.53E-08	2.55E-04	NA	NA
Chrysene	0.00E+00	1.30E-01	NA	2.35E-02	NA	NA	0.00E+00	0.00E+00
Cobalt	2.14E+01	1.00E-03	1.60E-02	NA	1.33E-08	8.28E-07	NA	NA
Copper	3.13E+01	1.00E-03	1.20E-02	NA	1.94E-08	1.62E-06	NA	NA
Cyanide	0.00E+00	1.00E-02	3.40E-03	NA	0.00E+00	0.00E+00	NA	NA
Cyclohexanone	0.00E+00	1.00E-02	4.00E+00	NA	0.00E+00	0.00E+00	NA	NA
Dibenzo(a,h)anthracene	0.00E+00	1.30E-01	NA	2.35E+01	NA	NA	0.00E+00	0.00E+00
Dieldrin	0.00E+00	1.00E-02	2.50E-05	3.20E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Di-n-octylphthalate	0.00E+00	1.00E-02	3.60E-02	NA	0.00E+00	0.00E+00	NA	NA
Ethyl ether	0.00E+00	1.00E-02	1.60E-01	NA	0.00E+00	0.00E+00	NA	NA
Ethylbenzene	0.00E+00	1.00E-02	9.70E-02	NA	0.00E+00	0.00E+00	NA	NA
Fluoride	3.20E+00	1.00E-03	5.82E-02	NA	1.98E-09	3.40E-08	NA	NA
Heptachlorodibenzofuran	0.00E+00	1.00E-02	NA	3.00E+03	NA	NA	0.00E+00	0.00E+00
Heptachlorodibenzo-p-dioxin	0.00E+00	3.00E-02	NA	3.00E+03	NA	NA	0.00E+00	0.00E+00
Hexachlorodibenzofuran	0.00E+00	1.00E-02	NA	3.00E+04	NA	NA	0.00E+00	0.00E+00
Hexachlorodibenzo-p-dioxin	0.00E+00	3.00E-02	NA	3.00E+04	NA	NA	0.00E+00	0.00E+00
Indeno(1,2,3-cd)pyrene	0.00E+00	1.30E-01	NA	2.35E+00	NA	NA	0.00E+00	0.00E+00
Lead	3.06E+01	1.00E-03	NA	NA	NA	NA	NA	NA
Manganese	1.33E+03	1.00E-03	5.60E-03	NA	8.24E-07	1.47E-04	NA	NA
Mercury	7.00E-02	1.00E-03	2.10E-05	NA	4.33E-11	2.06E-06	NA	NA
Methanol	0.00E+00	1.00E-02	4.00E-01	NA	0.00E+00	0.00E+00	NA	NA
Methyl-2-pentanone	0.00E+00	1.00E-02	8.40E-02	NA	0.00E+00	0.00E+00	NA	NA
Methylene chloride	0.00E+00	1.00E-02	5.70E-02	7.89E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Molybdenum	5.24E+00	1.00E-03	1.90E-03	NA	3.24E-09	1.71E-06	NA	NA
Nickel	4.56E+01	1.00E-03	5.40E-03	NA	2.82E-08	5.23E-06	NA	NA
N-nitrosodiphenylamine	0.00E+00	1.00E-02	5.00E-03	1.96E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
N-nitrosodipropylamine	0.00E+00	1.00E-02	NA	2.80E+01	NA	NA	0.00E+00	0.00E+00
Octachlorodibenzofuran	0.00E+00	1.00E-02	NA	3.00E+02	NA	NA	0.00E+00	0.00E+00
Octochlorodibenzo-p-dioxin	0.00E+00	3.00E-02	NA	3.00E+02	NA	NA	0.00E+00	0.00E+00
Pentachlorodibenzofuran	0.00E+00	1.00E-02	NA	1.50E+04	NA	NA	0.00E+00	0.00E+00
Pentachlorodibenzo-p-dioxin	0.00E+00	3.00E-02	NA	1.50E+05	NA	NA	0.00E+00	0.00E+00
Pentachlorophenol	0.00E+00	2.50E-01	3.00E-02	1.20E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Phenanthrene	0.00E+00	1.00E-02	NA	NA	NA	NA	NA	NA
Selenium	1.19E+00	1.00E-03	2.20E-03	NA	7.37E-10	3.35E-07	NA	NA
Silver	1.13E+00	1.00E-03	9.00E-04	NA	7.00E-10	7.77E-07	NA	NA
Tetrachlorodibenzofuran	0.00E+00	1.00E-02	NA	3.00E+04	NA	NA	0.00E+00	0.00E+00
Tetrachlorodibenzo-p-dioxin	0.00E+00	3.00E-02	NA	3.00E+05	NA	NA	0.00E+00	0.00E+00
Tetrachloroethylene	0.00E+00	1.00E-02	1.00E-02	5.40E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Thallium	5.80E-01	1.00E-03	1.80E-05	NA	3.59E-10	2.00E-05	NA	NA
Toluene	0.00E+00	1.00E-02	6.40E-02	NA	0.00E+00	0.00E+00	NA	NA
Tributyl phosphate	0.00E+00	1.00E-02	1.00E-01	1.08E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Trichloroethylene	0.00E+00	1.00E-02	4.50E-05	2.67E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Trifluorochloromethane	0.00E+00	NA	NA	NA	NA	NA	NA	NA
Uranium	4.56E+00	1.00E-03	5.10E-04	NA	2.82E-09	5.54E-06	NA	NA
Vanadium	4.14E+01	1.00E-03	7.00E-05	NA	2.56E-08	3.66E-04	NA	NA
Vinyl chloride	0.00E+00	1.00E-02	3.00E-03	1.50E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xylenes	0.00E+00	1.00E-02	1.84E-01	NA	0.00E+00	0.00E+00	NA	NA
Zinc	8.93E+01	1.00E-03	6.00E-02	NA	5.53E-08	9.22E-07	NA	NA
					total =	3.02E-03	total =	4.38E-07

TABLE E.0-5
Museum Worker - BKGD - IngestSoilChem

Museum Worker - Ingestion of Soil
Risk calculation for background

Intake Equation:			UNITS	adult
	CDI =	(CS*EF*ED*IR*FI*CF)/(BW*AT)		
	CDI =	Chronic Daily Intake	mg/kgday	calculated below
	CS =	Concentration of chemical in soil	mg/kg	see COC list below
	EF =	Exposure frequency	days/yr	250
	ED =	Exposure duration	yrs	25
	IR =	Ingestion rate	mg/day	50
	FI =	Fraction of contaminated soil	unitless	1
	CF =	Conversion factor	kg/mg	1.00E-06
	BW =	Body weight	kg	70
	ATc =	Average time for carcinogens	days	25550
	ATn =	Average time for non-carcinogens	days	9125

COC	conc	RfDo	CSFo	ADULT CDI	ADULT HQ	ADULT CDI	ADULT ILCR
	mg/kg	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	0.00E+00	4.00E-03	5.70E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,1-Dichloroethylene	0.00E+00	5.00E-02	6.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,2-dichloroethane	0.00E+00	2.00E-02	9.10E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2-Butanone	0.00E+00	6.00E-01	NA	0.00E+00	0.00E+00	NA	NA
3,3-Dichlorobenzidine	0.00E+00	NA	4.50E-01	NA	NA	0.00E+00	0.00E+00
4-Methylphenol	0.00E+00	5.00E-03	NA	0.00E+00	0.00E+00	NA	NA
4-Nitroanaline	0.00E+00	3.00E-03	2.10E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Acetone	0.00E+00	9.00E-01	NA	0.00E+00	0.00E+00	NA	NA
Antimony	2.87E+00	4.00E-04	NA	1.40E-06	3.51E-03	NA	NA
Aroclor-1254	0.00E+00	2.00E-05	2.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Aroclor-1260	0.00E+00	2.00E-05	2.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Arsenic	1.24E+01	3.00E-04	1.50E+00	6.07E-06	2.02E-02	2.17E-06	3.25E-06
Barium	1.87E+02	2.00E-01	NA	9.15E-05	4.57E-04	NA	NA
Benzene	0.00E+00	4.00E-03	5.50E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Benzo(a)anthracene	0.00E+00	NA	7.30E-01	NA	NA	0.00E+00	0.00E+00
Benzo(a)pyrene	0.00E+00	NA	7.30E+00	NA	NA	0.00E+00	0.00E+00
Benzo(b)fluoranthene	0.00E+00	NA	7.30E-01	NA	NA	0.00E+00	0.00E+00
Benzo(k)fluoranthene	0.00E+00	NA	7.30E-02	NA	NA	0.00E+00	0.00E+00
Beryllium	1.44E+00	2.00E-03	4.30E+00	7.05E-07	3.52E-04	2.52E-07	1.08E-06
Bis(2-chloroisopropyl)ether	0.00E+00	4.00E-02	NA	0.00E+00	0.00E+00	NA	NA
Bis(2-ethylhexyl)phthalate	0.00E+00	2.00E-02	1.40E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Boron	2.56E+00	2.00E-01	NA	1.25E-06	6.26E-06	NA	NA
Bromodichloromethane	0.00E+00	2.00E-02	6.20E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Bromoform	0.00E+00	2.00E-02	7.90E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Bromomethane	0.00E+00	1.40E-03	NA	0.00E+00	0.00E+00	NA	NA
Cadmium	9.89E-01	1.00E-03	NA	4.84E-07	4.84E-04	NA	NA
Carbazole	0.00E+00	NA	2.00E-03	NA	NA	0.00E+00	0.00E+00
Carbon disulfide	0.00E+00	1.00E-01	NA	0.00E+00	0.00E+00	NA	NA
Carbon tetrachloride	0.00E+00	7.00E-04	1.30E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chlordane	0.00E+00	5.00E-04	3.50E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chlorobenzene	0.00E+00	2.00E-02	NA	0.00E+00	0.00E+00	NA	NA
Chloroform	0.00E+00	1.00E-02	6.10E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chromium (VI)	2.47E+01	3.00E-03	NA	1.21E-05	4.03E-03	NA	NA
Chrysene	0.00E+00	NA	7.30E-03	NA	NA	0.00E+00	0.00E+00
Cobalt	2.14E+01	2.00E-02	NA	1.05E-05	5.23E-04	NA	NA
Copper	3.13E+01	4.00E-02	NA	1.53E-05	3.83E-04	NA	NA
Cyanide	0.00E+00	2.00E-02	NA	0.00E+00	0.00E+00	NA	NA
Cyclohexanone	0.00E+00	5.00E+00	NA	0.00E+00	0.00E+00	NA	NA
Dibenzo(a,h)anthracene	0.00E+00	NA	7.30E+00	NA	NA	0.00E+00	0.00E+00
Dieldrin	0.00E+00	5.00E-05	1.60E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Di-n-octylphthalate	0.00E+00	4.00E-02	NA	0.00E+00	0.00E+00	NA	NA
Ethyl ether	0.00E+00	2.00E-01	NA	0.00E+00	0.00E+00	NA	NA
Ethylbenzene	0.00E+00	1.00E-01	NA	0.00E+00	0.00E+00	NA	NA
Fluoride	3.20E+00	6.00E-02	NA	1.57E-06	2.61E-05	NA	NA
Heptachlorodibenzofuran	0.00E+00	NA	1.50E+03	NA	NA	0.00E+00	0.00E+00
Heptachlorodibenzo-p-dioxin	0.00E+00	NA	1.50E+03	NA	NA	0.00E+00	0.00E+00
Hexachlorodibenzofuran	0.00E+00	NA	1.50E+03	NA	NA	0.00E+00	0.00E+00
Hexachlorodibenzo-p-dioxin	0.00E+00	NA	1.50E+04	NA	NA	0.00E+00	0.00E+00
Indeno(1,2,3-cd)pyrene	0.00E+00	NA	7.30E-01	NA	NA	0.00E+00	0.00E+00
Lead	3.06E+01	NA	NA	NA	NA	NA	NA
Manganese	1.33E+03	1.40E-01	NA	6.51E-04	4.65E-03	NA	NA
Mercury	7.00E-02	3.00E-04	NA	3.42E-08	1.14E-04	NA	NA
Methanol	0.00E+00	5.00E-01	NA	0.00E+00	0.00E+00	NA	NA
Methyl-2-pentanone	0.00E+00	8.00E-02	NA	0.00E+00	0.00E+00	NA	NA
Methylene chloride	0.00E+00	6.00E-02	7.50E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Molybdenum	5.24E+00	5.00E-03	NA	2.56E-06	5.13E-04	NA	NA
Nickel	4.56E+01	2.00E-02	NA	2.23E-05	1.12E-03	NA	NA
N-nitrosodiphenylamine	0.00E+00	2.00E-02	4.90E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00
N-nitrosodipropylamine	0.00E+00	NA	7.00E+00	NA	NA	0.00E+00	0.00E+00
Octachlorodibenzofuran	0.00E+00	NA	1.50E+02	NA	NA	0.00E+00	0.00E+00
Octochlorodibenzo-p-dioxin	0.00E+00	NA	1.50E+02	NA	NA	0.00E+00	0.00E+00
Pentachlorodibenzofuran	0.00E+00	NA	7.50E+03	NA	NA	0.00E+00	0.00E+00
Pentachlorodibenzo-p-dioxin	0.00E+00	NA	7.50E+04	NA	NA	0.00E+00	0.00E+00
Pentachlorophenol	0.00E+00	3.00E-02	1.20E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Phenanthrene	0.00E+00	NA	NA	NA	NA	NA	NA
Selenium	1.19E+00	5.00E-03	NA	5.82E-07	1.16E-04	NA	NA
Silver	1.13E+00	5.00E-03	NA	5.53E-07	1.11E-04	NA	NA
Tetrachlorodibenzofuran	0.00E+00	NA	1.50E+04	NA	NA	0.00E+00	0.00E+00
Tetrachlorodibenzo-p-dioxin	0.00E+00	NA	1.50E+05	NA	NA	0.00E+00	0.00E+00
Tetrachloroethylene	0.00E+00	1.00E-02	5.40E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Thallium	5.80E-01	9.00E-05	NA	2.84E-07	3.15E-03	NA	NA
Toluene	0.00E+00	8.00E-02	NA	0.00E+00	0.00E+00	NA	NA
Tributyl phosphate	0.00E+00	2.00E-01	5.40E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Trichloroethylene	0.00E+00	3.00E-04	4.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Trifluorochloromethane	0.00E+00	NA	NA	NA	NA	NA	NA
Uranium	4.58E+00	6.00E-04	NA	2.23E-06	3.72E-03	NA	NA
Vanadium	4.14E+01	7.00E-03	NA	2.03E-05	2.89E-03	NA	NA
Vinyl chloride	0.00E+00	3.00E-03	1.50E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xylenes	0.00E+00	2.00E-01	NA	0.00E+00	0.00E+00	NA	NA
Zinc	8.93E+01	3.00E-01	NA	4.37E-05	1.46E-04	NA	NA
				total =	4.65E-02	total =	4.33E-06

TABLE E.0-5
Museum Worker - BKGD - DermalSWchem

Museum Worker - Dermal Contact with Surface Water
Risk calculation for background

Intake Equation:

			UNITS	adult
CDI =	(DA*EF*ED*SA)/(BW*AT)		mg/kgday	calculated below
CDI =	Chronic Daily Intake			
DA =	Dermal absorption dose		mg/cm²day	see COC list below
EF =	Exposure frequency		days/yr	8
ED =	Exposure duration		yrs	25
SA =	Surface area of skin		cm²	904
BW =	Body weight		kg	70
ATc =	Average time for carcinogens		days	25550
ATn =	Average time for non-carcinogens		days	9125

where: DA = C_v*K_p*CF*ET

C_v =	concentation of ith contaminant in surface water	mg/L	see COC list below
K_p =	permeability constant for ith contaminant	cm/hr	see COC list below
CF =	conversion factor	L/cm³	0.001
ET =	exposure time	hr/d	0.5

COC	C_v	K_p	DA	RfD	CSF	ADULT CDI	ADULT HQ	ADULT CDI	ADULT ILCR
	mg/L	cm/hr	mg/cm²day	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	0.00E+00	6.43E-03	0.00E+00	3.24E-03	7.04E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,1-Dichloroethylene	0.00E+00	1.59E-02	0.00E+00	5.00E-02	6.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,2-dichloroethane	0.00E+00	5.34E-03	0.00E+00	2.00E-02	9.10E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2-Butanone	0.00E+00	1.11E-03	0.00E+00	4.80E-01	NA	0.00E+00	0.00E+00	NA	NA
3,3-Dichlorobenzidine	0.00E+00	1.69E-02	0.00E+00	NA	9.00E-01	NA	NA	0.00E+00	0.00E+00
4-Methylphenol	0.00E+00	9.95E-03	0.00E+00	3.25E-03	NA	0.00E+00	0.00E+00	NA	NA
4-Nitroanaline	0.00E+00	2.66E-03	0.00E+00	2.40E-03	2.63E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Acetone	0.00E+00	5.69E-04	0.00E+00	7.47E-01	NA	0.00E+00	0.00E+00	NA	NA
Antimony	5.00E-04	1.00E-03	2.50E-10	8.00E-06	NA	7.08E-11	8.85E-06	NA	NA
Aroclor-1254	0.00E+00	1.29E+00	0.00E+00	1.80E-05	2.22E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Aroclor-1260	0.00E+00	5.48E+00	0.00E+00	1.80E-05	2.22E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Arsenic	1.50E-03	1.00E-03	7.50E-10	1.23E-04	3.66E+00	2.12E-10	1.73E-06	7.58E-11	2.77E-10
Barium	1.31E-02	1.00E-03	6.55E-09	1.40E-02	NA	1.85E-09	1.32E-07	NA	NA
Benzene	0.00E+00	2.07E-02	0.00E+00	3.88E-03	5.67E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Benzo(a)anthracene	0.00E+00	9.48E-01	0.00E+00	NA	2.35E+00	NA	NA	0.00E+00	0.00E+00
Benzo(a)pyrene	0.00E+00	1.24E+00	0.00E+00	NA	2.35E+01	NA	NA	0.00E+00	0.00E+00
Benzo(b)fluoranthene	0.00E+00	6.99E-01	0.00E+00	NA	2.35E+00	NA	NA	0.00E+00	0.00E+00
Benzo(k)fluoranthene	0.00E+00	1.20E+00	0.00E+00	NA	2.35E-01	NA	NA	0.00E+00	0.00E+00
Beryllium	1.00E-04	1.00E-03	5.00E-11	2.00E-05	4.30E+02	1.42E-11	7.08E-07	5.05E-12	2.17E-09
Bis(2-chloroisopropyl)ether	0.00E+00	7.63E-02	0.00E+00	2.00E-02	NA	0.00E+00	0.00E+00	NA	NA
Bis(2-ethylhexyl)phthalate	0.00E+00	1.97E+00	0.00E+00	3.80E-03	7.37E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Boron	1.58E-02	1.00E-03	7.90E-09	1.80E-01	NA	2.24E-09	1.24E-08	NA	NA
Bromodichloromethane	0.00E+00	5.02E-03	0.00E+00	1.96E-02	6.33E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Bromoform	0.00E+00	2.77E-03	0.00E+00	1.20E-02	1.32E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Bromomethane	0.00E+00	3.51E-03	0.00E+00	1.12E-03	NA	0.00E+00	0.00E+00	NA	NA
Cadmium	1.00E-04	1.00E-03	5.00E-11	1.00E-05	NA	1.42E-11	1.42E-06	NA	NA
Carbazole	0.00E+00	7.97E-02	0.00E+00	NA	2.86E-02	NA	NA	0.00E+00	0.00E+00
Carbon disulfide	0.00E+00	1.58E-02	0.00E+00	6.30E-02	NA	0.00E+00	0.00E+00	NA	NA
Carbon tetrachloride	0.00E+00	2.24E-02	0.00E+00	4.55E-04	2.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chlordane	0.00E+00	1.57E-01	0.00E+00	2.50E-04	7.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chlorobenzene	0.00E+00	4.07E-02	0.00E+00	6.20E-03	NA	0.00E+00	0.00E+00	NA	NA
Chloroform	0.00E+00	8.92E-03	0.00E+00	2.00E-03	3.05E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chromium (VI)	1.00E-03	2.00E-03	1.00E-09	6.00E-06	NA	2.83E-10	4.72E-06	NA	NA
Chrysene	0.00E+00	1.03E+00	0.00E+00	NA	2.35E-02	NA	NA	0.00E+00	0.00E+00
Cobalt	2.90E-04	4.00E-04	5.80E-11	1.60E-02	NA	1.64E-11	1.03E-09	NA	NA
Copper	1.40E-03	1.00E-03	7.00E-10	1.20E-02	NA	1.98E-10	1.65E-08	NA	NA
Cyanide	0.00E+00	1.00E-03	0.00E+00	3.40E-03	NA	0.00E+00	0.00E+00	NA	NA
Cyclohexanone	0.00E+00	1.80E-03	0.00E+00	4.00E+00	NA	0.00E+00	0.00E+00	NA	NA
Dibenzo(a,h)anthracene	0.00E+00	1.68E+00	0.00E+00	NA	2.35E+01	NA	NA	0.00E+00	0.00E+00
Dieldrin	0.00E+00	4.45E-02	0.00E+00	2.50E-05	3.20E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Di-n-octylphthalate	0.00E+00	4.45E+00	0.00E+00	3.60E-02	NA	0.00E+00	0.00E+00	NA	NA
Ethyl ether	0.00E+00	2.88E-03	0.00E+00	1.60E-01	NA	0.00E+00	0.00E+00	NA	NA
Ethylbenzene	0.00E+00	7.39E-02	0.00E+00	9.70E-02	NA	0.00E+00	0.00E+00	NA	NA
Fluoride	1.46E-01	1.00E-03	7.30E-08	5.82E-02	NA	2.07E-08	3.55E-07	NA	NA
Heptachlorodibenzofuran	0.00E+00	2.55E+00	0.00E+00	NA	3.00E+03	NA	NA	0.00E+00	0.00E+00
Heptachlorodibenzo-p-dioxin	0.00E+00	3.22E+00	0.00E+00	NA	3.00E+03	NA	NA	0.00E+00	0.00E+00
Hexachlorodibenzofuran	0.00E+00	2.38E+00	0.00E+00	NA	3.00E+04	NA	NA	0.00E+00	0.00E+00
Hexachlorodibenzo-p-dioxin	0.00E+00	5.29E+00	0.00E+00	NA	3.00E+04	NA	NA	0.00E+00	0.00E+00
Indeno(1,2,3-cd)pyrene	0.00E+00	2.23E+00	0.00E+00	NA	2.35E+00	NA	NA	0.00E+00	0.00E+00
Lead	5.00E-04	1.00E-04	2.50E-11	NA	NA	NA	NA	NA	NA
Manganese	6.50E-03	1.00E-03	3.25E-09	1.84E-03	NA	9.20E-10	5.00E-07	NA	NA
Mercury	6.00E-05	1.00E-03	3.00E-11	2.10E-05	NA	8.49E-12	4.04E-07	NA	NA
Methanol	0.00E+00	3.45E-04	0.00E+00	4.00E-01	NA	0.00E+00	0.00E+00	NA	NA
4-Methyl-2-pentanone	0.00E+00	3.97E-03	0.00E+00	6.40E-02	NA	0.00E+00	0.00E+00	NA	NA
Methylene chloride	0.00E+00	4.46E-03	0.00E+00	5.70E-02	7.89E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Molybdenum	9.70E-04	1.00E-03	4.85E-10	1.90E-03	NA	1.37E-10	7.23E-08	NA	NA
Nickel	1.70E-03	2.00E-04	1.70E-10	5.40E-03	NA	4.81E-11	8.91E-09	NA	NA
N-nitrosodiphenylamine	0.00E+00	1.96E-02	0.00E+00	5.00E-03	1.96E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
N-nitrosodipropylamine	0.00E+00	2.83E-03	0.00E+00	NA	2.80E+01	NA	NA	0.00E+00	0.00E+00
Octachlorodibenzofuran	0.00E+00	4.78E+00	0.00E+00	NA	3.00E+02	NA	NA	0.00E+00	0.00E+00
Octochlorodibenzo-p-dioxin	0.00E+00	1.65E+01	0.00E+00	NA	3.00E+02	NA	NA	0.00E+00	0.00E+00
Pentachlorodibenzofuran	0.00E+00	1.06E+00	0.00E+00	NA	1.50E+04	NA	NA	0.00E+00	0.00E+00
Pentachlorodibenzo-p-dioxin	0.00E+00	3.79E-01	0.00E+00	NA	1.50E+05	NA	NA	0.00E+00	0.00E+00
Pentachlorophenol	0.00E+00	1.95E-01	0.00E+00	3.00E-02	1.20E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Phenanthrene	0.00E+00	2.29E-01	0.00E+00	NA	NA	NA	NA	NA	NA
Selenium	2.50E-03	1.00E-03	1.25E-09	2.20E-03	NA	3.54E-10	1.61E-07	NA	NA
Silver	2.00E-04	6.00E-04	6.00E-11	9.00E-04	NA	1.70E-11	1.89E-08	NA	NA
Tetrachlorodibenzofuran	0.00E+00	1.12E+00	0.00E+00	NA	3.00E+04	NA	NA	0.00E+00	0.00E+00
Tetrachlorodibenzo-p-dioxin	0.00E+00	1.39E+00	0.00E+00	NA	3.00E+05	NA	NA	0.00E+00	0.00E+00
Tetrachloroethylene	0.00E+00	4.81E-02	0.00E+00	1.00E-02	5.40E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Thallium	4.00E-04	1.00E-03	2.00E-10	1.80E-05	NA	5.66E-11	3.15E-06	NA	NA
Toluene	0.00E+00	4.53E-02	0.00E+00	6.40E-02	NA	0.00E+00	0.00E+00	NA	NA
Tributyl phosphate	0.00E+00	3.13E-02	0.00E+00	1.00E-01	1.08E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Trichloroethylene	0.00E+00	1.57E-02	0.00E+00	4.50E-05	2.67E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Trifluorochloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Uranium	1.70E-03	1.00E-03	8.50E-10	5.10E-04	NA	2.41E-10	4.72E-07	NA	NA
Vanadium	2.00E-03	1.00E-03	1.00E-09	7.00E-05	NA	2.83E-10	4.04E-06	NA	NA
Vinyl chloride	0.00E+00	1.13E-02	0.00E+00	3.00E-03	1.50E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xylenes	0.00E+00	7.04E-02	0.00E+00	1.84E-01	NA	0.00E+00	0.00E+00	NA	NA
Zinc	3.70E-03	6.00E-04	1.11E-09	6.00E-02	NA	3.14E-10	5.24E-09	NA	NA
						total =	2.68E-05	total =	2.45E-09

TABLE E.0-5
Museum Worker - BKGD - IngestSWchem

Museum Worker - Ingestion of Surface Water
Risk calculation for background

Intake Equation:			UNITS	Assigned Values
	CDI =	(CW*EF*ED*IR)/(BW*AT)		
	CDI =	Chronic Daily Intake	mg/kgday	adult
	CW =	Concentration of chemical in water	mg/L	see COC table below
	EF =	Exposure frequency	days/yr	8
	ED =	Exposure duration	yrs	25
	IR =	Ingestion rate	L/day	0.001
	BW =	Body weight	kg	70
	ATc =	Average time for carcinogens	days	25550
	ATn =	Average time for non-carcinogens	days	9125

COC	CW	RfDo	CSFo	ADULT CDI	ADULT HQ	ADULT CDI	ADULT ILCR
	mg/L	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	0.00E+00	4.00E-03	5.70E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,1-Dichloroethylene	0.00E+00	5.00E-02	6.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,2-dichloroethane	0.00E+00	2.00E-02	9.10E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2-Butanone	0.00E+00	6.00E-01	NA	0.00E+00	0.00E+00	NA	NA
3,3-Dichlorobenzidine	0.00E+00	NA	4.50E-01	NA	NA	0.00E+00	0.00E+00
4-Methylphenol	0.00E+00	5.00E-03	NA	0.00E+00	0.00E+00	NA	NA
4-Nitroanaline	0.00E+00	3.00E-03	2.10E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Acetone	0.00E+00	9.00E-01	NA	0.00E+00	0.00E+00	NA	NA
Antimony	5.00E-04	4.00E-04	NA	1.57E-10	3.91E-07	NA	NA
Aroclor-1254	0.00E+00	2.00E-05	4.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Aroclor-1260	0.00E+00	2.00E-05	4.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Arsenic	1.50E-03	3.00E-04	1.50E+00	4.70E-10	1.57E-06	1.68E-10	2.52E-10
Barium	1.31E-02	2.00E-01	NA	4.10E-09	2.05E-08	NA	NA
Benzene	0.00E+00	4.00E-03	5.50E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Benzo(a)anthracene	0.00E+00	NA	7.30E-01	NA	NA	0.00E+00	0.00E+00
Benzo(a)pyrene	0.00E+00	NA	7.30E+00	NA	NA	0.00E+00	0.00E+00
Benzo(b)fluoranthene	0.00E+00	NA	7.30E-01	NA	NA	0.00E+00	0.00E+00
Benzo(k)fluoranthene	0.00E+00	NA	7.30E-02	NA	NA	0.00E+00	0.00E+00
Beryllium	1.00E-04	2.00E-03	4.30E+00	3.13E-11	1.57E-08	1.12E-11	4.81E-11
Bis(2-chloroisopropyl)ether	0.00E+00	4.00E-02	NA	0.00E+00	0.00E+00	NA	NA
Bis(2-ethylhexyl)phthalate	0.00E+00	2.00E-02	1.40E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Boron	1.58E-02	2.00E-01	NA	4.95E-09	2.47E-08	NA	NA
Bromodichloromethane	0.00E+00	2.00E-02	6.20E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Bromoform	0.00E+00	2.00E-02	7.90E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Bromomethane	0.00E+00	1.40E-03	NA	0.00E+00	0.00E+00	NA	NA
Cadmium	1.00E-04	1.00E-03	NA	3.13E-11	3.13E-08	NA	NA
Carbazole	0.00E+00	NA	2.00E-03	NA	NA	0.00E+00	0.00E+00
Carbon disulfide	0.00E+00	1.00E-01	NA	0.00E+00	0.00E+00	NA	NA
Carbon tetrachloride	0.00E+00	7.00E-04	1.30E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chlordane	0.00E+00	5.00E-04	3.50E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chlorobenzene	0.00E+00	2.00E-02	NA	0.00E+00	0.00E+00	NA	NA
Chloroform	0.00E+00	1.00E-02	6.10E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chromium (VI)	1.00E-03	3.00E-03	NA	3.13E-10	1.04E-07	NA	NA
Chrysene	0.00E+00	NA	7.30E-03	NA	NA	0.00E+00	0.00E+00
Cobalt	2.90E-04	2.00E-02	NA	9.08E-11	4.54E-09	NA	NA
Copper	1.40E-03	4.00E-02	NA	4.38E-10	1.10E-08	NA	NA
Cyanide	0.00E+00	2.00E-02	NA	0.00E+00	0.00E+00	NA	NA
Cyclohexanone	0.00E+00	5.00E+00	NA	0.00E+00	0.00E+00	NA	NA
Dibenzo(a,h)anthracene	0.00E+00	NA	7.30E+00	NA	NA	0.00E+00	0.00E+00
Dieldrin	0.00E+00	5.00E-05	1.60E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Di-n-octylphthalate	0.00E+00	4.00E-02	NA	0.00E+00	0.00E+00	NA	NA
Ethyl ether	0.00E+00	2.00E-01	NA	0.00E+00	0.00E+00	NA	NA
Ethylbenzene	0.00E+00	1.00E-01	NA	0.00E+00	0.00E+00	NA	NA
Fluoride	1.48E-01	6.00E-02	NA	4.57E-08	7.62E-07	NA	NA
Heptachlorodibenzofuran	0.00E+00	NA	1.50E+03	NA	NA	0.00E+00	0.00E+00
Heptachlorodibenzo-p-dioxin	0.00E+00	NA	1.50E+03	NA	NA	0.00E+00	0.00E+00
Hexachlorodibenzofuran	0.00E+00	NA	1.50E+03	NA	NA	0.00E+00	0.00E+00
Hexachlorodibenzo-p-dioxin	0.00E+00	NA	1.50E+04	NA	NA	0.00E+00	0.00E+00
Indeno(1,2,3-cd)pyrene	0.00E+00	NA	7.30E-01	NA	NA	0.00E+00	0.00E+00
Lead	5.00E-04	NA	NA	NA	NA	NA	NA
Manganese	6.50E-03	4.60E-02	NA	2.04E-09	4.42E-08	NA	NA
Mercury	6.00E-05	3.00E-04	NA	1.88E-11	6.26E-08	NA	NA
Methanol	0.00E+00	5.00E-01	NA	0.00E+00	0.00E+00	NA	NA
4-Methyl-2-pentanone	0.00E+00	8.00E-02	NA	0.00E+00	0.00E+00	NA	NA
Methylene chloride	0.00E+00	6.00E-02	7.50E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Molybdenum	9.70E-04	5.00E-03	NA	3.04E-10	6.07E-08	NA	NA
Nickel	1.70E-03	2.00E-02	NA	5.32E-10	2.66E-08	NA	NA
N-nitrosodiphenylamine	0.00E+00	2.00E-02	4.90E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00
N-nitrosodipropylamine	0.00E+00	NA	7.00E+00	NA	NA	0.00E+00	0.00E+00
Octachlorodibenzofuran	0.00E+00	NA	1.50E+02	NA	NA	0.00E+00	0.00E+00
Octochlorodibenzo-p-dioxin	0.00E+00	NA	1.50E+02	NA	NA	0.00E+00	0.00E+00
Pentachlorodibenzofuran	0.00E+00	NA	7.50E+03	NA	NA	0.00E+00	0.00E+00
Pentachlorodibenzo-p-dioxin	0.00E+00	NA	7.50E+04	NA	NA	0.00E+00	0.00E+00
Pentachlorophenol	0.00E+00	3.00E-02	1.20E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Phenanthrene	0.00E+00	NA	NA	NA	NA	NA	NA
Selenium	2.50E-03	5.00E-03	NA	7.83E-10	1.57E-07	NA	NA
Silver	2.00E-04	5.00E-03	NA	6.26E-11	1.25E-08	NA	NA
Tetrachlorodibenzofuran	0.00E+00	NA	1.50E+04	NA	NA	0.00E+00	0.00E+00
Tetrachlorodibenzo-p-dioxin	0.00E+00	NA	1.50E+05	NA	NA	0.00E+00	0.00E+00
Tetrachloroethylene	0.00E+00	1.00E-02	5.40E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Thallium	4.00E-04	9.00E-05	NA	1.25E-10	1.39E-06	NA	NA
Toluene	0.00E+00	8.00E-02	NA	0.00E+00	0.00E+00	NA	NA
Tributyl phosphate	0.00E+00	2.00E-01	5.40E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Trichloroethylene	0.00E+00	3.00E-04	4.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Trifluorochloromethane	0.00E+00	NA	NA	NA	NA	NA	NA
Uranium	1.70E-03	6.00E-04	NA	5.32E-10	8.87E-07	NA	NA
Vanadium	2.00E-03	7.00E-03	NA	6.26E-10	8.95E-08	NA	NA
Vinyl chloride	0.00E+00	3.00E-03	1.50E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xylenes	0.00E+00	2.00E-01	NA	0.00E+00	0.00E+00	NA	NA
Zinc	3.70E-03	3.00E-01	NA	1.16E-09	3.86E-09	NA	NA
				total =	**5.67E-06**	**total =**	**3.00E-10**

TABLE E.0-5
Museum Worker - BKGD - InhaleRad

Museum Worker - Inhalation of Gases & Particulates
Risk calculation for background

Intake Equation:

			UNITS	adult
CDI =	(CA*EF*ED*IR*ET)		pCi	calculated below
CDI =	Chronic Daily Intake		pCi/m^3	see COC list below
CA =	Concentration of radionuclide in air		days/yr	250
EF =	Exposure frequency		yrs	25
ED =	Exposure duration		m^3/hr	1.5
IR =	Inhalation rate		hrs/day	1
ET =	Exposure time			

COC	conc pCi/m^3	CSFi 1/pCi	ADULT CDI pCi	ADULT ILCR CDI*CSF
Cesium-137 + D	1.72E-06	1.19E-11	1.61E-02	1.91E-13
Lead-210 + D	4.06E-05	1.39E-08	3.80E-01	5.29E-09
Neptunium-237 + D	0.00E+00	1.77E-08	0.00E+00	0.00E+00
Plutonium-238	0.00E+00	3.36E-08	0.00E+00	0.00E+00
Plutonium-239/240	0.00E+00	3.33E-08	0.00E+00	0.00E+00
Radium-226 + D	4.06E-05	1.16E-08	3.80E-01	4.41E-09
Radium-228 + D	3.30E-05	5.23E-09	3.10E-01	1.62E-09
Radon-222+ D	3.99E+02	1.80E-11	3.74E+06	6.74E-05
Strontium-90 + D	0.00E+00	1.13E-10	0.00E+00	0.00E+00
Technetium-99	0.00E+00	1.41E-11	0.00E+00	0.00E+00
Thorium-228 + D	3.25E-05	1.43E-07	3.05E-01	4.36E-08
Thorium-230	4.06E-05	2.85E-08	3.80E-01	1.08E-08
Thorium-232	3.30E-05	4.33E-08	3.10E-01	1.34E-08
Uranium-234	4.05E-05	1.14E-08	3.79E-01	4.32E-09
Uranium-235 + D	1.84E-06	1.01E-08	1.73E-02	1.75E-10
Uranium-238 + D	3.95E-05	9.35E-09	3.71E-01	3.46E-09
			total =	**6.75E-05**

Air concentration is derived from air particulate value of 26 ug/m^3 (2005 SER background average from monitor AMS-12) multiplied by soil concentration. Rn-222 is derived by multiplying the soil Ra-226 value by 256 g/m^3. This conversion factor is based on Rn-222 air background and Ra-226 soil background (i.e., 400 pCi/m^3 divided by 1.56 pCi/g)

TABLE E.0-5
Museum Worker - BKGD - IngestSoilRad

Museum Worker - Ingestion of Soil
Risk calculation for background

Intake Equation:			UNITS	adult
	CDI =	(CS*EF*ED*IR*FI)		
	CDI =	Chronic Daily Intake	pCi	calculated below
	CS =	Concentration of radionuclide in soil	pCi/g	see COC list below
	EF =	Exposure frequency	days/yr	250
	ED =	Exposure duration	yrs	25
	IR =	Ingestion rate	g/day	0.05
	FI =	Fraction of contaminated soil	unitless	1

COC	conc	CSFos	ADULT	
			CDI	ILCR
	pCi/g	1/pCi	pCi	CDI*CSF
Cesium-137 + D	6.60E-02	4.33E-11	2.06E+01	8.93E-10
Lead-210 + D	1.56E+00	2.66E-09	4.88E+02	1.30E-06
Neptunium-237 + D	0.00E+00	1.62E-10	0.00E+00	0.00E+00
Plutonium-238	0.00E+00	2.72E-10	0.00E+00	0.00E+00
Plutonium-239/240	0.00E+00	2.76E-10	0.00E+00	0.00E+00
Radium-226 + D	1.56E+00	7.30E-10	4.88E+02	3.56E-07
Radium-228 + D	1.27E+00	2.29E-09	3.97E+02	9.09E-07
Radon-222+ D	NA	NA	NA	NA
Strontium-90 + D	0.00E+00	1.44E-10	0.00E+00	0.00E+00
Technetium-99	0.00E+00	7.66E-12	0.00E+00	0.00E+00
Thorium-228 + D	1.25E+00	8.09E-10	3.91E+02	3.16E-07
Thorium-230	1.56E+00	2.02E-10	4.88E+02	9.85E-08
Thorium-232	1.27E+00	2.31E-10	3.97E+02	9.17E-08
Uranium-234	1.56E+00	1.58E-10	4.86E+02	7.68E-08
Uranium-235 + D	7.09E-02	1.63E-10	2.22E+01	3.61E-09
Uranium-238 + D	1.52E+00	2.10E-10	4.75E+02	9.98E-08
			total =	**3.25E-06**

TABLE E.0-5
Museum Worker - BKGD - IngestSWrad

Museum Worker - Ingestion of Surface Water
Risk calculation for background

Intake Equation:

CDI =	(CW*EF*ED*IR)	
CDI =	Chronic Daily Intake	
CW =	Concentration of radionuclide in water	
EF =	Exposure frequency	
ED =	Exposure duration	
IR =	Ingestion rate	

UNITS	Assigned Values
pCi	adult
pCi/L	see COC table below
days/yr	8
yrs	25
L/day	0.001

COC	conc	CSFow	ADULT	
			CDI	ILCR
	pCi/L	1/pCi	pCi	CDI*CSF
Cesium-137 + D	1.70E+00	3.04E-11	3.40E-01	1.03E-11
Lead-210 + D	6.99E-01	1.27E-09	1.40E-01	1.78E-10
Neptunium-237 + D	1.19E-01	6.74E-11	2.38E-02	1.60E-12
Plutonium-238	1.10E-02	1.31E-10	2.20E-03	2.88E-13
Plutonium-239/240	3.17E-02	1.35E-10	6.34E-03	8.56E-13
Radium-226 + D	1.45E-01	3.86E-10	2.90E-02	1.12E-11
Radium-228 + D	2.50E+00	1.04E-09	5.00E-01	5.20E-10
Radon-222+ D	NA	NA	NA	NA
Strontium-90 + D	4.66E-01	7.40E-11	9.32E-02	6.90E-12
Technetium-99	6.20E+00	2.75E-12	1.24E+00	3.41E-12
Thorium-228 + D	2.50E+00	3.00E-10	5.00E-01	1.50E-10
Thorium-230	3.94E-02	9.10E-11	7.88E-03	7.17E-13
Thorium-232	2.50E+00	1.01E-10	5.00E-01	5.05E-11
Uranium-234	5.81E-01	7.07E-11	1.16E-01	8.21E-12
Uranium-235 + D	2.64E-02	7.18E-11	5.29E-03	3.80E-13
Uranium-238 + D	5.67E-01	8.71E-11	1.13E-01	9.88E-12
			total =	**9.52E-10**

TABLE E.0-5
Museum Worker - BKGD - ExternalRad

Museum Worker - External Radiation
Risk calculation for background

Intake Equation:			UNITS	adult
	CDI =	$(CS*EF*ED*ET_o*(1-SH_o))+(CS*EF*ED*ET_i*(1-SH_i))$		
	CDI =	Chronic Daily Intake	yr pCi/g	calculated below
	CS =	Concentration of radionuclide in soil	pCi/g	see COC list below
	EF =	Fraction of year exposed to radiation	--	0.68
	ED =	Exposure duration	yrs	25
	ET_o =	Fraction of day spent outdoors	--	0.04
	ET_i =	Fraction of day spent indoors	--	0.29
	SH_o =	Shield factor outdoors	--	0.25
	SH_i =	Shield factor indoors	--	0.5

COC	conc	CSFx	ADULT	
			CDI	ILCR
	pCi/g	g/pCi yr	yr pCi/g	CDI*CSF
Cesium-137 + D	6.60E-02	2.55E-06	2.00E-01	5.10E-07
Lead-210 + D	1.56E+00	4.21E-09	4.73E+00	1.99E-08
Neptunium-237 + D	0.00E+00	7.97E-07	0.00E+00	0.00E+00
Plutonium-238	0.00E+00	7.22E-11	0.00E+00	0.00E+00
Plutonium-239/240	0.00E+00	2.00E-10	0.00E+00	0.00E+00
Radium-226 + D	1.56E+00	8.49E-06	4.73E+00	4.01E-05
Radium-228 + D	1.27E+00	4.53E-06	3.85E+00	1.74E-05
Radon-222+ D	NA	NA	NA	NA
Strontium-90 + D	0.00E+00	1.96E-08	0.00E+00	0.00E+00
Technetium-99	0.00E+00	8.14E-11	0.00E+00	0.00E+00
Thorium-228 + D	1.25E+00	7.76E-06	3.79E+00	2.94E-05
Thorium-230	1.56E+00	8.19E-10	4.73E+00	3.87E-09
Thorium-232	1.27E+00	3.42E-10	3.85E+00	1.32E-09
Uranium-234	1.56E+00	2.52E-10	4.72E+00	1.19E-09
Uranium-235 + D	7.09E-02	5.43E-07	2.15E-01	1.17E-07
Uranium-238 + D	1.52E+00	1.14E-07	4.61E+00	5.25E-07
			total =	**8.81E-05**

TABLE E.0-5
Museum Worker - BKGD - SumPaths

Museum Worker - Summation of all Pathways
Risk calculation for background

	HQ	ILCR	rad only ILCR
Inhale	3.78E-02	6.77E-05	6.75E-05
Dermal Soil	3.02E-03	4.38E-07	NA
Ingest Soil	4.65E-02	7.58E-06	3.25E-06
Dermal Surface Water	2.68E-05	2.45E-09	NA
Ingest Surface Water	5.67E-06	1.25E-09	9.52E-10
External Radiation	NA	8.81E-05	8.81E-05
SUM	**8.74E-02**	**1.64E-04**	**1.59E-04**

Summation of all paths for individual nuclides

		Background Value as Applicable to Each Zone	
	Background ILCR	**Zone 6 ILCR**	**Zone 7 ILCR**
Cesium-137 + D	5.11E-07	5.11E-07	5.11E-07
Lead-210 + D	1.32E-06	1.32E-06	1.32E-06
Neptunium-237 + D	1.60E-12	NA	NA
Plutonium-238	2.88E-13	NA	NA
Plutonium-239/240	8.56E-13	NA	NA
Radium-226 + D	4.05E-05	4.05E-05	4.05E-05
Radium-228 + D	1.83E-05	1.83E-05	1.83E-05
Radon-222+ D	6.74E-05	6.74E-05	6.74E-05
Strontium-90 + D	6.90E-12	NA	NA
Technetium-99	3.41E-12	3.41E-12	3.41E-12
Thorium-228 + D	2.98E-05	2.98E-05	2.98E-05
Thorium-230	1.13E-07	1.13E-07	1.13E-07
Thorium-232	1.06E-07	1.06E-07	1.06E-07
Uranium-234	8.24E-08	8.24E-08	8.24E-08
Uranium-235 + D	1.20E-07	1.20E-07	1.20E-07
Uranium-238 + D	6.28E-07	6.28E-07	6.28E-07
SUM	**1.59E-04**	**1.59E-04**	**1.59E-04**

TABLE E.0-5
Museum Worker - BKGD - SumPaths

Summation of all paths for individual chemicals

	Background		Background Values as Applicable to Each Zone			
			Zone 6		Zone 7	
	ILCR	HQ	ILCR	HQ	ILCR	HQ
1,1,2-Trichloroethane	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA
1,1-Dichloroethylene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA
1,2-dichloroethane	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA
2-Butanone	No CSFs	0.00E+00	NA	NA	NA	NA
3,3-Dichlorobenzidine	0.00E+00	No RfDs	NA	NA	NA	NA
4-Methylphenol	No CSFs	0.00E+00	NA	NA	NA	NA
4-Nitroanaline	0.00E+00	0.00E+00	NA	NA	NA	NA
Acetone	No CSFs	0.00E+00	NA	NA	NA	NA
Antimony	No CSFs	3.74E-03	No CSFs	3.74E-03	No CSFs	3.74E-03
Aroclor-1254	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Aroclor-1260	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Arsenic	3.58E-06	2.21E-02	3.58E-06	2.21E-02	3.58E-06	2.21E-02
Barium	No CSFs	9.65E-04	No CSFs	9.65E-04	NA	NA
Benzene	0.00E+00	0.00E+00	NA	NA	NA	NA
Benzo(a)anthracene	0.00E+00	No RfDs	0.00E+00	No RfDs	0.00E+00	No RfDs
Benzo(a)pyrene	0.00E+00	No RfDs	0.00E+00	No RfDs	0.00E+00	No RfDs
Benzo(b)fluoranthene	0.00E+00	No RfDs	0.00E+00	No RfDs	0.00E+00	No RfDs
Benzo(k)fluoranthene	0.00E+00	No RfDs	0.00E+00	No RfDs	0.00E+00	No RfDs
Beryllium	1.22E-06	4.94E-04	1.22E-06	4.94E-04	1.22E-06	4.94E-04
Bis(2-chloroisopropyl)ether	No CSFs	0.00E+00	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	0.00E+00	0.00E+00	NA	NA	NA	NA
Boron	No CSFs	6.48E-06	NA	NA	NA	NA
Bromodichloromethane	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA
Bromoform	0.00E+00	0.00E+00	NA	NA	NA	NA
Bromomethane	No CSFs	0.00E+00	NA	NA	NA	NA
Cadmium	8.49E-10	5.47E-04	8.49E-10	5.47E-04	8.49E-10	5.47E-04
Carbazole	0.00E+00	No RfDs	NA	NA	NA	NA
Carbon disulfide	No CSFs	0.00E+00	NA	NA	NA	NA
Carbon tetrachloride	0.00E+00	0.00E+00	NA	NA	NA	NA
Chlordane	0.00E+00	0.00E+00	NA	NA	NA	NA
Chlorobenzene	No CSFs	0.00E+00	NA	NA	NA	NA
Chloroform	0.00E+00	0.00E+00	NA	NA	NA	NA
Chromium (VI)	1.41E-07	4.62E-03	NA	NA	NA	NA
Chrysene	0.00E+00	No RfDs	0.00E+00	No RfDs	0.00E+00	No RfDs
Cobalt	2.86E-08	1.95E-03	NA	NA	NA	NA
Copper	No CSFs	3.84E-04	NA	NA	NA	NA
Cyanide	No CSFs	0.00E+00	NA	NA	NA	NA
Cyclohexanone	No CSFs	0.00E+00	NA	NA	NA	NA
Dibenzo(a,h)anthracene	0.00E+00	No RfDs	0.00E+00	No RfDs	0.00E+00	No RfDs
Dieldrin	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA
Di-n-octylphthalate	No CSFs	0.00E+00	NA	NA	NA	NA

TABLE E.0-5
Museum Worker - BKGD - SumPaths

Summation of all paths for individual chemicals (continued)

	Background		Background Values as Applicable to Each Zone			
			Zone 6		Zone 7	
	ILCR	HQ	ILCR	HQ	ILCR	HQ
Ethyl ether	No CSFs	0.00E+00	NA	NA	NA	NA
Ethylbenzene	0.00E+00	0.00E+00	NA	NA	NA	NA
Fluoride	No CSFs	2.72E-05	No CSFs	2.72E-05	NA	NA
Heptachlorodibenzofuran	0.00E+00	No RfDs	NA	NA	NA	NA
Heptachlorodibenzo-p-dioxin	0.00E+00	No RfDs	0.00E+00	No RfDs	NA	NA
Hexachlorodibenzofuran	0.00E+00	No RfDs	NA	NA	NA	NA
Hexachlorodibenzo-p-dioxin	0.00E+00	No RfDs	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	0.00E+00	No RfDs	0.00E+00	No RfDs	0.00E+00	No RfDs
Lead	No CSFs	No RfDs	NA	NA	NA	NA
Manganese	No CSFs	4.03E-02	NA	NA	NA	NA
Mercury	No CSFs	1.17E-04	NA	NA	NA	NA
Methanol	No CSFs	0.00E+00	NA	NA	NA	NA
4-Methyl-2-pentanone	No CSFs	0.00E+00	NA	NA	NA	NA
Methylene chloride	0.00E+00	0.00E+00	NA	NA	NA	NA
Molybdenum	No CSFs	5.15E-04	No CSFs	5.15E-04	No CSFs	5.15E-04
Nickel	No CSFs	1.12E-03	NA	NA	NA	NA
N-nitrosodiphenylamine	0.00E+00	0.00E+00	NA	NA	NA	NA
N-nitrosodipropylamine	0.00E+00	No RfDs	NA	NA	NA	NA
Octachlorodibenzofuran	0.00E+00	No RfDs	NA	NA	NA	NA
Octochlorodibenzo-p-dioxin	0.00E+00	No RfDs	0.00E+00	No RfDs	NA	NA
Pentachlorodibenzofuran	No CSFs	No RfDs	NA	NA	NA	NA
Pentachlorodibenzo-p-dioxin	0.00E+00	No RfDs	NA	NA	NA	NA
Pentachlorophenol	0.00E+00	0.00E+00	NA	NA	NA	NA
Phenanthrene	No CSFs	No RfDs	No CSFs	No RfDs	No CSFs	No RfDs
Selenium	No CSFs	1.17E-04	NA	NA	NA	NA
Silver	No CSFs	1.11E-04	No CSFs	1.11E-04	No CSFs	1.11E-04
Tetrachlorodibenzofuran	No CSFs	No RfDs	NA	NA	NA	NA
Tetrachlorodibenzo-p-dioxin	No CSFs	No RfDs	NA	NA	NA	NA
Tetrachloroethylene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA
Thallium	No CSFs	3.18E-03	NA	NA	NA	NA
Toluene	No CSFs	0.00E+00	NA	NA	NA	NA
Tributyl phosphate	0.00E+00	0.00E+00	NA	NA	NA	NA
Trichloroethylene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA
Trifluorochloromethane	No CSFs	No RfDs	NA	NA	NA	NA
Uranium	No CSFs	3.73E-03	No CSFs	3.73E-03	No CSFs	3.73E-03
Vanadium	No CSFs	3.26E-03	NA	NA	NA	NA
Vinyl chloride	0.00E+00	0.00E+00	NA	NA	NA	NA
Xylenes	No CSFs	0.00E+00	NA	NA	NA	NA
Zinc	No CSFs	1.47E-04	NA	NA	NA	NA
SUM	**4.97E-06**	**8.74E-02**	**4.80E-06**	**3.22E-02**	**4.80E-06**	**3.12E-02**

TABLE E.0-6
Museum Visitor - BKGD - InhaleChem

Museum Visitor - Inhalation of Gases & Particulates
Risk calculation for background

Intake Equation:			UNITS	Assigned Values			
	CDI =	(CS*EF*ED*IR*ET)/(BW*AT)					
	CDI =	Chronic Daily Intake	mg/kgday	child	youth	adult	senior
	CA =	Concentration of chemical in air	mg/m^3	see table of COCs below			
	EF =	Exposure frequency	days/yr	10	10	10	20
	ED =	Exposure duration	yrs	3	6	14	7
	IR =	Inhalation rate	m^3/hr	1	1	1	1
	ET =	Exposure time	hrs/day	0.5	0.5	0.5	0.5
	BW =	Body weight	kg	15	47	70	70
	ATc =	Average time for carcinogens	days	25550	25550	25550	25550
	ATn =	Average time for non-carcinogens	days	1095	2190	5110	2555

COC	conc	RfDi	CSFI	CHILD				YOUTH				ADULT				SENIOR				SUM			
	mg/m^3	mg/kgday	kgday/mg	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR
				mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	0.00E+00	NA	5.60E-02	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
1,1-Dichloroethylene	0.00E+00	5.71E-02	1.75E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,2-dichloroethane	0.00E+00	NA	9.10E-02	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
2-Butanone	0.00E+00	1.43E+00	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
3,3-Dichlorobenzidine	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroanaline	0.00E+00	1.14E-03	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Acetone	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	7.46E-08	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	0.00E+00	NA	2.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Aroclor-1260	0.00E+00	NA	2.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Arsenic	3.22E-07	NA	1.51E+01	NA	NA	1.26E-11	1.91E-10	NA	NA	8.05E-12	1.22E-10	NA	NA	1.26E-11	1.91E-10	NA	NA	1.26E-11	1.91E-10	NA	NA	4.59E-11	6.93E-10
Barium	4.86E-06	1.43E-04	NA	4.44E-09	3.11E-05	NA	NA	1.42E-09	9.91E-06	NA	NA	9.51E-10	6.65E-06	NA	NA	1.90E-09	1.33E-05	NA	NA	1.62E-09	1.13E-05	NA	NA
Benzene	0.00E+00	8.57E-03	2.73E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Benzo(a)anthracene	0.00E+00	NA	3.08E-01	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Benzo(a)pyrene	0.00E+00	NA	3.08E-01	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Benzo(b)fluoranthene	0.00E+00	NA	3.08E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Benzo(k)fluoranthene	0.00E+00	NA	3.08E-02	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Beryllium	3.74E-08	5.71E-06	8.40E+00	3.42E-11	5.99E-06	1.47E-12	1.23E-11	1.09E-11	1.91E-06	9.35E-13	7.86E-12	7.33E-12	1.28E-06	1.47E-12	1.23E-11	1.47E-11	2.57E-06	1.47E-12	1.23E-11	1.24E-11	2.18E-06	5.33E-12	4.48E-11
Bis(2-chloroisopropyl)ether	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Boron	6.66E-08	5.71E-03	NA	6.08E-11	1.06E-08	NA	NA	1.94E-11	3.40E-09	NA	NA	1.30E-11	2.28E-09	NA	NA	2.61E-11	4.56E-09	NA	NA	2.21E-11	3.87E-09	NA	NA
Bromodichloromethane	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	0.00E+00	NA	3.85E-03	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Bromomethane	0.00E+00	1.43E-03	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Cadmium	2.57E-08	NA	6.30E+00	NA	NA	1.01E-12	6.34E-12	NA	NA	6.42E-13	4.05E-12	NA	NA	1.01E-12	6.34E-12	NA	NA	1.01E-12	6.34E-12	NA	NA	3.66E-12	2.31E-11
Carbazole	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	0.00E+00	2.00E-01	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Carbon tetrachloride	0.00E+00	NA	5.25E-02	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Chlordane	0.00E+00	2.00E-04	3.50E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chlorobenzene	0.00E+00	1.43E-02	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Chloroform	0.00E+00	NA	8.05E-02	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Chromium (VI)	6.42E-07	2.86E-05	4.20E+01	5.86E-10	2.05E-05	2.51E-11	1.06E-09	1.87E-10	6.54E-06	1.60E-11	6.74E-10	1.26E-10	4.39E-06	2.51E-11	1.06E-09	2.51E-10	8.79E-06	2.51E-11	1.06E-09	2.13E-10	7.46E-06	9.14E-11	3.84E-09
Chrysene	0.00E+00	NA	3.08E-03	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Cobalt	5.56E-07	5.71E-06	9.80E+00	5.08E-10	8.90E-05	2.18E-11	2.13E-10	1.62E-10	2.84E-05	1.39E-11	1.36E-10	1.09E-10	1.91E-05	2.18E-11	2.13E-10	2.18E-10	3.81E-05	2.18E-11	2.13E-10	1.85E-10	3.24E-05	7.92E-11	7.76E-10
Copper	8.14E-07	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexanone	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	0.00E+00	NA	3.08E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Dieldrin	0.00E+00	NA	1.61E+01	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Di-n-octylphthalate	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE E.0-6
Museum Visitor - BKGD - InhaleChem

Museum Visitor - Inhalation of Gases & Particulates
Risk calculation for background

Intake Equation:

			UNITS	Assigned Values			
				child	youth	adult	senior
CDI =	(CS*EF*ED*IR*ET)/(BW*AT)						
CDI =	Chronic Daily Intake		mg/kgday				
CA =	Concentration of chemical in air		mg/m³	see table of COCs below			
EF =	Exposure frequency		days/yr	10	10	10	20
ED =	Exposure duration		yrs	3	6	14	7
IR =	Inhalation rate		m³/hr	1	1	1	1
ET =	Exposure time		hrs/day	0.5	0.5	0.5	0.5
BW =	Body weight		kg	15	47	70	70
ATc =	Average time for carcinogens		days	25550	25550	25550	25550
ATn =	Average time for non-carcinogens		days	1095	2190	5110	2555

COC	conc	RfDi	CSFI	CHILD				YOUTH				ADULT				SENIOR				SUM			
	mg/m³	mg/kgday	kgday/mg	CDI mg/kgday	HQ CDI/RfD	CDI mg/kgday	ILCR CDI*CSF	CDI mg/kgday	HQ CDI/RfD	CDI mg/kgday	ILCR CDI*CSF	CDI mg/kgday	HQ CDI/RfD	CDI mg/kgday	ILCR CDI*CSF	CDI mg/kgday	HQ CDI/RfD	CDI mg/kgday	ILCR CDI*CSF	CDI mg/kgday	HQ CDI/RfD	CDI mg/kgday	ILCR CDI*CSF
Ethyl ether	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	0.00E+00	2.86E-01	3.85E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Fluoride	8.32E-08	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlorodibenzofuran	0.00E+00	NA	1.16E+03	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Heptachlorodibenzo-p-dioxin	0.00E+00	NA	1.16E+03	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Hexachlorodibenzofuran	0.00E+00	NA	1.16E+04	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Hexachlorodibenzo-p-dioxin	0.00E+00	NA	1.16E+04	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Indeno(1,2,3-cd)pyrene	0.00E+00	NA	3.08E-01	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Lead	7.96E-07	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	3.46E-05	1.43E-05	NA	3.16E-08	2.21E-03	NA	NA	1.01E-08	7.05E-04	NA	NA	6.77E-09	4.73E-04	NA	NA	1.35E-08	9.46E-04	NA	NA	1.15E-08	8.03E-04	NA	NA
Mercury	1.82E-09	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methanol	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl-2-pentanone	0.00E+00	8.57E-01	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Methylene chloride	0.00E+00	8.57E-01	1.65E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Molybdenum	1.36E-07	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	1.19E-06	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-nitrosodipropylamine	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Octochlorodibenzofuran	0.00E+00	NA	1.16E+02	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Octochlorodibenzo-p-dioxin	0.00E+00	NA	1.16E+02	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Pentachlorodibenzofuran	0.00E+00	NA	5.78E+03	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Pentachlorodibenzo-p-dioxin	0.00E+00	NA	5.78E+04	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Pentachlorophenol	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	3.09E-08	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	2.94E-08	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachlorodibenzofuran	0.00E+00	NA	1.16E+04	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Tetrachlorodibenzo-p-dioxin	0.00E+00	NA	1.16E+05	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Tetrachloroethylene	0.00E+00	1.71E-01	2.07E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Thallium	1.51E-08	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	0.00E+00	1.43E+00	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Tributyl phosphate	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethylene	0.00E+00	1.14E-02	4.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Trifluorochloromethane	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Uranium	1.19E-07	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	1.08E-06	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	0.00E+00	2.86E-02	3.08E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xylenes	0.00E+00	2.86E-02	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Zinc	2.32E-06	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
																				total =	8.57E-04	total =	5.38E-09

Air concentration is derived from air particulate value of 26 ug/m³ (2005 SER background average from monitor AMS-12) multiplied by soil concentration.

TABLE E.0-6
Museum Visitor - BKGD - DermalSoilChem

Museum Visitor - Dermal Contact with Soil/Sediment
Risk calculation for background

Intake Equation: CDI = (CS*AB*SA*EF*ED*AF*CF)/(BW*AT)

		UNITS	Assigned Values			
			child	youth	adult	senior
CDI =	Chronic Daily Intake	mg/kgday				
CS =	Concentration of chemical in soil	mg/kg	see table of COCs below			
AB =	Absorption factor	–	see table of COCs below			
SA =	Surface area of exposed skin	cm^2/day	2800	4370	5700	5700
EF =	Exposure frequency	days/yr	10	10	10	20
ED =	Exposure duration	yrs	3	6	14	7
AF =	Adherence factor	mg/cm^2	0.2	0.2	0.07	0.07
CF =	Conversion factor	kg/mg	1.00E-06	1.00E-06	1.00E-06	1.00E-06
BW =	Body weight	kg	15	47	70	70
ATc =	Average time for carcinogens	days	25550	25550	25550	25550
ATn =	Average time for non-carcinogens	days	1095	2190	5110	2555

COC	conc	AB	RfDd	CSFd	CHILD				YOUTH				ADULT				SENIOR				SUM			
					CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR
	mg/kg	unitless	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	0.00E+00	1.00E-02	3.24E-03	7.04E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,1-Dichloroethylene	0.00E+00	1.00E-02	5.00E-02	6.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,2-dichloroethane	0.00E+00	1.00E-02	2.00E-02	9.10E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2-Butanone	0.00E+00	1.00E-02	4.80E-01	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
3,3-Dichlorobenzidine	0.00E+00	1.00E-02	NA	9.00E-01	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
4-Methylphenol	0.00E+00	1.00E-02	3.25E-03	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
4-Nitroanaline	0.00E+00	1.00E-02	2.40E-03	2.63E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Acetone	0.00E+00	1.00E-02	7.47E-01	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Antimony	2.87E+00	1.00E-03	8.00E-06	NA	2.94E-09	3.67E-04	NA	NA	1.46E-09	1.83E-04	NA	NA	4.48E-10	5.60E-05	NA	NA	8.96E-10	1.12E-04	NA	NA	1.00E-09	1.26E-04	NA	NA
Aroclor-1254	0.00E+00	1.40E-01	1.80E-05	2.22E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Aroclor-1260	0.00E+00	1.40E-01	1.80E-05	2.22E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Arsenic	1.24E+01	3.00E-02	1.23E-04	3.66E+00	3.80E-07	3.09E-03	1.63E-08	5.97E-08	1.90E-07	1.54E-03	1.62E-08	5.95E-08	5.81E-08	4.72E-04	1.16E-08	4.25E-08	1.16E-07	9.45E-04	1.16E-08	4.25E-08	1.30E-07	1.06E-03	5.58E-08	2.04E-07
Barium	1.87E+02	1.00E-03	1.40E-02	NA	1.91E-07	1.37E-05	NA	NA	9.53E-08	6.81E-06	NA	NA	2.92E-08	2.09E-06	NA	NA	5.84E-08	4.17E-06	NA	NA	6.54E-08	4.67E-06	NA	NA
Benzene	0.00E+00	1.00E-02	3.88E-03	5.67E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Benzo(a)anthracene	0.00E+00	1.30E-01	NA	2.35E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Benzo(a)pyrene	0.00E+00	1.30E-01	NA	2.35E+01	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Benzo(b)fluoranthene	0.00E+00	1.30E-01	NA	2.35E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Benzo(k)fluoranthene	0.00E+00	1.30E-01	NA	2.35E-01	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Beryllium	1.44E+00	1.00E-03	2.00E-05	4.30E+02	1.47E-09	7.36E-05	6.31E-11	2.71E-08	7.34E-10	3.67E-05	6.29E-11	2.70E-08	2.25E-10	1.12E-05	4.50E-11	1.93E-08	4.50E-10	2.25E-05	4.50E-11	1.93E-08	5.04E-10	2.52E-05	2.16E-10	9.29E-08
Bis(2-chloroisopropyl)ether	0.00E+00	1.00E-02	2.00E-02	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Bis(2-ethylhexyl)phthalate	0.00E+00	1.00E-02	3.80E-03	7.37E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Boron	2.56E+00	1.00E-03	1.80E-01	NA	2.62E-09	1.45E-08	NA	NA	1.30E-09	7.25E-09	NA	NA	4.00E-10	2.22E-09	NA	NA	8.00E-10	4.44E-09	NA	NA	8.96E-10	4.98E-09	NA	NA
Bromodichloromethane	0.00E+00	1.00E-02	1.96E-02	6.33E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Bromoform	0.00E+00	1.00E-02	1.20E-02	1.32E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Bromomethane	0.00E+00	1.00E-02	1.12E-03	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Cadmium	9.89E-01	1.00E-03	1.00E-05	NA	1.01E-09	1.01E-04	NA	NA	5.04E-10	5.04E-05	NA	NA	1.54E-10	1.54E-05	NA	NA	3.09E-10	3.09E-05	NA	NA	3.46E-10	3.46E-05	NA	NA
Carbazole	0.00E+00	1.00E-02	NA	2.86E-02	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Carbon disulfide	0.00E+00	2.50E-01	6.30E-02	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Carbon tetrachloride	0.00E+00	1.00E-02	4.55E-04	2.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chlordane	0.00E+00	4.00E-02	2.50E-04	7.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chlorobenzene	0.00E+00	1.00E-02	6.20E-03	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Chloroform	0.00E+00	1.00E-02	2.00E-03	3.05E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chromium (VI)	2.47E+01	1.00E-03	6.00E-05	NA	2.53E-08	4.21E-04	NA	NA	1.26E-08	2.10E-04	NA	NA	3.86E-09	6.43E-05	NA	NA	7.71E-09	1.29E-04	NA	NA	8.64E-09	1.44E-04	NA	NA
Chrysene	0.00E+00	1.30E-01	NA	2.35E-02	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Cobalt	2.14E+01	1.00E-03	1.60E-02	NA	2.19E-08	1.37E-06	NA	NA	1.09E-08	6.81E-07	NA	NA	3.34E-09	2.09E-07	NA	NA	6.68E-09	4.18E-07	NA	NA	7.49E-09	4.68E-07	NA	NA
Copper	3.13E+01	1.00E-03	1.20E-02	NA	3.20E-08	2.67E-06	NA	NA	1.59E-08	1.33E-06	NA	NA	4.89E-09	4.07E-07	NA	NA	9.78E-09	8.15E-07	NA	NA	1.10E-08	9.13E-07	NA	NA
Cyanide	0.00E+00	1.00E-02	3.40E-03	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Cyclohexanone	0.00E+00	1.00E-02	4.00E+00	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Dibenzo(a,h)anthracene	0.00E+00	1.30E-01	NA	2.35E+01	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Dieldrin	0.00E+00	1.00E-02	2.50E-05	3.20E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Di-n-octylphthalate	0.00E+00	1.00E-02	3.60E-02	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA

TABLE E.0-6
Museum Visitor - BKGD - DermalSoilChem

Museum Visitor - Dermal Contact with Soil/Sediment
Risk calculation for background

Intake Equation:

			UNITS	Assigned Values			
			mg/kgday	child	youth	adult	senior
CDI =	(CS*AB*SA*EF*ED*AF*CF)/(BW*AT)						
CDI =	Chronic Daily Intake		mg/kgday				
CS =	Concentration of chemical in soil		mg/kg	see table of COCs below			
AB =	Absorption factor		–	see table of COCs below			
SA =	Surface area of exposed skin		cm^2/day	2800	4370	5700	5700
EF =	Exposure frequency		days/yr	10	10	10	20
ED =	Exposure duration		yrs	3	6	14	7
AF =	Adherence factor		mg/cm^2	0.2	0.2	0.07	0.07
CF =	Conversion factor		kg/mg	1.00E-06	1.00E-06	1.00E-06	1.00E-06
BW =	Body weight		kg	15	47	70	70
ATc =	Average time for carcinogens		days	25550	25550	25550	25550
ATn =	Average time for non-carcinogens		days	1095	2190	5110	2555

COC	conc	AB	RfDd	CSFd	CHILD				YOUTH				ADULT				SENIOR				SUM			
					CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR
	mg/kg	unitless	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
Ethyl ether	0.00E+00	1.00E-02	1.60E-01	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Ethylbenzene	0.00E+00	1.00E-02	9.70E-02	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Fluoride	3.20E+00	1.00E-03	5.82E-02	NA	3.27E-09	5.62E-08	NA	NA	1.63E-09	2.80E-08	NA	NA	5.00E-10	8.59E-09	NA	NA	9.99E-10	1.72E-08	NA	NA	1.12E-09	1.92E-08	NA	NA
Heptachlorodibenzofuran	0.00E+00	1.00E-02	NA	3.00E+03	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Heptachlorodibenzo-p-dioxin	0.00E+00	3.00E-02	NA	3.00E+03	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Hexachlorodibenzofuran	0.00E+00	1.00E-02	NA	3.00E+04	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Hexachlorodibenzo-p-dioxin	0.00E+00	3.00E-02	NA	3.00E+04	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Indeno(1,2,3-cd)pyrene	0.00E+00	1.30E-01	NA	2.35E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Lead	3.06E+01	1.00E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	1.33E+03	1.00E-03	5.60E-03	NA	1.36E-06	2.43E-04	NA	NA	6.78E-07	1.21E-04	NA	NA	2.08E-07	3.71E-05	NA	NA	4.15E-07	7.42E-05	NA	NA	4.65E-07	8.31E-05	NA	NA
Mercury	7.00E-02	1.00E-03	2.10E-05	NA	7.16E-11	3.41E-06	NA	NA	3.57E-11	1.70E-06	NA	NA	1.09E-11	5.21E-07	NA	NA	2.19E-11	1.04E-06	NA	NA	2.45E-11	1.17E-06	NA	NA
Methanol	0.00E+00	1.00E-02	4.00E-01	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Methyl-2-pentanone	0.00E+00	1.00E-02	6.40E-02	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Methylene chloride	0.00E+00	1.00E-02	5.70E-02	7.89E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Molybdenum	5.24E+00	1.00E-03	1.90E-03	NA	5.36E-09	2.82E-06	NA	NA	2.67E-09	1.41E-06	NA	NA	8.18E-10	4.31E-07	NA	NA	1.64E-09	8.61E-07	NA	NA	1.83E-09	9.65E-07	NA	NA
Nickel	4.56E+01	1.00E-03	5.40E-03	NA	4.66E-08	8.64E-06	NA	NA	2.32E-08	4.30E-06	NA	NA	7.12E-09	1.32E-06	NA	NA	1.42E-08	2.64E-06	NA	NA	1.60E-08	2.95E-06	NA	NA
N-nitrosodiphenylamine	0.00E+00	1.00E-02	5.00E-03	1.98E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
N-nitrosodipropylamine	0.00E+00	1.00E-02	NA	2.80E+01	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Octachlorodibenzofuran	0.00E+00	1.00E-02	NA	3.00E+02	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Octochlorodibenzo-p-dioxin	0.00E+00	3.00E-02	NA	3.00E+02	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Pentachlorodibenzofuran	0.00E+00	1.00E-02	NA	1.50E+04	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Pentachlorodibenzo-p-dioxin	0.00E+00	3.00E-02	NA	1.50E+05	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Pentachlorophenol	0.00E+00	2.50E-01	3.00E-02	1.20E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Phenanthrene	0.00E+00	1.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	1.19E+00	1.00E-03	2.20E-03	NA	1.22E-09	5.53E-07	NA	NA	6.06E-10	2.76E-07	NA	NA	1.86E-10	8.45E-08	NA	NA	3.72E-10	1.69E-07	NA	NA	4.16E-10	1.89E-07	NA	NA
Silver	1.13E+00	1.00E-03	9.00E-04	NA	1.16E-09	1.28E-06	NA	NA	5.76E-10	6.40E-07	NA	NA	1.76E-10	1.96E-07	NA	NA	3.53E-10	3.92E-07	NA	NA	3.95E-10	4.39E-07	NA	NA
Tetrachlorodibenzofuran	0.00E+00	1.00E-02	NA	3.00E+04	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Tetrachlorodibenzo-p-dioxin	0.00E+00	3.00E-02	NA	3.00E+05	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Tetrachloroethylene	0.00E+00	1.00E-02	1.00E-02	5.40E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Thallium	5.80E-01	1.00E-03	1.80E-05	NA	5.93E-10	3.30E-05	NA	NA	2.95E-10	1.64E-05	NA	NA	9.06E-11	5.03E-06	NA	NA	1.81E-10	1.01E-05	NA	NA	2.03E-10	1.13E-05	NA	NA
Toluene	0.00E+00	1.00E-02	6.40E-02	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Tributyl phosphate	0.00E+00	1.00E-02	1.00E-01	1.08E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Trichloroethylene	0.00E+00	1.00E-02	4.50E-05	2.67E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Trifluorochloromethane	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Uranium	4.56E+00	1.00E-03	5.10E-04	NA	4.66E-09	9.15E-06	NA	NA	2.32E-09	4.56E-06	NA	NA	7.12E-10	1.40E-06	NA	NA	1.42E-09	2.79E-06	NA	NA	1.60E-09	3.13E-06	NA	NA
Vanadium	4.14E+01	1.00E-03	7.00E-05	NA	4.23E-08	6.05E-04	NA	NA	2.11E-08	3.01E-04	NA	NA	6.47E-09	9.24E-05	NA	NA	1.29E-08	1.85E-04	NA	NA	1.45E-08	2.07E-04	NA	NA
Vinyl chloride	0.00E+00	1.00E-02	3.00E-03	1.50E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xylenes	0.00E+00	1.00E-02	1.84E-01	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Zinc	8.93E+01	1.00E-03	6.00E-02	NA	9.13E-08	1.52E-06	NA	NA	4.55E-08	7.58E-07	NA	NA	1.39E-08	2.32E-07	NA	NA	2.79E-08	4.65E-07	NA	NA	3.12E-08	5.21E-07	NA	NA
																					total =	1.70E-03	total =	2.97E-07

TABLE E.0-6
Museum Visitor - BKGD - IngestSoilChem

Museum Visitor - Ingestion of Soil
Risk calculation for background

Intake Equation:

			UNITS	Assigned Values			
				child	youth	adult	senior
CDI =	(CS*EF*ED*IR*FI*CF)/(BW*AT)						
CDI =	Chronic Daily Intake		mg/kgday				
CS =	Concentration of chemical in soil		mg/kg	see table of COCs below			
EF =	Exposure frequency		days/yr	10	10	10	20
ED =	Exposure duration		yrs	3	6	14	7
IR =	Ingestion rate		mg/day	100	75	50	50
FI =	Fraction of contaminated soil		unitless	1	1	1	1
CF =	Conversion factor		kg/mg	1.00E-06	1.00E-06	1.00E-06	1.00E-06
BW =	Body weight		kg	15	47	70	70
ATc =	Average time for carcinogens		days	25550	25550	25550	25550
ATn =	Average time for non-carcinogens		days	1095	2190	5110	2555

COC	conc	RfDo	CSFo	CHILD				YOUTH				ADULT				SENIOR				SUM			
				CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR
	mg/kg	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	0.00E+00	4.00E-03	5.70E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,1-Dichloroethylene	0.00E+00	5.00E-02	6.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,2-dichloroethane	0.00E+00	2.00E-02	9.10E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2-Butanone	0.00E+00	6.00E-01	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
3,3-Dichlorobenzidine	0.00E+00	NA	4.50E-01	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
4-Methylphenol	0.00E+00	5.00E-03	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
4-Nitroanaline	0.00E+00	3.00E-03	2.10E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Acetone	0.00E+00	9.00E-01	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Antimony	2.87E+00	4.00E-04	NA	5.24E-07	1.31E-03	NA	NA	1.25E-07	3.14E-04	NA	NA	5.62E-08	1.40E-04	NA	NA	1.12E-07	2.81E-04	NA	NA	1.30E-07	3.25E-04	NA	NA
Aroclor-1254	0.00E+00	2.00E-05	2.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Aroclor-1260	0.00E+00	2.00E-05	2.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Arsenic	1.24E+01	3.00E-04	1.50E+00	2.26E-06	7.55E-03	9.71E-08	1.46E-07	5.42E-07	1.81E-03	4.65E-08	6.97E-08	2.43E-07	8.09E-04	4.85E-08	7.28E-08	4.85E-07	1.62E-03	4.85E-08	7.28E-08	5.61E-07	1.87E-03	2.41E-07	3.61E-07
Barium	1.87E+02	2.00E-01	NA	3.42E-05	1.71E-04	NA	NA	8.18E-06	4.09E-05	NA	NA	3.66E-06	1.83E-05	NA	NA	7.32E-06	3.66E-05	NA	NA	8.47E-06	4.23E-05	NA	NA
Benzene	0.00E+00	4.00E-03	5.50E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Benzo(a)anthracene	0.00E+00	NA	7.30E-01	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Benzo(a)pyrene	0.00E+00	NA	7.30E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Benzo(b)fluoranthene	0.00E+00	NA	7.30E-01	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Benzo(k)fluoranthene	0.00E+00	NA	7.30E-02	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Beryllium	1.44E+00	2.00E-03	4.30E+00	2.63E-07	1.32E-04	1.13E-08	4.85E-08	6.30E-08	3.15E-05	5.40E-09	2.32E-08	2.82E-08	1.41E-05	5.64E-09	2.42E-08	5.64E-08	2.82E-05	5.64E-09	2.42E-08	6.52E-08	3.26E-05	2.79E-08	1.20E-07
Bis(2-chloroisopropyl)ether	0.00E+00	4.00E-02	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Bis(2-ethylhexyl)phthalate	0.00E+00	2.00E-02	1.40E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Boron	2.56E+00	2.00E-01	NA	4.68E-07	2.34E-06	NA	NA	1.12E-07	5.60E-07	NA	NA	5.01E-08	2.50E-07	NA	NA	1.00E-07	5.01E-07	NA	NA	1.16E-07	5.80E-07	NA	NA
Bromodichloromethane	0.00E+00	2.00E-02	6.20E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Bromoform	0.00E+00	2.00E-02	7.90E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Bromomethane	0.00E+00	1.40E-03	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Cadmium	9.89E-01	1.00E-03	NA	1.81E-07	1.81E-04	NA	NA	4.32E-08	4.32E-05	NA	NA	1.94E-08	1.94E-05	NA	NA	3.87E-08	3.87E-05	NA	NA	4.48E-08	4.48E-05	NA	NA
Carbazole	0.00E+00	NA	2.00E-03	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Carbon disulfide	0.00E+00	1.00E-01	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Carbon tetrachloride	0.00E+00	7.00E-04	1.30E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chlordane	0.00E+00	5.00E-04	3.50E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chlorobenzene	0.00E+00	2.00E-02	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Chloroform	0.00E+00	1.00E-02	6.10E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chromium (VI)	2.47E+01	3.00E-03	NA	4.51E-06	1.50E-03	NA	NA	1.08E-06	3.60E-04	NA	NA	4.83E-07	1.61E-04	NA	NA	9.67E-07	3.22E-04	NA	NA	1.12E-06	3.73E-04	NA	NA
Chrysene	0.00E+00	NA	7.30E-03	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Cobalt	2.14E+01	2.00E-02	NA	3.91E-06	1.95E-04	NA	NA	9.36E-07	4.68E-05	NA	NA	4.19E-07	2.09E-05	NA	NA	8.38E-07	4.19E-05	NA	NA	9.69E-07	4.84E-05	NA	NA
Copper	3.13E+01	4.00E-02	NA	5.72E-06	1.43E-04	NA	NA	1.37E-06	3.42E-05	NA	NA	6.13E-07	1.53E-05	NA	NA	1.23E-06	3.06E-05	NA	NA	1.42E-06	3.54E-05	NA	NA
Cyanide	0.00E+00	2.00E-02	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Cyclohexanone	0.00E+00	5.00E+00	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Dibenzo(a,h)anthracene	0.00E+00	NA	7.30E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Dieldrin	0.00E+00	5.00E-05	1.60E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Di-n-octylphthalate	0.00E+00	4.00E-02	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA

TABLE E.0-6
Museum Visitor - BKGD - IngestSoilChem

Museum Visitor - Ingestion of Soil
Risk calculation for background

Intake Equation:

			UNITS	Assigned Values			
				child	youth	adult	senior
CDI =	(CS*EF*ED*IR*FI*CF)/(BW*AT)		mg/kgday				
CDI =	Chronic Daily Intake		mg/kgday				
CS =	Concentration of chemical in soil		mg/kg	see table of COCs below			
EF =	Exposure frequency		days/yr	10	10	10	20
ED =	Exposure duration		yrs	3	6	14	7
IR =	Ingestion rate		mg/day	100	75	50	50
FI =	Fraction of contaminated soil		unitless	1	1	1	1
CF =	Conversion factor		kg/mg	1.00E-06	1.00E-06	1.00E-06	1.00E-06
BW =	Body weight		kg	15	47	70	70
ATc =	Average time for carcinogens		days	25550	25550	25550	25550
ATn =	Average time for non-carcinogens		days	1095	2190	5110	2555

COC	conc	RfDo	CSFo	CHILD				YOUTH				ADULT				SENIOR				SUM			
				CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR
	mg/kg	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
Ethyl ether	0.00E+00	2.00E-01	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Ethylbenzene	0.00E+00	1.00E-01	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Fluoride	3.20E+00	6.00E-02	NA	5.84E-07	9.74E-06	NA	NA	1.40E-07	2.33E-06	NA	NA	6.26E-08	1.04E-06	NA	NA	1.25E-07	2.09E-06	NA	NA	1.45E-07	2.41E-06	NA	NA
Heptachlorodibenzofuran	0.00E+00	NA	1.50E+03	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Heptachlorodibenzo-p-dioxin	0.00E+00	NA	1.50E+03	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Hexachlorodibenzofuran	0.00E+00	NA	1.50E+03	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Hexachlorodibenzo-p-dioxin	0.00E+00	NA	1.50E+04	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Indeno(1,2,3-cd)pyrene	0.00E+00	NA	7.30E-01	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Lead	3.06E+01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	1.33E+03	1.40E-01	NA	2.43E-04	1.74E-03	NA	NA	5.81E-05	4.15E-04	NA	NA	2.60E-05	1.86E-04	NA	NA	5.21E-05	3.72E-04	NA	NA	6.02E-05	4.30E-04	NA	NA
Mercury	7.00E-02	3.00E-04	NA	1.28E-08	4.26E-05	NA	NA	3.06E-09	1.02E-05	NA	NA	1.37E-09	4.57E-06	NA	NA	2.74E-09	9.13E-06	NA	NA	3.17E-09	1.06E-05	NA	NA
Methanol	0.00E+00	5.00E-01	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Methyl-2-pentanone	0.00E+00	8.00E-02	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Methylene chloride	0.00E+00	6.00E-02	7.50E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Molybdenum	5.24E+00	5.00E-03	NA	9.57E-07	1.91E-04	NA	NA	2.29E-07	4.58E-05	NA	NA	1.03E-07	2.05E-05	NA	NA	2.05E-07	4.10E-05	NA	NA	2.37E-07	4.74E-05	NA	NA
Nickel	4.56E+01	2.00E-02	NA	8.33E-06	4.16E-04	NA	NA	1.99E-06	9.97E-05	NA	NA	8.92E-07	4.46E-05	NA	NA	1.78E-06	8.92E-05	NA	NA	2.06E-06	1.03E-04	NA	NA
N-nitrosodiphenylamine	0.00E+00	2.00E-02	4.90E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
N-nitrosodipropylamine	0.00E+00	NA	7.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Octachlorodibenzofuran	0.00E+00	NA	1.50E+02	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Octochlorodibenzo-p-dioxin	0.00E+00	NA	1.50E+02	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Pentachlorodibenzofuran	0.00E+00	NA	7.50E+03	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Pentachlorodibenzo-p-dioxin	0.00E+00	NA	7.50E+04	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Pentachlorophenol	0.00E+00	3.00E-02	1.20E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Phenanthrene	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	1.19E+00	5.00E-03	NA	2.17E-07	4.35E-05	NA	NA	5.20E-08	1.04E-05	NA	NA	2.33E-08	4.66E-06	NA	NA	4.66E-08	9.32E-06	NA	NA	5.39E-08	1.08E-05	NA	NA
Silver	1.13E+00	5.00E-03	NA	2.06E-07	4.13E-05	NA	NA	4.94E-08	9.88E-06	NA	NA	2.21E-08	4.42E-06	NA	NA	4.42E-08	8.85E-06	NA	NA	5.12E-08	1.02E-05	NA	NA
Tetrachlorodibenzofuran	0.00E+00	NA	1.50E+04	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Tetrachlorodibenzo-p-dioxin	0.00E+00	NA	1.50E+05	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Tetrachloroethylene	0.00E+00	1.00E-02	5.40E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Thallium	5.80E-01	9.00E-05	NA	1.06E-07	1.18E-03	NA	NA	2.54E-08	2.82E-04	NA	NA	1.14E-08	1.26E-04	NA	NA	2.27E-08	2.52E-04	NA	NA	2.63E-08	2.92E-04	NA	NA
Toluene	0.00E+00	8.00E-02	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Tributyl phosphate	0.00E+00	2.00E-01	5.40E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Trichloroethylene	0.00E+00	3.00E-04	4.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Trifluorochloromethane	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Uranium	4.56E+00	6.00E-04	NA	8.33E-07	1.39E-03	NA	NA	1.99E-07	3.32E-04	NA	NA	8.92E-08	1.49E-04	NA	NA	1.78E-07	2.97E-04	NA	NA	2.06E-07	3.44E-04	NA	NA
Vanadium	4.14E+01	7.00E-03	NA	7.56E-06	1.08E-03	NA	NA	1.81E-06	2.59E-04	NA	NA	8.10E-07	1.16E-04	NA	NA	1.62E-06	2.31E-04	NA	NA	1.87E-06	2.68E-04	NA	NA
Vinyl chloride	0.00E+00	3.00E-03	1.50E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xylenes	0.00E+00	2.00E-01	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Zinc	8.93E+01	3.00E-01	NA	1.63E-05	5.44E-05	NA	NA	3.90E-06	1.30E-05	NA	NA	1.75E-06	5.83E-06	NA	NA	3.50E-06	1.17E-05	NA	NA	4.04E-06	1.35E-05	NA	NA
																				total =	4.30E-03	total =	4.81E-07

TABLE E.0-6
Museum Visitor - BKGD - DermalSWchem

Museum Visitor - Dermal Contact with Surface Water
Risk calculation for background

			UNITS	Assigned Values child	youth	adult	senior
Intake Equation:	CDI =	(DA*EF*ED*SA)/(BW*AT)					
	CDI =	Chronic Daily Intake	mg/kgday		calculated below		
	DA =	Dermal absorption dose	mg/cm²day	NA	NA	NA	NA
	EF =	Exposure frequency	days/yr	NA	NA	NA	NA
	ED =	Exposure duration	yrs	NA	NA	NA	NA
	SA =	Surface area of skin	cm²	NA	NA	NA	NA
	BW =	Body weight	kg	NA	NA	NA	NA
	ATc =	Average time for carcinogens	days	NA	NA	NA	NA
	ATn =	Average time for non-carcinogens	days	NA	NA	NA	NA
where:	DA = C_v*K_p*CF*ET						
	C_v =	concentation of ith contaminant in surface water	mg/L		see COC list below		
	K_p =	permeability constant for ith contaminant	cm/hr		see COC list below		
	CF =	conversion factor	L/cm³	NA	NA	NA	NA
	ET =	exposure time	hr/d	NA	NA	NA	NA

COC	C_v	K_p	DA	RfDd	CSFd	CHILD				YOUTH				ADULT				SENIOR				SUM			
						CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR
	mg/L	cm/hr	mg/cm²day	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	0.00E+00	6.43E-03	NA	3.24E-03	7.04E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethylene	0.00E+00	1.59E-02	NA	5.00E-02	6.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-dichloroethane	0.00E+00	5.34E-03	NA	2.00E-02	9.10E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	0.00E+00	1.11E-03	NA	4.80E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	0.00E+00	1.69E-02	NA	NA	9.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	0.00E+00	9.95E-03	NA	3.25E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	0.00E+00	2.66E-03	NA	2.40E-03	2.63E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	0.00E+00	5.69E-04	NA	7.47E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	5.00E-04	1.00E-03	NA	8.00E-06	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	0.00E+00	1.29E+00	NA	1.80E-05	2.22E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	0.00E+00	5.48E+00	NA	1.80E-05	2.22E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	1.50E-03	1.00E-03	NA	1.23E-04	3.66E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	1.31E-02	1.00E-03	NA	1.40E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	0.00E+00	2.07E-02	NA	3.88E-03	5.67E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	0.00E+00	9.48E-01	NA	NA	2.35E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	0.00E+00	1.24E+00	NA	NA	2.35E+01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	0.00E+00	6.99E-01	NA	NA	2.35E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	0.00E+00	1.20E+00	NA	NA	2.35E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	1.00E-04	1.00E-03	NA	2.00E-05	4.30E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-chloroisopropyl)ether	0.00E+00	7.63E-02	NA	2.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	0.00E+00	1.97E+00	NA	3.80E-03	7.37E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Boron	1.58E-02	1.00E-03	NA	1.80E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	0.00E+00	5.02E-03	NA	1.98E-02	6.33E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	0.00E+00	2.77E-03	NA	1.20E-02	1.32E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	0.00E+00	3.51E-03	NA	1.12E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	1.00E-04	1.00E-03	NA	1.00E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	0.00E+00	7.97E-02	NA	NA	2.86E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	0.00E+00	1.56E-02	NA	6.30E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	0.00E+00	2.24E-02	NA	4.55E-04	2.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlordane	0.00E+00	1.57E-01	NA	2.50E-04	7.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	0.00E+00	4.07E-02	NA	6.20E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	0.00E+00	8.92E-03	NA	2.00E-03	3.05E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (VI)	1.00E-03	2.00E-03	NA	6.00E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.00E+00	1.03E+00	NA	NA	2.35E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	2.90E-04	4.00E-04	NA	1.60E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	1.40E-03	1.00E-03	NA	1.20E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	0.00E+00	1.00E-03	NA	3.40E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexanone	0.00E+00	1.80E-03	NA	4.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	0.00E+00	1.68E+00	NA	NA	2.35E+01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	0.00E+00	4.45E-02	NA	2.50E-05	3.20E+01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-octylphthalate	0.00E+00	4.45E+00	NA	3.60E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE E.0-6
Museum Visitor - BKGD - DermalSWchem

Museum Visitor - Dermal Contact with Surface Water
Risk calculation for background

			UNITS	Assigned Values			
				child	youth	adult	senior
Intake Equation:	CDI =	(DA*EF*ED*SA)/(BW*AT)	mg/kgday	calculated below			
	CDI =	Chronic Daily Intake					
	DA =	Dermal absorption dose	mg/cm²day	NA	NA	NA	NA
	EF =	Exposure frequency	days/yr	NA	NA	NA	NA
	ED =	Exposure duration	yrs	NA	NA	NA	NA
	SA =	Surface area of skin	cm²	NA	NA	NA	NA
	BW =	Body weight	kg	NA	NA	NA	NA
	ATc =	Average time for carcinogens	days	NA	NA	NA	NA
	ATn =	Average time for non-carcinogens	days	NA	NA	NA	NA
where:	DA = C_v*K_p*CF*ET						
	C_v =	concentation of ith contaminant in surface water	mg/L	see COC list below			
	K_p =	permeability constant for ith contaminant	cm/hr	see COC list below			
	CF =	conversion factor	L/cm³	NA	NA	NA	NA
	ET =	exposure time	hr/d	NA	NA	NA	NA

COC	C_v	K_p	DA	RfDd	CSFd	CHILD				YOUTH				ADULT				SENIOR				SUM			
						CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR
	mg/L	cm/hr	mg/cm²day	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
Ethyl ether	0.00E+00	2.88E-03	NA	1.60E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	0.00E+00	7.39E-02	NA	9.70E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoride	1.46E-01	1.00E-03	NA	5.82E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlorodibenzofuran	0.00E+00	2.55E+00	NA	NA	3.00E+03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlorodibenzo-p-dioxin	0.00E+00	3.22E+00	NA	NA	3.00E+03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorodibenzofuran	0.00E+00	2.38E+00	NA	NA	3.00E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorodibenzo-p-dioxin	0.00E+00	5.29E+00	NA	NA	3.00E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	0.00E+00	2.23E+00	NA	NA	2.35E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	5.00E-04	1.00E-04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	6.50E-03	1.00E-03	NA	1.84E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	6.00E-05	1.00E-03	NA	2.10E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methanol	0.00E+00	3.45E-04	NA	4.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone	0.00E+00	3.97E-03	NA	6.40E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene chloride	0.00E+00	4.46E-03	NA	5.70E-02	7.89E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Molybdenum	9.70E-04	1.00E-03	NA	1.90E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	1.70E-03	2.00E-04	NA	5.40E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	0.00E+00	1.96E-02	NA	5.00E-03	1.96E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-nitrosodipropylamine	0.00E+00	2.83E-03	NA	NA	2.80E+01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Octachlorodibenzofuran	0.00E+00	4.78E+00	NA	NA	3.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Octochlorodibenzo-p-dioxin	0.00E+00	1.65E+01	NA	NA	3.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorodibenzofuran	0.00E+00	1.06E+00	NA	NA	1.50E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorodibenzo-p-dioxin	0.00E+00	3.79E-01	NA	NA	1.50E+05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	0.00E+00	1.96E-01	NA	3.00E-02	1.20E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	0.00E+00	2.29E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	2.50E-03	1.00E-03	NA	2.20E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	2.00E-04	6.00E-04	NA	9.00E-04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachlorodibenzofuran	NA	1.12E+00	NA	NA	3.00E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachlorodibenzo-p-dioxin	NA	1.39E+00	NA	NA	3.00E+05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethylene	0.00E+00	4.81E-02	NA	1.00E-02	5.40E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	4.00E-04	1.00E-03	NA	1.80E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	0.00E+00	4.53E-02	NA	6.40E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tributyl phosphate	0.00E+00	3.13E-02	NA	1.00E-01	1.08E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethylene	0.00E+00	1.57E-02	NA	4.50E-05	2.67E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trifluorochloromethane	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Uranium	1.70E-03	1.00E-03	NA	5.10E-04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	2.00E-03	1.00E-03	NA	7.00E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	0.00E+00	1.13E-02	NA	3.00E-03	1.50E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes	0.00E+00	7.04E-02	NA	1.84E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	3.70E-03	6.00E-04	NA	6.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
																						total =	0.00E+00	total =	0.00E+00

TABLE E.0-6
Museum Visitor - BKGD - IngestSWchem

Museum Visitor - Ingestion of Surface Water
Risk calculation for background

Intake Equation:			UNITS	Assigned Values			
				child	youth	adult	senior
	CDI =	(CW*EF*ED*IR)/(BW*AT)					
	CDI =	Chronic Daily Intake	mg/kgday				
	CW =	Concentration of chemical in water	mg/L	see COC table below			
	EF =	Exposure frequency	days/yr	NA	NA	NA	NA
	ED =	Exposure duration	yrs	NA	NA	NA	NA
	IR =	Ingestion rate	L/day	NA	NA	NA	NA
	BW =	Body weight	kg	NA	NA	NA	NA
	ATc =	Average time for carcinogens	days	NA	NA	NA	NA
	ATn =	Average time for non-carcinogens	days	NA	NA	NA	NA

COC	CW	RfDo	CSFo	CHILD				YOUTH				ADULT				SENIOR				SUM			
				CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR
	mg/L	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	0.00E+00	4.00E-03	5.70E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethylene	0.00E+00	5.00E-02	6.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-dichloroethane	0.00E+00	2.00E-02	9.10E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	0.00E+00	6.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	0.00E+00	NA	4.50E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	0.00E+00	5.00E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroanaline	0.00E+00	3.00E-03	2.10E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	0.00E+00	9.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	5.00E-04	4.00E-04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	0.00E+00	2.00E-05	4.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	0.00E+00	2.00E-05	4.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	1.50E-03	3.00E-04	1.50E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	1.31E-02	2.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	0.00E+00	4.00E-03	5.50E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	0.00E+00	NA	7.30E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	0.00E+00	NA	7.30E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	0.00E+00	NA	7.30E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	0.00E+00	NA	7.30E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	1.00E-04	2.00E-03	4.30E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-chloroisopropyl)ether	0.00E+00	4.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	0.00E+00	2.00E-02	1.40E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Boron	1.58E-02	2.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	0.00E+00	2.00E-02	6.20E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	0.00E+00	2.00E-02	7.90E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	0.00E+00	1.40E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	1.00E-04	1.00E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	0.00E+00	NA	2.00E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	0.00E+00	1.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	0.00E+00	7.00E-04	1.30E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlordane	0.00E+00	5.00E-04	3.50E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	0.00E+00	2.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	0.00E+00	1.00E-02	6.10E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (VI)	1.00E-03	3.00E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.00E+00	NA	7.30E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	2.90E-04	2.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	1.40E-03	4.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	0.00E+00	2.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexanone	0.00E+00	5.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	0.00E+00	NA	7.30E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	0.00E+00	5.00E-05	1.60E+01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-octylphthalate	0.00E+00	4.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE E.0-6
Museum Visitor - BKGD - IngestSWchem

Museum Visitor - Ingestion of Surface Water
Risk calculation for background

Intake Equation:

CDI =	(CW*EF*ED*IR)/(BW*AT)	
CDI =	Chronic Daily Intake	
CW =	Concentration of chemical in water	
EF =	Exposure frequency	
ED =	Exposure duration	
IR =	Ingestion rate	
BW =	Body weight	
ATc =	Average time for carcinogens	
ATn =	Average time for non-carcinogens	

UNITS	Assigned Values			
	child	youth	adult	senior
mg/kgday	see COC table below			
mg/L				
days/yr	NA	NA	NA	NA
yrs	NA	NA	NA	NA
L/day	NA	NA	NA	NA
kg	NA	NA	NA	NA
days	NA	NA	NA	NA
days	NA	NA	NA	NA

COC	CW	RfDo	CSFo	CHILD				YOUTH				ADULT				SENIOR				SUM			
				CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR
	mg/L	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
Ethyl ether	0.00E+00	2.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	0.00E+00	1.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoride	1.46E-01	6.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlorodibenzofuran	0.00E+00	NA	1.50E+03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlorodibenzo-p-dioxin	0.00E+00	NA	1.50E+03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorodibenzofuran	0.00E+00	NA	1.50E+03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorodibenzo-p-dioxin	0.00E+00	NA	1.50E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	0.00E+00	NA	7.30E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	5.00E-04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	6.50E-03	4.60E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	6.00E-05	3.00E-04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methanol	0.00E+00	5.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone	0.00E+00	8.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene chloride	0.00E+00	6.00E-02	7.50E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Molybdenum	9.70E-04	5.00E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	1.70E-03	2.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	0.00E+00	2.00E-02	4.90E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-nitrosodipropylamine	0.00E+00	NA	7.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Octachlorodibenzofuran	0.00E+00	NA	1.50E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Octochlorodibenzo-p-dioxin	0.00E+00	NA	1.50E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorodibenzofuran	0.00E+00	NA	7.50E+03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorodibenzo-p-dioxin	0.00E+00	NA	7.50E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	0.00E+00	3.00E-02	1.20E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	2.50E-03	5.00E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	2.00E-04	5.00E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachlorodibenzofuran	0.00E+00	NA	1.50E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachlorodibenzo-p-dioxin	0.00E+00	NA	1.50E+05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethylene	0.00E+00	1.00E-02	5.40E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	4.00E-04	9.00E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	0.00E+00	8.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tributyl phosphate	0.00E+00	2.00E-01	5.40E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethylene	0.00E+00	3.00E-04	4.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trifluorochloromethane	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Uranium	1.70E-03	6.00E-04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	2.00E-03	7.00E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	0.00E+00	3.00E-03	1.50E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes	0.00E+00	2.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	3.70E-03	3.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

total = 0.00E+00 total = 0.00E+00

TABLE E.0-6
Museum Visitor - BKGD - InhaleRad

Museum Visitor - Inhalation of Gases & Particulates
Risk calculation for background

Intake Equation:			UNITS	Assigned Values			
				child	youth	adult	senior
	CDI =	(CA*EF*ED*IR*ET)					
	CDI =	Chronic Daily Intake	pCi				
	CA =	Concentration of radionuclide in air	pCi/m^3	see table of COCs below			
	EF =	Exposure frequency	days/yr	10	10	10	20
	ED =	Exposure duration	yrs	3	6	14	7
	IR =	Inhalation rate	m^3/hr	1.0	1.0	1.0	1.0
	ET =	Exposure time	hrs/day	0.5	0.5	0.5	0.5

COC	conc	CSFi	CHILD		YOUTH		ADULT		SENIOR		SUM	
			CDI	ILCR	CDI	ILCR	CDI	ILCR	CDI	ILCR	CDI	ILCR
	pCi/m^3	1/pCi	pCi	CDI*CSF	pCi	CDI*CSF	pCi	CDI*CSF	pCi	CDI*CSF	pCi	CDI*CSF
Cesium-137 + D	1.72E-06	1.19E-11	2.57E-05	3.06E-16	5.15E-05	6.13E-16	1.20E-04	1.43E-15	1.20E-04	1.43E-15	3.17E-04	3.78E-15
Lead-210 + D	4.06E-05	1.39E-08	6.08E-04	8.46E-12	1.22E-03	1.69E-11	2.84E-03	3.95E-11	2.84E-03	3.95E-11	7.50E-03	1.04E-10
Neptunium-237 + D	0.00E+00	1.77E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Plutonium-238	0.00E+00	3.36E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Plutonium-239/240	0.00E+00	3.33E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Radium-226 + D	4.06E-05	1.16E-08	6.08E-04	7.06E-12	1.22E-03	1.41E-11	2.84E-03	3.29E-11	2.84E-03	3.29E-11	7.50E-03	8.70E-11
Radium-228 + D	3.30E-05	5.23E-09	4.95E-04	2.59E-12	9.91E-04	5.18E-12	2.31E-03	1.21E-11	2.31E-03	1.21E-11	6.11E-03	3.19E-11
Radon-222+ D	3.99E+02	1.80E-11	5.99E+03	1.08E-07	1.20E+04	2.16E-07	2.80E+04	5.03E-07	2.80E+04	5.03E-07	7.39E+04	1.33E-06
Strontium-90 + D	0.00E+00	1.13E-10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Technetium-99	0.00E+00	1.41E-11	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Thorium-228 + D	3.25E-05	1.43E-07	4.88E-04	6.97E-11	9.75E-04	1.39E-10	2.28E-03	3.25E-10	2.28E-03	3.25E-10	6.01E-03	8.60E-10
Thorium-230	4.06E-05	2.85E-08	6.08E-04	1.73E-11	1.22E-03	3.47E-11	2.84E-03	8.09E-11	2.84E-03	8.09E-11	7.50E-03	2.14E-10
Thorium-232	3.30E-05	4.33E-08	4.95E-04	2.14E-11	9.91E-04	4.29E-11	2.31E-03	1.00E-10	2.31E-03	1.00E-10	6.11E-03	2.65E-10
Uranium-234	4.05E-05	1.14E-08	6.07E-04	6.92E-12	1.21E-03	1.38E-11	2.83E-03	3.23E-11	2.83E-03	3.23E-11	7.49E-03	8.53E-11
Uranium-235 + D	1.84E-06	1.01E-08	2.77E-05	2.79E-13	5.53E-05	5.59E-13	1.29E-04	1.30E-12	1.29E-04	1.30E-12	3.41E-04	3.45E-12
Uranium-238 + D	3.95E-05	9.35E-09	5.93E-04	5.54E-12	1.19E-03	1.11E-11	2.77E-03	2.59E-11	2.77E-03	2.59E-11	7.31E-03	6.84E-11
											total =	**1.33E-06**

Air concentration is derived from air particulate value of 26 ug/m^3 (2005 SER background average from monitor AMS-12) multiplied by soil concentration.
Rn-222 is derived by multiplying the soil Ra-226 value by 256 g/m^3. This conversion factor is based on Rn-222 air background and Ra-226 soil background (i.e., 400 pCi/m^3 divided by 1.56 pCi/g)

TABLE E.0-6
Museum Visitor - BKGD - IngestSoilRad

Museum Visitor - Ingestion of Soil
Risk calculation for background

Intake Equation:

CDI =	(CS*EF*ED*IR*FI)	
CDI =	Chronic Daily Intake	
CS =	Concentration of radionuclide in soil	
EF =	Exposure frequency	
ED =	Exposure duration	
IR =	Ingestion rate	
FI =	Fraction of contaminated soil	

UNITS	Assigned Values			
	child	youth	adult	senior
pCi	see table of COCs below			
pCi/g				
days/yr	10	10	10	20
yrs	3	6	14	7
g/day	0.1	0.075	0.05	0.05
unitless	1	1	1	1

COC	conc	CSFos	CHILD		YOUTH		ADULT		SENIOR		SUM	
			CDI	ILCR	CDI	ILCR	CDI	ILCR	CDI	ILCR	CDI	ILCR
	pCi/g	1/pCi	pCi	CDI*CSF	pCi	CDI*CSF	pCi	CDI*CSF	pCi	CDI*CSF	pCi	CDI*CSF
Cesium-137 + D	6.60E-02	4.33E-11	1.98E-01	8.57E-12	2.97E-01	1.29E-11	4.62E-01	2.00E-11	4.62E-01	2.00E-11	1.42E+00	6.14E-11
Lead-210 + D	1.56E+00	2.66E-09	4.68E+00	1.24E-08	7.02E+00	1.87E-08	1.09E+01	2.90E-08	1.09E+01	2.90E-08	3.35E+01	8.92E-08
Neptunium-237 + D	0.00E+00	1.62E-10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Plutonium-238	0.00E+00	2.72E-10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Plutonium-239/240	0.00E+00	2.76E-10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Radium-226 + D	1.56E+00	7.30E-10	4.68E+00	3.42E-09	7.02E+00	5.12E-09	1.09E+01	7.97E-09	1.09E+01	7.97E-09	3.35E+01	2.45E-08
Radium-228 + D	1.27E+00	2.29E-09	3.81E+00	8.72E-09	5.72E+00	1.31E-08	8.89E+00	2.04E-08	8.89E+00	2.04E-08	2.73E+01	6.25E-08
Radon-222+ D	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Strontium-90 + D	0.00E+00	1.44E-10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Technetium-99	0.00E+00	7.66E-12	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Thorium-228 + D	1.25E+00	8.09E-10	3.75E+00	3.03E-09	5.63E+00	4.55E-09	8.75E+00	7.08E-09	8.75E+00	7.08E-09	2.69E+01	2.17E-08
Thorium-230	1.56E+00	2.02E-10	4.68E+00	9.45E-10	7.02E+00	1.42E-09	1.09E+01	2.21E-09	1.09E+01	2.21E-09	3.35E+01	6.78E-09
Thorium-232	1.27E+00	2.31E-10	3.81E+00	8.80E-10	5.72E+00	1.32E-09	8.89E+00	2.05E-09	8.89E+00	2.05E-09	2.73E+01	6.31E-09
Uranium-234	1.56E+00	1.58E-10	4.67E+00	7.38E-10	7.00E+00	1.11E-09	1.09E+01	1.72E-09	1.09E+01	1.72E-09	3.35E+01	5.29E-09
Uranium-235 + D	7.09E-02	1.63E-10	2.13E-01	3.47E-11	3.19E-01	5.20E-11	4.96E-01	8.09E-11	4.96E-01	8.09E-11	1.52E+00	2.49E-10
Uranium-238 + D	1.52E+00	2.10E-10	4.56E+00	9.58E-10	6.84E+00	1.44E-09	1.06E+01	2.23E-09	1.06E+01	2.23E-09	3.27E+01	6.86E-09
											total =	**2.24E-07**

TABLE E.0-6
Museum Visitor - BKGD - IngestSWrad

Museum Visitor - Ingestion of Surface Water
Risk calculation for background

Intake Equation:

CDI =	(CW*EF*ED*IR)/(BW*AT)	
CDI =	Chronic Daily Intake	
CW =	Concentration of radionuclide in water	
EF =	Exposure frequency	
ED =	Exposure duration	
IR =	Ingestion rate	

UNITS	Assigned Values			
	child	youth	adult	senior
pCi	see COC table below			
pCi/L				
days/yr	NA	NA	NA	NA
yrs	NA	NA	NA	NA
L/day	NA	NA	NA	NA

COC	conc	CSF	CHILD		YOUTH		ADULT		SENIOR		SUM	
			CDI	ILCR	CDI	ILCR	CDI	ILCR	CDI	ILCR	CDI	ILCR
	pCi/L	1/pCi	pCi	CDI*CSF	pCi	CDI*CSF	pCi	CDI*CSF	pCi	CDI*CSF	pCi	CDI*CSF
Cesium-137 + D	1.70E+00	3.04E-11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead-210 + D	6.99E-01	1.27E-09	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Neptunium-237 + D	1.19E-01	6.74E-11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Plutonium-238	1.10E-02	1.31E-10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Plutonium-239/240	3.17E-02	1.35E-10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Radium-226 + D	1.45E-01	3.86E-10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Radium-228 + D	2.50E+00	1.04E-09	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Radon-222+ D	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Strontium-90 + D	4.66E-01	7.40E-11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Technetium-99	6.20E+00	2.75E-12	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thorium-228 + D	2.50E+00	3.00E-10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thorium-230	3.94E-02	9.10E-11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thorium-232	2.50E+00	1.01E-10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Uranium-234	5.81E-01	7.07E-11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Uranium-235 + D	2.64E-02	7.18E-11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Uranium-238 + D	5.67E-01	8.71E-11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

total = 0.00E+00

TABLE E.0-6
Museum Visitor - BKGD - ExternalRad

Museum Visitor - External Radiation
Risk calculation for background

Intake Equation: CDI = $(CS*EF*ED*ET_o*(1-SH_o))+(CS*EF*ED*ETi*(1-SHi))$

		UNITS	Assigned Values			
			child	youth	adult	senior
CDI =	Chronic Daily Intake	yr pCi/g				
CS =	Concentration of radionuclide in soil	pCi/g	see table of COCs below			
EF =	Fraction of year exposed to radiation	--	0.027	0.027	0.027	0.05
ED =	Exposure duration	yrs	3	6	14	7
ET_o =	Fraction of day spent outdoors	--	0.021	0.021	0.021	0.021
ET_i =	Fraction of day spent indoors	--	0.083	0.083	0.083	0.083
SH_o =	Shield factor outdoors	--	0.25	0.25	0.25	0.25
SH_i =	Shield factor indoors	--	0.5	0.5	0.5	0.5

COC	conc	CSFx	CHILD		YOUTH		ADULT		SENIOR		SUM	
			CDI	ILCR	CDI	ILCR	CDI	ILCR	CDI	ILCR	CDI	ILCR
	pCi/g	g/pCi yr	yr pCi/g	CDI*CSF	yr pCi/g	CDI*CSF	yr pCi/g	CDI*CSF	yr pCi/g	CDI*CSF	yr pCi/g	CDI*CSF
Cesium-137 + D	6.60E-02	2.55E-06	3.11E-04	7.93E-10	6.22E-04	1.59E-09	1.45E-03	3.70E-09	1.45E-03	3.70E-09	3.83E-03	9.77E-09
Lead-210 + D	1.56E+00	4.21E-09	7.35E-03	3.09E-11	1.47E-02	6.19E-11	3.43E-02	1.44E-10	3.43E-02	1.44E-10	9.06E-02	3.81E-10
Neptunium-237 + D	0.00E+00	7.97E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Plutonium-238	0.00E+00	7.22E-11	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Plutonium-239/240	0.00E+00	2.00E-10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Radium-226 + D	1.56E+00	8.49E-06	7.35E-03	6.24E-08	1.47E-02	1.25E-07	3.43E-02	2.91E-07	3.43E-02	2.91E-07	9.06E-02	7.69E-07
Radium-228 + D	1.27E+00	4.53E-06	5.98E-03	2.71E-08	1.20E-02	5.42E-08	2.79E-02	1.26E-07	2.79E-02	1.26E-07	7.38E-02	3.34E-07
Radon-222+ D	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Strontium-90 + D	0.00E+00	1.96E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Technetium-99	0.00E+00	8.14E-11	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Thorium-228 + D	1.25E+00	7.76E-06	5.89E-03	4.57E-08	1.18E-02	9.14E-08	2.75E-02	2.13E-07	2.75E-02	2.13E-07	7.26E-02	5.63E-07
Thorium-230	1.56E+00	8.19E-10	7.35E-03	6.02E-12	1.47E-02	1.20E-11	3.43E-02	2.81E-11	3.43E-02	2.81E-11	9.06E-02	7.42E-11
Thorium-232	1.27E+00	3.42E-10	5.98E-03	2.05E-12	1.20E-02	4.09E-12	2.79E-02	9.54E-12	2.79E-02	9.54E-12	7.38E-02	2.52E-11
Uranium-234	1.56E+00	2.52E-10	7.33E-03	1.85E-12	1.47E-02	3.69E-12	3.42E-02	8.62E-12	3.42E-02	8.62E-12	9.04E-02	2.28E-11
Uranium-235 + D	7.09E-02	5.43E-07	3.34E-04	1.81E-10	6.68E-04	3.63E-10	1.56E-03	8.46E-10	1.56E-03	8.46E-10	4.12E-03	2.24E-09
Uranium-238 + D	1.52E+00	1.14E-07	7.16E-03	8.16E-10	1.43E-02	1.63E-09	3.34E-02	3.81E-09	3.34E-02	3.81E-09	8.83E-02	1.01E-08

total = 1.69E-06

TABLE E.0-6
Museum Visitor - BKGD - SumPaths

Museum Visitor - Summation of all Pathways
Risk calculation for background

	HQ	ILCR	rad only ILCR
Inhale	8.57E-04	1.34E-06	1.33E-06
Dermal Soil	1.70E-03	2.97E-07	NA
Ingest Soil	4.30E-03	7.05E-07	2.24E-07
Dermal Surface Water	NA	NA	NA
Ingest Surface Water	NA	NA	NA
External Radiation	NA	1.69E-06	1.69E-06
SUM	**6.87E-03**	**4.03E-06**	**3.24E-06**

Summation of all paths for individual nuclides

		Background Value as Applicable to Each Zone	
	Background ILCR	**Zone 6 ILCR**	**Zone 7 ILCR**
Cesium-137 + D	9.84E-09	9.84E-09	9.84E-09
Lead-210 + D	8.97E-08	8.97E-08	8.97E-08
Neptunium-237 + D	0.00E+00	NA	NA
Plutonium-238	0.00E+00	NA	NA
Plutonium-239/240	0.00E+00	NA	NA
Radium-226 + D	7.94E-07	7.94E-07	7.94E-07
Radium-228 + D	3.97E-07	3.97E-07	3.97E-07
Radon-222+ D	1.33E-06	1.33E-06	1.33E-06
Strontium-90 + D	0.00E+00	NA	NA
Technetium-99	0.00E+00	0.00E+00	0.00E+00
Thorium-228 + D	5.86E-07	5.86E-07	5.86E-07
Thorium-230	7.06E-09	7.06E-09	7.06E-09
Thorium-232	6.60E-09	6.60E-09	6.60E-09
Uranium-234	5.39E-09	5.39E-09	5.39E-09
Uranium-235 + D	2.49E-09	2.49E-09	2.49E-09
Uranium-238 + D	1.70E-08	1.70E-08	1.70E-08
SUM	**3.24E-06**	**3.24E-06**	**3.24E-06**

TABLE E.0-6
Museum Visitor - BKGD - SumPaths

Summation of all paths for individual chemicals

	Background		Background Values as Applicable to Each Zone			
			Zone 6		Zone 7	
	ILCR	HQ	ILCR	HQ	ILCR	HQ
1,1,2-Trichloroethane	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA
1,1-Dichloroethylene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA
1,2-dichloroethane	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA
2-Butanone	no CSFs	0.00E+00	NA	NA	NA	NA
3,3-Dichlorobenzidine	0.00E+00	no RfDs	NA	NA	NA	NA
4-Methylphenol	no CSFs	0.00E+00	NA	NA	NA	NA
4-Nitroanaline	0.00E+00	0.00E+00	NA	NA	NA	NA
Acetone	no CSFs	0.00E+00	NA	NA	NA	NA
Antimony	no CSFs	4.50E-04	no CSFs	4.50E-04	no CSFs	4.50E-04
Aroclor-1254	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Aroclor-1260	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Arsenic	5.66E-07	2.93E-03	5.66E-07	2.93E-03	5.66E-07	2.93E-03
Barium	no CSFs	5.83E-05	no CSFs	5.83E-05	NA	NA
Benzene	0.00E+00	0.00E+00	NA	NA	NA	NA
Benzo(a)anthracene	0.00E+00	no RfDs	0.00E+00	no RfDs	0.00E+00	no RfDs
Benzo(a)pyrene	0.00E+00	no RfDs	0.00E+00	no RfDs	0.00E+00	no RfDs
Benzo(b)fluoranthene	0.00E+00	no RfDs	0.00E+00	no RfDs	0.00E+00	no RfDs
Benzo(k)fluoranthene	0.00E+00	no RfDs	0.00E+00	no RfDs	0.00E+00	no RfDs
Beryllium	2.13E-07	6.00E-05	2.13E-07	6.00E-05	2.13E-07	6.00E-05
Bis(2-chloroisopropyl)ether	no CSFs	0.00E+00	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	0.00E+00	0.00E+00	NA	NA	NA	NA
Boron	no CSFs	5.88E-07	NA	NA	NA	NA
Bromodichloromethane	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA
Bromoform	0.00E+00	0.00E+00	NA	NA	NA	NA
Bromomethane	no CSFs	0.00E+00	NA	NA	NA	NA
Cadmium	2.31E-11	7.94E-05	2.31E-11	7.94E-05	2.31E-11	7.94E-05
Carbazole	0.00E+00	no RfDs	NA	NA	NA	NA
Carbon disulfide	no CSFs	0.00E+00	NA	NA	NA	NA
Carbon tetrachloride	0.00E+00	0.00E+00	NA	NA	NA	NA
Chlordane	0.00E+00	0.00E+00	NA	NA	NA	NA
Chlorobenzene	no CSFs	0.00E+00	NA	NA	NA	NA
Chloroform	0.00E+00	0.00E+00	NA	NA	NA	NA
Chromium (VI)	3.84E-09	5.24E-04	NA	NA	NA	NA
Chrysene	0.00E+00	no RfDs	0.00E+00	no RfDs	0.00E+00	no RfDs
Cobalt	7.76E-10	8.13E-05	NA	NA	NA	NA
Copper	no CSFs	3.63E-05	NA	NA	NA	NA
Cyanide	no CSFs	0.00E+00	NA	NA	NA	NA
Cyclohexanone	no CSFs	0.00E+00	NA	NA	NA	NA
Dibenzo(a,h)anthracene	0.00E+00	no RfDs	0.00E+00	no RfDs	0.00E+00	no RfDs
Dieldrin	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA
Di-n-octylphthalate	no CSFs	0.00E+00	NA	NA	NA	NA

TABLE E.0-6
Museum Visitor - BKGD - SumPaths

Summation of all paths for individual chemicals (continued)

	Background		Background Values as Applicable to Each Zone			
			Zone 6		Zone 7	
	ILCR	HQ	ILCR	HQ	ILCR	HQ
Ethyl ether	no CSFs	0.00E+00	NA	NA	NA	NA
Ethylbenzene	0.00E+00	0.00E+00	NA	NA	NA	NA
Fluoride	no CSFs	2.43E-06	no CSFs	2.43E-06	NA	NA
Heptachlorodibenzofuran	0.00E+00	no RfDs	NA	NA	NA	NA
Heptachlorodibenzo-p-dioxin	0.00E+00	no RfDs	0.00E+00	no RfDs	NA	NA
Hexachlorodibenzofuran	0.00E+00	no RfDs	NA	NA	NA	NA
Hexachlorodibenzo-p-dioxin	0.00E+00	no RfDs	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	0.00E+00	no RfDs	0.00E+00	no RfDs	0.00E+00	no RfDs
Lead	no CSFs	no RfDs	NA	NA	NA	NA
Manganese	no CSFs	1.32E-03	NA	NA	NA	NA
Mercury	no CSFs	1.17E-05	NA	NA	NA	NA
Methanol	no CSFs	0.00E+00	NA	NA	NA	NA
Methyl-2-pentanone	no CSFs	0.00E+00	NA	NA	NA	NA
Methylene chloride	0.00E+00	0.00E+00	NA	NA	NA	NA
Molybdenum	no CSFs	4.84E-05	no CSFs	4.84E-05	no CSFs	4.84E-05
Nickel	no CSFs	1.06E-04	NA	NA	NA	NA
N-nitrosodiphenylamine	0.00E+00	0.00E+00	NA	NA	NA	NA
N-nitrosodipropylamine	0.00E+00	no RfDs	NA	NA	NA	NA
Octachlorodibenzofuran	0.00E+00	no RfDs	NA	NA	NA	NA
Octochlorodibenzo-p-dioxin	0.00E+00	no RfDs	0.00E+00	no RfDs	NA	NA
Pentachlorodibenzofuran	no CSFs	no RfDs	NA	NA	NA	NA
Pentachlorodibenzo-p-dioxin	0.00E+00	no RfDs	NA	NA	NA	NA
Pentachlorophenol	0.00E+00	0.00E+00	NA	NA	NA	NA
Phenanthrene	no CSFs	no RfDs	no CSFs	no RfDs	no CSFs	no RfDs
Selenium	no CSFs	1.10E-05	NA	NA	NA	NA
Silver	no CSFs	1.07E-05	no CSFs	1.07E-05	no CSFs	1.07E-05
Tetrachlorodibenzofuran	no CSFs	no RfDs	NA	NA	NA	NA
Tetrachlorodibenzo-p-dioxin	no CSFs	no RfDs	NA	NA	NA	NA
Tetrachloroethylene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA
Thallium	no CSFs	3.03E-04	NA	NA	NA	NA
Toluene	no CSFs	0.00E+00	NA	NA	NA	NA
Tributyl phosphate	0.00E+00	0.00E+00	NA	NA	NA	NA
Trichloroethylene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA
Trifluorochloromethane	no CSFs	no RfDs	NA	NA	NA	NA
Uranium	no CSFs	3.47E-04	no CSFs	3.47E-04	no CSFs	3.47E-04
Vanadium	no CSFs	4.75E-04	NA	NA	NA	NA
Vinyl chloride	0.00E+00	0.00E+00	NA	NA	NA	NA
Xylenes	no CSFs	0.00E+00	NA	NA	NA	NA
Zinc	no CSFs	1.40E-05	NA	NA	NA	NA
SUM	**7.83E-07**	**6.87E-03**	**7.79E-07**	**3.99E-03**	**7.79E-07**	**3.93E-03**

APPENDIX E.1
Zone 1

Table

E.1-1	Construction Worker	- Only available on CD ROM.
E.1-2	Groundskeeper / Sampler	- Only available on CD ROM.
E.1-3	Undeveloped Park User	- Only available on CD ROM.
E.1-4	Building Maintenance	- This receptor has no exposure for this zone, therefore no table exists.
E.1-5	Museum Worker	- This receptor has no exposure for this zone, therefore no table exists.
E.1-6	Museum Visitor	- This receptor has no exposure for this zone, therefore no table exists.

