ENTACT

Appendix K

Appendix K

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BASELINE HUMAN HEALTH RISK ASSESSMENT
for the
OLD AMERICAN ZINC PLANT SITE
FAIRMONT CITY, ILLINOIS
Revision 0

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Baseline Human Health Risk Assessment
Old American Zinc Plant Site
Fairmont City, Illinois

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LIST OF ACRONYMS/ABBREVIATIONS

ALM Adult Lead Model

LIST OF ACRONYMS/ABBREVIATIONS

ALM	Adult Lead Model
BHHRA	Baseline Human Health Risk Assessment
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act (Superfund)
CERCLIS	Comprehensive Environmental Response, Compensation and Liability Information System
COPC	Contaminants of Potential Concern
COC	Contaminant of Concern
CSF	Cancer Slope Factor
CSM	Conceptual Site Model
DPC	Defense Plant Corporation
ENTACT	ENTACT & Associates, LLC
EPC	Exposure Point Concentrations
ft	feet
HI	Hazard Index
HQ	Hazard Quotient
IDPH	Illinois Department of Public Health
IEPA	Illinois Environmental Protection Agency
IEUBK	Integrated Exposure Uptake Biokinetic
LEC	Lifetime Exposure Concentration
m^3	cubic meters
mg/Kg	Milligram per kilogram
mg/L	Milligram per liter
$\mu g/m^3$	Microgram per cubic meter
MRC	Metals Reserve Company
NCP	National Contingency Plan
PEF	Particulate Emission Factor
PPRTV	Provisional Peer Reviewed Toxicity Values
PRG	Preliminary Remediation Goal
RA	Removal Action
RAGS	Risk Assessment Guidance for Superfund
RPF	Relative Potency Factor
RCRA	Resource Conservation and Recovery Act

RfC	Reference Concentration
RfD	Reference Dose
RI/FS	Remedial Investigation/ Feasibility Study
SAT	Site Assessment Team
SF	Slope Factor
SLRE	Screening Level Risk Evaluation
SSP	Support Sampling Plan
TACO	Tiered Approach to Corrective Action Objectives
TAL	Target Analyte List
TCRA	Time Critical Removal Action
UCL	Upper Confidence Limit
URF	Unit Risk Factors
USEPA	United States Environmental Protection Agency
VOC	Volatile Organic Compound
XRF	X-Ray Fluorescence
XTRA	XTRA Intermodal, Inc.

1.0 INTRODUCTION

1.1 OBJECTIVE

The primary objective of the Baseline Human Health Risk Assessment (BHHRA) is to evaluate potential adverse health effects attributable to exposure to smelter-related contaminants at the Old American Zinc Plant Site (Site) in Fairmont City, Illinois. The results of the risk assessment will facilitate Site management decisions. The resulting risk estimates ~~are likely to~~ may overestimate ~~actual~~ risks ~~in order to~~ and provide a conservative basis for future risk management decisions. The secondary objective of the risk assessment is to assist in the determination regarding potential appropriate cleanup levels or institutional controls, as necessary, which are protective of human health. ← chg

The Site consists of the 132-acre area where the former smelter facilities were located and recent trucking operations occurred (Facility Area), and areas beyond the boundaries of the Facility Area that have either a direct hydrologic connection to the Facility Area or may have been potentially affected from either air-borne migration of contaminants from the Facility Area or by the use of slag material as surfacing and fill material by residents and the Village of Fairmont City (Village).

1.2 SITE OWNERSHIP AND OPERATIONAL HISTORY

1.2.1 Former American Zinc, Lead & Smelting Company

In 1916, American Zinc Company of Illinois (American Zinc), a subsidiary of American Zinc, Lead and Smelting Company, purchased an existing primary zinc smelter located in Fairmont City from Granby Mining and Smelting Company. American Zinc produced slab zinc, zinc carbonate, cadmium, lead, and sulfuric acid at the existing smelting facilities. The primary residue generated during the smelter's operation was slag.

In 1941, American Zinc entered into an "Agreement of Lease" with two government entities: Defense Plant Corporation (DPC) and Metals Reserve Company (MRC) as part of meeting the increased zinc production needs of the country during World War II. DPC constructed additional smelting facilities on the Facility Area including a zinc roaster, an acid plant, a Waelz plant to produce lead, two zinc furnaces, and a cadmium furnace to increase the smelting capacity of the smelter. These facilities were all owned by DPC, and were leased back to and operated by American Zinc. In April 1951, American Zinc purchased the federal facilities from DPC. The MRC purchased and delivered metal concentrates to the smelter for smelting.

American Zinc discontinued use of the zinc furnace operations in 1953, but continued to roast ores for other smelter facilities and to produce acid from the roasting process. All

Facility Area operations by American Zinc were terminated by the end of 1967. All structures associated with the smelter were razed some time between 1967 and 1978. American Zinc maintained ownership of the Site until 1979 when it sold the property to XTRA.

All structures associated with the historic smelter operations which occurred between 1916 and 1967 were razed some time between 1967 and 1978 based on historical maps and aerial photos. Footprints of the former smelter-related buildings are still present in the central portion of the Facility Area as evidenced by concrete and brick foundations and other rubble associated with the former smelter. Observations at some of the former building footprints suggest the buildings were constructed on slabs with some subsurface utility corridors and/or vaults.

1.2.2 XTRA Intermodal, Inc.

XTRA leased the Facility Area property from American Zinc from 1976 to 1979 when it purchased the property, including clinker and other smelter residues, minerals or metals located on the property. XTRA used the Facility Area property for the storage of semi-trailers from 1976 to some time after 2003.

XTRA used the property as a transport trucking terminal which included the lease, storage, and maintenance of a diverse fleet of over-the-road trailers, intermodal ("piggy-back") trailers, and intermodal equipment. XTRA discontinued operations at the Facility Area sometime after 2003 and the Facility Area is currently inactive.

There are three buildings on the Facility Area property which were built and used by XTRA during its trucking operations. The buildings consist of brick and sheet metal and were used for administrative and maintenance purposes. A third sheet metal building, located south of the XTRA buildings, was leased by XTRA to Interstate Tire Retread Inc. XTRA and Interstate Tire Retread Inc. are no longer operating at the Facility Area and the buildings have been vacated. The structures are slated for demolition by XTRA.

1.3 PREVIOUS INVESTIGATIONS

The Site was placed on the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) list on October 13, 1993 as a site discovery. The discovery action was taken as the result of complaints from residents regarding the potential off-Site migration of contaminants to the surrounding neighborhood from XTRA's on-Site activities involving movement of the stockpiled slag material. Several investigations were conducted by the USEPA, IEPA, and Illinois Department of Public Health (IDPH) that included the collection of soil, sediment, and slag samples to assess whether or not the Site posed a threat to human health and the environment.

Between April and September, 1996, the IDPH conducted outdoor air monitoring at a

residence located 300 ft north of the Site. During this period, the average level of cadmium in the air was 0.006 micrograms per cubic meter of air ($\mu g/cm^3$), average level of lead was 0.062 $\mu g/cm^3$, and the average level for arsenic was 0.004 $\mu g/cm^3$. The IDPH concluded that no short-term health effects and no apparent increased cancer risk would be expected from breathing these levels of metals in air. The IDPH also noted that the average level of cadmium in the air for the year of 1996 in East St. Louis, located 4 miles from the Site, was 0.007 $\mu g/cm^3$, and that the observed cadmium levels may be a regional phenomenon due to numerous industries in the area (IDPH, 1996).

On April 22, 1999, the USEPA Site Assessment Team (SAT) presented a strategy memorandum to the Regional Decision Team addressing the potential risks associated with the Site. The SAT indicated that the Site posed a threat to human health via the soil exposure pathway. The SAT memorandum stated that off-Site migration of on-Site contamination had occurred by either wind-blown deposition and/or soil runoff. Based on the analysis, the USEPA and the IEPA agreed that the levels of arsenic, cadmium, and lead found in off-Site soils may cause adverse health effects.

Between June 24, 2003 and May 28, 2003, ENTACT conducted a TCRA on residential, commercial, and industrial properties adjacent to the Facility Area in accordance with a March 22, 2002 AOC entered into between Blue Tee and the U.S. EPA. As part of the TCRA, the concentration of metals in soil was measured at 462 properties and a removal action was conducted on 209 properties (ENTACT, 2003).

An air transport evaluation was conducted as part of the 2003 TCRA to determine the likelihood of lead-impacted air from the Facility Area re-contaminating the surrounding properties. The purpose of the Air Transport and Surface Water Runoff Evaluation was to determine the likelihood of lead-impacted settleable particulate matter and/or runoff migrating from the Facility Area and re-contaminating surrounding properties after the 2003 off-Facility Area soil removal activities have been completed. Based on this study, it was concluded that the total lead deposition rate over a two-year period would not exceed the residential or industrial remedial objectives of 400 mg/kg and 1,000 mg/kg respectively.

1.4 SITE DESCRIPTION

1.4.1 Facility Area

The Facility Area is currently inactive, and surrounded by a chain-linked perimeter fence with locked entrance gates along the eastern and southern boundaries. The fence was constructed to control and limit access onto the property by unauthorized persons. The only place where the fence is not continuous is at the former access drive located on the south side of the Site. This access road is blocked with large concrete barricades to prevent entry by unauthorized vehicles, and abuts an active railway terminal area. As the only way to reach this south access way is to go through the CSX rail yard security gate, entry to the Site through this access way is hindered. Therefore, entry to the Facility Area is controlled. During RI sampling events, no evidence of trespassing was

observed/encountered on the Facility Area. No tire marks or debris left from trespassers. No equipment was ever stolen nor was the trailers broken into or vandalized.

The overall nature of surficial material throughout the Facility Area consists of thin layer of a black granular asphaltic material (roto-till) overlying redistributed ground slag. Surficial material also included areas of localized demolition debris, brush, and gravel (access roads). In north central portion of Facility Area there is a low-lying area covered with gray powdery fill. The intended future land use is solely industrial. XTRA, the current property owner will incorporate deed restrictions to ensure land use is maintained industrial.

The Facility Area is bordered by Kingshighway to the east, 45th Street to the west, Maryland Avenue to the north, the Cargill Facility (formerly Swift Agricultural Chemical Corp.) to the southeast, and Rose Creek and the Penn Central and Baltimore/Ohio railroad corridor to the south (Figure 1-1). Residential properties lie to the immediate north and northeast of the Site, and commercial and industrial properties lie to the immediate east, south and west. Collinsville Road, a 4-lane highway, lies approximately 0.12 miles north of the Site and to the immediate south of a wetland complex.

1.4.2 Surface Water and Groundwater Uses

Surface water drainage over the majority of the Facility Area flows in a southwesterly direction to Rose Creek via a series of drainage ditches (Figure 1-2). Rose Creek flows in a westerly direction from the Facility Area, discharging to the Old Cahokia Watershed at a point approximately ¾ mile west of the Facility Area. The northwestern portion of the Facility Area is drained by a ditch along the western boundary of the Facility Area, which flows northward directly to the Old Cahokia Watershed at a point approximately ¼ mile north of the Facility Area. The drainage drainages and Rose Creek are ephemeral, flowing during and after rain events. There is no baseflow to these bodies and they have flowing water only from storm water run-off. Neither the drainage ditches nor Rose Creek can be used for fishing or recreational use and there is no evidence of swimming or fishing in these drainageways. These are shallow ephemeral channels, which only transport water during and after precipitation events. There is brush along Rose Creek and slag along the drainage ditches and portions of Rose Creek of the Facility Area. Further information on these drainage features is provided in Section 2 of the RI Report.

Off-Facility Area surface water bodies include the Old Cahokia Watershed, which includes the Old Cahokia Wetlands, located north and northwest of the Facility, and Schoenberger Creek, located approximately 1 mile south of the Facility Area. Based on information presented in the RI, surface drainage from the Facility Area discharges into the Old Cahokia Watershed via outfalls from Rose Creek and West Ditch. The area of the Old Cahokia Watershed immediately adjacent to the Rose Creek outfall is a dry meadow. Beyond the outfall area lies a wet meadow associated with an engineered drainage channel and localized ponds in former borrow pits. The area of the West Ditch outfall is characterized as a vegetated slope terrace with occasional ponding of water,

beyond which lies an inundated pond with no observable flow. Schoenberger Creek does not receive any drainage from the Facility Area, but represents a tributary to the engineered Cahokia Canal (located to the northwest of the Facility Area), which also receives drainage from Old Cahokia Wetlands.

The Village does not utilize groundwater for its potable water supply but draws exclusively on surface water from the Mississippi River. The nearest municipal wells are located approximately 3.5 miles to the east, and upgradient, of the Site, which serve the City of Collinsville. These wells range from 98 to 108 ft deep and draw water from the Mississippian-Valmeyer bedrock formation (USEPA, 1999). Slug testing and permeability testing of shallow saturated horizons on the Facility Area indicate that the groundwater above 60 to 70 feet is not, and cannot be used for potable purposes based n abundant fine and low well yield.

1.4.3 Surrounding Properties

The properties surrounding the Facility Area include residential, commercial and vacant properties. The vacant properties include undeveloped lots, primarily located south of the Facility Area covered with high weed and trash. One vacant lot was a former junkyard. There is evidence that slag from the facility Area has been used for fill and surfacing material in the surrounding properties. The Village of Fairmont City also has historically used slag as fill or surfacing material in alleyways. The alleyways are used by City for trash collection and utility ways. They are public right of ways. Most alleyways are separated from adjacent residential properties on either side by fencing.

1.5 APPROACH

The BHHRA was prepared under a no-action alternative (i.e., in the absence of remedial action), in accordance with the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). Information and data collected as part of the Remedial Investigation/Feasibility Study (RI/FS) activities serve as the basis for this task. The areas to be addressed by the BHHRA include the 132-acre area where the former smelter facilities were located and recent trucking operations occurred (Facility Area), and areas beyond the boundaries of the Facility Area that have either a direct hydrologic connection to the Facility Area or may have been potentially affected from either air-borne migration of contaminants from the Facility Area or by the use of slag material as surfacing and fill material by residents and the Village of Fairmont City (Village). The BHHRA evaluates the potential for adverse risks associated with exposure to chemicals in slag, soil, surface water, sediment, and groundwater. No air ? No, see p 3 Air monitoring indicated low risk

The applicable U.S. EPA risk assessment guidance was used for conducting the BHHRA including, but not limited to, the following documents:

- Risk Assessment Guidance for Superfund, Human Health Evaluation Manual, Parts A, B, D & E (1989, 1991a, 2001, 2004b).

- U.S. EPA Adult Lead Methodology (ALM) for quantifying adult lead exposures.
- Integrated Exposure Uptake Biokinetic Model for Lead in Children, Windows® version (IEUBKwin v1.0 build 263) (December, 2005)
- ProUCL Version 3.0 and 4.0 and User's Guide (2004d; 2007b).
- Human Health Toxicity Values in Superfund Risk Assessments (2003).
- Guidance for Comparing Background and Chemical Concentrations in Soil for Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Sites (2002b).

The BHHRA is organized into in the following remaining subsections:

Section 2 - Data Evaluation
Section 3 - Exposure Assessment
Section 4 - Toxicity Assessment
Section 5 - Risk Characterization
Section 6 - References

The tables and figures developed to analyze and support the BHHRA findings are located at the end of the report and in Attachments A through D. Attachment A presents the RAGS Part D tables. RAGS Part D Table 8 is not presented in Attachment A because no radionuclides are present at this site.

2.0 DATA EVALUATION

In this section available information on the hazardous substances at the Site is evaluated, chemicals detected in the environmental media (i.e., soil/slag, sediment, surface water, and groundwater) at the Site are summarized, and COPCs in each medium are identified.

2.1 CONTAMINANT CHARACTERIZATION

This subsection summarizes the results from the RI that are evaluated in the BHHRA. Complete details on the Site investigation activities are presented in Section 2 and Section 4 of the RI. Both XRF and laboratory data were collected as part of the RI, however, only the laboratory data are considered in the BHHRA. In addition, samples were analyzed as either fine fraction or total metals.

2.1.1 Facility Area Slag/Soil Sampling

Surface samples were collected from the upper 2 to 3 centimeters (0 to 1 inch) of the surficial material in Grid Quadrants throughout the Facility Area (Figure 2-1). Composite surface soil and slag samples were collected from beneath existing pavement, gravel aggregate, or roto-mill. Fine fraction (sieved) surface soil samples were analyzed by an off-site laboratory for the 8 RCRA metals and zinc.

Soil borings were also advanced throughout the Facility Area as part of the RI (Figure 2-2). At each boring location, the soils were continuously collected in intervals of 0 to 6 inches, 6 inches to 1 foot and at one foot intervals thereafter. The borings were logged by a geologist to define the base of the roto-mill surfacing, the thickness of the ground relocated slag, and the depth to the underlying soils. The borings were advanced a minimum of 1.0 ft below the base of the slag fill material and were not terminated until the XRF field measurements indicated that levels of metals were below soil screening levels, the PID readings were within background levels, or until groundwater was encountered, whichever came first. A minimum of one subsurface soil sample was collected below the ground relocated slag at each boring location for laboratory analysis. Soil samples for laboratory analysis were collected from soil intervals which, based on visual evidence of staining or field screening results, are most likely to have been affected. Select Facility Area soil samples were also analyzed for volatile organic compounds (VOCs) and polycyclic aromatic hydrocarbons (PAHs).

2.1.2 Off-Facility Area Soil Sampling

Off-Facility Area soil sampling was completed to include the following:

- Residential and commercial properties and vacant lots located to the west and

north of the Facility Area, for which the property owners provided access for sampling. These properties and lots were not sampled and/or addressed as part of the 2003 time-critical removal action (TCRA).

- Alleyways in the Village where it was believed that the Village had historically used slag as fill or surfacing material. These alleyways are located in the residential areas to the west of the Facility Area

Residential/Commercial Sampling

As part of the RI, ENTACT sampled 25 residential, commercial and vacant properties in the vicinity of the former smelter Facility Area for lead, zinc, arsenic, and cadmium concentrations. Fifteen properties were located to the north, west or south of the Facility Area and ten were located in the east of the Facility Area. The properties were sampled following receipt of owner permission to access the property. Following is a summary of the 25 properties sampled by ENTACT in 2006 and 2007:

Address	Property Type	Date Sampled
Properties located north, south or west of the Facility Area		
2768 N. 42nd Street	Residential	06/22/2006
4000 Collinsville Road	Residential	07/12/2006
4012 Maple Avenue	Commercial	07/05/2006
Northwest corner of Cookson Road and 44th Street	Commercial	09/20/2006
2521 N. 42nd Street	Vacant	07/13/2006
N. 42nd Street	Vacant	07/13/2006
2845 N. 44th Street	Vacant	07/13/2006
2539 N. 41st Street	Vacant	07/14/2006
3022 N. 48th Street [1]	Vacant	07/20/2006
Corner of N. 39th Street and Locust Street	Vacant	07/20/2006
Address	**Property Type**	**Date Sampled**
47th Street (Schurman Avenue)	Vacant	09/21/2006
Maryland Parkway	Vacant	09/21/2006
3800 Roselake Road	Vacant	12/12/2006
3809 Maple Avenue	Vacant	03/26/2007
2339 N. 51st Street[1]	Vacant	07/13/2006

Address	Property Type	Date Sampled
Properties located east of the Facility Area		
5515 Thomas	Residential	06/27/2006
5528 Delmar	Residential	06/28/2006
5508 Thomas [2]	Residential	06/29/2006
5500 Maryland	Residential	06/29/2006
5432 Maryland	Residential	06/30/2006
5507 Thomas	Residential	07/06/2006
5514 Kinder	Residential	07/10/2006
5427 Kinder	Residential	07/10/2006
5510 Thomas	Residential	07/11/2006
5517 Delmar [2]	Residential	07/11/2006

[1] *Denotes property overgrown with dense vegetation; one five-point composite sample collected.*
[2] *Existing garden noted at property.*

Pursuant to the approved SSP and the U.S. EPA August 2003 OSWER 9285.7-50 Final Superfund Lead-Contaminated Residential Sites Handbook, properties encompassing a total surface area less than or equal to 5,000 square feet required five-point composite samples from each of the following locations: front yard, back yard and, as necessary, the side yard. When present, composite samples were collected from downspout discharge areas, gardens, or distinct play areas. The number and array of discrete aliquots comprising these composites were determined by field conditions. Properties with a total surface area exceeding 5,000 square feet were divided into four equal quadrants: two in the front yard and two in the back yard. Five-point composite samples were collected at equal spacing and from the same depth interval in each quadrant: 0 to 6 inches, 6 to 12 inches, 12 to 18 inches, and 18 to 24 inches. Sampling followed the same protocol as specified for properties less than or equal to 5,000 square feet.

Vacant parcels were divided into equal sections and two, five-point composite samples were collected from each half. The residential properties noted in the above table range in size from 625 square feet (2768 N. 42nd St) to 37,500 square feet (5507 Thomas), with an average lot size of about 12,000 square feet and median size of about 8,400 square feet.

Samples were collected using a two-inch diameter, stainless-steel hand auger at the following six-inch depth intervals: 0 to 6 inches, 6 to 12 inches, 12 to 18 inches, and 18 to 24 inches. Each sampled interval was placed into a stainless-steel bowl for homogenization. Following XRF analysis, ten percent of samples were submitted for laboratory analysis of total concentrations of the eight RCRA metals and zinc.

To provide data for the Baseline Human Health Risk Assessment (BHHRA), a five-point composite surface soil sample was collected from each property from the upper one inch

of surficial materials. Following XRF analysis, the composite samples were submitted for drying, sieving and fine fraction analysis of total concentrations of the eight RCRA metals and zinc.

Alleyway Sampling

The soil from a total of eight alleyways located to the west of the Facility Area was also sampled to characterize the potential concentrations of metals. Each of the alleyways were sampled along a series of eight transects (AT1 to AT8) bisecting each the alleyway (see Figure 2-3). Alley samples were identified as Off-Site Residential Alleyway Samples, designated as *[OS-Alleyway Transect No.-Sample No.-Bottom Depth (feet)]*. Soil samples were collected using a 4.0-foot MacroCore sampler from the upper 3 to 4 feet of material. The core was opened and field-screened by the XRF at intervals of 0 to 6 inches, 6 inches to 1 foot, and at one foot intervals. Based on XRF results, borings continued in a vertical direction until the screening criteria was met. Ten percent of the samples were submitted to the approved laboratory for analysis of total RCRA metals and zinc. Two core samples were collected at in each of the eight alleyways and analyzed by the laboratory for the 8 RCRA metals and zinc. One, 3-point composite sample was also collected from the upper 0.1 foot of the grass-covered areas of each alleyway for off-Facility Area metal analysis of the fine fraction. The composite samples consisted of discrete samples collected from the upper 0.1 foot outside the gravel tracks. All alleyway samples were analyzed for the 8 RCRA metals and zinc.

2.1.3 Sediment Sampling

Sediment samples were collected from the ephemeral ditches and creeks draining the Facility Area. Samples were collected upstream of the Facility Area, on the Facility Area, downstream of the Facility Area and in the Old Cahokia Watershed, which receives all of the surface water runoff from the Facility Area (Figure 2-5). Due to the narrowness of the drainages, one grab sample was collected from the upper 0 to 6 inches of sediment from the center of the ditch or creek bed at each location. Sediment samples analyzed for the 8 RCRA metals and zinc. Select samples were also analyzed for copper and for pesticides.

2.1.4 Surface Water Samples

At sediment sample locations where water was present, surface water samples were also collected (Figure 2-5). Surface water samples were collected in June and December 2006 and were analyzed for total and dissolved 8 RCRA metals and zinc; select samples were also analyzed for copper. Surface water samples were collected on the Facility Area from East Ditch #1, West Ditch #2, and Rose Creek. Surface water samples were collected upgradient and downgradient of the Facility Area from Rose Creek, in Schoenberger Creek and in the Old Cahokia Watershed. Several surface water sample locations (SW-41, SW-43, and SW-44) were re-sampled in July 2007. The re-sample results were used in the HHRA.

2.1.5 Groundwater

In July and December 2006, nine monitoring well and three piezometer well samples were collected and analyzed for total and dissolved 8 RCRA metals, copper and zinc, VOCs, SVOCs, PAHs, and/or BTEX (Figure 2-6). In July 2007, additional groundwater samples were collected from the downgradient perimeter wells only (MW-4, MW-5, MW-6, and MW-7) and analyzed for total and dissolved 8 RCRA metals, copper and zinc. Based on an assumed westerly groundwater flow, the northeast, southeast, and south central perimeter wells (MW-01, MW-02 and MW-24) were used to determine the quality of the groundwater migrating onto the Facility Area from upgradient sources. The remaining interior/perimeter wells (piezometer P-01, P-02, and P-03, MW-03, MW-04, MW-05, MW-06, MW-07, and MW-29) were used to determine if the metals detected in slag and/or soils have leached to the shallow groundwater, and/or if dissolved metals in groundwater are potentially migrating from the Facility Area. The wells were installed to an estimated depth of approximately 15-ft below ground surface (bgs) with a screen length of 10 ft.

In addition to monitoring wells, eight vertical profile borings were drilled in December 2006 and January 2008. Samples were analyzed for both total and dissolved metals. The vertical profile results were not considered in the BHHRA because the sampling technique is not representative of a potable water supply.

2.2 SELECTION OF CHEMICALS OF POTENTIAL CONCERN

The chemicals identified in each environmental medium are summarized in tabular form by summary statistics, including the frequency of detection (i.e., the ratio of the number of samples in which the chemical was detected to the number of samples available), and the minimum and maximum detected concentrations (see Attachment A RAGS Part D Standard Tables 2a-1 through 2a-14). Although a screening evaluation is presented in these table in which the maximum detected concentrations are compared to risk-based criteria protective of human exposures, all known Facility Area-related metals (arsenic, cadmium, chromium, copper, lead, mercury, selenium, silver, and zinc) were retained and evaluated as COPCs in the BHHRA. VOCs, PAHs, and pesticides detected in soil, sediment, and/or groundwater are not smelter-related chemicals and are not considered COPCs in the BHHRA. In addition, the PAHs and metals detected in soil at concentrations that exceeded the risk-based criteria were also compared to Illinois Environmental Protection Agency Tier 1 soil remediation objectives (35 IAC Part 742). None of these other constituents exceeded IEPA standards (see Attachment A RAGS Tables 2 series).

While ambient/background levels of metals are not considered in the selection of COPCs, typical background levels and upgradient levels are considered in of the evaluation of Site-related risk. Due to known contamination in soil, sediments groundwater from adjacent industrial sources, the levels in upstream or upgradient sample locations are

If these other chems that are not smelter-related is found on-site must also be considered as site-related chem. irrespective where they come from. If they are BKG related then they must be identified as such.

assessed in the Risk Characterization to determine if this contamination is related to historic Site operations or coming from off-Site sources. Ultimately, the purpose of the BHHRA is to evaluate risks from contamination associated with historic smelter or XTRA operations. purpose of the HHRA is to evaluate total risks to potential receptors that come in contact w/ the site, irrespective whether part of that risk is also coming from RR or adjacent industrial sources. Surface material throughout the Facility Area consists of native soil and slag. Because the slag is visibly different from native soil, the BHHRA evaluated the On-Facility Area soil and slag datasets combined (i.e., mixed soil and slag) and individually (i.e., as slag and as native soil) to aid remedy selection (e.g., slag removal only). In addition to defining different soil types, each of the soil types were sieved to obtain the "fines fraction" of each soil type (e.g., fines fraction of the slag). In general, the fines slag and soil data were collected from the slag and soil surface (top 0.1 foot). The samples submitted for fine fraction analysis consisted of three separate aliquots which were individually analyzed by an X-Ray Fluorescence (XRF) instrument for total arsenic, lead, cadmium and zinc analysis, although no additional total metal analysis was done for the composite sample. For soil data collected from the Facility Area, the fines fraction data are evaluated for each soil type for the surface soil exposure scenarios, while the total soil data are evaluated for exposures to subsurface soil (e.g. utility/construction worker scenario).

This is true, but it's also true that the Contributions from the site and other sources toward Total Risk must should be identified.

At Off-Facility Area properties, the soil dataset consisted of both fines soil samples and total soil samples collected from depths up to 2 feet below ground surface. No soil was sampled at any Off-Facility Area location from depths greater than 2 feet, with the exception of alleyways where soil depth up to 4 feet below ground surface were sampled. Co-located composite samples were also analyzed for XRF analysis of total lead, arsenic, cadmium and zinc. Therefore, both datasets were used to evaluate in all potential exposure scenarios. For the evaluation of lead exposures, the fines soil data are evaluated separately from the total (unsieved) soil samples. The approved SSP (ENTACT 2006) states that the BHHRA will evaluate the fine fraction soil samples. In accordance with EPA guidance (U.S. EPA, 2000), the fine fraction of soil (defined as that portion of the total soil sample that passes through a 250 μm sieve) is the recommended portion of the total soil sample for estimates of upper-bound lead exposures. However, EPA states that this approach is not recommended for evaluation of other metals or chemicals (U.S. EPA 2000).

3.0 EXPOSURE ASSESSMENT

An exposure assessment estimates the type and magnitude of human exposure to COPCs identified at a site. For exposure and potential risks to occur, a complete exposure pathway must exist. A complete pathway requires the following elements (USEPA, 1989):

- a source and mechanism for release of constituents;
- a transport or retention medium;
- a point of potential human contact (exposure point) with the affected medium; and
- an exposure route (i.e., ingestion, dermal contact, or inhalation) at the exposure point.

If any one of these elements is missing, the pathway is not considered complete. For example, if human activity patterns and/or the location of potentially exposed individuals relative to the location of an affected exposure medium prevent human contact, then that exposure pathway is not complete. The pathways analysis in the conceptual site model (Figure 3-1 and Attachment A, RAGS Part B Table 1) illustrates each of the exposure pathway elements as they specifically relate to the Site. After exposure pathways have been identified, daily intakes of the COPCs are quantified using standard exposure algorithms.

The Facility Area is currently not used for any purpose. Access to the property by trespassers under both current and future land use is possible, though there was no evidence of trespassing observed during the RI field studies. The Facility Area was most recently used for commercial/industrial purposes (as a trucking transport facility) and this is the most probable future use for this property. Future site workers could be present outdoors or indoors depending on future redevelopment.

Although three buildings were identified at the property, it is not known if they currently exist as they were slated for demolition (see Section 1.4.1). It is also not know if utilities currently exist at the property. It is assumed that any reuse of the property would probably include excavation activities and utility installation. Therefore, utility workers and construction workers are considered potential future receptors. The current property owner, XTRA, has indicated that a deed-restriction will be implemented for the Facility Area property limiting future use to commercial/industrial activities. However, as the property use has not yet been restricted, hypothetical residential use must be considered as a possible future scenario at the Facility Area.

Yes

Until a deed-restrict. is in place, this RA cannot be accepted for only worker and trespasser scenario.

Slag from the Facility Area has been transported to surrounding properties for use as yard fill and as surfacing material for alleyways. Current residents may be potentially exposed to COPCs in yard fill and in alleyways. The locations identified as current residential properties that may contain elevated concentrations of COPCs include:

- 5515 Thomas
- 5528 Delmar
- 5508 Thomas

- 5500 Maryland
- 5432 Maryland
- 5507 Thomas
- 5514 Kinder
- 5427 Kinder
- 5510 Thomas
- 5517 Delmar
- 2768 N. 42nd Street
- 4000 Collinsville Road

In addition, two properties are currently used for commercial use: 4012 Maple St and Cookson Rd & 44th St. The zoning of these properties is not known. For the purposes of this assessment it is assumed future residential use of these properties is possible.
Casual recreational use of vacant lots adjacent to the Facility Area has been observed and considered a current and future potential exposure scenario. The locations identified as vacant lots adjacent to the Facility Area include:

- 2521 N. 42nd Street
- N. 42nd Street
- 2845 N. 44th Street
- 2539 N. 41st Street
- 3022 N. 48th Street 1
- Corner of N. 39th Street and Locust Street
- 47th Street (Schurman Avenue)
- Maryland Parkway
- 3800 Roselake Road
- 2339 N. 51st Street

It is not known if buried utilities currently exist along the alleyways, but to be conservative, utilities are assumed to exist for the purposes of this assessment. Utility repairs and future redevelopment of the lots and alleyways would allow potential exposure by utility workers and/or construction workers to subsurface soil. Although the current zoning is not known, future residential use of vacant lots and commercial properties (commercial properties include 4012 Maple Avenue and parcel located at Cookson Road and 44th Street) is considered possible in this assessment.
Although no recreational use (including fishing) has been identified for Rose Creek or other surface water bodies surrounding the Facility Area, activities such as wading by area residents and recreational receptors are considered possible.

There are no potable wells downgradient of the Facility Area and shallow groundwater cannot sustain the yield needed to provide potable water. Therefore, the groundwater exposure pathway is incomplete. In addition, shallow groundwater is present at depths greater than 10 ft bgs, precluding direct contact during excavation activities. Therefore, groundwater exposure is not quantified in the BHHRA.

Is there a deeper aquifer that is or can be impacted?

Based on these potential activities and uses, the following represent the current and future receptors identified for this site:

Current Receptors:

- On-Facility Area—Trespassers
- Off-Facility Area Residential Properties—Residents (child and adult)
- Off-Facility Area Vacant Properties—Occasional casual recreational use (e.g. walking, ball throwing)
- Off-Facility Area Commercial Properties—Commercial worker
- Off-Facility Area—Alleyways—Utility Workers
- Off-Facility Area—Alleyways—Residents (child and adult)

Future Receptors:

- On-Facility Area—Future Site Worker
- On-Facility Area—Future Construction/Utility Worker
- On-Facility Area—Future Hypothetical Resident (child and adult)
- Off-Facility Area Residential Properties—Future Residents (child and adult)
- Off-Facility Area Vacant Properties—Future Residents (child and adult)
- Off-Facility Area Commercial Properties—Future Residents (child and adult)
- Off-Facility Area Alleyways— Future Construction Worker
- Off-Facility Area Surface Water Bodies—Occasional recreational use

The potential exposure scenarios at these areas by these receptor groups are discussed in the following section.

3.1 IDENTIFICATION OF EXPOSURE SCENARIOS

This subsection describes the process used to identify the exposure scenarios for quantitative analysis of exposure to soil, sediment, and surface water both on and off the Facility Area.

3.1.1 Facility Area Receptors and Exposure Scenarios

The current human receptors who may be exposed to COPCs on the Facility Area are trespassers and utility workers. Future human receptors who may be exposed to the COPCs on the Facility Area include Facility Area commercial/industrial workers, construction/utility workers, and trespassers. Though under current conditions no residential uses occur on the Facility Area, hypothetical future residential land use must be considered because the property is not currently deed-restricted to remain industrial/commercial.

Current/Future Utility Worker, Future Commercial Worker and Future Construction Worker Exposure Scenarios

Utility workers involved with repair or maintenance activities may encounter COPCs in surface and subsurface soil. The Facility Area is currently vacant, and commercial/industrial use is considered the most plausible future land use. Future commercial/industrial workers on the Facility Area may also be exposed to COPCs in surface soil. Office workers are considered less exposed than outdoor workers and are therefore not evaluated as a distinct future receptor group. Future construction, utility or trench workers may have exposure to COPCs in surface soil and subsurface soil.

All the identified worker receptor groups may be exposed to COPCs in soil via several pathways including: dermal contact with soil; incidental ingestion of soil through hand-to-mouth contact; and inhalation of wind-blown dust. The potential for fugitive dust at the site is not currently known. Under current site conditions at the Facility Area, it is presumed that the potential for fugitive dust emissions is low given that the Facility Area is inactive and the presence of asphalt and slag covering the native soil at the site (as described in Section 1.4.1). However, for the purpose of this assessment, all workers are assumed to be exposed to fugitive dust (as soil particulates entrained by wind).

No activity has been identified that would include any exposure by utility worker or commercial workers to the man-made drainage ditches that exist at the Facility Area (East Ditch1, East Ditch 2, West Ditch 1, portion of Rose Creek). However, for the purposes of this assessment, it is assumed that future construction workers would be required to maintain the structural integrity and function of the drainage structures on an occasional basis. As a result, construction workers may be exposed to COPCs in sediment via incidental ingestion and dermal contact and to COPCs in surface water via dermal contact Furthermore, future workers were conservatively assumed to be exposed to surface water and sediment within the On-Facility Area drainage ditches one day per week 26 weeks per year. Because VOCs were not identified as COPCs soil or groundwater, the potential of inhalation of volatile contaminants was not evaluated.

Current/Future Trespass Exposure Scenarios

Under current conditions, access to the Facility Area is controlled through fencing and locked gates. However, it is possible for trespassers to gain access to the property through the southern access road from the rail yard. For the purposes of this assessment, trespassers are assumed to be potentially exposed to COPCs in surface soil via dermal contact with soil; incidental ingestion of soil. Although the potential for actual exposure to fugitive dust is considered minimal given the nature of the surface at the Facility Area, inhalation exposure to soil particulates as wind-blown dust is evaluated. Trespassers may also be exposed to COPCs in sediment via incidental ingestion and dermal contact and surface water through dermal contact when wading in the man-made ditches at the Facility Area. Any activity a trespasser may engage in at these ditches is considered to be occasional given the ephemeral nature of the surface water in these drainage ditches, as well as the presence of brush and slag along the sides of these structures. .

Hypothetical Future Residential Exposure Scenarios

It is unlikely the Facility Area will be used for residential purposes; however, because there is currently no legal restriction prohibiting residential uses, a hypothetical future residential scenario at the Facility Area was included in the BHHRA. Under this hypothetical future residential land use, future adult and child residents living within the Facility Area may come into contact with COPCs in soil via inhalation of fugitive dust while outdoors, and direct skin contact with and incidental ingestion of soil while playing or working in their yards. Although any future redevelopment of the Facility Area would include modifications to the existing nature of the property, including the surface drainage ditches, for the purposes of this assessment it was assumed that hypothetical residential receptors could be exposed to COPCs in the drainage ditches/creeks on the Facility Area. Exposures evaluated include incidental ingestion of and dermal contact with sediment and dermal contact with surface water during occasional exposures to these media within the drainage ditches on the Facility Area.

3.1.2 Off-Facility Area Receptors and Exposure Scenarios

The current land use of properties located adjacent to the Facility Area include a mix of commercial/industrial and residential uses. In addition, alleyways are used as public-right of ways. Not all the properties are currently occupied or used for any purpose (i.e. vacant). Future land use is expected to remain relatively unchanged; however, some currently vacant properties could possibly be used for future commercial/industrial or residential uses although the actual zoning of the property is unknown. The vacant lots adjacent to the Facility Area could also be used for current and future casual recreational uses by area residents (e.g., walking, ball playing).

As discussed in Section 1.4.2 of the BHHRA and in Section 1.1.1.3 of the RI, the majority of the surface drainage from the Facility Area discharges to Rose Creek (along the southern property line), with Rose Creek flowing to the west and ultimately discharging into the Old Cahokia Watershed. The Old Cahokia Watershed also receives a smaller volume of surface drainage directly from Facility Area ditches draining to the northwest. Rose Creek is an ephemeral surface water body, flowing during and after rain events. Rose Creek is not used for fishing or recreational use and there is no evidence that these activities occur. The Old Cahokia Watershed is a large wetland located northwest of the Facility Area property. The area of the Old Cahokia Watershed immediately adjacent to the Rose Creek outfall is a dry meadow. Beyond the outfall area lies a wet meadow associated with an engineered drainage channel and localized ponds in former borrow pits. The area of the West Ditch outfall is characterized as a vegetated slope terrace with occasional ponding of water, beyond which lies an inundated pond with no observable flow.

Current and Future Residential Exposure Scenarios

Current and future adult and child residents living in potentially affected areas adjacent to the Facility Area may come into contact with COPCs in soil via direct skin contact and

incidental ingestion of soil while playing or working in their yards, and via inhalation of fugitive dust while outdoors. It was also assumed that residents could have vegetable gardens from which they could consume homegrown produce that may potentially be impacted by COPCs in soil.

Although no activity has been defined for potential exposure to surface water bodies, for the purposes of this assessment it is assumed residential receptors may also incidentally ingest sediment and dermally contact COPCs in sediment and surface water while wading in the Off-Facility Area portion of Rose Creek and the Old Cahokia Watershed/wetlands.

Properties that are currently defined as vacant are evaluated in the risk assessment as residential, as these properties may be converted to residential use in the future. This future residential evaluation provides a conservative prediction of possible future risks because the resident receptor is considered the most exposed receptor as defined by this risk assessment.

Current/Future Off-Facility Area Recreational Exposure Scenario

Recreational use of the vacant parcels has been observed (e.g. ball playing), though the current zoning of these parcels is not known. For the purposes of this assessment, a recreational user is defined as a child between the ages of 7 and 17. Recreational users may have contact with surface soil through direct skin contact, incidental ingestion, and inhalation of fugitive dust. Recreational users may also contact sediment and surface water while wading in the off-Facility Area drainageways (Rose Creek, Old Cahokia Watershed). While future park development would involve use of groundcover (grass fields, gravel, pavement, barked areas) that would reduce exposures (USEPA, 2001a), no such land alterations are considered in the evaluation of current recreational exposure.

Risks to these receptor groups are evaluated in the BHHRA by exposure units, which differ based on the proximity to the Facility Area. The exposure units are:

Facility Area, including West and East ditches and Rose Creek adjacent to the Facility Area. Fine fraction (sieved) soil, surface water, and sediment samples collected in this area were evaluated to assess the current/future potential risk to trespassers, commercial/ industrial workers, and hypothetical future residents. Unsieved (total) surface/subsurface soil (0-10 ft bgs) samples were used to assess the future risk to utility/construction workers. The soil dataset was further split into slag and native soil (based on field observations) and exposure to these datasets were evaluated for each Facility Area receptor group.

Off-Facility Area Residences and Alleyways.
Off-Facility Area properties (current resident properties, commercial properties, and vacant properties) and alleyways were considered as separate exposure units. All the soil data, (including that from the fine fraction (sieved) soil samples) collected from individual properties and alleyways were evaluated to assess the current/future risk to residents. The soil data were also used to assess potential risks associated with the homegrown produce pathway.

Fine fraction (sieved) soil samples collected from all individual residences and alleyways were combined into two datasets to assess the future risk to recreational receptors exposed to soil throughout the residential lots and throughout the alleyways. Unsieved (total) surface/subsurface soil (0-2 ft bgs) residential soil samples and unsieved (total) surface/subsurface soil (0-4 ft bgs) alleyway samples were used to assess the future risk to construction workers.

Off-Facility Area surface water bodies include Rose Creek and Rose Creek outfall, Schoenberger Creek, and West Ditch outfall/Cahokia wetland. Surface water and sediment samples from throughout the off-Facility Area drainage features were used to assess potential risks to current/future residential and recreational receptors (age 7 to 17 years).

3.2 QUANTIFICATION OF EXPOSURE

To quantify exposure, human intake levels resulting from exposures to COPCs are estimated using exposure algorithms and assumptions. Exposure estimates for ingestion and dermal exposures represent the daily dose of a chemical taken into the body averaged over the appropriate exposure period, expressed as mg of chemical per kg of bodyweight per day. Inhalation exposures are assessed based on an estimated exposure concentration in air, expressed as mg chemical per m^3 of air, and is calculated via cross-media exposure modeling.

3.2.1 Exposure Algorithms

The primary source for the exposure algorithms to be used in this evaluation is USEPA (USEPA, 1989) although other supplemental risk assessment guidance documents were also used (USEPA, 2002c; USEPA, 1998b). The generalized equation for calculating chemical intakes is:

$$I = \frac{EPC \times CR \times ET \times EF \times ED \times F \times ABS}{BW \times AT}$$

where:

I = Intake, the amount of chemical taken in by the receptor (*mg/kg body weight/day*) or *exposure concentration* (mg/m^3)

EPC = Exposure point concentration, the chemical concentration contacted over the exposure period at the exposure point (*e.g.* mg/kg soil)

CR = Contact rate, the amount of affected medium contacted per unit time or event (*e.g.*, soil ingestion rate (mg/day) or air inhalation

rate (m^3/hr))

ET = Exposure time, describes the time interval over which exposure occurs (hours/event)

EF = Exposure frequency, describes how often exposure occurs (days/year)

ED = Exposure duration, describes how long exposure occurs (yr)

F = Intake fraction, fraction of media contacted that is assumed to be from the contaminated source (dimensionless)

ABS = Absorption factor, an adjustment factor to account for relative absorption of a chemical from the medium of interest compared to absorption from the exposure medium in the toxicity study(ies) used to derive the toxicity value (dimensionless)

BW = Bodyweight, the average bodyweight over the exposure period (kg)

AT = Averaging time, period over which exposure is averaged (days)

The variables shown in the exposure algorithm above are called exposure factors and vary depending on the receptor population being evaluated. Each receptor population (i.e., resident, Facility Area worker, utility worker and trespasser/recreational user) was characterized by a number of assumptions regarding the frequency of contact with potentially affected media, duration of exposure, and other parameters unique to each receptor population. These exposure factors were obtained from several regulatory agency and literature sources, including USEPA, 1997b, USEPA, 1989, USEPA, 1991, and USEPA, 2002c. Sources with information on regional behavior patterns were also considered.

The following section discuss the exposure pathways and exposure routes through which receptors are assumed to be exposed to COPCs, and present the exposure algorithms that were used in this risk assessment.

3.2.2 Exposure Pathways

For the individual off-Facility Area properties and alleyways, daily intake is not calculated for the soil exposure pathway because a screening-level risk evaluation (SLRE) was used to evaluate current residential soil exposure and risk for each individual property (see Section 5.3). Daily intake was calculated for future on-Facility Area residential soil exposure.

Daily intakes are also not calculated for exposure to lead; risk to lead is evaluated

separately as described in Section 4.2 and Section 5.5.

3.2.1.1 Soil/Sediment Pathway

All receptors are assumed to be exposed to on- and/or off-Facility Area surface soil. Utility and construction workers are assumed to be exposed to mixed surface/subsurface soil. Future Construction workers and trespassers are also assumed to be exposed to sediment and surface water in the On-Facility Area ditches and the portion of Rose Creek carrying surface water runoff from the Facility Area. Recreational receptors and area residents are assumed to be exposed to sediment and surface water in Off-Facility Area surface water bodies. The intake equations and the intake factors used to estimate daily intakes that result from soil/sediment ingestion, soil/sediment dermal absorption, and inhalation of particulates from soil only are presented for each receptor group in the RAGS Part D Tables 4a through 4d in Attachment A.

Incidental Ingestion

Soil and sediment may be inadvertently ingested through hand-to-mouth contact or in the case of small children, by directly ingesting soil or by placing soiled objects in the mouth. Chemical intake via incidental ingestion is calculated as follows:

$$\text{Intake} = C_s \times IR_s \times 10^{-6}\ \text{kg/mg} \times EF \times ED / (BW \times AT)$$

Where:

C_s	=	Chemical concentration in soil (milligrams per kilogram [mg/kg])
IR_s	=	Ingestion rate of soil (milligrams per day [mg/day])
EF	=	Exposure frequency (days per year [days/yr])
ED	=	Exposure duration (years)
BW	=	Body weight (kilograms [kg])
AT	=	Averaging time (days)

Dermal Absorption

Dermal contact with soil or sediment could result in the absorption of chemicals through the skin. The extent of chemical absorption through the skin is dependent upon many factors, including the type(s) of protective clothing worn, the part(s) of the body exposed, the presence of open sores or abrasions on the skin, the degree of soil adherence to the skin, the duration of the exposure, the constituent concentration in soil, and the ability of the chemical to enter the body through the skin (the dermal absorption efficiency). The

skin surface area available for contact is based on the mean body surface area not covered by clothing. In cases of soil contact, clothing is expected to limit the extent of exposed surface area (U.S. EPA, 2004a). Chemical intake via dermal absorption is calculated as follows:

$$\text{Intake} = C_s \times AF \times SA \times ABS \times EF \times ED / (BW \times AT)$$

where:

Intake	=	Estimated daily intake of COPCs through soil absorption (mg/kg-day)
C_s	=	Chemical concentration in soil (mg/kg)
AF	=	Adherence factor (milligrams per square centimeter [mg/cm^2])
SA	=	Surface area available for contact (cm^2)
ABS	=	Absorption factor (unitless)
EF	=	Exposure frequency (days/yr)
ED	=	Exposure duration (years)
BW	=	Body weight (kg)
AT	=	Averaging time (days)

The ABS, which accounts for the fraction of chemicals in soil that is transferred through the skin, is a chemical-specific property. Limited toxicological studies are available that specifically address the dermal absorption efficiency of inorganics. Dermal ABS were generally obtained from U.S. EPA (2004a). Where chemical-specific absorption factors were not available, U.S. EPA recommended default values for the appropriate chemical class (e.g., 0% for VOCs and 10% for SVOCs) (2004a). If a chemical-specific dermal ABS value was not available for an inorganic COPC, a value of 0% was used. A listing of dermal absorption factors used for each COPC is presented in the toxicity tables provided in RAGS Part D Tables 5 and 6 in Attachment A.

Inhalation of Particulates from Soil

COPCs found in soils were assumed to become airborne on suspended dust particles. The inhalation of airborne dust particles was assumed to be a possible exposure pathway for all receptors. Because of the damp or crusty conditions of sediments, inhalation of sediments was not considered to be a complete exposure route. Particulate inhalation exposure is calculated as follows:

$$\text{Intake} = C_s \times EF \times IRa \times (1/PEF) / (BW \times AT)$$

where:

C_s	=	Chemical concentration in soil (mg/kg)
EF	=	Exposure frequency (days/yr)
IRa	=	Inhalation rate (cubic meters per day [m^3/day])
PEF	=	Particulate emission factor (cubic meters per kilogram [m^3/kg])
BW	=	Body weight (kg)
AT	=	Averaging time (days)

The methodology used for evaluating the inhalation of particulates and vapors was in accordance with U.S. EPA's Supplemental Guidance For Developing Soil Screening Levels For Superfund Sites (2002c). A particulate emission factor (PEF) is used to relate COPC concentrations in soil to the concentration of respirable particles in air due to fugitive dust emission from surface soils containing COPCs. The PEF relates the COPC concentration in soil (by weight) to the concentration in respirable particles (PM_{10}) in air (by volume) that results from fugitive emissions from surface soil. The U.S. EPA has developed a default PEF of 1.36E+09 m^3/kg for hazardous waste site where the affected surface soil provides a relatively continuous and constant potential for emission over an extended period of time (e.g. years). This default PEF was adjusted to use the dispersion factor Q/C wind based on data from Chicago, Illinois (Q/C wind = 98.43), which is located in Zone 7 (U.S. EPA, 2002c – Attachment D). The U.S. EPA's default PEF of 1.36E+09 m^3/kg (which uses a default Q/C wind = 93.77) was adjusted to account for this different dispersion factor, resulting in a PEF of 1.43E+09 m^3/kg (i.e., 1.36E+09 m^3/kg ÷ 93.77) x 98.43). This PEF was applied for the commercial/industrial worker, trespasser/recreational user, and residential receptor.

A separate PEF was calculated for the construction/utility worker following Equation 5-5 in U.S. EPA's Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites (2002c), using default and example values, and a historical average of 105 days per year with greater than 0.01 inches of precipitation for Cahokia, IL. (http://mcc.sws.uiuc.edu/climate_midwest/ historical/precip/il/111160_psum.html). The PEF_{sc} (subchronic PEF) focuses exclusively on emissions from truck traffic on unpaved roads, which typically contribute the majority of dust emissions during future construction activities. The PEF used for the construction/utility worker was 3.72E+06 m^3/kg using the following equation:

$$PEF_{sc} = Q / C_{sr} \times \frac{1}{F_d} \left[\frac{T \times A_R}{556 \times (W/3)^{0.4} \times \frac{(365d/yr - p)}{365d/yr} \times \Sigma VKT} \right]$$

Where:

PEF_{sc} = Subchronic road particulate emission factor (m^3/kg)

Q/C_{sr} = Inverse of the ratio of the 1-h geometric mean air concentration to the emission flux along a straight road segment bisecting a square site (g/m -s per kg/m), default value of 23.02 g/m^2 -s per kg/m.

F_d = Dispersion correction factor (unitless), default value of 0.185.

T = Total time over which construction occurs (s), 5 days per week for 6 months 1.12E+07sec.

A = Surface area of affected road segment (m^2), default value of 274.213 m^2, assuming a 0.5 acre site; $A = L_R \times W_R \times 0.092903\ m^2/ft^2$) and L_R equals length of road segment (ft) and W_R equals width of road segment (ft)

W = Mean vehicle weight (tons) of 8 tons is assumed.

p = Number of days with at least 0.01 inches of precipitation (days/year), set at 105 days.

EVKT = Sum of fleet vehicle kilometers traveled during the exposure duration (km), default of 175.5 km, assuming that each vehicle travels the length of the road 5 days per week for 6 months.

3.2.1.2 Garden Pathway

If COPCs are present in residential soil, residents may potentially be exposed by eating homegrown produce that may take up COPCs from soil. Gardens have been observed on four of the residential lots sampled during the RI, with data collected from garden soil at two properties. The garden pathway is not evaluated for the future Facility Area resident because the surface material (slag, roto-fill, asphalt) would restrict plant growth. Simply considering residential use of the Facility Area is very conservative given that the property will be restricted in the future, but is included in this evaluation solely for informational purposes. Chemical intake through consumption of home-grown produce is calculated as follows:

$$\text{Intake} = (C_p) \times IR_p \times EF \times ED / (AT)$$

where

C_p = Chemical concentration in produce due to root uptake (milligrams per kilogram [mg/kg])

IR_p = Ingestion rate of home-grown produce (kilogram per day [kg/day], dry wt)

EF	=	Exposure frequency (days per year [days/yr])
ED	=	Exposure duration (years)
BW	=	Body weight (kilograms [kg])
AT	=	Averaging time (days)

The COPC concentrations in garden plants were predicted from the concentration of the COPC in the soil (C_{soil}) by using bioaccumulation factors for the above-ground produce and the belowground produce. The functions that typically relate the concentration in the aboveground portion and belowground portion of the produce (C_p) to the soil concentration (C_{soil}) are constants, which are termed bioaccumulation factors and are specific to the two potential portions of the plant to be consumed (leaf/stem portion and root portion). The concentration in the plant is estimated from the following equations:

Aboveground Produce:

$$C_{ap} = Br * C_{soil}$$

Belowground Produce:

$$C_{bp} = \frac{RCF * VG_{rootveg} * C_{soil}}{Kd_s * 1\ kg/L}$$

Total Produce:

$$C_p = C_{pa} + C_{pb}$$

Where:

C_{ap}	=	Concentration of COPC in aboveground portion of plant (mg/kg)
Br	=	Plant-soil bioaccumulation factor for produce (unitless; chemical specific)
C_{soil}	=	Concentration of COPC in soil (mg/kg)
C_{bp}	=	Concentration of COPC in belowground portion of plant (mg/kg)
RCF	=	Root Concentration Factor (unitless; chemical specific)
$VG_{root\ veg}$	=	*Empirical correction for below ground produce (unitless)*
Kd_s	=	Soil/water partitioning coefficient (L/kg) (chemical specific)

C_p = Chemical concentration in produce due to root uptake (mg/kg)

The equations and chemical specific factors were obtained from EPA (2005) and the chemical specific factors are presented in Table 3-2. A. The maximum detected concentration of the COPCs in soil collected from each lot was used for C_{soil}. For those properties with existing gardens (5508 Thomas, 5517 Delmar), the data from the soil sample collected from the garden was used to estimate current potential exposure, while future exposures at these two parcels was based on the maximum detected soil concentration regardless of where it was collected at that property.

3.2.2 Exposure Parameters

Two types of doses were calculated based on the mathematical models discussed above. One type (non-cancer dose), which was averaged over the actual exposure duration, was used to evaluate the potential for non-carcinogenic health risks. The other type (cancer dose), which was averaged over a 70-year lifetime, was used to evaluate potential carcinogenic risks. The exposure doses were expressed as absorbed doses, in mg/kg-day. Non-cancer and cancer doses were calculated for the reasonable maximum exposure (RME) scenario for each potential receptor. For all receptors, the AT is the period over which exposure is averaged. For non-carcinogenic effects, AT is equal to ED. For carcinogens, AT is equal to a 70-year lifetime (U.S. EPA, 1991c). All exposure parameters used for daily intake calculations are presented in RAGS Part D Tables 4a through 4d in Attachment A and are discussed below by receptor group.

3.2.2.1 Trespasser/Recreational User Exposure Parameters

Under current and future conditions, it is assumed that an older child represents the trespasser who potentially enters the Facility Area and is exposed to COPCs in surface soil via dermal contact with soil; incidental ingestion of soil; and inhalation of wind-blown dust. Trespassers may also incidentally ingest sediment and may dermally contact COPCs in sediment and surface water within the Facility Area drainages.

Under future conditions, it is assumed that an older child represents the recreational user of the Off-Facility Area parcels (vacant lots and alleyways) and is exposed to COPCs in surface soil via dermal contact with soil; incidental ingestion of soil; and inhalation of wind-blown dust. Recreational users may also incidentally ingest sediment and may dermally contact COPCs while wading in sediment and surface water in the off-Facility Area creeks. The following is a list of the exposure parameters applied for these receptor groups, which are listed in RAGS Part D Tables 4a-1 through 4a-4 in Attachment A:

- The trespasser was assumed to be exposed to Facility Area fine fraction surface soil, sediment, and surface water; the recreational user was assumed to be exposed to off-Facility Area fine fraction surface soil (residential lot dataset and alleyway dataset were evaluated separately), sediment, and surface water.

- The trespasser/recreational user was considered to be a seven to 16 year-old youth.

- An exposure frequency of 60 days per year was assumed for exposures to soil (U.S. EPA, 1995). An exposure frequency of 12 days per year was assumed for surface water and sediment, which is the recommended value for number of days per year spent swimming (U.S. EPA, 2002d).

- An exposure duration of 10 years was assumed (U.S. EPA, 1995).

- The trespasser/recreational user was assumed to have a body weight of 43 kilograms. This body weight represents the mean body weight for boys and girls between the ages of seven and 16 years (U.S. EPA 1997a – Table 7-3).

- A soil/sediment ingestion rate of 100 mg/day was used for the older child trespasser/recreational user in accordance with U.S. EPA guidance (1991c).

- Based on information presented in Tables 6-6 and 6-7 of the 1997 Exposure Factors Handbook (U.S. EPA, 1997a) and Exhibit C-1 of RAGS Part E (U.S. EPA, 2004a), fiftieth percentile total body surface areas for male and female children, beginning with the seven-to-eight-year age category and ending with the 15-to-16-year-age category, were used to derive an average total body surface area of 4,300 cm^2 for the trespasser/recreational user. The exposed skin was assumed to be limited to the head, forearms, hands, and lower legs.

- The AF accounts for the amount of soil that adheres to the skin after contact. This parameter is dependent on the physical characteristics of the soil encountered. Site-specific adherence factors are not known, but a range of values from 0.5 to 1.5 have been reported for non-site soils (U.S. EPA, 2004a). This range is for hand measurements only and may overestimate the average AF for the entire exposed skin surface. As recommended in U.S. EPA RAGS Part E guidance (2004a), a soil-to-skin AF of 0.2 mg/cm^2 was used to evaluate the trespasser/recreational user.

- For the evaluation of dermal contact with surface water (wading scenario), the trespasser/recreational user was assumed to be exposed for approximately one hour per event (U.S. EPA, 2002d). This value was based on the recommended activity time for children playing in sand and gravel of 60 minutes per day (Table 9-62 in U.S. EPA, 2002d).

- The inhalation rate for the trespasser/recreational user was estimated as the average for children (male and female) for the following ages: six to eight years, nine to11 years, 12 to 14 years, and 15 to 18 years old (U.S. EPA, 1997a). These inhalation rates were averaged to derive an inhalation rate of 13.3 m^3/day.

3.2.2.2 Residents

Off-Facility Area properties that are current residences were evaluated individually under a current exposure scenario. All Off-Facility Area properties (current residential properties, commercial properties, vacant properties) were evaluated individually under a future exposure scenario. Hypothetical residential use of the Facility Area was evaluated under a future exposure scenario.

Both current and future residents are assumed to be exposed to COPCs in surface soil via dermal contact with soil; incidental ingestion of soil; and inhalation of wind-blown dust. Current off-Facility Area residential properties with existing gardens (5508 Thomas, 5517 Delmar) and future off-Facility Area residents are also assumed to consume homegrown produce. Current and future Off-Facility Area residents were also assumed to potentially be exposed to COPCs in Off-Facility Area surface water bodies while wading via potential exposure pathways including incidental ingestion and dermal contact with sediments and dermal contact with surface water. The following is a list of the exposure parameters applied for these receptor groups, which are listed in RAGS Part D Tables 4b-1 through 4b-6 in Attachment A:

- The off-Facility Area resident was assumed to be exposed to soil on each individual parcel, and to soil within the alleyways, and to surface water and sediment within in drainage features down-gradient of the Facility Area. Only the off-Facility Area resident was assumed to consume garden produce. For the garden pathway, although plant uptake from soil is relevant only for each property (not alleyways) for depth intervals up to 1 ft bgs (total) soil, the maximum detected concentration in all soil samples collected on each parcel was used to estimate the produce concentrations at each property. Although the majority of the soil samples were collected from depth interval up to 1 ft bgs, a few soil samples were collected at depth intervals up to 2 ft bgs. Furthermore, the soil sample from the existing garden at 5517 Delmar was collected at a depth interval of 1 to 1.5 ft bgs. The Facility Area future hypothetical resident was assumed to be exposed to fine fraction surface soil, sediment and surface water on the Facility Area.

- An exposure duration of 30 years (six years as a child and 24 years as an adult) was used for soil and produce exposures (U.S. EPA 1995 and 1991a). An exposure duration of 30 years was also used for exposures to surface water bodies but 10 years as a child (age 7 to 16 years) and 20 years as an adult.

- An exposure frequency of 350 days/year was used for the child and adult resident for exposure to property soil and produce (U.S. EPA 1991a). For exposures to soils in alleyways, an exposure frequency of 1 day per week, 52 weeks per year was assumed (resulting in a 52 day/year exposure frequency over a 30-year exposure duration). For exposures to surface water bodies, an exposure frequency of 6 days per year over a 30-year total exposure duration was assumed.

- Body weights of 15 kilograms and 70 kilograms were used for the child and adult residents for exposures to soil and produce (U.S. EPA, 1991a). A body weight of 43 kg was used for exposures to surface water and sediment to the resident child (age 7 to 16 years).

- A soil/sediment ingestion rate of 200 mg/day was used for the child resident, and a soil/sediment ingestion rate of 100 mg/day was used for adult resident in accordance with U.S. EPA guidance (1991c).

- Ingestion rates for residential consumption of homegrown produce, combining exposed aboveground produce, protected aboveground produce, and belowground produce, are 0.0749 kg/day for an adult and 0.0375 kg/day for a child (adjusting consumption rates of 0.00243 kg produce /kg body weight for a child and 0.0017 kg produce/kg body weight for an adult in Table C-1-2 in EPA, 2005 using default adult and child body weights). The fraction of produce containing Facility Area-related COPCs is assumed to be 15 percent. This assumption is based on survey information regarding the percent of ingested produce that is homegrown in the Midwest region of the U.S. (Table 13-71, U.S. EPA, 1997).

- For soil exposures, a total body surface area of 2,800 cm^2 was used for the child resident (age 0 to 6 years) based on RAGS Part E guidance (U.S. EPA, 2004a). The exposed skin was assumed to be limited to the head, hands, forearms, lower legs, and feet. For exposures to surface water and sediment by an Off-Facility Area resident child (age 7 to 16 years), a total body surface area of 4,300 cm^2 was used. A total body surface area of 5,700 cm^2 was used for all dermal exposures to the adult resident based on RAGS Part E guidance (U.S. EPA, 2004a). The exposed skin was assumed to be limited to the head, hands, forearms, and lower legs.

- For the evaluation of dermal contact with surface water (wading scenario), the resident was assumed to be exposed for approximately one hour per event (U.S. EPA, 2002d). This value was based on the recommended activity time for children playing in sand and gravel of 60 minutes per day (Table 9-62 in U.S. EPA, 2002d).

- As recommended in U.S. EPA RAGS Part E guidance, a soil-to-skin AF of 0.2 mg/cm^2 was used to evaluate the child resident and an AF of 0.07 mg/cm^2 was used for the adult resident.

- The inhalation rate for the child resident between the ages of one and six was estimated as the maximum rate (10 m^3/day) among children for the following ages: one to two years, three to five years, and six to eight years old (U.S. EPA, 1997a). For the future adult resident, the inhalation rate (20 m^3/day) was estimated as a full residential daily exposure utilizing the adult hourly rates in Table 5-23 of the *Exposures Factor Handbook* and assuming eight hours of rest, eight hours of sedentary activity, and eight hours of moderate activity (U.S. EPA,

1997a).

3.2.2.3 Commercial/Industrial Facility Area Workers

While the property is not currently used, the property has been historically used for commercial/industrial purposes and this use is the most plausible future use. Commercial workers on the Facility Area may have exposure to COPCs in surface soil via dermal contact with soil; incidental ingestion of soil; and inhalation of wind-blown dust. The following is a list of the exposure parameters applied for this receptor group, which are listed in RAGS Part D Tables 4c-1through 4c-4 in Attachment A:

- The Facility Area worker was assumed to be exposed to fine fraction surface soil, sediment and surface water on the Facility Area while working.
- A soil/sediment ingestion rate of 50 mg/day was used for the occupational worker in accordance with U.S. EPA guidance (2004a).
- An exposure duration of 25 years was used (U.S. EPA 1991b).
- In evaluating exposures to soil, an exposure frequency of 250 days/year was used (U.S. EPA, 1991c). In evaluating exposure to surface water and sediment, an exposure frequency of 50 days/year was assumed, which is equivalent to one day per 50-week work year.
- A body weight of 70 kilograms was used for the Facility Area worker (U.S. EPA, 1991c).
- A total body surface area of 3,300 cm^2 was used for the Facility Area worker based on RAGS Part E guidance (U.S. EPA, 2004a). The exposed skin was assumed to be limited to the head, hands, and forearms.
- As recommended by U.S. EPA (2002c), a soil-to-skin AF of 0.2 mg/cm^2 was used to evaluate the worker.
- An inhalation rate of 20 m^3/day was used for Facility Area workers (U.S. EPA, 2002c).

3.2.2.4 Utility and Construction Workers

Construction or utility/trench workers may be exposed to COPCs within the Facility Area and outside the Facility Area (current residential properties, commercial properties and vacant parcels and alleyways were evaluated separately) during future redevelopment. Construction, utility or trench workers may have exposure to contaminants in surface and subsurface soil. In addition, it was assumed that construction workers would be exposed to COPC in sediment and surface water within the Facility Area drainage ditches and on-

Facility Area portion of Rose Creek.

Construction and utility workers may also have exposure to contaminants in the alleyway areas outside the Facility Area. These receptor groups may be exposed to COPCs in surface/subsurface soil via dermal contact with soil; incidental ingestion of soil; and inhalation of wind-blown dust. Construction workers may also incidentally ingest sediment and dermally contact sediment and surface water in the creeks down-gradient of the Facility Area. Although these two receptors represent different exposure scenarios, the exposure parameters (e.g. soil ingestion rates) are similar for the two receptors.

- The utility and construction worker were assumed to be exposed to surface and subsurface soil (0-10 ft bgs total soil), while working on the Facility Area or adjacent to the Facility Area (in the alleyways). The construction worker was also assumed to be exposed to sediment and surface water in the On-Facility Area drainage ditches and in the Off-Facility Area surface water bodies on an occasional basis.

- An exposure frequency for both receptors of 30 days per year and exposure duration of one year was assumed (IEPA, 2007).

- A body weight of 70 kilograms was used for both receptors (U.S. EPA, 1991c).

- A total body surface area of 3,300 cm^2 was used based on U.S. EPA's 2002 Soil Screening Level guidance (U.S. EPA, 2002c). The exposed skin was assumed to be limited to the face, hands, and forearms.

- U.S. EPA guidance (2002c) suggests using an ingestion rate of 330 mg/day for outdoor activities such as construction or landscaping. This value is a high-end soil ingestion rate based on the 95^{th} percentile value for adult soil intake rates reported in a soil ingestion mass-balance study (U.S. EPA, 2002c).

- For both workers worker, an AF of 0.3 mg/cm^2 was used based on the 95^{th} percentile value for construction workers (U.S. EPA, 2002c).

- An inhalation rate of 20 m^3/day was used for both workers (U.S. EPA, 2002c).

3.3 CALCULATION OF EXPOSURE POINT CONCENTRATIONS

To estimate the magnitude of exposure for each of the receptors described above, a representative concentration of each COPC present in a medium, the exposure point concentration (EPC), must be calculated. An EPC is a conservative estimate of the average chemical concentration in a medium that a receptor is likely to contact overtime (U.S. EPA 1989). Because of the uncertainty associated with estimating a true average concentration, EPA recommends calculating the 95% upper confidence limit (UCL) of the arithmetic mean concentration in the exposure area (U.S.EPA1992c). Methods for

calculation of the 95% UCL are provided in Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites (U.S.EPA 2002a). The lesser of the 95% UCL or the maximum concentration for each COPC in a dataset was used as the EPC for each exposure area. Only analytical data from fixed laboratory analyses collected as part of the RI was evaluated quantitatively in the risk assessment. Non-detect results were considered by taking one-half of the SQL, which was the assumed concentration for non-detected compounds. Duplicate field sample results were averaged before use in the risk assessment. In addition, all QA/QC data was used in assessing data quality but was excluded from the quantitative assessment of risk.

Prior to calculation of the EPCs, data were grouped into appropriate exposure units such as industrial/commercial areas (e.g., On-Facility Area) and current residential properties and future residential properties (which include commercial and vacant lots) that allow for calculation of risks associated with each associated exposure unit and facilitate risk management and future land use decision-making. Sample station locations, sample identification numbers, and analytical results used in calculating the EPCs for each data grouping area are provided in Attachment B, and are described in the following subsections for each exposure medium.

For non-residential media data sets containing fewer than 8 samples, the maximum concentration was used as the EPC. When more than 8 samples are available, the distribution of the data was tested using the Shapiro-Wilk 'W' Test or other appropriate test described by Gilbert (1987) or EPA (USEPA, 2000c). If the 95% UCL on the mean of the data distribution was lower than the maximum concentration, the 95% UCL was used as the EPC; otherwise the maximum value was used as the EPC. The method for calculating the 95% UCL depended on the distribution of the data set. When the data were normally distributed, the Student's t-statistic was used to calculate the 95% UCL. The H-statistic was used to calculate the 95% UCL for lognormally distributed datasets. For datasets that fit neither lognormal nor normal distribution curves, nonparametric methods described by EPA (USEPA, 2000c) were employed. The 95% UCL was calculated with U.S. EPA's ProUCL (version 3.0 and 4.0) program (2004d; 2007b), which calculates the 95% UCL of a dataset using various parametric and non-parametric methods. When using a 95% UCL as the EPC, the ProUCL recommended 95% UCL was selected.

EPA's Technical Review Workgroup for Lead (TRW) recommends that the soil contribution to dust lead be evaluated by comparing the average or arithmetic mean of soil lead concentrations from a representative area in the child's yard, and an average of dust lead concentrations from representative areas frequented by children inside the house (EPA, 2002e). Accordingly, the lead soil EPC was based on the arithmetic mean of the lead results for the fines fraction soil samples collected On-Facility Area, and sediment samples collected at On-Facility Area drainage ditches and samples collected at Off-Facility Area surface water bodies. For Off-Facility Area soil, the EPC is based on the lead results for the fines fraction from composite soil sample collected at each of the current resident properties, current commercial properties, current vacant properties, and alley way samples.

√ yes

Since most lead is found in the finer fraction of soil, and this finer fraction also adheres to skin, it is, therefore, recommended to estimate the arithmetic avg for surface and subsurface soils for lead using the finer fraction for ingestion, dermal contact and inhalation rather than the total soil.

3.3.1 Soil EPC

EPCs for surface soil from the Facility Area were derived separately for each of the following sample types collected throughout the Facility Area: 1) fine fraction soil samples representing a mix of native soil and slag, 2) fine fraction slag samples, and 3) fine fraction native soil. For utility/construction workers, the EPCs for surface and subsurface soil from the Facility Area were based on results from all surface and subsurface soil samples collected to a 10 foot depth from the Facility Area. Soil EPCs for Off-Facility Area properties (current residential properties, commercial properties, and vacant lots) were based on the maximum detected concentrations among all soil samples collected (i.e., composite fine fraction sample, composite total soil sample) at each property location Property-specific EPCs were used because people are expected to have the majority of their soil contact on their own property. Assuming that exposures occur predominantly within an individual yard will yield a representative range of risk estimates for the community. For exposures to utility and construction workers, the EPCs for surface and subsurface soil located off of the Facility Area are based on total soil samples collected from individual yards and alleys.

EPCs for inhalation of fugitive dust in outdoor air areas where no vegetation cover or paved surfaces are present were calculated from the soil EPCs using the particulate emission factor (PEF) approach described by EPA (USEPA, 1991). A PEF was derived using both Site-specific and default information provided in the USEPA's Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites (USEPA, 2002d), and is described in Subsection 3.2.1.1. The soil EPCs is then multiplied by the PEF to calculate the air concentration of particulates.

The soil datasets evaluated for each receptor group on the Facility Area were:

- Mixed soil and slag surface soil, fine fraction – Attachment B, Table B-5a&b
  - Current/Future trespasser
  - Future commercial/industrial worker
  - Future hypothetical resident (adult and child)

- Surface slag (fine fraction) – Attachment B, Table B-11a&b
  - Current/Future trespasser
  - Future commercial/industrial worker
  - Future hypothetical resident (adult and child)

- Surface native soil (fine fraction) – Attachment B, Table B-11a&b
  - Current/Future trespasser
  - Future commercial/industrial worker

- Mixed soil and slag surface/subsurface soil, (total metals) – Attachment B,

Table 6a&b
  - Future utility/construction worker

- Surface/subsurface native soil (total metals) – Attachment B, Table12a&b
  - Future utility/construction worker

- Surface/subsurface slag (total metals) – Attachment B, Table 13a&b
  - Future utility/construction worker

The derivation of the Off-Facility Area soil EPCs and the soil datasets used in the derivation are presented in Attachment B and are as follows:

- Current resident soil exposures (Current residential properties) – Attachment B Table 7c;
- Current resident Soil Data for Produce Uptake (Current residential properties with gardens) – Attachment B Table 7c;
- Future resident soil exposures (Residential properties, Commercial Properties, Vacant Lots) – Attachment B Table 7c;
- Current and Future Recreational soil exposures – Attachment B, Table B-7a;
- Current and Future Utility/Construction Worker soil exposures (– Attachment B, Table 8a&b.
- Current and Future Residential and Recreational Exposures to soil in Alleyways – Attachment B Table 7d.
- Current and Future Utility/Construction Worker soil exposures (Residential properties, Commercial Properties, Vacant Lots) – Attachment B Table 8a&b
- Current and Future Utility/Construction Worker soil exposures in Alleyways – Attachment B Table B10a&b.

3.3.2 Sediment and Surface Water EPC

Separate EPCs were calculated for sediment and surface water representing drainage ditches on the Facility Area (East Ditch 1, East Ditch 2, West Ditch 1, West Ditch 2, and portion of Rose Creek on the Facility Area) and sediment and surface water representing Off-Facility water bodies (Rose Creek Outfall, Old Cahokia Wetland). Sampling locations on the Facility Area included SD-1, SD-2, SD-5 through SD-9, SD-23 through SD-28. Sediment sampling locations representing Off-Facility Area areas included SD-03, SD-10 through SD-18, SD-20 through SD-21, SD-29 through SD34, and SD-36 through SD-37, SD-41 through SD-48. Sample SD-19, from the engineered drainage

way was not considered a representative sediment sample and was not used in the calculation of the EPCs. Sample SD-04 was collected upstream in Rose Creek and was considered as a background location. As all of the streams draining the Facility Area are ephemeral, surface water samples were only collected at co-located sediment sample locations where water was present. Surface water locations on the Facility Area included: SW-01, SW-05 through SW-08, and SW-24. Off-Facility Area surface water sampling locations included SW-10 through SW-13, SW-17, SW-20 through SW-22, SW-34, and SW-34 through SW-45 (Figure 2-5).