APPENDIX E.2
Zone 2

Table

E.2-1	Construction Worker	- Only available on CD ROM.
E.2-2	Groundskeeper / Sampler	- Only available on CD ROM.
E.2-3	Undeveloped Park User	- Only available on CD ROM.
E.2-4	Building Maintenance	- Only available on CD ROM.
E.2-5	Museum Worker	- This receptor has no exposure for this zone, therefore no table exists.
E.2-6	Museum Visitor	- This receptor has no exposure for this zone, therefore no table exists.

APPENDIX E.3
Zone 3

Table

E.3-1	Construction Worker	- Only available on CD ROM.
E.3-2	Groundskeeper / Sampler	- Only available on CD ROM.
E.3-3	Undeveloped Park User	- Only available on CD ROM.
E.3-4	Building Maintenance	- This receptor has no exposure for this zone, therefore no table exists.
E.3-5	Museum Worker	- This receptor has no exposure for this zone, therefore no table exists.
E.3-6	Museum Visitor	- This receptor has no exposure for this zone, therefore no table exists.

APPENDIX E.4
Zone 4

Table

E.4-1	Construction Worker	- Only available on CD ROM.
E.4-2	Groundskeeper / Sampler	- Only available on CD ROM.
E.4-3	Undeveloped Park User	- Only available on CD ROM.
E.4-4	Building Maintenance	- This receptor has no exposure for this zone, therefore no table exists.
E.4-5	Museum Worker	- This receptor has no exposure for this zone, therefore no table exists.
E.4-6	Museum Visitor	- This receptor has no exposure for this zone, therefore no table exists.

APPENDIX E.5
Zone 5

Table

E.5-1	Construction Worker	- Hard copy provided in this appendix, also available on CD ROM.
E.5-2	Groundskeeper / Sampler	- Hard copy provided in this appendix, also available on CD ROM.
E.5-3	Undeveloped Park User	- Hard copy provided in this appendix, also available on CD ROM.
E.5-4	Building Maintenance	- This receptor has no exposure for this zone, therefore no table exists.
E.5-5	Museum Worker	- This receptor has no exposure for this zone, therefore no table exists.
E.5-6	Museum Visitor	- This receptor has no exposure for this zone, therefore no table exists.

TABLE E.5-1
Construction Worker - Zone 5 - InhaleChem

Construction Worker - Inhalation of Gases & Particulates
Risk calculation for Zone 5

Intake Equation:			UNITS	adult
	CDI =	(CS*EF*ED*IR*ET)/(BW*AT)		
	CDI =	Chronic Daily Intake	mg/kgday	calculated below
	CA =	Concentration of chemical in air	mg/m^3	see COC list below
	EF =	Exposure frequency	days/yr	30
	ED =	Exposure duration	yrs	1
	IR =	Inhalation rate	m^3/hr	2.5
	ET =	Exposure time	hrs/day	8
	BW =	Body weight	kg	70
	ATc =	Average time for carcinogens	days	25550
	ATn =	Average time for non-carcinogens	days	365

COC	conc	RfDI	CSFI	ADULT CDI	HQ	CDI	ILCR
	mg/m^3	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	8.38E-12	NA	5.60E-02	NA	NA	2.81E-15	1.57E-16
1,1-Dichloroethylene	1.45E-11	5.71E-02	1.75E-01	3.41E-13	5.97E-12	4.87E-15	8.52E-16
1,2-dichloroethane	7.19E-12	NA	9.10E-02	NA	NA	2.41E-15	2.19E-16
2-Butanone	NA	1.43E+00	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	NA	NA	NA	NA	NA	NA	NA
4-Nitroanaline	NA	1.14E-03	NA	NA	NA	NA	NA
Acetone	1.31E-10	NA	NA	NA	NA	NA	NA
Antimony	5.78E-08	NA	NA	NA	NA	NA	NA
Aroclor-1254	1.75E-09	NA	2.00E+00	NA	NA	5.89E-13	1.18E-12
Aroclor-1260	1.58E-10	NA	2.00E+00	NA	NA	5.30E-14	1.06E-13
Arsenic	2.90E-07	NA	1.51E+01	NA	NA	9.72E-11	1.47E-09
Barium	4.68E-06	1.43E-04	NA	1.10E-07	7.68E-04	NA	NA
Benzene	3.58E-12	8.57E-03	2.73E-02	8.40E-14	9.80E-12	1.20E-15	3.26E-17
Benzo(a)anthracene	2.24E-09	NA	3.08E-01	NA	NA	7.50E-13	2.31E-13
Benzo(a)pyrene	2.26E-09	NA	3.08E-01	NA	NA	7.58E-13	2.34E-13
Benzo(b)fluoranthene	3.56E-09	NA	3.08E+00	NA	NA	1.19E-12	3.68E-12
Benzo(k)fluoranthene	7.92E-10	NA	3.08E-02	NA	NA	2.66E-13	8.19E-15
Beryllium	3.05E-08	5.71E-06	8.40E+00	7.15E-10	1.25E-04	1.02E-11	8.58E-11
Bis(2-chloroisopropyl)ether	NA	NA	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	NA	NA	NA	NA	NA	NA	NA
Boron	NA	5.71E-03	NA	NA	NA	NA	NA
Bromodichloromethane	3.00E-12	NA	NA	NA	NA	NA	NA
Bromoform	NA	NA	3.85E-03	NA	NA	NA	NA
Bromomethane	NA	1.43E-03	NA	NA	NA	NA	NA
Cadmium	1.84E-08	NA	6.30E+00	NA	NA	6.17E-12	3.89E-11
Carbazole	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	NA	2.00E-01	NA	NA	NA	NA	NA
Carbon tetrachloride	3.53E-12	NA	5.25E-02	NA	NA	1.18E-15	6.21E-17
Chlordane	NA	2.00E-04	3.50E-01	NA	NA	NA	NA
Chlorobenzene	NA	1.43E-02	NA	NA	NA	NA	NA
Chloroform	NA	NA	8.05E-02	NA	NA	NA	NA
Chromium (VI)	6.37E-07	2.86E-05	4.20E+01	1.50E-08	5.23E-04	2.14E-10	8.98E-09
Chrysene	2.22E-09	NA	3.08E-03	NA	NA	7.44E-13	2.29E-15
Cobalt	NA	5.71E-06	9.80E+00	NA	NA	NA	NA
Copper	NA	NA	NA	NA	NA	NA	NA
Cyanide	NA	NA	NA	NA	NA	NA	NA
Cyclohexanone	NA	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	3.96E-10	NA	3.08E+00	NA	NA	1.33E-13	4.10E-13
Dieldrin	1.42E-11	NA	1.61E+01	NA	NA	4.76E-15	7.66E-14
Di-n-octylphthalate	NA	NA	NA	NA	NA	NA	NA
Ethyl ether	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	3.58E-12	2.86E-01	3.85E-03	8.40E-14	2.94E-13	1.20E-15	4.62E-18
Fluoride	8.55E-08	NA	NA	NA	NA	NA	NA
Heptachlorodibenzofuran	NA	NA	1.16E+03	NA	NA	NA	NA
Heptachlorodibenzo-p-dioxin	NA	NA	1.16E+03	NA	NA	NA	NA
Hexachlorodibenzofuran	NA	NA	1.16E+04	NA	NA	NA	NA
Hexachlorodibenzo-p-dioxin	NA	NA	1.16E+04	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	1.47E-09	NA	3.08E-01	NA	NA	4.93E-13	1.52E-13
Lead	7.70E-07	NA	NA	NA	NA	NA	NA
Manganese	NA	1.43E-05	NA	NA	NA	NA	NA
Mercury	1.84E-09	NA	NA	NA	NA	NA	NA
Methanol	NA	NA	NA	NA	NA	NA	NA
Methyl-2-pentanone	1.84E-11	8.57E-01	NA	4.32E-13	5.05E-13	NA	NA
Methylene chloride	3.52E-11	8.57E-01	1.65E-03	8.27E-13	9.65E-13	1.18E-14	1.95E-17
Molybdenum	1.03E-07	NA	NA	NA	NA	NA	NA
Nickel	NA	NA	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	NA	NA	NA	NA	NA	NA	NA
N-nitrosodipropylamine	NA	NA	NA	NA	NA	NA	NA
Octochlorodibenzofuran	NA	NA	1.16E+02	NA	NA	NA	NA
Octochlorodibenzo-p-dioxin	NA	NA	1.16E+02	NA	NA	NA	NA
Pentachlorodibenzofuran	NA	NA	5.78E+03	NA	NA	NA	NA
Pentachlorodibenzo-p-dioxin	NA	NA	5.78E+04	NA	NA	NA	NA
Pentachlorophenol	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	3.23E-09	NA	NA	NA	NA	NA	NA
Selenium	3.29E-08	NA	NA	NA	NA	NA	NA
Silver	1.89E-08	NA	NA	NA	NA	NA	NA
Tetrachlorodibenzofuran	NA	NA	1.16E+04	NA	NA	NA	NA
Tetrachlorodibenzo-p-dioxin	NA	NA	1.16E+05	NA	NA	NA	NA
Tetrachloroethylene	2.42E-11	1.71E-01	2.07E-02	5.68E-13	3.32E-12	8.11E-15	1.68E-16
Thallium	NA	NA	NA	NA	NA	NA	NA
Toluene	1.57E-11	1.43E+00	NA	3.69E-13	2.58E-13	NA	NA
Tributyl phosphate	NA	NA	NA	NA	NA	NA	NA
Trichloroethylene	9.65E-12	1.14E-02	4.00E-01	2.27E-13	1.99E-11	3.24E-15	1.30E-15
Trifluorochloromethane	NA	NA	NA	NA	NA	NA	NA
Uranium	4.22E-07	NA	NA	NA	NA	NA	NA
Vanadium	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	NA	2.86E-02	3.08E-02	NA	NA	NA	NA
Xylenes	3.43E-11	2.86E-02	NA	8.05E-13	2.82E-11	NA	NA
Zinc	NA	NA	NA	NA	NA	NA	NA
				total =	1.42E-03	total =	1.06E-08

Air concentration is derived using air particulate value of 26 ug/m^3 (2005 SER background average from monitor AMS-12) multiplied by the soil concentration.

TABLE E.5-1
Construction Worker - Zone 5 - DermalSoilChem

Construction Worker - Dermal Contact with Soil/Sediment
Risk calculation for Zone 5

Intake Equation:			UNITS	adult
	CDI =	(CS*AB*SA*EF*ED*AF*CF)/(BW*AT)		
	CDI =	Chronic Daily Intake	mg/kgday	calculated below
	CS =	Concentration of chemical in soil	mg/kg	see COC list below
	AB	Absorption factor	--	see COC list below
	SA	Surface area of exposed skin	cm^2/day	3300
	EF =	Exposure frequency	days/yr	30
	ED =	Exposure duration	yrs	1
	AF =	Adherence factor	mg/cm^2	0.3
	CF =	Conversion factor	kg/mg	1.00E-06
	BW =	Body weight	kg	70
	ATc =	Average time for carcinogens	days	25550
	ATn =	Average time for non-carcinogens	days	365

COC	conc mg/kg	AB unitless	RfDd mg/kgday	CSFd kgday/mg	ADULT CDI mg/kgday	ADULT HQ CDI/RfD	ADULT CDI mg/kgday	ADULT ILCR CDI*CSF
1,1,2-Trichloroethane	3.22E-04	1.00E-02	3.24E-03	7.04E-02	3.75E-12	1.16E-09	5.35E-14	3.77E-15
1,1-Dichloroethylene	5.68E-04	1.00E-02	5.00E-02	6.00E-01	6.49E-12	1.30E-10	9.27E-14	5.56E-14
1,2-dichloroethane	2.76E-04	1.00E-02	2.00E-02	9.10E-02	3.21E-12	1.61E-10	4.59E-14	4.18E-15
2-Butanone	NA	1.00E-02	4.60E-01	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	NA	1.00E-02	NA	9.00E-01	NA	NA	NA	NA
4-Methylphenol	NA	1.00E-02	3.25E-03	NA	NA	NA	NA	NA
4-Nitroanaline	NA	1.00E-02	2.40E-03	2.63E-02	NA	NA	NA	NA
Acetone	5.04E-03	1.00E-02	7.47E-01	NA	5.86E-11	7.85E-11	NA	NA
Antimony	2.22E+00	1.00E-03	8.00E-06	NA	2.58E-09	3.23E-04	NA	NA
Aroclor-1254	6.75E-02	1.40E-01	1.80E-05	2.22E+00	1.10E-08	6.10E-04	1.57E-10	3.48E-10
Aroclor-1260	6.07E-03	1.40E-01	1.80E-05	2.22E+00	9.88E-10	5.49E-05	1.41E-11	3.13E-11
Arsenic	1.11E+01	3.00E-02	1.23E-04	3.66E+00	3.89E-07	3.16E-03	5.55E-09	2.03E-08
Barium	1.80E+02	1.00E-03	1.40E-02	NA	2.09E-07	1.49E-05	NA	NA
Benzene	1.38E-04	1.00E-02	3.88E-03	5.67E-02	1.60E-12	4.12E-10	2.28E-14	1.30E-15
Benzo(a)anthracene	8.60E-02	1.30E-01	NA	2.35E+00	NA	NA	1.86E-10	4.36E-10
Benzo(a)pyrene	8.70E-02	1.30E-01	NA	2.35E+01	NA	NA	1.88E-10	4.41E-09
Benzo(b)fluoranthene	1.37E-01	1.30E-01	NA	2.35E+00	NA	NA	2.96E-10	6.95E-10
Benzo(k)fluoranthene	3.05E-02	1.30E-01	NA	2.35E-01	NA	NA	6.58E-11	1.55E-11
Beryllium	1.17E+00	1.00E-03	2.00E-05	4.30E+02	1.36E-09	6.81E-05	1.95E-11	8.36E-09
Bis(2-chloroisopropyl)ether	NA	1.00E-02	2.00E-02	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	NA	1.00E-02	3.80E-03	7.37E-02	NA	NA	NA	NA
Boron	NA	1.00E-03	1.60E-01	NA	NA	NA	NA	NA
Bromodichloromethane	1.15E-04	1.00E-02	1.96E-02	6.33E-02	1.34E-12	6.84E-11	1.91E-14	1.21E-15
Bromoform	NA	1.00E-02	1.20E-02	1.32E-02	NA	NA	NA	NA
Bromomethane	NA	1.00E-02	1.12E-03	NA	NA	NA	NA	NA
Cadmium	7.07E-01	1.00E-03	1.00E-05	NA	8.22E-10	8.22E-05	NA	NA
Carbazole	NA	1.00E-02	NA	2.86E-02	NA	NA	NA	NA
Carbon disulfide	NA	2.50E-01	6.30E-02	NA	NA	NA	NA	NA
Carbon tetrachloride	1.36E-04	1.00E-02	4.55E-04	2.00E-01	1.58E-12	3.47E-09	2.25E-14	4.51E-15
Chlordane	NA	4.00E-02	2.50E-04	7.00E-01	NA	NA	NA	NA
Chlorobenzene	NA	1.00E-02	6.20E-03	NA	NA	NA	NA	NA
Chloroform	NA	1.00E-02	2.00E-03	3.05E-02	NA	NA	NA	NA
Chromium (VI)	2.45E+01	1.00E-03	6.00E-05	NA	2.85E-08	4.75E-04	NA	NA
Chrysene	8.53E-02	1.30E-01	NA	2.35E-02	NA	NA	1.84E-10	4.33E-12
Cobalt	NA	1.00E-03	1.60E-02	NA	NA	NA	NA	NA
Copper	NA	1.00E-03	1.20E-02	NA	NA	NA	NA	NA
Cyanide	NA	1.00E-02	3.40E-03	NA	NA	NA	NA	NA
Cyclohexanone	NA	1.00E-02	4.00E+00	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	1.52E-02	1.30E-01	NA	2.35E+01	NA	NA	3.29E-11	7.73E-10
Dieldrin	5.46E-04	1.00E-02	2.50E-05	3.20E+01	6.34E-12	2.54E-07	9.06E-14	2.90E-12
Di-n-octylphthalate	NA	1.00E-02	3.60E-02	NA	NA	NA	NA	NA
Ethyl ether	NA	1.00E-02	1.60E-01	NA	NA	NA	NA	NA
Ethylbenzene	1.38E-04	1.00E-02	9.70E-02	NA	1.60E-12	1.65E-11	NA	NA
Fluoride	3.29E+00	1.00E-03	5.82E-02	NA	3.82E-09	6.57E-08	NA	NA
Heptachlorodibenzofuran	NA	1.00E-02	NA	3.00E+03	NA	NA	NA	NA
Heptachlorodibenzo-p-dioxin	NA	3.00E-02	NA	3.00E+03	NA	NA	NA	NA
Hexachlorodibenzofuran	NA	1.00E-02	NA	3.00E+04	NA	NA	NA	NA
Hexachlorodibenzo-p-dioxin	NA	3.00E-02	NA	3.00E+04	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	5.65E-02	1.30E-01	NA	2.35E+00	NA	NA	1.22E-10	2.87E-10
Lead	2.96E+01	1.00E-03	NA	NA	NA	NA	NA	NA
Manganese	NA	1.00E-03	5.60E-03	NA	NA	NA	NA	NA
Mercury	7.07E-02	1.00E-03	2.10E-05	NA	8.21E-11	3.91E-06	NA	NA
Methanol	NA	1.00E-02	4.00E-01	NA	NA	NA	NA	NA
Methyl-2-pentanone	7.08E-04	1.00E-02	6.40E-02	NA	8.23E-12	1.29E-10	NA	NA
Methylene chloride	1.35E-03	1.00E-02	5.70E-02	7.89E-03	1.57E-11	2.76E-10	2.25E-13	1.77E-15
Molybdenum	3.96E+00	1.00E-03	1.90E-03	NA	4.60E-09	2.42E-06	NA	NA
Nickel	NA	1.00E-03	5.40E-03	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	NA	1.00E-02	5.00E-03	1.96E-02	NA	NA	NA	NA
N-nitrosodipropylamine	NA	1.00E-02	NA	2.80E+01	NA	NA	NA	NA
Octachlorodibenzofuran	NA	1.00E-02	NA	3.00E+02	NA	NA	NA	NA
Octochlorodibenzo-p-dioxin	NA	3.00E-02	NA	3.00E+02	NA	NA	NA	NA
Pentachlorodibenzofuran	NA	1.00E-02	NA	1.50E+04	NA	NA	NA	NA
Pentachlorodibenzo-p-dioxin	NA	3.00E-02	NA	1.50E+05	NA	NA	NA	NA
Pentachlorophenol	NA	2.60E-01	3.00E-02	1.20E-01	NA	NA	NA	NA
Phenanthrene	1.24E-01	1.00E-02	NA	NA	NA	NA	NA	NA
Selenium	1.27E+00	1.00E-03	2.20E-03	NA	1.47E-09	6.68E-07	NA	NA
Silver	7.28E-01	1.00E-03	9.00E-04	NA	8.46E-10	9.40E-07	NA	NA
Tetrachlorodibenzofuran	NA	1.00E-02	NA	3.00E+04	NA	NA	NA	NA
Tetrachlorodibenzo-p-dioxin	NA	3.00E-02	NA	3.00E+05	NA	NA	NA	NA
Tetrachloroethylene	9.30E-04	1.00E-02	1.00E-02	5.40E-01	1.08E-11	1.08E-09	1.54E-13	8.34E-14
Thallium	NA	1.00E-03	1.80E-05	NA	NA	NA	NA	NA
Toluene	6.05E-04	1.00E-02	6.40E-02	NA	7.03E-12	1.10E-10	NA	NA
Tributyl phosphate	NA	1.00E-02	1.00E-01	1.08E-02	NA	NA	NA	NA
Trichloroethylene	3.71E-04	1.00E-02	4.50E-05	2.67E+00	4.32E-12	9.59E-08	6.17E-14	1.65E-13
Trifluorochloromethane	NA	NA	NA	NA	NA	NA	NA	NA
Uranium	1.62E+01	1.00E-03	5.10E-04	NA	1.89E-08	3.70E-05	NA	NA
Vanadium	NA	1.00E-03	7.00E-05	NA	NA	NA	NA	NA
Vinyl chloride	NA	1.00E-02	3.00E-03	1.50E+00	NA	NA	NA	NA
Xylenes	1.32E-03	1.00E-02	1.84E-01	NA	1.53E-11	8.33E-11	NA	NA
Zinc	NA	1.00E-03	6.00E-02	NA	NA	NA	NA	NA
					total =	4.83E-03	total =	3.57E-08

TABLE E.5-1
Construction Worker - Zone 5 - IngestSoilChem

Construction Worker - Ingestion of Soil
Risk calculation for Zone 5

Intake Equation:			UNITS	adult
	CDI =	(CS*EF*ED*IR*FI*CF)/(BW*AT)		
	CDI =	Chronic Daily Intake	mg/kgday	calculated below
	CS =	Concentration of chemical in soil	mg/kg	see COC list below
	EF =	Exposure frequency	days/yr	30
	ED =	Exposure duration	yrs	1
	IR =	Ingestion rate	mg/day	330
	FI =	Fraction of contaminated soil	unitless	1
	CF =	Conversion factor	kg/mg	1.00E-06
	BW =	Body weight	kg	70
	ATc =	Average time for carcinogens	days	25550
	ATn =	Average time for non-carcinogens	days	365

COC	conc	RfDo	CSFo	ADULT CDI	HQ	CDI	ILCR
	mg/kg	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	3.22E-04	4.00E-03	5.70E-02	1.25E-10	3.12E-08	1.78E-12	1.02E-13
1,1-Dichloroethylene	5.58E-04	5.00E-02	6.00E-01	2.16E-10	4.32E-09	3.09E-12	1.85E-12
1,2-dichloroethane	2.76E-04	2.00E-02	9.10E-02	1.07E-10	5.36E-09	1.53E-12	1.39E-13
2-Butanone	NA	6.00E-01	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	NA	NA	4.50E-01	NA	NA	NA	NA
4-Methylphenol	NA	5.00E-03	NA	NA	NA	NA	NA
4-Nitroanaline	NA	3.00E-03	2.10E-02	NA	NA	NA	NA
Acetone	5.04E-03	9.00E-01	NA	1.95E-09	2.17E-09	NA	NA
Antimony	2.22E+00	4.00E-04	NA	8.61E-07	2.15E-03	NA	NA
Aroclor-1254	6.75E-02	2.00E-05	2.00E+00	2.61E-08	1.31E-03	3.73E-10	7.47E-10
Aroclor-1260	6.07E-03	2.00E-05	2.00E+00	2.35E-09	1.18E-04	3.36E-11	6.72E-11
Arsenic	1.11E+01	3.00E-04	1.50E+00	4.32E-06	1.44E-02	6.17E-08	9.26E-08
Barium	1.80E+02	2.00E-01	NA	6.97E-05	3.48E-04	NA	NA
Benzene	1.38E-04	4.00E-03	5.50E-02	5.33E-11	1.33E-08	7.62E-13	4.19E-14
Benzo(a)anthracene	8.60E-02	NA	7.30E-01	NA	NA	4.76E-10	3.47E-10
Benzo(a)pyrene	8.70E-02	NA	7.30E+00	NA	NA	4.81E-10	3.51E-09
Benzo(b)fluoranthene	1.37E-01	NA	7.30E-01	NA	NA	7.58E-10	5.53E-10
Benzo(k)fluoranthene	3.05E-02	NA	7.30E-02	NA	NA	1.69E-10	1.23E-11
Beryllium	1.17E+00	2.00E-03	4.30E+00	4.54E-07	2.27E-04	6.48E-09	2.79E-08
Bis(2-chloroisopropyl)ether	NA	4.00E-02	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	NA	2.00E-02	1.40E-02	NA	NA	NA	NA
Boron	NA	2.00E-01	NA	NA	NA	NA	NA
Bromodichloromethane	1.15E-04	2.00E-02	6.20E-02	4.47E-11	2.23E-09	6.38E-13	3.96E-14
Bromoform	NA	2.00E-02	7.90E-03	NA	NA	NA	NA
Bromomethane	NA	1.40E-03	NA	NA	NA	NA	NA
Cadmium	7.07E-01	1.00E-03	NA	2.74E-07	2.74E-04	NA	NA
Carbazole	NA	NA	2.00E-03	NA	NA	NA	NA
Carbon disulfide	NA	1.00E-01	NA	NA	NA	NA	NA
Carbon tetrachloride	1.36E-04	7.00E-04	1.30E-01	5.26E-11	7.51E-08	7.51E-13	9.76E-14
Chlordane	NA	5.00E-04	3.50E-01	NA	NA	NA	NA
Chlorobenzene	NA	2.00E-02	NA	NA	NA	NA	NA
Chloroform	NA	1.00E-02	6.10E-03	NA	NA	NA	NA
Chromium (VI)	2.45E+01	3.00E-03	NA	9.50E-06	3.17E-03	NA	NA
Chrysene	8.53E-02	NA	7.30E-03	NA	NA	4.72E-10	3.45E-12
Cobalt	NA	2.00E-02	NA	NA	NA	NA	NA
Copper	NA	4.00E-02	NA	NA	NA	NA	NA
Cyanide	NA	2.00E-02	NA	NA	NA	NA	NA
Cyclohexanone	NA	5.00E+00	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	1.52E-02	NA	7.30E+00	NA	NA	8.44E-11	6.16E-10
Dieldrin	5.46E-04	5.00E-05	1.60E+01	2.11E-10	4.23E-06	3.02E-12	4.83E-11
Di-n-octylphthalate	NA	4.00E-02	NA	NA	NA	NA	NA
Ethyl ether	NA	2.00E-01	NA	NA	NA	NA	NA
Ethylbenzene	1.38E-04	1.00E-01	NA	5.33E-11	5.33E-10	NA	NA
Fluoride	3.29E+00	6.00E-02	NA	1.27E-06	2.12E-05	NA	NA
Heptachlorodibenzofuran	NA	NA	1.50E+03	NA	NA	NA	NA
Heptachlorodibenzo-p-dioxin	NA	NA	1.50E+03	NA	NA	NA	NA
Hexachlorodibenzofuran	NA	NA	1.50E+03	NA	NA	NA	NA
Hexachlorodibenzo-p-dioxin	NA	NA	1.50E+04	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	5.65E-02	NA	7.30E-01	NA	NA	3.13E-10	2.28E-10
Lead	2.96E+01	NA	NA	NA	NA	NA	NA
Manganese	NA	1.40E-01	NA	NA	NA	NA	NA
Mercury	7.07E-02	3.00E-04	NA	2.74E-08	9.13E-05	NA	NA
Methanol	NA	5.00E-01	NA	NA	NA	NA	NA
Methyl-2-pentanone	7.08E-04	8.00E-02	NA	2.74E-10	3.43E-09	NA	NA
Methylene chloride	1.35E-03	6.00E-02	7.50E-03	5.25E-10	8.74E-09	7.50E-12	5.62E-14
Molybdenum	3.96E+00	5.00E-03	NA	1.53E-06	3.07E-04	NA	NA
Nickel	NA	2.00E-02	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	NA	2.00E-02	4.90E-03	NA	NA	NA	NA
N-nitrosodipropylamine	NA	NA	7.00E+00	NA	NA	NA	NA
Octachlorodibenzofuran	NA	NA	1.50E+02	NA	NA	NA	NA
Octochlorodibenzo-p-dioxin	NA	NA	1.50E+02	NA	NA	NA	NA
Pentachlorodibenzofuran	NA	NA	7.50E+03	NA	NA	NA	NA
Pentachlorodibenzo-p-dioxin	NA	NA	7.50E+04	NA	NA	NA	NA
Pentachlorophenol	NA	3.00E-02	1.20E-01	NA	NA	NA	NA
Phenanthrene	1.24E-01	NA	NA	NA	NA	NA	NA
Selenium	1.27E+00	5.00E-03	NA	4.90E-07	9.80E-05	NA	NA
Silver	7.28E-01	5.00E-03	NA	2.62E-07	5.64E-05	NA	NA
Tetrachlorodibenzofuran	NA	NA	1.50E+04	NA	NA	NA	NA
Tetrachlorodibenzo-p-dioxin	NA	NA	1.50E+05	NA	NA	NA	NA
Tetrachloroethylene	9.30E-04	1.00E-02	5.40E-01	3.60E-10	3.60E-08	5.15E-12	2.78E-12
Thallium	NA	9.00E-05	NA	NA	NA	NA	NA
Toluene	6.05E-04	8.00E-02	NA	2.34E-10	2.93E-09	NA	NA
Tributyl phosphate	NA	2.00E-01	5.40E-03	NA	NA	NA	NA
Trichloroethylene	3.71E-04	3.00E-04	4.00E-01	1.44E-10	4.80E-07	2.06E-12	8.22E-13
Trifluorochloromethane	NA	NA	NA	NA	NA	NA	NA
Uranium	1.62E+01	6.00E-04	NA	6.30E-06	1.05E-02	NA	NA
Vanadium	NA	7.00E-03	NA	NA	NA	NA	NA
Vinyl chloride	NA	3.00E-03	1.50E+00	NA	NA	NA	NA
Xylenes	1.32E-03	2.00E-01	NA	5.11E-10	2.56E-09	NA	NA
Zinc	NA	3.00E-01	NA	NA	NA	NA	NA
				total =	3.31E-02	total =	1.27E-07

TABLE E.5-1
Construction Worker - Zone 5 - DermalSWchem

Construction Worker - Dermal Contact with Surface Water
Risk calculation for Zone 5

			UNITS	adult
Intake Equation:	CDI =	(DA*EF*ED*SA)/(BW*AT)		
	CDI =	Chronic Daily Intake	mg/kgday	calculated below
	DA =	Dermal absorption dose	mg/cm²day	see COC list below
	EF =	Exposure frequency	days/yr	6
	ED =	Exposure duration	yrs	1
	SA =	Surface area of skin	cm²	5670
	BW =	Body weight	kg	70
	ATc =	Average time for carcinogens	days	25550
	ATn =	Average time for non-carcinogens	days	365
where:	DA = C_v*K_p*CF*ET			
	C_v =	concentation of ith contaminant in surface water	mg/L	see COC list below
	K_p =	permeability constant for ith contaminant	cm/hr	see COC list below
	CF =	conversion factor	L/cm³	0.001
	ET =	exposure time	hr/d	0.5

COC	C_v	K_p	DA	RfD	CSF	ADULT CDI	HQ	CDI	ILCR
	mg/L	cm/hr	mg/cm²day	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	5.00E-04	6.43E-03	1.61E-09	3.24E-03	7.04E-02	2.14E-09	6.61E-07	3.06E-11	2.15E-12
1,1-Dichloroethylene	5.00E-04	1.59E-02	3.98E-09	5.00E-02	6.00E-01	5.29E-09	1.06E-07	7.56E-11	4.54E-11
1,2-dichloroethane	5.00E-04	5.34E-03	1.34E-09	2.00E-02	9.10E-02	1.78E-09	8.89E-08	2.54E-11	2.31E-12
2-Butanone	NA	1.11E-03	NA	4.80E-01	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	NA	1.69E-02	NA	NA	9.00E-01	NA	NA	NA	NA
4-Methylphenol	NA	9.95E-03	NA	3.25E-03	NA	NA	NA	NA	NA
4-Nitroanaline	NA	2.66E-03	NA	2.40E-03	2.63E-02	NA	NA	NA	NA
Acetone	2.50E-03	5.69E-04	7.11E-10	7.47E-01	NA	9.47E-10	1.27E-09	NA	NA
Antimony	5.00E-04	1.00E-03	2.50E-10	8.00E-06	NA	3.33E-10	4.16E-05	NA	NA
Aroclor-1254	5.00E-05	1.29E+00	3.23E-08	1.80E-05	2.22E+00	4.29E-08	2.39E-03	6.13E-10	1.36E-09
Aroclor-1260	5.00E-05	5.48E+00	1.37E-07	1.80E-05	2.22E+00	1.82E-07	1.01E-02	2.61E-09	5.79E-09
Arsenic	3.29E-03	1.00E-03	1.64E-09	1.23E-04	3.66E+00	2.19E-09	1.78E-05	3.13E-11	1.14E-10
Barium	5.28E-02	1.00E-03	2.63E-08	1.40E-02	NA	3.50E-08	2.50E-06	NA	NA
Benzene	5.00E-04	2.07E-02	5.18E-09	3.88E-03	5.67E-02	6.89E-09	1.78E-06	9.84E-11	5.58E-12
Benzo(a)anthracene	5.00E-04	9.48E-01	2.37E-07	NA	2.35E+00	NA	NA	4.51E-09	1.06E-08
Benzo(a)pyrene	5.00E-04	1.24E+00	3.10E-07	NA	2.35E+01	NA	NA	5.90E-09	1.39E-07
Benzo(b)fluoranthene	5.00E-04	6.99E-01	1.75E-07	NA	2.35E+00	NA	NA	3.32E-09	7.81E-09
Benzo(k)fluoranthene	5.00E-04	1.20E+00	3.00E-07	NA	2.35E-01	NA	NA	5.71E-09	1.34E-09
Beryllium	1.58E-04	1.00E-03	7.88E-11	2.00E-05	4.30E+02	1.05E-10	5.24E-06	1.50E-12	6.44E-10
Bis(2-chloroisopropyl)ether	NA	7.63E-02	NA	2.00E-02	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	NA	1.97E+00	NA	3.80E-03	7.37E-02	NA	NA	NA	NA
Boron	NA	1.00E-03	NA	1.80E-01	NA	NA	NA	NA	NA
Bromodichloromethane	5.00E-04	5.02E-03	1.26E-09	1.96E-02	6.33E-02	1.67E-09	8.53E-08	2.39E-11	1.51E-12
Bromoform	NA	2.77E-03	NA	1.20E-02	1.32E-02	NA	NA	NA	NA
Bromomethane	NA	3.51E-03	NA	1.12E-03	NA	NA	NA	NA	NA
Cadmium	1.00E-04	1.00E-03	5.00E-11	1.00E-05	NA	6.66E-11	6.66E-06	NA	NA
Carbazole	NA	7.97E-02	NA	NA	2.86E-02	NA	NA	NA	NA
Carbon disulfide	NA	1.56E-02	NA	6.30E-02	NA	NA	NA	NA	NA
Carbon tetrachloride	5.00E-04	2.24E-02	5.60E-09	4.55E-04	2.00E-01	7.46E-09	1.64E-05	1.07E-10	2.13E-11
Chlordane	NA	1.57E-01	NA	2.50E-04	7.00E-01	NA	NA	NA	NA
Chlorobenzene	NA	4.07E-02	NA	6.20E-03	NA	NA	NA	NA	NA
Chloroform	NA	8.92E-03	NA	2.00E-03	3.05E-02	NA	NA	NA	NA
Chromium (VI)	3.33E-03	2.00E-03	3.33E-09	6.00E-05	NA	4.44E-09	7.39E-05	NA	NA
Chrysene	5.00E-04	1.03E+00	2.58E-07	NA	2.35E-02	NA	NA	4.90E-09	1.15E-10
Cobalt	NA	4.00E-04	NA	1.60E-02	NA	NA	NA	NA	NA
Copper	NA	1.00E-03	NA	1.20E-02	NA	NA	NA	NA	NA
Cyanide	NA	1.00E-03	NA	3.40E-03	NA	NA	NA	NA	NA
Cyclohexanone	NA	1.80E-03	NA	4.00E+00	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	5.00E-04	1.68E+00	4.20E-07	NA	2.35E+01	NA	NA	7.99E-09	1.88E-07
Dieldrin	2.00E-05	4.45E-02	4.45E-10	2.50E-05	3.20E+01	5.93E-10	2.37E-05	8.46E-12	2.71E-10
Di-n-octylphthalate	NA	4.45E+00	NA	3.60E-02	NA	NA	NA	NA	NA
Ethyl ether	NA	2.88E-03	NA	1.60E-01	NA	NA	NA	NA	NA
Ethylbenzene	5.00E-04	7.39E-02	1.85E-08	9.70E-02	NA	2.46E-08	2.54E-07	NA	NA
Fluoride	4.09E-01	1.00E-03	2.04E-07	5.82E-02	NA	2.72E-07	4.67E-06	NA	NA
Heptachlorodibenzofuran	NA	2.55E+00	NA	NA	3.00E+03	NA	NA	NA	NA
Heptachlorodibenzo-p-dioxin	NA	3.22E+00	NA	NA	3.00E+03	NA	NA	NA	NA
Hexachlorodibenzofuran	NA	2.36E+00	NA	NA	3.00E+04	NA	NA	NA	NA
Hexachlorodibenzo-p-dioxin	NA	5.29E+00	NA	NA	3.00E+04	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	5.00E-04	2.23E+00	5.58E-07	NA	2.35E+00	NA	NA	1.06E-08	2.49E-08
Lead	1.68E-03	1.00E-04	8.40E-11	NA	NA	NA	NA	NA	NA
Manganese	NA	1.00E-03	NA	1.84E-03	NA	NA	NA	NA	NA
Mercury	6.00E-05	1.00E-03	3.00E-11	2.10E-05	NA	3.99E-11	1.90E-06	NA	NA
Methanol	NA	3.45E-04	NA	4.00E-01	NA	NA	NA	NA	NA
4-Methyl-2-pentanone	2.50E-03	3.97E-03	4.96E-09	6.40E-02	NA	6.61E-09	1.03E-07	NA	NA
Methylene chloride	2.50E-03	4.46E-03	5.58E-09	5.70E-02	7.89E-03	7.42E-09	1.30E-07	1.06E-10	8.37E-13
Molybdenum	8.03E-03	1.00E-03	4.01E-09	1.90E-03	NA	5.34E-09	2.81E-06	NA	NA
Nickel	NA	2.00E-04	NA	5.40E-03	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	NA	1.96E-02	NA	5.00E-03	1.96E-02	NA	NA	NA	NA
N-nitrosodipropylamine	NA	2.83E-03	NA	NA	2.80E+01	NA	NA	NA	NA
Octachlorodibenzofuran	NA	4.78E+00	NA	NA	3.00E+02	NA	NA	NA	NA
Octochlorodibenzo-p-dioxin	NA	1.65E+01	NA	NA	3.00E+02	NA	NA	NA	NA
Pentachlorodibenzofuran	NA	1.06E+00	NA	NA	1.50E+04	NA	NA	NA	NA
Pentachlorodibenzo-p-dioxin	NA	3.79E-01	NA	NA	1.50E+05	NA	NA	NA	NA
Pentachlorophenol	NA	1.95E-01	NA	3.00E-02	1.20E-01	NA	NA	NA	NA
Phenanthrene	5.00E-04	2.29E-01	5.73E-08	NA	NA	NA	NA	NA	NA
Selenium	2.50E-03	1.00E-03	1.25E-09	2.20E-03	NA	1.66E-09	7.57E-07	NA	NA
Silver	2.00E-04	6.00E-04	6.00E-11	9.00E-04	NA	7.99E-11	8.88E-08	NA	NA
Tetrachlorodibenzofuran	NA	1.12E+00	NA	NA	3.00E+04	NA	NA	NA	NA
Tetrachlorodibenzo-p-dioxin	NA	1.39E+00	NA	NA	3.00E+05	NA	NA	NA	NA
Tetrachloroethylene	5.00E-04	4.81E-02	1.20E-08	1.00E-02	5.40E-01	1.60E-08	1.60E-06	2.29E-10	1.24E-10
Thallium	NA	1.00E-03	NA	1.80E-05	NA	NA	NA	NA	NA
Toluene	5.00E-04	4.53E-02	1.13E-08	6.40E-02	NA	1.51E-08	2.36E-07	NA	NA
Tributyl phosphate	NA	3.13E-02	NA	1.00E-01	1.08E-02	NA	NA	NA	NA
Trichloroethylene	5.00E-04	1.67E-02	3.93E-09	4.50E-05	2.67E+00	5.23E-09	1.16E-04	7.47E-11	1.99E-10
Trifluorochloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Uranium	2.14E-02	1.00E-03	1.07E-08	5.10E-04	NA	1.42E-08	2.79E-05	NA	NA
Vanadium	NA	1.00E-03	NA	7.00E-05	NA	NA	NA	NA	NA
Vinyl chloride	NA	1.13E-02	NA	3.00E-03	1.50E+00	NA	NA	NA	NA
Xylenes	5.00E-04	7.04E-02	1.76E-08	1.84E-01	NA	2.34E-08	1.27E-07	NA	NA
Zinc	NA	6.00E-04	NA	6.00E-02	NA	NA	NA	NA	NA
						total =	1.29E-02	total =	3.80E-07

TABLE E.5-1
Construction Worker - Zone 5 - IngestSWchem

Construction Worker - Ingestion of Surface Water
Risk calculation for Zone 5

Intake Equation:			UNITS	Assigned Values
	CDI =	(CW*EF*ED*IR)/(BW*AT)		
	CDI =	Chronic Daily Intake	mg/kgday	adult
	CW =	Concentration of chemical in water	mg/L	see COC table below
	EF =	Exposure frequency	days/yr	6
	ED =	Exposure duration	yrs	1
	IR =	Ingestion rate	L/day	0.005
	BW =	Body weight	kg	70
	ATc =	Average time for carcinogens	days	25550
	ATn =	Average time for non-carcinogens	days	365

COC	CW mg/L	RfDo mg/kgday	CSFo kgday/mg	ADULT CDI mg/kgday	HQ CDI/RfD	CDI mg/kgday	ILCR CDI*CSF
1,1,2-Trichloroethane	5.00E-04	4.00E-03	5.70E-02	5.87E-10	1.47E-07	8.39E-12	4.78E-13
1,1-Dichloroethylene	5.00E-04	5.00E-02	6.00E-01	5.87E-10	1.17E-08	8.39E-12	5.03E-12
1,2-dichloroethane	5.00E-04	2.00E-02	9.10E-02	5.87E-10	2.94E-08	8.39E-12	7.63E-13
2-Butanone	NA	6.00E-01	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	NA	NA	4.50E-01	NA	NA	NA	NA
4-Methylphenol	NA	5.00E-03	NA	NA	NA	NA	NA
4-Nitroanaline	NA	3.00E-03	2.10E-02	NA	NA	NA	NA
Acetone	2.50E-03	9.00E-01	NA	2.94E-09	3.26E-09	NA	NA
Antimony	5.00E-04	4.00E-04	NA	5.87E-10	1.47E-06	NA	NA
Aroclor-1254	5.00E-05	2.00E-05	4.00E-01	5.87E-11	2.94E-06	8.39E-13	3.35E-13
Aroclor-1260	5.00E-05	2.00E-05	4.00E-01	5.87E-11	2.94E-06	8.39E-13	3.35E-13
Arsenic	3.29E-03	3.00E-04	1.50E+00	3.88E-09	1.29E-05	5.51E-11	8.27E-11
Barium	5.26E-02	2.00E-01	NA	6.18E-08	3.09E-07	NA	NA
Benzene	5.00E-04	4.00E-03	5.50E-02	5.87E-10	1.47E-07	8.39E-12	4.61E-13
Benzo(a)anthracene	5.00E-04	NA	7.30E-01	NA	NA	8.39E-12	6.12E-12
Benzo(a)pyrene	5.00E-04	NA	7.30E+00	NA	NA	8.39E-12	6.12E-11
Benzo(b)fluoranthene	5.00E-04	NA	7.30E-01	NA	NA	8.39E-12	6.12E-12
Benzo(k)fluoranthene	5.00E-04	NA	7.30E-02	NA	NA	8.39E-12	6.12E-13
Beryllium	1.58E-04	2.00E-03	4.30E+00	1.85E-10	9.25E-08	2.64E-12	1.14E-11
Bis(2-chloroisopropyl)ether	NA	4.00E-02	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	NA	2.00E-02	1.40E-02	NA	NA	NA	NA
Boron	NA	2.00E-01	NA	NA	NA	NA	NA
Bromodichloromethane	5.00E-04	2.00E-02	6.20E-02	5.87E-10	2.94E-08	8.39E-12	5.20E-13
Bromoform	NA	2.00E-02	7.90E-03	NA	NA	NA	NA
Bromomethane	NA	1.40E-03	NA	NA	NA	NA	NA
Cadmium	1.00E-04	1.00E-03	NA	1.17E-10	1.17E-07	NA	NA
Carbazole	NA	NA	2.00E-03	NA	NA	NA	NA
Carbon disulfide	NA	1.00E-01	NA	NA	NA	NA	NA
Carbon tetrachloride	5.00E-04	7.00E-04	1.30E-01	5.87E-10	8.39E-07	8.39E-12	1.09E-12
Chlordane	NA	5.00E-04	3.50E-01	NA	NA	NA	NA
Chlorobenzene	NA	2.00E-02	NA	NA	NA	NA	NA
Chloroform	NA	1.00E-02	6.10E-03	NA	NA	NA	NA
Chromium (VI)	3.33E-03	3.00E-03	NA	3.91E-09	1.30E-06	NA	NA
Chrysene	5.00E-04	NA	7.30E-03	NA	NA	8.39E-12	6.12E-14
Cobalt	NA	2.00E-02	NA	NA	NA	NA	NA
Copper	NA	4.00E-02	NA	NA	NA	NA	NA
Cyanide	NA	2.00E-02	NA	NA	NA	NA	NA
Cyclohexanone	NA	5.00E+00	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	5.00E-04	NA	7.30E+00	NA	NA	8.39E-12	6.12E-11
Dieldrin	2.00E-05	5.00E-05	1.60E+01	2.35E-11	4.70E-07	3.35E-13	5.37E-12
Di-n-octylphthalate	NA	4.00E-02	NA	NA	NA	NA	NA
Ethyl ether	NA	2.00E-01	NA	NA	NA	NA	NA
Ethylbenzene	5.00E-04	1.00E-01	NA	5.87E-10	5.87E-09	NA	NA
Fluoride	4.09E-01	6.00E-02	NA	4.80E-07	7.99E-06	NA	NA
Heptachlorodibenzofuran	NA	NA	1.50E+03	NA	NA	NA	NA
Heptachlorodibenzo-p-dioxin	NA	NA	1.50E+03	NA	NA	NA	NA
Hexachlorodibenzofuran	NA	NA	1.50E+03	NA	NA	NA	NA
Hexachlorodibenzo-p-dioxin	NA	NA	1.50E+04	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	5.00E-04	NA	7.30E-01	NA	NA	8.39E-12	6.12E-12
Lead	1.68E-03	NA	NA	NA	NA	NA	NA
Manganese	NA	4.60E-02	NA	NA	NA	NA	NA
Mercury	6.00E-05	3.00E-04	NA	7.05E-11	2.35E-07	NA	NA
Methanol	NA	5.00E-01	NA	NA	NA	NA	NA
4-Methyl-2-pentanone	2.50E-03	8.00E-02	NA	2.94E-09	3.67E-08	NA	NA
Methylene chloride	2.50E-03	6.00E-02	7.50E-03	2.94E-09	4.89E-08	4.19E-11	3.15E-13
Molybdenum	8.03E-03	5.00E-03	NA	9.42E-09	1.88E-06	NA	NA
Nickel	NA	2.00E-02	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	NA	2.00E-02	4.90E-03	NA	NA	NA	NA
N-nitrosodipropylamine	NA	NA	7.00E+00	NA	NA	NA	NA
Octachlorodibenzofuran	NA	NA	1.50E+02	NA	NA	NA	NA
Octochlorodibenzo-p-dioxin	NA	NA	1.50E+02	NA	NA	NA	NA
Pentachlorodibenzofuran	NA	NA	7.50E+03	NA	NA	NA	NA
Pentachlorodibenzo-p-dioxin	NA	NA	7.50E+04	NA	NA	NA	NA
Pentachlorophenol	NA	3.00E-02	1.20E-01	NA	NA	NA	NA
Phenanthrene	5.00E-04	NA	NA	NA	NA	NA	NA
Selenium	2.50E-03	5.00E-03	NA	2.94E-09	5.87E-07	NA	NA
Silver	2.00E-04	5.00E-03	NA	2.35E-10	4.70E-08	NA	NA
Tetrachlorodibenzofuran	NA	NA	1.50E+04	NA	NA	NA	NA
Tetrachlorodibenzo-p-dioxin	NA	NA	1.50E+05	NA	NA	NA	NA
Tetrachloroethylene	5.00E-04	1.00E-02	5.40E-01	5.87E-10	5.87E-08	8.39E-12	4.53E-12
Thallium	NA	9.00E-05	NA	NA	NA	NA	NA
Toluene	5.00E-04	8.00E-02	NA	5.87E-10	7.34E-09	NA	NA
Tributyl phosphate	NA	2.00E-01	5.40E-03	NA	NA	NA	NA
Trichloroethylene	5.00E-04	3.00E-04	4.00E-01	5.87E-10	1.96E-06	8.39E-12	3.35E-12
Trifluorochloromethane	NA	NA	NA	NA	NA	NA	NA
Uranium	2.14E-02	6.00E-04	NA	2.51E-08	4.18E-05	NA	NA
Vanadium	NA	7.00E-03	NA	NA	NA	NA	NA
Vinyl chloride	NA	3.00E-03	1.50E+00	NA	NA	NA	NA
Xylenes	5.00E-04	2.00E-01	NA	5.87E-10	2.94E-09	NA	NA
Zinc	NA	3.00E-01	NA	NA	NA	NA	NA
				total =	7.84E-05	total =	2.58E-10

TABLE E.5-1
Construction Worker - Zone 5 - InhaleRad

Construction Worker - Inhalation of Gases & Particulates
Risk calculation for Zone 5

Intake Equation:			UNITS	adult
	CDI =	(CA*EF*ED*IR*ET)		
	CDI =	Chronic Daily Intake	pCi	calculated below
	CA =	Concentration of radionuclide in air	pCi/m^3	see COC list below
	EF =	Exposure frequency	days/yr	30
	ED =	Exposure duration	yrs	1
	IR =	Inhalation rate	m^3/hr	2.5
	ET =	Exposure time	hrs/day	8

COC	conc pCi/m^3	CSFI 1/pCi	ADULT CDI pCi	ADULT ILCR CDI*CSF
Cesium-137 + D	2.12E-06	1.19E-11	1.27E-03	1.52E-14
Lead-210 + D	5.55E-05	1.39E-08	3.33E-02	4.63E-10
Neptunium-237 + D	1.41E-07	1.77E-08	8.45E-05	1.50E-12
Plutonium-238	6.11E-08	3.36E-08	3.67E-05	1.23E-12
Plutonium-239/240	NA	3.33E-08	NA	NA
Radium-226 + D	3.33E-05	1.16E-08	2.00E-02	2.32E-10
Radium-228 + D	2.88E-05	5.23E-09	1.73E-02	9.04E-11
Radon-222+ D	3.28E+02	1.80E-11	1.97E+05	3.55E-06
Strontium-90 + D	NA	1.13E-10	NA	NA
Technetium-99	4.26E-05	1.41E-11	2.56E-02	3.61E-13
Thorium-228 + D	2.93E-05	1.43E-07	1.76E-02	2.51E-09
Thorium-230	6.39E-05	2.85E-08	3.83E-02	1.09E-09
Thorium-232	2.85E-05	4.33E-08	1.71E-02	7.41E-10
Uranium-234	1.44E-04	1.14E-08	8.65E-02	9.86E-10
Uranium-235 + D	6.57E-06	1.01E-08	3.94E-03	3.98E-11
Uranium-238 + D	1.41E-04	9.35E-09	8.45E-02	7.90E-10
			total =	**3.55E-06**

Air concentration is derived using air particulate value of 26 ug/m^3 (2005 SER background average from monitor AMS-12) multiplied by the soil concentration. Rn-222 is derived by multiplying the soil Ra-226 value by 256 g/m^3. This conversion factor is based on Rn-222 air background and Ra-226 soil background (i.e., 400 pCi/m^3 divided by 1.56 pCi/g)

TABLE E.5-1
Construction Worker - Zone 5 - IngestSoilRad

Construction Worker - Ingestion of Soil
Risk calculation for Zone 5

Intake Equation:			UNITS	adult
	CDI =	(CS*EF*ED*IR*FI)		
	CDI =	Chronic Daily Intake	pCi	calculated below
	CS =	Concentration of radionuclide in soil	pCi/g	see COC list below
	EF =	Exposure frequency	days/yr	30
	ED =	Exposure duration	yrs	1
	IR =	Ingestion rate	g/day	0.33
	FI =	Fraction of contaminated soil	unitless	1

COC	conc pCi/g	CSFos 1/pCi	ADULT CDI pCi	ADULT ILCR CDI*CSF
Cesium-137 + D	8.17E-02	4.33E-11	8.09E-01	3.50E-11
Lead-210 + D	2.13E+00	2.66E-09	2.11E+01	5.62E-08
Neptunium-237 + D	5.42E-03	1.62E-10	5.36E-02	8.69E-12
Plutonium-238	2.35E-03	2.72E-10	2.33E-02	6.33E-12
Plutonium-239/240	NA	2.76E-10	NA	NA
Radium-226 + D	1.28E+00	7.30E-10	1.27E+01	9.27E-09
Radium-228 + D	1.11E+00	2.29E-09	1.10E+01	2.51E-08
Radon-222+ D	NA	NA	NA	NA
Strontium-90 + D	NA	1.44E-10	NA	NA
Technetium-99	1.64E+00	7.66E-12	1.62E+01	1.24E-10
Thorium-228 + D	1.13E+00	8.09E-10	1.11E+01	9.02E-09
Thorium-230	2.46E+00	2.02E-10	2.43E+01	4.91E-09
Thorium-232	1.10E+00	2.31E-10	1.09E+01	2.51E-09
Uranium-234	5.55E+00	1.58E-10	5.49E+01	8.67E-09
Uranium-235 + D	2.53E-01	1.63E-10	2.50E+00	4.08E-10
Uranium-238 + D	5.42E+00	2.10E-10	5.36E+01	1.13E-08
			total =	**1.28E-07**

TABLE E.5-1
Construction Worker - Zone 5 - IngestSWrad

Construction Worker - Ingestion of Surface Water
Risk calculation for Zone 5

Intake Equation:			UNITS	Assigned Values
	CDI =	(CW*EF*ED*IR)		
	CDI =	Chronic Daily Intake	pCi	adult
	CW =	Concentration of radionuclide in water	pCi/L	see COC table below
	EF =	Exposure frequency	days/yr	6
	ED =	Exposure duration	yrs	1
	IR =	Ingestion rate	L/day	0.005

COC	conc pCi/L	CSFow 1/pCi	ADULT CDI pCi	ADULT ILCR CDI*CSF
Cesium-137 + D	1.99E+00	3.04E-11	5.97E-02	1.81E-12
Lead-210 + D	7.80E-01	1.27E-09	2.34E-02	2.97E-11
Neptunium-237 + D	2.66E-01	6.74E-11	7.99E-03	5.39E-13
Plutonium-238	3.71E-02	1.31E-10	1.11E-03	1.46E-13
Plutonium-239/240	NA	1.35E-10	NA	NA
Radium-226 + D	3.01E-01	3.86E-10	9.04E-03	3.49E-12
Radium-228 + D	3.17E+00	1.04E-09	9.50E-02	9.88E-11
Radon-222+ D	NA	NA	NA	NA
Strontium-90 + D	NA	7.40E-11	NA	NA
Technetium-99	9.35E+00	2.75E-12	2.80E-01	7.71E-13
Thorium-228 + D	3.07E+00	3.00E-10	9.22E-02	2.76E-11
Thorium-230	6.30E-01	9.10E-11	1.89E-02	1.72E-12
Thorium-232	3.17E+00	1.01E-10	9.50E-02	9.59E-12
Uranium-234	7.29E+00	7.07E-11	2.19E-01	1.55E-11
Uranium-235 + D	3.32E-01	7.18E-11	9.96E-03	7.15E-13
Uranium-238 + D	7.12E+00	8.71E-11	2.14E-01	1.86E-11
			total =	**2.09E-10**

TABLE E.5-1
Construction Worker - Zone 5 - ExternalRad

Constrcution Worker - External Radiation
Risk calculation for Zone 5

Intake Equation:			UNITS	adult
	CDI =	$(CS*EF*ED*ET_o*(1-SH_o))+(CS*EF*ED*ET_i*(1-SH_i))$		
	CDI =	Chronic Daily Intake	yr pCi/g	calculated below
	CS =	Concentration of radionuclide in soil	pCi/g	see COC list below
	EF =	Fraction of year exposed to radiation	--	0.08
	ED =	Exposure duration	yrs	1
	ET_o =	Fraction of day spent outdoors	--	0.33
	ET_i =	Fraction of day spent indoors	--	0.00
	SH_o =	Shield factor outdoors	--	0.25
	SH_i =	Shield factor indoors	--	0.5

COC	conc pCi/g	CSFx g/pCi yr	ADULT CDI yr pCi/g	ADULT ILCR CDI*CSF
Cesium-137 + D	8.17E-02	2.55E-06	1.68E-03	4.28E-09
Lead-210 + D	2.13E+00	4.21E-09	4.38E-02	1.85E-10
Neptunium-237 + D	5.42E-03	7.97E-07	1.11E-04	8.87E-11
Plutonium-238	2.35E-03	7.22E-11	4.83E-05	3.48E-15
Plutonium-239/240	NA	2.00E-10	NA	NA
Radium-226 + D	1.28E+00	8.49E-06	2.63E-02	2.24E-07
Radium-228 + D	1.11E+00	4.53E-06	2.28E-02	1.03E-07
Radon-222+ D	NA	NA	NA	NA
Strontium-90 + D	NA	1.96E-08	NA	NA
Technetium-99	1.64E+00	8.14E-11	3.37E-02	2.74E-12
Thorium-228 + D	1.13E+00	7.76E-06	2.31E-02	1.79E-07
Thorium-230	2.46E+00	8.19E-10	5.05E-02	4.13E-11
Thorium-232	1.10E+00	3.42E-10	2.25E-02	7.71E-12
Uranium-234	5.55E+00	2.52E-10	1.14E-01	2.87E-11
Uranium-235 + D	2.53E-01	5.43E-07	5.19E-03	2.82E-09
Uranium-238 + D	5.42E+00	1.14E-07	1.11E-01	1.27E-08
			total =	**5.26E-07**

TABLE E.5-1
Construction Worker - Zone 5 - SumPaths

Construction Worker - Summation of all Pathways
Risk calculation for Zone 5

	HQ	ILCR	rad only ILCR
Inhale	1.42E-03	3.56E-06	3.55E-06
Dermal Soil	4.83E-03	3.57E-08	NA
Ingest Soil	3.31E-02	2.54E-07	1.28E-07
Dermal Surface Water	1.29E-02	3.80E-07	NA
Ingest Surface Water	7.84E-05	4.67E-10	2.09E-10
External Radiation	NA	5.26E-07	5.26E-07
SUM	**5.23E-02**	**4.76E-06**	**4.21E-06**

Summation of all paths for individual nuclides

	Total ILCR	BKGD ILCR	Total-BKGD ILCR
Cesium-137 + D	4.31E-09	3.49E-09	8.28E-10
Lead-210 + D	5.69E-08	4.16E-08	1.53E-08
Neptunium-237 + D	9.94E-11	2.41E-13	9.91E-11
Plutonium-238	7.71E-12	4.32E-14	7.67E-12
Plutonium-239/240	NA	NA	NA
Radium-226 + D	2.33E-07	2.84E-07	0.00E+00
Radium-228 + D	1.28E-07	1.47E-07	0.00E+00
Radon-222+ D	3.55E-06	4.31E-06	0.00E+00
Strontium-90 + D	NA	NA	NA
Technetium-99	1.28E-10	5.12E-13	1.28E-10
Thorium-228 + D	1.91E-07	2.12E-07	0.00E+00
Thorium-230	6.05E-09	3.84E-09	2.21E-09
Thorium-232	3.27E-09	3.78E-09	0.00E+00
Uranium-234	9.70E-09	2.72E-09	6.98E-09
Uranium-235 + D	3.27E-09	9.16E-10	2.35E-09
Uranium-238 + D	2.47E-08	6.94E-09	1.78E-08
SUM	**4.21E-06**		**4.57E-08**

TABLE E.5-1
Construction Worker - Zone 5 - SumPaths

Summation of all paths for individual chemicals

	Total		BKGD		Total-BKGD	
	ILCR	HQ	ILCR	HQ	ILCR	HQ
1,1,2-Trichloroethane	2.74E-12	8.40E-07	0.00E+00	0.00E+00	2.74E-12	8.40E-07
1,1-Dichloroethylene	5.23E-11	1.22E-07	0.00E+00	0.00E+00	5.23E-11	1.22E-07
1,2-dichloroethane	3.22E-12	1.24E-07	0.00E+00	0.00E+00	3.22E-12	1.24E-07
2-Butanone	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	NA	NA	NA	NA	NA	NA
4-Methylphenol	NA	NA	NA	NA	NA	NA
4-Nitroanaline	NA	NA	NA	NA	NA	NA
Acetone	No CSFs	6.78E-09	No CSFs	0.00E+00	No CSFs	6.78E-09
Antimony	No CSFs	2.52E-03	No CSFs	3.24E-03	No CSFs	0.00E+00
Aroclor-1254	2.46E-09	4.31E-03	0.00E+00	0.00E+00	2.46E-09	4.31E-03
Aroclor-1260	5.88E-09	1.03E-02	0.00E+00	0.00E+00	5.88E-09	1.03E-02
Arsenic	1.15E-07	1.76E-02	1.27E-07	1.95E-02	0.00E+00	0.00E+00
Barium	No CSFs	1.13E-03	No CSFs	1.18E-03	No CSFs	0.00E+00
Benzene	6.09E-12	1.94E-06	0.00E+00	0.00E+00	6.09E-12	1.94E-06
Benzo(a)anthracene	1.14E-08	No RfDs	0.00E+00	No RfDs	1.14E-08	No RfDs
Benzo(a)pyrene	1.47E-07	No RfDs	0.00E+00	No RfDs	1.47E-07	No RfDs
Benzo(b)fluoranthene	9.07E-09	No RfDs	0.00E+00	No RfDs	9.07E-09	No RfDs
Benzo(k)fluoranthene	1.37E-09	No RfDs	0.00E+00	No RfDs	1.37E-09	No RfDs
Beryllium	3.70E-08	4.26E-04	4.51E-08	5.20E-04	0.00E+00	0.00E+00
Bis(2-chloroisopropyl)ether	NA	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	NA	NA	NA	NA	NA	NA
Boron	NA	NA	NA	NA	NA	NA
Bromodichloromethane	2.07E-12	1.17E-07	0.00E+00	0.00E+00	2.07E-12	1.17E-07
Bromoform	NA	NA	NA	NA	NA	NA
Bromomethane	NA	NA	NA	NA	NA	NA
Cadmium	3.89E-11	3.63E-04	5.43E-11	5.05E-04	0.00E+00	0.00E+00
Carbazole	NA	NA	NA	NA	NA	NA
Carbon disulfide	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	2.25E-11	1.73E-05	0.00E+00	0.00E+00	2.25E-11	1.73E-05
Chlordane	NA	NA	NA	NA	NA	NA
Chlorobenzene	NA	NA	NA	NA	NA	NA
Chloroform	NA	NA	NA	NA	NA	NA
Chromium (VI)	8.98E-09	4.24E-03	9.05E-09	4.22E-03	0.00E+00	2.08E-05
Chrysene	1.23E-10	No RfDs	0.00E+00	No RfDs	1.23E-10	No RfDs
Cobalt	NA	NA	NA	NA	NA	NA
Copper	NA	NA	NA	NA	NA	NA
Cyanide	NA	NA	NA	NA	NA	NA
Cyclohexanone	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	1.89E-07	No RfDs	0.00E+00	No RfDs	1.89E-07	No RfDs
Dieldrin	3.28E-10	2.87E-05	0.00E+00	0.00E+00	3.28E-10	2.87E-05
Di-n-octylphthalate	NA	NA	NA	NA	NA	NA

TABLE E.5-1
Construction Worker - Zone 5 - SumPaths

Summation of all paths for individual chemicals (continued)

	Total		BKGD		Total-BKGD	
	ILCR	HQ	ILCR	HQ	ILCR	HQ
Ethyl ether	No CSFs	NA	NA	NA	NA	NA
Ethylbenzene	4.62E-18	2.60E-07	0.00E+00	0.00E+00	4.62E-18	2.60E-07
Fluoride	No CSFs	3.40E-05	No CSFs	2.53E-05	No CSFs	8.72E-06
Heptachlorodibenzofuran	NA	NA	NA	NA	NA	NA
Heptachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA
Hexachlorodibenzofuran	NA	NA	NA	NA	NA	NA
Hexachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	2.54E-08	No RfDs	0.00E+00	No RfDs	2.54E-08	No RfDs
Lead	No CSFs	No RfDs	No CSFs	No RfDs	No CSFs	No RfDs
Manganese	NA	NA	NA	NA	NA	NA
Mercury	No CSFs	9.73E-05	No CSFs	9.64E-05	No CSFs	8.85E-07
Methanol	NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone	No CSFs	1.43E-07	No CSFs	0.00E+00	No CSFs	1.43E-07
Methylene chloride	1.21E-12	1.88E-07	0.00E+00	0.00E+00	1.21E-12	1.88E-07
Molybdenum	No CSFs	3.14E-04	No CSFs	4.10E-04	No CSFs	0.00E+00
Nickel	NA	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	NA	NA	NA	NA	NA	NA
N-nitrosodipropylamine	NA	NA	NA	NA	NA	NA
Octachlorodibenzofuran	NA	NA	NA	NA	NA	NA
Octochlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA
Pentachlorodibenzofuran	NA	NA	NA	NA	NA	NA
Pentachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA
Pentachlorophenol	NA	NA	NA	NA	NA	NA
Phenanthrene	No CSFs	No RfDs	No CSFs	No RfDs	No CSFs	No RfDs
Selenium	No CSFs	1.00E-04	No CSFs	9.42E-05	No CSFs	5.85E-06
Silver	No CSFs	5.75E-05	No CSFs	8.92E-05	No CSFs	0.00E+00
Tetrachlorodibenzofuran	NA	NA	NA	NA	NA	NA
Tetrachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA
Tetrachloroethylene	1.31E-10	1.70E-06	0.00E+00	0.00E+00	1.31E-10	1.70E-06
Thallium	NA	NA	NA	NA	NA	NA
Toluene	No CSFs	2.46E-07	No CSFs	0.00E+00	No CSFs	2.46E-07
Tributyl phosphate	NA	NA	NA	NA	NA	NA
Trichloroethylene	2.04E-10	1.19E-04	0.00E+00	0.00E+00	2.04E-10	1.19E-04
Trifluorochloromethane	No CSFs	No RfDs	NA	NA	NA	NA
Uranium	No CSFs	1.06E-02	No CSFs	2.96E-03	No CSFs	7.64E-03
Vanadium	NA	NA	NA	NA	NA	NA
Vinyl chloride	NA	NA	NA	NA	NA	NA
Xylenes	No CSFs	1.33E-07	No CSFs	0.00E+00	No CSFs	1.33E-07
Zinc	NA	NA	NA	NA	NA	NA
SUM	**5.53E-07**	**5.23E-02**			**3.92E-07**	**2.25E-02**

TABLE E.5-2
Groundskeeper / Sampler - Zone 5 - InhaleChem

Groundskeeper/Sampler - Inhalation of Gases & Particulates
Risk calculation for Zone 5

Intake Equation:			UNITS	adult
	CDI =	(CS*EF*ED*IR*ET)/(BW*AT)		
	CDI =	Chronic Daily Intake	mg/kgday	calculated below
	CA =	Concentration of chemical in air	mg/m^3	see COC list below
	EF =	Exposure frequency	days/yr	100
	ED =	Exposure duration	yrs	25
	IR =	Inhalation rate	m^3/hr	2.5
	ET =	Exposure time	hrs/day	8
	BW =	Body weight	kg	70
	ATc =	Average time for carcinogens	days	25550
	ATn =	Average time for non-carcinogens	days	9125

COC	conc	RfDI	CSFI	ADULT			
				CDI	HQ	CDI	ILCR
	mg/m^3	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	8.38E-12	NA	5.60E-02	NA	NA	2.34E-13	1.31E-14
1,1-Dichloroethylene	1.45E-11	5.71E-02	1.75E-01	1.14E-12	1.99E-11	4.06E-13	7.10E-14
1,2-dichloroethane	7.19E-12	NA	9.10E-02	NA	NA	2.01E-13	1.83E-14
2-Butanone	NA	1.43E+00	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	NA	NA	NA	NA	NA	NA	NA
4-Nitroanaline	NA	1.14E-03	NA	NA	NA	NA	NA
Acetone	1.31E-10	NA	NA	NA	NA	NA	NA
Antimony	5.78E-08	NA	NA	NA	NA	NA	NA
Aroclor-1254	1.75E-09	NA	2.00E+00	NA	NA	4.90E-11	9.81E-11
Aroclor-1260	1.58E-10	NA	2.00E+00	NA	NA	4.41E-12	8.83E-12
Arsenic	2.90E-07	NA	1.51E+01	NA	NA	8.10E-09	1.22E-07
Barium	4.68E-06	1.43E-04	NA	3.66E-07	2.56E-03	NA	NA
Benzene	3.58E-12	8.57E-03	2.73E-02	2.80E-13	3.27E-11	1.00E-13	2.73E-15
Benzo(a)anthracene	2.24E-09	NA	3.08E-01	NA	NA	6.25E-11	1.93E-11
Benzo(a)pyrene	2.26E-09	NA	3.08E-01	NA	NA	6.32E-11	1.95E-11
Benzo(b)fluoranthene	3.56E-09	NA	3.08E+00	NA	NA	9.95E-11	3.06E-10
Benzo(k)fluoranthene	7.92E-10	NA	3.08E-02	NA	NA	2.22E-11	6.82E-13
Beryllium	3.05E-08	5.71E-06	8.40E+00	2.38E-09	4.17E-04	8.51E-10	7.15E-09
Bis(2-chloroisopropyl)ether	NA	NA	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	NA	NA	NA	NA	NA	NA	NA
Boron	NA	5.71E-03	NA	NA	NA	NA	NA
Bromodichloromethane	3.00E-12	NA	NA	NA	NA	NA	NA
Bromoform	NA	NA	3.85E-03	NA	NA	NA	NA
Bromomethane	NA	1.43E-03	NA	NA	NA	NA	NA
Cadmium	1.84E-08	NA	6.30E+00	NA	NA	5.14E-10	3.24E-09
Carbazole	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	NA	2.00E-01	NA	NA	NA	NA	NA
Carbon tetrachloride	3.53E-12	NA	5.25E-02	NA	NA	9.86E-14	5.18E-15
Chlordane	NA	2.00E-04	3.50E-01	NA	NA	NA	NA
Chlorobenzene	NA	1.43E-02	NA	NA	NA	NA	NA
Chloroform	NA	NA	8.05E-02	NA	NA	NA	NA
Chromium (VI)	6.37E-07	2.86E-05	4.20E+01	4.99E-08	1.74E-03	1.78E-08	7.48E-07
Chrysene	2.22E-09	NA	3.08E-03	NA	NA	6.20E-11	1.91E-13
Cobalt	NA	5.71E-06	9.80E+00	NA	NA	NA	NA
Copper	NA	NA	NA	NA	NA	NA	NA
Cyanide	NA	NA	NA	NA	NA	NA	NA
Cyclohexanone	NA	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	3.96E-10	NA	3.08E+00	NA	NA	1.11E-11	3.41E-11
Dieldrin	1.42E-11	NA	1.61E+01	NA	NA	3.97E-13	6.39E-12
Di-n-octylphthalate	NA	NA	NA	NA	NA	NA	NA
Ethyl ether	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	3.58E-12	2.86E-01	3.85E-03	2.80E-13	9.79E-13	1.00E-13	3.85E-16
Fluoride	8.55E-08	NA	NA	NA	NA	NA	NA
Heptachlorodibenzofuran	NA	NA	1.16E+03	NA	NA	NA	NA
Heptachlorodibenzo-p-dioxin	NA	NA	1.16E+03	NA	NA	NA	NA
Hexachlorodibenzofuran	NA	NA	1.16E+04	NA	NA	NA	NA
Hexachlorodibenzo-p-dioxin	NA	NA	1.16E+04	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	1.47E-09	NA	3.08E-01	NA	NA	4.11E-11	1.27E-11
Lead	7.70E-07	NA	NA	NA	NA	NA	NA
Manganese	NA	1.43E-05	NA	NA	NA	NA	NA
Mercury	1.84E-09	NA	NA	NA	NA	NA	NA
Methanol	NA	NA	NA	NA	NA	NA	NA
Methyl-2-pentanone	1.84E-11	8.57E-01	NA	1.44E-12	1.68E-12	NA	NA
Methylene chloride	3.52E-11	8.57E-01	1.65E-03	2.76E-12	3.22E-12	9.84E-13	1.62E-15
Molybdenum	1.03E-07	NA	NA	NA	NA	NA	NA
Nickel	NA	NA	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	NA	NA	NA	NA	NA	NA	NA
N-nitrosodipropylamine	NA	NA	NA	NA	NA	NA	NA
Octochlorodibenzofuran	NA	NA	1.16E+02	NA	NA	NA	NA
Octochlorodibenzo-p-dioxin	NA	NA	1.16E+02	NA	NA	NA	NA
Pentachlorodibenzofuran	NA	NA	5.78E+03	NA	NA	NA	NA
Pentachlorodibenzo-p-dioxin	NA	NA	5.78E+04	NA	NA	NA	NA
Pentachlorophenol	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	3.23E-09	NA	NA	NA	NA	NA	NA
Selenium	3.29E-08	NA	NA	NA	NA	NA	NA
Silver	1.89E-08	NA	NA	NA	NA	NA	NA
Tetrachlorodibenzofuran	NA	NA	1.16E+04	NA	NA	NA	NA
Tetrachlorodibenzo-p-dioxin	NA	NA	1.16E+05	NA	NA	NA	NA
Tetrachloroethylene	2.42E-11	1.71E-01	2.07E-02	1.89E-12	1.11E-11	6.76E-13	1.40E-14
Thallium	NA	NA	NA	NA	NA	NA	NA
Toluene	1.57E-11	1.43E+00	NA	1.23E-12	8.61E-13	NA	NA
Tributyl phosphate	NA	NA	NA	NA	NA	NA	NA
Trichloroethylene	9.65E-12	1.14E-02	4.00E-01	7.56E-13	6.63E-11	2.70E-13	1.08E-13
Trifluorochloromethane	NA	NA	NA	NA	NA	NA	NA
Uranium	4.22E-07	NA	NA	NA	NA	NA	NA
Vanadium	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	NA	2.86E-02	3.08E-02	NA	NA	NA	NA
Xylenes	3.43E-11	2.86E-02	NA	2.68E-12	9.39E-11	NA	NA
Zinc	NA	NA	NA	NA	NA	NA	NA
				total =	4.72E-03	total =	8.82E-07

Air concentration is derived using air particulate value of 26 ug/m^3 (2005 SER background average from monitor AMS-12) multiplied by the soil concentration.

TABLE E.5-2
Groundskeeper / Sampler - Zone 5 - DermalSoilChem

Groundskeeper/Sampler - Dermal Contact with Soil/Sediment
Risk calculation for Zone 5

Intake Equation:			UNITS	adult
	CDI =	(CS*AB*SA*EF*ED*AF*CF)/(BW*AT)		
	CDI =	Chronic Daily Intake	mg/kgday	calculated below
	CS =	Concentration of chemical in soil	mg/kg	see COC list below
	AB	Absorption factor	--	see COC list below
	SA	Surface area of exposed skin	cm^2/day	3300
	EF =	Exposure frequency	days/yr	100
	ED =	Exposure duration	yrs	25
	AF =	Adherence factor	mg/cm^2	0.3
	CF =	Conversion factor	kg/mg	1.00E-06
	BW =	Body weight	kg	70
	ATc =	Average time for carcinogens	days	25550
	ATn =	Average time for non-carcinogens	days	9125

COC	conc	AB	RfDd	CSFd	ADULT CDI	HQ	CDI	ILCR
	mg/kg	unitless	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	3.22E-04	1.00E-02	3.24E-03	7.04E-02	1.25E-11	3.85E-09	4.46E-12	3.14E-13
1,1-Dichloroethylene	5.58E-04	1.00E-02	5.00E-02	6.00E-01	2.16E-11	4.32E-10	7.72E-12	4.63E-12
1,2-dichloroethane	2.76E-04	1.00E-02	2.00E-02	9.10E-02	1.07E-11	5.36E-10	3.83E-12	3.48E-13
2-Butanone	NA	1.00E-02	4.80E-01	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	NA	1.00E-02	NA	9.00E-01	NA	NA	NA	NA
4-Methylphenol	NA	1.00E-02	3.25E-03	NA	NA	NA	NA	NA
4-Nitroanaline	NA	1.00E-02	2.40E-03	2.63E-02	NA	NA	NA	NA
Acetone	5.04E-03	1.00E-02	7.47E-01	NA	1.95E-10	2.62E-10	NA	NA
Antimony	2.22E+00	1.00E-03	8.00E-06	NA	8.61E-09	1.08E-03	NA	NA
Aroclor-1254	6.75E-02	1.40E-01	1.80E-05	2.22E+00	3.66E-08	2.03E-03	1.31E-08	2.90E-08
Aroclor-1260	6.07E-03	1.40E-01	1.80E-05	2.22E+00	3.29E-09	1.83E-04	1.18E-09	2.61E-09
Arsenic	1.11E+01	3.00E-02	1.23E-04	3.66E+00	1.30E-06	1.05E-02	4.63E-07	1.69E-06
Barium	1.80E+02	1.00E-03	1.40E-02	NA	6.97E-07	4.98E-05	NA	NA
Benzene	1.38E-04	1.00E-02	3.88E-03	5.67E-02	5.33E-12	1.37E-09	1.90E-12	1.08E-13
Benzo(a)anthracene	8.60E-02	1.30E-01	NA	2.35E+00	NA	NA	1.55E-08	3.64E-08
Benzo(a)pyrene	8.70E-02	1.30E-01	NA	2.35E+01	NA	NA	1.56E-08	3.68E-07
Benzo(b)fluoranthene	1.37E-01	1.30E-01	NA	2.35E+00	NA	NA	2.46E-08	5.79E-08
Benzo(k)fluoranthene	3.05E-02	1.30E-01	NA	2.35E-01	NA	NA	5.48E-09	1.29E-09
Beryllium	1.17E+00	1.00E-03	2.00E-05	4.30E+02	4.54E-09	2.27E-04	1.62E-09	6.97E-07
Bis(2-chloroisopropyl)ether	NA	1.00E-02	2.00E-02	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	NA	1.00E-02	3.80E-03	7.37E-02	NA	NA	NA	NA
Boron	NA	1.00E-03	1.80E-01	NA	NA	NA	NA	NA
Bromodichloromethane	1.15E-04	1.00E-02	1.96E-02	6.33E-02	4.47E-12	2.28E-10	1.60E-12	1.01E-13
Bromoform	NA	1.00E-02	1.20E-02	1.32E-02	NA	NA	NA	NA
Bromomethane	NA	1.00E-02	1.12E-03	NA	NA	NA	NA	NA
Cadmium	7.07E-01	1.00E-03	1.00E-05	NA	2.74E-09	2.74E-04	NA	NA
Carbazole	NA	1.00E-02	NA	2.86E-02	NA	NA	NA	NA
Carbon disulfide	NA	2.50E-01	6.30E-02	NA	NA	NA	NA	NA
Carbon tetrachloride	1.38E-04	1.00E-02	4.55E-04	2.00E-01	5.26E-12	1.16E-08	1.88E-12	3.75E-13
Chlordane	NA	4.00E-02	2.50E-04	7.00E-01	NA	NA	NA	NA
Chlorobenzene	NA	1.00E-02	6.20E-03	NA	NA	NA	NA	NA
Chloroform	NA	1.00E-02	2.00E-03	3.05E-02	NA	NA	NA	NA
Chromium (VI)	2.45E+01	1.00E-03	6.00E-05	NA	9.50E-08	1.58E-03	NA	NA
Chrysene	8.53E-02	1.30E-01	NA	2.35E-02	NA	NA	1.53E-08	3.61E-10
Cobalt	NA	1.00E-03	1.60E-02	NA	NA	NA	NA	NA
Copper	NA	1.00E-03	1.20E-02	NA	NA	NA	NA	NA
Cyanide	NA	1.00E-02	3.40E-03	NA	NA	NA	NA	NA
Cyclohexanone	NA	1.00E-02	4.00E+00	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	1.52E-02	1.30E-01	NA	2.35E+01	NA	NA	2.74E-09	6.44E-08
Dieldrin	5.46E-04	1.00E-02	2.50E-05	3.20E+01	2.11E-11	8.46E-07	7.55E-12	2.42E-10
Di-n-octylphthalate	NA	1.00E-02	3.60E-02	NA	NA	NA	NA	NA
Ethyl ether	NA	1.00E-02	1.60E-01	NA	NA	NA	NA	NA
Ethylbenzene	1.38E-04	1.00E-02	9.70E-02	NA	5.33E-12	5.50E-11	NA	NA
Fluoride	3.29E+00	1.00E-03	5.82E-02	NA	1.27E-08	2.19E-07	NA	NA
Heptachlorodibenzofuran	NA	1.00E-02	NA	3.00E+03	NA	NA	NA	NA
Heptachlorodibenzo-p-dioxin	NA	3.00E-02	NA	3.00E+03	NA	NA	NA	NA
Hexachlorodibenzofuran	NA	1.00E-02	NA	3.00E+04	NA	NA	NA	NA
Hexachlorodibenzo-p-dioxin	NA	3.00E-02	NA	3.00E+04	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	5.65E-02	1.30E-01	NA	2.35E+00	NA	NA	1.02E-08	2.39E-08
Lead	2.96E+01	1.00E-03	NA	NA	NA	NA	NA	NA
Manganese	NA	1.00E-03	5.60E-03	NA	NA	NA	NA	NA
Mercury	7.07E-02	1.00E-03	2.10E-05	NA	2.74E-10	1.30E-05	NA	NA
Methanol	NA	1.00E-02	4.00E-01	NA	NA	NA	NA	NA
Methyl-2-pentanone	7.08E-04	1.00E-02	6.40E-02	NA	2.74E-11	4.29E-10	NA	NA
Methylene chloride	1.35E-03	1.00E-02	5.70E-02	7.89E-03	5.25E-11	9.21E-10	1.87E-11	1.48E-13
Molybdenum	3.96E+00	1.00E-03	1.90E-03	NA	1.53E-08	8.08E-06	NA	NA
Nickel	NA	1.00E-03	5.40E-03	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	NA	1.00E-02	5.00E-03	1.96E-02	NA	NA	NA	NA
N-nitrosodipropylamine	NA	1.00E-02	NA	2.80E+01	NA	NA	NA	NA
Octachlorodibenzofuran	NA	1.00E-02	NA	3.00E+02	NA	NA	NA	NA
Octochlorodibenzo-p-dioxin	NA	3.00E-02	NA	3.00E+02	NA	NA	NA	NA
Pentachlorodibenzofuran	NA	1.00E-02	NA	1.50E+04	NA	NA	NA	NA
Pentachlorodibenzo-p-dioxin	NA	3.00E-02	NA	1.50E+05	NA	NA	NA	NA
Pentachlorophenol	NA	2.50E-01	3.00E-02	1.20E-01	NA	NA	NA	NA
Phenanthrene	1.24E-01	1.00E-02	NA	NA	NA	NA	NA	NA
Selenium	1.27E+00	1.00E-03	2.20E-03	NA	4.90E-09	2.23E-06	NA	NA
Silver	7.26E-01	1.00E-03	9.00E-04	NA	2.82E-09	3.13E-06	NA	NA
Tetrachlorodibenzofuran	NA	1.00E-02	NA	3.00E+04	NA	NA	NA	NA
Tetrachlorodibenzo-p-dioxin	NA	3.00E-02	NA	3.00E+05	NA	NA	NA	NA
Tetrachloroethylene	9.30E-04	1.00E-02	1.00E-02	5.40E-01	3.60E-11	3.60E-09	1.29E-11	6.95E-12
Thallium	NA	1.00E-03	1.80E-05	NA	NA	NA	NA	NA
Toluene	6.05E-04	1.00E-02	6.40E-02	NA	2.34E-11	3.66E-10	NA	NA
Tributyl phosphate	NA	1.00E-02	1.00E-01	1.08E-02	NA	NA	NA	NA
Trichloroethylene	3.71E-04	1.00E-02	4.50E-05	2.67E+00	1.44E-11	3.20E-07	5.14E-12	1.37E-11
Trifluorochloromethane	NA	NA	NA	NA	NA	NA	NA	NA
Uranium	1.62E+01	1.00E-03	5.10E-04	NA	6.30E-08	1.23E-04	NA	NA
Vanadium	NA	1.00E-03	7.00E-05	NA	NA	NA	NA	NA
Vinyl chloride	NA	1.00E-02	3.00E-03	1.50E+00	NA	NA	NA	NA
Xylenes	1.32E-03	1.00E-02	1.84E-01	NA	5.11E-11	2.78E-10	NA	NA
Zinc	NA	1.00E-03	6.00E-02	NA	NA	NA	NA	NA
					total =	1.61E-02	total =	2.97E-06

TABLE E.5-2
Groundskeeper / Sampler - Zone 5 - IngestSoilChem

Groundskeeper/Sampler - Ingestion of Soil
Risk calculation for Zone 5

Intake Equation:			UNITS	adult
	CDI =	(CS*EF*ED*IR*FI*CF)/(BW*AT)		
	CDI =	Chronic Daily Intake	mg/kgday	calculated below
	CS =	Concentration of chemical in soil	mg/kg	see COC list below
	EF =	Exposure frequency	days/yr	100
	ED =	Exposure duration	yrs	25
	IR =	Ingestion rate	mg/day	100
	FI =	Fraction of contaminated soil	unitless	1
	CF =	Conversion factor	kg/mg	1.00E-06
	BW =	Body weight	kg	70
	ATc =	Average time for carcinogens	days	25550
	ATn =	Average time for non-carcinogens	days	9125

COC	conc	RfDo	CSFo	ADULT CDI	ADULT HQ	ADULT CDI	ADULT ILCR
	mg/kg	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	3.22E-04	4.00E-03	5.70E-02	1.26E-10	3.15E-08	4.51E-11	2.57E-12
1,1-Dichloroethylene	5.58E-04	5.00E-02	6.00E-01	2.18E-10	4.37E-09	7.80E-11	4.68E-11
1,2-dichloroethane	2.76E-04	2.00E-02	9.10E-02	1.08E-10	5.41E-09	3.86E-11	3.52E-12
2-Butanone	NA	6.00E-01	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	NA	NA	4.50E-01	NA	NA	NA	NA
4-Methylphenol	NA	5.00E-03	NA	NA	NA	NA	NA
4-Nitroanaline	NA	3.00E-03	2.10E-02	NA	NA	NA	NA
Acetone	5.04E-03	9.00E-01	NA	1.97E-09	2.19E-09	NA	NA
Antimony	2.22E+00	4.00E-04	NA	8.70E-07	2.17E-03	NA	NA
Aroclor-1254	6.75E-02	2.00E-05	2.00E+00	2.64E-08	1.32E-03	9.43E-09	1.89E-08
Aroclor-1260	6.07E-03	2.00E-05	2.00E+00	2.38E-09	1.19E-04	8.49E-10	1.70E-09
Arsenic	1.11E+01	3.00E-04	1.50E+00	4.36E-06	1.45E-02	1.56E-06	2.34E-06
Barium	1.80E+02	2.00E-01	NA	7.04E-05	3.52E-04	NA	NA
Benzene	1.38E-04	4.00E-03	5.50E-02	5.38E-11	1.35E-08	1.92E-11	1.06E-12
Benzo(a)anthracene	8.60E-02	NA	7.30E-01	NA	NA	1.20E-08	8.77E-09
Benzo(a)pyrene	8.70E-02	NA	7.30E+00	NA	NA	1.22E-08	8.87E-08
Benzo(b)fluoranthene	1.37E-01	NA	7.30E-01	NA	NA	1.91E-08	1.40E-08
Benzo(k)fluoranthene	3.05E-02	NA	7.30E-02	NA	NA	4.26E-09	3.11E-10
Beryllium	1.17E+00	2.00E-03	4.30E+00	4.58E-07	2.29E-04	1.64E-07	7.04E-07
Bis(2-chloroisopropyl)ether	NA	4.00E-02	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	NA	2.00E-02	1.40E-02	NA	NA	NA	NA
Boron	NA	2.00E-01	NA	NA	NA	NA	NA
Bromodichloromethane	1.15E-04	2.00E-02	6.20E-02	4.51E-11	2.26E-09	1.61E-11	9.99E-13
Bromoform	NA	2.00E-02	7.90E-03	NA	NA	NA	NA
Bromomethane	NA	1.40E-03	NA	NA	NA	NA	NA
Cadmium	7.07E-01	1.00E-03	NA	2.77E-07	2.77E-04	NA	NA
Carbazole	NA	NA	2.00E-03	NA	NA	NA	NA
Carbon disulfide	NA	1.00E-01	NA	NA	NA	NA	NA
Carbon tetrachloride	1.36E-04	7.00E-04	1.30E-01	5.31E-11	7.59E-08	1.90E-11	2.47E-12
Chlordane	NA	5.00E-04	3.50E-01	NA	NA	NA	NA
Chlorobenzene	NA	2.00E-02	NA	NA	NA	NA	NA
Chloroform	NA	1.00E-02	6.10E-03	NA	NA	NA	NA
Chromium (VI)	2.45E+01	3.00E-03	NA	9.59E-06	3.20E-03	NA	NA
Chrysene	8.53E-02	NA	7.30E-03	NA	NA	1.19E-08	8.70E-11
Cobalt	NA	2.00E-02	NA	NA	NA	NA	NA
Copper	NA	4.00E-02	NA	NA	NA	NA	NA
Cyanide	NA	2.00E-02	NA	NA	NA	NA	NA
Cyclohexanone	NA	5.00E+00	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	1.52E-02	NA	7.30E+00	NA	NA	2.13E-09	1.56E-08
Dieldrin	5.46E-04	5.00E-05	1.60E+01	2.14E-10	4.27E-06	7.63E-11	1.22E-09
Di-n-octylphthalate	NA	4.00E-02	NA	NA	NA	NA	NA
Ethyl ether	NA	2.00E-01	NA	NA	NA	NA	NA
Ethylbenzene	1.38E-04	1.00E-01	NA	5.38E-11	5.38E-10	NA	NA
Fluoride	3.29E+00	6.00E-02	NA	1.29E-06	2.15E-05	NA	NA
Heptachlorodibenzofuran	NA	NA	1.50E+03	NA	NA	NA	NA
Heptachlorodibenzo-p-dioxin	NA	NA	1.50E+03	NA	NA	NA	NA
Hexachlorodibenzofuran	NA	NA	1.50E+03	NA	NA	NA	NA
Hexachlorodibenzo-p-dioxin	NA	NA	1.50E+04	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	5.65E-02	NA	7.30E-01	NA	NA	7.90E-09	5.77E-09
Lead	2.96E+01	NA	NA	NA	NA	NA	NA
Manganese	NA	1.40E-01	NA	NA	NA	NA	NA
Mercury	7.07E-02	3.00E-04	NA	2.77E-08	9.22E-05	NA	NA
Methanol	NA	5.00E-01	NA	NA	NA	NA	NA
Methyl-2-pentanone	7.08E-04	8.00E-02	NA	2.77E-10	3.47E-09	NA	NA
Methylene chloride	1.35E-03	6.00E-02	7.50E-03	5.30E-10	8.83E-09	1.89E-10	1.42E-12
Molybdenum	3.96E+00	5.00E-03	NA	1.55E-06	3.10E-04	NA	NA
Nickel	NA	2.00E-02	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	NA	2.00E-02	4.90E-03	NA	NA	NA	NA
N-nitrosodipropylamine	NA	NA	7.00E+00	NA	NA	NA	NA
Octachlorodibenzofuran	NA	NA	1.50E+02	NA	NA	NA	NA
Octochlorodibenzo-p-dioxin	NA	NA	1.50E+02	NA	NA	NA	NA
Pentachlorodibenzofuran	NA	NA	7.50E+03	NA	NA	NA	NA
Pentachlorodibenzo-p-dioxin	NA	NA	7.50E+04	NA	NA	NA	NA
Pentachlorophenol	NA	3.00E-02	1.20E-01	NA	NA	NA	NA
Phenanthrene	1.24E-01	NA	NA	NA	NA	NA	NA
Selenium	1.27E+00	5.00E-03	NA	4.95E-07	9.90E-05	NA	NA
Silver	7.28E-01	5.00E-03	NA	2.85E-07	5.70E-05	NA	NA
Tetrachlorodibenzofuran	NA	NA	1.50E+04	NA	NA	NA	NA
Tetrachlorodibenzo-p-dioxin	NA	NA	1.50E+05	NA	NA	NA	NA
Tetrachloroethylene	9.30E-04	1.00E-02	5.40E-01	3.64E-10	3.64E-08	1.30E-10	7.02E-11
Thallium	NA	9.00E-05	NA	NA	NA	NA	NA
Toluene	6.05E-04	8.00E-02	NA	2.37E-10	2.96E-09	NA	NA
Tributyl phosphate	NA	2.00E-01	5.40E-03	NA	NA	NA	NA
Trichloroethylene	3.71E-04	3.00E-04	4.00E-01	1.45E-10	4.84E-07	5.19E-11	2.08E-11
Trifluorochloromethane	NA	NA	NA	NA	NA	NA	NA
Uranium	1.62E+01	6.00E-04	NA	6.36E-06	1.06E-02	NA	NA
Vanadium	NA	7.00E-03	NA	NA	NA	NA	NA
Vinyl chloride	NA	3.00E-03	1.50E+00	NA	NA	NA	NA
Xylenes	1.32E-03	2.00E-01	NA	5.16E-10	2.58E-09	NA	NA
Zinc	NA	3.00E-01	NA	NA	NA	NA	NA
				total =	3.34E-02	total =	3.20E-06

TABLE E.5-2
Groundskeeper / Sampler - Zone 5 - DermalSWchem

Groundskeeper/Sampler - Dermal Contact with Surface Water
Risk calculation for Zone 5

			UNITS	adult
Intake Equation:	CDI =	(DA*EF*ED*SA)/(BW*AT)		
	CDI =	Chronic Daily Intake	mg/kgday	calculated below
	DA =	Dermal absorption dose	mg/cm²day	see COC list below
	EF =	Exposure frequency	days/yr	12
	ED =	Exposure duration	yrs	25
	SA =	Surface area of skin	cm²	5870
	BW =	Body weight	kg	70
	ATc =	Average time for carcinogens	days	25550
	ATn =	Average time for non-carcinogens	days	9125
where:	DA = C_v*K_p*CF*ET			
	C_v =	concentation of ith contaminant in surface water	mg/L	see COC list below
	K_p =	permeability constant for ith contaminant	cm/hr	see COC list below
	CF =	conversion factor	L/cm³	0.001
	ET =	exposure time	hr/d	1

COC	C_v	K_p	DA	RfDd	CSFd	ADULT CDI	ADULT HQ	ADULT CDI	ADULT ILCR
	mg/L	cm/hr	mg/cm²day	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	5.00E-04	6.43E-03	3.22E-09	3.24E-03	7.04E-02	8.56E-09	2.64E-06	3.06E-09	2.15E-10
1,1-Dichloroethylene	5.00E-04	1.59E-02	7.95E-09	5.00E-02	6.00E-01	2.12E-08	4.23E-07	7.56E-09	4.54E-09
1,2-dichloroethane	5.00E-04	5.34E-03	2.67E-09	2.00E-02	9.10E-02	7.11E-09	3.56E-07	2.54E-09	2.31E-10
2-Butanone	NA	1.11E-03	NA	4.80E-01	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	NA	1.69E-02	NA	NA	9.00E-01	NA	NA	NA	NA
4-Methylphenol	NA	9.95E-03	NA	3.25E-03	NA	NA	NA	NA	NA
4-Nitroanaline	NA	2.66E-03	NA	2.40E-03	2.63E-02	NA	NA	NA	NA
Acetone	2.50E-03	5.69E-04	1.42E-09	7.47E-01	NA	3.79E-09	5.07E-09	NA	NA
Antimony	5.00E-04	1.00E-03	5.00E-10	8.00E-06	NA	1.33E-09	1.66E-04	NA	NA
Aroclor-1254	5.00E-05	1.29E+00	6.45E-08	1.80E-05	2.22E+00	1.72E-07	9.54E-03	6.13E-08	1.36E-07
Aroclor-1260	5.00E-05	5.48E+00	2.74E-07	1.80E-05	2.22E+00	7.30E-07	4.05E-02	2.61E-07	5.79E-07
Arsenic	3.29E-03	1.00E-03	3.29E-09	1.23E-04	3.66E+00	8.75E-09	7.12E-05	3.13E-09	1.14E-08
Barium	5.26E-02	1.00E-03	5.26E-08	1.40E-02	NA	1.40E-07	1.00E-05	NA	NA
Benzene	5.00E-04	2.07E-02	1.04E-08	3.88E-03	5.67E-02	2.76E-08	7.10E-06	9.84E-09	5.58E-10
Benzo(a)anthracene	5.00E-04	9.48E-01	4.74E-07	NA	2.35E+00	NA	NA	4.51E-07	1.06E-06
Benzo(a)pyrene	5.00E-04	1.24E+00	6.20E-07	NA	2.35E+01	NA	NA	5.90E-07	1.39E-05
Benzo(b)fluoranthene	5.00E-04	6.99E-01	3.50E-07	NA	2.35E+00	NA	NA	3.32E-07	7.81E-07
Benzo(k)fluoranthene	5.00E-04	1.20E+00	6.00E-07	NA	2.35E-01	NA	NA	5.71E-07	1.34E-07
Beryllium	1.58E-04	1.00E-03	1.58E-10	2.00E-05	4.30E+02	4.19E-10	2.10E-05	1.50E-10	6.44E-08
Bis(2-chloroisopropyl)ether	NA	7.63E-02	NA	2.00E-02	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	NA	1.97E+00	NA	3.80E-03	7.37E-02	NA	NA	NA	NA
Boron	NA	1.00E-03	NA	1.60E-01	NA	NA	NA	NA	NA
Bromodichloromethane	5.00E-04	5.02E-03	2.51E-09	1.96E-02	6.33E-02	6.66E-09	3.41E-07	2.39E-09	1.51E-10
Bromoform	NA	2.77E-03	NA	1.20E-02	1.32E-02	NA	NA	NA	NA
Bromomethane	NA	3.51E-03	NA	1.12E-03	NA	NA	NA	NA	NA
Cadmium	1.00E-04	1.00E-03	1.00E-10	1.00E-05	NA	2.66E-10	2.66E-05	NA	NA
Carbazole	NA	7.97E-02	NA	NA	2.66E-02	NA	NA	NA	NA
Carbon disulfide	NA	1.56E-02	NA	6.30E-02	NA	NA	NA	NA	NA
Carbon tetrachloride	5.00E-04	2.24E-02	1.12E-08	4.55E-04	2.00E-01	2.98E-08	6.56E-05	1.07E-08	2.13E-09
Chlordane	NA	1.57E-01	NA	2.50E-04	7.00E-01	NA	NA	NA	NA
Chlorobenzene	NA	4.07E-02	NA	6.20E-03	NA	NA	NA	NA	NA
Chloroform	NA	6.92E-03	NA	2.00E-03	3.05E-02	NA	NA	NA	NA
Chromium (VI)	3.33E-03	2.00E-03	6.66E-09	6.00E-05	NA	1.77E-08	2.96E-04	NA	NA
Chrysene	5.00E-04	1.03E+00	5.15E-07	NA	2.35E-02	NA	NA	4.90E-07	1.15E-08
Cobalt	NA	4.00E-04	NA	1.60E-02	NA	NA	NA	NA	NA
Copper	NA	1.00E-03	NA	1.20E-02	NA	NA	NA	NA	NA
Cyanide	NA	1.00E-03	NA	3.40E-03	NA	NA	NA	NA	NA
Cyclohexanone	NA	1.80E-03	NA	4.00E+00	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	5.00E-04	1.68E+00	8.40E-07	NA	2.35E+01	NA	NA	7.99E-07	1.88E-05
Dieldrin	2.00E-05	4.45E-02	8.90E-10	2.50E-05	3.20E+01	2.37E-09	9.48E-05	8.46E-10	2.71E-08
Di-n-octylphthalate	NA	4.45E+00	NA	3.60E-02	NA	NA	NA	NA	NA
Ethyl ether	NA	2.88E-03	NA	1.60E-01	NA	NA	NA	NA	NA
Ethylbenzene	5.00E-04	7.39E-02	3.70E-08	9.70E-02	NA	9.84E-08	1.01E-06	NA	NA
Fluoride	4.09E-01	1.00E-03	4.09E-07	5.82E-02	NA	1.09E-06	1.87E-05	NA	NA
Heptachlorodibenzofuran	NA	2.55E+00	NA	NA	3.00E+03	NA	NA	NA	NA
Heptachlorodibenzo-p-dioxin	NA	3.22E+00	NA	NA	3.00E+03	NA	NA	NA	NA
Hexachlorodibenzofuran	NA	2.38E+00	NA	NA	3.00E+04	NA	NA	NA	NA
Hexachlorodibenzo-p-dioxin	NA	5.29E+00	NA	NA	3.00E+04	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	5.00E-04	2.23E+00	1.12E-06	NA	2.35E+00	NA	NA	1.06E-06	2.49E-06
Lead	1.68E-03	1.00E-04	1.68E-10	NA	NA	NA	NA	NA	NA
Manganese	NA	1.00E-03	NA	1.84E-03	NA	NA	NA	NA	NA
Mercury	6.00E-05	1.00E-03	6.00E-11	2.10E-05	NA	1.60E-10	7.61E-06	NA	NA
Methanol	NA	3.45E-04	NA	4.00E-01	NA	NA	NA	NA	NA
4-Methyl-2-pentanone	2.50E-03	3.97E-03	9.93E-09	6.40E-02	NA	2.64E-08	4.13E-07	NA	NA
Methylene chloride	2.50E-03	4.46E-03	1.12E-08	5.70E-02	7.89E-03	2.97E-08	5.21E-07	1.06E-08	8.37E-11
Molybdenum	8.03E-03	1.00E-03	8.03E-09	1.90E-03	NA	2.14E-08	1.12E-05	NA	NA
Nickel	NA	2.00E-04	NA	5.40E-03	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	NA	1.96E-02	NA	5.00E-03	1.96E-02	NA	NA	NA	NA
N-nitrosodipropylamine	NA	2.83E-03	NA	NA	2.80E+01	NA	NA	NA	NA
Octachlorodibenzofuran	NA	4.78E+00	NA	NA	3.00E+02	NA	NA	NA	NA
Octochlorodibenzo-p-dioxin	NA	1.65E+01	NA	NA	3.00E+02	NA	NA	NA	NA
Pentachlorodibenzofuran	NA	1.06E+00	NA	NA	1.50E+04	NA	NA	NA	NA
Pentachlorodibenzo-p-dioxin	NA	3.79E-01	NA	NA	1.50E+05	NA	NA	NA	NA
Pentachlorophenol	NA	1.95E-01	NA	3.00E-02	1.20E-01	NA	NA	NA	NA
Phenanthrene	5.00E-04	2.29E-01	1.15E-07	NA	NA	NA	NA	NA	NA
Selenium	2.50E-03	1.00E-03	2.50E-09	2.20E-03	NA	6.66E-09	3.03E-06	NA	NA
Silver	2.00E-04	6.00E-04	1.20E-10	9.00E-04	NA	3.20E-10	3.55E-07	NA	NA
Tetrachlorodibenzofuran	NA	1.12E+00	NA	NA	3.00E+04	NA	NA	NA	NA
Tetrachlorodibenzo-p-dioxin	NA	1.39E+00	NA	NA	3.00E+05	NA	NA	NA	NA
Tetrachloroethylene	5.00E-04	4.81E-02	2.41E-08	1.00E-02	5.40E-01	6.40E-08	6.40E-06	2.29E-08	1.24E-08
Thallium	NA	1.00E-03	NA	1.80E-05	NA	NA	NA	NA	NA
Toluene	5.00E-04	4.53E-02	2.27E-08	6.40E-02	NA	6.03E-08	9.42E-07	NA	NA
Tributyl phosphate	NA	3.13E-02	NA	1.00E-01	1.08E-02	NA	NA	NA	NA
Trichloroethylene	5.00E-04	1.57E-02	7.85E-09	4.50E-05	2.67E+00	2.09E-08	4.65E-04	7.47E-09	1.99E-08
Trifluorochloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Uranium	2.14E-02	1.00E-03	2.14E-08	5.10E-04	NA	5.69E-08	1.12E-04	NA	NA
Vanadium	NA	1.00E-03	NA	7.00E-05	NA	NA	NA	NA	NA
Vinyl chloride	NA	1.13E-02	NA	3.00E-03	1.50E+00	NA	NA	NA	NA
Xylenes	5.00E-04	7.04E-02	3.52E-08	1.84E-01	NA	9.37E-08	5.09E-07	NA	NA
Zinc	NA	6.00E-04	NA	6.00E-02	NA	NA	NA	NA	NA
						total =	5.15E-02	total =	3.80E-05

TABLE E.5-2
Groundskeeper / Sampler - Zone 5 - IngestSWchem

Groundskeeper/Sampler - Ingestion of Surface Water
Risk calculation for Zone 5

Intake Equation:			UNITS	Assigned Values
	CDI =	(CW*EF*ED*IR)/(BW*AT)		
	CDI =	Chronic Daily Intake	mg/kgday	adult
	CW =	Concentration of chemical in water	mg/L	see COC table below
	EF =	Exposure frequency	days/yr	12
	ED =	Exposure duration	yrs	25
	IR =	Ingestion rate	L/day	0.01
	BW =	Body weight	kg	70
	ATc =	Average time for carcinogens	days	25550
	ATn =	Average time for non-carcinogens	days	9125