The surface water and sediment datasets evaluated for each receptor group were:

- Facility Area sediment (total metals) – Attachment B, Table B-1a&b
  - Current/Future Trespasser
  - Future Commercial/Industrial Worker
  - Future Construction Worker

- Facility Area surface water (total metals) – Attachment B, Table B-3a
  - Current/Future Trespasser
  - Future Commercial/Industrial Worker
  - Current/future Construction Worker

- Off-Facility Area sediment (total metals) – Attachment B, Table B-2a&b
  - Current/Future Recreational User
  - Current/future Resident (adult and child)
  - Future Construction Worker

- Off-Facility Area surface water (total metals) – Attachment B, Table B-4a&b
  - Current/Future Recreational User
  - Future Resident (adult and child)
  - Future Construction Worker

3.3.3 Medium-specific EPCs

Medium-specific EPCs for soil (excluding Off-Facility Area EPCs for individual properties), sediment and surface water are summarized in RAGS Tables 3a through 3c in Attachment A, and listed below:

- Facility Area mixed soil and slag (fine fraction) surface soil (Table 3a-1)
- Facility Area mixed soil and slag surface/subsurface (not sieved) (Table 3a-2)
- Off-Facility Area surface/subsurface soil (not sieved) (Table 3a-3)

- Off-Facility Area All Residential, Commercial, and Vacant Properties (fine fraction) surface soil (Table 3a-4)
- Facility Area Surface/Subsurface Slag (not sieved) (Table 3a-5)
- Facility Area Surface/Subsurface Native soil (not sieved) (Table 3a-6)
- Facility Area Surface Native soil (fine fraction) (Table 3a-7)
- Facility Area Surface Slag (fine fraction) (Table 3a-8)
- Off-Facility Area Alleyway Surface/subsurface soil (Table 3a-9)
- Off-Facility Area Alleyway fine fraction Surface soil (Table 3a-10)
- Facility Area Surface Water (Table 3b-1)
- Off-Facility Area Surface Water (Table 3b-2)
- Facility Area Sediment (Table 3c-1)
- Off-Facility Area Sediment (Table 3c-1)

4.0 TOXICITY ASSESSMENT

The purpose of a toxicity assessment is to evaluate the potential for Site-related chemical exposures to cause adverse health effects in exposed individuals and to define, to the extent possible, the relationship between the degree of exposure to a hazardous chemical and the likelihood and severity of any adverse health effects. Standard procedures for assessing and quantifying the toxicity of the COPCs are applied in the risk assessment. These procedures include identifying toxicity values for carcinogenic and non-carcinogenic chemicals and summarizing other relevant toxicity information.

4.1 TOXICITY CRITERIA

The potential cancer risks and non-cancer health effects from exposure to Site-related chemicals was evaluated using quantitative toxicity values. As recommended in a recent USEPA memorandum, Human Health Toxicity Values in Superfund Risk Assessments (USEPA, 2003d), the toxicity values that were used in these analyses are, in order of preference, values available in EPA's IRIS (USEPA, 2004c), then USEPA's Provisional Peer Reviewed Toxicity Values (PPRTVs) from the Office of Research and Development/National Center for Environmental Assessment/Superfund Health Risk Technical Support Center (USEPA, 2004f). If neither IRIS toxicity values nor PPRTVs are available, then toxicity values were obtained from other documented sources.

To assess carcinogenic health effects, cancer slope factors (CSFs) were used to assess oral and dermal exposures, while unit risk factors (URFs) were used to assess inhalation exposures. CSFs and URFs are upper-bound estimates of the carcinogenic potency of chemicals that are used to estimate the incremental risk of developing cancer, corresponding to a lifetime of exposure at the levels estimated in the exposure assessment. In standard risk assessment procedures, estimates of carcinogenic potency reflect the conservative assumption that no threshold exists for carcinogenic effects, i.e., that any exposure to a carcinogenic chemical will contribute an incremental amount to an individual's overall risk of developing cancer. The CSF and URF values recommended by the USEPA are conservative upper-bound estimates of potential risk. As a result, the "true" cancer risk is unlikely to exceed the estimated risk calculated using the CSF or URF, and may be as low as zero (USEPA, 1986).

Carcinogen toxicity values that are used in the risk assessment likely vary in the type of data used to calculate the CSFs and URFs, and the strength of the evidence supporting the values. Chemicals for which adequate human data are available are categorized as "known human carcinogens", while other values with varying levels of supporting data may be classified as "likely human carcinogens," "suggestive of human carcinogenicity," "not likely to be carcinogenic," or, perhaps data may be inadequate to make a determination of carcinogenicity.

The potential for non-cancer health effects from long duration exposures is evaluated by

comparing the estimated daily intake with a chronic oral reference dose (RfD) or by comparing estimated exposure concentrations in air with reference concentrations (RfCs) for inhalation. These toxicity values represent average daily exposure levels at which no adverse effects are expected to occur during chronic exposures. RfDs and RfCs reflect the underlying assumption that systemic toxicity occurs as a result of processes that have a threshold, i.e., that a safe level of exposure exists and that toxic effects will not be observed until this level has been exceeded. The RfDs and RfCs form any of the non-carcinogenic chemicals are based on laboratory animal studies. Variations in the strength of the underlying data are reflected in the uncertainty factors used to calculate the toxicity values and the confidence ratings assigned to the toxicity values. Uncertainty factors are used in the derivation of RfDs and RfCs to account for limitations in the underlying data and are intended to ensure that the toxicity value calculated based on the data will be unlikely to result in adverse health effects in exposed human populations. The magnitude of the total uncertainty factor used for a particular chemical varies depending on the nature and the quality of the available toxicity data.

As a conservative step, the risk assessment for chromium utilized the Cr^{+6} (hexavalent chromium) valance state in the BHHRA to evaluate the inhalation risk. The Cr^{+3} (trivalent chromium) valence state was used to evaluated the ingestion and dermal contact risk. It is noted that the lung is the target endpoint for hexavalent chromium as defined by EPA in the derivation of the inhalation reference concentration, while no target endpoint has been defined as the basis for the oral reference dose for trivalent chromium (U.S. EPA, 2007a). The Uncertainty Analysis discusses how risks may be overestimated by using this approach.

4.2 Lead Toxicity

Inorganic lead does not currently have an RfD or Slope Factor (SF). EPA's RfD Workgroup has stated that it would be inappropriate to develop an RfD for lead, because some effects of lead may occur at levels so low as to be essentially without a threshold (USEPA, 2001b). Instead, the potential health hazard from exposure to environmental lead is estimated based on predicted blood lead levels and probabilities of exceeding a blood level of 10 µg of lead per deciliter of blood (µg/dl) (EPA, 1994a).

4.2.1 USEPA's Integrated Exposure Uptake Biokinetic (IEUBK) model

Children are the primary human health concern for blood lead levels. EPA has defined a blood lead level of 10 µg/dL in greater than 5 percent of a hypothetically exposed population as the threshold for unacceptable levels of potential adverse neurological effects in children (USEPA, 1998). The 10 µg/dl blood lead level is a level established by the Centers for Disease Control and Prevention (CDC) as a benchmark to assess health hazards from lead exposure (EPA 1994a; EPA, 1998h; CDC 1991; CDC, 1997). The USEPA's Integrated Exposure Uptake Biokinetic (IEUBK) model (EPA 1994b) was used to evaluate the potential for unacceptable health effects in young children. The IEUBK model was designed to estimate the probability distribution of blood lead concentrations

in populations of children up to 84 months of age, based on assumptions about:

- intake of lead in air, the diet, soil, water and indoor dust;
- uptake of lead from these media into the bloodstream;
- distribution of lead to tissues and organs; and
- excretion of lead.

4.2.2 USEPA's Adult Lead Model (ALM)

The USEPA's Adult Lead Model (ALM) predicts a total soil concentration (contributions from soil or indirectly from soil dust) that, if ingested daily by a woman of childbearing age, would not raise the blood lead level of a fetus or newborn above 10 µg/dL, the current CDC benchmark of concern for chronic lead poisoning in children (EPA, 2003d; CDC, 1991). The ALM uses a nonresidential exposure scenario that could apply to either a female commercial or industrial worker (EPA, 2003d).

The model has a range of input assumptions that can be modified if site-specific data are available. Site-specific assumptions from the algorithms presented in Section 3 (Exposure Assessment) were used where possible in the model. With the exception of the exposure frequency, the lead concentration in soil, and the soil ingestion rate, recommended default values for each of the parameters were used to model blood lead levels for a future commercial/industrial worker on the Facility Area.

Rather than using the default exposure frequency of 219 days per year for a commercial/industrial worker (as recommended in the model), an exposure frequency of 250 days/year was used to agree with the parameters used for the other COPCs as presented in the Exposure Assessment, Section 3. The soil lead concentration used in the adult lead modeling was based on the mean concentration of lead in the fines fraction of soil as recommended in the ALM guidance (EPA, 2003d; EPA 2000). EPA's TRW recommends a default soil ingestion rate value of 50 mg/day (identified as IR_S in the ALM) as a plausible point estimate of the central tendency for daily soil intake from all occupational sources, including soil in indoor dust, resulting from non-contact intensive activities (EPA, 2003d). However, this would include exposures that are predominantly indoors. More intensive soil contact would be expected for predominantly outdoor activities such as construction, excavation, yard work, and gardening. TRW suggests using site-specific data on soil contact intensity, including potential seasonal variations, in considering whether or not the default value is applicable to the population of concern.

Since the populations of concern include a construction/utility worker, the default value of 50 mg/day was increased to 1 330 mg/day, respectively, to be consistent with the construction/utility soil ingestion rate used in the Exposure Assessment (Section 3). In adopting the single IR_S parameter to describe all sources of ingested soil, the methodology remains consistent with recommendations of the Superfund program and their implementation for risk assessment. Specifically, the IR_S parameter used in the ALM addresses all occupational soil intake by the individual, whether directly from soil

or indirectly through contact with dust (EPA, 2003d). The IR_S parameter specifically applies to the assessment of soil lead risk, and not risks associated with non-soil sources of lead in dust. According to EPA, in making soil ingestion exposure estimates under the RAGS framework, no specific assumptions are needed about the fraction of soil intake that occurs through dust (EPA, 2003d).

Adult lead modeling has been performed assuming both a homogeneous and a heterogeneous population. The individual blood lead geometric standard deviation (GSD_i) is a measure of the inter-individual variability in blood lead concentrations in a population whose members are exposed to the same nonresidential environmental lead levels. The lowest values of GSD are expected among homogeneous populations (e.g., individuals with similar socioeconomic and ethnic characteristics living within a relatively small geographic area) exposed to a single, dominant source of lead (e.g., lead mining or smelter sites). By contrast, higher values of GSD might be expected from a national survey. Although lead exposures among the general population are likely to be more greatly impacted by diet than soil (e.g., compared with populations exposed at a waste site), the national population is very heterogeneous, in that it includes individuals with different socioeconomic and ethnic characteristics living in distinct geographic areas.

4.3 CHEMICALS WITHOUT TOXICITY VALUES

Inhalation toxicity values are not available for some metals including, but not limited to, chromium, silver and zinc.

Inhalation RfDs or SFs listed in Region 9 PRGs that are based on route-to-route extrapolation were not used in the risk assessment. The USEPA does not recommend simply substituting oral toxicity values to assess toxicity from inhalation exposures for COPCs where no inhalation toxicity values are available (EPA, 1996b). For example, route-to-route extrapolation are not typically performed for inorganics due to portal of entry effects and known differences in absorption efficiency for the two routes of exposure. Instead, the USEPA recommends the route-to-route extrapolation be evaluated on a case-by-case basis. The use of USEPA Region 9 PRGs developed based on toxicity values from route-to-route extrapolation is recommended only for screening procedures. Consistent with EPA guidance, the implications of the absence of toxicity values are discussed in the uncertainty section of the risk assessment report (USEPA, 1989a).

4.4 DERMAL TOXICITY VALUES

Toxicity criteria have not be developed for the dermal exposure route. In the absence of dermal slope factors, the oral slope factor was divided by an appropriate gastrointestinal absorption factor (ABS_{GI}) (U.S. EPA, 1989). The ABS_{GI} is also known as the oral- to-dermal adjustment factor. The ABS_{GI} factor adjusts the orally administered dose for the amount absorbed since dermal exposure doses are expressed as "absorbed" doses (note that oral and inhalation doses are usually expressed as "administered" doses). A chronic

dermal RfD was derived for each chemical by multiplying the value used as the chronic oral RfD by an appropriate ABS_{GI}. Chemical-specific ABS_{GI} factors were obtained from U.S. EPA's RAGS Part E (2004b). For inorganics in which chemical-specific ABS_{GI} factors were not available, the ABS_{GI} factor was assumed to be 100% based on U.S. EPA's RAGS Part E guidance (2004b).

5.0 RISK CHARACTERIZATION

To characterize risks, quantitative estimates of exposure and toxicity are combined to yield numerical estimates of potential health risk. These risks were evaluated in accordance with USEPA guidance (USEPA, 1989). This phase of a risk assessment also involves interpreting and qualifying the derived risk estimates. As appropriate, risks were summed across chemicals and pathways. Qualitative discussion is also provided regarding the potential for individual receptors to be exposed via multiple scenarios. The methods that were used are described below.

5.1 CALCULATION OF CANCER RISKS

The cancer risk estimates derived using standard risk assessment methods are characterized as the incremental probability that an individual will develop cancer during his or her lifetime due to exposure to Site-related chemicals resulting from the specific exposure scenarios that are evaluated. The term "incremental" reflects the fact that the calculated risk associated with Site-related exposure is in addition to the background risk of cancer experienced by all individuals in the course of daily life. Approximately one in four Americans die of cancer. Thus, the background cancer risk is 0.25, or 250,000 in one million. Cancer risk estimates for a specific Site or exposure scenario are expressed as unitless values reflecting the additional probability that an individual will develop cancer over a lifetime of exposure at the assumed levels (e.g., one-in-a-million or $1\times10^{+06}$).

Excess (incremental) lifetime cancer risks (ELCR) for the ingestion and dermal exposure pathways are calculated using the following equation.

$$Cancer\ Risk = LEC\left[\frac{mg}{kg * day}\right] \times CSF\left[\frac{mg}{kg * day}\right]$$

Cancer risks for the inhalation pathway are calculated using the lifetime exposure concentration, LEC, and URF, as shown.

$$Cancer\ Risk = LEC\left[\frac{mg}{m^3}\right] \times URF\left[\frac{mg}{m^3}\right]$$

Because cancer risks are assumed to be additive, risks associated with simultaneous exposure to more than one carcinogen in a given medium are typically combined to estimate the total cancer risk associated with each exposure pathway (USEPA, 1989). Where exposures may occur via multiple exposure routes, total cancer risks for each exposure pathway may be summed for reasonable combinations of exposure pathways to determine the total cancer risk for the potentially exposed population of concern.

5.2 NON-CARCINOGENIC HEALTH RISK

In contrast with carcinogenic effects, potential noncancer health effects are not expressed as a probability. Instead, noncarcinogenic health risks are characterized as the increased likelihood that an individual will suffer adverse health effects as a result of chemical exposure. The USEPA defines the RfD and RfC as an estimate of a daily exposure level for the human population, including sensitive subpopulations, that is likely to be without an appreciable risk of deleterious effects during a lifetime (USEPA, 1989). If receptors are exposed to levels less than or equal to these acceptable levels, no adverse health effects are expected. Exposures above the RfD or RfC do not mean that adverse human health effects will occur, but rather that further evaluation is required.

To evaluate noncancer risks, the ratio of the average daily intake to the RfD or RfC is calculated. This ratio is referred to as the hazard quotient (HQ). If the calculated value of the HQ is less than or equal to 1.0, no adverse health effects are expected. If the calculated value of the HQ is greater than 1.0, then further risk evaluation is needed. For the ingestion and dermal pathways, the HQ is calculated using the following equation:

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

where:

HQ = Hazard quotient associated with exposure to the chemical *via* the specified exposure route (dimensionless)

I = Estimated average daily intake of the chemical *via* the specified exposure route (mg/kg-day)

RfD = Reference dose for the COPC (mg/kg-day)

To evaluate noncancer health risks for inhalation exposures, the LEC is divided by the RfC as shown in the following equation:

$$HQ = \frac{LEC}{RfC}$$

where:

HQ = Hazard quotient associated with exposure to the chemical *via* the specified route of exposure (unitless)

LEC = Lifetime exposure concentration (mg/m^3)

RfC = Reference concentration for the COPC in air (mg/m^3)

As an initial evaluation of aggregate risks, the HQs for each individual chemical were

summed for all chemicals in each exposure pathway to determine a non-cancer hazard index (HI). Such an approach reflects a conservative method for estimating noncancer health risks because the noncancer health risks associated with chemicals that affect different target organs are unlikely to be additive. If any HIs are found to exceed 1.0, chemicals were grouped into categories affecting the same target endpoint/organ, and HIs were recalculated for each target endpoint/organ.

5.4 DISCUSSION OF RESULTS BY RECEPTOR GROUP

5.4.1 Current/Future On-Facility Area Scenarios

Current/Future Trespassers

Under this potential exposure scenario, it was assumed that trespassers visit the Facility Area for recreational purposes using the same exposure parameters for current and future. Trespassers (ages 7 to 16) were assumed to be exposed to chemical COPCs in soil (as fine fraction mixed slag and native soil, as fine fraction slag, or as fine fraction native soil) through incidental ingestion, dermal absorption, and inhalation of dusts. In addition, this receptor is assumed to wade in the drainage ditches and exposed to COPCs in sediments and surface water. Details of all risk calculations for this receptor group are presented in the RAGS Part D Table in Attachment A (Table 7a, 9a, 10a for mixed native soil/slag; Table 7l, 9l, 10l for slag only; and Table 7u, 9u, 10u for native soil only).

For potential exposures to COPCs in the fines fraction of mixed slag and native soil, and COPCs in surface water and sediment within the drainage ditches, the cumulative lifetime excess cancer risk was 4E-05 (Table 5-1). This risk estimate falls within the 1E-04 to 1E-06 risk range. Potential exposures to arsenic in fines fraction mixed slag and native soil (ingestion and dermal contact), and in sediment (ingestion only) are the primary contributors to the cumulative excess cancer risk estimate (see Attachment A Table 9a). Exposure to arsenic resulted in a potential cancer risk of greater than 1E-06 for the soil ingestion and dermal RME scenarios. The cumulative HI for all exposure media combined for this receptor group did not exceed the acceptable limit of 1.0 (Table 5-1).

When evaluating potential exposures to the fines fraction of slag only, the cumulative excess lifetime cancer risk and HI associated with slag exposure only was slightly higher than the combined slag and native soil EPC (ELCR =3.8E-05 and the HI was 1.0). When evaluating potential exposures to the fines fraction of native soil only, the cumulative excess lifetime cancer risk and HI were both an order of magnitude lower (ELCR = 5.7E-06 and the HI = 0.1). Potential risks to a trespasser from exposure to slag and native soil fall within EPA's cancer risk range and do not exceed EPA's noncancer threshold. These risk estimates are also primarily due to direct contact with arsenic.

The cancer risk from sediment exposure (1.7E-06) fell within EPA's cancer risk range.

The cancer and noncancer risk from surface water for this receptor group did not exceed EPA's thresholds.

Future Facility Area Worker

Under this exposure scenario, the future worker is assumed to work primarily outdoors and exposed to surface slag/soil at the Facility Area and surface water and sediment within the On-Facility Area drainage ditches on an occasional basis. Details of all risk calculations for this receptor group are presented in the RAGS Part D Tables in Attachment A (Table 7f, 9f, 10f for mixed native soil/slag; Table 7p, 9p, 10p for slag; and Table 7t, 9t, 10t for native soil).

For potential exposures to COPCs in the fines fraction of mixed slag/native surface soil, and to COPCs in surface water and sediment in drainage ditches, the cumulative lifetime excess cancer risk was 2E-04 (Table 5-1). This potential risk exceeds the upper limit of EPA's risk range. The primary contributor to this ELCR is incidental ingestion and dermal contact with arsenic in soil and ingestion of arsenic in sediment (see Attachment A RAGS Table 9f). Potential exposure to arsenic in soil via the ingestion and dermal contact pathways resulted in individual cancer risk estimates greater than 1.0E-06 for the RME scenario. The cumulative HI for all exposure media combined (soil, surface water and sediment) (HI=3) exceeded one for this receptor group (Table 5-1) and is primarily associated with ingestion of arsenic in soil (see Attachment A RAGS Table 9f). The arsenic HQ (1) did not exceed the EPA's noncancer threshold.

When evaluating potential exposures to COPCs in the fines fraction of slag only, the cumulative excess lifetime cancer risk was 2.2E-04 and the HI was 2.5. The HQ for exposure to arsenic alone is 1.4 and the ELCR is 2E-4 (see Attachment A RAGS Table 9p). When evaluating potential exposures to COPCs in the fines fraction of native soil only, the cumulative excess lifetime cancer risk was 3.4E-05 and the HI was 0.35. Risks to a Facility Area worker from exposure to slag exceed EPA's cancer risk range, while risks from exposure to native soil falls within EPA's risk range. This risk is primarily associated with ingestion of arsenic.

The cancer risk from sediment exposure (6.0E-06) fell within EPA's cancer risk range. The cancer and noncancer risk from surface water by this receptor group did not exceed EPA's thresholds.

Utility/Construction Worker

Under this exposure scenario, it was assumed that utility or construction workers are exposed to COPCs in Facility Area surface and subsurface soil (total metals, 0-10 ft bgs) while in an excavation or trench. Future utility and construction workers were assumed to be exposed to COPCs in surface/subsurface soil within the Facility Area through incidental ingestion, dermal absorption, and inhalation of dusts. Under a future use scenario, it was assumed that construction workers would be exposed to COPCs while working in the Facility Area drainage ditches, with potential exposure to COPCs in sediments (incidental ingestion and dermal contact) and surface water (dermal contact

only). Details of all risk calculations for this receptor group are presented in the RAGS Part D Tables in Attachment A (Table 7g, 9g, 10g for surface and subsurface soil).

For potential exposures to COPCs in the surface and subsurface soil, and to COPCs in surface water and sediment in drainage ditches, the cumulative lifetime excess cancer risk was 9E-06 (Table 5-1). This risk estimate falls within the mid-range of EPA's allowable cancer risk range (1E-04 to 1E-06). Incidental ingestion of arsenic in soil is the primary contributor to the ELCR, representing 93% of the total ELCR. This COPC had individual cancer risk estimates greater than 1.0E-06 for the RME scenario. The cumulative HI for all exposure media combined (5) exceeded the HI limit of 1 for this receptor group (Table 5-1) and is primarily associated with ingestion of cadmium in soil (HQ =1.6) and ingestion of arsenic in soil (HQ=1.3) (see Attachment A RAGS Table 9g).

When evaluating potential exposures to COPCs in the fines fraction of slag only, the cumulative excess lifetime cancer risk was 1.5E-05 and the HI was 5.3. When evaluating native soil only, the cumulative excess lifetime cancer risk was 9.8E-07 and the HI was 2.1. Cancer risks to a Facility Area worker from exposure to slag falls within EPA's risk range, while risks from exposure to native soil fall below EPA's risk range. The HI above one was primarily attributed to ingestion of arsenic in the slag (HQ = 2.3) and ingestion of cadmium in the native soil (HQ = 1.8).

The cancer and noncancer risk from surface water and sediment exposure by this receptor group did not exceed EPA's thresholds.

Hypothetical Future Resident

Though it is unlikely the Facility Area will be used for residential purposes, a future hypothetical residential scenario was quantified for the Facility Area. Future hypothetical residents were assumed to be exposed to chemical COPCs in surface soil (as fine fraction mixed slag and native soil, as fine fraction slag, or as fine fraction native soil)) through incidental ingestion, dermal absorption, and inhalation of fugitive dusts. Details of all risk calculations for this receptor group (child, adult, and both) are presented in the RAGS Part D Tables in Attachment A (RAGS Tables 7c, 9c, 10c,; for mixed native soil/slag; RAGS Tables 7m, 9m, 10m for slag only; and RAGS Tables 7q, 9q, 10q for native soil only).

For potential exposures to COPCs in the fines fraction of mixed slag/native surface soil, the cumulative lifetime excess cancer risk (adult and child combined) was 9E-04 (Table 5-1). This risk estimate exceeds the 1E-04 to 1E-06 risk range. This risk is primarily associated with incidental ingestion of and dermal contact with arsenic in soil. This COPC had individual cancer risk estimates greater than 1.0E-06 for the RME scenario for these two exposure routes (see Attachment A, RAGS Table 9c). For exposures to a hypothetical resident child, the maximally exposed residential receptor, the total HI exceeded the HI limit of one. Exposures to arsenic, cadmium and zinc were the COPCs that contributed to this exceedance (see Attachment A, RAGS Table 9c).

When evaluating potential exposures to COPCs in the fines fraction of slag only, the cumulative excess lifetime cancer risk for hypothetical residents was 9.1E-04 (adult and child combined). Risks to hypothetical future resident living on the Facility Area from exposure to slag exceed EPA's risk range, which is primarily due to ingestion and dermal contact with arsenic (see Attachment A RAGS Table 9m). For exposures to a hypothetical resident child, the maximally exposed residential receptor, the cumulative HI exceeded the HI limit of 1.0, with hypothetical exposures to arsenic, cadmium, and zinc in soil contributing to this exceedence. When evaluating potential exposures to COPCs in the fines fraction of native soil only, the cumulative excess lifetime cancer risk also exceeds EPA's cancer risk range (ELCR = 1.4E-04) with arsenic as the primary contributor (see Attachment A, RAGS Table 9q. The total HI for a child exceeds the HI limit of 1, with potential exposures to arsenic and cadmium in native soils contributing to this exceedance (see Attachment A, RAGS Table 9q).

5.4.2 Current/Future Off-Facility Area Scenarios

Recreational User

As vacant land may be used for recreational purposes currently and in the future, recreational use of off-Facility Area properties was evaluated (all current residential properties, commercial properties, and vacant lots combined and all alleyways combined). Older children were assumed to be exposed to chemical COPCs in soil (fine fraction) through incidental ingestion, dermal absorption, and inhalation of dusts. In addition, this receptor is assumed to wade in the drainage ditches and creeks down-gradient of the Facility Area, incidentally ingesting sediments and absorbing contaminants from surface water and sediment while doing so. Arsenic concentrations in Rose Creek downstream of the Facility Area were elevated, but were at levels similar to or below soil background at the Rose Creek outfall, the West Ditch outfall and in Schoenberger Creek. The average total lead concentrations in sediment exceeded the residential screening level of 400 mg/kg in both the Facility Area drainages and in the downstream drainages. The average total lead concentrations in Schoenberger Creek sediment samples (175 mg/kg) and in Rose Creek Outfall sediment samples (213 mg/kg) do not exceed 400 mg/kg. The highest lead concentration in off-Facility Area sediment samples (3350 mg/kg at SD-41) was measured in Rose Creek just at the property line. Lead concentrations in Rose Creek decreased by at least an order of magnitude downstream of this location. A summary of the risk and hazard estimates for the recreational receptor is presented in Table 5-2. Details of all risk calculations for this receptor group are presented in the RAGS Part D Tables in Attachment A (Table 7b, 9b, 10b for current residential, current commercial, and vacant properties; Table 7w, 9w, 10w for alleyways).

For potential exposures to COPCs in fines fraction soil by a recreational user (child age 7 to 16 years), the cumulative lifetime excess cancer risk associated with recreational use was 3E-06 for the residential lots and 3E-06 for the alleyways (Table 5-2). These risk estimates fall within EPA's cancer risk range (1E-04 to 1E-06). Potential exposure to

arsenic in fines fraction soil via the ingestion pathway was the greatest contributor to the ELCR. The cumulative HIs for this receptor group for potential exposures to COPCs in fines fraction soil representing all residential, commercial and vacant properties combined, and to COPCs in fines fraction soil representing alleyways did not exceed EPA's HI limit of one (Table 5-2). The cancer and noncancer risk from surface water and sediment exposure by this receptor group did not exceed EPA's thresholds.

Utility and Construction Worker

Under this exposure scenario, it was assumed that utility or trench workers are exposed to contaminants in off-Facility Area surface and subsurface soil (total metals). Future utility/construction workers were assumed to be exposed to chemical COPCs in surface/subsurface soil representing all Off-Facility properties (current residential, commercial, and vacant properties) and to soil representing Off-Facility Area alleyways through incidental ingestion, dermal absorption, and inhalation of dusts. Utility/construction workers were also assumed to occasionally work in the drainage ditches and creeks, incidentally ingesting sediments and absorbing contaminants from surface water and sediment while doing so. A summary of the risk and hazard estimates for the utility/construction worker receptor is presented in Table 5-2. Details of all risk calculations for this receptor group are presented in the RAGS Part D Table in Attachment A (Table 7h, 9h, 10h for all Off-Facility Area residential, commercial, and vacant properties and Table 7v, 9v, 10v for alleyways).

For potential exposures to COPCs in fines fraction soil and surface water and sediment in Off-Facility Area surface water bodies by utility/construction workers, the cumulative lifetime excess cancer risk was 3E-06 for potential exposures at all Off-Facility Area properties combined (residential, commercial, and vacant lots) and 3E-06 for the alleyways (Table 5-2). These risk estimates fall within EPA's cancer risk range (1E-04 to 1E-06). The cumulative HI for all exposure media combined, including surface water and sediment, did not exceed one for this receptor group (0.2 for residential lots and 0.2 for the alleyways; see Table 5-2).

Current and Future Off-Facility Area Residents

As presented in Sections 2.0 and 3.0, a total of 24 Off-Facility Area properties of mixed uses were sampled for characterizing potential COPCs in soil. Of the 24 properties, 10 properties are currently vacant, 2 are commercial, and 12 are currently residential in use. Of the 12 residential properties, 2 properties contain produce gardens. For the purposes of this evaluation, future residential use (which includes a vegetable garden) is considered possible at all properties. Current garden use is also considered separately for the two residential properties where soil data exists for the current garden (5517 Delmar and 5508 Thomas). In addition to soil exposures at each property, for the purposes of this assessment, current and future area residents are considered recreational users of the Off-Facility Area surface water bodies, with potential exposures to COPCs in surface water and sediment.

The potential risk and hazard calculations for each of these individual properties are summarized in Table 5-3 and presented in Attachment A as follows:

Current residential properties with garden:

- Current exposures 5517 Delmar (current produce garden exposures based on soil data from garden) -- RAGS Tables 7 9 10 z
- Future exposures 5517 Delmar (future produce garden exposures based on maximum soil data from entire property) -- RAGS Tables 7 9 10 ac
- Current exposures 5508 Thomas (current produce garden exposures based on soil data from garden) -- RAGS Tables 7 9 10 ag
- Future exposures 5508 Thomas (future produce garden exposures based on maximum soil data from entire property) -- RAGS Tables 7 9 10 ah

Current residential properties without a garden (considered current and future exposures to soil and future exposures to homegrown produce):

- 5514 Kinder -- RAGS Tables 7 9 10 ab
- 5427 Kinder -- RAGS Tables 7 9 10 aa
- 5507 Thomas -- RAGS Tables 7 9 10 ai
- 5510 Thomas -- RAGS Tables 7 9 10 an
- 5528 Delmar -- RAGS Tables 7 9 10 ao
- 5500 Maryland -- RAGS Tables 7 9 10 ap
- 5515 Thomas -- RAGS Tables 7 9 10 aq
- 5432 Maryland -- RAGS Tables 7 9 10 ar
- 4000 Collinsville -- RAGS Tables 7 9 10 as
- 2768 N. 42nd St. -- RAGS Tables 7 9 10 at

Properties that are currently vacant and considered future residential properties:

- 47th Street (Schurmann) -- RAGS Table 7 9 10 ad
- 2845 44th St -- RAGS Tables 7 9 10 ae
- 3022 N. 48th St -- RAGS Tables 7 9 10 af
- 42 St -- RAGS Tables 7 9 10 aj
- 2339 N 51st St. -- RAGS Tables 7 9 10 ak
- Maryland Ave. -- RAGS Tables 7 9 10 al
- N 39th and Locust St -- RAGS Tables 7 9 10 am
- 2521 N 42nd St. -- RAGS Tables 7 9 10 au
- 3800 Roselake -- RAGS Tables 7 9 10 av
- 2539 N 41st St -- RAGS Tables 7 9 10 aw

Properties that are currently used for commercial purposes and considered future residential properties:

- 4012 Maple St -- RAGS Tables 7 9 10 ax

- Cookson Rd and 44th St. -- RAGS Tables 7 9 10 ay

For each of the Off-Facility Area properties, the summary of the estimated lifetime cancer risks (adult and child combined) and hazard indices (based on exposures to a resident child, the maximally exposed residential receptor) is presented in Table 5-3. Endpoint-specific His are also presented. It is noted that the soil and produce exposure point concentrations at all properties are based on the maximum detected concentration in the composite soil samples collected at each property. Therefore, the risk and hazard calculations presented herein represent conservative estimates of potential current and future exposures. At all current residential properties, the cumulative lifetime cancer risk for current residential exposures (to COPCs in residential property soil, surface water and sediment) ranged from 2.0E-05 to 5.0E-05 (Table 5-3) which is within EPA's cancer risk range (1E-04 to 1E-06). For future residential use of currently vacant properties, the cumulative cancer risks ranges from 3E-5 (properties at 3800 Roselake and at 2539 N 41st St) to 1E-4 (47th St. at Schurmann). These potential risk estimates are also within EPA's cancer risk range (1E-04 to 1E-06). For future residential use of current commercial properties, the cumulative cancer risk estimate exceeds EPA's cancer risk range at one property (4012 Maple Street). Exposures to arsenic at the maximum soil concentration of 59 mg/Kg in soil by the ingestion and dermal routes contributed the most to the estimate of potential risk. The average concentration of arsenic in soil at 4012 Maple Street is 29 mg/Kg.

With the exception of one residential property, the estimated HIs for all Off-Facility Area residential properties were below the HI limit of 1. At the residential property located at 5514 Kinder, the endpoint-specific HIs (for skin effects and kidney) exceeded the HI limit of 1. Ingestion of arsenic and cadmium in soil and ingestion of arsenic and cadmium in homegrown produce contributed to this exceedance (see Table 5-3 and Attachment A RAGS Tables RAGS Tables 7 9 10 ab). It is noted that no garden currently exists at 5514 Kinder. Furthermore, the maximum detection of arsenic (19 mg/Kg) and cadmium (81 mg/Kg) were both associated with a fines fraction sample. The average arsenic concentration in soil at this property is 13 mg/Kg and the average cadmium concentration is 31 mg/Kg. The endpoint-specific HIs for skin (arsenic) and kidney (cadmium) fall to 1 and 0.9 respectively when the average concentrations are used to estimate the soil EPC. Among the properties that are currently vacant or used for commercial use, the noncancer endpoint-specific HIs for skin and kidney exceeded the HI limit of 1 at seven properties, including five that are currently vacant properties. Arsenic and cadmium exposures were the primary contributors to the excess hazards at the vacant properties as follows:

- 47th St Schurmann — arsenic (51 mg/Kg in soil) and cadmium (180 mg/Kg in soil) via ingestion of soil and produce;
- 3022 N 48th St. — cadmium (61 mg/Kg in soil) and arsenic (17 mg/Kg in soil) via ingestion of soil and produce;
- 2845 44th St. — arsenic (26 mg/Kg in soil) via ingestion of soil and produce;
- 42nd St — arsenic (20 mg/Kg in soil) via ingestion of soil and produce; and
- Maryland — cadmium (63 mg/Kg in soil) via ingestion of soil and produce;

At the two commercial properties, the excess hazards associated with future residential use are as follows:

- 4012 Maple St — arsenic (59 mg/Kg in soil) via ingestion of soil and produce;
- Cookson Rd and 44th St — arsenic (25 mg/Kg in soil) via ingestion of soil and produce.

In addition to evaluating all Off-Facility Area properties as future residential properties, residential exposures to the COPCs in soil representing eight alleyways located to the west of the Facility Area (see Figure 2-3) were evaluated (see Attachment A RAGS Table 7, 9, 10 az). The cumulative excess cancer risk for residential exposure to COPCs in soil representing the alleyways (representing a single exposure point) was within EPA's 1E-04 to 1E-06 cancer risk range (Table 5-3). The noncancer total HI was below EPA's HI limit of 1.

Although included in the cumulative cancer risk estimates and hazard indices presented in Table 5-3, the pathway-specific lifetime excess cancer risk (adult and child combined) from exposures to surface water and sediment in Off-Facility Area surface water bodies a was 1.8E-06, which is within EPA's cancer risk range. The total HI for combined surface water and sediment exposures for resident child (the maximally exposed resident receptor) was 0.26 (see Attachment A RAGS Tables RAGS Tables 7 9 10 z through RAGS Tables 7 9 10 ay).

5.5 RISKS FROM LEAD

Adult lead modeling was performed using EPA's most current spreadsheet system (Version Date: 05/19/05) to evaluate lead exposure to adults. Using the model and intake factors for a Facility Area worker and utility worker, a range of PRGs was developed for the Midwest and an all US population (Attachment C). The concentrations of lead in soil and sediment are compared to the range of PRGs for each receptor group in Table 5-4 (Future Site Worker, Future Utility Worker, and Future Resident)). Average lead concentrations in Facility Area soil (fine fraction and total) and slag (fine fraction and total) and average lead concentrations in Facility Area sediment concentrations exceed the resident, Facility Area worker and utility worker PRGs. The average lead concentration in Facility Area native soil (fine fraction) exceeds the Facility Area worker PRG.

The average lead concentration in off-Facility Area soil (both fine fraction and total) do not exceed the PRGs while average concentration of lead in off-Facility Area sediment does exceed the residential soil PRG, which is based on a child's exposure. The fine fraction concentration of lead in the soil samples collected from the vacant property located at 47th Street and from the alleyway transect #2 sample also exceed one or more of these non-residential PRGs.

A residential screening level of 400 mg/kg has been set for lead based on EPA's Revised Interim Lead Soil Guidance for CERCLA Sites and RCRA Corrective Action Facilities (EPA, 1994). As shown in Table 5-4, fine-fraction lead concentrations equaled or exceeded the USEPA residential PRG of 400 mg/kg at two residential properties (5514 Kinder, and 2768 N. 42nd St), one commercial property (4012 Maple), three vacant lots (2845 N. 44th St.,, N. 48th St. Maryland, and 47th St (at Schurmann)) and at three alleyway (AT-2, AT-5 and AT-6) sampling locations. The 4012 Maple Avenue location had a lead concentration of 410 mg/kg. This lot is occupied by a restaurant; the back is gravel-covered and serves as a parking area for the owners and the side lot/yard is vacant. The residence at 2768 N. 42nd Street had a lead concentration of 510 mg/kg. It is located between 1,000 and 1,700 feet west of the Facility Area. The other residential lots are located more than 500 feet east of the Facility Area.

Concentrations of lead in residential and alleyway samples were input into the USEPA's IEUBK model (EPA 1994b) to evaluate the potential for unacceptable health effects in young children (Attachment C). The IEUBK Model output provides an estimate of the percentage of the exposed population that would have blood levels that exceed EPA's "safe" or acceptable level of 10 µg/dL (USEPA 2002f). USEPA considers exposures to be acceptable as long as no more than 5 percent of the exposed population of children will exceed this blood lead level. The residential soil PRG of 400 mg/Kg is protective of child exposures at this acceptable level. A summary of the soil sampling locations at Off-Facility Area locations that exceed the residential PRG is presented in (Table 5-4). In addition, an estimate of the percentage of the exposed population that would have blood levels that exceed USEPA's "safe" level of 10 µg/dL from the IEUBK Model is provided (see Attachment). Based on the IEUBK output, lead concentration in soil samples from the following properties result in an exceedence of the 5 percent threshold:

- Vacant property located at 47th Street,
- Alleyway transect 6 (AT6-0.1), and
- Alleyway transect 2 (AT2-0.1).

5.6 CHARACTERIZATION OF UNCERTAINTIES

A level of uncertainty is present in each step of the risk assessment process. Due to these uncertainties, assumptions in the risk assessment are meant to overestimate potential risks. In this subsection, uncertainties associated with the results are presented with an estimate of the influence of the uncertainty (e.g., whether the uncertainty would tend to lead to an over-or-under estimation of potential risks).

The environmental data collected from a site and how it is used in a risk assessment contributes uncertainty to the risk estimates. Exposure assessment uncertainties may include the biases and limitations associated with sample collection and analysis, chemical migration pathway assumptions, future land use, estimation of EPCs, characterization of each receptor and respective exposure factors, and assumptions regarding the steady-state concentration of COPCs overtime and bioavailability of

COPCs within a medium. Uncertainty is also associated with the toxicity assessment. Classification of carcinogenic chemicals and estimates of chemical toxicity involve the use of many uncertainty factors which are meant to overestimate potential risks in order to protect sensitive subpopulations. The risk characterization combines the assumptions made in the exposure and toxicity assessments and, combines all the uncertainties associated with each. These uncertainties affect the degree of confidence that can be placed in the risk characterization results. The following subsections qualitatively describe the uncertainty associated with the risk assessment.

5.6.1 Environmental Data Used in Risk Assessment

Primary areas of data uncertainty in this risk assessment are described below.

- Various types of data qualifiers are attached to analytical data by either the laboratory conducting the analyses or by the person performing data validation. A common data qualifier in data packages analyzed is the "J" qualifier. Data qualified with a "J" are estimated concentrations reported below the practical quantitation limit (PQL), but above the method detection limit (MDL). In this BHHRA, all data qualified with a "J" were used the same way as positive data that did not have the qualifier. Sometimes, a level of bias is associated with the "J"-qualified data indicates whether the concentration is biased high or low. Other times, the level of bias is unknown. The use of J-qualified data as the reported concentration may result in either an under- or overestimation of the actual concentration.

- The BHHRA is based on available data which, based on current practice, are assumed to be adequate. For site-specific risk assessments, as the number of sampling points increases, the uncertainty about the true distributions of values decreases. Even with a large number of sampling locations, it is impossible to conclude definitively that concentrations above those measured do not exist at the site.

- While it is generally expected that fine soil fractions will be "enriched" in lead compared to total soil fractions, in certain cases, the opposite situation may occur. In some soils, the total soil fraction may contain high concentrations of lead (e.g., if coarse materials from mining or industrial operations contained high concentrations of lead). When coarser materials contain high lead concentrations, the future degradation of these coarser materials into finer particles is a concern. In addition, total soil concentrations would be more representative of deliberate soil ingestion (pica) than fine fraction concentrations (EPA, 2000). Thus, current fine fraction concentrations may underestimate risk.

- Some chemicals may be present in background as a result of both natural and man-made conditions (U.S. EPA, 2002b). Arsenic is a primary risk driver for soil exposure. The IEPA (35 IAC Part 742) has established a background level

for arsenic of 13 mg/kg for counties within metropolitan statistical areas. In the off-Facility Area alleyway samples, the EPC was 19.5 mg/kg for fine fraction samples and 22.6 mg/kg for the subsurface samples. In the off-Facility Area residential samples, the EPC was 14.8 mg/kg for the fine fraction samples and 14.2 mg/kg for the subsurface samples. For the Facility Area samples, the EPC was 54.71 mg/kg for the native surface soil and 8.46 mg/kg for the native subsurface soil. Thus, not accounting for background levels of arsenic may result in an overestimation of the off-Facility Area soil risks and the Facility Area native soil risks. The concentrations of arsenic in Facility Area slag (EPC for slag was 354.6 mg/kg) was more than an order of magnitudes higher than the background level of arsenic. Not accounting for background levels of arsenic in the Facility Area, slag exposure scenarios would not result in an overestimation of risks.

5.6.2 Exposure Assumptions

There are a number of exposure-related assumptions that are likely to result in significant uncertainty. In most cases, this uncertainty overestimates the realistic exposures and, therefore, the risks. This is appropriate when performing risk assessments of this type so that the risk managers can be reasonably assured that the risks to the public are not underestimated and so that risk assessments for different locations and different scenarios can be compared. Much of the uncertainty involves the use of standard exposure factors relating to the soil and groundwater ingestion rate, frequency of exposure, among others. These factors are designed to cover reasonably maximum exposed individuals who are at the Site for many years. It is very likely that an actual individual would be exposed to a lesser degree than the reasonable maximum, and possibly to a significantly lesser degree. Specific exposure assumptions that add uncertainty to the risk estimates are described below.

- The data set for a particular chemical generally will contain some samples with positive results and others with non-detect results. The chemical may be present at a concentration just below the reported quantitation limit, or it may not be present in the sample at all. In this BHHRA, if a chemical was reported as a nondetect in a sample, it was assumed to be present at one-half the PQL for that sample in the calculation of the 95% UCL of the mean concentration. The use of one-half the reporting limit may result in either an under- or overestimation of the actual EPC.

- The recommended home vegetable ingestion rates are based on national average home produced consumption only; site-specific ingestion rates may be higher or lower than those recommended by U.S. EPA (2005b). Based on the limited growing season and the observed garden size when present, the recommended ingestion rates are expected to overestimate risk. The evaluation of potential exposures to Site-related chemicals in home-grown produce may be confounded by such factors as use of soil amendments, fertilizers, and pesticides in home gardens.

- In an analysis of BAFs for plants, Bechtel Jacobs (1998, as cited in U.S. EPA 2005f) found approximately 90% of plant BAFs were less than one. Assuming BAFs for inorganic contaminants when data are absent generally over-estimate uptake and are, therefore, suitable for screening purposes only (U.S. EPA, 2005f).

- Measurements of contaminant concentrations in plants at a specific site are always superior to estimates of these concentrations for assessing risks (BJC 1998). Inorganic chemicals are passively taken up by plants from soil water, with the additional possibility of active uptake in the case of required nutrients, such as copper and zinc. Soil properties such as pH, clay content, and organic matter strongly affect the concentrations of inorganic chemicals in soil solution. For example, the amount of zinc in soil water and plant tissues is generally observed to increase with decreasing pH and cation exchange capacity. Cadmium uptake by plants has been shown in numerous studies to decrease with increasing pH (BJC 1998). Thus, use of literature-based uptake factors can under or overestimate uptake and risk.

- A source of uncertainty associated with the exposure assessment was the lack of chemical-specific dermal ABS for several inorganics. For inorganics, the speciation of the compound is critical to the dermal absorption and there are too few data to extrapolate a reasonable default value (U.S. EPA, 2004a). The lack of chemical-specific ABS values for some of the inorganics may have resulted in an underestimation of risk via the dermal exposure route.

5.6.3 Toxicity Assessment

Toxicological uncertainties primarily relate to the methodologies by which carcinogenic and non-carcinogenic health criteria are developed. Standard U.S. EPA-established chemical slope factors and RfDs were used to estimate potential carcinogenic and non-carcinogenic health effects from exposure to chemical COPCs at the site. In general, the methodology currently used to develop CSFs and RfDs is conservative and likely results in an overestimation of human toxicity (U.S. EPA, 1989). The uncertainty associated with toxicity factors are described below.

- Although there is evidence to suggest some carcinogens may exhibit thresholds, CSFs are developed assuming there is no safe level of exposure to any chemical proven or suspected to cause cancer. This approach implies that exposure to even a single molecule of a chemical may be associated with a finite risk, however small. The assumption is that even if relatively large doses of a pollutant were required to cause cancer in laboratory animals (*i.e.*, much higher than a person would ever likely be exposed to over a lifetime), these exposure doses can be linearly extrapolated downward many orders of magnitude to estimate cancer slope factors for humans. A significant uncertainty for the carcinogens is whether the CSFs accurately reflect the carcinogenic potency of these chemicals at low EPCs. The calculated CSF is used to estimate an upper-bound lifetime probability

of an individual developing cancer as a result of exposure to a particular level of a carcinogen. Therefore, the CSFs developed by U.S. EPA are generally conservative and represent the upper-bound limit of the carcinogenic potency of each chemical. The actual risk posed by each chemical is unknown, but is likely to be lower than the calculated risk, and may even be as low as zero (U.S. EPA, 1989). The conclusion is that these toxicity assumptions typically result in an overestimation of carcinogenic risk.

- The assumption that all carcinogens (whether Groups A, B1, B2, or C) can cause cancer in humans is also conservative. Only those chemicals classified as "A" carcinogens by U.S. EPA are unequivocally considered human carcinogens. The other three classes are probable (Groups B1 and B2) or possible (Group C) human carcinogens. In this risk assessment, all "probable" and "possible" carcinogens are given the same weight in the toxicity assessment (and consequently in the estimation of risk) as known human carcinogens. This assumption most likely overestimates actual carcinogenic risk to humans.

- In the development of RfDs, it is assumed that a threshold dose exists below which there is no potential for adverse health effects to the most sensitive individuals in the population. The RfD is typically derived by applying several uncertainty factors of 10 each to a no observed adverse effect level (NOAEL) or a lowest observed adverse effect level (LOAEL) determined from a dose-response study in animals. An additional modifying factor of up to 10, which accounts for a qualitative professional assessment of additional uncertainties in the available toxicity data, also may be applied (U.s. EPA, 1989). The final degree of extrapolation for a given chemical can range anywhere from <10 to 100,000 and, therefore, result in a human subthreshold dose of up to one-hundred-thousandth of the study dose. In general, the calculated RfD is likely to be overly protective, and its use probably results in a moderate-to-high overestimation of the potential for non-carcinogenic risk.

- Only chronic RfDs, which are developed to evaluate potential toxicity at greater than seven years of exposure, were used in estimating non-carcinogenic HIs for all receptors including children and short-term construction workers. Subchronic RfDs are sometimes used to evaluate subchronic exposures of a duration ranging from 2 weeks to seven years, which may be more appropriate to address childhood (one to six years) and construction worker (less than one year) exposure. However, chronic RfDs and RfCs were conservatively used to evaluate all exposure pathways as recommended by U.S. EPA (2005b). The use of chronic RfDs to evaluate short-term exposures may have resulted in an overestimation of risk to future child residents and future construction workers. Chronic RfDs are developed assuming a lifetime daily exposure.

- There is uncertainty due to the use of default ABS_{GI} factors to derive dermal CSFs and RfDs from oral toxicity criteria. The degree of ABS_{GI} of chemicals in experimental animals depends on the method of administration (e.g., gavage,

dietary) and the lipid solubility of the chemical. Therefore, actual ABS_{GI} factors may vary considerably from chemical to chemical. The use of default ABS_{GI} factors may mask this variability. Consequently, risks through the dermal pathway may be over- or underestimated to an undetermined degree.

- Arsenic generated risks greater than 1E-06 based on exposure to soil. There has been considerable controversy regarding the derivation of the oral slope factor for arsenic. Much of the controversy has stemmed from questions regarding the uncertainties in the epidemiological study on which it is based. The IRIS database (2006) indicates that the oral unit risk factor is derived from the Taiwanese study (Tseng et al., 1968 and Tseng, 1977, as cited in IRIS, 2006) where increased incidences of skin lesions and skin cancer incidences were observed based on drinking water consumption. Based on these studies, a unit risk of $5E^{-05}$ mg/L was proposed using a linearized model (IRIS, 2006). However, the Taiwanese studies are fraught with uncertainties that may affect the estimation of its carcinogenic potency. Based on a reassessment of oral arsenic exposure by the Risk Assessment Forum (U.S. EPA, 1988a), the Administrator of the U.S. EPA (1988b) recommended that the above unit risk be adopted, but noted that the CSF for arsenic may be as much as an order-of-magnitude more conservative than other, similarly derived, CSFs. The memorandum further counsels that "in reaching risk management decisions in a specific situation, risk managers must recognize and consider the qualities and uncertainties of risk estimates." The uncertainties associated with the ingestion of inorganic arsenic are such that estimates could be modified downwards as much as an order-of-magnitude relative to risk estimates associated with most other carcinogens. In such instances, the management document must clearly articulate this fact and state the factors that influenced such a decision (IRIS, 2006, 1988b). This directive may have been strengthened by a recent Expert Panel review of arsenic carcinogenicity (ERG, 1997, as cited in IRIS, 2006) which concluded that for each of the plausible modes of action of arsenic as a carcinogen, the dose-response relationship would either show a threshold or would be nonlinear at low doses. Although subsequent data from Taiwan and other areas of the world suggest that arsenic ingestion may be additionally associated with cancers of several internal organs, dose-response data from these studies are not adequate for quantitative evaluation (IRIS, 2006).

- Several COPCs lacked established U.S. EPA toxicity factors through either the oral or inhalation exposure route. As such, a toxicity data gap exists and would be expected to underestimate risks for most of these chemicals. However, for example, chromium is not believed to be a carcinogen when ingested, and therefore has only an inhalation slope factor. Therefore, the absence of a pathway-specific (oral CSF) toxicity factor or RfD does not, in and of itself, imply a significant data gap that will automatically underestimate risks.

5.7 SUMMARY AND CONCLUSIONS

Estimated potential risks associated with exposure to each receptor identified in the CSM are presented in this BHHRA. Risk estimates were calculated for the following receptor groups and exposure pathways:

Facility Area Scenarios

- **Worker**: Surface soil (fine fraction mixed slag and native soil; fine fraction slag; fine fraction native soil), sediment and surface water exposure pathways
- **Trespasser**: Surface soil (fine fraction mixed slag and native soil; fine fraction slag; fine fraction native soil), sediment and surface water exposure pathways
- **Utility Worker**: Subsurface soil (total 0-10 ft bgs mixed slag and native soil; total 0-10 ft bgs slag; total 0-10 ft bgs native soil), sediment, and surface water exposure pathways
- **Hypothetical Resident**: Surface soil (fine fraction mixed slag and native soil; fine fraction slag; fine fraction native soil), sediment, and surface water exposure pathways

Off-Facility Area Scenarios

- **Recreational**: Surface soil (fine fraction soil data from current residential, commercial and vacant properties and fine fraction soil data from alleyway dataset), sediment and surface water exposure pathways
- **Utility/Construction Worker**: Subsurface soil (total soil dataset from all off-Facility Area properties and total soil dataset from all alleyways), sediment, and surface water exposure pathways
- **Resident**: Surface soil (maximum detected concentrations from fine fraction and total soil samples from each individual property (current resident, commercial and vacant lots) and total soil dataset from all alleyways), sediment, and surface water exposure pathways

The following are the COPCs in each environmental media for each receptor group (based on exceedance of an endpoint specific HI of 1 and/or a **target cancer risk of 1×10^{-6}** and/or lead concentration of 400 mg/kg and/or **arsenic concentration of 13 mg/kg**):

Facility Area Mixed Slag and Native Soil, Slag, and Native Soil:

Hypothetical Resident: arsenic, cadmium, and lead
Trespasser: arsenic, lead
Facility Area Worker: arsenic, lead

Utility Worker: arsenic, cadmium and lead

Facility Area Sediment:
Trespasser: arsenic, lead
Utility Worker: lead

Off-Facility Area Soil:
Resident: arsenic, cadmium, lead
Recreational user: arsenic, lead
Utility Worker: arsenic, lead

Off-Facility Area Sediment
Resident: arsenic, lead
Recreational user: arsenic
Utility Worker: arsenic

For the Facility Area, potential risk estimates from the soil exposure pathway exceeded EPA's allowable risk range of 1×10^{-4} to 1×10^{-6} for a future Facility Area worker and a hypothetical future resident. The HQs exceeded EPA's threshold of 1.0 for the future Facility Area worker, hypothetical future resident, and the utility worker. This risk is primarily attributed to exposure to arsenic and cadmium in slag rather than native soil. The average concentrations of lead in Facility Area soil exceeded the commercial/industrial worker and construction worker PRGs.

For the surrounding properties, potential risk estimates from the soil exposure pathway were at the lower end of EPA's risk range of 1×10^{-4} to 1×10^{-6} for the recreational user and the utility/construction worker, with the maximum risk estimate of 1.9×10^{-6} for the utility worker exposure to arsenic in alleyway soil. All HIs were below the EPA's threshold of one for these receptors. One concentration of arsenic (65 mg/kg) in the alleyway samples (OS-AT2-SB-0.5) exceeds the IEPA Tier 1 ingestion exposure route soil remediation objective for a construction worker (61 mg/kg).

For current and future residential exposures to all Off-Facility Area properties (including current residential and commercial properties and vacant lots), the cancer risk estimates from the soil direct contact exposure pathway were within EPA's risk range of 1×10^{-4} to 1×10^{-6} for all properties, with one exception. Potential future exposures to future residential receptor at the commercial property at 4012 Maple Street exceeds the cancer risk range (ELCR = 2E-4) based primarily on arsenic exposures in soil. For non-cancer endpoints, potential exposures at all current residential properties, with the exception of one, are below the noncancer hazard limit of 1. Exposures to maximum detected concentrations of arsenic and cadmium in soil at a residential property (5514 Kinder) exceeds the endpoint HI limit of 1, although exposures to the average soil concentrations at this property do not exceed the HI limit of 1. Residential exposures to soil at all other current residential properties do not exceed EPA's noncancer limit.

Among the properties that are currently vacant or used for commercial use, the noncancer

endpoint-specific HIs for skin and kidney exceeded the HI limit of 1 at seven properties, including five that are currently vacant properties. Arsenic and cadmium exposures were the primary contributors to the excess hazards at the vacant properties as follows:

- 47th St Schurmann — arsenic (51 mg/Kg in soil) and cadmium (180 mg/Kg in soil) via ingestion of soil and produce;
- 3022 N 48th St. — cadmium (61 mg/Kg in soil) and arsenic (17 mg/Kg in soil) via ingestion of soil and produce;
- 2845 44th St. — arsenic (26 mg/Kg in soil) via ingestion of soil and produce;
- 42nd St — arsenic (20 mg/Kg in soil) via ingestion of soil and produce; and
- Maryland — cadmium (63 mg/Kg in soil) via ingestion of soil and produce;

At the two commercial properties, the excess hazards associated with future residential use are as follows:

- 4012 Maple St — arsenic (59 mg/Kg in soil) via ingestion of soil and produce;
- Cookson Rd and 44th St — arsenic (25 mg/Kg in soil) via ingestion of soil and produce.

Within the alleyways, residential risk estimates from soil exposure pathway fell within the EPA's risk range of 1×10^{-4} to 1×10^{-6} for the residential receptor. The non-cancer HI was below EPA's HI limit of 1.H

The fine fraction lead concentration in surface soil equaled or exceeded the screening level of 400 mg/kg at the following residential properties, vacant lots, and alleyways:

Residential/vacant lots:

- 2845 N. 44th St — 410 mg/kg lead
- 4012 Maple — 410 mg/kg lead (vacant lot)
- N. 48th — 430 mg/kg lead (vacant lot)
- 5514 Kinder — 430 mg/kg lead
- Maryland — 470 mg/kg lead (vacant lot)
- 2768 N. 42nd — 510 mg/kg lead
- 47th St — 1600 mg/kg lead (vacant lot)

Alleyways:

- AT2 760 mg/kg lead
- AT5 460 mg/kg lead
- AT6 630 mg/kg lead

Risks estimates for exposure to sediments fell within the EPA's risk range of 1×10^{-4} to 1×10^{-6}, with the maximum risk estimate of 6×10^{-6} for Facility Area worker exposure to arsenic in sediments and surface water in the Facility Area drainage ditches. The HIs fell below the EPA's threshold of one for the sediment and surface water exposure pathway.

No risk estimates exceeded 1E-06 for cancer risks or an HQ of one for noncancer risks for exposures to Off-Facility Area surface water bodies by recreational users, construction workers or residents.

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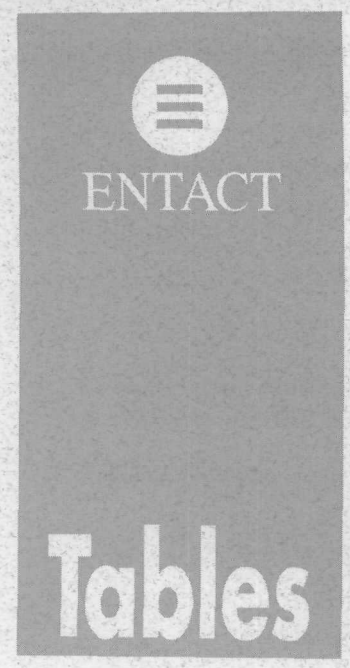
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Tables

Table 3-1
Calculation of Dermal Factor
Old American Zinc Plant Site
Fairmont City, IL

COPCs In Groundwater and Surface Water	Kp[a] (cm/hr)	Bathing		Incidental Contact Tevent =1 Z[b] (cm/event)
		Contact (adult) Tevent =0.58 Z[b] (cm/event)	Contact (child) Tevent =1 Z[b] (cm/event)	
Arsenic	1.0E-03	5.80E-04	1.00E-03	1.00E-03
Barium	1.0E-03	5.80E-04	1.00E-03	1.00E-03
Cadmium	1.0E-03	5.80E-04	1.00E-03	1.00E-03
Chromium	1.0E-03	5.80E-04	1.00E-03	1.00E-03
Copper	1.0E-03	5.80E-04	1.00E-03	1.00E-03
Lead	1.0E-04	5.80E-05	1.00E-04	1.00E-04
Mercury	1.0E-03	5.80E-04	1.00E-03	1.00E-03
Selenium	1.0E-03	5.80E-04	1.00E-03	1.00E-03
Silver	6.0E-04	3.48E-04	6.00E-04	6.00E-04
Zinc	6.0E-04	3.48E-04	6.00E-04	6.00E-04

a = Chemical-specific values were obtained from Supplemental RAGS Guidance (Part E) (EPA, 2004), Exhibit 3-1 (inorganics).

[b] The calculation of Z was performed in accordance with Supplemental RAGS Guidance (Part E) (EPA, 2004).

$$Z_{inorganic} = Kp \times t_{event}$$

Kp - Dermal Permeability Coefficient (cm/hr); chemical specific
tevent - Duration of Event (hr/event)
Z - Dermal Factor (cm/event)

Source: EPA, 2004. Risk Assessment Guidance for Superfund Volume 1: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment). Final. July 2004.

Table 3-2
Soil to Plant Uptake Parameters for Estimating Produce Concentrations
Old American Zinc Plant Site
Fairmont City, IL

COPC	Equation
Arsenic	Cplant = 0.03752 x Csoil
Barium	Cplant = 0.156 x Csoil
Cadmium	ln (Cplant) = 0.546 x ln(Csoil) - 0.475
Chromium	Cplant = 0.041 x Csoil
Copper	ln (Cplant) = 0.394 x ln(Csoil) + 0.668
Lead	ln (Cplant) = 0.561 x ln(Csoil) - 1.328
Mercury	Cplant = 1 x Csoil
Selenium	ln (Cplant) = 1.104 x ln(Csoil) - 0.677
Silver	Cplant = 0.014 x Csoil
Zinc	ln (Cplant) = 0.554 x ln(Csoil) + 1.575

Source: Table 4a in EPA, 2005

Table 5-1
Summary of Carcinogenic Risks and Noncarcinogenic Hazard Indices: Facility Area Scenarios
Old American Zinc Plant Site, Fairmont City, IL

Facility Area Scenario	Total Cancer Risk	Total Hazard Index
Current/Future Trespasser		
Soil (fine fraction)		
Ingestion	2.9E-05	7.4E-01
Dermal contact	7.5E-06	2.0E-01
Particulate Inhalation	6.2E-08	2.6E-04
Subtotal	3.7E-05	9.4E-01
Surface Water-Dermal contact	1.6E-08	4.4E-01
Sediment		
Ingestion	1.3E-06	6.1E-02
Dermal contact	3.4E-07	1.5E-02
Subtotal	1.7E-06	7.5E-02
TOTAL	**4E-05**	1E+00
Slag (fine fraction)		
Ingestion	2.9E-05	8.3E-01
Dermal contact	7.5E-06	2.1E-01
Particulate Inhalation	6.7E-08	2.8E-04
Subtotal	**3.7E-05**	1.0E+00
Native soil (fine fraction)		
Ingestion	4.5E-06	1.2E-01
Dermal contact	1.2E-06	2.7E-02
Particulate Inhalation	1.4E-08	1.3E-04
Subtotal	**5.7E-06**	1.4E-01
Current/Future Site Worker		
Soil (fine fraction)		
Ingestion	1.9E-04	1.9E+00
Dermal contact	3.7E-05	3.8E-01
Particulate Inhalation	4.6E-07	7.5E-04
Subtotal	2E-04	2E+00
Surface Water-Dermal contact	7.6E-08	8.5E-01
Sediment		
Ingestion	8.5E-06	1.5E-01
Dermal contact	1.7E-06	2.9E-02
Subtotal	1.0E-05	1.8E-01
TOTAL	**2E-04**	**3E+00**
Slag (fine fraction)		
Ingestion	1.9E-04	2.1E+00
Dermal contact	3.7E-05	4.1E-01
Particulate Inhalation	4.9E-07	8.2E-04
Subtotal	**2.2E-04**	**2.5E+00**
Native soil (fine fraction)		
Ingestion	2.9E-05	3.0E-01
Dermal contact	5.7E-06	5.4E-02
Particulate Inhalation	1.0E-07	3.9E-04
Subtotal	**3.4E-05**	3.5E-01

Table 5-1
Summary of Carcinogenic Risks and Noncarcinogenic Hazard Indices: Facility Area Scenarios
Old American Zinc Plant Site, Fairmont City, IL

Facility Area Scenario	Total Cancer Risk	Total Hazard Index
Future Utility Worker		
Soil (total 0 - 10 ft bgs)		
Ingestion	8.4E-06	4.3E+00
Dermal contact	9.1E-08	3.7E-02
Particulate Inhalation	5.2E-07	2.7E-02
Subtotal	**9E-06**	**4E+00**
Surface Water-Dermal contact	1.8E-09	5.1E-01
Sediment		
Ingestion	6.8E-07	3.1E-01
Dermal contact	6.1E-08	2.6E-02
Subtotal	7.4E-07	3.3E-01
TOTAL	**1E-05**	**5E+00**
Slag (total 0 - 10 ft bgs)		
Ingestion	1.4E-05	5.3E+00
Dermal contact	1.6E-07	3.8E-02
Particulate Inhalation	5.4E-07	3.1E-02
Subtotal	1.5E-05	**5.3E+00**
Native soil (total 0 - 10 ft bgs)		
Ingestion	5.9E-07	2.1E+00
Dermal contact	6.3E-09	2.7E-02
Particulate Inhalation	3.9E-07	1.4E-02
Subtotal	9.8E-07	**2.1E+00**
Future Child Resident		
Soil (fine fraction)		
Ingestion	5.8E-04	2.5E+01
Dermal contact	4.9E-05	2.1E+00
Particulate Inhalation	4.7E-07	3.2E-03
Subtotal	6E-04	3E+01
Surface Water-Dermal contact	1.7E-08	8.1E-01
Sediment		
Ingestion	4.6E-06	3.5E-01
Dermal contact	3.9E-07	2.8E-02
Subtotal	5E-06	4E-01
TOTAL	**6E-04**	**3E+01**
Slag (fine fraction)		
Ingestion	5.8E-04	2.8E+01
Dermal contact	4.9E-05	2.3E+00
Particulate Inhalation	5.0E-07	3.5E-03
Subtotal	**6.3E-04**	**3.0E+01**
Native soil (fine fraction)		
Ingestion	9.0E-05	3.9E+00
Dermal contact	7.6E-06	3.0E-01
Particulate Inhalation	1.1E-07	1.7E-03
Subtotal	**1E-04**	**4E+00**

Table 5-1
Summary of Carcinogenic Risks and Noncarcinogenic Hazard Indices: Facility Area Scenarios
Old American Zinc Plant Site, Fairmont City, IL

Facility Area Scenario	Total Cancer Risk	Total Hazard Index
Future Adult Resident		
Soil (fine fraction)		
Ingestion	2.5E-04	2.7E+00
Dermal contact	3.0E-05	3.2E-01
Particulate Inhalation	8.0E-07	1.4E-03
Subtotal	3E-04	3E+00
Surface Water-Dermal contact	3.0E-08	3.5E-01
Sediment		
Ingestion	2.0E-06	3.7E-02
Dermal contact	2.4E-07	4.3E-03
Subtotal	2.2E-06	4.1E-02
TOTAL	**3E-04**	**3E+00**
Slag (fine fraction)		
Ingestion	2.5E-04	3.0E+00
Dermal contact	3.0E-05	3.5E-01
Particulate Inhalation	8.6E-07	1.5E-03
Subtotal	**2.8E-04**	**3.3E+00**
Native soil (fine fraction)		
Ingestion	3.9E-05	4.2E-01
Dermal contact	4.6E-06	4.6E-02
Particulate Inhalation	1.8E-07	7.2E-04
Subtotal	**4.3E-05**	4.6E-01
Future Combined Child/Adult Resident		
Soil (fine fraction)		
Ingestion	8.3E-04	--
Dermal contact	7.9E-05	--
Particulate Inhalation	1.3E-06	--
Subtotal	9E-04	--
Surface Water-Dermal contact	4.8E-08	--
Sediment		
Ingestion	6.6E-06	--
Dermal contact	6.2E-07	--
Subtotal	7.2E-06	--
TOTAL	**9E-04**	**--**
Slag (fine fraction)		
Ingestion	8.3E-04	--
Dermal contact	7.9E-05	--
Particulate Inhalation	8.0E-06	--
Subtotal	**9.2E-04**	--
Native soil (fine fraction)		
Ingestion	1.3E-04	--
Dermal contact	1.2E-05	--
Particulate Inhalation	2.9E-07	--
Subtotal	**1.4E-04**	--

Table 5-2
Summary of Carcinogenic Risk and Noncarcinogenic Hazard Indices: Off-Facility Areas
Old American Zinc Plant Site, Fairmont City, IL

Off-Facility Area Scenario	Total Cancer Risk	Total Hazard Index
RESIDENTIAL LOTS		
Future Recreational User		
Soil (fine fraction)		
Ingestion	1.2E-06	4.7E-02
Dermal contact	3.1E-07	1.2E-02
Particulate Inhalation	7.0E-09	7.9E-05
Subtotal	1.5E-06	
Surface Water-Dermal contact	1.7E-08	8.1E-02
Sediment		
Ingestion	9.1E-07	3.5E-02
Dermal contact	2.3E-07	8.2E-03
Subtotal	1.1E-06	4.4E-02
TOTAL	**3E-06**	**1E-01**
Future Utility Worker		
Soil (total)		
Ingestion	1.2E-06	2.9E-02
Dermal contact	3.0E-07	7.4E-03
Particulate Inhalation	5.4E-09	8.1E-05
Subtotal	1.5E-06	3.7E-02
Surface Water-Dermal contact	1.7E-08	8.1E-02
Sediment		
Ingestion	9.1E-07	3.5E-02
Dermal contact	2.3E-07	8.2E-03
Subtotal	1.1E-06	4.4E-02
TOTAL	**3E-06**	**2E-01**
Current/Future Residential User: Child		
Soil (fine fraction)	See Table 5-3	
Surface Water-Dermal contact	1.8E-08	1.5E-01
Sediment		
Ingestion	3.1E-06	2.0E-01
Dermal contact	2.6E-07	1.5E-02
Subtotal	3.4E-06	2.2E-01
TOTAL	**3.4E-06**	**3.7E-01**
Current/Future Residential User: Adult		
Soil (fine fraction)	See Table 5-3	
Surface Water-Dermal contact	3.2E-08	6.5E-02
Sediment		
Ingestion	1.3E-06	2.2E-02
Dermal contact	1.6E-07	2.3E-03
Subtotal	1.5E-06	2.4E-02
TOTAL	**1.5E-06**	**8.9E-02**
Current/Future Residential User: Both		
Soil (fine fraction)	See Table 5-3	
Surface Water-Dermal contact	5.0E-08	--
Sediment		
Ingestion	4.5E-06	--
Dermal contact	4.2E-07	--
Subtotal	4.9E-06	--
TOTAL	**4.9E-06**	**--**

Table 5-2
Summary of Carcinogenic Risk and Noncarcinogenic Hazard Indices: Off-Facility Areas
Old American Zinc Plant Site, Fairmont City, IL

Off-Facility Area Scenario	Total Cancer Risk	Total Hazard Index
ALLEYWAYS		
Future Recreational User		
Soil (fine fraction)		
Ingestion	1.6E-06	3.8E-02
Dermal contact	4.1E-07	9.1E-03
Particulate Inhalation	1.3E-08	1.4E-04
Subtotal	2.0E-06	4.7E-02
Surface Water-Dermal contact	1.7E-08	8.1E-02
Sediment		
Ingestion	9.1E-07	3.5E-02
Dermal contact	2.3E-07	8.2E-03
Subtotal	1.1E-06	4.4E-02
TOTAL	**3E-06**	**2E-01**
Future Utility Worker		
Soil (total)		
Ingestion	1.9E-06	4.2E-02
Dermal contact	4.8E-07	9.8E-03
Particulate Inhalation	5.4E-09	8.1E-05
Subtotal	2.3E-06	5.2E-02
Surface Water-Dermal contact	1.7E-08	8.1E-02
Sediment		
Ingestion	9.1E-07	3.5E-02
Dermal contact	2.3E-07	8.2E-03
Subtotal	1.1E-06	4.4E-02
TOTAL	**3E-06**	**2E-01**
Current/Future Residential User: Child		
Soil (fine fraction)	See Table 5-4	
Surface Water-Dermal contact	1.8E-08	1.5E-01
Sediment		
Ingestion	3.1E-06	2.0E-01
Dermal contact	2.6E-07	1.5E-02
Subtotal	3.4E-06	2.2E-01
TOTAL	**3.4E-06**	**3.7E-01**
Current/Future Residential User: Adult		
Soil (fine fraction)	See Table 5-4	
Surface Water-Dermal contact	3.2E-08	6.5E-02
Sediment		
Ingestion	1.3E-06	2.2E-02
Dermal contact	1.6E-07	2.3E-03
Subtotal	1.5E-06	2.4E-02
TOTAL	**1.5E-06**	**8.9E-02**
Current/Future Residential User: Both		
Soil (fine fraction)	See Table 5-4	
Surface Water-Dermal contact	5.0E-08	--
Sediment		
Ingestion	4.5E-06	--
Dermal contact	4.2E-07	--
Subtotal	4.9E-06	--
TOTAL	**4.9E-06**	--

Table 5-3
Summary of Carcinogenic Risk and Noncarcinogenic Hazard Indices: Residential Scenarios for Off-Facility Residential Scenarios
Old American Zinc Plant Site, Fairmont City, IL

Location	Risk Estimate	Soil Direct Contact	Home Garden	TOTAL RISK
N 39TH-0.1	Cancer Risk	2.3E-05	1.1E-04	3E-04
	Noncancer HQ	7.7E-01	4.1E+00	1E+01
2539 N. 41ST-0.1	Cancer Risk	2.0E-05	8.2E-05	3E-04
	Noncancer HQ	5.1E-01	3.0E+00	9E+00
2521 N. 42ND-0.1	Cancer Risk	1.9E-05	9.8E-05	2E-04
	Noncancer HQ	6.9E-01	3.7E+00	1E+01
2768.N.42ND-0.1	Cancer Risk	2.0E-05	5.5E-05	3E-04
	Noncancer HQ	8.9E-01	2.8E+00	1E+01
42nd ST-0.1	Cancer Risk	2.2E-05	1.6E-04	3E-04
	Noncancer HQ	7.5E-01	4.4E+00	1E+01
2845 N, 44TH ST-0.1	Cancer Risk	3.3E-05	2.1E-04	4E-04
	Noncancer HQ	1.1E+00	7.2E+00	1E+01
47th ST-0.1	Cancer Risk	1.3E-04	5.5E-05	2E-03
	Noncancer HQ	8.0E+00	2.4E+00	6E+01
N. 48TH-0.1	Cancer Risk	2.8E-05	1.4E-04	4E-04
	Noncancer HQ	1.6E+00	6.5E+00	2E+01
2339 N. 51ST-0.1	Cancer Risk	1.2E-05	1.3E-04	9E-05
	Noncancer HQ	4.3E-01	5.7E+00	4E+00
4000 Collinsville Rd-0.1	Cancer Risk	1.7E-05	7.2E-05	2E-04
	Noncancer HQ	6.0E-01	3.3E+00	1E+01
Cookson-0.1	Cancer Risk	4.4E-05	2.0E-04	6E-04
	Noncancer HQ	1.3E+00	4.9E+00	2E+01
5517 Delmar-0.1	Cancer Risk	1.8E-05	1.4E-04	2E-04
	Noncancer HQ	6.3E-01	7.0E+00	1E+01
5528 Delmar-0.1	Cancer Risk	1.9E-05	1.1E-04	2E-04
	Noncancer HQ	5.9E-01	3.8E+00	1E+01
5514 Kinder-0.1	Cancer Risk	4.9E-05	1.2E-04	6E-04
	Noncancer HQ	1.8E+00	4.3E+00	2E+01
5427 Kinder-0.1	Cancer Risk	1.8E-05	9.8E-05	2E-04
	Noncancer HQ	6.6E-01	5.0E+00	1E+01
4012 Maple-0.1	Cancer Risk	4.6E-05	4.8E-04	6E-04
	Noncancer HQ	1.1E+00	7.4E+00	1E+01
5432 Maryland-0.1	Cancer Risk	2.4E-05	9.0E-05	3E-04
	Noncancer HQ	8.4E-01	3.6E+00	2E+01
5500 Maryland-0.1	Cancer Risk	2.2E-05	1.1E-04	3E-04
	Noncancer HQ	7.9E-01	3.9E+00	1E+01
Maryland-0.1	Cancer Risk	3.6E-05	1.2E-04	5E-04
	Noncancer HQ	3.0E+00	5.9E+00	3E+01
3800 Roselake-0.1	Cancer Risk	2.8E-05	6.5E-05	4E-04
	Noncancer HQ	8.9E-01	2.5E+00	1E+01
5507 Thomas-0.1	Cancer Risk	2.3E-05	1.1E-04	3E-04
	Noncancer HQ	8.1E-01	4.1E+00	1E+01
5508 Thomas-0.1	Cancer Risk	2.3E-05	9.0E-05	3E-04
	Noncancer HQ	7.8E-01	3.0E+00	1E+01
5510 Thomas-0.1	Cancer Risk	2.2E-05	1.1E-04	3E-04
	Noncancer HQ	8.7E-01	4.2E+00	1E+01
5515 Thomas-0.1	Cancer Risk	2.2E-05	9.4E-05	3E-04
	Noncancer HQ	7.2E-01	2.9E+00	1E+01

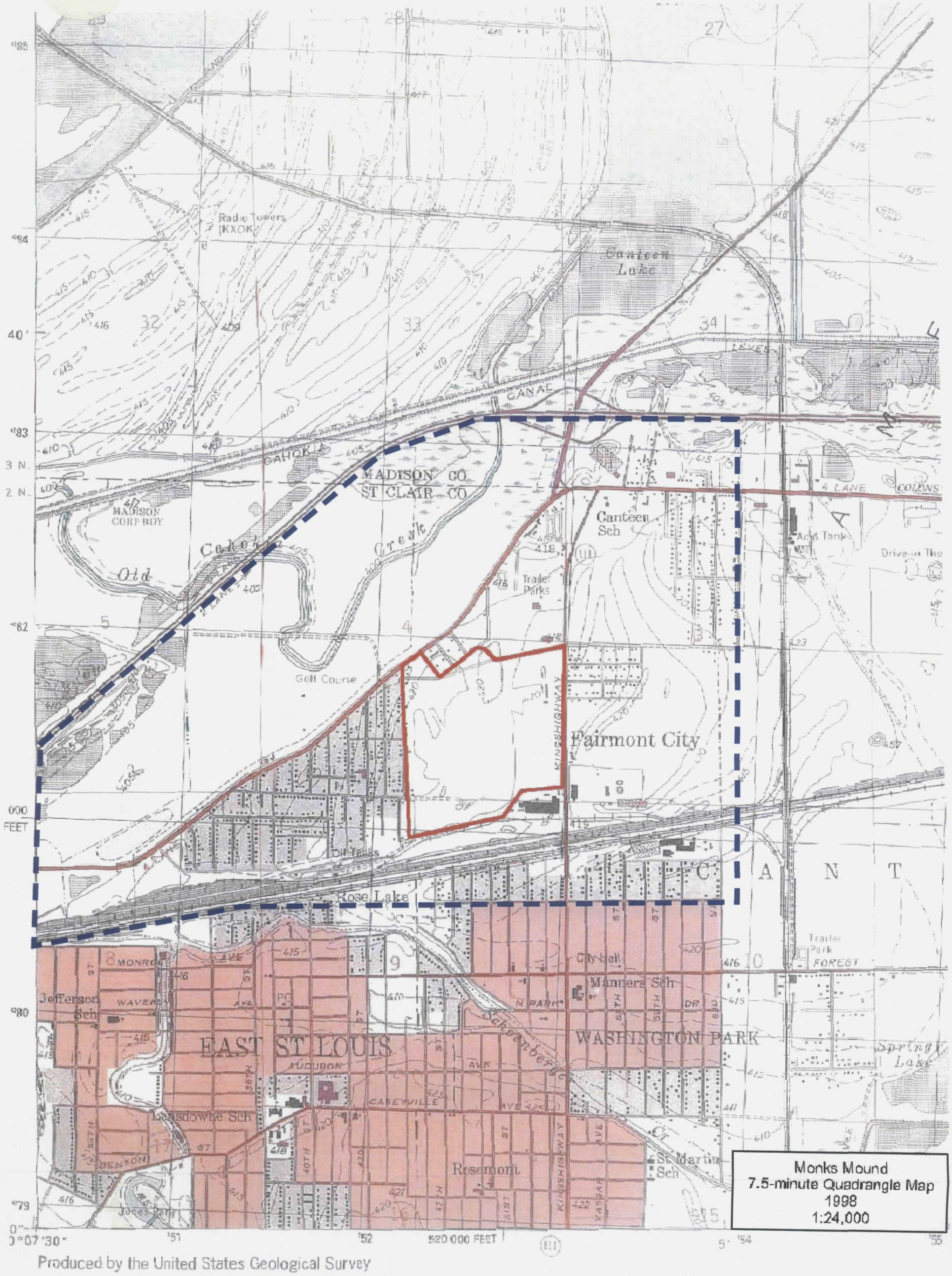
HQ = Hazard Quotient

Table 5-4
Summary of Lead Evaluation
Old American Zinc Plant Site, Fairmont City, IL

Location	Risk Estimate	Soil Direct Contact
OS-AT1-0.1	Cancer Risk	2.1E-05
	Noncancer HQ	7.5E-01
OS-AT2-0.1	Cancer Risk	3.6E-05
	Noncancer HQ	1.1E+00
OS-AT3-0.1	Cancer Risk	2.4E-05
	Noncancer HQ	8.4E-01
OS-AT4-0.1	Cancer Risk	4.4E-05
	Noncancer HQ	1.2E+00
OS-AT5-0.1	Cancer Risk	6.4E-05
	Noncancer HQ	2.0E+00
OS-AT6-0.1	Cancer Risk	6.7E-05
	Noncancer HQ	2.3E+00
OS-AT7-0.1	Cancer Risk	2.3E-05
	Noncancer HQ	7.8E-01
OS-AT8-0.1	Cancer Risk	1.7E-05
	Noncancer HQ	5.1E-01

HQ = Hazard Quotient

Figures



Facility Area Boundary

Approximate Site Area Boundary

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DATE	BY	CHK'D	APP'D	REVISIONS	NO

ENTACT & ASSOCIATES, LLC

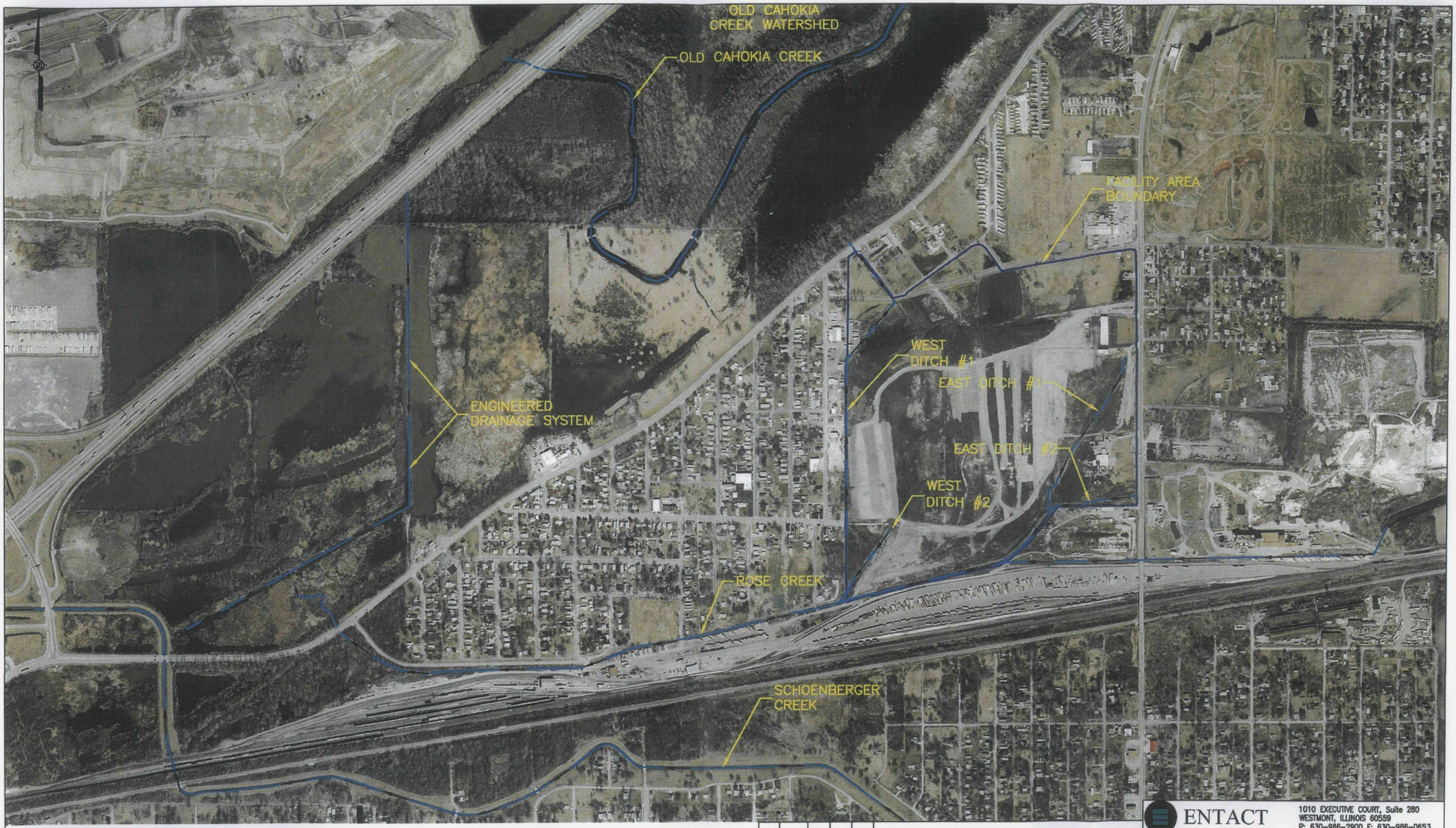
ENTACT

AMERICAN ZINC RI'S
FAIRMONT CITY, ILLINOIS

FACILITY AREA AND SITE LOCATION MAP

DESIGNED BY	PAT	1/15/08	CHECKED BY	PAT	1/15/08
DRAWN BY	MAC	1/15/08	APPROVED BY	PAT	1/15/08

SCALE	PROJECT NO.	FIGURE	REVISION NO.
1":0.5MI	C-1727	1-1	---



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SCALE
0' 800' 1600'

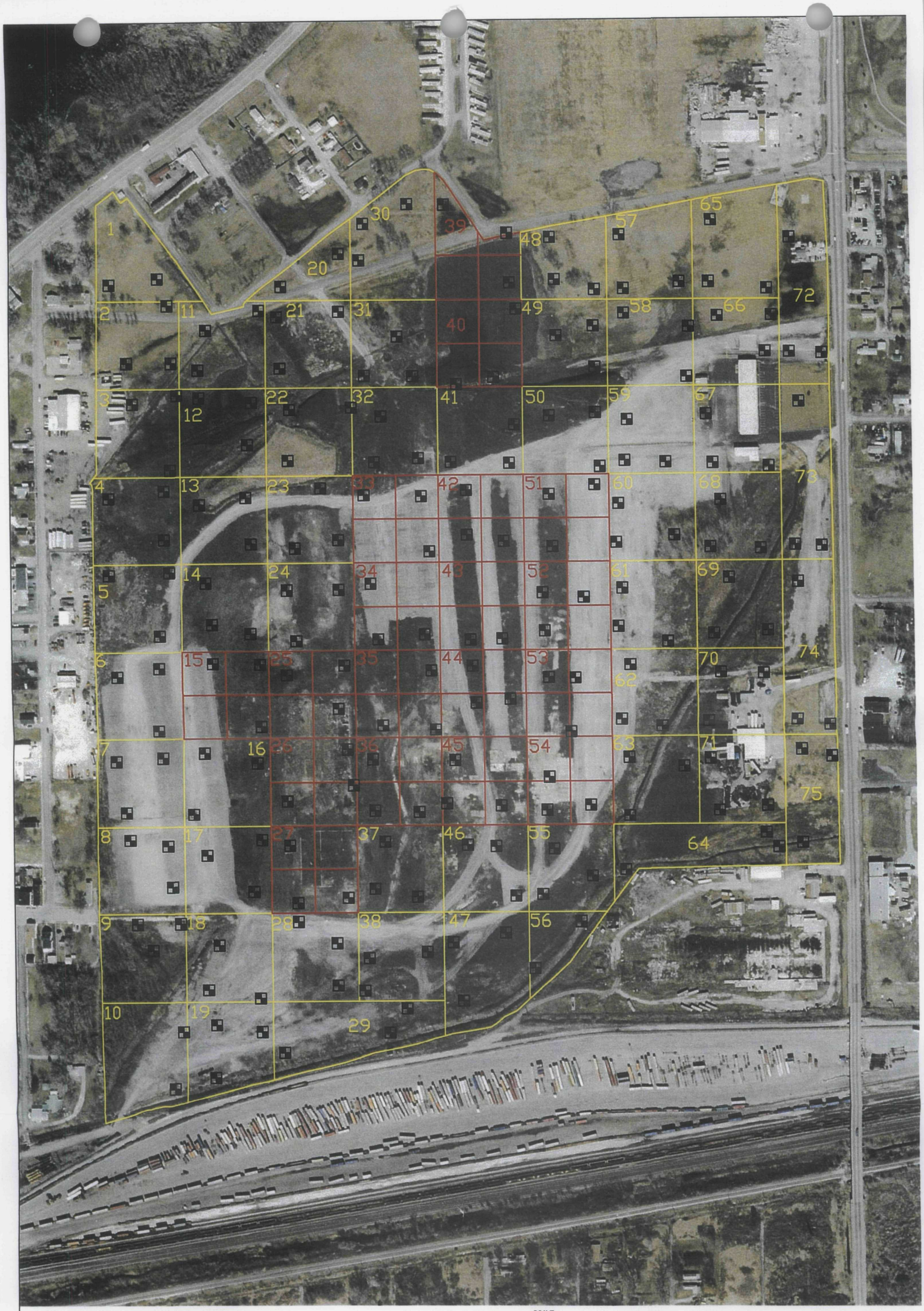
REV	DATE	BY	CHK'D	APR'VD	DESCRIPTION
0	08/07/08	MMC	PT	PT	ISSUED FOR DRAFT RI REPORT

ENTACT
1010 EXECUTIVE COURT, Suite 280
WESTMONT, ILLINOIS 60559
P: 630-986-2900 F: 630-986-0653

DRAWING NAME
SITE AREA DRAINAGE

PROJECT NAME & LOCATION
AMERICAN ZINC RIFS
FAIRMONT CITY, ILLINOIS

DRAWN BY	M. CARLSON	APPROVED BY	P. THOMSON	REVISION	SHEET NO.
DATE	01-18-08	DATE	01-18-08	0	1 OF 1
PROJECT NO.	C1727	FIGURE NO.	1-2		



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LEGEND

- 300' X 300' SAMPLING GRID LAYOUT
- 150' X 150' SAMPLING GRID LAYOUT
- SURFACE SAMPLE LOCATION

SCALE

0' 300' 600'

REV	DATE	BY	CHK'D	APR'VD	DESCRIPTION
0	08/07/06	MMC	PT	PT	ISSUED FOR DRAFT RI REPORT

ENTACT
1010 EXECUTIVE COURT, Suite 280
WESTMONT, ILLINOIS 60559
P: 630-986-2900 F: 630-986-0653

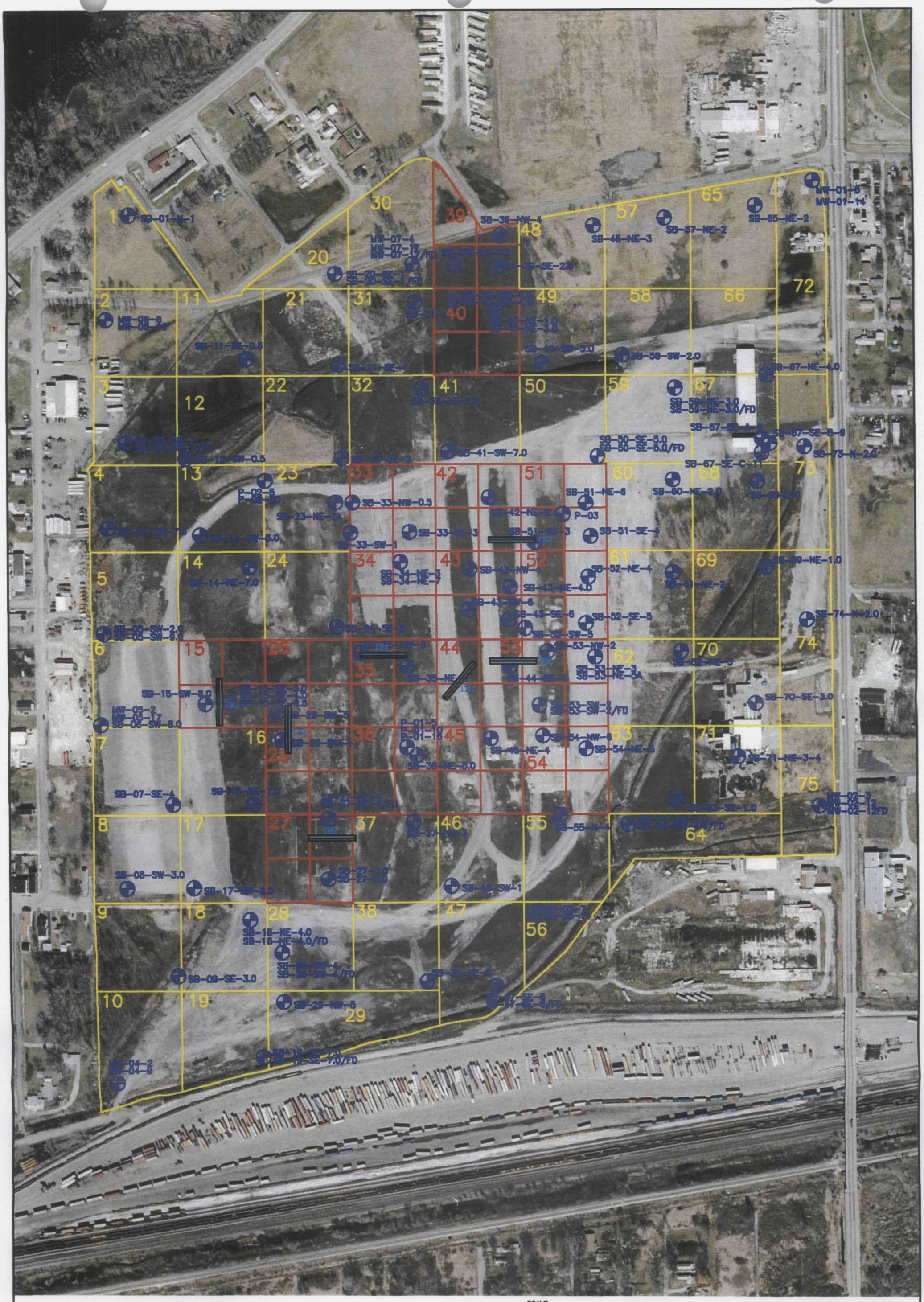
DRAWING NAME

SURFICIAL SLAG AND SOIL SAMPLING LOCATIONS

PROJECT NAME & LOCATION

AMERICAN ZINC RIFS
FAIRMONT CITY, ILLINOIS

DRAWN BY	M. CARLSON	APPROVED BY	P. THOMSON	REVISION	SHEET NO
DATE	01-16-06	DATE	01-16-06	0	1 OF 1
PROJECT NO.	C1727	FIGURE NO.	2-1		



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LEGEND

- SOIL BORING SAMPLE LOCATION
- TRENCH LOCATION

SCALE

0' 300' 600'

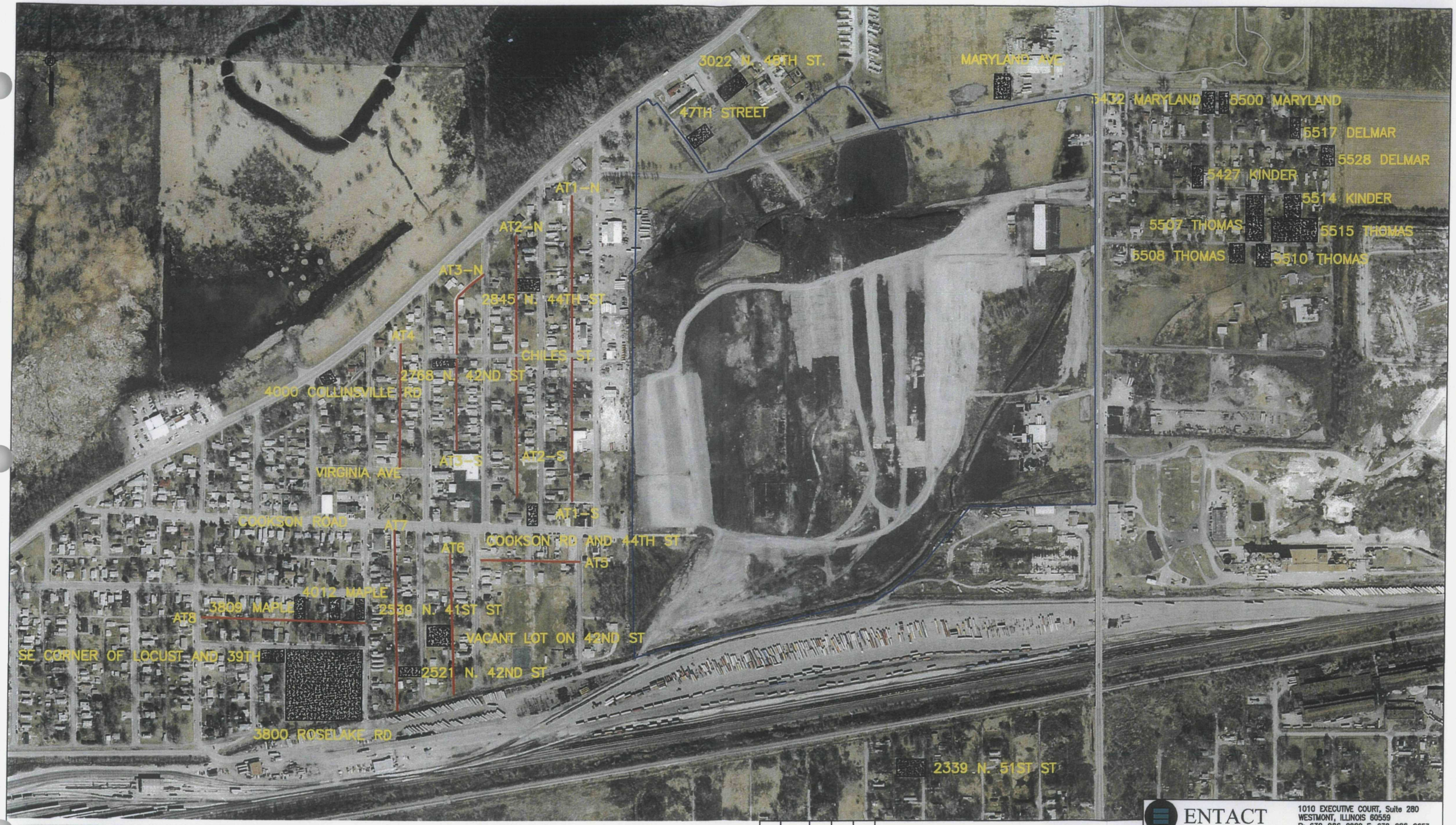
REV	DATE	BY	CHK'D	APP'VD	DESCRIPTION
0	03/07/08	MMC	PT	PT	ISSUED FOR DRAFT IN REPORT

ENTACT
1010 EXECUTIVE COURT, Suite 280
WESTMONT, ILLINOIS 60559
P: 630-986-2900 F: 630-986-0853

DRAWING NAME: BORING AND TRENCHING SAMPLE LOCATIONS

PROJECT NAME & LOCATION: AMERICAN ZINC RIFS
FAIRMONT CITY, ILLINOIS

DRAWN BY	M. CARLSON	APPROVED BY	P. THOMSON	REVISION	SHEET NO.
DATE	01-18-08	DATE	01-18-08	0	1 OF 1



LEGEND

- RESIDENTIAL, VACANT AND COMMERCIAL PROPERTIES SAMPLED
- ALLEYWAY TRANSECT
- FACILITY AREA BOUNDARY

SCALE

0' 500' 1000'

1. THE INFORMATION PRESENTED HEREIN IS CONFIDENTIAL IN NATURE AND IS NOT TO BE REPRODUCED OR RE-USED WITHOUT THE EXPRESSED WRITTEN PERMISSION OF ENTACT.
2. 2005 ORTHO-RECTIFIEDAERIAL PHOTOGRAPHY PROVIDED BY SURDEX, CHESTERFIELD, MO.

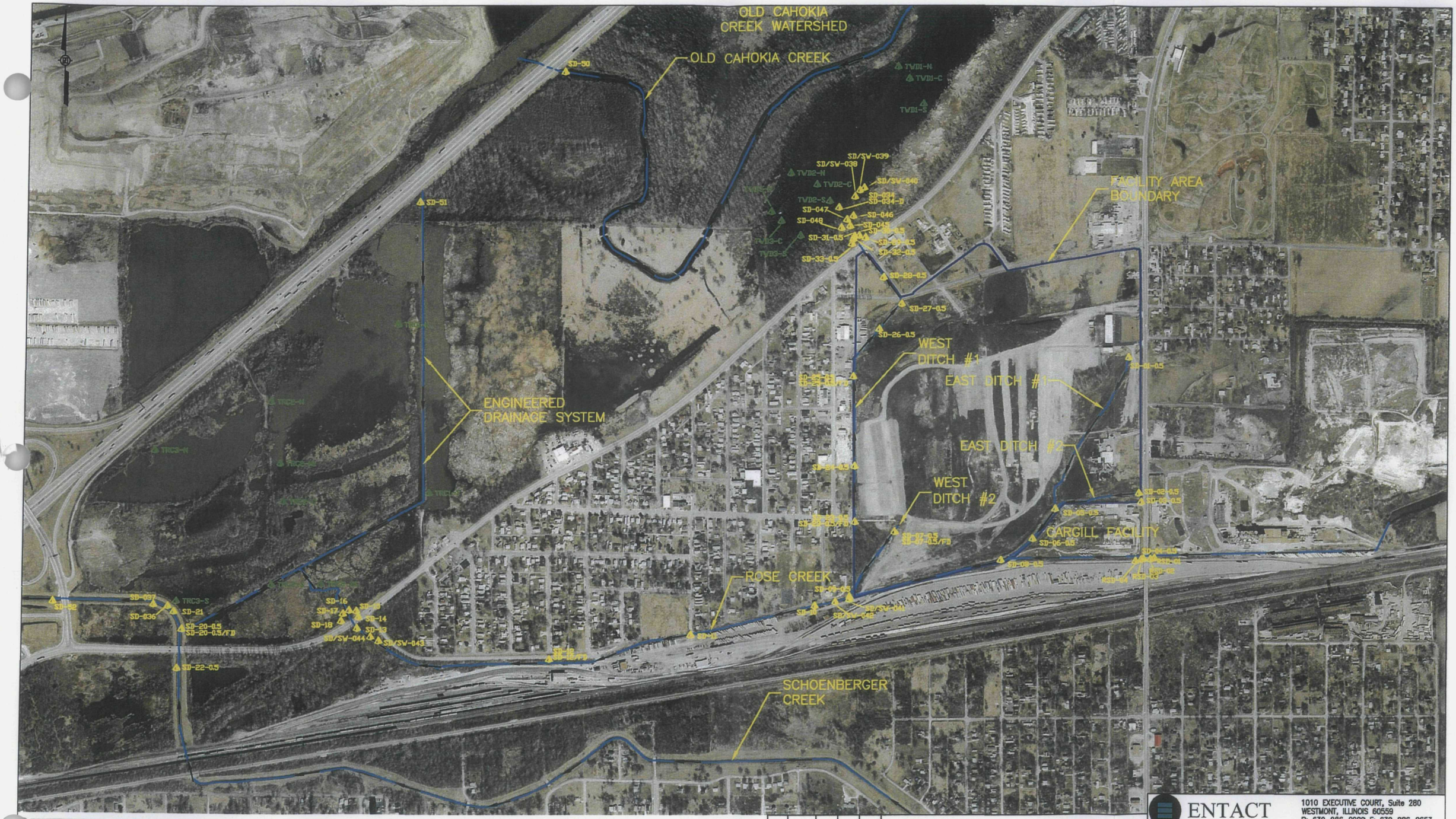
REV	DATE	BY	CHK'D	APR'VD	DESCRIPTION
0	08/07/08	MMC	PT	PT	ISSUED FOR DRAFT RI REPORT

ENTACT
1010 EXECUTIVE COURT, Suite 280
WESTMONT, ILLINOIS 60559
P: 630-986-2900 F: 630-986-0653

DRAWING NAME
LOCATIONS OF SITE PROPERTIES AND ALLEYWAYS SAMPLED

PROJECT NAME & LOCATION
AMERICAN ZINC RIFS
FAIRMONT CITY, ILLINOIS

DRAWN BY	M. CARLSON	APPROVED BY	P. THOMSON	REVISION	SHEET NO.
DATE	08-17-08	DATE	08-17-08	0	1 OF 1
PROJECT NO.	C1727	FIGURE NO.	2-3		



LEGEND

- GRAB SEDIMENT/SURFACE WATER SAMPLE LOCATION
- CORE TRANSECT SEDIMENT SAMPLE LOCATION

SCALE

0' 800' 1600'

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2. 2005 ORTHO-RECTIFIEDAERIAL PHOTOGRAPHY PROVIDED BY SURDEX, CHESTERFIELD, MO.

REV	DATE	BY	CHK'D	APR'VD	DESCRIPTION
0	08/07/08	MMC	PT	PT	ISSUED FOR DRAFT RI REPORT

ENTACT
1010 EXECUTIVE COURT, Suite 280
WESTMONT, ILLINOIS 60559
P: 630-986-2900 F: 630-986-0653

DRAWING NAME
SEDIMENT AND SURFACE WATER SAMPLING LOCATIONS

PROJECT NAME & LOCATION
AMERICAN ZINC RIFS
FAIRMONT CITY, ILLINOIS

DRAWN BY	M. CARLSON	APPROVED BY	P. THOMSON	REVISION	SHEET NO.
DATE	01-18-06	DATE	01-16-06	0	1 OF 1
PROJECT NO.	C1727	FIGURE NO.	2-4		

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2005 ORTHO-RECTIFIEDAERIAL PHOTOGRAPHY PROVIDED BY SURDEX, CHESTERFIELD, NO.

SCALE
0' 800' 1600'

LEGEND
- MONITORING WELL LOCATIONS
- VERTICAL PROFILE BORING LOCATIONS
- GROUNDWATER FLOW

REV	DATE	BY	CHK'D	APR'VD	DESCRIPTION
0	08/07/08	MMC	PT	PT	ISSUED FOR DRAFT RI REPORT

ENTACT
1010 EXECUTIVE COURT, Suite 280
WESTMONT, ILLINOIS 60559
P: 630-986-2900 F: 630-986-0653

DRAWING NAME
GROUNDWATER FLOW AND MONITORING WELL, PIEZOMETER, AND VERTICAL PROFILE LOCATIONS

PROJECT NAME & LOCATION
AMERICAN ZINC RIFS
FAIRMONT CITY, ILLINOIS

DRAWN BY	M. CARLSON	APPROVED BY	P. THOMSON	REVISION	SHEET NO.
DATE	01-18-06	DATE	01-18-06	0	1 OF 1
PROJECT NO.	C1727	FIGURE NO.	2-5		

ENTACT

ATTACHMENTS

ATTACHMENT A

RAGS PART D TABLES

TABLE A-1
RAGS Part D Table 1
SELECTION OF EXPOSURE PATHWAYS
FORMER AMERICAN ZINC SITE, FAIRMONT CITY, ILLINOIS

Scenario Timeframe	Medium	Exposure Medium	Exposure Point	Receptor Population	Receptor Age	Exposure Route	On-Site/ Off-Site	Type of Analysis	Rationale for Selection or Exclusion of Exposure Pathway
Current/Future	Soil	Surface Soil	Surface soil	Trespasser	Adolescent	Ingestion	On-site	Quant	Facility Area is currently vacant land.
						Dermal	On-site	Quant	
		Air	Dust from surface soil	Trespasser	Adolescent	Inhalation	On-site	Quant	
Current/Future	Soil	Surface Soil	Surface soil in open areas tracked into business.	Site Worker	Adult	Ingestion	On-site	Quant	Facility Area has historically been used by industrial/commercial enterprises.
						Dermal	On-site	Quant	
		Air	Dust from surface soil	Site Worker	Adult	Inhalation	On-site	Quant	
Future	Soil	Surface Soil	Surface soil in yard and tracked into	Resident	Adult	Ingestion	On-site	Quant	Residents in close proximity to Facility Area. Residential land use evaluated to provide an upperbound estimate of Facility Area risks.
						Dermal	On-site	Quant	
					Child	Ingestion	On-site	Quant	
						Dermal	On-site	Quant	
		Air	Dust from surface soil	Resident	Adult	Inhalation	On-site	Quant	
					Child	Inhalation	On-site	Quant	
Current/Future	Soil	Surface Soil	Surface soil	Recreation User	Adolescent	Ingestion	Off-site	Quant	Off-Facility area have been impacted by slag use.
						Dermal	Off-site	Quant	
		Air	Dust from surface soil	Recreation User	Adolescent	Inhalation	Off-site	Quant	
Current/Future	Soil	Surface Soil	Surface soil in yard and tracked into	Resident	Adult	Ingestion	Off-site	Quant	Residents in close proximity to Facility Area. Historic off-site use of slag as fill for residences and in alleyways. Some residents currently have gardens.
						Dermal	Off-site	Quant	
						Home-grown produce ingestion	On-site	Quant	
					Child	Ingestion	Off-site	Quant	
						Dermal	Off-site	Quant	
						Home-grown produce ingestion	On-site	Quant	
		Air	Dust from surface soil	Resident	Adult	Inhalation	Off-site	Quant	
					Child	Inhalation	Off-site	Quant	
Current/Future	Soil	Surface/subsurface Soil	Woker exposed to soil during excavation activities.	Utility Worker	Adult	Ingestion	On-site/off-site	Quant	Construction of homes; repairs of underground utilities may occur on and off the Facility Area.
						Dermal	On-site/off-site	Quant	
		Air	Woker exposed to soil dusts during excavation activities.	Utility Worker	Adult	Inhalation	On-site/off-site	Quant	
Future	Monitoring Well Groundwater	Groundwater	Tap water	Resident	Adult	Ingestion	On-site	None	Groundwater is not used as potable water supply. Groundwater cannot sustain yield to provide a potable supply.
						Dermal	On-site	None	
					Child	Ingestion	On-site	None	
						Dermal	On-site	None	
		Air	Water vapors at showerhead	Resident	Adult	Inhalation	On-site	None	No volatiles measured in groundwater; groundwater is not used as a potable supply.
					Child	Inhalation	On-site	None	
Future	Monitoring Well Groundwater	Groundwater	Groundwater in trench	Utility Worker	Adult	Dermal	On-site	None	No contact of utility worker to shallow groundwater(< 10 ft bgs) is anticipated because saturated zone is deep (encountered at 16 feet).
Current/Future	Surface Water	Surface Water	Exposed to surface water while trespassing	Trespasser	Adolescent	Dermal	On-site	Quant	Drainage features run through site.
Current/Future	Surface Water	Surface Water	Exposed to off-site surface water while recreating	Recreation User	Adolescent	Dermal	Off-site	Quant	Drainage features run through Facility Area and dicharges off site.
Current/Future	Surface Water	Surface water	Exposed to surface water while working outdoors.	Site Worker	Adult	Dermal	On-site/off-site	Quant	Drainage features run through Facility Area and dicharges off site..

TABLE 2a-1

OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN

FORMER AMERICAN ZINC SITE, FAIRMONT CITY, ILLINOIS

Scenario Timeframe:
Medium: Facility Area Surface Soils 0.0 - 0.5 ft (fines)
Exposure Medium: Facility Area Surface soils 0-0.5 ft (fines)

Exposure Point	CAS Number	Chemical	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (N/C) (4)	Potential ARAR/TBC Value (5)	Potential ARAR/TBC Source	COPC Flag (Y/N)	Rationale for Selection or Deletion (6)
On-Site Soil fine fraction	7440-38-2	Arsenic	4.3	31,000	mg/kg	CCS-13	75/75	NA	31,000	13	0.39	13	TACO	Y	ASL
	7440-39-3	Barium	83	4,000	mg/kg	CCS-15	75/75	NA	4,000	110	540	5,500	TACO	Y	ASL
	7440-43-9	Cadmium	3.2	5,000	mg/kg	CCS-13	75/75	NA	5,000	0.6	3.7	78	TACO	Y	ASL
	16065-83-1	Chromium	13	480	mg/kg	CCS-14	75/75	NA	480	16.2	22	230	TACO	Y	ASL
	7440-50-8	Copper	NA	NA	mg/kg	NA	NA	NA	NA	19.6	310	2,900	TACO	NA	NA
	7439-92-1	Lead	110	110,000	mg/kg	CCS-32	75/75	NA	110,000	36	40	400	TACO	Y	ASL
	7782-49-2	Selenium	0.445	68	mg/kg	CCS-32	75/75	0.89 - 0.99	68	0.48	39	390	TACO	Y	ASL
	7440-22-4	Silver	0.73	340	mg/kg	CCS-68	75/75	NA	340	0.55	39	390	TACO	Y	ASL
	7440-66-6	Zinc	380	200,000	mg/kg	CCS-23	75/75	NA	200,000	95	2300	23,000	TACO	Y	ASL
	7487-94-7	Mercury	0.0091 B	210	mg/kg	CCS-32	75/75	NA	210	0.06	2.3	23	TACO	Y	ASL

Footnote Instructions:

(1) B = Analyte was detected in laboratory control blank. J = Analyte concentration is estimated.

(2) Maximum detected concentration.

(3) 35 IL Admin Code 742, Appendix A, Table G - Concentrations of Inorganic Chemicals in Background Soils. Counties withiin Metropolitan Statistical Areas

(4) Region 9 Preliminary Remediation Goals (PRGs) for residential soils. PRGs for non-carcinogenic effects were adjusted to a Hazard Quotient = 0.1, the lower of the carcinogenic and the adjusted non-carcinogenic-based PRG was utilized.

(5) 35 Il Admin Code 742 - Tier 1 Soil Remediation Objectives - The lower of the direct contact values (inhalation and ingestion) is presented.

(6) ASL Above screening level;. BSL = Below screening level.

NA - Not analyzed; Not available.

TABLE 2a-2

OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN

FORMER AMERICAN ZINC SITE, FAIRMONT CITY, ILLINOIS

Scenario Timeframe:
Medium: Off-Site Surface Soils 0.0 - 0.5 ft (fines) - Residential Lots
Exposure Medium: Off-Site Surface Soils 0.0 - 0.5 ft (fines)

Exposure Point	CAS Number	Chemical	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (N/C) (4)	Potential ARAR/TBC Value (5)	Potential ARAR/TBC Source	COPC Flag (Y/N)	Rationale for Selection or Deletion (6)
Off-Site Soil	7440-38-2	Arsenic	4.7	51	mg/kg	47th ST-0.1	24/24	NA	51	13	0.39	13	TACO	Y	ASL
fine fraction	7440-39-3	Barium	100	370	mg/kg	47th ST-0.1	24/24	NA	370	110	540	5,500	TACO	Y	ASL
	7440-43-9	Cadmium	2.9	180	mg/kg	47th ST-0.1	24/24	NA	180	0.6	3.7	78	TACO	Y	ASL
	16065-83-1	Chromium	11	30	mg/kg	47th ST-0.1	24/24	NA	30	16.2	22	230	TACO	Y	ASL
	7440-50-8	Copper	NA	NA	mg/kg	47th ST-0.1	NA	NA	NA	19.6	310	2,900	TACO	NA	NA
	7439-92-1	Lead	82	1,600	mg/kg	47th ST-0.1	24/24	NA	1,600	36	40	400	TACO	Y	ASL
	7782-49-2	Selenium	0.59	2.1	mg/kg	47th ST-0.1	23/24	1.1	2.1	0.48	39	390	TACO	Y	ASL
	7440-22-4	Silver	0.18	11	mg/kg	47th ST-0.1	24/24	NA	11	0.55	39	390	TACO	Y	ASL
	7440-66-6	Zinc	410	16000	mg/kg	47th ST-0.1	24/24	NA	16,000	95	2300	23,000	TACO	Y	ASL
	7487-94-7	Mercury	0.072	1.1	mg/kg	47th ST-0.1	24/24	NA	1.1	0.06	2.3	23	TACO	Y	ASL

Footnote Instructions:

(1) B = Analyte was detected in laboratory control blank. J = Analyte concentration is estimated.

(2) Maximum detected concentration.

(3) 35 IL Admin Code 742, Appendix A, Table G - Concentrations of Inorganic Chemicals in Background Soils. Counties withiin Metropolitan Statistical Areas

(4) Region 9 Preliminary Remediation Goals (PRGs) for residential soils. PRGs for non-carcinogenic effects were adjusted to a Hazard Quotient = 0.1, the lower of the carcinogenic and the adjusted non-carcinogenic-based PRG was utilized.

(5) 35 Il Admin Code 742 - Tier 1 Soil Remediation Objectives - The lower of the direct contact values (inhalation and ingestion) is presented.

(6) ASL Above screening level;. BSL = Below screening level.

NA - Not analyzed; Not available.

TABLE 2a-3

OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN

FORMER AMERICAN ZINC SITE, FAIRMONT CITY, ILLINOIS

Scenario Timeframe:
Medium: Facility Area Soils 0.0 - 10.0 ft (total)
Exposure Medium: Facility Area Soils 0.0 - 10.0 ft (total)

Exposure Point	CAS Number	Chemical	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (N/C) (4)	Potential ARAR/TBC Value	Potential ARAR/TBC Source (5)	COPC Flag (Y/N)	Rationale for Selection or Deletion (6)
On-Site Soil	7440-38-2	Arsenic	1.5	470	mg/kg	SB-32-NE-1.0	97/97	NA	470	13	0.39	13	TACO	Y	ASL
Total soil	7440-39-3	Barium	13	2,300	mg/kg	SB-33-SW-1	97/97	NA	2,300	110	540	5,500	TACO	Y	ASL
Subsurface	7440-43-9	Cadmium	0.12 (B)	2,500	mg/kg	P-02-5	96/97	0.26	2,500	0.6	3.7	78	TACO	Y	ASL
	16065-83-1	Chromium	2.2	61	mg/kg	SB-61-NE-2	97/97	NA	61	16.2	22	230	TACO	Y	ASL
	7440-50-8	Copper	NA	NA	mg/kg	NA	NA	NA	NA	19.6	310	2,900	TACO	NA	NA
	7439-92-1	Lead	3.7	55,000	mg/kg	SB-59-NE-3.0	97/97	NA	55,000	36	40	400	TACO	Y	ASL
	7782-49-2	Selenium	0.47	140	mg/kg	SB-54-NE-5	74/97	0.97 - 1.4	140	0.48	39	390	TACO	Y	ASL
	7440-22-4	Silver	0.12	500	mg/kg	SB-54-NE-5	81/97	0.49 - 0.62	500	0.55	39	390	TACO	Y	ASL
	7440-66-6	Zinc	51	170,000	mg/kg	P-02-5	97/97	NA	170,000	95	2300	23,000	TACO	Y	ASL
	7487-94-7	Mercury	0.0078 B	540	mg/kg	SB-59-NE-3.0	94/97	0.017 - 2.1	540	0.06	2.3	23	TACO	Y	ASL

Footnote Instructions:

(1) B = Analyte was detected in laboratory control blank. J = Analyte concentration is estimated.

(2) Maximum detected concentration.

(3) 35 IL Admin Code 742, Appendix A, Table G - Concentrations of Inorganic Chemicals in Background Soils. Counties withiin Metropolitan Statistical Areas

(4) Region 9 Preliminary Remediation Goals (PRGs) for residential soils. PRGs for non-carcinogenic effects were adjusted to a Hazard Quotient = 0.1, the lower of the carcinogenic and the adjusted non-carcinogenic-based PRG was utilized.

(5) 35 Il Admin Code 742 - Tier 1 Soil Remediation Objectives - The lower of the direct contact values (inhalation and ingestion) is presented.

(6) ASL Above screening level;. BSL = Below screening level.

NA - Not analyzed; Not available.

TABLE 2a-4

OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN

FORMER AMERICAN ZINC SITE, FAIRMONT CITY, ILLINOIS

Scenario Timeframe:
Medium: Off-Site Sub-Surface Soils 0 - 10.0 ft
Exposure Medium: Off-Site Sub-Surface Soils 0 - 10.0 ft

Exposure Point	CAS Number	Chemical	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (N/C) (4)	Potential ARAR/TBC Value (5)	Potential ARAR/TBC Source	COPC Flag (Y/N)	Rationale for Selection or Deletion (6)
Off-Site Soil Subsurface-Total	7440-38-2	Arsenic	5.5	59	mg/kg	4012 Maple-SY-2	52/52	NA	59	13	0.39	13	TACO	Y	ASL
	7440-39-3	Barium	130	940	mg/kg	5517 Delmar-SE-2	52/52	NA	940	110	540	5,500	TACO	Y	ASL
	7440-43-9	Cadmium	0.96	63	mg/kg	Maryland-SW-0.5*	52/52	0.26	63	0.6	3.7	78	TACO	Y	ASL
	16065-83-1	Chromium	9.3	27	mg/kg	N. 39th-SE-0.5	52/52	NA	27	16.2	22	230	TACO	Y	ASL
	7440-50-8	Copper	NA	NA	mg/kg	NA	NA	NA	NA	19.6	310	2,900	TACO	NA	NA
	7439-92-1	Lead	13	3,500	mg/kg	4012 Maple-SY-2	52/52	NA	3,500	36	40	400	TACO	Y	ASL
	7782-49-2	Selenium	0.5	2.3	mg/kg	4012 Maple-SY-2	41/52	0.97 - 1.4	2.3	0.48	39	390	TACO	N	BSL
	7440-22-4	Silver	0.039	11	mg/kg	4012 Maple-SY-2	47/52	0.49 - 0.71	11	0.55	39	390	TACO	N	BSL
	7440-66-6	Zinc	140	6800	mg/kg	5517 Delmar-SE-2	52/52	NA	6,800	95	2300	23,000	TACO	Y	ASL
	7487-94-7	Mercury	0.019	0.9	mg/kg	2845 N. 44th St-SE-1	52/52	0.017-2.1	0.9	0.06	2.3	23	TACO	N	BSL

Footnote Instructions:

(1) B = Analyte was detected in laboratory control blank. J = Analyte concentration is estimated.

(2) Maximum detected concentration.

(3) 35 IL Admin Code 742, Appendix A, Table G - Concentrations of Inorganic Chemicals in Background Soils. Counties withiin Metropolitan Statistical Areas

(4) Region 9 Preliminary Remediation Goals (PRGs) for residential soils. PRGs for non-carcinogenic effects were adjusted to a Hazard Quotient = 0.1, the lower of the carcinogenic and the adjusted non-carcinogenic-based PRG was utilized.

(5) 35 Il Admin Code 742 - Tier 1 Soil Remediation Objectives - The lower of the direct contact values (inhalation and ingestion) is presented.

(6) ASL Above screening level;. BSL = Below screening level.

NA - Not analyzed; Not available.

* Duplicate sample was averaged.

TABLE 2a-5

OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN

FORMER AMERICAN ZINC SITE, FAIRMONT CITY, ILLINOIS

Scenario Timeframe:
Medium: Facility Area Sediment
Exposure Medium: Facility Area Sediment

Exposure Point	CAS Number	Chemical	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (4)	Potential ARAR/TBC Value	Potential ARAR/TBC Source (5)	COPC Flag (Y/N)	Rationale for Selection or Deletion (6)
Facility Area Sediment	7440-38-2	Arsenic	8.5	130	mg/kg	SD-24-0.5	13/13	NA	130	13	0.39	13	TACO	Y	ASL
	7440-39-3	Barium	81	610	mg/kg	SD-24-0.5	13/13	NA	610	110	540	5,500	TACO	Y	ASL
	7440-43-9	Cadmium	24	650	mg/kg	SD-25-0.5*	13/13	NA	650	0.6	3.7	78	TACO	Y	ASL
	16065-83-1	Chromium	10.5	74	mg/kg	SD-08-0.5	13/13	NA	74	16.2	22	230	TACO	Y	ASL
	7440-50-8	Copper	NA	NA	mg/kg	NA	NA	NA	NA	19.6	310	2,900	TACO	NA	NA
	7439-92-1	Lead	100.0	5,600	mg/kg	SD-24-0.5	13/13	NA	5,600	36	40	400	TACO	Y	ASL
	7782-49-2	Selenium	1.1	7.8	mg/kg	SD-25-0.5*	13/13	NA	7.8	0.48	39	390	TACO	N	BSL
	7440-22-4	Silver	1.2	64	mg/kg	SD-05-0.5	13/13	NA	64	0.55	39	390	TACO	Y	ASL
	7440-66-6	Zinc	1800	95,000	mg/kg	SD-25-0.5*	13/13	NA	95,000	95	2300	23,000	TACO	Y	ASL
	7487-94-7	Mercury	0.16	8.8	mg/kg	SD-05-0.5	13/13	NA	8.8	0.06	2.3	23	TACO	Y	ASL
	309-00-2	Aldrin	96	96	ug/kg	SD-05-0.5	1/5	21-60	96	NA	28.6	40	TACO	N	NSR
	60-57-1	Dieldrin	30	180	ug/kg	SD-05-0.5	4/5	60	180	NA	30.3	40	TACO	N	NSR
	50-29-3	4,4'-DDT	14	30	ug/kg	SD-09-0.5	1/5	30-60	30	NA	1720	2000	TACO	N	BSL;NSR
	57-74-9	gamma-Chlordane	10.5	69	ug/kg	SD-05-0.5	2/5	21-60	69	NA	1624	1800	TACO	N	BSL:NSR

Footnote Instructions:

(1) B = Analyte was detected in laboratory control blank. J = Analyte concentration is estimated.

(2) Maximum detected concentration.

(3) 35 IL Admin Code 742, Appendix A, Table G - Concentrations of Inorganic Chemicals in Background Soils. Counties withiin Metropolitan Statistical Areas

(4) Region 9 Preliminary Remediation Goals (PRGs) for residential soils. PRGs for non-carcinogenic effects were adjusted to a Hazard Quotient = 0.1, the lower of the carcinogenic and the adjusted non-carcinogenic-based PRG was utilized.

(5) 35 Il Admin Code 742 - Tier 1 Soil Remediation Objectives - The lower of the direct contact values (inhalation and ingestion) is presented.

(6) ASL Above screening level;. BSL = Below screening level. NSR = Not site-related.

NA - Not analyzed; Not available.

TABLE 2a-6

OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN

FORMER AMERICAN ZINC SITE, FAIRMONT CITY, ILLINOIS

Scenario Timeframe:
Medium: Off-Site Sediment
Exposure Medium: Off-Site Sediment

Exposure Point	CAS Number	Chemical	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (N/C) (4)	Potential ARAR/TBC Value	Potential ARAR/TBC Source (5)	COPC Flag (Y/N)	Rationale for Selection or Deletion (6)
Off-Site Sediment	7440-38-2	Arsenic	5	160	mg/kg	TRC-2-S-0-6	37/37	NA	160	13	0.39	13	TACO	Y	ASL
	7440-39-3	Barium	120	640	mg/kg	SD-22-0.5	37/37	NA	640	110	540	5,500	TACO	Y	ASL
	7440-43-9	Cadmium	1.1	1,300	mg/kg	TRC-2-S-0-6	37/37	NA	1,300	0.6	3.7	78	TACO	Y	ASL
	16065-83-1	Chromium	9.6	250	mg/kg	SD-22-0.5	37/37	NA	250	16.2	22	230	TACO	Y	ASL
	7440-50-8	Copper	100	5300	mg/kg	SD-48	16/16	NA	5,300	19.6	310	2,900	TACO	NA	NA
	7439-92-1	Lead	33.0	3,350	mg/kg	SD-41*	37/37	NA	3,350	36	40	400	TACO	Y	ASL
	7782-49-2	Selenium	0.5	10	mg/kg	TRC-2-S-0-6	27/37	1-9.7	10.0	0.48	39	390	TACO	N	BSL
	7440-22-4	Silver	0.23	18	mg/kg	SD-42	36/37	0.5	18	0.55	39	390	TACO	Y	ASL
	7440-66-6	Zinc	140	39,000	mg/kg	SD-034*	37/37	NA	39,000	95	2300	23,000	TACO	Y	ASL
	7487-94-7	Mercury	0.034	3.4	mg/kg	SD-43; TRC-2-S1-06	36/37	0.21	3.4	0.06	2.3	23	TACO	Y	ASL
	60-57-1	Dieldrin	170	170	ug/kg	SD-03-0.5	1/1	NA	170	NA	30	40	TACO	N	NSR
	72-55-9	DDE	14	14	ug/kg	SD-03-0.5	1/1	NA	14	NA	1720	2000	TACO	N	BSL;NSR
	50-29-3	4,4'-DDT	43	43	ug/kg	SD-03-0.5	1/1	NA	43	NA	1720	2000	TACO	N	BSL;NSR
	72-20-8	Endrin	53	53	ug/kg	SD-03-0.5	1/1	NA	53	NA	1833	23000	TACO	N	BSL;NSR

Footnote Instructions:

(1) B = Analyte was detected in laboratory control blank. J = Analyte concentration is estimated.

(2) Maximum detected concentration.

(3) 35 IL Admin Code 742, Appendix A, Table G - Concentrations of Inorganic Chemicals in Background Soils. Counties withiin Metropolitan Statistical Areas

(4) Region 9 Preliminary Remediation Goals (PRGs) for residential soils. PRGs for non-carcinogenic effects were adjusted to a Hazard Quotient = 0.1, the lower of the carcinogenic and the adjusted non-carcinogenic-based PRG was utilized.

(5) 35 Il Admin Code 742 - Tier 1 Soil Remediation Objectives - The lower of the direct contact values (inhalation and ingestion) is presented.

(6) ASL Above screening level;. BSL = Below screening level. NSR = Not site-related.

NA - Not analyzed; Not available.

* Duplicate samples were averaged.

TABLE 2a-7

OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN

FORMER AMERICAN ZINC SITE, FAIRMONT CITY, ILLINOIS

Scenario Timeframe:
Medium: Facility Area Surface Water
Exposure Medium: Facility Area Surface Water

Exposure Point	CAS Number	Chemical	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (4)	Potential ARAR/TBC Value	Potential ARAR/TBC Source (5)	COPC Flag (Y/N)	Rationale for Selection or Deletion (6)
On-Site Surface Water	7440-38-2	Arsenic	0.003	0.022	mg/L	SW-01	3/6	0.01	0.022	NA	0.000045	0.05	TACO	Y	ASL
	7440-39-3	Barium	0.011	0.390	mg/L	SW-01	6/6	0.01	0.390	NA	0.26	2	TACO	Y	ASL
	7440-43-9	Cadmium	0.0027	0.180	mg/L	SW-07*	6/6	0.01	0.180	NA	0.0018	0.005	TACO	Y	ASL
	16065-83-1	Chromium	0.0014	0.019	mg/L	SW-01	3/6	0.01	0.019	NA	0.011	0.1	TACO	Y	ASL
	7440-50-8	Copper	NA	NA	mg/L	NA	NA	0.01	NA	NA	0.15	0.65	TACO	NA	NA
	7439-92-1	Lead	0.0076	0.2700	mg/L	SW-01	6/6	0.005	0.27	NA	–	0.0075	TACO	Y	ASL
	7782-49-2	Selenium	ND	ND	mg/L	ND	ND	0.01	ND	NA	0.018	0.05	TACO	N	BSL
	7440-22-4	Silver	0.0046	0.0046	mg/L	SW-01	1/6	0.005	0.0046	NA	0.018	0.05	TACO	N	BSL
	7440-66-6	Zinc	0.28	42	mg/L	SW-07*	6/6	0.01	41.5	NA	1.09	5	TACO	Y	ASL
	7487-94-7	Mercury	0.00027	0.0013	mg/L	SW-01	3/6	0.0002	0.0013	NA	0.0011	0.002	TACO	Y	ASL

Footnote Instructions:

(1) B = Analyte was detected in laboratory control blank. J = Analyte concentration is estimated.

(2) Maximum detected concentration.

(3) 35 IL Admin Code 742, Appendix A, Table G - Concentrations of Inorganic Chemicals in Background Soils. Counties withiin Metropolitan Statistical Areas

(4) Region 9 Preliminary Remediation Goals (PRGs) for tap water. PRGs for non-carcinogenic effects were adjusted to a Hazard Quotient = 0.1, the lower of the carcinogenic and the adjusted non-carcinogenic-based PRG was utilized.

(5) 35 Il Admin Code 742 - Tier 1 Class I Groundwater Remediation Objectives.

(6) ASL Above screening level;. BSL = Below screening level. NSR = Not site-related.

NA - Not analyzed; Not available.

* Duplicate samples were averaged.

TABLE 2a-8

OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN

FORMER AMERICAN ZINC SITE, FAIRMONT CITY, ILLINOIS

Scenario Timeframe:
Medium: Off-Site Surface Water
Exposure Medium: Off-Site Surface Water

Exposure Point	CAS Number	Chemical	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (4)	Potential ARAR/TBC Value	Potential ARAR/TBC Source (5)	COPC Flag (Y/N)	Rationale for Selection or Deletion (6)
Off-Site Surface Water	7440-38-2	Arsenic	0.0046	0.060	mg/L	SW-34	11/20	0.01	0.060	NA	0.000045	0.05	TACO	Y	ASL
	7440-39-3	Barium	0.043	0.895	mg/L	SW-34	20/20	0.01	0.895	NA	0.26	2	TACO	Y	ASL
	7440-43-9	Cadmium	0.00069	1.750	mg/L	SW-34	18/20	0.01	1.750	NA	0.0018	0.005	TACO	Y	ASL
	16065-83-1	Chromium	0.0014	0.17	mg/L	SW-21	17/20	0.01	0.170	NA	0.011	0.1	TACO	Y	ASL
	7440-50-8	Copper	0.0165	2	mg/L	SW-45	9/9	0.01	2	NA	0.15	0.65	TACO	NA	NA
	7439-92-1	Lead	0.0025	1.9	mg/L	SW-34	17/20	0.005	1.90	NA	–	0.0075	TACO	Y	ASL
	7782-49-2	Selenium	0.005	0.01035	mg/L	SW-34	2/20	0.01	0.01035	NA	0.018	0.05	TACO	N	BSL
	7440-22-4	Silver	0.0012	0.014	mg/L	SW-34	5/20	0.005	0.0140	NA	0.018	0.05	TACO	N	BSL
	7440-66-6	Zinc	0.0185	260	mg/L	SW-45	20/20	0.01	260.0	NA	1.09	5	TACO	Y	ASL
	7487-94-7	Mercury	0.000098	0.00079	mg/L	SW-21	5/20	0.0002	0.0008	NA	0.0011	0.002	TACO	N	BSL

Footnote Instructions:

(1) B = Analyte was detected in laboratory control blank. J = Analyte concentration is estimated.

(2) Maximum detected concentration.

(3) 35 IL Admin Code 742, Appendix A, Table G - Concentrations of Inorganic Chemicals in Background Soils. Counties withiin Metropolitan Statistical Areas

(4) Region 9 Preliminary Remediation Goals (PRGs) for tap water. PRGs for non-carcinogenic effects were adjusted to a Hazard Quotient = 0.1, the lower of the carcinogenic and the adjusted non-carcinogenic-based PRG was utilized.

(5) 35 Il Admin Code 742 - Tier 1 Class I Groundwater Remediation Objectives.

(6) ASL Above screening level;. BSL = Below screening level. NSR = Not site-related.

NA - Not analyzed; Not available.

* Duplicate samples were averaged.

TABLE 2a-9

OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN

FORMER AMERICAN ZINC SITE, FAIRMONT CITY, ILLINOIS

Scenario Timeframe:
Medium: Facility Area Groundwater
Exposure Medium: Facility Area Groundwater

Exposure Point	CAS Number	Chemical	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (4)	Potential ARAR/TBC Value	Potential ARAR/TBC Source (5)	COPC Flag (Y/N)	Rationale for Selection or Deletion (6)
Groundwater	7440-38-2	Arsenic	0.0024	0.012	mg/L	P-03*	3/7	0.01	0.012	NA	0.000045	0.05	TACO	Y	ASL
	7440-39-3	Barium	0.032	0.140	mg/L	MW-06	7/7	0.01	0.140	NA	0.26	2	TACO	N	BSL
	7440-43-9	Cadmium	0.0015	3.400	mg/L	P-01*	7/7	0.01	3.400	NA	0.0018	0.005	TACO	Y	ASL
	16065-83-1	Chromium	0.0018	0.0059	mg/L	P-01*	5/7	0.01	0.006	NA	0.011	0.1	TACO	N	BSL
	7440-50-8	Copper	0.0045	0.0063	mg/L	MW-05	3/7	0.01	0.00630	NA	0.15	0.65	TACO	NA	NA
	7439-92-1	Lead	0.0033	0.0440	mg/L	P-01*	4/7	0.005	0.04	NA	--	0.0075	TACO	Y	ASL
	7782-49-2	Selenium	0.006	0.0097	mg/L	P-01*	3/7	0.01	0.00970	NA	0.018	0.05	TACO	N	BSL
	7440-22-4	Silver	0.001	0.0021	mg/L	P-02*	4/7	0.005	0.0021	NA	0.018	0.05	TACO	N	BSL
	7440-66-6	Zinc	0.056	225	mg/L	MW-03	7/7	0.01	225.0	NA	1.09	5	TACO	Y	ASL
	7487-94-7	Mercury	ND	ND	mg/L	ND	ND	0.0002	ND	NA	0.0011	0.002	TACO	N	BSL

Footnote Instructions:

(1) B = Analyte was detected in laboratory control blank. J = Analyte concentration is estimated.

(2) Maximum detected concentration from 2006 and 2007 sampling events for MW-03, MW-05, MW-06, MW-07, P-01, P-02, and P-03.

(3) 35 IL Admin Code 742, Appendix A, Table G - Concentrations of Inorganic Chemicals in Background Soils. Counties withiin Metropolitan Statistical Areas

(4) Region 9 Preliminary Remediation Goals (PRGs) for tap water. PRGs for non-carcinogenic effects were adjusted to a Hazard Quotient = 0.1, the lower of the carcinogenic and the adjusted non-carcinogenic-based PRG was utilized.

(5) 35 Il Admin Code 742 - Tier 1 Class I Groundwater Remediation Objectives.

(6) ASL Above screening level;. BSL = Below screening level. NSR = Not site-related.

NA - Not analyzed; Not available.

* Duplicate samples were averaged.

TABLE 2a-10a

OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN

FORMER AMERICAN ZINC SITE, FAIRMONT CITY, ILLINOIS

Scenario Timeframe:
Medium: OffFacility Area Surface Soils 0.0 - 0.5 ft (fines) - Alleyways
Exposure Medium: Off-Facility Area Surface Soils 0.0 - 0.5 ft (fines)

Exposure Point	CAS Number	Chemical	*Minimum* Concentration (Qualifier) (1)	*Maximum* Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (N/C) (4)	Potential ARAR/TBC Value (5)	Potential ARAR/TBC Source	COPC Flag (Y/N)	Rationale for Selection or Deletion (6)
Off Facility Area Soil	7440-38-2	Arsenic	6.7	26	mg/kg	OS-AT6-0.1	8/8	NA	26	13	0.39	13	TACO	Y	ASL
fine fraction	7440-39-3	Barium	170	420	mg/kg	OS-AT5-0.1	8/8	NA	420	110	540	5,500	TACO	N	BSL
Alleyways	7440-43-9	Cadmium	9.9	29	mg/kg	OS-AT6-0.1	8/8	NA	29	0.6	3.7	78	TACO	Y	ASL
	16065-83-1	Chromium	22	75	mg/kg	OS-AT4-0.1	8/8	NA	75	16.2	22	230	TACO	Y	ASL
	7439-92-1	Lead	110	760	mg/kg	OS-AT2-0.1	7/8	NA	760	36	40	400	TACO	Y	ASL
	7782-49-2	Selenium	0.61	1.5	mg/kg	OS-AT5-0.1	8/8	1.1	1.5	0.48	39	390	TACO	N	BSL
	7440-22-4	Silver	0.58	4.6	mg/kg	OS-AT6-0.1	8/8	NA	5	0.55	39	390	TACO	N	BSL
	7440-66-6	Zinc	880	6600	mg/kg	OS-AT6-0.1	8/8	NA	6,600	95	2300	23,000	TACO	Y	ASL
	7487-94-7	Mercury	0.03	0.19	mg/kg	OS-AT6-0.1	8/8	NA	0.2	0.06	2.3	23	TACO	N	BSL

Footnote Instructions:

(1) B = Analyte was detected in laboratory control blank. J = Analyte concentration is estimated.

(2) Maximum detected concentration.

(3) 35 iL Admin Code 742, Appendix A, Table G - *Concentrations of Inorganic Chemicals in Background Soils. Counties withiin Metropolitan Statistical Areas*

(4) Region 9 Preliminary Remediation Goals (PRGs) for residential soils. PRGs for non-carcinogenic effects were adjusted to a Hazard Quotient = 0.1, the lower of the carcinogenic and the adjusted non-carcinogenic-based PRG was utilized.

(5) 35 Il Admin Code 742 - Tier 1 Soil Remediation Objectives - The lower of the direct contact values (inhalation and ingestion) is presented.

(6) ASL Above screening level;. BSL = Below screening level.

NA - Not analyzed; Not available.