COC	CW	RfDo	CSFo	ADULT CDI	HQ	CDI	ILCR
	mg/L	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	5.00E-04	4.00E-03	5.70E-02	2.35E-09	5.87E-07	8.39E-10	4.78E-11
1,1-Dichloroethylene	5.00E-04	5.00E-02	6.00E-01	2.35E-09	4.70E-08	8.39E-10	5.03E-10
1,2-dichloroethane	5.00E-04	2.00E-02	9.10E-02	2.35E-09	1.17E-07	8.39E-10	7.63E-11
2-Butanone	NA	6.00E-01	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	NA	NA	4.50E-01	NA	NA	NA	NA
4-Methylphenol	NA	5.00E-03	NA	NA	NA	NA	NA
4-Nitroanaline	NA	3.00E-03	2.10E-02	NA	NA	NA	NA
Acetone	2.50E-03	9.00E-01	NA	1.17E-08	1.30E-08	NA	NA
Antimony	5.00E-04	4.00E-04	NA	2.35E-09	5.87E-06	NA	NA
Aroclor-1254	5.00E-05	2.00E-05	4.00E-01	2.35E-10	1.17E-05	8.39E-11	3.35E-11
Aroclor-1260	5.00E-05	2.00E-05	4.00E-01	2.35E-10	1.17E-05	8.39E-11	3.35E-11
Arsenic	3.29E-03	3.00E-04	1.50E+00	1.54E-08	5.15E-05	5.51E-09	8.27E-09
Barium	5.26E-02	2.00E-01	NA	2.47E-07	1.24E-06	NA	NA
Benzene	5.00E-04	4.00E-03	5.50E-02	2.35E-09	5.87E-07	8.39E-10	4.61E-11
Benzo(a)anthracene	5.00E-04	NA	7.30E-01	NA	NA	8.39E-10	6.12E-10
Benzo(a)pyrene	5.00E-04	NA	7.30E+00	NA	NA	8.39E-10	6.12E-09
Benzo(b)fluoranthene	5.00E-04	NA	7.30E-01	NA	NA	8.39E-10	6.12E-10
Benzo(k)fluoranthene	5.00E-04	NA	7.30E-02	NA	NA	8.39E-10	6.12E-11
Beryllium	1.58E-04	2.00E-03	4.30E+00	7.40E-10	3.70E-07	2.64E-10	1.14E-09
Bis(2-chloroisopropyl)ether	NA	4.00E-02	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	NA	2.00E-02	1.40E-02	NA	NA	NA	NA
Boron	NA	2.00E-01	NA	NA	NA	NA	NA
Bromodichloromethane	5.00E-04	2.00E-02	6.20E-02	2.35E-09	1.17E-07	8.39E-10	5.20E-11
Bromoform	NA	2.00E-02	7.90E-03	NA	NA	NA	NA
Bromomethane	NA	1.40E-03	NA	NA	NA	NA	NA
Cadmium	1.00E-04	1.00E-03	NA	4.70E-10	4.70E-07	NA	NA
Carbazole	NA	NA	2.00E-03	NA	NA	NA	NA
Carbon disulfide	NA	1.00E-01	NA	NA	NA	NA	NA
Carbon tetrachloride	5.00E-04	7.00E-04	1.30E-01	2.35E-09	3.35E-06	8.39E-10	1.09E-10
Chlordane	NA	5.00E-04	3.50E-01	NA	NA	NA	NA
Chlorobenzene	NA	2.00E-02	NA	NA	NA	NA	NA
Chloroform	NA	1.00E-02	6.10E-03	NA	NA	NA	NA
Chromium (VI)	3.33E-03	3.00E-03	NA	1.56E-08	5.22E-06	NA	NA
Chrysene	5.00E-04	NA	7.30E-03	NA	NA	8.39E-10	6.12E-12
Cobalt	NA	2.00E-02	NA	NA	NA	NA	NA
Copper	NA	4.00E-02	NA	NA	NA	NA	NA
Cyanide	NA	2.00E-02	NA	NA	NA	NA	NA
Cyclohexanone	NA	5.00E+00	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	5.00E-04	NA	7.30E+00	NA	NA	8.39E-10	6.12E-09
Dieldrin	2.00E-05	5.00E-05	1.60E+01	9.39E-11	1.88E-06	3.35E-11	5.37E-10
Di-n-octylphthalate	NA	4.00E-02	NA	NA	NA	NA	NA
Ethyl ether	NA	2.00E-01	NA	NA	NA	NA	NA
Ethylbenzene	5.00E-04	1.00E-01	NA	2.35E-09	2.35E-08	NA	NA
Fluoride	4.09E-01	6.00E-02	NA	1.92E-06	3.20E-05	NA	NA
Heptachlorodibenzofuran	NA	NA	1.50E+03	NA	NA	NA	NA
Heptachlorodibenzo-p-dioxin	NA	NA	1.50E+03	NA	NA	NA	NA
Hexachlorodibenzofuran	NA	NA	1.50E+03	NA	NA	NA	NA
Hexachlorodibenzo-p-dioxin	NA	NA	1.50E+04	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	5.00E-04	NA	7.30E-01	NA	NA	8.39E-10	6.12E-10
Lead	1.68E-03	NA	NA	NA	NA	NA	NA
Manganese	NA	4.60E-02	NA	NA	NA	NA	NA
Mercury	6.00E-05	3.00E-04	NA	2.82E-10	9.39E-07	NA	NA
Methanol	NA	5.00E-01	NA	NA	NA	NA	NA
4-Methyl-2-pentanone	2.50E-03	8.00E-02	NA	1.17E-08	1.47E-07	NA	NA
Methylene chloride	2.50E-03	6.00E-02	7.50E-03	1.17E-08	1.96E-07	4.19E-09	3.15E-11
Molybdenum	8.03E-03	5.00E-03	NA	3.77E-08	7.54E-06	NA	NA
Nickel	NA	2.00E-02	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	NA	2.00E-02	4.90E-03	NA	NA	NA	NA
N-nitrosodipropylamine	NA	NA	7.00E+00	NA	NA	NA	NA
Octachlorodibenzofuran	NA	NA	1.50E+02	NA	NA	NA	NA
Octochlorodibenzo-p-dioxin	NA	NA	1.50E+02	NA	NA	NA	NA
Pentachlorodibenzofuran	NA	NA	7.50E+03	NA	NA	NA	NA
Pentachlorodibenzo-p-dioxin	NA	NA	7.50E+04	NA	NA	NA	NA
Pentachlorophenol	NA	3.00E-02	1.20E-01	NA	NA	NA	NA
Phenanthrene	5.00E-04	NA	NA	NA	NA	NA	NA
Selenium	2.50E-03	5.00E-03	NA	1.17E-08	2.35E-06	NA	NA
Silver	2.00E-04	5.00E-03	NA	9.39E-10	1.88E-07	NA	NA
Tetrachlorodibenzofuran	NA	NA	1.50E+04	NA	NA	NA	NA
Tetrachlorodibenzo-p-dioxin	NA	NA	1.50E+05	NA	NA	NA	NA
Tetrachloroethylene	5.00E-04	1.00E-02	5.40E-01	2.35E-09	2.35E-07	8.39E-10	4.53E-10
Thallium	NA	9.00E-05	NA	NA	NA	NA	NA
Toluene	5.00E-04	8.00E-02	NA	2.35E-09	2.94E-08	NA	NA
Tributyl phosphate	NA	2.00E-01	5.40E-03	NA	NA	NA	NA
Trichloroethylene	5.00E-04	3.00E-04	4.00E-01	2.35E-09	7.83E-06	8.39E-10	3.35E-10
Trifluorochloromethane	NA	NA	NA	NA	NA	NA	NA
Uranium	2.14E-02	6.00E-04	NA	1.00E-07	1.67E-04	NA	NA
Vanadium	NA	7.00E-03	NA	NA	NA	NA	NA
Vinyl chloride	NA	3.00E-03	1.50E+00	NA	NA	NA	NA
Xylenes	5.00E-04	2.00E-01	NA	2.35E-09	1.17E-08	NA	NA
Zinc	NA	3.00E-01	NA	NA	NA	NA	NA
				total =	3.13E-04	total =	2.58E-08

TABLE E.5-2
Groundskeeper / Sampler - Zone 5 - InhaleRad

Groundskeeper/Sampler - Inhalation of Gases & Particulates
Risk calculation for Zone 5

Intake Equation:			UNITS	adult
	CDI =	(CA*EF*ED*IR*ET)		
	CDI =	Chronic Daily Intake	pCi	calculated below
	CA =	Concentration of radionuclide in air	pCi/m^3	see COC list below
	EF =	Exposure frequency	days/yr	100
	ED =	Exposure duration	yrs	25
	IR =	Inhalation rate	m^3/hr	2.5
	ET =	Exposure time	hrs/day	8

COC	conc	CSFi	ADULT	
			CDI	ILCR
	pCi/m^3	1/pCi	pCi	CDI*CSF
Cesium-137 + D	2.12E-06	1.19E-11	1.06E-01	1.26E-12
Lead-210 + D	5.55E-05	1.39E-08	2.77E+00	3.86E-08
Neptunium-237 + D	1.41E-07	1.77E-08	7.04E-03	1.25E-10
Plutonium-238	6.11E-08	3.36E-08	3.06E-03	1.03E-10
Plutonium-239/240	NA	3.33E-08	NA	NA
Radium-226 + D	3.33E-05	1.16E-08	1.67E+00	1.93E-08
Radium-228 + D	2.88E-05	5.23E-09	1.44E+00	7.54E-09
Radon-222+ D	3.28E+02	1.80E-11	1.64E+07	2.96E-04
Strontium-90 + D	NA	1.13E-10	NA	NA
Technetium-99	4.26E-05	1.41E-11	2.13E+00	3.01E-11
Thorium-228 + D	2.93E-05	1.43E-07	1.46E+00	2.09E-07
Thorium-230	6.39E-05	2.85E-08	3.19E+00	9.11E-08
Thorium-232	2.85E-05	4.33E-08	1.43E+00	6.18E-08
Uranium-234	1.44E-04	1.14E-08	7.21E+00	8.22E-08
Uranium-235 + D	6.57E-06	1.01E-08	3.28E-01	3.32E-09
Uranium-238 + D	1.41E-04	9.35E-09	7.04E+00	6.58E-08
			total =	**2.96E-04**

Air concentration is derived using air particulate value of 26 ug/m^3 (2005 SER background average from monitor AMS-12) multiplied by the soil concentration. Rn-222 is derived by multiplying the soil Ra-226 value by 256 g/m^3. This conversion factor is based on Rn-222 air background and Ra-226 soil background (i.e., 400 pCi/m^3 divided by 1.56 pCi/g)

TABLE E.5-2
Groundskeeper / Sampler - Zone 5 - IngestSoilRad

Groundskeep/Sampler - Ingestion of Soil
Risk calculation for Zone 5

Intake Equation:			UNITS	adult
	CDI =	(CS*EF*ED*IR*FI)		
	CDI =	Chronic Daily Intake	pCi	calculated below
	CS =	Concentration of radionuclide in soil	pCi/g	see COC list below
	EF =	Exposure frequency	days/yr	100
	ED =	Exposure duration	yrs	25
	IR =	Ingestion rate	g/day	0.1
	FI =	Fraction of contaminated soil	unitless	1

COC	conc	CSFos	ADULT	
			CDI	ILCR
	pCi/g	1/pCi	pCi	CDI*CSF
Cesium-137 + D	8.17E-02	4.33E-11	2.04E+01	8.84E-10
Lead-210 + D	2.13E+00	2.66E-09	5.34E+02	1.42E-06
Neptunium-237 + D	5.42E-03	1.62E-10	1.35E+00	2.19E-10
Plutonium-238	2.35E-03	2.72E-10	5.88E-01	1.60E-10
Plutonium-239/240	NA	2.76E-10	NA	NA
Radium-226 + D	1.28E+00	7.30E-10	3.21E+02	2.34E-07
Radium-228 + D	1.11E+00	2.29E-09	2.77E+02	6.35E-07
Radon-222+ D	NA	NA	NA	NA
Strontium-90 + D	NA	1.44E-10	NA	NA
Technetium-99	1.64E+00	7.66E-12	4.10E+02	3.14E-09
Thorium-228 + D	1.13E+00	8.09E-10	2.82E+02	2.28E-07
Thorium-230	2.46E+00	2.02E-10	6.14E+02	1.24E-07
Thorium-232	1.10E+00	2.31E-10	2.74E+02	6.34E-08
Uranium-234	5.55E+00	1.58E-10	1.39E+03	2.19E-07
Uranium-235 + D	2.53E-01	1.63E-10	6.32E+01	1.03E-08
Uranium-238 + D	5.42E+00	2.10E-10	1.35E+03	2.84E-07
			total =	**3.22E-06**

TABLE E.5-2
Groundskeeper / Sampler - Zone 5 - IngestSWrad

Groundskeeper/Sampler - Ingestion of Surface Water
Risk calculation for Zone 5

Intake Equation:			UNITS	Assigned Values
	CDI =	(CW*EF*ED*IR)		
	CDI =	Chronic Daily Intake	pCi	adult
	CW =	Concentration of radionuclide in water	pCi/L	see COC table below
	EF =	Exposure frequency	days/yr	12
	ED =	Exposure duration	yrs	25
	IR =	Ingestion rate	L/day	0.01

COC	conc	CSFow	ADULT	
			CDI	ILCR
	pCi/L	1/pCi	pCi	CDI*CSF
Cesium-137 + D	1.99E+00	3.04E-11	5.97E+00	1.81E-10
Lead-210 + D	7.80E-01	1.27E-09	2.34E+00	2.97E-09
Neptunium-237 + D	2.66E-01	6.74E-11	7.99E-01	5.39E-11
Plutonium-238	3.71E-02	1.31E-10	1.11E-01	1.46E-11
Plutonium-239/240	NA	1.35E-10	NA	NA
Radium-226 + D	3.01E-01	3.86E-10	9.04E-01	3.49E-10
Radium-228 + D	3.17E+00	1.04E-09	9.50E+00	9.88E-09
Radon-222+ D	NA	NA	NA	NA
Strontium-90 + D	NA	7.40E-11	NA	NA
Technetium-99	9.35E+00	2.75E-12	2.80E+01	7.71E-11
Thorium-228 + D	3.07E+00	3.00E-10	9.22E+00	2.76E-09
Thorium-230	6.30E-01	9.10E-11	1.89E+00	1.72E-10
Thorium-232	3.17E+00	1.01E-10	9.50E+00	9.59E-10
Uranium-234	7.29E+00	7.07E-11	2.19E+01	1.55E-09
Uranium-235 + D	3.32E-01	7.18E-11	9.96E-01	7.15E-11
Uranium-238 + D	7.12E+00	8.71E-11	2.14E+01	1.86E-09
			total =	**2.09E-08**

TABLE E.5-2
Groundskeeper / Sampler - Zone 5 - ExternalRad

Groundskeeper/Sampler - External Radiation
Risk calculation for Zone 5

			UNITS	adult
Intake Equation:	CDI =	$(CS*EF*ED*ET_o*(1-SH_o))+(CS*EF*ED*ET_i*(1-SH_i))$		
	CDI =	Chronic Daily Intake	yr pCi/g	calculated below
	CS =	Concentration of radionuclide in soil	pCi/g	see COC list below
	EF =	Fraction of year exposed to radiation	--	0.27
	ED =	Exposure duration	yrs	25
	ET_o =	Fraction of day spent outdoors	--	0.33
	ET_i =	Fraction of day spent indoors	--	0.00
	SH_o =	Shield factor outdoors	--	0.25
	SH_i =	Shield factor indoors	--	0.5

COC	conc pCi/g	CSFx g/pCi yr	ADULT CDI yr pCi/g	ADULT ILCR CDI*CSF
Cesium-137 + D	8.17E-02	2.55E-06	1.40E-01	3.56E-07
Lead-210 + D	2.13E+00	4.21E-09	3.65E+00	1.54E-08
Neptunium-237 + D	5.42E-03	7.97E-07	9.27E-03	7.39E-09
Plutonium-238	2.35E-03	7.22E-11	4.02E-03	2.90E-13
Plutonium-239/240	NA	2.00E-10	NA	NA
Radium-226 + D	1.28E+00	8.49E-06	2.19E+00	1.86E-05
Radium-228 + D	1.11E+00	4.53E-06	1.90E+00	8.59E-06
Radon-222+ D	NA	NA	NA	NA
Strontium-90 + D	NA	1.96E-08	NA	NA
Technetium-99	1.64E+00	8.14E-11	2.81E+00	2.28E-10
Thorium-228 + D	1.13E+00	7.76E-06	1.93E+00	1.50E-05
Thorium-230	2.46E+00	8.19E-10	4.21E+00	3.44E-09
Thorium-232	1.10E+00	3.42E-10	1.88E+00	6.42E-10
Uranium-234	5.55E+00	2.52E-10	9.49E+00	2.39E-09
Uranium-235 + D	2.53E-01	5.43E-07	4.32E-01	2.35E-07
Uranium-238 + D	5.42E+00	1.14E-07	9.27E+00	1.06E-06
			total =	**4.39E-05**

TABLE E.5-2
Groundskeeper / Sampler - Zone 5 - SumPaths

Groundskeeper/Sampler - Summation of all Pathways
Risk calculation for Zone 5

	HQ	ILCR	rad only ILCR
Inhale	4.72E-03	2.97E-04	2.96E-04
Dermal Soil	1.61E-02	2.97E-06	NA
Ingest Soil	3.34E-02	6.42E-06	3.22E-06
Dermal Surface Water	5.15E-02	3.80E-05	NA
Ingest Surface Water	3.13E-04	4.67E-08	2.09E-08
External Radiation	NA	4.39E-05	4.39E-05
SUM	**1.06E-01**	**3.88E-04**	**3.43E-04**

Summation of all paths for individual nuclides

	Total ILCR	BKGD ILCR	Total-BKGD ILCR
Cesium-137 + D	3.58E-07	2.89E-07	6.87E-08
Lead-210 + D	1.48E-06	1.08E-06	3.97E-07
Neptunium-237 + D	7.79E-09	2.41E-11	7.76E-09
Plutonium-238	2.77E-10	4.32E-12	2.73E-10
Plutonium-239/240	NA	NA	NA
Radium-226 + D	1.89E-05	2.30E-05	0.00E+00
Radium-228 + D	9.25E-06	1.06E-05	0.00E+00
Radon-222+ D	2.96E-04	3.59E-04	0.00E+00
Strontium-90 + D	NA	NA	NA
Technetium-99	3.48E-09	5.12E-11	3.42E-09
Thorium-228 + D	1.54E-05	1.71E-05	0.00E+00
Thorium-230	2.19E-07	1.39E-07	8.00E-08
Thorium-232	1.27E-07	1.46E-07	0.00E+00
Uranium-234	3.05E-07	8.53E-08	2.20E-07
Uranium-235 + D	2.48E-07	6.97E-08	1.79E-07
Uranium-238 + D	1.41E-06	3.95E-07	1.01E-06
SUM	**3.43E-04**		**1.97E-06**

TABLE E.5-2
Groundskeeper / Sampler - Zone 5 - SumPaths

Summation of all paths for individual chemicals

	Total		BKGD		Total-BKGD	
	ILCR	HQ	ILCR	HQ	ILCR	HQ
1,1,2-Trichloroethane	2.66E-10	3.26E-06	0.00E+00	0.00E+00	2.66E-10	3.26E-06
1,1-Dichloroethylene	5.09E-09	4.75E-07	0.00E+00	0.00E+00	5.09E-09	4.75E-07
1,2-dichloroethane	3.11E-10	4.79E-07	0.00E+00	0.00E+00	3.11E-10	4.79E-07
2-Butanone	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	NA	NA	NA	NA	NA	NA
4-Methylphenol	NA	NA	NA	NA	NA	NA
4-Nitroanaline	NA	NA	NA	NA	NA	NA
Acetone	No CSFs	2.06E-08	No CSFs	0.00E+00	No CSFs	2.06E-08
Antimony	No CSFs	3.42E-03	No CSFs	4.37E-03	No CSFs	0.00E+00
Aroclor-1254	1.84E-07	1.29E-02	0.00E+00	0.00E+00	1.84E-07	1.29E-02
Aroclor-1260	5.83E-07	4.09E-02	0.00E+00	0.00E+00	5.83E-07	4.09E-02
Arsenic	4.17E-06	2.52E-02	4.63E-06	2.80E-02	0.00E+00	0.00E+00
Barium	No CSFs	2.97E-03	No CSFs	3.08E-03	No CSFs	0.00E+00
Benzene	6.05E-10	7.71E-06	0.00E+00	0.00E+00	6.05E-10	7.71E-06
Benzo(a)anthracene	1.11E-06	No RfDs	0.00E+00	No RfDs	1.11E-06	No RfDs
Benzo(a)pyrene	1.43E-05	No RfDs	0.00E+00	No RfDs	1.43E-05	No RfDs
Benzo(b)fluoranthene	8.54E-07	No RfDs	0.00E+00	No RfDs	8.54E-07	No RfDs
Benzo(k)fluoranthene	1.36E-07	No RfDs	0.00E+00	No RfDs	1.36E-07	No RfDs
Beryllium	1.47E-06	8.95E-04	1.77E-06	1.09E-03	0.00E+00	0.00E+00
Bis(2-chloroisopropyl)ether	NA	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	NA	NA	NA	NA	NA	NA
Boron	NA	NA	NA	NA	NA	NA
Bromodichloromethane	2.04E-10	4.61E-07	0.00E+00	0.00E+00	2.04E-10	4.61E-07
Bromoform	NA	NA	NA	NA	NA	NA
Bromomethane	NA	NA	NA	NA	NA	NA
Cadmium	3.24E-09	5.78E-04	4.53E-09	7.97E-04	0.00E+00	0.00E+00
Carbazole	NA	NA	NA	NA	NA	NA
Carbon disulfide	No CSFs	NA	NA	NA	NA	NA
Carbon tetrachloride	2.24E-09	6.90E-05	0.00E+00	0.00E+00	2.24E-09	6.90E-05
Chlordane	NA	NA	NA	NA	NA	NA
Chlorobenzene	NA	NA	NA	NA	NA	NA
Chloroform	NA	NA	NA	NA	NA	NA
Chromium (VI)	7.48E-07	6.83E-03	7.54E-07	6.67E-03	0.00E+00	1.61E-04
Chrysene	1.20E-08	No RfDs	0.00E+00	No RfDs	1.20E-08	No RfDs
Cobalt	NA	NA	NA	NA	NA	NA
Copper	NA	NA	NA	NA	NA	NA
Cyanide	NA	NA	NA	NA	NA	NA
Cyclohexanone	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	1.89E-05	No RfDs	0.00E+00	No RfDs	1.89E-05	No RfDs
Dieldrin	2.91E-08	1.02E-04	0.00E+00	0.00E+00	2.91E-08	1.02E-04
Di-n-octylphthalate	NA	NA	NA	NA	NA	NA

TABLE E.5-2
Groundskeeper / Sampler - Zone 5 - SumPaths

Summation of all paths for individual chemicals (continued)

	Total		BKGD		Total-BKGD	
	ILCR	HQ	ILCR	HQ	ILCR	HQ
Ethyl ether	NA	NA	NA	NA	NA	NA
Ethylbenzene	3.85E-16	1.04E-06	0.00E+00	0.00E+00	3.85E-16	1.04E-06
Fluoride	No CSFs	7.23E-05	No CSFs	3.92E-05	No CSFs	3.32E-05
Heptachlorodibenzofuran	NA	NA	NA	NA	NA	NA
Heptachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA
Hexachlorodibenzofuran	NA	NA	NA	NA	NA	NA
Hexachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	2.52E-06	No RfDs	0.00E+00	No RfDs	2.52E-06	No RfDs
Lead	No CSFs	No RfDs	No CSFs	No RfDs	No CSFs	No RfDs
Manganese	NA	NA	NA	NA	NA	NA
Mercury	No CSFs	1.14E-04	No CSFs	1.13E-04	No CSFs	9.79E-07
Methanol	NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone	No CSFs	5.64E-07	No CSFs	0.00E+00	No CSFs	5.64E-07
Methylene chloride	1.17E-10	7.26E-07	0.00E+00	0.00E+00	1.17E-10	7.26E-07
Molybdenum	No CSFs	3.37E-04	No CSFs	4.23E-04	No CSFs	0.00E+00
Nickel	NA	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	NA	NA	NA	NA	NA	NA
N-nitrosodipropylamine	NA	NA	NA	NA	NA	NA
Octachlorodibenzofuran	NA	NA	NA	NA	NA	NA
Octochlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA
Pentachlorodibenzofuran	NA	NA	NA	NA	NA	NA
Pentachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA
Pentachlorophenol	NA	NA	NA	NA	NA	NA
Phenanthrene	No CSFs	No RfDs	No CSFs	No RfDs	No CSFs	No RfDs
Selenium	No CSFs	1.07E-04	No CSFs	1.01E-04	No CSFs	6.00E-06
Silver	No CSFs	6.06E-05	No CSFs	9.39E-05	No CSFs	0.00E+00
Tetrachlorodibenzofuran	NA	NA	NA	NA	NA	NA
Tetrachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA
Tetrachloroethylene	1.29E-08	6.68E-06	0.00E+00	0.00E+00	1.29E-08	6.68E-06
Thallium	NA	NA	NA	NA	NA	NA
Toluene	No CSFs	9.75E-07	No CSFs	0.00E+00	No CSFs	9.75E-07
Tributyl phosphate	NA	NA	NA	NA	NA	NA
Trichloroethylene	2.03E-08	4.73E-04	0.00E+00	0.00E+00	2.03E-08	4.73E-04
Trifluorochloromethane	NA	NA	NA	NA	NA	NA
Uranium	No CSFs	1.10E-02	No CSFs	3.03E-03	No CSFs	7.97E-03
Vanadium	NA	NA	NA	NA	NA	NA
Vinyl chloride	NA	NA	NA	NA	NA	NA
Xylenes	No CSFs	5.24E-07	No CSFs	0.00E+00	No CSFs	5.24E-07
Zinc	NA	NA	NA	NA	NA	NA
SUM	**4.50E-05**	**1.06E-01**			**3.86E-05**	**6.26E-02**

TABLE E.5-3
Undeveloped Park User - Zone 5 - InhaleChem

Undeveloped Park User - Inhalation of Gases & Particulates
Risk calculation for Zone 5

Intake Equation:			UNITS	Assigned Values			
	CDI =	(CA*EF*ED*IR*ET)/(BW*AT)					
	CDI =	Chronic Daily Intake	mg/kgday	child	youth	adult	senior
	CA =	Concentration of chemical in air	mg/m^3	see table of COCs below			
	EF =	Exposure frequency	days/yr	20	40	20	40
	ED =	Exposure duration	yrs	3	6	14	7
	IR =	Inhalation rate	m^3/hr	1	1	1	1
	ET =	Exposure time	hrs/day	2	2	2	2
	BW =	Body weight	kg	15	47	70	70
	ATc =	Average time for carcinogens	days	25550	25550	25550	25550
	ATn =	Average time for non-carcinogens	days	1095	2190	5110	2555

COC	conc	RfDi	CSFi	CHILD				YOUTH				ADULT				SENIOR				SUM			
				CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR
	mg/m^3	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	8.38E-12	NA	5.60E-02	NA	NA	2.62E-15	1.47E-16	NA	NA	3.35E-15	1.88E-16	NA	NA	2.62E-15	1.47E-16	NA	NA	2.62E-15	1.47E-16	NA	NA	1.12E-14	6.28E-16
1,1-Dichloroethylene	1.45E-11	5.71E-02	1.75E-01	1.06E-13	1.86E-12	4.54E-15	7.95E-16	6.77E-14	1.18E-12	5.80E-15	1.01E-15	2.27E-14	3.98E-13	4.54E-15	7.95E-16	4.54E-14	7.96E-13	4.54E-15	7.95E-16	4.53E-14	7.94E-13	1.94E-14	3.40E-15
1,2-dichloroethane	7.19E-12	NA	9.10E-02	NA	NA	2.25E-15	2.05E-16	NA	NA	2.87E-15	2.61E-16	NA	NA	2.25E-15	2.05E-16	NA	NA	2.25E-15	2.05E-16	NA	NA	9.62E-15	8.76E-16
2-Butanone	NA	1.43E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroanaline	NA	1.14E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	1.31E-10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	5.78E-08	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	1.75E-09	NA	2.00E+00	NA	NA	5.49E-13	1.10E-12	NA	NA	7.01E-13	1.40E-12	NA	NA	5.49E-13	1.10E-12	NA	NA	5.49E-13	1.10E-12	NA	NA	2.35E-12	4.70E-12
Aroclor-1260	1.58E-10	NA	2.00E+00	NA	NA	4.94E-14	9.89E-14	NA	NA	6.31E-14	1.26E-13	NA	NA	4.94E-14	9.89E-14	NA	NA	4.94E-14	9.89E-14	NA	NA	2.11E-13	4.23E-13
Arsenic	2.90E-07	NA	1.51E+01	NA	NA	9.07E-11	1.37E-09	NA	NA	1.16E-10	1.75E-09	NA	NA	9.07E-11	1.37E-09	NA	NA	9.07E-11	1.37E-09	NA	NA	3.88E-10	5.86E-09
Barium	4.68E-06	1.43E-04	NA	3.42E-08	2.39E-04	NA	NA	2.18E-08	1.52E-04	NA	NA	7.32E-09	5.12E-05	NA	NA	1.46E-08	1.02E-04	NA	NA	1.46E-08	1.02E-04	NA	NA
Benzene	3.58E-12	8.57E-03	2.73E-02	2.61E-14	3.05E-12	1.12E-15	3.06E-17	1.67E-14	1.95E-12	1.43E-15	3.90E-17	5.60E-15	6.53E-13	1.12E-15	3.06E-17	1.12E-14	1.31E-12	1.12E-15	3.06E-17	1.12E-14	1.30E-12	4.79E-15	1.31E-16
Benzo(a)anthracene	2.24E-09	NA	3.08E-01	NA	NA	7.00E-13	2.16E-13	NA	NA	8.94E-13	2.75E-13	NA	NA	7.00E-13	2.16E-13	NA	NA	7.00E-13	2.16E-13	NA	NA	2.99E-12	9.22E-13
Benzo(a)pyrene	2.26E-09	NA	3.08E-01	NA	NA	7.08E-13	2.18E-13	NA	NA	9.04E-13	2.78E-13	NA	NA	7.08E-13	2.18E-13	NA	NA	7.08E-13	2.18E-13	NA	NA	3.03E-12	9.32E-13
Benzo(b)fluoranthene	3.56E-09	NA	3.08E+00	NA	NA	1.11E-12	3.43E-12	NA	NA	1.42E-12	4.38E-12	NA	NA	1.11E-12	3.43E-12	NA	NA	1.11E-12	3.43E-12	NA	NA	4.77E-12	1.47E-11
Benzo(k)fluoranthene	7.92E-10	NA	3.08E-02	NA	NA	2.48E-13	7.64E-15	NA	NA	3.17E-13	9.76E-15	NA	NA	2.48E-13	7.64E-15	NA	NA	2.48E-13	7.64E-15	NA	NA	1.06E-12	3.27E-14
Beryllium	3.05E-08	5.71E-06	8.40E+00	2.22E-10	3.90E-05	9.54E-12	8.01E-11	1.42E-10	2.49E-05	1.22E-11	1.02E-10	4.77E-11	8.35E-06	9.54E-12	8.01E-11	9.54E-11	1.67E-05	9.54E-12	8.01E-11	9.51E-11	1.67E-05	4.08E-11	3.43E-10
Bis(2-chloroisopropyl)ether	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Boron	NA	5.71E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	3.00E-12	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	NA	NA	3.85E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	NA	1.43E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	1.84E-08	NA	6.30E+00	NA	NA	5.76E-12	3.63E-11	NA	NA	7.35E-12	4.63E-11	NA	NA	5.76E-12	3.63E-11	NA	NA	5.76E-12	3.63E-11	NA	NA	2.46E-11	1.55E-10
Carbazole	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	NA	2.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	3.53E-12	NA	5.25E-02	NA	NA	1.10E-15	5.80E-17	NA	NA	1.41E-15	7.40E-17	NA	NA	1.10E-15	5.80E-17	NA	NA	1.10E-15	5.80E-17	NA	NA	4.72E-15	2.48E-16
Chlordane	NA	2.00E-04	3.50E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	NA	1.43E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	NA	NA	8.05E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (VI)	6.37E-07	2.86E-05	4.20E+01	4.66E-09	1.63E-04	2.00E-10	8.38E-09	2.97E-09	1.04E-04	2.55E-10	1.07E-08	9.98E-10	3.49E-05	2.00E-10	8.38E-09	2.00E-09	6.98E-05	2.00E-10	8.38E-09	1.99E-09	6.96E-05	8.53E-10	3.58E-08
Chrysene	2.22E-09	NA	3.08E-03	NA	NA	6.94E-13	2.14E-15	NA	NA	8.87E-13	2.73E-15	NA	NA	6.94E-13	2.14E-15	NA	NA	6.94E-13	2.14E-15	NA	NA	2.97E-12	9.15E-15
Cobalt	NA	5.71E-06	9.80E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexanone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	3.96E-10	NA	3.08E+00	NA	NA	1.24E-13	3.82E-13	NA	NA	1.58E-13	4.88E-13	NA	NA	1.24E-13	3.82E-13	NA	NA	1.24E-13	3.82E-13	NA	NA	5.31E-13	1.63E-12
Dieldrin	1.42E-11	NA	1.61E+01	NA	NA	4.44E-15	7.15E-14	NA	NA	5.67E-15	9.13E-14	NA	NA	4.44E-15	7.15E-14	NA	NA	4.44E-15	7.15E-14	NA	NA	1.90E-14	3.06E-13
Di-n-octylphthalate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE E.5-3
Undeveloped Park User - Zone 5 - InhaleChem

Undeveloped Park User - Inhalation of Gases & Particulates
Risk calculation for Zone 5

Intake Equation:			UNITS	Assigned Values			
	CDI =	(CA*EF*ED*IR*ET)/(BW*AT)					
	CDI =	Chronic Daily Intake	mg/kgday	child	youth	adult	senior
	CA =	Concentration of chemical in air	mg/m^3	see table of COCs below			
	EF =	Exposure frequency	days/yr	20	40	20	40
	ED =	Exposure duration	yrs	3	6	14	7
	IR =	Inhalation rate	m^3/hr	1	1	1	1
	ET =	Exposure time	hrs/day	2	2	2	2
	BW =	Body weight	kg	15	47	70	70
	ATc =	Average time for carcinogens	days	25550	25550	25550	25550
	ATn =	Average time for non-carcinogens	days	1095	2190	5110	2555

COC	conc	RfDi	CSFi	CHILD				YOUTH				ADULT				SENIOR				SUM			
				CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR
	mg/m^3	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
Ethyl ether	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	3.58E-12	2.86E-01	3.85E-03	2.61E-14	9.14E-14	1.12E-15	4.31E-18	1.67E-14	5.83E-14	1.43E-15	5.50E-18	5.60E-15	1.96E-14	1.12E-15	4.31E-18	1.12E-14	3.92E-14	1.12E-15	4.31E-18	1.12E-14	3.91E-14	4.79E-15	1.84E-17
Fluoride	8.55E-08	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlorodibenzofuran	NA	NA	1.16E+03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlorodibenzo-p-dioxin	NA	NA	1.16E+03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorodibenzofuran	NA	NA	1.16E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorodibenzo-p-dioxin	NA	NA	1.16E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	1.47E-09	NA	3.08E-01	NA	NA	4.60E-13	1.42E-13	NA	NA	5.87E-13	1.81E-13	NA	NA	4.60E-13	1.42E-13	NA	NA	4.60E-13	1.42E-13	NA	NA	1.97E-12	6.06E-13
Lead	7.70E-07	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	NA	1.43E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	1.84E-09	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methanol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl-2-pentanone	1.84E-11	8.57E-01	NA	1.35E-13	1.57E-13	NA	NA	8.59E-14	1.00E-13	NA	NA	2.88E-14	3.36E-14	NA	NA	5.77E-14	6.73E-14	NA	NA	5.75E-14	6.71E-14	NA	NA
Methylene chloride	3.52E-11	8.57E-01	1.65E-03	2.57E-13	3.00E-13	1.10E-14	1.82E-17	1.64E-13	1.92E-13	1.41E-14	2.32E-17	5.51E-14	6.43E-14	1.10E-14	1.82E-17	1.10E-13	1.29E-13	1.10E-14	1.82E-17	1.10E-13	1.28E-13	4.71E-14	7.78E-17
Molybdenum	1.03E-07	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-nitrosodipropylamine	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Octochlorodibenzofuran	NA	NA	1.16E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Octochlorodibenzo-p-dioxin	NA	NA	1.16E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorodibenzofuran	NA	NA	5.78E+03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorodibenzo-p-dioxin	NA	NA	5.78E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	3.23E-09	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	3.29E-08	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	1.89E-08	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachlorodibenzofuran	NA	NA	1.16E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachlorodibenzo-p-dioxin	NA	NA	1.16E+05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethylene	2.42E-11	1.71E-01	2.07E-02	1.77E-13	1.03E-12	7.57E-15	1.57E-16	1.13E-13	6.59E-13	9.66E-15	2.00E-16	3.79E-14	2.21E-13	7.57E-15	1.57E-16	7.57E-14	4.43E-13	7.57E-15	1.57E-16	7.55E-14	4.42E-13	3.24E-14	6.70E-16
Thallium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1.57E-11	1.43E+00	NA	1.15E-13	8.04E-14	NA	NA	7.34E-14	5.13E-14	NA	NA	2.46E-14	1.72E-14	NA	NA	4.93E-14	3.44E-14	NA	NA	4.92E-14	3.44E-14	NA	NA
Tributyl phosphate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethylene	9.65E-12	1.14E-02	4.00E-01	7.05E-14	6.19E-12	3.02E-15	1.21E-15	4.50E-14	3.95E-12	3.86E-15	1.54E-15	1.51E-14	1.33E-12	3.02E-15	1.21E-15	3.02E-14	2.65E-12	3.02E-15	1.21E-15	3.02E-14	2.65E-12	1.29E-14	5.17E-15
Trifluorochloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Uranium	4.22E-07	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	NA	2.86E-02	3.08E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes	3.43E-11	2.86E-02	NA	2.51E-13	8.76E-12	NA	NA	1.60E-13	5.59E-12	NA	NA	5.37E-14	1.88E-12	NA	NA	1.07E-13	3.75E-12	NA	NA	1.07E-13	3.75E-12	NA	NA
Zinc	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
																				total =	1.88E-04	total =	4.22E-08

Air concentration is derived using an air particulate value of 26 ug/m^3 (2005 SER background average from monitor AMS-12) multiplied by the soil concentration.

TABLE E.5-3
Undeveloped Park User - Zone 5 - DermalSoilChem

Undeveloped Park User - Dermal Contact with Soil/Sediment
Risk calculation for Zone 5

Intake Equation:

		UNITS	Assigned Values			
			child	youth	adult	senior
CDI =	(CS*AB*SA*EF*ED*AF*CF)/(BW*AT)					
CDI =	Chronic Daily Intake	mg/kgday				
CS =	Concentration of chemical in soil	mg/kg	see table of COCs below			
AB	Absorption factor	–	see table of COCs below			
SA	Surface area of exposed skin	cm^2/day	2800	4370	5700	5700
EF =	Exposure frequency	days/yr	20	40	20	40
ED =	Exposure duration	yrs	3	6	14	7
AF =	Adherence factor	mg/cm^2	0.2	0.2	0.07	0.07
CF =	Conversion factor	kg/mg	1.00E-06	1.00E-06	1.00E-06	1.00E-06
BW =	Body weight	kg	15	47	70	70
ATc =	Average time for carcinogens	days	25550	25550	25550	25550
ATn =	Average time for non-carcinogens	days	1095	2190	5110	2555

COC	conc	AB	RfDd	CSFd	CHILD				YOUTH				ADULT				SENIOR				SUM			
					CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR
	mg/kg	unitless	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	3.22E-04	1.00E-02	3.24E-03	7.04E-02	6.59E-12	2.03E-09	2.83E-13	1.99E-14	6.57E-12	2.03E-09	5.63E-13	3.96E-14	1.01E-12	3.11E-10	2.01E-13	1.42E-14	2.01E-12	6.21E-10	2.01E-13	1.42E-14	2.91E-12	8.99E-10	1.25E-12	8.79E-14
1,1-Dichloroethylene	5.58E-04	1.00E-02	5.00E-02	6.00E-01	1.14E-11	2.28E-10	4.89E-13	2.94E-13	1.14E-11	2.27E-10	9.75E-13	5.85E-13	1.74E-12	3.49E-11	3.49E-13	2.09E-13	3.49E-12	6.97E-11	3.49E-13	2.09E-13	5.04E-12	1.01E-10	2.16E-12	1.30E-12
1,2-dichloroethane	2.76E-04	1.00E-02	2.00E-02	9.10E-02	5.65E-12	2.63E-10	2.42E-13	2.21E-14	5.63E-12	2.82E-10	4.83E-13	4.39E-14	8.63E-13	4.32E-11	1.73E-13	1.57E-14	1.73E-12	8.63E-11	1.73E-13	1.57E-14	2.50E-12	1.25E-10	1.07E-12	9.74E-14
2-Butanone	NA	1.00E-02	4.80E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	NA	1.00E-02	NA	9.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	NA	1.00E-02	3.25E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroanaline	NA	1.00E-02	2.40E-03	2.63E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	5.04E-03	1.00E-02	7.47E-01	NA	1.03E-10	1.38E-10	NA	NA	1.03E-10	1.38E-10	NA	NA	1.57E-11	2.11E-11	NA	NA	3.15E-11	4.22E-11	NA	NA	4.56E-11	6.10E-11	NA	NA
Antimony	2.22E+00	1.00E-03	8.00E-06	NA	4.55E-09	5.68E-04	NA	NA	4.53E-09	5.66E-04	NA	NA	6.94E-10	8.68E-05	NA	NA	1.39E-09	1.74E-04	NA	NA	2.01E-09	2.51E-04	NA	NA
Aroclor-1254	6.75E-02	1.40E-01	1.80E-05	2.22E+00	1.93E-08	1.07E-03	8.28E-10	1.84E-09	1.92E-08	1.07E-03	1.65E-09	3.66E-09	2.95E-09	1.64E-04	5.90E-10	1.31E-09	5.90E-09	3.28E-04	5.90E-10	1.31E-09	8.54E-09	4.74E-04	3.66E-09	8.12E-09
Aroclor-1260	6.07E-03	1.40E-01	1.80E-05	2.22E+00	1.74E-09	9.66E-05	7.45E-11	1.65E-10	1.73E-09	9.62E-05	1.48E-10	3.30E-10	2.66E-10	1.48E-05	5.31E-11	1.18E-10	5.31E-10	2.95E-05	5.31E-11	1.18E-10	7.68E-10	4.27E-05	3.29E-10	7.31E-10
Arsenic	1.11E+01	3.00E-02	1.23E-04	3.66E+00	6.84E-07	5.56E-03	2.93E-08	1.07E-07	6.81E-07	5.54E-03	5.84E-08	2.14E-07	1.04E-07	8.49E-04	2.09E-08	7.65E-08	2.09E-07	1.70E-03	2.09E-08	7.65E-08	3.02E-07	2.46E-03	1.30E-07	4.74E-07
Barium	1.80E+02	1.00E-03	1.40E-02	NA	3.68E-07	2.63E-05	NA	NA	3.66E-07	2.62E-05	NA	NA	5.62E-08	4.01E-06	NA	NA	1.12E-07	8.02E-06	NA	NA	1.63E-07	1.16E-05	NA	NA
Benzene	1.38E-04	1.00E-02	3.88E-03	5.67E-02	2.81E-12	7.25E-10	1.21E-13	6.84E-15	2.80E-12	7.23E-10	2.40E-13	1.36E-14	4.30E-13	1.11E-10	8.59E-14	4.87E-15	8.59E-13	2.21E-10	8.59E-14	4.87E-15	1.24E-12	3.20E-10	5.33E-13	3.02E-14
Benzo(a)anthracene	8.60E-02	1.30E-01	NA	2.35E+00	NA	NA	9.80E-10	2.30E-09	NA	NA	1.95E-09	4.59E-09	NA	NA	6.98E-10	1.64E-09	NA	NA	6.98E-10	1.64E-09	NA	NA	4.33E-09	1.02E-08
Benzo(a)pyrene	8.70E-02	1.30E-01	NA	2.35E+01	NA	NA	9.91E-10	2.33E-08	NA	NA	1.97E-09	4.64E-08	NA	NA	7.06E-10	1.66E-08	NA	NA	7.06E-10	1.66E-08	NA	NA	4.38E-09	1.03E-07
Benzo(b)fluoranthene	1.37E-01	1.30E-01	NA	2.35E+00	NA	NA	1.56E-09	3.67E-09	NA	NA	3.11E-09	7.31E-09	NA	NA	1.11E-09	2.61E-09	NA	NA	1.11E-09	2.61E-09	NA	NA	6.89E-09	1.62E-08
Benzo(k)fluoranthene	3.05E-02	1.30E-01	NA	2.35E-01	NA	NA	3.47E-10	8.16E-11	NA	NA	6.92E-10	1.63E-10	NA	NA	2.48E-10	5.82E-11	NA	NA	2.48E-10	5.82E-11	NA	NA	1.53E-09	3.61E-10
Beryllium	1.17E+00	1.00E-03	2.00E-05	4.30E+02	2.40E-09	1.20E-04	1.03E-10	4.42E-08	2.39E-09	1.19E-04	2.05E-10	8.80E-08	3.66E-10	1.83E-05	7.32E-11	3.15E-08	7.32E-10	3.66E-05	7.32E-11	3.15E-08	1.06E-09	5.29E-05	4.54E-10	1.95E-07
Bis(2-chloroisopropyl)ether	NA	1.00E-02	2.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	NA	1.00E-02	3.80E-03	7.37E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Boron	NA	1.00E-03	1.80E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	1.15E-04	1.00E-02	1.96E-02	6.33E-02	2.36E-12	1.20E-10	1.01E-13	6.40E-15	2.35E-12	1.20E-10	2.01E-13	1.27E-14	3.60E-13	1.84E-11	7.20E-14	4.56E-15	7.20E-13	3.67E-11	7.20E-14	4.56E-15	1.04E-12	5.32E-11	4.46E-13	2.83E-14
Bromoform	NA	1.00E-02	1.20E-02	1.32E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	NA	1.00E-02	1.12E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	7.07E-01	1.00E-03	1.00E-05	NA	1.45E-09	1.45E-04	NA	NA	1.44E-09	1.44E-04	NA	NA	2.21E-10	2.21E-05	NA	NA	4.42E-10	4.42E-05	NA	NA	6.39E-10	6.39E-05	NA	NA
Carbazole	NA	1.00E-02	NA	2.86E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	NA	2.50E-01	6.30E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	1.36E-04	1.00E-02	4.55E-04	2.00E-01	2.78E-12	6.10E-09	1.19E-13	2.38E-14	2.76E-12	6.08E-09	2.37E-13	4.74E-14	4.24E-13	9.31E-10	8.47E-14	1.69E-14	8.47E-13	1.86E-09	8.47E-14	1.69E-14	1.23E-12	2.69E-09	5.25E-13	1.05E-13
Chlordane	NA	4.00E-02	2.50E-04	7.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	NA	1.00E-02	6.20E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	NA	1.00E-02	2.00E-03	3.05E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (VI)	2.45E+01	1.00E-03	6.00E-05	NA	5.01E-08	8.36E-04	NA	NA	5.00E-08	8.33E-04	NA	NA	7.66E-09	1.28E-04	NA	NA	1.53E-08	2.55E-04	NA	NA	2.22E-08	3.69E-04	NA	NA
Chrysene	8.53E-02	1.30E-01	NA	2.35E-02	NA	NA	9.72E-10	2.28E-11	NA	NA	1.94E-09	4.55E-11	NA	NA	6.93E-10	1.63E-11	NA	NA	6.93E-10	1.63E-11	NA	NA	4.29E-09	1.01E-10
Cobalt	NA	1.00E-03	1.60E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	NA	1.00E-03	1.20E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	NA	1.00E-02	3.40E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexanone	NA	1.00E-02	4.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	1.52E-02	1.30E-01	NA	2.35E+01	NA	NA	1.74E-10	4.08E-09	NA	NA	3.46E-10	8.13E-09	NA	NA	1.24E-10	2.91E-09	NA	NA	1.24E-10	2.91E-09	NA	NA	7.67E-10	1.80E-08
Dieldrin	5.46E-04	1.00E-02	2.50E-05	3.20E+01	1.12E-11	4.47E-07	4.79E-13	1.53E-11	1.11E-11	4.45E-07	9.53E-13	3.05E-11	1.70E-12	6.82E-08	3.41E-13	1.09E-11	3.41E-12	1.36E-07	3.41E-13	1.09E-11	4.93E-12	1.97E-07	2.11E-12	6.76E-11
Di-n-octylphthalate	NA	1.00E-02	3.60E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE E.5-3
Undeveloped Park User - Zone 5 - DermalSoilChem

Undeveloped Park User - Dermal Contact with Soil/Sediment
Risk calculation for Zone 5

Intake Equation:			UNITS	Assigned Values			
				child	youth	adult	senior
	CDI =	(CS*AB*SA*EF*ED*AF*CF)/(BW*AT)					
	CDI =	Chronic Daily Intake	mg/kgday				
	CS =	Concentration of chemical in soil	mg/kg	see table of COCs below			
	AB	Absorption factor	–	see table of COCs below			
	SA	Surface area of exposed skin	cm^2/day	2800	4370	5700	5700
	EF =	Exposure frequency	days/yr	20	40	20	40
	ED =	Exposure duration	yrs	3	6	14	7
	AF =	Adherence factor	mg/cm^2	0.2	0.2	0.07	0.07
	CF =	Conversion factor	kg/mg	1.00E-06	1.00E-06	1.00E-06	1.00E-06
	BW =	Body weight	kg	15	47	70	70
	ATc =	Average time for carcinogens	days	25550	25550	25550	25550
	ATn =	Average time for non-carcinogens	days	1095	2190	5110	2555

COC	conc	AB	RfDd	CSFd	CHILD				YOUTH				ADULT				SENIOR				SUM			
					CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR
	mg/kg	unitless	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
Ethyl ether	NA	1.00E-02	1.60E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	1.38E-04	1.00E-02	9.70E-02	NA	2.81E-12	2.90E-11	NA	NA	2.80E-12	2.89E-11	NA	NA	4.30E-13	4.43E-12	NA	NA	8.59E-13	8.86E-12	NA	NA	1.24E-12	1.28E-11	NA	NA
Fluoride	3.29E+00	1.00E-03	5.82E-02	NA	6.73E-09	1.16E-07	NA	NA	6.70E-09	1.15E-07	NA	NA	1.03E-09	1.77E-08	NA	NA	2.06E-09	3.53E-08	NA	NA	2.97E-09	5.11E-08	NA	NA
Heptachlorodibenzofuran	NA	1.00E-02	NA	3.00E+03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlorodibenzo-p-dioxin	NA	3.00E-02	NA	3.00E+03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorodibenzofuran	NA	1.00E-02	NA	3.00E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorodibenzo-p-dioxin	NA	3.00E-02	NA	3.00E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	5.65E-02	1.30E-01	NA	2.35E+00	NA	NA	6.44E-10	1.51E-09	NA	NA	1.28E-09	3.02E-09	NA	NA	4.59E-10	1.08E-09	NA	NA	4.59E-10	1.08E-09	NA	NA	2.85E-09	6.69E-09
Lead	2.96E+01	1.00E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	NA	1.00E-03	5.60E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	7.07E-02	1.00E-03	2.10E-05	NA	1.45E-10	6.88E-06	NA	NA	1.44E-10	6.86E-06	NA	NA	2.21E-11	1.05E-06	NA	NA	4.41E-11	2.10E-06	NA	NA	6.38E-11	3.04E-06	NA	NA
Methanol	NA	1.00E-02	4.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl-2-pentanone	7.08E-04	1.00E-02	6.40E-02	NA	1.45E-11	2.26E-10	NA	NA	1.44E-11	2.26E-10	NA	NA	2.21E-12	3.46E-11	NA	NA	4.42E-12	6.91E-11	NA	NA	6.40E-12	1.00E-10	NA	NA
Methylene chloride	1.35E-03	1.00E-02	5.70E-02	7.89E-03	2.77E-11	4.86E-10	1.19E-12	9.37E-15	2.76E-11	4.84E-10	2.37E-12	1.87E-14	4.23E-12	7.42E-11	8.46E-13	6.67E-15	8.46E-12	1.48E-10	8.46E-13	6.67E-15	1.22E-11	2.15E-10	5.24E-12	4.14E-14
Molybdenum	3.96E+00	1.00E-03	1.90E-03	NA	8.10E-09	4.27E-06	NA	NA	8.07E-09	4.25E-06	NA	NA	1.24E-09	6.51E-07	NA	NA	2.47E-09	1.30E-06	NA	NA	3.58E-09	1.88E-06	NA	NA
Nickel	NA	1.00E-03	5.40E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	NA	1.00E-02	5.00E-03	1.96E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-nitrosodipropylamine	NA	1.00E-02	NA	2.80E+01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Octachlorodibenzofuran	NA	1.00E-02	NA	3.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Octochlorodibenzo-p-dioxin	NA	3.00E-02	NA	3.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorodibenzofuran	NA	1.00E-02	NA	1.50E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorodibenzo-p-dioxin	NA	3.00E-02	NA	1.50E+05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	NA	2.50E-01	3.00E-02	1.20E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	1.24E-01	1.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	1.27E+00	1.00E-03	2.20E-03	NA	2.59E-09	1.18E-06	NA	NA	2.58E-09	1.17E-06	NA	NA	3.95E-10	1.80E-07	NA	NA	7.90E-10	3.59E-07	NA	NA	1.14E-09	5.20E-07	NA	NA
Silver	7.28E-01	1.00E-03	9.00E-04	NA	1.49E-09	1.65E-06	NA	NA	1.48E-09	1.65E-06	NA	NA	2.27E-10	2.53E-07	NA	NA	4.55E-10	5.05E-07	NA	NA	6.58E-10	7.31E-07	NA	NA
Tetrachlorodibenzofuran	NA	1.00E-02	NA	3.00E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachlorodibenzo-p-dioxin	NA	3.00E-02	NA	3.00E+05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethylene	9.30E-04	1.00E-02	1.00E-02	5.40E-01	1.90E-11	1.90E-09	8.15E-13	4.40E-13	1.90E-11	1.90E-09	1.62E-12	8.77E-13	2.90E-12	2.90E-10	5.81E-13	3.14E-13	5.81E-12	5.81E-10	5.81E-13	3.14E-13	8.40E-12	8.40E-10	3.60E-12	1.94E-12
Thallium	NA	1.00E-03	1.80E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	6.05E-04	1.00E-02	6.40E-02	NA	1.24E-11	1.93E-10	NA	NA	1.23E-11	1.93E-10	NA	NA	1.89E-12	2.95E-11	NA	NA	3.78E-12	5.91E-11	NA	NA	5.47E-12	8.54E-11	NA	NA
Tributyl phosphate	NA	1.00E-02	1.00E-01	1.08E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethylene	3.71E-04	1.00E-02	4.50E-05	2.67E+00	7.60E-12	1.69E-07	3.26E-13	8.69E-13	7.57E-12	1.68E-07	6.49E-13	1.73E-12	1.16E-12	2.58E-08	2.32E-13	6.19E-13	2.32E-12	5.15E-08	2.32E-13	6.19E-13	3.36E-12	7.46E-08	1.44E-12	3.84E-12
Trifluorochloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Uranium	1.62E+01	1.00E-03	5.10E-04	NA	3.32E-08	6.52E-05	NA	NA	3.31E-08	6.49E-05	NA	NA	5.07E-09	9.95E-06	NA	NA	1.01E-08	1.99E-05	NA	NA	1.47E-08	2.88E-05	NA	NA
Vanadium	NA	1.00E-03	7.00E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	NA	1.00E-02	3.00E-03	1.50E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes	1.32E-03	1.00E-02	1.84E-01	NA	2.70E-11	1.47E-10	NA	NA	2.69E-11	1.46E-10	NA	NA	4.12E-12	2.24E-11	NA	NA	8.24E-12	4.48E-11	NA	NA	1.19E-11	6.48E-11	NA	NA
Zinc	NA	1.00E-03	6.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
																					total =	3.76E-03	total =	8.32E-07

TABLE E.5-3
Undeveloped Park User - Zone 5 - IngestSoilChem

Undeveloped Park User - Ingestion of Soil
Risk calculation for Zone 5

Intake Equation:

		UNITS	Assigned Values			
			child	youth	adult	senior
CDI =	(CS*EF*ED*IR*FI*CF)/(BW*AT)					
CDI =	Chronic Daily Intake	mg/kgday				
CS =	Concentration of chemical in soil	mg/kg	see table of COCs below			
EF =	Exposure frequency	days/yr	20	40	20	40
ED =	Exposure duration	yrs	3	6	14	7
IR =	Ingestion rate	mg/day	200	100	100	100
FI =	Fraction of contaminated soil	unitless	1	1	1	1
CF =	Conversion factor	kg/mg	1.00E-06	1.00E-06	1.00E-06	1.00E-06
BW =	Body weight	kg	15	47	70	70
ATc =	Average time for carcinogens	days	25550	25550	25550	25550
ATn =	Average time for non-carcinogens	days	1095	2190	5110	2555

COC	conc	RfDo	CSFo	CHILD				YOUTH				ADULT				SENIOR				SUM			
				CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR
	mg/kg	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	3.22E-04	4.00E-03	5.70E-02	2.35E-10	5.89E-08	1.01E-11	5.75E-13	7.51E-11	1.88E-08	6.44E-12	3.67E-13	2.52E-11	6.31E-09	5.05E-12	2.88E-13	5.05E-11	1.26E-08	5.05E-12	2.88E-13	8.21E-11	1.55E-08	2.66E-11	1.52E-12
1,1-Dichloroethylene	5.58E-04	5.00E-02	6.00E-01	4.08E-10	8.15E-09	1.75E-11	1.05E-11	1.30E-10	2.60E-09	1.12E-11	6.69E-12	4.37E-11	8.74E-10	8.74E-12	5.24E-12	8.74E-11	1.75E-09	8.74E-12	5.24E-12	1.08E-10	2.15E-09	4.61E-11	2.77E-11
1,2-dichloroethane	2.76E-04	2.00E-02	9.10E-02	2.02E-10	1.01E-08	8.66E-12	7.88E-13	6.45E-11	3.22E-09	5.52E-12	5.03E-13	2.16E-11	1.08E-09	4.33E-12	3.94E-13	4.33E-11	2.16E-09	4.33E-12	3.94E-13	5.33E-11	2.66E-09	2.28E-11	2.08E-12
2-Butanone	NA	6.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	NA	NA	4.50E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	NA	5.00E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroanaline	NA	3.00E-03	2.10E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	5.04E-03	9.00E-01	NA	3.68E-09	4.09E-09	NA	NA	1.18E-09	1.31E-09	NA	NA	3.95E-10	4.38E-10	NA	NA	7.69E-10	8.77E-10	NA	NA	9.72E-10	1.08E-09	NA	NA
Antimony	2.22E+00	4.00E-04	NA	1.62E-06	4.06E-03	NA	NA	5.18E-07	1.30E-03	NA	NA	1.74E-07	4.35E-04	NA	NA	3.48E-07	8.70E-04	NA	NA	4.28E-07	1.07E-03	NA	NA
Aroclor-1254	6.75E-02	2.00E-05	2.00E+00	4.93E-08	2.46E-03	2.11E-09	4.23E-09	1.57E-08	7.87E-04	1.35E-09	2.70E-09	5.28E-09	2.64E-04	1.06E-09	2.11E-09	1.06E-08	5.28E-04	1.06E-09	2.11E-09	1.30E-08	6.50E-04	5.57E-09	1.11E-08
Aroclor-1260	6.07E-03	2.00E-05	2.00E+00	4.44E-09	2.22E-04	1.90E-10	3.80E-10	1.42E-09	7.08E-05	1.21E-10	2.43E-10	4.75E-10	2.38E-05	9.51E-11	1.90E-10	9.51E-10	4.75E-05	9.51E-11	1.90E-10	1.17E-09	5.85E-05	5.02E-10	1.00E-09
Arsenic	1.11E+01	3.00E-04	1.50E+00	8.14E-06	2.71E-02	3.49E-07	5.24E-07	2.60E-06	8.66E-03	2.23E-07	3.34E-07	8.73E-07	2.91E-03	1.75E-07	2.62E-07	1.75E-06	5.82E-03	1.75E-07	2.62E-07	2.15E-06	7.16E-03	9.21E-07	1.38E-06
Barium	1.80E+02	2.00E-01	NA	1.31E-04	6.57E-04	NA	NA	4.19E-05	2.10E-04	NA	NA	1.41E-05	7.04E-05	NA	NA	2.82E-05	1.41E-04	NA	NA	3.47E-05	1.73E-04	NA	NA
Benzene	1.38E-04	4.00E-03	5.50E-02	1.01E-10	2.51E-08	4.31E-12	2.37E-13	3.21E-11	8.02E-09	2.75E-12	1.51E-13	1.08E-11	2.69E-09	2.15E-12	1.18E-13	2.15E-11	5.38E-09	2.15E-12	1.18E-13	2.65E-11	6.63E-09	1.14E-11	6.25E-13
Benzo(a)anthracene	6.60E-02	NA	7.30E-01	NA	NA	2.69E-09	1.97E-09	NA	NA	1.72E-09	1.25E-09	NA	NA	1.35E-09	9.83E-10	NA	NA	1.35E-09	9.83E-10	NA	NA	7.10E-09	5.19E-09
Benzo(a)pyrene	8.70E-02	NA	7.30E+00	NA	NA	2.72E-09	1.99E-08	NA	NA	1.74E-09	1.27E-08	NA	NA	1.36E-09	9.94E-09	NA	NA	1.36E-09	9.94E-09	NA	NA	7.18E-09	5.24E-08
Benzo(b)fluoranthene	1.37E-01	NA	7.30E-01	NA	NA	4.29E-09	3.13E-09	NA	NA	2.74E-09	2.00E-09	NA	NA	2.14E-09	1.56E-09	NA	NA	2.14E-09	1.56E-09	NA	NA	1.13E-08	8.26E-09
Benzo(k)fluoranthene	3.05E-02	NA	7.30E-02	NA	NA	9.54E-10	6.97E-11	NA	NA	6.09E-10	4.45E-11	NA	NA	4.77E-10	3.48E-11	NA	NA	4.77E-10	3.48E-11	NA	NA	2.52E-09	1.84E-10
Beryllium	1.17E+00	2.00E-03	4.30E+00	8.56E-07	4.28E-04	3.67E-08	1.58E-07	2.73E-07	1.37E-04	2.34E-08	1.01E-07	9.17E-08	4.58E-05	1.83E-08	7.88E-08	1.83E-07	9.17E-05	1.83E-08	7.88E-08	2.28E-07	1.13E-04	9.68E-08	4.16E-07
Bis(2-chloroisopropyl)ether	NA	4.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	NA	2.00E-02	1.40E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Boron	NA	2.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	1.15E-04	2.00E-02	6.20E-02	8.42E-11	4.21E-09	3.61E-12	2.24E-13	2.69E-11	1.34E-09	2.30E-12	1.43E-13	9.02E-12	4.51E-10	1.80E-12	1.12E-13	1.80E-11	9.02E-10	1.80E-12	1.12E-13	2.22E-11	1.11E-09	9.52E-12	5.90E-13
Bromoform	NA	2.00E-02	7.90E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	NA	1.40E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	7.07E-01	1.00E-03	NA	5.17E-07	5.17E-04	NA	NA	1.65E-07	1.65E-04	NA	NA	5.54E-08	5.54E-05	NA	NA	1.11E-07	1.11E-04	NA	NA	1.36E-07	1.36E-04	NA	NA
Carbazole	NA	NA	2.00E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	NA	1.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	1.36E-04	7.00E-04	1.30E-01	9.91E-11	1.42E-07	4.25E-12	5.52E-13	3.16E-11	4.52E-08	2.71E-12	3.52E-13	1.06E-11	1.52E-08	2.12E-12	2.76E-13	2.12E-11	3.03E-08	2.12E-12	2.76E-13	2.62E-11	3.74E-08	1.12E-11	1.46E-12
Chlordane	NA	5.00E-04	3.50E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	NA	2.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	NA	1.00E-02	6.10E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (VI)	2.45E+01	3.00E-03	NA	1.79E-05	5.97E-03	NA	NA	5.72E-06	1.91E-03	NA	NA	1.92E-06	6.40E-04	NA	NA	3.84E-06	1.28E-03	NA	NA	4.72E-06	1.57E-03	NA	NA
Chrysene	8.53E-02	NA	7.30E-03	NA	NA	2.67E-09	1.95E-11	NA	NA	1.70E-09	1.24E-11	NA	NA	1.34E-09	9.75E-12	NA	NA	1.34E-09	9.75E-12	NA	NA	7.05E-09	5.14E-11
Cobalt	NA	2.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	NA	4.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	NA	2.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexanone	NA	5.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	1.52E-02	NA	7.30E+00	NA	NA	4.77E-10	3.48E-09	NA	NA	3.05E-10	2.22E-09	NA	NA	2.39E-10	1.74E-09	NA	NA	2.39E-10	1.74E-09	NA	NA	1.26E-09	9.19E-09
Dieldrin	5.46E-04	5.00E-05	1.60E+01	3.99E-10	7.98E-06	1.71E-11	2.73E-10	1.27E-10	2.55E-06	1.09E-11	1.75E-10	4.27E-11	8.54E-07	8.54E-12	1.37E-10	8.54E-11	1.71E-06	8.54E-12	1.37E-10	1.05E-10	2.10E-06	4.51E-11	7.21E-10
Di-n-octylphthalate	NA	4.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE E.5-3
Undeveloped Park User - Zone 5 - IngestSoilChem

Undeveloped Park User - Ingestion of Soil
Risk calculation for Zone 5

Intake Equation:

		UNITS	Assigned Values			
			child	youth	adult	senior
CDI =	(CS*EF*ED*IR*FI*CF)/(BW*AT)	mg/kgday				
CDI =	Chronic Daily Intake	mg/kgday				
CS =	Concentration of chemical in soil	mg/kg	see table of COCs below			
EF =	Exposure frequency	days/yr	20	40	20	40
ED =	Exposure duration	yrs	3	6	14	7
IR =	Ingestion rate	mg/day	200	100	100	100
FI =	Fraction of contaminated soil	unitless	1	1	1	1
CF =	Conversion factor	kg/mg	1.00E-06	1.00E-06	1.00E-06	1.00E-06
BW =	Body weight	kg	15	47	70	70
ATc =	Average time for carcinogens	days	25550	25550	25550	25550
ATn =	Average time for non-carcinogens	days	1095	2190	5110	2555

COC	conc	RfDo	CSFo	CHILD				YOUTH				ADULT				SENIOR				SUM			
				CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR
	mg/kg	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
Ethyl ether	NA	2.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	1.38E-04	1.00E-01	NA	1.01E-10	1.01E-09	NA	NA	3.21E-11	3.21E-10	NA	NA	1.08E-11	1.08E-10	NA	NA	2.15E-11	2.15E-10	NA	NA	2.65E-11	2.65E-10	NA	NA
Fluoride	3.29E+00	6.00E-02	NA	2.40E-06	4.01E-05	NA	NA	7.67E-07	1.28E-05	NA	NA	2.58E-07	4.29E-06	NA	NA	5.15E-07	8.58E-06	NA	NA	6.34E-07	1.06E-05	NA	NA
Heptachlorodibenzofuran	NA	NA	1.50E+03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlorodibenzo-p-dioxin	NA	NA	1.50E+03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorodibenzofuran	NA	NA	1.50E+03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorodibenzo-p-dioxin	NA	NA	1.50E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	5.65E-02	NA	7.30E-01	NA	NA	1.77E-09	1.29E-09	NA	NA	1.13E-09	8.25E-10	NA	NA	8.85E-10	6.46E-10	NA	NA	8.85E-10	6.46E-10	NA	NA	4.67E-09	3.41E-09
Lead	2.96E+01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	NA	1.40E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	7.07E-02	3.00E-04	NA	5.16E-08	1.72E-04	NA	NA	1.65E-08	5.49E-05	NA	NA	5.53E-09	1.84E-05	NA	NA	1.11E-08	3.69E-05	NA	NA	1.36E-08	4.54E-05	NA	NA
Methanol	NA	5.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl-2-pentanone	7.08E-04	8.00E-02	NA	5.17E-10	6.47E-09	NA	NA	1.65E-10	2.06E-09	NA	NA	5.54E-11	6.93E-10	NA	NA	1.11E-10	1.39E-09	NA	NA	1.37E-10	1.71E-09	NA	NA
Methylene chloride	1.35E-03	6.00E-02	7.50E-03	9.89E-10	1.65E-08	4.24E-11	3.18E-13	3.16E-10	5.26E-09	2.71E-11	2.03E-13	1.06E-10	1.77E-09	2.12E-11	1.59E-13	2.12E-10	3.53E-09	2.12E-11	1.59E-13	2.61E-10	4.35E-09	1.12E-10	8.39E-13
Molybdenum	3.96E+00	5.00E-03	NA	2.89E-06	5.79E-04	NA	NA	9.24E-07	1.85E-04	NA	NA	3.10E-07	6.20E-05	NA	NA	6.20E-07	1.24E-04	NA	NA	7.64E-07	1.53E-04	NA	NA
Nickel	NA	2.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	NA	2.00E-02	4.90E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-nitrosodipropylamine	NA	NA	7.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Octachlorodibenzofuran	NA	NA	1.50E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Octochlorodibenzo-p-dioxin	NA	NA	1.50E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorodibenzofuran	NA	NA	7.50E+03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorodibenzo-p-dioxin	NA	NA	7.50E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	NA	3.00E-02	1.20E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	1.24E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	1.27E+00	5.00E-03	NA	9.24E-07	1.85E-04	NA	NA	2.95E-07	5.90E-05	NA	NA	9.90E-08	1.98E-05	NA	NA	1.98E-07	3.96E-05	NA	NA	2.44E-07	4.88E-05	NA	NA
Silver	7.28E-01	5.00E-03	NA	5.32E-07	1.06E-04	NA	NA	1.70E-07	3.39E-05	NA	NA	5.70E-08	1.14E-05	NA	NA	1.14E-07	2.28E-05	NA	NA	1.40E-07	2.81E-05	NA	NA
Tetrachlorodibenzofuran	NA	NA	1.50E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachlorodibenzo-p-dioxin	NA	NA	1.50E+05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethylene	9.30E-04	1.00E-02	5.40E-01	6.79E-10	6.79E-08	2.91E-11	1.57E-11	2.17E-10	2.17E-08	1.86E-11	1.00E-11	7.28E-11	7.28E-09	1.46E-11	7.86E-12	1.46E-10	1.46E-08	1.46E-11	7.86E-12	1.79E-10	1.79E-08	7.68E-11	4.15E-11
Thallium	NA	9.00E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	6.05E-04	8.00E-02	NA	4.42E-10	5.53E-09	NA	NA	1.41E-10	1.76E-09	NA	NA	4.74E-11	5.92E-10	NA	NA	9.47E-11	1.18E-09	NA	NA	1.17E-10	1.46E-09	NA	NA
Tributyl phosphate	NA	2.00E-01	5.40E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethylene	3.71E-04	3.00E-04	4.00E-01	2.71E-10	9.04E-07	1.16E-11	4.65E-12	8.66E-11	2.89E-07	7.42E-12	2.97E-12	2.91E-11	9.69E-08	5.81E-12	2.33E-12	5.81E-11	1.94E-07	5.81E-12	2.33E-12	7.16E-11	2.39E-07	3.07E-11	1.23E-11
Trifluorochloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Uranium	1.62E+01	6.00E-04	NA	1.19E-05	1.98E-02	NA	NA	3.79E-06	6.31E-03	NA	NA	1.27E-06	2.12E-03	NA	NA	2.54E-06	4.24E-03	NA	NA	3.13E-06	5.22E-03	NA	NA
Vanadium	NA	7.00E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	NA	3.00E-03	1.50E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes	1.32E-03	2.00E-01	NA	9.64E-10	4.82E-09	NA	NA	3.08E-10	1.54E-09	NA	NA	1.03E-10	5.16E-10	NA	NA	2.07E-10	1.03E-09	NA	NA	2.54E-10	1.27E-09	NA	NA
Zinc	NA	3.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
																				total =	1.64E-02	total =	1.89E-06

TABLE E.5-3
Undeveloped Park User - Zone 5 - DermalSWchem

Undeveloped Park User - Dermal Contact with Surface Water
Risk calculation for Zone 5

			UNITS	Assigned Values			
				child	youth	adult	senior
Intake Equation:	CDI =	(DA*EF*ED*SA)/(BW*AT)					
	CDI =	Chronic Daily Intake	mg/kgday	calculated below			
	DA =	Dermal absorption dose	mg/cm²day	see COC list below			
	EF =	Exposure frequency	days/yr	12	12	12	12
	ED =	Exposure duration	yrs	3	6	14	7
	SA =	Surface area of skin	cm²	2180	4470	6070	6070
	BW =	Body weight	kg	15	47	70	70
	ATc =	Average time for carcinogens	days	25550	25550	25550	25550
	ATn =	Average time for non-carcinogens	days	1095	2190	5110	2555
where:	DA = C_v*K_p*CF*ET						
	C_v =	concentation of ith contaminant in surface water	mg/L	see COC list below			
	K_p =	permeability constant for ith contaminant	cm/hr	see COC list below			
	CF =	conversion factor	L/cm³	0.001	0.001	0.001	0.001
	ET =	exposure time	hr/d	1	1	1	1

COC	C_v	K_p	DA	RfDd	CSFd	CHILD				YOUTH				ADULT				SENIOR				SUM			
						CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR
	mg/L	cm/hr	mg/cm²day	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	5.00E-04	6.43E-03	3.22E-09	3.24E-03	7.04E-02	1.54E-08	4.74E-06	6.58E-10	4.63E-11	1.01E-08	3.10E-06	8.62E-10	6.07E-11	9.17E-09	2.83E-06	1.83E-09	1.29E-10	9.17E-09	2.83E-06	9.17E-10	6.45E-11	9.96E-09	3.07E-06	4.27E-09	3.01E-10
1,1-Dichloroethylene	5.00E-04	1.59E-02	7.95E-09	5.00E-02	6.00E-01	3.80E-08	7.60E-07	1.63E-09	9.77E-10	2.49E-08	4.97E-07	2.13E-09	1.28E-09	2.27E-08	4.53E-07	4.53E-09	2.72E-09	2.27E-08	4.53E-07	2.27E-09	1.36E-09	2.46E-08	4.93E-07	1.06E-08	6.33E-09
1,2-dichloroethane	5.00E-04	5.34E-03	2.67E-09	2.00E-02	9.10E-02	1.28E-08	6.38E-07	5.47E-10	4.98E-11	8.35E-09	4.17E-07	7.16E-10	6.51E-11	7.61E-09	3.81E-07	1.52E-09	1.39E-10	7.61E-09	3.81E-07	7.61E-10	6.93E-11	8.27E-09	4.14E-07	3.55E-09	3.23E-10
2-Butanone	NA	1.11E-03	NA	4.80E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	NA	1.59E-02	NA	NA	9.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	NA	9.95E-03	NA	3.25E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroanaline	NA	2.66E-03	NA	2.40E-03	2.63E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	2.50E-03	5.69E-04	1.42E-09	7.47E-01	NA	6.80E-09	9.10E-09	NA	NA	4.45E-09	5.95E-09	NA	NA	4.06E-09	5.43E-09	NA	NA	4.06E-09	5.43E-09	NA	NA	4.41E-09	5.90E-09	NA	NA
Antimony	5.00E-04	1.00E-03	5.00E-10	8.00E-06	NA	2.39E-09	2.99E-04	NA	NA	1.56E-09	1.95E-04	NA	NA	1.43E-09	1.78E-04	NA	NA	1.43E-09	1.78E-04	NA	NA	1.55E-09	1.94E-04	NA	NA
Aroclor-1254	5.00E-05	1.29E+00	6.45E-08	1.80E-05	2.22E+00	3.08E-07	1.71E-02	1.32E-08	2.93E-08	2.02E-07	1.12E-02	1.73E-08	3.84E-08	1.84E-07	1.02E-02	3.68E-08	8.16E-08	1.84E-07	1.02E-02	1.84E-08	4.08E-08	2.00E-07	1.11E-02	8.57E-08	1.90E-07
Aroclor-1260	5.00E-05	5.48E+00	2.74E-07	1.80E-05	2.22E+00	1.31E-06	7.27E-02	5.61E-08	1.25E-07	8.57E-07	4.76E-02	7.34E-08	1.63E-07	7.81E-07	4.34E-02	1.56E-07	3.47E-07	7.81E-07	4.34E-02	7.81E-08	1.73E-07	8.49E-07	4.72E-02	3.64E-07	8.08E-07
Arsenic	3.29E-03	1.00E-03	3.29E-09	1.23E-04	3.66E+00	1.57E-08	1.28E-04	6.73E-10	2.46E-09	1.03E-08	8.36E-05	8.81E-10	3.22E-09	9.37E-09	7.62E-05	1.87E-09	6.86E-09	9.37E-09	7.62E-05	9.37E-10	3.43E-09	1.02E-08	8.28E-05	4.37E-09	1.60E-08
Barium	5.26E-02	1.00E-03	5.26E-08	1.40E-02	NA	2.51E-07	1.80E-05	NA	NA	1.65E-07	1.18E-05	NA	NA	1.50E-07	1.07E-05	NA	NA	1.50E-07	1.07E-05	NA	NA	1.63E-07	1.16E-05	NA	NA
Benzene	5.00E-04	2.07E-02	1.04E-08	3.88E-03	5.67E-02	4.95E-08	1.27E-05	2.12E-09	1.20E-10	3.24E-08	8.34E-06	2.77E-09	1.57E-10	2.95E-08	7.60E-06	5.90E-09	3.35E-10	2.95E-08	7.60E-06	2.95E-09	1.67E-10	3.21E-08	8.27E-06	1.37E-08	7.79E-10
Benzo(a)anthracene	5.00E-04	9.48E-01	4.74E-07	NA	2.35E+00	NA	NA	9.71E-08	2.28E-07	NA	NA	1.27E-07	2.99E-07	NA	NA	2.70E-07	6.35E-07	NA	NA	1.35E-07	3.18E-07	NA	NA	6.29E-07	1.48E-06
Benzo(a)pyrene	5.00E-04	1.24E+00	6.20E-07	NA	2.35E+01	NA	NA	1.27E-07	2.98E-06	NA	NA	1.66E-07	3.90E-06	NA	NA	3.54E-07	8.31E-06	NA	NA	1.77E-07	4.15E-06	NA	NA	8.23E-07	1.93E-05
Benzo(b)fluoranthene	5.00E-04	6.99E-01	3.50E-07	NA	2.35E+00	NA	NA	7.16E-08	1.68E-07	NA	NA	9.37E-08	2.20E-07	NA	NA	1.99E-07	4.68E-07	NA	NA	9.96E-08	2.34E-07	NA	NA	4.64E-07	1.09E-06
Benzo(k)fluoranthene	5.00E-04	1.20E+00	6.00E-07	NA	2.35E-01	NA	NA	1.23E-07	2.89E-08	NA	NA	1.61E-07	3.78E-08	NA	NA	3.42E-07	8.04E-08	NA	NA	1.71E-07	4.02E-08	NA	NA	7.97E-07	1.87E-07
Beryllium	1.58E-04	1.00E-03	1.58E-10	2.00E-05	4.30E+02	7.53E-10	3.76E-05	3.23E-11	1.39E-08	4.92E-10	2.46E-05	4.22E-11	1.82E-08	4.49E-10	2.25E-05	8.98E-11	3.86E-08	4.49E-10	2.25E-05	4.49E-11	1.93E-08	4.88E-10	2.44E-05	2.09E-10	8.99E-08
Bis(2-chloroisopropyl)ether	NA	7.63E-02	NA	2.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	NA	1.97E+00	NA	3.80E-03	7.37E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Boron	NA	1.00E-03	NA	1.80E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	5.00E-04	5.02E-03	2.51E-09	1.96E-02	6.33E-02	1.20E-08	6.12E-07	5.14E-10	3.25E-11	7.85E-09	4.00E-07	6.73E-10	4.26E-11	7.16E-09	3.65E-07	1.43E-09	9.06E-11	7.16E-09	3.65E-07	7.16E-10	4.53E-11	7.78E-09	3.97E-07	3.33E-09	2.11E-10
Bromoform	NA	2.77E-03	NA	1.20E-02	1.32E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	NA	3.51E-03	NA	1.12E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	1.00E-04	1.00E-03	1.00E-10	1.00E-05	NA	4.78E-10	4.78E-05	NA	NA	3.13E-10	3.13E-05	NA	NA	2.85E-10	2.85E-05	NA	NA	2.85E-10	2.85E-05	NA	NA	3.10E-10	3.10E-05	NA	NA
Carbazole	NA	7.97E-02	NA	NA	2.86E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	NA	1.56E-02	NA	6.30E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	5.00E-04	2.24E-02	1.12E-08	4.55E-04	2.00E-01	5.35E-08	1.18E-04	2.29E-09	4.59E-10	3.50E-08	7.70E-05	3.00E-09	6.00E-10	3.19E-08	7.02E-05	6.39E-09	1.28E-09	3.19E-08	7.02E-05	3.19E-09	6.39E-10	3.47E-08	7.63E-05	1.49E-08	2.97E-09
Chlordane	NA	1.57E-01	NA	2.50E-04	7.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	NA	4.07E-02	NA	6.20E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	NA	8.92E-03	NA	2.00E-03	3.05E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (VI)	3.33E-03	2.00E-03	6.66E-09	6.00E-05	NA	3.18E-08	5.31E-04	NA	NA	2.08E-08	3.47E-04	NA	NA	1.90E-08	3.17E-04	NA	NA	1.90E-08	3.17E-04	NA	NA	2.06E-08	3.44E-04	NA	NA
Chrysene	5.00E-04	1.03E+00	5.15E-07	NA	2.35E-02	NA	NA	1.05E-07	2.48E-09	NA	NA	1.38E-07	3.24E-09	NA	NA	2.94E-07	6.90E-09	NA	NA	1.47E-07	3.45E-09	NA	NA	6.84E-07	1.61E-08
Cobalt	NA	4.00E-04	NA	1.60E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	NA	1.00E-03	NA	1.20E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	NA	1.00E-03	NA	3.40E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexanone	NA	1.80E-03	NA	4.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	5.00E-04	1.68E+00	8.40E-07	NA	2.35E+01	NA	NA	1.72E-07	4.04E-06	NA	NA	2.25E-07	5.29E-06	NA	NA	4.79E-07	1.13E-05	NA	NA	2.39E-07	5.63E-06	NA	NA	1.12E-06	2.62E-05
Dieldrin	2.00E-05	4.45E-02	8.90E-10	2.50E-05	3.20E+01	4.25E-09	1.70E-04	1.82E-10	5.83E-09	2.78E-09	1.11E-04	2.39E-10	7.63E-09	2.54E-09	1.01E-04	5.07E-10	1.62E-08	2.54E-09	1.01E-04	2.54E-10	8.12E-09	2.78E-09	1.10E-04	1.18E-09	3.78E-08
Di-n-octylphthalate	NA	4.45E+00	NA	3.60E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE E.5-3
Undeveloped Park User - Zone 5 - DermalSWchem

Undeveloped Park User - Dermal Contact with Surface Water
Risk calculation for Zone 5

			UNITS	Assigned Values child	youth	adult	senior
Intake Equation:	CDI =	(DA*EF*ED*SA)/(BW*AT)					
	CDI =	Chronic Daily Intake	mg/kgday	calculated below			
	DA =	Dermal absorption dose	mg/cm²day	see COC list below			
	EF =	Exposure frequency	days/yr	12	12	12	12
	ED =	Exposure duration	yrs	3	6	14	7
	SA =	Surface area of skin	cm²	2180	4470	6070	6070
	BW =	Body weight	kg	15	47	70	70
	ATc =	Average time for carcinogens	days	25550	25550	25550	25550
	ATn =	Average time for non-carcinogens	days	1095	2190	5110	2555
where:	DA = C_v*K_p*CF*ET						
	C_v =	concentation of ith contaminant in surface water	mg/L	see COC list below			
	K_p =	permeability constant for ith contaminant	cm/hr	see COC list below			
	CF =	conversion factor	L/cm³	0.001	0.001	0.001	0.001
	ET =	exposure time	hr/d	1	1	1	1

COC	C_v	K_p	DA	RfDd	CSFd	CHILD CDI	CHILD HQ	CHILD CDI	CHILD ILCR	YOUTH CDI	YOUTH HQ	YOUTH CDI	YOUTH ILCR	ADULT CDI	ADULT HQ	ADULT CDI	ADULT ILCR	SENIOR CDI	SENIOR HQ	SENIOR CDI	SENIOR ILCR	SUM CDI	SUM HQ	SUM CDI	SUM ILCR
	mg/L	cm/hr	mg/cm²day	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
Ethyl ether	NA	2.86E-03	NA	1.60E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	5.00E-04	7.39E-02	3.70E-08	9.70E-02	NA	1.77E-07	1.82E-06	NA	NA	1.16E-07	1.19E-06	NA	NA	1.05E-07	1.09E-06	NA	NA	1.05E-07	1.09E-06	NA	NA	1.14E-07	1.18E-06	NA	NA
Fluoride	4.09E-01	1.00E-03	4.09E-07	5.82E-02	NA	1.95E-06	3.35E-05	NA	NA	1.28E-06	2.19E-05	NA	NA	1.16E-06	2.00E-05	NA	NA	1.16E-06	2.00E-05	NA	NA	1.27E-06	2.18E-05	NA	NA
Heptachlorodibenzofuran	NA	2.55E+00	NA	NA	3.00E+03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlorodibenzo-p-dioxin	NA	3.22E+00	NA	NA	3.00E+03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorodibenzofuran	NA	2.38E+00	NA	NA	3.00E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorodibenzo-p-dioxin	NA	5.29E+00	NA	NA	3.00E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	5.00E-04	2.23E+00	1.12E-06	NA	2.35E+00	NA	NA	2.28E-07	5.37E-07	NA	NA	2.99E-07	7.02E-07	NA	NA	6.36E-07	1.49E-06	NA	NA	3.18E-07	7.47E-07	NA	NA	1.48E-06	3.48E-06
Lead	1.68E-03	1.00E-04	1.68E-10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	NA	1.00E-03	NA	1.84E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	6.00E-05	1.00E-03	6.00E-11	2.10E-05	NA	2.87E-10	1.37E-05	NA	NA	1.88E-10	8.93E-06	NA	NA	1.71E-10	8.15E-06	NA	NA	1.71E-10	8.15E-06	NA	NA	1.86E-10	8.85E-06	NA	NA
Methanol	NA	3.45E-04	NA	4.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone	2.50E-03	3.97E-03	9.93E-09	6.40E-02	NA	4.74E-08	7.41E-07	NA	NA	3.10E-08	4.85E-07	NA	NA	2.83E-08	4.42E-07	NA	NA	2.83E-08	4.42E-07	NA	NA	3.08E-08	4.81E-07	NA	NA
Methylene chloride	2.50E-03	4.46E-03	1.12E-08	5.70E-02	7.89E-03	5.33E-08	9.35E-07	2.28E-09	1.80E-11	3.49E-08	6.12E-07	2.99E-09	2.36E-11	3.18E-08	5.58E-07	6.36E-09	5.02E-11	3.18E-08	5.58E-07	3.18E-09	2.51E-11	3.46E-08	6.06E-07	1.48E-08	1.17E-10
Molybdenum	8.03E-03	1.00E-03	8.03E-09	1.90E-03	NA	3.63E-08	2.02E-05	NA	NA	2.51E-08	1.32E-05	NA	NA	2.29E-08	1.20E-05	NA	NA	2.29E-08	1.20E-05	NA	NA	2.49E-08	1.31E-05	NA	NA
Nickel	NA	2.00E-04	NA	5.40E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	NA	1.96E-02	NA	5.00E-03	1.96E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-nitrosodipropylamine	NA	2.83E-03	NA	NA	2.80E+01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Octachlorodibenzofuran	NA	4.78E+00	NA	NA	3.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Octochlorodibenzo-p-dioxin	NA	1.65E+01	NA	NA	3.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorodibenzofuran	NA	1.06E+00	NA	NA	1.50E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorodibenzo-p-dioxin	NA	3.79E-01	NA	NA	1.50E+05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	NA	1.95E-01	NA	3.00E-02	1.20E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	5.00E-04	2.29E-01	1.15E-07	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	2.50E-03	1.00E-03	2.50E-09	2.20E-03	NA	1.19E-08	5.43E-06	NA	NA	7.82E-09	3.55E-06	NA	NA	7.13E-09	3.24E-06	NA	NA	7.13E-09	3.24E-06	NA	NA	7.75E-09	3.52E-06	NA	NA
Silver	2.00E-04	6.00E-04	1.20E-10	9.00E-04	NA	5.73E-10	6.37E-07	NA	NA	3.75E-10	4.17E-07	NA	NA	3.42E-10	3.80E-07	NA	NA	3.42E-10	3.80E-07	NA	NA	3.72E-10	4.13E-07	NA	NA
Tetrachlorodibenzofuran	NA	1.12E+00	NA	NA	3.00E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachlorodibenzo-p-dioxin	NA	1.39E+00	NA	NA	3.00E+05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethylene	5.00E-04	4.81E-02	2.41E-08	1.00E-02	5.40E-01	1.15E-07	1.15E-05	4.92E-09	2.66E-09	7.52E-08	7.52E-06	6.45E-09	3.48E-09	6.86E-08	6.86E-06	1.37E-08	7.40E-09	6.86E-08	6.86E-06	6.86E-09	3.70E-09	7.45E-08	7.45E-06	3.19E-08	1.72E-08
Thallium	NA	1.00E-03	NA	1.80E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	5.00E-04	4.53E-02	2.27E-08	6.40E-02	NA	1.08E-07	1.69E-06	NA	NA	7.08E-08	1.11E-06	NA	NA	6.46E-08	1.01E-06	NA	NA	6.46E-08	1.01E-06	NA	NA	7.02E-08	1.10E-06	NA	NA
Tributyl phosphate	NA	3.13E-02	NA	1.00E-01	1.08E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethylene	5.00E-04	1.57E-02	7.85E-09	4.50E-05	2.67E+00	3.75E-08	8.34E-04	1.61E-09	4.29E-09	2.45E-08	5.45E-04	2.10E-09	5.62E-09	2.24E-08	4.97E-04	4.49E-09	1.20E-08	2.24E-08	4.97E-04	2.24E-09	5.98E-09	2.43E-08	5.41E-04	1.04E-08	2.78E-08
Trifluorochloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Uranium	2.14E-02	1.00E-03	2.14E-08	5.10E-04	NA	1.02E-07	2.00E-04	NA	NA	6.69E-08	1.31E-04	NA	NA	6.09E-08	1.19E-04	NA	NA	6.09E-08	1.19E-04	NA	NA	6.62E-08	1.30E-04	NA	NA
Vanadium	NA	1.00E-03	NA	7.00E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	NA	1.13E-02	NA	3.00E-03	1.50E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes	5.00E-04	7.04E-02	3.52E-08	1.84E-01	NA	1.68E-07	9.14E-07	NA	NA	1.10E-07	5.98E-07	NA	NA	1.00E-07	5.45E-07	NA	NA	1.00E-07	5.45E-07	NA	NA	1.09E-07	5.93E-07	NA	NA
Zinc	NA	6.00E-04	NA	6.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
																						total =	5.99E-02	total =	5.30E-05

TABLE E.5-3
Undeveloped Park User - Zone 5 - IngestSWchem

Undeveloped Park User - Ingestion of Surface Water
Risk calculation for Zone 5

Intake Equation:			UNITS	Assigned Values			
				child	youth	adult	senior
	CDI =	(CW*EF*ED*IR)/(BW*AT)					
	CDI =	Chronic Daily Intake	mg/kgday				
	CW =	Concentration of chemical in water	mg/L	see COC table below			
	EF =	Exposure frequency	days/yr	12	12	12	12
	ED =	Exposure duration	yrs	3	6	14	7
	IR =	Ingestion rate	L/day	0.035	0.035	0.015	0.015
	BW =	Body weight	kg	15	47	70	70
	ATc =	Average time for carcinogens	days	25550	25550	25550	25550
	ATn =	Average time for non-carcinogens	days	1095	2190	5110	2555

COC	CW	RfDo	CSFo	CHILD				YOUTH				ADULT				SENIOR				SUM			
				CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR
	mg/L	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	5.00E-04	4.00E-03	5.70E-02	3.84E-08	9.59E-06	1.64E-09	9.37E-11	1.22E-08	3.06E-06	1.05E-09	5.98E-11	3.52E-09	8.81E-07	7.05E-10	4.02E-11	3.52E-09	8.81E-07	3.52E-10	2.01E-11	8.75E-09	2.19E-06	3.75E-09	2.14E-10
1,1-Dichloroethylene	5.00E-04	5.00E-02	6.00E-01	3.84E-08	7.67E-07	1.64E-09	9.86E-10	1.22E-08	2.45E-07	1.05E-09	6.30E-10	3.52E-09	7.05E-08	7.05E-10	4.23E-10	3.52E-09	7.05E-08	3.52E-10	2.11E-10	8.75E-09	1.75E-07	3.75E-09	2.25E-09
1,2-dichloroethane	5.00E-04	2.00E-02	9.10E-02	3.84E-08	1.92E-06	1.64E-09	1.50E-10	1.22E-08	6.12E-07	1.05E-09	9.55E-11	3.52E-09	1.76E-07	7.05E-10	6.41E-11	3.52E-09	1.76E-07	3.52E-10	3.21E-11	8.75E-09	4.37E-07	3.75E-09	3.41E-10
2-Butanone	NA	6.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	NA	NA	4.50E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	NA	5.00E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroanaline	NA	3.00E-03	2.10E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	2.50E-03	9.00E-01	NA	1.92E-07	2.13E-07	NA	NA	6.12E-08	6.80E-08	NA	NA	1.76E-08	1.96E-08	NA	NA	1.76E-08	1.96E-08	NA	NA	4.37E-08	4.86E-08	NA	NA
Antimony	5.00E-04	4.00E-04	NA	3.84E-08	9.59E-05	NA	NA	1.22E-08	3.06E-05	NA	NA	3.52E-09	8.81E-06	NA	NA	3.52E-09	8.81E-06	NA	NA	8.75E-09	2.19E-05	NA	NA
Aroclor-1254	5.00E-05	2.00E-05	4.00E-01	3.84E-09	1.92E-04	1.64E-10	6.58E-11	1.22E-09	6.12E-05	1.05E-10	4.20E-11	3.52E-10	1.76E-05	7.05E-11	2.82E-11	3.52E-10	1.76E-05	3.52E-11	1.41E-11	8.75E-10	4.37E-05	3.75E-10	1.50E-10
Aroclor-1260	5.00E-05	2.00E-05	4.00E-01	3.84E-09	1.92E-04	1.64E-10	6.58E-11	1.22E-09	6.12E-05	1.05E-10	4.20E-11	3.52E-10	1.76E-05	7.05E-11	2.82E-11	3.52E-10	1.76E-05	3.52E-11	1.41E-11	8.75E-10	4.37E-05	3.75E-10	1.50E-10
Arsenic	3.29E-03	3.00E-04	1.50E+00	2.52E-07	8.41E-04	1.08E-08	1.62E-08	8.05E-08	2.68E-04	6.90E-09	1.03E-08	2.32E-08	7.72E-05	4.63E-09	6.95E-09	2.32E-08	7.72E-05	2.32E-09	3.47E-09	5.75E-08	1.92E-04	2.47E-08	3.70E-08
Barium	5.26E-02	2.00E-01	NA	4.04E-06	2.02E-05	NA	NA	1.29E-06	6.44E-06	NA	NA	3.71E-07	1.85E-06	NA	NA	3.71E-07	1.85E-06	NA	NA	9.21E-07	4.60E-06	NA	NA
Benzene	5.00E-04	4.00E-03	5.50E-02	3.84E-08	9.59E-06	1.64E-09	9.04E-11	1.22E-08	3.06E-06	1.05E-09	5.77E-11	3.52E-09	8.81E-07	7.05E-10	3.87E-11	3.52E-09	8.81E-07	3.52E-10	1.94E-11	8.75E-09	2.19E-06	3.75E-09	2.06E-10
Benzo(a)anthracene	5.00E-04	NA	7.30E-01	NA	NA	1.64E-09	1.20E-09	NA	NA	1.05E-09	7.66E-10	NA	NA	7.05E-10	5.14E-10	NA	NA	3.52E-10	2.57E-10	NA	NA	3.75E-09	2.74E-09
Benzo(a)pyrene	5.00E-04	NA	7.30E+00	NA	NA	1.64E-09	1.20E-08	NA	NA	1.05E-09	7.66E-09	NA	NA	7.05E-10	5.14E-09	NA	NA	3.52E-10	2.57E-09	NA	NA	3.75E-09	2.74E-08
Benzo(b)fluoranthene	5.00E-04	NA	7.30E-01	NA	NA	1.64E-09	1.20E-09	NA	NA	1.05E-09	7.66E-10	NA	NA	7.05E-10	5.14E-10	NA	NA	3.52E-10	2.57E-10	NA	NA	3.75E-09	2.74E-09
Benzo(k)fluoranthene	5.00E-04	NA	7.30E-02	NA	NA	1.64E-08	1.20E-10	NA	NA	1.05E-09	7.66E-11	NA	NA	7.05E-10	5.14E-11	NA	NA	3.52E-10	2.57E-11	NA	NA	3.75E-09	2.74E-10
Beryllium	1.58E-04	2.00E-03	4.30E+00	1.21E-08	6.04E-06	5.18E-10	2.23E-09	3.86E-09	1.93E-06	3.31E-10	1.42E-09	1.11E-09	5.55E-07	2.22E-10	9.54E-10	1.11E-09	5.55E-07	1.11E-10	4.77E-10	2.76E-09	1.38E-06	1.18E-09	5.08E-09
Bis(2-chloroisopropyl)ether	NA	4.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	NA	2.00E-02	1.40E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Boron	NA	2.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	5.00E-04	2.00E-02	6.20E-02	3.84E-08	1.92E-06	1.64E-09	1.02E-10	1.22E-08	6.12E-07	1.05E-09	6.51E-11	3.52E-09	1.76E-07	7.05E-10	4.37E-11	3.52E-09	1.76E-07	3.52E-10	2.18E-11	8.75E-09	4.37E-07	3.75E-09	2.32E-10
Bromoform	NA	2.00E-02	7.90E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	NA	1.40E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	1.00E-04	1.00E-03	NA	7.67E-09	7.67E-06	NA	NA	2.45E-09	2.45E-06	NA	NA	7.05E-10	7.05E-07	NA	NA	7.05E-10	7.05E-07	NA	NA	1.75E-09	1.75E-06	NA	NA
Carbazole	NA	NA	2.00E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	NA	1.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	5.00E-04	7.00E-04	1.30E-01	3.84E-08	5.48E-05	1.64E-09	2.14E-10	1.22E-08	1.75E-05	1.05E-09	1.36E-10	3.52E-09	5.03E-06	7.05E-10	9.16E-11	3.52E-09	5.03E-06	3.52E-10	4.58E-11	8.75E-09	1.25E-05	3.75E-09	4.87E-10
Chlordane	NA	5.00E-04	3.50E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	NA	2.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	NA	1.00E-02	6.10E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (VI)	3.33E-03	3.00E-03	NA	2.56E-07	8.52E-05	NA	NA	8.16E-08	2.72E-05	NA	NA	2.35E-08	7.82E-06	NA	NA	2.35E-08	7.82E-06	NA	NA	5.83E-08	1.94E-05	NA	NA
Chrysene	5.00E-04	NA	7.30E-03	NA	NA	1.64E-09	1.20E-11	NA	NA	1.05E-09	7.66E-12	NA	NA	7.05E-10	5.14E-12	NA	NA	3.52E-10	2.57E-12	NA	NA	3.75E-09	2.74E-11
Cobalt	NA	2.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	NA	4.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	NA	2.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexanone	NA	5.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	5.00E-04	NA	7.30E+00	NA	NA	1.64E-09	1.20E-08	NA	NA	1.05E-09	7.66E-09	NA	NA	7.05E-10	5.14E-09	NA	NA	3.52E-10	2.57E-09	NA	NA	3.75E-09	2.74E-08
Dieldrin	2.00E-05	5.00E-05	1.60E+01	1.53E-09	3.07E-05	6.58E-11	1.05E-09	4.90E-10	9.79E-06	4.20E-11	6.72E-10	1.41E-10	2.82E-06	2.82E-11	4.51E-10	1.41E-10	2.82E-06	1.41E-11	2.25E-10	3.50E-10	7.00E-06	1.50E-10	2.40E-09
Di-n-octylphthalate	NA	4.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE E.5-3
Undeveloped Park User - Zone 5 - IngestSWchem

Undeveloped Park User - Ingestion of Surface Water
Risk calculation for Zone 5

Intake Equation:			UNITS	Assigned Values			
				child	youth	adult	senior
	CDI =	(CW*EF*ED*IR)/(BW*AT)					
	CDI =	Chronic Daily Intake	mg/kgday				
	CW =	Concentration of chemical in water	mg/L	see COC table below			
	EF =	Exposure frequency	days/yr	12	12	12	12
	ED =	Exposure duration	yrs	3	6	14	7
	IR =	Ingestion rate	L/day	0.035	0.035	0.015	0.015
	BW =	Body weight	kg	15	47	70	70
	ATc =	Average time for carcinogens	days	25550	25550	25550	25550
	ATn =	Average time for non-carcinogens	days	1095	2190	5110	2555

COC	CW	RfDo	CSFo	CHILD				YOUTH				ADULT				SENIOR				SUM			
				CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR
	mg/L	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
Ethyl ether	NA	2.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	5.00E-04	1.00E-01	NA	3.84E-08	3.84E-07	NA	NA	1.22E-08	1.22E-07	NA	NA	3.52E-09	3.52E-08	NA	NA	3.52E-09	3.52E-08	NA	NA	8.75E-09	8.75E-08	NA	NA
Fluoride	4.09E-01	6.00E-02	NA	3.13E-05	5.22E-04	NA	NA	1.00E-05	1.67E-04	NA	NA	2.88E-06	4.80E-05	NA	NA	2.88E-06	4.80E-05	NA	NA	7.15E-06	1.19E-04	NA	NA
Heptachlorodibenzofuran	NA	NA	1.50E+03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlorodibenzo-p-dioxin	NA	NA	1.50E+03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorodibenzofuran	NA	NA	1.50E+03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorodibenzo-p-dioxin	NA	NA	1.50E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	5.00E-04	NA	7.30E-01	NA	NA	1.64E-09	1.20E-09	NA	NA	1.05E-09	7.66E-10	NA	NA	7.05E-10	5.14E-10	NA	NA	3.52E-10	2.57E-10	NA	NA	3.75E-09	2.74E-09
Lead	1.68E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	NA	4.60E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	6.00E-05	3.00E-04	NA	4.60E-09	1.53E-05	NA	NA	1.47E-09	4.90E-06	NA	NA	4.23E-10	1.41E-06	NA	NA	4.23E-10	1.41E-06	NA	NA	1.05E-09	3.50E-06	NA	NA
Methanol	NA	5.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone	2.50E-03	8.00E-02	NA	1.92E-07	2.40E-06	NA	NA	6.12E-08	7.65E-07	NA	NA	1.76E-08	2.20E-07	NA	NA	1.76E-08	2.20E-07	NA	NA	4.37E-08	5.47E-07	NA	NA
Methylene chloride	2.50E-03	6.00E-02	7.50E-03	1.92E-07	3.20E-06	8.22E-09	6.16E-11	6.12E-08	1.02E-06	5.25E-09	3.93E-11	1.76E-08	2.94E-07	3.52E-09	2.64E-11	1.76E-08	2.94E-07	1.76E-09	1.32E-11	4.37E-08	7.29E-07	1.87E-08	1.41E-10
Molybdenum	8.03E-03	5.00E-03	NA	6.16E-07	1.23E-04	NA	NA	1.96E-07	3.93E-05	NA	NA	5.65E-08	1.13E-05	NA	NA	5.65E-08	1.13E-05	NA	NA	1.40E-07	2.81E-05	NA	NA
Nickel	NA	2.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	NA	2.00E-02	4.90E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-nitrosodipropylamine	NA	NA	7.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Octachlorodibenzofuran	NA	NA	1.50E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Octochlorodibenzo-p-dioxin	NA	NA	1.50E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorodibenzofuran	NA	NA	7.50E+03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorodibenzo-p-dioxin	NA	NA	7.50E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	NA	3.00E-02	1.20E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	5.00E-04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	2.50E-03	5.00E-03	NA	1.92E-07	3.84E-05	NA	NA	6.12E-08	1.22E-05	NA	NA	1.76E-08	3.52E-06	NA	NA	1.76E-08	3.52E-06	NA	NA	4.37E-08	8.75E-06	NA	NA
Silver	2.00E-04	5.00E-03	NA	1.53E-08	3.07E-06	NA	NA	4.90E-09	9.79E-07	NA	NA	1.41E-09	2.82E-07	NA	NA	1.41E-09	2.82E-07	NA	NA	3.50E-09	7.00E-07	NA	NA
Tetrachlorodibenzofuran	NA	NA	1.50E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachlorodibenzo-p-dioxin	NA	NA	1.50E+05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethylene	5.00E-04	1.00E-02	5.40E-01	3.84E-08	3.84E-06	1.64E-09	8.88E-10	1.22E-08	1.22E-06	1.05E-09	5.67E-10	3.52E-09	3.52E-07	7.05E-10	3.80E-10	3.52E-09	3.52E-07	3.52E-10	1.90E-10	8.75E-09	8.75E-07	3.75E-09	2.02E-09
Thallium	NA	9.00E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	5.00E-04	8.00E-02	NA	3.84E-08	4.79E-07	NA	NA	1.22E-08	1.53E-07	NA	NA	3.52E-09	4.40E-08	NA	NA	3.52E-09	4.40E-08	NA	NA	8.75E-09	1.09E-07	NA	NA
Tributyl phosphate	NA	2.00E-01	5.40E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethylene	5.00E-04	3.00E-04	4.00E-01	3.84E-08	1.28E-04	1.64E-09	6.58E-10	1.22E-08	4.08E-05	1.05E-09	4.20E-10	3.52E-09	1.17E-05	7.05E-10	2.82E-10	3.52E-09	1.17E-05	3.52E-10	1.41E-10	8.75E-09	2.92E-05	3.75E-09	1.50E-09
Trifluorochloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Uranium	2.14E-02	6.00E-04	NA	1.64E-06	2.73E-03	NA	NA	5.23E-07	8.71E-04	NA	NA	1.50E-07	2.51E-04	NA	NA	1.50E-07	2.51E-04	NA	NA	3.74E-07	6.23E-04	NA	NA
Vanadium	NA	7.00E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	NA	3.00E-03	1.50E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes	5.00E-04	2.00E-01	NA	3.84E-08	1.92E-07	NA	NA	1.22E-08	6.12E-08	NA	NA	3.52E-09	1.76E-08	NA	NA	3.52E-09	1.76E-08	NA	NA	8.75E-09	4.37E-08	NA	NA
Zinc	NA	3.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
																				total =	1.17E-03	total =	1.15E-07

TABLE E.5-3
Undeveloped Park User - Zone 5 - InhaleRad

Undeveloped Park User - Inhalation of Gases & Particulates
Risk calculation for Zone 5

Intake Equation:			UNITS	Assigned Values			
	CDI =	(CA*EF*ED*IR*ET)					
	CDI =	Chronic Daily Intake	pCi	child	youth	adult	senior
	CA =	Concentration of radionuclide in air	pCi/m^3	see table of COCs below			
	EF =	Exposure frequency	days/yr	20	40	20	40
	ED =	Exposure duration	yrs	3	6	14	7
	IR =	Inhalation rate	m^3/hr	1.0	1.0	1.0	1.0
	ET =	Exposure time	hrs/day	2	2	2	2

COC	conc	CSFi	CHILD		YOUTH		ADULT		SENIOR		SUM	
			CDI	ILCR	CDI	ILCR	CDI	ILCR	CDI	ILCR	CDI	ILCR
	pCi/m^3	1/pCi	pCi	CDI*CSF	pCi	CDI*CSF	pCi	CDI*CSF	pCi	CDI*CSF	pCi	CDI*CSF
Cesium-137 + D	2.12E-06	1.19E-11	2.55E-04	3.03E-15	1.02E-03	1.21E-14	1.19E-03	1.42E-14	1.19E-03	1.42E-14	3.65E-03	4.35E-14
Lead-210 + D	5.55E-05	1.39E-08	6.66E-03	9.26E-11	2.66E-02	3.70E-10	3.11E-02	4.32E-10	3.11E-02	4.32E-10	9.54E-02	1.33E-09
Neptunium-237 + D	1.41E-07	1.77E-08	1.69E-05	2.99E-13	6.76E-05	1.20E-12	7.89E-05	1.40E-12	7.89E-05	1.40E-12	2.42E-04	4.29E-12
Plutonium-238	6.11E-08	3.36E-08	7.33E-06	2.46E-13	2.93E-05	9.86E-13	3.42E-05	1.15E-12	3.42E-05	1.15E-12	1.05E-04	3.53E-12
Plutonium-239/240	NA	3.33E-08	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Radium-226 + D	3.33E-05	1.16E-08	4.00E-03	4.64E-11	1.60E-02	1.86E-10	1.87E-02	2.17E-10	1.87E-02	2.17E-10	5.74E-02	6.65E-10
Radium-228 + D	2.88E-05	5.23E-09	3.46E-03	1.81E-11	1.38E-02	7.24E-11	1.61E-02	8.44E-11	1.61E-02	8.44E-11	4.96E-02	2.59E-10
Radon-222+ D	3.28E+02	1.80E-11	3.94E+04	7.09E-07	1.58E+05	2.84E-06	1.84E+05	3.31E-06	1.84E+05	3.31E-06	5.65E+05	1.02E-05
Strontium-90 + D	NA	1.13E-10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Technetium-99	4.26E-05	1.41E-11	5.12E-03	7.21E-14	2.05E-02	2.88E-13	2.39E-02	3.37E-13	2.39E-02	3.37E-13	7.33E-02	1.03E-12
Thorium-228 + D	2.93E-05	1.43E-07	3.51E-03	5.02E-10	1.41E-02	2.01E-09	1.64E-02	2.34E-09	1.64E-02	2.34E-09	5.04E-02	7.20E-09
Thorium-230	6.39E-05	2.85E-08	7.67E-03	2.19E-10	3.07E-02	8.74E-10	3.58E-02	1.02E-09	3.58E-02	1.02E-09	1.10E-01	3.13E-09
Thorium-232	2.85E-05	4.33E-08	3.42E-03	1.48E-10	1.37E-02	5.93E-10	1.60E-02	6.92E-10	1.60E-02	6.92E-10	4.91E-02	2.12E-09
Uranium-234	1.44E-04	1.14E-08	1.73E-02	1.97E-10	6.92E-02	7.89E-10	8.07E-02	9.20E-10	8.07E-02	9.20E-10	2.48E-01	2.83E-09
Uranium-235 + D	6.57E-06	1.01E-08	7.88E-04	7.96E-12	3.15E-03	3.18E-11	3.68E-03	3.72E-11	3.68E-03	3.72E-11	1.13E-02	1.14E-10
Uranium-238 + D	1.41E-04	9.35E-09	1.69E-02	1.58E-10	6.76E-02	6.32E-10	7.89E-02	7.37E-10	7.89E-02	7.37E-10	2.42E-01	2.26E-09
											total =	**1.02E-05**

Air concentration is derived using an air particulate value of 26 ug/m^3 (2005 SER background average from monitor AMS-12) multiplied by the soil concentration.