TABLE 2e-11

OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN

FORMER AMERICAN ZINC SITE, FAIRMONT CITY, ILLINOIS

Scenario Timeframe
Medium: Facility Area Soils 0 0 - 10.0 ft
Exposure Medium Native Soils (Total)

Exposure Point	CAS Number	Chemical	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (N/C) (4)	Potential ARAR/TBC Value (5,6)	Potential ARAR/TBC Source (5,6)	COPC Flag (Y/N)	Rationale for Selection or Deletion (7)
Facility Area Soil	7429-90-5	Aluminum	8,800	13,000	mg/kg	SB-39-SE-2	3/3	NA	13,000	9,500	7600	78,00	IEPA	Y	ASL
	7440-36-0	Antimony	0 85 B	1 8 B	mg/kg	SB-39-SE-2	3/3	NA	1.8 B	4	3 1	31	TACO	N	BSL
	7440-38-2	Arsenic	3 7	22	mg/kg	SB-39-SE-2	48/48	NA	22	13	0.39	13	TACO	Y	ASL
	7440-39-3	Barium	13	380	mg/kg	SB-62-NE-5	48/48	NA	380	110	540	5,500	TACO	N	BSL
	7440-41-7	Beryllium	0 51	0.80	mg/kg	SB-39-SE-2	3/3	NA	0 80	0 59	15	160	TACO	N	BSL
	7440-43-9	Cadmium	0 12 B	1,800	mg/kg	SB-35-NW-6	47/48	NA	1,800	0.8	3 7	78	TACO	Y	ASL
	7440-70-2	Calcium	1,700	4,300	mg/kg	SB-40-NE-3 0	3/3	NA	4,300	9,300	—	NA	—	N	BSL
	7440-47-3	Chromium	2 9	32	mg/kg	SB-67-SE-A-9	48/48	NA	32	16 2	22	230	TACO	Y	ASL
	7440-48-4	Cobalt	10	14	mg/kg	SB-39-SW-3.0	3/3	NA	14	8.9	140	4,700	TACO	N	BSL
	7440-50-8	Copper	380	1,700	mg/kg	SB-39-SE-2	NA	NA	1,700	19 6	310	2,900	TACO	Y	ASL
	15438-31-0	Iron	13,000	20,000	mg/kg	SB-39-SE-2	3/3	NA	20,000	15,900	2,300	NA	—	Y	ASL
	7439-92-1	Lead	3.7	470	mg/kg	SB-39-SE-2	48/48	NA	470	38	40	400	TACO	Y	ASL
	7439-95-4	Magnesium	2,400	3,200	mg/kg	SB-39-SE-2	3/3	NA	3,200	4,820	—	NA	—	N	BSL
	7439-96-5	Manganese	430	610	mg/kg	SB-39-SW-3 0	3/3	NA	610	636	180	3,700	TACO	Y	ASL
	7440-02-0	Nickel	14	38	mg/kg	SB-40-NE-3 0	3/3	NA	38	18	160	1,600	TACO	N	BSL
	9/7/7440	Potassium	1900	2600	mg/kg	SB-39-SE-2	3/3	NA	2600	1,288	—	NA	—	N	BSL
	7782-49-2	Selenium	0 47 B	1.7	mg/kg	SB-03-SW-1.0	36/48	0.97 - 1 4	1 7	0.48	39	390	TACO	N	BSL
	7440-22-4	Silver	0 13 B	2 2	mg/kg	SB-39-SE-2	33/48	0.49 - 0 71	2 2	0 55	39	390	TACO	N	BSL
	7440-23-5	Sodium	150	150	mg/kg	SB-40-NE-3.0	1/3	120 - 130	150	130	—	NA	—	N	BSL
	7440-28-0	Thallium	0 99 B	0 99 B	mg/kg	SB-39-SE-2	1/3	1 2	0 99 B	0 32	0 52	6 3	TACO	Y	ASL
	7440-62-2	Vanadium	22	33	mg/kg	SB-39-SE-2	3/3	NA	33	25.2	7 8	550	TACO	Y	ASL
	7440-66-6	Zinc	51	12,000	mg/kg	SB-43-SW-6	48/48	NA	12,000	95	2300	23,000	TACO	Y	ASL
	7439-97-6	Mercury	0 016 B	0 44	mg/kg	SB-41-SW-7 0	46/48	0.017 - 2 1	0 44	0 06	2 3	23	TACO	N	BSL
	91-20-3	Naphthalene	0 026 J	0 23	mg/kg	SB-43-SW-5	3 / 11	41 - 44	0 23	NA	5.6	170	TACO	N	BSL
	208-96-8	Acenaphthylene	0 028 J	0 052	mg/kg	SB-43-SW-5	2 / 11	41 - 44	0 052	NA	—	2,300	IEPA	N	BSL
	83-32-9	Acenaphthene	0 89	0 84	mg/kg	SB-43-SW-5	1 / 11	41 - 44	0.84	NA	370	4,700	TACO	N	BSL
	86-73-7	Fluorene	0 05	0 056	mg/kg	SB-51-NE-6	2 / 11	41 - 44	0 056	NA	270	3,100	TACO	N	BSL
	85-01-8	Phenanthrene	0 010 J	0 96	mg/kg	SB-51-NE-6	6 / 11	42 - 44	0 96	NA	—	2,300	IEPA	N	BSL
	120-12-7	Anthracene	0 061	0 15	mg/kg	SB-43-SW-5	2 / 11	41 - 44	0.15	NA	2,200	23,000	TACO	N	BSL
	206-44-0	Fluoranthene	0 011 J	1 1	mg/kg	SB-43-SW-5	6 / 11	42 - 44	1 1	NA	230	3,100	TACO	N	BSL
	129-00-0	Pyrene	0 021 J	0 96	mg/kg	SB-43-SW-5	5 / 11	42 - 44	0 96	NA	230	2,300	TACO	N	BSL
	56-55-3	Benzo(a)anthracene	0.011 J	0 41	mg/kg	SB-51-NE-6	5 / 11	42 - 44	0 41	1 8	0.062	0 9	TACO	N	BSL
	218-01-9	Chrysene	0.023 J	1 3	mg/kg	SB-51-NE-6	5 / 11	42 - 44	1 3	2 7	62	88	TACO	N	BSL
	117-81-7	Bis(2-ethylhexyl)phthalate	0 33	0 23	mg/kg	SB-39-SE-2	1 / 4	210 - 220	0 23	NA	35	46	TACO	N	BSL
	205-99-2	Benzo(b)fluoranthene	0 018 J	0 44	mg/kg	SB-51-NE-6	6 / 11	42 - 44	0 44	2	0 062	0 9	TACO	N	BSL
	207-08-9	Benzo(k)fluoranthene	0 012 J	0 18	mg/kg	SB-43-SW-5	6 / 11	42 - 44	0.18	1 7	6 2	9	TACO	N	BSL
	50-32-8	Benzo(a)pyrene	0 011 J	0 19	mg/kg	SB-43-SW-5	6 / 11	42 - 44	0 19	2 1	0 062	0.09	TACO	N	BSL
	193-39-5	Indeno(1,2,3-cd)pyrene	0 032 J	0 12	mg/kg	SB-43-SW-5	4 / 11	41 - 44	0 12	1 6	0 62	0.9	TACO	N	BSL
	53-70-3	Dibenzo(a,h)anthracene	0 032 J	0.074	mg/kg	SB-51-NE-6	4 / 11	41 - 44	0 074	0 42	0 062	0 09	TACO	N	BSL
	191-24-2	Benzo(ghi)perylene	0 013 J	0 14	mg/kg	SB-51-NE-6	5 / 11	42 - 44	0 14	NA	—	2,300	IEPA	N	BSL
	67-64-1	Acetone	0 024	0 024	mg/kg	SB-36-NE-5 0	1 / 2	0 0064	0 024	NA	1,413	7,800	TACO	N	BSL
	75-15-0	Carbon disulfide	0.0074	0 0074	mg/kg	SB-04-SW-7 0	1 / 2	0 0053	0 0074	NA	36	720	TACO	N	BSL

Footnote Instructions

(1) B = Analyte was detected in laboratory control blank J = Analyte concentration is estimated

(2) Maximum detected concentration

(3) 35 IL Admin Code 742, Appendix A, Table G - Concentrations of Inorganic Chemicals in Background Soils Counties within Metropolitan Statistical Areas

(4) Region 9 Preliminary Remediation Goals (PRGs) for residential soils PRGs for non-carcinogenic effects were adjusted to a Hazard Quotient = 0 1 the lower of the carcinogenic and the adjusted non-carcinogenic-based PRG was utilized

(5) TACO - 35 Il Admin Code 742 - Tier 1 Soil Remediation Objectives - the lower of values based upon inhalation and ingestion is presented

(6) IEPA - SROs for "non-TACO" chemicals, prepared by Illinois EPA Toxicity Assessment Unit - the lower of values based upon inhalation and ingestion is presented

(7) ASL Above screening level, BSL = Below screening level

If PAH concentration did not exceed TACO value and/or IEPA background value, it was also excluded as a COPC

TABLE 2# 12

OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN

FORMER AMERICAN ZINC SITE, FAIRMONT CITY, ILLINOIS

Scenario Timeframe Current/Future
Medium: Facility Slag 0 0 - 10.0 ft
Exposure Medium Subsurface Slag (total metals)

Exposure Point	CAS Number	Chemical	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (N/C) (4)	Potential ARAR/TBC Value (5,6)	Potential ARAR/TBC Source (5,6)	COPC Flag (Y/N)	Rationale for Selection or Deletion (7)
Facility Area Slag	7429-90-5	Aluminum	11,000	11,000	mg/kg	SB-40-NW-0 5	1/1	na	11,000	9,500	7,600	78,000	IEPA	Y	ASL
	7440-36-0	Antimony	4.6	4 6	mg/kg	SB-40-NW-0.5	1/1	na	4 6	4 0	3 1	31	TACO	Y	ASL
	7440-38-2	Arsenic	1 5	470	mg/kg	SB-32-NE-1	51/51	na	470	13	0 39	13	TACO	Y	ASL
	7440-39-3	Barium	16	2,300	mg/kg	SB-33-SW-1	51/51	na	2,300	110	540	5,500	TACO	Y	ASL
	7440-41-7	Beryllium	0.75	0.75	mg/kg	SB-40-NW-0 5	1/1	na	*0 75*	*0.59*	*15*	*160*	TACO	N	BSL
	7440-43-9	Cadmium	1 1	2500	mg/kg	P-02-5	51/51	na	2500	0.6	3 7	78	TACO	Y	ASL
	7440-70-2	Calcium	1,800	1,800	mg/kg	SB-40-NW-0 5	1/1	na	1,800	9,300	—	NA	--	N	BSL
	7440-47-3	Chromium	2.2	81	mg/kg	SB-61-NE-2	51/51	na	81	16 2	22	230	TACO	Y	ASL
	7440-48-4	Cobalt	8 5	8 5	mg/kg	SB-40-NW-0 5	1/1	na	8.5	8 9	140	4,700	TACO	N	BSL
	7440-50-8	Copper	470	4,300	mg/kg	SB-09-NE-1 0	3/3	na	4,300	19 6	310	2,900	TACO	Y	ASL
	15438-31-0	Iron	21,000	21,000	mg/kg	SB-40-NW-0.5	1/1	na	21,000	15,900	2,300	NA	--	Y	ASL
	7439-92-1	Lead	17 0	55,000	mg/kg	SB-59-NE-3 0	51/51	na	55,000	36	40	400	TACO	Y	ASL
	7439-95-4	Magnesium	2,400	2,400	mg/kg	SB-40-NW-0 5	1/1	na	2,400	4,820	—	NA	--	N	BSL
	7439-96-5	Manganese	320	320	mg/kg	SB-40-NW-0.5	1/1	na	320	636	180	3,700	TACO	Y	ASL
	7440-02-0	Nickel	19	19	mg/kg	SB-40-NW-0 5	1/1	na	19	18	160	1,600	TACO	N	BSL
	9/7/7440	*Potassium*	*2,000*	*2 600*	*mg/kg*	*SB-40-NW-0 5*	*1/1*	*na*	*2,000*	*1,288*	—	NA	--	N	BSL
	7782-49-2	Selenium	0 53 B	140	mg/kg	SB-54-NE-5	50/51	1 0	140	0.48	39	390	TACO	Y	ASL
	7440-22-4	Silver	0 12 B	500	mg/kg	SB-32-NE-1	50/51	0 51	500	0 55	39	390	TACO	Y	ASL
	7440-23-5	Sodium	97 B	97 B	mg/kg	SB-40-NW-0 5	1/1	na	97 B	130	—	NA	--	N	BSL
	7440-62-2	Vanadium	28	28	mg/kg	SB-40-NW-0 5	1/1	na	28	25.2	7 8	550	TACO	Y	ASL
	7440-66-6	Zinc	390	170,000	mg/kg	SB-09-NE-1 0	51/51	na	170,000	95	2300	23,000	TACO	Y	ASL
	7439-97-6	Mercury	0.0078 B	540	mg/kg	SB-59-NE-3 0	50/51	1 9	540	0 06	2.3	23	TACO	Y	ASL
	91-20-3	Naphthalene	0 013 J	0 024 J	mg/kg	SB-51-SE-4 0	3/6	40 - 44	0 024 J	NA	5 8	170	TACO	N	BSL
	208-96-8	Acenaphthylene	0.0095 J	0 0095 J	mg/kg	SB-51-SE-4 0	1/6	40 - 44	0.0095 J	NA	—	2,300	IEPA	N	BSL
	85-01-8	Phenanthrene	0 081	0 27	mg/kg	SB-43-NW-3	5/6	44	0 27	NA	—	2,300	IEPA	N	BSL
	120-12-7	Anthracene	0 0097 J	0 054	mg/kg	SB-43-NW-3	4/6	43 - 44	0 054	NA	2,200	23,000	TACO	N	BSL
	206-44-0	Fluoranthene	0.1	0 75	mg/kg	SB-43-NW-3	5/6	44	0.75	NA	230	3,100	TACO	N	ASL
	129-00-0	Pyrene	*0 061*	*0 63*	mg/kg	SB-43-NW-3	5/6	44	*0 63*	NA	230	2,300	TACO	N	BSL
	56-55-3	Benzo(a)anthracene	0 035 J	0.33	mg/kg	SB-43-NW-3	5/6	44	0 33	1 8	0 062	0 9	TACO	N	BSL
	218-01-9	Chrysene	0 053	0.36	mg/kg	SB-43-NW-3	5/6	44	0 36	2 7	62	88	TACO	N	BSL
	205-99-2	Benzo(b)fluoranthene	0.061	0 41	mg/kg	SB-43-NW-3	5/6	44	0 41	2	0 062	0.9	TACO	N	BSL
	207-08-9	Benzo(k)fluoranthene	0.024 J	0.22	mg/kg	SB-43-NW-3	5/6	44	0.22	1 7	6 2	9	TACO	N	BSL
	50-32-8	Benzo(a)pyrene	0 024 J	0 34	mg/kg	SB-43-NW-3	5/6	44	0 34	2 1	0 062	0.09	TACO	N	BSL
	193-39-5	Indeno(1,2,3-cd)pyrene	*0 017 J*	*0 21*	mg/kg	SB-43-NW-3	*5/6*	44	*0.21*	*1 8*	*0.62*	*0 9*	TACO	N	BSL
	53-70-3	Dibenzo(a,h)anthracene	0.011 J	0.081	mg/kg	SB-43-NW-3	4/6	40 - 44	0 081	0 42	0 062	0 09	TACO	N	BSL
	191-24-2	Benzo(ghi)perylene	0 024 J	0.23	mg/kg	SB-43-NW-3	5/6	44	0 23	NA	—	2,300	IEPA	N	BSL
	67-64-1	Acetone	0 024	0 024	mg/kg	SB-31-SW-1 7 SB-36-NE-5 0	2/2	NA	0 024	NA	1,413	7,800	TACO	N	BSL

Footnote Instructions

(1) B = Analyte was detected in laboratory control blank J = Analyte concentration is estimated

(2) Maximum detected concentration

(3) 35 IL Admin Code 742, Appendix A, Table G - Concentrations of Inorganic Chemicals in Background Soils Counties within Metropolitan Statistical Areas

(4) Region 9 Preliminary Remediation Goals (PRGs) for residential soils PRGs for non-carcinogenic effects were adjusted to a Hazard Quotient = 0 1, the lower of the carcinogenic and the adjusted non-carcinogenic-based PRG was utilized

(5) TACO - 35 Il Admin Code 742 - Tier 1 Soil Remediation Objectives - the lower of values based upon inhalation and ingestion is presented

(6) *IEPA - SROs for "non-TACO" chemicals, prepared by Illinois EPA Toxicity Assessment Unit - the lower of values based upon inhalation and ingestion is presented*

(7) ASL Above screening level, BSL = Below screening level

PAHs, aluminum, vanadium, and thallium concentrations did not exceed TACO value and/or IEPA background value, they were also excluded as a COPC

TABLE 2a-13

OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN

FORMER AMERICAN ZINC SITE, FAIRMONT CITY, ILLINOIS

Scenario Timeframe: Current/Future

Medium: Facility Area Slag 0.0 - 0.5 (Fine Fraction Analysis)

Exposure Medium: Facility Area slag

Exposure Point	CAS Number	Chemical	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (4)	Potential ARAR/TBC Value (5)	Potential ARAR/TBC Source (5)	COPC Flag (Y/N)	Rationale for Selection or Deletion (6)
Facility Area Slag	7440-38-2	Arsenic	13	31,000	mg/kg	CSS-13	64 / 64	NA	31,000	13	0.39	13	TACO	Y	ASL
	7440-39-3	Barium	110	4,000	mg/kg	CSS-15	64 / 64	NA	4,000	110	540	5,500	TACO	Y	ASL
	7440-43-9	Cadmium	9.7	5,000	mg/kg	CSS-13	64 / 64	NA	5,000	0.6	3.7	78	TACO	Y	ASL
	7440-47-3	Chromium	15	480	mg/kg	css-14	64 / 64	NA	480	16.2	22	230	TACO	Y	ASL
	7440-50-8	Copper	850	4,000	mg/kg	CSS-21	2 / 2	NA	4,000	19.6	310	2,900	TACO	Y	ASL
	7439-92-1	Lead	240	103,000	mg/kg	CSS-32	64 / 64	NA	110,000	36	40	400	TACO	Y	ASL
	7782-49-2	Selenium	0.49 B	66	mg/kg	CSS-32	64 / 64	NA	68	0.48	39	390	TACO	Y	ASL
	7440-22-4	Silver	3.4	340	mg/kg	CSS-68	64 / 64	NA	300	0.55	39	390	TACO	Y	ASL
	7440-66-6	Zinc	980	200,000	mg/kg	CSS-23	64 / 64	NA	200,000	95	2300	23,000	TACO	Y	ASL
	7439-97-6	Mercury	0.0091 B	205	mg/kg	CSS-32	64 / 64	NA	210	0.06	2.3	23	TACO	Y	ASL

Footnote Instructions:

(1) B = Analyte was detected in laboratory control blank. J = Analyte concentration is estimated.

(2) Maximum detected concentration

(3) 35 IL Admin Code 742, Appendix A, Table G - Concentrations of Inorganic Chemicals in Background Soils. Counties withiin Metropolitan Statistical Areas

(4) Region 9 Preliminary Remediation Goals (PRGs) for residential soils. PRGs for non-carcinogenic effects were adjusted to a Hazard Quotient = 0.1, the lower of the carcinogenic and the adjusted non-carcinogenic-based PRG was utilized

(5) TACO - 35 Il Admin Code 742 - Tier 1 Soil Remediation Objectives - the lower of values based upon inhalation and ingestion is presented.

(6) ASL Above screening level;. BSL = Below screening level.

NA - Not available.

TABLE 2a-14

OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN

FORMER AMERICAN ZINC SITE, FAIRMONT CITY, ILLINOIS

Scenario Timeframe: Current/Future

Medium: Facility Area surface soil native 0.0 - 0.5 (Fine Fraction Analysis)

Exposure Medium: Facility Area Surface soil (fines)

Exposure Point	CAS Number	Chemical	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (N/C) (4)	Potential ARAR/TBC Value (5)	Potential ARAR/TBC Source (5)	COPC Flag (Y/N)	Rationale for Selection or Deletion (6)
Native Facility Area (Fine Fraction)	7440-38-2	Arsenic	4.3	96	mg/kg	CSS-40	12/12	NA	96	13	0.39	13	TACO	Y	ASL
	7440-39-3	Barium	83	670	mg/kg	CSS-48	12/12	NA	670	110	540	5,500	TACO	Y	ASL
	7440-43-9	Cadmium	3.2	140	mg/kg	CSS-57	12/12	NA	140	0.6	3.7	78	TACO	Y	ASL
	7440-47-3	Chromium	13	58	mg/kg	CSS-48	12/12	NA	58	16.2	22	230	TACO	Y	ASL
	7439-92-1	Lead	110	2,600	mg/kg	CSS-48	12/12	NA	2,600	36	40	400	TACO	Y	ASL
	7782-49-2	Selenium	0.73 B	3.7	mg/kg	CSS-40	10/12	0.89 - 0.98	3.7	0.48	39	390	TACO	N	BSL
	7440-22-4	Silver	0.73	57	mg/kg	CSS-57	12/12	NA	57	0.55	39	390	TACO	Y	ASL
	7440-66-6	Zinc	380	14,000	mg/kg	CSS-40&57	12/12	NA	14,000	95	2300	23,000	TACO	Y	ASL
	7439-97-6	Mercury	0.062	3.0	mg/kg	CSS-75	12/12	NA	3.0	0.06	2.3	23	TACO	Y	ASL

Footnote Instructions:

(1) B = Analyte was detected in laboratory control blank. J = Analyte concentration is estimated.

(2) Maximum detected concentration

(3) 35 IL Admin Code 742, Appendix A, Table G - Concentrations of Inorganic Chemicals in Background Soils. Counties withiin Metropolitan Statistical Areas

(4) Region 9 Preliminary Remediation Goals (PRGs) for residential soils. PRGs for non-carcinogenic effects were adjusted to a Hazard Quotient = 0.1, the lower of the carcinogenic and the adjusted non-carcinogenic-based PRG was utilized.

(5) TACO - 35 Il Admin Code 742 - Tier 1 Soil Remediation Objectives - the lower of values based upon inhalation and ingestion is presented.

(6) ASL Above screening level;. BSL = Below screening level.

NA - Not available.

Table 3a-1
RAGS PART D TABLE 3.1.RME
EXPOSURE POINT CONCENTRATION SUMMARY
REASONABLE MAXIMUM EXPOSURE
Former Old American Zinc Plating, Fairmont City, IL

Scenario Timeframe: Current/Future
Medium: Facility Area Surface Soil (fine fraction)
Exposure Medium: Facility Area Surface Soil

Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (1)	Maximum Concentration	Exposure Point Concentration (EPC)			
					Value	Units	Statistic (2)	Rationale
Arsenic	mg/kg	564.6093333	354.0426633	31000	354.0426633	mg/kg	95% H-UCL	95% UCL
Barium	mg/kg	404.64	644.8541261	4000	644.8541261	mg/kg	95% Chebyshev (Mean, Sd)	95% UCL
Cadmium	mg/kg	185.5013333	601.3656687	5000	601.3656687	mg/kg	97.5% Chebyshev (Mean, S	95% UCL
Chromium	mg/kg	41.88	74.19162589	480	74.19162589	mg/kg	95% Chebyshev (Mean, Sd)	95% UCL
Copper	mg/kg	NA	NA	NA	NA	mg/kg	NA	NA
Lead	mg/kg	4975.733333	5861.394919	110000	5861.394919	mg/kg	95% H-UCL	95% UCL
Mercury	mg/kg	6.256894667	9.111006296	210	9.111006296	mg/kg	95% H-UCL	95% UCL
Selenium	mg/kg	4.6994	5.322296419	68	5.322296419	mg/kg	95% H-UCL	95% UCL
Silver	mg/kg	69.50786667	87.33835122	340	87.33835122	mg/kg	Approximate Gamma UCL	95% UCL
Zinc	mg/kg	27588.8	34016.34977	200000	34016.34977	mg/kg	Approximate Gamma UCL	95% UCL

Statistics:

Maximum Detected Value (Max); 95% UCL of Transformed Data (95% UCL - T); 95% UCL of Normal Data (95% UCL - N); 95% UCL of Nonparametric Data (95% UCL - NP); 95% UCL of gamma distributed data (95% UCL - G)

(1) Distribution tested by ProUCL.

(2) EPA's ProUCL Ver. 3.0 was used to calculate UCLs

G = Data follow gamma distribution (determine
H-UCL = UCL calculted using lognormal data
N = Normal
NA = UCL not calculated; number of results wa
NP = Nonparametric
T = Transformed (UCL based on lognormalized
UCL = Upper Confidence Limit

Table 3a-2
RAGS PART D TABLE 3.1.RME
EXPOSURE POINT CONCENTRATION SUMMARY
REASONABLE MAXIMUM EXPOSURE
Former Old American Zinc Plating, Fairmont City, IL

Scenario Timeframe: Current/Future
Medium: Facility Area Surface/subsurface Soil (total)
Exposure Medium: Facility Area Surface/Subsurface Soil (total)

Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (1)	Maximum Concentration	Exposure Point Concentration (EPC)			
					Value	Units	Statistic (2)	Rationale
Arsenic	mg/kg	58.13092784	121.3067816	470	121.3067816	mg/kg	97.5% Chebyshev (Mean, S	95% UCL
Barium	mg/kg	258.7835052	396.3273464	2300	396.3273464	mg/kg	95% Chebyshev (Mean, Sd)	95% UCL
Cadmium	mg/kg	140.6732474	499.4637517	2500	499.4637517	mg/kg	99% Chebyshev (Mean, Sd)	95% UCL
Chromium	mg/kg	16.31134021	17.59199558	61	17.59199558	mg/kg	Student's-t UCL	95% UCL
Copper	mg/kg	NA	NA	NA	NA	mg/kg	NA	NA
Lead	mg/kg	3477.892784	11668.38362	55000	11668.38362	mg/kg	99% Chebyshev (Mean, Sd)	95% UCL
Mercury	mg/kg	11.74896186	72.08784912	540	72.08784912	mg/kg	99% Chebyshev (Mean, Sd)	95% UCL
Selenium	mg/kg	4.799845361	14.87249624	140	14.87249624	mg/kg	97.5% Chebyshev (Mean, S	95% UCL
Silver	mg/kg	28.25159794	106.9768839	500	106.9768839	mg/kg	99% Chebyshev (Mean, Sd)	95% UCL
Zinc	mg/kg	17588.30928	45211.39629	170000	45211.39629	mg/kg	95% H-UCL	95% UCL

Statistics:

Maximum Detected Value (Max); 95% UCL of Transformed Data (95% UCL - T); 95% UCL of Normal Data (95% UCL - N)
95% UCL of Nonparametric Data (95% UCL - NP); 95% UCL of gamma distributed data (95% UCL - G
(1) Distribution tested by ProUCL.
(2) EPA's ProUCL Ver. 3.0 was used to calculate UCLs

G = Data follow gamma distribution (determined by ProUCL).
H-UCL = UCL calculted using lognormal data and the H stat
N = Normal
NA = UCL not calculated; number of results was less than 1C
NP = Nonparametric
T = Transformed (UCL based on lognormalized data)
UCL = Upper Confidence Limit

Table 3a-3
RAGS PART D TABLE 3.1.RME
EXPOSURE POINT CONCENTRATION SUMMARY
REASONABLE MAXIMUM EXPOSURE
Former Old American Zinc Plating, Fairmont City, IL

Scenario Timeframe: Current/Future
Medium: Off-Facility areaSurface/Subsurface Soil (total)
Exposure Medium: Off-facility area Surface /Subsurface Soil (total)

Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (1)	Maximum Concentration	Exposure Point Concentration (EPC)			
					Value	Units	Statistic (2)	Rationale
Arsenic	mg/kg	12.38269231	14.19434267	59	14.19434267	mg/kg	Student's-t UCL	95% UCL
Barium	mg/kg	212.2115385	238.4324912	940	238.4324912	mg/kg	Student's-t UCL	95% UCL
Cadmium	mg/kg	17.24346154	20.55619347	62.5	20.55619347	mg/kg	Approximate Gamma UCL	95% UCL
Chromium	mg/kg	16.23269231	17.20167163	27	17.20167163	mg/kg	Approximate Gamma UCL	95% UCL
Copper	mg/kg	NS	NS	NS	NS	mg/kg	NS	NA
Lead	mg/kg	292.2596154	406.6123256	3500	406.6123256	mg/kg	95% H-UCL	95% UCL
Mercury	mg/kg	0.125461539	0.150623289	0.9	0.150623289	mg/kg	95% H-UCL	95% UCL
Selenium	mg/kg	0.928076923	1.018757743	2.3	1.018757743	mg/kg	Approximate Gamma UCL	95% UCL
Silver	mg/kg	0.692096154	1.044465772	11	1.044465772	mg/kg	Student's-t UCL	95% UCL
Zinc	mg/kg	1137.5	1871.731926	6800	1871.731926	mg/kg	95% Chebyshev (Mean, Sd)	95% UCL

Statistics:

Maximum Detected Value (Max); 95% UCL of Transformed Data (95% UCL - T); 95% UCL of Normal Data (95% UCL - N); 95% UCL of Nonparametric Data (95% UCL - NP); 95% UCL of gamma distributed data (95% UCL - G)

(1) Distribution tested by ProUCL.

(2) EPA's ProUCL Ver. 3.0 was used to calculate UCLs

G = Data follow gamma distribution (determined
H-UCL = UCL calculted using lognormal data an
N = Normal
NA = UCL not calculated; number of results was
NP = Nonparametric
T = Transformed (UCL based on lognormalized d
UCL = Upper Confidence Limit
NS = Not sampled

Table 3a-4
RAGS PART D TABLE 3.1.RME
EXPOSURE POINT CONCENTRATION SUMMARY
REASONABLE MAXIMUM EXPOSURE
Former Old American Zinc Plating, Fairmont City, IL

Scenario Timeframe: Current/Future
Medium: Off-site Surface Soil (fine fraction) - Residential Lots
Exposure Medium: Off-site Surface Soil (fine fraction)

Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (1)	Maximum Concentration	Exposure Point Concentration (EPC)			
					Value	Units	Statistic (2)	Rationale
Arsenic	mg/kg	11.67083333	14.8742287	51	14.8742287	mg/kg	Student's-t UCL	95% UCL
Barium	mg/kg	202.0833333	221.043037	370	221.043037	mg/kg	Approximate Gamma UCL	95% UCL
Cadmium	mg/kg	22.27083333	55.242228	180	55.242228	mg/kg	95% Chebyshev (Mean, Sd	95% UCL
Chromium	mg/kg	17.75	19.13855393	30	19.13855393	mg/kg	Approximate Gamma UCL	95% UCL
Copper	mg/kg	NA	NA	NA	NA	mg/kg	NA	NA
Lead	mg/kg	292.375	390.2742501	1600	390.2742501	mg/kg	Approximate Gamma UCL	95% UCL
Mercury	mg/kg	0.1765	0.368353639	1.1	0.368353639	mg/kg	95% Chebyshev (Mean, Sd	95% UCL
Selenium	mg/kg	1.027916667	1.163901822	2.1	1.163901822	mg/kg	Approximate Gamma UCL	95% UCL
Silver	mg/kg	1.070416667	3.007471066	11	3.007471066	mg/kg	95% Chebyshev (Mean, Sd	95% UCL
Zinc	mg/kg	1638.333333	4433.460477	16000	4433.460477	mg/kg	95% Chebyshev (Mean, Sd	95% UCL

Statistics:

Maximum Detected Value (Max); 95% UCL of Transformed Data (95% UCL - T); 95% UCL of Normal Data (95% UCL - N); 95% UCL of Nonparametric Data (95% UCL - NP); 95% UCL of gamma distributed data (95% UCL - G)

(1) Distribution tested by ProUCL.

(2) EPA's ProUCL Ver. 3.0 was used to calculate UCLs

G = Data follow gamma distribution (determined
H-UCL = UCL calculted using lognormal data a
N = Normal
NA = UCL not calculated; number of results was
NP = Nonparametric
T = Transformed (UCL based on lognormalized
UCL = Upper Confidence Limit

Table 3a-5
RAGS PART D TABLE 3.1.RME
EXPOSURE POINT CONCENTRATION SUMMARY
REASONABLE MAXIMUM EXPOSURE
Former Old American Zinc Plating, Fairmont City, IL

Scenario Timeframe: Current/Future
Medium: Facility Area Native Surface/subsurface Soil (total)
Exposure Medium: Native Facility Area Surface/Subsurface Soil (total)

Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (1)	Maximum Concentration	Exposure Point Concentration (EPC)			
					Value	Units	Statistic (2)	Rationale
Arsenic	mg/kg	7.823	8.46	22	8.46	mg/kg	95% Approximate gamma UCL	95% UCL-G
Barium	mg/kg	202.2	217.5	380	217.5	mg/kg	Student's-t UCL	95% UCL-N
Cadmium	mg/kg	126.5	550.7	1800	550.7	mg/kg	99% Chebyshev (Mean, Sd) UCL	Data do not follow a Discernable Distribution (0.05)
Chromium	mg/kg	16.55	17.7	32	17.7	mg/kg	95% Modified-t UCL	Data do not follow a Discernable Distribution (0.05)
Copper	mg/kg	1.26E+03	NS	1700	1700	mg/kg	Maximum	Data set less than 10
Lead	mg/kg	62.72	215.4	470	215.4	mg/kg	99% Chebyshev (Mean, Sd) UCL	Data do not follow a Discernable Distribution (0.05)
Mercury	mg/kg	0.0788	0.178	1.05	0.178	mg/kg	95% Chebyshev (Mean, Sd) UCL	Data do not follow a Discernable Distribution (0.05)
Selenium	mg/kg	0.8	0.874	1.7	0.874	mg/kg	95% Modified-t UCL	Data do not follow a Discernable Distribution (0.05)
Silver	mg/kg	0.427	0.707	2.2	0.707	mg/kg	95% Chebyshev (Mean, Sd) UCL	Data do not follow a Discernable Distribution (0.05)
Zinc	mg/kg	3385	4483	12000	4483	mg/kg	95% Approximate gamma UCL	95% UCL-G

Statistics:

Maximum Detected Value (Max); 95% UCL of Transformed Data (95% UCL - T); 95% UCL of Normal Data (95% UCL - N); 95% UCL of Nonparametric Data (95% UCL - NP); 95% UCL of gamma distributed data (95% UCL - G)

(1) Distribution tested by ProUCL.

(2) EPA's ProUCL Ver. 4.0 was used to calculate UCLs

G = Data follow gamma distribution (determined by ProUCL).
H-UCL = UCL calculted using lognormal data and the H stat.
N = Normal
NA = UCL not calculated; number of results was less than 10
NP = Nonparametric
T = Transformed (UCL based on lognormalized data)
UCL = Upper Confidence Limit
NS = Not sampled

Table 3a-6
RAGS PART D TABLE 3.1.RME
EXPOSURE POINT CONCENTRATION SUMMARY
REASONABLE MAXIMUM EXPOSURE
Former Old American Zinc Plating, Fairmont City, IL

Scenario Timeframe: Current/Future
Medium: Facility Area Slag Surface/subsurface Soil (0-10 ft bgs total)
Exposure Medium: Facility Area Slag Surface/Subsurface Soil (total)

Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (1)	Maximum Concentration	Exposure Point Concentration (EPC)			
					Value	Units	Statistic (2)	Rationale
Arsenic	mg/kg	108.3	208.6	470	208.6	mg/kg	95% H-UCL	95% UCL-T
Barium	mg/kg	310.9	418	2300	418	mg/kg	95% H-UCL	95% UCL-T
Cadmium	mg/kg	152.5	290.5	2500	290.5	mg/kg	95% H-UCL	95% UCL-T
Chromium	mg/kg	16.88	23.34	61	23.34	mg/kg	95% Chebyshev (Mean, Sd) UCL	Data do not follow a Discernable Distribution (0.05)
Copper	mg/kg	2690	NA	4300	4300	mg/kg	NA	NA
Lead	mg/kg	6677	19060	55000	19060	mg/kg	95% H-UCL	95% UCL-T
Mercury	mg/kg	22.28	96.82	540	96.82	mg/kg	97.5% Chebyshev (MVUE) UCL	95% UCL-T
Selenium	mg/kg	8.496	9.655	140	9.655	mg/kg	95% H-UCL	95% UCL-T
Silver	mg/kg	55.26	260.4	500	260.4	mg/kg	95% Chebyshev (MVUE) UCL	95% UCL-T
Zinc	mg/kg	34001	46222	170000	46222	mg/kg	95%Approximate Gamma UCL	95% UCL-G

Statistics:

Maximum Detected Value (Max); 95% UCL of LN-Transformed Data (95% UCL - T); 95% UCL of Normal Data (95% UCL - N); 95% UCL of Nonparametric Data (95% UCL - NP); 95% UCL of gamma distributed data (95% UCL - G)
(1) Distribution tested by ProUCL.
(2) EPA's ProUCL Ver. 3.0 was used to calculate UCLs

G = Data follow gamma distribution (determined by ProUCL).
H-UCL = UCL calculted using lognormal data and the H stat.
N = Normal
NA = UCL not calculated; number of results was less than 10
NP = Nonparametric
T = Transformed (UCL based on lognormalized data)
UCL = Upper Confidence Limit

Table 3a-7

RAGS PART D TABLE 3.1.RME
EXPOSURE POINT CONCENTRATION SUMMARY
REASONABLE MAXIMUM EXPOSURE
Former Old American Zinc Plating, Fairmont City, IL

Scenario Timeframe: Current/Future
Medium: Facility Area Native Surface Soil (fine fraction)
Exposure Medium: Facility Area Native Surface soil (fine fraction)

Chemical of *Potential Concern*	Units	Arithmetic *Mean*	95% UCL *(Distribution)* (1)	Maximum *Concentration*	Exposure Point Concentration (EPC)			
					Value	Units	Statistic (2)	Rationale
Arsenic	mg/kg	32.98	54.71	96	54.71	mg/kg	95% Approximate gamma UCL	95% UCL-G
Barium	mg/kg	274.5	354.8	670	354.8	mg/kg	Student's-t UCL	95% UCL-N
Cadmium	mg/kg	50.3	71.66	140	71.66	mg/kg	Student's-t UCL	95% UCL-N
Chromium	mg/kg	27.46	36.61	58	36.61	mg/kg	95% Approximate gamma UCL	95% UCL-G
Copper	mg/kg	NS	NS	NS	NS	mg/kg	NS	NS
Lead	mg/kg	996.2	1531	2,600	1531	mg/kg	95% Approximate gamma UCL	95% UCL-G
Mercury	mg/kg	0.609	1.415	3.0	1.415	mg/kg	95% Chebyshev (MVUE) UCL	Data do not follow a Discernable Distribution (0.05)
Selenium	mg/kg	1.41	2.016	3.7	2.016	mg/kg	95% Approximate gamma UCL	95% UCL-G
Silver	mg/kg	16.34	97.48	57	57	mg/kg	99% Chebyshev (MVUE) UCL	Data do not follow a Discernable Distribution (0.05)
Zinc	mg/kg	6722	9898	14,000	9898	mg/kg	Student's-t UCL	95% UCL-N

Statistics:

Maximum Detected Value (Max); 95% UCL of Transformed Data (95% UCL - T); 95% UCL of Normal Data (95% UCL - N); 95% UCL of Nonparametric Data (95% UCL - NP); 95% UCL of gamma distributed data (95% UCL - G)
(1) Distribution tested by ProUCL.
(2) EPA's ProUCL Ver. 4.0 was used to calculate UCLs

G = Data follow gamma distribution (determined by ProUCL).
H-UCL = UCL calculted using lognormal data and the H stat.
N = Normal
NA = UCL not calculated
NP = Nonparametric
T = Transformed (UCL based on lognormalized data)
UCL = Upper Confidence Limit
NS = Not sampled

Table 3a-8
RAGS PART D TABLE 3.1.RME
EXPOSURE POINT CONCENTRATION SUMMARY
REASONABLE MAXIMUM EXPOSURE
Former Old American Zinc Plating, Fairmont City, IL

Scenario Timeframe: Current/Future
Medium: Facility Area Slag Surface soil (fine fraction)
Exposure Medium: Facility Area Slag Surface (fine fraction)

Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (1)	Maximum Concentration	Exposure Point Concentration (EPC)			
					Value	Units	Statistic (2)	Rationale
Arsenic	mg/kg	656.4	354.6	31,000	354.6	mg/kg	97.5% Chebyshev (Mean, Sd) UCL	Data do not follow a Discernable Distribution (0.05)
Barium	mg/kg	428.8	705.8	4,000	705.8	mg/kg	95% Chebyshev (Mean, Sd) UCL	Data do not follow a Discernable Distribution (0.05)
Cadmium	mg/kg	210	694.9	5,000	694.9	mg/kg	97.5% Chebyshev (Mean, Sd) UCL	Data do not follow a Discernable Distribution (0.05)
Chromium	mg/kg	44.25	81.81	480	81.81	mg/kg	95% Chebyshev (Mean, Sd) UCL	Data do not follow a Discernable Distribution (0.05)
Copper	mg/kg	NS	NS	4,000	4000	mg/kg	NA	NA
Lead	mg/kg	5540	6233	103,000	6233	mg/kg	95% H-UCL	95% UCL-T
Mercury	mg/kg	7.122	9.9918	205	9.9918	mg/kg	95% H-UCL	95% UCL-T
Selenium	mg/kg	5.256	5.961	66	5.961	mg/kg	95% H-UCL	95% UCL-T
Silver	mg/kg	79.5	98.28	340	98.28	mg/kg	95% Approximate Gamma UCL	95% UCL-G
Zinc	mg/kg	31340	38222	200,000	38222	mg/kg	95% Approximate Gamma UCL	95% UCL-G

Statistics:

Maximum Detected Value (Max); 95% UCL of LN-Transformed Data (95% UCL - T); 95% UCL of Normal Data (95% UCL - N); 95% UCL of Nonparametric Data (95% UCL - NP); 95% UCL of gamma distributed data (95% UCL - G)

(1) Distribution tested by ProUCL.

(2) EPA's ProUCL Ver. 3.0 was used to calculate UCLs

G = Data follow gamma distribution (determined by ProUCL).
H-UCL = UCL calculted using lognormal data and the H stat.
N = Normal
NA = UCL not calculated
NP = Nonparametric
T = Transformed (UCL based on lognormalized data)
UCL = Upper Confidence Limit
NS = Not sampled

Table 3a-9
RAGS PART D TABLE 3.1.RME
EXPOSURE POINT CONCENTRATION SUMMARY
REASONABLE MAXIMUM EXPOSURE
Former Old American Zinc Plating, Fairmont City, IL

Scenario Timeframe: Current/Future
Medium: Off-Facility area Surface/Subsurface Soil (total) - Alleyways
Exposure Medium: Off-Facility Area Surface /Subsurface Soil (total)

Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (1)	Maximum Concentration	Exposure Point Concentration (EPC)			
					Value	Units	Statistic (2)	Rationale
Arsenic	mg/kg	15.15	22.63454099	65	22.63454099	mg/kg	H-UCL	95% UCL
Barium	mg/kg	207.5	267.7928167	680	267.7928167	mg/kg	Approximate Gamma UCL	95% UCL
Cadmium	mg/kg	9.433125	18.01487768	43	18.01487768	mg/kg	Approximate Gamma UCL	95% UCL
Chromium	mg/kg	21.71875	50.81118194	120	50.81118194	mg/kg	95% Chebyshev (Mean, Sd) UCL	95% UCL
Copper	mg/kg	NS	NS	NS	NS	mg/kg	NS	NA
Lead	mg/kg	597.2875	1617.598429	6600	1617.598429	mg/kg	Adjusted Gamma UCL	95% UCL
Mercury	mg/kg	0.0510625	0.071791024	0.11	0.071791024	mg/kg	Approximate Gamma UCL	95% UCL
Selenium	mg/kg	1.2890625	1.632286462	2.8	1.632286462	mg/kg	Approximate Gamma UCL	95% UCL
Silver	mg/kg	2.68625	14.88106446	18	14.88106446	mg/kg	99% Chebyshev (Mean, Sd) UCL	95% UCL
Zinc	mg/kg	1733.375	3216.638905	11000	3216.638905	mg/kg	Approximate Gamma UCL	95% UCL

Statistics:

Maximum Detected Value (Max); 95% UCL of Transformed Data (95% UCL - T); 95% UCL of Normal Data (95% UCL - N); 95% UCL of Nonparametric Data (95% UCL - NP); 95% UCL of gamma distributed data (95% UCL - G)

(1) Distribution tested by ProUCL.

(2) EPA's ProUCL Ver. 3.0 was used to calculate UCLs

G = Data follow gamma distribution (determined by Prc
H-UCL = UCL calculted using lognormal data and the I
N = Normal
NA = UCL not calculated; number of results was less th
NP = Nonparametric
T = Transformed (UCL based on lognormalized data)
UCL = Upper Confidence Limit
NS = Not sampled

Table 3a-10
RAGS PART D TABLE 3.1.RME
EXPOSURE POINT CONCENTRATION SUMMARY
REASONABLE MAXIMUM EXPOSURE
Former Old American Zinc Plating, Fairmont City, IL

Scenario Timeframe: Current/Future
Medium: Off-Facility area Surface Soil (fine fraction) - Alleyways
Exposure Medium: Off-Facility area Surface Soil (fine)

Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (1)	Maximum Concentration	Exposure Point Concentration (EPC)			
					Value	Units	Statistic (2)	Rationale
Arsenic	mg/kg	14.44	19.52	26	19.52	mg/kg	Student's t-UCL	95% UCL
Barium	mg/kg	236.3	299.3	420	299.3	mg/kg	Approximate Gamma UCL	95% UCL
Cadmium	mg/kg	14.43	20.11	29	20.11	mg/kg	Student's t-UCL	95% UCL
Chromium	mg/kg	36.38	48.94	75	48.94	mg/kg	Approximate Gamma UCL	95% UCL
Copper	mg/kg	NS	NS	NS	NS	mg/kg	NS	NA
Lead	mg/kg	361.3	515.6	760	515.6	mg/kg	Student's t-UCL	95% UCL
Mercury	mg/kg	0.0859	0.139	0.19	0.139	mg/kg	Approximate Gamma UCL	95% UCL
Selenium	mg/kg	0.854	1.081	1.5	1.081	mg/kg	Student's t-UCL	95% UCL
Silver	mg/kg	1.681	2.827	4.6	2.827	mg/kg	Approximate Gamma UCL	95% UCL
Zinc	mg/kg	1970	3473	6600	3473	mg/kg	Approximate Gamma UCL	95% UCL

Statistics:

Maximum Detected Value (Max); 95% UCL of Transformed Data (95% UCL - T); 95% UCL of Normal Data (95% UCL - N); 95% UCL of Nonparametric Data (95% UCL - NP); 95% UCL of gamma distributed data (95% UCL - G)
(1) Distribution tested by ProUCL.
(2) EPA's ProUCL Ver. 3.0 was used to calculate UCLs

G = Data follow gamma distribution (determined by Prc
H-UCL = UCL calculted using lognormal data and the H
N = Normal
NA = UCL not calculated; number of results was less th
NP = Nonparametric
T = Transformed (UCL based on lognormalized data)
UCL = Upper Confidence Limit
NS = Not sampled

Table 3b-1
RAGS PART D TABLE 3.1.RME
EXPOSURE POINT CONCENTRATION SUMMARY
REASONABLE MAXIMUM EXPOSURE
Former Old American Zinc Plating, Fairmont City, IL

Scenario Timeframe: Current/Future
Medium: Facility Area Surface Water
Exposure Medium: Facility Area Surface Water

Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (1)	Maximum Concentration	Exposure Point Concentration (EPC)			
					Value	Units	Statistic (2)	Rationale
Arsenic	mg/l	7.75E-03	NA	0.022	0.022	mg/l	MAX	UCL not calculated; number of results was less than 10
Barium	mg/l	1.04E-01	NA	0.39	0.39	mg/l	MAX	UCL not calculated; number of results was less than 10
Cadmium	mg/l	5.87E-02	NA	0.18	0.18	mg/l	MAX	UCL not calculated; number of results was less than 10
Chromium	mg/l	6.52E-03	NA	0.019	0.019	mg/l	MAX	UCL not calculated; number of results was less than 10
Copper	--	--	--	--	--	--	--	--
Lead	mg/l	1.27E-01	NA	0.27	0.27	mg/l	MAX	UCL not calculated; number of results was less than 10
Mercury	mg/l	ND	NA	ND	ND	mg/l	MAX	UCL not calculated; number of results was less than 10
Selenium	mg/l	2.85E-03	NA	0.0046	0.005	mg/l	MAX	UCL not calculated; number of results was less than 10
Silver	mg/l	1.25E+01	NA	41.5	41.5	mg/l	MAX	UCL not calculated; number of results was less than 10
Zinc	mg/l	4.23E-04	NA	0.0013	0.001	mg/l	MAX	UCL not calculated; number of results was less than 10

Statistics:

Maximum Detected Value (Max); 95% UCL of Transformed Data (95% UCL - T); 95% UCL of Normal Data (G = Data follow gamma distribution (determined by ProUCL).
95% UCL of Nonparametric Data (95% UCL - NP); 95% UCL of gamma distributed data (95% UCL - G)
(1) Distribution tested by ProUCL.
(2) EPA's ProUCL Ver. 3.0 was used to calculate UCLs

H-UCL = UCL calculted using lognormal data and the H stat.
N = Normal
NA = UCL not calculated; number of results was less than 10
NP = Nonparametric
T = Transformed (UCL based on lognormalized data)
UCL = Upper Confidence Limit
-- Not analyzed.

Table 3b-2
RAGS PART D TABLE 3.1.RME
EXPOSURE POINT CONCENTRATION SUMMARY
REASONABLE MAXIMUM EXPOSURE
Former Old American Zinc Plating, Fairmont City, IL

Scenario Timeframe: Current/Future
Medium: Off-Facility Area Surface Water
Exposure Medium: Off-Facility Area Surface Water

Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (1)	Maximum Concentration	Exposure Point Concentration (EPC)			
					Value	Units	Statistic (2)	Rationale
Arsenic	ug/l	0.0108	0.0233	0.06	0.0233	mg/L	95% Chebyshev (Mean, Sd) UCL	95% UCL
Barium	ug/l	0.172	0.405	0.895	0.405	mg/L	95% Chebyshev (Mean, Sd) UCL	95% UCL
Cadmium	ug/l	0.16	0.592	1.75	0.592	mg/L	97.5% Chebyshev (Mean, Sd) UC	95% UCL
Chromium	ug/l	0.0162	0.105	0.17	0.105	mg/L	99% Chebyshev (Mean, Sd) UCL	95% UCL
Copper	ug/l	0.249	0.876	2	0.876	mg/L	99% Chebyshev (Mean, Sd) UCL	95% UCL
Lead	ug/l	0.127	1.065	1.9	1.065	mg/L	99% Chebyshev (Mean, Sd) UCL	95% UCL
Mercury	ug/l	1.72E-04	3.48E-04	0.00079	0.00034777	mg/L	95% Chebyshev (Mean, Sd) UCL	95% UCL
Selenium	ug/l	0.00524	0.00571	0.0104	0.00571	mg/L	Student's-t UCL	95% UCL
Silver	ug/l	0.00277	0.00539	0.014	0.00539	mg/L	95% Chebyshev (Mean, Sd) UCL	95% UCL
Zinc	ug/l	25.85	184.8	260	184.8	mg/L	99% Chebyshev (Mean, Sd) UCL	95% UCL

Statistics:

Maximum Detected Value (Max); 95% UCL of Transformed Data (95% UCL - T); 95% UCL of Normal Data (95% UCL - N); 95% UCL of Nonparametric Data (95% UCL - NP); 95% UCL of gamma distributed data (95% UCL - G)

(1) Distribution tested by ProUCL.

(2) EPA's ProUCL Ver. 3.0 was used to calculate UCLs

G = Data follow gamma distribution (determined by Prol
H-UCL = UCL calculted using lognormal data and the H
N = Normal
NA = UCL not calculated; number of results was less tha
NP = Nonparametric
T = Transformed (UCL based on lognormalized data)
UCL = Upper Confidence Limit

Table 3c-1
RAGS PART D TABLE 3.1.RME
EXPOSURE POINT CONCENTRATION SUMMARY
REASONABLE MAXIMUM EXPOSURE
Former Old American Zinc Plating, Fairmont City, IL

Scenario Timeframe: Current/Future
Medium: Facility Area Sediment
Exposure Medium: Facility Area Sediment

Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (1)	Maximum Concentration	Exposure Point Concentration (EPC)			
					Value	Units	Statistic (2)	Rationale
Arsenic	mg/kg	51.90769231	81.4281854	130	81.4281854	mg/kg	Approximate Gamma	95% UCL
Barium	mg/kg	311.6153846	386.4881964	610	386.4881964	mg/kg	Student's-t UCL	95% UCL
Cadmium	mg/kg	204.8461538	363.8735313	650	363.8735313	mg/kg	Approximate Gamma	95% UCL
Chromium	mg/kg	33.84615385	47.72973477	74	47.72973477	mg/kg	Approximate Gamma	95% UCL
Copper	mg/kg	NA	NA	NA	NA	mg/kg	NA	95% UCL
Lead	mg/kg	1798.461538	2906.150464	5600	2906.150464	mg/kg	Approximate Gamma	95% UCL
Mercury	mg/kg	2.801923077	5.282536938	8.8	5.282536938	mg/kg	Approximate Gamma	95% UCL
Selenium	mg/kg	3.473846154	5.273244607	7.8	5.273244607	mg/kg	Approximate Gamma	95% UCL
Silver	mg/kg	17.92692308	32.53730231	64	32.53730231	mg/kg	Approximate Gamma	95% UCL
Zinc	mg/kg	23530.76923	38820.66495	95000	38820.66495	mg/kg	Approximate Gamma	95% UCL

Statistics:

Maximum Detected Value (Max); 95% UCL of Transformed Data (95% UCL - T); 95% UCL of Normal Data (95% UCL - N); 95% UCL of Nonparametric Data (95% UCL - NP); 95% UCL of gamma distributed data (95% UCL - G)

(1) Distribution tested by ProUCL.

(2) EPA's ProUCL Ver. 3.0 was used to calculate UCLs

G = Data follow gamma distribution (det
H-UCL = UCL calculted using lognormal
N = Normal
NA = UCL not calculated; number of resu
NP = Nonparametric
T = Transformed (UCL based on lognorm
UCL = Upper Confidence Limit

Table 3c-1
RAGS PART D TABLE 3.1.RME
EXPOSURE POINT CONCENTRATION SUMMARY
REASONABLE MAXIMUM EXPOSURE
Former Old American Zinc Plating, Fairmont City, IL

Scenario Timeframe: Current/Future
Medium: Off-Facility Area Sediment
Exposure Medium: Off-Facility Area Sediment

Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (1)	Maximum Concentration	Exposure Point Concentration (EPC)			
					Value	Units	Statistic (2)	Rationale
Arsenic	mg/kg	28.46	55.47	160	55.47	mg/kg	95% Chebyshev (Mean, Sd	95% UCL
Barium	mg/kg	252.8	283.9	640	283.9	mg/kg	Approximate Gamma UCL	95% UCL
Cadmium	mg/kg	121.9	174.3	1300	174.3	mg/kg	Approximate Gamma UCL	95% UCL
Chromium	mg/kg	43.48	81.47	250	81.47	mg/kg	95% Chebyshev (Mean, Sd	95% UCL
Copper	mg/kg	1299	2225	5300	2225	mg/kg	Approximate Gamma UCL	95% UCL
Lead	mg/kg	543.2	728.8	3350	728.8	mg/kg	Approximate Gamma UCL	95% UCL
Mercury	mg/kg	0.926	1.414	11	1.414	mg/kg	95% H-UCL	95% UCL
Selenium	mg/kg	2.191	2.767	10	2.767	mg/kg	95% H-UCL	95% UCL
Silver	mg/kg	3.072	4.317	18	4.317	mg/kg	Approximate Gamma UCL	95% UCL
Zinc	mg/kg	8515	11963	39000	11963	mg/kg	Approximate Gamma UCL	95% UCL

Statistics:

Maximum Detected Value (Max); 95% UCL of Transformed Data (95% UCL - T); 95% UCL of Normal Data (95% UCL - N); 95% UCL of Nonparametric Data (95% UCL - NP); 95% UCL of gamma distributed data (95% UCL - G)

(1) Distribution tested by ProUCL.

(2) EPA's ProUCL Ver. 3.0 was used to calculate UCLs

G = Data follow gamma distribution (determined by
H-UCL = UCL calculted using lognormal data and tl
N = Normal
NA = UCL not calculated; number of results was les
NP = Nonparametric
T = Transformed (UCL based on lognormalized data
UCL = Upper Confidence Limit

Table 3c-2
RAGS PART D TABLE 3.1.RME
EXPOSURE POINT CONCENTRATION SUMMARY
REASONABLE MAXIMUM EXPOSURE
Former Old American Zinc Plating, Fairmont City, IL

Scenario Timeframe: Current/Future
Medium: Off-Facility Area Sediment
Exposure Medium: Off-Facility Area Sediment

Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (1)	Maximum Concentration	Exposure Point Concentration (EPC)			
					Value	Units	Statistic (2)	Rationale
Arsenic	mg/kg	28.46	55.47	160	55.47	mg/kg	95% Chebyshev (Mean, Sc	95% UCL
Barium	mg/kg	252.8	283.9	640	283.9	mg/kg	Approximate Gamma UCL	95% UCL
Cadmium	mg/kg	121.9	174.3	1300	174.3	mg/kg	Approximate Gamma UCL	95% UCL
Chromium	mg/kg	43.48	81.47	250	81.47	mg/kg	95% Chebyshev (Mean, Sc	95% UCL
Copper	mg/kg	1299	2225	5300	2225	mg/kg	Approximate Gamma UCL	95% UCL
Lead	mg/kg	543.2	728.8	3350	728.8	mg/kg	Approximate Gamma UCL	95% UCL
Mercury	mg/kg	0.926	1.414	11	1.414	mg/kg	95% H-UCL	95% UCL
Selenium	mg/kg	2.191	2.767	10	2.767	mg/kg	95% H-UCL	95% UCL
Silver	mg/kg	3.072	4.317	18	4.317	mg/kg	Approximate Gamma UCL	95% UCL
Zinc	mg/kg	8515	11963	39000	11963	mg/kg	Approximate Gamma UCL	95% UCL

Statistics:

Maximum Detected Value (Max); 95% UCL of Transformed Data (95% UCL - T); 95% UCL of Normal Data (95% UCL - N); 95% UCL of Nonparametric Data (95% UCL - NP); 95% UCL of gamma distributed data (95% UCL - G)

(1) Distribution tested by ProUCL.

(2) EPA's ProUCL Ver. 3.0 was used to calculate UCLs

G = Data follow gamma distribution (determined by
H-UCL = UCL calculted using lognormal data and tl
N = Normal
NA = UCL not calculated; number of results was les
NP = Nonparametric
T = Transformed (UCL based on lognormalized data
UCL = Upper Confidence Limit

TABLE 4a-1
RAGS PART D TABLE 4.1.RME
VALUES USED FOR DAILY INTAKE CALCULATIONS
REASONABLE MAXIMUM EXPOSURE
Former Old American Zinc Site, Fairmont City, IL

Scenario Timeframe: Current/Future
Medium: Surface Soil
Exposure Medium: On /Off-Facility Area Soil

Exposure Route	Receptor Population	Receptor Age (1)	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name (2)
Ingestion	Trespasser/ Recreational User	Child age 7 to 16 yrs	Surface Soil Facility Area soil Off Facility Area soil	CS	Chemical Concentration in Soil	Chemical Specific	mg/kg	--	Chronic daily intake (CDI) (mg/kg-day)=
				IR-S	Soil Ingestion Rate	100	mg/day	EPA, 1995	CSW x IR-S x FI x CF1 x EF x ED/BW x AT
				CF1	Conversion Factor	1.00E-06	kg/mg	--	
				FI	Fraction Ingested	1	--	(3)	
				EF	Exposure Frequency	60	days/year	EPA, 1995	
				ED	Exposure Duration	10	years	EPA, 1995	
				BW	Body Weight	43	kg	EPA, 1995 (4)	
				AT-N	Averaging Time (non-cancer)	3650	days	EPA, 1989	
				AT-C	Averaging Time (cancer)	25550	days	EPA, 1989	
Dermal	Trespasser/ Recreational User	Child age 7 to 16 yrs	Surface Soil Facility Area soil Off Facility Area soil	CS	Chemical Concentration in Soil	Chemical Specific	mg/kg	--	Chronic daily intake (CDI) (mg/kg-day)=
				CF1	Conversion Factor	1.00E-06	kg/mg	--	CSW x CF1 x SA x FC x AF x ABS x EF x ED/BW x AT
				FC	Fraction of Skin Contacted	1	--	(3)	
				SA	Skin Surface Area	4300	cm^2/day	EPA, 1997; EPA, 2004 (5)	
				AF	Adherence Factor	0.2	mg/cm^2	(6)	
				ABS	Dermal Absorption Factor	Chemical Specific	unitless	(7)	
				EF	Exposure Frequency	60	days/year	EPA, 1995	
				ED	Exposure Duration	10	years	EPA, 1995	
				BW	Body Weight	43	kg	EPA, 1995 (4)	
				AT-N	Averaging Time (non-cancer)	3650	days	EPA, 1989	
				AT-C	Averaging Time (cancer)	25550	days	EPA, 1989	

Footnotes:

(1) Assumes an older children accesses the site, the trespasser is considered to be a 7 to 16 year old adolescent.

(2) Information regarding modeled intake development can be found in the exposure assessment section of the human health risk assessment.

(3) Assumes all incidental soil intake occurs when trespasser is on the site.

(4) 43 kg represents the mean body weight for boys and girls between the ages of 7 and 16 years (Table 7-3, EPA 1997 Exposure Factors Handbook).

(5) Based on information presented in Tables 6-6 and 6-7 of the 1997 Exposure Factors Handbook (EPA, 1997) and Exhibit C-1 of RAGS Part E (EPA, 2004), fiftieth percentile total body surface areas for male and female children, beginning with the 7<8 year age category and ending with the 15<16 age category, were used to derive an average total body surface area for the current trespasser/visitor. The exposed skin was assumed to be limited to the head, forearms, hands, and lower legs.

(6) The same soil adherence factor as recommended for child residents and industrial workers in EPA's RAGS Part E was used for the current on-site trespasser/visitor (EPA, 2004).

(7) In the absence of chemical-specific dermal absorption values, a default skin absorption fraction of 0.10 will be used for semivolatile organic chemicals. A default absorption for inorganics and volatile organic chemicals is no longer recommended (EPA, 2004).

EPA, 1989: Risk Assessment Guidance for Superfund. Vol. 1: Human Health Evaluation Manual, Part A. OERR. EPA/5440/1-89/002.

EPA, 1995: EPA Region VI Supplemental Risk Assessment Guidance, May 1995.

EPA, 1997: EPA Exposure Factor Handbook. EPA/600/P-95/002Fa. August 1997.

EPA, 2004: Risk Assessment Guidance for Superfund. Vol. 1: Human Health Evaluation Manual, Part E (Supplemental Guidance for Dermal Risk Assessment). Final. EPA/540/R/99/005. July 2004.

TABLE 4a-2
RAGS PART D TABLE 4.1.RME
VALUES USED FOR DAILY INTAKE CALCULATIONS
REASONABLE MAXIMUM EXPOSURE
Former Old American Zinc Site, Fairmont City, IL

Scenario Timeframe: Current/Future
Medium: On/Off Facility Area Surface Soil
Exposure Medium: Air

Exposure Route	Receptor Population	Receptor Age (1)	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name (2)
Inhalation	Trespasser/ Recreational User	Child age 7 to 16 yrs	Particulates In Outdoor Air Facility Area soil	CS	Chemical Concentration in Soil	Chemical Specific	mg/kg	--	Chronic daily intake (CDI) (mg/kg-day)=
				PEF	Particulate Emission Factor	1.43E+09	m^3/kg	EPA, 2002 (3)	CSW x (1/PEF) x IN x FInh x EF x ED/BW x AT
				IN	Inhalation Rate	13.3	m^3/day	EPA, 1997 (4)	
				FInh	Fraction Inhaled	1	--	(5)	
				EF	Exposure Frequency	60	days/year	EPA, 1995	
				ED	Exposure Duration	10	years	EPA, 1995	
				BW	Body Weight	43	kg	EPA, 1995 (6)	
				AT-N	Averaging Time (non-cancer)	3650	days	EPA, 1989	
				AT-C	Averaging Time (cancer)	25550	days	EPA, 1989	

Footnotes:

(1) Assumes an older children accesses the site, the trespasser is considered to be a 7 to 16 year old adolescent.

(2) Information regarding modeled intake development can be found in the exposure assessment section of the human health risk assessment.

(3) With the exception of the dispersion factor (Q/C wind), the PEF was calculated using all defaults (including a source area of 0.5 acres) recommended in EPA's Supplemental Soil Screening Guidance (EPA, 2002).
The dispersion factor (85.63) was based on data from Cleveland, Ohio, which is located in Zone 7 (EPA, 2002 - Appendix D).

(4) The inhalation rate was estimated as the average for children (male and female) 6-8 years, 9-11 years, 12-14 years, and 15 to 18 years old (EPA, 1997).

(5) Assumes all incidental soil intake occurs when trespasser is on the site.

(6) 43 kg represents the mean body weight for boys and girls between the ages of 7 and 16 years (Table 7-3, EPA 1997 Exposure Factors Handbook).

EPA, 1989: Risk Assessment Guidance for Superfund. Vol. 1: Human Health Evaluation Manual, Part A. OERR. EPA/5440/1-89/002.

EPA, 1995: EPA Region VI Supplemental Risk Assessment Guidance, May 1995.

EPA, 1997: EPA Exposure Factor Handbook. EPA/600/P-95/002Fa. August 1997.

EPA, 2002: Supplemental Guidance For Developing Soil Screening Levels For Superfund Sites. OSWER 9355.4-24. December 2002.

EPA, 2004: Risk Assessment Guidance for Superfund. Vol. 1: Human Health Evaluation Manual, Part E (Supplemental Guidance for Dermal Risk Assessment). Final. EPA/540/R/99/005. July 2004.

TABLE 4a-3
RAGS PART D TABLE 4.1.RME
VALUES USED FOR DAILY INTAKE CALCULATIONS
REASONABLE MAXIMUM EXPOSURE
Former Old American Zinc Site, Fairmont City, IL

Scenario Timeframe: Current/Future
Medium: On/Off Facility Area Surface Water
Exposure Medium: Surface Water

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name (1)
Dermal	Trespasser/ Recreational User	Child age 7 to 16 yrs	Surface water (incidental contact)	CW	Chemical Concentration in Surface Water	Chemical Specific	mg/L	--	Chronic daily intake (CDI) (mg/kg-day)=
				CF1	Conversion Factor	1.00E-03	liter/cm^3	--	CW x CF1 x FC x Z x EV x EF x ED x SA/BW x AT
				FC	Fraction of Skin Contacted	1	--	--	
				Z	Dermal Factor	Chemical Specific	cm/event	(3)	Calculation of Dermal Factor (Z):
				EV	Event Frequency	1	events/day	EPA, 1995	$Z_{inorganics} = Kp \times t_{event}$
				EF	Exposure Frequency	12	days/year	EPA, 2002	
				ED	Exposure Duration	10	years	EPA, 1995	Kp (cm/hr)
				SA	Skin Surface Area	4400	cm^2	EPA, 1997; EPA, 2004 (4)	Cd, Cr3, Hg, and all others: 1E-03
				BW	Body Weight	43	kg	EPA, 1995 (2)	Cr6:2E-03
				AT-N	Averaging Time (non-cancer)	3650	days	EPA, 1989	Pb: 1E-04
				AT-C	Averaging Time (cancer)	25550	days	EPA, 1989	Ag & Zn, 6E-04
				t_{event}	Duration of Event	1	hour/event	EPA, 2002 (5)	
				Kp	Dermal Permeability Coefficient	cm/hour	Chemical Specific	EPA, 2004	

Footnotes:

(1) Information regarding modeled intake development can be found in the exposure assessment section of the human health risk assessment

(2) 43 kg represents the mean body weight for boys and girls between the ages of 7 and 16 years (Table 7-3, EPA 1997 Exposure Factors Handbook).

(3) The dermal factor will be calculated according to Equations 3 2, 3 3, and 3.4 of EPA RAGS Part E (EPA, 2004) Multiplying CW and CF1 by the dermal factor (Z) yields the DAevent.

(4) Based on information presented in Tables 6-6 and 6-7 of the 1997 Exposure Factors Handbook (EPA, 1997) and Exhibit C-1 of RAGS Part E (EPA, 2004), fiftieth percentile total body surface areas for male and female children, beginning with the 7<8 year age category and ending with the 15<16 age category, were used to derive an average total body surface area for the current trespasser/visitor. The exposed skin was assumed to be limited to the face, forearms, hands, lower legs, and feet.

(5) Estimated from the recommended time spent playing on sand or gravel (Table 9-62 in EPA, 2002).

EPA, 1989: Risk Assessment Guidance for Superfund. Vol. 1: Human Health Evaluation Manual, Part A. OERR. EPA/5440/1-89/002.

EPA, 1995: EPA Region VI Supplemental Risk Assessment Guidance, May 1995.

EPA, 1997. EPA Exposure Factor Handbook. EPA/600/P-95/002Fa. August 1997

EPA, 2002: Child-Specific Exposure Factors Handbook. EPA-600-P-00-002B. September 2002 Interim Report.

EPA, 2004 Risk Assessment Guidance for Superfund. Vol. 1. Human Health Evaluation Manual, Part E (Supplemental Guidance for Dermal Risk Assessment). Final EPA/540/R/99/005. July 2004.

TABLE 4a-4
RAGS PART D TABLE 4.1.RME
VALUES USED FOR DAILY INTAKE CALCULATIONS
REASONABLE MAXIMUM EXPOSURE
Former Old American Zinc Site, Fairmont City, IL

Scenario Timeframe: Current/Future
Medium: Sediment
Exposure Medium: On-site/Off-site Sediment

Exposure Route	Receptor Population	Receptor Age (1)	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name (2)
Ingestion	Trespasser/ Recreational User	Child age 7 to 16 yrs	Sediment	CS	Chemical Concentration in Sediment	Chemical Specific	mg/kg	--	Chronic daily intake (CDI) (mg/kg-day)=
			On-site sediment	IR-S	Soil Ingestion Rate	100	mg/day	EPA, 1995	CSW x IR-S x FI x CF1 x EF x ED/BW x AT
			Off-site sediment	CF1	Conversion Factor	1.00E-06	kg/mg	--	
				FI	Fraction Ingested	1	--	(3)	
				EF	Exposure Frequency	12	days/year	EPA, 2002	
				ED	Exposure Duration	10	years	EPA, 1995	
				BW	Body Weight	43	kg	EPA, 1995 (4)	
				AT-N	Averaging Time (non-cancer)	3650	days	EPA, 1989	
				AT-C	Averaging Time (cancer)	25550	days	EPA, 1989	
Dermal	Trespasser/ Recreational User	Child age 7 to 16 yrs	Sediment	CS	Chemical Concentration in Sediment	Chemical Specific	mg/kg	--	Chronic daily intake (CDI) (mg/kg-day)=
			On-site sediment	CF1	Conversion Factor	1.00E-06	kg/mg	--	CSW x CF1 x SA x FC x AF x ABS x EF x ED/BW x AT
			Off-site sediment	FC	Fraction of Skin Contacted	1	--	(3)	
				SA	Skin Surface Area	4300	cm^2/day	EPA, 1997; EPA, 2004 (5)	
				AF	Adherence Factor	0.2	mg/cm^2	(6)	
				ABS	Dermal Absorption Factor	Chemical Specific	unitless	(7)	
				EF	Exposure Frequency	12	days/year	EPA, 2002	
				ED	Exposure Duration	10	years	EPA, 1995	
				BW	Body Weight	43	kg	EPA, 1995 (4)	
				AT-N	Averaging Time (non-cancer)	3650	days	EPA, 1989	
				AT-C	Averaging Time (cancer)	25550	days	EPA, 1989	

Footnotes:

(1) Assumes an older children accesses the site, the trespasser is considered to be a 7 to 16 year old adolescent.

(2) Information regarding modeled intake development can be found in the exposure assessment section of the human health risk assessment.

(3) Assumes all incidental soil intake occurs when trespasser is on the site.

(4) 43 kg represents the mean body weight for boys and girls between the ages of 7 and 16 years (Table 7-3, EPA 1997 Exposure Factors Handbook).

(5) Based on information presented in Tables 6-6 and 6-7 of the 1997 Exposure Factors Handbook (EPA, 1997) and Exhibit C-1 of RAGS Part E (EPA, 2004), fiftieth percentile total body surface areas for male and female children, beginning with the 7<8 year age category and ending with the 15<16 age category, were used to derive an average total body surface area for the current trespasser/visitor. The exposed skin was assumed to be limited to the head, forearms, hands, and lower legs.

(6) The same soil adherence factor as recommended for child residents and industrial workers in EPA's RAGS Part E was used for the current on-site trespasser/visitor (EPA, 2004).

(7) In the absence of chemical-specific dermal absorption values, a default skin absorption fraction of 0.10 will be used for semivolatile organic chemicals. A default absorption for inorganics and volatile organic chemicals is no longer recommended (EPA, 2004).

EPA, 1989: Risk Assessment Guidance for Superfund. Vol. 1: Human Health Evaluation Manual, Part A. OERR. EPA/5440/1-89/002.

EPA, 1995: EPA Region VI Supplemental Risk Assessment Guidance, May 1995.

EPA, 1997: EPA Exposure Factor Handbook. EPA/600/P-95/002Fa August 1997.

EPA, 2004: Risk Assessment Guidance for Superfund. Vol. 1: Human Health Evaluation Manual, Part E (Supplemental Guidance for Dermal Risk Assessment). Final. EPA/540/R/99/005. July 2004.

TABLE 4b-1
RAGS PART D TABLE 4.1.RME
VALUES USED FOR DAILY INTAKE CALCULATIONS
REASONABLE MAXIMUM EXPOSURE
Former Old American Zinc Site, Fairmont City, IL

Scenario Timeframe: Current/Future
Medium: Surface Soil
Exposure Medium: On/Off Facility Area Soil

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name (1)
Ingestion	Resident	Child	Surface Soil	CS	Chemical Concentration in Soil	Chemical Specific	mg/kg	--	Chronic daily intake (CDI) (mg/kg-day)=
			Current: Off- Facility Area soil	IR-S	Soil Ingestion Rate	200	mg/day	EPA, 1991a	CS x IR-S x CF1 x FI x EF x ED/BW x AT
			Future: Facility Area soil	CF1	Conversion Factor	1.00E-06	kg/mg	--	
				FI	Fraction Ingested	1	--	(2)	
				EF	Exposure Frequency	350	days/year	EPA, 1991a	
				ED	Exposure Duration	6	years	EPA, 1991a	
				BW	Body Weight	15	kg	EPA, 1991a	
				AT-N	Averaging Time (non-cancer)	2190	days	EPA, 1989	
				AT-C	Averaging Time (cancer)	25550	days	EPA, 1989	
		Child/Adult	Surface Soil	CS	Chemical Concentration in Soil	Chemical Specific	mg/kg	--	Chronic daily intake (CDI) (mg/kg-day)=
			Current: Off- Facility Area soil	IR-Sadj	Age Adjusted Soil Ingestion Rate	114.29	(mg-yr)/(kg-d)	EPA, 1991b (3)	CS x IR-Sadj x CF1 x FI x EF/AT-C
			Future: Facility Area soil	CF1	Conversion Factor	1.00E-06	kg/mg	--	
				FI	Fraction Ingested	1	--	(2)	
				EF	Exposure Frequency	350	days/year	EPA, 1991a	
				AT-C	Averaging Time (cancer)	25550	days	EPA, 1989	

Footnotes:

(1) Information regarding modeled intake development can be found in the exposure assessment section of the human health risk assessment.

(2) A fraction ingested of 1 will be used for residential and industrial exposure to on-site soil.

(3) The age adjusted soil ingestion factor was calculated according to Equation 3 in EPA RAGS Part B (EPA, 1991b).

EPA, 1989: Risk Assessment Guidance for Superfund. Vol. 1: Human Health Evaluation Manual, Part A. OERR. EPA/5440/1-89/002.

EPA, 1991a: Risk Assessment Guidance for Superfund, Volume 1 - Human Health Evaluation Manual Supplemental Guidance, "Standard Default Exposure Factors." Interim Final. OSWER Directive 9285.6-03.

EPA, 1991b: Risk Assessment Guidance for Superfund. Vol. 1: Human Health Evaluation Manual (Part B, Development of Risk-based Preliminary Remediation Goals).

TABLE 4b-2
RAGS PART D TABLE 4.1.RME
VALUES USED FOR DAILY INTAKE CALCULATIONS
REASONABLE MAXIMUM EXPOSURE
Former Old American Zinc Site, Fairmont City, IL

Scenario Timeframe: Current/Future
Medium: Surface Soil
Exposure Medium: Off/On Facility Area Soil

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name (1)
Dermal	Resident	Child	Surface Soil	CS	Chemical Concentration in Soil	Chemical Specific	mg/kg	--	Chronic daily intake (CDI) (mg/kg-day)=
			Current: Off Facility Area soil	CF1	Conversion Factor	1.00E-06	kg/mg	--	CS x CF1 x SA x FC x AF x ABS x EF x ED/BW x AT
			Future: Facility Area soil	FC	Fraction of Skin Contacted	1	--	(2)	
				SA	Skin Surface Area	2800	cm^2/day	EPA, 2004	
				AF	Adherence Factor	0.2	mg/cm^2	EPA, 2004	
				ABS	Dermal Absorption Factor	Chemical Specific	unitless	(3)	
				EF	Exposure Frequency	350	days/year	EPA, 1991a	
				ED	Exposure Duration	6	years	EPA, 1991a	
				BW	Body Weight	15	kg	EPA, 1991a	
				AT-N	Averaging Time (non-cancer)	2190	days	EPA, 1989	
				AT-C	Averaging Time (cancer)	25550	days	EPA, 1989	
		Child/Adult	Surface Soil	CS	Chemical Concentration in Soil	Chemical Specific	mg/kg	--	Chronic daily intake (CDI) (mg/kg-day)=
			Current: Off Facility Area soil	CF1	Conversion Factor	1.00E-06	kg/mg	--	CS x CF1 x SAadj x FC x ABS x EF/AT-C
			Future: Facility Area soil	FC	Fraction of Skin Contacted	1	--	(2)	
				SAadj	Age Adjusted Dermal Exposure Factor	360.80	(mg-yr)/(kg-d)	EPA, 1991b (4)	
				ABS	Dermal Absorption Factor	Chemical Specific	unitless	(3)	
				EF	Exposure Frequency	350	days/year	EPA, 1991a	
				AT-C	Averaging Time (cancer	25550	days	EPA, 1989	

Footnotes:

(1) Information regarding modeled intake development can be found in the exposure assessment section of the human health risk assessment.

(2) A fraction of skin contacted of 1 will be used for residential and industrial exposure to on-site soil.

(3) In the absence of chemical-specific dermal absorption values, a default skin absorption fraction of 0.10 will be used for semivolatile organic chemicals.

A default absorption for inorganics and volatile organic chemicals is no longer recommended (EPA, 2004).

(4) The age adjusted dermal exposure factor was calculated according to Equation 3.21 in EPA RAGS Part E (EPA, 2004).

EPA, 1989: Risk Assessment Guidance for Superfund. Vol. 1: Human Health Evaluation Manual, Part A. OERR. EPA/5440/1-89/002.

EPA, 1991a: Risk Assessment Guidance for Superfund, Volume I - Human Health Evaluation Manual Supplemental Guidance, "Standard Default Exposure Factors." Interim Final OSWER Directive 9285.6-03.

EPA, 1991b: Risk Assessment Guidance for Superfund. Vol. 1: Human Health Evaluation Manual (Part B, Development of Risk-based Preliminary Remediation Goals).

EPA, 2004: Risk Assessment Guidance for Superfund. Vol. 1: Human Health Evaluation Manual, Part E (Supplemental Guidance for Dermal Risk Assessment) Final. EPA/540/R/99/005. July 2004.

TABLE 4b-3
RAGS PART D TABLE 4.1.RME
VALUES USED FOR DAILY INTAKE CALCULATIONS
REASONABLE MAXIMUM EXPOSURE
Former Old American Zinc Site, Fairmont City, IL

Scenario Timeframe: Current/Future
Medium: On/Off Facility Area Surface Soil
Exposure Medium: Air

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name (1)
Inhalation	Resident	Child	Particulates In Outdoor Air	CS	Chemical Concentration in Soil	Chemical Specific	mg/kg	--	Chronic daily intake (CDI) (mg/kg-day)=
			Current: Off Facility Area soil	PEF	Particulate Emission Factor	1.43E+09	m^3/kg	EPA, 2002 (2)	CS x (1/PEF) x IN x FInh x EF x ED/BW x AT
			Future: Facility Area soil	IN	Inhalation Rate	10	m^3/day	EPA, 1997 (3)	
				FInh	Fraction Inhaled	1	--	(4)	
				EF	Exposure Frequency	350	days/year	EPA, 1991a	
				ED	Exposure Duration	6	years	EPA, 1991a	
				BW	Body Weight	15	kg	EPA, 1991a	
				AT-N	Averaging Time (non-cancer)	2190	days	EPA, 1989	
				AT-C	Averaging Time (cancer)	25550	days	EPA, 1989	
		Child/Adult	Particulates In Outdoor Air	CS	Chemical Concentration in Soil	Chemical Specific	mg/kg	--	Chronic daily intake (CDI) (mg/kg-day)=
			Current: Off Facility Area soil	PEF	Particulate Emission Factor	1.43E+09	m^3/kg	EPA, 2002 (2)	CS x (1/PEF) x INadj x FInh x EF/AT-C
			Future: Facility Area soil	INadj	Age Adjusted Inhalation Rate	10.86	(m^3-yr)/(kg-d)	EPA, 1991b (6)	
				FInh	Fraction Inhaled	1	--	(4)	
				EF	Exposure Frequency	350	days/year	EPA, 1991a	
				AT-C	Averaging Time (cancer)	25550	days	EPA, 1989	

Footnotes:

(1) Information regarding modeled intake development can be found in the exposure assessment section of the human health risk assessment.

(2) With the exception of the dispersion factor (Q/C wind), the PEF was calculated using all defaults (including a source area of 0.5 acres) recommended in EPA's Supplemental Soil Screening Guidance (EPA, 2002).
The dispersion factor (85.63) was based on data from Cleveland, Ohio, which is located in Zone 7 (EPA, 2002 - Appendix D).

(3) The inhalation rate was estimated as the maximum rate for children 1-2 years, 3-5 years, and 6-8 years old (EPA, 1997).

(4) A fraction inhaled of 1 will be used for residential and industrial exposure to on-site soil.

(5) The inhalation rate was estimated as a full residential daily exposure utilizing the adult hourly rates in Table 5-23 of the Exposures Factor Handbook and assuming 8 hours of rest, 8 hours of sedentary activity, and 8 hours of moderate activity (EPA, 1997).

(6) The age adjusted soil inhalation factor was calculated by analogy to methods described in EPA RAGS Part B (EPA, 1991b)

EPA, 1989: Risk Assessment Guidance for Superfund. Vol. 1: Human Health Evaluation Manual, Part A. OERR. *EPA/5440/1-89/002.*

EPA, 1991a: Risk Assessment Guidance for Superfund, Volume I - Human Health Evaluation Manual Supplemental Guidance, "Standard Default Exposure Factors." Interim Final. OSWER Directive 9285.6-03.

EPA, 1991b: Risk Assessment Guidance for Superfund. Vol. 1: Human Health Evaluation Manual (Part B, Development of Risk-based Preliminary Remediation Goals).

EPA, 1997: EPA Exposure Factor Handbook. EPA/600/P-95/002Fa. August 1997.

EPA, 2002: *Supplemental Guidance For* Developing Soil Screening Levels For Superfund Sites. OSWER 9355.4-24, December 2002.

EPA, 2004: Risk Assessment Guidance for Superfund. Vol. 1: Human Health Evaluation Manual, Part E (Supplemental Guidance for Dermal Risk Assessment). Final. EPA/540/R/99/005. July 2004.