Rn-222 is derived by multiplying the soil Ra-226 value by 256 g/m^3. This conversion factor is based on Rn-222 air background and Ra-226 soil background (i.e., 400 pCi/m^3 divided by 1.56 pCi/g)

TABLE E.5-3
Undeveloped Park User - Zone 5 - IngestSoilRad

Undeveloped Park User - Ingestion of Soil
Risk calculation for Zone 5

Intake Equation:			UNITS	Assigned Values			
				child	youth	adult	senior
	CDI =	(CS*EF*ED*IR*FI)					
	CDI =	Chronic Daily Intake	pCi				
	CS =	Concentration of radionuclide in soil	pCi/g	see table of COCs below			
	EF =	Exposure frequency	days/yr	20	40	20	40
	ED =	Exposure duration	yrs	3	6	14	7
	IR =	Ingestion rate	g/day	0.2	0.1	0.1	0.1
	FI =	Fraction of contaminated soil	unitless	1	1	1	1

COC	conc	CSFos	CHILD		YOUTH		ADULT		SENIOR		SUM	
			CDI	ILCR	CDI	ILCR	CDI	ILCR	CDI	ILCR	CDI	ILCR
	pCi/g	1/pCi	pCi	CDI*CSF	pCi	CDI*CSF	pCi	CDI*CSF	pCi	CDI*CSF	pCi	CDI*CSF
Cesium-137 + D	8.17E-02	4.33E-11	9.80E-01	4.24E-11	1.96E+00	8.49E-11	2.29E+00	9.90E-11	2.29E+00	9.90E-11	7.52E+00	3.25E-10
Lead-210 + D	2.13E+00	2.66E-09	2.56E+01	6.81E-08	5.12E+01	1.36E-07	5.98E+01	1.59E-07	5.98E+01	1.59E-07	1.96E+02	5.22E-07
Neptunium-237 + D	5.42E-03	1.62E-10	6.50E-02	1.05E-11	1.30E-01	2.11E-11	1.52E-01	2.46E-11	1.52E-01	2.46E-11	4.98E-01	8.07E-11
Plutonium-238	2.35E-03	2.72E-10	2.82E-02	7.67E-12	5.64E-02	1.53E-11	6.58E-02	1.79E-11	6.58E-02	1.79E-11	2.16E-01	5.88E-11
Plutonium-239/240	NA	2.76E-10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Radium-226 + D	1.28E+00	7.30E-10	1.54E+01	1.12E-08	3.08E+01	2.25E-08	3.59E+01	2.62E-08	3.59E+01	2.62E-08	1.18E+02	8.61E-08
Radium-228 + D	1.11E+00	2.29E-09	1.33E+01	3.05E-08	2.66E+01	6.09E-08	3.10E+01	7.11E-08	3.10E+01	7.11E-08	1.02E+02	2.34E-07
Radon-222+ D	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Strontium-90 + D	NA	1.44E-10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Technetium-99	1.64E+00	7.66E-12	1.97E+01	1.51E-10	3.93E+01	3.01E-10	4.59E+01	3.52E-10	4.59E+01	3.52E-10	1.51E+02	1.16E-09
Thorium-228 + D	1.13E+00	8.09E-10	1.35E+01	1.09E-08	2.70E+01	2.19E-08	3.15E+01	2.55E-08	3.15E+01	2.55E-08	1.04E+02	8.38E-08
Thorium-230	2.46E+00	2.02E-10	2.95E+01	5.96E-09	5.90E+01	1.19E-08	6.88E+01	1.39E-08	6.88E+01	1.39E-08	2.26E+02	4.57E-08
Thorium-232	1.10E+00	2.31E-10	1.32E+01	3.04E-09	2.63E+01	6.08E-09	3.07E+01	7.10E-09	3.07E+01	7.10E-09	1.01E+02	2.33E-08
Uranium-234	5.55E+00	1.58E-10	6.65E+01	1.05E-08	1.33E+02	2.10E-08	1.55E+02	2.45E-08	1.55E+02	2.45E-08	5.10E+02	8.06E-08
Uranium-235 + D	2.53E-01	1.63E-10	3.03E+00	4.94E-10	6.06E+00	9.88E-10	7.07E+00	1.15E-09	7.07E+00	1.15E-09	2.32E+01	3.79E-09
Uranium-238 + D	5.42E+00	2.10E-10	6.50E+01	1.36E-08	1.30E+02	2.73E-08	1.52E+02	3.18E-08	1.52E+02	3.18E-08	4.98E+02	1.05E-07
											total =	**1.19E-06**

TABLE E.5-3
Undeveloped Park User - Zone 5 - IngestSWrad

Undeveloped Park User - Ingestion of Surface Water
Risk calculation for Zone 5

Intake Equation:			UNITS	Assigned Values			
	CDI =	(CW*EF*ED*IR)/(BW*AT)					
	CDI =	Chronic Daily Intake	pCi	child	youth	adult	senior
	CW =	Concentration of radionuclide in water	pCi/L	see COC table below			
	EF =	Exposure frequency	days/yr	12	12	12	12
	ED =	Exposure duration	yrs	3	6	14	7
	IR =	Ingestion rate	L/day	0.035	0.035	0.015	0.015

COC	conc	CSF	CHILD		YOUTH		ADULT		SENIOR		SUM	
			CDI	ILCR	CDI	ILCR	CDI	ILCR	CDI	ILCR	CDI	ILCR
	pCi/L	1/pCi	pCi	CDI*CSF	pCi	CDI*CSF	pCi	CDI*CSF	pCi	CDI*CSF	pCi	CDI*CSF
Cesium-137 + D	1.99E+00	3.04E-11	2.51E+00	7.62E-11	5.01E+00	1.52E-10	5.01E+00	1.52E-10	2.51E+00	7.62E-11	1.50E+01	4.57E-10
Lead-210 + D	7.80E-01	1.27E-09	9.82E-01	1.25E-09	1.96E+00	2.50E-09	1.96E+00	2.50E-09	9.82E-01	1.25E-09	5.89E+00	7.49E-09
Neptunium-237 + D	2.66E-01	6.74E-11	3.36E-01	2.26E-11	6.71E-01	4.52E-11	6.71E-01	4.52E-11	3.36E-01	2.26E-11	2.01E+00	1.36E-10
Plutonium-238	3.71E-02	1.31E-10	4.68E-02	6.12E-12	9.35E-02	1.22E-11	9.35E-02	1.22E-11	4.68E-02	6.12E-12	2.81E-01	3.67E-11
Plutonium-239/240	NA	1.35E-10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Radium-226 + D	3.01E-01	3.86E-10	3.79E-01	1.46E-10	7.59E-01	2.93E-10	7.59E-01	2.93E-10	3.79E-01	1.46E-10	2.28E+00	8.79E-10
Radium-228 + D	3.17E+00	1.04E-09	3.99E+00	4.15E-09	7.98E+00	8.30E-09	7.98E+00	8.30E-09	3.99E+00	4.15E-09	2.39E+01	2.49E-08
Radon-222+ D	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Strontium-90 + D	NA	7.40E-11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Technetium-99	9.35E+00	2.75E-12	1.18E+01	3.24E-11	2.36E+01	6.48E-11	2.36E+01	6.48E-11	1.18E+01	3.24E-11	7.07E+01	1.94E-10
Thorium-228 + D	3.07E+00	3.00E-10	3.87E+00	1.16E-09	7.74E+00	2.32E-09	7.74E+00	2.32E-09	3.87E+00	1.16E-09	2.32E+01	6.97E-09
Thorium-230	6.30E-01	9.10E-11	7.94E-01	7.23E-11	1.59E+00	1.45E-10	1.59E+00	1.45E-10	7.94E-01	7.23E-11	4.76E+00	4.34E-10
Thorium-232	3.17E+00	1.01E-10	3.99E+00	4.03E-10	7.98E+00	8.06E-10	7.98E+00	8.06E-10	3.99E+00	4.03E-10	2.39E+01	2.42E-09
Uranium-234	7.29E+00	7.07E-11	9.19E+00	6.50E-10	1.84E+01	1.30E-09	1.84E+01	1.30E-09	9.19E+00	6.50E-10	5.51E+01	3.90E-09
Uranium-235 + D	3.32E-01	7.18E-11	4.19E-01	3.00E-11	8.37E-01	6.01E-11	8.37E-01	6.01E-11	4.19E-01	3.00E-11	2.51E+00	1.80E-10
Uranium-238 + D	7.12E+00	8.71E-11	8.97E+00	7.82E-10	1.79E+01	1.56E-09	1.79E+01	1.56E-09	8.97E+00	7.82E-10	5.38E+01	4.69E-09
											total =	**5.27E-08**

TABLE E.5-3
Undeveloped Park User - Zone 5 - ExternalRad

Undeveloped Park User - External Radiation
Risk calculation for Zone 5

Intake Equation:			UNITS	Assigned Values			
				child	youth	adult	senior
	CDI =	(CS*EF*ED*ET_o*(1-SH_o))					
	CDI =	Chronic Daily Intake	yr pCi/g				
	CS =	Concentration of radionuclide in soil	pCi/g	see table of COCs below			
	EF =	Fraction of year exposed to radiation	--	0.055	0.11	0.055	0.11
	ED =	Exposure duration	yrs	3	6	14	7
	ET_o =	Fraction of day spent outdoors	--	0.083	0.083	0.083	0.083
	ET_i =	Fraction of day spent indoors	--	NA	NA	NA	NA
	SH_o =	Shield factor outdoors	--	0.25	0.25	0.25	0.25
	SH_i =	Shield factor indoors	--	NA	NA	NA	NA

COC	conc	CSFx	CHILD		YOUTH		ADULT		SENIOR		SUM	
			CDI	ILCR	CDI	ILCR	CDI	ILCR	CDI	ILCR	CDI	ILCR
	pCi/g	g/pCi yr	yr pCi/g	CDI*CSF	yr pCi/g	CDI*CSF	yr pCi/g	CDI*CSF	yr pCi/g	CDI*CSF	yr pCi/g	CDI*CSF
Cesium-137 + D	8.17E-02	2.55E-06	8.39E-04	2.14E-09	3.36E-03	8.56E-09	3.92E-03	9.99E-09	3.92E-03	9.99E-09	1.20E-02	3.07E-08
Lead-210 + D	2.13E+00	4.21E-09	2.19E-02	9.23E-11	8.77E-02	3.69E-10	1.02E-01	4.31E-10	1.02E-01	4.31E-10	3.14E-01	1.32E-09
Neptunium-237 + D	5.42E-03	7.97E-07	5.57E-05	4.44E-11	2.23E-04	1.77E-10	2.60E-04	2.07E-10	2.60E-04	2.07E-10	7.98E-04	6.36E-10
Plutonium-238	2.35E-03	7.22E-11	2.41E-05	1.74E-15	9.66E-05	6.97E-15	1.13E-04	8.14E-15	1.13E-04	8.14E-15	3.46E-04	2.50E-14
Plutonium-239/240	NA	2.00E-10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Radium-226 + D	1.28E+00	8.49E-06	1.32E-02	1.12E-07	5.27E-02	4.48E-07	6.15E-02	5.22E-07	6.15E-02	5.22E-07	1.89E-01	1.60E-06
Radium-228 + D	1.11E+00	4.53E-06	1.14E-02	5.16E-08	4.56E-02	2.06E-07	5.32E-02	2.41E-07	5.32E-02	2.41E-07	1.63E-01	7.40E-07
Radon-222+ D	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Strontium-90 + D	NA	1.96E-08	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Technetium-99	1.64E+00	8.14E-11	1.68E-02	1.37E-12	6.74E-02	5.48E-12	7.86E-02	6.40E-12	7.86E-02	6.40E-12	2.41E-01	1.97E-11
Thorium-228 + D	1.13E+00	7.76E-06	1.16E-02	8.98E-08	4.63E-02	3.59E-07	5.40E-02	4.19E-07	5.40E-02	4.19E-07	1.66E-01	1.29E-06
Thorium-230	2.46E+00	8.19E-10	2.52E-02	2.07E-11	1.01E-01	8.27E-11	1.18E-01	9.65E-11	1.18E-01	9.65E-11	3.62E-01	2.96E-10
Thorium-232	1.10E+00	3.42E-10	1.13E-02	3.86E-12	4.51E-02	1.54E-11	5.26E-02	1.80E-11	5.26E-02	1.80E-11	1.62E-01	5.53E-11
Uranium-234	5.55E+00	2.52E-10	5.70E-02	1.44E-11	2.28E-01	5.74E-11	2.66E-01	6.70E-11	2.66E-01	6.70E-11	8.17E-01	2.06E-10
Uranium-235 + D	2.53E-01	5.43E-07	2.60E-03	1.41E-09	1.04E-02	5.64E-09	1.21E-02	6.58E-09	1.21E-02	6.58E-09	3.72E-02	2.02E-08
Uranium-238 + D	5.42E+00	1.14E-07	5.56E-02	6.34E-09	2.23E-01	2.54E-08	2.60E-01	2.96E-08	2.60E-01	2.96E-08	7.98E-01	9.09E-08
											total =	**3.77E-06**

TABLE E.5-3
Undeveloped Park User - Zone 5 - SumPaths

Undeveloped Park User - Summation of all Pathways
Risk calculation for Zone 5

	HQ	ILCR	rad only ILCR
Inhale	1.88E-04	1.02E-05	1.02E-05
Dermal Soil	3.76E-03	8.32E-07	NA
Ingest Soil	1.64E-02	3.07E-06	1.19E-06
Dermal Surface Water	5.99E-02	5.30E-05	NA
Ingest Surface Water	1.17E-03	1.15E-07	5.27E-08
External Radiation	NA	3.83E-06	3.77E-06
SUM	**8.15E-02**	**7.11E-05**	**1.52E-05**

Summation of all paths for individual nuclides

	Total ILCR	BKGD ILCR	Total-BKGD ILCR
Cesium-137 + D	3.15E-08	2.54E-08	6.02E-09
Lead-210 + D	5.32E-07	3.90E-07	1.42E-07
Neptunium-237 + D	8.57E-10	6.06E-11	7.96E-10
Plutonium-238	9.91E-11	1.09E-11	8.82E-11
Plutonium-239/240	NA	NA	NA
Radium-226 + D	1.69E-06	2.06E-06	0.00E+00
Radium-228 + D	9.98E-07	1.13E-06	0.00E+00
Radon-222+ D	1.02E-05	1.24E-05	0.00E+00
Strontium-90 + D	NA	NA	NA
Technetium-99	1.37E-09	1.29E-10	1.24E-09
Thorium-228 + D	1.38E-06	1.54E-06	0.00E+00
Thorium-230	4.95E-08	3.12E-08	1.83E-08
Thorium-232	2.79E-08	3.14E-08	0.00E+00
Uranium-234	8.75E-08	2.38E-08	6.37E-08
Uranium-235 + D	2.43E-08	6.78E-09	1.75E-08
Uranium-238 + D	2.03E-07	5.59E-08	1.47E-07
SUM	**1.52E-05**		**3.96E-07**

TABLE E.5-3
Undeveloped Park User - Zone 5 - SumPaths

Summation of all paths for individual chemicals

	Total		BKGD		Total - BKGD	
	ILCR	HQ	ILCR	HQ	ILCR	HQ
1,1,2-Trichloroethane	9.73E-10	5.28E-06	3.91E-10	0.00E+00	5.83E-10	5.28E-06
1,1-Dichloroethylene	8.61E-09	6.70E-07	0.00E+00	0.00E+00	8.61E-09	6.70E-07
1,2-dichloroethane	6.66E-10	8.54E-07	0.00E+00	0.00E+00	6.66E-10	8.54E-07
2-Butanone	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	NA	NA	NA	NA	NA	NA
4-Methylphenol	NA	NA	NA	NA	NA	NA
4-Nitroanaline	NA	NA	NA	NA	NA	NA
Acetone	no CSFs	5.57E-08	no CSFs	0.00E+00	no CSFs	5.57E-08
Antimony	no CSFs	1.54E-03	no CSFs	1.90E-03	no CSFs	0.00E+00
Aroclor-1254	2.10E-07	1.23E-02	0.00E+00	0.00E+00	2.10E-07	1.23E-02
Aroclor-1260	8.10E-07	4.73E-02	0.00E+00	0.00E+00	8.10E-07	4.73E-02
Arsenic	1.91E-06	9.89E-03	2.09E-06	1.08E-02	0.00E+00	0.00E+00
Barium	no CSFs	3.03E-04	no CSFs	3.02E-04	no CSFs	1.07E-06
Benzene	9.86E-10	1.05E-05	0.00E+00	0.00E+00	9.86E-10	1.05E-05
Benzo(a)anthracene	1.50E-06	no RfDs	0.00E+00	no RfDs	1.50E-06	no RfDs
Benzo(a)pyrene	1.95E-05	no RfDs	0.00E+00	no RfDs	1.95E-05	no RfDs
Benzo(b)fluoranthene	1.12E-06	no RfDs	0.00E+00	no RfDs	1.12E-06	no RfDs
Benzo(k)fluoranthene	1.88E-07	no RfDs	0.00E+00	no RfDs	1.88E-07	no RfDs
Beryllium	7.06E-07	2.08E-04	8.12E-07	2.39E-04	0.00E+00	0.00E+00
Bis(2-chloroisopropyl)ether	NA	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	NA	NA	NA	NA	NA	NA
Boron	NA	NA	NA	NA	NA	NA
Bromodichloromethane	4.44E-10	8.35E-07	0.00E+00	0.00E+00	4.44E-10	8.35E-07
Bromoform	NA	NA	NA	NA	NA	NA
Bromomethane	NA	NA	NA	NA	NA	NA
Cadmium	1.55E-10	2.33E-04	2.17E-10	3.09E-04	0.00E+00	0.00E+00
Carbazole	NA	NA	NA	NA	NA	NA
Carbon disulfide	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	3.46E-09	8.88E-05	0.00E+00	0.00E+00	3.46E-09	8.88E-05
Chlordane	NA	NA	NA	NA	NA	NA
Chlorobenzene	NA	NA	NA	NA	NA	NA
Chloroform	NA	NA	NA	NA	NA	NA
Chromium (VI)	3.58E-08	2.38E-03	3.61E-08	2.13E-03	0.00E+00	2.50E-04
Chrysene	1.63E-08	no RfDs	0.00E+00	no RfDs	1.63E-08	no RfDs
Cobalt	NA	NA	NA	NA	NA	NA
Copper	NA	NA	NA	NA	NA	NA
Cyanide	NA	NA	NA	NA	NA	NA
Cyclohexanone	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	2.63E-05	no RfDs	0.00E+00	no RfDs	2.63E-05	no RfDs
Dieldrin	4.10E-08	1.20E-04	0.00E+00	0.00E+00	4.10E-08	1.20E-04
Di-n-octylphthalate	NA	NA	NA	NA	NA	NA

TABLE E.5-3
Undeveloped Park User - Zone 5 - SumPaths

Summation of all paths for individual chemicals (continued)

	Total		BKGD		Total - BKGD	
	ILCR	HQ	ILCR	HQ	ILCR	HQ
Ethyl ether	no CSFs	NA	NA	NA	NA	NA
Ethylbenzene	1.84E-17	1.27E-06	0.00E+00	0.00E+00	1.84E-17	1.27E-06
Fluoride	no CSFs	1.52E-04	no CSFs	5.99E-05	no CSFs	9.17E-05
Heptachlorodibenzofuran	NA	NA	NA	NA	NA	NA
Heptachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA
Hexachlorodibenzofuran	NA	NA	NA	NA	NA	NA
Hexachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	3.49E-06	no RfDs	0.00E+00	no RfDs	3.49E-06	no RfDs
Lead	no CSFs	no RfDs	no CSFs	no RfDs	no CSFs	no RfDs
Manganese	NA	NA	NA	NA	NA	NA
Mercury	no CSFs	6.08E-05	no CSFs	5.94E-05	no CSFs	1.40E-06
Methanol	NA	NA	NA	NA	NA	NA
Methyl-2-pentanone	no CSFs	1.03E-06	no CSFs	0.00E+00	no CSFs	1.03E-06
Methylene chloride	2.58E-10	1.34E-06	0.00E+00	0.00E+00	2.58E-10	1.34E-06
Molybdenum	no CSFs	1.96E-04	no CSFs	2.09E-04	no CSFs	0.00E+00
Nickel	NA	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	NA	NA	NA	NA	NA	NA
N-nitrosodipropylamine	NA	NA	NA	NA	NA	NA
Octachlorodibenzofuran	NA	NA	NA	NA	NA	NA
Octochlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA
Pentachlorodibenzofuran	NA	NA	NA	NA	NA	NA
Pentachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA
Pentachlorophenol	NA	NA	NA	NA	NA	NA
Phenanthrene	no CSFs	no RfDs	no CSFs	no RfDs	no CSFs	no RfDs
Selenium	no CSFs	6.16E-05	no CSFs	5.83E-05	no CSFs	3.30E-06
Silver	no CSFs	2.99E-05	no CSFs	4.58E-05	no CSFs	0.00E+00
Tetrachlorodibenzofuran	NA	NA	NA	NA	NA	NA
Tetrachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA
Tetrachloroethylene	1.93E-08	8.35E-06	0.00E+00	0.00E+00	1.93E-08	8.35E-06
Thallium	NA	NA	NA	NA	NA	NA
Toluene	no CSFs	1.21E-06	no CSFs	0.00E+00	no CSFs	1.21E-06
Tributyl phosphate	NA	NA	NA	NA	NA	NA
Trichloroethylene	2.94E-08	5.70E-04	0.00E+00	0.00E+00	2.94E-08	5.70E-04
Trifluorochloromethane	NA	NA	NA	NA	NA	NA
Uranium	no CSFs	6.00E-03	no CSFs	1.53E-03	no CSFs	4.47E-03
Vanadium	NA	NA	NA	NA	NA	NA
Vinyl chloride	NA	NA	NA	NA	NA	NA
Xylenes	no CSFs	6.38E-07	no CSFs	0.00E+00	no CSFs	6.38E-07
Zinc	NA	NA	NA	NA	NA	NA
SUM	**5.59E-05**	**8.15E-02**			**5.32E-05**	**6.52E-02**

APPENDIX E.6
Zone 6

Table

E.6-1	Construction Worker	- Only available on CD ROM.
E.6-2	Groundskeeper / Sampler	- Only available on CD ROM.
E.6-3	Undeveloped Park User	- Only available on CD ROM.
E.6-4	Building Maintenance	- This receptor has no exposure for this zone, therefore no table exists.
E.6-5	Museum Worker	- Hard copy provided in this appendix, also available on CD ROM.
E.6-6	Museum Visitor	- Only available on CD ROM.

TABLE E.6-5
Museum Worker - Zone 6 - InhaleChem

Museum Worker - Inhalation of Gases & Particulates
Risk calculation for Zone 6

Intake Equation:			UNITS	adult
	CDI =	(CS*EF*ED*IR*ET)/(BW*AT)		
	CDI =	Chronic Daily Intake	mg/kgday	calculated below
	CA =	Concentration of chemical in air	mg/m^3	see COC list below
	EF =	Exposure frequency	days/yr	250
	ED =	Exposure duration	yrs	25
	IR =	Inhalation rate	m^3/hr	1.5
	ET =	Exposure time	hrs/day	1
	BW =	Body weight	kg	70
	ATc =	Average time for carcinogens	days	25550
	ATn =	Average time for non-carcinogens	days	9125

COC	conc	RfDI	CSFI	ADULT CDI	HQ	CDI	ILCR
	mg/m^3	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	8.48E-12	NA	5.60E-02	NA	NA	4.44E-14	2.49E-15
1,1-Dichloroethylene	3.15E-11	5.71E-02	1.75E-01	4.62E-13	8.09E-12	1.65E-13	2.89E-14
1,2-dichloroethane	2.55E-11	NA	9.10E-02	NA	NA	1.34E-13	1.22E-14
2-Butanone	NA	1.43E+00	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	NA	NA	NA	NA	NA	NA	NA
4-Nitroanaline	NA	1.14E-03	NA	NA	NA	NA	NA
Acetone	NA	NA	NA	NA	NA	NA	NA
Antimony	3.61E-08	NA	NA	NA	NA	NA	NA
Aroclor-1254	5.28E-10	NA	2.00E+00	NA	NA	2.77E-12	5.54E-12
Aroclor-1260	1.89E-10	NA	2.00E+00	NA	NA	9.92E-13	1.98E-12
Arsenic	2.66E-07	NA	1.51E+01	NA	NA	1.39E-09	2.10E-08
Barium	4.79E-06	1.43E-04	NA	7.03E-08	4.92E-04	NA	NA
Benzene	NA	8.57E-03	2.73E-02	NA	NA	NA	NA
Benzo(a)anthracene	1.73E-10	NA	3.08E-01	NA	NA	9.09E-13	2.80E-13
Benzo(a)pyrene	1.44E-09	NA	3.08E-01	NA	NA	7.53E-12	2.32E-12
Benzo(b)fluoranthene	1.35E-09	NA	3.08E+00	NA	NA	7.09E-12	2.19E-11
Benzo(k)fluoranthene	1.08E-10	NA	3.08E-02	NA	NA	5.66E-13	1.74E-14
Beryllium	2.96E-08	5.71E-06	8.40E+00	4.34E-10	7.60E-05	1.55E-10	1.30E-09
Bis(2-chloroisopropyl)ether	NA	NA	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	NA	NA	NA	NA	NA	NA	NA
Boron	NA	5.71E-03	NA	NA	NA	NA	NA
Bromodichloromethane	2.62E-11	NA	NA	NA	NA	NA	NA
Bromoform	NA	NA	3.85E-03	NA	NA	NA	NA
Bromomethane	NA	1.43E-03	NA	NA	NA	NA	NA
Cadmium	1.27E-08	NA	6.30E+00	NA	NA	6.67E-11	4.20E-10
Carbazole	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	NA	2.00E-01	NA	NA	NA	NA	NA
Carbon tetrachloride	NA	NA	5.25E-02	NA	NA	NA	NA
Chlordane	NA	2.00E-04	3.50E-01	NA	NA	NA	NA
Chlorobenzene	NA	1.43E-02	NA	NA	NA	NA	NA
Chloroform	NA	NA	8.05E-02	NA	NA	NA	NA
Chromium (VI)	NA	2.86E-05	4.20E+01	NA	NA	NA	NA
Chrysene	2.61E-10	NA	3.08E-03	NA	NA	1.37E-12	4.21E-15
Cobalt	NA	5.71E-06	9.80E+00	NA	NA	NA	NA
Copper	NA	NA	NA	NA	NA	NA	NA
Cyanide	NA	NA	NA	NA	NA	NA	NA
Cyclohexanone	NA	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	5.24E-10	NA	3.08E+00	NA	NA	2.76E-12	8.46E-12
Dieldrin	4.75E-11	NA	1.61E+01	NA	NA	2.49E-13	4.01E-12
Di-n-octylphthalate	NA	NA	NA	NA	NA	NA	NA
Ethyl ether	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	NA	2.86E-01	3.85E-03	NA	NA	NA	NA
Fluoride	1.83E-07	NA	NA	NA	NA	NA	NA
Heptachlorodibenzofuran	NA	NA	1.16E+03	NA	NA	NA	NA
Heptachlorodibenzo-p-dioxin	4.37E-13	NA	1.16E+03	NA	NA	2.29E-15	2.66E-12
Hexachlorodibenzofuran	NA	NA	1.16E+04	NA	NA	NA	NA
Hexachlorodibenzo-p-dioxin	NA	NA	1.16E+04	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	1.10E-09	NA	3.08E-01	NA	NA	5.74E-12	1.77E-12
Lead	NA	NA	NA	NA	NA	NA	NA
Manganese	NA	1.43E-05	NA	NA	NA	NA	NA
Mercury	NA	NA	NA	NA	NA	NA	NA
Methanol	NA	NA	NA	NA	NA	NA	NA
Methyl-2-pentanone	NA	8.57E-01	NA	NA	NA	NA	NA
Methylene chloride	NA	8.57E-01	1.65E-03	NA	NA	NA	NA
Molybdenum	1.27E-07	NA	NA	NA	NA	NA	NA
Nickel	NA	NA	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	NA	NA	NA	NA	NA	NA	NA
N-nitrosodipropylamine	NA	NA	NA	NA	NA	NA	NA
Octochlorodibenzofuran	NA	NA	1.16E+02	NA	NA	NA	NA
Octochlorodibenzo-p-dioxin	6.74E-12	NA	1.16E+02	NA	NA	3.53E-14	4.10E-12
Pentachlorodibenzofuran	NA	NA	5.78E+03	NA	NA	NA	NA
Pentachlorodibenzo-p-dioxin	NA	NA	5.78E+04	NA	NA	NA	NA
Pentachlorophenol	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	1.92E-10	NA	NA	NA	NA	NA	NA
Selenium	NA	NA	NA	NA	NA	NA	NA
Silver	1.23E-08	NA	NA	NA	NA	NA	NA
Tetrachlorodibenzofuran	NA	NA	1.16E+04	NA	NA	NA	NA
Tetrachlorodibenzo-p-dioxin	NA	NA	1.16E+05	NA	NA	NA	NA
Tetrachloroethylene	2.94E-11	1.71E-01	2.07E-02	4.32E-13	2.53E-12	1.54E-13	3.20E-15
Thallium	NA	NA	NA	NA	NA	NA	NA
Toluene	NA	1.43E+00	NA	NA	NA	NA	NA
Tributyl phosphate	NA	NA	NA	NA	NA	NA	NA
Trichloroethylene	4.75E-11	1.14E-02	4.00E-01	6.98E-13	6.12E-11	2.49E-13	9.97E-14
Trifluorochloromethane	NA	NA	NA	NA	NA	NA	NA
Uranium	9.98E-07	NA	NA	NA	NA	NA	NA
Vanadium	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	NA	2.86E-02	3.08E-02	NA	NA	NA	NA
Xylenes	NA	2.86E-02	NA	NA	NA	NA	NA
Zinc	NA	NA	NA	NA	NA	NA	NA
				total =	5.68E-04	total =	2.28E-08

Air concentration is derived using air particulate value of 26 ug/m^3 (2005 SER background average from monitor AMS-12) multiplied by the soil concentration.

TABLE E.6-5
Museum Worker - Zone 6 - DermalSoilChem

Museum Worker - Dermal Contact with Soil/Sediment
Risk calculation for Zone 6

Intake Equation:			UNITS	adult
	CDI =	(CS*AB*SA*EF*ED*AF*CF)/(BW*AT)		
	CDI =	Chronic Daily Intake	mg/kgday	calculated below
	CS =	Concentration of chemical in soil	mg/kg	see COC list below
	AB	Absorption factor	--	see COC list below
	SA	Surface area of exposed skin	cm^2/day	904
	EF =	Exposure frequency	days/yr	250
	ED =	Exposure duration	yrs	25
	AF =	Adherence factor	mg/cm^2	0.07
	CF =	Conversion factor	kg/mg	1.00E-06
	BW =	Body weight	kg	70
	ATc =	Average time for carcinogens	days	25550
	ATn =	Average time for non-carcinogens	days	9125

COC	conc	AB	RfDd	CSFd	ADULT CDI	ADULT HQ	ADULT CDI	ADULT ILCR
	mg/kg	unitless	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	3.26E-04	1.00E-02	3.24E-03	7.04E-02	2.02E-12	6.23E-10	7.21E-13	5.08E-14
1,1-Dichloroethylene	1.21E-03	1.00E-02	5.00E-02	6.00E-01	7.50E-12	1.50E-10	2.68E-12	1.61E-12
1,2-dichloroethane	9.80E-04	1.00E-02	2.00E-02	9.10E-02	6.07E-12	3.04E-10	2.17E-12	1.97E-13
2-Butanone	NA	1.00E-02	4.80E-01	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	NA	1.00E-02	NA	9.00E-01	NA	NA	NA	NA
4-Methylphenol	NA	1.00E-02	3.25E-03	NA	NA	NA	NA	NA
4-Nitroanaline	NA	1.00E-02	2.40E-03	2.63E-02	NA	NA	NA	NA
Acetone	NA	1.00E-02	7.47E-01	NA	NA	NA	NA	NA
Antimony	1.39E+00	1.00E-03	8.00E-06	NA	8.60E-10	1.07E-04	NA	NA
Aroclor-1254	2.03E-02	1.40E-01	1.80E-05	2.22E+00	1.76E-09	9.79E-05	6.29E-10	1.40E-09
Aroclor-1260	7.28E-03	1.40E-01	1.80E-05	2.22E+00	6.31E-10	3.51E-05	2.25E-10	5.00E-10
Arsenic	1.02E+01	3.00E-02	1.23E-04	3.66E+00	1.90E-07	1.54E-03	6.78E-08	2.48E-07
Barium	1.84E+02	1.00E-03	1.40E-02	NA	1.14E-07	8.15E-06	NA	NA
Benzene	NA	1.00E-02	3.88E-03	5.67E-02	NA	NA	NA	NA
Benzo(a)anthracene	6.67E-03	1.30E-01	NA	2.35E+00	NA	NA	1.92E-10	4.51E-10
Benzo(a)pyrene	5.53E-02	1.30E-01	NA	2.35E+01	NA	NA	1.59E-09	3.73E-08
Benzo(b)fluoranthene	5.21E-02	1.30E-01	NA	2.35E+00	NA	NA	1.50E-09	3.52E-09
Benzo(k)fluoranthene	4.15E-03	1.30E-01	NA	2.35E-01	NA	NA	1.19E-10	2.80E-11
Beryllium	1.14E+00	1.00E-03	2.00E-05	4.30E+02	7.04E-10	3.52E-05	2.52E-10	1.08E-07
Bis(2-chloroisopropyl)ether	NA	1.00E-02	2.00E-02	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	NA	1.00E-02	3.80E-03	7.37E-02	NA	NA	NA	NA
Boron	NA	1.00E-03	1.80E-01	NA	NA	NA	NA	NA
Bromodichloromethane	1.01E-03	1.00E-02	1.96E-02	6.33E-02	6.23E-12	3.18E-10	2.23E-12	1.41E-13
Bromoform	NA	1.00E-02	1.20E-02	1.32E-02	NA	NA	NA	NA
Bromomethane	NA	1.00E-02	1.12E-03	NA	NA	NA	NA	NA
Cadmium	4.89E-01	1.00E-03	1.00E-05	NA	3.03E-10	3.03E-05	NA	NA
Carbazole	NA	1.00E-02	NA	2.86E-02	NA	NA	NA	NA
Carbon disulfide	NA	2.50E-01	6.30E-02	NA	NA	NA	NA	NA
Carbon tetrachloride	NA	1.00E-02	4.55E-04	2.00E-01	NA	NA	NA	NA
Chlordane	NA	4.00E-02	2.50E-04	7.00E-01	NA	NA	NA	NA
Chlorobenzene	NA	1.00E-02	6.20E-03	NA	NA	NA	NA	NA
Chloroform	NA	1.00E-02	2.00E-03	3.05E-02	NA	NA	NA	NA
Chromium (VI)	NA	1.00E-03	6.00E-05	NA	NA	NA	NA	NA
Chrysene	1.00E-02	1.30E-01	NA	2.35E-02	NA	NA	2.88E-10	6.77E-12
Cobalt	NA	1.00E-03	1.60E-02	NA	NA	NA	NA	NA
Copper	NA	1.00E-03	1.20E-02	NA	NA	NA	NA	NA
Cyanide	NA	1.00E-02	3.40E-03	NA	NA	NA	NA	NA
Cyclohexanone	NA	1.00E-02	4.00E+00	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	2.02E-02	1.30E-01	NA	2.35E+01	NA	NA	5.80E-10	1.36E-08
Dieldrin	1.83E-03	1.00E-02	2.50E-05	3.20E+01	1.13E-11	4.53E-07	4.04E-12	1.29E-10
Di-n-octylphthalate	NA	1.00E-02	3.60E-02	NA	NA	NA	NA	NA
Ethyl ether	NA	1.00E-02	1.60E-01	NA	NA	NA	NA	NA
Ethylbenzene	NA	1.00E-02	9.70E-02	NA	NA	NA	NA	NA
Fluoride	7.05E+00	1.00E-03	5.82E-02	NA	4.37E-09	7.50E-08	NA	NA
Heptachlorodibenzofuran	NA	1.00E-02	NA	3.00E+03	NA	NA	NA	NA
Heptachlorodibenzo-p-dioxin	1.68E-05	3.00E-02	NA	3.00E+03	NA	NA	1.12E-13	3.35E-10
Hexachlorodibenzofuran	NA	1.00E-02	NA	3.00E+04	NA	NA	NA	NA
Hexachlorodibenzo-p-dioxin	NA	3.00E-02	NA	3.00E+04	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	4.21E-02	1.30E-01	NA	2.35E+00	NA	NA	1.21E-09	2.85E-09
Lead	NA	1.00E-03	NA	NA	NA	NA	NA	NA
Manganese	NA	1.00E-03	5.60E-03	NA	NA	NA	NA	NA
Mercury	NA	1.00E-03	2.10E-05	NA	NA	NA	NA	NA
Methanol	NA	1.00E-02	4.00E-01	NA	NA	NA	NA	NA
Methyl-2-pentanone	NA	1.00E-02	6.40E-02	NA	NA	NA	NA	NA
Methylene chloride	NA	1.00E-02	5.70E-02	7.89E-03	NA	NA	NA	NA
Molybdenum	4.89E+00	1.00E-03	1.90E-03	NA	3.03E-09	1.59E-06	NA	NA
Nickel	NA	1.00E-03	5.40E-03	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	NA	1.00E-02	5.00E-03	1.96E-02	NA	NA	NA	NA
N-nitrosodipropylamine	NA	1.00E-02	NA	2.80E+01	NA	NA	NA	NA
Octachlorodibenzofuran	NA	1.00E-02	NA	3.00E+02	NA	NA	NA	NA
Octochlorodibenzo-p-dioxin	2.59E-04	3.00E-02	NA	3.00E+02	NA	NA	1.72E-12	5.16E-10
Pentachlorodibenzofuran	NA	1.00E-02	NA	1.50E+04	NA	NA	NA	NA
Pentachlorodibenzo-p-dioxin	NA	3.00E-02	NA	1.50E+05	NA	NA	NA	NA
Pentachlorophenol	NA	2.50E-01	3.00E-02	1.20E-01	NA	NA	NA	NA
Phenanthrene	7.37E-03	1.00E-02	NA	NA	NA	NA	NA	NA
Selenium	NA	1.00E-03	2.20E-03	NA	NA	NA	NA	NA
Silver	4.72E-01	1.00E-03	9.00E-04	NA	2.92E-10	3.25E-07	NA	NA
Tetrachlorodibenzofuran	NA	1.00E-02	NA	3.00E+04	NA	NA	NA	NA
Tetrachlorodibenzo-p-dioxin	NA	3.00E-02	NA	3.00E+05	NA	NA	NA	NA
Tetrachloroethylene	1.13E-03	1.00E-02	1.00E-02	5.40E-01	7.01E-12	7.01E-10	2.50E-12	1.35E-12
Thallium	NA	1.00E-03	1.80E-05	NA	NA	NA	NA	NA
Toluene	NA	1.00E-02	6.40E-02	NA	NA	NA	NA	NA
Tributyl phosphate	NA	1.00E-02	1.00E-01	1.08E-02	NA	NA	NA	NA
Trichloroethylene	1.83E-03	1.00E-02	4.50E-05	2.67E+00	1.13E-11	2.52E-07	4.04E-12	1.08E-11
Trifluorochloromethane	NA	NA	NA	NA	NA	NA	NA	NA
Uranium	3.83E+01	1.00E-03	5.10E-04	NA	2.37E-08	4.65E-05	NA	NA
Vanadium	NA	1.00E-03	7.00E-05	NA	NA	NA	NA	NA
Vinyl chloride	NA	1.00E-02	3.00E-03	1.50E+00	NA	NA	NA	NA
Xylenes	NA	1.00E-02	1.84E-01	NA	NA	NA	NA	NA
Zinc	NA	1.00E-03	6.00E-02	NA	NA	NA	NA	NA
					total =	1.91E-03	total =	4.17E-07

TABLE E.6-5
Museum Worker - Zone 6 - IngestSoilChem

Museum Worker - Ingestion of Soil
Risk calculation for Zone 6

Intake Equation:			UNITS	adult
	CDI =	(CS*EF*ED*IR*FI*CF)/(BW*AT)		
	CDI =	Chronic Daily Intake	mg/kgday	calculated below
	CS =	Concentration of chemical in soil	mg/kg	see COC list below
	EF =	Exposure frequency	days/yr	250
	ED =	Exposure duration	yrs	25
	IR =	Ingestion rate	mg/day	50
	FI =	Fraction of contaminated soil	unitless	1
	CF =	Conversion factor	kg/mg	1.00E-06
	BW =	Body weight	kg	70
	ATc =	Average time for carcinogens	days	25550
	ATn =	Average time for non-carcinogens	days	9125

COC	conc mg/kg	RfDo mg/kgday	CSFo kgday/mg	ADULT CDI mg/kgday	HQ CDI/RfD	CDI mg/kgday	ILCR CDI*CSF
1,1,2-Trichloroethane	3.26E-04	4.00E-03	5.70E-02	1.60E-10	3.99E-08	5.70E-11	3.25E-12
1,1-Dichloroethylene	1.21E-03	5.00E-02	6.00E-01	5.92E-10	1.18E-08	2.12E-10	1.27E-10
1,2-dichloroethane	9.80E-04	2.00E-02	9.10E-02	4.80E-10	2.40E-08	1.71E-10	1.56E-11
2-Butanone	NA	6.00E-01	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	NA	NA	4.50E-01	NA	NA	NA	NA
4-Methylphenol	NA	5.00E-03	NA	NA	NA	NA	NA
4-Nitroanaline	NA	3.00E-03	2.10E-02	NA	NA	NA	NA
Acetone	NA	9.00E-01	NA	NA	NA	NA	NA
Antimony	1.39E+00	4.00E-04	NA	6.79E-07	1.70E-03	NA	NA
Aroclor-1254	2.03E-02	2.00E-05	2.00E+00	9.94E-09	4.97E-04	3.55E-09	7.10E-09
Aroclor-1260	7.28E-03	2.00E-05	2.00E+00	3.56E-09	1.78E-04	1.27E-09	2.54E-09
Arsenic	1.02E+01	3.00E-04	1.50E+00	5.00E-06	1.67E-02	1.79E-06	2.68E-06
Barium	1.84E+02	2.00E-01	NA	9.02E-05	4.51E-04	NA	NA
Benzene	NA	4.00E-03	5.50E-02	NA	NA	NA	NA
Benzo(a)anthracene	6.67E-03	NA	7.30E-01	NA	NA	1.17E-09	8.51E-10
Benzo(a)pyrene	5.53E-02	NA	7.30E+00	NA	NA	9.66E-09	7.05E-08
Benzo(b)fluoranthene	5.21E-02	NA	7.30E-01	NA	NA	9.10E-09	6.64E-09
Benzo(k)fluoranthene	4.15E-03	NA	7.30E-02	NA	NA	7.25E-10	5.29E-11
Beryllium	1.14E+00	2.00E-03	4.30E+00	5.56E-07	2.78E-04	1.99E-07	8.55E-07
Bis(2-chloroisopropyl)ether	NA	4.00E-02	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	NA	2.00E-02	1.40E-02	NA	NA	NA	NA
Boron	NA	2.00E-01	NA	NA	NA	NA	NA
Bromodichloromethane	1.01E-03	2.00E-02	6.20E-02	4.92E-10	2.46E-08	1.76E-10	1.09E-11
Bromoform	NA	2.00E-02	7.90E-03	NA	NA	NA	NA
Bromomethane	NA	1.40E-03	NA	NA	NA	NA	NA
Cadmium	4.89E-01	1.00E-03	NA	2.39E-07	2.39E-04	NA	NA
Carbazole	NA	NA	2.00E-03	NA	NA	NA	NA
Carbon disulfide	NA	1.00E-01	NA	NA	NA	NA	NA
Carbon tetrachloride	NA	7.00E-04	1.30E-01	NA	NA	NA	NA
Chlordane	NA	5.00E-04	3.50E-01	NA	NA	NA	NA
Chlorobenzene	NA	2.00E-02	NA	NA	NA	NA	NA
Chloroform	NA	1.00E-02	6.10E-03	NA	NA	NA	NA
Chromium (VI)	NA	3.00E-03	NA	NA	NA	NA	NA
Chrysene	1.00E-02	NA	7.30E-03	NA	NA	1.75E-09	1.28E-11
Cobalt	NA	2.00E-02	NA	NA	NA	NA	NA
Copper	NA	4.00E-02	NA	NA	NA	NA	NA
Cyanide	NA	2.00E-02	NA	NA	NA	NA	NA
Cyclohexanone	NA	5.00E+00	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	2.02E-02	NA	7.30E+00	NA	NA	3.52E-09	2.57E-08
Dieldrin	1.83E-03	5.00E-05	1.60E+01	8.94E-10	1.79E-05	3.19E-10	5.11E-09
Di-n-octylphthalate	NA	4.00E-02	NA	NA	NA	NA	NA
Ethyl ether	NA	2.00E-01	NA	NA	NA	NA	NA
Ethylbenzene	NA	1.00E-01	NA	NA	NA	NA	NA
Fluoride	7.05E+00	6.00E-02	NA	3.45E-06	5.75E-05	NA	NA
Heptachlorodibenzofuran	NA	NA	1.50E+03	NA	NA	NA	NA
Heptachlorodibenzo-p-dioxin	1.68E-05	NA	1.50E+03	NA	NA	2.94E-12	4.41E-09
Hexachlorodibenzofuran	NA	NA	1.50E+03	NA	NA	NA	NA
Hexachlorodibenzo-p-dioxin	NA	NA	1.50E+04	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	4.21E-02	NA	7.30E-01	NA	NA	7.36E-09	5.38E-09
Lead	NA	NA	NA	NA	NA	NA	NA
Manganese	NA	1.40E-01	NA	NA	NA	NA	NA
Mercury	NA	3.00E-04	NA	NA	NA	NA	NA
Methanol	NA	5.00E-01	NA	NA	NA	NA	NA
Methyl-2-pentanone	NA	8.00E-02	NA	NA	NA	NA	NA
Methylene chloride	NA	6.00E-02	7.50E-03	NA	NA	NA	NA
Molybdenum	4.89E+00	5.00E-03	NA	2.39E-06	4.78E-04	NA	NA
Nickel	NA	2.00E-02	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	NA	2.00E-02	4.90E-03	NA	NA	NA	NA
N-nitrosodipropylamine	NA	NA	7.00E+00	NA	NA	NA	NA
Octachlorodibenzofuran	NA	NA	1.50E+02	NA	NA	NA	NA
Octochlorodibenzo-p-dioxin	2.59E-04	NA	1.50E+02	NA	NA	4.53E-11	6.79E-09
Pentachlorodibenzofuran	NA	NA	7.50E+03	NA	NA	NA	NA
Pentachlorodibenzo-p-dioxin	NA	NA	7.50E+04	NA	NA	NA	NA
Pentachlorophenol	NA	3.00E-02	1.20E-01	NA	NA	NA	NA
Phenanthrene	7.37E-03	NA	NA	NA	NA	NA	NA
Selenium	NA	5.00E-03	NA	NA	NA	NA	NA
Silver	4.72E-01	5.00E-03	NA	2.31E-07	4.62E-05	NA	NA
Tetrachlorodibenzofuran	NA	NA	1.50E+04	NA	NA	NA	NA
Tetrachlorodibenzo-p-dioxin	NA	NA	1.50E+05	NA	NA	NA	NA
Tetrachloroethylene	1.13E-03	1.00E-02	5.40E-01	5.54E-10	5.54E-08	1.98E-10	1.07E-10
Thallium	NA	9.00E-05	NA	NA	NA	NA	NA
Toluene	NA	8.00E-02	NA	NA	NA	NA	NA
Tributyl phosphate	NA	2.00E-01	5.40E-03	NA	NA	NA	NA
Trichloroethylene	1.83E-03	3.00E-04	4.00E-01	8.94E-10	2.98E-06	3.19E-10	1.28E-10
Trifluorochloromethane	NA	NA	NA	NA	NA	NA	NA
Uranium	3.83E+01	6.00E-04	NA	1.87E-05	3.12E-02	NA	NA
Vanadium	NA	7.00E-03	NA	NA	NA	NA	NA
Vinyl chloride	NA	3.00E-03	1.50E+00	NA	NA	NA	NA
Xylenes	NA	2.00E-01	NA	NA	NA	NA	NA
Zinc	NA	3.00E-01	NA	NA	NA	NA	NA
				total =	5.19E-02	total =	3.67E-06

TABLE E.6-5
Museum Worker - Zone 6 - DermalSWchem

Museum Worker - Dermal Contact with Surface Water
Risk calculation for Zone 6

			UNITS	adult
Intake Equation:	CDI =	(DA*EF*ED*SA)/(BW*AT)		
	CDI =	Chronic Daily Intake	mg/kgday	calculated below
	DA =	Dermal absorption dose	mg/cm²day	see COC list below
	EF =	Exposure frequency	days/yr	8
	ED =	Exposure duration	yrs	25
	SA =	Surface area of skin	cm²	904
	BW =	Body weight	kg	70
	ATc =	Average time for carcinogens	days	25550
	ATn =	Average time for non-carcinogens	days	9125
where:	DA = C_v*K_p*CF*ET			
	C_v =	concentation of ith contaminant in surface water	mg/L	see COC list below
	K_p =	permeability constant for ith contaminant	cm/hr	see COC list below
	CF =	conversion factor	L/cm³	0.001
	ET =	exposure time	hr/d	0.5

COC	C_v	K_p	DA	RfD	CSF	ADULT CDI	ADULT HQ	ADULT CDI	ADULT ILCR
	mg/L	cm/hr	mg/cm²day	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	0.00E+00	6.43E-03	0.00E+00	3.24E-03	7.04E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,1-Dichloroethylene	5.00E-04	1.59E-02	3.98E-09	5.00E-02	6.00E-01	1.13E-09	2.25E-08	4.02E-10	2.41E-10
1,2-dichloroethane	5.00E-04	5.34E-03	1.34E-09	2.00E-02	9.10E-02	3.78E-10	1.89E-08	1.35E-10	1.23E-11
2-Butanone	NA	1.11E-03	NA	4.80E-01	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	NA	1.69E-02	NA	NA	9.00E-01	NA	NA	NA	NA
4-Methylphenol	NA	9.95E-03	NA	3.25E-03	NA	NA	NA	NA	NA
4-Nitroanaline	NA	2.66E-03	NA	2.40E-03	2.63E-02	NA	NA	NA	NA
Acetone	NA	5.69E-04	NA	7.47E-01	NA	NA	NA	NA	NA
Antimony	5.00E-04	1.00E-03	2.50E-10	8.00E-06	NA	7.08E-11	8.85E-06	NA	NA
Aroclor-1254	5.00E-05	1.29E+00	3.23E-08	1.80E-05	2.22E+00	9.13E-09	5.07E-04	3.26E-09	7.24E-09
Aroclor-1260	5.00E-05	5.48E+00	1.37E-07	1.80E-05	2.22E+00	3.88E-08	2.15E-03	1.38E-08	3.07E-08
Arsenic	5.76E-03	1.00E-03	2.88E-09	1.23E-04	3.66E+00	8.16E-10	6.63E-06	2.91E-10	1.07E-09
Barium	6.90E-02	1.00E-03	3.45E-08	1.40E-02	NA	9.76E-09	6.97E-07	NA	NA
Benzene	NA	2.07E-02	NA	3.88E-03	5.67E-02	NA	NA	NA	NA
Benzo(a)anthracene	5.00E-04	9.48E-01	2.37E-07	NA	2.35E+00	NA	NA	2.40E-08	5.63E-08
Benzo(a)pyrene	5.00E-04	1.24E+00	3.10E-07	NA	2.35E+01	NA	NA	3.13E-08	7.36E-07
Benzo(b)fluoranthene	0.00E+00	6.99E-01	0.00E+00	NA	2.35E+00	NA	NA	0.00E+00	0.00E+00
Benzo(k)fluoranthene	0.00E+00	1.20E+00	0.00E+00	NA	2.35E-01	NA	NA	0.00E+00	0.00E+00
Beryllium	1.94E-04	1.00E-03	9.69E-11	2.00E-05	4.30E+02	2.74E-11	1.37E-06	9.79E-12	4.21E-09
Bis(2-chloroisopropyl)ether	NA	7.63E-02	NA	2.00E-02	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	NA	1.97E+00	NA	3.80E-03	7.37E-02	NA	NA	NA	NA
Boron	NA	1.00E-03	NA	1.80E-01	NA	NA	NA	NA	NA
Bromodichloromethane	5.00E-04	5.02E-03	1.26E-09	1.96E-02	6.33E-02	3.55E-10	1.81E-08	1.27E-10	8.03E-12
Bromoform	NA	2.77E-03	NA	1.20E-02	1.32E-02	NA	NA	NA	NA
Bromomethane	NA	3.51E-03	NA	1.12E-03	NA	NA	NA	NA	NA
Cadmium	1.08E-04	1.00E-03	5.38E-11	1.00E-05	NA	1.52E-11	1.52E-06	NA	NA
Carbazole	NA	7.97E-02	NA	NA	2.86E-02	NA	NA	NA	NA
Carbon disulfide	NA	1.56E-02	NA	6.30E-02	NA	NA	NA	NA	NA
Carbon tetrachloride	NA	2.24E-02	NA	4.55E-04	2.00E-01	NA	NA	NA	NA
Chlordane	NA	1.57E-01	NA	2.50E-04	7.00E-01	NA	NA	NA	NA
Chlorobenzene	NA	4.07E-02	NA	6.20E-03	NA	NA	NA	NA	NA
Chloroform	NA	8.92E-03	NA	2.00E-03	3.05E-02	NA	NA	NA	NA
Chromium (VI)	NA	2.00E-03	NA	6.00E-05	NA	NA	NA	NA	NA
Chrysene	0.00E+00	1.03E+00	0.00E+00	NA	2.35E-02	NA	NA	0.00E+00	0.00E+00
Cobalt	NA	4.00E-04	NA	1.60E-02	NA	NA	NA	NA	NA
Copper	NA	1.00E-03	NA	1.20E-02	NA	NA	NA	NA	NA
Cyanide	NA	1.00E-03	NA	3.40E-03	NA	NA	NA	NA	NA
Cyclohexanone	NA	1.80E-03	NA	4.00E+00	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	5.00E-04	1.68E+00	4.20E-07	NA	2.35E+01	NA	NA	4.25E-08	9.98E-07
Dieldrin	2.00E-05	4.45E-02	4.45E-10	2.50E-05	3.20E+01	1.26E-10	5.04E-06	4.50E-11	1.44E-09
Di-n-octylphthalate	NA	4.45E+00	NA	3.60E-02	NA	NA	NA	NA	NA
Ethyl ether	NA	2.86E-03	NA	1.60E-01	NA	NA	NA	NA	NA
Ethylbenzene	NA	7.39E-02	NA	9.70E-02	NA	NA	NA	NA	NA
Fluoride	4.73E-01	1.00E-03	2.36E-07	5.82E-02	NA	6.69E-08	1.15E-06	NA	NA
Heptachlorodibenzofuran	NA	2.55E+00	NA	NA	3.00E+03	NA	NA	NA	NA
Heptachlorodibenzo-p-dioxin	0.00E+00	3.22E+00	0.00E+00	NA	3.00E+03	NA	NA	0.00E+00	0.00E+00
Hexachlorodibenzofuran	NA	2.38E+00	NA	NA	3.00E+04	NA	NA	NA	NA
Hexachlorodibenzo-p-dioxin	NA	5.29E+00	NA	NA	3.00E+04	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	0.00E+00	2.23E+00	0.00E+00	NA	2.35E+00	NA	NA	0.00E+00	0.00E+00
Lead	NA	1.00E-04	NA	NA	NA	NA	NA	NA	NA
Manganese	NA	1.00E-03	NA	1.84E-03	NA	NA	NA	NA	NA
Mercury	NA	1.00E-03	NA	2.10E-05	NA	NA	NA	NA	NA
Methanol	NA	3.45E-04	NA	4.00E-01	NA	NA	NA	NA	NA
4-Methyl-2-pentanone	NA	3.97E-03	NA	6.40E-02	NA	NA	NA	NA	NA
Methylene chloride	NA	4.46E-03	NA	5.70E-02	7.89E-03	NA	NA	NA	NA
Molybdenum	6.99E-03	1.00E-03	3.49E-09	1.90E-03	NA	9.89E-10	5.20E-07	NA	NA
Nickel	NA	2.00E-04	NA	5.40E-03	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	NA	1.96E-02	NA	5.00E-03	1.96E-02	NA	NA	NA	NA
N-nitrosodipropylamine	NA	2.83E-03	NA	NA	2.80E+01	NA	NA	NA	NA
Octachlorodibenzofuran	NA	4.76E+00	NA	NA	3.00E+02	NA	NA	NA	NA
Octochlorodibenzo-p-dioxin	0.00E+00	1.65E+01	0.00E+00	NA	3.00E+02	NA	NA	0.00E+00	0.00E+00
Pentachlorodibenzofuran	NA	1.06E+00	NA	NA	1.50E+04	NA	NA	NA	NA
Pentachlorodibenzo-p-dioxin	NA	3.79E-01	NA	NA	1.50E+05	NA	NA	NA	NA
Pentachlorophenol	NA	1.95E-01	NA	3.00E-02	1.20E-01	NA	NA	NA	NA
Phenanthrene	0.00E+00	2.29E-01	0.00E+00	NA	NA	NA	NA	NA	NA
Selenium	NA	1.00E-03	NA	2.20E-03	NA	NA	NA	NA	NA
Silver	2.00E-04	6.00E-04	6.00E-11	9.00E-04	NA	1.70E-11	1.89E-08	NA	NA
Tetrachlorodibenzofuran	NA	1.12E+00	NA	NA	3.00E+04	NA	NA	NA	NA
Tetrachlorodibenzo-p-dioxin	NA	1.39E+00	NA	NA	3.00E+05	NA	NA	NA	NA
Tetrachloroethylene	5.00E-04	4.81E-02	1.20E-08	1.00E-02	5.40E-01	3.40E-09	3.40E-07	1.22E-09	6.56E-10
Thallium	NA	1.00E-03	NA	1.80E-05	NA	NA	NA	NA	NA
Toluene	NA	4.53E-02	NA	6.40E-02	NA	NA	NA	NA	NA
Tributyl phosphate	NA	3.13E-02	NA	1.00E-01	1.08E-02	NA	NA	NA	NA
Trichloroethylene	5.00E-04	1.57E-02	3.93E-09	4.50E-05	2.67E+00	1.11E-09	2.47E-05	3.97E-10	1.06E-09
Trifluorochloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Uranium	2.42E-02	1.00E-03	1.21E-08	5.10E-04	NA	3.42E-09	6.71E-06	NA	NA
Vanadium	NA	1.00E-03	NA	7.00E-05	NA	NA	NA	NA	NA
Vinyl chloride	NA	1.13E-02	NA	3.00E-03	1.50E+00	NA	NA	NA	NA
Xylenes	NA	7.04E-02	NA	1.84E-01	NA	NA	NA	NA	NA
Zinc	NA	6.00E-04	NA	6.00E-02	NA	NA	NA	NA	NA
						total =	2.72E-03	total =	1.84E-06

TABLE E.6-5
Museum Worker - Zone 6 - IngestSWchem

Museum Worker - Ingestion of Surface Water
Risk calculation for Zone 6

Intake Equation:			UNITS	Assigned Values
	CDI =	(CW*EF*ED*IR)/(BW*AT)		
	CDI =	Chronic Daily Intake	mg/kgday	adult
	CW =	Concentration of chemical in water	mg/L	see COC table below
	EF =	Exposure frequency	days/yr	8
	ED =	Exposure duration	yrs	25
	IR =	Ingestion rate	L/day	0.001
	BW =	Body weight	kg	70
	ATc =	Average time for carcinogens	days	25550
	ATn =	Average time for non-carcinogens	days	9125

COC	CW	RfDo	CSFo	ADULT CDI	HQ	CDI	ILCR
	mg/L	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	0.00E+00	4.00E-03	5.70E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,1-Dichloroethylene	5.00E-04	5.00E-02	6.00E-01	1.57E-10	3.13E-09	5.59E-11	3.35E-11
1,2-dichloroethane	5.00E-04	2.00E-02	9.10E-02	1.57E-10	7.83E-09	5.59E-11	5.09E-12
2-Butanone	NA	6.00E-01	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	NA	NA	4.50E-01	NA	NA	NA	NA
4-Methylphenol	NA	5.00E-03	NA	NA	NA	NA	NA
4-Nitroanaline	NA	3.00E-03	2.10E-02	NA	NA	NA	NA
Acetone	NA	9.00E-01	NA	NA	NA	NA	NA
Antimony	5.00E-04	4.00E-04	NA	1.57E-10	3.91E-07	NA	NA
Aroclor-1254	5.00E-05	2.00E-05	4.00E-01	1.57E-11	7.83E-07	5.59E-12	2.24E-12
Aroclor-1260	5.00E-05	2.00E-05	4.00E-01	1.57E-11	7.83E-07	5.59E-12	2.24E-12
Arsenic	5.76E-03	3.00E-04	1.50E+00	1.80E-09	6.01E-06	6.44E-10	9.67E-10
Barium	6.90E-02	2.00E-01	NA	2.16E-08	1.08E-07	NA	NA
Benzene	NA	4.00E-03	5.50E-02	NA	NA	NA	NA
Benzo(a)anthracene	5.00E-04	NA	7.30E-01	NA	NA	5.59E-11	4.08E-11
Benzo(a)pyrene	5.00E-04	NA	7.30E+00	NA	NA	5.59E-11	4.08E-10
Benzo(b)fluoranthene	0.00E+00	NA	7.30E-01	NA	NA	0.00E+00	0.00E+00
Benzo(k)fluoranthene	0.00E+00	NA	7.30E-02	NA	NA	0.00E+00	0.00E+00
Beryllium	1.94E-04	2.00E-03	4.30E+00	6.07E-11	3.03E-08	2.17E-11	9.32E-11
Bis(2-chloroisopropyl)ether	NA	4.00E-02	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	NA	2.00E-02	1.40E-02	NA	NA	NA	NA
Boron	NA	2.00E-01	NA	NA	NA	NA	NA
Bromodichloromethane	5.00E-04	2.00E-02	6.20E-02	1.57E-10	7.83E-09	5.59E-11	3.47E-12
Bromoform	NA	2.00E-02	7.90E-03	NA	NA	NA	NA
Bromomethane	NA	1.40E-03	NA	NA	NA	NA	NA
Cadmium	1.08E-04	1.00E-03	NA	3.37E-11	3.37E-08	NA	NA
Carbazole	NA	NA	2.00E-03	NA	NA	NA	NA
Carbon disulfide	NA	1.00E-01	NA	NA	NA	NA	NA
Carbon tetrachloride	NA	7.00E-04	1.30E-01	NA	NA	NA	NA
Chlordane	NA	5.00E-04	3.50E-01	NA	NA	NA	NA
Chlorobenzene	NA	2.00E-02	NA	NA	NA	NA	NA
Chloroform	NA	1.00E-02	6.10E-03	NA	NA	NA	NA
Chromium (VI)	NA	3.00E-03	NA	NA	NA	NA	NA
Chrysene	0.00E+00	NA	7.30E-03	NA	NA	0.00E+00	0.00E+00
Cobalt	NA	2.00E-02	NA	NA	NA	NA	NA
Copper	NA	4.00E-02	NA	NA	NA	NA	NA
Cyanide	NA	2.00E-02	NA	NA	NA	NA	NA
Cyclohexanone	NA	5.00E+00	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	5.00E-04	NA	7.30E+00	NA	NA	5.59E-11	4.08E-10
Dieldrin	2.00E-05	5.00E-05	1.60E+01	6.26E-12	1.25E-07	2.24E-12	3.58E-11
Di-n-octylphthalate	NA	4.00E-02	NA	NA	NA	NA	NA
Ethyl ether	NA	2.00E-01	NA	NA	NA	NA	NA
Ethylbenzene	NA	1.00E-01	NA	NA	NA	NA	NA
Fluoride	4.73E-01	6.00E-02	NA	1.48E-07	2.47E-06	NA	NA
Heptachlorodibenzofuran	NA	NA	1.50E+03	NA	NA	NA	NA
Heptachlorodibenzo-p-dioxin	0.00E+00	NA	1.50E+03	NA	NA	0.00E+00	0.00E+00
Hexachlorodibenzofuran	NA	NA	1.50E+03	NA	NA	NA	NA
Hexachlorodibenzo-p-dioxin	NA	NA	1.50E+04	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	0.00E+00	NA	7.30E-01	NA	NA	0.00E+00	0.00E+00
Lead	NA	NA	NA	NA	NA	NA	NA
Manganese	NA	4.60E-02	NA	NA	NA	NA	NA
Mercury	NA	3.00E-04	NA	NA	NA	NA	NA
Methanol	NA	5.00E-01	NA	NA	NA	NA	NA
4-Methyl-2-pentanone	NA	8.00E-02	NA	NA	NA	NA	NA
Methylene chloride	NA	6.00E-02	7.50E-03	NA	NA	NA	NA
Molybdenum	6.99E-03	5.00E-03	NA	2.19E-09	4.38E-07	NA	NA
Nickel	NA	2.00E-02	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	NA	2.00E-02	4.90E-03	NA	NA	NA	NA
N-nitrosodipropylamine	NA	NA	7.00E+00	NA	NA	NA	NA
Octachlorodibenzofuran	NA	NA	1.50E+02	NA	NA	NA	NA
Octochlorodibenzo-p-dioxin	0.00E+00	NA	1.50E+02	NA	NA	0.00E+00	0.00E+00
Pentachlorodibenzofuran	NA	NA	7.50E+03	NA	NA	NA	NA
Pentachlorodibenzo-p-dioxin	NA	NA	7.50E+04	NA	NA	NA	NA
Pentachlorophenol	NA	3.00E-02	1.20E-01	NA	NA	NA	NA
Phenanthrene	0.00E+00	NA	NA	NA	NA	NA	NA
Selenium	NA	5.00E-03	NA	NA	NA	NA	NA
Silver	2.00E-04	5.00E-03	NA	6.26E-11	1.25E-08	NA	NA
Tetrachlorodibenzofuran	NA	NA	1.50E+04	NA	NA	NA	NA
Tetrachlorodibenzo-p-dioxin	NA	NA	1.50E+05	NA	NA	NA	NA
Tetrachloroethylene	5.00E-04	1.00E-02	5.40E-01	1.57E-10	1.57E-08	5.59E-11	3.02E-11
Thallium	NA	9.00E-05	NA	NA	NA	NA	NA
Toluene	NA	8.00E-02	NA	NA	NA	NA	NA
Tributyl phosphate	NA	2.00E-01	5.40E-03	NA	NA	NA	NA
Trichloroethylene	5.00E-04	3.00E-04	4.00E-01	1.57E-10	5.22E-07	5.59E-11	2.24E-11
Trifluorochloromethane	NA	NA	NA	NA	NA	NA	NA
Uranium	2.42E-02	6.00E-04	NA	7.57E-09	1.26E-05	NA	NA
Vanadium	NA	7.00E-03	NA	NA	NA	NA	NA
Vinyl chloride	NA	3.00E-03	1.50E+00	NA	NA	NA	NA
Xylenes	NA	2.00E-01	NA	NA	NA	NA	NA
Zinc	NA	3.00E-01	NA	NA	NA	NA	NA
				total =	**2.44E-05**	**total =**	**2.05E-09**

TABLE E.6-5
Museum Worker - Zone 6 - InhaleRad

Museum Worker - Inhalation of Gases & Particulates
Risk calculation for Zone 6

Intake Equation:			UNITS	adult
	CDI =	(CA*EF*ED*IR*ET)		
	CDI =	Chronic Daily Intake	pCi	calculated below
	CA =	Concentration of radionuclide in air	pCi/m^3	see COC list below
	EF =	Exposure frequency	days/yr	250
	ED =	Exposure duration	yrs	25
	IR =	Inhalation rate	m^3/hr	1.5
	ET =	Exposure time	hrs/day	1

COC	conc	CSFi	ADULT	
			CDI	ILCR
	pCi/m^3	1/pCi	pCi	CDI*CSF
Cesium-137 + D	2.60E-06	1.19E-11	2.44E-02	2.91E-13
Lead-210 + D	4.07E-05	1.39E-08	3.81E-01	5.30E-09
Neptunium-237 + D	NA	1.77E-08	NA	NA
Plutonium-238	NA	3.36E-08	NA	NA
Plutonium-239/240	NA	3.33E-08	NA	NA
Radium-226 + D	3.55E-05	1.16E-08	3.32E-01	3.86E-09
Radium-228 + D	2.91E-05	5.23E-09	2.73E-01	1.43E-09
Radon-222+ D	3.49E+02	1.80E-11	3.27E+06	5.89E-05
Strontium-90 + D	NA	1.13E-10	NA	NA
Technetium-99	7.70E-05	1.41E-11	7.22E-01	1.02E-11
Thorium-228 + D	2.91E-05	1.43E-07	2.73E-01	3.90E-08
Thorium-230	1.99E-04	2.85E-08	1.87E+00	5.32E-08
Thorium-232	2.88E-05	4.33E-08	2.70E-01	1.17E-08
Uranium-234	3.40E-04	1.14E-08	3.19E+00	3.63E-08
Uranium-235 + D	1.55E-05	1.01E-08	1.45E-01	1.47E-09
Uranium-238 + D	3.32E-04	9.35E-09	3.11E+00	2.91E-08
			total =	**5.91E-05**

Air concentration is derived from air particulate value of 26 ug/m^3 (2005 SER background average from monitor AMS-12) multiplied by soil concentration. Rn-222 is derived by multiplying the soil Ra-226 value by 256 g/m^3. This conversion factor is based on Rn-222 air background and Ra-226 soil background (i.e., 400 pCi/m^3 divided by 1.56 pCi/g)

TABLE E.6-5
Museum Worker - Zone 6 - IngestSoilRad

Museum Worker - Ingestion of Soil
Risk calculation for Zone 6

Intake Equation:			UNITS	adult
	CDI =	(CS*EF*ED*IR*FI)		
	CDI =	Chronic Daily Intake	pCi	calculated below
	CS =	Concentration of radionuclide in soil	pCi/g	see COC list below
	EF =	Exposure frequency	days/yr	250
	ED =	Exposure duration	yrs	25
	IR =	Ingestion rate	g/day	0.05
	FI =	Fraction of contaminated soil	unitless	1

COC	conc pCi/g	CSFos 1/pCi	ADULT CDI pCi	ADULT ILCR CDI*CSF
Cesium-137 + D	1.00E-01	4.33E-11	3.13E+01	1.36E-09
Lead-210 + D	1.56E+00	2.66E-09	4.89E+02	1.30E-06
Neptunium-237 + D	NA	1.62E-10	NA	NA
Plutonium-238	NA	2.72E-10	NA	NA
Plutonium-239/240	NA	2.76E-10	NA	NA
Radium-226 + D	1.36E+00	7.30E-10	4.26E+02	3.11E-07
Radium-228 + D	1.12E+00	2.29E-09	3.50E+02	8.01E-07
Radon-222+ D	NA	NA	NA	NA
Strontium-90 + D	NA	1.44E-10	NA	NA
Technetium-99	2.96E+00	7.66E-12	9.25E+02	7.09E-09
Thorium-228 + D	1.12E+00	8.09E-10	3.50E+02	2.83E-07
Thorium-230	7.66E+00	2.02E-10	2.39E+03	4.84E-07
Thorium-232	1.11E+00	2.31E-10	3.46E+02	8.00E-08
Uranium-234	1.31E+01	1.58E-10	4.09E+03	6.46E-07
Uranium-235 + D	5.96E-01	1.63E-10	1.86E+02	3.04E-08
Uranium-238 + D	1.28E+01	2.10E-10	3.99E+03	8.38E-07
			total =	**4.78E-06**

TABLE E.6-5
Museum Worker - Zone 6 - IngestSWrad

Museum Worker - Ingestion of Surface Water
Risk calculation for Zone 6

Intake Equation:			UNITS	Assigned Values
	CDI =	(CW*EF*ED*IR)		
	CDI =	Chronic Daily Intake	pCi	adult
	CW =	Concentration of radionuclide in water	pCi/L	see COC table below
	EF =	Exposure frequency	days/yr	8
	ED =	Exposure duration	yrs	25
	IR =	Ingestion rate	L/day	0.001

COC	conc pCi/L	CSFow 1/pCi	ADULT CDI pCi	ADULT ILCR CDI*CSF
Cesium-137 + D	2.00E+00	3.04E-11	4.00E-01	1.21E-11
Lead-210 + D	6.99E-01	1.27E-09	1.40E-01	1.78E-10
Neptunium-237 + D	NA	6.74E-11	NA	NA
Plutonium-238	NA	1.31E-10	NA	NA
Plutonium-239/240	NA	1.35E-10	NA	NA
Radium-226 + D	4.08E-01	3.86E-10	8.16E-02	3.15E-11
Radium-228 + D	3.25E+00	1.04E-09	6.50E-01	6.76E-10
Radon-222+ D	NA	NA	NA	NA
Strontium-90 + D	NA	7.40E-11	NA	NA
Technetium-99	1.25E+01	2.75E-12	2.50E+00	6.86E-12
Thorium-228 + D	3.18E+00	3.00E-10	6.37E-01	1.91E-10
Thorium-230	1.33E-01	9.10E-11	2.65E-02	2.42E-12
Thorium-232	3.25E+00	1.01E-10	6.50E-01	6.57E-11
Uranium-234	8.25E+00	7.07E-11	1.65E+00	1.17E-10
Uranium-235 + D	3.76E-01	7.18E-11	7.52E-02	5.40E-12
Uranium-238 + D	8.06E+00	8.71E-11	1.61E+00	1.40E-10
			total =	**1.43E-09**

TABLE E.6-5
Museum Worker - Zone 6 - ExternalRad

Museum Worker - External Radiation
Risk calculation for Zone 6

Intake Equation:			UNITS	adult
	CDI =	$(CS*EF*ED*ET_o*(1-SH_o))+(CS*EF*ED*ET_i*(1-SH_i))$		
	CDI =	Chronic Daily Intake	yr pCi/g	calculated below
	CS =	Concentration of radionuclide in soil	pCi/g	see COC list below
	EF =	Fraction of year exposed to radiation	--	0.68
	ED =	Exposure duration	yrs	25
	ET_o =	Fraction of day spent outdoors	--	0.04
	ET_i =	Fraction of day spent indoors	--	0.29
	SH_o =	Shield factor outdoors	--	0.25
	SH_i =	Shield factor indoors	--	0.5

COC	conc pCi/g	CSFx g/pCi yr	ADULT CDI yr pCi/g	ADULT ILCR CDI*CSF
Cesium-137 + D	1.00E-01	2.55E-06	3.04E-01	7.74E-07
Lead-210 + D	1.56E+00	4.21E-09	4.74E+00	2.00E-08
Neptunium-237 + D	NA	7.97E-07	NA	NA
Plutonium-238	NA	7.22E-11	NA	NA
Plutonium-239/240	NA	2.00E-10	NA	NA
Radium-226 + D	1.36E+00	8.49E-06	4.13E+00	3.51E-05
Radium-228 + D	1.12E+00	4.53E-06	3.39E+00	1.54E-05
Radon-222+ D	NA	NA	NA	NA
Strontium-90 + D	NA	1.96E-08	NA	NA
Technetium-99	2.96E+00	8.14E-11	8.97E+00	7.30E-10
Thorium-228 + D	1.12E+00	7.76E-06	3.39E+00	2.63E-05
Thorium-230	7.66E+00	8.19E-10	2.32E+01	1.90E-08
Thorium-232	1.11E+00	3.42E-10	3.36E+00	1.15E-09
Uranium-234	1.31E+01	2.52E-10	3.96E+01	9.99E-09
Uranium-235 + D	5.96E-01	5.43E-07	1.81E+00	9.80E-07
Uranium-238 + D	1.28E+01	1.14E-07	3.87E+01	4.41E-06
			total =	**8.30E-05**

TABLE E.6-5
Museum Worker - Zone 6 - SumPaths

Museum Worker - Summation of all Pathways
Risk calculation for Zone 6

	HQ	ILCR	rad only ILCR
Inhale	5.68E-04	5.91E-05	5.91E-05
Dermal Soil	1.91E-03	4.17E-07	NA
Ingest Soil	5.19E-02	8.45E-06	4.78E-06
Dermal Surface Water	2.72E-03	1.84E-06	NA
Ingest Surface Water	2.44E-05	3.48E-09	1.43E-09
External Radiation	NA	8.30E-05	8.30E-05
SUM	**5.71E-02**	**1.53E-04**	**1.47E-04**

Summation of all paths for individual nuclides

	Total ILCR	BKGD ILCR	Total - BKGD ILCR
Cesium-137 + D	7.75E-07	5.11E-07	2.65E-07
Lead-210 + D	1.33E-06	1.32E-06	3.68E-09
Neptunium-237 + D	NA	NA	NA
Plutonium-238	NA	NA	NA
Plutonium-239/240	NA	NA	NA
Radium-226 + D	3.54E-05	4.05E-05	0.00E+00
Radium-228 + D	1.62E-05	1.83E-05	0.00E+00
Radon-222+ D	5.89E-05	6.74E-05	0.00E+00
Strontium-90 + D	NA	NA	NA
Technetium-99	7.83E-09	3.41E-12	7.83E-09
Thorium-228 + D	2.66E-05	2.98E-05	0.00E+00
Thorium-230	5.56E-07	1.13E-07	4.43E-07
Thorium-232	9.29E-08	1.06E-07	0.00E+00
Uranium-234	6.92E-07	8.24E-08	6.10E-07
Uranium-235 + D	1.01E-06	1.20E-07	8.92E-07
Uranium-238 + D	5.28E-06	6.28E-07	4.65E-06
SUM	**1.47E-04**		**6.87E-06**

TABLE E.6-5
Museum Worker - Zone 6 - SumPaths

Summation of all paths for individual chemicals

	Total		BKGD		Total - BKGD	
	ILCR	HQ	ILCR	HQ	ILCR	HQ
1,1,2-Trichloroethane	3.30E-12	4.05E-08	0.00E+00	0.00E+00	3.30E-12	4.05E-08
1,1-Dichloroethylene	4.03E-10	3.76E-08	0.00E+00	0.00E+00	4.03E-10	3.76E-08
1,2-dichloroethane	3.32E-11	5.10E-08	0.00E+00	0.00E+00	3.32E-11	5.10E-08
2-Butanone	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	NA	NA	NA	NA	NA	NA
4-Methylphenol	NA	NA	NA	NA	NA	NA
4-Nitroanaline	NA	NA	NA	NA	NA	NA
Acetone	NA	NA	NA	NA	NA	NA
Antimony	No CSFs	1.82E-03	No CSFs	3.74E-03	No CSFs	0.00E+00
Aroclor-1254	1.57E-08	1.10E-03	0.00E+00	0.00E+00	1.57E-08	1.10E-03
Aroclor-1260	3.38E-08	2.37E-03	0.00E+00	0.00E+00	3.38E-08	2.37E-03
Arsenic	2.95E-06	1.82E-02	3.58E-06	2.21E-02	0.00E+00	0.00E+00
Barium	No CSFs	9.52E-04	No CSFs	9.65E-04	No CSFs	0.00E+00
Benzene	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	5.76E-08	No RfDs	0.00E+00	No RfDs	5.76E-08	No RfDs
Benzo(a)pyrene	8.45E-07	No RfDs	0.00E+00	No RfDs	8.45E-07	No RfDs
Benzo(b)fluoranthene	1.02E-08	No RfDs	0.00E+00	No RfDs	1.02E-08	No RfDs
Benzo(k)fluoranthene	8.10E-11	No RfDs	0.00E+00	No RfDs	8.10E-11	No RfDs
Beryllium	9.68E-07	3.91E-04	1.22E-06	4.94E-04	0.00E+00	0.00E+00
Bis(2-chloroisopropyl)ether	NA	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	NA	NA	NA	NA	NA	NA
Boron	NA	NA	NA	NA	NA	NA
Bromodichloromethane	2.25E-11	5.09E-08	0.00E+00	0.00E+00	2.25E-11	5.09E-08
Bromoform	NA	NA	NA	NA	NA	NA
Bromomethane	NA	NA	NA	NA	NA	NA
Cadmium	4.20E-10	2.71E-04	8.49E-10	5.47E-04	0.00E+00	0.00E+00
Carbazole	NA	NA	NA	NA	NA	NA
Carbon disulfide	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	NA	NA	NA	NA	NA	NA
Chlordane	NA	NA	NA	NA	NA	NA
Chlorobenzene	NA	NA	NA	NA	NA	NA
Chloroform	NA	NA	NA	NA	NA	NA
Chromium (VI)	NA	NA	NA	NA	NA	NA
Chrysene	1.96E-11	No RfDs	0.00E+00	No RfDs	1.96E-11	No RfDs
Cobalt	NA	NA	NA	NA	NA	NA
Copper	NA	NA	NA	NA	NA	NA
Cyanide	NA	NA	NA	NA	NA	NA
Cyclohexanone	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	1.04E-06	No RfDs	0.00E+00	No RfDs	1.04E-06	No RfDs
Dieldrin	6.72E-09	2.35E-05	0.00E+00	0.00E+00	6.72E-09	2.35E-05
Di-n-octylphthalate	NA	NA	NA	NA	NA	NA

TABLE E.6-5
Museum Worker - Zone 6 - SumPaths

Summation of all paths for individual chemicals (continued)

	Total		BKGD		Total - BKGD	
	ILCR	HQ	ILCR	HQ	ILCR	HQ
Ethyl ether	NA	NA	NA	NA	NA	NA
Ethylbenzene	NA	NA	NA	NA	NA	NA
Fluoride	No CSFs	6.12E-05	No CSFs	2.72E-05	No CSFs	3.40E-05
Heptachlorodibenzofuran	NA	NA	NA	NA	NA	NA
Heptachlorodibenzo-p-dioxin	4.75E-09	No RfDs	0.00E+00	No RfDs	4.75E-09	No RfDs
Hexachlorodibenzofuran	NA	NA	NA	NA	NA	NA
Hexachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	8.22E-09	No RfDs	0.00E+00	No RfDs	8.22E-09	No RfDs
Lead	NA	NA	NA	NA	NA	NA
Manganese	NA	NA	NA	NA	NA	NA
Mercury	NA	NA	NA	NA	NA	NA
Methanol	NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone	NA	NA	NA	NA	NA	NA
Methylene chloride	NA	NA	NA	NA	NA	NA
Molybdenum	No CSFs	4.81E-04	No CSFs	5.15E-04	No CSFs	0.00E+00
Nickel	NA	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	NA	NA	NA	NA	NA	NA
N-nitrosodipropylamine	NA	NA	NA	NA	NA	NA
Octachlorodibenzofuran	NA	NA	NA	NA	NA	NA
Octochlorodibenzo-p-dioxin	7.31E-09	No RfDs	0.00E+00	No RfDs	7.31E-09	No RfDs
Pentachlorodibenzofuran	NA	NA	NA	NA	NA	NA
Pentachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA
Pentachlorophenol	NA	NA	NA	NA	NA	NA
Phenanthrene	No CSFs	No RfDs	No CSFs	No RfDs	No CSFs	No RfDs
Selenium	NA	NA	NA	NA	NA	NA
Silver	No CSFs	4.65E-05	No CSFs	1.11E-04	No CSFs	0.00E+00
Tetrachlorodibenzofuran	NA	NA	NA	NA	NA	NA
Tetrachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA
Tetrachloroethylene	7.95E-10	4.12E-07	0.00E+00	0.00E+00	7.95E-10	4.12E-07
Thallium	NA	NA	NA	NA	NA	NA
Toluene	NA	NA	NA	NA	NA	NA
Tributyl phosphate	NA	NA	NA	NA	NA	NA
Trichloroethylene	1.22E-09	2.84E-05	0.00E+00	0.00E+00	1.22E-09	2.84E-05
Trifluorochloromethane	NA	NA	NA	NA	NA	NA
Uranium	No CSFs	3.13E-02	No CSFs	3.73E-03	No CSFs	2.76E-02
Vanadium	NA	NA	NA	NA	NA	NA
Vinyl chloride	NA	NA	NA	NA	NA	NA
Xylenes	NA	NA	NA	NA	NA	NA
Zinc	NA	NA	NA	NA	NA	NA
SUM	**5.95E-06**	**5.71E-02**			**2.03E-06**	**3.11E-02**

APPENDIX E.7
Zone 7

Table

E.7-1	Construction Worker	- Only available on CD ROM.
E.7-2	Groundskeeper / Sampler	- Only available on CD ROM.
E.7-3	Undeveloped Park User	- Only available on CD ROM.
E.7-4	Building Maintenance	- Hard copy provided in this appendix, also available on CD ROM.
E.7-5	Museum Worker	- Only available on CD ROM.
E.7-6	Museum Visitor	- Hard copy provided in this appendix, also available on CD ROM.

TABLE E.7-4
Building Maintenance - Zone 7 - InhaleChem

Building Maintenance - Inhalation of Gases & Particulates
Risk calculation for Zone 7

Intake Equation:			UNITS	adult
	CDI =	(CS*EF*ED*IR*ET)/(BW*AT)		
	CDI =	Chronic Daily Intake	mg/kgday	calculated below
	CA =	Concentration of chemical in air	mg/m^3	see COC list below
	EF =	Exposure frequency	days/yr	250
	ED =	Exposure duration	yrs	25
	IR =	Inhalation rate	m^3/hr	1.5
	ET =	Exposure time	hrs/day	1
	BW =	Body weight	kg	70
	ATc =	Average time for carcinogens	days	25550
	ATn =	Average time for non-carcinogens	days	9125

COC	conc	RfDI	CSFI	ADULT			
				CDI	HQ	CDI	ILCR
	mg/m^3	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	NA	NA	5.60E-02	NA	NA	NA	NA
1,1-Dichloroethylene	NA	5.71E-02	1.75E-01	NA	NA	NA	NA
1,2-dichloroethane	NA	NA	9.10E-02	NA	NA	NA	NA
2-Butanone	NA	1.43E+00	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	NA	NA	NA	NA	NA	NA	NA
4-Nitroanaline	NA	1.14E-03	NA	NA	NA	NA	NA
Acetone	NA	NA	NA	NA	NA	NA	NA
Antimony	5.15E-08	NA	NA	NA	NA	NA	NA
Aroclor-1254	4.01E-10	NA	2.00E+00	NA	NA	2.10E-12	4.20E-12
Aroclor-1260	1.65E-10	NA	2.00E+00	NA	NA	8.65E-13	1.73E-12
Arsenic	2.67E-07	NA	1.51E+01	NA	NA	1.40E-09	2.11E-08
Barium	NA	1.43E-04	NA	NA	NA	NA	NA
Benzene	NA	8.57E-03	2.73E-02	NA	NA	NA	NA
Benzo(a)anthracene	3.01E-09	NA	3.08E-01	NA	NA	1.58E-11	4.87E-12
Benzo(a)pyrene	1.37E-09	NA	3.08E-01	NA	NA	7.19E-12	2.22E-12
Benzo(b)fluoranthene	4.82E-09	NA	3.08E+00	NA	NA	2.53E-11	7.78E-11
Benzo(k)fluoranthene	1.45E-09	NA	3.08E-02	NA	NA	7.60E-12	2.34E-13
Beryllium	2.67E-08	5.71E-06	8.40E+00	3.93E-10	6.87E-05	1.40E-10	1.18E-09
Bis(2-chloroisopropyl)ether	NA	NA	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	NA	NA	NA	NA	NA	NA	NA
Boron	NA	5.71E-03	NA	NA	NA	NA	NA
Bromodichloromethane	NA	NA	NA	NA	NA	NA	NA
Bromoform	NA	NA	3.85E-03	NA	NA	NA	NA
Bromomethane	NA	1.43E-03	NA	NA	NA	NA	NA
Cadmium	1.75E-08	NA	6.30E+00	NA	NA	9.19E-11	5.79E-10
Carbazole	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	NA	2.00E-01	NA	NA	NA	NA	NA
Carbon tetrachloride	NA	NA	5.25E-02	NA	NA	NA	NA
Chlordane	NA	2.00E-04	3.50E-01	NA	NA	NA	NA
Chlorobenzene	NA	1.43E-02	NA	NA	NA	NA	NA
Chloroform	NA	NA	8.05E-02	NA	NA	NA	NA
Chromium (VI)	NA	2.86E-05	4.20E+01	NA	NA	NA	NA
Chrysene	1.63E-08	NA	3.08E-03	NA	NA	8.55E-11	2.63E-13
Cobalt	NA	5.71E-06	9.80E+00	NA	NA	NA	NA
Copper	NA	NA	NA	NA	NA	NA	NA
Cyanide	NA	NA	NA	NA	NA	NA	NA
Cyclohexanone	NA	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	7.49E-10	NA	3.08E+00	NA	NA	3.92E-12	1.21E-11
Dieldrin	NA	NA	1.61E+01	NA	NA	NA	NA
Di-n-octylphthalate	NA	NA	NA	NA	NA	NA	NA
Ethyl ether	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	NA	2.86E-01	3.85E-03	NA	NA	NA	NA
Fluoride	NA	NA	NA	NA	NA	NA	NA
Heptachlorodibenzofuran	NA	NA	1.16E+03	NA	NA	NA	NA
Heptachlorodibenzo-p-dioxin	NA	NA	1.16E+03	NA	NA	NA	NA
Hexachlorodibenzofuran	NA	NA	1.16E+04	NA	NA	NA	NA
Hexachlorodibenzo-p-dioxin	NA	NA	1.16E+04	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	5.57E-09	NA	3.08E-01	NA	NA	2.92E-11	9.00E-12
Lead	NA	NA	NA	NA	NA	NA	NA
Manganese	NA	1.43E-05	NA	NA	NA	NA	NA
Mercury	NA	NA	NA	NA	NA	NA	NA
Methanol	NA	NA	NA	NA	NA	NA	NA
Methyl-2-pentanone	NA	8.57E-01	NA	NA	NA	NA	NA
Methylene chloride	NA	8.57E-01	1.65E-03	NA	NA	NA	NA
Molybdenum	1.03E-07	NA	NA	NA	NA	NA	NA
Nickel	NA	NA	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	NA	NA	NA	NA	NA	NA	NA
N-nitrosodipropylamine	NA	NA	NA	NA	NA	NA	NA
Octochlorodibenzofuran	NA	NA	1.16E+02	NA	NA	NA	NA
Octochlorodibenzo-p-dioxin	NA	NA	1.16E+02	NA	NA	NA	NA
Pentachlorodibenzofuran	NA	NA	5.78E+03	NA	NA	NA	NA
Pentachlorodibenzo-p-dioxin	NA	NA	5.78E+04	NA	NA	NA	NA
Pentachlorophenol	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	1.57E-09	NA	NA	NA	NA	NA	NA
Selenium	NA	NA	NA	NA	NA	NA	NA
Silver	2.30E-08	NA	NA	NA	NA	NA	NA
Tetrachlorodibenzofuran	NA	NA	1.16E+04	NA	NA	NA	NA
Tetrachlorodibenzo-p-dioxin	NA	NA	1.16E+05	NA	NA	NA	NA
Tetrachloroethylene	NA	1.71E-01	2.07E-02	NA	NA	NA	NA
Thallium	NA	NA	NA	NA	NA	NA	NA
Toluene	NA	1.43E+00	NA	NA	NA	NA	NA
Tributyl phosphate	NA	NA	NA	NA	NA	NA	NA
Trichloroethylene	NA	1.14E-02	4.00E-01	NA	NA	NA	NA
Trifluorochloromethane	NA	NA	NA	NA	NA	NA	NA
Uranium	3.94E-07	NA	NA	NA	NA	NA	NA
Vanadium	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	NA	2.86E-02	3.08E-02	NA	NA	NA	NA
Xylenes	NA	2.86E-02	NA	NA	NA	NA	NA
Zinc	NA	NA	NA	NA	NA	NA	NA
				total =	6.87E-05	total =	2.30E-08

Air concentration is derived using air particulate value of 26 ug/m^3 (2005 SER background average from monitor AMS-12) multiplied by the soil concentration.

TABLE E.7-4
Building Maintenance - Zone 7 - DermalSoilChem

Building Maintenance - Dermal Contact with Soil/Sediment
Risk calculation for Zone 7

Intake Equation:			UNITS	adult
	CDI =	(CS*AB*SA*EF*ED*AF*CF)/(BW*AT)		
	CDI =	Chronic Daily Intake	mg/kgday	calculated below
	CS =	Concentration of chemical in soil	mg/kg	see COC list below
	AB	Absorption factor	--	see COC list below
	SA	Surface area of exposed skin	cm^2/day	2077
	EF =	Exposure frequency	days/yr	250
	ED =	Exposure duration	yrs	25
	AF =	Adherence factor	mg/cm^2	0.2
	CF =	Conversion factor	kg/mg	1.00E-06
	BW =	Body weight	kg	70
	ATc =	Average time for carcinogens	days	25550
	ATn =	Average time for non-carcinogens	days	9125

COC	conc	AB	RfDd	CSFd	ADULT CDI	HQ	CDI	ILCR
	mg/kg	unitless	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	NA	1.00E-02	3.24E-03	7.04E-02	NA	NA	NA	NA
1,1-Dichloroethylene	NA	1.00E-02	5.00E-02	6.00E-01	NA	NA	NA	NA
1,2-dichloroethane	NA	1.00E-02	2.00E-02	9.10E-02	NA	NA	NA	NA
2-Butanone	NA	1.00E-02	4.80E-01	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	NA	1.00E-02	NA	9.00E-01	NA	NA	NA	NA
4-Methylphenol	NA	1.00E-02	3.25E-03	NA	NA	NA	NA	NA
4-Nitroaniline	NA	1.00E-02	2.40E-03	2.63E-02	NA	NA	NA	NA
Acetone	NA	1.00E-02	7.47E-01	NA	NA	NA	NA	NA
Antimony	1.98E+00	1.00E-03	8.00E-06	NA	8.05E-09	1.01E-03	NA	NA
Aroclor-1254	1.54E-02	1.40E-01	1.80E-05	2.22E+00	6.77E-09	4.87E-04	3.13E-09	6.95E-09
Aroclor-1260	6.34E-03	1.40E-01	1.80E-05	2.22E+00	3.61E-09	2.01E-04	1.29E-09	2.86E-09
Arsenic	1.03E+01	3.00E-02	1.23E-04	3.66E+00	1.25E-06	1.02E-02	4.47E-07	1.64E-06
Barium	NA	1.00E-03	1.40E-02	NA	NA	NA	NA	NA
Benzene	NA	1.00E-02	3.88E-03	5.67E-02	NA	NA	NA	NA
Benzo(a)anthracene	1.16E-01	1.30E-01	NA	2.35E+00	NA	NA	2.19E-08	5.14E-08
Benzo(a)pyrene	5.28E-02	1.30E-01	NA	2.35E+01	NA	NA	9.96E-09	2.34E-07
Benzo(b)fluoranthene	1.85E-01	1.30E-01	NA	2.35E+00	NA	NA	3.50E-08	8.22E-08
Benzo(k)fluoranthene	5.57E-02	1.30E-01	NA	2.35E-01	NA	NA	1.05E-08	2.47E-09
Beryllium	1.03E+00	1.00E-03	2.00E-05	4.30E+02	4.18E-09	2.09E-04	1.49E-09	6.42E-07
Bis(2-chloroisopropyl)ether	NA	1.00E-02	2.00E-02	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	NA	1.00E-02	3.60E-03	7.37E-02	NA	NA	NA	NA
Boron	NA	1.00E-03	1.80E-01	NA	NA	NA	NA	NA
Bromodichloromethane	NA	1.00E-02	1.96E-02	6.33E-02	NA	NA	NA	NA
Bromoform	NA	1.00E-02	1.20E-02	1.32E-02	NA	NA	NA	NA
Bromomethane	NA	1.00E-02	1.12E-03	NA	NA	NA	NA	NA
Cadmium	6.74E-01	1.00E-03	1.00E-05	NA	2.74E-09	2.74E-04	NA	NA
Carbazole	NA	1.00E-02	NA	2.86E-02	NA	NA	NA	NA
Carbon disulfide	NA	2.50E-01	6.30E-02	NA	NA	NA	NA	NA
Carbon tetrachloride	NA	1.00E-02	4.55E-04	2.00E-01	NA	NA	NA	NA
Chlordane	NA	4.00E-02	2.50E-04	7.00E-01	NA	NA	NA	NA
Chlorobenzene	NA	1.00E-02	6.20E-03	NA	NA	NA	NA	NA
Chloroform	NA	1.00E-02	2.00E-03	3.05E-02	NA	NA	NA	NA
Chromium (VI)	NA	1.00E-03	6.00E-05	NA	NA	NA	NA	NA
Chrysene	6.27E-01	1.30E-01	NA	2.35E-02	NA	NA	1.18E-07	2.78E-09
Cobalt	NA	1.00E-03	1.60E-02	NA	NA	NA	NA	NA
Copper	NA	1.00E-03	1.20E-02	NA	NA	NA	NA	NA
Cyanide	NA	1.00E-02	3.40E-03	NA	NA	NA	NA	NA
Cyclohexanone	NA	1.00E-02	4.00E+00	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	2.88E-02	1.30E-01	NA	2.35E+01	NA	NA	5.43E-09	1.28E-07
Dieldrin	NA	1.00E-02	2.50E-05	3.20E+01	NA	NA	NA	NA
Di-n-octylphthalate	NA	1.00E-02	3.60E-02	NA	NA	NA	NA	NA
Ethyl ether	NA	1.00E-02	1.60E-01	NA	NA	NA	NA	NA
Ethylbenzene	NA	1.00E-02	9.70E-02	NA	NA	NA	NA	NA
Fluoride	NA	1.00E-03	5.82E-02	NA	NA	NA	NA	NA
Heptachlorodibenzofuran	NA	1.00E-02	NA	3.00E+03	NA	NA	NA	NA
Heptachlorodibenzo-p-dioxin	NA	3.00E-02	NA	3.00E+03	NA	NA	NA	NA
Hexachlorodibenzofuran	NA	1.00E-02	NA	3.00E+04	NA	NA	NA	NA
Hexachlorodibenzo-p-dioxin	NA	3.00E-02	NA	3.00E+04	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	2.14E-01	1.30E-01	NA	2.35E+00	NA	NA	4.05E-08	9.51E-08
Lead	NA	1.00E-03	NA	NA	NA	NA	NA	NA
Manganese	NA	1.00E-03	5.60E-03	NA	NA	NA	NA	NA
Mercury	NA	1.00E-03	2.10E-05	NA	NA	NA	NA	NA
Methanol	NA	1.00E-02	4.00E-01	NA	NA	NA	NA	NA
Methyl-2-pentanone	NA	1.00E-02	6.40E-02	NA	NA	NA	NA	NA
Methylene chloride	NA	1.00E-02	5.70E-02	7.89E-03	NA	NA	NA	NA
Molybdenum	3.97E+00	1.00E-03	1.90E-03	NA	1.61E-08	8.49E-06	NA	NA
Nickel	NA	1.00E-03	5.40E-03	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	NA	1.00E-02	5.00E-03	1.96E-02	NA	NA	NA	NA
N-nitrosodipropylamine	NA	1.00E-02	NA	2.80E+01	NA	NA	NA	NA
Octachlorodibenzofuran	NA	1.00E-02	NA	3.00E+02	NA	NA	NA	NA
Octochlorodibenzo-p-dioxin	NA	3.00E-02	NA	3.00E+02	NA	NA	NA	NA
Pentachlorodibenzofuran	NA	1.00E-02	NA	1.50E+04	NA	NA	NA	NA
Pentachlorodibenzo-p-dioxin	NA	3.00E-02	NA	1.50E+05	NA	NA	NA	NA
Pentachlorophenol	NA	2.50E-01	3.00E-02	1.20E-01	NA	NA	NA	NA
Phenanthrene	6.02E-02	1.00E-02	NA	NA	NA	NA	NA	NA
Selenium	NA	1.00E-03	2.20E-03	NA	NA	NA	NA	NA
Silver	8.84E-01	1.00E-03	9.00E-04	NA	3.59E-09	3.99E-06	NA	NA
Tetrachlorodibenzofuran	NA	1.00E-02	NA	3.00E+04	NA	NA	NA	NA
Tetrachlorodibenzo-p-dioxin	NA	3.00E-02	NA	3.00E+05	NA	NA	NA	NA
Tetrachloroethylene	NA	1.00E-02	1.00E-02	5.40E-01	NA	NA	NA	NA
Thallium	NA	1.00E-03	1.60E-05	NA	NA	NA	NA	NA
Toluene	NA	1.00E-02	6.40E-02	NA	NA	NA	NA	NA
Tributyl phosphate	NA	1.00E-02	1.00E-01	1.08E-02	NA	NA	NA	NA
Trichloroethylene	NA	1.00E-02	4.50E-05	2.67E+00	NA	NA	NA	NA
Trifluorochloromethane	NA	NA	NA	NA	NA	NA	NA	NA
Uranium	1.52E+01	1.00E-03	5.10E-04	NA	6.16E-08	1.21E-04	NA	NA
Vanadium	NA	1.00E-03	7.00E-05	NA	NA	NA	NA	NA
Vinyl chloride	NA	1.00E-02	3.00E-03	1.50E+00	NA	NA	NA	NA
Xylenes	NA	1.00E-02	1.84E-01	NA	NA	NA	NA	NA
Zinc	NA	1.00E-03	6.00E-02	NA	NA	NA	NA	NA
					total =	1.25E-02	total =	2.88E-06

TABLE E.7-4
Building Maintenance - Zone 7 - IngestSoilChem

Building Maintenance - Ingestion of Soil
Risk calculation for Zone 7

Intake Equation:			UNITS	adult
	CDI =	(CS*EF*ED*IR*FI*CF)/(BW*AT)		
	CDI =	Chronic Daily Intake	mg/kgday	calculated below
	CS =	Concentration of chemical in soil	mg/kg	see COC list below
	EF =	Exposure frequency	days/yr	250
	ED =	Exposure duration	yrs	25
	IR =	Ingestion rate	mg/day	50
	FI =	Fraction of contaminated soil	unitless	1
	CF =	Conversion factor	kg/mg	1.00E-06
	BW =	Body weight	kg	70
	ATc =	Average time for carcinogens	days	25550
	ATn =	Average time for non-carcinogens	days	9125

				ADULT			
COC	conc	RfDo	CSFo	CDI	HQ	CDI	ILCR
	mg/kg	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	NA	4.00E-03	5.70E-02	NA	NA	NA	NA
1,1-Dichloroethylene	NA	5.00E-02	6.00E-01	NA	NA	NA	NA
1,2-dichloroethane	NA	2.00E-02	9.10E-02	NA	NA	NA	NA
2-Butanone	NA	6.00E-01	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	NA	NA	4.50E-01	NA	NA	NA	NA
4-Methylphenol	NA	5.00E-03	NA	NA	NA	NA	NA
4-Nitroanaline	NA	3.00E-03	2.10E-02	NA	NA	NA	NA
Acetone	NA	9.00E-01	NA	NA	NA	NA	NA
Antimony	1.98E+00	4.00E-04	NA	9.68E-07	2.42E-03	NA	NA
Aroclor-1254	1.54E-02	2.00E-05	2.00E+00	7.54E-09	3.77E-04	2.69E-09	5.39E-09
Aroclor-1260	6.34E-03	2.00E-05	2.00E+00	3.10E-09	1.55E-04	1.11E-09	2.22E-09
Arsenic	1.03E+01	3.00E-04	1.50E+00	5.02E-06	1.67E-02	1.79E-06	2.69E-06
Barium	NA	2.00E-01	NA	NA	NA	NA	NA
Benzene	NA	4.00E-03	5.50E-02	NA	NA	NA	NA
Benzo(a)anthracene	1.16E-01	NA	7.30E-01	NA	NA	2.03E-08	1.48E-08
Benzo(a)pyrene	5.28E-02	NA	7.30E+00	NA	NA	9.22E-09	6.73E-08
Benzo(b)fluoranthene	1.85E-01	NA	7.30E-01	NA	NA	3.24E-08	2.36E-08
Benzo(k)fluoranthene	5.57E-02	NA	7.30E-02	NA	NA	9.74E-09	7.11E-10
Beryllium	1.03E+00	2.00E-03	4.30E+00	5.03E-07	2.52E-04	1.80E-07	7.73E-07
Bis(2-chloroisopropyl)ether	NA	4.00E-02	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	NA	2.00E-02	1.40E-02	NA	NA	NA	NA
Boron	NA	2.00E-01	NA	NA	NA	NA	NA
Bromodichloromethane	NA	2.00E-02	6.20E-02	NA	NA	NA	NA
Bromoform	NA	2.00E-02	7.90E-03	NA	NA	NA	NA
Bromomethane	NA	1.40E-03	NA	NA	NA	NA	NA
Cadmium	6.74E-01	1.00E-03	NA	3.30E-07	3.30E-04	NA	NA
Carbazole	NA	NA	2.00E-03	NA	NA	NA	NA
Carbon disulfide	NA	1.00E-01	NA	NA	NA	NA	NA
Carbon tetrachloride	NA	7.00E-04	1.30E-01	NA	NA	NA	NA
Chlordane	NA	5.00E-04	3.50E-01	NA	NA	NA	NA
Chlorobenzene	NA	2.00E-02	NA	NA	NA	NA	NA
Chloroform	NA	1.00E-02	6.10E-03	NA	NA	NA	NA
Chromium (VI)	NA	3.00E-03	NA	NA	NA	NA	NA
Chrysene	6.27E-01	NA	7.30E-03	NA	NA	1.10E-07	8.00E-10
Cobalt	NA	2.00E-02	NA	NA	NA	NA	NA
Copper	NA	4.00E-02	NA	NA	NA	NA	NA
Cyanide	NA	2.00E-02	NA	NA	NA	NA	NA
Cyclohexanone	NA	5.00E+00	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	2.88E-02	NA	7.30E+00	NA	NA	5.03E-09	3.67E-08
Dieldrin	NA	5.00E-05	1.60E+01	NA	NA	NA	NA
Di-n-octylphthalate	NA	4.00E-02	NA	NA	NA	NA	NA
Ethyl ether	NA	2.00E-01	NA	NA	NA	NA	NA
Ethylbenzene	NA	1.00E-01	NA	NA	NA	NA	NA
Fluoride	NA	6.00E-02	NA	NA	NA	NA	NA
Heptachlorodibenzofuran	NA	NA	1.50E+03	NA	NA	NA	NA
Heptachlorodibenzo-p-dioxin	NA	NA	1.50E+03	NA	NA	NA	NA
Hexachlorodibenzofuran	NA	NA	1.50E+03	NA	NA	NA	NA
Hexachlorodibenzo-p-dioxin	NA	NA	1.50E+04	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	2.14E-01	NA	7.30E-01	NA	NA	3.75E-08	2.73E-08
Lead	NA	NA	NA	NA	NA	NA	NA
Manganese	NA	1.40E-01	NA	NA	NA	NA	NA
Mercury	NA	3.00E-04	NA	NA	NA	NA	NA
Methanol	NA	5.00E-01	NA	NA	NA	NA	NA
Methyl-2-pentanone	NA	8.00E-02	NA	NA	NA	NA	NA
Methylene chloride	NA	6.00E-02	7.50E-03	NA	NA	NA	NA
Molybdenum	3.97E+00	5.00E-03	NA	1.94E-06	3.88E-04	NA	NA
Nickel	NA	2.00E-02	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	NA	2.00E-02	4.90E-03	NA	NA	NA	NA
N-nitrosodipropylamine	NA	NA	7.00E+00	NA	NA	NA	NA
Octachlorodibenzofuran	NA	NA	1.50E+02	NA	NA	NA	NA
Octochlorodibenzo-p-dioxin	NA	NA	1.50E+02	NA	NA	NA	NA
Pentachlorodibenzofuran	NA	NA	7.50E+03	NA	NA	NA	NA
Pentachlorodibenzo-p-dioxin	NA	NA	7.50E+04	NA	NA	NA	NA
Pentachlorophenol	NA	3.00E-02	1.20E-01	NA	NA	NA	NA
Phenanthrene	6.02E-02	NA	NA	NA	NA	NA	NA
Selenium	NA	5.00E-03	NA	NA	NA	NA	NA
Silver	8.84E-01	5.00E-03	NA	4.32E-07	8.65E-05	NA	NA
Tetrachlorodibenzofuran	NA	NA	1.50E+04	NA	NA	NA	NA
Tetrachlorodibenzo-p-dioxin	NA	NA	1.50E+05	NA	NA	NA	NA
Tetrachloroethylene	NA	1.00E-02	5.40E-01	NA	NA	NA	NA
Thallium	NA	9.00E-05	NA	NA	NA	NA	NA
Toluene	NA	8.00E-02	NA	NA	NA	NA	NA
Tributyl phosphate	NA	2.00E-01	5.40E-03	NA	NA	NA	NA
Trichloroethylene	NA	3.00E-04	4.00E-01	NA	NA	NA	NA
Trifluorochloromethane	NA	NA	NA	NA	NA	NA	NA
Uranium	1.52E+01	6.00E-04	NA	7.42E-06	1.24E-02	NA	NA
Vanadium	NA	7.00E-03	NA	NA	NA	NA	NA
Vinyl chloride	NA	3.00E-03	1.50E+00	NA	NA	NA	NA
Xylenes	NA	2.00E-01	NA	NA	NA	NA	NA
Zinc	NA	3.00E-01	NA	NA	NA	NA	NA
				total =	3.31E-02	total =	3.64E-06

TABLE E.7-4
Building Maintenance - Zone 7 - DermalSWchem

Building Maintenance - Dermal Contact with Surface Water
Risk calculation for Zone 7

			UNITS	adult
Intake Equation:	CDI =	(DA*EF*ED*SA)/(BW*AT)		
	CDI =	Chronic Daily Intake	mg/kgday	calculated below
	DA =	Dermal absorption dose	mg/cm²day	NA
	EF =	Exposure frequency	days/yr	NA
	ED =	Exposure duration	yrs	NA
	SA =	Surface area of skin	cm²	NA
	BW =	Body weight	kg	NA
	ATc =	Average time for carcinogens	days	NA
	ATn =	Average time for non-carcinogens	days	NA
where:	DA = C_v*K_p*CF*ET			
	C_v =	concentation of ith contaminant in surface water	mg/L	see COC list below
	K_p =	permeability constant for ith contaminant	cm/hr	see COC list below
	CF =	conversion factor	L/cm³	NA
	ET =	exposure time	hr/d	NA

COC	C_v	K_p	DA	RfD	CSF	ADULT CDI	HQ	CDI	ILCR
	mg/L	cm/hr	mg/cm²day	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	NA	6.43E-03	NA	3.24E-03	7.04E-02	NA	NA	NA	NA
1,1-Dichloroethylene	NA	1.59E-02	NA	5.00E-02	6.00E-01	NA	NA	NA	NA
1,2-dichloroethane	NA	5.34E-03	NA	2.00E-02	9.10E-02	NA	NA	NA	NA
2-Butanone	NA	1.11E-03	NA	4.80E-01	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	NA	1.69E-02	NA	NA	9.00E-01	NA	NA	NA	NA
4-Methylphenol	NA	9.95E-03	NA	3.25E-03	NA	NA	NA	NA	NA
4-Nitroanaline	NA	2.66E-03	NA	2.40E-03	2.63E-02	NA	NA	NA	NA
Acetone	NA	5.69E-04	NA	7.47E-01	NA	NA	NA	NA	NA
Antimony	5.00E-04	1.00E-03	NA	8.00E-08	NA	NA	NA	NA	NA
Aroclor-1254	0.00E+00	1.29E+00	NA	1.80E-05	2.22E+00	NA	NA	NA	NA
Aroclor-1260	0.00E+00	5.48E+00	NA	1.80E-05	2.22E+00	NA	NA	NA	NA
Arsenic	3.00E-03	1.00E-03	NA	1.23E-04	3.66E+00	NA	NA	NA	NA
Barium	NA	1.00E-03	NA	1.40E-02	NA	NA	NA	NA	NA
Benzene	NA	2.07E-02	NA	3.88E-03	5.67E-02	NA	NA	NA	NA
Benzo(a)anthracene	0.00E+00	9.48E-01	NA	NA	2.35E+00	NA	NA	NA	NA
Benzo(a)pyrene	0.00E+00	1.24E+00	NA	NA	2.35E+01	NA	NA	NA	NA
Benzo(b)fluoranthene	0.00E+00	6.99E-01	NA	NA	2.35E+00	NA	NA	NA	NA
Benzo(k)fluoranthene	0.00E+00	1.20E+00	NA	NA	2.35E-01	NA	NA	NA	NA
Beryllium	1.60E-04	1.00E-03	NA	2.00E-05	4.30E+02	NA	NA	NA	NA
Bis(2-chloroisopropyl)ether	NA	7.63E-02	NA	2.00E-02	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	NA	1.97E+00	NA	3.80E-03	7.37E-02	NA	NA	NA	NA
Boron	NA	1.00E-03	NA	1.80E-01	NA	NA	NA	NA	NA
Bromodichloromethane	NA	5.02E-03	NA	1.96E-02	6.33E-02	NA	NA	NA	NA
Bromoform	NA	2.77E-03	NA	1.20E-02	1.32E-02	NA	NA	NA	NA
Bromomethane	NA	3.51E-03	NA	1.12E-03	NA	NA	NA	NA	NA
Cadmium	1.00E-04	1.00E-03	NA	1.00E-05	NA	NA	NA	NA	NA
Carbazole	NA	7.97E-02	NA	NA	2.86E-02	NA	NA	NA	NA
Carbon disulfide	NA	1.56E-02	NA	6.30E-02	NA	NA	NA	NA	NA
Carbon tetrachloride	NA	2.24E-02	NA	4.55E-04	2.00E-01	NA	NA	NA	NA
Chlordane	NA	1.57E-01	NA	2.50E-04	7.00E-01	NA	NA	NA	NA
Chlorobenzene	NA	4.07E-02	NA	6.20E-03	NA	NA	NA	NA	NA
Chloroform	NA	8.92E-03	NA	2.00E-03	3.05E-02	NA	NA	NA	NA
Chromium (VI)	NA	2.00E-03	NA	6.00E-05	NA	NA	NA	NA	NA
Chrysene	0.00E+00	1.03E+00	NA	NA	2.35E-02	NA	NA	NA	NA
Cobalt	NA	4.00E-04	NA	1.60E-02	NA	NA	NA	NA	NA
Copper	NA	1.00E-03	NA	1.20E-02	NA	NA	NA	NA	NA
Cyanide	NA	1.00E-03	NA	3.40E-03	NA	NA	NA	NA	NA
Cyclohexanone	NA	1.80E-03	NA	4.00E+00	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	0.00E+00	1.68E+00	NA	NA	2.35E+01	NA	NA	NA	NA
Dieldrin	NA	4.45E-02	NA	2.50E-05	3.20E+01	NA	NA	NA	NA
Di-n-octylphthalate	NA	4.45E+00	NA	3.60E-02	NA	NA	NA	NA	NA
Ethyl ether	NA	2.88E-03	NA	1.60E-01	NA	NA	NA	NA	NA
Ethylbenzene	NA	7.39E-02	NA	9.70E-02	NA	NA	NA	NA	NA
Fluoride	NA	1.00E-03	NA	5.82E-02	NA	NA	NA	NA	NA
Heptachlorodibenzofuran	NA	2.55E+00	NA	NA	3.00E+03	NA	NA	NA	NA
Heptachlorodibenzo-p-dioxin	NA	3.22E+00	NA	NA	3.00E+03	NA	NA	NA	NA
Hexachlorodibenzofuran	NA	2.38E+00	NA	NA	3.00E+04	NA	NA	NA	NA
Hexachlorodibenzo-p-dioxin	NA	5.29E+00	NA	NA	3.00E+04	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	0.00E+00	2.23E+00	NA	NA	2.35E+00	NA	NA	NA	NA
Lead	NA	1.00E-04	NA	NA	NA	NA	NA	NA	NA
Manganese	NA	1.00E-03	NA	1.84E-03	NA	NA	NA	NA	NA
Mercury	NA	1.00E-03	NA	2.10E-05	NA	NA	NA	NA	NA
Methanol	NA	3.45E-04	NA	4.00E-01	NA	NA	NA	NA	NA
4-Methyl-2-pentanone	NA	3.97E-03	NA	8.40E-02	NA	NA	NA	NA	NA
Methylene chloride	NA	4.48E-03	NA	5.70E-02	7.89E-03	NA	NA	NA	NA
Molybdenum	7.65E-03	1.00E-03	NA	1.90E-03	NA	NA	NA	NA	NA
Nickel	NA	2.00E-04	NA	5.40E-03	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	NA	1.96E-02	NA	5.00E-03	1.98E-02	NA	NA	NA	NA
N-nitrosodipropylamine	NA	2.83E-03	NA	NA	2.80E+01	NA	NA	NA	NA
Octachlorodibenzofuran	NA	4.78E+00	NA	NA	3.00E+02	NA	NA	NA	NA
Octochlorodibenzo-p-dioxin	NA	1.65E+01	NA	NA	3.00E+02	NA	NA	NA	NA
Pentachlorodibenzofuran	NA	1.06E+00	NA	NA	1.50E+04	NA	NA	NA	NA
Pentachlorodibenzo-p-dioxin	NA	3.79E-01	NA	NA	1.50E+05	NA	NA	NA	NA
Pentachlorophenol	NA	1.95E-01	NA	3.00E-02	1.20E-01	NA	NA	NA	NA
Phenanthrene	0.00E+00	2.29E-01	NA	NA	NA	NA	NA	NA	NA
Selenium	NA	1.00E-03	NA	2.20E-03	NA	NA	NA	NA	NA
Silver	2.00E-04	6.00E-04	NA	9.00E-04	NA	NA	NA	NA	NA
Tetrachlorodibenzofuran	NA	1.12E+00	NA	NA	3.00E+04	NA	NA	NA	NA
Tetrachlorodibenzo-p-dioxin	NA	1.39E+00	NA	NA	3.00E+05	NA	NA	NA	NA
Tetrachloroethylene	NA	4.81E-02	NA	1.00E-02	5.40E-01	NA	NA	NA	NA
Thallium	NA	1.00E-03	NA	1.80E-05	NA	NA	NA	NA	NA
Toluene	NA	4.53E-02	NA	6.40E-02	NA	NA	NA	NA	NA
Tributyl phosphate	NA	3.13E-02	NA	1.00E-01	1.08E-02	NA	NA	NA	NA
Trichloroethylene	NA	1.57E-02	NA	4.50E-05	2.67E+00	NA	NA	NA	NA
Trifluorochloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Uranium	1.94E-02	1.00E-03	NA	5.10E-04	NA	NA	NA	NA	NA
Vanadium	NA	1.00E-03	NA	7.00E-05	NA	NA	NA	NA	NA
Vinyl chloride	NA	1.13E-02	NA	3.00E-03	1.50E+00	NA	NA	NA	NA
Xylenes	NA	7.04E-02	NA	1.84E-01	NA	NA	NA	NA	NA
Zinc	NA	6.00E-04	NA	6.00E-02	NA	NA	NA	NA	NA
							total = 0.00E+00		total = 0.00E+00

TABLE E.7-4
Building Maintenance - Zone 7 - IngestSWchem

Building Maintenance - Ingestion of Surface Water
Risk calculation for Zone 7

Intake Equation:			UNITS	Assigned Values
	CDI =	(CW*EF*ED*IR)/(BW*AT)		
	CDI =	Chronic Daily Intake	mg/kgday	adult
	CW =	Concentration of chemical in water	mg/L	see COC table below
	EF =	Exposure frequency	days/yr	NA
	ED =	Exposure duration	yrs	NA
	IR =	Ingestion rate	L/day	NA
	BW =	Body weight	kg	NA
	ATc =	Average time for carcinogens	days	NA
	ATn =	Average time for non-carcinogens	days	NA

COC	CW	RfDo	CSFo	ADULT CDI	HQ	CDI	ILCR
	mg/L	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	NA	4.00E-03	5.70E-02	NA	NA	NA	NA
1,1-Dichloroethylene	NA	5.00E-02	6.00E-01	NA	NA	NA	NA
1,2-dichloroethane	NA	2.00E-02	9.10E-02	NA	NA	NA	NA
2-Butanone	NA	6.00E-01	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	NA	NA	4.50E-01	NA	NA	NA	NA
4-Methylphenol	NA	5.00E-03	NA	NA	NA	NA	NA
4-Nitroanaline	NA	3.00E-03	2.10E-02	NA	NA	NA	NA
Acetone	NA	9.00E-01	NA	NA	NA	NA	NA
Antimony	5.00E-04	4.00E-04	NA	NA	NA	NA	NA
Aroclor-1254	0.00E+00	2.00E-05	4.00E-01	NA	NA	NA	NA
Aroclor-1260	0.00E+00	2.00E-05	4.00E-01	NA	NA	NA	NA
Arsenic	3.00E-03	3.00E-04	1.50E+00	NA	NA	NA	NA
Barium	NA	2.00E-01	NA	NA	NA	NA	NA
Benzene	NA	4.00E-03	5.50E-02	NA	NA	NA	NA
Benzo(a)anthracene	0.00E+00	NA	7.30E-01	NA	NA	NA	NA
Benzo(a)pyrene	0.00E+00	NA	7.30E+00	NA	NA	NA	NA
Benzo(b)fluoranthene	0.00E+00	NA	7.30E-01	NA	NA	NA	NA
Benzo(k)fluoranthene	0.00E+00	NA	7.30E-02	NA	NA	NA	NA
Beryllium	1.60E-04	2.00E-03	4.30E+00	NA	NA	NA	NA
Bis(2-chloroisopropyl)ether	NA	4.00E-02	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	NA	2.00E-02	1.40E-02	NA	NA	NA	NA
Boron	NA	2.00E-01	NA	NA	NA	NA	NA
Bromodichloromethane	NA	2.00E-02	6.20E-02	NA	NA	NA	NA
Bromoform	NA	2.00E-02	7.90E-03	NA	NA	NA	NA
Bromomethane	NA	1.40E-03	NA	NA	NA	NA	NA
Cadmium	1.00E-04	1.00E-03	NA	NA	NA	NA	NA
Carbazole	NA	NA	2.00E-03	NA	NA	NA	NA
Carbon disulfide	NA	1.00E-01	NA	NA	NA	NA	NA
Carbon tetrachloride	NA	7.00E-04	1.30E-01	NA	NA	NA	NA
Chlordane	NA	5.00E-04	3.50E-01	NA	NA	NA	NA
Chlorobenzene	NA	2.00E-02	NA	NA	NA	NA	NA
Chloroform	NA	1.00E-02	6.10E-03	NA	NA	NA	NA
Chromium (VI)	NA	3.00E-03	NA	NA	NA	NA	NA
Chrysene	0.00E+00	NA	7.30E-03	NA	NA	NA	NA
Cobalt	NA	2.00E-02	NA	NA	NA	NA	NA
Copper	NA	4.00E-02	NA	NA	NA	NA	NA
Cyanide	NA	2.00E-02	NA	NA	NA	NA	NA
Cyclohexanone	NA	5.00E+00	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	0.00E+00	NA	7.30E+00	NA	NA	NA	NA
Dieldrin	NA	5.00E-05	1.60E+01	NA	NA	NA	NA
Di-n-octylphthalate	NA	4.00E-02	NA	NA	NA	NA	NA
Ethyl ether	NA	2.00E-01	NA	NA	NA	NA	NA
Ethylbenzene	NA	1.00E-01	NA	NA	NA	NA	NA
Fluoride	NA	6.00E-02	NA	NA	NA	NA	NA
Heptachlorodibenzofuran	NA	NA	1.50E+03	NA	NA	NA	NA
Heptachlorodibenzo-p-dioxin	NA	NA	1.50E+03	NA	NA	NA	NA
Hexachlorodibenzofuran	NA	NA	1.50E+03	NA	NA	NA	NA
Hexachlorodibenzo-p-dioxin	NA	NA	1.50E+04	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	0.00E+00	NA	7.30E-01	NA	NA	NA	NA
Lead	NA	NA	NA	NA	NA	NA	NA
Manganese	NA	4.60E-02	NA	NA	NA	NA	NA
Mercury	NA	3.00E-04	NA	NA	NA	NA	NA
Methanol	NA	5.00E-01	NA	NA	NA	NA	NA
4-Methyl-2-pentanone	NA	8.00E-02	NA	NA	NA	NA	NA
Methylene chloride	NA	6.00E-02	7.50E-03	NA	NA	NA	NA
Molybdenum	7.65E-03	5.00E-03	NA	NA	NA	NA	NA
Nickel	NA	2.00E-02	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	NA	2.00E-02	4.90E-03	NA	NA	NA	NA
N-nitrosodipropylamine	NA	NA	7.00E+00	NA	NA	NA	NA
Octachlorodibenzofuran	NA	NA	1.50E+02	NA	NA	NA	NA
Octochlorodibenzo-p-dioxin	NA	NA	1.50E+02	NA	NA	NA	NA
Pentachlorodibenzofuran	NA	NA	7.50E+03	NA	NA	NA	NA
Pentachlorodibenzo-p-dioxin	NA	NA	7.50E+04	NA	NA	NA	NA
Pentachlorophenol	NA	3.00E-02	1.20E-01	NA	NA	NA	NA
Phenanthrene	0.00E+00	NA	NA	NA	NA	NA	NA
Selenium	NA	5.00E-03	NA	NA	NA	NA	NA
Silver	2.00E-04	5.00E-03	NA	NA	NA	NA	NA
Tetrachlorodibenzofuran	NA	NA	1.50E+04	NA	NA	NA	NA
Tetrachlorodibenzo-p-dioxin	NA	NA	1.50E+05	NA	NA	NA	NA
Tetrachloroethylene	NA	1.00E-02	5.40E-01	NA	NA	NA	NA
Thallium	NA	9.00E-05	NA	NA	NA	NA	NA
Toluene	NA	8.00E-02	NA	NA	NA	NA	NA
Tributyl phosphate	NA	2.00E-01	5.40E-03	NA	NA	NA	NA
Trichloroethylene	NA	3.00E-04	4.00E-01	NA	NA	NA	NA
Trifluorochloromethane	NA	NA	NA	NA	NA	NA	NA
Uranium	1.94E-02	6.00E-04	NA	NA	NA	NA	NA
Vanadium	NA	7.00E-03	NA	NA	NA	NA	NA
Vinyl chloride	NA	3.00E-03	1.50E+00	NA	NA	NA	NA
Xylenes	NA	2.00E-01	NA	NA	NA	NA	NA
Zinc	NA	3.00E-01	NA	NA	NA	NA	NA
				total =	0.00E+00	total =	0.00E+00

TABLE E.7-4
Building Maintenance - Zone 7 - InhaleRad

Building Maintenance - Inhalation of Gases & Particulates
Risk calculation for Zone 7

Intake Equation:			UNITS	adult
	CDI =	(CA*EF*ED*IR*ET)		
	CDI =	Chronic Daily Intake	pCi	calculated below
	CA =	Concentration of radionuclide in air	pCi/m^3	see COC list below
	EF =	Exposure frequency	days/yr	250
	ED =	Exposure duration	yrs	25
	IR =	Inhalation rate	m^3/hr	1.5
	ET =	Exposure time	hrs/day	1

COC	conc	CSFi	ADULT	
			CDI	ILCR
	pCi/m^3	1/pCi	pCi	CDI*CSF
Cesium-137 + D	2.97E-06	1.19E-11	2.78E-02	3.31E-13
Lead-210 + D	1.12E-04	1.39E-08	1.05E+00	1.45E-08
Neptunium-237 + D	NA	1.77E-08	NA	NA
Plutonium-238	NA	3.36E-08	NA	NA
Plutonium-239/240	NA	3.33E-08	NA	NA
Radium-226 + D	3.67E-05	1.16E-08	3.45E-01	4.00E-09
Radium-228 + D	2.98E-05	5.23E-09	2.79E-01	1.46E-09
Radon-222+ D	3.62E+02	1.80E-11	3.39E+06	6.11E-05
Strontium-90 + D	NA	1.13E-10	NA	NA
Technetium-99	8.47E-05	1.41E-11	7.94E-01	1.12E-11
Thorium-228 + D	3.05E-05	1.43E-07	2.86E-01	4.09E-08
Thorium-230	8.01E-05	2.85E-08	7.51E-01	2.14E-08
Thorium-232	2.98E-05	4.33E-08	2.79E-01	1.21E-08
Uranium-234	1.35E-04	1.14E-08	1.26E+00	1.44E-08
Uranium-235 + D	6.13E-06	1.01E-08	5.75E-02	5.81E-10
Uranium-238 + D	1.31E-04	9.35E-09	1.23E+00	1.15E-08
			total =	**6.12E-05**

Air concentration is derived using air particulate value of 26 ug/m^3 (2005 SER background average from monitor AMS-12) multiplied by the soil concentration.
Rn-222 is derived by multiplying the soil Ra-226 value by 256 g/m^3. This conversion factor is based on Rn-222 air background and Ra-226 soil background (i.e., 400 pCi/m^3 divided by 1.56 pCi/g)

TABLE E.7-4
Building Maintenance - Zone 7 - IngestSoilRad

Building Maintenance - Ingestion of Soil
Risk calculation for Zone 7

			UNITS	adult
Intake Equation:	CDI =	(CS*EF*ED*IR*FI)		
	CDI =	Chronic Daily Intake	pCi	calculated below
	CS =	Concentration of radionuclide in soil	pCi/g	see COC list below
	EF =	Exposure frequency	days/yr	250
	ED =	Exposure duration	yrs	25
	IR =	Ingestion rate	g/day	0.05
	FI =	Fraction of contaminated soil	unitless	1

COC	conc pCi/g	CSFos 1/pCi	ADULT CDI pCi	ADULT ILCR CDI*CSF
Cesium-137 + D	1.14E-01	4.33E-11	3.56E+01	1.54E-09
Lead-210 + D	4.29E+00	2.66E-09	1.34E+03	3.57E-06
Neptunium-237 + D	NA	1.62E-10	NA	NA
Plutonium-238	NA	2.72E-10	NA	NA
Plutonium-239/240	NA	2.76E-10	NA	NA
Radium-226 + D	1.41E+00	7.30E-10	4.42E+02	3.22E-07
Radium-228 + D	1.14E+00	2.29E-09	3.58E+02	8.19E-07
Radon-222+ D	NA	NA	NA	NA
Strontium-90 + D	NA	1.44E-10	NA	NA
Technetium-99	3.26E+00	7.66E-12	1.02E+03	7.80E-09
Thorium-228 + D	1.17E+00	8.09E-10	3.66E+02	2.96E-07
Thorium-230	3.08E+00	2.02E-10	9.63E+02	1.95E-07
Thorium-232	1.14E+00	2.31E-10	3.58E+02	8.26E-08
Uranium-234	5.18E+00	1.58E-10	1.62E+03	2.56E-07
Uranium-235 + D	2.36E-01	1.63E-10	7.37E+01	1.20E-08
Uranium-238 + D	5.05E+00	2.10E-10	1.58E+03	3.32E-07
			total =	**5.89E-06**

TABLE E.7-4
Building Maintenance - Zone 7 - IngestSWrad

Building Maintenance - Ingestion of Surface Water
Risk calculation for Zone 7

Intake Equation:			UNITS	Assigned Values
	CDI =	(CW*EF*ED*IR)		
	CDI =	Chronic Daily Intake	pCi	adult
	CW =	Concentration of radionuclide in water	pCi/L	see COC table below
	EF =	Exposure frequency	days/yr	NA
	ED =	Exposure duration	yrs	NA
	IR =	Ingestion rate	L/day	NA

COC	conc pCi/L	CSFow 1/pCi	ADULT CDI pCi	ADULT ILCR CDI*CSF
Cesium-137 + D	1.70E+00	3.04E-11	NA	NA
Lead-210 + D	6.99E-01	1.27E-09	NA	NA
Neptunium-237 + D	NA	6.74E-11	NA	NA
Plutonium-238	NA	1.31E-10	NA	NA
Plutonium-239/240	NA	1.35E-10	NA	NA
Radium-226 + D	3.84E-01	3.86E-10	NA	NA
Radium-228 + D	2.82E+00	1.04E-09	NA	NA
Radon-222+ D	NA	NA	NA	NA
Strontium-90 + D	NA	7.40E-11	NA	NA
Technetium-99	7.96E+00	2.75E-12	NA	NA
Thorium-228 + D	2.92E+00	3.00E-10	NA	NA
Thorium-230	2.03E-01	9.10E-11	NA	NA
Thorium-232	2.82E+00	1.01E-10	NA	NA
Uranium-234	6.62E+00	7.07E-11	NA	NA
Uranium-235 + D	3.02E-01	7.18E-11	NA	NA
Uranium-238 + D	6.47E+00	8.71E-11	NA	NA
			total =	**0.00E+00**

TABLE E.7-4
Building Maintenance - Zone 7 - ExternalRad

Building Maintenance - External Radiation
Risk calculation for Zone 7

			UNITS	adult
Intake Equation:	CDI =	$(CS*EF*ED*ET_o*(1-SH_o))+(CS*EF*ED*ET_i*(1-SH_i))$		
	CDI =	Chronic Daily Intake	yr pCi/g	calculated below
	CS =	Concentration of radionuclide in soil	pCi/g	see COC list below
	EF =	Fraction of year exposed to radiation	--	0.68
	ED =	Exposure duration	yrs	25
	ET_o =	Fraction of day spent outdoors	--	0.04
	ET_i =	Fraction of day spent indoors	--	0.29
	SH_o =	Shield factor outdoors	--	0.25
	SH_i =	Shield factor indoors	--	0.5

COC	conc pCi/g	CSFx g/pCi yr	ADULT CDI yr pCi/g	ADULT ILCR CDI*CSF
Cesium-137 + D	1.14E-01	2.55E-06	3.46E-01	8.81E-07
Lead-210 + D	4.29E+00	4.21E-09	1.30E+01	5.47E-08
Neptunium-237 + D	NA	7.97E-07	NA	NA
Plutonium-238	NA	7.22E-11	NA	NA
Plutonium-239/240	NA	2.00E-10	NA	NA
Radium-226 + D	1.41E+00	8.49E-06	4.28E+00	3.64E-05
Radium-228 + D	1.14E+00	4.53E-06	3.47E+00	1.57E-05
Radon-222+ D	NA	NA	NA	NA
Strontium-90 + D	NA	1.96E-08	NA	NA
Technetium-99	3.26E+00	8.14E-11	9.87E+00	8.03E-10
Thorium-228 + D	1.17E+00	7.76E-06	3.55E+00	2.76E-05
Thorium-230	3.08E+00	8.19E-10	9.34E+00	7.65E-09
Thorium-232	1.14E+00	3.42E-10	3.47E+00	1.19E-09
Uranium-234	5.18E+00	2.52E-10	1.57E+01	3.95E-09
Uranium-235 + D	2.36E-01	5.43E-07	7.15E-01	3.88E-07
Uranium-238 + D	5.05E+00	1.14E-07	1.53E+01	1.75E-06
			total =	**8.27E-05**

TABLE E.7-4
Building Maintenance - Zone 7 - SumPaths

Building Maintenance - Summation of all Pathways
Risk calculation for Zone 7

	HQ	ILCR	rad only ILCR
Inhale	6.87E-05	6.12E-05	6.12E-05
Dermal Soil	1.25E-02	2.88E-06	NA
Ingest Soil	3.31E-02	9.53E-06	5.89E-06
Dermal Surface Water	NA	NA	NA
Ingest Surface Water	NA	NA	0.00E+00
External Radiation	NA	8.27E-05	8.27E-05
SUM	**4.57E-02**	**1.56E-04**	**1.50E-04**

Summation of all paths for individual nuclides

	Total ILCR	BKGD ILCR	Total - BKGD ILCR
Cesium-137 + D	8.83E-07	5.11E-07	3.72E-07
Lead-210 + D	3.64E-06	1.32E-06	2.31E-06
Neptunium-237 + D	NA	NA	NA
Plutonium-238	NA	NA	NA
Plutonium-239/240	NA	NA	NA
Radium-226 + D	3.67E-05	4.05E-05	0.00E+00
Radium-228 + D	1.65E-05	1.83E-05	0.00E+00
Radon-222+ D	6.11E-05	6.74E-05	0.00E+00
Strontium-90 + D	NA	NA	NA
Technetium-99	8.61E-09	0.00E+00	8.61E-09
Thorium-228 + D	2.79E-05	2.98E-05	0.00E+00
Thorium-230	2.24E-07	1.13E-07	1.10E-07
Thorium-232	9.59E-08	1.06E-07	0.00E+00
Uranium-234	2.74E-07	8.24E-08	1.91E-07
Uranium-235 + D	4.01E-07	1.20E-07	2.80E-07
Uranium-238 + D	2.09E-06	6.28E-07	1.46E-06
SUM	**1.50E-04**		**4.74E-06**

TABLE E.7-4
Building Maintenance - Zone 7 - SumPaths

Summation of all paths for individual chemicals

	Total		BKGD		Total - BKGD	
	ILCR	HQ	ILCR	HQ	ILCR	HQ
1,1,2-Trichloroethane	NA	NA	NA	NA	NA	NA
1,1-Dichloroethylene	NA	NA	NA	NA	NA	NA
1,2-dichloroethane	NA	NA	NA	NA	NA	NA
2-Butanone	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	NA	NA	NA	NA	NA	NA
4-Methylphenol	NA	NA	NA	NA	NA	NA
4-Nitroanaline	NA	NA	NA	NA	NA	NA
Acetone	NA	NA	NA	NA	NA	NA
Antimony	No CSFs	3.43E-03	No CSFs	4.97E-03	No CSFs	0.00E+00
Aroclor-1254	1.23E-08	8.64E-04	0.00E+00	0.00E+00	1.23E-08	8.64E-04
Aroclor-1260	5.08E-09	3.56E-04	0.00E+00	0.00E+00	5.08E-09	3.56E-04
Arsenic	4.35E-06	2.69E-02	5.25E-06	3.25E-02	0.00E+00	0.00E+00
Barium	NA	NA	NA	NA	NA	NA
Benzene	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	6.62E-08	No RfDs	0.00E+00	No RfDs	6.62E-08	No RfDs
Benzo(a)pyrene	3.01E-07	No RfDs	0.00E+00	No RfDs	3.01E-07	No RfDs
Benzo(b)fluoranthene	1.06E-07	No RfDs	0.00E+00	No RfDs	1.06E-07	No RfDs
Benzo(k)fluoranthene	3.18E-09	No RfDs	0.00E+00	No RfDs	3.18E-09	No RfDs
Beryllium	1.42E-06	5.29E-04	1.98E-06	7.41E-04	0.00E+00	0.00E+00
Bis(2-chloroisopropyl)ether	NA	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	NA	NA	NA	NA	NA	NA
Boron	NA	NA	NA	NA	NA	NA
Bromodichloromethane	NA	NA	NA	NA	NA	NA
Bromoform	NA	NA	NA	NA	NA	NA
Bromomethane	NA	NA	NA	NA	NA	NA
Cadmium	5.79E-10	6.04E-04	8.49E-10	8.86E-04	0.00E+00	0.00E+00
Carbazole	NA	NA	NA	NA	NA	NA
Carbon disulfide	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	NA	NA	NA	NA	NA	NA
Chlordane	NA	NA	NA	NA	NA	NA
Chlorobenzene	NA	NA	NA	NA	NA	NA
Chloroform	NA	NA	NA	NA	NA	NA
Chromium (VI)	NA	NA	NA	NA	NA	NA
Chrysene	3.58E-09	No RfDs	0.00E+00	No RfDs	3.58E-09	No RfDs
Cobalt	NA	NA	NA	NA	NA	NA
Copper	NA	NA	NA	NA	NA	NA
Cyanide	NA	NA	NA	NA	NA	NA
Cyclohexanone	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	1.64E-07	No RfDs	0.00E+00	No RfDs	1.64E-07	No RfDs
Dieldrin	NA	NA	NA	NA	NA	NA
Di-n-octylphthalate	NA	NA	NA	NA	NA	NA

TABLE E.7-4
Building Maintenance - Zone 7 - SumPaths

Summation of all paths for individual chemicals (continued)

	Total		BKGD		Total - BKGD	
	ILCR	HQ	ILCR	HQ	ILCR	HQ
Ethyl ether	NA	NA	NA	NA	NA	NA
Ethylbenzene	NA	NA	NA	NA	NA	NA
Fluoride	NA	NA	NA	NA	NA	NA
Heptachlorodibenzofuran	NA	NA	NA	NA	NA	NA
Heptachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA
Hexachlorodibenzofuran	NA	NA	NA	NA	NA	NA
Hexachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	1.22E-07	No RfDs	0.00E+00	No RfDs	1.22E-07	No RfDs
Lead	NA	NA	NA	NA	NA	NA
Manganese	NA	NA	NA	NA	NA	NA
Mercury	NA	NA	NA	NA	NA	NA
Methanol	NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone	NA	NA	NA	NA	NA	NA
Methylene chloride	NA	NA	NA	NA	NA	NA
Molybdenum	No CSFs	3.97E-04	No CSFs	5.24E-04	No CSFs	0.00E+00
Nickel	NA	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	NA	NA	NA	NA	NA	NA
N-nitrosodipropylamine	NA	NA	NA	NA	NA	NA
Octachlorodibenzofuran	NA	NA	NA	NA	NA	NA
Octochlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA
Pentachlorodibenzofuran	NA	NA	NA	NA	NA	NA
Pentachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA
Pentachlorophenol	NA	NA	NA	NA	NA	NA
Phenanthrene	No CSFs	No RfDs	No CSFs	No RfDs	No CSFs	No RfDs
Selenium	NA	NA	NA	NA	NA	NA
Silver	No CSFs	9.05E-05	No CSFs	1.16E-04	No CSFs	0.00E+00
Tetrachlorodibenzofuran	NA	NA	NA	NA	NA	NA
Tetrachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA
Tetrachloroethylene	NA	NA	NA	NA	NA	NA
Thallium	NA	NA	NA	NA	NA	NA
Toluene	NA	NA	NA	NA	NA	NA
Tributyl phosphate	NA	NA	NA	NA	NA	NA
Trichloroethylene	NA	NA	NA	NA	NA	NA
Trifluorochloromethane	NA	NA	NA	NA	NA	NA
Uranium	No CSFs	1.25E-02	No CSFs	3.75E-03	No CSFs	8.73E-03
Vanadium	NA	NA	NA	NA	NA	NA
Vinyl chloride	NA	NA	NA	NA	NA	NA
Xylenes	NA	NA	NA	NA	NA	NA
Zinc	NA	NA	NA	NA	NA	NA
SUM	**6.55E-06**	**4.57E-02**			**7.85E-07**	**9.95E-03**

TABLE E.7-6
Museum Visitor - Zone 7 - InhaleChem

Museum Visitor - Inhalation of Gases & Particulates
Risk calculation for Zone 7

Intake Equation:			UNITS	Assigned Values			
				child	youth	adult	senior
	CDI =	(CS*EF*ED*IR*ET)/(BW*AT)					
	CDI =	Chronic Daily Intake	mg/kgday				
	CA =	Concentration of chemical in air	mg/m^3	see table of COCs below			
	EF =	Exposure frequency	days/yr	10	10	10	20
	ED =	Exposure duration	yrs	3	6	14	7
	IR =	Inhalation rate	m^3/hr	1	1	1	1
	ET =	Exposure time	hrs/day	0.5	0.5	0.5	0.5
	BW =	Body weight	kg	15	47	70	70
	ATc =	Average time for carcinogens	days	25550	25550	25550	25550
	ATn =	Average time for non-carcinogens	days	1095	2190	5110	2555

COC	conc	RfDI	CSFi	CHILD				YOUTH				ADULT				SENIOR				SUM			
				CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR
	mg/m^3	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	NA	NA	5.60E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethylene	NA	5.71E-02	1.75E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-dichloroethane	NA	NA	9.10E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	NA	1.43E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroanaline	NA	1.14E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	5.15E-08	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	4.01E-10	NA	2.00E+00	NA	NA	1.57E-14	3.14E-14	NA	NA	1.00E-14	2.00E-14	NA	NA	1.57E-14	3.14E-14	NA	NA	1.57E-14	3.14E-14	NA	NA	5.71E-14	1.14E-13
Aroclor-1260	1.65E-10	NA	2.00E+00	NA	NA	6.46E-15	1.29E-14	NA	NA	4.12E-15	8.24E-15	NA	NA	6.46E-15	1.29E-14	NA	NA	6.46E-15	1.29E-14	NA	NA	2.35E-14	4.70E-14
Arsenic	2.67E-07	NA	1.51E+01	NA	NA	1.04E-11	1.58E-10	NA	NA	6.67E-12	1.01E-10	NA	NA	1.04E-11	1.58E-10	NA	NA	1.04E-11	1.58E-10	NA	NA	3.80E-11	5.74E-10
Barium	NA	1.43E-04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	NA	8.57E-03	2.73E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	3.01E-09	NA	3.08E-01	NA	NA	1.18E-13	3.63E-14	NA	NA	7.53E-14	2.32E-14	NA	NA	1.18E-13	3.63E-14	NA	NA	1.18E-13	3.63E-14	NA	NA	4.29E-13	1.32E-13
Benzo(a)pyrene	1.37E-09	NA	3.08E-01	NA	NA	5.37E-14	1.65E-14	NA	NA	3.43E-14	1.06E-14	NA	NA	5.37E-14	1.65E-14	NA	NA	5.37E-14	1.65E-14	NA	NA	1.95E-13	6.02E-14
Benzo(b)fluoranthene	4.82E-09	NA	3.08E+00	NA	NA	1.89E-13	5.81E-13	NA	NA	1.20E-13	3.71E-13	NA	NA	1.89E-13	5.81E-13	NA	NA	1.89E-13	5.81E-13	NA	NA	6.86E-13	2.11E-12
Benzo(k)fluoranthene	1.45E-09	NA	3.08E-02	NA	NA	5.67E-14	1.75E-15	NA	NA	3.62E-14	1.12E-15	NA	NA	5.67E-14	1.75E-15	NA	NA	5.67E-14	1.75E-15	NA	NA	2.06E-13	6.36E-15
Beryllium	2.67E-08	5.71E-06	8.40E+00	2.44E-11	4.28E-06	1.05E-12	8.79E-12	7.80E-12	1.37E-06	6.88E-13	5.61E-12	5.23E-12	9.17E-07	1.05E-12	8.79E-12	1.05E-11	1.83E-06	1.05E-12	8.79E-12	8.89E-12	1.56E-06	3.81E-12	3.20E-11
Bis(2-chloroisopropyl)ether	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Boron	NA	5.71E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	NA	NA	3.85E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	NA	1.43E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	1.75E-08	NA	6.30E+00	NA	NA	6.86E-13	4.32E-12	NA	NA	4.38E-13	2.76E-12	NA	NA	6.86E-13	4.32E-12	NA	NA	6.86E-13	4.32E-12	NA	NA	2.50E-12	1.57E-11
Carbazole	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	NA	2.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	NA	NA	5.25E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlordane	NA	2.00E-04	3.50E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	NA	1.43E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	NA	NA	8.05E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (VI)	NA	2.86E-05	4.20E+01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	1.63E-08	NA	3.08E-03	NA	NA	6.38E-13	1.97E-15	NA	NA	4.08E-13	1.26E-15	NA	NA	6.38E-13	1.97E-15	NA	NA	6.38E-13	1.97E-15	NA	NA	2.32E-12	7.15E-15
Cobalt	NA	5.71E-06	9.80E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexanone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	7.49E-10	NA	3.08E+00	NA	NA	2.93E-14	9.03E-14	NA	NA	1.87E-14	5.76E-14	NA	NA	2.93E-14	9.03E-14	NA	NA	2.93E-14	9.03E-14	NA	NA	1.07E-13	3.28E-13
Dieldrin	NA	NA	1.61E+01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-octylphthalate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE E.7-6
Museum Visitor - Zone 7 - InhaleChem

Museum Visitor - Inhalation of Gases & Particulates
Risk calculation for Zone 7

Intake Equation:			UNITS	Assigned Values			
				child	youth	adult	senior
	CDI =	(CS*EF*ED*IR*ET)/(BW*AT)					
	CDI =	Chronic Daily Intake	mg/kgday				
	CA =	Concentration of chemical in air	mg/m^3	see table of COCs below			
	EF =	Exposure frequency	days/yr	10	10	10	20
	ED =	Exposure duration	yrs	3	6	14	7
	IR =	Inhalation rate	m^3/hr	1	1	1	1
	ET =	Exposure time	hrs/day	0.5	0.5	0.5	0.5
	BW =	Body weight	kg	15	47	70	70
	ATc =	Average time for carcinogens	days	25550	25550	25550	25550
	ATn =	Average time for non-carcinogens	days	1095	2190	5110	2555

COC	conc	RfDI	CSFI	CHILD				YOUTH				ADULT				SENIOR				SUM			
				CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR
	mg/m^3	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
Ethyl ether	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	NA	2.86E-01	3.85E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoride	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlorodibenzofuran	NA	NA	1.16E+03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlorodibenzo-p-dioxin	NA	NA	1.16E+03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorodibenzofuran	NA	NA	1.16E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorodibenzo-p-dioxin	NA	NA	1.16E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	5.57E-09	NA	3.08E-01	NA	NA	2.18E-13	6.72E-14	NA	NA	1.39E-13	4.29E-14	NA	NA	2.18E-13	6.72E-14	NA	NA	2.18E-13	6.72E-14	NA	NA	7.94E-13	2.44E-13
Lead	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	NA	1.43E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methanol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl-2-pentanone	NA	8.57E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene chloride	NA	8.57E-01	1.65E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Molybdenum	1.03E-07	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-nitrosodipropylamine	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Octochlorodibenzofuran	NA	NA	1.16E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Octochlorodibenzo-p-dioxin	NA	NA	1.16E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorodibenzofuran	NA	NA	5.78E+03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorodibenzo-p-dioxin	NA	NA	5.78E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	1.57E-09	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	2.30E-08	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachlorodibenzofuran	NA	NA	1.16E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachlorodibenzo-p-dioxin	NA	NA	1.16E+05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethylene	NA	1.71E-01	2.07E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	NA	1.43E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tributyl phosphate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethylene	NA	1.14E-02	4.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trifluorochloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Uranium	3.94E-07	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	NA	2.86E-02	3.08E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes	NA	2.86E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
																				total =	1.56E-06	total =	6.24E-10

Air concentration is derived from air particulate value of 26 ug/m^3 (2005 SER background average from monitor AMS-12) multiplied by soil concentration.

TABLE E.7-6
Museum Visitor - Zone 7 - DermalSoilChem

Museum Visitor - Dermal Contact with Soil/Sediment
Risk calculation for Zone 7

Intake Equation:			UNITS	Assigned Values			
				child	youth	adult	senior
	CDI =	(CS*AB*SA*EF*ED*AF*CF)/(BW*AT)					
	CDI =	Chronic Daily Intake	mg/kgday				
	CS =	Concentration of chemical in soil	mg/kg	see table of COCs below			
	AB =	Absorption factor	--	see table of COCs below			
	SA =	Surface area of exposed skin	cm^2/day	2800	4370	5700	5700
	EF =	Exposure frequency	days/yr	10	10	10	20
	ED =	Exposure duration	yrs	3	6	14	7
	AF =	Adherence factor	mg/cm^2	0.2	0.2	0.07	0.07
	CF =	Conversion factor	kg/mg	1.00E-06	1.00E-06	1.00E-06	1.00E-06
	BW =	Body weight	kg	15	47	70	70
	ATc =	Average time for carcinogens	days	25550	25550	25550	25550
	ATn =	Average time for non-carcinogens	days	1095	2190	5110	2555

COC	conc	AB	RfDd	CSFd	CHILD				YOUTH				ADULT				SENIOR				SUM			
					CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR
	mg/kg	unitless	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	NA	1.00E-02	3.24E-03	7.04E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethylene	NA	1.00E-02	5.00E-02	6.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-dichloroethane	NA	1.00E-02	2.00E-02	9.10E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	NA	1.00E-02	4.80E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	NA	1.00E-02	NA	9.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	NA	1.00E-02	3.25E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroanaline	NA	1.00E-02	2.40E-03	2.63E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	NA	1.00E-02	7.47E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	1.98E+00	1.00E-03	8.00E-06	NA	2.02E-09	2.53E-04	NA	NA	1.01E-09	1.26E-04	NA	NA	3.09E-10	3.86E-05	NA	NA	6.18E-10	7.73E-05	NA	NA	6.93E-10	8.66E-05	NA	NA
Aroclor-1254	1.54E-02	1.40E-01	1.80E-05	2.22E+00	2.21E-09	1.23E-04	9.46E-11	2.10E-10	1.10E-09	6.11E-05	9.42E-11	2.09E-10	3.37E-10	1.87E-05	6.74E-11	1.50E-10	6.74E-10	3.74E-05	6.74E-11	1.50E-10	7.55E-10	4.19E-05	3.24E-10	7.18E-10
Aroclor-1260	6.34E-03	1.40E-01	1.80E-05	2.22E+00	9.08E-10	5.05E-05	3.89E-11	8.64E-11	4.52E-10	2.51E-05	3.88E-11	8.61E-11	1.39E-10	7.70E-06	2.77E-11	6.16E-11	2.77E-10	1.54E-05	2.77E-11	6.16E-11	3.11E-10	1.73E-05	1.33E-10	2.96E-10
Arsenic	1.03E+01	3.00E-02	1.23E-04	3.66E+00	3.15E-07	2.56E-03	1.35E-08	4.94E-08	1.57E-07	1.28E-03	1.34E-08	4.92E-08	4.81E-08	3.91E-04	9.62E-09	3.52E-08	9.62E-08	7.82E-04	9.62E-09	3.52E-08	1.08E-07	8.76E-04	4.62E-08	1.69E-07
Barium	NA	1.00E-03	1.40E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	NA	1.00E-02	3.88E-03	5.67E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	1.16E-01	1.30E-01	NA	2.35E+00	NA	NA	6.60E-10	1.55E-09	NA	NA	6.58E-10	1.55E-09	NA	NA	4.71E-10	1.11E-09	NA	NA	4.71E-10	1.11E-09	NA	NA	2.26E-09	5.31E-09
Benzo(a)pyrene	5.28E-02	1.30E-01	NA	2.35E+01	NA	NA	3.01E-10	7.07E-09	NA	NA	3.00E-10	7.04E-09	NA	NA	2.14E-10	5.04E-09	NA	NA	2.14E-10	5.04E-09	NA	NA	1.03E-09	2.42E-08
Benzo(b)fluoranthene	1.85E-01	1.30E-01	NA	2.35E+00	NA	NA	1.06E-09	2.48E-09	NA	NA	1.05E-09	2.47E-09	NA	NA	7.53E-10	1.77E-09	NA	NA	7.53E-10	1.77E-09	NA	NA	3.61E-09	8.49E-09
Benzo(k)fluoranthene	5.57E-02	1.30E-01	NA	2.35E-01	NA	NA	3.18E-10	7.46E-11	NA	NA	3.16E-10	7.44E-11	NA	NA	2.26E-10	5.32E-11	NA	NA	2.26E-10	5.32E-11	NA	NA	1.09E-09	2.55E-10
Beryllium	1.03E+00	1.00E-03	2.00E-05	4.30E+02	1.05E-09	5.26E-05	4.51E-11	1.94E-08	5.24E-10	2.62E-05	4.49E-11	1.93E-08	1.61E-10	8.03E-06	3.21E-11	1.38E-08	3.21E-10	1.61E-05	3.21E-11	1.38E-08	3.60E-10	1.80E-05	1.54E-10	6.63E-08
Bis(2-chloroisopropyl)ether	NA	1.00E-02	2.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	NA	1.00E-02	3.80E-03	7.37E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Boron	NA	1.00E-03	1.80E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	NA	1.00E-02	1.96E-02	6.33E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	NA	1.00E-02	1.20E-02	1.32E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	NA	1.00E-02	1.12E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	6.74E-01	1.00E-03	1.00E-05	NA	6.89E-10	6.89E-05	NA	NA	3.43E-10	3.43E-05	NA	NA	1.05E-10	1.05E-05	NA	NA	2.11E-10	2.11E-05	NA	NA	2.36E-10	2.36E-05	NA	NA
Carbazole	NA	1.00E-02	NA	2.86E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	NA	2.50E-01	6.30E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	NA	1.00E-02	4.55E-04	2.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlordane	NA	4.00E-02	2.50E-04	7.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	NA	1.00E-02	6.20E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	NA	1.00E-02	2.00E-03	3.05E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (VI)	NA	1.00E-03	6.00E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	6.27E-01	1.30E-01	NA	2.35E-02	NA	NA	3.58E-09	8.40E-11	NA	NA	3.56E-09	8.37E-11	NA	NA	2.55E-09	5.99E-11	NA	NA	2.55E-09	5.99E-11	NA	NA	1.22E-08	2.87E-10
Cobalt	NA	1.00E-03	1.60E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	NA	1.00E-03	1.20E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	NA	1.00E-02	3.40E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexanone	NA	1.00E-02	4.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	2.88E-02	1.30E-01	NA	2.35E+01	NA	NA	1.64E-10	3.86E-09	NA	NA	1.63E-10	3.84E-09	NA	NA	1.17E-10	2.75E-09	NA	NA	1.17E-10	2.75E-09	NA	NA	5.81E-10	1.32E-08
Dieldrin	NA	1.00E-02	2.50E-05	3.20E+01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-octylphthalate	NA	1.00E-02	3.60E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE E.7-6
Museum Visitor - Zone 7 - DermalSoilChem

Museum Visitor - Dermal Contact with Soil/Sediment
Risk calculation for Zone 7

Intake Equation:			UNITS	Assigned Values			
				child	youth	adult	senior
	CDI =	(CS*AB*SA*EF*ED*AF*CF)/(BW*AT)					
	CDI =	Chronic Daily Intake	mg/kgday				
	CS =	Concentration of chemical in soil	mg/kg	see table of COCs below			
	AB =	Absorption factor	–	see table of COCs below			
	SA =	Surface area of exposed skin	cm^2/day	2800	4370	5700	5700
	EF =	Exposure frequency	days/yr	10	10	10	20
	ED =	Exposure duration	yrs	3	6	14	7
	AF =	Adherence factor	mg/cm^2	0.2	0.2	0.07	0.07
	CF =	Conversion factor	kg/mg	1.00E-06	1.00E-06	1.00E-06	1.00E-06
	BW =	Body weight	kg	15	47	70	70
	ATc =	Average time for carcinogens	days	25550	25550	25550	25550
	ATn =	Average time for non-carcinogens	days	1095	2190	5110	2555

COC	conc	AB	RfDd	CSFd	CHILD				YOUTH				ADULT				SENIOR				SUM			
					CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR
	mg/kg	unitless	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
Ethyl ether	NA	1.00E-02	1.60E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	NA	1.00E-02	9.70E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoride	NA	1.00E-03	5.82E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlorodibenzofuran	NA	1.00E-02	NA	3.00E+03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlorodibenzo-p-dioxin	NA	3.00E-02	NA	3.00E+03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorodibenzofuran	NA	1.00E-02	NA	3.00E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorodibenzo-p-dioxin	NA	3.00E-02	NA	3.00E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	2.14E-01	1.30E-01	NA	2.35E+00	NA	NA	1.22E-09	2.87E-09	NA	NA	1.22E-09	2.86E-09	NA	NA	8.70E-10	2.05E-09	NA	NA	8.70E-10	2.05E-09	NA	NA	4.18E-09	9.82E-09
Lead	NA	1.00E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	NA	1.00E-03	5.60E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	NA	1.00E-03	2.10E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methanol	NA	1.00E-02	4.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl-2-pentanone	NA	1.00E-02	6.40E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene chloride	NA	1.00E-02	5.70E-02	7.89E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Molybdenum	3.97E+00	1.00E-03	1.90E-03	NA	4.06E-09	2.14E-06	NA	NA	2.02E-09	1.06E-06	NA	NA	6.20E-10	3.26E-07	NA	NA	1.24E-09	6.53E-07	NA	NA	1.39E-09	7.31E-07	NA	NA
Nickel	NA	1.00E-03	5.40E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	NA	1.00E-02	5.00E-03	1.96E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-nitrosodipropylamine	NA	1.00E-02	NA	2.80E+01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Octachlorodibenzofuran	NA	1.00E-02	NA	3.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Octochlorodibenzo-p-dioxin	NA	3.00E-02	NA	3.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorodibenzofuran	NA	1.00E-02	NA	1.50E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorodibenzo-p-dioxin	NA	3.00E-02	NA	1.50E+05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	NA	2.50E-01	3.00E-02	1.20E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	6.02E-02	1.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	NA	1.00E-03	2.20E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	8.84E-01	1.00E-03	9.00E-04	NA	9.04E-10	1.00E-06	NA	NA	4.50E-10	5.00E-07	NA	NA	1.38E-10	1.53E-07	NA	NA	2.76E-10	3.07E-07	NA	NA	3.09E-10	3.44E-07	NA	NA
Tetrachlorodibenzofuran	NA	1.00E-02	NA	3.00E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachlorodibenzo-p-dioxin	NA	3.00E-02	NA	3.00E+05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethylene	NA	1.00E-02	1.00E-02	5.40E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	NA	1.00E-03	1.80E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	NA	1.00E-02	6.40E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tributyl phosphate	NA	1.00E-02	1.00E-01	1.08E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethylene	NA	1.00E-02	4.50E-05	2.67E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trifluorochloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Uranium	1.52E+01	1.00E-03	5.10E-04	NA	1.55E-08	3.04E-05	NA	NA	7.73E-09	1.51E-05	NA	NA	2.37E-09	4.64E-06	NA	NA	4.74E-09	9.29E-06	NA	NA	5.31E-09	1.04E-05	NA	NA
Vanadium	NA	1.00E-03	7.00E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	NA	1.00E-02	3.00E-03	1.50E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes	NA	1.00E-02	1.84E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	NA	1.00E-03	6.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
																					total =	1.07E-03	total =	2.98E-07

TABLE E.7-6
Museum Visitor - Zone 7 - IngestSoilChem

Museum Visitor - Ingestion of Soil
Risk calculation for Zone 7

Intake Equation:			UNITS	Assigned Values			
				child	youth	adult	senior
	CDI =	(CS*EF*ED*IR*FI*CF)/(BW*AT)					
	CDI =	Chronic Daily Intake	mg/kgday				
	CS =	Concentration of chemical in soil	mg/kg	see table of COCs below			
	EF =	Exposure frequency	days/yr	10	10	10	20
	ED =	Exposure duration	yrs	3	6	14	7
	IR =	Ingestion rate	mg/day	100	75	50	50
	FI =	Fraction of contaminated soil	unitless	1	1	1	1
	CF =	Conversion factor	kg/mg	1.00E-06	1.00E-06	1.00E-06	1.00E-06
	BW =	Body weight	kg	15	47	70	70
	ATc =	Average time for carcinogens	days	25550	25550	25550	25550
	ATn =	Average time for non-carcinogens	days	1095	2190	5110	2555

COC	conc	RfDo	CSFo	CHILD				YOUTH				ADULT				SENIOR				SUM			
				CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR
	mg/kg	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	NA	4.00E-03	5.70E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethylene	NA	5.00E-02	6.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-dichloroethane	NA	2.00E-02	9.10E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	NA	6.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	NA	NA	4.50E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	NA	5.00E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroanaline	NA	3.00E-03	2.10E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	NA	9.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	1.98E+00	4.00E-04	NA	3.62E-07	9.04E-04	NA	NA	8.65E-08	2.16E-04	NA	NA	3.87E-08	9.68E-05	NA	NA	7.75E-08	1.94E-04	NA	NA	8.96E-08	2.24E-04	NA	NA
Aroclor-1254	1.54E-02	2.00E-05	2.00E+00	2.81E-09	1.41E-04	1.21E-10	2.41E-10	6.74E-10	3.37E-05	5.77E-11	1.15E-10	3.02E-10	1.51E-05	6.03E-11	1.21E-10	6.03E-10	3.02E-05	6.03E-11	1.21E-10	6.98E-10	3.49E-05	2.99E-10	5.98E-10
Aroclor-1260	8.34E-03	2.00E-05	2.00E+00	1.16E-09	5.79E-05	4.97E-11	9.93E-11	2.77E-10	1.39E-05	2.38E-11	4.75E-11	1.24E-10	6.21E-06	2.48E-11	4.97E-11	2.48E-10	1.24E-05	2.48E-11	4.97E-11	2.87E-10	1.44E-05	1.23E-10	2.46E-10
Arsenic	1.03E+01	3.00E-04	1.50E+00	1.87E-06	6.25E-03	8.03E-08	1.20E-07	4.49E-07	1.50E-03	3.85E-08	5.77E-08	2.01E-07	6.69E-04	4.02E-08	6.02E-08	4.02E-07	1.34E-03	4.02E-08	6.02E-08	4.65E-07	1.55E-03	1.99E-07	2.99E-07
Barium	NA	2.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	NA	4.00E-03	5.50E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	1.16E-01	NA	7.30E-01	NA	NA	9.07E-10	6.62E-10	NA	NA	4.34E-10	3.17E-10	NA	NA	4.54E-10	3.31E-10	NA	NA	4.54E-10	3.31E-10	NA	NA	2.25E-09	1.64E-09
Benzo(a)pyrene	5.28E-02	NA	7.30E+00	NA	NA	4.13E-10	3.02E-09	NA	NA	1.98E-10	1.44E-09	NA	NA	2.07E-10	1.51E-09	NA	NA	2.07E-10	1.51E-09	NA	NA	1.02E-09	7.48E-09
Benzo(b)fluoranthene	1.85E-01	NA	7.30E-01	NA	NA	1.45E-09	1.06E-09	NA	NA	6.95E-10	5.07E-10	NA	NA	7.26E-10	5.30E-10	NA	NA	7.26E-10	5.30E-10	NA	NA	3.60E-09	2.63E-09
Benzo(k)fluoranthene	5.57E-02	NA	7.30E-02	NA	NA	4.36E-10	3.18E-11	NA	NA	2.09E-10	1.52E-11	NA	NA	2.18E-10	1.59E-11	NA	NA	2.18E-10	1.59E-11	NA	NA	1.08E-09	7.89E-11
Beryllium	1.03E+00	2.00E-03	4.30E+00	1.88E-07	9.39E-05	8.05E-09	3.46E-08	4.50E-08	2.25E-05	3.85E-09	1.66E-08	2.01E-08	1.01E-05	4.03E-09	1.73E-08	4.03E-08	2.01E-05	4.03E-09	1.73E-08	4.66E-08	2.33E-05	2.00E-08	8.58E-08
Bis(2-chloroisopropyl)ether	NA	4.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	NA	2.00E-02	1.40E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Boron	NA	2.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	NA	2.00E-02	6.20E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	NA	2.00E-02	7.90E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	NA	1.40E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	6.74E-01	1.00E-03	NA	1.23E-07	1.23E-04	NA	NA	2.95E-08	2.95E-05	NA	NA	1.32E-08	1.32E-05	NA	NA	2.64E-08	2.64E-05	NA	NA	3.05E-08	3.05E-05	NA	NA
Carbazole	NA	NA	2.00E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	NA	1.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	NA	7.00E-04	1.30E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlordane	NA	5.00E-04	3.50E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	NA	2.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	NA	1.00E-02	6.10E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (VI)	NA	3.00E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	6.27E-01	NA	7.30E-03	NA	NA	4.91E-09	3.59E-11	NA	NA	2.35E-09	1.72E-11	NA	NA	2.46E-09	1.79E-11	NA	NA	2.46E-09	1.79E-11	NA	NA	1.22E-08	8.89E-11
Cobalt	NA	2.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	NA	4.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	NA	2.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexanone	NA	5.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	2.88E-02	NA	7.30E+00	NA	NA	2.25E-10	1.65E-09	NA	NA	1.08E-10	7.88E-10	NA	NA	1.13E-10	8.23E-10	NA	NA	1.13E-10	8.23E-10	NA	NA	5.59E-10	4.08E-09
Dieldrin	NA	5.00E-05	1.60E+01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-octylphthalate	NA	4.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE E.7-6
Museum Visitor - Zone 7 - IngestSoilChem

Museum Visitor - Ingestion of Soil
Risk calculation for Zone 7

Intake Equation: CDI = (CS*EF*ED*IR*FI*CF)/(BW*AT)

		UNITS	Assigned Values			
CDI =	Chronic Daily Intake	mg/kgday	child	youth	adult	senior
CS =	Concentration of chemical in soil	mg/kg	see table of COCs below			
EF =	Exposure frequency	days/yr	10	10	10	20
ED =	Exposure duration	yrs	3	6	14	7
IR =	Ingestion rate	mg/day	100	75	50	50
FI =	Fraction of contaminated soil	unitless	1	1	1	1
CF =	Conversion factor	kg/mg	1.00E-06	1.00E-06	1.00E-06	1.00E-06
BW =	Body weight	kg	15	47	70	70
ATc =	Average time for carcinogens	days	25550	25550	25550	25550
ATn =	Average time for non-carcinogens	days	1095	2190	5110	2555

				CHILD				YOUTH				ADULT				SENIOR				SUM			
COC	conc	RfDo	CSFo	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR
	mg/kg	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
Ethyl ether	NA	2.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	NA	1.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoride	NA	6.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlorodibenzofuran	NA	NA	1.50E+03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlorodibenzo-p-dioxin	NA	NA	1.50E+03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorodibenzofuran	NA	NA	1.50E+03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorodibenzo-p-dioxin	NA	NA	1.50E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	2.14E-01	NA	7.30E-01	NA	NA	1.68E-09	1.22E-09	NA	NA	8.03E-10	5.86E-10	NA	NA	8.39E-10	6.12E-10	NA	NA	8.39E-10	6.12E-10	NA	NA	4.16E-09	3.04E-09
Lead	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	NA	1.40E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	NA	3.00E-04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methanol	NA	5.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl-2-pentanone	NA	8.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene chloride	NA	6.00E-02	7.50E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Molybdenum	3.97E+00	5.00E-03	NA	7.25E-07	1.45E-04	NA	NA	1.74E-07	3.47E-05	NA	NA	7.77E-08	1.55E-05	NA	NA	1.55E-07	3.11E-05	NA	NA	1.80E-07	3.59E-05	NA	NA
Nickel	NA	2.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	NA	2.00E-02	4.90E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-nitrosodipropylamine	NA	NA	7.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Octachlorodibenzofuran	NA	NA	1.50E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Octochlorodibenzo-p-dioxin	NA	NA	1.50E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorodibenzofuran	NA	NA	7.50E+03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorodibenzo-p-dioxin	NA	NA	7.50E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	NA	3.00E-02	1.20E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	6.02E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	NA	5.00E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	8.84E-01	5.00E-03	NA	1.61E-07	3.23E-05	NA	NA	3.86E-08	7.73E-06	NA	NA	1.73E-08	3.46E-06	NA	NA	3.46E-08	6.92E-06	NA	NA	4.00E-08	8.00E-06	NA	NA
Tetrachlorodibenzofuran	NA	NA	1.50E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachlorodibenzo-p-dioxin	NA	NA	1.50E+05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethylene	NA	1.00E-02	5.40E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	NA	9.00E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	NA	8.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tributyl phosphate	NA	2.00E-01	5.40E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethylene	NA	3.00E-04	4.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trifluorochloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Uranium	1.52E+01	6.00E-04	NA	2.77E-06	4.62E-03	NA	NA	6.63E-07	1.10E-03	NA	NA	2.97E-07	4.95E-04	NA	NA	5.93E-07	9.89E-04	NA	NA	6.86E-07	1.14E-03	NA	NA
Vanadium	NA	7.00E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	NA	3.00E-03	1.50E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes	NA	2.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	NA	3.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
																				total =	3.06E-03	total =	4.04E-07

TABLE E.7-6
Museum Visitor - Zone 7 - DermalSWchem

Museum Visitor - Dermal Contact with Surface Water
Risk calculation for Zone 7

			UNITS	Assigned Values			
				child	youth	adult	senior
Intake Equation:	CDI =	(DA*EF*ED*SA)/(BW*AT)					
	CDI =	Chronic Daily Intake	mg/kgday	calculated below			
	DA =	Dermal absorption dose	mg/cm^{2}day	NA	NA	NA	NA
	EF =	Exposure frequency	days/yr	NA	NA	NA	NA
	ED =	Exposure duration	yrs	NA	NA	NA	NA
	SA =	Surface area of skin	cm^2	NA	NA	NA	NA
	BW =	Body weight	kg	NA	NA	NA	NA
	ATc =	Average time for carcinogens	days	NA	NA	NA	NA
	ATn =	Average time for non-carcinogens	days	NA	NA	NA	NA
where:	DA = C_v*K_p*CF*ET						
	C_v =	concentation of ith contaminant in surface water	mg/L	see COC list below			
	K_p =	permeability constant for ith contaminant	cm/hr	see COC list below			
	CF =	conversion factor	L/cm^3	NA	NA	NA	NA
	ET =	exposure time	hr/d	NA	NA	NA	NA

COC	C_v	K_p	DA	RfDd	CSFd	CHILD				YOUTH				ADULT				SENIOR				SUM			
						CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR
	mg/L	cm/hr	mg/cm^{2}day	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	NA	6.43E-03	NA	3.24E-03	7.04E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethylene	NA	1.59E-02	NA	5.00E-02	6.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-dichloroethane	NA	5.34E-03	NA	2.00E-02	9.10E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	NA	1.11E-03	NA	4.80E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	NA	1.69E-02	NA	NA	9.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	NA	9.95E-03	NA	3.25E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	NA	2.66E-03	NA	2.40E-03	2.63E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	NA	5.69E-04	NA	7.47E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	5.00E-04	1.00E-03	NA	8.00E-06	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	0.00E+00	1.29E+00	NA	1.80E-05	2.22E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	0.00E+00	5.48E+00	NA	1.80E-05	2.22E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	3.00E-03	1.00E-03	NA	1.23E-04	3.66E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	NA	1.00E-03	NA	1.40E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	NA	2.07E-02	NA	3.88E-03	5.67E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	0.00E+00	9.48E-01	NA	NA	2.35E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	0.00E+00	1.24E+00	NA	NA	2.35E+01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	0.00E+00	6.99E-01	NA	NA	2.35E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	0.00E+00	1.20E+00	NA	NA	2.35E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	1.60E-04	1.00E-03	NA	2.00E-05	4.30E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-chloroisopropyl)ether	NA	7.63E-02	NA	2.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	NA	1.97E+00	NA	3.80E-03	7.37E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Boron	NA	1.00E-03	NA	1.80E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	NA	5.02E-03	NA	1.96E-02	6.33E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	NA	2.77E-03	NA	1.20E-02	1.32E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	NA	3.51E-03	NA	1.12E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	1.00E-04	1.00E-03	NA	1.00E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	NA	7.97E-02	NA	NA	2.86E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	NA	1.56E-02	NA	6.30E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	NA	2.24E-02	NA	4.55E-04	2.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlordane	NA	1.57E-01	NA	2.50E-04	7.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	NA	4.07E-02	NA	6.20E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	NA	8.92E-03	NA	2.00E-03	3.05E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (VI)	NA	2.00E-03	NA	6.00E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.00E+00	1.03E+00	NA	NA	2.35E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	NA	4.00E-04	NA	1.60E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	NA	1.00E-03	NA	1.20E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	NA	1.00E-03	NA	3.40E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexanone	NA	1.80E-03	NA	4.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	0.00E+00	1.68E+00	NA	NA	2.35E+01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	NA	4.45E-02	NA	2.50E-05	3.20E+01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-octylphthalate	NA	4.45E+00	NA	3.60E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE E.7-6
Museum Visitor - Zone 7 - DermalSWchem

Museum Visitor - Dermal Contact with Surface Water
Risk calculation for Zone 7

			UNITS	Assigned Values child	youth	adult	senior
Intake Equation:	CDI =	(DA*EF*ED*SA)/(BW*AT)					
	CDI =	Chronic Daily Intake	mg/kgday		calculated below		
	DA =	Dermal absorption dose	mg/cm²day	NA	NA	NA	NA
	EF =	Exposure frequency	days/yr	NA	NA	NA	NA
	ED =	Exposure duration	yrs	NA	NA	NA	NA
	SA =	Surface area of skin	cm²	NA	NA	NA	NA
	BW =	Body weight	kg	NA	NA	NA	NA
	ATc =	Average time for carcinogens	days	NA	NA	NA	NA
	ATn =	Average time for non-carcinogens	days	NA	NA	NA	NA
where:	DA = C_v*K_p*CF*ET						
	C_v =	concentation of ith contaminant in surface water	mg/L		see COC list below		
	K_p =	permeability constant for ith contaminant	cm/hr		see COC list below		
	CF =	conversion factor	L/cm³	NA	NA	NA	NA
	ET =	exposure time	hr/d	NA	NA	NA	NA

COC	C_v	K_p	DA	RfDd	CSFd	CHILD CDI	CHILD HQ	CHILD CDI	CHILD ILCR	YOUTH CDI	YOUTH HQ	YOUTH CDI	YOUTH ILCR	ADULT CDI	ADULT HQ	ADULT CDI	ADULT ILCR	SENIOR CDI	SENIOR HQ	SENIOR CDI	SENIOR ILCR	SUM CDI	SUM HQ	SUM CDI	SUM ILCR
	mg/L	cm/hr	mg/cm²day	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
Ethyl ether	NA	2.88E-03	NA	1.60E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	NA	7.39E-02	NA	9.70E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoride	NA	1.00E-03	NA	5.82E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlorodibenzofuran	NA	2.55E+00	NA	NA	3.00E+03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlorodibenzo-p-dioxin	NA	3.22E+00	NA	NA	3.00E+03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorodibenzofuran	NA	2.38E+00	NA	NA	3.00E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorodibenzo-p-dioxin	NA	5.29E+00	NA	NA	3.00E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	0.00E+00	2.23E+00	NA	NA	2.35E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	NA	1.00E-04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	NA	1.00E-03	NA	1.84E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	NA	1.00E-03	NA	2.10E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methanol	NA	3.45E-04	NA	4.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone	NA	3.97E-03	NA	6.40E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene chloride	NA	4.46E-03	NA	5.70E-02	7.89E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Molybdenum	7.65E-03	1.00E-03	NA	1.90E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	NA	2.00E-04	NA	5.40E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	NA	1.96E-02	NA	5.00E-03	1.96E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-nitrosodipropylamine	NA	2.83E-03	NA	NA	2.80E+01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Octachlorodibenzofuran	NA	4.78E+00	NA	NA	3.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Octochlorodibenzo-p-dioxin	NA	1.65E+01	NA	NA	3.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorodibenzofuran	NA	1.06E+00	NA	NA	1.50E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorodibenzo-p-dioxin	NA	3.79E-01	NA	NA	1.50E+05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	NA	1.95E-01	NA	3.00E-02	1.20E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	0.00E+00	2.29E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	NA	1.00E-03	NA	2.20E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	2.00E-04	6.00E-04	NA	9.00E-04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachlorodibenzofuran	NA	1.12E+00	NA	NA	3.00E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachlorodibenzo-p-dioxin	NA	1.39E+00	NA	NA	3.00E+05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethylene	NA	4.81E-02	NA	1.00E-02	5.40E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	NA	1.00E-03	NA	1.80E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	NA	4.53E-02	NA	6.40E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tributyl phosphate	NA	3.13E-02	NA	1.00E-01	1.08E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethylene	NA	1.57E-02	NA	4.50E-05	2.67E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trifluorochloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Uranium	1.94E-02	1.00E-03	NA	5.10E-04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	NA	1.00E-03	NA	7.00E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	NA	1.13E-02	NA	3.00E-03	1.50E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes	NA	7.04E-02	NA	1.84E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	NA	6.00E-04	NA	6.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
																						total =	0.00E+00	total =	0.00E+00

TABLE E.7-6
Museum Visitor - Zone 7 - IngestSWchem

Museum Visitor - Ingestion of Surface Water
Risk calculation for Zone 7

Intake Equation:			UNITS	Assigned Values			
				child	youth	adult	senior
	CDI =	(CW*EF*ED*IR)/(BW*AT)					
	CDI =	Chronic Daily Intake	mg/kgday				
	CW =	Concentration of chemical in water	mg/L	see COC table below			
	EF =	Exposure frequency	days/yr	NA	NA	NA	NA
	ED =	Exposure duration	yrs	NA	NA	NA	NA
	IR =	Ingestion rate	L/day	NA	NA	NA	NA
	BW =	Body weight	kg	NA	NA	NA	NA
	ATc =	Average time for carcinogens	days	NA	NA	NA	NA
	ATn =	Average time for non-carcinogens	days	NA	NA	NA	NA

COC	CW	RfDo	CSFo	CHILD				YOUTH				ADULT				SENIOR				SUM			
				CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR
	mg/L	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	NA	4.00E-03	5.70E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethylene	NA	5.00E-02	6.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-dichloroethane	NA	2.00E-02	9.10E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	NA	6.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	NA	NA	4.50E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	NA	5.00E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	NA	3.00E-03	2.10E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	NA	9.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	5.00E-04	4.00E-04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	0.00E+00	2.00E-05	4.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	0.00E+00	2.00E-05	4.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	3.00E-03	3.00E-04	1.50E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	NA	2.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	NA	4.00E-03	5.50E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	0.00E+00	NA	7.30E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	0.00E+00	NA	7.30E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	0.00E+00	NA	7.30E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	0.00E+00	NA	7.30E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	1.60E-04	2.00E-03	4.30E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-chloroisopropyl)ether	NA	4.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	NA	2.00E-02	1.40E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Boron	NA	2.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	NA	2.00E-02	6.20E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	NA	2.00E-02	7.90E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	NA	1.40E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	1.00E-04	1.00E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	NA	NA	2.00E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	NA	1.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	NA	7.00E-04	1.30E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlordane	NA	5.00E-04	3.50E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	NA	2.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	NA	1.00E-02	6.10E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (VI)	NA	3.00E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.00E+00	NA	7.30E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	NA	2.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	NA	4.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	NA	2.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexanone	NA	5.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	0.00E+00	NA	7.30E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	NA	5.00E-05	1.60E+01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-octylphthalate	NA	4.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE E.7-6
Museum Visitor - Zone 7 - IngestSWchem

Museum Visitor - Ingestion of Surface Water
Risk calculation for Zone 7

Intake Equation:			UNITS	Assigned Values			
				child	youth	adult	senior
	CDI =	(CW*EF*ED*IR)/(BW*AT)					
	CDI =	Chronic Daily Intake	mg/kgday				
	CW =	Concentration of chemical in water	mg/L	see COC table below			
	EF =	Exposure frequency	days/yr	NA	NA	NA	NA
	ED =	Exposure duration	yrs	NA	NA	NA	NA
	IR =	Ingestion rate	L/day	NA	NA	NA	NA
	BW =	Body weight	kg	NA	NA	NA	NA
	ATc =	Average time for carcinogens	days	NA	NA	NA	NA
	ATn =	Average time for non-carcinogens	days	NA	NA	NA	NA

COC	CW	RfDo	CSFo	CHILD				YOUTH				ADULT				SENIOR				SUM			
				CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR
	mg/L	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
Ethyl ether	NA	2.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	NA	1.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoride	NA	6.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlorodibenzofuran	NA	NA	1.50E+03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlorodibenzo-p-dioxin	NA	NA	1.50E+03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorodibenzofuran	NA	NA	1.50E+03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorodibenzo-p-dioxin	NA	NA	1.50E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	0.00E+00	NA	7.30E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	NA	4.60E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	NA	3.00E-04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methanol	NA	5.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone	NA	8.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene chloride	NA	6.00E-02	7.50E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Molybdenum	7.65E-03	5.00E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	NA	2.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	NA	2.00E-02	4.90E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-nitrosodipropylamine	NA	NA	7.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Octachlorodibenzofuran	NA	NA	1.50E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Octochlorodibenzo-p-dioxin	NA	NA	1.50E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorodibenzofuran	NA	NA	7.50E+03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorodibenzo-p-dioxin	NA	NA	7.50E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	NA	3.00E-02	1.20E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	NA	5.00E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	2.00E-04	5.00E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachlorodibenzofuran	NA	NA	1.50E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachlorodibenzo-p-dioxin	NA	NA	1.50E+05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethylene	NA	1.00E-02	5.40E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	NA	9.00E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	NA	8.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tributyl phosphate	NA	2.00E-01	5.40E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethylene	NA	3.00E-04	4.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trifluorochloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Uranium	1.94E-02	6.00E-04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	NA	7.00E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	NA	3.00E-03	1.50E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes	NA	2.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	NA	3.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
																				total =	0.00E+00	total =	0.00E+00

TABLE E.7-6
Museum Visitor - Zone 7 - InhaleRad

Museum Visitor - Inhalation of Gases & Particulates
Risk calculation for Zone 7

Intake Equation:			UNITS	Assigned Values			
				child	youth	adult	senior
	CDI =	(CA*EF*ED*IR*ET)					
	CDI =	Chronic Daily Intake	pCi				
	CA =	Concentration of radionuclide in air	pCi/m^3	see table of COCs below			
	EF =	Exposure frequency	days/yr	10	10	10	20
	ED =	Exposure duration	yrs	3	6	14	7
	IR =	Inhalation rate	m^3/hr	1.0	1.0	1.0	1.0
	ET =	Exposure time	hrs/day	0.5	0.5	0.5	0.5

COC	conc	CSFi	CHILD		YOUTH		ADULT		SENIOR		SUM	
			CDI	ILCR	CDI	ILCR	CDI	ILCR	CDI	ILCR	CDI	ILCR
	pCi/m^3	1/pCi	pCi	CDI*CSF	pCi	CDI*CSF	pCi	CDI*CSF	pCi	CDI*CSF	pCi	CDI*CSF
Cesium-137 + D	2.97E-06	1.19E-11	4.45E-05	5.29E-16	8.90E-05	1.06E-15	2.08E-04	2.47E-15	2.08E-04	2.47E-15	5.49E-04	6.53E-15
Lead-210 + D	1.12E-04	1.39E-08	1.67E-03	2.33E-11	3.35E-03	4.65E-11	7.81E-03	1.09E-10	7.81E-03	1.09E-10	2.06E-02	2.87E-10
Neptunium-237 + D	NA	1.77E-08	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Plutonium-238	NA	3.36E-08	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Plutonium-239/240	NA	3.33E-08	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Radium-226 + D	3.67E-05	1.16E-08	5.51E-04	6.39E-12	1.10E-03	1.28E-11	2.57E-03	2.98E-11	2.57E-03	2.98E-11	6.80E-03	7.89E-11
Radium-228 + D	2.98E-05	5.23E-09	4.46E-04	2.33E-12	8.93E-04	4.67E-12	2.08E-03	1.09E-11	2.08E-03	1.09E-11	5.50E-03	2.88E-11
Radon-222+ D	3.62E+02	1.80E-11	5.43E+03	9.77E-08	1.09E+04	1.95E-07	2.53E+04	4.56E-07	2.53E+04	4.56E-07	6.69E+04	1.20E-06
Strontium-90 + D	NA	1.13E-10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Technetium-99	8.47E-05	1.41E-11	1.27E-03	1.79E-14	2.54E-03	3.58E-14	5.93E-03	8.36E-14	5.93E-03	8.36E-14	1.57E-02	2.21E-13
Thorium-228 + D	3.05E-05	1.43E-07	4.57E-04	6.54E-11	9.14E-04	1.31E-10	2.13E-03	3.05E-10	2.13E-03	3.05E-10	5.64E-03	8.06E-10
Thorium-230	8.01E-05	2.85E-08	1.20E-03	3.43E-11	2.40E-03	6.85E-11	5.61E-03	1.60E-10	5.61E-03	1.60E-10	1.48E-02	4.22E-10
Thorium-232	2.98E-05	4.33E-08	4.46E-04	1.93E-11	8.93E-04	3.86E-11	2.08E-03	9.02E-11	2.08E-03	9.02E-11	5.50E-03	2.38E-10
Uranium-234	1.35E-04	1.14E-08	2.02E-03	2.30E-11	4.04E-03	4.60E-11	9.42E-03	1.07E-10	9.42E-03	1.07E-10	2.49E-02	2.84E-10
Uranium-235 + D	6.13E-06	1.01E-08	9.20E-05	9.29E-13	1.84E-04	1.86E-12	4.29E-04	4.33E-12	4.29E-04	4.33E-12	1.13E-03	1.15E-11
Uranium-238 + D	1.31E-04	9.35E-09	1.97E-03	1.84E-11	3.94E-03	3.69E-11	9.20E-03	8.60E-11	9.20E-03	8.60E-11	2.43E-02	2.27E-10
											total =	**1.21E-06**

Air concentration is derived from air particulate value of 26 ug/m^3 (2005 SER background average from monitor AMS-12) multiplied by soil concentration.

Rn-222 is derived by multiplying the soil Ra-226 value by 256 g/m^3. This conversion factor is based on Rn-222 air background and Ra-226 soil background (i.e., 400 pCi/m^3 divided by 1.56 pCi/g)

TABLE E.7-6
Museum Visitor - Zone 7 - IngestSoilRad

Museum Visitor - Ingestion of Soil
Risk calculation for Zone 7

Intake Equation:			UNITS	Assigned Values			
				child	youth	adult	senior
	CDI =	(CS*EF*ED*IR*FI)					
	CDI =	Chronic Daily Intake	pCi				
	CS =	Concentration of radionuclide in soil	pCi/g	see table of COCs below			
	EF =	Exposure frequency	days/yr	10	10	10	20
	ED =	Exposure duration	yrs	3	6	14	7
	IR =	Ingestion rate	g/day	0.1	0.075	0.05	0.05
	FI =	Fraction of contaminated soil	unitless	1	1	1	1

COC	conc	CSFos	CHILD		YOUTH		ADULT		SENIOR		SUM	
			CDI	ILCR	CDI	ILCR	CDI	ILCR	CDI	ILCR	CDI	ILCR
	pCi/g	1/pCi	pCi	CDI*CSF	pCi	CDI*CSF	pCi	CDI*CSF	pCi	CDI*CSF	pCi	CDI*CSF
Cesium-137 + D	1.14E-01	4.33E-11	3.42E-01	1.48E-11	5.13E-01	2.22E-11	7.99E-01	3.46E-11	7.99E-01	3.46E-11	2.45E+00	1.06E-10
Lead-210 + D	4.29E+00	2.66E-09	1.29E+01	3.42E-08	1.93E+01	5.13E-08	3.00E+01	7.99E-08	3.00E+01	7.99E-08	9.22E+01	2.45E-07
Neptunium-237 + D	NA	1.62E-10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Plutonium-238	NA	2.72E-10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Plutonium-239/240	NA	2.76E-10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Radium-226 + D	1.41E+00	7.30E-10	4.24E+00	3.10E-09	6.36E+00	4.64E-09	9.89E+00	7.22E-09	9.89E+00	7.22E-09	3.04E+01	2.22E-08
Radium-228 + D	1.14E+00	2.29E-09	3.43E+00	7.86E-09	5.15E+00	1.18E-08	8.01E+00	1.83E-08	8.01E+00	1.83E-08	2.46E+01	5.63E-08
Radon-222+ D	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Strontium-90 + D	NA	1.44E-10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Technetium-99	3.26E+00	7.66E-12	9.77E+00	7.48E-11	1.47E+01	1.12E-10	2.28E+01	1.75E-10	2.28E+01	1.75E-10	7.00E+01	5.36E-10
Thorium-228 + D	1.17E+00	8.09E-10	3.52E+00	2.84E-09	5.27E+00	4.27E-09	8.21E+00	6.64E-09	8.21E+00	6.64E-09	2.52E+01	2.04E-08
Thorium-230	3.08E+00	2.02E-10	9.24E+00	1.87E-09	1.39E+01	2.80E-09	2.16E+01	4.36E-09	2.16E+01	4.36E-09	6.63E+01	1.34E-08
Thorium-232	1.14E+00	2.31E-10	3.43E+00	7.93E-10	5.15E+00	1.19E-09	8.01E+00	1.85E-09	8.01E+00	1.85E-09	2.46E+01	5.68E-09
Uranium-234	5.18E+00	1.58E-10	1.55E+01	2.45E-09	2.33E+01	3.68E-09	3.62E+01	5.72E-09	3.62E+01	5.72E-09	1.11E+02	1.76E-08
Uranium-235 + D	2.36E-01	1.63E-10	7.07E-01	1.15E-10	1.06E+00	1.73E-10	1.65E+00	2.69E-10	1.65E+00	2.69E-10	5.07E+00	8.26E-10
Uranium-238 + D	5.05E+00	2.10E-10	1.52E+01	3.18E-09	2.27E+01	4.78E-09	3.54E+01	7.43E-09	3.54E+01	7.43E-09	1.09E+02	2.28E-08
											total =	**4.05E-07**

TABLE E.7-6
Museum Visitor - Zone 7 - IngestSWrad

Museum Visitor - Ingestion of Surface Water
Risk calculation for Zone 7

			UNITS	Assigned Values			
				child	youth	adult	senior
Intake Equation:	CDI =	(CW*EF*ED*IR)/(BW*AT)					
	CDI =	Chronic Daily Intake	pCi				
	CW =	Concentration of radionuclide in water	pCi/L	see COC table below			
	EF =	Exposure frequency	days/yr	NA	NA	NA	NA
	ED =	Exposure duration	yrs	NA	NA	NA	NA
	IR =	Ingestion rate	L/day	NA	NA	NA	NA

COC	conc	CSF	CHILD		YOUTH		ADULT		SENIOR		SUM	
			CDI	ILCR	CDI	ILCR	CDI	ILCR	CDI	ILCR	CDI	ILCR
	pCi/L	1/pCi	pCi	CDI*CSF	pCi	CDI*CSF	pCi	CDI*CSF	pCi	CDI*CSF	pCi	CDI*CSF
Cesium-137 + D	1.70E+00	3.04E-11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead-210 + D	6.99E-01	1.27E-09	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Neptunium-237 + D	NA	6.74E-11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Plutonium-238	NA	1.31E-10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Plutonium-239/240	NA	1.35E-10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Radium-226 + D	3.84E-01	3.86E-10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Radium-228 + D	2.82E+00	1.04E-09	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Radon-222+ D	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Strontium-90 + D	NA	7.40E-11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Technetium-99	7.96E+00	2.75E-12	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thorium-228 + D	2.92E+00	3.00E-10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thorium-230	2.03E-01	9.10E-11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thorium-232	2.82E+00	1.01E-10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Uranium-234	6.62E+00	7.07E-11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Uranium-235 + D	3.02E-01	7.18E-11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Uranium-238 + D	6.47E+00	8.71E-11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
											total =	**0.00E+00**

TABLE E.7-6
Museum Visitor - Zone 7 - ExternalRad

Museum Visitor - External Radiation
Risk calculation for Zone 7

			UNITS	Assigned Values			
Intake Equation:	CDI =	$(CS*EF*ED*ET_o*(1-SH_o))+(CS*EF*ED*ETi*(1-SHi))$					
	CDI =	Chronic Daily Intake	yr pCi/g	child	youth	adult	senior
	CS =	Concentration of radionuclide in soil	pCi/g	see table of COCs below			
	EF =	Fraction of year exposed to radiation	--	0.027	0.027	0.027	0.05
	ED =	Exposure duration	yrs	3	6	14	7
	ET_o =	Fraction of day spent outdoors	--	0.021	0.021	0.021	0.021
	ET_i =	Fraction of day spent indoors	--	0.083	0.083	0.083	0.083
	SH_o =	Shield factor outdoors	--	0.25	0.25	0.25	0.25
	SH_i =	Shield factor indoors	--	0.5	0.5	0.5	0.5

COC	conc	CSFx	CHILD		YOUTH		ADULT		SENIOR		SUM	
			CDI	ILCR	CDI	ILCR	CDI	ILCR	CDI	ILCR	CDI	ILCR
	pCi/g	g/pCi yr	yr pCi/g	CDI*CSF	yr pCi/g	CDI*CSF	yr pCi/g	CDI*CSF	yr pCi/g	CDI*CSF	yr pCi/g	CDI*CSF
Cesium-137 + D	1.14E-01	2.55E-06	5.37E-04	1.37E-09	1.07E-03	2.74E-09	2.51E-03	6.39E-09	2.51E-03	6.39E-09	6.63E-03	1.69E-08
Lead-210 + D	4.29E+00	4.21E-09	2.02E-02	8.50E-11	4.04E-02	1.70E-10	9.43E-02	3.97E-10	9.43E-02	3.97E-10	2.49E-01	1.05E-09
Neptunium-237 + D	NA	7.97E-07	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Plutonium-238	NA	7.22E-11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Plutonium-239/240	NA	2.00E-10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Radium-226 + D	1.41E+00	8.49E-06	6.66E-03	5.65E-08	1.33E-02	1.13E-07	3.11E-02	2.64E-07	3.11E-02	2.64E-07	8.21E-02	6.97E-07
Radium-228 + D	1.14E+00	4.53E-06	5.39E-03	2.44E-08	1.08E-02	4.88E-08	2.51E-02	1.14E-07	2.51E-02	1.14E-07	6.65E-02	3.01E-07
Radon-222+ D	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Strontium-90 + D	NA	1.96E-08	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Technetium-99	3.26E+00	8.14E-11	1.53E-02	1.25E-12	3.07E-02	2.50E-12	7.16E-02	5.83E-12	7.16E-02	5.83E-12	1.89E-01	1.54E-11
Thorium-228 + D	1.17E+00	7.76E-06	5.52E-03	4.28E-08	1.10E-02	8.57E-08	2.58E-02	2.00E-07	2.58E-02	2.00E-07	6.81E-02	5.28E-07
Thorium-230	3.08E+00	8.19E-10	1.45E-02	1.19E-11	2.90E-02	2.38E-11	6.77E-02	5.55E-11	6.77E-02	5.55E-11	1.79E-01	1.47E-10
Thorium-232	1.14E+00	3.42E-10	5.39E-03	1.84E-12	1.08E-02	3.69E-12	2.51E-02	8.60E-12	2.51E-02	8.60E-12	6.65E-02	2.27E-11
Uranium-234	5.18E+00	2.52E-10	2.44E-02	6.14E-12	4.87E-02	1.23E-11	1.14E-01	2.87E-11	1.14E-01	2.87E-11	3.01E-01	7.57E-11
Uranium-235 + D	2.36E-01	5.43E-07	1.11E-03	6.03E-10	2.22E-03	1.21E-09	5.18E-03	2.81E-09	5.18E-03	2.81E-09	1.37E-02	7.44E-09
Uranium-238 + D	5.05E+00	1.14E-07	2.38E-02	2.71E-09	4.76E-02	5.43E-09	1.11E-01	1.27E-08	1.11E-01	1.27E-08	2.94E-01	3.35E-08
											total =	**1.59E-06**

TABLE E.7-6
Museum Visitor - Zone 7 - SumPaths

Museum Visitor - Summation of all Pathways
Risk calculation for Zone 7

	HQ	ILCR	rad only ILCR
Inhale	1.56E-06	1.21E-06	1.21E-06
Dermal Soil	1.07E-03	2.98E-07	NA
Ingest Soil	3.06E-03	8.10E-07	4.05E-07
Dermal Surface Water	NA	NA	NA
Ingest Surface Water	NA	NA	NA
External Radiation	NA	1.59E-06	1.59E-06
SUM	**4.14E-03**	**3.90E-06**	**3.20E-06**

Summation of all paths for individual nuclides

	Total ILCR	BKGD ILCR	Total - BKGD ILCR
Cesium-137 + D	1.70E-08	9.84E-09	7.16E-09
Lead-210 + D	2.47E-07	8.97E-08	1.57E-07
Neptunium-237 + D	NA	NA	NA
Plutonium-238	NA	NA	NA
Plutonium-239/240	NA	NA	NA
Radium-226 + D	7.19E-07	7.94E-07	0.00E+00
Radium-228 + D	3.57E-07	3.97E-07	0.00E+00
Radon-222+ D	1.20E-06	1.33E-06	0.00E+00
Strontium-90 + D	NA	NA	NA
Technetium-99	5.52E-10	0.00E+00	5.52E-10
Thorium-228 + D	5.49E-07	5.86E-07	0.00E+00
Thorium-230	1.40E-08	7.06E-09	6.89E-09
Thorium-232	5.94E-09	6.60E-09	0.00E+00
Uranium-234	1.79E-08	5.39E-09	1.25E-08
Uranium-235 + D	8.27E-09	2.49E-09	5.79E-09
Uranium-238 + D	5.65E-08	1.70E-08	3.95E-08
SUM	**3.20E-06**		**2.29E-07**

TABLE E.7-6
Museum Visitor - Zone 7 - SumPaths

Summation of all paths for individual chemicals

	Total		BKGD		Total - BKGD	
	ILCR	HQ	ILCR	HQ	ILCR	HQ
1,1,2-Trichloroethane	NA	NA	NA	NA	NA	NA
1,1-Dichloroethylene	NA	NA	NA	NA	NA	NA
1,2-dichloroethane	NA	NA	NA	NA	NA	NA
2-Butanone	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	NA	NA	NA	NA	NA	NA
4-Methylphenol	NA	NA	NA	NA	NA	NA
4-Nitroanaline	NA	NA	NA	NA	NA	NA
Acetone	NA	NA	NA	NA	NA	NA
Antimony	no CSFs	3.11E-04	no CSFs	4.50E-04	no CSFs	0.00E+00
Aroclor-1254	1.32E-09	7.68E-05	0.00E+00	0.00E+00	1.32E-09	7.68E-05
Aroclor-1260	5.42E-10	3.16E-05	0.00E+00	0.00E+00	5.42E-10	3.16E-05
Arsenic	4.68E-07	2.42E-03	5.66E-07	2.93E-03	0.00E+00	0.00E+00
Barium	NA	NA	NA	NA	NA	NA
Benzene	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	6.95E-09	no RfDs	0.00E+00	no RfDs	6.95E-09	no RfDs
Benzo(a)pyrene	3.17E-08	no RfDs	0.00E+00	no RfDs	3.17E-08	no RfDs
Benzo(b)fluoranthene	1.11E-08	no RfDs	0.00E+00	no RfDs	1.11E-08	no RfDs
Benzo(k)fluoranthene	3.34E-10	no RfDs	0.00E+00	no RfDs	3.34E-10	no RfDs
Beryllium	1.52E-07	4.28E-05	2.13E-07	6.00E-05	0.00E+00	0.00E+00
Bis(2-chloroisopropyl)ether	NA	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	NA	NA	NA	NA	NA	NA
Boron	NA	NA	NA	NA	NA	NA
Bromodichloromethane	NA	NA	NA	NA	NA	NA
Bromoform	NA	NA	NA	NA	NA	NA
Bromomethane	NA	NA	NA	NA	NA	NA
Cadmium	1.57E-11	5.41E-05	2.31E-11	7.94E-05	0.00E+00	0.00E+00
Carbazole	NA	NA	NA	NA	NA	NA
Carbon disulfide	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	NA	NA	NA	NA	NA	NA
Chlordane	NA	NA	NA	NA	NA	NA
Chlorobenzene	NA	NA	NA	NA	NA	NA
Chloroform	NA	NA	NA	NA	NA	NA
Chromium (VI)	NA	NA	NA	NA	NA	NA
Chrysene	3.76E-10	no RfDs	0.00E+00	no RfDs	3.76E-10	no RfDs
Cobalt	NA	NA	NA	NA	NA	NA
Copper	NA	NA	NA	NA	NA	NA
Cyanide	NA	NA	NA	NA	NA	NA
Cyclohexanone	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	1.73E-08	no RfDs	0.00E+00	no RfDs	1.73E-08	no RfDs
Dieldrin	NA	NA	NA	NA	NA	NA
Di-n-octylphthalate	NA	NA	NA	NA	NA	NA

TABLE E.7-6
Museum Visitor - Zone 7 - SumPaths

Summation of all paths for individual chemicals (continued)

	Total		BKGD		Total - BKGD	
	ILCR	HQ	ILCR	HQ	ILCR	HQ
Ethyl ether	NA	NA	NA	NA	NA	NA
Ethylbenzene	NA	NA	NA	NA	NA	NA
Fluoride	NA	NA	NA	NA	NA	NA
Heptachlorodibenzofuran	NA	NA	NA	NA	NA	NA
Heptachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA
Hexachlorodibenzofuran	NA	NA	NA	NA	NA	NA
Hexachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	1.29E-08	no RfDs	0.00E+00	no RfDs	1.29E-08	no RfDs
Lead	NA	NA	NA	NA	NA	NA
Manganese	NA	NA	NA	NA	NA	NA
Mercury	NA	NA	NA	NA	NA	NA
Methanol	NA	NA	NA	NA	NA	NA
Methyl-2-pentanone	NA	NA	NA	NA	NA	NA
Methylene chloride	NA	NA	NA	NA	NA	NA
Molybdenum	no CSFs	3.67E-05	no CSFs	4.84E-05	no CSFs	0.00E+00
Nickel	NA	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	NA	NA	NA	NA	NA	NA
N-nitrosodipropylamine	NA	NA	NA	NA	NA	NA
Octachlorodibenzofuran	NA	NA	NA	NA	NA	NA
Octochlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA
Pentachlorodibenzofuran	NA	NA	NA	NA	NA	NA
Pentachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA
Pentachlorophenol	NA	NA	NA	NA	NA	NA
Phenanthrene	no CSFs	no RfDs	no CSFs	no RfDs	no CSFs	no RfDs
Selenium	NA	NA	NA	NA	NA	NA
Silver	no CSFs	8.35E-06	no CSFs	1.07E-05	no CSFs	0.00E+00
Tetrachlorodibenzofuran	NA	NA	NA	NA	NA	NA
Tetrachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA
Tetrachloroethylene	NA	NA	NA	NA	NA	NA
Thallium	NA	NA	NA	NA	NA	NA
Toluene	NA	NA	NA	NA	NA	NA
Tributyl phosphate	NA	NA	NA	NA	NA	NA
Trichloroethylene	NA	NA	NA	NA	NA	NA
Trifluorochloromethane	NA	NA	NA	NA	NA	NA
Uranium	no CSFs	1.15E-03	no CSFs	3.47E-04	no CSFs	8.07E-04
Vanadium	NA	NA	NA	NA	NA	NA
Vinyl chloride	NA	NA	NA	NA	NA	NA
Xylenes	NA	NA	NA	NA	NA	NA
Zinc	NA	NA	NA	NA	NA	NA
SUM	**7.03E-07**	**4.14E-03**			**8.24E-08**	**9.16E-04**

APPENDIX E.8
Zone 8

Table

E.8-1	Construction Worker	- Only available on CD ROM.
E.8-2	Groundskeeper / Sampler	- Only available on CD ROM.
E.8-3	Undeveloped Park User	- This receptor has no exposure for this zone, therefore no table exists.
E.8-4	Building Maintenance	- Only available on CD ROM.
E.8-5	Museum Worker	- This receptor has no exposure for this zone, therefore no table exists.
E.8-6	Museum Visitor	- This receptor has no exposure for this zone, therefore no table exists.

APPENDIX E.9
HWMUs

Table

E.9-1	Construction Worker	- Hard copy provided in this appendix, also available on CD ROM.
E.9-2	Groundskeeper / Sampler	- Hard copy provided in this appendix, also available on CD ROM.
E.9-3	Undeveloped Park User	- Hard copy provided in this appendix, also available on CD ROM.
E.9-4	Building Maintenance	- Hard copy provided in this appendix, also available on CD ROM.
E.9-5	Museum Worker	- Hard copy provided in this appendix, also available on CD ROM.
E.9-6	Museum Visitor	- Hard copy provided in this appendix, also available on CD ROM.

TABLE E.9-1
Construction Worker - HWMU - InhaleChem

Construction Worker - Inhalation of Gases & Particulates
Risk calculation for HWMU

Intake Equation:			UNITS	adult
	CDI =	(CS*EF*ED*IR*ET)/(BW*AT)		
	CDI =	Chronic Daily Intake	mg/kgday	calculated below
	CA =	Concentration of chemical in air	mg/m³	see COC list below
	EF =	Exposure frequency	days/yr	30
	ED =	Exposure duration	yrs	1
	IR =	Inhalation rate	m³/hr	2.5
	ET =	Exposure time	hrs/day	8
	BW =	Body weight	kg	70
	ATc =	Average time for carcinogens	days	25550
	ATn =	Average time for non-carcinogens	days	365

COC	conc mg/m³	RfDI mg/kgday	CSFI kgday/mg	ADULT CDI mg/kgday	ADULT HQ CDI/RfD	ADULT CDI mg/kgday	ADULT ILCR CDI*CSF
1,1,2-Trichloroethane	3.12E-10	NA	5.60E-02	NA	NA	1.05E-13	5.86E-15
1,1-Dichloroethylene	NA	5.71E-02	1.75E-01	NA	NA	NA	NA
1,2-dichloroethane	NA	NA	9.10E-02	NA	NA	NA	NA
2-Butanone	1.87E-10	1.43E+00	NA	4.40E-12	3.07E-12	NA	NA
3,3-Dichlorobenzidine	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	NA	NA	NA	NA	NA	NA	NA
4-Nitroanaline	NA	1.14E-03	NA	NA	NA	NA	NA
Acetone	NA	NA	NA	NA	NA	NA	NA
Antimony	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	NA	NA	2.00E+00	NA	NA	NA	NA
Aroclor-1260	NA	NA	2.00E+00	NA	NA	NA	NA
Arsenic	NA	NA	1.51E+01	NA	NA	NA	NA
Barium	6.63E-06	1.43E-04	NA	1.56E-07	1.09E-03	NA	NA
Benzene	4.42E-11	8.57E-03	2.73E-02	1.04E-12	1.21E-10	1.46E-14	4.05E-16
Benzo(a)anthracene	NA	NA	3.08E-01	NA	NA	NA	NA
Benzo(a)pyrene	NA	NA	3.08E-01	NA	NA	NA	NA
Benzo(b)fluoranthene	NA	NA	3.08E+00	NA	NA	NA	NA
Benzo(k)fluoranthene	NA	NA	3.08E-02	NA	NA	NA	NA
Beryllium	NA	5.71E-06	8.40E+00	NA	NA	NA	NA
Bis(2-chloroisopropyl)ether	NA	NA	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	NA	NA	NA	NA	NA	NA	NA
Boron	NA	5.71E-03	NA	NA	NA	NA	NA
Bromodichloromethane	NA	NA	NA	NA	NA	NA	NA
Bromoform	NA	NA	3.85E-03	NA	NA	NA	NA
Bromomethane	NA	1.43E-03	NA	NA	NA	NA	NA
Cadmium	NA	NA	6.30E+00	NA	NA	NA	NA
Carbazole	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	NA	2.00E-01	NA	NA	NA	NA	NA
Carbon tetrachloride	NA	NA	5.25E-02	NA	NA	NA	NA
Chlordane	NA	2.00E-04	3.50E-01	NA	NA	NA	NA
Chlorobenzene	NA	1.43E-02	NA	NA	NA	NA	NA
Chloroform	NA	NA	8.05E-02	NA	NA	NA	NA
Chromium (VI)	5.17E-07	2.86E-05	4.20E+01	1.22E-08	4.25E-04	1.74E-10	7.29E-09
Chrysene	NA	NA	3.08E-03	NA	NA	NA	NA
Cobalt	NA	5.71E-06	9.80E+00	NA	NA	NA	NA
Copper	NA	NA	NA	NA	NA	NA	NA
Cyanide	NA	NA	NA	NA	NA	NA	NA
Cyclohexanone	NA	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	NA	NA	3.08E+00	NA	NA	NA	NA
Dieldrin	NA	NA	1.61E+01	NA	NA	NA	NA
Di-n-octylphthalate	NA	NA	NA	NA	NA	NA	NA
Ethyl ether	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	NA	2.86E-01	3.85E-03	NA	NA	NA	NA
Fluoride	NA	NA	NA	NA	NA	NA	NA
Heptachlorodibenzofuran	NA	NA	1.16E+03	NA	NA	NA	NA
Heptachlorodibenzo-p-dioxin	NA	NA	1.16E+03	NA	NA	NA	NA
Hexachlorodibenzofuran	NA	NA	1.16E+04	NA	NA	NA	NA
Hexachlorodibenzo-p-dioxin	NA	NA	1.16E+04	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	NA	NA	3.08E-01	NA	NA	NA	NA
Lead	1.36E-06	NA	NA	NA	NA	NA	NA
Manganese	NA	1.43E-05	NA	NA	NA	NA	NA
Mercury	9.02E-10	NA	NA	NA	NA	NA	NA
Methanol	NA	NA	NA	NA	NA	NA	NA
Methyl-2-pentanone	NA	8.57E-01	NA	NA	NA	NA	NA
Methylene chloride	2.00E-10	8.57E-01	1.65E-03	4.70E-12	5.49E-12	6.72E-14	1.11E-16
Molybdenum	NA	NA	NA	NA	NA	NA	NA
Nickel	NA	NA	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	NA	NA	NA	NA	NA	NA	NA
N-nitrosodipropylamine	NA	NA	NA	NA	NA	NA	NA
Octochlorodibenzofuran	NA	NA	1.16E+02	NA	NA	NA	NA
Octochlorodibenzo-p-dioxin	NA	NA	1.16E+02	NA	NA	NA	NA
Pentachlorodibenzofuran	NA	NA	5.78E+03	NA	NA	NA	NA
Pentachlorodibenzo-p-dioxin	NA	NA	5.78E+04	NA	NA	NA	NA
Pentachlorophenol	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	NA	NA	NA	NA	NA	NA	NA
Selenium	NA	NA	NA	NA	NA	NA	NA
Silver	NA	NA	NA	NA	NA	NA	NA
Tetrachlorodibenzofuran	NA	NA	1.16E+04	NA	NA	NA	NA
Tetrachlorodibenzo-p-dioxin	NA	NA	1.16E+05	NA	NA	NA	NA
Tetrachloroethylene	1.79E-09	1.71E-01	2.07E-02	4.19E-11	2.45E-10	5.99E-13	1.24E-14
Thallium	NA	NA	NA	NA	NA	NA	NA
Toluene	1.98E-10	1.43E+00	NA	4.64E-12	3.24E-12	NA	NA
Tributyl phosphate	NA	NA	NA	NA	NA	NA	NA
Trichloroethylene	NA	1.14E-02	4.00E-01	NA	NA	NA	NA
Trifluorochloromethane	NA	NA	NA	NA	NA	NA	NA
Uranium	NA	NA	NA	NA	NA	NA	NA
Vanadium	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	NA	2.86E-02	3.08E-02	NA	NA	NA	NA
Xylenes	7.80E-10	2.86E-02	NA	1.83E-11	6.40E-10	NA	NA
Zinc	NA	NA	NA	NA	NA	NA	NA
				total =	1.51E-03	total =	7.29E-09

Air concentration is derived using air particulate value of 26 ug/m³ (2005 SER background average from monitor AMS-12) multiplied by the soil concentration.

TABLE E.9-1
Construction Worker - HWMU - DermalSoilChem

Construction Worker - Dermal Contact with Soil/Sediment
Risk calculation for HWMU

Intake Equation:			UNITS	adult
	CDI =	(CS*AB*SA*EF*ED*AF*CF)/(BW*AT)		
	CDI =	Chronic Daily Intake	mg/kgday	calculated below
	CS =	Concentration of chemical in soil	mg/kg	see COC list below
	AB	Absorption factor	–	see COC list below
	SA	Surface area of exposed skin	cm^2/day	3300
	EF =	Exposure frequency	days/yr	30
	ED =	Exposure duration	yrs	1
	AF =	Adherence factor	mg/cm^2	0.3
	CF =	Conversion factor	kg/mg	1.00E-06
	BW =	Body weight	kg	70
	ATc =	Average time for carcinogens	days	25550
	ATn =	Average time for non-carcinogens	days	365

COC	conc	AB	RfDd	CSFd	ADULT CDI	HQ	CDI	ILCR
	mg/kg	unitless	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	1.20E-02	1.00E-02	3.24E-03	7.04E-02	1.39E-10	4.31E-08	1.99E-12	1.40E-13
1,1-Dichloroethylene	NA	1.00E-02	5.00E-02	6.00E-01	NA	NA	NA	NA
1,2-dichloroethane	NA	1.00E-02	2.00E-02	9.10E-02	NA	NA	NA	NA
2-Butanone	7.20E-03	1.00E-02	4.80E-01	NA	8.37E-11	1.74E-10	NA	NA
3,3-Dichlorobenzidine	NA	1.00E-02	NA	9.00E-01	NA	NA	NA	NA
4-Methylphenol	NA	1.00E-02	3.25E-03	NA	NA	NA	NA	NA
4-Nitroanaline	NA	1.00E-02	2.40E-03	2.63E-02	NA	NA	NA	NA
Acetone	NA	1.00E-02	7.47E-01	NA	NA	NA	NA	NA
Antimony	NA	1.00E-03	8.00E-06	NA	NA	NA	NA	NA
Aroclor-1254	NA	1.40E-01	1.80E-05	2.22E+00	NA	NA	NA	NA
Aroclor-1260	NA	1.40E-01	1.80E-05	2.22E+00	NA	NA	NA	NA
~~Arsenic~~	~~NA~~	~~3.00E-02~~	~~1.23E-04~~	~~3.66E+00~~	~~NA~~	~~NA~~	~~NA~~	~~NA~~
Barium	2.55E+02	1.00E-03	1.40E-02	NA	2.96E-07	2.12E-05	NA	NA
Benzene	1.70E-03	1.00E-02	3.88E-03	5.67E-02	1.98E-11	5.09E-09	2.82E-13	1.60E-14
Benzo(a)anthracene	NA	1.30E-01	NA	2.35E+00	NA	NA	NA	NA
Benzo(a)pyrene	NA	1.30E-01	NA	2.35E+01	NA	NA	NA	NA
Benzo(b)fluoranthene	NA	1.30E-01	NA	2.35E+00	NA	NA	NA	NA
Benzo(k)fluoranthene	NA	1.30E-01	NA	2.35E-01	NA	NA	NA	NA
Beryllium	NA	1.00E-03	2.00E-05	4.30E+02	NA	NA	NA	NA
Bis(2-chloroisopropyl)ether	NA	1.00E-02	2.00E-02	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	NA	1.00E-02	3.60E-03	7.37E-02	NA	NA	NA	NA
Boron	NA	1.00E-03	1.80E-01	NA	NA	NA	NA	NA
Bromodichloromethane	NA	1.00E-02	1.96E-02	6.33E-02	NA	NA	NA	NA
Bromoform	NA	1.00E-02	1.20E-02	1.32E-02	NA	NA	NA	NA
Bromomethane	NA	1.00E-02	1.12E-03	NA	NA	NA	NA	NA
Cadmium	NA	1.00E-03	1.00E-05	NA	NA	NA	NA	NA
Carbazole	NA	1.00E-02	NA	2.86E-02	NA	NA	NA	NA
Carbon disulfide	NA	2.50E-01	6.30E-02	NA	NA	NA	NA	NA
Carbon tetrachloride	NA	1.00E-02	4.55E-04	2.00E-01	NA	NA	NA	NA
Chlordane	NA	4.00E-02	2.50E-04	7.00E-01	NA	NA	NA	NA
Chlorobenzene	NA	1.00E-02	6.20E-03	NA	NA	NA	NA	NA
Chloroform	NA	1.00E-02	2.00E-03	3.05E-02	NA	NA	NA	NA
Chromium (VI)	1.99E+01	1.00E-03	6.00E-05	NA	2.31E-08	3.86E-04	NA	NA
Chrysene	NA	1.30E-01	NA	2.35E-02	NA	NA	NA	NA
Cobalt	NA	1.00E-03	1.60E-02	NA	NA	NA	NA	NA
Copper	NA	1.00E-03	1.20E-02	NA	NA	NA	NA	NA
Cyanide	NA	1.00E-02	3.40E-03	NA	NA	NA	NA	NA
Cyclohexanone	NA	1.00E-02	4.00E+00	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	NA	1.30E-01	NA	2.35E+01	NA	NA	NA	NA
Dieldrin	NA	1.00E-02	2.50E-05	3.20E+01	NA	NA	NA	NA
Di-n-octylphthalate	NA	1.00E-02	3.60E-02	NA	NA	NA	NA	NA
Ethyl ether	NA	1.00E-02	1.60E-01	NA	NA	NA	NA	NA
Ethylbenzene	NA	1.00E-02	9.70E-02	NA	NA	NA	NA	NA
Fluoride	NA	1.00E-03	5.82E-02	NA	NA	NA	NA	NA
Heptachlorodibenzofuran	NA	1.00E-02	NA	3.00E+03	NA	NA	NA	NA
Heptachlorodibenzo-p-dioxin	NA	3.00E-02	NA	3.00E+03	NA	NA	NA	NA
Hexachlorodibenzofuran	NA	1.00E-02	NA	3.00E+04	NA	NA	NA	NA
Hexachlorodibenzo-p-dioxin	NA	3.00E-02	NA	3.00E+04	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	NA	1.30E-01	NA	2.35E+00	NA	NA	NA	NA
Lead	5.24E+01	1.00E-03	NA	NA	NA	NA	NA	NA
Manganese	NA	1.00E-03	5.60E-03	NA	NA	NA	NA	NA
Mercury	3.47E-02	1.00E-03	2.10E-05	NA	4.03E-11	1.92E-06	NA	NA
Methanol	NA	1.00E-02	4.00E-01	NA	NA	NA	NA	NA
Methyl-2-pentanone	NA	1.00E-02	6.40E-02	NA	NA	NA	NA	NA
Methylene chloride	7.70E-03	1.00E-02	5.70E-02	7.89E-03	8.95E-11	1.57E-09	1.28E-12	1.01E-14
Molybdenum	NA	1.00E-03	1.90E-03	NA	NA	NA	NA	NA
Nickel	NA	1.00E-03	5.40E-03	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	NA	1.00E-02	5.00E-03	1.96E-02	NA	NA	NA	NA
N-nitrosodipropylamine	NA	1.00E-02	NA	2.80E+01	NA	NA	NA	NA
Octachlorodibenzofuran	NA	1.00E-02	NA	3.00E+02	NA	NA	NA	NA
Octochlorodibenzo-p-dioxin	NA	3.00E-02	NA	3.00E+02	NA	NA	NA	NA
Pentachlorodibenzofuran	NA	1.00E-02	NA	1.50E+04	NA	NA	NA	NA
Pentachlorodibenzo-p-dioxin	NA	3.00E-02	NA	1.50E+05	NA	NA	NA	NA
Pentachlorophenol	NA	2.50E-01	3.00E-02	1.20E-01	NA	NA	NA	NA
Phenanthrene	NA	1.00E-02	NA	NA	NA	NA	NA	NA
Selenium	NA	1.00E-03	2.20E-03	NA	NA	NA	NA	NA
Silver	NA	1.00E-03	9.00E-04	NA	NA	NA	NA	NA
Tetrachlorodibenzofuran	NA	1.00E-02	NA	3.00E+04	NA	NA	NA	NA
Tetrachlorodibenzo-p-dioxin	NA	3.00E-02	NA	3.00E+05	NA	NA	NA	NA
Tetrachloroethylene	6.87E-02	1.00E-02	1.00E-02	5.40E-01	7.99E-10	7.99E-08	1.14E-11	6.16E-12
Thallium	NA	1.00E-03	1.80E-05	NA	NA	NA	NA	NA
Toluene	7.60E-03	1.00E-02	6.40E-02	NA	8.83E-11	1.38E-09	NA	NA
Tributyl phosphate	NA	1.00E-02	1.00E-01	1.08E-02	NA	NA	NA	NA
Trichloroethylene	NA	1.00E-02	4.50E-05	2.67E+00	NA	NA	NA	NA
Trifluorochloromethane	NA	NA	NA	NA	NA	NA	NA	NA
Uranium	NA	1.00E-03	5.10E-04	NA	NA	NA	NA	NA
Vanadium	NA	1.00E-03	7.00E-05	NA	NA	NA	NA	NA
Vinyl chloride	NA	1.00E-02	3.00E-03	1.50E+00	NA	NA	NA	NA
Xylenes	3.00E-02	1.00E-02	1.84E-01	NA	3.49E-10	1.90E-09	NA	NA
Zinc	NA	1.00E-03	6.00E-02	NA	NA	NA	NA	NA
					total =	4.09E-04	total =	6.33E-12

TABLE E.9-1
Construction Worker - HWMU - IngestSoilChem

Construction Worker - Ingestion of Soil
Risk calculation for HWMU

Intake Equation:			UNITS	adult
	CDI =	(CS*EF*ED*IR*FI*CF)/(BW*AT)		
	CDI =	Chronic Daily Intake	mg/kgday	calculated below
	CS =	Concentration of chemical in soil	mg/kg	see COC list below
	EF =	Exposure frequency	days/yr	30
	ED =	Exposure duration	yrs	1
	IR =	Ingestion rate	mg/day	330
	FI =	Fraction of contaminated soil	unitless	1
	CF =	Conversion factor	kg/mg	1.00E-06
	BW =	Body weight	kg	70
	ATc =	Average time for carcinogens	days	25550
	ATn =	Average time for non-carcinogens	days	365

COC	conc mg/kg	RfDo mg/kgday	CSFo kgday/mg	ADULT CDI mg/kgday	HQ CDI/RfD	CDI mg/kgday	ILCR CDI*CSF
1,1,2-Trichloroethane	1.20E-02	4.00E-03	5.70E-02	4.65E-09	1.16E-06	6.64E-11	3.79E-12
1,1-Dichloroethylene	NA	5.00E-02	6.00E-01	NA	NA	NA	NA
1,2-dichloroethane	NA	2.00E-02	9.10E-02	NA	NA	NA	NA
2-Butanone	7.20E-03	6.00E-01	NA	2.79E-09	4.65E-09	NA	NA
3,3-Dichlorobenzidine	NA	NA	4.50E-01	NA	NA	NA	NA
4-Methylphenol	NA	5.00E-03	NA	NA	NA	NA	NA
4-Nitroanaline	NA	3.00E-03	2.10E-02	NA	NA	NA	NA
Acetone	NA	9.00E-01	NA	NA	NA	NA	NA
Antimony	NA	4.00E-04	NA	NA	NA	NA	NA
Aroclor-1254	NA	2.00E-05	2.00E+00	NA	NA	NA	NA
Aroclor-1260	NA	2.00E-05	2.00E+00	NA	NA	NA	NA
Arsenic	NA	3.00E-04	1.50E+00	NA	NA	NA	NA
Barium	2.55E+02	2.00E-01	NA	9.88E-05	4.94E-04	NA	NA
Benzene	1.70E-03	4.00E-03	5.50E-02	6.59E-10	1.65E-07	9.41E-12	5.18E-13
Benzo(a)anthracene	NA	NA	7.30E-01	NA	NA	NA	NA
Benzo(a)pyrene	NA	NA	7.30E+00	NA	NA	NA	NA
Benzo(b)fluoranthene	NA	NA	7.30E-01	NA	NA	NA	NA
Benzo(k)fluoranthene	NA	NA	7.30E-02	NA	NA	NA	NA
Beryllium	NA	2.00E-03	4.30E+00	NA	NA	NA	NA
Bis(2-chloroisopropyl)ether	NA	4.00E-02	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	NA	2.00E-02	1.40E-02	NA	NA	NA	NA
Boron	NA	2.00E-01	NA	NA	NA	NA	NA
Bromodichloromethane	NA	2.00E-02	6.20E-02	NA	NA	NA	NA
Bromoform	NA	2.00E-02	7.90E-03	NA	NA	NA	NA
Bromomethane	NA	1.40E-03	NA	NA	NA	NA	NA
Cadmium	NA	1.00E-03	NA	NA	NA	NA	NA
Carbazole	NA	NA	2.00E-03	NA	NA	NA	NA
Carbon disulfide	NA	1.00E-01	NA	NA	NA	NA	NA
Carbon tetrachloride	NA	7.00E-04	1.30E-01	NA	NA	NA	NA
Chlordane	NA	5.00E-04	3.50E-01	NA	NA	NA	NA
Chlorobenzene	NA	2.00E-02	NA	NA	NA	NA	NA
Chloroform	NA	1.00E-02	6.10E-03	NA	NA	NA	NA
Chromium (VI)	1.99E+01	3.00E-03	NA	7.71E-06	2.57E-03	NA	NA
Chrysene	NA	NA	7.30E-03	NA	NA	NA	NA
Cobalt	NA	2.00E-02	NA	NA	NA	NA	NA
Copper	NA	4.00E-02	NA	NA	NA	NA	NA
Cyanide	NA	2.00E-02	NA	NA	NA	NA	NA
Cyclohexanone	NA	5.00E+00	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	NA	NA	7.30E+00	NA	NA	NA	NA
Dieldrin	NA	5.00E-05	1.60E+01	NA	NA	NA	NA
Di-n-octylphthalate	NA	4.00E-02	NA	NA	NA	NA	NA
Ethyl ether	NA	2.00E-01	NA	NA	NA	NA	NA
Ethylbenzene	NA	1.00E-01	NA	NA	NA	NA	NA
Fluoride	NA	6.00E-02	NA	NA	NA	NA	NA
Heptachlorodibenzofuran	NA	NA	1.50E+03	NA	NA	NA	NA
Heptachlorodibenzo-p-dioxin	NA	NA	1.50E+03	NA	NA	NA	NA
Hexachlorodibenzofuran	NA	NA	1.50E+03	NA	NA	NA	NA
Hexachlorodibenzo-p-dioxin	NA	NA	1.50E+04	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	NA	NA	7.30E-01	NA	NA	NA	NA
Lead	5.24E+01	NA	NA	NA	NA	NA	NA
Manganese	NA	1.40E-01	NA	NA	NA	NA	NA
Mercury	3.47E-02	3.00E-04	NA	1.34E-08	4.48E-05	NA	NA
Methanol	NA	5.00E-01	NA	NA	NA	NA	NA
Methyl-2-pentanone	NA	8.00E-02	NA	NA	NA	NA	NA
Methylene chloride	7.70E-03	6.00E-02	7.50E-03	2.98E-09	4.97E-08	4.26E-11	3.20E-13
Molybdenum	NA	5.00E-03	NA	NA	NA	NA	NA
Nickel	NA	2.00E-02	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	NA	2.00E-02	4.90E-03	NA	NA	NA	NA
N-nitrosodipropylamine	NA	NA	7.00E+00	NA	NA	NA	NA
Octachlorodibenzofuran	NA	NA	1.50E+02	NA	NA	NA	NA
Octochlorodibenzo-p-dioxin	NA	NA	1.50E+02	NA	NA	NA	NA
Pentachlorodibenzofuran	NA	NA	7.50E+03	NA	NA	NA	NA
Pentachlorodibenzo-p-dioxin	NA	NA	7.50E+04	NA	NA	NA	NA
Pentachlorophenol	NA	3.00E-02	1.20E-01	NA	NA	NA	NA
Phenanthrene	NA	NA	NA	NA	NA	NA	NA
Selenium	NA	5.00E-03	NA	NA	NA	NA	NA
Silver	NA	5.00E-03	NA	NA	NA	NA	NA
Tetrachlorodibenzofuran	NA	NA	1.50E+04	NA	NA	NA	NA
Tetrachlorodibenzo-p-dioxin	NA	NA	1.50E+05	NA	NA	NA	NA
Tetrachloroethylene	6.87E-02	1.00E-02	5.40E-01	2.66E-08	2.66E-06	3.80E-10	2.05E-10
Thallium	NA	9.00E-05	NA	NA	NA	NA	NA
Toluene	7.60E-03	8.00E-02	NA	2.94E-09	3.68E-08	NA	NA
Tributyl phosphate	NA	2.00E-01	5.40E-03	NA	NA	NA	NA
Trichloroethylene	NA	3.00E-04	4.00E-01	NA	NA	NA	NA
Trifluorochloromethane	NA	NA	NA	NA	NA	NA	NA
Uranium	NA	6.00E-04	NA	NA	NA	NA	NA
Vanadium	NA	7.00E-03	NA	NA	NA	NA	NA
Vinyl chloride	NA	3.00E-03	1.50E+00	NA	NA	NA	NA
Xylenes	3.00E-02	2.00E-01	NA	1.16E-08	5.81E-08	NA	NA
Zinc	NA	3.00E-01	NA	NA	NA	NA	NA
				total =	3.11E-03	total =	2.10E-10

TABLE E.9-1
Construction Worker - HWMU - DermalSWchem

Construction Worker - Dermal Contact with Surface Water
Risk calculation for HWMU

			UNITS	adult
Intake Equation:	CDI =	(DA*EF*ED*SA)/(BW*AT)		
	CDI =	Chronic Daily Intake	mg/kgday	calculated below
	DA =	Dermal absorption dose	mg/cm²day	see COC list below
	EF =	Exposure frequency	days/yr	6
	ED =	Exposure duration	yrs	1
	SA =	Surface area of skin	cm²	5670
	BW =	Body weight	kg	70
	ATc =	Average time for carcinogens	days	25550
	ATn =	Average time for non-carcinogens	days	365
where:	DA = C_v*K_p*CF*ET			
	C_v =	concentation of ith contaminant in surface water	mg/L	see COC list below
	K_p =	permeability constant for ith contaminant	cm/hr	see COC list below
	CF =	conversion factor	L/cm³	0.001
	ET =	exposure time	hr/d	0.5