TABLE 4b-4
RAGS PART D TABLE 4.1.RME
VALUES USED FOR DAILY INTAKE CALCULATIONS
REASONABLE MAXIMUM EXPOSURE
Former Old American Zinc Site, Fairmont City, IL

Scenario Timeframe: Current/Future
Medium: Surface Water
Exposure Medium: Off-Facility Surface Water

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name (1)
Dermal	Resident	Child	Surface Water	CW	Chemical Concentration in Groundwater	Chemical Specific	mg/L	--	Chronic daily intake (CDI) (mg/kg-day)=
		Age 7 to 16 years	Off-Facility Area	CF1	Conversion Factor	1.00E-03	liter/cm^3	--	CW x CF1 x FC x Z x EV x EF x ED x SA/BW x AT
				FC	Fraction of Skin Contacted	1	--	--	
				Z	Dermal Factor	Chemical Specific	cm/event	(2)	Calculation of Dermal Factor (Z):
				EV	Event Frequency	1	events/day	EPA, 1995	$Z_{inorganics} = Kp \times t_{event}$
				EF	Exposure Frequency	6	days/year	EPA, 2002	
				ED	Exposure Duration	10	years	EPA, 1991a	Kp (cm/hr)
				SA	Skin Surface Area	4400	cm^2	EPA, 1997; EPA, 2004 (4)	Cd, Cr3, Hg, and all others: 1E-03
				BW	Body Weight	43	kg	EPA, 1995 (5)	Cr6:2E-03
				AT-N	Averaging Time (non-cancer)	3650	days	EPA, 1989	Pb: 1E-04
				AT-C	Averaging Time (cancer)	25550	days	EPA, 1989	Ag & Zn: 6E-04
				FA	Fraction absorbed water	unitless	Chemical Specific	EPA, 2004	
				t_{event}	Duration of Event	1	hour/event	EPA, 2004	
				Kp	Dermal Permeability Coefficient	cm/hour	Chemical Specific	EPA, 2004	
		Child/Adult	Surface Water	CW	Chemical Concentration in Surface Water	Chemical Specific	mg/L	--	Chronic daily intake (CDI) (mg/kg-day)=
			Off-Facility Area	CF1	Conversion Factor	1.00E-03	liter/cm^3	--	CW x CF1 x FC x Z x EV x EF x SAadj/AT-C
				FC	Fraction of Skin Contacted	1	--	--	
				Z	Dermal Factor	Chemical Specific	cm/event	(2)	Calculation of Dermal Factor (Z):

TABLE 4b-5
RAGS PART D TABLE 4.1.RME
VALUES USED FOR DAILY INTAKE CALCULATIONS
REASONABLE MAXIMUM EXPOSURE
Former Old American Zinc Site, Fairmont City, IL

Scenario Timeframe: Current/Future
Medium: Sediment
Exposure Medium: Off-Facility Sediment

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name (1)
Ingestion	Resident	Child Age 7 to 16	Sediment Off-Facility Area	CS	Chemical Concentration in Soil	Chemical Specific	mg/kg	--	Chronic daily intake (CDI) (mg/kg-day)= CS x IR-S x CF1 x FI x EF x ED/BW x AT
				IR-S	Sediment Ingestion Rate	100	mg/day	EPA, 1991a	
				CF1	Conversion Factor	1.00E-06	kg/mg	--	
				FI	Fraction Ingested	1	--	(2)	
				EF	Exposure Frequency	6	days/year	EPA, 2002	
				ED	Exposure Duration	10	years	EPA, 1991a	
				BW	Body Weight	43	kg	EPA, 1991a	
				AT-N	Averaging Time (non-cancer)	3650	days	EPA, 1989	
				AT-C	Averaging Time (cancer)	25550	days	EPA, 1989	
		Child/Adult	Sediment Off-Facility Area	CS	Chemical Concentration in Soil	Chemical Specific	mg/kg	--	Chronic daily intake (CDI) (mg/kg-day)= CS x IR-Sadj x CF1 x FI x EF/AT-C
				IR-Sadj	Age Adjusted Soil Ingestion Rate	51.82	(mg-yr)/(kg-d)	EPA, 1991b (3)	
				CF1	Conversion Factor	1.00E-06	kg/mg	--	
				FI	Fraction Ingested	1	--	(2)	
				EF	Exposure Frequency	6	days/year	EPA, 1991a	
				AT-C	Averaging Time (cancer)	25550	days	EPA, 1989	

Footnotes:

(1) *Information regarding modeled intake development can be found in the exposure assessment section of the human health risk assessment.*

(2) A fraction ingested of 1 was used for residential and industrial exposure to sediment

(3) The age adjusted soil ingestion factor was calculated according to Equation 3 in EPA RAGS Part B (EPA, 1991b).

EPA, 1989: Risk Assessment Guidance for Superfund. Vol. 1: Human Health Evaluation Manual, Part A. OERR. EPA/5440/1-89/002.

EPA, 1991a: Risk Assessment Guidance for Superfund, Volume I - Human Health Evaluation Manual Supplemental Guidance, "Standard Default Exposure Factors." Interim Final. OSWER Directive 9285.6-03.

EPA, 1991b: Risk Assessment Guidance for Superfund. Vol. 1: Human Health Evaluation Manual (Part B, Development of Risk-based Preliminary Remediation Goals).

TABLE 4b-6
RAGS PART D TABLE 4.1.RME
VALUES USED FOR DAILY INTAKE CALCULATIONS
REASONABLE MAXIMUM EXPOSURE
Former Old American Zinc Site, Fairmont City, IL

Scenario Timeframe: Current/Future
Medium: Sediment
Exposure Medium: Off-Facility Sediment

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name (1)
Dermal	Resident	Child Age 7 to 16 years	Sediment Off-Facility Area	CS	Chemical Concentration in Soil	Chemical Specific	mg/kg	--	Chronic daily intake (CDI) (mg/kg-day)=
				CF1	Conversion Factor	1.00E-06	kg/mg	--	CS x CF1 x SA x FC x AF x ABS x EF x ED/BW x AT
				FC	Fraction of Skin Contacted	1	--	(2)	
				SA	Skin Surface Area	4400	cm^2/day	EPA, 2004	
				AF	Adherence Factor	0.2	mg/cm^2	EPA, 2004	
				ABS	Dermal Absorption Factor	Chemical Specific	unitless	(3)	
				EF	Exposure Frequency	6	days/year	EPA, 2002	
				ED	Exposure Duration	10	years	EPA, 1991a	
				BW	Body Weight	43	kg	EPA, 1991a	
				AT-N	Averaging Time (non-cancer)	3540	days	EPA, 1989	
				AT-C	Averaging Time (cancer)	25550	days	EPA, 1989	
		Child/Adult	Sediment Off-Facility Area	CS	Chemical Concentration in Soil	Chemical Specific	mg/kg	--	Chronic daily intake (CDI) (mg/kg-day)=
				CF1	Conversion Factor	1.00E-06	kg/mg	--	CS x CF1 x SAadj x FC x ABS x EF/AT-C
				FC	Fraction of Skin Contacted	1	--	(2)	
				SAadj	Age Adjusted Dermal Exposure Factor	314	(mg-yr)/(kg-d)	EPA, 1991b (4)	
				ABS	Dermal Absorption Factor	Chemical Specific	unitless	(3)	
				EF	Exposure Frequency	6	days/year	EPA, 2002	
				AT-C	Averaging Time (cancer	25550	days	EPA, 1989	

Footnotes:

(1) Information regarding modeled intake development can be found in the exposure assessment section of the human health risk assessment.

(2) A fraction of skin contacted of 1 will be used for residential and industrial exposure to on-site soil.

(3) In the absence of chemical-specific dermal absorption values, a default skin absorption fraction of 0.10 will be used for semivolatile organic chemicals.

A default absorption for inorganics and volatile organic chemicals is no longer recommended (EPA, 2004).

(4) The age adjusted dermal exposure factor was calculated according to Equation 3.21 in EPA RAGS Part E (EPA, 2004).

EPA, 1989: Risk Assessment Guidance for Superfund. Vol. 1: Human Health Evaluation Manual, Part A. OERR. EPA/5440/1-89/002.

EPA, 1991a: Risk Assessment Guidance for Superfund, Volume I - Human Health Evaluation Manual Supplemental Guidance, "Standard Default Exposure Factors." Interim Final. OSWER Directive 9285.6-03.

EPA, 1991b: Risk Assessment Guidance for Superfund. Vol. 1: Human Health Evaluation Manual (Part B, Development of Risk-based Preliminary Remediation Goals).

EPA, 2004: Risk Assessment Guidance for Superfund. Vol. 1: Human Health Evaluation Manual, Part E (Supplemental Guidance for Dermal Risk Assessment). Final. EPA/540/R/99/005. July 2004.

TABLE 4b-7
RAGS PART D TABLE 4.1.RME
VALUES USED FOR DAILY INTAKE CALCULATIONS
REASONABLE MAXIMUM EXPOSURE
Former Old American Zinc Site, Fairmont City, IL

Scenario Timeframe: *Current/Future*
Medium: Surface Soil
Exposure Medium Off-Facility Homegrown Produce

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name (1)
Produce Ingestion	Resident	Child	Produce	Cp	Chemical Concentration in Produce	Chemical Specific (4)	mg/kg	--	Chronic daily intake (CDI) (mg/kg-day)=
				IR-P	Produce Ingestion Rate	0.0375	kg/day	EPA, 2005e	Cp x IR-p x FI x EF x ED/BW x AT
				FI	Fraction Ingested	0.15	--	(2)	
				EF	Exposure Frequency	350	days/year	EPA, 1991a	
				ED	Exposure Duration	6	years	EPA, 1991a	
				BW	Body Weight	15	kg	EPA, 1991a	
				AT-N	Averaging Time (non-cancer)	2190	days	EPA, 1989	
				AT-C	Averaging Time (cancer)	25550	days	EPA, 1989	
		Child/Adult	Produce	Cp	Chemical Concentration in Produce	Chemical Specific (4)	mg/kg	--	Chronic daily intake (CDI) (mg/kg-day)=
				IR-Padj	Age Adjusted Soil Ingestion Rate	0.041	(mg-yr)/(kg-d)	EPA, 1991b (3)	Cp x IR-Padj x FI x EF/AT-C
				FI	Fraction Ingested	0.15	--	(2)	
				EF	Exposure Frequency	350	days/year	EPA, 1991a	
				AT-C	Averaging Time (cancer)	25550	days	EPA, 1989	

Footnotes:

(1) Information regarding modeled intake development can be found in the exposure assessment section of the human health risk assessment.

(2) A fraction ingested of 0.15 was assumed, representing the % produce ingested that is home grown (EPA, 1997).

(3) The age adjusted soil ingestion factor was calculated according to Equation 3 in EPA RAGS Part B (EPA, 1991b).

(4) Plant concentrations estimate from soil using following equations from EPA 2005 to estimate aboveground and belowgrown produce concentrations.

Aboveground Produce:

$Cap = Br * Csoil$

Belowground Produce:

$Cbp = RCF * VGrootveg * Csoil * 1/Kds * 0.1\ L/kg$

Total Produce:

$Cp = Cap + Cbp$

Where:

Cap =	Concentration of COPC in aboveground portion of plant (mg/kg)
Br =	Plant-soil bioaccumulation factor for produce (unitless, chemical specific)
Csoil =	Concentration of COPC in soil (mg/kg)
Cbp =	Concentration of COPC in belowground portion of plant (mg/kg)
RCF =	Root Concentration Factor (unitless; chemical specific)
VGroot veg =	Empirical correction for below ground produce (unitless) (0.01 for all COPC at this site based on LogKow <4)
Kds =	Soil/water partitioning coefficient (L/kg) (chemical specific)
Cp =	Chemical concentration in produce due to root uptake (mg/kg)

EPA, 1989: Risk Assessment Guidance for Superfund. Vol 1. Human Health Evaluation Manual, Part A. OERR. EPA/5440/1-89/002

EPA, 1991a: Risk Assessment Guidance for Superfund, Volume I - Human Health Evaluation Manual Supplemental Guidance, "Standard Default Exposure Factors." Interim Final. OSWER Directive 9285.6-03.

EPA, 1991b: Risk Assessment Guidance for Superfund. Vol. 1: Human Health Evaluation Manual (Part B, Development of Risk-based Preliminary Remediation Goals).

EPA, 2005b

TABLE 4c-1
RAGS PART D TABLE 4.1.RME
VALUES USED FOR DAILY INTAKE CALCULATIONS
REASONABLE MAXIMUM EXPOSURE
Former Old American Zinc Site, Fairmont City, IL

Scenario Timeframe: Current/Future
Medium: Surface Soil
Exposure Medium: Facility Area Surface Soil

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name (1)
Ingestion	Commercial/ Industrial Worker	Adult	Surface soil. Current/Future: Facility Area soil	CS	Chemical Concentration in Soil	Chemical Specific	mg/kg	--	Chronic daily intake (CDI) (mg/kg-day)=
				IR-S	Soil Ingestion Rate	50	mg/day	EPA, 2004b	CS x IR-S x FI x CF1 x EF x ED/BW x AT
				CF1	Conversion Factor	1.00E-06	kg/mg	--	
				FI	Fraction Ingested	1	--	(2)	
				EF	Exposure Frequency	250	days/year	EPA, 1991a	
				ED	Exposure Duration	25	years	EPA, 1991a	
				BW	Body Weight	70	kg	EPA, 1991a	
				AT-N	Averaging Time (non-cancer)	9125	days	EPA, 1989	
				AT-C	Averaging Time (cancer)	25550	days	EPA, 1989	
Dermal	Commercial/ Industrial Worker	Adult	Surface Soil Current/Future: Facility Area soil	CS	Chemical Concentration in Soil	Chemical Specific	mg/kg	--	Chronic daily intake (CDI) (mg/kg-day)=
				CF1	Conversion Factor	1.00E-06	kg/mg	--	CS x CF1 x SA x FC x AF x ABS x EF x ED/BW x AT
				FC	Fraction of Skin Contacted	1	--	(2)	
				SA	Skin Surface Area	3300	cm^2/day	EPA, 2004	
				AF	Adherence Factor	0.2	mg/cm^2	EPA, 2004	
				ABS	Dermal Absorption Factor	Chemical Specific	unitless	--	
				EF	Exposure Frequency	250	days/year	EPA, 1991a	
				ED	Exposure Duration	25	years	EPA, 1991a	
				BW	Body Weight	70	kg	EPA, 1991a	
				AT-N	Averaging Time (non-cancer)	9125	days	EPA, 1989	
				AT-C	Averaging Time (cancer)	25550	days	EPA, 1989	

Footnotes:

(1) Information regarding modeled intake development can be found in the exposure assessment section of the human health risk assessment.

(2) The soil ingestion rate is recommended for an outdoor worker (EPA, 2002).

(2) A fraction ingested and of skin contacted of 1 will be used for residential and industrial exposure to on-site soil.

EPA, 1989: Risk Assessment Guidance for Superfund. Vol. 1: Human Health Evaluation Manual, Part A. OERR. EPA/5440/1-89/002.

EPA, 1991a: Risk Assessment Guidance for Superfund, Volume 1 - Human Health Evaluation Manual Supplemental Guidance, "Standard Default Exposure Factors." Interim Final. OSWER Directive 9285.6-03.

EPA, 2002: Supplemental Guidance For Developing Soil Screening Levels For Superfund Sites. OSWER 9355.4-24. December 2002.

EPA, 2004a: Risk Assessment Guidance for Superfund. Vol. 1: Human Health Evaluation Manual, Part E (Supplemental Guidance for Dermal Risk Assessment). Final. EPA/540/R/99/005. July 2004.

TABLE 4c-2
RAGS PART D TABLE 4.1.RME
VALUES USED FOR DAILY INTAKE CALCULATIONS
REASONABLE MAXIMUM EXPOSURE
Former Old American Zinc Site, Fairmont City, IL

Scenario Timeframe: Current/Future
Medium: Facility Area surface Soil
Exposure Medium: Air

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name (1)
Inhalation	Commercial/ Industrial Worker	Adult	Particulates In Outdoor Air Current/Future: Facility Area soil	CS	Chemical Concentration in Soil	Chemical Specific	mg/kg	--	Chronic daily intake (CDI) (mg/kg-day)=
				PEF	Particulate Emission Factor	1.43E+09	m^3/kg	EPA, 2002 (2)	CS x (1/PEF) x IN x FInh x EF x ED/BW x AT
				IN	Inhalation Rate	20	m^3/day	EPA, 2004b	
				FInh	Fraction Inhaled	1	--	(4)	
				EF	Exposure Frequency	250	days/year	EPA, 1991a	
				ED	Exposure Duration	25	years	EPA, 1991a	
				BW	Body Weight	70	kg	EPA, 1991a	
				AT-N	Averaging Time (non-cancer)	9125	days	EPA, 1989	
				AT-C	Averaging Time (cancer)	25550	days	EPA, 1989	

Footnotes:

(1) Information regarding modeled intake development can be found in the exposure assessment section of the human health risk assessment.

(2) With the exception of the dispersion factor (Q/C wind), the PEF was calculated using all defaults (including a source area of 0.5 acres) recommended in EPA's Supplemental Soil Screening Guidance (EPA, 2002).
The dispersion factor (85.63) was based on data from Cleveland, Ohio, which is located in Zone 7 (EPA, 2002 - Appendix D).

(3) The inhalation rate was estimated based on that recommended for an adult male (EPA, 1997).

(4) A fraction inhaled of 1 will be used for residential and industrial exposure to on-site soil.

(5) Chemical specific. Volatilization factors will be determined based on methodologies presented in the EPA's Supplemental Guidance For Developing Soil Screening Levels For Superfund Sites (EPA, 2002).
Site specific values (e.g., Q/C vol) will be used when available.

EPA, 1989: Risk Assessment Guidance for Superfund. Vol. 1: Human Health Evaluation Manual, Part A. OERR. EPA/5440/1-89/002.

EPA, 1991a: Risk Assessment Guidance for Superfund, Volume I - Human Health Evaluation Manual Supplemental Guidance, "Standard Default Exposure Factors." Interim Final. OSWER Directive 9285.6-03.

EPA, 1997: EPA Exposure Factor Handbook. EPA/600/P-95/002Fa. August 1997.

EPA, 2002: Supplemental Guidance For Developing Soil Screening Levels For Superfund Sites. OSWER 9355.4-24. December 2002.

EPA, 2004: Risk Assessment Guidance for Superfund. Vol. 1: Human Health Evaluation Manual, Part E (Supplemental Guidance for Dermal Risk Assessment). Final. EPA/540/R/99/005. July 2004.

TABLE 4c-3
RAGS PART D TABLE 4.1.RME
VALUES USED FOR DAILY INTAKE CALCULATIONS
REASONABLE MAXIMUM EXPOSURE
Former Old American Zinc Site, Fairmont City, IL

Scenario Timeframe: Current/Future
Medium: Facility Area Surface Water
On-site Exposure Medium: Surface Water

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name (1)
Dermal	Commercial/ Industrial Worker	Adult	Surface water	CW	Chemical Concentration in Surface Water	Chemical Specific	mg/L	--	Chronic daily intake (CDI) (mg/kg-day)=
			(incidental contact)	CF1	Conversion Factor	1.00E-03	liter/cm^3	--	CW x CF1 x FC x Z x EV x EF x ED x SA/BW x AT
			Current/Future. Facility Area surface water	FC	Fraction of Skin Contacted	1	--	--	
				Z	Dermal Factor	Chemical Specific	cm/event	(2)	Calculation of Dermal Factor (Z):
				EV	Event Frequency	1	events/day	EPA, 1995	$Z_{inorganics} = Kp \times t_{event}$
				EF	Exposure Frequency	26	days/year	Estimated; 0.5 day per week	
				ED	Exposure Duration	25	years	EPA, 1995	Kp (cm/hr)
				SA	Skin Surface Area	3300	cm^2	EPA, 2004a	Cd, Cr3, Hg, and all others. 1E-03
				BW	Body Weight	70	kg	EPA, 1995	Cr6:2E-03
				AT-N	Averaging Time (non-cancer)	9125	days	EPA, 1989	Pb: 1E-04
				AT-C	Averaging Time (cancer)	25550	days	EPA, 1989	Ag & Zn: 6E-04
				t_{event}	Duration of Event	1	hour/event	estimated	
				Kp	Dermal Permeability Coefficient	cm/hour	Chemical Specific	EPA, 2004a	

Footnotes:

(1) Information regarding modeled intake development can be found in the exposure assessment section of the human health risk assessment.

(2) The dermal factor will be calculated according to Equations 3.2, 3.3, and 3.4 of EPA RAGS Part E (EPA, 2004). Multiplying CW and CF1 by the dermal factor (Z) yields the DAevent.

EPA, 1989: Risk Assessment Guidance for Superfund. Vol. 1: Human Health Evaluation Manual. Part A. OERR. EPA/5440/1-89/002.

EPA, 1995: EPA Region VI Supplemental Risk Assessment Guidance, May 1995.

EPA, 1997: EPA Exposure Factor Handbook. EPA/600/P-95/002Fa. August 1997.

EPA, 2002: Child-Specific Exposure Factors Handbook. EPA-600-P-00-002B. September 2002. Interim Report.

EPA, 2004a: *Risk Assessment Guidance for Superfund. Vol. 1: Human Health Evaluation Manual, Part E (Supplemental Guidance for Dermal Risk Assessment). Final.* EPA/540/R/99/005. July 2004.

TABLE 4c-4
RAGS PART D TABLE 4.1.RME
VALUES USED FOR DAILY INTAKE CALCULATIONS
REASONABLE MAXIMUM EXPOSURE
Former Old American Zinc Site, Fairmont City, IL

Scenario Timeframe: Current/Future
Medium: Sediment
Exposure Medium: On-site Sediment

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name (1)
Ingestion	Commercial/ Industrial Worker	Adult	Sediment	CS	Chemical Concentration in Sediment	Chemical Specific	mg/kg	--	Chronic daily intake (CDI) (mg/kg-day)=
			Current/Future - on-site sediment	IR-S	Soil Ingestion Rate	50	mg/day	EPA, 2004b	CSW x IR-S x FI x CF1 x EF x ED/BW x AT
				CF1	Conversion Factor	1.00E-06	kg/mg	--	
				FI	Fraction Ingested	1	--	(2)	
				EF	Exposure Frequency	26	days/year	Estimated; 0.5 day per week	
				ED	Exposure Duration	25	years	EPA, 2002	
				BW	Body Weight	70	kg	EPA, 2002	
				AT-N	Averaging Time (non-cancer)	9125	days	EPA, 1989	
				AT-C	Averaging Time (cancer)	25550	days	EPA, 1989	
Dermal	Commercial/ Industrial Worker	Adult	Sediment	CS	Chemical Concentration in Sediment	Chemical Specific	mg/kg	--	Chronic daily intake (CDI) (mg/kg-day)=
			(incidental contact)	CF1	Conversion Factor	1.00E-06	kg/mg	--	CSW x CF1 x SA x FC x AF x ABS x EF x ED/BW x AT
			Current/Future - on-site sediment	FC	Fraction of Skin Contacted	1	--	(2)	
				SA	Skin Surface Area	3300	cm^2/day	EPA, 2002	
				AF	Adherence Factor	0.2	mg/cm^2	EPA, 2002	
				ABS	Dermal Absorption Factor	Chemical Specific	unitless	(4)	
				EF	Exposure Frequency	26	days/year	Estimated; 0.5 day per week	
				ED	Exposure Duration	25	years	EPA, 2002	
				BW	Body Weight	70	kg	EPA, 2002	
				AT-N	Averaging Time (non-cancer)	9125	days	EPA, 1989	
				AT-C	Averaging Time (cancer)	25550	days	EPA, 1989	

Footnotes:

(1) Information regarding modeled intake development can be found in the exposure assessment section of the human health risk assessment.

(2) The dermal factor will be calculated according to Equations 3.2, 3.3, and 3.4 of EPA RAGS Part E (EPA, 2004). Multiplying CW and CF1 by the dermal factor (Z) yields the DAevent.

EPA, 1989: Risk Assessment Guidance for Superfund. Vol. 1. Human Health Evaluation Manual, Part A. OERR. EPA 5440.1-89/002

EPA, 1995: EPA Region VI Supplemental Risk Assessment Guidance, May 1995

EPA, 1997: EPA Exposure Factor Handbook. EPA/600/P-95/002Fa. August 1997

EPA, 2002: Child-Specific Exposure Factors Handbook. EPA-600-P-00-002B. September 2002. Interim Report.

EPA, 2004a. Risk Assessment Guidance for Superfund. Vol. 1. Human Health Evaluation Manual, Part E (Supplemental Guidance for Dermal Risk Assessment). Final. EPA/540/R/99/005. July 2004.

TABLE 4d-1
RAGS PART D TABLE 4.1.RME
VALUES USED FOR DAILY INTAKE CALCULATIONS
REASONABLE MAXIMUM EXPOSURE
Former Old American Zinc Site, Fairmont City, IL

Scenario Timeframe: Current/Future
Medium: Surface/Subsurface Soil
Exposure Medium: On/Off Facility Area Soil

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name (1)
Ingestion	Utility/ Construction Worker	Adult	Surface/Subsurface Soil	CS	Chemical Concentration in Soil	Chemical Specific	mg/kg	--	Chronic daily intake (CDI) (mg/kg-day)=
				IR-S	Soil Ingestion Rate	330	mg/day	EPA, 2002	CSW x IR-S x FI x CF1 x EF x ED/BW x AT
				CF1	Conversion Factor	1.00E-06	kg/mg	--	
				FI	Fraction Ingested	1	--	(2)	
				EF	Exposure Frequency	30	days/year	IEPA, 2007	
				ED	Exposure Duration	1	years	EPA, 2002	
				BW	Body Weight	70	kg	EPA, 2002	
				AT-N	Averaging Time (non-cancer)	365	days	EPA, 1989	
				AT-C	Averaging Time (cancer)	25550	days	EPA, 1989	
Dermal	Utility/ Construction Worker	Adult	Surface/Subsurface Soil	CS	Chemical Concentration in Soil	Chemical Specific	mg/kg	--	Chronic daily intake (CDI) (mg/kg-day)=
				CF1	Conversion Factor	1.00E-06	kg/mg	--	CSW x CF1 x SA x FC x AF x ABS x EF x ED/BW x AT
				FC	Fraction of Skin Contacted	1	--	(2)	
				SA	Skin Surface Area	3300	cm^2/day	EPA, 2002	
				AF	Adherence Factor	0.3	mg/cm^2	EPA, 2002	
				ABS	Dermal Absorption Factor	Chemical Specific	unitless	(4)	
				EF	Exposure Frequency	30	days/year	IEPA, 2007	
				ED	Exposure Duration	1	years	EPA, 2002	
				BW	Body Weight	70	kg	EPA, 2002	
				AT-N	Averaging Time (non-cancer)	365	days	EPA, 1989	
				AT-C	Averaging Time (cancer)	25550	days	EPA, 1989	

Footnotes:

(1) Information regarding modeled intake development can be found in the exposure assessment section of the human health risk assessment.

(2) A fraction ingested and of skin contacted of 1 will be used for construction exposure to on-site soil.

(3) The construction worker was assumed to be working 5 days per week for 6 months (26 weeks x 5 days/week).

(4) In the absence of chemical-specific dermal absorption values, a default skin absorption fraction of 0.10 will be used for semivolatile organic chemicals.

A default absorption for inorganics and volatile organic chemicals is no longer recommended (EPA, 2004).

EPA, 1989: Risk Assessment Guidance for Superfund. Vol. 1: Human Health Evaluation Manual, Part A. OERR. EPA/5440/1-89/002.

EPA, 2002: Supplemental Guidance For Developing Soil Screening Levels For Superfund Sites. OSWER 9355.4-24. December 2002.

EPA, 2004: Risk Assessment Guidance for Superfund. Vol. 1: Human Health Evaluation Manual, Part E (Supplemental Guidance for Dermal Risk Assessment). Final. EPA/540/R/99/005. July 2004.

TABLE 4d-2
RAGS PART D TABLE 4.1.RME
VALUES USED FOR DAILY INTAKE CALCULATIONS
REASONABLE MAXIMUM EXPOSURE
Former Old American Zinc Site, Fairmont City, IL

Scenario Timeframe: Current/Future
Medium: Soil (as Fugitive Dust)
Exposure Medium: On/Off Facility Area Air

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name (1)
Inhalation	Utility/ Construction Worker	Adult	Particulates In Outdoor Air	CS	Chemical Concentration in Soil	Chemical Specific	mg/kg	--	Chronic daily intake (CDI) (mg/kg-day)=
				PEF	Particulate Emission Factor	3.72E+06	m^3/kg	EPA, 2002 (2)	CS x (1/PEF) x IN x Flnh x EF x ED/BW x AT
				IN	Inhalation Rate	20	m^3/day	EPA, 2002	
				Flnh	Fraction Inhaled	1	--	(3)	
				EF	Exposure Frequency	30	days/year	IEPA, 2007	
				ED	Exposure Duration	1	years	EPA, 2002	
				BW	Body Weight	70	kg	EPA, 2002	
				AT-N	Averaging Time (non-cancer)	365	days	EPA, 1989	
				AT-C	Averaging Time (cancer)	25550	days	EPA, 1989	

Footnotes:

(1) Information regarding modeled intake development can be found in the exposure assessment section of the human health risk assessment.

(2) With the exception of the dispersion factor (Q/C wind), the PEF was calculated using all defaults (including a source area of 0.5 acres) recommended in EPA's Supplemental Soil Screening Guidance (EPA, 2002).
The dispersion factor was based on data from Cleveland, Ohio, which is located in Zone 7 (EPA, 2002 - Appendix D).

(3) A fraction inhaled of 1 will be used for construction exposure to on-site soil.

EPA, 1989: Risk Assessment Guidance for Superfund. Vol. 1: Human Health Evaluation Manual, Part A. OERR. EPA/5440/1-89/002.

EPA, 2002: Supplemental Guidance For Developing Soil Screening Levels For Superfund Sites. OSWER 9355.4-24. December 2002.

EPA, 2004: Risk Assessment Guidance for Superfund. Vol. 1: Human Health Evaluation Manual, Part E (Supplemental Guidance for Dermal Risk Assessment). Final. EPA/540/R/99/005. July 2004.

TABLE 4d-3
RAGS PART D TABLE 4.1.RME
VALUES USED FOR DAILY INTAKE CALCULATIONS
REASONABLE MAXIMUM EXPOSURE
Former Old American Zinc Site, Fairmont City, IL

Scenario Timeframe: Current/Future
Medium: On/Off Facility Area Surface Water
On-site Exposure Medium: Surface Water

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name (1)
Dermal	Construction Worker	Adult	Surface water (incidental contact)	CW	Chemical Concentration in Surface Water	Chemical Specific	mg/L	--	Chronic daily intake (CDI) (mg/kg-day)=
				CF1	Conversion Factor	1.00E-03	liter/cm^3	--	CW x CF1 x FC x Z x EV x EF x ED x SA/BW x AT
				FC	Fraction of Skin Contacted	1	--	--	
				Z	Dermal Factor	Chemical Specific	cm/event	(2)	Calculation of Dermal Factor (Z):
				EV	Event Frequency	1	events/day	EPA, 1995	$Z_{inorganics} = Kp \times t_{event}$
				EF	Exposure Frequency	30	days/year	IEPA 2007	
				ED	Exposure Duration	1	years	EPA, 1995	Kp (cm/hr)
				SA	Skin Surface Area	3300	cm^2	EPA, 2004	Cd, Cr3, Hg, and all others: 1E-03
				BW	Body Weight	70	kg	EPA, 1995	Cr6:2E-03
				AT-N	Averaging Time (non-cancer)	365	days	EPA, 1989	Pb: 1E-04
				AT-C	Averaging Time (cancer)	25550	days	EPA, 1989	Ag & Zn: 6E-04
				t_{event}	Duration of Event	1	hour/event	estimated	
				Kp	Dermal Permeability Coefficient	cm/hour	Chemical Specific	EPA, 2004	

Footnotes:

(1) Information regarding modeled intake development can be found in the exposure assessment section of the human health risk assessment

(2) The dermal factor will be calculated according to Equations 3.2, 3.3, and 3.4 of EPA RAGS Part E (EPA, 2004). Multiplying CW and CF1 by the dermal factor (Z) yields the DAevent.

EPA, 1989: *Risk Assessment Guidance for Superfund. Vol. 1. Human Health Evaluation Manual, Part A.* OERR. *EPA/5440/1-89/002.*

EPA, 1995: EPA Region VI Supplemental Risk Assessment Guidance, May 1995

EPA, 1997: EPA Exposure Factor Handbook. EPA/600/P-95/002Fa. August 1997.

EPA, 2002: Child-Specific Exposure Factors Handbook. EPA-600-P-00-002B September 2002 Interim Report.

EPA, 2004: Risk Assessment Guidance for Superfund. Vol. 1: Human Health Evaluation Manual, Part E (Supplemental Guidance for Dermal Risk Assessment). Final. EPA/540/R/99/005. July 2004.

TABLE 4d-4
RAGS PART D TABLE 4.1.RME
VALUES USED FOR DAILY INTAKE CALCULATIONS
REASONABLE MAXIMUM EXPOSURE
Former Old American Zinc Site, Fairmont City, IL

Scenario Timeframe: Current/Future
Medium: Sediment
Exposure Medium: On/Off-Facility Sediment

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name (1)
Ingestion	Construction Worker	Adult	Sediment	CS	Chemical Concentration in Sediment	Chemical Specific	mg/kg	--	Chronic daily intake (CDI) (mg/kg-day)=
				IR-S	Soil Ingestion Rate	330	mg/day	EPA, 2002	CSW x IR-S x FI x CF1 x FF x ED/BW x AT
				CF1	Conversion Factor	1.00E-06	kg/mg	--	
				FI	Fraction Ingested	1	--	(2)	
				EF	Exposure Frequency	30	days/year	IEPA, 2007	
				ED	Exposure Duration	1	years	EPA, 2002	
				BW	Body Weight	70	kg	EPA, 2002	
				AT-N	Averaging Time (non-cancer)	365	days	EPA, 1989	
				AT-C	Averaging Time (cancer)	25550	days	EPA, 1989	
Dermal	Construction Worker	Adult	Sediment (Incidental contact)	CS	Chemical Concentration in Sediment	Chemical Specific	mg/kg	--	Chronic daily intake (CDI) (mg/kg-day)=
				CF1	Conversion Factor	1.00E-06	kg/mg	--	CSW x CF1 x SA x FC x AF x ABS x EF x ED/BW x AT
				FC	Fraction of Skin Contacted	1	--	(2)	
				SA	Skin Surface Area	3300	cm^2/day	EPA, 2002	
				AF	Adherence Factor	0.3	mg/cm^2	EPA, 2002	
				ABS	Dermal Absorption Factor	Chemical Specific	unitless	(4)	
				EF	Exposure Frequency	30	days/year	IEPA, 2007	
				ED	Exposure Duration	1	years	EPA, 2002	
				BW	Body Weight	70	kg	EPA, 2002	
				AT-N	Averaging Time (non-cancer)	365	days	EPA, 1989	
				AT-C	Averaging Time (cancer)	25550	days	EPA, 1989	

Footnotes:

(1) Information regarding modeled intake development can be found in the exposure assessment section of the human health risk assessment

(2) The dermal factor will be calculated according to Equations 3.2, 3.3, and 3.4 of EPA RAGS Part E (EPA, 2004). Multiplying CW and CF1 by the dermal factor (Z) yields the DAevent.

EPA, 1989: Risk Assessment Guidance for Superfund. Vol. I: Human Health Evaluation Manual, Part A. OERR. EPA 5440/1-89/002

EPA, 1995: EPA Region VI Supplemental Risk Assessment Guidance, May 1995.

EPA, 1997: EPA Exposure Factor Handbook. EPA 600/P-95/002Fa. August 1997.

EPA, 2002. Child-Specific Exposure Factors Handbook. EPA-600-P-00-002B. September 2002. Interim Report.

EPA, 2004. Risk Assessment Guidance for Superfund. Vol. 1. Human Health Evaluation Manual, Part E (Supplemental Guidance for Dermal Risk Assessment). Final. EPA/540/R/99/005. July 2004.

RAGS Part D Table 5A
Non-Cancer Toxicity Data - Oral and Dermal
Former Old American Zinc Site
Fairmont City, IL

CAS No.	Chemical of Potential Concern	Chronic/ Subchronic	Oral RfD Value	Oral RfD Units	Oral Absorption Efficiency for Dermal[1]	Dermal Absorption Factor[2]	Dermal RfD[3]	Dermal RfD units	Primary Target Organ	Critical Effect	Combined Uncertainty/ Modifying Factors	RfD Source	RfD Source Date	Search Date[4]
7440382	Arsenic	Chronic	3.00E-04	mg/kg-day	95% (No adjustment)	0.03	3.00E-04	mg/kg-day	Skin	hyperpigmentation, keratosis, integument	3	IRIS	2/1/1993	4/2/2007
7440393	Barium	Chronic	2.00E-01	mg/kg-day	7%	1	1.40E-02	mg/kg-day	Kidney	nephropathy	300	IRIS	7/11/2005	4/2/2007
7440439	Cadmium (water)	Chronic	5.00E-04	mg/kg-day	5%	0.001	2.50E-05	mg/kg-day	Kidney	significant proteinuria	10	IRIS	2/1/1994	4/2/2007
7440439	Cadmium (food)	Chronic	1.00E-03	mg/kg-day	2.5%	0.001	2.50E-05	mg/kg-day	Kidney	significant proteinuria	10	IRIS	2/1/1994	4/2/2007
16065831	Chromium III	Chronic	1.50E+00	mg/kg-day	1.3%	1	1.95E-02	mg/kg-day	Lung	NOEL	1000	IRIS	9/3/1998	4/2/2007
18540299	Chromium VI	Chronic	3.00E-03	mg/kg-day	2.5%	1	7.50E-05	mg/kg-day	Lung	NOEL	900	IRIS	9/3/1998	4/2/2007
7440508	Copper	Chronic	4.00E-02 a	mg/kg-day	100%	1	4.00E-02	mg/kg-day	GI System	--	--	HEAST/ PROV/ORNL	--	4/2/2007
7439921	Lead	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4/2/2007
7487947	Mercury (mercuric chloride)	Chronic	3.00E-04	mg/kg-day	7%	1	2.10E-05	mg/kg-day	Immunilogical	autoimmune effects	1000	IRIS	5/1/1995	4/2/2007
7782492	Selenium	Chronic	5.00E-03	mg/kg-day	30-80% (no adjustment)	1	5.00E-03	mg/kg-day	Skin; central nervous system	Clinical selenosis	3	IRIS	9/1/1991	4/2/2007
7440224	Silver	Chronic	5.00E-03	mg/kg-day	4%	1	2.00E-04	mg/kg-day	central nervous system	Argyria	3	IRIS	12/1/1996	4/2/2007
7440666	Zinc	Chronic	3.00E-01	mg/kg-day	highly variable (no adjustment)	1	3.00E-01	mg/kg-day	Circulatory system	Decreases in erythrocyte Cu, Zn superoxide dismutase (ESOD) activity in healthy adult male and female volunteers	3	IRIS	8/3/2005	4/2/2007

Notes

(1) - Gastrointestinal absorption data was obtained RAGS Part E (Final, 2004), Exhibit 4-1.

(2) - Dermal absorption factors were obtained from RAGS Part E (Final, 2004), Exhibit 3-4

(3) - The absorbed dermal RfD was derived by multiplying the oral to dermal adjustment factor by the Oral RfD.

(4) - Date searched IRIS and ORNL RAIS.

drinking water standard (MCLG) of 1.3 mg/L. The ORNL RAIS converts this MCLG to an RfD for chronic and subchronic oral exposure.

GI = Gastrointestinal

HEAST = Health Effects Assesment Summary Tables

IRIS = United States Environmental Protection Agency Integrated Risk Information System (http://www.epa.gov/iris

mg/kg-day = milligrams per kilogram per day

NA = Not Applicable

PROV/ORNL = EPA Provisional Peer Reviewed Toxicity Values provided by the Oak Ridge National Laboratory (ORNL) Risk Assessment Information System (RAIS) http://risk.lsd.ornl.gov

RfD = Reference Dose

-- = Not Available

RAGS Part D Table 5B
Non-Cancer Toxicity Data - Inhalation
Former American Zinc Site
Fairmont City, IL

CAS No.	Chemical of Potential Concern	Chronic/ Subchronic	Inhalation RfC Value	Inhalation RfC Units	Adjusted Inhalation RfD[1]	Inhalation RfD units	Primary Target Organ	Critical Effect	Combined Uncertainty/ Modifying Factors	RfC Source	RfC Source Date	Search Date[2]
7440382	Arsenic	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4/2/2007
7440393	Barium	Chronic	5.00E-04	mg/m^3	1.43E-04	mg/kg-day	fetus	fetotoxicity	1000	HEAST	--	4/2/2007
7440439	Cadmium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4/2/2007
16065831	Chromium III	NA	NA	NA	NA	NA	NA	NA	NA	IRIS	9/3/1998	4/2/2007
18540299	Chromium VI	Chronic	1.00E-04	mg/m^3	2.86E-05	mg/kg-day	Lungs	Lactate dehydrogenase in bronchioalveolar lavage fluid	300	IRIS	9/3/1998	4/2/2007
7440508	Copper	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4/2/2007
7439921	Lead	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4/2/2007
7487947	Mercury (elemental)	Chronic	3.00E-04	mg/m^3	8.57E-05	mg/kg-day	Central nervous system	Hand tremor; increases in memory disturbances; slight subjective and objective evidence of autonomic dysfunction	NA	IRIS	6/1/1995	4/2/2007
7782492	Selenium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4/2/2007
7440224	Silver	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4/2/2007
7440666	Zinc	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4/2/2007

Notes:

(1) = Adjustment for RfC to RfD is based upon multiplication by 20 inhalation rate of cubic meters/day and dividing by 70 kilograms body weight.

(2) - Date searched IRIS and ORNL RAIS.

GI = Gastrointestinal

HEAST = Health Effects Assesment Summary Tables

IRIS = United States Environmental Protection Agency Integrated Risk Information System (http://www.epa.gov/iris

mg/kg-day = milligrams per kilogram per day

NA = Not Applicable

PROV/ORNL = EPA Provisional Peer Reviewed Toxicity Values provided by the Oak Ridge National Laboratory (ORNL) Risk Assessment Information System (RAIS) http://risk.lsc

RfD = Reference Dose

-- = Not Available

RAGS Part D Table 6A
Cancer Toxicity Data - Oral and Dermal
Fomer Old American Zinc Site
Fairmont City, IL

CAS No.	Chemical of Potential Concern	Oral Cancer Slope Factor	GI Absorption Factor[1]	Dermal Absorption Factor[2]	Dermal Cancer Slope Factor[3]	Units	Weight of Evidence/ Cancer Guideline Description[4]	Slope Factor Source	Slope Fator Source Date	Search Date[5]
7440382	Arsenic	1.50E+00	95% (No adjustment)	0.03	1.50E+00	$(mg/kg\text{-}day)^{-1}$	A	IRIS	4/10/1998	4/2/2007
7440393	Barium	NA	7%	1	NA	NA	D	IRIS	3/30/1998	4/2/2007
7440439	Cadmium	NA	5%/2.5%	0.001	NA	NA	NA	NA	NA	4/2/2007
16065831	Chromium III	NA	1.3%	1	NA	NA	D	IRIS	9/3/1998	4/2/2007
18540299	Chromium VI	NA	2.5%	1	NA	NA	NA	IRIS	9/3/1998	4/2/2007
7440508	Copper	NA	100%	1	NA	NA	D	IRIS	8/1/1991	4/2/2007
7439921	Lead	NA	NA	1	NA	NA	NA	NA	NA	4/2/2007
7487947	Mercury (mercuric chloride)	NA	7%	1	NA	NA	C	IRIS	6/1/1995	4/2/2007
7782492	Selenium	NA	30 - 80%	1	NA	NA	D	IRIS	7/1/1993	4/2/2007
7440224	Silver	NA	4%	1	NA	NA	D	IRIS	6/1/1989	4/2/2007
7440666	Zinc	NA	highly variable	1	NA	NA	D	IRIS	8/3/2005	4/2/2007

Notes:

(1) - Gastrointestinal absorption data was obtained RAGS Part E (Final, 2004), Exhibit 4-1.

(2) - Dermal absorption factors were obtained from RAGS Part E (Final, 2004), Exhibit 3-4.

(3) - The absorbed dermal SF was developed using the Oral SF divided by the GI Absorption Factor.

(4) - Carcinogenic weight-of-evidence is a qualitative designation for potential carcinogens.

A - Human carcinogen

B1 - Probable human carcinogen - indicates that limited human data is available

B2 - Probable human carcinogen - indicates sufficient evidence in animals and inadequate or no evidence in humans

C - Possible human carcinogen

D- Not classifiable as to human carcinogenicity

(5) - Date searched IRIS and ORNL RAIS.

GI = Gastrointestinal

HEAST = Health Effects Assesment Summary Tables

IRIS = United States Environmental Protection Agency Integrated Risk Information System (http://www.epa.gov/iris

mg/kg-day = milligrams per kilogram per day

NA = Not Applicable

PROV/ORNL = EPA Provisional Peer Reviewed Toxicity Values provided by the Oak Ridge National Laboratory (ORNL) Risk Assessment Information System (RAIS) http://risk.lsd.ornl.gov

-- = Not Available

RAGS Part D Table 6B
Cancer Toxicity Data - Inhalation
Former Old American Zinc Site
Fairmont City, Illinois

CAS No.	Chemical of Potential Concern	Inhalation Unit Risk	Units	Inhalation Cancer Slope Factor[1]	Units	Weight of Evidence/ Cancer Guideline Description[2]	Slope Factor Source	Slope Factor Date	Search Date[3]
7440382	Arsenic	4.30E+00	$(mg/m^3)^{-1}$	1.51E+01	$(mg/kg\text{-}day)^{-1}$	A	IRIS	4/10/1998	4/2/2007
7440393	Barium	NA	NA	NA	NA	D	IRIS	3/30/1998	4/2/2007
7440439	Cadmium	1.80E+00	$(mg/m^3)^{-1}$	6.30E+00	$(mg/kg\text{-}day)^{-1}$	B1	IRIS	6/1/1992	4/2/2007
16065831	Chromium III	NA	NA	NA	NA	D	IRIS	9/3/1998	4/2/2007
18540299	Chromium VI	1.20E+01	$(mg/m^3)^{-1}$	2.94E+02 3	$(mg/kg\text{-}day)^{-1}$	A	IRIS	9/3/1998	4/2/2007
7440473	Total Chromium	1.20E+01	$(mg/m^3)^{-1}$	4.20E+01	$(mg/kg\text{-}day)^{-1}$	A	IRIS	9/3/1998	4/2/2007
7440508	Copper	NA	NA	NA	NA	D	IRIS	8/1/1991	4/2/2007
7439921	Lead	NA	NA	NA	NA	NA	NA	NA	4/2/2007
7487947	Mercury	NA	NA	NA	NA	C	IRIS	6/1/1995	4/2/2007
7782492	Selenium	NA	NA	NA	NA	D	IRIS	7/1/1993	4/2/2007
7440224	Silver	NA	NA	NA	NA	D	IRIS	6/1/1989	4/2/2007
7440666	Zinc	NA	NA	NA	NA	D	IRIS	8/3/2005	4/2/2007

Notes:

1 - Adjustment is 3.5 based upon unit risk multiplied by 70 kilograms body weight and divided by an inhalation rate of 20 cubic meters per day.

2 - Carcinogenic weight-of-evidence is a qualitative designation for potential carcinogens.

A - Human carcinogen

B1 - Probable human carcinogen - indicates that limited human data is available

B2 - Probable human carcinogen - indicates sufficient evidence in animals and inadequate or no evidence in humans

C - Possible human carcinogen

D- Not classifiable as to human carcinogenicity

3 - For CR6, the IRIS value is multiplied by a factor of 7 to account for 1:6 ratio of chromium Vi to Cr III (EPA, Region 9 2004 PRG Table).

IRIS = United States Environmental Protection Agency Integrated Risk Information System (http://www.epa.gov/iris

mg/m^3 = milligram per cubic meter

mg/kg-day = milligrams per kilogram per day

NA = Not Applicable

Information System (RAIS) http://risk.lsd.ornl.gov

-- = Not Available

TABLE 7a
RAGS PART D TABLE 7.1 RME
CALCULATION OF CHEMICAL CANCER RISKS
REASONABLE MAXIMUM EXPOSURE
Facility Area Trespasser Exposure - Former American Zinc Plating Site, Fairmont City, IL

Scenario Timeframe: Current
Receptor Population: Trespasser
Receptor Age: Adolescent

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF		Cancer Risk	Intake/Exposure Concentration		RfD		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Soil	Facility Area soil	Ingestion	Arsenic	3.5E+02	mg/kg	1.93E-05	mg/kg-day	1.5E+00	1/mg/kg-day	2.9E-05	1.35E-04	mg/kg-day	3.0E-04	mg/kg/day	4.5E-01
fine fraction		fine fraction		Barium	6.4E+02	mg/kg	3.52E-05	mg/kg-day	NC	1/mg/kg-day	NC	2.47E-04	mg/kg-day	2.0E-01	mg/kg day	1.2E-03
				Cadmium	6.0E+02	mg/kg	3.28E-05	mg/kg-day	NC	1/mg/kg-day	NC	2.30E-04	mg/kg-day	1.0E-03	mg/kg/day	2.3E-01
				Chromium	7.4E+01	mg/kg	4.05E-06	mg/kg-day	NC	1/mg/kg-day	NC	2.84E-05	mg/kg-day	1.5E+00	mg/kg/day	1.9E-05
				Copper	NS	mg/kg	#VALUE!	mg/kg-day	NC	1/mg/kg-day	NS	#VALUE!	mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	5.9E+03	mg/kg	3.20E-04	mg/kg-day	NTV	1/mg/kg-day	NTV	2.24E-03	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	9.1E+00	mg/kg	4.98E-07	mg/kg-day	NC	1/mg/kg-day	NC	3.48E-06	mg/kg-day	3.0E-04	mg/kg/day	1.2E-02
				Selenium	5.3E+00	mg/kg	2.91E-07	mg/kg-day	NC	1/mg/kg-day	NC	2.03E-06	mg/kg-day	5.0E-03	mg/kg day	4.1E-04
				Silver	8.7E+01	mg/kg	4.77E-06	mg/kg-day	NC	1/mg/kg-day	NC	3.34E-05	mg/kg-day	5.0E-03	mg/kg/day	6.7E-03
				Zinc	3.4E+04	mg/kg	1.86E-03	mg/kg-day	NC	1/mg/kg-day	NC	1.30E-02	mg/kg-day	3.0E-01	mg/kg day	4.3E-02
			Exp. Route Total								2.9E-05					7.4E-01
			Dermal Contact	Arsenic	3.5E+02	mg/kg	4.99E-06	mg/kg-day	1.5E+00	1/mg/kg-day	7.5E-06	3.49E-05	mg/kg-day	3.0E-04	mg/kg/day	1.2E-01
				Barium	6.4E+02	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	1.4E-02	mg/kg/day	0.0E+00
				Cadmium	6.0E+02	mg/kg	2.82E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.98E-06	mg/kg-day	2.5E-05	mg/kg/day	7.9E-02
				Chromium (as III)	7.4E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-02	mg/kg/day	0.0E+00
				Copper	NS	mg/kg	#VALUE!	mg/kg-day	NC	1/mg/kg-day	NS	#VALUE!	mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	5.9E+03	mg/kg	0.00E+00	mg/kg-day	NTV	1/mg/kg-day	NTV	0.00E+00	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	9.1E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.1E-05	mg/kg/day	0.0E+00
				Selenium	5.3E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	5.0E-03	mg/kg/day	0.0E+00
				Silver	8.7E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-04	mg/kg/day	0.0E+00
				Zinc	3.4E+04	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	3.0E-01	mg/kg/day	0.0E+00
			Exp. Route Total								7.5E-06					2.0E-01
	Exposure Medium Total										3.6E-05					9.4E-01
	Air	Air	Inhalation of Particulates	Arsenic	3.5E+02	mg/kg	1.80E-09	mg/kg-day	1.51E+01	1/mg/kg-day	2.7E-08	1.26E-08	mg/kg-day	NTV	mg/kg/day	NTV
				Barium	6.4E+02	mg/kg	3.28E-09	mg/kg-day	NC	1/mg/kg-day	NC	2.29E-08	mg/kg-day	1.4E-04	mg/kg/day	1.6E-04
				Cadmium	6.0E+02	mg/kg	3.05E-09	mg/kg-day	6.30E+00	1/mg/kg-day	1.9E-08	2.14E-08	mg/kg-day	NTV	mg/kg/day	NTV
				Chromium (as VI-nc, total-c)	7.4E+01	mg/kg	3.77E-10	mg/kg-day	4.2E+01	1/mg/kg-day	1.6E-08	2.64E-09	mg/kg-day	2.9E-05	mg/kg/day	9.2E-05
				Copper	NS	mg/kg	#VALUE!	mg/kg-day	NC	1/mg/kg-day	NS	#VALUE!	mg/kg-day	NTV	mg/kg/day	NS
				Lead	5.9E+03	mg/kg	2.98E-08	mg/kg-day	NTV	1/mg/kg-day	NTV	2.08E-07	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	9.1E+00	mg/kg	4.63E-11	mg/kg-day	NC	1/mg/kg-day	NC	3.24E-10	mg/kg-day	8.6E-05	mg/kg/day	3.8E-06
				Selenium	5.3E+00	mg/kg	2.70E-11	mg/kg-day	NC	1/mg/kg-day	NC	1.89E-10	mg/kg-day	NTV	mg/kg/day	NTV
				Silver	8.7E+01	mg/kg	4.44E-10	mg/kg-day	NC	1/mg/kg-day	NC	3.11E-09	mg/kg-day	NTV	mg/kg/day	NTV
				Zinc	3.4E+04	mg/kg	1.73E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.21E-06	mg/kg-day	NTV	mg/kg/day	NTV
			Exp. Route Total								6.2E-08					2.6E-04
Medium Total											3.7E-05					9.4E-01
Surface Water	Surface Water	Surface Water	Dermal Contact	Arsenic	2.2E-02	mg/L	1.06E-08	mg/kg-day	1.5E+00	1/mg/kg-day	1.6E-08	7.40E-08	mg/kg-day	3.0E-04	mg/kg/day	2.5E-04
				Barium	3.9E-01	mg/L	1.87E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.31E-06	mg/kg-day	1.4E-02	mg/kg/day	9.4E-05
				Cadmium	1.8E-01	mg/L	8.65E-08	mg/kg-day	NC	1/mg/kg-day	NC	6.06E-07	mg/kg-day	2.5E-05	mg/kg/day	2.4E-02
				Chromium	1.9E-02	mg/L	9.13E-09	mg/kg-day	NC	1/mg/kg-day	NC	6.39E-08	mg/kg-day	2.0E-02	mg/kg/day	3.3E-06
				Copper	NS	mg/L	--	mg/kg-day	NC	1/mg/kg-day	NS	--	mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.7E-01	mg/L	1.30E-08	mg/kg-day	NTV	1/mg/kg-day	NTV	9.08E-08	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	NS	mg/L	--	mg/kg-day	NC	1/mg/kg-day	NS	--	mg/kg-day	2.1E-05	mg/kg/day	NS
				Selenium	4.6E-03	mg/L	2.21E-09	mg/kg-day	NC	1/mg/kg-day	NC	1.55E-08	mg/kg-day	5.0E-03	mg/kg/day	3.1E-06
				Silver	4.2E-01	mg/L	1.20E-05	mg/kg-day	NC	1/mg/kg-day	NC	8.38E-05	mg/kg-day	2.0E-04	mg/kg/day	4.2E-01
				Zinc	1.3E-03	mg/L	3.75E-10	mg/kg-day	NC	1/mg/kg-day	NC	2.62E-09	mg/kg-day	3.0E-01	mg/kg/day	8.7E-09
			Exp. Route Total								1.6E-08					4.4E-01
		Exposure Point Total									1.6E-08					4.4E-01
Medium Total											1.6E-08					4.4E-01
Sediment	Sediment	Facility Area sediment	Ingestion	Arsenic	8.1E+01	mg/kg	8.89E-07	mg/kg-day	1.5E+00	1/mg/kg-day	1.3E-06	6.21E-06	mg/kg-day	3.0E-04	mg/kg/day	2.1E-02
				Barium	3.9E+02	mg/kg	4.22E-06	mg/kg-day	NC	1/mg/kg-day	NC	2.95E-05	mg/kg-day	2.0E-01	mg/kg/day	1.5E-04
				Cadmium	3.6E+02	mg/kg	3.97E-06	mg/kg-day	NC	1/mg/kg-day	NC	2.78E-05	mg/kg-day	1.0E-03	mg/kg/day	2.8E-02
				Chromium	4.8E+01	mg/kg	5.21E-07	mg/kg-day	NC	1/mg/kg-day	NC	3.65E-06	mg/kg-day	1.5E+00	mg/kg/day	2.4E-06
				Copper	NS	mg/kg	#VALUE!	mg/kg-day	NC	1/mg/kg-day	NS	#VALUE!	mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.9E+03	mg/kg	1.17E-05	mg/kg-day	NTV	1/mg/kg-day	NTV	2.22E-04	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	5.3E+00	mg/kg	5.77E-08	mg/kg-day	NC	1/mg/kg-day	NC	4.04E-07	mg/kg-day	3.0E-04	mg/kg/day	1.3E-03
				Selenium	5.3E+00	mg/kg	5.76E-08	mg/kg-day	NC	1/mg/kg-day	NC	4.03E-07	mg/kg-day	5.0E-03	mg/kg/day	8.1E-05
				Silver	3.3E+01	mg/kg	3.55E-07	mg/kg-day	NC	1/mg/kg-day	NC	2.49E-06	mg/kg-day	5.0E-03	mg/kg/day	5.0E-04
				Zinc	1.9E+04	mg/kg	4.24E-04	mg/kg-day	NC	1/mg/kg-day	NC	2.97E-03	mg/kg-day	3.0E-01	mg/kg/day	9.9E-03
			Exp. Route Total								1.3E-06					6.1E-02
			Dermal Contact	Arsenic	8.1E+01	mg/kg	2.29E-07	mg/kg-day	1.5E+00	1/mg/kg-day	3.4E-07	1.61E-06	mg/kg-day	3.0E-04	mg/kg/day	5.4E-03
				Barium	3.9E+02	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	1.4E-02	mg/kg/day	0.0E+00
				Cadmium	3.6E+02	mg/kg	3.42E-08	mg/kg-day	NC	1/mg/kg-day	NC	2.39E-07	mg/kg-day	2.5E-05	mg/kg/day	9.6E-03
				Chromium	4.8E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-02	mg/kg/day	0.0E+00
				Copper	NS	mg/kg	#VALUE!	mg/kg-day	NC	1/mg/kg-day	NS	#VALUE!	mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.9E+03	mg/kg	0.00E+00	mg/kg-day	NTV	1/mg/kg-day	NTV	0.00E+00	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	5.3E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.1E-05	mg/kg/day	0.0E+00
				Selenium	5.3E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	5.0E-03	mg/kg/day	0.0E+00
				Silver	3.3E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-04	mg/kg/day	0.0E+00
				Zinc	3.9E+04	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	3.0E-01	mg/kg/day	0.0E+00
			Exp. Route Total								3.4E-07					1.5E-02
		Exposure Point Total									1.7E-06					7.5E-02
Medium Total											1.7E-06					7.5E-02
											Total of Receptor Risks Across All Media					Total of Receptor Hazards Across All Media
											3.8E-05					1.5E+00

Notes:
EPC = Exposure Point Concentration
NC = Not classified as a carcinogen
NE = Not evaluated as a volatile chemical
NTV = No Toxicity Value Available
RfD = Noncancer Reference Dose

Bolded Chemicals and Bold/Underlined Risks = Exceeds a cancer risk of 1E-06 or a HQ of 0.1
NS - Not sampled or not detected.

E 7b

RAGS PART D TABLE 7.1 RME
CALCULATION OF CHEMICAL CANCER RISKS
REASONABLE MAXIMUM EXPOSURE
Off-Facility Area Recreational Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Current/Future
Receptor Population: Recreational User
Receptor Age: Adolescent

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF		Cancer Risk	Intake/Exposure Concentration		RfD		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Soil	Off-Facility Area soil	Ingestion	Arsenic	1.5E+01	mg/kg	8.12E-07	mg/kg-day	1.5E+00	1/mg/kg-day	1.2E-06	5.69E-06	mg/kg-day	3.0E-04	mg/kg/day	1.9E-02
fine fraction		fine fraction		Barium	2.2E+02	mg/kg	1.21E-05	mg/kg-day	NC	1/mg/kg-day	NC	8.45E-05	mg/kg-day	2.0E-01	mg/kg/day	4.2E-04
residential lots				Cadmium	5.5E+01	mg/kg	3.02E-06	mg/kg-day	NC	1/mg/kg-day	NC	2.11E-05	mg/kg-day	1.0E-03	mg/kg/day	2.1E-02
				Chromium	1.9E+01	mg/kg	1.05E-06	mg/kg-day	NC	1/mg/kg-day	NC	7.32E-06	mg/kg-day	1.5E+00	mg/kg/day	4.9E-06
				Copper	NS	mg/kg	#VALUE!	mg/kg-day	NC	1/mg/kg-day	NS	#VALUE!	mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	3.9E+02	mg/kg	2.13E-05	mg/kg-day	NTV	1/mg/kg-day	NTV	1.49E-04	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	3.7E-01	mg/kg	2.01E-08	mg/kg-day	NC	1/mg/kg-day	NC	1.41E-07	mg/kg-day	3.0E-04	mg/kg/day	4.7E-04
				Selenium	1.2E+00	mg/kg	6.36E-08	mg/kg-day	NC	1/mg/kg-day	NC	4.45E-07	mg/kg-day	5.0E-03	mg/kg/day	8.9E-05
				Silver	3.0E+00	mg/kg	1.64E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.15E-06	mg/kg-day	5.0E-03	mg/kg/day	2.3E-04
				Zinc	4.4E+03	mg/kg	2.42E-04	mg/kg-day	NC	1/mg/kg-day	NC	1.69E-03	mg/kg-day	3.0E-01	mg/kg/day	5.6E-03
			Exp. Route Total								1.2E-06					4.7E-02
			Dermal Contact	Arsenic	1.5E+01	mg/kg	2.10E-07	mg/kg-day	1.5E+00	1/mg/kg-day	3.1E-07	1.47E-06	mg/kg-day	3.0E-04	mg/kg/day	4.9E-03
				Barium	2.2E+02	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	1.4E-02	mg/kg/day	0.0E+00
				Cadmium	5.5E+01	mg/kg	2.59E-08	mg/kg-day	NC	1/mg/kg-day	NC	1.82E-07	mg/kg-day	2.5E-05	mg/kg/day	7.3E-03
				Chromium (as III)	1.9E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-02	mg/kg/day	0.0E+00
				Copper	NS	mg/kg	#VALUE!	mg/kg-day	NC	1/mg/kg-day	NS	#VALUE!	mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	3.9E+02	mg/kg	0.00E+00	mg/kg-day	NTV	1/mg/kg-day	NTV	0.00E+00	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	3.7E-01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.1E-05	mg/kg/day	0.0E+00
				Selenium	1.2E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	5.0E-03	mg/kg/day	0.0E+00
				Silver	3.0E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-04	mg/kg/day	0.0E+00
				Zinc	4.4E+03	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	3.0E-01	mg/kg/day	0.0E+00
			Exp. Route Total								3.1E-07					1.2E-02
	Exposure Medium Total										1.5E-06					5.9E-02
	Air	Air	Inhalation of Particulates	Arsenic	1.5E+01	mg/kg	7.56E-11	mg/kg-day	1.51E+01	1/mg/kg-day	1.1E-09	5.29E-10	mg/kg-day	NTV	mg/kg/day	NTV
				Barium	2.2E+02	mg/kg	1.12E-09	mg/kg-day	NC	1/mg/kg-day	NC	7.86E-09	mg/kg-day	1.4E-04	mg/kg/day	5.5E-05
				Cadmium	5.5E+01	mg/kg	2.81E-10	mg/kg-day	6.30E+00	1/mg/kg-day	1.8E-09	1.96E-09	mg/kg-day	NTV	mg/kg/day	NTV
				Chromium (as VI-nc; total-c)	1.9E+01	mg/kg	9.72E-11	mg/kg-day	4.2E+01	1/mg/kg-day	4.1E-09	6.80E-10	mg/kg-day	2.9E-05	mg/kg/day	2.4E-05
				Copper	NS	mg/kg	#VALUE!	mg/kg-day	NC	1/mg/kg-day	NS	#VALUE!	mg/kg-day	NTV	mg/kg/day	NS
				Lead	3.9E+02	mg/kg	1.98E-09	mg/kg-day	NTV	1/mg/kg-day	NTV	1.39E-08	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	3.7E-01	mg/kg	1.87E-12	mg/kg-day	NC	1/mg/kg-day	NC	1.31E-11	mg/kg-day	8.6E-05	mg/kg/day	1.5E-07
				Selenium	1.2E+00	mg/kg	5.91E-12	mg/kg-day	NC	1/mg/kg-day	NC	4.14E-11	mg/kg-day	NTV	mg/kg/day	NTV
				Silver	3.0E+00	mg/kg	1.53E-11	mg/kg-day	NC	1/mg/kg-day	NC	1.07E-10	mg/kg-day	NTV	mg/kg/day	NTV
				Zinc	4.4E+03	mg/kg	2.25E-08	mg/kg-day	NC	1/mg/kg-day	NC	1.58E-07	mg/kg-day	NTV	mg/kg/day	NTV
			Exp. Route Total								7.0E-09					7.9E-05
Medium Total											1.5E-06					5.9E-02

LE 7c
RAGS PART D TABLE 7.1 RME
CALCULATION OF CHEMICAL CANCER RISKS
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: **Future**
Receptor Population: **Hypothetical Resident**
Receptor Age: *Child (noncancer) Child/Adult (cancer)*

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF		Cancer Risk	Intake/Exposure Concentration		RfD		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Soil	Facility Area soil	Ingestion	Arsenic	3.5E+02	mg/kg	5.54E-04	mg/kg-day	1.5E+00	1/mg/kg-day	8.3E-04	4.53E-03	mg/kg-day	3.0E-04	mg/kg/day	1.5E+01
fine fraction		*fine fraction*		*Barium*	6.4E+02	mg/kg	1.01E-03	mg/kg-day	NC	1/mg/kg-day	NC	8.24E-03	mg/kg-day	2.0E-01	mg/kg/day	4.1E-02
				Cadmium	6.0E+02	mg/kg	9.41E-04	mg/kg-day	NC	1/mg/kg-day	NC	7.69E-03	mg/kg-day	1.0E-03	mg/kg/day	7.7E+00
				Chromium	7.4E+01	mg/kg	1.16E-04	mg/kg-day	NC	1/mg/kg-day	NC	9.49E-04	mg/kg-day	1.5E+00	mg/kg/day	6.3E-04
				Copper	NS	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	5.9E-03	mg/kg	9.18E-03	mg/kg-day	NTV	1/mg/kg-day	NTV	7.49E-02	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	9.1E+00	mg/kg	1.43E-05	mg/kg-day	NC	1/mg/kg-day	NC	1.16E-04	mg/kg-day	3.0E-04	mg/kg/day	3.9E-01
				Selenium	5.3E+00	mg/kg	8.33E-06	mg/kg-day	NC	1/mg/kg-day	NC	6.80E-05	mg/kg-day	5.0E-03	mg/kg/day	1.4E-02
				Silver	8.7E-01	mg/kg	1.37E-04	mg/kg-day	NC	1/mg/kg-day	NC	1.12E-03	mg/kg-day	5.0E-03	mg/kg/day	2.2E-01
				Zinc	3.4E+04	mg/kg	5.33E-02	mg/kg-day	NC	1/mg/kg-day	NC	4.35E-01	mg/kg-day	3.0E-01	mg/kg/day	1.4E+00
			Exp. Route Total								8.3E-04					2.5E+01
			Dermal Contact	Arsenic	3.5E+02	mg/kg	5.25E-05	mg/kg-day	1.5E+00	1/mg/kg-day	7.9E-05	3.80E-04	mg/kg-day	3.0E-04	mg/kg/day	1.3E+00
				Barium	6.4E+02	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	1.4E-02	mg/kg/day	0.0E+00
				Cadmium	6.0E+02	mg/kg	2.97E-06	mg/kg-day	NC	1/mg/kg-day	NC	2.15E-05	mg/kg-day	2.5E-05	mg/kg/day	8.6E-01
				Chromium (as III)	7.4E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-02	mg/kg/day	0.0E+00
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	5.9E-03	mg/kg	0.00E+00	mg/kg-day	NTV	1/mg/kg-day	NTV	0.00E+00	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	9.1E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.1E-05	mg/kg/day	0.0E+00
				Selenium	5.3E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	5.0E-03	mg/kg/day	0.0E+00
				Silver	8.7E-01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-04	mg/kg/day	0.0E+00
				Zinc	3.4E+04	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	3.0E-01	mg/kg/day	0.0E+00
			Exp. Route Total								7.9E-05					2.1E-00
	Air	Air	Inhalation of Particulates	Arsenic	3.5E+02	mg/kg	3.68E-08	mg/kg-day	1.51E+01	1/mg/kg-day	5.6E-07	1.58E-07	mg/kg-day	NTV	mg/kg/day	NTV
				Barium	6.4E+02	mg/kg	6.71E-08	mg/kg-day	NC	1/mg/kg-day	NC	2.88E-07	mg/kg-day	1.4E-04	mg/kg/day	2.0E-03
				Cadmium	6.0E+02	mg/kg	6.25E-08	mg/kg-day	6.30E+00	1/mg/kg-day	3.9E-07	2.69E-07	mg/kg-day	NTV	mg/kg/day	NTV
				Chromium (as VI-nc; total-c)	7.4E+01	mg/kg	7.72E-09	mg/kg-day	4.2E+01	1/mg/kg-day	3.2E-07	3.32E-08	mg/kg-day	2.9E-05	mg/kg/day	1.2E-03
				Copper	NS	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	NTV	mg/kg/day	NS
				Lead	5.9E-03	mg/kg	6.10E-07	mg/kg-day	NTV	1/mg/kg-day	NTV	2.62E-06	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	9.1E+00	mg/kg	9.48E-10	mg/kg-day	NC	1/mg/kg-day	NC	4.07E-09	mg/kg-day	8.6E-05	mg/kg/day	4.8E-05
				Selenium	5.3E+00	mg/kg	5.54E-10	mg/kg-day	NC	1/mg/kg-day	NC	2.38E-09	mg/kg-day	NTV	mg/kg/day	NTV
				Silver	8.7E+01	mg/kg	9.08E-09	mg/kg-day	NC	1/mg/kg-day	NC	3.90E-08	mg/kg-day	NTV	mg/kg/day	NTV
				Zinc	3.4E+04	mg/kg	3.54E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.52E-05	mg/kg-day	NTV	mg/kg/day	NTV
			Exp. Route Total								1.3E-06					3.2E-03
		Exposure Point Total									1.3E-06					3.2E-03
Medium Total											8.0E-05					2.1E+00
										Total of Receptor Risks Across All Media	8.0E-05	Total of Receptor Hazards Across All Media				2.1E+00

RAGS PART D TABLE 7.1 RME
CALCULATION OF CHEMICAL CANCER RISKS
REASONABLE MAXIMUM EXPOSURE
Facility Area Site Worker Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Current/Future
Receptor Population: Site Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF		Cancer Risk	Intake/Exposure Concentration		RfD		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Soil	Facility Areae soil	Ingestion	Arsenic	3.5E+02	mg/kg	1.24E-04	mg/kg-day	1.5E+00	1/mg/kg-day	1.9E-04	3.46E-04	mg/kg-day	3.0E-04	mg/kg/day	1.2E+00
fine fraction		*fine fraction*		Barium	6.4E+02	mg/kg	2.25E-04	mg/kg-day	NC	1/mg/kg-day	NC	6.31E-04	mg/kg-day	2.0E-01	mg/kg/day	3.2E-03
				Cadmium	6.0E+02	mg/kg	2.10E-04	mg/kg-day	NC	1/mg/kg-day	NC	5.88E-04	mg/kg-day	1.0E-03	mg/kg/day	5.9E-01
				Chromium	7.4E+01	mg/kg	2.59E-05	mg/kg-day	NC	1/mg/kg-day	NC	7.26E-05	mg/kg-day	1.5E+00	mg/kg/day	4.8E-05
				Copper	NS	mg/kg	#VALUE!	mg/kg-day	NC	1/mg/kg-day	NS	#VALUE!	mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	5.9E+03	mg/kg	2.05E-03	mg/kg-day	NTV	1/mg/kg-day	NTV	5.74E-03	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	9.1E+00	mg/kg	3.18E-06	mg/kg-day	NC	1/mg/kg-day	NC	8.91E-06	mg/kg-day	3.0E-04	mg/kg/day	3.0E-02
				Selenium	5.3E+00	mg/kg	1.86E-06	mg/kg-day	NC	1/mg/kg-day	NC	5.21E-06	mg/kg-day	5.0E-03	mg/kg/day	1.0E-03
				Silver	8.7E+01	mg/kg	3.05E-05	mg/kg-day	NC	1/mg/kg-day	NC	8.55E-05	mg/kg-day	5.0E-03	mg/kg/day	1.7E-02
				Zinc	3.4E+04	mg/kg	1.19E-02	mg/kg-day	NC	1/mg/kg-day	NC	3.33E-02	mg/kg-day	3.0E-01	mg/kg/day	1.1E-01
			Exp. Route Total								1.9E-04					1.9E+00
			Dermal Contact	Arsenic	3.5E+02	mg/kg	2.45E-05	mg/kg-day	1.5E+00	1/mg/kg-day	3.7E-05	6.86E-05	mg/kg-day	3.0E-04	mg/kg/day	2.3E-01
				Barium	6.4E+02	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	1.4E-02	mg/kg/day	0.0E+00
				Cadmium	6.0E+02	mg/kg	1.39E-06	mg/kg-day	NC	1/mg/kg-day	NC	3.88E-06	mg/kg-day	2.5E-05	mg/kg/day	1.6E-01
				Chromium (as III)	7.4E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-02	mg/kg/day	0.0E+00
				Copper	NS	mg/kg	#VALUE!	mg/kg-day	NC	1/mg/kg-day	NS	#VALUE!	mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	5.9E+03	mg/kg	0.00E+00	mg/kg-day	NTV	1/mg/kg-day	NTV	0.00E+00	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	9.1E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.1E-05	mg/kg/day	0.0E+00
				Selenium	5.3E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	5.0E-03	mg/kg/day	0.0E+00
				Silver	8.7E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-04	mg/kg/day	0.0E+00
				Zinc	3.4E+04	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	3.0E-01	mg/kg/day	0.0E+00
			Exp. Route Total								3.7E-05					3.8E-01
	Exposure Medium Total										2.2E-04					2.3E+00
	Air	Air	Inhalation of Particulates	Arsenic	3.5E+02	mg/kg	1.32E-08	mg/kg-day	1.51E+01	1/mg/kg-day	2.0E-07	3.68E-08	mg/kg-day	NTV	mg/kg/day	NTV
				Barium	6.4E+02	mg/kg	2.40E-08	mg/kg-day	NC	1/mg/kg-day	NC	6.71E-08	mg/kg-day	1.4E-04	mg/kg/day	4.7E-04
				Cadmium	6.0E+02	mg/kg	2.23E-08	mg/kg-day	6.30E+00	1/mg/kg-day	1.4E-07	6.25E-08	mg/kg-day	NTV	mg/kg/day	NTV
				Chromium (as VI-nc; total-c)	7.4E+01	mg/kg	2.76E-09	mg/kg-day	4.2E+01	1/mg/kg-day	1.2E-07	7.72E-09	mg/kg-day	2.9E-05	mg/kg/day	2.7E-04
				Copper	NS	mg/kg	#VALUE!	mg/kg-day	NC	1/mg/kg-day	NS	#VALUE!	mg/kg-day	NTV	mg/kg/day	NS
				Lead	5.9E+03	mg/kg	2.18E-07	mg/kg-day	NTV	1/mg/kg-day	NTV	6.10E-07	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	9.1E+00	mg/kg	3.38E-10	mg/kg-day	NC	1/mg/kg-day	NC	9.48E-10	mg/kg-day	8.6E-05	mg/kg/day	1.1E-05
				Selenium	5.3E+00	mg/kg	1.98E-10	mg/kg-day	NC	1/mg/kg-day	NC	5.54E-10	mg/kg-day	NTV	mg/kg/day	NTV
				Silver	8.7E+01	mg/kg	3.24E-09	mg/kg-day	NC	1/mg/kg-day	NC	9.08E-09	mg/kg-day	NTV	mg/kg/day	NTV
				Zinc	3.4E+04	mg/kg	1.26E-06	mg/kg-day	NC	1/mg/kg-day	NC	3.54E-06	mg/kg-day	NTV	mg/kg/day	NTV
			Exp. Route Total								*4.6E-07*					7.5E-04
Medium Total											2.2E-04					2.3E+00