COC	C_v	K_p	DA	RfD	CSF	ADULT CDI	ADULT HQ	ADULT CDI	ADULT ILCR
	mg/L	cm/hr	mg/cm²day	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	1.00E-03	6.43E-03	3.22E-09	3.24E-03	7.04E-02	4.28E-09	1.32E-06	6.12E-11	4.31E-12
1,1-Dichloroethylene	NA	1.59E-02	NA	5.00E-02	6.00E-01	NA	NA	NA	NA
1,2-dichloroethane	NA	5.34E-03	NA	2.00E-02	9.10E-02	NA	NA	NA	NA
2-Butanone	5.00E-03	1.11E-03	2.78E-09	4.80E-01	NA	3.69E-09	7.70E-09	NA	NA
3,3-Dichlorobenzidine	NA	1.69E-02	NA	NA	9.00E-01	NA	NA	NA	NA
4-Methylphenol	NA	9.95E-03	NA	3.25E-03	NA	NA	NA	NA	NA
4-Nitroanaline	NA	2.66E-03	NA	2.40E-03	2.63E-02	NA	NA	NA	NA
Acetone	NA	5.69E-04	NA	7.47E-01	NA	NA	NA	NA	NA
Antimony	NA	1.00E-03	NA	8.00E-06	NA	NA	NA	NA	NA
Aroclor-1254	NA	1.29E+00	NA	1.80E-05	2.22E+00	NA	NA	NA	NA
Aroclor-1260	NA	5.48E+00	NA	1.80E-05	2.22E+00	NA	NA	NA	NA
Arsenic	NA	1.00E-03	NA	1.23E-04	3.66E+00	NA	NA	NA	NA
Barium	5.61E-02	1.00E-03	2.81E-08	1.40E-02	NA	3.73E-08	2.67E-06	NA	NA
Benzene	1.00E-03	2.07E-02	1.04E-08	3.88E-03	5.67E-02	1.38E-08	3.55E-06	1.97E-10	1.12E-11
Benzo(a)anthracene	NA	9.46E-01	NA	NA	2.35E+00	NA	NA	NA	NA
Benzo(a)pyrene	NA	1.24E+00	NA	NA	2.35E+01	NA	NA	NA	NA
Benzo(b)fluoranthene	NA	6.99E-01	NA	NA	2.35E+00	NA	NA	NA	NA
Benzo(k)fluoranthene	NA	1.20E+00	NA	NA	2.35E-01	NA	NA	NA	NA
Beryllium	NA	1.00E-03	NA	2.00E-05	4.30E+02	NA	NA	NA	NA
Bis(2-chloroisopropyl)ether	NA	7.63E-02	NA	2.00E-02	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	NA	1.97E+00	NA	3.80E-03	7.37E-02	NA	NA	NA	NA
Boron	NA	1.00E-03	NA	1.80E-01	NA	NA	NA	NA	NA
Bromodichloromethane	NA	5.02E-03	NA	1.96E-02	6.33E-02	NA	NA	NA	NA
Bromoform	NA	2.77E-03	NA	1.20E-02	1.32E-02	NA	NA	NA	NA
Bromomethane	NA	3.51E-03	NA	1.12E-03	NA	NA	NA	NA	NA
Cadmium	NA	1.00E-03	NA	1.00E-05	NA	NA	NA	NA	NA
Carbazole	NA	7.97E-02	NA	NA	2.86E-02	NA	NA	NA	NA
Carbon disulfide	NA	1.56E-02	NA	6.30E-02	NA	NA	NA	NA	NA
Carbon tetrachloride	NA	2.24E-02	NA	4.55E-04	2.00E-01	NA	NA	NA	NA
Chlordane	NA	1.57E-01	NA	2.50E-04	7.00E-01	NA	NA	NA	NA
Chlorobenzene	NA	4.07E-02	NA	6.20E-03	NA	NA	NA	NA	NA
Chloroform	NA	8.92E-03	NA	2.00E-03	3.05E-02	NA	NA	NA	NA
Chromium (VI)	1.80E-03	2.00E-03	1.80E-09	6.00E-05	NA	2.40E-09	3.99E-05	NA	NA
Chrysene	NA	1.03E+00	NA	NA	2.35E-02	NA	NA	NA	NA
Cobalt	NA	4.00E-04	NA	1.60E-02	NA	NA	NA	NA	NA
Copper	NA	1.00E-03	NA	1.20E-02	NA	NA	NA	NA	NA
Cyanide	NA	1.00E-03	NA	3.40E-03	NA	NA	NA	NA	NA
Cyclohexanone	NA	1.80E-03	NA	4.00E+00	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	NA	1.68E+00	NA	NA	2.35E+01	NA	NA	NA	NA
Dieldrin	NA	4.45E-02	NA	2.50E-05	3.20E+01	NA	NA	NA	NA
Di-n-octylphthalate	NA	4.45E+00	NA	3.60E-02	NA	NA	NA	NA	NA
Ethyl ether	NA	2.88E-03	NA	1.60E-01	NA	NA	NA	NA	NA
Ethylbenzene	NA	7.39E-02	NA	9.70E-02	NA	NA	NA	NA	NA
Fluoride	NA	1.00E-03	NA	5.82E-02	NA	NA	NA	NA	NA
Heptachlorodibenzofuran	NA	2.55E+00	NA	NA	3.00E+03	NA	NA	NA	NA
Heptachlorodibenzo-p-dioxin	NA	3.22E+00	NA	NA	3.00E+03	NA	NA	NA	NA
Hexachlorodibenzofuran	NA	2.38E+00	NA	NA	3.00E+04	NA	NA	NA	NA
Hexachlorodibenzo-p-dioxin	NA	5.29E+00	NA	NA	3.00E+04	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	NA	2.23E+00	NA	NA	2.35E+00	NA	NA	NA	NA
Lead	1.20E-03	1.00E-04	6.00E-11	NA	NA	NA	NA	NA	NA
Manganese	NA	1.00E-03	NA	1.84E-03	NA	NA	NA	NA	NA
Mercury	6.00E-05	1.00E-03	3.00E-11	2.10E-05	NA	3.99E-11	1.90E-06	NA	NA
Methanol	NA	3.45E-04	NA	4.00E-01	NA	NA	NA	NA	NA
4-Methyl-2-pentanone	NA	3.97E-03	NA	6.40E-02	NA	NA	NA	NA	NA
Methylene chloride	5.00E-03	4.46E-03	1.12E-08	5.70E-02	7.89E-03	1.48E-08	2.60E-07	2.12E-10	1.67E-12
Molybdenum	NA	1.00E-03	NA	1.90E-03	NA	NA	NA	NA	NA
Nickel	NA	2.00E-04	NA	5.40E-03	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	NA	1.96E-02	NA	5.00E-03	1.96E-02	NA	NA	NA	NA
N-nitrosodipropylamine	NA	2.83E-03	NA	NA	2.80E+01	NA	NA	NA	NA
Octachlorodibenzofuran	NA	4.78E+00	NA	NA	3.00E+02	NA	NA	NA	NA
Octochlorodibenzo-p-dioxin	NA	1.65E+01	NA	NA	3.00E+02	NA	NA	NA	NA
Pentachlorodibenzofuran	NA	1.06E+00	NA	NA	1.50E+04	NA	NA	NA	NA
Pentachlorodibenzo-p-dioxin	NA	3.79E-01	NA	NA	1.50E+05	NA	NA	NA	NA
Pentachlorophenol	NA	1.95E-01	NA	3.00E-02	1.20E-01	NA	NA	NA	NA
Phenanthrene	NA	2.29E-01	NA	NA	NA	NA	NA	NA	NA
Selenium	NA	1.00E-03	NA	2.20E-03	NA	NA	NA	NA	NA
Silver	NA	6.00E-04	NA	9.00E-04	NA	NA	NA	NA	NA
Tetrachlorodibenzofuran	NA	1.12E+00	NA	NA	3.00E+04	NA	NA	NA	NA
Tetrachlorodibenzo-p-dioxin	NA	1.39E+00	NA	NA	3.00E+05	NA	NA	NA	NA
Tetrachloroethylene	1.00E-03	4.81E-02	2.41E-08	1.00E-02	5.40E-01	3.20E-08	3.20E-06	4.57E-10	2.47E-10
Thallium	NA	1.00E-03	NA	1.80E-05	NA	NA	NA	NA	NA
Toluene	1.00E-03	4.53E-02	2.27E-08	6.40E-02	NA	3.02E-08	4.71E-07	NA	NA
Tributyl phosphate	NA	3.13E-02	NA	1.00E-01	1.08E-02	NA	NA	NA	NA
Trichloroethylene	NA	1.57E-02	NA	4.50E-05	2.67E+00	NA	NA	NA	NA
Trifluorochloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Uranium	NA	1.00E-03	NA	5.10E-04	NA	NA	NA	NA	NA
Vanadium	NA	1.00E-03	NA	7.00E-05	NA	NA	NA	NA	NA
Vinyl chloride	NA	1.13E-02	NA	3.00E-03	1.50E+00	NA	NA	NA	NA
Xylenes	1.00E-03	7.04E-02	3.52E-08	1.84E-01	NA	4.69E-08	2.55E-07	NA	NA
Zinc	NA	6.00E-04	NA	6.00E-02	NA	NA	NA	NA	NA
						total =	5.36E-05	total =	2.64E-10

TABLE E.9-1
Construction Worker - HWMU - IngestSWchem

Construction Worker - Ingestion of Surface Water
Risk calculation for HWMU

Intake Equation:			UNITS	Assigned Values
	CDI =	(CW*EF*ED*IR)/(BW*AT)		
	CDI =	Chronic Daily Intake	mg/kgday	adult
	CW =	Concentration of chemical in water	mg/L	see COC table below
	EF =	Exposure frequency	days/yr	6
	ED =	Exposure duration	yrs	1
	IR =	Ingestion rate	L/day	0.005
	BW =	Body weight	kg	70
	ATc =	Average time for carcinogens	days	25550
	ATn =	Average time for non-carcinogens	days	365

COC	CW	RfDo	CSFo	ADULT CDI	ADULT HQ	ADULT CDI	ADULT ILCR
	mg/L	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	1.00E-03	4.00E-03	5.70E-02	1.17E-09	2.94E-07	1.68E-11	9.56E-13
1,1-Dichloroethylene	NA	5.00E-02	6.00E-01	NA	NA	NA	NA
1,2-dichloroethane	NA	2.00E-02	9.10E-02	NA	NA	NA	NA
2-Butanone	5.00E-03	6.00E-01	NA	5.87E-09	9.78E-09	NA	NA
3,3-Dichlorobenzidine	NA	NA	4.50E-01	NA	NA	NA	NA
4-Methylphenol	NA	5.00E-03	NA	NA	NA	NA	NA
4-Nitroanaline	NA	3.00E-03	2.10E-02	NA	NA	NA	NA
Acetone	NA	9.00E-01	NA	NA	NA	NA	NA
Antimony	NA	4.00E-04	NA	NA	NA	NA	NA
Aroclor-1254	NA	2.00E-05	4.00E-01	NA	NA	NA	NA
Aroclor-1260	NA	2.00E-05	4.00E-01	NA	NA	NA	NA
Arsenic	NA	3.00E-04	1.50E+00	NA	NA	NA	NA
Barium	5.61E-02	2.00E-01	NA	6.59E-08	3.29E-07	NA	NA
Benzene	1.00E-03	4.00E-03	5.50E-02	1.17E-09	2.94E-07	1.68E-11	9.23E-13
Benzo(a)anthracene	NA	NA	7.30E-01	NA	NA	NA	NA
Benzo(a)pyrene	NA	NA	7.30E+00	NA	NA	NA	NA
Benzo(b)fluoranthene	NA	NA	7.30E-01	NA	NA	NA	NA
Benzo(k)fluoranthene	NA	NA	7.30E-02	NA	NA	NA	NA
Beryllium	NA	2.00E-03	4.30E+00	NA	NA	NA	NA
Bis(2-chloroisopropyl)ether	NA	4.00E-02	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	NA	2.00E-02	1.40E-02	NA	NA	NA	NA
Boron	NA	2.00E-01	NA	NA	NA	NA	NA
Bromodichloromethane	NA	2.00E-02	6.20E-02	NA	NA	NA	NA
Bromoform	NA	2.00E-02	7.90E-03	NA	NA	NA	NA
Bromomethane	NA	1.40E-03	NA	NA	NA	NA	NA
Cadmium	NA	1.00E-03	NA	NA	NA	NA	NA
Carbazole	NA	NA	2.00E-03	NA	NA	NA	NA
Carbon disulfide	NA	1.00E-01	NA	NA	NA	NA	NA
Carbon tetrachloride	NA	7.00E-04	1.30E-01	NA	NA	NA	NA
Chlordane	NA	5.00E-04	3.50E-01	NA	NA	NA	NA
Chlorobenzene	NA	2.00E-02	NA	NA	NA	NA	NA
Chloroform	NA	1.00E-02	6.10E-03	NA	NA	NA	NA
Chromium (VI)	1.80E-03	3.00E-03	NA	2.11E-09	7.05E-07	NA	NA
Chrysene	NA	NA	7.30E-03	NA	NA	NA	NA
Cobalt	NA	2.00E-02	NA	NA	NA	NA	NA
Copper	NA	4.00E-02	NA	NA	NA	NA	NA
Cyanide	NA	2.00E-02	NA	NA	NA	NA	NA
Cyclohexanone	NA	5.00E+00	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	NA	NA	7.30E+00	NA	NA	NA	NA
Dieldrin	NA	5.00E-05	1.60E+01	NA	NA	NA	NA
Di-n-octylphthalate	NA	4.00E-02	NA	NA	NA	NA	NA
Ethyl ether	NA	2.00E-01	NA	NA	NA	NA	NA
Ethylbenzene	NA	1.00E-01	NA	NA	NA	NA	NA
Fluoride	NA	6.00E-02	NA	NA	NA	NA	NA
Heptachlorodibenzofuran	NA	NA	1.50E+03	NA	NA	NA	NA
Heptachlorodibenzo-p-dioxin	NA	NA	1.50E+03	NA	NA	NA	NA
Hexachlorodibenzofuran	NA	NA	1.50E+03	NA	NA	NA	NA
Hexachlorodibenzo-p-dioxin	NA	NA	1.50E+04	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	NA	NA	7.30E-01	NA	NA	NA	NA
Lead	1.20E-03	NA	NA	NA	NA	NA	NA
Manganese	NA	4.60E-02	NA	NA	NA	NA	NA
Mercury	6.00E-05	3.00E-04	NA	7.05E-11	2.35E-07	NA	NA
Methanol	NA	5.00E-01	NA	NA	NA	NA	NA
4-Methyl-2-pentanone	NA	8.00E-02	NA	NA	NA	NA	NA
Methylene chloride	5.00E-03	6.00E-02	7.50E-03	5.87E-09	9.78E-08	8.39E-11	6.29E-13
Molybdenum	NA	5.00E-03	NA	NA	NA	NA	NA
Nickel	NA	2.00E-02	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	NA	2.00E-02	4.90E-03	NA	NA	NA	NA
N-nitrosodipropylamine	NA	NA	7.00E+00	NA	NA	NA	NA
Octachlorodibenzofuran	NA	NA	1.50E+02	NA	NA	NA	NA
Octochlorodibenzo-p-dioxin	NA	NA	1.50E+02	NA	NA	NA	NA
Pentachlorodibenzofuran	NA	NA	7.50E+03	NA	NA	NA	NA
Pentachlorodibenzo-p-dioxin	NA	NA	7.50E+04	NA	NA	NA	NA
Pentachlorophenol	NA	3.00E-02	1.20E-01	NA	NA	NA	NA
Phenanthrene	NA	NA	NA	NA	NA	NA	NA
Selenium	NA	5.00E-03	NA	NA	NA	NA	NA
Silver	NA	5.00E-03	NA	NA	NA	NA	NA
Tetrachlorodibenzofuran	NA	NA	1.50E+04	NA	NA	NA	NA
Tetrachlorodibenzo-p-dioxin	NA	NA	1.50E+05	NA	NA	NA	NA
Tetrachloroethylene	1.00E-03	1.00E-02	5.40E-01	1.17E-09	1.17E-07	1.68E-11	9.06E-12
Thallium	NA	9.00E-05	NA	NA	NA	NA	NA
Toluene	1.00E-03	8.00E-02	NA	1.17E-09	1.47E-08	NA	NA
Tributyl phosphate	NA	2.00E-01	5.40E-03	NA	NA	NA	NA
Trichloroethylene	NA	3.00E-04	4.00E-01	NA	NA	NA	NA
Trifluorochloromethane	NA	NA	NA	NA	NA	NA	NA
Uranium	NA	6.00E-04	NA	NA	NA	NA	NA
Vanadium	NA	7.00E-03	NA	NA	NA	NA	NA
Vinyl chloride	NA	3.00E-03	1.50E+00	NA	NA	NA	NA
Xylenes	1.00E-03	2.00E-01	NA	1.17E-09	5.87E-09	NA	NA
Zinc	NA	3.00E-01	NA	NA	NA	NA	NA
				total =	2.10E-06	total =	1.18E-11

TABLE E.9-1
Construction Worker - HWMU - SumPaths

Construction Worker - Summation of all Pathways
Risk calculation for HWMU

	HQ	ILCR
Inhale	1.51E-03	7.29E-09
Dermal Soil	4.09E-04	6.33E-12
Ingest Soil	3.11E-03	2.10E-10
Dermal Surface Water	5.36E-05	2.64E-10
Ingest Surface Water	2.10E-06	1.16E-11
SUM	**5.09E-03**	**7.78E-09**

Summation of all paths for individual chemicals

	ILCR	HQ
1,1,2-Trichloroethane	9.19E-12	2.82E-06
1,1-Dichloroethylene	NA	NA
1,2-dichloroethane	NA	NA
2-Butanone	No CSFs	2.23E-08
3,3-Dichlorobenzidine	NA	No RfDs
4-Methylphenol	No CSFs	NA
4-Nitroanaline	NA	NA
Acetone	No CSFs	NA
Antimony	No CSFs	NA
Aroclor-1254	NA	NA
Aroclor-1260	NA	No RfDs
Arsenic	NA	NA
Barium	No CSFs	1.61E-03
Benzene	1.26E-11	4.02E-06
Benzo(a)anthracene	NA	No RfDs
Benzo(a)pyrene	NA	No RfDs
Benzo(b)fluoranthene	NA	No RfDs
Benzo(k)fluoranthene	NA	No RfDs
Beryllium	NA	NA
Bis(2-chloroisopropyl)ether	No CSFs	NA
Bis(2-ethylhexyl)phthalate	NA	NA
Boron	No CSFs	NA
Bromodichloromethane	NA	NA
Bromoform	NA	NA
Bromomethane	No CSFs	NA
Cadmium	NA	NA
Carbazole	NA	No RfDs
Carbon disulfide	No CSFs	NA
Carbon tetrachloride	NA	NA
Chlordane	NA	NA
Chlorobenzene	No CSFs	NA
Chloroform	NA	NA
Chromium (VI)	7.29E-09	3.42E-03
Chrysene	NA	No RfDs
Cobalt	NA	NA
Copper	No CSFs	NA
Cyanide	No CSFs	NA
Cyclohexanone	No CSFs	NA
Dibenzo(a,h)anthracene	NA	No RfDs
Dieldrin	NA	NA
Di-n-octylphthalate	No CSFs	NA

TABLE E.9-1
Construction Worker - HWMU - SumPaths

Summation of all paths for individual chemicals (continued)

	ILCR	HQ
Ethyl ether	No CSFs	NA
Ethylbenzene	NA	NA
Fluoride	No CSFs	NA
Heptachlorodibenzofuran	NA	No RfDs
Heptachlorodibenzo-p-dioxin	NA	No RfDs
Hexachlorodibenzofuran	NA	No RfDs
Hexachlorodibenzo-p-dioxin	NA	No RfDs
Indeno(1,2,3-cd)pyrene	NA	No RfDs
Lead	No CSFs	No RfDs
Manganese	No CSFs	NA
Mercury	No CSFs	4.89E-05
Methanol	No CSFs	NA
4-Methyl-2-pentanone	No CSFs	NA
Methylene chloride	2.63E-12	4.10E-07
Molybdenum	No CSFs	NA
Nickel	No CSFs	NA
N-nitrosodiphenylamine	NA	NA
N-nitrosodipropylamine	NA	No RfDs
Octachlorodibenzofuran	NA	No RfDs
Octochlorodibenzo-p-dioxin	NA	No RfDs
Pentachlorodibenzofuran	No CSFs	No RfDs
Pentachlorodibenzo-p-dioxin	NA	No RfDs
Pentachlorophenol	NA	NA
Phenanthrene	No CSFs	No RfDs
Selenium	No CSFs	NA
Silver	No CSFs	NA
Tetrachlorodibenzofuran	No CSFs	No RfDs
Tetrachlorodibenzo-p-dioxin	No CSFs	No RfDs
Tetrachloroethylene	4.68E-10	6.06E-06
Thallium	No CSFs	NA
Toluene	No CSFs	5.24E-07
Tributyl phosphate	NA	NA
Trichloroethylene	NA	NA
Trifluorochloromethane	No CSFs	No RfDs
Uranium	No CSFs	NA
Vanadium	No CSFs	NA
Vinyl chloride	NA	NA
Xylenes	No CSFs	3.21E-07
Zinc	No CSFs	NA
SUM	**7.78E-09**	**5.09E-03**

TABLE E.9-2
Groundskeeper / Sampler - HWMU - InhaleChem

Groundskeeper/Sampler - Inhalation of Gases & Particulates
Risk calculation for HWMU

Intake Equation:			UNITS	adult
	CDI =	(CS*EF*ED*IR*ET)/(BW*AT)		
	CDI =	Chronic Daily Intake	mg/kgday	calculated below
	CA =	Concentration of chemical in air	mg/m^3	see COC list below
	EF =	Exposure frequency	days/yr	100
	ED =	Exposure duration	yrs	25
	IR =	Inhalation rate	m^3/hr	2.5
	ET =	Exposure time	hrs/day	8
	BW =	Body weight	kg	70
	ATc =	Average time for carcinogens	days	25550
	ATn =	Average time for non-carcinogens	days	9125

COC	conc	RfDI	CSFI	ADULT CDI	ADULT HQ	ADULT CDI	ADULT ILCR
	mg/m^3	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	3.12E-10	NA	5.60E-02	NA	NA	8.72E-12	4.88E-13
1,1-Dichloroethylene	NA	5.71E-02	1.75E-01	NA	NA	NA	NA
1,2-dichloroethane	NA	NA	9.10E-02	NA	NA	NA	NA
2-Butanone	1.87E-10	1.43E+00	NA	1.47E-11	1.02E-11	NA	NA
3,3-Dichlorobenzidine	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	NA	NA	NA	NA	NA	NA	NA
4-Nitroanaline	NA	1.14E-03	NA	NA	NA	NA	NA
Acetone	NA	NA	NA	NA	NA	NA	NA
Antimony	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	NA	NA	2.00E+00	NA	NA	NA	NA
Aroclor-1260	NA	NA	2.00E+00	NA	NA	NA	NA
Arsenic	NA	NA	1.51E+01	NA	NA	NA	NA
Barium	6.63E-06	1.43E-04	NA	5.19E-07	3.63E-03	NA	NA
Benzene	4.42E-11	8.57E-03	2.73E-02	3.46E-12	4.04E-10	1.24E-12	3.37E-14
Benzo(a)anthracene	NA	NA	3.08E-01	NA	NA	NA	NA
Benzo(a)pyrene	NA	NA	3.08E-01	NA	NA	NA	NA
Benzo(b)fluoranthene	NA	NA	3.08E+00	NA	NA	NA	NA
Benzo(k)fluoranthene	NA	NA	3.08E-02	NA	NA	NA	NA
Beryllium	NA	5.71E-06	8.40E+00	NA	NA	NA	NA
Bis(2-chloroisopropyl)ether	NA	NA	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	NA	NA	NA	NA	NA	NA	NA
Boron	NA	5.71E-03	NA	NA	NA	NA	NA
Bromodichloromethane	NA	NA	NA	NA	NA	NA	NA
Bromoform	NA	NA	3.85E-03	NA	NA	NA	NA
Bromomethane	NA	1.43E-03	NA	NA	NA	NA	NA
Cadmium	NA	NA	6.30E+00	NA	NA	NA	NA
Carbazole	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	NA	2.00E-01	NA	NA	NA	NA	NA
Carbon tetrachloride	NA	NA	5.25E-02	NA	NA	NA	NA
Chlordane	NA	2.00E-04	3.50E-01	NA	NA	NA	NA
Chlorobenzene	NA	1.43E-02	NA	NA	NA	NA	NA
Chloroform	NA	NA	8.05E-02	NA	NA	NA	NA
Chromium (VI)	5.17E-07	2.86E-05	4.20E+01	4.05E-08	1.42E-03	1.45E-08	6.08E-07
Chrysene	NA	NA	3.08E-03	NA	NA	NA	NA
Cobalt	NA	5.71E-06	9.80E+00	NA	NA	NA	NA
Copper	NA	NA	NA	NA	NA	NA	NA
Cyanide	NA	NA	NA	NA	NA	NA	NA
Cyclohexanone	NA	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	NA	NA	3.08E+00	NA	NA	NA	NA
Dieldrin	NA	NA	1.61E+01	NA	NA	NA	NA
Di-n-octylphthalate	NA	NA	NA	NA	NA	NA	NA
Ethyl ether	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	NA	2.86E-01	3.85E-03	NA	NA	NA	NA
Fluoride	NA	NA	NA	NA	NA	NA	NA
Heptachlorodibenzofuran	NA	NA	1.16E+03	NA	NA	NA	NA
Heptachlorodibenzo-p-dioxin	NA	NA	1.16E+03	NA	NA	NA	NA
Hexachlorodibenzofuran	NA	NA	1.16E+04	NA	NA	NA	NA
Hexachlorodibenzo-p-dioxin	NA	NA	1.16E+04	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	NA	NA	3.08E-01	NA	NA	NA	NA
Lead	1.36E-06	NA	NA	NA	NA	NA	NA
Manganese	NA	1.43E-05	NA	NA	NA	NA	NA
Mercury	9.02E-10	NA	NA	NA	NA	NA	NA
Methanol	NA	NA	NA	NA	NA	NA	NA
Methyl-2-pentanone	NA	8.57E-01	NA	NA	NA	NA	NA
Methylene chloride	2.00E-10	8.57E-01	1.65E-03	1.57E-11	1.83E-11	5.60E-12	9.23E-15
Molybdenum	NA	NA	NA	NA	NA	NA	NA
Nickel	NA	NA	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	NA	NA	NA	NA	NA	NA	NA
N-nitrosodipropylamine	NA	NA	NA	NA	NA	NA	NA
Octochlorodibenzofuran	NA	NA	1.16E+02	NA	NA	NA	NA
Octochlorodibenzo-p-dioxin	NA	NA	1.16E+02	NA	NA	NA	NA
Pentachlorodibenzofuran	NA	NA	5.78E+03	NA	NA	NA	NA
Pentachlorodibenzo-p-dioxin	NA	NA	5.78E+04	NA	NA	NA	NA
Pentachlorophenol	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	NA	NA	NA	NA	NA	NA	NA
Selenium	NA	NA	NA	NA	NA	NA	NA
Silver	NA	NA	NA	NA	NA	NA	NA
Tetrachlorodibenzofuran	NA	NA	1.16E+04	NA	NA	NA	NA
Tetrachlorodibenzo-p-dioxin	NA	NA	1.16E+05	NA	NA	NA	NA
Tetrachloroethylene	1.79E-09	1.71E-01	2.07E-02	1.40E-10	8.18E-10	4.99E-11	1.03E-12
Thallium	NA	NA	NA	NA	NA	NA	NA
Toluene	1.98E-10	1.43E+00	NA	1.55E-11	1.08E-11	NA	NA
Tributyl phosphate	NA	NA	NA	NA	NA	NA	NA
Trichloroethylene	NA	1.14E-02	4.00E-01	NA	NA	NA	NA
Trifluorochloromethane	NA	NA	NA	NA	NA	NA	NA
Uranium	NA	NA	NA	NA	NA	NA	NA
Vanadium	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	NA	2.86E-02	3.08E-02	NA	NA	NA	NA
Xylenes	7.80E-10	2.86E-02	NA	6.11E-11	2.13E-09	NA	NA
Zinc	NA	NA	NA	NA	NA	NA	NA
				total =	5.05E-03	total =	6.08E-07

Air concentration is derived using air particulate value of 26 ug/m^3 (2005 SER background average from monitor AMS-12) multiplied by the soil concentration.

TABLE E.9-2
Groundskeeper / Sampler - HWMU - DermalSoilChem

Groundskeeper/Sampler - Dermal Contact with Soil/Sediment
Risk calculation for HWMU

Intake Equation:			UNITS	adult
	CDI =	(CS*AB*SA*EF*ED*AF*CF)/(BW*AT)		
	CDI =	Chronic Daily Intake	mg/kgday	calculated below
	CS =	Concentration of chemical in soil	mg/kg	see COC list below
	AB	Absorption factor	–	see COC list below
	SA	Surface area of exposed skin	cm^2/day	3300
	EF =	Exposure frequency	days/yr	100
	ED =	Exposure duration	yrs	25
	AF =	Adherence factor	mg/cm^2	0.3
	CF =	Conversion factor	kg/mg	1.00E-06
	BW =	Body weight	kg	70
	ATc =	Average time for carcinogens	days	25550
	ATn =	Average time for non-carcinogens	days	9125

COC	conc	AB	RfDd	CSFd	ADULT CDI	HQ	CDI	ILCR
	mg/kg	unitless	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	1.20E-02	1.00E-02	3.24E-03	7.04E-02	4.65E-10	1.44E-07	1.66E-10	1.17E-11
1,1-Dichloroethylene	NA	1.00E-02	5.00E-02	6.00E-01	NA	NA	NA	NA
1,2-dichloroethane	NA	1.00E-02	2.00E-02	9.10E-02	NA	NA	NA	NA
2-Butanone	7.20E-03	1.00E-02	4.60E-01	NA	2.79E-10	5.81E-10	NA	NA
3,3-Dichlorobenzidine	NA	1.00E-02	NA	9.00E-01	NA	NA	NA	NA
4-Methylphenol	NA	1.00E-02	3.25E-03	NA	NA	NA	NA	NA
4-Nitroanaline	NA	1.00E-02	2.40E-03	2.63E-02	NA	NA	NA	NA
Acetone	NA	1.00E-02	7.47E-01	NA	NA	NA	NA	NA
Antimony	NA	1.00E-03	8.00E-06	NA	NA	NA	NA	NA
Aroclor-1254	NA	1.40E-01	1.80E-05	2.22E+00	NA	NA	NA	NA
Aroclor-1260	NA	1.40E-01	1.80E-05	2.22E+00	NA	NA	NA	NA
Arsenic	NA	3.00E-02	1.23E-04	3.66E+00	NA	NA	NA	NA
Barium	2.55E+02	1.00E-03	1.40E-02	NA	9.88E-07	7.06E-05	NA	NA
Benzene	1.70E-03	1.00E-02	3.88E-03	5.87E-02	6.59E-11	1.70E-08	2.35E-11	1.33E-12
Benzo(a)anthracene	NA	1.30E-01	NA	2.35E+00	NA	NA	NA	NA
Benzo(a)pyrene	NA	1.30E-01	NA	2.35E+01	NA	NA	NA	NA
Benzo(b)fluoranthene	NA	1.30E-01	NA	2.35E+00	NA	NA	NA	NA
Benzo(k)fluoranthene	NA	1.30E-01	NA	2.35E-01	NA	NA	NA	NA
Beryllium	NA	1.00E-03	2.00E-05	4.30E+02	NA	NA	NA	NA
Bis(2-chloroisopropyl)ether	NA	1.00E-02	2.00E-02	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	NA	1.00E-02	3.80E-03	7.37E-02	NA	NA	NA	NA
Boron	NA	1.00E-03	1.80E-01	NA	NA	NA	NA	NA
Bromodichloromethane	NA	1.00E-02	1.96E-02	6.33E-02	NA	NA	NA	NA
Bromoform	NA	1.00E-02	1.20E-02	1.32E-02	NA	NA	NA	NA
Bromomethane	NA	1.00E-02	1.12E-03	NA	NA	NA	NA	NA
Cadmium	NA	1.00E-03	1.00E-05	NA	NA	NA	NA	NA
Carbazole	NA	1.00E-02	NA	2.86E-02	NA	NA	NA	NA
Carbon disulfide	NA	2.50E-01	6.30E-02	NA	NA	NA	NA	NA
Carbon tetrachloride	NA	1.00E-02	4.55E-04	2.00E-01	NA	NA	NA	NA
Chlordane	NA	4.00E-02	2.50E-04	7.00E-01	NA	NA	NA	NA
Chlorobenzene	NA	1.00E-02	6.20E-03	NA	NA	NA	NA	NA
Chloroform	NA	1.00E-02	2.00E-03	3.05E-02	NA	NA	NA	NA
Chromium (VI)	1.99E+01	1.00E-03	6.00E-05	NA	7.71E-08	1.29E-03	NA	NA
Chrysene	NA	1.30E-01	NA	2.35E-02	NA	NA	NA	NA
Cobalt	NA	1.00E-03	1.60E-02	NA	NA	NA	NA	NA
Copper	NA	1.00E-03	1.20E-02	NA	NA	NA	NA	NA
Cyanide	NA	1.00E-02	3.40E-03	NA	NA	NA	NA	NA
Cyclohexanone	NA	1.00E-02	4.00E+00	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	NA	1.30E-01	NA	2.35E+01	NA	NA	NA	NA
Dieldrin	NA	1.00E-02	2.50E-05	3.20E+01	NA	NA	NA	NA
Di-n-octylphthalate	NA	1.00E-02	3.60E-02	NA	NA	NA	NA	NA
Ethyl ether	NA	1.00E-02	1.60E-01	NA	NA	NA	NA	NA
Ethylbenzene	NA	1.00E-02	9.70E-02	NA	NA	NA	NA	NA
Fluoride	NA	1.00E-03	5.82E-02	NA	NA	NA	NA	NA
Heptachlorodibenzofuran	NA	1.00E-02	NA	3.00E+03	NA	NA	NA	NA
Heptachlorodibenzo-p-dioxin	NA	3.00E-02	NA	3.00E+03	NA	NA	NA	NA
Hexachlorodibenzofuran	NA	1.00E-02	NA	3.00E+04	NA	NA	NA	NA
Hexachlorodibenzo-p-dioxin	NA	3.00E-02	NA	3.00E+04	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	NA	1.30E-01	NA	2.35E+00	NA	NA	NA	NA
Lead	5.24E+01	1.00E-03	NA	NA	NA	NA	NA	NA
Manganese	NA	1.00E-03	5.60E-03	NA	NA	NA	NA	NA
Mercury	3.47E-02	1.00E-03	2.10E-05	NA	1.34E-10	6.40E-06	NA	NA
Methanol	NA	1.00E-02	4.00E-01	NA	NA	NA	NA	NA
Methyl-2-pentanone	NA	1.00E-02	6.40E-02	NA	NA	NA	NA	NA
Methylene chloride	7.70E-03	1.00E-02	5.70E-02	7.89E-03	2.98E-10	5.23E-09	1.07E-10	8.41E-13
Molybdenum	NA	1.00E-03	1.90E-03	NA	NA	NA	NA	NA
Nickel	NA	1.00E-03	5.40E-03	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	NA	1.00E-02	5.00E-03	1.96E-02	NA	NA	NA	NA
N-nitrosodipropylamine	NA	1.00E-02	NA	2.80E+01	NA	NA	NA	NA
Octachlorodibenzofuran	NA	1.00E-02	NA	3.00E+02	NA	NA	NA	NA
Octochlorodibenzo-p-dioxin	NA	3.00E-02	NA	3.00E+02	NA	NA	NA	NA
Pentachlorodibenzofuran	NA	1.00E-02	NA	1.50E+04	NA	NA	NA	NA
Pentachlorodibenzo-p-dioxin	NA	3.00E-02	NA	1.50E+05	NA	NA	NA	NA
Pentachlorophenol	NA	2.50E-01	3.00E-02	1.20E-01	NA	NA	NA	NA
Phenanthrene	NA	1.00E-02	NA	NA	NA	NA	NA	NA
Selenium	NA	1.00E-03	2.20E-03	NA	NA	NA	NA	NA
Silver	NA	1.00E-03	9.00E-04	NA	NA	NA	NA	NA
Tetrachlorodibenzofuran	NA	1.00E-02	NA	3.00E+04	NA	NA	NA	NA
Tetrachlorodibenzo-p-dioxin	NA	3.00E-02	NA	3.00E+05	NA	NA	NA	NA
Tetrachloroethylene	6.87E-02	1.00E-02	1.00E-02	5.40E-01	2.66E-09	2.66E-07	9.51E-10	5.13E-10
Thallium	NA	1.00E-03	1.80E-05	NA	NA	NA	NA	NA
Toluene	7.60E-03	1.00E-02	6.40E-02	NA	2.94E-10	4.60E-09	NA	NA
Tributyl phosphate	NA	1.00E-02	1.00E-01	1.08E-02	NA	NA	NA	NA
Trichloroethylene	NA	1.00E-02	4.50E-05	2.67E+00	NA	NA	NA	NA
Trifluorochloromethane	NA	NA	NA	NA	NA	NA	NA	NA
Uranium	NA	1.00E-03	5.10E-04	NA	NA	NA	NA	NA
Vanadium	NA	1.00E-03	7.00E-05	NA	NA	NA	NA	NA
Vinyl chloride	NA	1.00E-02	3.00E-03	1.50E+00	NA	NA	NA	NA
Xylenes	3.00E-02	1.00E-02	1.84E-01	NA	1.16E-09	6.32E-09	NA	NA
Zinc	NA	1.00E-03	6.00E-02	NA	NA	NA	NA	NA
					total =	1.36E-03	total =	5.27E-10

TABLE E.9-2
Groundskeeper / Sampler - HWMU - IngestSoilChem

Groundskeeper/Sampler - Ingestion of Soil
Risk calculation for HWMU

Intake Equation:			UNITS	adult
	CDI =	(CS*EF*ED*IR*FI*CF)/(BW*AT)		
	CDI =	Chronic Daily Intake	mg/kgday	calculated below
	CS =	Concentration of chemical in soil	mg/kg	see COC list below
	EF =	Exposure frequency	days/yr	100
	ED =	Exposure duration	yrs	25
	IR =	Ingestion rate	mg/day	100
	FI =	Fraction of contaminated soil	unitless	1
	CF =	Conversion factor	kg/mg	1.00E-06
	BW =	Body weight	kg	70
	ATc =	Average time for carcinogens	days	25550
	ATn =	Average time for non-carcinogens	days	9125

COC	conc	RfDo	CSFo	ADULT CDI	HQ	CDI	ILCR
	mg/kg	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	1.20E-02	4.00E-03	5.70E-02	4.70E-09	1.17E-06	1.68E-09	9.56E-11
1,1-Dichloroethylene	NA	5.00E-02	6.00E-01	NA	NA	NA	NA
1,2-dichloroethane	NA	2.00E-02	9.10E-02	NA	NA	NA	NA
2-Butanone	7.20E-03	6.00E-01	NA	2.82E-09	4.70E-09	NA	NA
3,3-Dichlorobenzidine	NA	NA	4.50E-01	NA	NA	NA	NA
4-Methylphenol	NA	5.00E-03	NA	NA	NA	NA	NA
4-Nitroanaline	NA	3.00E-03	2.10E-02	NA	NA	NA	NA
Acetone	NA	9.00E-01	NA	NA	NA	NA	NA
Antimony	NA	4.00E-04	NA	NA	NA	NA	NA
Aroclor-1254	NA	2.00E-05	2.00E+00	NA	NA	NA	NA
Aroclor-1260	NA	2.00E-05	2.00E+00	NA	NA	NA	NA
Arsenic	NA	3.00E-04	1.50E+00	NA	NA	NA	NA
Barium	2.55E+02	2.00E-01	NA	9.98E-05	4.99E-04	NA	NA
Benzene	1.70E-03	4.00E-03	5.50E-02	6.65E-10	1.66E-07	2.39E-10	1.31E-11
Benzo(a)anthracene	NA	NA	7.30E-01	NA	NA	NA	NA
Benzo(a)pyrene	NA	NA	7.30E+00	NA	NA	NA	NA
Benzo(b)fluoranthene	NA	NA	7.30E-01	NA	NA	NA	NA
Benzo(k)fluoranthene	NA	NA	7.30E-02	NA	NA	NA	NA
Beryllium	NA	2.00E-03	4.30E+00	NA	NA	NA	NA
Bis(2-chloroisopropyl)ether	NA	4.00E-02	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	NA	2.00E-02	1.40E-02	NA	NA	NA	NA
Boron	NA	2.00E-01	NA	NA	NA	NA	NA
Bromodichloromethane	NA	2.00E-02	6.20E-02	NA	NA	NA	NA
Bromoform	NA	2.00E-02	7.90E-03	NA	NA	NA	NA
Bromomethane	NA	1.40E-03	NA	NA	NA	NA	NA
Cadmium	NA	1.00E-03	NA	NA	NA	NA	NA
Carbazole	NA	NA	2.00E-03	NA	NA	NA	NA
Carbon disulfide	NA	1.00E-01	NA	NA	NA	NA	NA
Carbon tetrachloride	NA	7.00E-04	1.30E-01	NA	NA	NA	NA
Chlordane	NA	5.00E-04	3.50E-01	NA	NA	NA	NA
Chlorobenzene	NA	2.00E-02	NA	NA	NA	NA	NA
Chloroform	NA	1.00E-02	6.10E-03	NA	NA	NA	NA
Chromium (VI)	1.99E+01	3.00E-03	NA	7.79E-06	2.60E-03	NA	NA
Chrysene	NA	NA	7.30E-03	NA	NA	NA	NA
Cobalt	NA	2.00E-02	NA	NA	NA	NA	NA
Copper	NA	4.00E-02	NA	NA	NA	NA	NA
Cyanide	NA	2.00E-02	NA	NA	NA	NA	NA
Cyclohexanone	NA	5.00E+00	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	NA	NA	7.30E+00	NA	NA	NA	NA
Dieldrin	NA	5.00E-05	1.60E+01	NA	NA	NA	NA
Di-n-octylphthalate	NA	4.00E-02	NA	NA	NA	NA	NA
Ethyl ether	NA	2.00E-01	NA	NA	NA	NA	NA
Ethylbenzene	NA	1.00E-01	NA	NA	NA	NA	NA
Fluoride	NA	6.00E-02	NA	NA	NA	NA	NA
Heptachlorodibenzofuran	NA	NA	1.50E+03	NA	NA	NA	NA
Heptachlorodibenzo-p-dioxin	NA	NA	1.50E+03	NA	NA	NA	NA
Hexachlorodibenzofuran	NA	NA	1.50E+03	NA	NA	NA	NA
Hexachlorodibenzo-p-dioxin	NA	NA	1.50E+04	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	NA	NA	7.30E-01	NA	NA	NA	NA
Lead	5.24E+01	NA	NA	NA	NA	NA	NA
Manganese	NA	1.40E-01	NA	NA	NA	NA	NA
Mercury	3.47E-02	3.00E-04	NA	1.36E-08	4.53E-05	NA	NA
Methanol	NA	5.00E-01	NA	NA	NA	NA	NA
Methyl-2-pentanone	NA	8.00E-02	NA	NA	NA	NA	NA
Methylene chloride	7.70E-03	6.00E-02	7.50E-03	3.01E-09	5.02E-08	1.08E-09	8.07E-12
Molybdenum	NA	5.00E-03	NA	NA	NA	NA	NA
Nickel	NA	2.00E-02	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	NA	2.00E-02	4.90E-03	NA	NA	NA	NA
N-nitrosodipropylamine	NA	NA	7.00E+00	NA	NA	NA	NA
Octachlorodibenzofuran	NA	NA	1.50E+02	NA	NA	NA	NA
Octochlorodibenzo-p-dioxin	NA	NA	1.50E+02	NA	NA	NA	NA
Pentachlorodibenzofuran	NA	NA	7.50E+03	NA	NA	NA	NA
Pentachlorodibenzo-p-dioxin	NA	NA	7.50E+04	NA	NA	NA	NA
Pentachlorophenol	NA	3.00E-02	1.20E-01	NA	NA	NA	NA
Phenanthrene	NA	NA	NA	NA	NA	NA	NA
Selenium	NA	5.00E-03	NA	NA	NA	NA	NA
Silver	NA	5.00E-03	NA	NA	NA	NA	NA
Tetrachlorodibenzofuran	NA	NA	1.50E+04	NA	NA	NA	NA
Tetrachlorodibenzo-p-dioxin	NA	NA	1.50E+05	NA	NA	NA	NA
Tetrachloroethylene	8.87E-02	1.00E-02	5.40E-01	2.69E-08	2.69E-06	9.60E-09	5.19E-09
Thallium	NA	9.00E-05	NA	NA	NA	NA	NA
Toluene	7.60E-03	8.00E-02	NA	2.97E-09	3.72E-08	NA	NA
Tributyl phosphate	NA	2.00E-01	5.40E-03	NA	NA	NA	NA
Trichloroethylene	NA	3.00E-04	4.00E-01	NA	NA	NA	NA
Trifluorochloromethane	NA	NA	NA	NA	NA	NA	NA
Uranium	NA	6.00E-04	NA	NA	NA	NA	NA
Vanadium	NA	7.00E-03	NA	NA	NA	NA	NA
Vinyl chloride	NA	3.00E-03	1.50E+00	NA	NA	NA	NA
Xylenes	3.00E-02	2.00E-01	NA	1.17E-08	5.87E-08	NA	NA
Zinc	NA	3.00E-01	NA	NA	NA	NA	NA
				total =	3.14E-03	total =	5.30E-09

TABLE E.9-2
Groundskeeper / Sampler - HWMU - DermalSWchem

Groundskeeper/Sampler - Dermal Contact with Surface Water
Risk calculation for HWMU

			UNITS	adult
Intake Equation:	CDI =	(DA*EF*ED*SA)/(BW*AT)		
	CDI =	Chronic Daily Intake	mg/kgday	calculated below
	DA =	Dermal absorption dose	mg/cm²day	see COC list below
	EF =	Exposure frequency	days/yr	12
	ED =	Exposure duration	yrs	25
	SA =	Surface area of skin	cm²	5670
	BW =	Body weight	kg	70
	ATc =	Average time for carcinogens	days	25550
	ATn =	Average time for non-carcinogens	days	9125
where:	DA = C_v*K_p*CF*ET			
	C_v =	concentation of ith contaminant in surface water	mg/L	see COC list below
	K_p =	permeability constant for ith contaminant	cm/hr	see COC list below
	CF =	conversion factor	L/cm³	0.001
	ET =	exposure time	hr/d	1

COC	C_v	K_p	DA	RfDd	CSFd	ADULT CDI	ADULT HQ	ADULT CDI	ADULT ILCR
	mg/L	cm/hr	mg/cm²day	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	1.00E-03	6.43E-03	6.43E-09	3.24E-03	7.04E-02	1.71E-08	5.28E-06	6.12E-09	4.31E-10
1,1-Dichloroethylene	NA	1.59E-02	NA	5.00E-02	6.00E-01	NA	NA	NA	NA
1,2-dichloroethane	NA	5.34E-03	NA	2.00E-02	9.10E-02	NA	NA	NA	NA
2-Butanone	5.00E-03	1.11E-03	5.55E-09	4.80E-01	NA	1.48E-08	3.08E-08	NA	NA
3,3-Dichlorobenzidine	NA	1.69E-02	NA	NA	9.00E-01	NA	NA	NA	NA
4-Methylphenol	NA	9.95E-03	NA	3.25E-03	NA	NA	NA	NA	NA
4-Nitroanaline	NA	2.66E-03	NA	2.40E-03	2.63E-02	NA	NA	NA	NA
Acetone	NA	5.69E-04	NA	7.47E-01	NA	NA	NA	NA	NA
Antimony	NA	1.00E-03	NA	8.00E-06	NA	NA	NA	NA	NA
Aroclor-1254	NA	1.29E+00	NA	1.80E-05	2.22E+00	NA	NA	NA	NA
Aroclor-1260	NA	5.48E+00	NA	1.80E-05	2.22E+00	NA	NA	NA	NA
Arsenic	NA	1.00E-03	NA	1.23E-04	3.66E+00	NA	NA	NA	NA
Barium	5.61E-02	1.00E-03	5.61E-08	1.40E-02	NA	1.49E-07	1.07E-05	NA	NA
Benzene	1.00E-03	2.07E-02	2.07E-08	3.88E-03	5.67E-02	5.51E-06	1.42E-05	1.97E-08	1.12E-09
Benzo(a)anthracene	NA	9.48E-01	NA	NA	2.35E+00	NA	NA	NA	NA
Benzo(a)pyrene	NA	1.24E+00	NA	NA	2.35E+01	NA	NA	NA	NA
Benzo(b)fluoranthene	NA	6.99E-01	NA	NA	2.35E+00	NA	NA	NA	NA
Benzo(k)fluoranthene	NA	1.20E+00	NA	NA	2.35E-01	NA	NA	NA	NA
Beryllium	NA	1.00E-03	NA	2.00E-05	4.30E+02	NA	NA	NA	NA
Bis(2-chloroisopropyl)ether	NA	7.63E-02	NA	2.00E-02	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	NA	1.97E+00	NA	3.80E-03	7.37E-02	NA	NA	NA	NA
Boron	NA	1.00E-03	NA	1.80E-01	NA	NA	NA	NA	NA
Bromodichloromethane	NA	5.02E-03	NA	1.96E-02	6.33E-02	NA	NA	NA	NA
Bromoform	NA	2.77E-03	NA	1.20E-02	1.32E-02	NA	NA	NA	NA
Bromomethane	NA	3.51E-03	NA	1.12E-03	NA	NA	NA	NA	NA
Cadmium	NA	1.00E-03	NA	1.00E-05	NA	NA	NA	NA	NA
Carbazole	NA	7.97E-02	NA	NA	2.86E-02	NA	NA	NA	NA
Carbon disulfide	NA	1.56E-02	NA	6.30E-02	NA	NA	NA	NA	NA
Carbon tetrachloride	NA	2.24E-02	NA	4.55E-04	2.00E-01	NA	NA	NA	NA
Chlordane	NA	1.57E-01	NA	2.50E-04	7.00E-01	NA	NA	NA	NA
Chlorobenzene	NA	4.07E-02	NA	6.20E-03	NA	NA	NA	NA	NA
Chloroform	NA	8.92E-03	NA	2.00E-03	3.05E-02	NA	NA	NA	NA
Chromium (VI)	1.80E-03	2.00E-03	3.60E-09	6.00E-05	NA	9.59E-09	1.60E-04	NA	NA
Chrysene	NA	1.03E+00	NA	NA	2.35E-02	NA	NA	NA	NA
Cobalt	NA	4.00E-04	NA	1.60E-02	NA	NA	NA	NA	NA
Copper	NA	1.00E-03	NA	1.20E-02	NA	NA	NA	NA	NA
Cyanide	NA	1.00E-03	NA	3.40E-03	NA	NA	NA	NA	NA
Cyclohexanone	NA	1.80E-03	NA	4.00E+00	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	NA	1.68E+00	NA	NA	2.35E+01	NA	NA	NA	NA
Dieldrin	NA	4.45E-02	NA	2.50E-05	3.20E+01	NA	NA	NA	NA
Di-n-octylphthalate	NA	4.45E+00	NA	3.60E-02	NA	NA	NA	NA	NA
Ethyl ether	NA	2.68E-03	NA	1.60E-01	NA	NA	NA	NA	NA
Ethylbenzene	NA	7.39E-02	NA	9.70E-02	NA	NA	NA	NA	NA
Fluoride	NA	1.00E-03	NA	5.82E-02	NA	NA	NA	NA	NA
Heptachlorodibenzofuran	NA	2.55E+00	NA	NA	3.00E+03	NA	NA	NA	NA
Heptachlorodibenzo-p-dioxin	NA	3.22E+00	NA	NA	3.00E+03	NA	NA	NA	NA
Hexachlorodibenzofuran	NA	2.38E+00	NA	NA	3.00E+04	NA	NA	NA	NA
Hexachlorodibenzo-p-dioxin	NA	5.29E+00	NA	NA	3.00E+04	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	NA	2.23E+00	NA	NA	2.35E+00	NA	NA	NA	NA
Lead	1.20E-03	1.00E-04	1.20E-10	NA	NA	NA	NA	NA	NA
Manganese	NA	1.00E-03	NA	1.84E-03	NA	NA	NA	NA	NA
Mercury	6.00E-05	1.00E-03	6.00E-11	2.10E-05	NA	1.60E-10	7.61E-06	NA	NA
Methanol	NA	3.45E-04	NA	4.00E-01	NA	NA	NA	NA	NA
4-Methyl-2-pentanone	NA	3.97E-03	NA	8.40E-02	NA	NA	NA	NA	NA
Methylene chloride	5.00E-03	4.46E-03	2.23E-08	5.70E-02	7.89E-03	5.94E-08	1.04E-06	2.12E-08	1.67E-10
Molybdenum	NA	1.00E-03	NA	1.90E-03	NA	NA	NA	NA	NA
Nickel	NA	2.00E-04	NA	5.40E-03	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	NA	1.96E-02	NA	5.00E-03	1.96E-02	NA	NA	NA	NA
N-nitrosodipropylamine	NA	2.83E-03	NA	NA	2.80E+01	NA	NA	NA	NA
Octachlorodibenzofuran	NA	4.78E+00	NA	NA	3.00E+02	NA	NA	NA	NA
Octochlorodibenzo-p-dioxin	NA	1.65E+01	NA	NA	3.00E+02	NA	NA	NA	NA
Pentachlorodibenzofuran	NA	1.06E+00	NA	NA	1.50E+04	NA	NA	NA	NA
Pentachlorodibenzo-p-dioxin	NA	3.79E-01	NA	NA	1.50E+05	NA	NA	NA	NA
Pentachlorophenol	NA	1.95E-01	NA	3.00E-02	1.20E-01	NA	NA	NA	NA
Phenanthrene	NA	2.29E-01	NA	NA	NA	NA	NA	NA	NA
Selenium	NA	1.00E-03	NA	2.20E-03	NA	NA	NA	NA	NA
Silver	NA	6.00E-04	NA	9.00E-04	NA	NA	NA	NA	NA
Tetrachlorodibenzofuran	NA	1.12E+00	NA	NA	3.00E+04	NA	NA	NA	NA
Tetrachlorodibenzo-p-dioxin	NA	1.39E+00	NA	NA	3.00E+05	NA	NA	NA	NA
Tetrachloroethylene	1.00E-03	4.81E-02	4.81E-08	1.00E-02	5.40E-01	1.28E-07	1.28E-05	4.57E-08	2.47E-08
Thallium	NA	1.00E-03	NA	1.80E-05	NA	NA	NA	NA	NA
Toluene	1.00E-03	4.53E-02	4.53E-08	6.40E-02	NA	1.21E-07	1.88E-06	NA	NA
Tributyl phosphate	NA	3.13E-02	NA	1.00E-01	1.08E-02	NA	NA	NA	NA
Trichloroethylene	NA	1.57E-02	NA	4.50E-05	2.67E+00	NA	NA	NA	NA
Trifluorochloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Uranium	NA	1.00E-03	NA	5.10E-04	NA	NA	NA	NA	NA
Vanadium	NA	1.00E-03	NA	7.00E-05	NA	NA	NA	NA	NA
Vinyl chloride	NA	1.13E-02	NA	3.00E-03	1.50E+00	NA	NA	NA	NA
Xylenes	1.00E-03	7.04E-02	7.04E-08	1.84E-01	NA	1.87E-07	1.02E-06	NA	NA
Zinc	NA	6.00E-04	NA	6.00E-02	NA	NA	NA	NA	NA
						total =	2.14E-04	total =	2.64E-08

TABLE E.9-2
Groundskeeper / Sampler - HWMU - IngestSWchem

Groundskeeper/Sampler - Ingestion of Surface Water
Risk calculation for HWMU

Intake Equation:			UNITS	Assigned Values
	CDI =	(CW*EF*ED*IR)/(BW*AT)		
	CDI =	Chronic Daily Intake	mg/kgday	adult
	CW =	Concentration of chemical in water	mg/L	see COC table below
	EF =	Exposure frequency	days/yr	12
	ED =	Exposure duration	yrs	25
	IR =	Ingestion rate	L/day	0.01
	BW =	Body weight	kg	70
	ATc =	Average time for carcinogens	days	25550
	ATn =	Average time for non-carcinogens	days	9125

COC	CW	RfDo	CSFo	ADULT CDI	ADULT HQ	ADULT CDI	ADULT ILCR
	mg/L	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	1.00E-03	4.00E-03	5.70E-02	4.70E-09	1.17E-06	1.68E-09	9.58E-11
1,1-Dichloroethylene	NA	5.00E-02	6.00E-01	NA	NA	NA	NA
1,2-dichloroethane	NA	2.00E-02	9.10E-02	NA	NA	NA	NA
2-Butanone	5.00E-03	6.00E-01	NA	2.35E-08	3.91E-08	NA	NA
3,3-Dichlorobenzidine	NA	NA	4.50E-01	NA	NA	NA	NA
4-Methylphenol	NA	5.00E-03	NA	NA	NA	NA	NA
4-Nitroanaline	NA	3.00E-03	2.10E-02	NA	NA	NA	NA
Acetone	NA	9.00E-01	NA	NA	NA	NA	NA
Antimony	NA	4.00E-04	NA	NA	NA	NA	NA
Aroclor-1254	NA	2.00E-05	4.00E-01	NA	NA	NA	NA
Aroclor-1260	NA	2.00E-05	4.00E-01	NA	NA	NA	NA
Arsenic	NA	3.00E-04	1.50E+00	NA	NA	NA	NA
Barium	5.61E-02	2.00E-01	NA	2.63E-07	1.32E-06	NA	NA
Benzene	1.00E-03	4.00E-03	5.50E-02	4.70E-09	1.17E-06	1.68E-09	9.23E-11
Benzo(a)anthracene	NA	NA	7.30E-01	NA	NA	NA	NA
Benzo(a)pyrene	NA	NA	7.30E+00	NA	NA	NA	NA
Benzo(b)fluoranthene	NA	NA	7.30E-01	NA	NA	NA	NA
Benzo(k)fluoranthene	NA	NA	7.30E-02	NA	NA	NA	NA
Beryllium	NA	2.00E-03	4.30E+00	NA	NA	NA	NA
Bis(2-chloroisopropyl)ether	NA	4.00E-02	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	NA	2.00E-02	1.40E-02	NA	NA	NA	NA
Boron	NA	2.00E-01	NA	NA	NA	NA	NA
Bromodichloromethane	NA	2.00E-02	6.20E-02	NA	NA	NA	NA
Bromoform	NA	2.00E-02	7.90E-03	NA	NA	NA	NA
Bromomethane	NA	1.40E-03	NA	NA	NA	NA	NA
Cadmium	NA	1.00E-03	NA	NA	NA	NA	NA
Carbazole	NA	NA	2.00E-03	NA	NA	NA	NA
Carbon disulfide	NA	1.00E-01	NA	NA	NA	NA	NA
Carbon tetrachloride	NA	7.00E-04	1.30E-01	NA	NA	NA	NA
Chlordane	NA	5.00E-04	3.50E-01	NA	NA	NA	NA
Chlorobenzene	NA	2.00E-02	NA	NA	NA	NA	NA
Chloroform	NA	1.00E-02	6.10E-03	NA	NA	NA	NA
Chromium (VI)	1.80E-03	3.00E-03	NA	8.45E-09	2.82E-06	NA	NA
Chrysene	NA	NA	7.30E-03	NA	NA	NA	NA
Cobalt	NA	2.00E-02	NA	NA	NA	NA	NA
Copper	NA	4.00E-02	NA	NA	NA	NA	NA
Cyanide	NA	2.00E-02	NA	NA	NA	NA	NA
Cyclohexanone	NA	5.00E+00	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	NA	NA	7.30E+00	NA	NA	NA	NA
Dieldrin	NA	5.00E-05	1.60E+01	NA	NA	NA	NA
Di-n-octylphthalate	NA	4.00E-02	NA	NA	NA	NA	NA
Ethyl ether	NA	2.00E-01	NA	NA	NA	NA	NA
Ethylbenzene	NA	1.00E-01	NA	NA	NA	NA	NA
Fluoride	NA	6.00E-02	NA	NA	NA	NA	NA
Heptachlorodibenzofuran	NA	NA	1.50E+03	NA	NA	NA	NA
Heptachlorodibenzo-p-dioxin	NA	NA	1.50E+03	NA	NA	NA	NA
Hexachlorodibenzofuran	NA	NA	1.50E+03	NA	NA	NA	NA
Hexachlorodibenzo-p-dioxin	NA	NA	1.50E+04	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	NA	NA	7.30E-01	NA	NA	NA	NA
Lead	1.20E-03	NA	NA	NA	NA	NA	NA
Manganese	NA	4.60E-02	NA	NA	NA	NA	NA
Mercury	6.00E-05	3.00E-04	NA	2.82E-10	9.39E-07	NA	NA
Methanol	NA	5.00E-01	NA	NA	NA	NA	NA
4-Methyl-2-pentanone	NA	8.00E-02	NA	NA	NA	NA	NA
Methylene chloride	5.00E-03	6.00E-02	7.50E-03	2.35E-08	3.91E-07	8.39E-09	6.29E-11
Molybdenum	NA	5.00E-03	NA	NA	NA	NA	NA
Nickel	NA	2.00E-02	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	NA	2.00E-02	4.90E-03	NA	NA	NA	NA
N-nitrosodipropylamine	NA	NA	7.00E+00	NA	NA	NA	NA
Octachlorodibenzofuran	NA	NA	1.50E+02	NA	NA	NA	NA
Octochlorodibenzo-p-dioxin	NA	NA	1.50E+02	NA	NA	NA	NA
Pentachlorodibenzofuran	NA	NA	7.50E+03	NA	NA	NA	NA
Pentachlorodibenzo-p-dioxin	NA	NA	7.50E+04	NA	NA	NA	NA
Pentachlorophenol	NA	3.00E-02	1.20E-01	NA	NA	NA	NA
Phenanthrene	NA	NA	NA	NA	NA	NA	NA
Selenium	NA	5.00E-03	NA	NA	NA	NA	NA
Silver	NA	5.00E-03	NA	NA	NA	NA	NA
Tetrachlorodibenzofuran	NA	NA	1.50E+04	NA	NA	NA	NA
Tetrachlorodibenzo-p-dioxin	NA	NA	1.50E+05	NA	NA	NA	NA
Tetrachloroethylene	1.00E-03	1.00E-02	5.40E-01	4.70E-09	4.70E-07	1.68E-09	9.08E-10
Thallium	NA	9.00E-05	NA	NA	NA	NA	NA
Toluene	1.00E-03	8.00E-02	NA	4.70E-09	5.87E-08	NA	NA
Tributyl phosphate	NA	2.00E-01	5.40E-03	NA	NA	NA	NA
Trichloroethylene	NA	3.00E-04	4.00E-01	NA	NA	NA	NA
Trifluorochloromethane	NA	NA	NA	NA	NA	NA	NA
Uranium	NA	6.00E-04	NA	NA	NA	NA	NA
Vanadium	NA	7.00E-03	NA	NA	NA	NA	NA
Vinyl chloride	NA	3.00E-03	1.50E+00	NA	NA	NA	NA
Xylenes	1.00E-03	2.00E-01	NA	4.70E-09	2.35E-08	NA	NA
Zinc	NA	3.00E-01	NA	NA	NA	NA	NA
				total =	8.41E-06	total =	1.16E-09

TABLE E.9-2
Groundskeeper / Sampler - HWMU - SumPaths

Groundskeeper/Sampler - Summation of all Pathways
Risk calculation for HWMU

	HQ	ILCR
Inhale	5.05E-03	6.08E-07
Dermal Soil	1.36E-03	5.27E-10
Ingest Soil	3.14E-03	5.30E-09
Dermal Surface Water	2.14E-04	2.64E-08
Ingest Surface Water	8.41E-06	1.16E-09
SUM	**9.78E-03**	**6.41E-07**

Summation of all paths for individual chemicals

	ILCR	HQ
1,1,2-Trichloroethane	6.34E-10	7.78E-06
1,1-Dichloroethylene	NA	NA
1,2-dichloroethane	NA	NA
2-Butanone	No CSFs	7.52E-08
3,3-Dichlorobenzidine	NA	No RfDs
4-Methylphenol	No CSFs	NA
4-Nitroanaline	NA	NA
Acetone	No CSFs	NA
Antimony	No CSFs	NA
Aroclor-1254	NA	NA
Aroclor-1260	NA	NA
Arsenic	NA	NA
Barium	No CSFs	4.21E-03
Benzene	1.22E-09	1.56E-05
Benzo(a)anthracene	NA	No RfDs
Benzo(a)pyrene	NA	No RfDs
Benzo(b)fluoranthene	NA	No RfDs
Benzo(k)fluoranthene	NA	No RfDs
Beryllium	NA	NA
Bis(2-chloroisopropyl)ether	No CSFs	NA
Bis(2-ethylhexyl)phthalate	NA	NA
Boron	No CSFs	NA
Bromodichloromethane	NA	NA
Bromoform	NA	NA
Bromomethane	No CSFs	NA
Cadmium	NA	NA
Carbazole	NA	No RfDs
Carbon disulfide	No CSFs	NA
Carbon tetrachloride	NA	NA
Chlordane	NA	NA
Chlorobenzene	No CSFs	NA
Chloroform	NA	NA
Chromium (VI)	6.08E-07	5.46E-03
Chrysene	NA	No RfDs
Cobalt	NA	NA
Copper	No CSFs	NA
Cyanide	No CSFs	NA
Cyclohexanone	No CSFs	NA
Dibenzo(a,h)anthracene	NA	No RfDs
Dieldrin	NA	NA
Di-n-octylphthalate	No CSFs	NA

TABLE E.9-2
Groundskeeper / Sampler - HWMU - SumPaths

Summation of all paths for individual chemicals (continued)

	ILCR	HQ
Ethyl ether	No CSFs	NA
Ethylbenzene	NA	NA
Fluoride	No CSFs	NA
Heptachlorodibenzofuran	NA	No RfDs
Heptachlorodibenzo-p-dioxin	NA	No RfDs
Hexachlorodibenzofuran	NA	No RfDs
Hexachlorodibenzo-p-dioxin	NA	No RfDs
Indeno(1,2,3-cd)pyrene	NA	No RfDs
Lead	No CSFs	No RfDs
Manganese	No CSFs	NA
Mercury	No CSFs	6.02E-05
Methanol	No CSFs	NA
4-Methyl-2-pentanone	No CSFs	NA
Methylene chloride	2.39E-10	1.49E-06
Molybdenum	No CSFs	NA
Nickel	No CSFs	NA
N-nitrosodiphenylamine	NA	NA
N-nitrosodipropylamine	NA	No RfDs
Octachlorodibenzofuran	NA	No RfDs
Octochlorodibenzo-p-dioxin	NA	No RfDs
Pentachlorodibenzofuran	No CSFs	No RfDs
Pentachlorodibenzo-p-dioxin	NA	No RfDs
Pentachlorophenol	NA	NA
Phenanthrene	No CSFs	No RfDs
Selenium	No CSFs	NA
Silver	No CSFs	NA
Tetrachlorodibenzofuran	No CSFs	No RfDs
Tetrachlorodibenzo-p-dioxin	No CSFs	No RfDs
Tetrachloroethylene	3.13E-08	1.62E-05
Thallium	No CSFs	NA
Toluene	No CSFs	1.99E-06
Tributyl phosphate	NA	NA
Trichloroethylene	NA	NA
Trifluorochloromethane	No CSFs	No RfDs
Uranium	No CSFs	NA
Vanadium	No CSFs	NA
Vinyl chloride	NA	NA
Xylenes	No CSFs	1.11E-06
Zinc	No CSFs	NA
SUM	**6.41E-07**	**9.78E-03**

TABLE E.9-3
Undeveloped Park User - HWMU - InhaleChem

Undeveloped Park User - Inhalation of Gases & Particulates
Risk calculation for HWMUs

Intake Equation:			UNITS	Assigned Values			
				child	youth	adult	senior
	CDI =	(CA*EF*ED*IR*ET)/(BW*AT)	mg/kgday				
	CDI =	Chronic Daily Intake	mg/kgday				
	CA =	Concentration of chemical in air	mg/m^3	see table of COCs below			
	EF =	Exposure frequency	days/yr	20	40	20	40
	ED =	Exposure duration	yrs	3	6	14	7
	IR =	Inhalation rate	m^3/hr	1	1	1	1
	ET =	Exposure time	hrs/day	2	2	2	2
	BW =	Body weight	kg	15	47	70	70
	ATc =	Average time for carcinogens	days	25550	25550	25550	25550
	ATn =	Average time for non-carcinogens	days	1095	2190	5110	2555

COC	conc	RfDi	CSFi	CHILD				YOUTH				ADULT				SENIOR				SUM			
				CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR
	mg/m^3	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	3.12E-10	NA	5.60E-02	NA	NA	9.77E-14	5.47E-15	NA	NA	1.25E-13	6.98E-15	NA	NA	9.77E-14	5.47E-15	NA	NA	9.77E-14	5.47E-15	NA	NA	4.18E-13	2.34E-14
1,1-Dichloroethylene	NA	5.71E-02	1.75E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-dichloroethane	NA	NA	9.10E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	1.87E-10	1.43E+00	NA	1.37E-12	9.56E-13	NA	NA	8.73E-13	6.10E-13	NA	NA	2.93E-13	2.05E-13	NA	NA	5.86E-13	4.10E-13	NA	NA	5.85E-13	4.09E-13	NA	NA
3,3-Dichlorobenzidine	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroanaline	NA	1.14E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	NA	NA	2.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	NA	NA	2.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	NA	NA	1.51E+01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	6.63E-06	1.43E-04	NA	4.84E-08	3.39E-04	NA	NA	3.09E-08	2.16E-04	NA	NA	1.04E-08	7.26E-05	NA	NA	2.08E-08	1.45E-04	NA	NA	2.07E-08	1.45E-04	NA	NA
Benzene	4.42E-11	8.57E-03	2.73E-02	3.23E-13	3.77E-11	1.38E-14	3.78E-16	2.06E-13	2.41E-11	1.77E-14	4.82E-16	6.92E-14	8.07E-12	1.38E-14	3.78E-16	1.38E-13	1.61E-11	1.38E-14	3.78E-16	1.38E-13	1.61E-11	5.92E-14	1.62E-15
Benzo(a)anthracene	NA	NA	3.08E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	NA	NA	3.08E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	NA	NA	3.08E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	NA	NA	3.08E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	NA	5.71E-06	8.40E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-chloroisopropyl)ether	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Boron	NA	5.71E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	NA	NA	3.85E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	NA	1.43E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	NA	NA	6.30E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	NA	2.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	NA	NA	5.25E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlordane	NA	2.00E-04	3.50E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	NA	1.43E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	NA	NA	8.05E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (VI)	5.17E-07	2.86E-05	4.20E+01	3.78E-09	1.32E-04	1.62E-10	6.80E-09	2.41E-09	8.44E-05	2.07E-10	8.69E-09	8.10E-10	2.83E-05	1.62E-10	6.80E-09	1.62E-09	5.66E-05	1.62E-10	6.80E-09	1.62E-09	5.65E-05	6.93E-10	2.91E-08
Chrysene	NA	NA	3.08E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	NA	5.71E-06	9.80E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexanone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	NA	NA	3.08E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	NA	NA	1.61E+01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-octylphthalate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE E.9-3
Undeveloped Park User - HWMU - InhaleChem

Undeveloped Park User - Inhalation of Gases & Particulates
Risk calculation for HWMUs

Intake Equation:			UNITS	Assigned Values			
				child	youth	adult	senior
	CDI =	(CA*EF*ED*IR*ET)/(BW*AT)					
	CDI =	Chronic Daily Intake	mg/kgday				
	CA =	Concentration of chemical in air	mg/m^3	see table of COCs below			
	EF =	Exposure frequency	days/yr	20	40	20	40
	ED =	Exposure duration	yrs	3	6	14	7
	IR =	Inhalation rate	m^3/hr	1	1	1	1
	ET =	Exposure time	hrs/day	2	2	2	2
	BW =	Body weight	kg	15	47	70	70
	ATc =	Average time for carcinogens	days	25550	25550	25550	25550
	ATn =	Average time for non-carcinogens	days	1095	2190	5110	2555

COC	conc	RfDi	CSFi	CHILD				YOUTH				ADULT				SENIOR				SUM			
				CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR
	mg/m^3	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
Ethyl ether	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	NA	2.86E-01	3.85E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoride	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlorodibenzofuran	NA	NA	1.16E+03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlorodibenzo-p-dioxin	NA	NA	1.16E+03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorodibenzofuran	NA	NA	1.16E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorodibenzo-p-dioxin	NA	NA	1.16E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	NA	NA	3.08E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	1.36E-06	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	NA	1.43E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	9.02E-10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methanol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl-2-pentanone	NA	8.57E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene chloride	2.00E-10	8.57E-01	1.65E-03	1.46E-12	1.71E-12	6.27E-14	1.03E-16	9.34E-13	1.09E-12	8.00E-14	1.32E-16	3.13E-13	3.66E-13	6.27E-14	1.03E-16	6.27E-13	7.31E-13	6.27E-14	1.03E-16	6.26E-13	7.30E-13	2.68E-13	4.42E-16
Molybdenum	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-nitrosodipropylamine	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Octochlorodibenzofuran	NA	NA	1.16E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Octochlorodibenzo-p-dioxin	NA	NA	1.16E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorodibenzofuran	NA	NA	5.78E+03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorodibenzo-p-dioxin	NA	NA	5.78E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachlorodibenzofuran	NA	NA	1.16E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachlorodibenzo-p-dioxin	NA	NA	1.16E+05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethylene	1.79E-09	1.71E-01	2.07E-02	1.30E-11	7.63E-11	5.59E-13	1.16E-14	8.33E-12	4.87E-11	7.14E-13	1.48E-14	2.80E-12	1.64E-11	5.59E-13	1.16E-14	5.59E-12	3.27E-11	5.59E-13	1.16E-14	5.58E-12	3.26E-11	2.39E-12	4.95E-14
Thallium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1.98E-10	1.43E+00	NA	1.44E-12	1.01E-12	NA	NA	9.21E-13	6.44E-13	NA	NA	3.09E-13	2.16E-13	NA	NA	6.19E-13	4.33E-13	NA	NA	6.17E-13	4.32E-13	NA	NA
Tributyl phosphate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethylene	NA	1.14E-02	4.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trifluorochloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Uranium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	NA	2.86E-02	3.08E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes	7.80E-10	2.86E-02	NA	5.70E-12	1.99E-10	NA	NA	3.64E-12	1.27E-10	NA	NA	1.22E-12	4.27E-11	NA	NA	2.44E-12	8.54E-11	NA	NA	2.44E-12	8.52E-11	NA	NA
Zinc	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
																				total =	2.01E-04	total =	2.91E-08

Air concentration is derived using air particulate value of 26 ug/m^3 (2005 SER background average from monitor AMS-12) multiplied by soil concentration.

TABLE E.9-3
Undeveloped Park User - HWMU - DermalSoilChem

Undeveloped Park User - Dermal Contact with Soil/Sediment
Risk calculation for HWMU

Intake Equation:			UNITS	Assigned Values			
				child	youth	adult	senior
	CDI =	(CS*AB*SA*EF*ED*AF*CF)/(BW*AT)					
	CDI =	Chronic Daily Intake	mg/kgday				
	CS =	Concentration of chemical in soil	mg/kg	see table of COCs below			
	AB	Absorption factor	--	see table of COCs below			
	SA	Surface area of exposed skin	cm^2/day	2800	4370	5700	5700
	EF =	Exposure frequency	days/yr	20	40	20	40
	ED =	Exposure duration	yrs	3	6	14	7
	AF =	Adherence factor	mg/cm^2	0.2	0.2	0.07	0.07
	CF =	Conversion factor	kg/mg	1.00E-06	1.00E-06	1.00E-06	1.00E-06
	BW =	Body weight	kg	15	47	70	70
	ATc =	Average time for carcinogens	days	25550	25550	25550	25550
	ATn =	Average time for non-carcinogens	days	1095	2190	5110	2555

COC	conc	AB	RfDd	CSFd	CHILD				YOUTH				ADULT				SENIOR				SUM			
					CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR
	mg/kg	unitless	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	1.20E-02	1.00E-02	3.24E-03	7.04E-02	2.45E-10	7.58E-08	1.05E-11	7.41E-13	2.45E-10	7.55E-08	2.10E-11	1.48E-12	3.75E-11	1.16E-08	7.50E-12	5.28E-13	7.50E-11	2.31E-08	7.50E-12	5.28E-13	1.08E-10	3.35E-08	4.65E-11	3.27E-12
1,1-Dichloroethylene	NA	1.00E-02	5.00E-02	6.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-dichloroethane	NA	1.00E-02	2.00E-02	9.10E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	7.20E-03	1.00E-02	4.80E-01	NA	1.47E-10	3.07E-10	NA	NA	1.47E-10	3.06E-10	NA	NA	2.25E-11	4.68E-11	NA	NA	4.50E-11	9.37E-11	NA	NA	6.51E-11	1.36E-10	NA	NA
3,3-Dichlorobenzidine	NA	1.00E-02	NA	9.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	NA	1.00E-02	3.25E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	NA	1.00E-02	2.40E-03	2.63E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	NA	1.00E-02	7.47E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	NA	1.00E-03	8.00E-06	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	NA	1.40E-01	1.80E-05	2.22E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	NA	1.40E-01	1.80E-05	2.22E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	NA	3.00E-02	1.23E-04	3.66E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	2.55E+02	1.00E-03	1.40E-02	NA	5.22E-07	3.73E-05	NA	NA	5.20E-07	3.71E-05	NA	NA	7.96E-08	5.69E-06	NA	NA	1.59E-07	1.14E-05	NA	NA	2.30E-07	1.65E-05	NA	NA
Benzene	1.70E-03	1.00E-02	3.88E-03	5.67E-02	3.48E-11	8.96E-09	1.49E-12	8.45E-14	3.46E-11	8.93E-09	2.97E-12	1.68E-13	5.31E-12	1.37E-09	1.06E-12	6.02E-14	1.06E-11	2.74E-09	1.06E-12	6.02E-14	1.54E-11	3.96E-09	6.58E-12	3.73E-13
Benzo(a)anthracene	NA	1.30E-01	NA	2.35E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	NA	1.30E-01	NA	2.35E+01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	NA	1.30E-01	NA	2.35E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	NA	1.30E-01	NA	2.35E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	NA	1.00E-03	2.00E-05	4.30E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-chloroisopropyl)ether	NA	1.00E-02	2.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	NA	1.00E-02	3.80E-03	7.37E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Boron	NA	1.00E-03	1.80E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	NA	1.00E-02	1.96E-02	6.33E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	NA	1.00E-02	1.20E-02	1.32E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	NA	1.00E-02	1.12E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	NA	1.00E-03	1.00E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	NA	1.00E-02	NA	2.86E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	NA	2.50E-01	8.30E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	NA	1.00E-02	4.55E-04	2.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlordane	NA	4.00E-02	2.50E-04	7.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	NA	1.00E-02	6.20E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	NA	1.00E-02	2.00E-03	3.05E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (VI)	1.99E+01	1.00E-03	6.00E-05	NA	4.07E-08	6.78E-04	NA	NA	4.06E-08	6.76E-04	NA	NA	6.22E-09	1.04E-04	NA	NA	1.24E-08	2.07E-04	NA	NA	1.80E-08	3.00E-04	NA	NA
Chrysene	NA	1.30E-01	NA	2.35E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	NA	1.00E-03	1.60E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	NA	1.00E-03	1.20E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	NA	1.00E-02	3.40E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexanone	NA	1.00E-02	4.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	NA	1.30E-01	NA	2.35E+01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	NA	1.00E-02	2.50E-05	3.20E+01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-octylphthalate	NA	1.00E-02	3.60E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE E.9-3
Undeveloped Park User - HWMU - DermalSoilChem

Undeveloped Park User - Dermal Contact with Soil/Sediment
Risk calculation for HWMU

Intake Equation:

		UNITS	Assigned Values			
			child	youth	adult	senior
CDI =	(CS*AB*SA*EF*ED*AF*CF)/(BW*AT)					
CDI =	Chronic Daily Intake	mg/kgday				
CS =	Concentration of chemical in soil	mg/kg	see table of COCs below			
AB	Absorption factor	–	see table of COCs below			
SA	Surface area of exposed skin	cm^2/day	2800	4370	5700	5700
EF =	Exposure frequency	days/yr	20	40	20	40
ED =	Exposure duration	yrs	3	6	14	7
AF =	Adherence factor	mg/cm^2	0.2	0.2	0.07	0.07
CF =	Conversion factor	kg/mg	1.00E-06	1.00E-06	1.00E-06	1.00E-06
BW =	Body weight	kg	15	47	70	70
ATc =	Average time for carcinogens	days	25550	25550	25550	25550
ATn =	Average time for non-carcinogens	days	1095	2190	5110	2555

COC	conc	AB	RfDd	CSFd	CHILD				YOUTH				ADULT				SENIOR				SUM			
					CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR
	mg/kg	unitless	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
Ethyl ether	NA	1.00E-02	1.60E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	NA	1.00E-02	9.70E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoride	NA	1.00E-03	5.82E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlorodibenzofuran	NA	1.00E-02	NA	3.00E+03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlorodibenzo-p-dioxin	NA	3.00E-02	NA	3.00E+03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorodibenzofuran	NA	1.00E-02	NA	3.00E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorodibenzo-p-dioxin	NA	3.00E-02	NA	3.00E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	NA	1.30E-01	NA	2.35E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	5.24E+01	1.00E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	NA	1.00E-03	5.60E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	3.47E-02	1.00E-03	2.10E-05	NA	7.10E-11	3.38E-06	NA	NA	7.07E-11	3.37E-06	NA	NA	1.08E-11	5.16E-07	NA	NA	2.17E-11	1.03E-06	NA	NA	3.14E-11	1.49E-06	NA	NA
Methanol	NA	1.00E-02	4.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl-2-pentanone	NA	1.00E-02	6.40E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene chloride	7.70E-03	1.00E-02	5.70E-02	7.89E-03	1.58E-10	2.76E-09	6.75E-12	5.33E-14	1.57E-10	2.75E-09	1.35E-11	1.06E-13	2.40E-11	4.22E-10	4.81E-12	3.79E-14	4.81E-11	8.44E-10	4.81E-12	3.79E-14	6.96E-11	1.22E-09	2.98E-11	2.35E-13
Molybdenum	NA	1.00E-03	1.90E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	NA	1.00E-03	5.40E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	NA	1.00E-02	5.00E-03	1.96E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-nitrosodipropylamine	NA	1.00E-02	NA	2.80E+01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Octachlorodibenzofuran	NA	1.00E-02	NA	3.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Octochlorodibenzo-p-dioxin	NA	3.00E-02	NA	3.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorodibenzofuran	NA	1.00E-02	NA	1.50E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorodibenzo-p-dioxin	NA	3.00E-02	NA	1.50E+05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	NA	2.50E-01	3.00E-02	1.20E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	NA	1.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	NA	1.00E-03	2.20E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	NA	1.00E-03	9.00E-04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachlorodibenzofuran	NA	1.00E-02	NA	3.00E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachlorodibenzo-p-dioxin	NA	3.00E-02	NA	3.00E+05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethylene	6.87E-02	1.00E-02	1.00E-02	5.40E-01	1.41E-09	1.41E-07	6.02E-11	3.25E-11	1.40E-09	1.40E-07	1.20E-10	6.48E-11	2.15E-10	2.15E-08	4.29E-11	2.32E-11	4.29E-10	4.29E-08	4.29E-11	2.32E-11	6.21E-10	6.21E-08	2.66E-10	1.44E-10
Thallium	NA	1.00E-03	1.80E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	7.60E-03	1.00E-02	6.40E-02	NA	1.55E-10	2.43E-09	NA	NA	1.55E-10	2.42E-09	NA	NA	2.37E-11	3.71E-10	NA	NA	4.75E-11	7.42E-10	NA	NA	6.87E-11	1.07E-09	NA	NA
Tributyl phosphate	NA	1.00E-02	1.00E-01	1.08E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethylene	NA	1.00E-02	4.50E-05	2.67E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trifluorochloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Uranium	NA	1.00E-03	5.10E-04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	NA	1.00E-03	7.00E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	NA	1.00E-02	3.00E-03	1.50E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes	3.00E-02	1.00E-02	1.84E-01	NA	6.14E-10	3.34E-09	NA	NA	6.11E-10	3.32E-09	NA	NA	9.37E-11	5.09E-10	NA	NA	1.87E-10	1.02E-09	NA	NA	2.71E-10	1.47E-09	NA	NA
Zinc	NA	1.00E-03	6.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
																					total =	3.18E-04	total =	1.48E-10

TABLE E.9-3
Undeveloped Park User - HWMU - IngestSoilChem

Undeveloped Park User - Ingestion of Soil
Risk calculation for HWMU

Intake Equation: CDI = (CS*EF*ED*IR*FI*CF)/(BW*AT)

		UNITS	Assigned Values			
			child	youth	adult	senior
CDI =	Chronic Daily Intake	mg/kgday				
CS =	Concentration of chemical in soil	mg/kg	see table of COCs below			
EF =	Exposure frequency	days/yr	20	40	20	40
ED =	Exposure duration	yrs	3	6	14	7
IR =	Ingestion rate	mg/day	200	100	100	100
FI =	Fraction of contaminated soil	unitless	1	1	1	1
CF =	Conversion factor	kg/mg	1.00E-06	1.00E-06	1.00E-06	1.00E-06
BW =	Body weight	kg	15	47	70	70
ATc =	Average time for carcinogens	days	25550	25550	25550	25550
ATn =	Average time for non-carcinogens	days	1095	2190	5110	2555

COC	conc	RfDo	CSFo	CHILD				YOUTH				ADULT				SENIOR				SUM			
				CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR
	mg/kg	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	1.20E-02	4.00E-03	5.70E-02	8.77E-09	2.19E-06	3.76E-10	2.14E-11	2.80E-09	7.00E-07	2.40E-10	1.37E-11	9.39E-10	2.35E-07	1.88E-10	1.07E-11	1.88E-09	4.70E-07	1.88E-10	1.07E-11	2.31E-09	5.78E-07	9.91E-10	5.65E-11
1,1-Dichloroethylene	NA	5.00E-02	6.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-dichloroethane	NA	2.00E-02	9.10E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	7.20E-03	6.00E-01	NA	5.26E-09	8.77E-09	NA	NA	1.68E-09	2.80E-09	NA	NA	5.64E-10	9.39E-10	NA	NA	1.13E-09	1.88E-09	NA	NA	1.39E-09	2.31E-09	NA	NA
3,3-Dichlorobenzidine	NA	NA	4.50E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	NA	5.00E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	NA	3.00E-03	2.10E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	NA	9.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	NA	4.00E-04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	NA	2.00E-05	2.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	NA	2.00E-05	2.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	NA	3.00E-04	1.50E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	2.55E+02	2.00E-01	NA	1.86E-04	9.32E-04	NA	NA	5.95E-05	2.97E-04	NA	NA	2.00E-05	9.98E-05	NA	NA	3.99E-05	2.00E-04	NA	NA	4.92E-05	2.46E-04	NA	NA
Benzene	1.70E-03	4.00E-03	5.50E-02	1.24E-09	3.11E-07	5.32E-11	2.93E-12	3.96E-10	9.91E-08	3.40E-11	1.87E-12	1.33E-10	3.33E-08	2.66E-11	1.46E-12	2.66E-10	6.65E-08	2.66E-11	1.46E-12	3.28E-10	8.19E-08	1.40E-10	7.72E-12
Benzo(a)anthracene	NA	NA	7.30E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	NA	NA	7.30E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	NA	NA	7.30E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	NA	NA	7.30E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	NA	2.00E-03	4.30E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-chloroisopropyl)ether	NA	4.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	NA	2.00E-02	1.40E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Boron	NA	2.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	NA	2.00E-02	6.20E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	NA	2.00E-02	7.90E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	NA	1.40E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	NA	1.00E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	NA	NA	2.00E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	NA	1.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	NA	7.00E-04	1.30E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlordane	NA	5.00E-04	3.50E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	NA	2.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	NA	1.00E-02	6.10E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (VI)	1.99E+01	3.00E-03	NA	1.45E-05	4.85E-03	NA	NA	4.64E-06	1.55E-03	NA	NA	1.56E-06	5.19E-04	NA	NA	3.12E-06	1.04E-03	NA	NA	3.84E-06	1.28E-03	NA	NA
Chrysene	NA	NA	7.30E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	NA	2.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	NA	4.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	NA	2.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexanone	NA	5.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	NA	NA	7.30E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	NA	5.00E-05	1.60E+01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-octylphthalate	NA	4.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE E.9-3
Undeveloped Park User - HWMU - IngestSoilChem

Undeveloped Park User - Ingestion of Soil
Risk calculation for HWMU

Intake Equation:			UNITS	Assigned Values			
				child	youth	adult	senior
	CDI =	(CS*EF*ED*IR*FI*CF)/(BW*AT)					
	CDI =	Chronic Daily Intake	mg/kgday				
	CS =	Concentration of chemical in soil	mg/kg	see table of COCs below			
	EF =	Exposure frequency	days/yr	20	40	20	40
	ED =	Exposure duration	yrs	3	6	14	7
	IR =	Ingestion rate	mg/day	200	100	100	100
	FI =	Fraction of contaminated soil	unitless	1	1	1	1
	CF =	Conversion factor	kg/mg	1.00E-06	1.00E-06	1.00E-06	1.00E-06
	BW =	Body weight	kg	15	47	70	70
	ATc =	Average time for carcinogens	days	25550	25550	25550	25550
	ATn =	Average time for non-carcinogens	days	1095	2190	5110	2555

COC	conc	RfDo	CSFo	CHILD				YOUTH				ADULT				SENIOR				SUM			
				CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR
	mg/kg	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
Ethyl ether	NA	2.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	NA	1.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoride	NA	6.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlorodibenzofuran	NA	NA	1.50E+03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlorodibenzo-p-dioxin	NA	NA	1.50E+03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorodibenzofuran	NA	NA	1.50E+03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorodibenzo-p-dioxin	NA	NA	1.50E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	NA	NA	7.30E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	5.24E+01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	NA	1.40E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	3.47E-02	3.00E-04	NA	2.54E-08	8.45E-05	NA	NA	8.09E-09	2.70E-05	NA	NA	2.72E-09	9.05E-06	NA	NA	5.43E-09	1.81E-05	NA	NA	6.69E-09	2.23E-05	NA	NA
Methanol	NA	5.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl-2-pentanone	NA	8.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene chloride	7.70E-03	6.00E-02	7.50E-03	5.63E-09	9.38E-08	2.41E-10	1.81E-12	1.80E-09	2.99E-08	1.54E-10	1.15E-12	6.03E-10	1.00E-08	1.21E-10	9.04E-13	1.21E-09	2.01E-08	1.21E-10	9.04E-13	1.48E-09	2.47E-08	6.36E-10	4.77E-12
Molybdenum	NA	5.00E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	NA	2.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	NA	2.00E-02	4.90E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-nitrosodipropylamine	NA	NA	7.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Octachlorodibenzofuran	NA	NA	1.50E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Octochlorodibenzo-p-dioxin	NA	NA	1.50E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorodibenzofuran	NA	NA	7.50E+03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorodibenzo-p-dioxin	NA	NA	7.50E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	NA	3.00E-02	1.20E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	NA	5.00E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	NA	5.00E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachlorodibenzofuran	NA	NA	1.50E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachlorodibenzo-p-dioxin	NA	NA	1.50E+05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethylene	6.87E-02	1.00E-02	5.40E-01	5.02E-08	5.02E-06	2.15E-09	1.16E-09	1.60E-08	1.60E-06	1.37E-09	7.41E-10	5.38E-09	5.38E-07	1.08E-09	5.81E-10	1.08E-08	1.08E-06	1.08E-09	5.81E-10	1.32E-08	1.32E-06	5.68E-09	3.06E-09
Thallium	NA	9.00E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	7.60E-03	8.00E-02	NA	5.55E-09	6.94E-08	NA	NA	1.77E-09	2.22E-08	NA	NA	5.95E-10	7.44E-09	NA	NA	1.19E-09	1.49E-08	NA	NA	1.46E-09	1.83E-08	NA	NA
Tributyl phosphate	NA	2.00E-01	5.40E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethylene	NA	3.00E-04	4.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trifluorochloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Uranium	NA	6.00E-04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	NA	7.00E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	NA	3.00E-03	1.50E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes	3.00E-02	2.00E-01	NA	2.19E-08	1.10E-07	NA	NA	7.00E-09	3.50E-08	NA	NA	2.35E-09	1.17E-08	NA	NA	4.70E-09	2.35E-08	NA	NA	5.78E-09	2.89E-08	NA	NA
Zinc	NA	3.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
																				total =	1.55E-03	total =	3.13E-09

TABLE E.9-3
Undeveloped Park User - HWMU - DermalSWchem

Undeveloped Park User - Dermal Contact with Surface Water
Risk calculation for HWMU

			UNITS	Assigned Values child	youth	adult	senior
Intake Equation:	CDI =	(DA*EF*ED*SA)/(BW*AT)					
	CDI =	Chronic Daily intake	mg/kgday	calculated below			
	DA =	Dermal absorption dose	mg/cm²day	see COC list below			
	EF =	Exposure frequency	days/yr	12	12	12	12
	ED =	Exposure duration	yrs	3	6	14	7
	SA =	Surface area of skin	cm²	2180	4470	6070	6070
	BW =	Body weight	kg	15	47	70	70
	ATc =	Average time for carcinogens	days	25550	25550	25550	25550
	ATn =	Average time for non-carcinogens	days	1095	2190	5110	2555
where:	DA = C_v*K_p*CF*ET						
	C_v =	concentation of ith contaminant in surface water	mg/L	see COC list below			
	K_p =	permeability constant for ith contaminant	cm/hr	see COC list below			
	CF =	conversion factor	L/cm³	0.001	0.001	0.001	0.001
	ET =	exposure time	hr/d	1	1	1	1

COC	C_v	K_p	DA	RfDd	CSFd	CHILD CDI	CHILD HQ	CHILD CDI	CHILD ILCR	YOUTH CDI	YOUTH HQ	YOUTH CDI	YOUTH ILCR	ADULT CDI	ADULT HQ	ADULT CDI	ADULT ILCR	SENIOR CDI	SENIOR HQ	SENIOR CDI	SENIOR ILCR	SUM CDI	SUM HQ	SUM CDI	SUM ILCR
	mg/L	cm/hr	mg/cm²day	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	1.00E-03	6.43E-03	6.43E-09	3.24E-03	7.04E-02	3.07E-08	9.48E-06	1.32E-09	9.27E-11	2.01E-08	6.21E-06	1.72E-09	1.21E-10	1.83E-08	5.66E-06	3.67E-09	2.58E-10	1.83E-08	5.66E-06	1.83E-09	1.29E-10	1.99E-08	6.15E-06	8.54E-09	6.01E-10
1,1-Dichloroethylene	NA	1.59E-02	NA	5.00E-02	6.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-dichloroethane	NA	5.34E-03	NA	2.00E-02	9.10E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	5.00E-03	1.11E-03	5.55E-09	4.80E-01	NA	2.65E-08	5.52E-08	NA	NA	1.74E-08	3.62E-08	NA	NA	1.58E-08	3.30E-08	NA	NA	1.58E-08	3.30E-08	NA	NA	1.72E-08	3.58E-08	NA	NA
3,3-Dichlorobenzidine	NA	1.69E-02	NA	NA	9.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	NA	9.95E-03	NA	3.25E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	NA	2.88E-03	NA	2.40E-03	2.63E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	NA	5.69E-04	NA	7.47E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	NA	1.00E-03	NA	8.00E-06	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	NA	1.29E+00	NA	1.80E-05	2.22E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	NA	5.48E+00	NA	1.80E-05	2.22E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	NA	1.00E-03	NA	1.23E-04	3.66E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	5.61E-02	1.00E-03	5.61E-08	1.40E-02	NA	2.68E-07	1.91E-05	NA	NA	1.75E-07	1.25E-05	NA	NA	1.60E-07	1.14E-05	NA	NA	1.60E-07	1.14E-05	NA	NA	1.74E-07	1.24E-05	NA	NA
Benzene	1.00E-03	2.07E-02	2.07E-08	3.88E-03	5.67E-02	9.89E-08	2.55E-05	4.24E-09	2.40E-10	6.47E-08	1.67E-05	5.55E-09	3.15E-10	5.90E-08	1.52E-05	1.18E-08	6.69E-10	5.90E-08	1.52E-05	5.90E-09	3.35E-10	6.41E-08	1.65E-05	2.75E-08	1.56E-09
Benzo(a)anthracene	NA	9.48E-01	NA	NA	2.35E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	NA	1.24E+00	NA	NA	2.35E+01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	NA	6.99E-01	NA	NA	2.35E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	NA	1.20E+00	NA	NA	2.35E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	NA	1.00E-03	NA	2.00E-05	4.30E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-chloroisopropyl)ether	NA	7.63E-02	NA	2.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	NA	1.97E+00	NA	3.80E-03	7.37E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Boron	NA	1.00E-03	NA	1.80E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	NA	5.02E-03	NA	1.96E-02	6.33E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	NA	2.77E-03	NA	1.20E-02	1.32E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	NA	3.51E-03	NA	1.12E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	NA	1.00E-03	NA	1.00E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	NA	7.97E-02	NA	NA	2.86E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	NA	1.58E-02	NA	6.30E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	NA	2.24E-02	NA	4.55E-04	2.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlordane	NA	1.57E-01	NA	2.50E-04	7.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	NA	4.07E-02	NA	6.20E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	NA	8.92E-03	NA	2.00E-03	3.05E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (VI)	1.80E-03	2.00E-03	3.60E-09	6.00E-05	NA	1.72E-08	2.87E-04	NA	NA	1.13E-08	1.88E-04	NA	NA	1.03E-08	1.71E-04	NA	NA	1.03E-08	1.71E-04	NA	NA	1.12E-08	1.86E-04	NA	NA
Chrysene	NA	1.03E+00	NA	NA	2.35E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	NA	4.00E-04	NA	1.60E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	NA	1.00E-03	NA	1.20E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	NA	1.00E-03	NA	3.40E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexanone	NA	1.80E-03	NA	4.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	NA	1.68E+00	NA	NA	2.35E+01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	NA	4.45E-02	NA	2.50E-05	3.20E+01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-octylphthalate	NA	4.45E+00	NA	3.60E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE E.9-3
Undeveloped Park User - HWMU - DermalSWchem

Undeveloped Park User - Dermal Contact with Surface Water
Risk calculation for HWMU

			UNITS	Assigned Values			
				child	youth	adult	senior
Intake Equation:	CDI =	(DA*EF*ED*SA)/(BW*AT)					
	CDI =	Chronic Daily Intake	mg/kgday	calculated below			
	DA =	Dermal absorption dose	mg/cm²day	see COC list below			
	EF =	Exposure frequency	days/yr	12	12	12	12
	ED =	Exposure duration	yrs	3	6	14	7
	SA =	Surface area of skin	cm²	2180	4470	6070	6070
	BW =	Body weight	kg	15	47	70	70
	ATc =	Average time for carcinogens	days	25550	25550	25550	25550
	ATn =	Average time for non-carcinogens	days	1095	2190	5110	2555
where:	DA = C_v*K_p*CF*ET						
	C_v =	concentation of ith contaminant in surface water	mg/L	see COC list below			
	K_p =	permeability constant for ith contaminant	cm/hr	see COC list below			
	CF =	conversion factor	L/cm³	0.001	0.001	0.001	0.001
	ET =	exposure time	hr/d	1	1	1	1

COC	C_v	K_p	DA	RfDd	CSFd	CHILD				YOUTH				ADULT				SENIOR				SUM			
						CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR
	mg/L	cm/hr	mg/cm²day	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
Ethyl ether	NA	2.88E-03	NA	1.60E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	NA	7.39E-02	NA	9.70E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoride	NA	1.00E-03	NA	5.82E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlorodibenzofuran	NA	2.55E+00	NA	NA	3.00E+03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlorodibenzo-p-dioxin	NA	3.22E+00	NA	NA	3.00E+03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorodibenzofuran	NA	2.38E+00	NA	NA	3.00E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorodibenzo-p-dioxin	NA	5.29E+00	NA	NA	3.00E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	NA	2.23E+00	NA	NA	2.35E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	1.20E-03	1.00E-04	1.20E-10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	NA	1.00E-03	NA	1.84E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	6.00E-05	1.00E-03	6.00E-11	2.10E-05	NA	2.87E-10	1.37E-05	NA	NA	1.88E-10	8.93E-06	NA	NA	1.71E-10	8.15E-06	NA	NA	1.71E-10	8.15E-06	NA	NA	1.86E-10	8.85E-06	NA	NA
Methanol	NA	3.45E-04	NA	4.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone	NA	3.97E-03	NA	6.40E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene chloride	5.00E-03	4.46E-03	2.23E-08	5.70E-02	7.89E-03	1.07E-07	1.87E-06	4.57E-09	3.60E-11	6.97E-08	1.22E-06	5.98E-09	4.72E-11	6.36E-08	1.12E-06	1.27E-08	1.00E-10	6.36E-08	1.12E-06	8.36E-09	5.02E-11	6.91E-08	1.21E-06	2.96E-08	2.34E-10
Molybdenum	NA	1.00E-03	NA	1.90E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	NA	2.00E-04	NA	5.40E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	NA	1.96E-02	NA	5.00E-03	1.96E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-nitrosodipropylamine	NA	2.83E-03	NA	NA	2.80E+01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Octachlorodibenzofuran	NA	4.78E+00	NA	NA	3.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Octochlorodibenzo-p-dioxin	NA	1.65E+01	NA	NA	3.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorodibenzofuran	NA	1.06E+00	NA	NA	1.50E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorodibenzo-p-dioxin	NA	3.79E-01	NA	NA	1.50E+05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	NA	1.95E-01	NA	3.00E-02	1.20E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	NA	2.29E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	NA	1.00E-03	NA	2.20E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	NA	6.00E-04	NA	9.00E-04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachlorodibenzofuran	NA	1.12E+00	NA	NA	3.00E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachlorodibenzo-p-dioxin	NA	1.39E+00	NA	NA	3.00E+05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethylene	1.00E-03	4.81E-02	4.81E-08	1.00E-02	5.40E-01	2.30E-07	2.30E-05	9.85E-09	5.32E-09	1.50E-07	1.50E-05	1.29E-08	6.98E-09	1.37E-07	1.37E-05	2.74E-08	1.48E-08	1.37E-07	1.37E-05	1.37E-08	7.40E-09	1.49E-07	1.49E-05	6.39E-08	3.45E-08
Thallium	NA	1.00E-03	NA	1.80E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1.00E-03	4.53E-02	4.53E-08	6.40E-02	NA	2.16E-07	3.38E-06	NA	NA	1.42E-07	2.21E-06	NA	NA	1.29E-07	2.02E-06	NA	NA	1.29E-07	2.02E-06	NA	NA	1.40E-07	2.19E-06	NA	NA
Tributyl phosphate	NA	3.13E-02	NA	1.00E-01	1.08E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethylene	NA	1.57E-02	NA	4.50E-05	2.67E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trifluorochloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Uranium	NA	1.00E-03	NA	5.10E-04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	NA	1.00E-03	NA	7.00E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	NA	1.13E-02	NA	3.00E-03	1.50E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes	1.00E-03	7.04E-02	7.04E-08	1.84E-01	NA	3.36E-07	1.83E-06	NA	NA	2.20E-07	1.20E-06	NA	NA	2.01E-07	1.09E-06	NA	NA	2.01E-07	1.09E-06	NA	NA	2.18E-07	1.19E-06	NA	NA
Zinc	NA	6.00E-04	NA	6.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
																						total =	2.49E-04	total =	3.69E-08

TABLE E.9-3
Undeveloped Park User - HWMU - IngestSWchem

Undeveloped Park User - Ingestion of Surface Water
Risk calculation for HWMU

Intake Equation:			UNITS	Assigned Values			
				child	youth	adult	senior
	CDI =	(CW*EF*ED*IR)/(BW*AT)					
	CDI =	Chronic Daily Intake	mg/kgday				
	CW =	Concentration of chemical in water	mg/L	see COC table below			
	EF =	Exposure frequency	days/yr	12	12	12	12
	ED =	Exposure duration	yrs	3	6	14	7
	IR =	Ingestion rate	L/day	0.035	0.035	0.015	0.015
	BW =	Body weight	kg	15	47	70	70
	ATc =	Average time for carcinogens	days	25550	25550	25550	25550
	ATn =	Average time for non-carcinogens	days	1095	2190	5110	2555

COC	CW	RfDo	CSFo	CHILD				YOUTH				ADULT				SENIOR				SUM			
				CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR
	mg/L	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	1.00E-03	4.00E-03	5.70E-02	7.67E-08	1.92E-05	3.29E-09	1.87E-10	2.45E-08	6.12E-06	2.10E-09	1.20E-10	7.05E-09	1.76E-06	1.41E-09	8.03E-11	7.05E-09	1.76E-06	7.05E-10	4.02E-11	1.75E-08	4.37E-06	7.50E-09	4.27E-10
1,1-Dichloroethylene	NA	5.00E-02	6.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-dichloroethane	NA	2.00E-02	9.10E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	5.00E-03	6.00E-01	NA	3.84E-07	6.39E-07	NA	NA	1.22E-07	2.04E-07	NA	NA	3.52E-08	5.87E-08	NA	NA	3.52E-08	5.87E-08	NA	NA	8.75E-08	1.46E-07	NA	NA
3,3-Dichlorobenzidine	NA	NA	4.50E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	NA	5.00E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroanaline	NA	3.00E-03	2.10E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	NA	9.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	NA	4.00E-04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	NA	2.00E-05	4.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	NA	2.00E-05	4.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	NA	3.00E-04	1.50E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	5.61E-02	2.00E-01	NA	4.30E-06	2.15E-05	NA	NA	1.37E-06	6.87E-06	NA	NA	3.95E-07	1.98E-06	NA	NA	3.95E-07	1.98E-06	NA	NA	9.82E-07	4.91E-06	NA	NA
Benzene	1.00E-03	4.00E-03	5.50E-02	7.67E-08	1.92E-05	3.29E-09	1.81E-10	2.45E-08	6.12E-06	2.10E-09	1.15E-10	7.05E-09	1.76E-06	1.41E-09	7.75E-11	7.05E-09	1.76E-06	7.05E-10	3.87E-11	1.75E-08	4.37E-06	7.50E-09	4.12E-10
Benzo(a)anthracene	NA	NA	7.30E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	NA	NA	7.30E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	NA	NA	7.30E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	NA	NA	7.30E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	NA	2.00E-03	4.30E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-chloroisopropyl)ether	NA	4.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	NA	2.00E-02	1.40E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Boron	NA	2.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	NA	2.00E-02	6.20E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	NA	2.00E-02	7.90E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	NA	1.40E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	NA	1.00E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	NA	NA	2.00E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	NA	1.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	NA	7.00E-04	1.30E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlordane	NA	5.00E-04	3.50E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	NA	2.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	NA	1.00E-02	6.10E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (VI)	1.80E-03	3.00E-03	NA	1.38E-07	4.60E-05	NA	NA	4.41E-08	1.47E-05	NA	NA	1.27E-08	4.23E-06	NA	NA	1.27E-08	4.23E-06	NA	NA	3.15E-08	1.05E-05	NA	NA
Chrysene	NA	NA	7.30E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	NA	2.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	NA	4.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	NA	2.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexanone	NA	5.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	NA	NA	7.30E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	NA	5.00E-05	1.60E+01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-octylphthalate	NA	4.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE E.9-3
Undeveloped Park User - HWMU - IngestSWchem

Undeveloped Park User - Ingestion of Surface Water
Risk calculation for HWMU

Intake Equation:			UNITS	Assigned Values			
				child	youth	adult	senior
	CDI =	(CW*EF*ED*IR)/(BW*AT)					
	CDI =	Chronic Daily Intake	mg/kgday				
	CW =	Concentration of chemical in water	mg/L	see COC table below			
	EF =	Exposure frequency	days/yr	12	12	12	12
	ED =	Exposure duration	yrs	3	6	14	7
	IR =	Ingestion rate	L/day	0.035	0.035	0.015	0.015
	BW =	Body weight	kg	15	47	70	70
	ATc =	Average time for carcinogens	days	25550	25550	25550	25550
	ATn =	Average time for non-carcinogens	days	1095	2190	5110	2555

				CHILD				YOUTH				ADULT				SENIOR				SUM			
COC	CW	RfDo	CSFo	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR
	mg/L	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
Ethyl ether	NA	2.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	NA	1.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoride	NA	6.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlorodibenzofuran	NA	NA	1.50E+03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlorodibenzo-p-dioxin	NA	NA	1.50E+03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorodibenzofuran	NA	NA	1.50E+03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorodibenzo-p-dioxin	NA	NA	1.50E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	NA	NA	7.30E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	1.20E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	NA	4.60E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	6.00E-05	3.00E-04	NA	4.60E-09	1.53E-05	NA	NA	1.47E-09	4.90E-06	NA	NA	4.23E-10	1.41E-06	NA	NA	4.23E-10	1.41E-06	NA	NA	1.05E-09	3.50E-06	NA	NA
Methanol	NA	5.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone	NA	8.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene chloride	5.00E-03	6.00E-02	7.50E-03	3.84E-07	6.39E-06	1.64E-08	1.23E-10	1.22E-07	2.04E-06	1.05E-08	7.87E-11	3.52E-08	5.87E-07	7.05E-09	5.28E-11	3.52E-08	5.87E-07	3.52E-09	2.64E-11	8.75E-08	1.46E-06	3.75E-08	2.81E-10
Molybdenum	NA	5.00E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	NA	2.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	NA	2.00E-02	4.90E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-nitrosodipropylamine	NA	NA	7.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Octachlorodibenzofuran	NA	NA	1.50E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Octochlorodibenzo-p-dioxin	NA	NA	1.50E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorodibenzofuran	NA	NA	7.50E+03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorodibenzo-p-dioxin	NA	NA	7.50E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	NA	3.00E-02	1.20E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	NA	5.00E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	NA	5.00E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachlorodibenzofuran	NA	NA	1.50E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachlorodibenzo-p-dioxin	NA	NA	1.50E+05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethylene	1.00E-03	1.00E-02	5.40E-01	7.67E-08	7.67E-06	3.29E-09	1.78E-09	2.45E-08	2.45E-06	2.10E-09	1.13E-09	7.05E-09	7.05E-07	1.41E-09	7.61E-10	7.05E-09	7.05E-07	7.05E-10	3.80E-10	1.75E-08	1.75E-06	7.50E-09	4.05E-09
Thallium	NA	9.00E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1.00E-03	8.00E-02	NA	7.67E-08	9.59E-07	NA	NA	2.45E-08	3.06E-07	NA	NA	7.05E-09	8.81E-08	NA	NA	7.05E-09	8.81E-08	NA	NA	1.75E-08	2.19E-07	NA	NA
Tributyl phosphate	NA	2.00E-01	5.40E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethylene	NA	3.00E-04	4.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trifluorochloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Uranium	NA	6.00E-04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	NA	7.00E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	NA	3.00E-03	1.50E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes	1.00E-03	2.00E-01	NA	7.67E-08	3.84E-07	NA	NA	2.45E-08	1.22E-07	NA	NA	7.05E-09	3.52E-08	NA	NA	7.05E-09	3.52E-08	NA	NA	1.75E-08	8.75E-08	NA	NA
Zinc	NA	3.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
																				total =	3.13E-05	total =	5.17E-09

TABLE E.9-3
Undeveloped Park User - HWMU - SumPaths

Undeveloped Park User - Summation of all Pathways
Risk calculation for HWMU

	HQ	ILCR
Inhale	2.01E-04	2.91E-08
Dermal Soil	3.18E-04	1.48E-10
Ingest Soil	1.55E-03	3.13E-09
Dermal Surface Water	2.49E-04	3.69E-08
Ingest Surface Water	3.13E-05	5.17E-09
SUM	**2.35E-03**	**7.44E-08**

Summation of all paths for individual chemicals

	ILCR	HQ
1,1,2-Trichloroethane	1.09E-09	1.11E-05
1,1-Dichloroethylene	NA	NA
1,2-dichloroethane	NA	NA
2-Butanone	no CSFs	1.84E-07
3,3-Dichlorobenzidine	NA	no RfDs
4-Methylphenol	no CSFs	NA
4-Nitroanaline	NA	NA
Acetone	no CSFs	NA
Antimony	no CSFs	NA
Aroclor-1254	NA	NA
Aroclor-1260	NA	NA
Arsenic	NA	NA
Barium	no CSFs	4.24E-04
Benzene	1.98E-09	2.10E-05
Benzo(a)anthracene	NA	no RfDs
Benzo(a)pyrene	NA	no RfDs
Benzo(b)fluoranthene	NA	no RfDs
Benzo(k)fluoranthene	NA	no RfDs
Beryllium	NA	NA
Bis(2-chloroisopropyl)ether	no CSFs	NA
Bis(2-ethylhexyl)phthalate	NA	NA
Boron	no CSFs	NA
Bromodichloromethane	NA	NA
Bromoform	NA	NA
Bromomethane	no CSFs	NA
Cadmium	NA	NA
Carbazole	NA	no RfDs
Carbon disulfide	no CSFs	NA
Carbon tetrachloride	NA	NA
Chlordane	NA	NA
Chlorobenzene	no CSFs	NA
Chloroform	NA	NA
Chromium (VI)	2.91E-08	1.83E-03
Chrysene	NA	no RfDs
Cobalt	NA	NA
Copper	no CSFs	NA
Cyanide	no CSFs	NA
Cyclohexanone	no CSFs	NA
Dibenzo(a,h)anthracene	NA	NA
Dieldrin	NA	NA
Di-n-octylphthalate	no CSFs	NA

TABLE E.9-3
Undeveloped Park User - HWMU - SumPaths

Summation of all paths for individual chemicals (continued)

	ILCR	HQ
Ethyl ether	no CSFs	NA
Ethylbenzene	NA	NA
Fluoride	no CSFs	NA
Heptachlorodibenzofuran	NA	no RfDs
Heptachlorodibenzo-p-dioxin	NA	no RfDs
Hexachlorodibenzofuran	NA	no RfDs
Hexachlorodibenzo-p-dioxin	NA	no RfDs
Indeno(1,2,3-cd)pyrene	NA	no RfDs
Lead	no CSFs	no RfDs
Manganese	no CSFs	NA
Mercury	no CSFs	3.61E-05
Methanol	no CSFs	NA
Methyl-2-pentanone	no CSFs	NA
Methylene chloride	5.20E-10	2.70E-06
Molybdenum	no CSFs	NA
Nickel	no CSFs	NA
N-nitrosodiphenylamine	NA	NA
N-nitrosodipropylamine	NA	no RfDs
Octachlorodibenzofuran	NA	no RfDs
Octochlorodibenzo-p-dioxin	NA	no RfDs
Pentachlorodibenzofuran	no CSFs	no RfDs
Pentachlorodibenzo-p-dioxin	NA	no RfDs
Pentachlorophenol	NA	NA
Phenanthrene	no CSFs	no RfDs
Selenium	no CSFs	NA
Silver	no CSFs	NA
Tetrachlorodibenzofuran	no CSFs	no RfDs
Tetrachlorodibenzo-p-dioxin	no CSFs	no RfDs
Tetrachloroethylene	4.18E-08	1.80E-05
Thallium	no CSFs	NA
Toluene	no CSFs	2.43E-06
Tributyl phosphate	NA	NA
Trichloroethylene	NA	NA
Trifluorochloromethane	no CSFs	no RfDs
Uranium	no CSFs	NA
Vanadium	no CSFs	NA
Vinyl chloride	NA	NA
Xylenes	no CSFs	1.30E-06
Zinc	no CSFs	NA
SUM	**7.44E-08**	**2.35E-03**

TABLE E.9-4
Building Maintenance - HWMU - InhaleChem

Building Maintenance - Inhalation of Gases & Particulates
Risk calculation for HWMU

Intake Equation:			UNITS	adult
	CDI =	(CS*EF*ED*IR*ET)/(BW*AT)		
	CDI =	Chronic Daily Intake	mg/kgday	calculated below
	CA =	Concentration of chemical in air	mg/m^3	see COC list below
	EF =	Exposure frequency	days/yr	250
	ED =	Exposure duration	yrs	25
	IR =	Inhalation rate	m^3/hr	1.5
	ET =	Exposure time	hrs/day	1
	BW =	Body weight	kg	70
	ATc =	Average time for carcinogens	days	25550
	ATn =	Average time for non-carcinogens	days	9125

COC	conc	RfDI	CSFi	ADULT CDI	HQ	CDI	ILCR
	mg/m^3	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	3.12E-10	NA	5.60E-02	NA	NA	1.64E-12	9.16E-14
1,1-Dichloroethylene	NA	5.71E-02	1.75E-01	NA	NA	NA	NA
1,2-dichloroethane	NA	NA	9.10E-02	NA	NA	NA	NA
2-Butanone	1.87E-10	1.43E+00	NA	2.75E-12	1.92E-12	NA	NA
3,3-Dichlorobenzidine	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	NA	NA	NA	NA	NA	NA	NA
4-Nitroanaline	NA	1.14E-03	NA	NA	NA	NA	NA
Acetone	NA	NA	NA	NA	NA	NA	NA
Antimony	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	NA	NA	2.00E+00	NA	NA	NA	NA
Aroclor-1260	NA	NA	2.00E+00	NA	NA	NA	NA
Arsenic	NA	NA	1.51E+01	NA	NA	NA	NA
Barium	6.63E-06	1.43E-04	NA	9.73E-08	6.80E-04	NA	NA
Benzene	4.42E-11	8.57E-03	2.73E-02	6.49E-13	7.57E-11	2.32E-13	6.33E-15
Benzo(a)anthracene	NA	NA	3.08E-01	NA	NA	NA	NA
Benzo(a)pyrene	NA	NA	3.08E-01	NA	NA	NA	NA
Benzo(b)fluoranthene	NA	NA	3.08E+00	NA	NA	NA	NA
Benzo(k)fluoranthene	NA	NA	3.08E-02	NA	NA	NA	NA
Beryllium	NA	5.71E-06	8.40E+00	NA	NA	NA	NA
Bis(2-chloroisopropyl)ether	NA	NA	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	NA	NA	NA	NA	NA	NA	NA
Boron	NA	5.71E-03	NA	NA	NA	NA	NA
Bromodichloromethane	NA	NA	NA	NA	NA	NA	NA
Bromoform	NA	NA	3.85E-03	NA	NA	NA	NA
Bromomethane	NA	1.43E-03	NA	NA	NA	NA	NA
Cadmium	NA	NA	6.30E+00	NA	NA	NA	NA
Carbazole	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	NA	2.00E-01	NA	NA	NA	NA	NA
Carbon tetrachloride	NA	NA	5.25E-02	NA	NA	NA	NA
Chlordane	NA	2.00E-04	3.50E-01	NA	NA	NA	NA
Chlorobenzene	NA	1.43E-02	NA	NA	NA	NA	NA
Chloroform	NA	NA	8.05E-02	NA	NA	NA	NA
Chromium (VI)	5.17E-07	2.86E-05	4.20E+01	7.59E-09	2.66E-04	2.71E-09	1.14E-07
Chrysene	NA	NA	3.08E-03	NA	NA	NA	NA
Cobalt	NA	5.71E-06	9.80E+00	NA	NA	NA	NA
Copper	NA	NA	NA	NA	NA	NA	NA
Cyanide	NA	NA	NA	NA	NA	NA	NA
Cyclohexanone	NA	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	NA	NA	3.08E+00	NA	NA	NA	NA
Dieldrin	NA	NA	1.61E+01	NA	NA	NA	NA
Di-n-octylphthalate	NA	NA	NA	NA	NA	NA	NA
Ethyl ether	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	NA	2.86E-01	3.85E-03	NA	NA	NA	NA
Fluoride	NA	NA	NA	NA	NA	NA	NA
Heptachlorodibenzofuran	NA	NA	1.16E+03	NA	NA	NA	NA
Heptachlorodibenzo-p-dioxin	NA	NA	1.16E+03	NA	NA	NA	NA
Hexachlorodibenzofuran	NA	NA	1.16E+04	NA	NA	NA	NA
Hexachlorodibenzo-p-dioxin	NA	NA	1.16E+04	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	NA	NA	3.08E-01	NA	NA	NA	NA
Lead	1.36E-06	NA	NA	NA	NA	NA	NA
Manganese	NA	1.43E-05	NA	NA	NA	NA	NA
Mercury	9.02E-10	NA	NA	NA	NA	NA	NA
Methanol	NA	NA	NA	NA	NA	NA	NA
Methyl-2-pentanone	NA	8.57E-01	NA	NA	NA	NA	NA
Methylene chloride	2.00E-10	8.57E-01	1.65E-03	2.94E-12	3.43E-12	1.06E-12	1.73E-15
Molybdenum	NA	NA	NA	NA	NA	NA	NA
Nickel	NA	NA	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	NA	NA	NA	NA	NA	NA	NA
N-nitrosodipropylamine	NA	NA	NA	NA	NA	NA	NA
Octochlorodibenzofuran	NA	NA	1.16E+02	NA	NA	NA	NA
Octochlorodibenzo-p-dioxin	NA	NA	1.16E+02	NA	NA	NA	NA
Pentachlorodibenzofuran	NA	NA	5.78E+03	NA	NA	NA	NA
Pentachlorodibenzo-p-dioxin	NA	NA	5.78E+04	NA	NA	NA	NA
Pentachlorophenol	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	NA	NA	NA	NA	NA	NA	NA
Selenium	NA	NA	NA	NA	NA	NA	NA
Silver	NA	NA	NA	NA	NA	NA	NA
Tetrachlorodibenzofuran	NA	NA	1.16E+04	NA	NA	NA	NA
Tetrachlorodibenzo-p-dioxin	NA	NA	1.16E+05	NA	NA	NA	NA
Tetrachloroethylene	1.79E-09	1.71E-01	2.07E-02	2.62E-11	1.53E-10	9.36E-12	1.94E-13
Thallium	NA	NA	NA	NA	NA	NA	NA
Toluene	1.98E-10	1.43E+00	NA	2.90E-12	2.03E-12	NA	NA
Tributyl phosphate	NA	NA	NA	NA	NA	NA	NA
Trichloroethylene	NA	1.14E-02	4.00E-01	NA	NA	NA	NA
Trifluorochloromethane	NA	NA	NA	NA	NA	NA	NA
Uranium	NA	NA	NA	NA	NA	NA	NA
Vanadium	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	NA	2.86E-02	3.08E-02	NA	NA	NA	NA
Xylenes	7.80E-10	2.86E-02	NA	1.14E-11	4.00E-10	NA	NA
Zinc	NA	NA	NA	NA	NA	NA	NA
				total =	9.46E-04	total =	1.14E-07

Air concentration is derived using air particulate value of 26 ug/m^3 (2005 SER background average from monitor AMS-12) multiplied by the soil concentration.