TABLE 7g
RAGS PART D TABLE 7.1 RME
CALCULATION OF CHEMICAL CANCER RISKS
REASONABLE MAXIMUM EXPOSURE
Facility Area Utility Worker Exposure - Former American Zinc Plating Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Utility Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF		Cancer Risk	Intake/Exposure Concentration		RfD		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Total Soil	Surface/subsurface Soil	Facility Area soil total	Ingestion	Arsenic	1.2E+02	mg/kg	5.60E-06	mg/kg-day	1.5E+00	1/mg/kg-day	8.4E-06	3.92E-04	mg/kg-day	3.0E-04	mg/kg/day	1.3E+00
				Barium	4.0E+02	mg/kg	1.83E-05	mg/kg-day	NC	1/mg/kg-day	NC	1.28E-03	mg/kg-day	2.0E-01	mg/kg/day	6.4E-03
				Cadmium	5.0E+02	mg/kg	2.30E-05	mg/kg-day	NC	1/mg/kg-day	NC	1.61E-03	mg/kg-day	1.0E-03	mg/kg/day	1.6E+00
				Chromium	1.8E+01	mg/kg	8.11E-07	mg/kg-day	NC	1/mg/kg-day	NC	5.68E-05	mg/kg-day	1.5E+00	mg/kg/day	3.8E-05
				Copper	NS	mg/kg	#VALUE!	mg/kg-day	NC	1 mg/kg-day	NS	#VALUE!	mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	1.2E+04	mg/kg	5.38E-04	mg/kg-day	NTV	1/mg/kg-day	NTV	3.77E-02	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	7.2E+01	mg/kg	3.33E-06	mg/kg-day	NC	1/mg/kg-day	NC	2.33E-04	mg/kg-day	3.0E-04	mg/kg/day	7.8E-01
				Selenium	1.5E+01	mg/kg	6.86E-07	mg/kg-day	NC	1 mg/kg-day	NC	4.80E-05	mg/kg-day	5.0E-03	mg/kg/day	9.6E-03
				Silver	1.1E+02	mg/kg	4.93E-06	mg/kg-day	NC	1/mg/kg-day	NC	3.45E-04	mg/kg-day	5.0E-03	mg/kg/day	6.9E-02
				Zinc	4.5E+04	mg/kg	2.09E-03	mg/kg-day	NC	1/mg/kg-day	NC	1.46E-01	mg/kg-day	3.0E-01	mg/kg/day	4.9E-01
			Exp. Route Total								8.4E-06					4.3E+00
			Dermal Contact	Arsenic	1.2E+02	mg/kg	6.04E-08	mg/kg-day	1.5E+00	1/mg/kg-day	9.1E-08	4.23E-06	mg/kg-day	3.0E-04	mg/kg/day	1.4E-02
				Barium	4.0E+02	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	1.4E-02	mg/kg/day	0.0E+00
				Cadmium	5.0E+02	mg/kg	8.29E-09	mg/kg-day	NC	1/mg/kg-day	NC	5.81E-07	mg/kg-day	2.5E-05	mg/kg/day	2.3E-02
				Chromium (as III)	1.8E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-02	mg/kg/day	0.0E+00
				Copper	NS	mg/kg	#VALUE!	mg/kg-day	NC	1/mg/kg-day	NS	#VALUE!	mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	1.2E+04	mg/kg	0.00E+00	mg/kg-day	NTV	1/mg/kg-day	NTV	0.00E+00	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	7.2E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.1E-05	mg/kg/day	0.0E+00
				Selenium	1.5E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	5.0E-03	mg/kg/day	0.0E+00
				Silver	1.1E+02	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-04	mg/kg/day	0.0E+00
				Zinc	4.5E+04	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	3.0E-01	mg/kg/day	0.0E+00
			Exp. Route Total								9.1E-08					3.7E-02
	Exposure Medium Total										8.5E-06					4.3E+00
	Air	Air	Inhalation of Particulates	Arsenic	1.2E+02	mg/kg	1.09E-08	mg/kg-day	1.51E+01	1/mg/kg-day	1.7E-07	7.66E-07	mg/kg-day	NTV	mg/kg/day	NTV
				Barium	4.0E+02	mg/kg	3.57E-08	mg/kg-day	NC	1/mg/kg-day	NC	2.50E-06	mg/kg-day	1.4E-04	mg/kg/day	1.7E-02
				Cadmium	5.0E+02	mg/kg	4.50E-08	mg/kg-day	6.30E+00	1/mg/kg-day	2.8E-07	3.15E-06	mg/kg-day	NTV	mg/kg/day	NTV
				Chromium (as VI-nc, total-c	1.8E+01	mg/kg	1.59E-09	mg/kg-day	4.2E+01	1/mg/kg-day	6.7E-08	1.11E-07	mg/kg-day	2.9E-05	mg/kg/day	3.9E-03
				Copper	NS	mg/kg	#VALUE!	mg/kg-day	NC	1 mg/kg-day	NS	#VALUE!	mg/kg-day	NTV	mg/kg/day	NS
				Lead	1.2E+04	mg/kg	1.05E-06	mg/kg-day	NTV	1/mg/kg-day	NTV	7.37E-05	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	7.2E+01	mg/kg	6.50E-09	mg/kg-day	NC	1/mg/kg-day	NC	4.55E-07	mg/kg-day	8.6E-05	mg/kg/day	5.3E-03
				Selenium	1.5E+01	mg/kg	1.34E-09	mg/kg-day	NC	1/mg/kg-day	NC	9.39E-08	mg/kg-day	NTV	mg/kg/day	NTV
				Silver	1.1E+02	mg/kg	9.65E-09	mg/kg-day	NC	1 mg/kg-day	NC	6.75E-07	mg/kg-day	NTV	mg/kg/day	NTV
				Zinc	4.5E+04	mg/kg	4.08E-06	mg/kg-day	NC	1/mg/kg-day	NC	2.85E-04	mg/kg-day	NTV	mg/kg/day	NTV
			Exp. Route Total								5.2E-07					2.7E-02
Medium Total											9.0E-06					4.3E+00
Surface Water	Surface Water	Surface Water	Dermal Contact	Arsenic	2.2E-02	mg/L	1.22E-09	mg/kg-day	1.5E+00	1/mg/kg-day	1.8E-09	8.52E-08	mg/kg-day	3.0E-04	mg/kg/day	2.8E-04
				Barium	3.9E-01	mg/L	2.16E-08	mg/kg-day	NC	1/mg/kg-day	NC	1.51E-06	mg/kg-day	1.4E-02	mg/kg/day	1.1E-04
				Cadmium	1.8E-01	mg/L	9.96E-09	mg/kg-day	NC	1/mg/kg-day	NC	6.97E-07	mg/kg-day	2.5E-05	mg/kg/day	2.8E-02
				Chromium	1.9E-02	mg/L	1.05E-09	mg/kg-day	NC	1/mg/kg-day	NC	7.36E-08	mg/kg-day	2.0E-02	mg/kg/day	3.8E-06
				Copper	NS	mg/L	#VALUE!	mg/kg-day	NC	1 mg/kg-day	NS	#VALUE!	mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.7E-01	mg/L	1.49E-09	mg/kg-day	NTV	1/mg/kg-day	NTV	1.05E-07	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	NS	mg/L	#VALUE!	mg/kg-day	NC	1/mg/kg-day	NS	#VALUE!	mg/kg-day	2.1E-05	mg/kg/day	NS
				Selenium	4.6E-03	mg/L	2.55E-10	mg/kg-day	NC	1/mg/kg-day	NC	1.78E-08	mg/kg-day	5.0E-03	mg/kg/day	3.6E-06
				Silver	4.2E+01	mg/L	1.38E-06	mg/kg-day	NC	1/mg/kg-day	NC	9.65E-05	mg/kg-day	2.0E-04	mg/kg/day	4.8E-01
				Zinc	1.3E-03	mg/L	4.32E-11	mg/kg-day	NC	1/mg/kg-day	NC	3.02E-09	mg/kg-day	3.0E-01	mg/kg/day	1.0E-08
			Exp. Route Total								1.8E-09					5.1E-01
		Exposure Point Total									1.8E-09					5.1E-01
Medium Total											1.8E-09					5.1E-01
Sediment	Sediment	Facility Area sediment	Ingestion	Arsenic	8.1E+01	mg/kg	4.51E-07	mg/kg-day	1.5E+00	1/mg/kg-day	6.8E-07	3.16E-05	mg/kg-day	3.0E-04	mg/kg/day	1.1E-01
				Barium	3.9E+02	mg/kg	2.14E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.50E-04	mg/kg-day	2.0E-01	mg/kg/day	7.5E-04
				Cadmium	3.6E+02	mg/kg	2.01E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.41E-04	mg/kg-day	1.0E-03	mg/kg/day	1.4E-01
				Chromium	4.8E+01	mg/kg	2.64E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.85E-05	mg/kg-day	1.5E+00	mg/kg/day	1.2E-05
				Copper	NS	mg/kg	#VALUE!	mg/kg-day	NC	1/mg/kg-day	NS	#VALUE!	mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.9E+03	mg/kg	1.61E-05	mg/kg-day	NTV	1/mg/kg-day	NTV	1.13E-03	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	5.3E+00	mg/kg	2.92E-08	mg/kg-day	NC	1/mg/kg-day	NC	2.05E-06	mg/kg-day	3.0E-04	mg/kg/day	6.8E-03
				Selenium	5.3E+00	mg/kg	2.92E-08	mg/kg-day	NC	1/mg/kg-day	NC	2.04E-06	mg/kg-day	5.0E-03	mg/kg/day	4.1E-04
				Silver	3.3E+01	mg/kg	1.80E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.26E-05	mg/kg-day	5.0E-03	mg/kg/day	2.5E-03
				Zinc	1.9E+04	mg/kg	2.15E-04	mg/kg-day	NC	1/mg/kg-day	NC	1.50E-02	mg/kg-day	3.0E-01	mg/kg/day	5.0E-02
			Exp. Route Total								6.8E-07					3.1E-01
			Dermal Contact	Arsenic	8.1E+01	mg/kg	4.06E-08	mg/kg-day	1.5E+00	1/mg/kg-day	6.1E-08	2.84E-06	mg/kg-day	3.0E-04	mg/kg/day	9.5E-03
				Barium	3.9E+02	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	1.4E-02	mg/kg/day	0.0E+00
				Cadmium	3.6E+02	mg/kg	6.04E-09	mg/kg-day	NC	1/mg/kg-day	NC	4.23E-07	mg/kg-day	2.5E-05	mg/kg/day	1.7E-02
				Chromium	4.8E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-02	mg/kg/day	0.0E+00
				Copper	NS	mg/kg	#VALUE!	mg/kg-day	NC	1/mg/kg-day	NS	#VALUE!	mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.9E+03	mg/kg	0.00E+00	mg/kg-day	NTV	1/mg/kg-day	NTV	0.00E+00	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	5.3E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.1E-05	mg/kg/day	0.0E+00
				Selenium	5.3E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	5.0E-03	mg/kg/day	0.0E+00
				Silver	3.3E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-04	mg/kg/day	0.0E+00
				Zinc	1.9E+04	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	3.0E-01	mg/kg/day	0.0E+00
			Exp. Route Total								6.1E-08					2.6E-02
		Exposure Point Total									7.4E-07					3.3E-01
Medium Total											7.4E-07					3.3E-01
										Total of Receptor Risks Across All Media	9.7E-06			Total of Receptor Hazards Across All Media		5.2E+00

Notes:
EPC = Exposure Point Concentration
NC = Not classified as a carcinogen
NE = Not evaluated as a volatile chemical
NTV = No Toxicity Value Available
RfD = Noncancer Reference Dose

Bolded Chemicals and Bold/Underlined Risks = Exceeds a cancer risk of 1E-06 or a HQ of 0.1
NS - Not sampled or not detected.

TABLE 7b
RAGS PART D TABLE 7.1 RME
CALCULATION OF CHEMICAL CANCER RISKS
REASONABLE MAXIMUM EXPOSURE
Off-Facility Area Utility Worker Exposure - Former American Zinc Plating Site, Fairmont City, IL

Scenario Timeframe: Current/Future
Receptor Population: Utility Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF		Cancer Risk	Intake/Exposure Concentration		RfD		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Soil Total- Residential lot	surface/subsurface soil - Residential lot	Off-Facility Area soil	Ingestion	Arsenic	1.4E+01	mg/kg	7.75E-07	mg/kg-day	1.5E+00	1/mg/kg-day	1.2E-06	5.43E-06	mg/kg-day	3.0E-04	mg/kg/day	1.8E-02
				Barium	2.1E+02	mg/kg	1.30E-05	mg/kg-day	NC	1/mg/kg-day	NC	9.11E-05	mg/kg-day	2.0E-01	mg/kg/day	4.6E-04
				Cadmium	2.1E+01	mg/kg	1.12E-06	mg/kg-day	NC	1/mg/kg-day	NC	7.86E-06	mg/kg-day	1.0E-03	mg/kg/day	7.9E-03
				Chromium	1.7E+01	mg/kg	9.39E-07	mg/kg-day	NC	1/mg/kg-day	NC	6.58E-06	mg/kg-day	1.5E+00	mg/kg/day	4.4E-06
				Copper	NS	mg/kg	#VALUE!	mg/kg-day	NC	1/mg/kg-day	NS	#VALUE!	mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	4.1E+02	mg/kg	2.22E-05	mg/kg-day	NTV	1/mg/kg-day	NTV	1.55E-04	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.5E-01	mg/kg	8.23E-09	mg/kg-day	NC	1/mg/kg-day	NC	5.76E-08	mg/kg-day	3.0E-04	mg/kg/day	1.9E-04
				Selenium	1.0E+00	mg/kg	5.56E-08	mg/kg-day	NC	1/mg/kg-day	NC	3.89E-07	mg/kg-day	5.0E-03	mg/kg/day	7.8E-05
				Silver	1.0E+00	mg/kg	5.70E-08	mg/kg-day	NC	1/mg/kg-day	NC	3.99E-07	mg/kg-day	5.0E-03	mg/kg/day	8.0E-05
				Zinc	1.9E+03	mg/kg	1.02E-04	mg/kg-day	NC	1/mg/kg-day	NC	7.16E-04	mg/kg-day	3.0E-01	mg/kg/day	2.4E-03
			Exp. Route Total								1.2E-06					2.9E-02
			Dermal Contact	Arsenic	1.4E+01	mg/kg	2.00E-07	mg/kg-day	1.5E+00	1/mg/kg-day	3.0E-07	1.40E-06	mg/kg-day	3.0E-04	mg/kg/day	4.7E-03
				Barium	2.4E+02	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	1.4E-02	mg/kg/day	0.0E+00
				Cadmium	2.1E+01	mg/kg	9.65E-09	mg/kg-day	NC	1/mg/kg-day	NC	6.76E-08	mg/kg-day	2.5E-05	mg/kg/day	2.7E-03
				Chromium (as III)	1.7E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-02	mg/kg/day	0.0E+00
				Copper	NS	mg/kg	#VALUE!	mg/kg-day	NC	1/mg/kg-day	NS	#VALUE!	mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	4.1E+02	mg/kg	0.00E+00	mg/kg-day	NTV	1/mg/kg-day	NTV	0.00E+00	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.5E-01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.1E-05	mg/kg/day	0.0E+00
				Selenium	1.0E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	5.0E-03	mg/kg/day	0.0E+00
				Silver	1.0E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-04	mg/kg/day	0.0E+00
				Zinc	1.9E+03	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	3.0E-01	mg/kg/day	0.0E+00
			Exp. Route Total								3.0E-07					7.4E-03
	Exposure Medium Total										1.5E-06					3.7E-02
	Air	Air	Inhalation of Particulates	Arsenic	1.4E+01	mg/kg	7.21E-11	mg/kg-day	1.51E+01	1/mg/kg-day	1.1E-09	5.05E-10	mg/kg-day	NTV	mg/kg/day	NTV
				Barium	2.4E+02	mg/kg	1.21E-09	mg/kg-day	NC	1/mg/kg-day	NC	8.48E-09	mg/kg-day	1.4E-04	mg/kg/day	5.9E-05
				Cadmium	2.1E+01	mg/kg	1.04E-10	mg/kg-day	6.30E+00	1/mg/kg-day	6.6E-10	7.31E-10	mg/kg-day	NTV	mg/kg/day	NTV
				Chromium (as VI-ne, total-c)	1.7E+01	mg/kg	8.74E-11	mg/kg-day	4.2E+01	1/mg/kg-day	3.7E-09	6.12E-10	mg/kg-day	2.9E-05	mg/kg/day	2.1E-05
				Copper	NS	mg/kg	#VALUE!	mg/kg-day	NC	1/mg/kg-day	NS	#VALUE!	mg/kg-day	NTV	mg/kg/day	NS
				Lead	4.1E+02	mg/kg	2.07E-09	mg/kg-day	NTV	1/mg/kg-day	NTV	1.45E-08	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.5E-01	mg/kg	7.65E-13	mg/kg-day	NC	1/mg/kg-day	NC	5.36E-12	mg/kg-day	8.6E-05	mg/kg/day	6.2E-08
				Selenium	1.0E+00	mg/kg	5.17E-12	mg/kg-day	NC	1/mg/kg-day	NC	3.62E-11	mg/kg-day	NTV	mg/kg/day	NTV
				Silver	1.0E+00	mg/kg	5.31E-12	mg/kg-day	NC	1/mg/kg-day	NC	3.71E-11	mg/kg-day	NTV	mg/kg/day	NTV
				Zinc	1.9E+03	mg/kg	9.51E-09	mg/kg-day	NC	1/mg/kg-day	NC	6.66E-08	mg/kg-day	NTV	mg/kg/day	NTV
			Exp. Route Total								5.4E-09					8.1E-05
Medium Total											1.5E-06					3.7E-02
Surface Water	Off-site Surface Water	Surface Water	Dermal Contact	Arsenic	2.3E-02	mg/L	1.12E-08	mg/kg-day	1.5E+00	1/mg/kg-day	1.7E-08	7.84E-08	mg/kg-day	3.0E-04	mg/kg/day	2.6E-04
				Barium	4.1E-01	mg/L	1.95E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.36E-06	mg/kg-day	1.4E-02	mg/kg/day	9.7E-05
				Cadmium	5.9E-01	mg/L	2.85E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.99E-06	mg/kg-day	2.5E-05	mg/kg/day	8.0E-02
				Chromium	7.1E-01	mg/L	5.05E-08	mg/kg-day	NC	1/mg/kg-day	NC	3.53E-07	mg/kg-day	2.0E-02	mg/kg/day	1.8E-05
				Copper	8.8E-01	mg/L	4.21E-07	mg/kg-day	NC	1/mg/kg-day	NC	2.95E-06	mg/kg-day	4.0E-02	mg/kg/day	7.4E-05
				Lead	1.1E+00	mg/L	5.12E-08	mg/kg-day	NTV	1/mg/kg-day	NTV	3.58E-07	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	3.5E-04	mg/L	1.67E-10	mg/kg-day	NC	1/mg/kg-day	NC	1.17E-09	mg/kg-day	2.1E-05	mg/kg/day	5.6E-05
				Selenium	5.7E-03	mg/L	2.74E-09	mg/kg-day	NC	1/mg/kg-day	NC	1.92E-08	mg/kg-day	5.0E-03	mg/kg/day	3.8E-06
				Silver	5.4E-03	mg/L	1.55E-09	mg/kg-day	NC	1/mg/kg-day	NC	1.09E-08	mg/kg-day	2.0E-04	mg/kg/day	5.4E-05
				Zinc	1.8E+02	mg/L	5.33E-05	mg/kg-day	NC	1/mg/kg-day	NC	3.73E-04	mg/kg-day	3.0E-01	mg/kg/day	1.2E-03
			Exp. Route Total								1.7E-08					8.1E-02
		Exposure Point Total									1.7E-08					8.1E-02
Medium Total											1.7E-08					8.1E-02
Sediment	Off-site Sediment	Off-Facility Area sediment	Ingestion	Arsenic	5.5E+01	mg/kg	6.06E-07	mg/kg-day	1.5E+00	1/mg/kg-day	9.1E-07	4.24E-06	mg/kg-day	3.0E-04	mg/kg/day	1.4E-02
				Barium	2.8E+02	mg/kg	3.10E-06	mg/kg-day	NC	1/mg/kg-day	NC	2.17E-05	mg/kg-day	2.0E-01	mg/kg/day	1.1E-04
				Cadmium	1.7E+02	mg/kg	1.90E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.33E-05	mg/kg-day	1.0E-03	mg/kg/day	1.3E-02
				Chromium	8.1E+01	mg/kg	8.90E-07	mg/kg-day	NC	1/mg/kg-day	NC	6.23E-06	mg/kg-day	1.5E+00	mg/kg/day	4.2E-06
				Copper	2.2E+03	mg/kg	2.43E-05	mg/kg-day	NC	1/mg/kg-day	NC	1.70E-04	mg/kg-day	4.0E-02	mg/kg/day	4.3E-03
				Lead	7.3E+02	mg/kg	7.96E-06	mg/kg-day	NTV	1/mg/kg-day	NTV	5.57E-05	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.4E+00	mg/kg	1.54E-08	mg/kg-day	NC	1/mg/kg-day	NC	1.08E-07	mg/kg-day	3.0E-04	mg/kg/day	3.6E-04
				Selenium	2.8E+00	mg/kg	3.02E-08	mg/kg-day	NC	1/mg/kg-day	NC	2.12E-07	mg/kg-day	5.0E-03	mg/kg/day	4.2E-05
				Silver	4.3E+00	mg/kg	4.72E-08	mg/kg-day	NC	1/mg/kg-day	NC	3.30E-07	mg/kg-day	5.0E-03	mg/kg/day	6.6E-05
				Zinc	1.2E+04	mg/kg	1.31E-04	mg/kg-day	NC	1/mg/kg-day	NC	9.15E-04	mg/kg-day	3.0E-01	mg/kg/day	3.0E-03
			Exp. Route Total								9.1E-07					3.5E-02
			Dermal Contact	Arsenic	5.5E+01	mg/kg	1.56E-07	mg/kg-day	1.5E+00	1/mg/kg-day	2.3E-07	1.09E-06	mg/kg-day	3.0E-04	mg/kg/day	3.6E-03
				Barium	2.8E+02	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	1.4E-02	mg/kg/day	0.0E+00
				Cadmium	1.7E+02	mg/kg	1.64E-08	mg/kg-day	NC	1/mg/kg-day	NC	1.15E-07	mg/kg-day	2.5E-05	mg/kg/day	4.6E-03
				Chromium	8.1E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-02	mg/kg/day	0.0E+00
				Copper	2.2E+03	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	4.0E-02	mg/kg/day	0.0E+00
				Lead	7.3E+02	mg/kg	0.00E+00	mg/kg-day	NTV	1/mg/kg-day	NTV	0.00E+00	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.4E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.1E-05	mg/kg/day	0.0E+00
				Selenium	2.8E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	5.0E-03	mg/kg/day	0.0E+00
				Silver	4.3E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-04	mg/kg/day	0.0E+00
				Zinc	1.2E+04	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	3.0E-01	mg/kg/day	0.0E+00
			Exp. Route Total								2.3E-07					8.2E-03
		Exposure Point Total									1.1E-06					4.4E-02
Medium Total											1.1E-06					4.4E-02
											Total of Receptor Risks Across All Media					Total of Receptor Hazards Across All Media
											2.6E-06					1.6E-01

Notes:
EPC = Exposure Point Concentration
NC = Not classified as a carcinogen
NE = Not evaluated as a volatile chemical
NTV = No Toxicity Value Available
RfD = Noncancer Reference Dose

Bolded Chemicals and Bold/Underlined Risks = Exceeds a cancer risk of 1E-06 or a HQ of 0.1
NS - Not sampled or not detected.

TABLE 7I
RAGS PART D TABLE 7.1 RME
CALCULATION OF CHEMICAL CANCER RISKS
REASONABLE MAXIMUM EXPOSURE
Facility Area Trespasser Exposure - Former American Zinc Plating Site, Fairmont City, IL

Scenario Timeframe: Current
Receptor Population: Trespasser
Receptor Age: Adolescent

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF		Cancer Risk	Intake/Exposure Concentration		RfD		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Slag fine fraction	Slag	Facility Area slag fine fraction	Ingestion	Arsenic	3.5E+02	mg/kg	1.94E-05	mg/kg-day	1.5E+00	1/mg/kg-day	2.9E-05	1.36E-04	mg/kg-day	3.0E-04	mg/kg/day	4.5E-01
				Barium	7.1E+02	mg/kg	3.85E-05	mg/kg-day	NC	1/mg/kg-day	NC	2.70E-04	mg/kg-day	2.0E-01	mg/kg/day	1.3E-03
				Cadmium	6.9E+02	mg/kg	3.80E-05	mg/kg-day	NC	1/mg/kg-day	NC	2.66E-04	mg/kg-day	1.0E-03	mg/kg/day	2.7E-01
				Chromium	8.2E+01	mg/kg	4.47E-06	mg/kg-day	NC	1/mg/kg-day	NC	3.13E-05	mg/kg-day	1.5E+00	mg/kg day	2.1E-05
				Copper	4.0E+03	mg/kg	2.18E-04	mg/kg-day	NC	1/mg/kg-day	NC	1.53E-03	mg/kg-day	4.0E-02	mg/kg/day	3.8E-02
				Lead	6.2E+03	mg/kg	3.40E-04	mg/kg-day	NTV	1/mg/kg-day	NTV	2.38E-03	mg/kg-day	NTV	mg/kg day	NTV
				Mercury	1.0E+01	mg/kg	5.46E-07	mg/kg-day	NC	1/mg/kg-day	NC	3.82E-06	mg/kg-day	3.0E-04	mg/kg/day	1.3E-02
				Selenium	6.0E+00	mg/kg	3.26E-07	mg/kg-day	NC	1/mg/kg-day	NC	2.28E-06	mg/kg-day	5.0E-03	mg/kg/day	4.6E-04
				Silver	9.8E+01	mg/kg	5.37E-06	mg/kg-day	NC	1/mg/kg-day	NC	3.76E-05	mg/kg-day	5.0E-03	mg/kg/day	7.5E-03
				Zinc	3.8E+04	mg/kg	2.09E-03	mg/kg-day	NC	1/mg/kg-day	NC	1.46E-02	mg/kg-day	3.0E-01	mg/kg/day	4.9E-02
			Exp. Route Total								2.9E-05					8.3E-01
			Dermal Contact	Arsenic	3.5E+02	mg/kg	5.00E-06	mg/kg-day	1.5E+00	1/mg/kg-day	7.5E-06	3.50E-05	mg/kg-day	3.0E-04	mg/kg/day	1.2E-01
				Barium	7.1E+02	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	1.4E-02	mg/kg/day	0.0E+00
				Cadmium	6.9E+02	mg/kg	3.26E-07	mg/kg-day	NC	1/mg/kg-day	NC	2.28E-06	mg/kg-day	2.5E-05	mg/kg/day	9.1E-02
				Chromium (as III)	8.2E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg day	NC	0.00E+00	mg/kg-day	2.0E-02	mg/kg/day	0.0E+00
				Copper	4.0E+03	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	4.0E-02	mg/kg/day	0.0E+00
				Lead	6.2E+03	mg/kg	0.00E+00	mg/kg-day	NTV	1/mg/kg-day	NTV	0.00E+00	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.0E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.1E-05	mg/kg/day	0.0E+00
				Selenium	6.0E+00	mg/kg	0.00E+00	mg/kg-day	NC	1 mg/kg-day	NC	0.00E+00	mg/kg-day	5.0E-03	mg/kg/day	0.0E+00
				Silver	9.8E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-04	mg/kg/day	0.0E+00
				Zinc	3.8E+04	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	3.0E-01	mg/kg/day	0.0E+00
			Exp. Route Total								7.5E-06					2.1E-01
	Exposure Medium Total										3.7E-05					1.0E+00
	Air	Air	Inhalation of Particulates	Arsenic	3.5E+02	mg/kg	1.80E-09	mg/kg-day	1.51E+01	1/mg/kg-day	2.7E-08	1.26E-08	mg/kg-day	NTV	mg/kg/day	NTV
				Barium	7.1E+02	mg/kg	3.58E-09	mg/kg-day	NC	1/mg/kg-day	NC	2.51E-08	mg/kg-day	1.4E-04	mg/kg/day	1.8E-04
				Cadmium	6.9E+02	mg/kg	3.53E-09	mg/kg-day	6.30E+00	1/mg/kg-day	2.2E-08	2.47E-08	mg/kg-day	NTV	mg/kg/day	NTV
				Chromium (as VI-nc, total-c)	8.2E+01	mg/kg	4.16E-10	mg/kg-day	4.2E+01	1/mg/kg-day	1.7E-08	2.91E-09	mg/kg-day	2.9E-05	mg/kg/day	1.0E-04
				Copper	4.0E+03	mg/kg	2.03E-08	mg/kg-day	NC	1/mg/kg-day	NC	1.42E-07	mg/kg-day	NTV	mg/kg/day	NTV
				Lead	6.2E+03	mg/kg	3.17E-08	mg/kg-day	NTV	1/mg/kg-day	NTV	2.22E-07	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.0E+01	mg/kg	5.08E-11	mg/kg-day	NC	1/mg/kg-day	NC	3.55E-10	mg/kg-day	8.6E-05	mg/kg/day	4.1E-06
				Selenium	6.0E+00	mg/kg	3.03E-11	mg/kg-day	NC	1/mg/kg-day	NC	2.12E-10	mg/kg-day	NTV	mg/kg/day	NTV
				Silver	9.8E+01	mg/kg	4.99E-10	mg/kg-day	NC	1/mg/kg-day	NC	3.49E-09	mg/kg-day	NTV	mg/kg/day	NTV
				Zinc	3.8E+04	mg/kg	1.94E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.36E-06	mg/kg-day	NTV	mg/kg/day	NTV
			Exp. Route Total								6.7E-08					2.8E-04
Medium Total											3.7E-05					1.0E+00
Surface Water	Surface Water	Surface Water	Dermal Contact	Arsenic	2.2E-02	mg/L	1.06E-08	mg/kg-day	1.5E+00	1/mg/kg-day	1.6E-08	7.40E-08	mg/kg-day	3.0E-04	mg/kg/day	2.5E-04
				Barium	3.9E-01	mg/L	1.87E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.31E-06	mg/kg-day	1.4E-02	mg/kg/day	9.4E-05
				Cadmium	1.8E-03	mg/L	8.65E-08	mg/kg-day	NC	1/mg/kg-day	NC	6.06E-07	mg/kg-day	2.5E-05	mg/kg/day	2.4E-02
				Chromium	1.9E-02	mg/L	9.13E-09	mg/kg-day	NC	1/mg/kg-day	NC	6.39E-08	mg/kg-day	2.0E-02	mg/kg/day	3.3E-06
				Copper	NS	mg/L	–	mg/kg-day	NC	1/mg/kg-day	NS	–	mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.7E-01	mg/L	1.30E-08	mg/kg-day	NTV	1/mg/kg-day	NTV	9.08E-08	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	NS	mg/L	–	mg/kg-day	NC	1/mg/kg-day	NS	–	mg/kg-day	2.1E-05	mg/kg/day	NS
				Selenium	4.6E-03	mg/L	2.21E-09	mg/kg-day	NC	1/mg/kg-day	NC	1.55E-08	mg/kg-day	5.0E-03	mg/kg/day	3.1E-06
				Silver	4.2E+01	mg/L	1.20E-05	mg/kg-day	NC	1/mg/kg-day	NC	8.38E-05	mg/kg-day	2.0E-04	mg/kg/day	4.2E-01
				Zinc	1.3E-03	mg/L	3.75E-10	mg/kg-day	NC	1/mg/kg-day	NC	2.62E-09	mg/kg-day	3.0E-01	mg/kg/day	8.7E-09
			Exp. Route Total								1.6E-08					4.4E-01
		Exposure Point Total									1.6E-08					4.4E-01
Medium Total											1.6E-08					4.4E-01
Sediment	Sediment	Facility Area sediment	Ingestion	Arsenic	8.1E+01	mg/kg	8.89E-07	mg/kg-day	1.5E+00	1/mg/kg-day	1.3E-06	6.23E-06	mg/kg-day	3.0E-04	mg/kg/day	2.1E-02
				Barium	3.9E+02	mg/kg	4.22E-06	mg/kg-day	NC	1/mg/kg-day	NC	2.95E-05	mg/kg-day	2.0E-01	mg/kg/day	1.5E-04
				Cadmium	3.6E+02	mg/kg	3.93E-06	mg/kg-day	NC	1/mg/kg-day	NC	2.78E-05	mg/kg-day	1.0E-03	mg/kg/day	2.8E-02
				Chromium	4.8E+01	mg/kg	5.21E-07	mg/kg-day	NC	1/mg/kg-day	NC	3.65E-06	mg/kg-day	1.5E+00	mg/kg/day	2.4E-06
				Copper	NS	mg/kg	#VALUE!	mg/kg-day	NC	1/mg/kg-day	NS	#VALUE!	mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.9E+03	mg/kg	3.17E-05	mg/kg-day	NTV	1/mg/kg-day	NTV	2.22E-04	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	5.3E+00	mg/kg	5.77E-08	mg/kg-day	NC	1/mg/kg-day	NC	4.04E-07	mg/kg-day	3.0E-04	mg/kg/day	1.3E-03
				Selenium	5.3E+00	mg/kg	5.76E-08	mg/kg-day	NC	1/mg/kg-day	NC	4.03E-07	mg/kg-day	5.0E-03	mg/kg/day	8.1E-05
				Silver	3.3E+01	mg/kg	3.55E-07	mg/kg-day	NC	1/mg/kg-day	NC	2.49E-06	mg/kg-day	5.0E-03	mg/kg/day	5.0E-04
				Zinc	1.9E+04	mg/kg	4.24E-04	mg/kg-day	NC	1/mg/kg-day	NC	2.97E-03	mg/kg-day	3.0E-01	mg/kg/day	9.9E-03
			Exp. Route Total								1.3E-06					6.1E-02
			Dermal Contact	Arsenic	8.1E+01	mg/kg	2.29E-07	mg/kg-day	1.5E+00	1/mg/kg-day	3.4E-07	1.61E-06	mg/kg-day	3.0E-04	mg/kg/day	5.4E-03
				Barium	3.9E+02	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	1.4E-02	mg/kg/day	0.0E+00
				Cadmium	3.6E+02	mg/kg	3.42E-08	mg/kg-day	NC	1/mg/kg-day	NC	2.39E-07	mg/kg-day	2.5E-05	mg/kg/day	9.6E-03
				Chromium	4.8E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-02	mg/kg/day	0.0E+00
				Copper	NS	mg/kg	#VALUE!	mg/kg-day	NC	1/mg/kg-day	NS	#VALUE!	mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.9E+03	mg/kg	0.00E+00	mg/kg-day	NTV	1/mg/kg-day	NTV	0.00E+00	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	5.3E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.1E-05	mg/kg/day	0.0E+00
				Selenium	5.3E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	5.0E-03	mg/kg/day	0.0E+00
				Silver	3.3E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-04	mg/kg/day	0.0E+00
				Zinc	1.9E+04	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	3.0E-01	mg/kg/day	0.0E+00
			Exp. Route Total								3.4E-07					1.5E-02
		Exposure Point Total									1.7E-06					7.5E-02
Medium Total											1.7E-06					7.5E-02
										Total of Receptor Risks Across All Media	3.8E-05			Total of Receptor Hazards Across All Media		1.6E+00

Notes:
EPC = Exposure Point Concentration
NC = Not classified as a carcinogen
NE = Not evaluated as a volatile chemical
NTV = No Toxicity Value Available
RfD = Noncancer Reference Dose

Bolded Chemicals and Bold/Underlined Risks = Exceeds a cancer risk of 1E-06 or a HQ of 0.1
NS - Not sampled or not detected.

E 7m

RAGS PART D TABLE 7.1 RME
CALCULATION OF CHEMICAL CANCER RISKS
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Hypothetical Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF		Cancer	Intake/Exposure Concentration		RfD		Hazard
							Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
Surface Slag	Slag	Facility area slag	Ingestion	Arsenic	3.5E+02	mg/kg	5.55E-04	mg/kg-day	1.5E+00	1/mg/kg-day	8.3E-04	4.53E-03	mg/kg-day	3.0E-04	mg/kg/day	1.5E+01
fine fraction		fine fraction		Barium	7.1E+02	mg/kg	1.10E-03	mg/kg-day	NC	1/mg/kg-day	NC	9.02E-03	mg/kg-day	2.0E-01	mg/kg/day	4.5E-02
				Cadmium	6.9E+02	mg/kg	1.09E-03	mg/kg-day	NC	1/mg/kg-day	NC	8.88E-03	mg/kg-day	1.0E-03	mg/kg/day	8.9E+00
				Chromium	8.2E+01	mg/kg	1.28E-04	mg/kg-day	NC	1/mg/kg-day	NC	1.05E-03	mg/kg-day	1.5E+00	mg/kg/day	7.0E-04
				Copper	4.0E+03	mg/kg	6.26E-03	mg/kg-day	NC	1/mg/kg-day	NC	5.11E-02	mg/kg-day	4.0E-02	mg/kg/day	1.3E+00
				Lead	6.2E+03	mg/kg	9.76E-03	mg/kg-day	NTV	1/mg/kg-day	NTV	7.97E-02	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.0E+01	mg/kg	1.56E-05	mg/kg-day	NC	1/mg/kg-day	NC	1.28E-04	mg/kg-day	3.0E-04	mg/kg/day	4.3E-01
				Selenium	6.0E+00	mg/kg	9.33E-06	mg/kg-day	NC	1/mg/kg-day	NC	7.62E-05	mg/kg-day	5.0E-03	mg/kg/day	1.5E-02
				Silver	9.8E+01	mg/kg	1.54E-04	mg/kg-day	NC	1/mg/kg-day	NC	1.26E-03	mg/kg-day	5.0E-03	mg/kg/day	2.5E-01
				Zinc	3.8E+04	mg/kg	5.98E-02	mg/kg-day	NC	1/mg/kg-day	NC	4.89E-01	mg/kg-day	3.0E-01	mg/kg/day	1.6E+00
			Exp. Route Total								8.3E-04					2.8E+01
			Dermal Contact	Arsenic	3.5E+02	mg/kg	5.26E-05	mg/kg-day	1.5E+00	1/mg/kg-day	7.9E-05	3.81E-04	mg/kg-day	3.0E-04	mg/kg/day	1.3E+00
				Barium	7.1E+02	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	1.4E-02	mg/kg/day	0.0E+00
				Cadmium	6.9E+02	mg/kg	3.43E-06	mg/kg-day	NC	1/mg/kg-day	NC	2.49E-05	mg/kg-day	2.5E-05	mg/kg/day	1.0E+00
				Chromium (as III)	*8.2E+01*	*mg/kg*	*0.00E+00*	*mg/kg-day*	NC	*1/mg/kg-day*	NC	*0.00E+00*	*mg/kg-day*	*2.0E-02*	*mg/kg/day*	*0.0E+00*
				Copper	4.0E+03	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	4.0E-02	mg/kg/day	0.0E+00
				Lead	6.2E+03	mg/kg	0.00E+00	mg/kg-day	NTV	1/mg/kg-day	NTV	0.00E+00	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.0E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.1E-05	mg/kg/day	0.0E+00
				Selenium	6.0E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	5.0E-03	mg/kg/day	0.0E+00
				Silver	9.8E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-04	mg/kg/day	0.0E+00
				Zinc	3.8E+04	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	3.0E-01	mg/kg/day	0.0E+00
			Exp. Route Total								7.9E-05					2.3E+00
	Exposure Medium Total										9.1E-04					3.0E+01
	Air	Air	Inhalation of Particulates	Arsenic	3.5E+02	mg/kg	3.69E-08	mg/kg-day	1.51E+01	1/mg/kg-day	5.6E-07	1.59E-07	mg/kg-day	NTV	mg/kg/day	NTV
				Barium	7.1E+02	mg/kg	7.34E-08	mg/kg-day	NC	1/mg/kg-day	NC	3.16E-07	mg/kg-day	1.4E-04	mg/kg/day	2.2E-03
				Cadmium	6.9E+02	mg/kg	7.23E-08	mg/kg-day	6.30E+00	1/mg/kg-day	4.6E-07	3.11E-07	mg/kg-day	NTV	mg/kg/day	NTV
				Chromium (as VI-nc; total-c)	8.2E+01	mg/kg	8.51E-09	mg/kg-day	4.2E+01	1/mg/kg-day	3.6E-07	3.66E-08	mg/kg-day	2.9E-05	mg/kg/day	1.3E-03
				Copper	4.0E+03	mg/kg	4.16E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.79E-06	mg/kg-day	NTV	mg/kg/day	NTV
				Lead	6.2E+03	mg/kg	6.48E-07	mg/kg-day	NTV	1/mg/kg-day	NTV	2.79E-06	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.0E+01	mg/kg	1.04E-09	mg/kg-day	NC	1/mg/kg-day	NC	4.47E-09	mg/kg-day	8.6E-05	mg/kg/day	5.2E-05
				Selenium	6.0E+00	mg/kg	6.20E-10	mg/kg-day	NC	1/mg/kg-day	NC	2.66E-09	mg/kg-day	NTV	mg/kg/day	NTV
				Silver	9.8E+01	mg/kg	1.02E-08	mg/kg-day	NC	1/mg/kg-day	NC	4.39E-08	mg/kg-day	NTV	mg/kg/day	NTV
				Zinc	3.8E+04	mg/kg	3.98E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.71E-05	mg/kg-day	NTV	mg/kg/day	NTV
			Exp. Route Total								1.4E-06					3.5E-03
Medium Total											9.1E-04					3.0E+01
										Total of Receptor Risks Across All Media	9.1E-04		Total of Receptor Hazards Across All Media			3.0E+01

Notes:
EPC = Exposure Point Concentration
NC = Not classified as a carcinogen
NE = Not evaluated as a volatile chemical
NTV = No Toxicity Value Available
RfD = Noncancer Reference Dose

Bolded Chemicals and Bold/Underlined Risks = Exceeds a cancer risk of 1E-06 or a HQ of 0.1.
NS - Not sampled or not detected.

RAGS PART D TABLE 7.1 RME
CALCULATION OF CHEMICAL CANCER RISKS
REASONABLE MAXIMUM EXPOSURE
Facility Area Site Worker Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: *Current/Future*
Receptor Population: Site Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF		Cancer	Intake/Exposure Concentration		RfD		Hazard
							Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
Surface Slag	Slag	Facility Area slag	Ingestion	Arsenic	3.5E+02	mg/kg	1.24E-04	mg/kg-day	1.5E+00	1/mg/kg-day	1.9E-04	3.47E-04	mg/kg-day	3.0E-04	mg/kg/day	1.2E+00
fine fraction		fine fraction		Barium	7.1E+02	mg/kg	2.47E-04	mg/kg-day	NC	1/mg/kg-day	NC	6.91E-04	mg/kg-day	2.0E-01	mg/kg/day	3.5E-03
				Cadmium	6.9E+02	mg/kg	2.43E-04	mg/kg-day	NC	1/mg/kg-day	NC	6.80E-04	mg/kg-day	1.0E-03	mg/kg/day	6.8E-01
				Chromium	8.2E+01	mg/kg	2.86E-05	mg/kg-day	NC	1/mg/kg-day	NC	8.00E-05	mg/kg-day	1.5E+00	mg/kg/day	5.3E-05
				Copper	4.0E+03	mg/kg	1.40E-03	mg/kg-day	NC	1/mg/kg-day	NC	3.91E-03	mg/kg-day	4.0E-02	mg/kg/day	9.8E-02
				Lead	6.2E+03	mg/kg	2.18E-03	mg/kg-day	NTV	1/mg/kg-day	NTV	6.10E-03	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.0E+01	mg/kg	3.49E-06	mg/kg-day	NC	1/mg/kg-day	NC	9.78E-06	mg/kg-day	3.0E-04	mg/kg/day	3.3E-02
				Selenium	6.0E+00	mg/kg	2.08E-06	mg/kg-day	NC	1/mg/kg-day	NC	5.83E-06	mg/kg-day	5.0E-03	mg/kg/day	1.2E-03
				Silver	9.8E+01	mg/kg	3.43E-05	mg/kg-day	NC	1/mg/kg-day	NC	9.62E-05	mg/kg-day	5.0E-03	mg/kg/day	1.9E-02
				Zinc	3.8E+04	mg/kg	1.34E-02	mg/kg-day	NC	1/mg/kg-day	NC	3.74E-02	mg/kg-day	3.0E-01	mg/kg/day	1.2E-01
			Exp. Route Total								1.9E-04					2.1E+00
			Dermal Contact	*Arsenic*	3.5E+02	*mg/kg*	2.45E-05	*mg/kg-day*	1.5E+00	*1/mg/kg-day*	3.7E-05	6.87E-05	*mg/kg-day*	3.0E-04	*mg/kg/day*	2.3E-01
				Barium	7.1E+02	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	1.4E-02	mg/kg/day	0.0E+00
				Cadmium	6.9E+02	mg/kg	1.60E-06	mg/kg-day	NC	1/mg/kg-day	NC	4.49E-06	mg/kg-day	2.5E-05	mg/kg/day	1.8E-01
				Chromium (as III)	8.2E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-02	mg/kg/day	0.0E+00
				Copper	4.0E+03	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	4.0E-02	mg/kg/day	0.0E+00
				Lead	6.2E+03	mg/kg	0.00E+00	mg/kg-day	NTV	1/mg/kg-day	NTV	0.00E+00	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.0E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.1E-05	mg/kg/day	0.0E+00
				Selenium	6.0E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	5.0E-03	mg/kg/day	0.0E+00
				Silver	9.8E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-04	mg/kg/day	0.0E+00
				Zinc	3.8E+04	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	3.0E-01	mg/kg/day	0.0E+00
			Exp. Route Total								3.7E-05					4.1E-01
	Exposure Medium Total										2.2E-04					2.5E+00
	Air	Air	Inhalation of Particulates	Arsenic	3.5E+02	mg/kg	1.32E-08	mg/kg-day	1.51E+01	1/mg/kg-day	2.0E-07	3.69E-08	mg/kg-day	NTV	mg/kg/day	NTV
				Barium	7.1E+02	mg/kg	2.62E-08	mg/kg-day	NC	1/mg/kg-day	NC	7.34E-08	mg/kg-day	1.4E-04	mg/kg/day	5.1E-04
				Cadmium	6.9E+02	mg/kg	2.58E-08	mg/kg-day	6.30E+00	1/mg/kg-day	1.6E-07	7.23E-08	mg/kg-day	NTV	mg/kg/day	NTV
				Chromium (as VI-nc; total-c)	8.2E+01	mg/kg	3.04E-09	mg/kg-day	4.2E+01	1/mg/kg-day	1.3E-07	8.51E-09	mg/kg-day	2.9E-05	mg/kg/day	3.0E-04
				Copper	4.0E+03	mg/kg	1.49E-07	mg/kg-day	NC	1/mg/kg-day	NC	4.16E-07	mg/kg-day	NTV	mg/kg/day	NTV
				Lead	6.2E+03	mg/kg	2.32E-07	mg/kg-day	NTV	1/mg/kg-day	NTV	6.48E-07	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.0E+01	mg/kg	3.71E-10	mg/kg-day	NC	1/mg/kg-day	NC	1.04E-09	mg/kg-day	8.6E-05	mg/kg/day	1.2E-05
				Selenium	6.0E+00	mg/kg	2.21E-10	mg/kg-day	NC	1/mg/kg-day	NC	6.20E-10	mg/kg-day	NTV	mg/kg/day	NTV
				Silver	9.8E+01	mg/kg	3.65E-09	mg/kg-day	NC	1/mg/kg-day	NC	1.02E-08	mg/kg-day	NTV	mg/kg/day	NTV
				Zinc	3.8E+04	mg/kg	1.42E-06	mg/kg-day	NC	1/mg/kg-day	NC	3.98E-06	mg/kg-day	NTV	mg/kg/day	NTV
			Exp. Route Total								4.9E-07					8.2E-04
Medium Total											2.2E-04					2.5E+00

RAGS PART D TABLE 7.1 RME
CALCULATION OF CHEMICAL CANCER RISKS
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Hypothetical Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF		Cancer	Intake/Exposure Concentration		RfD		Hazard
							Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
Native Surface Soil	Native surface soil	Facility Area native soil	Ingestion	Arsenic	5.5E+01	mg/kg	8.57E-05	mg/kg-day	1.5E+00	1/mg/kg-day	1.3E-04	6.99E-04	mg/kg-day	3.0E-04	mg/kg/day	2.3E+00
fine fraction		fine fraction		Barium	3.5E+02	mg/kg	5.55E-04	mg/kg-day	NC	1/mg/kg-day	NC	4.54E-03	mg/kg-day	2.0E-01	mg/kg/day	2.3E-02
				Cadmium	7.2E+01	mg/kg	1.12E-04	mg/kg-day	NC	1/mg/kg-day	NC	9.16E-04	mg/kg-day	1.0E-03	mg/kg/day	9.2E-01
				Chromium	3.7E+01	mg/kg	5.73E-05	mg/kg-day	NC	1/mg/kg-day	NC	4.68E-04	mg/kg-day	1.5E+00	mg/kg/day	3.1E-04
				Copper	NS	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NS	NS	mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	1.5E+03	mg/kg	2.40E-03	mg/kg-day	NTV	1/mg/kg-day	NTV	1.96E-02	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.4E+00	mg/kg	2.22E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.81E-05	mg/kg-day	3.0E-04	mg/kg/day	6.0E-02
				Selenium	*2.0E+00*	*mg/kg*	*3.16E-06*	*mg/kg-day*	*NC*	*1/mg/kg-day*	NC	*2.58E-05*	*mg/kg-day*	*5.0E-03*	*mg/kg/day*	*5.2E-03*
				Silver	5.7E+01	mg/kg	8.92E-05	mg/kg-day	NC	1/mg/kg-day	NC	7.29E-04	mg/kg-day	5.0E-03	mg/kg/day	1.5E-01
				Zinc	9.9E+03	mg/kg	1.55E-02	mg/kg-day	NC	1/mg/kg-day	NC	1.27E-01	mg/kg-day	3.0E-01	mg/kg/day	4.2E-01
			Exp. Route Total								1.3E-04					3.9E+00
			Dermal Contact	Arsenic	5.5E+01	mg/kg	8.11E-06	mg/kg-day	1.5E+00	1/mg/kg-day	1.2E-05	5.88E-05	mg/kg-day	3.0E-04	mg/kg/day	2.0E-01
				Barium	3.5E+02	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	1.4E-02	mg/kg/day	0.0E+00
				Cadmium	7.2E+01	mg/kg	3.54E-07	mg/kg-day	NC	1/mg/kg-day	NC	2.57E-06	mg/kg-day	2.5E-05	mg/kg/day	1.0E-01
				Chromium (as III)	3.7E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-02	mg/kg/day	0.0E+00
				Copper	NS	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NS	0.00E+00	mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	1.5E+03	mg/kg	0.00E+00	mg/kg-day	NTV	1/mg/kg-day	NTV	0.00E+00	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.4E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.1E-05	mg/kg/day	0.0E+00
				Selenium	2.0E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	5.0E-03	mg/kg/day	0.0E+00
				Silver	5.7E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-04	mg/kg/day	0.0E+00
				Zinc	9.9E+03	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	3.0E-01	mg/kg/day	0 0E+00
			Exp. Route Total								1.2E-05					3.0E-01
	Exposure Medium Total										1.4E-04					4.2E+00

LE 7t
RAGS PART D TABLE 7.1 RME
CALCULATION OF CHEMICAL CANCER RISKS
REASONABLE MAXIMUM EXPOSURE
Facility Area Site Worker Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Current/Future
Receptor Population: Site Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF		Cancer Risk	Intake/Exposure Concentration		RfD		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
native surface soil	Native soil	Facility area native soil	Ingestion	Arsenic	5.5E+01	mg/kg	1.91E-05	mg/kg-day	1.5E+00	1/mg/kg-day	2.9E-05	5.35E-05	mg/kg-day	3.0E-04	mg/kg/day	1.8E-01
fine fraction		fine fraction		Barium	3.5E+02	mg/kg	1.24E-04	mg/kg-day	NC	1/mg/kg-day	NC	3.47E-04	mg/kg-day	2.0E-01	mg/kg/day	1.7E-03
				Cadmium	7.2E+01	mg/kg	2.50E-05	mg/kg-day	NC	1/mg/kg-day	NC	7.01E-05	mg/kg-day	1.0E-03	mg/kg/day	7.0E-02
				Chromium	3.7E+01	mg/kg	1.28E-05	mg/kg-day	NC	1/mg/kg-day	NC	3.58E-05	mg/kg-day	1.5E+00	mg/kg/day	2.4E-05
				Copper	NS	mg/kg	#VALUE!	mg/kg-day	NC	1/mg/kg-day	NS	#VALUE!	mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	1.5E+03	mg/kg	5.35E-04	mg/kg-day	NTV	1/mg/kg-day	NTV	1.50E-03	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.4E+00	mg/kg	4.94E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.38E-06	mg/kg-day	3.0E-04	mg/kg/day	4.6E-03
				Selenium	2.0E+00	mg/kg	7.05E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.97E-06	mg/kg-day	5.0E-03	mg/kg/day	3.9E-04
				Silver	5.7E+01	mg/kg	1.99E-05	mg/kg-day	NC	1/mg/kg-day	NC	5.58E-05	mg/kg-day	5.0E-03	mg/kg/day	1.1E-02
				Zinc	9.9E+03	mg/kg	3.46E-03	mg/kg-day	NC	1/mg/kg-day	NC	9.68E-03	mg/kg-day	3.0E-01	mg/kg/day	3.2E-02
			Exp. Route Total								2.9E-05					3.0E-01
			Dermal Contact	Arsenic	5.5E+01	mg/kg	3.79E-06	mg/kg-day	1.5E+00	1/mg/kg-day	5.7E-06	1.06E-05	mg/kg-day	3.0E-04	mg/kg/day	3.5E-02
				Barium	3.5E+02	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	1.4E-02	mg/kg/day	0.0E+00
				Cadmium	7.2E+01	mg/kg	1.65E-07	mg/kg-day	NC	1/mg/kg-day	NC	4.63E-07	mg/kg-day	2.5E-05	mg/kg/day	1.9E-02
				Chromium (as III)	3.7E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-02	mg/kg/day	0.0E+00
				Copper	NS	mg/kg	#VALUE!	mg/kg-day	NC	1/mg/kg-day	NS	#VALUE!	mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	1.5E+03	mg/kg	0.00E+00	mg/kg-day	NTV	1/mg/kg-day	NTV	0.00E+00	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.4E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.1E-05	mg/kg/day	0.0E+00
				Selenium	2.0E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	5.0E-03	mg/kg/day	0.0E+00
				Silver	5.7E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-04	mg/kg/day	0.0E+00
				Zinc	9.9E+03	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	3.0E-01	mg/kg/day	0.0E+00
			Exp. Route Total								5.7E-06					5.4E-02
	Exposure Medium Total										3.4E-05					3.5E-01
	Air	Air	Inhalation of Particulates	Arsenic	5.5E+01	mg/kg	2.03E-09	mg/kg-day	1.51E+01	1/mg/kg-day	3.1E-08	5.69E-09	mg/kg-day	NTV	mg/kg/day	NTV
				Barium	3.5E+02	mg/kg	1.32E-08	mg/kg-day	NC	1/mg/kg-day	NC	3.69E-08	mg/kg-day	1.4E-04	mg/kg/day	2.6E-04
				Cadmium	7.2E+01	mg/kg	2.66E-09	mg/kg-day	6.30E+00	1/mg/kg-day	1.7E-08	7.45E-09	mg/kg-day	NTV	mg/kg/day	NTV
				Chromium (as VI-nc; total-c)	3.7E+01	mg/kg	1.36E-09	mg/kg-day	4.2E+01	1/mg/kg-day	5.7E-08	3.81E-09	mg/kg-day	2.9E-05	mg/kg/day	1.3E-04
				Copper	NS	mg/kg	#VALUE!	mg/kg-day	NC	1/mg/kg-day	NS	#VALUE!	mg/kg-day	NTV	mg/kg/day	NS
				Lead	1.5E+03	mg/kg	5.69E-08	mg/kg-day	NTV	1/mg/kg-day	NTV	1.59E-07	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.4E+00	mg/kg	5.26E-11	mg/kg-day	NC	1/mg/kg-day	NC	1.47E-10	mg/kg-day	8.6E-05	mg/kg/day	1.7E-06
				Selenium	2.0E+00	mg/kg	7.49E-11	mg/kg-day	NC	1/mg/kg-day	NC	2.10E-10	mg/kg-day	NTV	mg/kg/day	NTV
				Silver	5.7E+01	mg/kg	2.12E-09	mg/kg-day	NC	1/mg/kg-day	NC	5.93E-09	mg/kg-day	NTV	mg/kg/day	NTV
				Zinc	9.9E+03	mg/kg	3.68E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.03E-06	mg/kg-day	NTV	mg/kg/day	NTV
			Exp. Route Total								1.0E-07					3.9E-04
Medium Total											3.4E-05					3.5E-01

TABLE 7u
RAGS PART D TABLE 7.1 RME
CALCULATION OF CHEMICAL CANCER RISKS
REASONABLE MAXIMUM EXPOSURE
Facility Area Trespasser Exposure - Former American Zinc Plating Site, Fairmont City, IL

Scenario Timeframe: Current
Receptor Population: Trespasser
Receptor Age: Adolescent

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF		Cancer Risk	Intake/Exposure Concentration		RfD		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Native surface soil fine fraction	native soil	Facility area native soil fine fraction	Ingestion	Arsenic	5.5E+01	mg/kg	2.99E-06	mg/kg-day	1.5E+00	1/mg/kg-day	4.5E-06	2.09E-05	mg/kg-day	3.0E-04	mg/kg/day	7.0E-02
				Barium	3.5E+02	mg/kg	1.94E-05	mg/kg-day	NC	1/mg/kg-day	NC	1.36E-04	mg/kg-day	2.0E-01	mg/kg/day	6.8E-04
				Cadmium	7.2E+01	mg/kg	3.91E-06	mg/kg-day	NC	1/mg/kg-day	NC	2.74E-05	mg/kg-day	1.0E-03	mg/kg/day	2.7E-02
				Chromium	3.7E+01	mg/kg	2.00E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.40E-05	mg/kg-day	1.5E+00	mg/kg/day	9.3E-06
				Copper	NS	mg/kg	NS	mg/kg-day	NC	1/mg/kg-day	NS	NS	mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	1.5E+03	mg/kg	8.36E-05	mg/kg-day	NTV	1/mg/kg-day	NTV	5.85E-04	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.4E+00	mg/kg	7.73E-08	mg/kg-day	NC	1/mg/kg-day	NC	5.41E-07	mg/kg-day	3.0E-04	mg/kg/day	1.8E-03
				Selenium	2.0E+00	mg/kg	1.10E-07	mg/kg-day	NC	1/mg/kg-day	NC	7.71E-07	mg/kg-day	5.0E-03	mg/kg/day	1.5E-04
				Silver	5.7E+01	mg/kg	3.11E-06	mg/kg-day	NC	1/mg/kg-day	NC	2.18E-05	mg/kg-day	5.0E-03	mg/kg/day	4.4E-03
				Zinc	9.9E+03	mg/kg	5.41E-04	mg/kg-day	NC	1/mg/kg-day	NC	3.78E-03	mg/kg-day	3.0E-01	mg/kg/day	1.3E-02
			Exp. Route Total								4.5E-06					1.2E-01
			Dermal Contact	Arsenic	5.5E+01	mg/kg	7.71E-07	mg/kg-day	1.5E+00	1/mg/kg-day	1.2E-06	5.40E-06	mg/kg-day	3.0E-04	mg/kg/day	1.8E-02
				Barium	3.5E+02	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	1.4E-02	mg/kg/day	0.0E+00
				Cadmium	7.2E+01	mg/kg	3.37E-08	mg/kg-day	NC	1/mg/kg-day	NC	2.36E-07	mg/kg-day	2.5E-05	mg/kg/day	9.4E-03
				Chromium (as III)	3.7E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-02	mg/kg/day	0.0E+00
				Copper	NS	mg/kg	NS	mg/kg-day	NC	1/mg/kg-day	NS	NS	mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	1.5E+03	mg/kg	0.00E+00	mg/kg-day	NTV	1/mg/kg-day	NTV	0.00E+00	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.4E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.1E-05	mg/kg/day	0.0E+00
				Selenium	2.0E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	5.0E-03	mg/kg/day	0.0E+00
				Silver	5.7E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-04	mg/kg/day	0.0E+00
				Zinc	9.9E+03	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	3.0E-01	mg/kg/day	0.0E+00
			Exp. Route Total								1.2E-06					2.7E-02
	Exposure Medium Total										5.6E-06					1.4E-01
	Air	Air	Inhalation of Particulates	Arsenic	5.5E+01	mg/kg	2.78E-10	mg/kg-day	1.51E+01	1/mg/kg-day	4.2E-09	1.95E-09	mg/kg-day	NTV	mg/kg/day	NTV
				Barium	3.5E+02	mg/kg	1.80E-09	mg/kg-day	NC	1/mg/kg-day	NC	1.26E-08	mg/kg-day	1.4E-04	mg/kg/day	8.8E-05
				Cadmium	7.2E+01	mg/kg	3.64E-10	mg/kg-day	6.30E+00	1/mg/kg-day	2.3E-09	2.55E-09	mg/kg-day	NTV	mg/kg/day	NTV
				Chromium (as VI-nc; total-c)	3.7E+01	mg/kg	1.86E-10	mg/kg-day	4.2E+01	1/mg/kg-day	7.8E-09	1.30E-09	mg/kg-day	2.9E-05	mg/kg/day	4.6E-05
				Copper	NS	mg/kg	#VALUE!	mg/kg-day	NC	1/mg/kg-day	NS	#VALUE!	mg/kg-day	NTV	mg/kg/day	NS
				Lead	1.5E+03	mg/kg	7.78E-09	mg/kg-day	NTV	1/mg/kg-day	NTV	5.44E-08	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.4E+00	mg/kg	7.19E-12	mg/kg-day	NC	1/mg/kg-day	NC	5.03E-11	mg/kg-day	8.6E-05	mg/kg/day	5.9E-07
				Selenium	2.0E+00	mg/kg	1.02E-11	mg/kg-day	NC	1/mg/kg-day	NC	7.17E-11	mg/kg-day	NTV	mg/kg/day	NTV
				Silver	5.7E+01	mg/kg	2.90E-10	mg/kg-day	NC	1/mg/kg-day	NC	2.03E-09	mg/kg-day	NTV	mg/kg/day	NTV
				Zinc	9.9E+03	mg/kg	5.03E-08	mg/kg-day	NC	1/mg/kg-day	NC	3.52E-07	mg/kg-day	NTV	mg/kg/day	NTV
			Exp. Route Total								1.4E-08					1.3E-04
Medium Total											5.7E-06					1.4E-01
Surface Water	Surface Water	Surface Water	Dermal Contact	Arsenic	2.2E-02	mg/L	1.06E-08	mg/kg-day	1.5E+00	1/mg/kg-day	1.6E-08	7.40E-08	mg/kg-day	3.0E-04	mg/kg/day	2.5E-04
				Barium	3.9E-01	mg/L	1.87E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.31E-06	mg/kg-day	1.4E-02	mg/kg/day	9.4E-05
				Cadmium	1.8E-01	mg/L	8.65E-08	mg/kg-day	NC	1/mg/kg-day	NC	6.06E-07	mg/kg-day	2.5E-05	mg/kg/day	2.4E-02
				Chromium	1.9E-02	mg/L	9.13E-09	mg/kg-day	NC	1/mg/kg-day	NC	6.39E-08	mg/kg-day	2.0E-02	mg/kg/day	3.3E-06
				Copper	NS	mg/L	--	mg/kg-day	NC	1/mg/kg-day	NS	--	mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.7E-01	mg/L	1.30E-08	mg/kg-day	NTV	1/mg/kg-day	NTV	9.08E-08	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	NS	mg/L	--	mg/kg-day	NC	1/mg/kg-day	NS	--	mg/kg-day	2.1E-05	mg/kg/day	NS
				Selenium	4.6E-03	mg/L	2.21E-09	mg/kg-day	NC	1/mg/kg-day	NC	1.55E-08	mg/kg-day	5.0E-03	mg/kg/day	3.1E-06
				Silver	4.2E-01	mg/L	1.20E-05	mg/kg-day	NC	1/mg/kg-day	NC	8.38E-05	mg/kg-day	2.0E-04	mg/kg/day	4.2E-01
				Zinc	1.3E-03	mg/L	3.75E-10	mg/kg-day	NC	1/mg/kg-day	NC	2.62E-09	mg/kg-day	3.0E-01	mg/kg/day	8.7E-09
			Exp. Route Total								1.6E-08					4.4E-01
		Exposure Point Total									1.6E-08					4.4E-01
Medium Total											1.6E-08					4.4E-01
Sediment	Sediment	Facility area sediment	Ingestion	Arsenic	8.1E+01	mg/kg	8.89E-07	mg/kg-day	1.5E+00	1/mg/kg-day	1.3E-06	6.23E-06	mg/kg-day	3.0E-04	mg/kg/day	2.1E-02
				Barium	3.9E+02	mg/kg	4.22E-06	mg/kg-day	NC	1/mg/kg-day	NC	2.95E-05	mg/kg-day	2.0E-01	mg/kg/day	1.5E-04
				Cadmium	3.6E+02	mg/kg	3.97E-06	mg/kg-day	NC	1/mg/kg-day	NC	2.78E-05	mg/kg-day	1.0E-03	mg/kg/day	2.8E-02
				Chromium	4.8E+01	mg/kg	5.21E-07	mg/kg-day	NC	1/mg/kg-day	NC	3.65E-06	mg/kg-day	1.5E+00	mg/kg/day	2.4E-06
				Copper	NS	mg/kg	#VALUE!	mg/kg-day	NC	1/mg/kg-day	NS	#VALUE!	mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.9E+03	mg/kg	3.17E-05	mg/kg-day	NTV	1/mg/kg-day	NTV	2.22E-04	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	5.3E+00	mg/kg	5.77E-08	mg/kg-day	NC	1/mg/kg-day	NC	4.04E-07	mg/kg-day	3.0E-04	mg/kg/day	1.3E-03
				Selenium	5.3E+00	mg/kg	5.76E-08	mg/kg-day	NC	1/mg/kg-day	NC	4.03E-07	mg/kg-day	5.0E-03	mg/kg/day	8.1E-05
				Silver	3.3E+01	mg/kg	3.55E-07	mg/kg-day	NC	1/mg/kg-day	NC	2.49E-06	mg/kg-day	5.0E-03	mg/kg/day	5.0E-04
				Zinc	3.9E+04	mg/kg	4.24E-04	mg/kg-day	NC	1/mg/kg-day	NC	2.97E-03	mg/kg-day	3.0E-01	mg/kg/day	9.9E-03
			Exp. Route Total								1.3E-06					6.1E-02
			Dermal Contact	Arsenic	8.1E+01	mg/kg	2.29E-07	mg/kg-day	1.5E+00	1/mg/kg-day	3.4E-07	1.61E-06	mg/kg-day	3.0E-04	mg/kg/day	5.4E-03
				Barium	3.9E+02	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	1.4E-02	mg/kg/day	0.0E+00
				Cadmium	3.6E+02	mg/kg	3.42E-08	mg/kg-day	NC	1/mg/kg-day	NC	2.39E-07	mg/kg-day	2.5E-05	mg/kg/day	9.6E-03
				Chromium	4.8E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-02	mg/kg/day	0.0E+00
				Copper	NS	mg/kg	#VALUE!	mg/kg-day	NC	1/mg/kg-day	NS	#VALUE!	mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.9E+03	mg/kg	0.00E+00	mg/kg-day	NTV	1/mg/kg-day	NTV	0.00E+00	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	5.3E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.1E-05	mg/kg/day	0.0E+00
				Selenium	5.3E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	5.0E-03	mg/kg/day	0.0E+00
				Silver	3.3E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-04	mg/kg/day	0.0E+00
				Zinc	3.9E+04	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	3.0E-01	mg/kg/day	0.0E+00
			Exp. Route Total								3.4E-07					1.5E-02
		Exposure Point Total									1.7E-06					7.5E-02
Medium Total											1.7E-06					7.5E-02
										Total of Receptor Risks Across All Media	7.3E-06			Total of Receptor Hazards Across All Media		6.6E-01

Notes:
EPC = Exposure Point Concentration
NC = Not classified as a carcinogen
NE = Not evaluated as a volatile chemical
NTV = No Toxicity Value Available
RfD = Noncancer Reference Dose

Bolded Chemicals and Bold/Underlined Risks = Exceeds a cancer risk of 1E-06 or a HQ of 0.1
NS - Not sampled or not detected.

TABLE 7v
RAGS PART D TABLE 7.1 RME
CALCULATION OF CHEMICAL CANCER RISKS
REASONABLE MAXIMUM EXPOSURE
Off- Facility Area Utility Worker Exposure - Former American Zinc Plating Site, Fairmont City, IL

Scenario Timeframe: Current/Future
Receptor Population: Utility Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF		Cancer Risk	Intake/Exposure Concentration		RfD		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Soil Total - Alleyway	surface/subsurface soil	Off-Facility area alleyway soil	Ingestion	Arsenic	2.3E+01	mg/kg	1.24E-06	mg/kg-day	1.5E+00	1/mg/kg-day	1.9E-06	8.65E-06	mg/kg-day	3.0E-04	mg/kg/day	2.9E-02
				Barium	2.7E+02	mg/kg	1.46E-05	mg/kg-day	NC	1/mg/kg-day	NC	1.02E-04	mg/kg-day	2.0E-01	mg/kg/day	5.1E-04
				Cadmium	1.8E+01	mg/kg	9.84E-07	mg/kg-day	NC	1/mg/kg-day	NC	6.89E-06	mg/kg-day	1.0E-03	mg/kg/day	6.9E-03
				Chromium	5.1E+01	mg/kg	2.77E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.94E-05	mg/kg-day	1.5E+00	mg/kg/day	1.3E-05
				Copper	NS	mg/kg	#VALUE!	mg/kg-day	NC	1/mg/kg-day	NS	#VALUE!	mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	1.6E+03	mg/kg	8.83E-05	mg/kg-day	NTV	1/mg/kg-day	NTV	6.18E-04	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	7.2E-02	mg/kg	3.92E-09	mg/kg-day	NC	1/mg/kg-day	NC	2.74E-08	mg/kg-day	3.0E-04	mg/kg/day	9.1E-05
				Selenium	1.6E+00	mg/kg	8.91E-08	mg/kg-day	NC	1/mg/kg-day	NC	6.24E-07	mg/kg-day	5.0E-03	mg/kg/day	1.2E-04
				Silver	1.5E+01	mg/kg	8.13E-07	mg/kg-day	NC	1/mg/kg-day	NC	5.69E-06	mg/kg-day	5.0E-03	mg/kg/day	1.1E-03
				Zinc	3.2E+03	mg/kg	1.76E-04	mg/kg-day	NC	1/mg/kg-day	NC	1.23E-03	mg/kg-day	3.0E-01	mg/kg/day	4.1E-03
			Exp. Route Total								1.9E-06					4.2E-02
			Dermal Contact	Arsenic	2.3E+01	mg/kg	3.19E-07	mg/kg-day	1.5E+00	1/mg/kg-day	4.8E-07	2.23E-06	mg/kg-day	3.0E-04	mg/kg/day	7.4E-03
				Barium	2.7E+02	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	1.4E-02	mg/kg/day	0.0E+00
				Cadmium	1.8E+01	mg/kg	8.46E-09	mg/kg-day	NC	1/mg/kg-day	NC	5.92E-08	mg/kg-day	2.5E-05	mg/kg/day	2.4E-03
				Chromium (as III)	5.1E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-02	mg/kg/day	0.0E+00
				Copper	NS	mg/kg	#VALUE!	mg/kg-day	NC	1/mg/kg-day	NS	#VALUE!	mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	1.6E+03	mg/kg	0.00E+00	mg/kg-day	NTV	1/mg/kg-day	NTV	0.00E+00	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	7.2E-02	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.1E-05	mg/kg/day	0.0E+00
				Selenium	1.6E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	5.0E-03	mg/kg/day	0.0E+00
				Silver	1.5E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-04	mg/kg/day	0.0E+00
				Zinc	3.2E+03	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	3.0E-01	mg/kg/day	0.0E+00
			Exp. Route Total								4.8E-07					9.8E-03
	Exposure Medium Total										2.3E-06					5.2E-02
	Air	Air	Inhalation of Particulates	Arsenic	2.3E+01	mg/kg	1.15E-10	mg/kg-day	3.5E+01	1/mg/kg-day	1.7E-09	8.05E-10	mg/kg-day	NTV	mg/kg/day	NTV
				Barium	2.7E+02	mg/kg	1.36E-09	mg/kg-day	NC	1/mg/kg-day	NC	9.52E-09	mg/kg-day	1.4E-04	mg/kg/day	6.7E-05
				Cadmium	1.8E+01	mg/kg	9.15E-11	mg/kg-day	6.30E+00	1/mg/kg-day	5.8E-10	6.41E-10	mg/kg-day	NTV	mg/kg/day	NTV
				Chromium (as VI-nc; total-c)	5.1E+01	mg/kg	2.58E-10	mg/kg-day	4.2E+01	1/mg/kg-day	1.1E-08	1.81E-09	mg/kg-day	2.9E-05	mg/kg/day	6.3E-05
				Copper	NS	mg/kg	#VALUE!	mg/kg-day	NC	1/mg/kg-day	NS	#VALUE!	mg/kg-day	NTV	mg/kg/day	NS
				Lead	1.6E+03	mg/kg	8.22E-09	mg/kg-day	NTV	1/mg/kg-day	NTV	5.75E-08	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	7.2E-02	mg/kg	3.65E-13	mg/kg-day	NC	1/mg/kg-day	NC	2.55E-12	mg/kg-day	8.6E-05	mg/kg/day	3.0E-08
				Selenium	1.6E+00	mg/kg	8.29E-12	mg/kg-day	NC	1/mg/kg-day	NC	5.80E-11	mg/kg-day	NTV	mg/kg/day	NTV
				Silver	1.5E+01	mg/kg	7.56E-11	mg/kg-day	NC	1/mg/kg-day	NC	5.29E-10	mg/kg-day	NTV	mg/kg/day	NTV
				Zinc	3.2E+03	mg/kg	1.63E-08	mg/kg-day	NC	1/mg/kg-day	NC	1.14E-07	mg/kg-day	NTV	mg/kg/day	NTV
			Exp. Route Total								1.3E-08					1.3E-04
Medium Total											2.3E-06					5.2E-02
Surface Water	Off-Facility Area Surface Water	Surface Water	Dermal Contact	Arsenic	2.3E-02	mg/L	1.12E-08	mg/kg-day	1.5E+00	1/mg/kg-day	1.7E-08	7.84E-08	mg/kg-day	3.0E-04	mg/kg/day	2.6E-04
				Barium	4.1E-01	mg/L	1.95E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.36E-06	mg/kg-day	1.4E-02	mg/kg/day	9.7E-05
				Cadmium	5.9E-01	mg/L	2.85E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.99E-06	mg/kg-day	2.5E-05	mg/kg/day	8.0E-02
				Chromium	1.1E-01	mg/L	5.05E-08	mg/kg-day	NC	1/mg/kg-day	NC	3.53E-07	mg/kg-day	2.0E-02	mg/kg/day	1.8E-05
				Copper	8.8E-01	mg/L	4.21E-07	mg/kg-day	NC	1/mg/kg-day	NC	2.95E-06	mg/kg-day	4.0E-02	mg/kg/day	7.4E-05
				Lead	1.1E+00	mg/L	5.12E-08	mg/kg-day	NTV	1/mg/kg-day	NTV	3.58E-07	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	3.5E-04	mg/L	1.67E-10	mg/kg-day	NC	1/mg/kg-day	NC	1.17E-09	mg/kg-day	2.1E-05	mg/kg/day	5.6E-05
				Selenium	5.7E-03	mg/L	2.74E-09	mg/kg-day	NC	1/mg/kg-day	NC	1.92E-08	mg/kg-day	5.0E-03	mg/kg/day	3.8E-06
				Silver	5.4E-03	mg/L	1.55E-09	mg/kg-day	NC	1/mg/kg-day	NC	1.09E-08	mg/kg-day	2.0E-04	mg/kg/day	5.4E-05
				Zinc	1.8E+02	mg/L	5.33E-05	mg/kg-day	NC	1/mg/kg-day	NC	3.73E-04	mg/kg-day	3.0E-01	mg/kg/day	1.2E-03
			Exp. Route Total								1.7E-08					8.1E-02
		Exposure Point Total									1.7E-08					8.1E-02
Medium Total											1.7E-08					8.1E-02
Sediment	Off-Facility Area Sediment	Off-site sediment	Ingestion	Arsenic	5.5E+01	mg/kg	6.06E-07	mg/kg-day	1.5E+00	1/mg/kg-day	9.1E-07	4.24E-06	mg/kg-day	3.0E-04	mg/kg/day	1.4E-02
				Barium	2.8E+02	mg/kg	3.10E-06	mg/kg-day	NC	1/mg/kg-day	NC	2.17E-05	mg/kg-day	2.0E-01	mg/kg/day	1.1E-04
				Cadmium	1.7E+02	mg/kg	1.90E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.33E-05	mg/kg-day	1.0E-03	mg/kg/day	1.3E-02
				Chromium	8.1E+01	mg/kg	8.90E-07	mg/kg-day	NC	1/mg/kg-day	NC	6.23E-06	mg/kg-day	1.5E+00	mg/kg/day	4.2E-06
				Copper	2.2E+03	mg/kg	2.43E-05	mg/kg-day	NC	1/mg/kg-day	NC	1.70E-04	mg/kg-day	4.0E-02	mg/kg/day	4.3E-03
				Lead	7.3E+02	mg/kg	7.96E-06	mg/kg-day	NTV	1/mg/kg-day	NTV	5.57E-05	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.4E+00	mg/kg	1.54E-08	mg/kg-day	NC	1/mg/kg-day	NC	1.08E-07	mg/kg-day	3.0E-04	mg/kg/day	3.6E-04
				Selenium	2.8E+00	mg/kg	3.02E-08	mg/kg-day	NC	1/mg/kg-day	NC	2.12E-07	mg/kg-day	5.0E-03	mg/kg/day	4.2E-05
				Silver	4.3E+00	mg/kg	4.72E-08	mg/kg-day	NC	1/mg/kg-day	NC	3.30E-07	mg/kg-day	5.0E-03	mg/kg/day	6.6E-05
				Zinc	1.2E+04	mg/kg	1.31E-04	mg/kg-day	NC	1/mg/kg-day	NC	9.15E-04	mg/kg-day	3.0E-01	mg/kg/day	3.0E-03
			Exp. Route Total								9.1E-07					3.5E-02
			Dermal Contact	Arsenic	5.5E+01	mg/kg	1.56E-07	mg/kg-day	1.5E+00	1/mg/kg-day	2.3E-07	1.09E-06	mg/kg-day	3.0E-04	mg/kg/day	3.6E-03
				Barium	2.8E+02	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	1.4E-02	mg/kg/day	0.0E+00
				Cadmium	1.7E+02	mg/kg	1.64E-08	mg/kg-day	NC	1/mg/kg-day	NC	1.15E-07	mg/kg-day	2.5E-05	mg/kg/day	4.6E-03
				Chromium	8.1E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-02	mg/kg/day	0.0E+00
				Copper	2.2E+03	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	4.0E-02	mg/kg/day	0.0E+00
				Lead	7.3E+02	mg/kg	0.00E+00	mg/kg-day	NTV	1/mg/kg-day	NTV	0.00E+00	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.4E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.1E-05	mg/kg/day	0.0E+00
				Selenium	2.8E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	5.0E-03	mg/kg/day	0.0E+00
				Silver	4.3E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-04	mg/kg/day	0.0E+00
				Zinc	1.2E+04	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	3.0E-01	mg/kg/day	0.0E+00
			Exp. Route Total								2.3E-07					8.2E-03
		Exposure Point Total									1.1E-06					4.4E-02
Medium Total											1.1E-06					4.4E-02
											Total of Receptor Risks Across All Media	3.5E-06		Total of Receptor Hazards Across All Media		1.8E-01

Notes:
EPC = Exposure Point Concentration
NC = Not classified as a carcinogen
NE = Not evaluated as a volatile chemical
NTV = No Toxicity Value Available
RfD = Noncancer Reference Dose

Bolded Chemicals and Bold/Underlined Risks = Exceeds a cancer risk of 1E-06 or a HQ of 0.1
NS - Not sampled or not detected.