TABLE E.9-4
Building Maintenance - HWMU - DermalSoilChem

Building Maintenance - Dermal Contact with Soil/Sediment
Risk calculation for HWMU

Intake Equation:			UNITS	adult
	CDI =	(CS*AB*SA*EF*ED*AF*CF)/(BW*AT)		
	CDI =	Chronic Daily Intake	mg/kgday	calculated below
	CS =	Concentration of chemical in soil	mg/kg	see COC list below
	AB	Absorption factor	–	see COC list below
	SA	Surface area of exposed skin	cm^2/day	2077
	EF =	Exposure frequency	days/yr	250
	ED =	Exposure duration	yrs	25
	AF =	Adherence factor	mg/cm^2	0.2
	CF =	Conversion factor	kg/mg	1.00E-06
	BW =	Body weight	kg	70
	ATc =	Average time for carcinogens	days	25550
	ATn =	Average time for non-carcinogens	days	9125

COC	conc	AB	RfDd	CSFd	ADULT CDI	HQ	CDI	ILCR
	mg/kg	unitless	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	1.20E-02	1.00E-02	3.24E-03	7.04E-02	4.88E-10	1.51E-07	1.74E-10	1.23E-11
1,1-Dichloroethylene	NA	1.00E-02	5.00E-02	6.00E-01	NA	NA	NA	NA
1,2-dichloroethane	NA	1.00E-02	2.00E-02	9.10E-02	NA	NA	NA	NA
2-Butanone	7.20E-03	1.00E-02	4.80E-01	NA	2.93E-10	6.10E-10	NA	NA
3,3-Dichlorobenzidine	NA	1.00E-02	NA	9.00E-01	NA	NA	NA	NA
4-Methylphenol	NA	1.00E-02	3.25E-03	NA	NA	NA	NA	NA
4-Nitroanaline	NA	1.00E-02	2.40E-03	2.63E-02	NA	NA	NA	NA
Acetone	NA	1.00E-02	7.47E-01	NA	NA	NA	NA	NA
Antimony	NA	1.00E-03	8.00E-06	NA	NA	NA	NA	NA
Aroclor-1254	NA	1.40E-01	1.80E-05	2.22E+00	NA	NA	NA	NA
Aroclor-1260	NA	1.40E-01	1.80E-05	2.22E+00	NA	NA	NA	NA
Arsenic	NA	3.00E-02	1.23E-04	3.66E+00	NA	NA	NA	NA
Barium	2.55E+02	1.00E-03	1.40E-02	NA	1.04E-06	7.40E-05	NA	NA
Benzene	1.70E-03	1.00E-02	3.88E-03	5.67E-02	6.91E-11	1.78E-08	2.47E-11	1.40E-12
Benzo(a)anthracene	NA	1.30E-01	NA	2.35E+00	NA	NA	NA	NA
Benzo(a)pyrene	NA	1.30E-01	NA	2.35E+01	NA	NA	NA	NA
Benzo(b)fluoranthene	NA	1.30E-01	NA	2.35E+00	NA	NA	NA	NA
Benzo(k)fluoranthene	NA	1.30E-01	NA	2.35E-01	NA	NA	NA	NA
Beryllium	NA	1.00E-03	2.00E-05	4.30E+02	NA	NA	NA	NA
Bis(2-chloroisopropyl)ether	NA	1.00E-02	2.00E-02	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	NA	1.00E-02	3.80E-03	7.37E-02	NA	NA	NA	NA
Boron	NA	1.00E-03	1.80E-01	NA	NA	NA	NA	NA
Bromodichloromethane	NA	1.00E-02	1.96E-02	6.33E-02	NA	NA	NA	NA
Bromoform	NA	1.00E-02	1.20E-02	1.32E-02	NA	NA	NA	NA
Bromomethane	NA	1.00E-02	1.12E-03	NA	NA	NA	NA	NA
Cadmium	NA	1.00E-03	1.00E-05	NA	NA	NA	NA	NA
Carbazole	NA	1.00E-02	NA	2.86E-02	NA	NA	NA	NA
Carbon disulfide	NA	2.50E-01	6.30E-02	NA	NA	NA	NA	NA
Carbon tetrachloride	NA	1.00E-02	4.55E-04	2.00E-01	NA	NA	NA	NA
Chlordane	NA	4.00E-02	2.50E-04	7.00E-01	NA	NA	NA	NA
Chlorobenzene	NA	1.00E-02	6.20E-03	NA	NA	NA	NA	NA
Chloroform	NA	1.00E-02	2.00E-03	3.05E-02	NA	NA	NA	NA
Chromium (VI)	1.99E+01	1.00E-03	6.00E-05	NA	8.09E-08	1.35E-03	NA	NA
Chrysene	NA	1.30E-01	NA	2.35E-02	NA	NA	NA	NA
Cobalt	NA	1.00E-03	1.60E-02	NA	NA	NA	NA	NA
Copper	NA	1.00E-03	1.20E-02	NA	NA	NA	NA	NA
Cyanide	NA	1.00E-02	3.40E-03	NA	NA	NA	NA	NA
Cyclohexanone	NA	1.00E-02	4.00E+00	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	NA	1.30E-01	NA	2.35E+01	NA	NA	NA	NA
Dieldrin	NA	1.00E-02	2.50E-05	3.20E+01	NA	NA	NA	NA
Di-n-octylphthalate	NA	1.00E-02	3.60E-02	NA	NA	NA	NA	NA
Ethyl ether	NA	1.00E-02	1.60E-01	NA	NA	NA	NA	NA
Ethylbenzene	NA	1.00E-02	9.70E-02	NA	NA	NA	NA	NA
Fluoride	NA	1.00E-03	5.82E-02	NA	NA	NA	NA	NA
Heptachlorodibenzofuran	NA	1.00E-02	NA	3.00E+03	NA	NA	NA	NA
Heptachlorodibenzo-p-dioxin	NA	3.00E-02	NA	3.00E+03	NA	NA	NA	NA
Hexachlorodibenzofuran	NA	1.00E-02	NA	3.00E+04	NA	NA	NA	NA
Hexachlorodibenzo-p-dioxin	NA	3.00E-02	NA	3.00E+04	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	NA	1.30E-01	NA	2.35E+00	NA	NA	NA	NA
Lead	5.24E+01	1.00E-03	NA	NA	NA	NA	NA	NA
Manganese	NA	1.00E-03	5.60E-03	NA	NA	NA	NA	NA
Mercury	3.47E-02	1.00E-03	2.10E-05	NA	1.41E-10	6.72E-06	NA	NA
Methanol	NA	1.00E-02	4.00E-01	NA	NA	NA	NA	NA
Methyl-2-pentanone	NA	1.00E-02	6.40E-02	NA	NA	NA	NA	NA
Methylene chloride	7.70E-03	1.00E-02	5.70E-02	7.89E-03	3.13E-10	5.49E-09	1.12E-10	8.82E-13
Molybdenum	NA	1.00E-03	1.90E-03	NA	NA	NA	NA	NA
Nickel	NA	1.00E-03	5.40E-03	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	NA	1.00E-02	5.00E-03	1.96E-02	NA	NA	NA	NA
N-nitrosodipropylamine	NA	1.00E-02	NA	2.80E+01	NA	NA	NA	NA
Octachlorodibenzofuran	NA	1.00E-02	NA	3.00E+02	NA	NA	NA	NA
Octochlorodibenzo-p-dioxin	NA	3.00E-02	NA	3.00E+02	NA	NA	NA	NA
Pentachlorodibenzofuran	NA	1.00E-02	NA	1.50E+04	NA	NA	NA	NA
Pentachlorodibenzo-p-dioxin	NA	3.00E-02	NA	1.50E+05	NA	NA	NA	NA
Pentachlorophenol	NA	2.50E-01	3.00E-02	1.20E-01	NA	NA	NA	NA
Phenanthrene	NA	1.00E-02	NA	NA	NA	NA	NA	NA
Selenium	NA	1.00E-03	2.20E-03	NA	NA	NA	NA	NA
Silver	NA	1.00E-03	9.00E-04	NA	NA	NA	NA	NA
Tetrachlorodibenzofuran	NA	1.00E-02	NA	3.00E+04	NA	NA	NA	NA
Tetrachlorodibenzo-p-dioxin	NA	3.00E-02	NA	3.00E+05	NA	NA	NA	NA
Tetrachloroethylene	6.87E-02	1.00E-02	1.00E-02	5.40E-01	2.79E-09	2.79E-07	9.97E-10	5.39E-10
Thallium	NA	1.00E-03	1.80E-05	NA	NA	NA	NA	NA
Toluene	7.60E-03	1.00E-02	8.40E-02	NA	3.09E-10	4.83E-09	NA	NA
Tributyl phosphate	NA	1.00E-02	1.00E-01	1.08E-02	NA	NA	NA	NA
Trichloroethylene	NA	1.00E-02	4.50E-05	2.67E+00	NA	NA	NA	NA
Trifluorochloromethane	NA	NA	NA	NA	NA	NA	NA	NA
Uranium	NA	1.00E-03	5.10E-04	NA	NA	NA	NA	NA
Vanadium	NA	1.00E-03	7.00E-05	NA	NA	NA	NA	NA
Vinyl chloride	NA	1.00E-02	3.00E-03	1.50E+00	NA	NA	NA	NA
Xylenes	3.00E-02	1.00E-02	1.84E-01	NA	1.22E-09	6.63E-09	NA	NA
Zinc	NA	1.00E-03	6.00E-02	NA	NA	NA	NA	NA
					total =	1.43E-03	total =	5.53E-10

TABLE E.9-4
Building Maintenance - HWMU - IngestSoilChem

Building Maintenance - Ingestion of Soil
Risk calculation for HWMU

Intake Equation:			UNITS	adult
	CDI =	(CS*EF*ED*IR*FI*CF)/(BW*AT)		
	CDI =	Chronic Daily Intake	mg/kgday	calculated below
	CS =	Concentration of chemical in soil	mg/kg	see COC list below
	EF =	Exposure frequency	days/yr	250
	ED =	Exposure duration	yrs	25
	IR =	Ingestion rate	mg/day	50
	FI =	Fraction of contaminated soil	unitless	1
	CF =	Conversion factor	kg/mg	1.00E-06
	BW =	Body weight	kg	70
	ATc =	Average time for carcinogens	days	25550
	ATn =	Average time for non-carcinogens	days	9125

COC	conc	RfDo	CSFo	ADULT CDI	HQ	CDI	ILCR
	mg/kg	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	1.20E-02	4.00E-03	5.70E-02	5.87E-09	1.47E-06	2.10E-09	1.20E-10
1,1-Dichloroethylene	NA	5.00E-02	6.00E-01	NA	NA	NA	NA
1,2-dichloroethane	NA	2.00E-02	9.10E-02	NA	NA	NA	NA
2-Butanone	7.20E-03	6.00E-01	NA	3.52E-09	5.87E-09	NA	NA
3,3-Dichlorobenzidine	NA	NA	4.50E-01	NA	NA	NA	NA
4-Methylphenol	NA	5.00E-03	NA	NA	NA	NA	NA
4-Nitroanaline	NA	3.00E-03	2.10E-02	NA	NA	NA	NA
Acetone	NA	9.00E-01	NA	NA	NA	NA	NA
Antimony	NA	4.00E-04	NA	NA	NA	NA	NA
Aroclor-1254	NA	2.00E-05	2.00E+00	NA	NA	NA	NA
Aroclor-1260	NA	2.00E-05	2.00E+00	NA	NA	NA	NA
Arsenic	NA	3.00E-04	1.50E+00	NA	NA	NA	NA
Barium	2.55E+02	2.00E-01	NA	1.25E-04	6.24E-04	NA	NA
Benzene	1.70E-03	4.00E-03	5.50E-02	8.32E-10	2.08E-07	2.97E-10	1.63E-11
Benzo(a)anthracene	NA	NA	7.30E-01	NA	NA	NA	NA
Benzo(a)pyrene	NA	NA	7.30E+00	NA	NA	NA	NA
Benzo(b)fluoranthene	NA	NA	7.30E-01	NA	NA	NA	NA
Benzo(k)fluoranthene	NA	NA	7.30E-02	NA	NA	NA	NA
Beryllium	NA	2.00E-03	4.30E+00	NA	NA	NA	NA
Bis(2-chloroisopropyl)ether	NA	4.00E-02	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	NA	2.00E-02	1.40E-02	NA	NA	NA	NA
Boron	NA	2.00E-01	NA	NA	NA	NA	NA
Bromodichloromethane	NA	2.00E-02	6.20E-02	NA	NA	NA	NA
Bromoform	NA	2.00E-02	7.90E-03	NA	NA	NA	NA
Bromomethane	NA	1.40E-03	NA	NA	NA	NA	NA
Cadmium	NA	1.00E-03	NA	NA	NA	NA	NA
Carbazole	NA	NA	2.00E-03	NA	NA	NA	NA
Carbon disulfide	NA	1.00E-01	NA	NA	NA	NA	NA
Carbon tetrachloride	NA	7.00E-04	1.30E-01	NA	NA	NA	NA
Chlordane	NA	5.00E-04	3.50E-01	NA	NA	NA	NA
Chlorobenzene	NA	2.00E-02	NA	NA	NA	NA	NA
Chloroform	NA	1.00E-02	6.10E-03	NA	NA	NA	NA
Chromium (VI)	1.99E+01	3.00E-03	NA	9.74E-08	3.25E-03	NA	NA
Chrysene	NA	NA	7.30E-03	NA	NA	NA	NA
Cobalt	NA	2.00E-02	NA	NA	NA	NA	NA
Copper	NA	4.00E-02	NA	NA	NA	NA	NA
Cyanide	NA	2.00E-02	NA	NA	NA	NA	NA
Cyclohexanone	NA	5.00E+00	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	NA	NA	7.30E+00	NA	NA	NA	NA
Dieldrin	NA	5.00E-05	1.60E+01	NA	NA	NA	NA
Di-n-octylphthalate	NA	4.00E-02	NA	NA	NA	NA	NA
Ethyl ether	NA	2.00E-01	NA	NA	NA	NA	NA
Ethylbenzene	NA	1.00E-01	NA	NA	NA	NA	NA
Fluoride	NA	6.00E-02	NA	NA	NA	NA	NA
Heptachlorodibenzofuran	NA	NA	1.50E+03	NA	NA	NA	NA
Heptachlorodibenzo-p-dioxin	NA	NA	1.50E+03	NA	NA	NA	NA
Hexachlorodibenzofuran	NA	NA	1.50E+03	NA	NA	NA	NA
Hexachlorodibenzo-p-dioxin	NA	NA	1.50E+04	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	NA	NA	7.30E-01	NA	NA	NA	NA
Lead	5.24E+01	NA	NA	NA	NA	NA	NA
Manganese	NA	1.40E-01	NA	NA	NA	NA	NA
Mercury	3.47E-02	3.00E-04	NA	1.70E-08	5.66E-05	NA	NA
Methanol	NA	5.00E-01	NA	NA	NA	NA	NA
Methyl-2-pentanone	NA	8.00E-02	NA	NA	NA	NA	NA
Methylene chloride	7.70E-03	6.00E-02	7.50E-03	3.77E-09	6.28E-08	1.35E-09	1.01E-11
Molybdenum	NA	5.00E-03	NA	NA	NA	NA	NA
Nickel	NA	2.00E-02	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	NA	2.00E-02	4.90E-03	NA	NA	NA	NA
N-nitrosodipropylamine	NA	NA	7.00E+00	NA	NA	NA	NA
Octachlorodibenzofuran	NA	NA	1.50E+02	NA	NA	NA	NA
Octochlorodibenzo-p-dioxin	NA	NA	1.50E+02	NA	NA	NA	NA
Pentachlorodibenzofuran	NA	NA	7.50E+03	NA	NA	NA	NA
Pentachlorodibenzo-p-dioxin	NA	NA	7.50E+04	NA	NA	NA	NA
Pentachlorophenol	NA	3.00E-02	1.20E-01	NA	NA	NA	NA
Phenanthrene	NA	NA	NA	NA	NA	NA	NA
Selenium	NA	5.00E-03	NA	NA	NA	NA	NA
Silver	NA	5.00E-03	NA	NA	NA	NA	NA
Tetrachlorodibenzofuran	NA	NA	1.50E+04	NA	NA	NA	NA
Tetrachlorodibenzo-p-dioxin	NA	NA	1.50E+05	NA	NA	NA	NA
Tetrachloroethylene	6.87E-02	1.00E-02	5.40E-01	3.36E-08	3.36E-06	1.20E-08	6.48E-09
Thallium	NA	9.00E-05	NA	NA	NA	NA	NA
Toluene	7.60E-03	8.00E-02	NA	3.72E-09	4.65E-08	NA	NA
Tributyl phosphate	NA	2.00E-01	5.40E-03	NA	NA	NA	NA
Trichloroethylene	NA	3.00E-04	4.00E-01	NA	NA	NA	NA
Trifluorochloromethane	NA	NA	NA	NA	NA	NA	NA
Uranium	NA	6.00E-04	NA	NA	NA	NA	NA
Vanadium	NA	7.00E-03	NA	NA	NA	NA	NA
Vinyl chloride	NA	3.00E-03	1.50E+00	NA	NA	NA	NA
Xylenes	3.00E-02	2.00E-01	NA	1.47E-08	7.34E-08	NA	NA
Zinc	NA	3.00E-01	NA	NA	NA	NA	NA
				total =	3.93E-03	total =	6.63E-09

TABLE E.9-4
Building Maintenance - HWMU - DermalSWchem

Building Maintenance - Dermal Contact with Surface Water
Risk calculation for HWMU

			UNITS	adult
Intake Equation:	CDI =	(DA*EF*ED*SA)/(BW*AT)		
	CDI =	Chronic Daily Intake	mg/kgday	calculated below
	DA =	Dermal absorption dose	mg/cm²day	NA
	EF =	Exposure frequency	days/yr	NA
	ED =	Exposure duration	yrs	NA
	SA =	Surface area of skin	cm²	NA
	BW =	Body weight	kg	NA
	ATc =	Average time for carcinogens	days	NA
	ATn =	Average time for non-carcinogens	days	NA
where:	DA = C_v*K_p*CF*ET			
	C_v =	concentation of ith contaminant in surface water	mg/L	see COC list below
	K_p =	permeability constant for ith contaminant	cm/hr	see COC list below
	CF =	conversion factor	L/cm³	NA
	ET =	exposure time	hr/d	NA

COC	C_v	K_p	DA	RfD	CSF	ADULT CDI	ADULT HQ	ADULT CDI	ADULT ILCR
	mg/L	cm/hr	mg/cm²day	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	1.00E-03	6.43E-03	NA	3.24E-03	7.04E-02	NA	NA	NA	NA
1,1-Dichloroethylene	NA	1.59E-02	NA	5.00E-02	6.00E-01	NA	NA	NA	NA
1,2-dichloroethane	NA	5.34E-03	NA	2.00E-02	9.10E-02	NA	NA	NA	NA
2-Butanone	5.00E-03	1.11E-03	NA	4.60E-01	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	NA	1.69E-02	NA	NA	9.00E-01	NA	NA	NA	NA
4-Methylphenol	NA	9.95E-03	NA	3.25E-03	NA	NA	NA	NA	NA
4-Nitroanaline	NA	2.66E-03	NA	2.40E-03	2.63E-02	NA	NA	NA	NA
Acetone	NA	5.69E-04	NA	7.47E-01	NA	NA	NA	NA	NA
Antimony	NA	1.00E-03	NA	8.00E-06	NA	NA	NA	NA	NA
Aroclor-1254	NA	1.29E+00	NA	1.60E-05	2.22E+00	NA	NA	NA	NA
Aroclor-1260	NA	5.48E+00	NA	1.60E-05	2.22E+00	NA	NA	NA	NA
Arsenic	NA	1.00E-03	NA	1.23E-04	3.66E+00	NA	NA	NA	NA
Barium	5.61E-02	1.00E-03	NA	1.40E-02	NA	NA	NA	NA	NA
Benzene	1.00E-03	2.07E-02	NA	3.88E-03	5.67E-02	NA	NA	NA	NA
Benzo(a)anthracene	NA	9.48E-01	NA	NA	2.35E+00	NA	NA	NA	NA
Benzo(a)pyrene	NA	1.24E+00	NA	NA	2.35E+01	NA	NA	NA	NA
Benzo(b)fluoranthene	NA	6.99E-01	NA	NA	2.35E+00	NA	NA	NA	NA
Benzo(k)fluoranthene	NA	1.20E+00	NA	NA	2.35E-01	NA	NA	NA	NA
Beryllium	NA	1.00E-03	NA	2.00E-05	4.30E+02	NA	NA	NA	NA
Bis(2-chloroisopropyl)ether	NA	7.63E-02	NA	2.00E-02	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	NA	1.97E+00	NA	3.80E-03	7.37E-02	NA	NA	NA	NA
Boron	NA	1.00E-03	NA	1.80E-01	NA	NA	NA	NA	NA
Bromodichloromethane	NA	5.02E-03	NA	1.96E-02	6.33E-02	NA	NA	NA	NA
Bromoform	NA	2.77E-03	NA	1.20E-02	1.32E-02	NA	NA	NA	NA
Bromomethane	NA	3.51E-03	NA	1.12E-03	NA	NA	NA	NA	NA
Cadmium	NA	1.00E-03	NA	1.00E-05	NA	NA	NA	NA	NA
Carbazole	NA	7.97E-02	NA	NA	2.86E-02	NA	NA	NA	NA
Carbon disulfide	NA	1.56E-02	NA	8.30E-02	NA	NA	NA	NA	NA
Carbon tetrachloride	NA	2.24E-02	NA	4.55E-04	2.00E-01	NA	NA	NA	NA
Chlordane	NA	1.57E-01	NA	2.50E-04	7.00E-01	NA	NA	NA	NA
Chlorobenzene	NA	4.07E-02	NA	6.20E-03	NA	NA	NA	NA	NA
Chloroform	NA	8.92E-03	NA	2.00E-03	3.05E-02	NA	NA	NA	NA
Chromium (VI)	1.80E-03	2.00E-03	NA	6.00E-05	NA	NA	NA	NA	NA
Chrysene	NA	1.03E+00	NA	NA	2.35E-02	NA	NA	NA	NA
Cobalt	NA	4.00E-04	NA	1.60E-02	NA	NA	NA	NA	NA
Copper	NA	1.00E-03	NA	1.20E-02	NA	NA	NA	NA	NA
Cyanide	NA	1.00E-03	NA	3.40E-03	NA	NA	NA	NA	NA
Cyclohexanone	NA	1.80E-03	NA	4.00E+00	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	NA	1.68E+00	NA	NA	2.35E+01	NA	NA	NA	NA
Dieldrin	NA	4.45E-02	NA	2.50E-05	3.20E+01	NA	NA	NA	NA
Di-n-octylphthalate	NA	4.45E+00	NA	3.60E-02	NA	NA	NA	NA	NA
Ethyl ether	NA	2.88E-03	NA	1.60E-01	NA	NA	NA	NA	NA
Ethylbenzene	NA	7.39E-02	NA	9.70E-02	NA	NA	NA	NA	NA
Fluoride	NA	1.00E-03	NA	5.82E-02	NA	NA	NA	NA	NA
Heptachlorodibenzofuran	NA	2.55E+00	NA	NA	3.00E+03	NA	NA	NA	NA
Heptachlorodibenzo-p-dioxin	NA	3.22E+00	NA	NA	3.00E+03	NA	NA	NA	NA
Hexachlorodibenzofuran	NA	2.38E+00	NA	NA	3.00E+04	NA	NA	NA	NA
Hexachlorodibenzo-p-dioxin	NA	5.29E+00	NA	NA	3.00E+04	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	NA	2.23E+00	NA	NA	2.35E+00	NA	NA	NA	NA
Lead	1.20E-03	1.00E-04	NA	NA	NA	NA	NA	NA	NA
Manganese	NA	1.00E-03	NA	1.84E-03	NA	NA	NA	NA	NA
Mercury	6.00E-06	1.00E-03	NA	2.10E-05	NA	NA	NA	NA	NA
Methanol	NA	3.45E-04	NA	4.00E-01	NA	NA	NA	NA	NA
4-Methyl-2-pentanone	NA	3.97E-03	NA	6.40E-02	NA	NA	NA	NA	NA
Methylene chloride	5.00E-03	4.46E-03	NA	5.70E-02	7.89E-03	NA	NA	NA	NA
Molybdenum	NA	1.00E-03	NA	1.90E-03	NA	NA	NA	NA	NA
Nickel	NA	2.00E-04	NA	5.40E-03	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	NA	1.96E-02	NA	5.00E-03	1.96E-02	NA	NA	NA	NA
N-nitrosodipropylamine	NA	2.83E-03	NA	NA	2.80E+01	NA	NA	NA	NA
Octachlorodibenzofuran	NA	4.78E+00	NA	NA	3.00E+02	NA	NA	NA	NA
Octochlorodibenzo-p-dioxin	NA	1.65E+01	NA	NA	3.00E+02	NA	NA	NA	NA
Pentachlorodibenzofuran	NA	1.06E+00	NA	NA	1.50E+04	NA	NA	NA	NA
Pentachlorodibenzo-p-dioxin	NA	3.79E-01	NA	NA	1.50E+05	NA	NA	NA	NA
Pentachlorophenol	NA	1.95E-01	NA	3.00E-02	1.20E-01	NA	NA	NA	NA
Phenanthrene	NA	2.29E-01	NA	NA	NA	NA	NA	NA	NA
Selenium	NA	1.00E-03	NA	2.20E-03	NA	NA	NA	NA	NA
Silver	NA	6.00E-04	NA	9.00E-04	NA	NA	NA	NA	NA
Tetrachlorodibenzofuran	NA	1.12E+00	NA	NA	3.00E+04	NA	NA	NA	NA
Tetrachlorodibenzo-p-dioxin	NA	1.39E+00	NA	NA	3.00E+05	NA	NA	NA	NA
Tetrachloroethylene	1.00E-03	4.81E-02	NA	1.00E-02	5.40E-01	NA	NA	NA	NA
Thallium	NA	1.00E-03	NA	1.80E-05	NA	NA	NA	NA	NA
Toluene	1.00E-03	4.53E-02	NA	6.40E-02	NA	NA	NA	NA	NA
Tributyl phosphate	NA	3.13E-02	NA	1.00E-01	1.08E-02	NA	NA	NA	NA
Trichloroethylene	NA	1.57E-02	NA	4.50E-05	2.67E+00	NA	NA	NA	NA
Trifluorochloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Uranium	NA	1.00E-03	NA	5.10E-04	NA	NA	NA	NA	NA
Vanadium	NA	1.00E-03	NA	7.00E-05	NA	NA	NA	NA	NA
Vinyl chloride	NA	1.13E-02	NA	3.00E-03	1.50E+00	NA	NA	NA	NA
Xylenes	1.00E-03	7.04E-02	NA	1.84E-01	NA	NA	NA	NA	NA
Zinc	NA	6.00E-04	NA	6.00E-02	NA	NA	NA	NA	NA
						total =	0.00E+00	total =	0.00E+00

TABLE E.9-4
Building Maintenance - HWMU - IngestSWchem

Building Maintenance - Ingestion of Surface Water
Risk calculation for HWMU

Intake Equation:			UNITS	Assigned Values
	CDI =	(CW*EF*ED*IR)/(BW*AT)		
	CDI =	Chronic Daily Intake	mg/kgday	adult
	CW =	Concentration of chemical in water	mg/L	see COC table below
	EF =	Exposure frequency	days/yr	NA
	ED =	Exposure duration	yrs	NA
	IR =	Ingestion rate	L/day	NA
	BW =	Body weight	kg	NA
	ATc =	Average time for carcinogens	days	NA
	ATn =	Average time for non-carcinogens	days	NA

				ADULT			
COC	CW	RfDo	CSFo	CDI	HQ	CDI	ILCR
	mg/L	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	1.00E-03	4.00E-03	5.70E-02	NA	NA	NA	NA
1,1-Dichloroethylene	NA	5.00E-02	6.00E-01	NA	NA	NA	NA
1,2-dichloroethane	NA	2.00E-02	9.10E-02	NA	NA	NA	NA
2-Butanone	5.00E-03	6.00E-01	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	NA	NA	4.50E-01	NA	NA	NA	NA
4-Methylphenol	NA	5.00E-03	NA	NA	NA	NA	NA
4-Nitroanaline	NA	3.00E-03	2.10E-02	NA	NA	NA	NA
Acetone	NA	9.00E-01	NA	NA	NA	NA	NA
Antimony	NA	4.00E-04	NA	NA	NA	NA	NA
Aroclor-1254	NA	2.00E-05	4.00E-01	NA	NA	NA	NA
Aroclor-1260	NA	2.00E-05	4.00E-01	NA	NA	NA	NA
Arsenic	NA	3.00E-04	1.50E+00	NA	NA	NA	NA
Barium	5.61E-02	2.00E-01	NA	NA	NA	NA	NA
Benzene	1.00E-03	4.00E-03	5.50E-02	NA	NA	NA	NA
Benzo(a)anthracene	NA	NA	7.30E-01	NA	NA	NA	NA
Benzo(a)pyrene	NA	NA	7.30E+00	NA	NA	NA	NA
Benzo(b)fluoranthene	NA	NA	7.30E-01	NA	NA	NA	NA
Benzo(k)fluoranthene	NA	NA	7.30E-02	NA	NA	NA	NA
Beryllium	NA	2.00E-03	4.30E+00	NA	NA	NA	NA
Bis(2-chloroisopropyl)ether	NA	4.00E-02	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	NA	2.00E-02	1.40E-02	NA	NA	NA	NA
Boron	NA	2.00E-01	NA	NA	NA	NA	NA
Bromodichloromethane	NA	2.00E-02	6.20E-02	NA	NA	NA	NA
Bromoform	NA	2.00E-02	7.90E-03	NA	NA	NA	NA
Bromomethane	NA	1.40E-03	NA	NA	NA	NA	NA
Cadmium	NA	1.00E-03	NA	NA	NA	NA	NA
Carbazole	NA	NA	2.00E-03	NA	NA	NA	NA
Carbon disulfide	NA	1.00E-01	NA	NA	NA	NA	NA
Carbon tetrachloride	NA	7.00E-04	1.30E-01	NA	NA	NA	NA
Chlordane	NA	5.00E-04	3.50E-01	NA	NA	NA	NA
Chlorobenzene	NA	2.00E-02	NA	NA	NA	NA	NA
Chloroform	NA	1.00E-02	6.10E-03	NA	NA	NA	NA
Chromium (VI)	1.80E-03	3.00E-03	NA	NA	NA	NA	NA
Chrysene	NA	NA	7.30E-03	NA	NA	NA	NA
Cobalt	NA	2.00E-02	NA	NA	NA	NA	NA
Copper	NA	4.00E-02	NA	NA	NA	NA	NA
Cyanide	NA	2.00E-02	NA	NA	NA	NA	NA
Cyclohexanone	NA	5.00E+00	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	NA	NA	7.30E+00	NA	NA	NA	NA
Dieldrin	NA	5.00E-05	1.60E+01	NA	NA	NA	NA
Di-n-octylphthalate	NA	4.00E-02	NA	NA	NA	NA	NA
Ethyl ether	NA	2.00E-01	NA	NA	NA	NA	NA
Ethylbenzene	NA	1.00E-01	NA	NA	NA	NA	NA
Fluoride	NA	6.00E-02	NA	NA	NA	NA	NA
Heptachlorodibenzofuran	NA	NA	1.50E+03	NA	NA	NA	NA
Heptachlorodibenzo-p-dioxin	NA	NA	1.50E+03	NA	NA	NA	NA
Hexachlorodibenzofuran	NA	NA	1.50E+03	NA	NA	NA	NA
Hexachlorodibenzo-p-dioxin	NA	NA	1.50E+04	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	NA	NA	7.30E-01	NA	NA	NA	NA
Lead	1.20E-03	NA	NA	NA	NA	NA	NA
Manganese	NA	4.60E-02	NA	NA	NA	NA	NA
Mercury	6.00E-05	3.00E-04	NA	NA	NA	NA	NA
Methanol	NA	5.00E-01	NA	NA	NA	NA	NA
4-Methyl-2-pentanone	NA	8.00E-02	NA	NA	NA	NA	NA
Methylene chloride	5.00E-03	6.00E-02	7.50E-03	NA	NA	NA	NA
Molybdenum	NA	5.00E-03	NA	NA	NA	NA	NA
Nickel	NA	2.00E-02	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	NA	2.00E-02	4.90E-03	NA	NA	NA	NA
N-nitrosodipropylamine	NA	NA	7.00E+00	NA	NA	NA	NA
Octachlorodibenzofuran	NA	NA	1.50E+02	NA	NA	NA	NA
Octochlorodibenzo-p-dioxin	NA	NA	1.50E+02	NA	NA	NA	NA
Pentachlorodibenzofuran	NA	NA	7.50E+03	NA	NA	NA	NA
Pentachlorodibenzo-p-dioxin	NA	NA	7.50E+04	NA	NA	NA	NA
Pentachlorophenol	NA	3.00E-02	1.20E-01	NA	NA	NA	NA
Phenanthrene	NA	NA	NA	NA	NA	NA	NA
Selenium	NA	5.00E-03	NA	NA	NA	NA	NA
Silver	NA	5.00E-03	NA	NA	NA	NA	NA
Tetrachlorodibenzofuran	NA	NA	1.50E+04	NA	NA	NA	NA
Tetrachlorodibenzo-p-dioxin	NA	NA	1.50E+05	NA	NA	NA	NA
Tetrachloroethylene	1.00E-03	1.00E-02	5.40E-01	NA	NA	NA	NA
Thallium	NA	9.00E-05	NA	NA	NA	NA	NA
Toluene	1.00E-03	8.00E-02	NA	NA	NA	NA	NA
Tributyl phosphate	NA	2.00E-01	5.40E-03	NA	NA	NA	NA
Trichloroethylene	NA	3.00E-04	4.00E-01	NA	NA	NA	NA
Trifluorochloromethane	NA	NA	NA	NA	NA	NA	NA
Uranium	NA	6.00E-04	NA	NA	NA	NA	NA
Vanadium	NA	7.00E-03	NA	NA	NA	NA	NA
Vinyl chloride	NA	3.00E-03	1.50E+00	NA	NA	NA	NA
Xylenes	1.00E-03	2.00E-01	NA	NA	NA	NA	NA
Zinc	NA	3.00E-01	NA	NA	NA	NA	NA
				total =	0.00E+00	total =	0.00E+00

TABLE E.9-4
Building Maintenance - HWMU - SumPaths

Building Maintenance - Summation of all Pathways
Risk calculation for background

	HQ	ILCR
Inhale	9.46E-04	1.14E-07
Dermal Soil	1.43E-03	5.53E-10
Ingest Soil	3.93E-03	6.63E-09
Dermal Surface Water	NA	NA
Ingest Surface Water	NA	NA
SUM	**6.31E-03**	**1.21E-07**

Summation of all paths for individual chemicals

	ILCR	HQ
1,1,2-Trichloroethane	1.32E-10	1.62E-06
1,1-Dichloroethylene	NA	NA
1,2-dichloroethane	NA	NA
2-Butanone	No CSFs	6.48E-09
3,3-Dichlorobenzidine	NA	NA
4-Methylphenol	NA	NA
4-Nitroanaline	NA	NA
Acetone	NA	NA
Antimony	NA	NA
Aroclor-1254	NA	NA
Aroclor-1260	NA	NA
Arsenic	NA	NA
Barium	No CSFs	1.38E-03
Benzene	1.77E-11	2.26E-07
Benzo(a)anthracene	NA	NA
Benzo(a)pyrene	NA	NA
Benzo(b)fluoranthene	NA	NA
Benzo(k)fluoranthene	NA	NA
Beryllium	NA	NA
Bis(2-chloroisopropyl)ether	NA	NA
Bis(2-ethylhexyl)phthalate	NA	NA
Boron	NA	NA
Bromodichloromethane	NA	NA
Bromoform	NA	NA
Bromomethane	NA	NA
Cadmium	NA	NA
Carbazole	NA	NA
Carbon disulfide	No CSFs	NA
Carbon tetrachloride	NA	NA
Chlordane	NA	NA
Chlorobenzene	No CSFs	NA
Chloroform	NA	NA
Chromium (VI)	1.14E-07	4.86E-03
Chrysene	NA	NA
Cobalt	NA	NA
Copper	NA	NA
Cyanide	NA	NA
Cyclohexanone	NA	NA
Dibenzo(a,h)anthracene	NA	NA
Dieldrin	NA	NA
Di-n-octylphthalate	NA	NA

TABLE E.9-4
Building Maintenance - HWMU - SumPaths

Summation of all paths for individual chemicals (continued)

	ILCR	HQ
Ethyl ether	NA	NA
Ethylbenzene	NA	NA
Fluoride	NA	NA
Heptachlorodibenzofuran	NA	NA
Heptachlorodibenzo-p-dioxin	NA	NA
Hexachlorodibenzofuran	NA	NA
Hexachlorodibenzo-p-dioxin	NA	NA
Indeno(1,2,3-cd)pyrene	NA	NA
Lead	NA	NA
Manganese	NA	NA
Mercury	No CSFs	6.33E-05
Methanol	NA	NA
4-Methyl-2-pentanone	NA	NA
Methylene chloride	1.10E-11	6.83E-08
Molybdenum	NA	NA
Nickel	NA	NA
N-nitrosodiphenylamine	NA	NA
N-nitrosodipropylamine	NA	NA
Octachlorodibenzofuran	NA	NA
Octochlorodibenzo-p-dioxin	NA	NA
Pentachlorodibenzofuran	NA	NA
Pentachlorodibenzo-p-dioxin	NA	NA
Pentachlorophenol	NA	NA
Phenanthrene	NA	NA
Selenium	NA	NA
Silver	NA	NA
Tetrachlorodibenzofuran	NA	NA
Tetrachlorodibenzo-p-dioxin	NA	NA
Tetrachloroethylene	7.02E-09	3.64E-06
Thallium	NA	NA
Toluene	No CSFs	5.13E-08
Tributyl phosphate	NA	NA
Trichloroethylene	NA	NA
Trifluorochloromethane	NA	NA
Uranium	NA	NA
Vanadium	NA	NA
Vinyl chloride	NA	NA
Xylenes	No CSFs	8.04E-08
Zinc	NA	NA
SUM	**1.21E-07**	**6.31E-03**

TABLE E.9-5

Museum Worker - HWMU - InhaleChem

Museum Worker - Inhalation of Gases & Particulates
Risk calculation for HWMU

Intake Equation:			UNITS	adult
	CDI =	(CS*EF*ED*IR*ET)/(BW*AT)		
	CDI =	Chronic Daily Intake	mg/kgday	calculated below
	CA =	Concentration of chemical in air	mg/m^3	see COC list below
	EF =	Exposure frequency	days/yr	250
	ED =	Exposure duration	yrs	25
	IR =	Inhalation rate	m^3/hr	1.5
	ET =	Exposure time	hrs/day	1
	BW =	Body weight	kg	70
	ATc =	Average time for carcinogens	days	25550
	ATn =	Average time for non-carcinogens	days	9125

COC	conc	RfDi	CSFI	ADULT CDI	ADULT HQ	ADULT CDI	ADULT ILCR
	mg/m^3	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	3.12E-10	NA	5.60E-02	NA	NA	1.64E-12	9.16E-14
1,1-Dichloroethylene	NA	5.71E-02	1.75E-01	NA	NA	NA	NA
1,2-dichloroethane	NA	NA	9.10E-02	NA	NA	NA	NA
2-Butanone	1.87E-10	1.43E+00	NA	2.75E-12	1.92E-12	NA	NA
3,3-Dichlorobenzidine	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	NA	1.14E-03	NA	NA	NA	NA	NA
Acetone	NA	NA	NA	NA	NA	NA	NA
Antimony	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	NA	NA	2.00E+00	NA	NA	NA	NA
Aroclor-1260	NA	NA	2.00E+00	NA	NA	NA	NA
Arsenic	NA	NA	1.51E+01	NA	NA	NA	NA
Barium	6.63E-06	1.43E-04	NA	9.73E-08	6.80E-04	NA	NA
Benzene	4.42E-11	8.57E-03	2.73E-02	6.49E-13	7.57E-11	2.32E-13	6.33E-15
Benzo(a)anthracene	NA	NA	3.08E-01	NA	NA	NA	NA
Benzo(a)pyrene	NA	NA	3.08E-01	NA	NA	NA	NA
Benzo(b)fluoranthene	NA	NA	3.08E+00	NA	NA	NA	NA
Benzo(k)fluoranthene	NA	NA	3.08E-02	NA	NA	NA	NA
Beryllium	NA	5.71E-06	8.40E+00	NA	NA	NA	NA
Bis(2-chloroisopropyl)ether	NA	NA	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	NA	NA	NA	NA	NA	NA	NA
Boron	NA	5.71E-03	NA	NA	NA	NA	NA
Bromodichloromethane	NA	NA	NA	NA	NA	NA	NA
Bromoform	NA	NA	3.85E-03	NA	NA	NA	NA
Bromomethane	NA	1.43E-03	NA	NA	NA	NA	NA
Cadmium	NA	NA	6.30E+00	NA	NA	NA	NA
Carbazole	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	NA	2.00E-01	NA	NA	NA	NA	NA
Carbon tetrachloride	NA	NA	5.25E-02	NA	NA	NA	NA
Chlordane	NA	2.00E-04	3.50E-01	NA	NA	NA	NA
Chlorobenzene	NA	1.43E-02	NA	NA	NA	NA	NA
Chloroform	NA	NA	8.05E-02	NA	NA	NA	NA
Chromium (VI)	5.17E-07	2.86E-05	4.20E+01	7.59E-09	2.66E-04	2.71E-09	1.14E-07
Chrysene	NA	NA	3.08E-03	NA	NA	NA	NA
Cobalt	NA	5.71E-06	9.80E+00	NA	NA	NA	NA
Copper	NA	NA	NA	NA	NA	NA	NA
Cyanide	NA	NA	NA	NA	NA	NA	NA
Cyclohexanone	NA	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	NA	NA	3.08E+00	NA	NA	NA	NA
Dieldrin	NA	NA	1.61E+01	NA	NA	NA	NA
Di-n-octylphthalate	NA	NA	NA	NA	NA	NA	NA
Ethyl ether	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	NA	2.86E-01	3.85E-03	NA	NA	NA	NA
Fluoride	NA	NA	NA	NA	NA	NA	NA
Heptachlorodibenzofuran	NA	NA	1.16E+03	NA	NA	NA	NA
Heptachlorodibenzo-p-dioxin	NA	NA	1.16E+03	NA	NA	NA	NA
Hexachlorodibenzofuran	NA	NA	1.16E+04	NA	NA	NA	NA
Hexachlorodibenzo-p-dioxin	NA	NA	1.16E+04	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	NA	NA	3.08E-01	NA	NA	NA	NA
Lead	1.36E-06	NA	NA	NA	NA	NA	NA
Manganese	NA	1.43E-05	NA	NA	NA	NA	NA
Mercury	9.02E-10	NA	NA	NA	NA	NA	NA
Methanol	NA	NA	NA	NA	NA	NA	NA
Methyl-2-pentanone	NA	8.57E-01	NA	NA	NA	NA	NA
Methylene chloride	2.00E-10	8.57E-01	1.65E-03	2.94E-12	3.43E-12	1.05E-12	1.73E-15
Molybdenum	NA	NA	NA	NA	NA	NA	NA
Nickel	NA	NA	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	NA	NA	NA	NA	NA	NA	NA
N-nitrosodipropylamine	NA	NA	NA	NA	NA	NA	NA
Octochlorodibenzofuran	NA	NA	1.16E+02	NA	NA	NA	NA
Octochlorodibenzo-p-dioxin	NA	NA	1.16E+02	NA	NA	NA	NA
Pentachlorodibenzofuran	NA	NA	5.78E+03	NA	NA	NA	NA
Pentachlorodibenzo-p-dioxin	NA	NA	5.78E+04	NA	NA	NA	NA
Pentachlorophenol	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	NA	NA	NA	NA	NA	NA	NA
Selenium	NA	NA	NA	NA	NA	NA	NA
Silver	NA	NA	NA	NA	NA	NA	NA
Tetrachlorodibenzofuran	NA	NA	1.16E+04	NA	NA	NA	NA
Tetrachlorodibenzo-p-dioxin	NA	NA	1.16E+05	NA	NA	NA	NA
Tetrachloroethylene	1.79E-09	1.71E-01	2.07E-02	2.62E-11	1.53E-10	9.36E-12	1.94E-13
Thallium	NA	NA	NA	NA	NA	NA	NA
Toluene	1.98E-10	1.43E+00	NA	2.90E-12	2.03E-12	NA	NA
Tributyl phosphate	NA	NA	NA	NA	NA	NA	NA
Trichloroethylene	NA	1.14E-02	4.00E-01	NA	NA	NA	NA
Trifluorochloromethane	NA	NA	NA	NA	NA	NA	NA
Uranium	NA	NA	NA	NA	NA	NA	NA
Vanadium	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	NA	2.86E-02	3.08E-02	NA	NA	NA	NA
Xylenes	7.80E-10	2.86E-02	NA	1.14E-11	4.00E-10	NA	NA
Zinc	NA	NA	NA	NA	NA	NA	NA
				total =	9.46E-04	total =	1.14E-07

Air concentration is derived using air particulate value of 26 ug/m^3 (2005 SER background average from monitor AMS-12) multiplied by soil concentration.

TABLE E.9-5
Museum Worker - HWMU - DermalSoilChem

Museum Worker - Dermal Contact with Soil/Sediment
Risk calculation for HWMU

Intake Equation:			UNITS	adult
	CDI =	(CS*AB*SA*EF*ED*AF*CF)/(BW*AT)		
	CDI =	Chronic Daily Intake	mg/kgday	calculated below
	CS =	Concentration of chemical in soil	mg/kg	see COC list below
	AB	Absorption factor	--	see COC list below
	SA	Surface area of exposed skin	cm^2/day	904
	EF =	Exposure frequency	days/yr	250
	ED =	Exposure duration	yrs	25
	AF =	Adherence factor	mg/cm^2	0.07
	CF =	Conversion factor	kg/mg	1.00E-06
	BW =	Body weight	kg	70
	ATc =	Average time for carcinogens	days	25550
	ATn =	Average time for non-carcinogens	days	9125

COC	conc	AB	RfDd	CSFd	ADULT CDI	HQ	CDI	ILCR
	mg/kg	unitless	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	1.20E-02	1.00E-02	3.24E-03	7.04E-02	7.43E-11	2.29E-08	2.65E-11	1.87E-12
1,1-Dichloroethylene	NA	1.00E-02	5.00E-02	6.00E-01	NA	NA	NA	NA
1,2-dichloroethane	NA	1.00E-02	2.00E-02	9.10E-02	NA	NA	NA	NA
2-Butanone	7.20E-03	1.00E-02	4.80E-01	NA	4.46E-11	9.29E-11	NA	NA
3,3-Dichlorobenzidine	NA	1.00E-02	NA	9.00E-01	NA	NA	NA	NA
4-Methylphenol	NA	1.00E-02	3.25E-03	NA	NA	NA	NA	NA
4-Nitroanaline	NA	1.00E-02	2.40E-03	2.63E-02	NA	NA	NA	NA
Acetone	NA	1.00E-02	7.47E-01	NA	NA	NA	NA	NA
Antimony	NA	1.00E-03	8.00E-06	NA	NA	NA	NA	NA
Aroclor-1254	NA	1.40E-01	1.80E-05	2.22E+00	NA	NA	NA	NA
Aroclor-1260	NA	1.40E-01	1.80E-05	2.22E+00	NA	NA	NA	NA
Arsenic	NA	3.00E-02	1.23E-04	3.66E+00	NA	NA	NA	NA
Barium	2.55E+02	1.00E-03	1.40E-02	NA	1.58E-07	1.13E-05	NA	NA
Benzene	1.70E-03	1.00E-02	3.88E-03	5.67E-02	1.05E-11	2.71E-09	3.76E-12	2.13E-13
Benzo(a)anthracene	NA	1.30E-01	NA	2.35E+00	NA	NA	NA	NA
Benzo(a)pyrene	NA	1.30E-01	NA	2.35E+01	NA	NA	NA	NA
Benzo(b)fluoranthene	NA	1.30E-01	NA	2.35E+00	NA	NA	NA	NA
Benzo(k)fluoranthene	NA	1.30E-01	NA	2.35E-01	NA	NA	NA	NA
Beryllium	NA	1.00E-03	2.00E-05	4.30E+02	NA	NA	NA	NA
Bis(2-chloroisopropyl)ether	NA	1.00E-02	2.00E-02	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	NA	1.00E-02	3.80E-03	7.37E-02	NA	NA	NA	NA
Boron	NA	1.00E-03	1.80E-01	NA	NA	NA	NA	NA
Bromodichloromethane	NA	1.00E-02	1.96E-02	6.33E-02	NA	NA	NA	NA
Bromoform	NA	1.00E-02	1.20E-02	1.32E-02	NA	NA	NA	NA
Bromomethane	NA	1.00E-02	1.12E-03	NA	NA	NA	NA	NA
Cadmium	NA	1.00E-03	1.00E-05	NA	NA	NA	NA	NA
Carbazole	NA	1.00E-02	NA	2.86E-02	NA	NA	NA	NA
Carbon disulfide	NA	2.50E-01	6.30E-02	NA	NA	NA	NA	NA
Carbon tetrachloride	NA	1.00E-02	4.55E-04	2.00E-01	NA	NA	NA	NA
Chlordane	NA	4.00E-02	2.50E-04	7.00E-01	NA	NA	NA	NA
Chlorobenzene	NA	1.00E-02	6.20E-03	NA	NA	NA	NA	NA
Chloroform	NA	1.00E-02	2.00E-03	3.05E-02	NA	NA	NA	NA
Chromium (VI)	1.99E+01	1.00E-03	6.00E-05	NA	1.23E-08	2.05E-04	NA	NA
Chrysene	NA	1.30E-01	NA	2.35E-02	NA	NA	NA	NA
Cobalt	NA	1.00E-03	1.60E-02	NA	NA	NA	NA	NA
Copper	NA	1.00E-03	1.20E-02	NA	NA	NA	NA	NA
Cyanide	NA	1.00E-02	3.40E-03	NA	NA	NA	NA	NA
Cyclohexanone	NA	1.00E-02	4.00E+00	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	NA	1.30E-01	NA	2.35E+01	NA	NA	NA	NA
Dieldrin	NA	1.00E-02	2.50E-05	3.20E+01	NA	NA	NA	NA
Di-n-octylphthalate	NA	1.00E-02	3.60E-02	NA	NA	NA	NA	NA
Ethyl ether	NA	1.00E-02	1.60E-01	NA	NA	NA	NA	NA
Ethylbenzene	NA	1.00E-02	9.70E-02	NA	NA	NA	NA	NA
Fluoride	NA	1.00E-03	5.82E-02	NA	NA	NA	NA	NA
Heptachlorodibenzofuran	NA	1.00E-02	NA	3.00E+03	NA	NA	NA	NA
Heptachlorodibenzo-p-dioxin	NA	3.00E-02	NA	3.00E+03	NA	NA	NA	NA
Hexachlorodibenzofuran	NA	1.00E-02	NA	3.00E+04	NA	NA	NA	NA
Hexachlorodibenzo-p-dioxin	NA	3.00E-02	NA	3.00E+04	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	NA	1.30E-01	NA	2.35E+00	NA	NA	NA	NA
Lead	5.24E+01	1.00E-03	NA	NA	NA	NA	NA	NA
Manganese	NA	1.00E-03	5.60E-03	NA	NA	NA	NA	NA
Mercury	3.47E-02	1.00E-03	2.10E-05	NA	2.15E-11	1.02E-06	NA	NA
Methanol	NA	1.00E-02	4.00E-01	NA	NA	NA	NA	NA
Methyl-2-pentanone	NA	1.00E-02	6.40E-02	NA	NA	NA	NA	NA
Methylene chloride	7.70E-03	1.00E-02	5.70E-02	7.89E-03	4.77E-11	8.36E-10	1.70E-11	1.34E-13
Molybdenum	NA	1.00E-03	1.90E-03	NA	NA	NA	NA	NA
Nickel	NA	1.00E-03	5.40E-03	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	NA	1.00E-02	5.00E-03	1.96E-02	NA	NA	NA	NA
N-nitrosodipropylamine	NA	1.00E-02	NA	2.80E+01	NA	NA	NA	NA
Octachlorodibenzofuran	NA	1.00E-02	NA	3.00E+02	NA	NA	NA	NA
Octochlorodibenzo-p-dioxin	NA	3.00E-02	NA	3.00E+02	NA	NA	NA	NA
Pentachlorodibenzofuran	NA	1.00E-02	NA	1.50E+04	NA	NA	NA	NA
Pentachlorodibenzo-p-dioxin	NA	3.00E-02	NA	1.50E+05	NA	NA	NA	NA
Pentachlorophenol	NA	2.50E-01	3.00E-02	1.20E-01	NA	NA	NA	NA
Phenanthrene	NA	1.00E-02	NA	NA	NA	NA	NA	NA
Selenium	NA	1.00E-03	2.20E-03	NA	NA	NA	NA	NA
Silver	NA	1.00E-03	9.00E-04	NA	NA	NA	NA	NA
Tetrachlorodibenzofuran	NA	1.00E-02	NA	3.00E+04	NA	NA	NA	NA
Tetrachlorodibenzo-p-dioxin	NA	3.00E-02	NA	3.00E+05	NA	NA	NA	NA
Tetrachloroethylene	6.87E-02	1.00E-02	1.00E-02	5.40E-01	4.25E-10	4.25E-08	1.52E-10	8.20E-11
Thallium	NA	1.00E-03	1.80E-05	NA	NA	NA	NA	NA
Toluene	7.60E-03	1.00E-02	8.40E-02	NA	4.71E-11	7.35E-10	NA	NA
Tributyl phosphate	NA	1.00E-02	1.00E-01	1.08E-02	NA	NA	NA	NA
Trichloroethylene	NA	1.00E-02	4.50E-05	2.67E+00	NA	NA	NA	NA
Trifluorochloromethane	NA	NA	NA	NA	NA	NA	NA	NA
Uranium	NA	1.00E-03	5.10E-04	NA	NA	NA	NA	NA
Vanadium	NA	1.00E-03	7.00E-05	NA	NA	NA	NA	NA
Vinyl chloride	NA	1.00E-02	3.00E-03	1.50E+00	NA	NA	NA	NA
Xylenes	3.00E-02	1.00E-02	1.84E-01	NA	1.86E-10	1.01E-09	NA	NA
Zinc	NA	1.00E-03	6.00E-02	NA	NA	NA	NA	NA
					total =	2.18E-04	total =	8.43E-11

TABLE E.9-5
Museum Worker - HWMU - IngestSoilChem

Museum Worker - Ingestion of Soil
Risk calculation for HWMU

Intake Equation:			UNITS	adult
	CDI =	(CS*EF*ED*IR*FI*CF)/(BW*AT)		
	CDI =	Chronic Daily Intake	mg/kgday	calculated below
	CS =	Concentration of chemical in soil	mg/kg	see COC list below
	EF =	Exposure frequency	days/yr	250
	ED =	Exposure duration	yrs	25
	IR =	Ingestion rate	mg/day	50
	FI =	Fraction of contaminated soil	unitless	1
	CF =	Conversion factor	kg/mg	1.00E-06
	BW =	Body weight	kg	70
	ATc =	Average time for carcinogens	days	25550
	ATn =	Average time for non-carcinogens	days	9125

				ADULT			
COC	conc	RfDo	CSFo	CDI	HQ	CDI	ILCR
	mg/kg	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	1.20E-02	4.00E-03	5.70E-02	5.87E-09	1.47E-06	2.10E-09	1.20E-10
1,1-Dichloroethylene	NA	5.00E-02	6.00E-01	NA	NA	NA	NA
1,2-dichloroethane	NA	2.00E-02	9.10E-02	NA	NA	NA	NA
2-Butanone	7.20E-03	6.00E-01	NA	3.52E-09	5.87E-09	NA	NA
3,3-Dichlorobenzidine	NA	NA	4.50E-01	NA	NA	NA	NA
4-Methylphenol	NA	5.00E-03	NA	NA	NA	NA	NA
4-Nitroanaline	NA	3.00E-03	2.10E-02	NA	NA	NA	NA
Acetone	NA	9.00E-01	NA	NA	NA	NA	NA
Antimony	NA	4.00E-04	NA	NA	NA	NA	NA
Aroclor-1254	NA	2.00E-05	2.00E+00	NA	NA	NA	NA
Aroclor-1260	NA	2.00E-05	2.00E+00	NA	NA	NA	NA
Arsenic	NA	3.00E-04	1.50E+00	NA	NA	NA	NA
Barium	2.55E+02	2.00E-01	NA	1.25E-04	6.24E-04	NA	NA
Benzene	1.70E-03	4.00E-03	5.50E-02	8.32E-10	2.08E-07	2.97E-10	1.63E-11
Benzo(a)anthracene	NA	NA	7.30E-01	NA	NA	NA	NA
Benzo(a)pyrene	NA	NA	7.30E+00	NA	NA	NA	NA
Benzo(b)fluoranthene	NA	NA	7.30E-01	NA	NA	NA	NA
Benzo(k)fluoranthene	NA	NA	7.30E-02	NA	NA	NA	NA
Beryllium	NA	2.00E-03	4.30E+00	NA	NA	NA	NA
Bis(2-chloroisopropyl)ether	NA	4.00E-02	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	NA	2.00E-02	1.40E-02	NA	NA	NA	NA
Boron	NA	2.00E-01	NA	NA	NA	NA	NA
Bromodichloromethane	NA	2.00E-02	6.20E-02	NA	NA	NA	NA
Bromoform	NA	2.00E-02	7.90E-03	NA	NA	NA	NA
Bromomethane	NA	1.40E-03	NA	NA	NA	NA	NA
Cadmium	NA	1.00E-03	NA	NA	NA	NA	NA
Carbazole	NA	NA	2.00E-03	NA	NA	NA	NA
Carbon disulfide	NA	1.00E-01	NA	NA	NA	NA	NA
Carbon tetrachloride	NA	7.00E-04	1.30E-01	NA	NA	NA	NA
Chlordane	NA	5.00E-04	3.50E-01	NA	NA	NA	NA
Chlorobenzene	NA	2.00E-02	NA	NA	NA	NA	NA
Chloroform	NA	1.00E-02	6.10E-03	NA	NA	NA	NA
Chromium (VI)	1.99E+01	3.00E-03	NA	9.74E-06	3.25E-03	NA	NA
Chrysene	NA	NA	7.30E-03	NA	NA	NA	NA
Cobalt	NA	2.00E-02	NA	NA	NA	NA	NA
Copper	NA	4.00E-02	NA	NA	NA	NA	NA
Cyanide	NA	2.00E-02	NA	NA	NA	NA	NA
Cyclohexanone	NA	5.00E+00	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	NA	NA	7.30E+00	NA	NA	NA	NA
Dieldrin	NA	5.00E-05	1.60E+01	NA	NA	NA	NA
Di-n-octylphthalate	NA	4.00E-02	NA	NA	NA	NA	NA
Ethyl ether	NA	2.00E-01	NA	NA	NA	NA	NA
Ethylbenzene	NA	1.00E-01	NA	NA	NA	NA	NA
Fluoride	NA	6.00E-02	NA	NA	NA	NA	NA
Heptachlorodibenzofuran	NA	NA	1.50E+03	NA	NA	NA	NA
Heptachlorodibenzo-p-dioxin	NA	NA	1.50E+03	NA	NA	NA	NA
Hexachlorodibenzofuran	NA	NA	1.50E+03	NA	NA	NA	NA
Hexachlorodibenzo-p-dioxin	NA	NA	1.50E+04	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	NA	NA	7.30E-01	NA	NA	NA	NA
Lead	5.24E+01	NA	NA	NA	NA	NA	NA
Manganese	NA	1.40E-01	NA	NA	NA	NA	NA
Mercury	3.47E-02	3.00E-04	NA	1.70E-08	5.66E-05	NA	NA
Methanol	NA	5.00E-01	NA	NA	NA	NA	NA
Methyl-2-pentanone	NA	8.00E-02	NA	NA	NA	NA	NA
Methylene chloride	7.70E-03	6.00E-02	7.50E-03	3.77E-09	6.28E-08	1.35E-09	1.01E-11
Molybdenum	NA	5.00E-03	NA	NA	NA	NA	NA
Nickel	NA	2.00E-02	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	NA	2.00E-02	4.90E-03	NA	NA	NA	NA
N-nitrosodipropylamine	NA	NA	7.00E+00	NA	NA	NA	NA
Octachlorodibenzofuran	NA	NA	1.50E+02	NA	NA	NA	NA
Octochlorodibenzo-p-dioxin	NA	NA	1.50E+02	NA	NA	NA	NA
Pentachlorodibenzofuran	NA	NA	7.50E+03	NA	NA	NA	NA
Pentachlorodibenzo-p-dioxin	NA	NA	7.50E+04	NA	NA	NA	NA
Pentachlorophenol	NA	3.00E-02	1.20E-01	NA	NA	NA	NA
Phenanthrene	NA	NA	NA	NA	NA	NA	NA
Selenium	NA	5.00E-03	NA	NA	NA	NA	NA
Silver	NA	5.00E-03	NA	NA	NA	NA	NA
Tetrachlorodibenzofuran	NA	NA	1.50E+04	NA	NA	NA	NA
Tetrachlorodibenzo-p-dioxin	NA	NA	1.50E+05	NA	NA	NA	NA
Tetrachloroethylene	6.87E-02	1.00E-02	5.40E-01	3.36E-08	3.36E-06	1.20E-08	6.48E-09
Thallium	NA	9.00E-05	NA	NA	NA	NA	NA
Toluene	7.60E-03	8.00E-02	NA	3.72E-09	4.65E-08	NA	NA
Tributyl phosphate	NA	2.00E-01	5.40E-03	NA	NA	NA	NA
Trichloroethylene	NA	3.00E-04	4.00E-01	NA	NA	NA	NA
Trifluorochloromethane	NA	NA	NA	NA	NA	NA	NA
Uranium	NA	6.00E-04	NA	NA	NA	NA	NA
Vanadium	NA	7.00E-03	NA	NA	NA	NA	NA
Vinyl chloride	NA	3.00E-03	1.50E+00	NA	NA	NA	NA
Xylenes	3.00E-02	2.00E-01	NA	1.47E-08	7.34E-08	NA	NA
Zinc	NA	3.00E-01	NA	NA	NA	NA	NA
				total =	3.93E-03	total =	6.63E-09

TABLE E.9-5

Museum Worker - HWMU - DermalSWchem

Museum Worker - Dermal Contact with Surface Water
Risk calculation for HWMU

			UNITS	adult
Intake Equation:	CDI =	(DA*EF*ED*SA)/(BW*AT)		
	CDI =	Chronic Daily Intake	mg/kgday	calculated below
	DA =	Dermal absorption dose	mg/cm²day	see COC list below
	EF =	Exposure frequency	days/yr	8
	ED =	Exposure duration	yrs	25
	SA =	Surface area of skin	cm²	904
	BW =	Body weight	kg	70
	ATc =	Average time for carcinogens	days	25550
	ATn =	Average time for non-carcinogens	days	9125
where:	DA = C_v*K_p*CF*ET			
	C_v =	concentation of ith contaminant in surface water	mg/L	see COC list below
	K_p =	permeability constant for ith contaminant	cm/hr	see COC list below
	CF =	conversion factor	L/cm³	0.001
	ET =	exposure time	hr/d	0.5

COC	C_v	K_p	DA	RfD	CSF	ADULT CDI	ADULT HQ	ADULT CDI	ADULT ILCR
	mg/L	cm/hr	mg/cm²day	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	1.00E-03	6.43E-03	3.22E-09	3.24E-03	7.04E-02	9.10E-10	2.81E-07	3.25E-10	2.29E-11
1,1-Dichloroethylene	NA	1.59E-02	NA	5.00E-02	6.00E-01	NA	NA	NA	NA
1,2-dichloroethane	NA	5.34E-03	NA	2.00E-02	9.10E-02	NA	NA	NA	NA
2-Butanone	5.00E-03	1.11E-03	2.78E-09	4.80E-01	NA	7.85E-10	1.64E-09	NA	NA
3,3-Dichlorobenzidine	NA	1.69E-02	NA	NA	9.00E-01	NA	NA	NA	NA
4-Methylphenol	NA	9.95E-03	NA	3.25E-03	NA	NA	NA	NA	NA
4-Nitroanaline	NA	2.66E-03	NA	2.40E-03	2.63E-02	NA	NA	NA	NA
Acetone	NA	5.69E-04	NA	7.47E-01	NA	NA	NA	NA	NA
Antimony	NA	1.00E-03	NA	8.00E-06	NA	NA	NA	NA	NA
Aroclor-1254	NA	1.29E+00	NA	1.80E-05	2.22E+00	NA	NA	NA	NA
Aroclor-1260	NA	5.48E+00	NA	1.80E-05	2.22E+00	NA	NA	NA	NA
Arsenic	NA	1.00E-03	NA	1.23E-04	3.66E+00	NA	NA	NA	NA
Barium	5.61E-02	1.00E-03	2.81E-08	1.40E-02	NA	7.94E-09	5.67E-07	NA	NA
Benzene	1.00E-03	2.07E-02	1.04E-08	3.88E-03	5.67E-02	2.93E-09	7.55E-07	1.05E-09	5.93E-11
Benzo(a)anthracene	NA	9.48E-01	NA	NA	2.35E+00	NA	NA	NA	NA
Benzo(a)pyrene	NA	1.24E+00	NA	NA	2.35E+01	NA	NA	NA	NA
Benzo(b)fluoranthene	NA	6.99E-01	NA	NA	2.35E+00	NA	NA	NA	NA
Benzo(k)fluoranthene	NA	1.20E+00	NA	NA	2.35E-01	NA	NA	NA	NA
Beryllium	NA	1.00E-03	NA	2.00E-05	4.30E+02	NA	NA	NA	NA
Bis(2-chloroisopropyl)ether	NA	7.63E-02	NA	2.00E-02	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	NA	1.97E+00	NA	3.80E-03	7.37E-02	NA	NA	NA	NA
Boron	NA	1.00E-03	NA	1.60E-01	NA	NA	NA	NA	NA
Bromodichloromethane	NA	5.02E-03	NA	1.96E-02	6.33E-02	NA	NA	NA	NA
Bromoform	NA	2.77E-03	NA	1.20E-02	1.32E-02	NA	NA	NA	NA
Bromomethane	NA	3.51E-03	NA	1.12E-03	NA	NA	NA	NA	NA
Cadmium	NA	1.00E-03	NA	1.00E-05	NA	NA	NA	NA	NA
Carbazole	NA	7.97E-02	NA	NA	2.86E-02	NA	NA	NA	NA
Carbon disulfide	NA	1.56E-02	NA	6.30E-02	NA	NA	NA	NA	NA
Carbon tetrachloride	NA	2.24E-02	NA	4.55E-04	2.00E-01	NA	NA	NA	NA
Chlordane	NA	1.57E-01	NA	2.50E-04	7.00E-01	NA	NA	NA	NA
Chlorobenzene	NA	4.07E-02	NA	6.20E-03	NA	NA	NA	NA	NA
Chloroform	NA	8.92E-03	NA	2.00E-03	3.05E-02	NA	NA	NA	NA
Chromium (VI)	1.80E-03	2.00E-03	1.80E-09	6.00E-05	NA	5.09E-10	8.49E-06	NA	NA
Chrysene	NA	1.03E+00	NA	NA	2.35E-02	NA	NA	NA	NA
Cobalt	NA	4.00E-04	NA	1.60E-02	NA	NA	NA	NA	NA
Copper	NA	1.00E-03	NA	1.20E-02	NA	NA	NA	NA	NA
Cyanide	NA	1.00E-03	NA	3.40E-03	NA	NA	NA	NA	NA
Cyclohexanone	NA	1.80E-03	NA	4.00E+00	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	NA	1.68E+00	NA	NA	2.35E+01	NA	NA	NA	NA
Dieldrin	NA	4.45E-02	NA	2.50E-05	3.20E+01	NA	NA	NA	NA
Di-n-octylphthalate	NA	4.45E+00	NA	3.60E-02	NA	NA	NA	NA	NA
Ethyl ether	NA	2.88E-03	NA	1.60E-01	NA	NA	NA	NA	NA
Ethylbenzene	NA	7.39E-02	NA	9.70E-02	NA	NA	NA	NA	NA
Fluoride	NA	1.00E-03	NA	5.82E-02	NA	NA	NA	NA	NA
Heptachlorodibenzofuran	NA	2.55E+00	NA	NA	3.00E+03	NA	NA	NA	NA
Heptachlorodibenzo-p-dioxin	NA	3.22E+00	NA	NA	3.00E+03	NA	NA	NA	NA
Hexachlorodibenzofuran	NA	2.38E+00	NA	NA	3.00E+04	NA	NA	NA	NA
Hexachlorodibenzo-p-dioxin	NA	5.29E+00	NA	NA	3.00E+04	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	NA	2.23E+00	NA	NA	2.35E+00	NA	NA	NA	NA
Lead	1.20E-03	1.00E-04	6.00E-11	NA	NA	NA	NA	NA	NA
Manganese	NA	1.00E-03	NA	1.84E-03	NA	NA	NA	NA	NA
Mercury	6.00E-05	1.00E-03	3.00E-11	2.10E-05	NA	8.49E-12	4.04E-07	NA	NA
Methanol	NA	3.45E-04	NA	4.00E-01	NA	NA	NA	NA	NA
4-Methyl-2-pentanone	NA	3.97E-03	NA	8.40E-02	NA	NA	NA	NA	NA
Methylene chloride	5.00E-03	4.46E-03	1.12E-08	5.70E-02	7.89E-03	3.16E-09	5.54E-08	1.13E-09	8.89E-12
Molybdenum	NA	1.00E-03	NA	1.90E-03	NA	NA	NA	NA	NA
Nickel	NA	2.00E-04	NA	5.40E-03	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	NA	1.96E-02	NA	5.00E-03	1.96E-02	NA	NA	NA	NA
N-nitrosodipropylamine	NA	2.83E-03	NA	NA	2.80E+01	NA	NA	NA	NA
Octachlorodibenzofuran	NA	4.78E+00	NA	NA	3.00E+02	NA	NA	NA	NA
Octochlorodibenzo-p-dioxin	NA	1.65E+01	NA	NA	3.00E+02	NA	NA	NA	NA
Pentachlorodibenzofuran	NA	1.06E+00	NA	NA	1.50E+04	NA	NA	NA	NA
Pentachlorodibenzo-p-dioxin	NA	3.79E-01	NA	NA	1.50E+05	NA	NA	NA	NA
Pentachlorophenol	NA	1.95E-01	NA	3.00E-02	1.20E-01	NA	NA	NA	NA
Phenanthrene	NA	2.29E-01	NA	NA	NA	NA	NA	NA	NA
Selenium	NA	1.00E-03	NA	2.20E-03	NA	NA	NA	NA	NA
Silver	NA	6.00E-04	NA	9.00E-04	NA	NA	NA	NA	NA
Tetrachlorodibenzofuran	NA	1.12E+00	NA	NA	3.00E+04	NA	NA	NA	NA
Tetrachlorodibenzo-p-dioxin	NA	1.39E+00	NA	NA	3.00E+05	NA	NA	NA	NA
Tetrachloroethylene	1.00E-03	4.81E-02	2.41E-08	1.00E-02	5.40E-01	6.81E-09	6.81E-07	2.43E-09	1.31E-09
Thallium	NA	1.00E-03	NA	1.80E-05	NA	NA	NA	NA	NA
Toluene	1.00E-03	4.53E-02	2.27E-08	6.40E-02	NA	6.41E-09	1.00E-07	NA	NA
Tributyl phosphate	NA	3.13E-02	NA	1.00E-01	1.08E-02	NA	NA	NA	NA
Trichloroethylene	NA	1.57E-02	NA	4.50E-05	2.67E+00	NA	NA	NA	NA
Trifluorochloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Uranium	NA	1.00E-03	NA	5.10E-04	NA	NA	NA	NA	NA
Vanadium	NA	1.00E-03	NA	7.00E-05	NA	NA	NA	NA	NA
Vinyl chloride	NA	1.13E-02	NA	3.00E-03	1.50E+00	NA	NA	NA	NA
Xylenes	1.00E-03	7.04E-02	3.52E-08	1.84E-01	NA	9.96E-09	5.41E-08	NA	NA
Zinc	NA	6.00E-04	NA	6.00E-02	NA	NA	NA	NA	NA
						total =	1.14E-05	total =	1.40E-09

TABLE E.9-5
Museum Worker - HWMU - IngestSWchem

Museum Worker - Ingestion of Surface Water
Risk calculation for HWMU

Intake Equation:			UNITS	Assigned Values
	CDI =	(CW*EF*ED*IR)/(BW*AT)		
	CDI =	Chronic Daily Intake	mg/kgday	adult
	CW =	Concentration of chemical in water	mg/L	see COC table below
	EF =	Exposure frequency	days/yr	8
	ED =	Exposure duration	yrs	25
	IR =	Ingestion rate	L/day	0.001
	BW =	Body weight	kg	70
	ATc =	Average time for carcinogens	days	25550
	ATn =	Average time for non-carcinogens	days	9125

COC	CW	RfDo	CSFo	ADULT CDI	HQ	CDI	ILCR
	mg/L	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	1.00E-03	4.00E-03	5.70E-02	3.13E-10	7.83E-08	1.12E-10	6.37E-12
1,1-Dichloroethylene	NA	5.00E-02	6.00E-01	NA	NA	NA	NA
1,2-dichloroethane	NA	2.00E-02	9.10E-02	NA	NA	NA	NA
2-Butanone	5.00E-03	6.00E-01	NA	1.57E-09	2.61E-09	NA	NA
3,3-Dichlorobenzidine	NA	NA	4.50E-01	NA	NA	NA	NA
4-Methylphenol	NA	5.00E-03	NA	NA	NA	NA	NA
4-Nitroanaline	NA	3.00E-03	2.10E-02	NA	NA	NA	NA
Acetone	NA	9.00E-01	NA	NA	NA	NA	NA
Antimony	NA	4.00E-04	NA	NA	NA	NA	NA
Aroclor-1254	NA	2.00E-05	4.00E-01	NA	NA	NA	NA
Aroclor-1260	NA	2.00E-05	4.00E-01	NA	NA	NA	NA
Arsenic	NA	3.00E-04	1.50E+00	NA	NA	NA	NA
Barium	5.61E-02	2.00E-01	NA	1.76E-08	8.78E-08	NA	NA
Benzene	1.00E-03	4.00E-03	5.50E-02	3.13E-10	7.83E-08	1.12E-10	6.15E-12
Benzo(a)anthracene	NA	NA	7.30E-01	NA	NA	NA	NA
Benzo(a)pyrene	NA	NA	7.30E+00	NA	NA	NA	NA
Benzo(b)fluoranthene	NA	NA	7.30E-01	NA	NA	NA	NA
Benzo(k)fluoranthene	NA	NA	7.30E-02	NA	NA	NA	NA
Beryllium	NA	2.00E-03	4.30E+00	NA	NA	NA	NA
Bis(2-chloroisopropyl)ether	NA	4.00E-02	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	NA	2.00E-02	1.40E-02	NA	NA	NA	NA
Boron	NA	2.00E-01	NA	NA	NA	NA	NA
Bromodichloromethane	NA	2.00E-02	6.20E-02	NA	NA	NA	NA
Bromoform	NA	2.00E-02	7.90E-03	NA	NA	NA	NA
Bromomethane	NA	1.40E-03	NA	NA	NA	NA	NA
Cadmium	NA	1.00E-03	NA	NA	NA	NA	NA
Carbazole	NA	NA	2.00E-03	NA	NA	NA	NA
Carbon disulfide	NA	1.00E-01	NA	NA	NA	NA	NA
Carbon tetrachloride	NA	7.00E-04	1.30E-01	NA	NA	NA	NA
Chlordane	NA	5.00E-04	3.50E-01	NA	NA	NA	NA
Chlorobenzene	NA	2.00E-02	NA	NA	NA	NA	NA
Chloroform	NA	1.00E-02	6.10E-03	NA	NA	NA	NA
Chromium (VI)	1.80E-03	3.00E-03	NA	5.64E-10	1.88E-07	NA	NA
Chrysene	NA	NA	7.30E-03	NA	NA	NA	NA
Cobalt	NA	2.00E-02	NA	NA	NA	NA	NA
Copper	NA	4.00E-02	NA	NA	NA	NA	NA
Cyanide	NA	2.00E-02	NA	NA	NA	NA	NA
Cyclohexanone	NA	5.00E+00	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	NA	NA	7.30E+00	NA	NA	NA	NA
Dieldrin	NA	5.00E-05	1.60E+01	NA	NA	NA	NA
Di-n-octylphthalate	NA	4.00E-02	NA	NA	NA	NA	NA
Ethyl ether	NA	2.00E-01	NA	NA	NA	NA	NA
Ethylbenzene	NA	1.00E-01	NA	NA	NA	NA	NA
Fluoride	NA	6.00E-02	NA	NA	NA	NA	NA
Heptachlorodibenzofuran	NA	NA	1.50E+03	NA	NA	NA	NA
Heptachlorodibenzo-p-dioxin	NA	NA	1.50E+03	NA	NA	NA	NA
Hexachlorodibenzofuran	NA	NA	1.50E+03	NA	NA	NA	NA
Hexachlorodibenzo-p-dioxin	NA	NA	1.50E+04	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	NA	NA	7.30E-01	NA	NA	NA	NA
Lead	1.20E-03	NA	NA	NA	NA	NA	NA
Manganese	NA	4.60E-02	NA	NA	NA	NA	NA
Mercury	6.00E-05	3.00E-04	NA	1.88E-11	6.26E-08	NA	NA
Methanol	NA	5.00E-01	NA	NA	NA	NA	NA
4-Methyl-2-pentanone	NA	8.00E-02	NA	NA	NA	NA	NA
Methylene chloride	5.00E-03	6.00E-02	7.50E-03	1.57E-09	2.61E-08	5.59E-10	4.19E-12
Molybdenum	NA	5.00E-03	NA	NA	NA	NA	NA
Nickel	NA	2.00E-02	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	NA	2.00E-02	4.90E-03	NA	NA	NA	NA
N-nitrosodipropylamine	NA	NA	7.00E+00	NA	NA	NA	NA
Octachlorodibenzofuran	NA	NA	1.50E+02	NA	NA	NA	NA
Octochlorodibenzo-p-dioxin	NA	NA	1.50E+02	NA	NA	NA	NA
Pentachlorodibenzofuran	NA	NA	7.50E+03	NA	NA	NA	NA
Pentachlorodibenzo-p-dioxin	NA	NA	7.50E+04	NA	NA	NA	NA
Pentachlorophenol	NA	3.00E-02	1.20E-01	NA	NA	NA	NA
Phenanthrene	NA	NA	NA	NA	NA	NA	NA
Selenium	NA	5.00E-03	NA	NA	NA	NA	NA
Silver	NA	5.00E-03	NA	NA	NA	NA	NA
Tetrachlorodibenzofuran	NA	NA	1.50E+04	NA	NA	NA	NA
Tetrachlorodibenzo-p-dioxin	NA	NA	1.50E+05	NA	NA	NA	NA
Tetrachloroethylene	1.00E-03	1.00E-02	5.40E-01	3.13E-10	3.13E-08	1.12E-10	6.04E-11
Thallium	NA	9.00E-05	NA	NA	NA	NA	NA
Toluene	1.00E-03	8.00E-02	NA	3.13E-10	3.91E-09	NA	NA
Tributyl phosphate	NA	2.00E-01	5.40E-03	NA	NA	NA	NA
Trichloroethylene	NA	3.00E-04	4.00E-01	NA	NA	NA	NA
Trifluorochloromethane	NA	NA	NA	NA	NA	NA	NA
Uranium	NA	6.00E-04	NA	NA	NA	NA	NA
Vanadium	NA	7.00E-03	NA	NA	NA	NA	NA
Vinyl chloride	NA	3.00E-03	1.50E+00	NA	NA	NA	NA
Xylenes	1.00E-03	2.00E-01	NA	3.13E-10	1.57E-09	NA	NA
Zinc	NA	3.00E-01	NA	NA	NA	NA	NA
				total =	5.60E-07	total =	7.71E-11

TABLE E.9-5
Museum Worker - HWMU - SumPaths

Museum Worker - Summation of all Pathways
Risk calculation for background

	HQ	ILCR
Inhale	9.46E-04	1.14E-07
Dermal Soil	2.18E-04	8.43E-11
Ingest Soil	3.93E-03	6.63E-09
Dermal Surface Water	1.14E-05	1.40E-09
Ingest Surface Water	5.60E-07	7.71E-11
SUM	**5.11E-03**	**1.22E-07**

Summation of all paths for individual chemicals

	ILCR	HQ
1,1,2-Trichloroethane	1.51E-10	1.85E-06
1,1-Dichloroethylene	NA	NA
1,2-dichloroethane	NA	NA
2-Butanone	No CSFs	1.02E-08
3,3-Dichlorobenzidine	NA	No RfDs
4-Methylphenol	No CSFs	NA
4-Nitroanaline	NA	NA
Acetone	No CSFs	NA
Antimony	No CSFs	NA
Aroclor-1254	NA	NA
Aroclor-1260	NA	NA
Arsenic	NA	NA
Barium	No CSFs	1.32E-03
Benzene	8.20E-11	1.04E-06
Benzo(a)anthracene	NA	No RfDs
Benzo(a)pyrene	NA	No RfDs
Benzo(b)fluoranthene	NA	No RfDs
Benzo(k)fluoranthene	NA	No RfDs
Beryllium	NA	NA
Bis(2-chloroisopropyl)ether	No CSFs	NA
Bis(2-ethylhexyl)phthalate	NA	NA
Boron	No CSFs	NA
Bromodichloromethane	NA	NA
Bromoform	NA	NA
Bromomethane	No CSFs	NA
Cadmium	NA	NA
Carbazole	NA	No RfDs
Carbon disulfide	No CSFs	NA
Carbon tetrachloride	NA	NA
Chlordane	NA	NA
Chlorobenzene	No CSFs	NA
Chloroform	NA	NA
Chromium (VI)	1.14E-07	3.72E-03
Chrysene	NA	No RfDs
Cobalt	NA	NA
Copper	No CSFs	NA
Cyanide	No CSFs	NA
Cyclohexanone	No CSFs	NA
Dibenzo(a,h)anthracene	NA	No RfDs
Dieldrin	NA	NA
Di-n-octylphthalate	No CSFs	NA

TABLE E.9-5
Museum Worker - HWMU - SumPaths

Summation of all paths for individual chemicals (continued)

	ILCR	HQ
Ethyl ether	No CSFs	NA
Ethylbenzene	NA	NA
Fluoride	No CSFs	NA
Heptachlorodibenzofuran	NA	No RfDs
Heptachlorodibenzo-p-dioxin	NA	No RfDs
Hexachlorodibenzofuran	NA	No RfDs
Hexachlorodibenzo-p-dioxin	NA	No RfDs
Indeno(1,2,3-cd)pyrene	NA	No RfDs
Lead	No CSFs	No RfDs
Manganese	No CSFs	NA
Mercury	No CSFs	5.81E-05
Methanol	No CSFs	NA
4-Methyl-2-pentanone	No CSFs	NA
Methylene chloride	2.33E-11	1.45E-07
Molybdenum	No CSFs	NA
Nickel	No CSFs	NA
N-nitrosodiphenylamine	NA	NA
N-nitrosodipropylamine	NA	No RfDs
Octachlorodibenzofuran	NA	No RfDs
Octochlorodibenzo-p-dioxin	NA	No RfDs
Pentachlorodibenzofuran	No CSFs	No RfDs
Pentachlorodibenzo-p-dioxin	NA	No RfDs
Pentachlorophenol	NA	NA
Phenanthrene	No CSFs	No RfDs
Selenium	No CSFs	NA
Silver	No CSFs	NA
Tetrachlorodibenzofuran	No CSFs	No RfDs
Tetrachlorodibenzo-p-dioxin	No CSFs	No RfDs
Tetrachloroethylene	7.94E-09	4.12E-06
Thallium	No CSFs	NA
Toluene	No CSFs	1.51E-07
Tributyl phosphate	NA	NA
Trichloroethylene	NA	NA
Trifluorochloromethane	No CSFs	No RfDs
Uranium	No CSFs	NA
Vanadium	No CSFs	NA
Vinyl chloride	NA	NA
Xylenes	No CSFs	1.31E-07
Zinc	No CSFs	NA
SUM	**1.22E-07**	**5.11E-03**

TABLE E.9-6
Museum Visitor - HWMU - InhaleChem

Museum Visitor - Inhalation of Gases & Particulates
Risk calculation for HWMU

Intake Equation:			UNITS	Assigned Values			
				child	youth	adult	senior
	CDI =	(CS*EF*ED*IR*ET)/(BW*AT)					
	CDI =	Chronic Daily Intake	mg/kgday				
	CA =	Concentration of chemical in air	mg/m^3	see table of COCs below			
	EF =	Exposure frequency	days/yr	10	10	10	20
	ED =	Exposure duration	yrs	3	6	14	7
	IR =	Inhalation rate	m^3/hr	1	1	1	1
	ET =	Exposure time	hrs/day	0.5	0.5	0.5	0.5
	BW =	Body weight	kg	15	47	70	70
	ATc =	Average time for carcinogens	days	25550	25550	25550	25550
	ATn =	Average time for non-carcinogens	days	1095	2190	5110	2555

COC	conc	RfDi	CSFi	CHILD				YOUTH				ADULT				SENIOR				SUM			
				CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR
	mg/m^3	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	3.12E-10	NA	5.60E-02	NA	NA	1.22E-14	6.84E-16	NA	NA	7.79E-15	4.36E-16	NA	NA	1.22E-14	6.84E-16	NA	NA	1.22E-14	6.84E-16	NA	NA	4.44E-14	2.49E-15
1,1-Dichloroethylene	NA	5.71E-02	1.75E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-dichloroethane	NA	NA	9.10E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	1.87E-10	1.43E+00	NA	1.71E-13	1.20E-13	NA	NA	5.46E-14	3.82E-14	NA	NA	3.66E-14	2.56E-14	NA	NA	7.33E-14	5.12E-14	NA	NA	6.22E-14	4.35E-14	NA	NA
3,3-Dichlorobenzidine	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroanaline	NA	1.14E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	NA	NA	2.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	NA	NA	2.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	NA	NA	1.51E+01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	6.63E-06	1.43E-04	NA	6.05E-09	4.23E-05	NA	NA	1.93E-09	1.35E-05	NA	NA	1.30E-09	9.07E-06	NA	NA	2.59E-09	1.81E-05	NA	NA	2.20E-09	1.54E-05	NA	NA
Benzene	4.42E-11	8.57E-03	2.73E-02	4.04E-14	4.71E-12	1.73E-15	4.72E-17	1.29E-14	1.50E-12	1.10E-15	3.01E-17	8.65E-15	1.01E-12	1.73E-15	4.72E-17	1.73E-14	2.02E-12	1.73E-15	4.72E-17	1.47E-14	1.71E-12	6.29E-15	1.72E-16
Benzo(a)anthracene	NA	NA	3.08E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	NA	NA	3.08E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	NA	NA	3.08E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	NA	NA	3.08E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	NA	5.71E-06	8.40E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-chloroisopropyl)ether	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Boron	NA	5.71E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	NA	NA	3.85E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	NA	1.43E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	NA	NA	6.30E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	NA	2.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	NA	NA	5.25E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlordane	NA	2.00E-04	3.50E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	NA	1.43E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	NA	NA	8.05E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (VI)	5.17E-07	2.86E-05	4.20E+01	4.73E-10	1.65E-05	2.03E-11	8.51E-10	1.51E-10	5.27E-06	1.29E-11	5.43E-10	1.01E-10	3.54E-06	2.03E-11	8.51E-10	2.03E-10	7.08E-06	2.03E-11	8.51E-10	1.72E-10	6.01E-06	7.37E-11	3.09E-09
Chrysene	NA	NA	3.08E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	NA	5.71E-06	9.80E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexanone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	NA	NA	3.08E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	NA	NA	1.61E+01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-octylphthalate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE E.9-6
Museum Visitor - HWMU - InhaleChem

Museum Visitor - Inhalation of Gases & Particulates
Risk calculation for HWMU

Intake Equation:			UNITS	Assigned Values			
				child	youth	adult	senior
	CDI =	(CS*EF*ED*IR*ET)/(BW*AT)					
	CDI =	Chronic Daily Intake	mg/kgday				
	CA =	Concentration of chemical in air	mg/m^3	see table of COCs below			
	EF =	Exposure frequency	days/yr	10	10	10	20
	ED =	Exposure duration	yrs	3	6	14	7
	IR =	Inhalation rate	m^3/hr	1	1	1	1
	ET =	Exposure time	hrs/day	0.5	0.5	0.5	0.5
	BW =	Body weight	kg	15	47	70	70
	ATc =	Average time for carcinogens	days	25550	25550	25550	25550
	ATn =	Average time for non-carcinogens	days	1095	2190	5110	2555

COC	conc	RfDi	CSFI	CHILD				YOUTH				ADULT				SENIOR				SUM			
				CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR
	mg/m^3	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
Ethyl ether	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	NA	2.86E-01	3.85E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoride	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlorodibenzofuran	NA	NA	1.16E+03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlorodibenzo-p-dioxin	NA	NA	1.16E+03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorodibenzofuran	NA	NA	1.16E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorodibenzo-p-dioxin	NA	NA	1.16E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	NA	NA	3.08E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	1.36E-06	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	NA	1.43E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	9.02E-10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methanol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl-2-pentanone	NA	8.57E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene chloride	2.00E-10	8.57E-01	1.65E-03	1.83E-13	2.13E-13	7.84E-15	1.29E-17	5.84E-14	6.81E-14	5.00E-15	8.25E-18	3.92E-14	4.57E-14	7.84E-15	1.29E-17	7.84E-14	9.14E-14	7.84E-15	1.29E-17	6.65E-14	7.76E-14	2.85E-14	4.70E-17
Molybdenum	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-nitrosodipropylamine	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Octochlorodibenzofuran	NA	NA	1.16E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Octochlorodibenzo-p-dioxin	NA	NA	1.16E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorodibenzofuran	NA	NA	5.78E+03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorodibenzo-p-dioxin	NA	NA	5.78E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachlorodibenzofuran	NA	NA	1.16E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachlorodibenzo-p-dioxin	NA	NA	1.16E+05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethylene	1.79E-09	1.71E-01	2.07E-02	1.63E-12	9.54E-12	6.99E-14	1.45E-15	5.21E-13	3.04E-12	4.46E-14	9.24E-16	3.50E-13	2.04E-12	6.99E-14	1.45E-15	6.99E-13	4.09E-12	6.99E-14	1.45E-15	5.93E-13	3.47E-12	2.54E-13	5.27E-15
Thallium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1.98E-10	1.43E+00	NA	1.80E-13	1.26E-13	NA	NA	5.76E-14	4.03E-14	NA	NA	3.87E-14	2.70E-14	NA	NA	7.73E-14	5.41E-14	NA	NA	6.57E-14	4.59E-14	NA	NA
Tributyl phosphate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethylene	NA	1.14E-02	4.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trifluorochloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Uranium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	NA	2.86E-02	3.08E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes	7.80E-10	2.86E-02	NA	7.12E-13	2.49E-11	NA	NA	2.27E-13	7.95E-12	NA	NA	1.53E-13	5.34E-12	NA	NA	3.05E-13	1.07E-11	NA	NA	2.59E-13	9.06E-12	NA	NA
Zinc	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
																				total =	2.14E-05	total =	3.09E-09

Air concentration is derived from air particulate value of 26 ug/m^3 (2005 SER background average from monitor AMS-12) multiplied by soil concentration.

TABLE E.9-6
Museum Visitor - HWMU - DermalSoilChem

Museum Visitor - Dermal Contact with Soil/Sediment
Risk calculation for HWMU

Intake Equation:			UNITS	Assigned Values			
				child	youth	adult	senior
	CDI =	(CS*AB*SA*EF*ED*AF*CF)/(BW*AT)					
	CDI =	Chronic Daily Intake	mg/kgday				
	CS =	Concentration of chemical in soil	mg/kg	see table of COCs below			
	AB	Absorption factor	-	see table of COCs below			
	SA	Surface area of exposed skin	cm^2/day	2800	4370	5700	5700
	EF =	Exposure frequency	days/yr	10	10	10	20
	ED =	Exposure duration	yrs	3	6	14	7
	AF =	Adherence factor	mg/cm^2	0.2	0.2	0.07	0.07
	CF =	Conversion factor	kg/mg	1.00E-06	1.00E-06	1.00E-06	1.00E-06
	BW =	Body weight	kg	15	47	70	70
	ATc =	Average time for carcinogens	days	25550	25550	25550	25550
	ATn =	Average time for non-carcinogens	days	1095	2190	5110	2555

COC	conc	AB	RfDd	CSFd	CHILD				YOUTH				ADULT				SENIOR				SUM			
					CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR
	mg/kg	unitless	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	1.20E-02	1.00E-02	3.24E-03	7.04E-02	1.23E-10	3.79E-08	5.26E-12	3.70E-13	6.11E-11	1.89E-08	5.24E-12	3.69E-13	1.87E-11	5.78E-09	3.75E-12	2.64E-13	3.75E-11	1.16E-08	3.75E-12	2.64E-13	4.20E-11	1.30E-08	1.80E-11	1.27E-12
1,1-Dichloroethylene	NA	1.00E-02	5.00E-02	6.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-dichloroethane	NA	1.00E-02	2.00E-02	9.10E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	7.20E-03	1.00E-02	4.80E-01	NA	7.36E-11	1.53E-10	NA	NA	3.67E-11	7.64E-11	NA	NA	1.12E-11	2.34E-11	NA	NA	2.25E-11	4.68E-11	NA	NA	2.52E-11	5.25E-11	NA	NA
3,3-Dichlorobenzidine	NA	1.00E-02	NA	9.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	NA	1.00E-02	3.25E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroanaline	NA	1.00E-02	2.40E-03	2.63E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	NA	1.00E-02	7.47E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	NA	1.00E-03	8.00E-08	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	NA	1.40E-01	1.80E-05	2.22E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	NA	1.40E-01	1.80E-05	2.22E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	NA	3.00E-02	1.23E-04	3.66E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	2.55E+02	1.00E-03	1.40E-02	NA	2.61E-07	1.86E-05	NA	NA	1.30E-07	9.28E-06	NA	NA	3.98E-08	2.84E-06	NA	NA	7.96E-08	5.69E-06	NA	NA	8.92E-08	6.37E-06	NA	NA
Benzene	1.70E-03	1.00E-02	3.86E-03	5.67E-02	1.74E-11	4.48E-09	7.45E-13	4.23E-14	8.68E-12	2.23E-09	7.42E-13	4.21E-14	2.65E-12	6.84E-10	5.31E-13	3.01E-14	5.31E-12	1.37E-09	5.31E-13	3.01E-14	5.95E-12	1.53E-09	2.55E-12	1.45E-13
Benzo(a)anthracene	NA	1.30E-01	NA	2.35E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	NA	1.30E-01	NA	2.35E+01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	NA	1.30E-01	NA	2.35E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	NA	1.30E-01	NA	2.35E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	NA	1.00E-03	2.00E-05	4.30E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-chloroisopropyl)ether	NA	1.00E-02	2.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	NA	1.00E-02	3.80E-03	7.37E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Boron	NA	1.00E-03	1.60E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	NA	1.00E-02	1.96E-02	6.33E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	NA	1.00E-02	1.20E-02	1.32E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	NA	1.00E-02	1.12E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	NA	1.00E-03	1.00E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	NA	1.00E-02	NA	2.86E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	NA	2.50E-01	6.30E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	NA	1.00E-02	4.55E-04	2.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlordane	NA	4.00E-02	2.50E-04	7.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	NA	1.00E-02	6.20E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	NA	1.00E-02	2.00E-03	3.05E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (VI)	1.99E+01	1.00E-03	6.00E-05	NA	2.04E-08	3.39E-04	NA	NA	1.01E-08	1.69E-04	NA	NA	3.11E-09	5.18E-05	NA	NA	6.22E-09	1.04E-04	NA	NA	6.96E-09	1.16E-04	NA	NA
Chrysene	NA	1.30E-01	NA	2.35E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	NA	1.00E-03	1.60E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	NA	1.00E-03	1.20E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	NA	1.00E-02	3.40E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexanone	NA	1.00E-02	4.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	NA	1.30E-01	NA	2.35E+01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	NA	1.00E-02	2.50E-05	3.20E+01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-octylphthalate	NA	1.00E-02	3.60E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE E.9-6
Museum Visitor - HWMU - DermalSoilChem

Museum Visitor - Dermal Contact with Soil/Sediment
Risk calculation for HWMU

Intake Equation:			UNITS	Assigned Values			
				child	youth	adult	senior
	CDI =	(CS*AB*SA*EF*ED*AF*CF)/(BW*AT)					
	CDI =	Chronic Daily Intake	mg/kgday				
	CS =	Concentration of chemical in soil	mg/kg	see table of COCs below			
	AB	Absorption factor	--	see table of COCs below			
	SA	Surface area of exposed skin	cm^2/day	2800	4370	5700	5700
	EF =	Exposure frequency	days/yr	10	10	10	20
	ED =	Exposure duration	yrs	3	6	14	7
	AF =	Adherence factor	mg/cm^2	0.2	0.2	0.07	0.07
	CF =	Conversion factor	kg/mg	1.00E-06	1.00E-06	1.00E-06	1.00E-06
	BW =	Body weight	kg	15	47	70	70
	ATc =	Average time for carcinogens	days	25550	25550	25550	25550
	ATn =	Average time for non-carcinogens	days	1095	2190	5110	2555

COC	conc	AB	RfDd	CSFd	CHILD				YOUTH				ADULT				SENIOR				SUM			
					CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR
	mg/kg	unitless	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
Ethyl ether	NA	1.00E-02	1.60E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	NA	1.00E-02	9.70E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoride	NA	1.00E-03	5.82E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlorodibenzofuran	NA	1.00E-02	NA	3.00E+03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlorodibenzo-p-dioxin	NA	3.00E-02	NA	3.00E+03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorodibenzofuran	NA	1.00E-02	NA	3.00E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorodibenzo-p-dioxin	NA	3.00E-02	NA	3.00E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	NA	1.30E-01	NA	2.35E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	5.24E+01	1.00E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	NA	1.00E-03	5.60E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	3.47E-02	1.00E-03	2.10E-05	NA	3.55E-11	1.69E-06	NA	NA	1.77E-11	8.42E-07	NA	NA	5.42E-12	2.58E-07	NA	NA	1.08E-11	5.16E-07	NA	NA	1.21E-11	5.78E-07	NA	NA
Methanol	NA	1.00E-02	4.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl-2-pentanone	NA	1.00E-02	6.40E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene chloride	7.70E-03	1.00E-02	5.70E-02	7.89E-03	7.88E-11	1.38E-09	3.38E-12	2.66E-14	3.92E-11	6.88E-10	3.36E-12	2.65E-14	1.20E-11	2.11E-10	2.40E-12	1.90E-14	2.40E-11	4.22E-10	2.40E-12	1.90E-14	2.89E-11	4.73E-10	1.15E-11	9.11E-14
Molybdenum	NA	1.00E-03	1.90E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	NA	1.00E-03	5.40E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	NA	1.00E-02	5.00E-03	1.96E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-nitrosodipropylamine	NA	1.00E-02	NA	2.80E+01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Octachlorodibenzofuran	NA	1.00E-02	NA	3.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Octochlorodibenzo-p-dioxin	NA	3.00E-02	NA	3.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorodibenzofuran	NA	1.00E-02	NA	1.50E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorodibenzo-p-dioxin	NA	3.00E-02	NA	1.50E+05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	NA	2.50E-01	3.00E-02	1.20E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	NA	1.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	NA	1.00E-03	2.20E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	NA	1.00E-03	9.00E-04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachlorodibenzofuran	NA	1.00E-02	NA	3.00E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachlorodibenzo-p-dioxin	NA	3.00E-02	NA	3.00E+05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethylene	6.87E-02	1.00E-02	1.00E-02	5.40E-01	7.03E-10	7.03E-08	3.01E-11	1.63E-11	3.50E-10	3.50E-08	3.00E-11	1.62E-11	1.07E-10	1.07E-08	2.15E-11	1.16E-11	2.15E-10	2.15E-08	2.15E-11	1.16E-11	2.40E-10	2.40E-08	1.03E-10	5.56E-11
Thallium	NA	1.00E-03	1.60E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	7.60E-03	1.00E-02	6.40E-02	NA	7.77E-11	1.21E-09	NA	NA	3.87E-11	6.05E-10	NA	NA	1.19E-11	1.85E-10	NA	NA	2.37E-11	3.71E-10	NA	NA	2.66E-11	4.16E-10	NA	NA
Tributyl phosphate	NA	1.00E-02	1.00E-01	1.08E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethylene	NA	1.00E-02	4.50E-05	2.67E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trifluorochloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Uranium	NA	1.00E-03	5.10E-04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	NA	1.00E-03	7.00E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	NA	1.00E-02	3.00E-03	1.50E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes	3.00E-02	1.00E-02	1.84E-01	NA	3.07E-10	1.67E-09	NA	NA	1.53E-10	8.31E-10	NA	NA	4.68E-11	2.55E-10	NA	NA	9.37E-11	5.09E-10	NA	NA	1.05E-10	5.71E-10	NA	NA
Zinc	NA	1.00E-03	6.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
																					total =	1.23E-04	total =	5.71E-11

TABLE E.9-6
Museum Visitor - HWMU - IngestSoilChem

Museum Visitor - Ingestion of Soil
Risk calculation for HWMU

Intake Equation:			UNITS	Assigned Values			
				child	youth	adult	senior
	CDI =	(CS*EF*ED*IR*FI*CF)/(BW*AT)	mg/kgday				
	CDI =	Chronic Daily Intake	mg/kgday				
	CS =	Concentration of chemical in soil	mg/kg	see table of COCs below			
	EF =	Exposure frequency	days/yr	10	10	10	20
	ED =	Exposure duration	yrs	3	6	14	7
	IR =	Ingestion rate	mg/day	100	75	50	50
	FI =	Fraction of contaminated soil	unitless	1	1	1	1
	CF =	Conversion factor	kg/mg	1.00E-06	1.00E-06	1.00E-06	1.00E-06
	BW =	Body weight	kg	15	47	70	70
	ATc =	Average time for carcinogens	days	25550	25550	25550	25550
	ATn =	Average time for non-carcinogens	days	1095	2190	5110	2555

COC	conc	RfDo	CSFo	CHILD				YOUTH				ADULT				SENIOR				SUM			
				CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR
	mg/kg	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	1.20E-02	4.00E-03	5.70E-02	2.19E-09	5.48E-07	9.39E-11	5.35E-12	5.25E-10	1.31E-07	4.50E-11	2.56E-12	2.35E-10	5.87E-08	4.70E-11	2.68E-12	4.70E-10	1.17E-07	4.70E-11	2.68E-12	5.43E-10	1.36E-07	2.33E-10	1.33E-11
1,1-Dichloroethylene	NA	5.00E-02	6.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-dichloroethane	NA	2.00E-02	9.10E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	7.20E-03	6.00E-01	NA	1.32E-09	2.19E-09	NA	NA	3.15E-10	5.25E-10	NA	NA	1.41E-10	2.35E-10	NA	NA	2.82E-10	4.70E-10	NA	NA	3.26E-10	5.43E-10	NA	NA
3,3-Dichlorobenzidine	NA	NA	4.50E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	NA	5.00E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroanaline	NA	3.00E-03	2.10E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	NA	9.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	NA	4.00E-04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	NA	2.00E-05	2.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	NA	2.00E-05	2.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	NA	3.00E-04	1.50E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	2.55E+02	2.00E-01	NA	4.68E-05	2.33E-04	NA	NA	1.11E-05	5.57E-05	NA	NA	4.99E-06	2.50E-05	NA	NA	9.98E-06	4.99E-05	NA	NA	1.15E-05	5.77E-05	NA	NA
Benzene	1.70E-03	4.00E-03	5.50E-02	3.11E-10	7.76E-08	1.33E-11	7.32E-13	7.43E-11	1.86E-08	6.37E-12	3.50E-13	3.33E-11	8.32E-09	6.65E-12	3.66E-13	6.65E-11	1.66E-08	6.65E-12	3.66E-13	7.70E-11	1.92E-08	3.30E-11	1.81E-12
Benzo(a)anthracene	NA	NA	7.30E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	NA	NA	7.30E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	NA	NA	7.30E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	NA	NA	7.30E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	NA	2.00E-03	4.30E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-chloroisopropyl)ether	NA	4.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	NA	2.00E-02	1.40E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Boron	NA	2.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	NA	2.00E-02	6.20E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	NA	2.00E-02	7.90E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	NA	1.40E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	NA	1.00E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	NA	NA	2.00E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	NA	1.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	NA	7.00E-04	1.30E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlordane	NA	5.00E-04	3.50E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	NA	2.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	NA	1.00E-02	6.10E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (VI)	1.99E+01	3.00E-03	NA	3.63E-06	1.21E-03	NA	NA	8.70E-07	2.90E-04	NA	NA	3.89E-07	1.30E-04	NA	NA	7.79E-07	2.60E-04	NA	NA	9.01E-07	3.00E-04	NA	NA
Chrysene	NA	NA	7.30E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	NA	2.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	NA	4.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	NA	2.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexanone	NA	5.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	NA	NA	7.30E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	NA	5.00E-05	1.60E+01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-octylphthalate	NA	4.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE E.9-6
Museum Visitor - HWMU - IngestSoilChem

Museum Visitor - Ingestion of Soil
Risk calculation for HWMU

Intake Equation:

		UNITS	Assigned Values			
			child	youth	adult	senior
CDI =	(CS*EF*ED*IR*FI*CF)/(BW*AT)					
CDI =	Chronic Daily Intake	mg/kgday				
CS =	Concentration of chemical in soil	mg/kg	see table of COCs below			
EF =	Exposure frequency	days/yr	10	10	10	20
ED =	Exposure duration	yrs	3	6	14	7
IR =	Ingestion rate	mg/day	100	75	50	50
FI =	Fraction of contaminated soil	unitless	1	1	1	1
CF =	Conversion factor	kg/mg	1.00E-06	1.00E-06	1.00E-06	1.00E-06
BW =	Body weight	kg	15	47	70	70
ATc =	Average time for carcinogens	days	25550	25550	25550	25550
ATn =	Average time for non-carcinogens	days	1095	2190	5110	2555

COC	conc	RfDo	CSFo	CHILD				YOUTH				ADULT				SENIOR				SUM			
				CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR
	mg/kg	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
Ethyl ether	NA	2.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	NA	1.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoride	NA	6.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlorodibenzofuran	NA	NA	1.50E+03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlorodibenzo-p-dioxin	NA	NA	1.50E+03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorodibenzofuran	NA	NA	1.50E+03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorodibenzo-p-dioxin	NA	NA	1.50E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	NA	NA	7.30E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	5.24E+01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	NA	1.40E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	3.47E-02	3.00E-04	NA	6.34E-09	2.11E-05	NA	NA	1.52E-09	5.06E-06	NA	NA	6.79E-10	2.26E-06	NA	NA	1.36E-09	4.53E-06	NA	NA	1.57E-09	5.24E-06	NA	NA
Methanol	NA	5.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl-2-pentanone	NA	8.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene chloride	7.70E-03	6.00E-02	7.50E-03	1.41E-09	2.34E-08	6.03E-11	4.52E-13	3.37E-10	5.61E-09	2.89E-11	2.16E-13	1.51E-10	2.51E-09	3.01E-11	2.26E-13	3.01E-10	5.02E-09	3.01E-11	2.26E-13	3.49E-10	5.81E-09	1.49E-10	1.12E-12
Molybdenum	NA	5.00E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	NA	2.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	NA	2.00E-02	4.90E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-nitrosodipropylamine	NA	NA	7.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Octachlorodibenzofuran	NA	NA	1.50E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Octochlorodibenzo-p-dioxin	NA	NA	1.50E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorodibenzofuran	NA	NA	7.50E+03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorodibenzo-p-dioxin	NA	NA	7.50E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	NA	3.00E-02	1.20E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	NA	5.00E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	NA	5.00E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachlorodibenzofuran	NA	NA	1.50E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachlorodibenzo-p-dioxin	NA	NA	1.50E+05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethylene	6.87E-02	1.00E-02	5.40E-01	1.25E-08	1.25E-06	5.38E-10	2.90E-10	3.00E-09	3.00E-07	2.57E-10	1.39E-10	1.34E-09	1.34E-07	2.69E-10	1.45E-10	2.69E-09	2.69E-07	2.69E-10	1.45E-10	3.11E-09	3.11E-07	1.33E-09	7.20E-10
Thallium	NA	9.00E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	7.60E-03	8.00E-02	NA	1.39E-09	1.74E-08	NA	NA	3.32E-10	4.15E-09	NA	NA	1.49E-10	1.86E-09	NA	NA	2.97E-10	3.72E-09	NA	NA	3.44E-10	4.30E-09	NA	NA
Tributyl phosphate	NA	2.00E-01	5.40E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethylene	NA	3.00E-04	4.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trifluorochloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Uranium	NA	6.00E-04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	NA	7.00E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	NA	3.00E-03	1.50E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes	3.00E-02	2.00E-01	NA	5.48E-09	2.74E-08	NA	NA	1.31E-09	6.56E-09	NA	NA	5.87E-10	2.94E-09	NA	NA	1.17E-09	5.87E-09	NA	NA	1.36E-09	6.79E-09	NA	NA
Zinc	NA	3.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
																				total =	3.64E-04	total =	7.36E-10