TABLE 7w
RAGS PART D TABLE 7.1 RME
CALCULATION OF CHEMICAL CANCER RISKS
REASONABLE MAXIMUM EXPOSURE
Off-Facility Area Recreational Exposure - Former American Zinc Plating Site, Fairmont City, IL

Scenario Timeframe: Current/Future
Receptor Population: Recreational User - Alleyway
Receptor Age: Adolescent

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF		Cancer	Intake/Exposure Concentration		RfD		Hazard
							Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
Surface Soil	Soil	Off Facility Area soil	Ingestion	Arsenic	2.0E+01	mg/kg	1.07E-06	mg/kg-day	1.5E+00	1/mg/kg-day	1.6E-06	7.46E-06	mg/kg-day	3.0E-04	mg/kg/day	2.5E-02
fine fraction		fine fraction		Barium	3.0E+02	mg/kg	1.63E-05	mg/kg-day	NC	1/mg/kg-day	NC	1.14E-04	mg/kg-day	2.0E-01	mg/kg/day	5.7E-04
alleyways	alleyways			Cadmium	2.0E+01	mg/kg	1.10E-06	mg/kg-day	NC	1/mg/kg-day	NC	7.69E-06	mg/kg-day	1.0E-03	mg/kg/day	7.7E-03
				Chromium	4.9E+01	mg/kg	2.67E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.87E-05	mg/kg-day	1.5E+00	mg/kg/day	1.2E-05
				Copper	NS	mg/kg	#VALUE!	mg/kg-day	NC	1/mg/kg-day	NS	#VALUE!	mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	5.2E+02	mg/kg	2.82E-05	mg/kg-day	NTV	1/mg/kg-day	NTV	1.97E-04	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.4E-01	mg/kg	7.59E-09	mg/kg-day	NC	1/mg/kg-day	NC	5.31E-08	mg/kg-day	3.0E-04	mg/kg/day	1.8E-04
				Selenium	1.1E+00	mg/kg	5.90E-08	mg/kg-day	NC	1/mg/kg-day	NC	4.13E-07	mg/kg-day	5.0E-03	mg/kg/day	8.3E-05
				Silver	2.8E+00	mg/kg	1.54E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.08E-06	mg/kg-day	5.0E-03	mg/kg/day	2.2E-04
				Zinc	3.5E+03	mg/kg	1.90E-04	mg/kg-day	NC	1/mg/kg-day	NC	1.33E-03	mg/kg-day	3.0E-01	mg/kg/day	4.4E-03
			Exp. Route Total								1.6E-06					3.8E-02
			Dermal Contact	Arsenic	2.0E+01	mg/kg	2.75E-07	mg/kg-day	1.5E+00	1/mg/kg-day	4.1E-07	1.93E-06	mg/kg-day	3.0E-04	mg/kg/day	6.4E-03
				Barium	3.0E+02	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	1.4E-02	mg/kg/day	0.0E+00
				Cadmium	2.0E+01	mg/kg	9.45E-09	mg/kg-day	NC	1/mg/kg-day	NC	6.61E-08	mg/kg-day	2.5E-05	mg/kg/day	2.6E-03
				Chromium (as III)	4.9E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-02	mg/kg/day	0.0E+00
				Copper	NS	mg/kg	#VALUE!	mg/kg-day	NC	1/mg/kg-day	NS	#VALUE!	mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	5.2E+02	mg/kg	0.00E+00	mg/kg-day	NTV	1/mg/kg-day	NTV	0.00E+00	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.4E-01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.1E-05	mg/kg/day	0.0E+00
				Selenium	1.1E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	5.0E-03	mg/kg/day	0.0E+00
				Silver	2.8E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-04	mg/kg/day	0.0E+00
				Zinc	3.5E+03	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	3.0E-01	mg/kg/day	0.0E+00
			Exp. Route Total								4.1E-07					9.1E-03
	Exposure Medium Total										2.0E-06					4.7E-02
	Air	Air	Inhalation of Particulates	Arsenic	2.0E+01	mg/kg	9.91E-11	mg/kg-day	1.51E+01	1/mg/kg-day	1.5E-09	6.94E-10	mg/kg-day	NTV	mg/kg/day	NTV
				Barium	3.0E+02	mg/kg	1.52E-09	mg/kg-day	NC	1/mg/kg-day	NC	1.06E-08	mg/kg-day	1.4E-04	mg/kg/day	7.4E-05
				Cadmium	2.0E+01	mg/kg	1.02E-10	mg/kg-day	6.30E+00	1/mg/kg-day	6.4E-10	7.15E-10	mg/kg-day	NTV	mg/kg/day	NTV
				Chromium (as VI-ne; total-c)	4.9E+01	mg/kg	2.49E-10	mg/kg-day	4.2E+01	1/mg/kg-day	1.0E-08	1.74E-09	mg/kg-day	2.9E-05	mg/kg/day	6.1E-05
				Copper	NS	mg/kg	#VALUE!	mg/kg-day	NC	1/mg/kg-day	NS	#VALUE!	mg/kg-day	NTV	mg/kg/day	NS
				Lead	5.2E+02	mg/kg	2.62E-09	mg/kg-day	NTV	1/mg/kg-day	NTV	1.83E-08	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.4E-01	mg/kg	7.06E-13	mg/kg-day	NC	1/mg/kg-day	NC	4.94E-12	mg/kg-day	8.6E-05	mg/kg/day	5.8E-08
				Selenium	1.1E+00	mg/kg	5.49E-12	mg/kg-day	NC	1/mg/kg-day	NC	3.84E-11	mg/kg-day	NTV	mg/kg/day	NTV
				Silver	2.8E+00	mg/kg	1.44E-11	mg/kg-day	NC	1/mg/kg-day	NC	1.01E-10	mg/kg-day	NTV	mg/kg/day	NTV
				Zinc	3.5E+03	mg/kg	1.76E-08	mg/kg-day	NC	1/mg/kg-day	NC	1.23E-07	mg/kg-day	NTV	mg/kg/day	NTV
			Exp. Route Total								1.3E-08					1.4E-04
Medium Total											2.0E-06					4.7E-02
Surface Water	Off Facility Area Surface Water	Surface Water	Dermal Contact	Arsenic	2.3E-02	mg/L	1.12E-08	mg/kg-day	1.5E+00	1/mg/kg-day	1.7E-08	7.84E-08	mg/kg-day	3.0E-04	mg/kg/day	2.6E-04
				Barium	4.1E-01	mg/L	1.95E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.36E-06	mg/kg-day	1.4E-02	mg/kg/day	9.7E-05
				Cadmium	5.9E-01	mg/L	2.85E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.99E-06	mg/kg-day	2.5E-05	mg/kg/day	8.0E-02
				Chromium	1.1E-01	mg/L	5.05E-08	mg/kg-day	NC	1/mg/kg-day	NC	3.53E-07	mg/kg-day	2.0E-02	mg/kg/day	1.8E-05
				Copper	8.8E-01	mg/L	4.21E-07	mg/kg-day	NC	1/mg/kg-day	NC	2.95E-06	mg/kg-day	4.0E-02	mg/kg/day	7.4E-05
				Lead	1.1E+00	mg/L	5.12E-08	mg/kg-day	NTV	1/mg/kg-day	NTV	3.58E-07	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	3.5E-04	mg/L	1.67E-10	mg/kg-day	NC	1/mg/kg-day	NC	1.17E-09	mg/kg-day	2.1E-05	mg/kg/day	5.6E-05
				Selenium	5.7E-03	mg/L	2.74E-09	mg/kg-day	NC	1/mg/kg-day	NC	1.92E-08	mg/kg-day	5.0E-03	mg/kg/day	3.8E-06
				Silver	5.4E-03	mg/L	1.55E-09	mg/kg-day	NC	1/mg/kg-day	NC	1.09E-08	mg/kg-day	2.0E-04	mg/kg/day	5.4E-05
				Zinc	1.8E+02	mg/L	5.33E-05	mg/kg-day	NC	1/mg/kg-day	NC	3.77E-04	mg/kg-day	3.0E-01	mg/kg/day	1.2E-03
			Exp. Route Total								1.7E-08					8.1E-02
		Exposure Point Total									1.7E-08					8.1E-02
Medium Total											1.7E-08					8.1E-02
Sediment	Off Facility Area Sediment	sediment	Ingestion	Arsenic	5.5E+01	mg/kg	6.06E-07	mg/kg-day	1.5E+00	1/mg/kg-day	9.1E-07	4.24E-06	mg/kg-day	3.0E-04	mg/kg/day	1.4E-02
				Barium	2.8E+02	mg/kg	3.10E-06	mg/kg-day	NC	1/mg/kg-day	NC	2.17E-05	mg/kg-day	2.0E-01	mg/kg/day	1.1E-04
				Cadmium	1.7E+02	mg/kg	1.90E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.33E-05	mg/kg-day	1.0E-03	mg/kg/day	1.3E-02
				Chromium	8.1E+01	mg/kg	8.90E-07	mg/kg-day	NC	1/mg/kg-day	NC	6.23E-06	mg/kg-day	1.5E+00	mg/kg/day	4.2E-06
				Copper	2.2E+03	mg/kg	2.43E-05	mg/kg-day	NC	1/mg/kg-day	NC	1.70E-04	mg/kg-day	4.0E-02	mg/kg/day	4.3E-03
				Lead	7.3E+02	mg/kg	7.96E-06	mg/kg-day	NTV	1/mg/kg-day	NTV	5.57E-05	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.4E+00	mg/kg	1.54E-08	mg/kg-day	NC	1/mg/kg-day	NC	1.08E-07	mg/kg-day	3.0E-04	mg/kg/day	3.6E-04
				Selenium	2.8E+00	mg/kg	3.02E-08	mg/kg-day	NC	1/mg/kg-day	NC	2.12E-07	mg/kg-day	5.0E-03	mg/kg/day	4.2E-05
				Silver	4.3E+00	mg/kg	4.72E-08	mg/kg-day	NC	1/mg/kg-day	NC	3.30E-07	mg/kg-day	5.0E-03	mg/kg/day	6.6E-05
				Zinc	1.2E+04	mg/kg	1.31E-04	mg/kg-day	NC	1/mg/kg-day	NC	9.15E-04	mg/kg-day	3.0E-01	mg/kg/day	3.0E-03
			Exp. Route Total								9.1E-07					3.5E-02
			Dermal Contact	Arsenic	5.5E+01	mg/kg	1.56E-07	mg/kg-day	1.5E+00	1/mg/kg-day	2.3E-07	1.09E-06	mg/kg-day	3.0E-04	mg/kg/day	3.6E-03
				Barium	2.8E+02	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	1.4E-02	mg/kg/day	0.0E+00
				Cadmium	1.7E+02	mg/kg	1.64E-08	mg/kg-day	NC	1/mg/kg-day	NC	1.15E-07	mg/kg-day	2.5E-05	mg/kg/day	4.6E-03
				Chromium	8.1E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-02	mg/kg/day	0.0E+00
				Copper	2.2E+03	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	4.0E-02	mg/kg/day	0.0E+00
				Lead	7.3E+02	mg/kg	0.00E+00	mg/kg-day	NTV	1/mg/kg-day	NTV	0.00E+00	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.4E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.1E-05	mg/kg/day	0.0E+00
				Selenium	2.8E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	5.0E-03	mg/kg/day	0.0E+00
				Silver	4.3E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-04	mg/kg/day	0.0E+00
				Zinc	1.2E+04	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	3.0E-01	mg/kg/day	0.0E+00
			Exp. Route Total								2.3E-07					8.2E-03
		Exposure Point Total									1.1E-06					4.4E-02
Medium Total											1.1E-06					4.4E-02
										Total of Receptor Risks Across All Media	3.2E-06			Total of Receptor Hazards Across All Media		1.7E-01

Notes:
EPC = Exposure Point Concentration
NC = Not classified as a carcinogen
NE = Not evaluated as a volatile chemical
NTV = No Toxicity Value Available
RfD = Noncancer Reference Dose

Bolded Chemicals and Bold/Underlined Risks = Exceeds a cancer risk of 1E-06 or a HQ of 0.1
NS - Not sampled or not detected.

TABLE 7x
RAGS PART D TABLE 7.1 RME
CALCULATION OF CHEMICAL CANCER RISKS
REASONABLE MAXIMUM EXPOSURE
Facility Area Utility Worker Exposure - Former American Zinc Plating Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Utility Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF		Cancer	Intake/Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
Total Soil - Slag only	Surface/subsurface Soil - slag only	Facility Area site soil total - slag only	Ingestion	Arsenic	2.1E+02	mg/kg	9.62E-06	mg/kg-day	1.5E+00	1/mg/kg-day	1.4E-05	6.74E-04	mg/kg-day	3.0E-04	mg/kg/day	2.2E+00
				Barium	4.2E+02	mg/kg	1.93E-05	mg/kg-day	NC	1/mg/kg-day	NC	1.35E-03	mg/kg-day	2.0E-01	mg/kg/day	6.7E-03
				Cadmium	2.9E+02	mg/kg	1.34E-05	mg/kg-day	NC	1/mg/kg-day	NC	9.38E-04	mg/kg-day	1.0E-03	mg/kg/day	9.4E-01
				Chromium	2.3E+01	mg/kg	1.08E-06	mg/kg-day	NC	1/mg/kg-day	NC	7.54E-05	mg/kg-day	1.5E+00	mg/kg/day	5.0E-05
				Copper	4.3E+03	mg/kg	1.98E-04	mg/kg-day	NC	1/mg/kg-day	NC	1.39E-02	mg/kg-day	4.0E-02	mg/kg/day	3.5E-01
				Lead	1.9E+04	mg/kg	8.79E-04	mg/kg-day	NTV	1/mg/kg-day	NTV	6.15E-02	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	9.7E+01	mg/kg	4.47E-06	mg/kg-day	NC	1/mg/kg-day	NC	3.13E-04	mg/kg-day	3.0E-04	mg/kg/day	1.0E+00
				Selenium	9.7E+00	mg/kg	4.45E-07	mg/kg-day	NC	1/mg/kg-day	NC	3.12E-05	mg/kg-day	5.0E-03	mg/kg/day	6.2E-03
				Silver	2.6E+02	mg/kg	1.20E-05	mg/kg-day	NC	1/mg/kg-day	NC	8.41E-04	mg/kg-day	5.0E-03	mg/kg/day	1.7E-01
				Zinc	4.6E+04	mg/kg	2.13E-03	mg/kg-day	NC	1/mg/kg-day	NC	1.49E-01	mg/kg-day	3.0E-01	mg/kg/day	5.0E-01
			Exp. Route Total								1.4E-05					5.3E+00
			Dermal Contact	Arsenic	2.1E+02	mg/kg	1.04E-07	mg/kg-day	1.5E+00	1/mg/kg-day	1.6E-07	7.27E-06	mg/kg-day	3.0E-04	mg/kg/day	2.4E-02
				Barium	4.2E+02	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	1.4E-02	mg/kg/day	0.0E+00
				Cadmium	2.9E+02	mg/kg	4.82E-09	mg/kg-day	NC	1/mg/kg-day	NC	3.38E-07	mg/kg-day	2.5E-05	mg/kg/day	1.4E-02
				Chromium (as III)	2.3E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-02	mg/kg/day	0.0E+00
				Copper	4.3E+03	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	4.0E-02	mg/kg/day	0.0E+00
				Lead	1.9E+04	mg/kg	0.00E+00	mg/kg-day	NTV	1/mg/kg-day	NTV	0.00E+00	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	9.7E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.1E-05	mg/kg/day	0.0E+00
				Selenium	9.7E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	5.0E-03	mg/kg/day	0.0E+00
				Silver	2.6E+02	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-04	mg/kg/day	0.0E+00
				Zinc	4.6E+04	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	3.0E-01	mg/kg/day	0.0E+00
			Exp. Route Total								1.6E-07					3.8E-02
	Exposure Medium Total										1.5E-05					5.3E+00
	Air	Air	Inhalation of Particulates	Arsenic	2.1E+02	mg/kg	1.88E-08	mg/kg-day	1.51E+01	1/mg/kg-day	2.8E-07	1.32E-06	mg/kg-day	NTV	mg/kg/day	NTV
				Barium	4.2E+02	mg/kg	3.77E-08	mg/kg-day	NC	1/mg/kg-day	NC	2.64E-06	mg/kg-day	1.4E-04	mg/kg/day	1.8E-02
				Cadmium	2.9E+02	mg/kg	2.62E-08	mg/kg-day	6.30E+00	1/mg/kg-day	1.7E-07	1.83E-06	mg/kg-day	NTV	mg/kg/day	NTV
				Chromium (as VI-ne, total-c	2.3E+01	mg/kg	2.10E-09	mg/kg-day	4.2E+01	1/mg/kg-day	8.8E-08	1.47E-07	mg/kg-day	2.9E-05	mg/kg/day	5.2E-03
				Copper	4.3E+03	mg/kg	3.88E-07	mg/kg-day	NC	1/mg/kg-day	NC	2.71E-05	mg/kg-day	NTV	mg/kg/day	NTV
				Lead	1.9E+04	mg/kg	1.72E-06	mg/kg-day	NTV	1/mg/kg-day	NTV	1.20E-04	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	9.7E+01	mg/kg	8.73E-09	mg/kg-day	NC	1/mg/kg-day	NC	6.11E-07	mg/kg-day	8.6E-05	mg/kg/day	7.1E-03
				Selenium	9.7E+00	mg/kg	8.71E-10	mg/kg-day	NC	1/mg/kg-day	NC	6.09E-08	mg/kg-day	NTV	mg/kg/day	NTV
				Silver	2.6E+02	mg/kg	2.35E-08	mg/kg-day	NC	1/mg/kg-day	NC	1.64E-06	mg/kg-day	NTV	mg/kg/day	NTV
				Zinc	4.6E+04	mg/kg	4.17E-06	mg/kg-day	NC	1/mg/kg-day	NC	2.92E-04	mg/kg-day	NTV	mg/kg/day	NTV
			Exp. Route Total								5.4E-07					3.1E-02
Medium Total											1.5E-05					5.3E+00
Surface Water	Surface Water	Surface Water	Dermal Contact	Arsenic	2.2E-02	mg/L	1.22E-09	mg/kg-day	1.5E+00	1/mg/kg-day	1.8E-09	8.52E-08	mg/kg-day	3.0E-04	mg/kg/day	2.8E-04
				Barium	3.9E-01	mg/L	2.16E-08	mg/kg-day	NC	1/mg/kg-day	NC	1.51E-06	mg/kg-day	1.4E-02	mg/kg/day	1.1E-04
				Cadmium	1.8E-01	mg/L	9.96E-09	mg/kg-day	NC	1/mg/kg-day	NC	6.97E-07	mg/kg-day	2.5E-05	mg/kg/day	2.8E-02
				Chromium	1.9E-02	mg/L	1.05E-09	mg/kg-day	NC	1/mg/kg-day	NC	7.36E-08	mg/kg-day	2.0E-02	mg/kg/day	3.8E-06
				Copper	NS	mg/L	#VALUE!	mg/kg-day	NC	1/mg/kg-day	NS	#VALUE!	mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.7E-01	mg/L	1.49E-09	mg/kg-day	NTV	1/mg/kg-day	NTV	1.05E-07	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	NS	mg/L	#VALUE!	mg/kg-day	NC	1/mg/kg-day	NS	#VALUE!	mg/kg-day	2.1E-05	mg/kg/day	NS
				Selenium	4.6E-03	mg/L	2.55E-10	mg/kg-day	NC	1/mg/kg-day	NC	1.78E-08	mg/kg-day	5.0E-03	mg/kg/day	3.6E-06
				Silver	4.2E+01	mg/L	1.38E-06	mg/kg-day	NC	1/mg/kg-day	NC	9.65E-05	mg/kg-day	2.0E-04	mg/kg/day	4.8E-01
				Zinc	1.3E-03	mg/L	4.32E-11	mg/kg-day	NC	1/mg/kg-day	NC	3.02E-09	mg/kg-day	3.0E-01	mg/kg/day	1.0E-08
			Exp. Route Total								1.8E-09					5.1E-01
		Exposure Point Total									1.8E-09					5.1E-01
Medium Total											1.8E-09					5.1E-01
Sediment	Sediment	sediment	Ingestion	Arsenic	8.1E+01	mg/kg	4.51E-07	mg/kg-day	1.5E+00	1/mg/kg-day	6.8E-07	3.16E-05	mg/kg-day	3.0E-04	mg/kg/day	1.1E-01
				Barium	3.9E+02	mg/kg	2.14E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.50E-04	mg/kg-day	2.0E-01	mg/kg/day	7.5E-04
				Cadmium	3.6E+02	mg/kg	2.00E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.41E-04	mg/kg-day	1.0E-03	mg/kg/day	1.4E-01
				Chromium	4.8E+01	mg/kg	2.64E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.85E-05	mg/kg-day	1.5E+00	mg/kg/day	1.2E-05
				Copper	NS	mg/kg	#VALUE!	mg/kg-day	NC	1/mg/kg-day	NS	#VALUE!	mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.9E+03	mg/kg	1.61E-05	mg/kg-day	NTV	1/mg/kg-day	NTV	1.13E-03	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	5.3E+00	mg/kg	2.92E-08	mg/kg-day	NC	1/mg/kg-day	NC	2.05E-06	mg/kg-day	3.0E-04	mg/kg/day	6.8E-03
				Selenium	5.3E+00	mg/kg	2.92E-08	mg/kg-day	NC	1/mg/kg-day	NC	2.04E-06	mg/kg-day	5.0E-03	mg/kg/day	4.1E-04
				Silver	3.3E+01	mg/kg	1.80E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.26E-05	mg/kg-day	5.0E-03	mg/kg/day	2.5E-03
				Zinc	3.9E+04	mg/kg	2.15E-04	mg/kg-day	NC	1/mg/kg-day	NC	1.50E-02	mg/kg-day	3.0E-01	mg/kg/day	5.0E-02
			Exp. Route Total								6.8E-07					3.1E-01
			Dermal Contact	Arsenic	8.1E+01	mg/kg	4.06E-08	mg/kg-day	1.5E+00	1/mg/kg-day	6.1E-08	2.84E-06	mg/kg-day	3.0E-04	mg/kg/day	9.5E-03
				Barium	3.9E+02	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	1.4E-02	mg/kg/day	0.0E+00
				Cadmium	3.6E+02	mg/kg	6.04E-09	mg/kg-day	NC	1/mg/kg-day	NC	4.23E-07	mg/kg-day	2.5E-05	mg/kg/day	1.7E-02
				Chromium	4.8E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-02	mg/kg/day	0.0E+00
				Copper	NS	mg/kg	#VALUE!	mg/kg-day	NC	1/mg/kg-day	NS	#VALUE!	mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.9E+03	mg/kg	0.00E+00	mg/kg-day	NTV	1/mg/kg-day	NTV	0.00E+00	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	5.3E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.1E-05	mg/kg/day	0.0E+00
				Selenium	5.3E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	5.0E-03	mg/kg/day	0.0E+00
				Silver	3.3E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-04	mg/kg/day	0.0E+00
				Zinc	3.9E+04	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	3.0E-01	mg/kg/day	0.0E+00
			Exp. Route Total								6.1E-08					2.6E-02
		Exposure Point Total									7.4E-07					3.3E-01
Medium Total											7.4E-07					3.3E-01
											Total of Receptor Risks Across All Media	1.6E-05		Total of Receptor Hazards Across All Media		6.2E+00

Notes:
EPC = Exposure Point Concentration
NC = Not classified as a carcinogen
NE = Not evaluated as a volatile chemical
NTV = No Toxicity Value Available
RfD = Noncancer Reference Dose

Bolded Chemicals and Bold/Underlined Risks = Exceeds a cancer risk of 1E-06 or a HQ of 0.1
NS - Not sampled or not detected.

TABLE 7y
RAGS PART D TABLE 7.1 RME
CALCULATION OF CHEMICAL CANCER RISKS
REASONABLE MAXIMUM EXPOSURE
Facility Area Utility Worker Exposure - Former American Zinc Plating Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Utility Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF		Cancer Risk	Intake/Exposure Concentration		RfD		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Soil -Native soil only	Surface/subsurface Soil - native soil only	Facility area soil total - native soil	Ingestion	Arsenic	8.5E+00	mg/kg	3.90E-07	mg/kg-day	1.5E+00	1/mg/kg-day	5.9E-07	2.73E-05	mg/kg-day	3.0E-04	mg/kg/day	9.1E-02
				Barium	2.2E+02	mg/kg	1.00E-05	mg/kg-day	NC	1/mg/kg-day	NC	7.02E-04	mg/kg-day	2.0E-01	mg/kg/day	3.5E-03
				Cadmium	5.5E+02	mg/kg	2.54E-05	mg/kg-day	NC	1/mg/kg-day	NC	1.78E-03	mg/kg-day	1.0E-03	mg/kg/day	1.8E+00
				Chromium	1.8E+01	mg/kg	8.16E-07	mg/kg-day	NC	1/mg/kg-day	NC	5.72E-05	mg/kg-day	1.5E+00	mg/kg day	3.8E-05
				Copper	1.7E+03	mg/kg	7.84E-05	mg/kg-day	NC	1/mg/kg-day	NC	5.49E-03	mg/kg-day	4.0E-02	mg/kg day	1.4E-01
				Lead	2.2E+02	mg/kg	9.94E-06	mg/kg-day	NTV	1/mg/kg-day	NTV	6.96E-04	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.8E-01	mg/kg	8.21E-09	mg/kg-day	NC	1/mg/kg-day	NC	5.75E-07	mg/kg-day	3.0E-04	mg/kg/day	1.9E-03
				Selenium	8.7E-01	mg/kg	4.03E-08	mg/kg-day	NC	1/mg/kg-day	NC	2.82E-06	mg/kg-day	5.0E-03	mg/kg/day	5.6E-04
				Silver	7.1E-01	mg/kg	3.26E-08	mg/kg-day	NC	1/mg/kg-day	NC	2.28E-06	mg/kg-day	5.0E-03	mg/kg/day	4.6E-04
				Zinc	4.5E+03	mg/kg	2.07E-04	mg/kg-day	NC	1/mg/kg-day	NC	1.45E-02	mg/kg-day	3.0E-01	mg/kg/day	4.8E-02
			Exp. Route Total								5.9E-07					2.1E+00
			Dermal Contact	Arsenic	8.5E+00	mg/kg	4.21E-09	mg/kg-day	1.5E+00	1/mg/kg-day	6.3E-09	2.95E-07	mg/kg-day	3.0E-04	mg/kg/day	9.8E-04
				Barium	2.2E+02	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	1.4E-02	mg/kg/day	0.0E+00
				Cadmium	5.5E+02	mg/kg	9.14E-09	mg/kg-day	NC	1/mg/kg-day	NC	6.40E-07	mg/kg-day	2.5E-05	mg/kg/day	2.6E-02
				Chromium (as III)	1.8E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-02	mg/kg/day	0.0E+00
				Copper	1.7E+03	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	4.0E-02	mg/kg/day	0.0E+00
				Lead	2.2E+02	mg/kg	0.00E+00	mg/kg-day	NTV	1/mg/kg-day	NTV	0.00E+00	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.8E-01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.1E-05	mg/kg/day	0.0E+00
				Selenium	8.7E-01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	5.0E-03	mg/kg/day	0.0E+00
				Silver	7.1E-01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-04	mg/kg/day	0.0E+00
				Zinc	4.5E+03	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	3.0E-01	mg/kg/day	0.0E+00
			Exp. Route Total								6.3E-09					2.7E-02
	Exposure Medium Total										5.9E-07					2.1E+00
	Air	Air	Inhalation of Particulates	Arsenic	8.5E+00	mg/kg	7.63E-10	mg/kg-day	1.51E+01	1/mg/kg-day	1.2E-08	5.34E-08	mg/kg-day	NTV	mg/kg/day	NTV
				Barium	2.2E+02	mg/kg	1.96E-08	mg/kg-day	NC	1/mg/kg-day	NC	1.37E-06	mg/kg-day	1.4E-04	mg/kg/day	9.8E-03
				Cadmium	5.5E+02	mg/kg	4.97E-08	mg/kg-day	6.30E+00	1/mg/kg-day	3.1E-07	3.48E-06	mg/kg-day	NTV	mg/kg/day	NTV
				Chromium (as VI-nc, total-c	1.8E+01	mg/kg	1.60E-09	mg/kg-day	4.2E+01	1/mg/kg-day	6.7E-08	1.12E-07	mg/kg-day	2.9E-05	mg/kg/day	3.9E-03
				Copper	1.7E+03	mg/kg	1.53E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.07E-05	mg/kg-day	NTV	mg/kg/day	NTV
				Lead	2.2E+02	mg/kg	1.94E-08	mg/kg-day	NTV	1/mg/kg-day	NTV	1.36E-06	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.8E-01	mg/kg	1.61E-11	mg/kg-day	NC	1/mg/kg-day	NC	1.12E-09	mg/kg-day	8.6E-05	mg/kg/day	1.3E-05
				Selenium	8.7E-01	mg/kg	7.88E-11	mg/kg-day	NC	1/mg/kg-day	NC	5.52E-09	mg/kg-day	NTV	mg/kg/day	NTV
				Silver	7.1E-01	mg/kg	6.38E-11	mg/kg-day	NC	1/mg/kg-day	NC	4.46E-09	mg/kg-day	NTV	mg/kg/day	NTV
				Zinc	4.5E+03	mg/kg	4.04E-07	mg/kg-day	NC	1/mg/kg-day	NC	2.83E-05	mg/kg-day	NTV	mg/kg/day	NTV
			Exp. Route Total								3.9E-07					1.4E-02
Medium Total											9.8E-07					2.1E+00
Surface Water	Surface Water	Surface Water	Dermal Contact	Arsenic	2.2E-02	mg/L	1.22E-09	mg/kg-day	1.5E+00	1/mg/kg-day	1.8E-09	8.52E-08	mg/kg-day	3.0E-04	mg/kg/day	2.8E-04
				Barium	3.9E-01	mg/L	2.16E-08	mg/kg-day	NC	1/mg/kg-day	NC	1.51E-06	mg/kg-day	1.4E-02	mg/kg/day	1.1E-04
				Cadmium	1.8E-01	mg/L	9.96E-09	mg/kg-day	NC	1/mg/kg-day	NC	6.97E-07	mg/kg-day	2.5E-05	mg/kg/day	2.8E-02
				Chromium	1.9E-02	mg/L	1.05E-09	mg/kg-day	NC	1/mg/kg-day	NC	7.36E-08	mg/kg-day	2.0E-02	mg/kg/day	3.8E-06
				Copper	NS	mg/L	#VALUE!	mg/kg-day	NC	1/mg/kg-day	NS	#VALUE!	mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.7E-01	mg/L	1.49E-09	mg/kg-day	NTV	1/mg/kg-day	NTV	1.05E-07	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	NS	mg/L	#VALUE!	mg/kg-day	NC	1/mg/kg-day	NS	#VALUE!	mg/kg-day	2.1E-05	mg/kg/day	NS
				Selenium	4.6E-03	mg/L	2.55E-10	mg/kg-day	NC	1/mg/kg-day	NC	1.78E-08	mg/kg-day	5.0E-03	mg/kg/day	3.6E-06
				Silver	4.2E-01	mg/L	1.38E-06	mg/kg-day	NC	1/mg/kg-day	NC	9.65E-05	mg/kg-day	2.0E-04	mg/kg/day	4.8E-01
				Zinc	1.3E-03	mg/L	4.32E-11	mg/kg-day	NC	1/mg/kg-day	NC	3.02E-09	mg/kg-day	3.0E-01	mg/kg/day	1.0E-08
			Exp. Route Total								1.8E-09					5.1E-01
		Exposure Point Total									1.8E-09					5.1E-01
Medium Total											1.8E-09					5.1E-01
Sediment	Sediment	sediment	Ingestion	Arsenic	8.1E+01	mg/kg	4.51E-07	mg/kg-day	1.5E+00	1/mg/kg-day	6.8E-07	3.16E-05	mg/kg-day	3.0E-04	mg/kg/day	1.1E-01
				Barium	3.9E+02	mg/kg	2.14E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.50E-04	mg/kg-day	2.0E-01	mg/kg/day	7.5E-04
				Cadmium	3.6E+02	mg/kg	2.01E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.41E-04	mg/kg-day	1.0E-03	mg/kg/day	1.4E-01
				Chromium	4.8E+01	mg/kg	2.64E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.85E-05	mg/kg-day	1.5E+00	mg/kg/day	1.2E-05
				Copper	NS	mg/kg	#VALUE!	mg/kg-day	NC	1/mg/kg-day	NS	#VALUE!	mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.9E+03	mg/kg	1.61E-05	mg/kg-day	NTV	1/mg/kg-day	NTV	1.13E-03	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	5.3E+00	mg/kg	2.92E-08	mg/kg-day	NC	1/mg/kg-day	NC	2.05E-06	mg/kg-day	3.0E-04	mg/kg/day	6.8E-03
				Selenium	5.3E+00	mg/kg	2.92E-08	mg/kg-day	NC	1/mg/kg-day	NC	2.04E-06	mg/kg-day	5.0E-03	mg/kg/day	4.1E-04
				Silver	3.1E+01	mg/kg	1.80E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.26E-05	mg/kg-day	5.0E-03	mg/kg/day	2.5E-03
				Zinc	3.9E+04	mg/kg	2.15E-04	mg/kg-day	NC	1/mg/kg-day	NC	1.50E-02	mg/kg-day	3.0E-01	mg/kg/day	5.0E-02
			Exp. Route Total								6.8E-07					3.1E-01
			Dermal Contact	Arsenic	8.1E+01	mg/kg	4.06E-08	mg/kg-day	1.5E+00	1/mg/kg-day	6.1E-08	2.84E-06	mg/kg-day	3.0E-04	mg/kg/day	9.5E-03
				Barium	3.9E+02	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	1.4E-02	mg/kg/day	0.0E+00
				Cadmium	3.6E+02	mg/kg	6.04E-09	mg/kg-day	NC	1/mg/kg-day	NC	4.23E-07	mg/kg-day	2.5E-05	mg/kg/day	1.7E-02
				Chromium	4.8E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-02	mg/kg/day	0.0E+00
				Copper	NS	mg/kg	#VALUE!	mg/kg-day	NC	1/mg/kg-day	NS	#VALUE!	mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.9E+03	mg/kg	0.00E+00	mg/kg-day	NTV	1/mg/kg-day	NTV	0.00E+00	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	5.3E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.1E-05	mg/kg/day	0.0E+00
				Selenium	5.3E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	5.0E-03	mg/kg/day	0.0E+00
				Silver	3.3E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-04	mg/kg/day	0.0E+00
				Zinc	3.9E+04	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	3.0E-01	mg/kg/day	0.0E+00
			Exp. Route Total								6.1E-08					2.6E-02
		Exposure Point Total									7.4E-07					3.3E-01
Medium Total											7.4E-07					3.3E-01
										Total of Receptor Risks Across All Media	1.7E-06			Total of Receptor Hazards Across All Media		2.9E+00

Notes:
EPC = Exposure Point Concentration
NC = Not classified as a carcinogen
NE = Not evaluated as a volatile chemical
NTV = No Toxicity Value Available
RfD = Noncancer Reference Dose

Bolded Chemicals and Bold/Underlined Risks = Exceeds a cancer risk of 1E-06 or a HQ of 0.1
NS - Not sampled or not detected.

LE 7z

RAGS PART D TABLE 7.1 RME
CALCULATION OF CHEMICAL CANCER RISKS
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Current
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF		Cancer Risk	Intake/Exposure Concentration		RfD		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Soil	Soil	Off-Facility 5517 Delmar	Ingestion	Arsenic	1.7E+01	mg/kg	2.66E-05	mg/kg-day	1.5E+00	1/mg/kg-day	4.0E-05	2.17E-04	mg/kg-day	3.0E-04	mg/kg/day	7.2E-01
				Barium	9.4E-02	mg/kg	1.47E-03	mg/kg-day	NC	1/mg/kg-day	NC	1.20E-02	mg/kg-day	2.0E-01	mg/kg/day	6.0E-02
				Cadmium	5.5E-01	mg/kg	8.61E-05	mg/kg-day	NC	1/mg/kg-day	NC	7.03E-04	mg/kg-day	1.0E-03	mg/kg/day	7.0E-01
				Chromium	2.6E+01	mg/kg	4.07E-05	mg/kg-day	NC	1/mg/kg-day	NC	3.32E-04	mg/kg-day	1.5E+00	mg/kg/day	2.2E-04
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	9.9E+02	mg/kg	1.55E-03	mg/kg-day	NTV	1/mg/kg-day	NTV	1.27E-02	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	2.0E-01	mg/kg	3.13E-07	mg/kg-day	NC	1/mg/kg-day	NC	2.56E-06	mg/kg-day	3.0E-04	mg/kg/day	8.5E-03
				Selenium	9.4E-01	mg/kg	1.47E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.20E-05	mg/kg-day	5.0E-03	mg/kg/day	2.4E-03
				Silver	6.3E-01	mg/kg	9.86E-07	mg/kg-day	NC	1/mg/kg-day	NC	8.05E-06	mg/kg-day	5.0E-03	mg/kg/day	1.6E-03
				Zinc	6.8E-03	mg/kg	1.06E-02	mg/kg-day	NC	1/mg/kg-day	NC	8.69E-02	mg/kg-day	3.0E-01	mg/kg/day	2.9E-01
			Exp. Route Total								4.0E-05					1.8E+00
			Dermal Contact	Arsenic	1.7E+01	mg/kg	2.52E-06	mg/kg-day	1.5E+00	1/mg/kg-day	3.8E-06	1.83E-05	mg/kg-day	3.0E-04	mg/kg/day	6.1E-02
				Barium	9.4E+02	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	1.4E-02	mg/kg/day	0.0E+00
				Cadmium	5.5E+01	mg/kg	2.72E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.97E-06	mg/kg-day	2.5E-05	mg/kg/day	7.9E-02
				Chromium (as III)	2.6E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-02	mg/kg/day	0.0E+00
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	9.9E-02	mg/kg	0.00E+00	mg/kg-day	NTV	1/mg/kg-day	NTV	0.00E+00	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	2.0E-01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.1E-05	mg/kg/day	0.0E+00
				Selenium	9.4E-01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	5.0E-03	mg/kg/day	0.0E+00
				Silver	6.3E-01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-04	mg/kg/day	0.0E+00
				Zinc	6.8E-03	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	3.0E-01	mg/kg/day	0.0E+00
			Exp. Route Total								3.8E-06					1.4E-01
			Produce Ingestion Current	Arsenic	1.4E+01	mg/kg	1.40E-06	mg/kg-day	1.5E+00	1/mg/kg-day	2.1E-06	1.78E-04	mg/kg-day	3.0E-04	mg/kg/day	5.9E-01
				Barium	1.7E-02	mg/kg	1.70E-05	mg/kg-day	NC	1/mg/kg-day	NC	2.16E-03	mg/kg-day	2.0E-01	mg/kg/day	1.1E-02
				Cadmium	9.9E-00	mg/kg	9.88E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.26E-04	mg/kg-day	1.0E-03	mg/kg/day	1.3E-01
				Chromium	1.4E+01	mg/kg	1.40E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.78E-04	mg/kg-day	1.5E+00	mg/kg/day	1.2E-04
				Copper	NS	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NS	0.00E+00	mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.2E-02	mg/kg	2.20E-05	mg/kg-day	NTV	1/mg/kg-day	NTV	2.79E-03	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.8E-01	mg/kg	1.80E-08	mg/kg-day	NC	1/mg/kg-day	NC	2.28E-06	mg/kg-day	3.0E-04	mg/kg/day	7.6E-03
				Selenium	7.5E-01	mg/kg	7.48E-08	mg/kg-day	NC	1/mg/kg-day	NC	9.51E-06	mg/kg-day	5.0E-03	mg/kg/day	1.9E-03
				Silver	5.4E-01	mg/kg	5.39E-08	mg/kg-day	NC	1/mg/kg-day	NC	6.85E-06	mg/kg-day	5.0E-03	mg/kg/day	1.4E-03
				Zinc	9.5E-02	mg/kg	9.48E-05	mg/kg-day	NC	1/mg/kg-day	NC	1.20E-02	mg/kg-day	3.0E-01	mg/kg/day	4.0E-02
			Exp. Route Total								2.1E-06					7.8E-01
	Exposure Medium Total										4.6E-05					2.7E+00
	Air	Off-Facility 5517 Delmar	Inhalation of Particulates	Arsenic	1.7E+01	mg/kg	1.77E-09	mg/kg-day	1.51E+01	1/mg/kg-day	2.7E-08	7.60E-09	mg/kg-day	NTV	mg/kg/day	NTV
				Barium	9.4E-02	mg/kg	9.78E-08	mg/kg-day	NC	1/mg/kg-day	NC	4.20E-07	mg/kg-day	1.4E-04	mg/kg/day	2.9E-03
				Cadmium	5.5E+01	mg/kg	5.72E-09	mg/kg-day	6.30E-00	1/mg/kg-day	3.6E-08	2.46E-08	mg/kg-day	NTV	mg/kg/day	NTV
				Chromium (as VI-nc; total-c	2.6E+01	mg/kg	2.70E-09	mg/kg-day	4.2E+01	1/mg/kg-day	1.1E-07	1.16E-08	mg/kg-day	2.9E-05	mg/kg/day	4.1E-04
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	NTV	mg/kg/day	NS
				Lead	9.9E-02	mg/kg	1.03E-07	mg/kg-day	NTV	1/mg/kg-day	NTV	4.43E-07	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	2.0E-01	mg/kg	2.08E-11	mg/kg-day	NC	1/mg/kg-day	NC	8.94E-11	mg/kg-day	8.6E-05	mg/kg/day	1.0E-06
				Selenium	9.4E-01	mg/kg	9.78E-11	mg/kg-day	NC	1/mg/kg-day	NC	4.20E-10	mg/kg-day	NTV	mg/kg/day	NTV
				Silver	6.3E-01	mg/kg	6.55E-11	mg/kg-day	NC	1/mg/kg-day	NC	2.82E-10	mg/kg-day	NTV	mg/kg/day	NTV
				Zinc	6.8E-03	mg/kg	7.07E-07	mg/kg-day	NC	1/mg/kg-day	NC	3.04E-06	mg/kg-day	NTV	mg/kg/day	NTV
			Exp. Route Total								1.8E-07					3.3E-03
Medium Total											4.6E-05					2.7E+00

RAGS PART D TABLE 7.1 RME
CALCULATION OF CHEMICAL CANCER RISKS
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Current
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF		Cancer	Intake/Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
Surface Water	Surface Water	Off-Facility Surface Water	Dermal Contact	Arsenic	2.2E-02	mg/L	1.37E-08	mg/kg-day	1.5E+00	1/mg/kg-day	2.1E-08	3.70E-08	mg/kg-day	3.0E-04	mg/kg/day	1.2E-04
				Barium	3.9E-01	mg/L	2.43E-07	mg/kg-day	NC	1/mg/kg-day	NC	6.56E-07	mg/kg-day	1.4E-02	mg/kg/day	4.7E-05
				Cadmium	1.8E-01	mg/L	1.12E-07	mg/kg-day	NC	1/mg/kg-day	NC	3.03E-07	mg/kg-day	2.5E-05	mg/kg/day	1.2E-02
				Chromium	1.9E-02	mg/L	1.18E-08	mg/kg-day	NC	1/mg/kg-day	NC	3.20E-08	mg/kg-day	2.0E-02	mg/kg/day	1.6E-06
				Copper	NS	mg/L		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.7E-01	mg/L	1.68E-08	mg/kg-day	NTV	1/mg/kg-day	NTV	4.54E-08	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	NS	mg/L		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	2.1E-05	mg/kg/day	NS
				Selenium	4.6E-03	mg/L	2.86E-09	mg/kg-day	NC	1/mg/kg-day	NC	7.74E-09	mg/kg-day	5.0E-03	mg/kg/day	1.5E-06
				Silver	4.2E-01	mg/L	1.55E-05	mg/kg-day	NC	1/mg/kg-day	NC	4.19E-05	mg/kg-day	2.0E-04	mg/kg/day	2.1E-01
				Zinc	1.3E-03	mg/L	4.86E-10	mg/kg-day	NC	1/mg/kg-day	NC	1.31E-09	mg/kg-day	3.0E-01	mg/kg/day	4.4E-09
			Exp. Route Total								2.1E-08					2.2E-01
		Exposure Point Total									2.1E-08					2.2E-01
Medium Total											2.1E-08					2.2E-01
Sediment	Sediment	Off-Facility Sediment	Ingestion	Arsenic	8.1E-01	mg/kg	9.91E-07	mg/kg-day	1.5E+00	1/mg/kg-day	1.5E-06	3.11E-06	mg/kg-day	3.0E-04	mg/kg/day	1.0E-02
				Barium	3.9E+02	mg/kg	4.70E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.48E-05	mg/kg-day	2.0E-01	mg/kg/day	7.4E-05
				Cadmium	3.6E+02	mg/kg	4.43E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.39E-05	mg/kg-day	1.0E-03	mg/kg/day	1.4E-02
				Chromium	4.8E+01	mg/kg	5.81E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.82E-06	mg/kg-day	1.5E+00	mg/kg/day	1.2E-06
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.9E+03	mg/kg	3.54E-05	mg/kg-day	NTV	1/mg/kg-day	NTV	1.11E-04	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	5.3E+00	mg/kg	6.43E-08	mg/kg-day	NC	1/mg/kg-day	NC	2.02E-07	mg/kg-day	3.0E-04	mg/kg/day	6.7E-04
				Selenium	5.3E+00	mg/kg	6.42E-08	mg/kg-day	NC	1/mg/kg-day	NC	2.02E-07	mg/kg-day	5.0E-03	mg/kg/day	4.0E-05
				Silver	3.3E+01	mg/kg	3.96E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.24E-06	mg/kg-day	5.0E-03	mg/kg/day	2.5E-04
				Zinc	3.9E+04	mg/kg	4.72E-04	mg/kg-day	NC	1/mg/kg-day	NC	1.48E-03	mg/kg-day	3.0E-01	mg/kg/day	4.9E-03
			Exp. Route Total								1.5E-06					3.0E-02
			Dermal Contact	Arsenic	8.1E+01	mg/kg	1.80E-07	mg/kg-day	1.5E+00	1/mg/kg-day	2.7E-07	8.03E-07	mg/kg-day	3.0E-04	mg/kg/day	2.7E-03
				Barium	3.9E+02	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	1.4E-02	mg/kg/day	0.0E+00
				Cadmium	3.6E+02	mg/kg	2.68E-08	mg/kg-day	NC	1/mg/kg-day	NC	1.20E-07	mg/kg-day	2.5E-05	mg/kg/day	4.8E-03
				Chromium	4.8E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-02	mg/kg/day	0.0E+00
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.9E+03	mg/kg	0.00E+00	mg/kg-day	NTV	1/mg/kg-day	NTV	0.00E+00	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	5.3E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.1E-05	mg/kg/day	0.0E+00
				Selenium	5.3E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	5.0E-03	mg/kg/day	0.0E+00
				Silver	3.3E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-04	mg/kg/day	0.0E+00
				Zinc	3.9E+04	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	3.0E-01	mg/kg/day	0.0E+00
			Exp. Route Total								2.7E-07					7.5E-03
		Exposure Point Total									1.8E-06					3.8E-02
Medium Total											1.8E-06					3.8E-02
											Total of Receptor Risks Across All Media	4.8E-05	Total of Receptor Hazards Across All Media			3.0E+00

Notes:

EPC = Exposure Point Concentration
NC = Not classified as a carcinogen
NE = Not evaluated as a volatile chemical
NTV = No Toxicity Value Available
RfD = Noncancer Reference Dose

Bolded Chemicals and Bold/Underlined Risks = Exceeds a cancer risk of 1E-06 or a HQ of 0.1.
NS - Not sampled or not detected.
EPC for Current Produce Ingestion based on measured soil concentrations in existing garden.

RAGS PART D TABLE 7.1 RME
CALCULATION OF CHEMICAL CANCER RISKS
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plating Site, Fairmont City, IL

Scenario Timeframe: Current/Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF		Cancer Risk	Intake/Exposure Concentration		RfD		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Soil	Soil	Off-Facility 5427 Kinder	Ingestion	Arsenic	1.2E-01	mg/kg	1.88E-05	mg/kg-day	1.5E+00	1/mg/kg-day	2.8E-05	1.53E-04	mg/kg-day	3.0E-04	mg/kg/day	5.1E-01
				Barium	2.4E+02	mg/kg	3.76E-04	mg/kg-day	NC	1/mg/kg-day	NC	3.07E-03	mg/kg-day	2.0E-01	mg/kg/day	1.5E-02
				Cadmium	4.1E+01	mg/kg	6.42E-05	mg/kg-day	NC	1/mg/kg-day	NC	5.24E-04	mg/kg-day	1.0E-03	mg/kg/day	5.2E-01
				Chromium	1.8E+01	mg/kg	2.82E-05	mg/kg-day	NC	1/mg/kg-day	NC	2.30E-04	mg/kg-day	1.5E+00	mg/kg/day	1.5E-04
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	5.2E+02	mg/kg	8.14E-04	mg/kg-day	NTV	1/mg/kg-day	NTV	6.65E-03	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.3E-01	mg/kg	2.04E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.66E-06	mg/kg-day	3.0E-04	mg/kg/day	5.5E-03
				Selenium	2.0E+00	mg/kg	3.13E-06	mg/kg-day	NC	1/mg/kg-day	NC	2.56E-05	mg/kg-day	5.0E-03	mg/kg/day	5.1E-03
				Silver	8.2E-01	mg/kg	1.28E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.05E-05	mg/kg-day	5.0E-03	mg/kg/day	2.1E-03
				Zinc	1.8E-03	mg/kg	2.82E-03	mg/kg-day	NC	1/mg/kg-day	NC	2.30E-02	mg/kg-day	3.0E-01	mg/kg/day	7.7E-02
			Exp. Route Total								2.8E-05					1.1E+00
			Dermal Contact	Arsenic	1.2E-01	mg/kg	1.78E-06	mg/kg-day	1.5E+00	1/mg/kg-day	2.7E-06	1.29E-05	mg/kg-day	3.0E-04	mg/kg/day	4.3E-02
				Barium	2.4E+02	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	1.4E-02	mg/kg/day	0.0E+00
				Cadmium	4.1E+01	mg/kg	2.03E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.47E-06	mg/kg-day	2.5E-05	mg/kg/day	5.9E-02
				Chromium (as III)	1.8E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-02	mg/kg/day	0.0E+00
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	5.2E+02	mg/kg	0.00E+00	mg/kg-day	NTV	1/mg/kg-day	NTV	0.00E+00	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.3E-01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.1E-05	mg/kg/day	0.0E+00
				Selenium	2.0E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	5.0E-03	mg/kg/day	0.0E+00
				Silver	8.2E-01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-04	mg/kg/day	0.0E+00
				Zinc	1.8E-03	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	3.0E-01	mg/kg/day	0.0E+00
			Exp. Route Total								*2.7E-06*					*1.0E-01*
			Produce Ingestion Future	Arsenic	1.2E-01	mg/kg	1.20E-06	mg/kg-day	1.5E+00	1/mg/kg-day	1.8E-06	1.52E-04	mg/kg-day	3.0E-04	mg/kg/day	5.1E-01
				Barium	2.4E+02	mg/kg	2.40E-05	mg/kg-day	NC	1/mg/kg-day	NC	3.04E-03	mg/kg-day	2.0E-01	mg/kg/day	1.5E-02
				Cadmium	4.1E+01	mg/kg	4.09E-06	mg/kg-day	NC	1/mg/kg-day	NC	5.20E-04	mg/kg-day	1.0E-03	mg/kg/day	5.2E-01
				Chromium	1.8E-01	mg/kg	1.80E-06	mg/kg-day	NC	1/mg/kg-day	NC	2.28E-04	mg/kg-day	1.5E+00	mg/kg/day	1.5E-04
				Copper	NS	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NS	0.00E+00	mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	5.2E-02	mg/kg	5.19E-05	mg/kg-day	NTV	1/mg/kg-day	NTV	6.59E-03	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.3E-01	mg/kg	1.30E-08	mg/kg-day	NC	1/mg/kg-day	NC	1.65E-06	mg/kg-day	3.0E-04	mg/kg/day	5.5E-03
				Selenium	2.0E+00	mg/kg	2.00E-07	mg/kg-day	NC	1/mg/kg-day	NC	2.54E-05	mg/kg-day	5.0E-03	mg/kg/day	5.1E-03
				Silver	8.2E-01	mg/kg	8.18E-08	mg/kg-day	NC	1/mg/kg-day	NC	1.04E-05	mg/kg-day	5.0E-03	mg/kg/day	2.1E-03
				Zinc	1.8E-03	mg/kg	1.80E-04	mg/kg-day	NC	1/mg/kg-day	NC	2.28E-02	mg/kg-day	3.0E-01	mg/kg/day	7.6E-02
			Exp. Route Total								1.8E-06					1.1E+00
	Exposure Medium Total										3.3E-05					2.4E+00
	Air	Off-Facility 5427 Kinder	Inhalation of Particulates	Arsenic	1.2E-01	mg/kg	1.25E-09	mg/kg-day	1.51E+01	1/mg/kg-day	1.9E-08	5.36E-09	mg/kg-day	NTV	mg/kg/day	NTV
				Barium	2.4E-02	mg/kg	2.50E-08	mg/kg-day	NC	1/mg/kg-day	NC	1.07E-07	mg/kg-day	1.4E-04	mg/kg/day	7.5E-04
				Cadmium	4.1E+01	mg/kg	4.26E-09	mg/kg-day	6.30E+00	1/mg/kg-day	2.7E-08	1.83E-08	mg/kg-day	NTV	mg/kg/day	NTV
				Chromium (as VI-nc; total-c	1.8E-01	mg/kg	1.87E-09	mg/kg-day	4.2E+01	1/mg/kg-day	7.9E-08	8.05E-09	mg/kg-day	2.9E-05	mg/kg/day	2.8E-04
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	NTV	mg/kg/day	NS
				Lead	5.2E-02	mg/kg	5.41E-08	mg/kg-day	NTV	1/mg/kg-day	NTV	2.32E-07	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.3E-01	mg/kg	1.35E-11	mg/kg-day	NC	1/mg/kg-day	NC	5.81E-11	mg/kg-day	8.6E-05	mg/kg/day	6.8E-07
				Selenium	2.0E-00	mg/kg	2.08E-10	mg/kg-day	NC	1/mg/kg-day	NC	8.94E-10	mg/kg-day	NTV	mg/kg/day	NTV
				Silver	8.2E-01	mg/kg	8.53E-11	mg/kg-day	NC	1/mg/kg-day	NC	3.67E-10	mg/kg-day	NTV	mg/kg/day	NTV
				Zinc	1.8E-03	mg/kg	1.87E-07	mg/kg-day	NC	1/mg/kg-day	NC	8.05E-07	mg/kg-day	NTV	mg/kg/day	NTV
			Exp. Route Total								1.2E-07					1.0E-03
Medium Total											3.3E-05					2.4E+00

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RAGS PART D TABLE 7.1 RME
CALCULATION OF CHEMICAL CANCER RISKS
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plating Site, Fairmont City, IL

Scenario Timeframe: Current/Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF		Cancer Risk	Intake/Exposure Concentration		RfD		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Water	Surface Water	Off-Facility Surface Water	Dermal Contact	Arsenic	2.2E-02	mg/L	1.37E-08	mg/kg-day	1.5E+00	1/mg/kg-day	2.1E-08	3.70E-08	mg/kg-day	3.0E-04	mg/kg/day	1.2E-04
				Barium	3.9E-01	mg/L	2.43E-07	mg/kg-day	NC	1/mg/kg-day	NC	6.56E-07	mg/kg-day	1.4E-02	mg/kg/day	4.7E-05
				Cadmium	1.8E-01	mg/L	1.12E-07	mg/kg-day	NC	1/mg/kg-day	NC	3.03E-07	mg/kg-day	2.5E-05	mg/kg/day	1.2E-02
				Chromium	1.9E-02	mg/L	1.18E-08	mg/kg-day	NC	1/mg/kg-day	NC	3.20E-08	mg/kg-day	2.0E-02	mg/kg/day	1.6E-06
				Copper	NS	mg/L		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.7E-01	mg/L	1.68E-08	mg/kg-day	NTV	1/mg/kg-day	NTV	4.54E-08	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	NS	mg/L		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	2.1E-05	mg/kg/day	NS
				Selenium	4.6E-03	mg/L	2.86E-09	mg/kg-day	NC	1/mg/kg-day	NC	7.74E-09	mg/kg-day	5.0E-03	mg/kg/day	1.5E-06
				Silver	4.2E-01	mg/L	1.55E-05	mg/kg-day	NC	1/mg/kg-day	NC	4.19E-05	mg/kg-day	2.0E-04	mg/kg/day	2.1E-01
				Zinc	1.3E-03	mg/L	4.86E-10	mg/kg-day	NC	1/mg/kg-day	NC	1.31E-09	mg/kg-day	3.0E-01	mg/kg/day	4.4E-09
			Exp. Route Total								2.1E-08					2.2E-01
		Exposure Point Total									2.1E-08					2.2E-01
Medium Total											2.1E-08					2.2E-01
Sediment	Sediment	Off-Facility Sediment	Ingestion	Arsenic	8.1E-01	mg/kg	9.91E-07	mg/kg-day	1.5E+00	1/mg/kg-day	1.5E-06	3.11E-06	mg/kg-day	3.0E-04	mg/kg/day	1.0E-02
				Barium	3.9E-02	mg/kg	4.70E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.48E-05	mg/kg-day	2.0E-01	mg/kg/day	7.4E-05
				Cadmium	3.6E-02	mg/kg	4.43E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.39E-05	mg/kg-day	1.0E-03	mg/kg/day	1.4E-02
				Chromium	4.8E+01	mg/kg	5.81E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.82E-06	mg/kg-day	1.5E+00	mg/kg/day	1.2E-06
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.9E+03	mg/kg	3.54E-05	mg/kg-day	NTV	1/mg/kg-day	NTV	1.11E-04	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	5.3E+00	mg/kg	6.43E-08	mg/kg-day	NC	1/mg/kg-day	NC	2.02E-07	mg/kg-day	3.0E-04	mg/kg/day	6.7E-04
				Selenium	5.3E-00	mg/kg	6.42E-08	mg/kg-day	NC	1/mg/kg-day	NC	2.02E-07	mg/kg-day	5.0E-03	mg/kg/day	4.0E-05
				Silver	3.3E+01	mg/kg	3.96E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.24E-06	mg/kg-day	5.0E-03	mg/kg/day	2.5E-04
				Zinc	3.9E-04	mg/kg	4.72E-04	mg/kg-day	NC	1/mg/kg-day	NC	1.48E-03	mg/kg-day	3.0E-01	mg/kg/day	4.9E-03
			Exp. Route Total								1.5E-06					3.0E-02
			Dermal Contact	Arsenic	8.1E-01	mg/kg	1.80E-07	mg/kg-day	1.5E+00	1/mg/kg-day	2.7E-07	8.03E-07	mg/kg-day	3.0E-04	mg/kg/day	2.7E-03
				Barium	3.9E-02	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	1.4E-02	mg/kg/day	0.0E+00
				Cadmium	3.6E-02	mg/kg	2.68E-08	mg/kg-day	NC	1/mg/kg-day	NC	1.20E-07	mg/kg-day	2.5E-05	mg/kg/day	4.8E-03
				Chromium	4.8E-01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-02	mg/kg/day	0.0E+00
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.9E+03	mg/kg	0.00E+00	mg/kg-day	NTV	1/mg/kg-day	NTV	0.00E+00	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	5.3E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.1E-05	mg/kg/day	0.0E+00
				Selenium	5.3E-00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	5.0E-03	mg/kg/day	0.0E+00
				Silver	3.3E-01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-04	mg/kg/day	0.0E+00
				Zinc	3.9E-04	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	3.0E-01	mg/kg/day	0.0E+00
			Exp. Route Total								2.7E-07					7.5E-03
		Exposure Point Total									1.8E-06					3.8E-02
Medium Total											1.8E-06					3.8E-02
											Total of Receptor Risks Across All Media	3.5E-05		Total of Receptor Hazards Across All Media		2.6E+00

Notes:

EPC = Exposure Point Concentration
NC = Not classified as a carcinogen
NE = Not evaluated as a volatile chemical
NTV = No Toxicity Value Available
RfD = Noncancer Reference Dose

Bolded Chemicals and Bold/Underlined Risks = Exceeds a cancer risk of 1E-06 or a HQ of 0.1.
NS - Not sampled or not detected.
No garden currently exists at property based on site visit.

Tab 7ab

RAGS PART D TABLE 7.1 RME
CALCULATION OF CHEMICAL CANCER RISKS
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Current/Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF		Cancer Risk	Intake/Exposure Concentration		RfD		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Soil	Soil	Off-Facility 5514 Kinder	Ingestion	Arsenic	1.9E+01	mg/kg	2.97E-05	mg/kg-day	1.5E+00	1/mg/kg-day	4.5E-05	2.43E-04	mg/kg-day	3.0E-04	mg/kg/day	8.1E-01
				Barium	3.5E+02	mg/kg	5.48E-04	mg/kg-day	NC	1/mg/kg-day	NC	4.47E-03	mg/kg-day	2.0E-01	mg/kg/day	2.2E-02
				Cadmium	8.1E+01	mg/kg	1.27E-04	mg/kg-day	NC	1/mg/kg-day	NC	1.04E-03	mg/kg-day	1.0E-03	mg/kg/day	1.0E+00
				Chromium	2.6E+01	mg/kg	4.07E-05	mg/kg-day	NC	1/mg/kg-day	NC	3.32E-04	mg/kg-day	1.5E+00	mg/kg/day	2.2E-04
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	5.1E+02	mg/kg	7.98E-04	mg/kg-day	NTV	1/mg/kg-day	NTV	6.52E-03	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	4.1E-01	mg/kg	6.42E-07	mg/kg-day	NC	1/mg/kg-day	NC	5.24E-06	mg/kg-day	3.0E-04	mg/kg/day	1.7E-02
				Selenium	1.8E+00	mg/kg	2.82E-06	mg/kg-day	NC	1/mg/kg-day	NC	2.30E-05	mg/kg-day	5.0E-03	mg/kg/day	4.6E-03
				Silver	2.2E+00	mg/kg	3.44E-06	mg/kg-day	NC	1/mg/kg-day	NC	2.81E-05	mg/kg-day	5.0E-03	mg/kg/day	5.6E-03
				Zinc	3.7E+03	mg/kg	5.79E-03	mg/kg-day	NC	1/mg/kg-day	NC	4.73E-02	mg/kg-day	3.0E-01	mg/kg/day	1.6E-01
			Exp. Route Total								4.5E-05					2.1E+00
			Dermal Contact	Arsenic	1.9E+01	mg/kg	2.82E-06	mg/kg-day	1.5E+00	1/mg/kg-day	4.2E-06	2.04E-05	mg/kg-day	3.0E-04	mg/kg/day	6.8E-02
				Barium	3.5E+02	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	1.4E-02	mg/kg/day	0.0E+00
				Cadmium	8.1E+01	mg/kg	4.00E-07	mg/kg-day	NC	1/mg/kg-day	NC	2.90E-06	mg/kg-day	2.5E-05	mg/kg/day	1.2E-01
				Chromium (as III)	2.6E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-02	mg/kg/day	0.0E+00
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	5.1E+02	mg/kg	0.00E+00	mg/kg-day	NTV	1/mg/kg-day	NTV	0.00E+00	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	4.1E-01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.1E-05	mg/kg/day	0.0E+00
				Selenium	1.8E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	5.0E-03	mg/kg/day	0.0E+00
				Silver	2.2E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-04	mg/kg/day	0.0E+00
				Zinc	3.7E+03	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	3.0E-01	mg/kg/day	0.0E+00
			Exp. Route Total								4.2E-06					1.8E-01
			Produce Ingestion	Arsenic	1.9E+01	mg/kg	1.90E-06	mg/kg-day	1.5E+00	1/mg/kg-day	2.8E-06	2.41E-04	mg/kg-day	3.0E-04	mg/kg/day	8.0E-01
			Future	Barium	3.5E+02	mg/kg	3.49E-05	mg/kg-day	NC	1/mg/kg-day	NC	4.44E-03	mg/kg-day	2.0E-01	mg/kg/day	2.2E-02
				Cadmium	8.1E+01	mg/kg	8.08E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.03E-03	mg/kg-day	1.0E-03	mg/kg/day	1.03E+00
				Chromium	2.6E+01	mg/kg	2.59E-06	mg/kg-day	NC	1/mg/kg-day	NC	3.30E-04	mg/kg-day	1.5E+00	mg/kg/day	2.2E-04
				Copper	NS	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NS	0.00E+00	mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	5.1E+02	mg/kg	5.09E-05	mg/kg-day	NTV	1/mg/kg-day	NTV	6.47E-03	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	4.1E-01	mg/kg	4.09E-08	mg/kg-day	NC	1/mg/kg-day	NC	5.20E-06	mg/kg-day	3.0E-04	mg/kg/day	1.7E-02
				Selenium	1.8E+00	mg/kg	1.80E-07	mg/kg-day	NC	1/mg/kg-day	NC	2.28E-05	mg/kg-day	5.0E-03	mg/kg/day	4.6E-03
				Silver	2.2E+00	mg/kg	2.20E-07	mg/kg-day	NC	1/mg/kg-day	NC	2.79E-05	mg/kg-day	5.0E-03	mg/kg/day	5.6E-03
				Zinc	3.7E+03	mg/kg	3.69E-04	mg/kg-day	NC	1/mg/kg-day	NC	4.69E-02	mg/kg-day	3.0E-01	mg/kg/day	1.6E-01
			Exp. Route Total								2.8E-06					2.0E+00
	Exposure Medium Total										5.2E-05					4.3E+00
	Air	Off-facility 5514 Kinder	Inhalation of Particulates	Arsenic	1.9E+01	mg/kg	1.98E-09	mg/kg-day	1.51E+01	1/mg/kg-day	3.0E-08	8.49E-09	mg/kg-day	NTV	mg/kg/day	NTV
				Barium	3.5E+02	mg/kg	3.64E-08	mg/kg-day	NC	1/mg/kg-day	NC	1.56E-07	mg/kg-day	1.4E-04	mg/kg/day	1.1E-03
				Cadmium	8.1E+01	mg/kg	8.42E-09	mg/kg-day	6.30E+00	1/mg/kg-day	5.3E-08	3.62E-08	mg/kg-day	NTV	mg/kg/day	NTV
				Chromium (as VI-nc; total-c	2.6E+01	mg/kg	2.70E-09	mg/kg-day	4.2E+01	1/mg/kg-day	1.1E-07	1.16E-08	mg/kg-day	2.9E-05	mg/kg/day	4.1E-04
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	NTV	mg/kg/day	NS
				Lead	5.1E+02	mg/kg	5.30E-08	mg/kg-day	NTV	1/mg/kg-day	NTV	2.28E-07	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	4.1E-01	mg/kg	4.26E-11	mg/kg-day	NC	1/mg/kg-day	NC	1.83E-10	mg/kg-day	8.6E-05	mg/kg/day	2.1E-06
				Selenium	1.8E+00	mg/kg	1.87E-10	mg/kg-day	NC	1/mg/kg-day	NC	8.05E-10	mg/kg-day	NTV	mg/kg/day	NTV
				Silver	2.2E+00	mg/kg	2.29E-10	mg/kg-day	NC	1/mg/kg-day	NC	9.83E-10	mg/kg-day	NTV	mg/kg/day	NTV
				Zinc	3.7E+03	mg/kg	3.85E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.65E-06	mg/kg-day	NTV	mg/kg/day	NTV
			Exp. Route Total								2.0E-07					1.5E-03
Medium Total											5.2E-05					4.3E+00

E 7ab

RAGS PART D TABLE 7.1 RME
CALCULATION OF CHEMICAL CANCER RISKS
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Current/Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF		Cancer Risk	Intake/Exposure Concentration		RfD		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Water	Surface Water	Off-Facility Surface Water	Dermal Contact	Arsenic	2.2E-02	mg/L	1.37E-08	mg/kg-day	1.5E+00	1/mg/kg-day	2.1E-08	3.70E-08	mg/kg-day	3.0E-04	mg/kg/day	1.2E-04
				Barium	3.9E-01	mg/L	2.43E-07	mg/kg-day	NC	1/mg/kg-day	NC	6.56E-07	mg/kg-day	1.4E-02	mg/kg/day	4.7E-05
				Cadmium	1.8E-01	mg/L	1.12E-07	mg/kg-day	NC	1/mg/kg-day	NC	3.03E-07	mg/kg-day	2.5E-05	mg/kg/day	1.2E-02
				Chromium	1.9E-02	mg/L	1.18E-08	mg/kg-day	NC	1/mg/kg-day	NC	3.20E-08	mg/kg-day	2.0E-02	mg/kg/day	1.6E-06
				Copper	NS	mg/L		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.7E-01	mg/L	1.68E-08	mg/kg-day	NTV	1/mg/kg-day	NTV	4.54E-08	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	NS	mg/L		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	2.1E-05	mg/kg/day	NS
				Selenium	4.6E-03	mg/L	2.86E-09	mg/kg-day	NC	1/mg/kg-day	NC	7.74E-09	mg/kg-day	5.0E-03	mg/kg/day	1.5E-06
				Silver	4.2E+01	mg/L	1.55E-05	mg/kg-day	NC	1/mg/kg-day	NC	4.19E-05	mg/kg-day	2.0E-04	mg/kg/day	2.1E-01
				Zinc	1.3E-03	mg/L	4.86E-10	mg/kg-day	NC	1/mg/kg-day	NC	1.31E-09	mg/kg-day	3.0E-01	mg/kg/day	4.4E-09
			Exp. Route Total								2.1E-08					2.2E-01
		Exposure Point Total									2.1E-08					2.2E-01
Medium Total											2.1E-08					2.2E-01
Sediment	Sediment	Off-Facility Sediment	Ingestion	Arsenic	8.1E+01	mg/kg	9.91E-07	mg/kg-day	1.5E+00	1/mg/kg-day	1.5E-06	3.11E-06	mg/kg-day	3.0E-04	mg/kg/day	1.0E-02
				Barium	3.9E+02	mg/kg	4.70E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.48E-05	mg/kg-day	2.0E-01	mg/kg/day	7.4E-05
				Cadmium	3.6E+02	mg/kg	4.43E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.39E-05	mg/kg-day	1.0E-03	mg/kg/day	1.4E-02
				Chromium	4.8E+01	mg/kg	5.81E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.82E-06	mg/kg-day	1.5E+00	mg/kg/day	1.2E-06
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.9E+03	mg/kg	3.54E-05	mg/kg-day	NTV	1/mg/kg-day	NTV	1.11E-04	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	5.3E+00	mg/kg	6.43E-08	mg/kg-day	NC	1/mg/kg-day	NC	2.02E-07	mg/kg-day	3.0E-04	mg/kg/day	6.7E-04
				Selenium	5.3E+00	mg/kg	6.42E-08	mg/kg-day	NC	1/mg/kg-day	NC	2.02E-07	mg/kg-day	5.0E-03	mg/kg/day	4.0E-05
				Silver	3.3E+01	mg/kg	3.96E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.24E-06	mg/kg-day	5.0E-03	mg/kg/day	2.5E-04
				Zinc	3.9E+04	mg/kg	4.72E-04	mg/kg-day	NC	1/mg/kg-day	NC	1.48E-03	mg/kg-day	3.0E-01	mg/kg/day	4.9E-03
			Exp. Route Total								1.5E-06					3.0E-02
			Dermal Contact	Arsenic	8.1E+01	mg/kg	1.80E-07	mg/kg-day	1.5E+00	1/mg/kg-day	2.7E-07	8.03E-07	mg/kg-day	3.0E-04	mg/kg/day	2.7E-03
				Barium	3.9E+02	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	1.4E-02	mg/kg/day	0.0E+00
				Cadmium	3.6E+02	mg/kg	2.68E-08	mg/kg-day	NC	1/mg/kg-day	NC	1.20E-07	mg/kg-day	2.5E-05	mg/kg/day	4.8E-03
				Chromium	4.8E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-02	mg/kg/day	0.0E+00
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.9E+03	mg/kg	0.00E+00	mg/kg-day	NTV	1/mg/kg-day	NTV	0.00E+00	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	5.3E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.1E-05	mg/kg/day	0.0E+00
				Selenium	5.3E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	5.0E-03	mg/kg/day	0.0E+00
				Silver	3.3E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-04	mg/kg/day	0.0E+00
				Zinc	3.9E+04	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	3.0E-01	mg/kg/day	0.0E+00
			Exp. Route Total								3.7E-07					7.5E-03
		Exposure Point Total									1.8E-06					3.8E-02
Medium Total											1.8E-06					3.8E-02
											Total of Receptor Risks Across All Media	5.4E-05		Total of Receptor Hazards Across All Media		4.5E+00

Notes:

EPC = Exposure Point Concentration
NC = Not classified as a carcinogen
NE = Not evaluated as a volatile chemical
NTV = No Toxicity Value Available
RfD = Noncancer Reference Dose

Bolded Chemicals and Bold/Underlined Risks = Exceeds a cancer risk of 1E-06 or a HQ of 0.1.
NS - Not sampled or not detected.
No garden currently exists at property based on site visit.