TABLE E.9-6
Museum Visitor - HWMU - DermalSWchem

Museum Visitor - Dermal Contact with Surface Water
Risk calculation for HWMU

			UNITS	Assigned Values: child	youth	adult	senior
Intake Equation:	CDI =	(DA*EF*ED*SA)/(BW*AT)					
	CDI =	Chronic Daily Intake	mg/kgday	calculated below			
	DA =	Dermal absorption dose	mg/cm²day	NA	NA	NA	NA
	EF =	Exposure frequency	days/yr	NA	NA	NA	NA
	ED =	Exposure duration	yrs	NA	NA	NA	NA
	SA =	Surface area of skin	cm²	NA	NA	NA	NA
	BW =	Body weight	kg	NA	NA	NA	NA
	ATc =	Average time for carcinogens	days	NA	NA	NA	NA
	ATn =	Average time for non-carcinogens	days	NA	NA	NA	NA
where:	DA = C_v*K_p*CF*ET						
	C_v =	concentation of ith contaminant in surface water	mg/L	see COC list below			
	K_p =	permeability constant for ith contaminant	cm/hr	see COC list below			
	CF =	conversion factor	L/cm³	NA	NA	NA	NA
	ET =	exposure time	hr/d	NA	NA	NA	NA

COC	C_v	K_p	DA	RfDd	CSFd	CHILD CDI	CHILD HQ	CHILD CDI	CHILD ILCR	YOUTH CDI	YOUTH HQ	YOUTH CDI	YOUTH ILCR	ADULT CDI	ADULT HQ	ADULT CDI	ADULT ILCR	SENIOR CDI	SENIOR HQ	SENIOR CDI	SENIOR ILCR	SUM CDI	SUM HQ	SUM CDI	SUM ILCR
	mg/L	cm/hr	mg/cm²day	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	1.00E-03	6.43E-03	NA	3.24E-03	7.04E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethylene	NA	1.59E-02	NA	5.00E-02	6.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-dichloroethane	NA	5.34E-03	NA	2.00E-02	9.10E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	5.00E-03	1.11E-03	NA	4.80E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	NA	1.69E-02	NA	NA	9.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	NA	9.95E-03	NA	3.25E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	NA	2.66E-03	NA	2.40E-03	2.63E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	NA	5.69E-04	NA	7.47E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	NA	1.00E-03	NA	8.00E-06	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	NA	1.29E+00	NA	1.80E-05	2.22E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	NA	5.48E+00	NA	1.80E-05	2.22E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	NA	1.00E-03	NA	1.23E-04	3.66E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	5.61E-02	1.00E-03	NA	1.40E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	1.00E-03	2.07E-02	NA	3.88E-03	5.67E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	NA	9.48E-01	NA	NA	2.35E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	NA	1.24E+00	NA	NA	2.35E+01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	NA	6.99E-01	NA	NA	2.35E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	NA	1.20E+00	NA	NA	2.35E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	NA	1.00E-03	NA	2.00E-05	4.30E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-chloroisopropyl)ether	NA	7.63E-02	NA	2.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	NA	1.97E+00	NA	3.80E-03	7.37E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Boron	NA	1.00E-03	NA	1.80E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	NA	5.02E-03	NA	1.96E-02	6.33E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	NA	2.77E-03	NA	1.20E-02	1.32E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	NA	3.51E-03	NA	1.12E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	NA	1.00E-03	NA	1.00E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	NA	7.97E-02	NA	NA	2.86E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	NA	1.56E-02	NA	6.30E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	NA	2.24E-02	NA	4.55E-04	2.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlordane	NA	1.57E-01	NA	2.50E-04	7.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	NA	4.07E-02	NA	6.20E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	NA	8.92E-03	NA	2.00E-03	3.05E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (VI)	1.80E-03	2.00E-03	NA	6.00E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	NA	1.03E+00	NA	NA	2.35E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	NA	4.00E-04	NA	1.60E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	NA	1.00E-03	NA	1.20E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	NA	1.00E-03	NA	3.40E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexanone	NA	1.80E-03	NA	4.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	NA	1.68E+00	NA	NA	2.35E+01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	NA	4.45E-02	NA	2.50E-05	3.20E+01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-octylphthalate	NA	4.45E+00	NA	3.60E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE E.9-6
Museum Visitor - HWMU - DermalSWchem

Museum Visitor - Dermal Contact with Surface Water
Risk calculation for HWMU

			UNITS	Assigned Values			
				child	youth	adult	senior
Intake Equation:	CDI =	(DA*EF*ED*SA)/(BW*AT)					
	CDI =	Chronic Daily Intake	mg/kgday		calculated below		
	DA =	Dermal absorption dose	mg/cm^{2}day	NA	NA	NA	NA
	EF =	Exposure frequency	days/yr	NA	NA	NA	NA
	ED =	Exposure duration	yrs	NA	NA	NA	NA
	SA =	Surface area of skin	cm^2	NA	NA	NA	NA
	BW =	Body weight	kg	NA	NA	NA	NA
	ATc =	Average time for carcinogens	days	NA	NA	NA	NA
	ATn =	Average time for non-carcinogens	days	NA	NA	NA	NA
where:	DA = C_v*K_p*CF*ET						
	C_v =	concentation of ith contaminant in surface water	mg/L		see COC list below		
	K_p =	permeability constant for ith contaminant	cm/hr		see COC list below		
	CF =	conversion factor	L/cm^3	NA	NA	NA	NA
	ET =	exposure time	hr/d	NA	NA	NA	NA

COC	C_v	K_p	DA	RfDd	CSFd	CHILD				YOUTH				ADULT				SENIOR				SUM			
						CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR
	mg/L	cm/hr	mg/cm^{2}day	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
Ethyl ether	NA	2.88E-03	NA	1.60E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	NA	7.39E-02	NA	9.70E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoride	NA	1.00E-03	NA	5.82E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlorodibenzofuran	NA	2.55E+00	NA	NA	3.00E+03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlorodibenzo-p-dioxin	NA	3.22E+00	NA	NA	3.00E+03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorodibenzofuran	NA	2.38E+00	NA	NA	3.00E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorodibenzo-p-dioxin	NA	5.29E+00	NA	NA	3.00E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	NA	2.23E+00	NA	NA	2.35E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	1.20E-03	1.00E-04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	NA	1.00E-03	NA	1.84E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	6.00E-05	1.00E-03	NA	2.10E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methanol	NA	3.45E-04	NA	4.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone	NA	3.97E-03	NA	6.40E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene chloride	5.00E-03	4.46E-03	NA	5.70E-02	7.89E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Molybdenum	NA	1.00E-03	NA	1.90E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	NA	2.00E-04	NA	5.40E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	NA	1.96E-02	NA	5.00E-03	1.98E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-nitrosodipropylamine	NA	2.63E-03	NA	NA	2.80E+01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Octachlorodibenzofuran	NA	4.78E+00	NA	NA	3.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Octochlorodibenzo-p-dioxin	NA	1.65E+01	NA	NA	3.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorodibenzofuran	NA	1.06E+00	NA	NA	1.50E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorodibenzo-p-dioxin	NA	3.79E-01	NA	NA	1.50E+05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	NA	1.95E-01	NA	3.00E-02	1.20E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	NA	2.29E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	NA	1.00E-03	NA	2.20E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	NA	6.00E-04	NA	9.00E-04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachlorodibenzofuran	NA	1.12E+00	NA	NA	3.00E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachlorodibenzo-p-dioxin	NA	1.39E+00	NA	NA	3.00E+05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethylene	1.00E-03	4.81E-02	NA	1.00E-02	5.40E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	NA	1.00E-03	NA	1.80E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1.00E-03	4.53E-02	NA	6.40E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tributyl phosphate	NA	3.13E-02	NA	1.00E-01	1.08E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethylene	NA	1.57E-02	NA	4.50E-05	2.67E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trifluorochloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Uranium	NA	1.00E-03	NA	5.10E-04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	NA	1.00E-03	NA	7.00E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	NA	1.13E-02	NA	3.00E-03	1.50E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes	1.00E-03	7.04E-02	NA	1.84E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	NA	6.00E-04	NA	6.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
																						total =	0.00E+00	total =	0.00E+00

TABLE E.9-6
Museum Visitor - HWMU - IngestSWchem

Museum Visitor - Ingestion of Surface Water
Risk calculation for HWMU

Intake Equation:

			UNITS	Assigned Values			
				child	youth	adult	senior
CDI =	(CW*EF*ED*IR)/(BW*AT)		mg/kgday				
CDI =	Chronic Daily Intake		mg/kgday				
CW =	Concentration of chemical in water		mg/L	see COC table below			
EF =	Exposure frequency		days/yr	NA	NA	NA	NA
ED =	Exposure duration		yrs	NA	NA	NA	NA
IR =	Ingestion rate		L/day	NA	NA	NA	NA
BW =	Body weight		kg	NA	NA	NA	NA
ATc =	Average time for carcinogens		days	NA	NA	NA	NA
ATn =	Average time for non-carcinogens		days	NA	NA	NA	NA

COC	CW	RfDo	CSFo	CHILD				YOUTH				ADULT				SENIOR				SUM			
				CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR
	mg/L	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	1.00E-03	4.00E-03	5.70E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethylene	NA	5.00E-02	6.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-dichloroethane	NA	2.00E-02	9.10E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	5.00E-03	6.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	NA	NA	4.50E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	NA	5.00E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroanaline	NA	3.00E-03	2.10E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	NA	9.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	NA	4.00E-04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	NA	2.00E-05	4.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	NA	2.00E-05	4.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	NA	3.00E-04	1.50E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	5.61E-02	2.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	1.00E-03	4.00E-03	5.50E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	NA	NA	7.30E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	NA	NA	7.30E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	NA	NA	7.30E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	NA	NA	7.30E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	NA	2.00E-03	4.30E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-chloroisopropyl)ether	NA	4.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	NA	2.00E-02	1.40E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Boron	NA	2.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	NA	2.00E-02	6.20E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	NA	2.00E-02	7.90E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	NA	1.40E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	NA	1.00E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	NA	NA	2.00E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	NA	1.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	NA	7.00E-04	1.30E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlordane	NA	5.00E-04	3.50E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	NA	2.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	NA	1.00E-02	6.10E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (VI)	1.80E-03	3.00E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	NA	NA	7.30E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	NA	2.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	NA	4.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	NA	2.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexanone	NA	5.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	NA	NA	7.30E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	NA	5.00E-05	1.60E+01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-octylphthalate	NA	4.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE E.9-6
Museum Visitor - HWMU - IngestSWchem

Museum Visitor - Ingestion of Surface Water
Risk calculation for HWMU

Intake Equation:

		UNITS	Assigned Values			
			child	youth	adult	senior
CDI =	(CW*EF*ED*IR)/(BW*AT)					
CDI =	Chronic Daily Intake	mg/kgday				
CW =	Concentration of chemical in water	mg/L	see COC table below			
EF =	Exposure frequency	days/yr	NA	NA	NA	NA
ED =	Exposure duration	yrs	NA	NA	NA	NA
IR =	Ingestion rate	L/day	NA	NA	NA	NA
BW =	Body weight	kg	NA	NA	NA	NA
ATc =	Average time for carcinogens	days	NA	NA	NA	NA
ATn =	Average time for non-carcinogens	days	NA	NA	NA	NA

COC	CW	RfDo	CSFo	CHILD				YOUTH				ADULT				SENIOR				SUM			
				CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR
	mg/L	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
Ethyl ether	NA	2.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	NA	1.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoride	NA	6.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlorodibenzofuran	NA	NA	1.50E+03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlorodibenzo-p-dioxin	NA	NA	1.50E+03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorodibenzofuran	NA	NA	1.50E+03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorodibenzo-p-dioxin	NA	NA	1.50E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	NA	NA	7.30E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	1.20E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	NA	4.60E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	6.00E-05	3.00E-04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methanol	NA	5.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone	NA	8.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene chloride	5.00E-03	6.00E-02	7.50E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Molybdenum	NA	5.00E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	NA	2.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	NA	2.00E-02	4.90E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-nitrosodipropylamine	NA	NA	7.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Octachlorodibenzofuran	NA	NA	1.50E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Octochlorodibenzo-p-dioxin	NA	NA	1.50E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorodibenzofuran	NA	NA	7.50E+03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorodibenzo-p-dioxin	NA	NA	7.50E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	NA	3.00E-02	1.20E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	NA	5.00E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	NA	5.00E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachlorodibenzofuran	NA	NA	1.50E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachlorodibenzo-p-dioxin	NA	NA	1.50E+05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethylene	1.00E-03	1.00E-02	5.40E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	NA	9.00E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1.00E-03	8.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tributyl phosphate	NA	2.00E-01	5.40E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethylene	NA	3.00E-04	4.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trifluorochloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Uranium	NA	6.00E-04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	NA	7.00E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	NA	3.00E-03	1.50E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes	1.00E-03	2.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	NA	3.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
																				total =	0.00E+00	total =	0.00E+00

TABLE E.9-6
Museum Visitor - HWMU - SumPaths

Museum Visitor - Summation of all Pathways
Risk calculation for HWMU

	HQ	ILCR
Inhale	2.14E-05	3.09E-09
Dermal Soil	1.23E-04	5.71E-11
Ingest Soil	3.64E-04	7.36E-10
Dermal Surface Water	NA	NA
Ingest Surface Water	NA	NA
SUM	**5.08E-04**	**3.89E-09**

Summation of all paths for individual chemicals

	ILCR	HQ
1,1,2-Trichloroethane	1.45E-11	1.49E-07
1,1-Dichloroethylene	NA	NA
1,2-dichloroethane	NA	NA
2-Butanone	no CSFs	5.96E-10
3,3-Dichlorobenzidine	NA	no RfDs
4-Methylphenol	no CSFs	NA
4-Nitroanaline	NA	NA
Acetone	no CSFs	NA
Antimony	no CSFs	NA
Aroclor-1254	NA	NA
Aroclor-1260	NA	NA
Arsenic	NA	NA
Barium	no CSFs	7.95E-05
Benzene	1.96E-12	2.08E-08
Benzo(a)anthracene	NA	no RfDs
Benzo(a)pyrene	NA	no RfDs
Benzo(b)fluoranthene	NA	no RfDs
Benzo(k)fluoranthene	NA	no RfDs
Beryllium	NA	NA
Bis(2-chloroisopropyl)ether	no CSFs	NA
Bis(2-ethylhexyl)phthalate	NA	NA
Boron	no CSFs	NA
Bromodichloromethane	NA	NA
Bromoform	NA	NA
Bromomethane	no CSFs	NA
Cadmium	NA	NA
Carbazole	NA	no RfDs
Carbon disulfide	no CSFs	NA
Carbon tetrachloride	NA	NA
Chlordane	NA	NA
Chlorobenzene	no CSFs	NA
Chloroform	NA	NA
Chromium (VI)	3.09E-09	4.22E-04
Chrysene	NA	no RfDs
Cobalt	NA	NA
Copper	no CSFs	NA
Cyanide	no CSFs	NA
Cyclohexanone	no CSFs	NA
Dibenzo(a,h)anthracene	NA	no RfDs
Dieldrin	NA	NA
Di-n-octylphthalate	no CSFs	NA

TABLE E.9-6
Museum Visitor - HWMU - SumPaths

Summation of all paths for individual chemicals (continued)

	ILCR	HQ
Ethyl ether	no CSFs	NA
Ethylbenzene	NA	NA
Fluoride	no CSFs	NA
Heptachlorodibenzofuran	NA	no RfDs
Heptachlorodibenzo-p-dioxin	NA	no RfDs
Hexachlorodibenzofuran	NA	no RfDs
Hexachlorodibenzo-p-dioxin	NA	no RfDs
Indeno(1,2,3-cd)pyrene	NA	no RfDs
Lead	no CSFs	no RfDs
Manganese	no CSFs	NA
Mercury	no CSFs	5.81E-06
Methanol	no CSFs	NA
Methyl-2-pentanone	no CSFs	NA
Methylene chloride	1.21E-12	6.28E-09
Molybdenum	no CSFs	NA
Nickel	no CSFs	NA
N-nitrosodiphenylamine	NA	NA
N-nitrosodipropylamine	NA	no RfDs
Octachlorodibenzofuran	NA	no RfDs
Octochlorodibenzo-p-dioxin	NA	no RfDs
Pentachlorodibenzofuran	no CSFs	no RfDs
Pentachlorodibenzo-p-dioxin	NA	no RfDs
Pentachlorophenol	NA	NA
Phenanthrene	no CSFs	no RfDs
Selenium	no CSFs	NA
Silver	no CSFs	NA
Tetrachlorodibenzofuran	no CSFs	no RfDs
Tetrachlorodibenzo-p-dioxin	no CSFs	no RfDs
Tetrachloroethylene	7.75E-10	3.35E-07
Thallium	no CSFs	NA
Toluene	no CSFs	4.72E-09
Tributyl phosphate	NA	NA
Trichloroethylene	NA	NA
Trifluorochloromethane	no CSFs	no RfDs
Uranium	no CSFs	NA
Vanadium	no CSFs	NA
Vinyl chloride	NA	NA
Xylenes	no CSFs	7.37E-09
Zinc	no CSFs	NA
SUM	**3.89E-09**	**5.08E-04**

APPENDIX E.10
Uncertainty Analysis

Table

E.10-1a	Undeveloped Park User	- Only available on CD ROM.
E.10-1b	Undeveloped Park User	- Only available on CD ROM.
E.10-2a	Undeveloped Park User	- Only available on CD ROM.
E.10-2b	Undeveloped Park User	- Only available on CD ROM.
E.10-3a	Undeveloped Park User	- Only available on CD ROM.
E.10-3b	Undeveloped Park User	- Only available on CD ROM.
E.10-4	Undeveloped Park User	Hard copy provided in this appendix, also available on CD ROM.
E.10-5a	Groundskeeper / Sampler	Only available on CD ROM.
E.10-5b	Groundskeeper / Sampler	Only available on CD ROM.
E.10-6	Groundskeeper / Sampler	Only available on CD ROM.

TABLE E.10-4

Undeveloped Park User - 70 Year Exposure Factor for Child, Youth, Adult, and Senior with Maximum Uranium Concentration and No Organic Constituents in Surface Water

InhaleChem

Undeveloped Park User - Inhalation of Gases & Particulates

Risk calculation in Zone 5 for exposure duration of 70 years loaded on child, youth, adult, and senior; maximum uranium concentration in surface water; remove one-half detection limit values for organic COCs in surface water

Intake Equation:			UNITS	Assigned Values			
	CDI =	(CA*EF*ED*IR*ET)/(BW*AT)					
	CDI =	Chronic Daily Intake	mg/kgday	child	youth	adult	senior
	CA =	Concentration of chemical in air	mg/m³	see table of COCs below			
	EF =	Exposure frequency	days/yr	20	40	20	40
	ED =	Exposure duration	yrs	6	12	37	15
	IR =	Inhalation rate	m³/hr	1	1	1	1
	ET =	Exposure time	hrs/day	2	2	2	2
	BW =	Body weight	kg	15	47	70	70
	ATc =	Average time for carcinogens	days	25550	25550	25550	25550
	ATn =	Average time for non-carcinogens	days	2190	4380	13505	5475

COC	conc	RfDi	CSFi	CHILD				YOUTH				ADULT				SENIOR				SUM			
				CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR
	mg/m³	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	8.38E-12	NA	5.60E-02	NA	NA	5.25E-15	2.94E-16	NA	NA	6.70E-15	3.75E-16	NA	NA	6.93E-15	3.88E-16	NA	NA	5.62E-15	3.15E-16	NA	NA	2.45E-14	1.37E-15
1,1-Dichloroethylene	1.45E-11	5.71E-02	1.75E-01	1.06E-13	1.86E-12	9.08E-15	1.59E-15	6.77E-14	1.18E-12	1.16E-14	2.03E-15	2.27E-14	3.98E-13	1.20E-14	2.10E-15	4.54E-14	7.96E-13	9.73E-15	1.70E-15	4.24E-14	7.43E-13	4.24E-14	7.42E-15
1,2-dichloroethane	7.19E-12	NA	9.10E-02	NA	NA	4.50E-15	4.10E-16	NA	NA	5.75E-15	5.23E-16	NA	NA	5.95E-15	5.41E-16	NA	NA	4.82E-15	4.39E-16	NA	NA	2.10E-14	1.91E-15
2-Butanone	NA	1.43E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	NA	1.14E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	1.31E-10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	5.78E-08	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	1.75E-09	NA	2.00E+00	NA	NA	1.10E-12	2.20E-12	NA	NA	1.40E-12	2.80E-12	NA	NA	1.45E-12	2.90E-12	NA	NA	1.18E-12	2.35E-12	NA	NA	5.13E-12	1.03E-11
Aroclor-1260	1.58E-10	NA	2.00E+00	NA	NA	9.89E-14	1.98E-13	NA	NA	1.26E-13	2.52E-13	NA	NA	1.31E-13	2.61E-13	NA	NA	1.06E-13	2.12E-13	NA	NA	4.62E-13	9.23E-13
Arsenic	2.90E-07	NA	1.51E+01	NA	NA	1.81E-10	2.74E-09	NA	NA	2.32E-10	3.50E-09	NA	NA	2.40E-10	3.62E-09	NA	NA	1.94E-10	2.94E-09	NA	NA	8.47E-10	1.28E-08
Barium	4.68E-06	1.43E-04	NA	3.42E-08	2.39E-04	NA	NA	2.18E-08	1.52E-04	NA	NA	7.32E-09	5.12E-05	NA	NA	1.46E-08	1.02E-04	NA	NA	1.37E-08	9.56E-05	NA	NA
Benzene	3.58E-12	8.57E-03	2.73E-02	2.61E-14	3.05E-12	2.24E-15	6.12E-17	1.67E-14	1.95E-12	2.86E-15	7.81E-17	5.60E-15	6.53E-13	2.96E-15	8.08E-17	1.12E-14	1.31E-12	2.40E-15	6.55E-17	1.05E-14	1.22E-12	1.05E-14	2.86E-16
Benzo(a)anthracene	2.24E-09	NA	3.08E-01	NA	NA	1.40E-12	4.31E-13	NA	NA	1.79E-12	5.50E-13	NA	NA	1.85E-12	5.70E-13	NA	NA	1.50E-12	4.62E-13	NA	NA	6.54E-12	2.01E-12
Benzo(a)pyrene	2.26E-09	NA	3.08E-01	NA	NA	1.42E-12	4.36E-13	NA	NA	1.81E-12	5.57E-13	NA	NA	1.87E-12	5.76E-13	NA	NA	1.52E-12	4.67E-13	NA	NA	6.61E-12	2.04E-12
Benzo(b)fluoranthene	3.56E-09	NA	3.08E+00	NA	NA	2.23E-12	6.87E-12	NA	NA	2.85E-12	8.76E-12	NA	NA	2.95E-12	9.07E-12	NA	NA	2.39E-12	7.36E-12	NA	NA	1.04E-11	3.21E-11
Benzo(k)fluoranthene	7.92E-10	NA	3.08E-02	NA	NA	4.96E-13	1.53E-14	NA	NA	6.34E-13	1.95E-14	NA	NA	6.56E-13	2.02E-14	NA	NA	5.32E-13	1.64E-14	NA	NA	2.32E-12	7.14E-14
Beryllium	3.05E-08	5.71E-06	8.40E+00	2.22E-10	3.90E-05	1.91E-11	1.60E-10	1.42E-10	2.49E-05	2.43E-11	2.05E-10	4.77E-11	8.35E-06	2.52E-11	2.12E-10	9.54E-11	1.67E-05	2.04E-11	1.72E-10	8.90E-11	1.56E-05	8.90E-11	7.48E-10
Bis(2-chloroisopropyl)ether	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Boron	NA	5.71E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	3.00E-12	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	NA	NA	3.85E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	NA	1.43E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	1.84E-08	NA	6.30E+00	NA	NA	1.15E-11	7.25E-11	NA	NA	1.47E-11	9.26E-11	NA	NA	1.52E-11	9.59E-11	NA	NA	1.23E-11	7.77E-11	NA	NA	5.38E-11	3.39E-10
Carbazole	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	NA	2.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	3.53E-12	NA	5.25E-02	NA	NA	2.21E-15	1.16E-16	NA	NA	2.82E-15	1.48E-16	NA	NA	2.92E-15	1.53E-16	NA	NA	2.37E-15	1.24E-16	NA	NA	1.03E-14	5.42E-16
Chlordane	NA	2.00E-04	3.50E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	NA	1.43E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	NA	NA	8.05E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (VI)	6.37E-07	2.86E-05	4.20E+01	4.66E-09	1.63E-04	3.99E-10	1.68E-08	2.97E-09	1.04E-04	5.10E-10	2.14E-08	9.98E-10	3.49E-05	5.27E-10	2.22E-08	2.00E-09	6.98E-05	4.28E-10	1.80E-08	1.86E-09	6.52E-05	1.86E-09	7.83E-08
Chrysene	2.22E-09	NA	3.08E-03	NA	NA	1.39E-12	4.28E-15	NA	NA	1.77E-12	5.46E-15	NA	NA	1.84E-12	5.65E-15	NA	NA	1.49E-12	4.58E-15	NA	NA	6.49E-12	2.00E-14
Cobalt	NA	5.71E-06	9.80E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexanone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	3.96E-10	NA	3.08E+00	NA	NA	2.48E-13	7.64E-13	NA	NA	3.17E-13	9.76E-13	NA	NA	3.28E-13	1.01E-12	NA	NA	2.66E-13	8.19E-13	NA	NA	1.16E-12	3.57E-12
Dieldrin	1.42E-11	NA	1.61E+01	NA	NA	8.89E-15	1.43E-13	NA	NA	1.13E-14	1.83E-13	NA	NA	1.17E-14	1.89E-13	NA	NA	9.52E-15	1.53E-13	NA	NA	4.15E-14	6.68E-13
Di-n-octylphthalate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE E.10-4

Undeveloped Park User - 70 Year Exposure Factor for Child, Youth, Adult, and Senior with Maximum Uranium Concentration and No Organic Constituents in Surface Water
InhaleChem

Undeveloped Park User - Inhalation of Gases & Particulates
Risk calculation in Zone 5 for exposure duration of 70 years loaded on child, youth, adult, and senior; maximum uranium concentration in surface water; remove one-half detection limit values for organic COCs in surface water

Intake Equation:			UNITS	Assigned Values			
				child	youth	adult	senior
	CDI =	(CA*EF*ED*IR*ET)/(BW*AT)					
	CDI =	Chronic Daily Intake	mg/kgday				
	CA =	Concentration of chemical in air	mg/m³	see table of COCs below			
	EF =	Exposure frequency	days/yr	20	40	20	40
	ED =	Exposure duration	yrs	6	12	37	15
	IR =	Inhalation rate	m³/hr	1	1	1	1
	ET =	Exposure time	hrs/day	2	2	2	2
	BW =	Body weight	kg	15	47	70	70
	ATc =	Average time for carcinogens	days	25550	25550	25550	25550
	ATn =	Average time for non-carcinogens	days	2190	4380	13505	5475

COC	conc	RfDi	CSFi	CHILD				YOUTH				ADULT				SENIOR				SUM			
				CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR
	mg/m³	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
Ethyl ether	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	3.58E-12	2.86E-01	3.85E-03	2.61E-14	9.14E-14	2.24E-15	8.62E-18	1.67E-14	5.83E-14	2.86E-15	1.10E-17	5.60E-15	1.96E-14	2.96E-15	1.14E-17	1.12E-14	3.92E-14	2.40E-15	9.24E-18	1.05E-14	3.66E-14	1.05E-14	4.03E-17
Fluoride	8.55E-08	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlorodibenzofuran	NA	NA	1.16E+03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlorodibenzo-p-dioxin	NA	NA	1.16E+03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorodibenzofuran	NA	NA	1.16E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorodibenzo-p-dioxin	NA	NA	1.16E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	1.47E-09	NA	3.08E-01	NA	NA	9.20E-13	2.83E-13	NA	NA	1.17E-12	3.62E-13	NA	NA	1.22E-12	3.75E-13	NA	NA	9.86E-13	3.04E-13	NA	NA	4.30E-12	1.32E-12
Lead	7.70E-07	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	NA	1.43E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	1.84E-09	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methanol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl-2-pentanone	1.84E-11	8.57E-01	NA	1.35E-13	1.57E-13	NA	NA	8.59E-14	1.00E-13	NA	NA	2.88E-14	3.36E-14	NA	NA	5.77E-14	6.73E-14	NA	NA	5.38E-14	6.28E-14	NA	NA
Methylene chloride	3.52E-11	8.57E-01	1.65E-03	2.57E-13	3.00E-13	2.20E-14	3.64E-17	1.64E-13	1.92E-13	2.81E-14	4.64E-17	5.51E-14	6.43E-14	2.91E-14	4.81E-17	1.10E-13	1.29E-13	2.36E-14	3.90E-17	1.03E-13	1.20E-13	1.03E-13	1.70E-16
Molybdenum	1.03E-07	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-nitrosodipropylamine	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Octochlorodibenzofuran	NA	NA	1.16E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Octochlorodibenzo-p-dioxin	NA	NA	1.16E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorodibenzofuran	NA	NA	5.78E+03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorodibenzo-p-dioxin	NA	NA	5.78E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	3.23E-09	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	3.29E-08	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	1.89E-08	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachlorodibenzofuran	NA	NA	1.16E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachlorodibenzo-p-dioxin	NA	NA	1.16E+05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethylene	2.42E-11	1.71E-01	2.07E-02	1.77E-13	1.03E-12	1.51E-14	3.13E-16	1.13E-13	6.59E-13	1.93E-14	4.00E-16	3.79E-14	2.21E-13	2.00E-14	4.14E-16	7.57E-14	4.43E-13	1.62E-14	3.36E-16	7.07E-14	4.13E-13	7.07E-14	1.46E-15
Thallium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1.57E-11	1.43E+00	NA	1.15E-13	8.04E-14	NA	NA	7.34E-14	5.13E-14	NA	NA	2.46E-14	1.72E-14	NA	NA	4.93E-14	3.44E-14	NA	NA	4.60E-14	3.22E-14	NA	NA
Tributyl phosphate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethylene	9.65E-12	1.14E-02	4.00E-01	7.05E-14	6.19E-12	6.05E-15	2.42E-15	4.50E-14	3.95E-12	7.72E-15	3.09E-15	1.51E-14	1.33E-12	7.99E-15	3.20E-15	3.02E-14	2.65E-12	6.48E-15	2.59E-15	2.82E-14	2.48E-12	2.82E-14	1.13E-14
Trifluorochloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Uranium	4.22E-07	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	NA	2.86E-02	3.08E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes	3.43E-11	2.86E-02	NA	2.51E-13	8.76E-12	NA	NA	1.60E-13	5.59E-12	NA	NA	5.37E-14	1.88E-12	NA	NA	1.07E-13	3.75E-12	NA	NA	1.00E-13	3.51E-12	NA	NA
Zinc	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
																				total =	1.76E-04	total =	9.22E-08

Air concentration is derived using an air particulate value of 26 ug/m³ (2005 SER background average from monitor AMS-12) multiplied by the soil concentration.

TABLE E.10-4

Undeveloped Park User - 70 Year Exposure Factor for Child, Youth, Adult, and Senior with Maximum Uranium Concentration and No Organic Constituents in Surface Water

DermalSoilChem

Undeveloped Park User - Dermal Contact with Soil/Sediment

Risk calculation in Zone 5 for exposure duration of 70 years loaded on child, youth, adult, and senior; maximum uranium concentration in surface water; remove one-half detection limit values for organic COCs in surface water

Intake Equation:			UNITS	Assigned Values			
				child	youth	adult	senior
	CDI =	(CS*AB*SA*EF*ED*AF*CF)/(BW*AT)	mg/kgday				
	CDI =	Chronic Daily Intake	mg/kgday				
	CS =	Concentration of chemical in soil	mg/kg	see table of COCs below			
	AB	Absorption factor	~	see table of COCs below			
	SA	Surface area of exposed skin	cm^2/day	2800	4370	5700	5700
	EF =	Exposure frequency	days/yr	20	40	20	40
	ED =	Exposure duration	yrs	6	12	37	15
	AF =	Adherence factor	mg/cm^2	0.2	0.2	0.07	0.07
	CF =	Conversion factor	kg/mg	1.00E-06	1.00E-06	1.00E-06	1.00E-06
	BW =	Body weight	kg	15	47	70	70
	ATc =	Average time for carcinogens	days	25550	25550	25550	25550
	ATn =	Average time for non-carcinogens	days	2190	4380	13505	5475

COC	conc	AB	RfDd	CSFd	CHILD				YOUTH				ADULT				SENIOR				SUM			
					CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR
	mg/kg	unitless	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	3.22E-04	1.00E-02	3.24E-03	7.04E-02	6.59E-12	2.03E-09	5.65E-13	3.98E-14	6.57E-12	2.03E-09	1.13E-12	7.93E-14	1.01E-12	3.11E-10	5.32E-13	3.75E-14	2.01E-12	6.21E-10	4.31E-13	3.04E-14	2.85E-12	8.19E-10	2.65E-12	1.87E-13
1,1-Dichloroethylene	5.58E-04	1.00E-02	5.00E-02	6.00E-01	1.14E-11	2.28E-10	9.78E-13	5.87E-13	1.14E-11	2.27E-10	1.95E-12	1.17E-12	1.74E-12	3.49E-11	9.21E-13	5.53E-13	3.49E-12	6.97E-11	7.47E-13	4.48E-13	4.60E-12	9.19E-11	4.60E-12	2.76E-12
1,2-dichloroethane	2.76E-04	1.00E-02	2.00E-02	9.10E-02	5.65E-12	2.83E-10	4.85E-13	4.41E-14	5.63E-12	2.82E-10	9.66E-13	8.79E-14	8.63E-13	4.32E-11	4.56E-13	4.15E-14	1.73E-12	8.63E-11	3.70E-13	3.37E-14	2.28E-12	1.14E-10	2.28E-12	2.07E-13
2-Butanone	NA	1.00E-02	4.80E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	NA	1.00E-02	NA	9.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	NA	1.00E-02	3.25E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroanaline	NA	1.00E-02	2.40E-03	2.63E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	5.04E-03	1.00E-02	7.47E-01	NA	1.03E-10	1.38E-10	NA	NA	1.03E-10	1.38E-10	NA	NA	1.57E-11	2.11E-11	NA	NA	3.15E-11	4.22E-11	NA	NA	4.15E-11	5.56E-11	NA	NA
Antimony	2.22E+00	1.00E-03	8.00E-06	NA	4.55E-09	5.68E-04	NA	NA	4.53E-09	5.66E-04	NA	NA	6.94E-10	8.68E-05	NA	NA	1.39E-09	1.74E-04	NA	NA	1.83E-09	2.29E-04	NA	NA
Aroclor-1254	6.75E-02	1.40E-01	1.80E-05	2.22E+00	1.93E-08	1.07E-03	1.66E-09	3.68E-09	1.92E-08	1.07E-03	3.30E-09	7.33E-09	2.95E-09	1.64E-04	1.56E-09	3.46E-09	5.90E-09	3.28E-04	1.26E-09	2.81E-09	7.78E-09	4.32E-04	7.78E-09	1.73E-08
Aroclor-1260	6.07E-03	1.40E-01	1.80E-05	2.22E+00	1.74E-09	9.66E-05	1.49E-10	3.31E-10	1.73E-09	9.62E-05	2.97E-10	6.59E-10	2.66E-10	1.48E-05	1.40E-10	3.12E-10	5.31E-10	2.95E-05	1.14E-10	2.53E-10	7.00E-10	3.89E-05	7.00E-10	1.55E-09
Arsenic	1.11E+01	3.00E-02	1.23E-04	3.66E+00	6.84E-07	5.56E-03	5.86E-08	2.15E-07	6.81E-07	5.54E-03	1.17E-07	4.28E-07	1.04E-07	8.49E-04	5.52E-08	2.02E-07	2.09E-07	1.70E-03	4.48E-08	1.64E-07	2.75E-07	2.24E-03	2.75E-07	1.01E-06
Barium	1.80E+02	1.00E-03	1.40E-02	NA	3.68E-07	2.63E-05	NA	NA	3.66E-07	2.62E-05	NA	NA	5.62E-08	4.01E-06	NA	NA	1.12E-07	8.02E-06	NA	NA	1.48E-07	1.06E-05	NA	NA
Benzene	1.38E-04	1.00E-02	3.88E-03	5.67E-02	2.81E-12	7.25E-10	2.41E-13	1.37E-14	2.80E-12	7.23E-10	4.81E-13	2.73E-14	4.30E-13	1.11E-10	2.27E-13	1.29E-14	8.59E-13	2.21E-10	1.84E-13	1.04E-14	1.13E-12	2.92E-10	1.13E-12	6.43E-14
Benzo(a)anthracene	8.60E-02	1.30E-01	NA	2.35E+00	NA	NA	1.96E-09	4.61E-09	NA	NA	3.91E-09	9.18E-09	NA	NA	1.85E-09	4.34E-09	NA	NA	1.50E-09	3.52E-09	NA	NA	9.21E-09	2.16E-08
Benzo(a)pyrene	8.70E-02	1.30E-01	NA	2.35E+01	NA	NA	1.98E-09	4.66E-08	NA	NA	3.95E-09	9.28E-08	NA	NA	1.87E-09	4.39E-08	NA	NA	1.51E-09	3.56E-08	NA	NA	9.31E-09	2.19E-07
Benzo(b)fluoranthene	1.37E-01	1.30E-01	NA	2.35E+00	NA	NA	3.12E-09	7.33E-09	NA	NA	6.22E-09	1.46E-08	NA	NA	2.94E-09	6.90E-09	NA	NA	2.38E-09	5.60E-09	NA	NA	1.47E-08	3.44E-08
Benzo(k)fluoranthene	3.05E-02	1.30E-01	NA	2.35E-01	NA	NA	6.95E-10	1.63E-10	NA	NA	1.38E-09	3.25E-10	NA	NA	6.54E-10	1.54E-10	NA	NA	5.30E-10	1.25E-10	NA	NA	3.26E-09	7.67E-10
Beryllium	1.17E+00	1.00E-03	2.00E-05	4.30E+02	2.40E-09	1.20E-04	2.05E-10	8.83E-08	2.39E-09	1.19E-04	4.09E-10	1.76E-07	3.66E-10	1.83E-05	1.93E-10	8.31E-08	7.32E-10	3.66E-05	1.57E-10	6.74E-08	9.65E-10	4.82E-05	9.65E-10	4.15E-07
Bis(2-chloroisopropyl)ether	NA	1.00E-02	2.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	NA	1.00E-02	3.80E-03	7.37E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Boron	NA	1.00E-03	1.80E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	1.15E-04	1.00E-02	1.96E-02	6.33E-02	2.36E-12	1.20E-10	2.02E-13	1.28E-14	2.35E-12	1.20E-10	4.03E-13	2.55E-14	3.60E-13	1.84E-11	1.90E-13	1.20E-14	7.20E-13	3.67E-11	1.54E-13	9.77E-15	9.50E-13	4.84E-11	9.50E-13	6.01E-14
Bromoform	NA	1.00E-02	1.20E-02	1.32E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	NA	1.00E-02	1.12E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	7.07E-01	1.00E-03	1.00E-05	NA	1.45E-09	1.45E-04	NA	NA	1.44E-09	1.44E-04	NA	NA	2.21E-10	2.21E-05	NA	NA	4.42E-10	4.42E-05	NA	NA	5.83E-10	5.83E-05	NA	NA
Carbazole	NA	1.00E-02	NA	2.86E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	NA	2.50E-01	6.30E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	1.36E-04	1.00E-02	4.55E-04	2.00E-01	2.78E-12	6.10E-09	2.38E-13	4.76E-14	2.76E-12	6.08E-09	4.74E-13	9.48E-14	4.24E-13	9.31E-10	2.24E-13	4.48E-14	8.47E-13	1.86E-09	1.82E-13	3.63E-14	1.12E-12	2.46E-09	1.12E-12	2.23E-13
Chlordane	NA	4.00E-02	2.50E-04	7.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	NA	1.00E-02	6.20E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	NA	1.00E-02	2.00E-03	3.05E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (VI)	2.45E+01	1.00E-03	6.00E-05	NA	5.01E-08	8.36E-04	NA	NA	5.00E-08	8.33E-04	NA	NA	7.66E-09	1.28E-04	NA	NA	1.53E-08	2.55E-04	NA	NA	2.02E-08	3.36E-04	NA	NA
Chrysene	8.53E-02	1.30E-01	NA	2.35E-02	NA	NA	1.94E-09	4.57E-11	NA	NA	3.87E-09	9.10E-11	NA	NA	1.83E-09	4.30E-11	NA	NA	1.48E-09	3.49E-11	NA	NA	9.13E-09	2.15E-10
Cobalt	NA	1.00E-03	1.60E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	NA	1.00E-03	1.20E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	NA	1.00E-02	3.40E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexanone	NA	1.00E-02	4.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	1.52E-02	1.30E-01	NA	2.35E+01	NA	NA	3.47E-10	8.17E-09	NA	NA	6.92E-10	1.63E-08	NA	NA	3.27E-10	7.69E-09	NA	NA	2.65E-10	6.23E-09	NA	NA	1.63E-09	3.84E-08
Dieldrin	5.46E-04	1.00E-02	2.50E-05	3.20E+01	1.12E-11	4.47E-07	9.57E-13	3.06E-11	1.11E-11	4.45E-07	1.91E-12	6.10E-11	1.70E-12	6.82E-08	9.01E-13	2.88E-11	3.41E-12	1.36E-07	7.31E-13	2.34E-11	4.50E-12	1.80E-07	4.50E-12	1.44E-10
Di-n-octylphthalate	NA	1.00E-02	3.60E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE E.10-4

Undeveloped Park User - 70 Year Exposure Factor for Child, Youth, Adult, and Senior with Maximum Uranium Concentration and No Organic Constituents in Surface Water

DermalSoilChem

Undeveloped Park User - Dermal Contact with Soil/Sediment

Risk calculation in Zone 5 for exposure duration of 70 years loaded on child, youth, adult, and senior; maximum uranium concentration in surface water; remove one-half detection limit values for organic COCs in surface water

Intake Equation:

CDI = (CS*AB*SA*EF*ED*AF*CF)/(BW*AT)

		UNITS	Assigned Values			
			child	youth	adult	senior
CDI =	Chronic Daily Intake	mg/kgday				
CS =	Concentration of chemical in soil	mg/kg	see table of COCs below			
AB	Absorption factor	–	see table of COCs below			
SA	Surface area of exposed skin	cm^2/day	2800	4370	5700	5700
EF =	Exposure frequency	days/yr	20	40	20	40
ED =	Exposure duration	yrs	6	12	37	15
AF =	Adherence factor	mg/cm^2	0.2	0.2	0.07	0.07
CF =	Conversion factor	kg/mg	1.00E-06	1.00E-06	1.00E-06	1.00E-06
BW =	Body weight	kg	15	47	70	70
ATc =	Average time for carcinogens	days	25550	25550	25550	25550
ATn =	Average time for non-carcinogens	days	2190	4380	13505	5475

COC	conc	AB	RfDd	CSFd	CHILD				YOUTH				ADULT				SENIOR				SUM			
					CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR
	mg/kg	unitless	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
Ethyl ether	NA	1.00E-02	1.60E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	1.38E-04	1.00E-02	9.70E-02	NA	2.81E-12	2.90E-11	NA	NA	2.80E-12	2.89E-11	NA	NA	4.30E-13	4.43E-12	NA	NA	8.59E-13	8.86E-12	NA	NA	1.13E-12	1.17E-11	NA	NA
Fluoride	3.29E+00	1.00E-03	5.82E-02	NA	6.73E-09	1.16E-07	NA	NA	6.70E-09	1.15E-07	NA	NA	1.03E-09	1.77E-08	NA	NA	2.06E-09	3.53E-08	NA	NA	2.71E-09	4.66E-08	NA	NA
Heptachlorodibenzofuran	NA	1.00E-02	NA	3.00E+03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlorodibenzo-p-dioxin	NA	3.00E-02	NA	3.00E+03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorodibenzofuran	NA	1.00E-02	NA	3.00E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorodibenzo-p-dioxin	NA	3.00E-02	NA	3.00E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	5.65E-02	1.30E-01	NA	2.35E+00	NA	NA	1.29E-09	3.03E-09	NA	NA	2.57E-09	6.03E-09	NA	NA	1.21E-09	2.85E-09	NA	NA	9.84E-10	2.31E-09	NA	NA	6.05E-09	1.42E-08
Lead	2.96E+01	1.00E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	NA	1.00E-03	5.60E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	7.07E-02	1.00E-03	2.10E-05	NA	1.45E-10	6.88E-06	NA	NA	1.44E-10	6.86E-06	NA	NA	2.21E-11	1.05E-06	NA	NA	4.41E-11	2.10E-06	NA	NA	5.82E-11	2.77E-06	NA	NA
Methanol	NA	1.00E-02	4.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl-2-pentanone	7.08E-04	1.00E-02	6.40E-02	NA	1.45E-11	2.26E-10	NA	NA	1.44E-11	2.26E-10	NA	NA	2.21E-12	3.46E-11	NA	NA	4.42E-12	6.91E-11	NA	NA	5.83E-12	9.12E-11	NA	NA
Methylene chloride	1.35E-03	1.00E-02	5.70E-02	7.89E-03	2.77E-11	4.86E-10	2.37E-12	1.87E-14	2.76E-11	4.84E-10	4.73E-12	3.73E-14	4.23E-12	7.42E-11	2.24E-12	1.76E-14	8.46E-12	1.48E-10	1.81E-12	1.43E-14	1.12E-11	1.96E-10	1.12E-11	8.80E-14
Molybdenum	3.96E+00	1.00E-03	1.90E-03	NA	8.10E-09	4.27E-06	NA	NA	8.07E-09	4.25E-06	NA	NA	1.24E-09	6.51E-07	NA	NA	2.47E-09	1.30E-06	NA	NA	3.26E-09	1.72E-06	NA	NA
Nickel	NA	1.00E-03	5.40E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	NA	1.00E-02	5.00E-03	1.96E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-nitrosodipropylamine	NA	1.00E-02	NA	2.80E+01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Octachlorodibenzofuran	NA	1.00E-02	NA	3.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Octochlorodibenzo-p-dioxin	NA	3.00E-02	NA	3.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorodibenzofuran	NA	1.00E-02	NA	1.50E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorodibenzo-p-dioxin	NA	3.00E-02	NA	1.50E+05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	NA	2.50E-01	3.00E-02	1.20E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	1.24E-01	1.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	1.27E+00	1.00E-03	2.20E-03	NA	2.59E-09	1.18E-06	NA	NA	2.58E-09	1.17E-06	NA	NA	3.95E-10	1.80E-07	NA	NA	7.90E-10	3.59E-07	NA	NA	1.04E-09	4.74E-07	NA	NA
Silver	7.28E-01	1.00E-03	9.00E-04	NA	1.49E-09	1.65E-06	NA	NA	1.48E-09	1.65E-06	NA	NA	2.27E-10	2.53E-07	NA	NA	4.55E-10	5.05E-07	NA	NA	5.99E-10	6.66E-07	NA	NA
Tetrachlorodibenzofuran	NA	1.00E-02	NA	3.00E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachlorodibenzo-p-dioxin	NA	3.00E-02	NA	3.00E+05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethylene	9.30E-04	1.00E-02	1.00E-02	5.40E-01	1.90E-11	1.90E-09	1.63E-12	8.81E-13	1.90E-11	1.90E-09	3.25E-12	1.75E-12	2.90E-12	2.90E-10	1.54E-12	8.29E-13	5.81E-12	5.81E-10	1.24E-12	6.72E-13	7.66E-12	7.66E-10	7.66E-12	4.14E-12
Thallium	NA	1.00E-03	1.80E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	6.05E-04	1.00E-02	6.40E-02	NA	1.24E-11	1.93E-10	NA	NA	1.23E-11	1.93E-10	NA	NA	1.89E-12	2.95E-11	NA	NA	3.78E-12	5.91E-11	NA	NA	4.98E-12	7.79E-11	NA	NA
Tributyl phosphate	NA	1.00E-02	1.00E-01	1.08E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethylene	3.71E-04	1.00E-02	4.50E-05	2.67E+00	7.60E-12	1.69E-07	6.51E-13	1.74E-12	7.57E-12	1.68E-07	1.30E-12	3.46E-12	1.16E-12	2.58E-08	6.13E-13	1.64E-12	2.32E-12	5.15E-08	4.97E-13	1.33E-12	3.06E-12	6.80E-08	3.06E-12	8.17E-12
Trifluorochloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Uranium	1.62E+01	1.00E-03	5.10E-04	NA	3.32E-08	6.52E-05	NA	NA	3.31E-08	6.49E-05	NA	NA	5.07E-09	9.95E-06	NA	NA	1.01E-08	1.99E-05	NA	NA	1.34E-08	2.62E-05	NA	NA
Vanadium	NA	1.00E-03	7.00E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	NA	1.00E-02	3.00E-03	1.50E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes	1.32E-03	1.00E-02	1.84E-01	NA	2.70E-11	1.47E-10	NA	NA	2.69E-11	1.46E-10	NA	NA	4.12E-12	2.24E-11	NA	NA	8.24E-12	4.48E-11	NA	NA	1.09E-11	5.90E-11	NA	NA
Zinc	NA	1.00E-03	6.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
																					total =	3.42E-03	total =	1.77E-06

TABLE E.10-4

Undeveloped Park User - 70 Year Exposure Factor for Child, Youth, Adult, and Senior with Maximum Uranium Concentration and No Organic Constituents in Surface Water

IngestSoilChem

Undeveloped Park User - Ingestion of Soil

Risk calculation in Zone 5 for exposure duration of 70 years loaded on child, youth, adult, and senior; maximum uranium concentration in surface water; remove one-half detection limit values for organic COCs in surface water

Intake Equation:			UNITS	Assigned Values			
				child	youth	adult	senior
	CDI =	(CS*EF*ED*IR*FI*CF)/(BW*AT)					
	CDI =	Chronic Daily Intake	mg/kgday				
	CS =	Concentration of chemical in soil	mg/kg	see table of COCs below			
	EF =	Exposure frequency	days/yr	20	40	20	40
	ED =	Exposure duration	yrs	6	12	37	15
	IR =	Ingestion rate	mg/day	200	100	100	100
	FI =	Fraction of contaminated soil	unitless	1	1	1	1
	CF =	Conversion factor	kg/mg	1.00E-06	1.00E-06	1.00E-06	1.00E-06
	BW =	Body weight	kg	15	47	70	70
	ATc =	Average time for carcinogens	days	25550	25550	25550	25550
	ATn =	Average time for non-carcinogens	days	2190	4380	13505	5475

COC	conc	RfDo	CSFo	CHILD				YOUTH				ADULT				SENIOR				SUM			
				CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR
	mg/kg	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	3.22E-04	4.00E-03	5.70E-02	2.35E-10	5.89E-08	2.02E-11	1.15E-12	7.51E-11	1.88E-08	1.29E-11	7.34E-13	2.52E-11	6.31E-09	1.33E-11	7.60E-13	5.05E-11	1.26E-08	1.08E-11	6.16E-13	5.72E-11	1.43E-08	5.72E-11	3.26E-12
1,1-Dichloroethylene	5.58E-04	5.00E-02	6.00E-01	4.08E-10	8.15E-09	3.49E-11	2.10E-11	1.30E-10	2.60E-09	2.23E-11	1.34E-11	4.37E-11	8.74E-10	2.31E-11	1.39E-11	8.74E-11	1.75E-09	1.87E-11	1.12E-11	9.90E-11	1.98E-09	9.90E-11	5.94E-11
1,2-dichloroethane	2.76E-04	2.00E-02	9.10E-02	2.02E-10	1.01E-08	1.73E-11	1.58E-12	6.45E-11	3.22E-09	1.10E-11	1.01E-12	2.16E-11	1.08E-09	1.14E-11	1.04E-12	4.33E-11	2.16E-09	9.27E-12	8.44E-13	4.91E-11	2.45E-09	4.91E-11	4.47E-12
2-Butanone	NA	6.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	NA	NA	4.50E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	NA	5.00E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroanaline	NA	3.00E-03	2.10E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	5.04E-03	9.00E-01	NA	3.68E-09	4.09E-09	NA	NA	1.18E-09	1.31E-09	NA	NA	3.95E-10	4.38E-10	NA	NA	7.89E-10	8.77E-10	NA	NA	8.95E-10	9.94E-10	NA	NA
Antimony	2.22E+00	4.00E-04	NA	1.62E-06	4.06E-03	NA	NA	5.18E-07	1.30E-03	NA	NA	1.74E-07	4.35E-04	NA	NA	3.48E-07	8.70E-04	NA	NA	3.94E-07	9.86E-04	NA	NA
Aroclor-1254	6.75E-02	2.00E-05	2.00E+00	4.93E-08	2.46E-03	4.23E-09	8.45E-09	1.57E-08	7.87E-04	2.70E-09	5.39E-09	5.28E-09	2.64E-04	2.79E-09	5.58E-09	1.06E-08	5.28E-04	2.26E-09	4.53E-09	1.20E-08	5.99E-04	1.20E-08	2.40E-08
Aroclor-1260	6.07E-03	2.00E-05	2.00E+00	4.44E-09	2.22E-04	3.80E-10	7.60E-10	1.42E-09	7.08E-05	2.43E-10	4.85E-10	4.75E-10	2.38E-05	2.51E-10	5.02E-10	9.51E-10	4.75E-05	2.04E-10	4.07E-10	1.08E-09	5.39E-05	1.08E-09	2.16E-09
Arsenic	1.11E+01	3.00E-04	1.50E+00	8.14E-06	2.71E-02	6.98E-07	1.05E-06	2.60E-06	8.66E-03	4.46E-07	6.68E-07	8.73E-07	2.91E-03	4.61E-07	6.92E-07	1.75E-06	5.82E-03	3.74E-07	5.61E-07	1.98E-06	6.60E-03	1.98E-06	2.97E-06
Barium	1.80E+02	2.00E-01	NA	1.31E-04	6.57E-04	NA	NA	4.19E-05	2.10E-04	NA	NA	1.41E-05	7.04E-05	NA	NA	2.82E-05	1.41E-04	NA	NA	3.19E-05	1.60E-04	NA	NA
Benzene	1.38E-04	4.00E-03	5.50E-02	1.01E-10	2.51E-08	8.62E-12	4.74E-13	3.21E-11	8.02E-09	5.50E-12	3.02E-13	1.08E-11	2.69E-09	5.69E-12	3.13E-13	2.15E-11	5.38E-09	4.62E-12	2.54E-13	2.44E-11	6.11E-09	2.44E-11	1.34E-12
Benzo(a)anthracene	8.60E-02	NA	7.30E-01	NA	NA	5.38E-09	3.93E-09	NA	NA	3.44E-09	2.51E-09	NA	NA	3.56E-09	2.60E-09	NA	NA	2.88E-09	2.11E-09	NA	NA	1.53E-08	1.11E-08
Benzo(a)pyrene	8.70E-02	NA	7.30E+00	NA	NA	5.45E-09	3.97E-08	NA	NA	3.48E-09	2.54E-08	NA	NA	3.60E-09	2.63E-08	NA	NA	2.92E-09	2.13E-08	NA	NA	1.54E-08	1.13E-07
Benzo(b)fluoranthene	1.37E-01	NA	7.30E-01	NA	NA	8.57E-09	6.26E-09	NA	NA	5.47E-09	3.99E-09	NA	NA	5.66E-09	4.13E-09	NA	NA	4.59E-09	3.35E-09	NA	NA	2.43E-08	1.77E-08
Benzo(k)fluoranthene	3.05E-02	NA	7.30E-02	NA	NA	1.91E-09	1.39E-10	NA	NA	1.22E-09	8.89E-11	NA	NA	1.26E-09	9.21E-11	NA	NA	1.02E-09	7.46E-11	NA	NA	5.41E-09	3.95E-10
Beryllium	1.17E+00	2.00E-03	4.30E+00	8.56E-07	4.28E-04	7.33E-08	3.15E-07	2.73E-07	1.37E-04	4.68E-08	2.01E-07	9.17E-08	4.58E-05	4.85E-08	2.08E-07	1.83E-07	9.17E-05	3.93E-08	1.69E-07	2.08E-07	1.04E-04	2.08E-07	8.94E-07
Bis(2-chloroisopropyl)ether	NA	4.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	NA	2.00E-02	1.40E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Boron	NA	2.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	1.15E-04	2.00E-02	6.20E-02	8.42E-11	4.21E-09	7.22E-12	4.48E-13	2.69E-11	1.34E-09	4.61E-12	2.86E-13	9.02E-12	4.51E-10	4.77E-12	2.96E-13	1.80E-11	9.02E-10	3.87E-12	2.40E-13	2.05E-11	1.02E-09	2.05E-11	1.27E-12
Bromoform	NA	2.00E-02	7.90E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	NA	1.40E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	7.07E-01	1.00E-03	NA	5.17E-07	5.17E-04	NA	NA	1.65E-07	1.65E-04	NA	NA	5.54E-08	5.54E-05	NA	NA	1.11E-07	1.11E-04	NA	NA	1.26E-07	1.26E-04	NA	NA
Carbazole	NA	NA	2.00E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	NA	1.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	1.36E-04	7.00E-04	1.30E-01	9.91E-11	1.42E-07	8.50E-12	1.10E-12	3.16E-11	4.52E-08	5.42E-12	7.05E-13	1.06E-11	1.52E-08	5.61E-12	7.30E-13	2.12E-11	3.03E-08	4.55E-12	5.92E-13	2.41E-11	3.44E-08	2.41E-11	3.13E-12
Chlordane	NA	5.00E-04	3.50E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	NA	2.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	NA	1.00E-02	6.10E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (VI)	2.45E+01	3.00E-03	NA	1.79E-05	5.97E-03	NA	NA	5.72E-06	1.91E-03	NA	NA	1.92E-06	6.40E-04	NA	NA	3.84E-06	1.28E-03	NA	NA	4.35E-06	1.45E-03	NA	NA
Chrysene	8.53E-02	NA	7.30E-03	NA	NA	5.34E-09	3.90E-11	NA	NA	3.41E-09	2.49E-11	NA	NA	3.53E-09	2.58E-11	NA	NA	2.86E-09	2.09E-11	NA	NA	1.51E-08	1.11E-10
Cobalt	NA	2.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	NA	4.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	NA	2.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexanone	NA	5.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	1.52E-02	NA	7.30E+00	NA	NA	9.55E-10	6.97E-09	NA	NA	6.09E-10	4.45E-09	NA	NA	6.31E-10	4.60E-09	NA	NA	5.11E-10	3.73E-09	NA	NA	2.71E-09	1.98E-08
Dieldrin	5.46E-04	5.00E-05	1.60E+01	3.99E-10	7.98E-06	3.42E-11	5.47E-10	1.27E-10	2.55E-06	2.18E-11	3.49E-10	4.27E-11	8.54E-07	2.26E-11	3.61E-10	8.54E-11	1.71E-06	1.83E-11	2.93E-10	9.69E-11	1.94E-06	9.69E-11	1.55E-09
Di-n-octylphthalate	NA	4.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE E.10-4
Undeveloped Park User - 70 Year Exposure Factor for Child, Youth, Adult, and Senior with Maximum Uranium Concentration and No Organic Constituents in Surface Water
IngestSoilChem

Undeveloped Park User - Ingestion of Soil

Risk calculation in Zone 5 for exposure duration of 70 years loaded on child, youth, adult, and senior; maximum uranium concentration in surface water; remove one-half detection limit values for organic COCs in surface water

Intake Equation:

		UNITS	Assigned Values			
			child	youth	adult	senior
CDI =	(CS*EF*ED*IR*FI*CF)/(BW*AT)	mg/kgday				
CDI =	Chronic Daily Intake	mg/kgday				
CS =	Concentration of chemical in soil	mg/kg	see table of COCs below			
EF =	Exposure frequency	days/yr	20	40	20	40
ED =	Exposure duration	yrs	6	12	37	15
IR =	Ingestion rate	mg/day	200	100	100	100
FI =	Fraction of contaminated soil	unitless	1	1	1	1
CF =	Conversion factor	kg/mg	1.00E-06	1.00E-06	1.00E-06	1.00E-06
BW =	Body weight	kg	15	47	70	70
ATc =	Average time for carcinogens	days	25550	25550	25550	25550
ATn =	Average time for non-carcinogens	days	2190	4380	13505	5475

COC	conc	RfDo	CSFo	CHILD				YOUTH				ADULT				SENIOR				SUM			
				CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR
	mg/kg	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
Ethyl ether	NA	2.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	1.38E-04	1.00E-01	NA	1.01E-10	1.01E-09	NA	NA	3.21E-11	3.21E-10	NA	NA	1.08E-11	1.08E-10	NA	NA	2.15E-11	2.15E-10	NA	NA	2.44E-11	2.44E-10	NA	NA
Fluoride	3.29E+00	6.00E-02	NA	2.40E-06	4.01E-05	NA	NA	7.67E-07	1.28E-05	NA	NA	2.58E-07	4.29E-06	NA	NA	5.15E-07	8.58E-06	NA	NA	5.84E-07	9.73E-06	NA	NA
Heptachlorodibenzofuran	NA	NA	1.50E+03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlorodibenzo-p-dioxin	NA	NA	1.50E+03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorodibenzofuran	NA	NA	1.50E+03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorodibenzo-p-dioxin	NA	NA	1.50E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	5.65E-02	NA	7.30E-01	NA	NA	3.54E-09	2.58E-09	NA	NA	2.26E-09	1.65E-09	NA	NA	2.34E-09	1.71E-09	NA	NA	1.90E-09	1.38E-09	NA	NA	1.00E-08	7.32E-09
Lead	2.96E+01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	NA	1.40E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	7.07E-02	3.00E-04	NA	5.16E-08	1.72E-04	NA	NA	1.65E-08	5.49E-05	NA	NA	5.53E-09	1.84E-05	NA	NA	1.11E-08	3.69E-05	NA	NA	1.25E-08	4.18E-05	NA	NA
Methanol	NA	5.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl-2-pentanone	7.08E-04	8.00E-02	NA	5.17E-10	6.47E-09	NA	NA	1.65E-10	2.06E-09	NA	NA	5.54E-11	6.93E-10	NA	NA	1.11E-10	1.39E-09	NA	NA	1.26E-10	1.57E-09	NA	NA
Methylene chloride	1.35E-03	6.00E-02	7.50E-03	9.89E-10	1.65E-08	8.48E-11	6.36E-13	3.16E-10	5.26E-09	5.41E-11	4.06E-13	1.06E-10	1.77E-09	5.60E-11	4.20E-13	2.12E-10	3.53E-09	4.54E-11	3.41E-13	2.40E-10	4.01E-09	2.40E-10	1.80E-12
Molybdenum	3.96E+00	5.00E-03	NA	2.89E-06	5.79E-04	NA	NA	9.24E-07	1.85E-04	NA	NA	3.10E-07	6.20E-05	NA	NA	6.20E-07	1.24E-04	NA	NA	7.03E-07	1.41E-04	NA	NA
Nickel	NA	2.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	NA	2.00E-02	4.90E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-nitrosodipropylamine	NA	NA	7.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Octachlorodibenzofuran	NA	NA	1.50E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Octochlorodibenzo-p-dioxin	NA	NA	1.50E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorodibenzofuran	NA	NA	7.50E+03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorodibenzo-p-dioxin	NA	NA	7.50E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	NA	3.00E-02	1.20E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	1.24E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	1.27E+00	5.00E-03	NA	9.24E-07	1.85E-04	NA	NA	2.95E-07	5.90E-05	NA	NA	9.90E-08	1.98E-05	NA	NA	1.98E-07	3.96E-05	NA	NA	2.25E-07	4.49E-05	NA	NA
Silver	7.28E-01	5.00E-03	NA	5.32E-07	1.06E-04	NA	NA	1.70E-07	3.39E-05	NA	NA	5.70E-08	1.14E-05	NA	NA	1.14E-07	2.28E-05	NA	NA	1.29E-07	2.58E-05	NA	NA
Tetrachlorodibenzofuran	NA	NA	1.50E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachlorodibenzo-p-dioxin	NA	NA	1.50E+05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethylene	9.30E-04	1.00E-02	5.40E-01	6.79E-10	6.79E-08	5.82E-11	3.14E-11	2.17E-10	2.17E-08	3.72E-11	2.01E-11	7.28E-11	7.28E-09	3.85E-11	2.08E-11	1.46E-10	1.46E-08	3.12E-11	1.68E-11	1.65E-10	1.65E-08	1.65E-10	8.91E-11
Thallium	NA	9.00E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	6.05E-04	8.00E-02	NA	4.42E-10	5.53E-09	NA	NA	1.41E-10	1.76E-09	NA	NA	4.74E-11	5.92E-10	NA	NA	9.47E-11	1.18E-09	NA	NA	1.07E-10	1.34E-09	NA	NA
Tributyl phosphate	NA	2.00E-01	5.40E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethylene	3.71E-04	3.00E-04	4.00E-01	2.71E-10	9.04E-07	2.33E-11	9.30E-12	8.66E-11	2.89E-07	1.48E-11	5.94E-12	2.91E-11	9.69E-08	1.54E-11	6.15E-12	5.81E-11	1.94E-07	1.25E-11	4.98E-12	6.59E-11	2.20E-07	6.59E-11	2.64E-11
Trifluorochloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Uranium	1.62E+01	6.00E-04	NA	1.19E-05	1.98E-02	NA	NA	3.79E-06	6.31E-03	NA	NA	1.27E-06	2.12E-03	NA	NA	2.54E-06	4.24E-03	NA	NA	2.88E-06	4.81E-03	NA	NA
Vanadium	NA	7.00E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	NA	3.00E-03	1.50E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes	1.32E-03	2.00E-01	NA	9.64E-10	4.82E-09	NA	NA	3.08E-10	1.54E-09	NA	NA	1.03E-10	5.16E-10	NA	NA	2.07E-10	1.03E-09	NA	NA	2.34E-10	1.17E-09	NA	NA
Zinc	NA	3.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
																				total =	1.51E-02	total =	4.06E-06

TABLE E.10-4

Undeveloped Park User - 70 Year Exposure Factor for Child, Youth, Adult, and Senior with Maximum Uranium Concentration and No Organic Constituents in Surface Water

DermalSWchem

Undeveloped Park User - Dermal Contact with Surface Water

Risk calculation in Zone 5 for exposure duration of 70 years loaded on child, youth, adult, and senior; maximum uranium concentration in surface water; remove one-half detection limit values for organic COCs in surface water

			UNITS	Assigned Values			
				child	youth	adult	senior
Intake Equation:	CDI =	(DA*EF*ED*SA)/(BW*AT)					
	CDI =	Chronic Daily Intake	mg/kgday		calculated below		
	DA =	Dermal absorption dose	mg/cm^{2}day		see COC list below		
	EF =	Exposure frequency	days/yr	12	12	12	12
	ED =	Exposure duration	yrs	6	12	37	15
	SA =	Surface area of skin	cm^2	2180	4470	6070	6070
	BW =	Body weight	kg	15	47	70	70
	ATc =	Average time for carcinogens	days	25550	25550	25550	25550
	ATn =	Average time for non-carcinogens	days	2190	4380	13505	5475
where:	DA = C_v*K_p*CF*ET						
	C_v =	concentation of ith contaminant in surface water	mg/L		see COC list below		
	K_p =	permeability constant for ith contaminant	cm/hr		see COC list below		
	CF =	conversion factor	L/cm^3	0.001	0.001	0.001	0.001
	ET =	exposure time	hr/d	1	1	1	1

COC	C_v	K_p	DA	RfDd	CSFd	CHILD				YOUTH				ADULT				SENIOR				SUM			
						CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR
	mg/L	cm/hr	mg/cm^{2}day	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	0.00E+00	6.43E-03	0.00E+00	3.24E-03	7.04E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,1-Dichloroethylene	0.00E+00	1.59E-02	0.00E+00	5.00E-02	6.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,2-dichloroethane	0.00E+00	5.34E-03	0.00E+00	2.00E-02	9.10E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2-Butanone	NA	1.11E-03	NA	4.80E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	NA	1.69E-02	NA	NA	9.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	NA	9.95E-03	NA	3.25E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	NA	2.66E-03	NA	2.40E-03	2.63E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	0.00E+00	5.69E-04	0.00E+00	7.47E-01	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Antimony	5.00E-04	1.00E-03	5.00E-10	8.00E-06	NA	2.39E-09	2.99E-04	NA	NA	1.56E-09	1.95E-04	NA	NA	1.43E-09	1.78E-04	NA	NA	1.43E-09	1.78E-04	NA	NA	1.53E-09	1.91E-04	NA	NA
Aroclor-1254	0.00E+00	1.29E+00	0.00E+00	1.80E-05	2.22E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Aroclor-1260	0.00E+00	5.48E+00	0.00E+00	1.80E-05	2.22E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Arsenic	3.29E-03	1.00E-03	3.29E-09	1.23E-04	3.66E+00	1.57E-08	1.28E-04	1.35E-09	4.93E-09	1.03E-08	8.36E-05	1.76E-09	6.45E-09	9.37E-09	7.62E-05	4.95E-09	1.81E-08	9.37E-09	7.62E-05	2.01E-09	7.35E-09	1.01E-08	8.19E-05	1.01E-08	3.69E-08
Barium	5.26E-02	1.00E-03	5.26E-08	1.40E-02	NA	2.51E-07	1.80E-05	NA	NA	1.65E-07	1.18E-05	NA	NA	1.50E-07	1.07E-05	NA	NA	1.50E-07	1.07E-05	NA	NA	1.61E-07	1.15E-05	NA	NA
Benzene	0.00E+00	2.07E-02	0.00E+00	3.88E-03	5.67E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Benzo(a)anthracene	0.00E+00	9.48E-01	0.00E+00	NA	2.35E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Benzo(a)pyrene	0.00E+00	1.24E+00	0.00E+00	NA	2.35E+01	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Benzo(b)fluoranthene	0.00E+00	6.99E-01	0.00E+00	NA	2.35E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Benzo(k)fluoranthene	0.00E+00	1.20E+00	0.00E+00	NA	2.35E-01	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Beryllium	1.58E-04	1.00E-03	1.58E-10	2.00E-05	4.30E+02	7.53E-10	3.76E-05	6.45E-11	2.77E-08	4.92E-10	2.46E-05	8.44E-11	3.63E-08	4.49E-10	2.25E-05	2.37E-10	1.02E-07	4.49E-10	2.25E-05	9.62E-11	4.14E-08	4.82E-10	2.41E-05	4.82E-10	2.07E-07
Bis(2-chloroisopropyl)ether	NA	7.63E-02	NA	2.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	NA	1.97E+00	NA	3.80E-03	7.37E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Boron	NA	1.00E-03	NA	1.80E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	0.00E+00	5.02E-03	0.00E+00	1.96E-02	6.33E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Bromoform	NA	2.77E-03	NA	1.20E-02	1.32E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	NA	3.51E-03	NA	1.12E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	1.00E-04	1.00E-03	1.00E-10	1.00E-05	NA	4.78E-10	4.78E-05	NA	NA	3.13E-10	3.13E-05	NA	NA	2.85E-10	2.85E-05	NA	NA	2.85E-10	2.85E-05	NA	NA	3.06E-10	3.06E-05	NA	NA
Carbazole	NA	7.97E-02	NA	NA	2.86E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	NA	1.56E-02	NA	6.30E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	0.00E+00	2.24E-02	0.00E+00	4.55E-04	2.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chlordane	NA	1.57E-01	NA	2.50E-04	7.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	NA	4.07E-02	NA	6.20E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	NA	8.92E-03	NA	2.00E-03	3.05E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (VI)	3.33E-03	2.00E-03	6.66E-09	6.00E-05	NA	3.18E-08	5.31E-04	NA	NA	2.08E-08	3.47E-04	NA	NA	1.90E-08	3.17E-04	NA	NA	1.90E-08	3.17E-04	NA	NA	2.04E-08	3.40E-04	NA	NA
Chrysene	0.00E+00	1.03E+00	0.00E+00	NA	2.35E-02	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Cobalt	NA	4.00E-04	NA	1.60E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	NA	1.00E-03	NA	1.20E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	NA	1.00E-03	NA	3.40E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexanone	NA	1.80E-03	NA	4.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	0.00E+00	1.68E+00	0.00E+00	NA	2.35E+01	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Dieldrin	0.00E+00	4.45E-02	0.00E+00	2.50E-05	3.20E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Di-n-octylphthalate	NA	4.45E+00	NA	3.60E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE E.10-4

Undeveloped Park User - 70 Year Exposure Factor for Child, Youth, Adult, and Senior with Maximum Uranium Concentration and No Organic Constituents in Surface Water

DermalSWchem

Undeveloped Park User - Dermal Contact with Surface Water

Risk calculation in Zone 5 for exposure duration of 70 years loaded on child, youth, adult, and senior; maximum uranium concentration in surface water; remove one-half detection limit values for organic COCs in surface water

Intake Equation:			UNITS	Assigned Values			
				child	youth	adult	senior
	CDI =	(DA*EF*ED*SA)/(BW*AT)					
	CDI =	Chronic Daily Intake	mg/kgday	calculated below			
	DA =	Dermal absorption dose	mg/cm²day	see COC list below			
	EF =	Exposure frequency	days/yr	12	12	12	12
	ED =	Exposure duration	yrs	6	12	37	15
	SA =	Surface area of skin	cm²	2180	4470	6070	6070
	BW =	Body weight	kg	15	47	70	70
	ATc =	Average time for carcinogens	days	25550	25550	25550	25550
	ATn =	Average time for non-carcinogens	days	2190	4380	13505	5475
where:	DA = C_v*K_p*CF*ET						
	C_v =	concentation of ith contaminant in surface water	mg/L	see COC list below			
	K_p =	permeability constant for ith contaminant	cm/hr	see COC list below			
	CF =	conversion factor	L/cm³	0.001	0.001	0.001	0.001
	ET =	exposure time	hr/d	1	1	1	1

COC	C_v	K_p	DA	RfDd	CSFd	CHILD				YOUTH				ADULT				SENIOR				SUM			
						CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR
	mg/L	cm/hr	mg/cm²day	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
Ethyl ether	NA	2.88E-03	NA	1.60E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	0.00E+00	7.39E-02	0.00E+00	9.70E-02	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Fluoride	4.09E-01	1.00E-03	4.09E-07	5.82E-02	NA	1.95E-06	3.35E-05	NA	NA	1.28E-06	2.19E-05	NA	NA	1.16E-06	2.00E-05	NA	NA	1.16E-06	2.00E-05	NA	NA	1.25E-06	2.15E-05	NA	NA
Heptachlorodibenzofuran	NA	2.55E+00	NA	NA	3.00E+03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlorodibenzo-p-dioxin	NA	3.22E+00	NA	NA	3.00E+03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorodibenzofuran	NA	2.38E+00	NA	NA	3.00E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorodibenzo-p-dioxin	NA	5.29E+00	NA	NA	3.00E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	0.00E+00	2.23E+00	0.00E+00	NA	2.35E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Lead	1.68E-03	1.00E-04	1.68E-10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	NA	1.00E-03	NA	1.84E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	6.00E-05	1.00E-03	6.00E-11	2.10E-05	NA	2.87E-10	1.37E-05	NA	NA	1.88E-10	8.93E-06	NA	NA	1.71E-10	8.15E-06	NA	NA	1.71E-10	8.15E-06	NA	NA	1.84E-10	8.75E-06	NA	NA
Methanol	NA	3.45E-04	NA	4.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone	0.00E+00	3.97E-03	0.00E+00	6.40E-02	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Methylene chloride	0.00E+00	4.46E-03	0.00E+00	5.70E-02	7.89E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Molybdenum	8.03E-03	1.00E-03	8.03E-09	1.90E-03	NA	3.83E-08	2.02E-05	NA	NA	2.51E-08	1.32E-05	NA	NA	2.29E-08	1.20E-05	NA	NA	2.29E-08	1.20E-05	NA	NA	2.46E-08	1.29E-05	NA	NA
Nickel	NA	2.00E-04	NA	5.40E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	NA	1.96E-02	NA	5.00E-03	1.96E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-nitrosodipropylamine	NA	2.83E-03	NA	NA	2.80E+01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Octachlorodibenzofuran	NA	4.78E+00	NA	NA	3.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Octochlorodibenzo-p-dioxin	NA	1.65E+01	NA	NA	3.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorodibenzofuran	NA	1.06E+00	NA	NA	1.50E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorodibenzo-p-dioxin	NA	3.79E-01	NA	NA	1.50E+05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	NA	1.95E-01	NA	3.00E-02	1.20E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	0.00E+00	2.29E-01	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	2.50E-03	1.00E-03	2.50E-09	2.20E-03	NA	1.19E-08	5.43E-06	NA	NA	7.82E-09	3.55E-06	NA	NA	7.13E-09	3.24E-06	NA	NA	7.13E-09	3.24E-06	NA	NA	7.66E-09	3.48E-06	NA	NA
Silver	2.00E-04	6.00E-04	1.20E-10	9.00E-04	NA	5.73E-10	6.37E-07	NA	NA	3.75E-10	4.17E-07	NA	NA	3.42E-10	3.80E-07	NA	NA	3.42E-10	3.80E-07	NA	NA	3.68E-10	4.08E-07	NA	NA
Tetrachlorodibenzofuran	NA	1.12E+00	NA	NA	3.00E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachlorodibenzo-p-dioxin	NA	1.39E+00	NA	NA	3.00E+05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethylene	0.00E+00	4.81E-02	0.00E+00	1.00E-02	5.40E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Thallium	NA	1.00E-03	NA	1.80E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	0.00E+00	4.53E-02	0.00E+00	6.40E-02	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Tributyl phosphate	NA	3.13E-02	NA	1.00E-01	1.08E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethylene	0.00E+00	1.57E-02	0.00E+00	4.50E-05	2.67E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Trifluorochloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Uranium	8.79E-01	1.00E-03	8.79E-07	5.10E-04	NA	4.20E-06	8.24E-03	NA	NA	2.75E-06	5.39E-03	NA	NA	2.51E-06	4.91E-03	NA	NA	2.51E-06	4.91E-03	NA	NA	2.69E-06	5.28E-03	NA	NA
Vanadium	NA	1.00E-03	NA	7.00E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	NA	1.13E-02	NA	3.00E-03	1.50E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes	0.00E+00	7.04E-02	0.00E+00	1.84E-01	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Zinc	NA	6.00E-04	NA	6.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
																						total =	6.01E-03	total =	2.44E-07

TABLE E.10-4

Undeveloped Park User - 70 Year Exposure Factor for Child, Youth, Adult, and Senior with Maximum Uranium Concentration and No Organic Constituents in Surface Water

IngestSWchem

Undeveloped Park User - Ingestion of Surface Water

Risk calculation in Zone 5 for exposure duration of 70 years loaded on child, youth, adult, and senior; maximum uranium concentration in surface water; remove one-half detection limit values for organic COCs in surface water

Intake Equation:

		UNITS	Assigned Values			
			child	youth	adult	senior
CDI =	(CW*EF*ED*IR)/(BW*AT)					
CDI =	Chronic Daily Intake	mg/kgday				
CW =	Concentration of chemical in water	mg/L	see COC table below			
EF =	Exposure frequency	days/yr	12	12	12	12
ED =	Exposure duration	yrs	6	12	37	15
IR =	Ingestion rate	L/day	0.035	0.035	0.015	0.015
BW =	Body weight	kg	15	47	70	70
ATc =	Average time for carcinogens	days	25550	25550	25550	25550
ATn =	Average time for non-carcinogens	days	2190	4380	13505	5475

COC	CW	RfDo	CSFo	CHILD				YOUTH				ADULT				SENIOR				SUM			
				CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR
	mg/L	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
1,1,2-Trichloroethane	0.00E+00	4.00E-03	5.70E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,1-Dichloroethylene	0.00E+00	5.00E-02	6.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,2-dichloroethane	0.00E+00	2.00E-02	9.10E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2-Butanone	NA	6.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	NA	NA	4.50E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	NA	5.00E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroanaline	NA	3.00E-03	2.10E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	0.00E+00	9.00E-01	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Antimony	5.00E-04	4.00E-04	NA	3.84E-08	9.59E-05	NA	NA	1.22E-08	3.06E-05	NA	NA	3.52E-09	8.81E-06	NA	NA	3.52E-09	8.81E-06	NA	NA	8.00E-09	2.00E-05	NA	NA
Aroclor-1254	0.00E+00	2.00E-05	4.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Aroclor-1260	0.00E+00	2.00E-05	4.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Arsenic	3.29E-03	3.00E-04	1.50E+00	2.52E-07	8.41E-04	2.16E-08	3.24E-08	8.05E-08	2.68E-04	1.38E-08	2.07E-08	2.32E-08	7.72E-05	1.22E-08	1.84E-08	2.32E-08	7.72E-05	4.96E-09	7.44E-09	5.26E-08	1.75E-04	5.26E-08	7.89E-08
Barium	5.26E-02	2.00E-01	NA	4.04E-06	2.02E-05	NA	NA	1.29E-06	6.44E-06	NA	NA	3.71E-07	1.85E-06	NA	NA	3.71E-07	1.85E-06	NA	NA	8.42E-07	4.21E-06	NA	NA
Benzene	0.00E+00	4.00E-03	5.50E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Benzo(a)anthracene	0.00E+00	NA	7.30E-01	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Benzo(a)pyrene	0.00E+00	NA	7.30E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Benzo(b)fluoranthene	0.00E+00	NA	7.30E-01	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Benzo(k)fluoranthene	0.00E+00	NA	7.30E-02	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Beryllium	1.56E-04	2.00E-03	4.30E+00	1.21E-08	6.04E-06	1.04E-09	4.45E-09	3.86E-09	1.93E-06	6.61E-10	2.84E-09	1.11E-09	5.55E-07	5.86E-10	2.52E-09	1.11E-09	5.55E-07	2.38E-10	1.02E-09	2.52E-09	1.26E-06	2.52E-09	1.08E-08
Bis(2-chloroisopropyl)ether	NA	4.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	NA	2.00E-02	1.40E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Boron	NA	2.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	0.00E+00	2.00E-02	6.20E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Bromoform	NA	2.00E-02	7.90E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	NA	1.40E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	1.00E-04	1.00E-03	NA	7.67E-09	7.67E-06	NA	NA	2.45E-09	2.45E-06	NA	NA	7.05E-10	7.05E-07	NA	NA	7.05E-10	7.05E-07	NA	NA	1.60E-09	1.60E-06	NA	NA
Carbazole	NA	NA	2.00E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	NA	1.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	0.00E+00	7.00E-04	1.30E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chlordane	NA	5.00E-04	3.50E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	NA	2.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	NA	1.00E-02	6.10E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (VI)	3.33E-03	3.00E-03	NA	2.56E-07	8.52E-05	NA	NA	8.16E-08	2.72E-05	NA	NA	2.35E-08	7.82E-06	NA	NA	2.35E-08	7.82E-06	NA	NA	5.33E-08	1.78E-05	NA	NA
Chrysene	0.00E+00	NA	7.30E-03	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Cobalt	NA	2.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	NA	4.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	NA	2.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexanone	NA	5.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	0.00E+00	NA	7.30E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Dieldrin	0.00E+00	5.00E-05	1.60E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Di-n-octylphthalate	NA	4.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE E.10-4
Undeveloped Park User - 70 Year Exposure Factor for Child, Youth, Adult, and Senior with Maximum Uranium Concentration and No Organic Constituents in Surface Water
IngestSWchem

Undeveloped Park User - Ingestion of Surface Water
Risk calculation in Zone 5 for exposure duration of 70 years loaded on child, youth, adult, and senior; maximum uranium concentration in surface water; remove one-half detection limit values for organic COCs in surface water

Intake Equation:			UNITS	Assigned Values			
				child	youth	adult	senior
	CDI =	(CW*EF*ED*IR)/(BW*AT)					
	CDI =	Chronic Daily Intake	mg/kgday				
	CW =	Concentration of chemical in water	mg/L	see COC table below			
	EF =	Exposure frequency	days/yr	12	12	12	12
	ED =	Exposure duration	yrs	6	12	37	15
	IR =	Ingestion rate	L/day	0.035	0.035	0.015	0.015
	BW =	Body weight	kg	15	47	70	70
	ATc =	Average time for carcinogens	days	25550	25550	25550	25550
	ATn =	Average time for non-carcinogens	days	2190	4380	13505	5475

COC	CW	RfDo	CSFo	CHILD				YOUTH				ADULT				SENIOR				SUM			
				CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR	CDI	HQ	CDI	ILCR
	mg/L	mg/kgday	kgday/mg	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF	mg/kgday	CDI/RfD	mg/kgday	CDI*CSF
Ethyl ether	NA	2.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	0.00E+00	1.00E-01	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Fluoride	4.09E-01	6.00E-02	NA	3.13E-05	5.22E-04	NA	NA	1.00E-05	1.67E-04	NA	NA	2.88E-06	4.80E-05	NA	NA	2.88E-06	4.80E-05	NA	NA	6.54E-06	1.09E-04	NA	NA
Heptachlorodibenzofuran	NA	NA	1.50E+03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlorodibenzo-p-dioxin	NA	NA	1.50E+03	NA	NA	NA	NA	NA	NA.	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorodibenzofuran	NA	NA	1.50E+03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorodibenzo-p-dioxin	NA	NA	1.50E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	0.00E+00	NA	7.30E-01	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00
Lead	1.68E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	NA	4.60E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	6.00E-05	3.00E-04	NA	4.60E-09	1.53E-05	NA	NA	1.47E-09	4.90E-06	NA	NA	4.23E-10	1.41E-06	NA	NA	4.23E-10	1.41E-06	NA	NA	9.60E-10	3.20E-06	NA	NA
Methanol	NA	5.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone	0.00E+00	8.00E-02	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Methylene chloride	0.00E+00	6.00E-02	7.50E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Molybdenum	8.03E-03	5.00E-03	NA	6.16E-07	1.23E-04	NA	NA	1.96E-07	3.93E-05	NA	NA	5.65E-08	1.13E-05	NA	NA	5.65E-08	1.13E-05	NA	NA	1.28E-07	2.57E-05	NA	NA
Nickel	NA	2.00E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	NA	2.00E-02	4.90E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-nitrosodipropylamine	NA	NA	7.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Octachlorodibenzofuran	NA	NA	1.50E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Octochlorodibenzo-p-dioxin	NA	NA	1.50E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorodibenzofuran	NA	NA	7.50E+03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorodibenzo-p-dioxin	NA	NA	7.50E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	NA	3.00E-02	1.20E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	2.50E-03	5.00E-03	NA	1.92E-07	3.84E-05	NA	NA	6.12E-08	1.22E-05	NA	NA	1.76E-08	3.52E-06	NA	NA	1.76E-08	3.52E-06	NA	NA	4.00E-08	8.00E-06	NA	NA
Silver	2.00E-04	5.00E-03	NA	1.53E-08	3.07E-06	NA	NA	4.90E-09	9.79E-07	NA	NA	1.41E-09	2.82E-07	NA	NA	1.41E-09	2.82E-07	NA	NA	3.20E-09	6.40E-07	NA	NA
Tetrachlorodibenzofuran	NA	NA	1.50E+04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachlorodibenzo-p-dioxin	NA	NA	1.50E+05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethylene	0.00E+00	1.00E-02	5.40E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Thallium	NA	9.00E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	0.00E+00	8.00E-02	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Tributyl phosphate	NA	2.00E-01	5.40E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethylene	0.00E+00	3.00E-04	4.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Trifluorochloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Uranium	8.79E-01	6.00E-04	NA	6.74E-05	1.12E-01	NA	NA	2.15E-05	3.59E-02	NA	NA	6.19E-06	1.03E-02	NA	NA	6.19E-06	1.03E-02	NA	NA	1.41E-05	2.34E-02	NA	NA
Vanadium	NA	7.00E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	NA	3.00E-03	1.50E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes	0.00E+00	2.00E-01	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	NA	NA
Zinc	NA	3.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
																				total =	2.38E-02	total =	8.98E-08

TABLE E.10-4

Undeveloped Park User - 70 Year Exposure Factor for Child, Youth, Adult, and Senior with Maximum Uranium Concentration and No Organic Constituents in Surface Water

InhaleRad

Undeveloped Park User - Inhalation of Gases & Particulates

Risk calculation in Zone 5 for exposure duration of 70 years loaded on child, youth, adult, and senior; maximum uranium concentration in surface water; remove one-half detection limit values for organic COCs in surface water

Intake Equation:			UNITS	Assigned Values			
				child	youth	adult	senior
	CDI =	(CA*EF*ED*IR*ET)					
	CDI =	Chronic Daily Intake	pCi				
	CA =	Concentration of radionuclide in air	pCi/m^3	see table of COCs below			
	EF =	Exposure frequency	days/yr	20	40	20	40
	ED =	Exposure duration	yrs	6	12	37	15
	IR =	Inhalation rate	m^3/hr	1.0	1.0	1.0	1.0
	ET =	Exposure time	hrs/day	2	2	2	2

COC	conc	CSFi	CHILD		YOUTH		ADULT		SENIOR		SUM	
			CDI	ILCR	CDI	ILCR	CDI	ILCR	CDI	ILCR	CDI	ILCR
	pCi/m^3	1/pCi	pCi	CDI*CSF	pCi	CDI*CSF	pCi	CDI*CSF	pCi	CDI*CSF	pCi	CDI*CSF
Cesium-137 + D	2.12E-06	1.19E-11	5.10E-04	6.07E-15	2.04E-03	2.43E-14	3.14E-03	3.74E-14	2.55E-03	3.03E-14	8.24E-03	9.81E-14
Lead-210 + D	5.55E-05	1.39E-08	1.33E-02	1.85E-10	5.33E-02	7.40E-10	8.21E-02	1.14E-09	6.66E-02	9.26E-10	2.15E-01	2.99E-09
Neptunium-237 + D	1.41E-07	1.77E-08	3.38E-05	5.98E-13	1.35E-04	2.39E-12	2.08E-04	3.69E-12	1.69E-04	2.99E-12	5.47E-04	9.67E-12
Plutonium-238	6.11E-08	3.36E-08	1.47E-05	4.93E-13	5.87E-05	1.97E-12	9.04E-05	3.04E-12	7.33E-05	2.46E-12	2.37E-04	7.97E-12
Plutonium-239/240	NA	3.33E-08	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Radium-226 + D	3.33E-05	1.16E-08	8.00E-03	9.28E-11	3.20E-02	3.71E-10	4.94E-02	5.73E-10	4.00E-02	4.64E-10	1.29E-01	1.50E-09
Radium-228 + D	2.88E-05	5.23E-09	6.92E-03	3.62E-11	2.77E-02	1.45E-10	4.27E-02	2.23E-10	3.46E-02	1.81E-10	1.12E-01	5.85E-10
Radon-222+ D	3.28E+02	1.80E-11	7.88E+04	1.42E-06	3.15E+05	5.67E-06	4.86E+05	8.75E-06	3.94E+05	7.09E-06	1.27E+06	2.29E-05
Strontium-90 + D	NA	1.13E-10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Technetium-99	4.26E-05	1.41E-11	1.02E-02	1.44E-13	4.09E-02	5.77E-13	6.31E-02	8.90E-13	5.12E-02	7.21E-13	1.65E-01	2.33E-12
Thorium-228 + D	2.93E-05	1.43E-07	7.03E-03	1.00E-09	2.81E-02	4.02E-09	4.33E-02	6.20E-09	3.51E-02	5.02E-09	1.14E-01	1.62E-08
Thorium-230	6.39E-05	2.85E-08	1.53E-02	4.37E-10	6.13E-02	1.75E-09	9.46E-02	2.70E-09	7.67E-02	2.19E-09	2.48E-01	7.07E-09
Thorium-232	2.85E-05	4.33E-08	6.85E-03	2.96E-10	2.74E-02	1.19E-09	4.22E-02	1.83E-09	3.42E-02	1.48E-09	1.11E-01	4.79E-09
Uranium-234	1.44E-04	1.14E-08	3.46E-02	3.94E-10	1.38E-01	1.58E-09	2.13E-01	2.43E-09	1.73E-01	1.97E-09	5.59E-01	6.38E-09
Uranium-235 + D	6.57E-06	1.01E-08	1.58E-03	1.59E-11	6.31E-03	6.37E-11	9.72E-03	9.82E-11	7.88E-03	7.96E-11	2.55E-02	2.57E-10
Uranium-238 + D	1.41E-04	9.35E-09	3.38E-02	3.16E-10	1.35E-01	1.26E-09	2.08E-01	1.95E-09	1.69E-01	1.58E-09	5.46E-01	5.11E-09
											total =	**2.30E-05**

Air concentration is derived using an air particulate value of 26 ug/m^3 (2005 SER background average from monitor AMS-12) multiplied by the soil concentration.

Rn-222 is derived by multiplying the soil Ra-226 value by 256 g/m^3. This conversion factor is based on Rn-222 air background and Ra-226 soil background (i.e., 400 pCi/m^3 divided by 1.56 pCi/g)

TABLE E.10-4

Undeveloped Park User - 70 Year Exposure Factor for Child, Youth, Adult, and Senior with Maximum Uranium Concentration and No Organic Constituents in Surface Water

IngestSoilRad

Undeveloped Park User - Ingestion of Soil

Risk calculation in Zone 5 for exposure duration of 70 years loaded on child, youth, adult, and senior; maximum uranium concentration in surface water; remove one-half detection limit values for organic COCs in surface water

Intake Equation:			UNITS	Assigned Values			
	CDI =	(CS*EF*ED*IR*FI)					
	CDI =	Chronic Daily Intake	pCi	child	youth	adult	senior
	CS =	Concentration of radionuclide in soil	pCi/g	see table of COCs below			
	EF =	Exposure frequency	days/yr	20	40	20	40
	ED =	Exposure duration	yrs	6	12	37	15
	IR =	Ingestion rate	g/day	0.2	0.1	0.1	0.1
	FI =	Fraction of contaminated soil	unitless	1	1	1	1

COC	conc	CSFos	CHILD		YOUTH		ADULT		SENIOR		SUM	
			CDI	ILCR	CDI	ILCR	CDI	ILCR	CDI	ILCR	CDI	ILCR
	pCi/g	1/pCi	pCi	CDI*CSF	pCi	CDI*CSF	pCi	CDI*CSF	pCi	CDI*CSF	pCi	CDI*CSF
Cesium-137 + D	8.17E-02	4.33E-11	1.96E+00	8.49E-11	3.92E+00	1.70E-10	6.04E+00	2.62E-10	4.90E+00	2.12E-10	1.68E+01	7.29E-10
Lead-210 + D	2.13E+00	2.66E-09	5.12E+01	1.36E-07	1.02E+02	2.73E-07	1.58E+02	4.20E-07	1.28E+02	3.41E-07	4.40E+02	1.17E-06
Neptunium-237 + D	5.42E-03	1.62E-10	1.30E-01	2.11E-11	2.60E-01	4.21E-11	4.01E-01	6.49E-11	3.25E-01	5.27E-11	1.12E+00	1.81E-10
Plutonium-238	2.35E-03	2.72E-10	5.64E-02	1.53E-11	1.13E-01	3.07E-11	1.74E-01	4.73E-11	1.41E-01	3.84E-11	4.84E-01	1.32E-10
Plutonium-239/240	NA	2.76E-10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Radium-226 + D	1.28E+00	7.30E-10	3.08E+01	2.25E-08	6.16E+01	4.49E-08	9.49E+01	6.93E-08	7.70E+01	5.62E-08	2.64E+02	1.93E-07
Radium-228 + D	1.11E+00	2.29E-09	2.66E+01	6.09E-08	5.32E+01	1.22E-07	8.20E+01	1.88E-07	6.65E+01	1.52E-07	2.28E+02	5.23E-07
Radon-222+ D	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Strontium-90 + D	NA	1.44E-10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Technetium-99	1.64E+00	7.66E-12	3.93E+01	3.01E-10	7.87E+01	6.03E-10	1.21E+02	9.29E-10	9.84E+01	7.54E-10	3.38E+02	2.59E-09
Thorium-228 + D	1.13E+00	8.09E-10	2.70E+01	2.19E-08	5.41E+01	4.37E-08	8.33E+01	6.74E-08	6.76E+01	5.47E-08	2.32E+02	1.88E-07
Thorium-230	2.46E+00	2.02E-10	5.90E+01	1.19E-08	1.18E+02	2.38E-08	1.82E+02	3.67E-08	1.47E+02	2.98E-08	5.06E+02	1.02E-07
Thorium-232	1.10E+00	2.31E-10	2.63E+01	6.08E-09	5.27E+01	1.22E-08	8.12E+01	1.88E-08	6.58E+01	1.52E-08	2.26E+02	5.22E-08
Uranium-234	5.55E+00	1.58E-10	1.33E+02	2.10E-08	2.66E+02	4.21E-08	4.10E+02	6.48E-08	3.33E+02	5.26E-08	1.14E+03	1.80E-07
Uranium-235 + D	2.53E-01	1.63E-10	6.06E+00	9.88E-10	1.21E+01	1.98E-09	1.87E+01	3.05E-09	1.52E+01	2.47E-09	5.21E+01	8.48E-09
Uranium-238 + D	5.42E+00	2.10E-10	1.30E+02	2.73E-08	2.60E+02	5.46E-08	4.01E+02	8.42E-08	3.25E+02	6.82E-08	1.12E+03	2.34E-07
											total =	**2.65E-06**

TABLE E.10-4

Undeveloped Park User - 70 Year Exposure Factor for Child, Youth, Adult, and Senior with Maximum Uranium Concentration and No Organic Constituents in Surface Water
IngestSWrad

Undeveloped Park User - Ingestion of Surface Water
Risk calculation in Zone 5 for exposure duration of 70 years loaded on child, youth, adult, and senior; maximum uranium concentration in surface water; remove one-half detection limit values for organic COCs in surface water

Intake Equation:			UNITS	Assigned Values			
				child	youth	adult	senior
	CDI =	(CW*EF*ED*IR)/(BW*AT)	pCi				
	CDI =	Chronic Daily Intake	pCi				
	CW =	Concentration of radionuclide in water	pCi/L	see COC table below			
	EF =	Exposure frequency	days/yr	12	12	12	12
	ED =	Exposure duration	yrs	6	12	37	15
	IR =	Ingestion rate	L/day	0.035	0.035	0.015	0.015

COC	conc	CSF	CHILD		YOUTH		ADULT		SENIOR		SUM	
			CDI	ILCR	CDI	ILCR	CDI	ILCR	CDI	ILCR	CDI	ILCR
	pCi/L	1/pCi	pCi	CDI*CSF	pCi	CDI*CSF	pCi	CDI*CSF	pCi	CDI*CSF	pCi	CDI*CSF
Cesium-137 + D	1.99E+00	3.04E-11	5.01E+00	1.52E-10	1.00E+01	3.05E-10	1.33E+01	4.03E-10	5.37E+00	1.63E-10	3.37E+01	1.02E-09
Lead-210 + D	7.80E-01	1.27E-09	1.96E+00	2.50E-09	3.93E+00	4.99E-09	5.19E+00	6.60E-09	2.11E+00	2.67E-09	1.32E+01	1.68E-08
Neptunium-237 + D	2.66E-01	6.74E-11	6.71E-01	4.52E-11	1.34E+00	9.05E-11	1.77E+00	1.20E-10	7.19E-01	4.85E-11	4.51E+00	3.04E-10
Plutonium-238	3.71E-02	1.31E-10	9.35E-02	1.22E-11	1.87E-01	2.45E-11	2.47E-01	3.24E-11	1.00E-01	1.31E-11	6.28E-01	8.22E-11
Plutonium-239/240	NA	1.35E-10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Radium-226 + D	3.01E-01	3.86E-10	7.59E-01	2.93E-10	1.52E+00	5.86E-10	2.01E+00	7.74E-10	8.13E-01	3.14E-10	5.10E+00	1.97E-09
Radium-228 + D	3.17E+00	1.04E-09	7.98E+00	8.30E-09	1.60E+01	1.66E-08	2.11E+01	2.19E-08	8.55E+00	8.89E-09	5.36E+01	5.57E-08
Radon-222+ D	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Strontium-90 + D	NA	7.40E-11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Technetium-99	9.35E+00	2.75E-12	2.36E+01	6.48E-11	4.71E+01	1.30E-10	6.22E+01	1.71E-10	2.52E+01	6.94E-11	1.58E+02	4.35E-10
Thorium-228 + D	3.07E+00	3.00E-10	7.74E+00	2.32E-09	1.55E+01	4.64E-09	2.05E+01	6.14E-09	8.29E+00	2.49E-09	5.20E+01	1.56E-08
Thorium-230	6.30E-01	9.10E-11	1.59E+00	1.45E-10	3.18E+00	2.89E-10	4.20E+00	3.82E-10	1.70E+00	1.55E-10	1.07E+01	9.70E-10
Thorium-232	3.17E+00	1.01E-10	7.98E+00	8.06E-10	1.60E+01	1.61E-09	2.11E+01	2.13E-09	8.55E+00	8.63E-10	5.36E+01	5.41E-09
Uranium-234	3.00E+02	7.07E-11	7.56E+02	5.35E-08	1.51E+03	1.07E-07	2.00E+03	1.41E-07	8.10E+02	5.73E-08	5.08E+03	3.59E-07
Uranium-235 + D	1.37E+01	7.18E-11	3.45E+01	2.47E-09	6.89E+01	4.95E-09	9.11E+01	6.54E-09	3.69E+01	2.65E-09	2.31E+02	1.66E-08
Uranium-238 + D	2.93E+02	8.71E-11	7.39E+02	6.43E-08	1.48E+03	1.29E-07	1.95E+03	1.70E-07	7.92E+02	6.89E-08	4.96E+03	4.32E-07
											total =	**9.06E-07**

TABLE E.10-4

Undeveloped Park User - 70 Year Exposure Factor for Child, Youth, Adult, and Senior with Maximum Uranium Concentration and No Organic Constituents in Surface Water

ExternalRad

Undeveloped Park User - External Radiation

Risk calculation in Zone 5 for exposure duration of 70 years loaded on child, youth, adult, and senior; maximum uranium concentration in surface water; remove one-half detection limit values for organic COCs in surface water

Intake Equation:			UNITS	Assigned Values			
				child	youth	adult	senior
	CDI =	(CS*EF*ED*ET_o*(1-SH_o))					
	CDI =	Chronic Daily Intake	yr pCi/g				
	CS =	Concentration of radionuclide in soil	pCi/g	see table of COCs below			
	EF =	Fraction of year exposed to radiation	--	0.055	0.11	0.055	0.11
	ED =	Exposure duration	yrs	6	12	37	15
	ET_o =	Fraction of day spent outdoors	--	0.083	0.083	0.083	0.083
	ET_i =	Fraction of day spent indoors	--	NA	NA	NA	NA
	SH_o =	Shield factor outdoors	--	0.25	0.25	0.25	0.25
	SH_i =	Shield factor indoors	--	NA	NA	NA	NA

COC	conc	CSFx	CHILD		YOUTH		ADULT		SENIOR		SUM	
			CDI	ILCR	CDI	ILCR	CDI	ILCR	CDI	ILCR	CDI	ILCR
	pCi/g	g/pCi yr	yr pCi/g	CDI*CSF	yr pCi/g	CDI*CSF	yr pCi/g	CDI*CSF	yr pCi/g	CDI*CSF	yr pCi/g	CDI*CSF
Cesium-137 + D	8.17E-02	2.55E-06	1.68E-03	4.28E-09	6.71E-03	1.71E-08	1.04E-02	2.64E-08	8.39E-03	2.14E-08	2.71E-02	6.92E-08
Lead-210 + D	2.13E+00	4.21E-09	4.39E-02	1.85E-10	1.75E-01	7.39E-10	2.70E-01	1.14E-09	2.19E-01	9.23E-10	7.09E-01	2.98E-09
Neptunium-237 + D	5.42E-03	7.97E-07	1.11E-04	8.87E-11	4.45E-04	3.55E-10	6.87E-04	5.47E-10	5.57E-04	4.44E-10	1.80E-03	1.43E-09
Plutonium-238	2.35E-03	7.22E-11	4.83E-05	3.49E-15	1.93E-04	1.39E-14	2.98E-04	2.15E-14	2.41E-04	1.74E-14	7.81E-04	5.64E-14
Plutonium-239/240	NA	2.00E-10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Radium-226 + D	1.28E+00	8.49E-06	2.64E-02	2.24E-07	1.05E-01	8.95E-07	1.63E-01	1.38E-06	1.32E-01	1.12E-06	4.26E-01	3.62E-06
Radium-228 + D	1.11E+00	4.53E-06	2.28E-02	1.03E-07	9.11E-02	4.13E-07	1.40E-01	6.36E-07	1.14E-01	5.16E-07	3.68E-01	1.67E-06
Radon-222+ D	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Strontium-90 + D	NA	1.96E-08	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Technetium-99	1.64E+00	8.14E-11	3.37E-02	2.74E-12	1.35E-01	1.10E-11	2.08E-01	1.69E-11	1.68E-01	1.37E-11	5.45E-01	4.43E-11
Thorium-228 + D	1.13E+00	7.76E-06	2.31E-02	1.80E-07	9.26E-02	7.18E-07	1.43E-01	1.11E-06	1.16E-01	8.98E-07	3.74E-01	2.90E-06
Thorium-230	2.46E+00	8.19E-10	5.05E-02	4.14E-11	2.02E-01	1.65E-10	3.11E-01	2.55E-10	2.52E-01	2.07E-10	8.16E-01	6.69E-10
Thorium-232	1.10E+00	3.42E-10	2.25E-02	7.71E-12	9.02E-02	3.08E-11	1.39E-01	4.76E-11	1.13E-01	3.86E-11	3.65E-01	1.25E-10
Uranium-234	5.55E+00	2.52E-10	1.14E-01	2.87E-11	4.56E-01	1.15E-10	7.03E-01	1.77E-10	5.70E-01	1.44E-10	1.84E+00	4.64E-10
Uranium-235 + D	2.53E-01	5.43E-07	5.19E-03	2.82E-09	2.08E-02	1.13E-08	3.20E-02	1.74E-08	2.60E-02	1.41E-08	8.39E-02	4.56E-08
Uranium-238 + D	5.42E+00	1.14E-07	1.11E-01	1.27E-08	4.45E-01	5.07E-08	6.86E-01	7.82E-08	5.56E-01	6.34E-08	1.80E+00	2.05E-07
											total =	**8.51E-06**

TABLE E.10-4

Undeveloped Park User - 70 Year Exposure Factor for Child, Youth, Adult, and Senior with Maximum Uranium Concentration and No Organic Constituents in Surface Water
SumPaths

Undeveloped Park User - Summation of all Pathways
Risk calculation in Zone 5 for exposure duration of 70 years loaded on child, youth, adult, and senior; maximum uranium concentration in surface water; remove one-half detection limit values for organic COCs in surface water

*** See Table E.10-3b for the background calculations provided in this table.**

	HQ	ILCR	rad only ILCR
Inhale	1.76E-04	2.31E-05	2.30E-05
Dermal Soil	3.42E-03	1.77E-06	NA
Ingest Soil	1.51E-02	6.71E-06	2.65E-06
Dermal Surface Water	6.01E-03	2.44E-07	NA
Ingest Surface Water	2.38E-02	8.98E-08	9.06E-07
External Radiation	NA	9.42E-06	8.51E-06
SUM	**4.86E-02**	**4.13E-05**	**3.51E-05**

Summation of all paths for individual nuclides

	Total ILCR	BKGD* ILCR	Total-BKGD ILCR
Cesium-137 + D	7.09E-08	5.74E-08	1.36E-08
Lead-210 + D	1.19E-06	8.74E-07	3.18E-07
Neptunium-237 + D	1.93E-09	1.36E-10	1.79E-09
Plutonium-238	2.22E-10	2.44E-11	1.98E-10
Plutonium-239/240	NA	NA	NA
Radium-226 + D	3.81E-06	4.64E-06	0.00E+00
Radium-228 + D	2.25E-06	2.55E-06	0.00E+00
Radon-222+ D	2.29E-05	2.79E-05	0.00E+00
Strontium-90 + D	NA	NA	NA
Technetium-99	3.07E-09	2.88E-10	2.78E-09
Thorium-228 + D	3.12E-06	3.46E-06	0.00E+00
Thorium-230	1.11E-07	6.99E-08	4.11E-08
Thorium-232	6.25E-08	7.04E-08	0.00E+00
Uranium-234	5.46E-07	5.33E-08	4.93E-07
Uranium-235 + D	7.09E-08	1.53E-08	5.57E-08
Uranium-238 + D	8.77E-07	1.26E-07	7.51E-07
SUM	**3.51E-05**	**3.98E-05**	**1.68E-06**

TABLE E.10-4

Undeveloped Park User - 70 Year Exposure Factor for Child, Youth, Adult, and Senior with Maximum Uranium Concentration and No Organic Constituents in Surface Water

SumPaths

Summation of all paths for individual chemicals

	Total		BKGD*		Total - BKGD	
	ILCR	HQ	ILCR	HQ	ILCR	HQ
1,1,2-Trichloroethane	1.03E-09	1.51E-08	8.74E-10	0.00E+00	1.53E-10	1.51E-08
1,1-Dichloroethylene	6.22E-11	2.07E-09	0.00E+00	0.00E+00	6.22E-11	2.07E-09
1,2-dichloroethane	4.67E-12	2.57E-09	0.00E+00	0.00E+00	4.67E-12	2.57E-09
2-Butanone	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	NA	NA	NA	NA	NA	NA
4-Methylphenol	NA	NA	NA	NA	NA	NA
4-Nitroanaline	NA	NA	NA	NA	NA	NA
Acetone	no CSFs	1.05E-09	no CSFs	0.00E+00	no CSFs	1.05E-09
Antimony	no CSFs	1.43E-03	no CSFs	1.78E-03	no CSFs	0.00E+00
Aroclor-1254	4.12E-08	1.03E-03	0.00E+00	0.00E+00	4.12E-08	1.03E-03
Aroclor-1260	3.71E-09	9.28E-05	0.00E+00	0.00E+00	3.71E-09	9.28E-05
Arsenic	4.10E-06	9.09E-03	4.49E-06	9.95E-03	0.00E+00	0.00E+00
Barium	no CSFs	2.82E-04	no CSFs	2.80E-04	no CSFs	1.21E-06
Benzene	1.41E-12	6.40E-09	0.00E+00	0.00E+00	1.41E-12	6.40E-09
Benzo(a)anthracene	3.28E-08	no RfDs	0.00E+00	no RfDs	3.28E-08	no RfDs
Benzo(a)pyrene	3.31E-07	no RfDs	0.00E+00	no RfDs	3.31E-07	no RfDs
Benzo(b)fluoranthene	5.22E-08	no RfDs	0.00E+00	no RfDs	5.22E-08	no RfDs
Benzo(k)fluoranthene	1.16E-09	no RfDs	0.00E+00	no RfDs	1.16E-09	no RfDs
Beryllium	1.53E-06	1.93E-04	1.75E-06	2.22E-04	0.00E+00	0.00E+00
Bis(2-chloroisopropyl)ether	NA	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	NA	NA	NA	NA	NA	NA
Boron	NA	NA	NA	NA	NA	NA
Bromodichloromethane	1.33E-12	1.07E-09	0.00E+00	0.00E+00	1.33E-12	1.07E-09
Bromoform	NA	NA	NA	NA	NA	NA
Bromomethane	NA	NA	NA	NA	NA	NA
Cadmium	3.39E-10	2.16E-04	4.74E-10	2.89E-04	0.00E+00	0.00E+00
Carbazole	NA	NA	NA	NA	NA	NA
Carbon disulfide	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	3.35E-12	3.69E-08	0.00E+00	0.00E+00	3.35E-12	3.69E-08
Chlordane	NA	NA	NA	NA	NA	NA
Chlorobenzene	NA	NA	NA	NA	NA	NA
Chloroform	NA	NA	NA	NA	NA	NA
Chromium (VI)	7.83E-08	2.21E-03	7.89E-08	1.97E-03	0.00E+00	2.36E-04
Chrysene	3.25E-10	no RfDs	0.00E+00	no RfDs	3.25E-10	no RfDs
Cobalt	NA	NA	NA	NA	NA	NA
Copper	NA	NA	NA	NA	NA	NA
Cyanide	NA	NA	NA	NA	NA	NA
Cyclohexanone	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	5.81E-08	no RfDs	0.00E+00	no RfDs	5.81E-08	no RfDs
Dieldrin	1.69E-09	2.12E-06	0.00E+00	0.00E+00	1.69E-09	2.12E-06
Di-n-octylphthalate	NA	NA	NA	NA	NA	NA

TABLE E.10-4

Undeveloped Park User - 70 Year Exposure Factor for Child, Youth, Adult, and Senior with Maximum Uranium Concentration and No Organic Constituents in Surface Water

SumPaths

Summation of all paths for individual chemicals (continued)

	Total		BKGD*		Total - BKGD	
	ILCR	HQ	ILCR	HQ	ILCR	HQ
Ethyl ether	no CSFs	NA	no CSFs	NA	NA	NA
Ethylbenzene	4.03E-17	2.56E-10	0.00E+00	0.00E+00	4.03E-17	2.56E-10
Fluoride	no CSFs	1.40E-04	no CSFs	5.61E-05	no CSFs	8.41E-05
Heptachlorodibenzofuran	NA	NA	NA	NA	NA	NA
Heptachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA
Hexachlorodibenzofuran	NA	NA	NA	NA	NA	NA
Hexachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	2.15E-08	no RfDs	0.00E+00	no RfDs	2.15E-08	no RfDs
Lead	no CSFs	no RfDs	no CSFs	no RfDs	no CSFs	no RfDs
Manganese	NA	NA	NA	NA	NA	NA
Mercury	no CSFs	5.65E-05	no CSFs	5.61E-05	no CSFs	4.15E-07
Methanol	NA	NA	NA	NA	NA	NA
Methyl-2-pentanone	no CSFs	1.66E-09	no CSFs	0.00E+00	no CSFs	1.66E-09
Methylene chloride	1.89E-12	4.20E-09	0.00E+00	0.00E+00	1.89E-12	4.20E-09
Molybdenum	no CSFs	1.81E-04	no CSFs	1.93E-04	no CSFs	0.00E+00
Nickel	NA	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	NA	NA	NA	NA	NA	NA
N-nitrosodipropylamine	NA	NA	NA	NA	NA	NA
Octachlorodibenzofuran	NA	NA	NA	NA	NA	NA
Octochlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA
Pentachlorodibenzofuran	NA	NA	NA	NA	NA	NA
Pentachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA
Pentachlorophenol	NA	NA	NA	NA	NA	NA
Phenanthrene	no CSFs	no RfDs	no CSFs	no RfDs	no CSFs	no RfDs
Selenium	no CSFs	5.69E-05	no CSFs	5.42E-05	no CSFs	2.69E-06
Silver	no CSFs	2.76E-05	no CSFs	4.22E-05	no CSFs	0.00E+00
Tetrachlorodibenzofuran	NA	NA	NA	NA	NA	NA
Tetrachlorodibenzo-p-dioxin	NA	NA	NA	NA	NA	NA
Tetrachloroethylene	9.33E-11	1.73E-08	0.00E+00	0.00E+00	9.33E-11	1.73E-08
Thallium	NA	NA	NA	NA	NA	NA
Toluene	no CSFs	1.42E-09	no CSFs	0.00E+00	no CSFs	1.42E-09
Tributyl phosphate	NA	NA	NA	NA	NA	NA
Trichloroethylene	3.45E-11	2.88E-07	0.00E+00	0.00E+00	3.45E-11	2.88E-07
Trifluorochloromethane	NA	NA	NA	NA	NA	NA
Uranium	no CSFs	3.36E-02	no CSFs	1.41E-03	no CSFs	3.21E-02
Vanadium	NA	NA	NA	NA	NA	NA
Vinyl chloride	NA	NA	NA	NA	NA	NA
Xylenes	no CSFs	1.23E-09	no CSFs	0.00E+00	no CSFs	1.23E-09
Zinc	NA	NA	NA	NA	NA	NA
SUM	**6.26E-06**	**4.86E-02**	**6.32E-06**	**1.63E-02**	**5.45E-07**	**3.36E-02**