RAGS PART D TABLE 7.1 RME
CALCULATION OF CHEMICAL CANCER RISKS
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF		Cancer	Intake/Exposure Concentration		RfD		Hazard
							Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
Soil	Soil	Off-Facility	Ingestion	Arsenic	1.4E-01	mg/kg	2.19E-05	mg/kg-day	1.5E+00	1/mg/kg-day	3.3E-05	1.79E-04	mg/kg-day	3.0E-04	mg/kg/day	6.0E-01
		5517 Delmar		Barium	1.7E+02	mg/kg	2.66E-04	mg/kg-day	NC	1/mg/kg-day	NC	2.17E-03	mg/kg-day	2.0E-01	mg/kg/day	1.1E-02
				Cadmium	9.9E+00	mg/kg	1.55E-05	mg/kg-day	NC	1/mg/kg-day	NC	1.27E-04	mg/kg-day	1.0E-03	mg/kg/day	1.3E-01
				Chromium	1.4E+01	mg/kg	2.19E-05	mg/kg-day	NC	1/mg/kg-day	NC	1.79E-04	mg/kg-day	1.5E+00	mg/kg/day	1.2E-04
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.2E+02	mg/kg	3.44E-04	mg/kg-day	NTV	1/mg/kg-day	NTV	2.81E-03	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.8E-01	mg/kg	2.82E-07	mg/kg-day	NC	1/mg/kg-day	NC	2.30E-06	mg/kg-day	3.0E-04	mg/kg/day	7.7E-03
				Selenium	7.5E-01	mg/kg	1.17E-06	mg/kg-day	NC	1/mg/kg-day	NC	9.59E-06	mg/kg-day	5.0E-03	mg/kg/day	1.9E-03
				Silver	5.4E-01	mg/kg	8.45E-07	mg/kg-day	NC	1/mg/kg-day	NC	6.90E-06	mg/kg-day	5.0E-03	mg/kg/day	1.4E-03
				Zinc	9.5E+02	mg/kg	1.49E-03	mg/kg-day	NC	1/mg/kg-day	NC	1.21E-02	mg/kg-day	3.0E-01	mg/kg/day	4.0E-02
			Exp. Route Total								3.3E-05					7.9E-01
			Dermal Contact	Arsenic	1.4E-01	mg/kg	2.08E-06	mg/kg-day	1.5E+00	1/mg/kg-day	3.1E-06	1.50E-05	mg/kg-day	3.0E-04	mg/kg/day	5.0E-02
				Barium	1.7E-02	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	1.4E-02	mg/kg/day	0.0E+00
				Cadmium	9.9E+00	mg/kg	4.89E-08	mg/kg-day	NC	1/mg/kg-day	NC	3.54E-07	mg/kg-day	2.5E-05	mg/kg/day	1.4E-02
				Chromium (as III)	1.4E-01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-02	mg/kg/day	0.0E+00
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.2E+02	mg/kg	0.00E+00	mg/kg-day	NTV	1/mg/kg-day	NTV	0.00E+00	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.8E-01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.1E-05	mg/kg/day	0.0E+00
				Selenium	7.5E-01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	5.0E-03	mg/kg/day	0.0E+00
				Silver	5.4E-01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-04	mg/kg/day	0.0E+00
				Zinc	9.5E+02	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	3.0E-01	mg/kg/day	0.0E+00
			Exp. Route Total								3.1E-06					6.4E-02
			Produce Ingestion	Arsenic	1.4E-01	mg/kg	1.40E-06	mg/kg-day	1.5E+00	1/mg/kg-day	2.1E-06	1.78E-04	mg/kg-day	3.0E-04	mg/kg/day	5.9E-01
			Future	Barium	1.7E+02	mg/kg	1.70E-05	mg/kg-day	NC	1/mg/kg-day	NC	2.16E-03	mg/kg-day	2.0E-01	mg/kg/day	1.1E-02
				Cadmium	9.9E+00	mg/kg	9.88E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.26E-04	mg/kg-day	1.0E-03	mg/kg/day	1.3E-01
				Chromium	1.4E+01	mg/kg	1.40E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.78E-04	mg/kg-day	1.5E+00	mg/kg/day	1.2E-04
				Copper	NS	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NS	0.00E+00	mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.2E+02	mg/kg	2.20E-05	mg/kg-day	NTV	1/mg/kg-day	NTV	2.79E-03	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.8E-01	mg/kg	1.80E-08	mg/kg-day	NC	1/mg/kg-day	NC	2.28E-06	mg/kg-day	3.0E-04	mg/kg/day	7.6E-03
				Selenium	7.5E-01	mg/kg	7.48E-08	mg/kg-day	NC	1/mg/kg-day	NC	9.51E-06	mg/kg-day	5.0E-03	mg/kg/day	1.9E-03
				Silver	5.4E-01	mg/kg	5.39E-08	mg/kg-day	NC	1/mg/kg-day	NC	6.85E-06	mg/kg-day	5.0E-03	mg/kg/day	1.4E-03
				Zinc	9.5E+02	mg/kg	9.48E-05	mg/kg-day	NC	1/mg/kg-day	NC	1.20E-02	mg/kg-day	3.0E-01	mg/kg/day	4.0E-02
			Exp. Route Total								2.1E-06					7.8E-01
	Exposure Medium Total										3.8E-05					1.6E+00
	Air	Off-Facility	Inhalation of Particulates	Arsenic	1.4E-01	mg/kg	1.46E-09	mg/kg-day	1.51E+01	1/mg/kg-day	2.2E-08	6.26E-09	mg/kg-day	NTV	mg/kg/day	NTV
		5517 Delmar		Barium	1.7E-02	mg/kg	1.77E-08	mg/kg-day	NC	1/mg/kg-day	NC	7.60E-08	mg/kg-day	1.4E-04	mg/kg/day	5.3E-04
				Cadmium	9.9E+00	mg/kg	1.03E-09	mg/kg-day	6.30E+00	1/mg/kg-day	6.5E-09	4.43E-09	mg/kg-day	NTV	mg/kg/day	NTV
				Chromium (as VI-nc; total-c	1.4E-01	mg/kg	1.46E-09	mg/kg-day	4.2E+01	1/mg/kg-day	6.1E-08	6.26E-09	mg/kg-day	2.9E-05	mg/kg/day	2.2E-04
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	NTV	mg/kg/day	NS
				Lead	2.2E+02	mg/kg	2.29E-08	mg/kg-day	NTV	1/mg/kg-day	NTV	9.83E-08	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.8E-01	mg/kg	1.87E-11	mg/kg-day	NC	1/mg/kg-day	NC	8.05E-11	mg/kg-day	8.6E-05	mg/kg/day	9.4E-07
				Selenium	7.5E-01	mg/kg	7.80E-11	mg/kg-day	NC	1/mg/kg-day	NC	3.35E-10	mg/kg-day	NTV	mg/kg/day	NTV
				Silver	5.4E-01	mg/kg	5.62E-11	mg/kg-day	NC	1/mg/kg-day	NC	2.41E-10	mg/kg-day	NTV	mg/kg/day	NTV
				Zinc	9.5E+02	mg/kg	9.88E-08	mg/kg-day	NC	1/mg/kg-day	NC	4.25E-07	mg/kg-day	NTV	mg/kg/day	NTV
			Exp. Route Total								9.0E-08					7.5E-04
Medium Total											3.8E-05					1.6E+00

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RAGS PART D TABLE 7.1 RME
CALCULATION OF CHEMICAL CANCER RISKS
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF		Cancer	Intake/Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
Surface Water	Surface Water	Off-Facility Surface Water	Dermal Contact	Arsenic	2.2E-02	mg/L	1.37E-08	mg/kg-day	1.5E+00	1/mg/kg-day	2.1E-08	3.70E-08	mg/kg-day	3.0E-04	mg/kg/day	1.2E-04
				Barium	3.9E-01	mg/L	2.43E-07	mg/kg-day	NC	1/mg/kg-day	NC	6.56E-07	mg/kg-day	1.4E-02	mg/kg/day	4.7E-05
				Cadmium	1.8E-01	mg/L	1.12E-07	mg/kg-day	NC	1/mg/kg-day	NC	3.03E-07	mg/kg-day	2.5E-05	mg/kg/day	1.2E-02
				Chromium	1.9E-02	mg/L	1.18E-08	mg/kg-day	NC	1/mg/kg-day	NC	3.20E-08	mg/kg-day	2.0E-02	mg/kg/day	1.6E-06
				Copper	NS	mg/L		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.7E-01	mg/L	1.68E-08	mg/kg-day	NTV	1/mg/kg-day	NTV	4.54E-08	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	NS	mg/L		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	2.1E-05	mg/kg/day	NS
				Selenium	4.6E-03	mg/L	2.86E-09	mg/kg-day	NC	1/mg/kg-day	NC	7.74E-09	mg/kg-day	5.0E-03	mg/kg/day	1.5E-06
				Silver	4.2E-01	mg/L	1.55E-05	mg/kg-day	NC	1/mg/kg-day	NC	4.19E-05	mg/kg-day	2.0E-04	mg/kg/day	2.1E-01
				Zinc	1.3E-03	mg/L	4.86E-10	mg/kg-day	NC	1/mg/kg-day	NC	1.31E-09	mg/kg-day	3.0E-01	mg/kg/day	4.4E-09
			Exp. Route Total								2.1E-08					2.2E-01
		Exposure Point Total									2.1E-08					2.2E-01
Medium Total											2.1E-08					2.2E-01
Sediment	Sediment	Off-Facility Sediment	Ingestion	Arsenic	8.1E-01	mg/kg	9.91E-07	mg/kg-day	1.5E+00	1/mg/kg-day	1.5E-06	3.11E-06	mg/kg-day	3.0E-04	mg/kg/day	1.0E-02
				Barium	3.9E-02	mg/kg	4.70E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.48E-05	mg/kg-day	2.0E-01	mg/kg/day	7.4E-05
				Cadmium	3.6E-02	mg/kg	4.43E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.39E-05	mg/kg-day	1.0E-03	mg/kg/day	1.4E-02
				Chromium	4.8E-01	mg/kg	5.81E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.82E-06	mg/kg-day	1.5E+00	mg/kg/day	1.2E-06
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.9E-03	mg/kg	3.54E-05	mg/kg-day	NTV	1/mg/kg-day	NTV	1.11E-04	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	5.3E-00	mg/kg	6.43E-08	mg/kg-day	NC	1/mg/kg-day	NC	2.02E-07	mg/kg-day	3.0E-04	mg/kg/day	6.7E-04
				Selenium	5.3E-00	mg/kg	6.42E-08	mg/kg-day	NC	1/mg/kg-day	NC	2.02E-07	mg/kg-day	5.0E-03	mg/kg/day	4.0E-05
				Silver	3.3E-01	mg/kg	3.96E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.24E-06	mg/kg-day	5.0E-03	mg/kg/day	2.5E-04
				Zinc	3.9E-04	mg/kg	4.72E-04	mg/kg-day	NC	1/mg/kg-day	NC	1.48E-03	mg/kg-day	3.0E-01	mg/kg/day	4.9E-03
			Exp. Route Total								1.5E-06					3.0E-02
			Dermal Contact	Arsenic	8.1E-01	mg/kg	1.80E-07	mg/kg-day	1.5E+00	1/mg/kg-day	2.7E-07	8.03E-07	mg/kg-day	3.0E-04	mg/kg/day	2.7E-03
				Barium	3.9E-02	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	1.4E-02	mg/kg/day	0.0E+00
				Cadmium	3.6E-02	mg/kg	2.68E-08	mg/kg-day	NC	1/mg/kg-day	NC	1.20E-07	mg/kg-day	2.5E-05	mg/kg/day	4.8E-03
				Chromium	4.8E-01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-02	mg/kg/day	0.0E+00
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.9E-03	mg/kg	0.00E+00	mg/kg-day	NTV	1/mg/kg-day	NTV	0.00E+00	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	5.3E-00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.1E-05	mg/kg/day	0.0E+00
				Selenium	5.3E-00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	5.0E-03	mg/kg/day	0.0E+00
				Silver	3.3E-01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-04	mg/kg/day	0.0E+00
				Zinc	3.9E-04	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	3.0E-01	mg/kg/day	0.0E+00
			Exp. Route Total								2.7E-07					7.5E-03
		Exposure Point Total									1.8E-06					3.8E-02
Medium Total											1.8E-06					3.8E-02
											Total of Receptor Risks Across All Media	4.0E-05	Total of Receptor Hazards Across All Media			1.9E+00

Notes:
EPC = Exposure Point Concentration
NC = Not classified as a carcinogen
NE = Not evaluated as a volatile chemical
NTV = No Toxicity Value Available
RfD = Noncancer Reference Dose

Bolded Chemicals and Bold/Underlined Risks = Exceeds a cancer risk of 1E-06 or a HQ of 0.1.
NS - Not sampled or not detected.
EPC for Future Produce Ingestion based on maximum detected concentration in all soil samples collected at property, which may exceed the measured soil concentrations in existing garden.

RAGS PART D TABLE 7.1 RME
CALCULATION OF CHEMICAL CANCER RISKS
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Platnt Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF		Cancer Risk	Intake/Exposure Concentration		RfD		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Soil	Soil	Off-Facility 47 St (Schulmann)	Ingestion	Arsenic	5.1E+01	mg/kg	7.98E-05	mg/kg-day	1.5E+00	1/mg/kg-day	1.2E-04	6.52E-04	mg/kg-day	3.0E-04	mg/kg/day	2.2E+00
				Barium	3.7E+02	mg/kg	5.79E-04	mg/kg-day	NC	1/mg/kg-day	NC	4.73E-03	mg/kg-day	2.0E-01	mg/kg/day	2.4E-02
				Cadmium	1.8E+02	mg/kg	2.82E-04	mg/kg-day	NC	1/mg/kg-day	NC	2.30E-03	mg/kg-day	1.0E-03	mg/kg/day	2.3E+00
				Chromium	3.0E+01	mg/kg	4.70E-05	mg/kg-day	NC	1/mg/kg-day	NC	3.84E-04	mg/kg-day	1.5E+00	mg/kg/day	2.6E-04
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	1.6E+03	mg/kg	2.50E-03	mg/kg-day	NTV	1/mg/kg-day	NTV	2.05E-02	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.1E+00	mg/kg	1.72E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.41E-05	mg/kg-day	3.0E-04	mg/kg/day	4.7E-02
				Selenium	2.1E+00	mg/kg	3.29E-06	mg/kg-day	NC	1/mg/kg-day	NC	2.68E-05	mg/kg-day	5.0E-03	mg/kg/day	5.4E-03
				Silver	1.1E+01	mg/kg	1.72E-05	mg/kg-day	NC	1/mg/kg-day	NC	1.41E-04	mg/kg-day	5.0E-03	mg/kg/day	2.8E-02
				Zinc	1.6E+04	mg/kg	2.50E-02	mg/kg-day	NC	1/mg/kg-day	NC	2.05E-01	mg/kg-day	3.0E-01	mg/kg/day	6.8E-01
			Exp. Route Total								1.2E-04					5.3E+00
			Dermal Contact	Arsenic	5.1E+01	mg/kg	7.56E-06	mg/kg-day	1.5E+00	1/mg/kg-day	1.1E-05	5.48E-05	mg/kg-day	3.0E-04	mg/kg/day	1.8E-01
				Barium	3.7E+02	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	1.4E-02	mg/kg/day	0.0E+00
				Cadmium	1.8E+02	mg/kg	8.90E-07	mg/kg-day	NC	1/mg/kg-day	NC	6.44E-06	mg/kg-day	2.5E-05	mg/kg/day	2.6E-01
				Chromium (as III)	3.0E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-02	mg/kg/day	0.0E+00
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	1.6E+03	mg/kg	0.00E+00	mg/kg-day	NTV	1/mg/kg-day	NTV	0.00E+00	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.1E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.1E-05	mg/kg/day	0.0E+00
				Selenium	2.1E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	5.0E-03	mg/kg/day	0.0E+00
				Silver	1.1E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-04	mg/kg/day	0.0E+00
				Zinc	1.6E+04	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	3.0E-01	mg/kg/day	0.0E+00
			Exp. Route Total								1.1E-05					4.4E-01
			Produce Ingestion Future	Arsenic	5.1E+01	mg/kg	5.09E-06	mg/kg-day	1.5E+00	1/mg/kg-day	7.6E-06	6.47E-04	mg/kg-day	3.0E-04	mg/kg/day	2.2E+00
				Barium	3.7E+02	mg/kg	3.69E-05	mg/kg-day	NC	1/mg/kg-day	NC	4.59E-03	mg/kg-day	2.0E-01	mg/kg/day	2.3E-02
				Cadmium	1.8E+02	mg/kg	1.80E-05	mg/kg-day	NC	1/mg/kg-day	NC	2.28E-03	mg/kg-day	1.0E-03	mg/kg/day	2.3E+00
				Chromium	3.0E+01	mg/kg	2.99E-06	mg/kg-day	NC	1/mg/kg-day	NC	3.80E-04	mg/kg-day	1.5E+00	mg/kg/day	2.5E-04
				Copper	NS	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NS	0.00E+00	mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	1.6E+03	mg/kg	1.60E-04	mg/kg-day	NTV	1/mg/kg-day	NTV	2.03E-02	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.1E+00	mg/kg	1.10E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.39E-05	mg/kg-day	3.0E-04	mg/kg/day	4.6E-02
				Selenium	2.1E+00	mg/kg	2.10E-07	mg/kg-day	NC	1/mg/kg-day	NC	2.66E-05	mg/kg-day	5.0E-03	mg/kg/day	5.3E-03
				Silver	1.1E+01	mg/kg	1.10E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.39E-04	mg/kg-day	5.0E-03	mg/kg/day	2.8E-02
				Zinc	1.6E+04	mg/kg	1.60E-03	mg/kg-day	NC	1/mg/kg-day	NC	2.03E-01	mg/kg-day	3.0E-01	mg/kg/day	6.8E-01
			Exp. Route Total								7.6E-06					5.2E+00
	Exposure Medium Total										1.4E-04					1.1E+01
	Air	Off-Facility 47 St (Schulmann)	Inhalation of Particulates	Arsenic	5.1E-01	mg/kg	5.30E-09	mg/kg-day	1.51E-01	1/mg/kg-day	8.0E-08	2.28E-08	mg/kg-day	NTV	mg/kg/day	NTV
				Barium	3.7E-02	mg/kg	3.85E-08	mg/kg-day	NC	1/mg/kg-day	NC	1.65E-07	mg/kg-day	1.4E-04	mg/kg/day	1.2E-03
				Cadmium	1.8E-02	mg/kg	1.87E-08	mg/kg-day	6.30E-00	1/mg/kg-day	1.2E-07	8.05E-08	mg/kg-day	NTV	mg/kg/day	NTV
				Chromium (as VI-ec, total-c	3.0E-01	mg/kg	3.12E-09	mg/kg-day	4.2E-01	1/mg/kg-day	1.3E-07	1.34E-08	mg/kg-day	2.9E-05	mg/kg/day	4.7E-04
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	NTV	mg/kg/day	NS
				Lead	1.6E-03	mg/kg	1.66E-07	mg/kg-day	NTV	1/mg/kg-day	NTV	7.15E-07	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.1E-00	mg/kg	1.14E-10	mg/kg-day	NC	1/mg/kg-day	NC	4.92E-10	mg/kg-day	8.6E-05	mg/kg/day	5.7E-06
				Selenium	2.1E-00	mg/kg	2.18E-10	mg/kg-day	NC	1/mg/kg-day	NC	9.39E-10	mg/kg-day	NTV	mg/kg/day	NTV
				Silver	1.1E-01	mg/kg	1.14E-09	mg/kg-day	NC	1/mg/kg-day	NC	4.92E-09	mg/kg-day	NTV	mg/kg/day	NTV
				Zinc	1.6E-04	mg/kg	1.66E-06	mg/kg-day	NC	1/mg/kg-day	NC	7.15E-06	mg/kg-day	NTV	mg/kg/day	NTV
			Exp. Route Total								3.3E-07					1.6E-03
Medium Total											1.4E-04					1.1E+01

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RAGS PART D TABLE 7.1 RME
CALCULATION OF CHEMICAL CANCER RISKS
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Platnt Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF		Cancer	Intake/Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
Surface Water	Surface Water	Off-Facility Surface Water	Dermal Contact	Arsenic	2.2E-02	mg/L	1.37E-08	mg/kg-day	1.5E+00	1/mg/kg-day	2.1E-08	3.70E-08	mg/kg-day	3.0E-04	mg/kg/day	1.2E-04
				Barium	3.9E-01	mg/L	2.43E-07	mg/kg-day	NC	1/mg/kg-day	NC	6.56E-07	mg/kg-day	1.4E-02	mg/kg/day	4.7E-05
				Cadmium	1.8E-01	mg/L	1.12E-07	mg/kg-day	NC	1/mg/kg-day	NC	3.03E-07	mg/kg-day	2.5E-05	mg/kg/day	1.2E-02
				Chromium	1.9E-02	mg/L	1.18E-08	mg/kg-day	NC	1/mg/kg-day	NC	3.20E-08	mg/kg-day	2.0E-02	mg/kg/day	1.6E-06
				Copper	NS	mg/L		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.7E-01	mg/L	1.68E-08	mg/kg-day	NTV	1/mg/kg-day	NTV	4.54E-08	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	NS	mg/L		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	2.1E-05	mg/kg/day	NS
				Selenium	4.6E-03	mg/L	2.86E-09	mg/kg-day	NC	1/mg/kg-day	NC	7.74E-09	mg/kg-day	5.0E-03	mg/kg/day	1.5E-06
				Silver	4.2E-01	mg/L	1.55E-05	mg/kg-day	NC	1/mg/kg-day	NC	4.19E-05	mg/kg-day	2.0E-04	mg/kg/day	2.1E-01
				Zinc	1.3E-03	mg/L	4.86E-10	mg/kg-day	NC	1/mg/kg-day	NC	1.31E-09	mg/kg-day	3.0E-01	mg/kg/day	4.4E-09
			Exp. Route Total								2.1E-08					2.2E-01
		Exposure Point Total									2.1E-08					2.2E-01
Medium Total											2.1E-08					2.2E-01
Sediment	Sediment	Off-Facility Sediment	Ingestion	Arsenic	8.1E+01	mg/kg	9.91E-07	mg/kg-day	1.5E+00	1/mg/kg-day	1.5E-06	3.1E-06	mg/kg-day	3.0E-04	mg/kg/day	1.0E-02
				Barium	3.9E+02	mg/kg	4.70E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.48E-05	mg/kg-day	2.0E-01	mg/kg/day	7.4E-05
				Cadmium	3.6E+02	mg/kg	4.43E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.39E-05	mg/kg-day	1.0E-03	mg/kg/day	1.4E-02
				Chromium	4.8E+01	mg/kg	5.81E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.82E-06	mg/kg-day	1.5E+00	mg/kg/day	1.2E-06
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.9E+03	mg/kg	3.54E-05	mg/kg-day	NTV	1/mg/kg-day	NTV	1.11E-04	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	5.3E+00	mg/kg	6.43E-08	mg/kg-day	NC	1/mg/kg-day	NC	2.02E-07	mg/kg-day	3.0E-04	mg/kg/day	6.7E-04
				Selenium	5.3E+00	mg/kg	6.42E-08	mg/kg-day	NC	1/mg/kg-day	NC	2.02E-07	mg/kg-day	5.0E-03	mg/kg/day	4.0E-05
				Silver	3.3E+01	mg/kg	3.96E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.24E-06	mg/kg-day	5.0E-03	mg/kg/day	2.5E-04
				Zinc	3.9E+04	mg/kg	4.72E-04	mg/kg-day	NC	1/mg/kg-day	NC	1.48E-03	mg/kg-day	3.0E-01	mg/kg/day	4.9E-03
			Exp. Route Total								1.5E-06					3.0E-02
			Dermal Contact	Arsenic	8.1E+01	mg/kg	1.80E-07	mg/kg-day	1.5E+00	1/mg/kg-day	2.7E-07	8.03E-07	mg/kg-day	3.0E-04	mg/kg/day	2.7E-03
				Barium	3.9E+02	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	1.4E-02	mg/kg/day	0.0E+00
				Cadmium	3.6E+02	mg/kg	2.68E-08	mg/kg-day	NC	1/mg/kg-day	NC	1.20E-07	mg/kg-day	2.5E-05	mg/kg/day	4.8E-03
				Chromium	4.8E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-02	mg/kg/day	0.0E+00
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.9E+03	mg/kg	0.00E+00	mg/kg-day	NTV	1/mg/kg-day	NTV	0.00E+00	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	5.3E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.1E-05	mg/kg/day	0.0E+00
				Selenium	5.3E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	5.0E-03	mg/kg/day	0.0E+00
				Silver	3.3E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-04	mg/kg/day	0.0E+00
				Zinc	3.9E+04	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	3.0E-01	mg/kg/day	0.0E+00
			Exp. Route Total								2.7E-07					7.5E-03
		Exposure Point Total									1.8E-06					3.8E-02
Medium Total											1.8E-06					3.8E-02
											Total of Receptor Risks Across All Media	1.4E-04	Total of Receptor Hazards Across All Media			1.1E+01

Notes:
EPC = Exposure Point Concentration
NC = Not classified as a carcinogen
NE = Not evaluated as a volatile chemical
NTV = No Toxicity Value Available
RfD = Noncancer Reference Dose

Bolded Chemicals and Bold/Underlined Risks = Exceeds a cancer risk of 1E-06 or a HQ of 0.1.
NS - Not sampled or not detected.
Property is currently vacant

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RAGS PART D TABLE 7.1 RME
CALCULATION OF CHEMICAL CANCER RISKS
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child Adult (cancer)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF		Cancer Risk	Intake/Exposure Concentration		RfD		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Soil	Soil	Off-Facility 2845 44th Street	Ingestion	Arsenic	2.6E+01	mg/kg	4.07E-05	mg/kg-day	1.5E+00	1/mg/kg-day	6.1E-05	3.32E-04	mg/kg-day	3.0E-04	mg/kg/day	1.1E+00
				Barium	2.3E-02	mg/kg	3.60E-04	mg/kg-day	NC	1/mg/kg-day	NC	2.94E-03	mg/kg-day	2.0E-01	mg/kg/day	1.5E-02
				Cadmium	2.4E-01	mg/kg	3.76E-05	mg/kg-day	NC	1/mg/kg-day	NC	3.07E-04	mg/kg-day	1.0E-03	mg/kg/day	3.1E-01
				Chromium	2.2E+01	mg/kg	3.44E-05	mg/kg-day	NC	1/mg/kg-day	NC	2.81E-04	mg/kg-day	1.5E+00	mg/kg/day	1.9E-04
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	1.1E-03	mg/kg	1.72E-03	mg/kg-day	NTV	1/mg/kg-day	NTV	*1.41E-02*	*mg/kg-day*	NTV	*mg/kg/day*	NTV
				Mercury	9.0E-01	mg/kg	1.41E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.15E-05	mg/kg-day	3.0E-04	mg/kg/day	3.8E-02
				Selenium	1.2E+00	mg/kg	1.88E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.53E-05	mg/kg-day	5.0E-03	mg/kg/day	3.1E-03
				Silver	2.5E+00	mg/kg	3.91E-06	mg/kg-day	NC	1/mg/kg-day	NC	3.20E-05	mg/kg-day	5.0E-03	mg/kg/day	6.4E-03
				Zinc	3.9E-03	mg/kg	6.11E-03	mg/kg-day	NC	1/mg/kg-day	NC	4.99E-02	mg/kg-day	3.0E-01	mg/kg/day	1.7E-01
			Exp. Route Total								6.1E-05					1.6E+00
			Dermal Contact	Arsenic	2.6E+01	mg/kg	3.86E-06	mg/kg-day	1.5E+00	1/mg/kg-day	5.8E-06	2.79E-05	mg/kg-day	3.0E-04	mg/kg/day	9.3E-02
				Barium	2.3E+02	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	1.4E-02	mg/kg/day	0.0E+00
				Cadmium	2.4E+01	mg/kg	1.19E-07	mg/kg-day	NC	1/mg/kg-day	NC	8.59E-07	mg/kg-day	2.5E-05	mg/kg/day	3.4E-02
				Chromium (as III)	*2.2E+01*	mg/kg	*0.00E+00*	mg/kg-day	NC	1/mg/kg-day	NC	*0.00E+00*	mg/kg-day	*2.0E-02*	mg/kg/day	*0.0E+00*
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	1.1E+03	mg/kg	0.00E+00	mg/kg-day	NTV	1/mg/kg-day	NTV	0.00E+00	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	9.0E-01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.1E-05	mg/kg/day	0.0E+00
				Selenium	1.2E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	5.0E-03	mg/kg/day	0.0E+00
				Silver	2.5E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-04	mg/kg/day	0.0E+00
				Zinc	3.9E-03	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	3.0E-01	mg/kg/day	0.0E+00
			Exp. Route Total								5.8E-06					1.3E-01
			Produce Ingestion Future	Arsenic	2.6E+01	mg/kg	2.59E-06	mg/kg-day	1.5E+00	1/mg/kg-day	3.9E-06	3.30E-04	mg/kg-day	3.0E-04	mg/kg/day	1.1E+00
				Barium	2.3E+02	mg/kg	2.30E-05	mg/kg-day	NC	1/mg/kg-day	NC	2.92E-03	mg/kg-day	2.0E-01	mg/kg/day	1.5E-02
				Cadmium	2.4E-01	mg/kg	2.40E-06	mg/kg-day	NC	1/mg/kg-day	NC	3.04E-04	mg/kg-day	1.0E-03	mg/kg/day	3.0E-01
				Chromium	2.2E-01	mg/kg	2.20E-06	mg/kg-day	NC	1/mg/kg-day	NC	2.79E-04	mg/kg-day	1.5E+00	mg/kg/day	1.9E-04
				Copper	NS	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NS	0.00E+00	mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	1.1E+03	mg/kg	1.10E-04	mg/kg-day	NTV	1/mg/kg-day	NTV	1.39E-02	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	9.0E-01	mg/kg	8.98E-08	mg/kg-day	NC	1/mg/kg-day	NC	1.14E-05	mg/kg-day	3.0E-04	mg/kg/day	3.8E-02
				Selenium	1.2E+00	mg/kg	1.20E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.52E-05	mg/kg-day	5.0E-03	mg/kg/day	3.0E-03
				Silver	2.5E+00	mg/kg	2.49E-07	mg/kg-day	NC	1/mg/kg-day	NC	3.17E-05	mg/kg-day	5.0E-03	mg/kg/day	6.3E-03
				Zinc	3.9E-03	mg/kg	3.89E-04	mg/kg-day	NC	1/mg/kg-day	NC	4.94E-02	mg/kg-day	3.0E-01	mg/kg/day	1.6E-01
			Exp. Route Total								3.9E-05					1.6E+00
	Exposure Medium Total										7.1E-05					3.4E+00
	Air	Off-Facility 2845 44th Street	Inhalation of Particulates	Arsenic	2.6E-01	mg/kg	2.70E-09	mg/kg-day	1.51E+01	1/mg/kg-day	4.1E-08	1.16E-08	mg/kg-day	NTV	mg/kg/day	NTV
				Barium	2.3E-02	mg/kg	2.39E-08	mg/kg-day	NC	1/mg/kg-day	NC	1.03E-07	mg/kg-day	1.4E-04	mg/kg/day	7.2E-04
				Cadmium	2.4E-01	mg/kg	2.50E-09	mg/kg-day	6.30E+00	1/mg/kg-day	1.6E-08	1.07E-08	mg/kg-day	NTV	mg/kg/day	NTV
				Chromium (as VI-nc; total-c	2.2E-01	mg/kg	2.29E-09	mg/kg-day	4.2E+01	1/mg/kg-day	9.6E-08	9.83E-09	mg/kg-day	2.9E-05	mg/kg/day	3.4E-04
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	NTV	mg/kg/day	NS
				Lead	1.1E+03	mg/kg	1.14E-07	mg/kg-day	NTV	1/mg/kg-day	NTV	4.92E-07	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	9.0E-01	mg/kg	9.36E-11	mg/kg-day	NC	1/mg/kg-day	NC	4.02E-10	mg/kg-day	8.6E-05	mg/kg/day	4.7E-06
				Selenium	1.2E+00	mg/kg	1.25E-10	mg/kg-day	NC	1/mg/kg-day	NC	5.36E-10	mg/kg-day	NTV	mg/kg/day	NTV
				Silver	2.5E-00	mg/kg	2.60E-10	mg/kg-day	NC	1/mg/kg-day	NC	1.12E-09	mg/kg-day	NTV	mg/kg/day	NTV
				Zinc	3.9E-03	mg/kg	4.06E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.74E-06	mg/kg-day	NTV	mg/kg/day	NTV
			Exp. Route Total								1.5E-07					1.1E-03
Medium Total											7.1E-05					3.4E+00

RAGS PART D TABLE 7.1 RME
CALCULATION OF CHEMICAL CANCER RISKS
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF		Cancer	Intake/Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
Surface Water	Surface Water	Off-Facility	Dermal Contact	Arsenic	2.2E-02	mg/L	1.37E-08	mg/kg-day	1.5E+00	1/mg/kg-day	2.1E-08	3.70E-08	mg/kg-day	3.0E-04	mg/kg/day	1.2E-04
		Surface Water		Barium	3.9E-01	mg/L	2.43E-07	mg/kg-day	NC	1/mg/kg-day	NC	6.56E-07	mg/kg-day	1.4E-02	mg/kg/day	4.7E-05
				Cadmium	1.8E-01	mg/L	1.12E-07	mg/kg-day	NC	1/mg/kg-day	NC	3.03E-07	mg/kg-day	2.5E-05	mg/kg/day	1.2E-02
				Chromium	1.9E-02	mg/L	1.18E-08	mg/kg-day	NC	1/mg/kg-day	NC	3.20E-08	mg/kg-day	2.0E-02	mg/kg/day	1.6E-06
				Copper	NS	mg/L		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.7E-01	mg/L	1.68E-08	mg/kg-day	NTV	1/mg/kg-day	NTV	4.54E-08	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	NS	mg/L		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	2.1E-05	mg/kg/day	NS
				Selenium	4.6E-03	mg/L	2.86E-09	mg/kg-day	NC	1/mg/kg-day	NC	7.74E-09	mg/kg-day	5.0E-03	mg/kg/day	1.5E-06
				Silver	4.2E-01	mg/L	1.55E-05	mg/kg-day	NC	1/mg/kg-day	NC	4.19E-05	mg/kg-day	2.0E-04	mg/kg/day	2.1E-01
				Zinc	1.3E-03	mg/L	4.86E-10	mg/kg-day	NC	1/mg/kg-day	NC	1.31E-09	mg/kg-day	3.0E-01	mg/kg/day	4.4E-09
			Exp. Route Total								2.1E-08					2.2E-01
		Exposure Point Total									2.1E-08					2.2E-01
Medium Total											2.1E-08					2.2E-01
Sediment	Sediment	Off-Facility	Ingestion	Arsenic	8.1E-01	mg/kg	9.91E-07	mg/kg-day	1.5E+00	1/mg/kg-day	1.5E-06	3.11E-06	mg/kg-day	3.0E-04	mg/kg/day	1.0E-02
		Sediment		Barium	3.9E-02	mg/kg	4.70E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.48E-05	mg/kg-day	2.0E-01	mg/kg/day	7.4E-05
				Cadmium	3.6E-02	mg/kg	4.43E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.39E-05	mg/kg-day	1.0E-03	mg/kg/day	1.4E-02
				Chromium	4.8E-01	mg/kg	5.81E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.82E-06	mg/kg-day	1.5E-00	mg/kg/day	1.2E-06
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.9E-03	mg/kg	3.54E-05	mg/kg-day	NTV	1/mg/kg-day	NTV	1.11E-04	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	5.3E-00	mg/kg	6.43E-08	mg/kg-day	NC	1/mg/kg-day	NC	2.02E-07	mg/kg-day	3.0E-04	mg/kg/day	6.7E-04
				Selenium	5.3E-00	mg/kg	6.42E-08	mg/kg-day	NC	1/mg/kg-day	NC	2.02E-07	mg/kg-day	5.0E-03	mg/kg/day	4.0E-05
				Silver	3.3E-01	mg/kg	3.96E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.24E-06	mg/kg-day	5.0E-03	mg/kg/day	2.5E-04
				Zinc	3.9E-04	mg/kg	4.72E-04	mg/kg-day	NC	1/mg/kg-day	NC	1.48E-03	mg/kg-day	3.0E-01	mg/kg/day	4.9E-03
			Exp. Route Total								1.5E-06					3.0E-02
			Dermal Contact	Arsenic	8.1E-01	mg/kg	1.80E-07	mg/kg-day	1.5E+00	1/mg/kg-day	2.7E-07	8.03E-07	mg/kg-day	3.0E-04	mg/kg/day	2.7E-03
				Barium	3.9E-02	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	1.4E-02	mg/kg/day	0.0E+00
				Cadmium	3.6E-02	mg/kg	2.68E-08	mg/kg-day	NC	1/mg/kg-day	NC	1.20E-07	mg/kg-day	2.5E-05	mg/kg/day	4.8E-03
				Chromium	4.8E-01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-02	mg/kg/day	0.0E+00
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.9E-03	mg/kg	0.00E+00	mg/kg-day	NTV	1/mg/kg-day	NTV	0.00E+00	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	5.3E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.1E-05	mg/kg/day	0.0E+00
				Selenium	5.3E-00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	5.0E-03	mg/kg/day	0.0E+00
				Silver	3.3E-01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-04	mg/kg/day	0.0E+00
				Zinc	3.9E-04	mg/kg	0.00E-00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E-00	mg/kg-day	3.0E-01	mg/kg/day	0.0E-00
			Exp. Route Total								2.7E-07					7.5E-03
		Exposure Point Total									1.8E-06					3.8E-02
Medium Total											1.8E-06					3.8E-02
										Total of Receptor Risks Across All Media	7.3E-05			Total of Receptor Hazards Across All Media		3.7E+00

Notes:
EPC = Exposure Point Concentration
NC = Not classified as a carcinogen
NE = Not evaluated as a volatile chemical
NTV = No Toxicity Value Available
RfD = Noncancer Reference Dose

Bolded Chemicals and Bold/Underlined Risks = Exceeds a cancer risk of 1E-06 or a HQ of 0.1.
NS - Not sampled or not detected.
Property is currently vacant

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RAGS PART D TABLE 7.1 RME
CALCULATION OF CHEMICAL CANCER RISKS
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF		Cancer Risk	Intake/Exposure Concentration		RfD		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Soil	Soil	Off-Facility	Ingestion	Arsenic	1.7E+01	mg/kg	2.66E-05	mg/kg-day	1.5E+00	1/mg/kg-day	4.0E-05	2.17E-04	mg/kg-day	3.0E-04	mg/kg/day	7.2E-01
		3022 N 48th St.		Barium	3.2E+02	mg/kg	5.01E-04	mg/kg-day	NC	1/mg/kg-day	NC	4.09E-03	mg/kg-day	2.0E-01	mg/kg/day	2.0E-02
				Cadmium	6.1E+01	mg/kg	9.55E-05	mg/kg-day	NC	1/mg/kg-day	NC	7.80E-04	mg/kg-day	1.0E-03	mg/kg/day	7.8E-01
				Chromium	2.4E+01	mg/kg	3.76E-05	mg/kg-day	NC	1/mg/kg-day	NC	3.07E-04	mg/kg-day	1.5E+00	mg/kg/day	2.0E-04
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	7.2E+02	mg/kg	1.13E-03	mg/kg-day	NTV	1/mg/kg-day	NTV	9.21E-03	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.8E-01	mg/kg	2.82E-07	mg/kg-day	NC	1/mg/kg-day	NC	2.30E-06	mg/kg-day	3.0E-04	mg/kg/day	7.7E-03
				Selenium	9.2E-01	mg/kg	1.44E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.18E-05	mg/kg-day	5.0E-03	mg/kg/day	2.4E-03
				Silver	1.4E+00	mg/kg	2.19E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.79E-05	mg/kg-day	5.0E-03	mg/kg/day	3.6E-03
				Zinc	3.6E+03	mg/kg	5.64E-03	mg/kg-day	NC	1/mg/kg-day	NC	4.60E-02	mg/kg-day	3.0E-01	mg/kg/day	1.5E-01
			Exp. Route Total								4.0E-05					1.7E+00
			Dermal Contact	Arsenic	1.7E+01	mg/kg	2.52E-06	mg/kg-day	1.5E+00	1/mg/kg-day	3.8E-06	1.83E-05	mg/kg-day	3.0E-04	mg/kg/day	6.1E-02
				Barium	3.2E+02	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	1.4E-02	mg/kg/day	0.0E+00
				Cadmium	6.1E+01	mg/kg	3.01E-07	mg/kg-day	NC	1/mg/kg-day	NC	2.18E-06	mg/kg-day	2.5E-05	mg/kg/day	8.7E-02
				Chromium (as III)	2.4E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-02	mg/kg/day	0.0E+00
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	7.2E+02	mg/kg	0.00E+00	mg/kg-day	NTV	1/mg/kg-day	NTV	0.00E+00	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.8E-01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.1E-05	mg/kg/day	0.0E+00
				Selenium	9.2E-01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	5.0E-03	mg/kg/day	0.0E+00
				Silver	1.4E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-04	mg/kg/day	0.0E+00
				Zinc	3.6E+03	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	3.0E-01	mg/kg/day	0.0E+00
			Exp. Route Total								3.8E-06					1.5E-01
			Produce Ingestion	Arsenic	1.7E+01	mg/kg	1.70E-06	mg/kg-day	1.5E+00	1/mg/kg-day	2.5E-06	2.16E-04	mg/kg-day	3.0E-04	mg/kg/day	7.2E-01
			Future	Barium	3.2E+02	mg/kg	3.19E-05	mg/kg-day	NC	1/mg/kg-day	NC	4.06E-03	mg/kg-day	2.0E-01	mg/kg/day	2.0E-02
				Cadmium	6.1E+01	mg/kg	6.09E-06	mg/kg-day	NC	1/mg/kg-day	NC	7.73E-04	mg/kg-day	1.0E-03	mg/kg/day	7.7E-01
				Chromium	2.4E+01	mg/kg	2.40E-06	mg/kg-day	NC	1/mg/kg-day	NC	3.04E-04	mg/kg-day	1.5E+00	mg/kg/day	2.0E-04
				Copper	NS	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NS	0.00E+00	mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	7.2E+02	mg/kg	7.19E-05	mg/kg-day	NTV	1/mg/kg-day	NTV	9.13E-03	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.8E-01	mg/kg	1.80E-08	mg/kg-day	NC	1/mg/kg-day	NC	2.28E-06	mg/kg-day	3.0E-04	mg/kg/day	7.6E-03
				Selenium	9.2E-01	mg/kg	9.18E-08	mg/kg-day	NC	1/mg/kg-day	NC	1.17E-05	mg/kg-day	5.0E-03	mg/kg/day	2.3E-03
				Silver	1.4E+00	mg/kg	1.40E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.78E-05	mg/kg-day	5.0E-03	mg/kg/day	3.6E-03
				Zinc	3.6E+03	mg/kg	3.59E-04	mg/kg-day	NC	1/mg/kg-day	NC	4.56E-02	mg/kg-day	3.0E-01	mg/kg/day	1.5E-01
			Exp. Route Total								2.5E-06					1.7E+00
	Exposure Medium Total										4.6E-05					3.5E+00
	Air	Off-Facility	Inhalation of Particulates	Arsenic	1.7E+01	mg/kg	1.77E-09	mg/kg-day	1.51E+01	1/mg/kg-day	2.7E-08	7.60E-09	mg/kg-day	NTV	mg/kg/day	NTV
		3022 N 48th St.		Barium	3.2E+02	mg/kg	3.33E-08	mg/kg-day	NC	1/mg/kg-day	NC	1.43E-07	mg/kg-day	1.4E-04	mg/kg/day	1.0E-03
				Cadmium	6.1E+01	mg/kg	6.34E-09	mg/kg-day	6.30E+00	1/mg/kg-day	4.0E-08	2.73E-08	mg/kg-day	NTV	mg/kg/day	NTV
				Chromium (as VI-nc; total-c	2.4E+01	mg/kg	2.50E-09	mg/kg-day	4.2E+01	1/mg/kg-day	1.0E-07	1.07E-08	mg/kg-day	2.9E-05	mg/kg/day	3.8E-04
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	NTV	mg/kg/day	NS
				Lead	7.2E+02	mg/kg	7.49E-08	mg/kg-day	NTV	1/mg/kg-day	NTV	3.22E-07	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.8E-01	mg/kg	1.87E-11	mg/kg-day	NC	1/mg/kg-day	NC	8.05E-11	mg/kg-day	8.6E-05	mg/kg/day	9.4E-07
				Selenium	9.2E-01	mg/kg	9.57E-11	mg/kg-day	NC	1/mg/kg-day	NC	4.11E-10	mg/kg-day	NTV	mg/kg/day	NTV
				Silver	1.4E+00	mg/kg	1.46E-10	mg/kg-day	NC	1/mg/kg-day	NC	6.26E-10	mg/kg-day	NTV	mg/kg/day	NTV
				Zinc	3.6E+03	mg/kg	3.74E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.61E-06	mg/kg-day	NTV	mg/kg/day	NTV
			Exp. Route Total								1.7E-07					1.4E-03
Medium Total											4.6E-05					3.5E+00

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RAGS PART D TABLE 7.1 RME
CALCULATION OF CHEMICAL CANCER RISKS
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF		Cancer Risk	Intake/Exposure Concentration		RfD		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Water	Surface Water	Off-Facility Surface Water	Dermal Contact	Arsenic	2.2E-02	mg/L	1.37E-08	mg/kg-day	1.5E+00	1/mg/kg-day	2.1E-08	3.70E-08	mg/kg-day	3.0E-04	mg/kg/day	1.2E-04
				Barium	3.9E-01	mg/L	2.43E-07	mg/kg-day	NC	1/mg/kg-day	NC	6.56E-07	mg/kg-day	1.4E-02	mg/kg/day	4.7E-05
				Cadmium	1.8E-01	mg/L	1.12E-07	mg/kg-day	NC	1/mg/kg-day	NC	3.03E-07	mg/kg-day	2.5E-05	mg/kg/day	1.2E-02
				Chromium	1.9E-02	mg/L	1.18E-08	mg/kg-day	NC	1/mg/kg-day	NC	3.20E-08	mg/kg-day	2.0E-02	mg/kg/day	1.6E-06
				Copper	NS	mg/L		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.7E-01	mg/L	1.68E-08	mg/kg-day	NTV	1/mg/kg-day	NTV	4.54E-08	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	NS	mg/L		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	2.1E-05	mg/kg/day	NS
				Selenium	4.6E-03	mg/L	2.86E-09	mg/kg-day	NC	1/mg/kg-day	NC	7.74E-09	mg/kg-day	5.0E-03	mg/kg/day	1.5E-06
				Silver	4.2E-01	mg/L	1.55E-05	mg/kg-day	NC	1/mg/kg-day	NC	4.19E-05	mg/kg-day	2.0E-04	mg/kg/day	2.1E-01
				Zinc	1.3E-03	mg/L	4.86E-10	mg/kg-day	NC	1/mg/kg-day	NC	1.31E-09	mg/kg-day	3.0E-01	mg/kg/day	4.4E-09
			Exp. Route Total								2.1E-08					2.2E-01
		Exposure Point Total									2.1E-08					2.2E-01
Medium Total											2.1E-08					2.2E-01
Sediment	Sediment	Off-Facility Sediment	Ingestion	Arsenic	8.1E-01	mg/kg	9.91E-07	mg/kg-day	1.5E+00	1/mg/kg-day	1.5E-06	3.11E-06	mg/kg-day	3.0E-04	mg/kg/day	1.0E-02
				Barium	3.9E+02	mg/kg	4.70E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.48E-05	mg/kg-day	2.0E-01	mg/kg/day	7.4E-05
				Cadmium	3.6E-02	mg/kg	4.43E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.39E-05	mg/kg-day	1.0E-03	mg/kg/day	1.4E-02
				Chromium	4.8E+01	mg/kg	5.81E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.82E-06	mg/kg-day	1.5E+00	mg/kg/day	1.2E-06
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.9E-03	mg/kg	3.54E-05	mg/kg-day	NTV	1/mg/kg-day	NTV	1.11E-04	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	5.3E-00	mg/kg	6.43E-08	mg/kg-day	NC	1/mg/kg-day	NC	2.02E-07	mg/kg-day	3.0E-04	mg/kg/day	6.7E-04
				Selenium	5.3E-00	mg/kg	6.42E-08	mg/kg-day	NC	1/mg/kg-day	NC	2.02E-07	mg/kg-day	5.0E-03	mg/kg/day	4.0E-05
				Silver	3.3E-01	mg/kg	3.96E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.24E-06	mg/kg-day	5.0E-03	mg/kg/day	2.5E-04
				Zinc	3.9E-04	mg/kg	4.72E-04	mg/kg-day	NC	1/mg/kg-day	NC	1.48E-03	mg/kg-day	3.0E-01	mg/kg/day	4.9E-03
			Exp. Route Total								1.5E-06					3.0E-02
			Dermal Contact	Arsenic	8.1E-01	mg/kg	1.80E-07	mg/kg-day	1.5E+00	1/mg/kg-day	2.7E-07	8.03E-07	mg/kg-day	3.0E-04	mg/kg/day	2.7E-03
				Barium	3.9E+02	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	1.4E-02	mg/kg/day	0.0E+00
				Cadmium	3.6E-02	mg/kg	2.68E-08	mg/kg-day	NC	1/mg/kg-day	NC	1.20E-07	mg/kg-day	2.5E-05	mg/kg/day	4.8E-03
				Chromium	4.8E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-02	mg/kg/day	0.0E+00
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.9E-03	mg/kg	0.00E-00	mg/kg-day	NTV	1/mg/kg-day	NTV	0.00E+00	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	5.3E-00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.1E-05	mg/kg/day	0.0E+00
				Selenium	5.3E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	5.0E-03	mg/kg/day	0.0E+00
				Silver	3.3E-01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-04	mg/kg/day	0.0E+00
				Zinc	3.9E-04	mg/kg	0.00E-00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	3.0E-01	mg/kg/day	0.0E+00
			Exp. Route Total								2.7E-07					7.5E-03
		Exposure Point Total									1.8E-06					3.8E-02
Medium Total											1.8E-06					3.8E-02
											Total of Receptor Risks Across All Media 4.8E-06					Total of Receptor Hazards Across All Media 3.8E+00

Notes:
EPC = Exposure Point Concentration
NC = Not classified as a carcinogen
NE = Not evaluated as a volatile chemical
NTV = No Toxicity Value Available
RfD = Noncancer Reference Dose

Bolded Chemicals and Bold/Underlined Risks = Exceeds a cancer risk of 1E-06 or a HQ of 0.1.
NS - Not sampled or not detected.
Property is currently vacant

RAGS PART D TABLE 7.1 RME
CALCULATION OF CHEMICAL CANCER RISKS
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Current
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF		Cancer Risk	Intake/Exposure Concentration		RfD		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Soil	Soil	Off-Facility 5508 Thomas	Ingestion	Arsenic	1.1E+01	mg/kg	1.72E-05	mg/kg-day	1.5E+00	1/mg/kg-day	2.6E-05	1.41E-04	mg/kg-day	3.0E-04	mg/kg/day	4.7E-01
				Barium	2.0E-02	mg/kg	3.13E-04	mg/kg-day	NC	1/mg/kg-day	NC	2.56E-03	mg/kg-day	2.0E-01	mg/kg/day	1.3E-02
				Cadmium	1.2E-01	mg/kg	1.88E-05	mg/kg-day	NC	1/mg/kg-day	NC	1.53E-04	mg/kg-day	1.0E-03	mg/kg/day	1.5E-01
				Chromium	1.8E+01	mg/kg	2.82E-05	mg/kg-day	NC	1/mg/kg-day	NC	2.30E-04	mg/kg-day	1.5E+00	mg/kg/day	1.5E-04
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.2E+02	mg/kg	3.44E-04	mg/kg-day	NTV	1/mg/kg-day	NTV	2.81E-03	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.1E-01	mg/kg	1.72E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.41E-06	mg/kg-day	3.0E-04	mg/kg/day	4.7E-03
				Selenium	1.0E+00	mg/kg	1.57E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.28E-05	mg/kg-day	5.0E-03	mg/kg/day	2.6E-03
				Silver	4.6E-01	mg/kg	7.20E-07	mg/kg-day	NC	1/mg/kg-day	NC	5.88E-06	mg/kg-day	5.0E-03	mg/kg/day	1.2E-03
				Zinc	8.7E+02	mg/kg	1.36E-03	mg/kg-day	NC	1/mg/kg-day	NC	1.11E-02	mg/kg-day	3.0E-01	mg/kg/day	3.7E-02
			Exp. Route Total								2.6E-05					6.8E-01
			Dermal Contact	Arsenic	1.1E+01	mg/kg	1.63E-06	mg/kg-day	1.5E+00	1/mg/kg-day	2.4E-06	1.18E-05	mg/kg-day	3.0E-04	mg/kg/day	3.9E-02
				Barium	2.0E+02	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	1.4E-02	mg/kg/day	0.0E+00
				Cadmium	1.2E+01	mg/kg	5.93E-08	mg/kg-day	NC	1/mg/kg-day	NC	4.30E-07	mg/kg-day	2.5E-05	mg/kg/day	1.7E-02
				Chromium (as III)	1.8E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-02	mg/kg/day	0.0E+00
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.2E-02	mg/kg	0.00E+00	mg/kg-day	NTV	1/mg/kg-day	NTV	0.00E+00	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.1E-01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.1E-05	mg/kg/day	0.0E+00
				Selenium	1.0E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	5.0E-03	mg/kg/day	0.0E+00
				Silver	4.6E-01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-04	mg/kg/day	0.0E+00
				Zinc	8.7E+02	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	3.0E-01	mg/kg/day	0.0E+00
			Exp. Route Total								2.4E-06					5.7E-02
			Produce Ingestion	Arsenic	8.8E+00	mg/kg	8.78E-07	mg/kg-day	1.5E+00	1/mg/kg-day	1.3E-06	1.12E-04	mg/kg-day	3.0E-04	mg/kg/day	3.7E-01
			Current	*Barium*	1.9E-02	*mg/kg*	*1.90E-05*	*mg/kg-day*	NC	*1/mg/kg-day*	*NC*	2.41E-03	mg/kg-day	*2.0E-01*	mg/kg/day	1.2E-02
				Cadmium	1.0E-01	mg/kg	9.98E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.27E-04	mg/kg-day	1.0E-03	mg/kg/day	1.3E-01
				Chromium	1.2E-01	mg/kg	1.20E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.52E-04	mg/kg-day	1.5E+00	mg/kg/day	1.0E-04
				Copper	NS	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NS	0.00E+00	mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	1.0E-02	mg/kg	9.98E-06	mg/kg-day	NTV	1/mg/kg-day	NTV	1.27E-03	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	7.8E-01	mg/kg	7.78E-08	mg/kg-day	NC	1/mg/kg-day	NC	9.89E-06	mg/kg-day	3.0E-04	mg/kg/day	3.3E-02
				Selenium	1.8E-01	mg/kg	1.80E-08	mg/kg-day	NC	1/mg/kg-day	NC	2.28E-06	mg/kg-day	5.0E-03	mg/kg/day	4.6E-04
				Silver	4.4E-02	mg/kg	4.39E-05	mg/kg-day	NC	1/mg/kg-day	NC	5.58E-03	mg/kg-day	5.0E-03	mg/kg/day	1.1E+00
				Zinc	6.1E-02	*mg/kg*	*6.09E-09*	*mg/kg-day*	*NC*	*1/mg/kg-day*	*NC*	*7.73E-07*	*mg/kg-day*	3.0E-01	*mg/kg/day*	*2.6E-06*
			Exp. Route Total								1.3E-06					1.7E+00
	Exposure Medium Total										3.0E-05					2.4E+00
	Air	Off-Facility 5508 Thomas	Inhalation of Particulates	Arsenic	1.1E+01	mg/kg	1.14E-09	mg/kg-day	1.51E-01	1/mg/kg-day	1.7E-08	4.92E-09	mg/kg-day	NTV	mg/kg/day	NTV
				Barium	2.0E-02	mg/kg	2.08E-08	mg/kg-day	NC	1/mg/kg-day	NC	8.94E-08	mg/kg-day	1.4E-04	mg/kg/day	6.3E-04
				Cadmium	1.2E-01	mg/kg	1.25E-09	mg/kg-day	6.30E+00	1/mg/kg-day	7.9E-09	5.36E-09	mg/kg-day	NTV	mg/kg/day	NTV
				Chromium (as VI-nc; total-c	1.8E-01	mg/kg	1.87E-09	mg/kg-day	4.2E+01	1/mg/kg-day	7.9E-08	8.05E-09	mg/kg-day	2.9E-05	mg/kg/day	2.8E-04
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	NTV	mg/kg/day	NS
				Lead	2.2E-02	mg/kg	2.29E-08	mg/kg-day	NTV	1/mg/kg-day	NTV	9.83E-08	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.1E-01	mg/kg	1.14E-11	mg/kg-day	NC	1/mg/kg-day	NC	4.92E-11	mg/kg-day	8.6E-05	mg/kg/day	5.7E-07
				Selenium	1.0E-00	mg/kg	1.04E-10	mg/kg-day	NC	1/mg/kg-day	NC	4.47E-10	mg/kg-day	NTV	mg/kg/day	NTV
				Silver	4.6E-01	mg/kg	4.78E-11	mg/kg-day	NC	1/mg/kg-day	NC	2.06E-10	mg/kg-day	NTV	mg/kg/day	NTV
				Zinc	8.7E-02	mg/kg	9.05E-08	mg/kg-day	NC	1/mg/kg-day	NC	3.89E-07	mg/kg-day	NTV	mg/kg/day	NTV
			Exp. Route Total								1.0E-07					9.1E-04
Medium Total											3.0E-05					2.4E+00

RAGS PART D TABLE 7.1 RME
CALCULATION OF CHEMICAL CANCER RISKS
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Current
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF		Cancer	Intake/Exposure Concentration		RfD		Hazard
							Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
Surface Water	Surface Water	Off-Facility	Dermal Contact	Arsenic	2.2E-02	mg/L	1.37E-08	mg/kg-day	1.5E+00	1/mg/kg-day	2.1E-08	3.70E-08	mg/kg-day	3.0E-04	mg/kg/day	1.2E-04
		Surface Water		Barium	3.9E-01	mg/L	2.43E-07	mg/kg-day	NC	1/mg/kg-day	NC	6.56E-07	mg/kg-day	1.4E-02	mg/kg/day	4.7E-05
				Cadmium	1.8E-01	mg/L	1.12E-07	mg/kg-day	NC	1/mg/kg-day	NC	3.03E-07	mg/kg-day	2.5E-05	mg/kg/day	1.2E-02
				Chromium	1.9E-02	mg/L	1.18E-08	mg/kg-day	NC	1/mg/kg-day	NC	3.20E-08	mg/kg-day	2.0E-02	mg/kg/day	1.6E-06
				Copper	NS	mg/L		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.7E-01	mg/L	1.68E-08	mg/kg-day	NTV	1/mg/kg-day	NTV	4.54E-08	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	NS	mg/L		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	2.1E-05	mg/kg/day	NS
				Selenium	4.6E-03	mg/L	2.86E-09	mg/kg-day	NC	1/mg/kg-day	NC	7.74E-09	mg/kg-day	5.0E-03	mg/kg/day	1.5E-06
				Silver	4.2E-01	mg/L	1.55E-05	mg/kg-day	NC	1/mg/kg-day	NC	4.19E-05	mg/kg-day	2.0E-04	mg/kg/day	2.1E-01
				Zinc	1.3E-03	mg/L	4.86E-10	mg/kg-day	NC	1/mg/kg-day	NC	1.31E-09	mg/kg-day	3.0E-01	mg/kg/day	4.4E-09
			Exp. Route Total								2.1E-08					2.2E-01
		Exposure Point Total									2.1E-08					2.2E-01
Medium Total											2.1E-08					2.2E-01
Sediment	Sediment	Off-Facility	Ingestion	Arsenic	8.1E-01	mg/kg	9.91E-07	mg/kg-day	1.5E+00	1/mg/kg-day	1.5E-06	3.11E-06	mg/kg-day	3.0E-04	mg/kg/day	1.0E-02
		Sediment		Barium	3.9E-02	mg/kg	4.70E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.48E-05	mg/kg-day	2.0E-01	mg/kg/day	7.4E-05
				Cadmium	3.6E-02	mg/kg	4.43E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.39E-05	mg/kg-day	1.0E-03	mg/kg/day	1.4E-02
				Chromium	4.8E+01	mg/kg	5.81E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.82E-06	mg/kg-day	1.5E+00	mg/kg/day	1.2E-06
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.9E-03	mg/kg	3.54E-05	mg/kg-day	NTV	1/mg/kg-day	NTV	1.11E-04	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	5.3E+00	mg/kg	6.43E-08	mg/kg-day	NC	1/mg/kg-day	NC	2.02E-07	mg/kg-day	3.0E-04	mg/kg/day	6.7E-04
				Selenium	5.3E+00	mg/kg	6.42E-08	mg/kg-day	NC	1/mg/kg-day	NC	2.02E-07	mg/kg-day	5.0E-03	mg/kg/day	4.0E-05
				Silver	3.3E-01	mg/kg	3.96E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.24E-06	mg/kg-day	5.0E-03	mg/kg/day	2.5E-04
				Zinc	3.9E-04	mg/kg	4.72E-04	mg/kg-day	NC	1/mg/kg-day	NC	1.48E-03	mg/kg-day	3.0E-01	mg/kg/day	4.9E-03
			Exp. Route Total								1.5E-06					3.0E-02
			Dermal Contact	Arsenic	8.1E+01	mg/kg	1.80E-07	mg/kg-day	1.5E+00	1/mg/kg-day	2.7E-07	8.03E-07	mg/kg-day	3.0E-04	mg/kg/day	2.7E-03
				Barium	3.9E+02	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	1.4E-02	mg/kg/day	0.0E+00
				Cadmium	3.6E-02	mg/kg	2.68E-08	mg/kg-day	NC	1/mg/kg-day	NC	1.20E-07	mg/kg-day	2.5E-05	mg/kg/day	4.8E-03
				Chromium	4.8E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-02	mg/kg/day	0.0E+00
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.9E-03	mg/kg	0.00E+00	mg/kg-day	NTV	1/mg/kg-day	NTV	0.00E+00	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	5.3E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.1E-05	mg/kg/day	0.0E+00
				Selenium	5.3E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	5.0E-03	mg/kg/day	0.0E+00
				Silver	3.3E-01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-04	mg/kg/day	0.0E+00
				Zinc	3.9E-04	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	3.0E-01	mg/kg/day	0.0E+00
			Exp. Route Total								2.7E-07					7.5E-03
		Exposure Point Total									1.8E-06					3.8E-02
Medium Total											1.8E-06					3.8E-02
										Total of Receptor Risks Across All Media	3.1E-05	Total of Receptor Hazards Across All Media				2.7E+00

Notes:

EPC = Exposure Point Concentration
NC = Not classified as a carcinogen
NE = Not evaluated as a volatile chemical
NTV = No Toxicity Value Available
RfD = Noncancer Reference Dose

Bolded Chemicals and Bold/Underlined Risks = Exceeds a cancer risk of 1E-06 or a HQ of 0.1.
NS - Not sampled or not detected.
EPC for Current Produce Ingestion based on measured soil concentrations in existing garden.

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RAGS PART D TABLE 7.1 RME
CALCULATION OF CHEMICAL CANCER RISKS
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF		Cancer Risk	Intake/Exposure Concentration		RfD		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Soil	Soil	Off-Facility 5508 Thomas	Ingestion	Arsenic	1.1E-01	mg/kg	1.72E-05	mg/kg-day	1.5E-00	1/mg/kg-day	2.6E-05	1.41E-04	mg/kg-day	3.0E-04	mg/kg/day	4.7E-01
				Barium	2.0E+02	mg/kg	3.13E-04	mg/kg-day	NC	1/mg/kg-day	NC	2.56E-03	mg/kg-day	2.0E-01	mg/kg/day	1.3E-02
				Cadmium	1.2E+01	mg/kg	1.88E-05	mg/kg-day	NC	1/mg/kg-day	NC	1.53E-04	mg/kg-day	1.0E-03	mg/kg/day	1.5E-01
				Chromium	1.8E+01	mg/kg	2.82E-05	mg/kg-day	NC	1/mg/kg-day	NC	2.30E-04	mg/kg-day	1.5E+00	mg/kg/day	1.5E-04
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.2E+02	mg/kg	3.44E-04	mg/kg-day	NTV	1/mg/kg-day	NTV	2.81E-03	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.1E-01	mg/kg	1.72E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.41E-06	mg/kg-day	3.0E-04	mg/kg/day	4.7E-03
				Selenium	1.0E+00	mg/kg	1.57E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.28E-05	mg/kg-day	5.0E-03	mg/kg/day	2.6E-03
				Silver	4.6E-01	mg/kg	7.20E-07	mg/kg-day	NC	1/mg/kg-day	NC	5.88E-06	mg/kg-day	5.0E-03	mg/kg/day	1.2E-03
				Zinc	8.7E+02	mg/kg	1.36E-03	mg/kg-day	NC	1/mg/kg-day	NC	1.11E-02	mg/kg-day	3.0E-01	mg/kg/day	3.7E-02
			Exp. Route Total								2.6E-05					6.8E-01
			Dermal Contact	Arsenic	1.1E-01	mg/kg	1.63E-06	mg/kg-day	1.5E+00	1/mg/kg-day	2.4E-06	1.18E-05	mg/kg-day	3.0E-04	mg/kg/day	3.9E-02
				Barium	2.0E+02	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	1.4E-02	mg/kg/day	0.0E+00
				Cadmium	1.2E+01	mg/kg	5.93E-08	mg/kg-day	NC	1/mg/kg-day	NC	4.30E-07	mg/kg-day	2.5E-05	mg/kg/day	1.7E-02
				Chromium (as III)	1.8E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-02	mg/kg/day	0.0E+00
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.2E+02	mg/kg	0.00E+00	mg/kg-day	NTV	1/mg/kg-day	NTV	0.00E+00	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.1E-01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.1E-05	mg/kg/day	0.0E+00
				Selenium	1.0E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	5.0E-03	mg/kg/day	0.0E+00
				Silver	4.6E-01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-04	mg/kg/day	0.0E+00
				Zinc	8.7E+02	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	3.0E-01	mg/kg/day	0.0E+00
			Exp. Route Total								2.4E-06					5.7E-02
			Produce Ingestion Future	Arsenic	1.1E-01	mg/kg	1.10E-06	mg/kg-day	1.5E+00	1/mg/kg-day	1.6E-06	1.39E-04	mg/kg-day	3.0E-04	mg/kg/day	4.6E-01
				Barium	2.0E+02	mg/kg	2.00E-05	mg/kg-day	NC	1/mg/kg-day	NC	2.54E-03	mg/kg-day	2.0E-01	mg/kg/day	1.3E-02
				Cadmium	1.2E+01	mg/kg	1.20E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.52E-04	mg/kg-day	1.0E-03	mg/kg/day	1.5E-01
				Chromium	1.8E+01	mg/kg	1.80E-06	mg/kg-day	NC	1/mg/kg-day	NC	2.28E-04	mg/kg-day	1.5E+00	mg/kg/day	1.5E-04
				Copper	NS	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NS	0.00E+00	mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.2E+02	mg/kg	2.20E-05	mg/kg-day	NTV	1/mg/kg-day	NTV	2.79E-03	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.1E-01	mg/kg	1.10E-08	mg/kg-day	NC	1/mg/kg-day	NC	1.39E-06	mg/kg-day	3.0E-04	mg/kg/day	4.6E-03
				Selenium	1.0E+00	mg/kg	9.98E-08	mg/kg-day	NC	1/mg/kg-day	NC	1.27E-05	mg/kg-day	5.0E-03	mg/kg/day	2.5E-03
				Silver	4.6E-01	mg/kg	4.59E-08	mg/kg-day	NC	1/mg/kg-day	NC	5.83E-06	mg/kg-day	5.0E-03	mg/kg/day	1.2E-03
				Zinc	8.7E+02	mg/kg	8.68E-05	mg/kg-day	NC	1/mg/kg-day	NC	1.10E-02	mg/kg-day	3.0E-01	mg/kg/day	3.7E-02
			Exp. Route Total								1.6E-06					6.8E-01
	Exposure Medium Total										3.0E-05					1.4E+00
	Air	Off-Facility 5508 Thomas	Inhalation of Particulates	Arsenic	1.1E-01	mg/kg	1.14E-09	mg/kg-day	1.51E+01	1/mg/kg-day	1.7E-08	4.92E-09	mg/kg-day	NTV	mg/kg/day	NTV
				Barium	2.0E+02	mg/kg	2.08E-08	mg/kg-day	NC	1/mg/kg-day	NC	8.94E-08	mg/kg-day	1.4E-04	mg/kg/day	6.3E-04
				Cadmium	1.2E-01	mg/kg	1.25E-09	mg/kg-day	6.30E+00	1/mg/kg-day	7.9E-09	5.36E-09	mg/kg-day	NTV	mg/kg/day	NTV
				Chromium (as VI-nc; total-c	1.8E-01	mg/kg	1.87E-09	mg/kg-day	4.2E-01	1/mg/kg-day	7.9E-08	8.05E-09	mg/kg-day	2.9E-05	mg/kg/day	2.8E-04
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	NTV	mg/kg/day	NS
				Lead	2.2E+02	mg/kg	2.29E-08	mg/kg-day	NTV	1/mg/kg-day	NTV	9.83E-08	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.1E-01	mg/kg	1.14E-11	mg/kg-day	NC	1/mg/kg-day	NC	4.92E-11	mg/kg-day	8.6E-05	mg/kg/day	5.7E-07
				Selenium	1.0E+00	mg/kg	1.04E-10	mg/kg-day	NC	1/mg/kg-day	NC	4.47E-10	mg/kg-day	NTV	mg/kg/day	NTV
				Silver	4.6E-01	mg/kg	4.78E-11	mg/kg-day	NC	1/mg/kg-day	NC	2.06E-10	mg/kg-day	NTV	mg/kg/day	NTV
				Zinc	8.7E+02	mg/kg	9.05E-08	mg/kg-day	NC	1/mg/kg-day	NC	3.89E-07	mg/kg-day	NTV	mg/kg/day	NTV
			Exp. Route Total								1.0E-07					9.1E-04
Medium Total											3.0E-05					1.4E+00

RAGS PART D TABLE 7.1 RME
CALCULATION OF CHEMICAL CANCER RISKS
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF		Cancer Risk	Intake/Exposure Concentration		RfD		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Water	Surface Water	Off-Facility Surface Water	Dermal Contact	Arsenic	2.2E-02	mg/L	1.37E-08	mg/kg-day	1.5E+00	1/mg/kg-day	2.1E-08	3.70E-08	mg/kg-day	3.0E-04	mg/kg/day	1.2E-04
				Barium	3.9E-01	mg/L	2.43E-07	mg/kg-day	NC	1/mg/kg-day	NC	6.56E-07	mg/kg-day	1.4E-02	mg/kg/day	4.7E-05
				Cadmium	*1.8E-01*	*mg/L*	*1.12E-07*	*mg/kg-day*	*NC*	*1/mg/kg-day*	*NC*	*3.03E-07*	*mg/kg-day*	*2.5E-05*	*mg/kg/day*	*1.2E-02*
				Chromium	1.9E-02	mg/L	1.18E-08	mg/kg-day	NC	1/mg/kg-day	NC	3.20E-08	mg/kg-day	2.0E-02	mg/kg/day	1.6E-06
				Copper	NS	mg/L		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.7E-01	mg/L	1.68E-08	mg/kg-day	NTV	1/mg/kg-day	NTV	4.54E-08	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	NS	mg/L		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	2.1E-05	mg/kg/day	NS
				Selenium	4.6E-03	mg/L	2.86E-09	mg/kg-day	NC	1/mg/kg-day	NC	7.74E-09	mg/kg-day	5.0E-03	mg/kg/day	1.5E-06
				Silver	4.2E-01	mg/L	1.55E-05	mg/kg-day	NC	1/mg/kg-day	NC	4.19E-05	mg/kg-day	2.0E-04	mg/kg/day	2.1E-01
				Zinc	1.3E-03	mg/L	4.86E-10	mg/kg-day	NC	1/mg/kg-day	NC	1.31E-09	mg/kg-day	3.0E-01	mg/kg/day	4.4E-09
			Exp. Route Total								2.1E-08					2.2E-01
		Exposure Point Total									2.1E-08					2.2E-01
Medium Total											2.1E-08					2.2E-01
Sediment	Sediment	Off-Facility Sediment	Ingestion	Arsenic	8.1E+01	mg/kg	9.91E-07	mg/kg-day	1.5E+00	1/mg/kg-day	1.5E-06	3.11E-06	mg/kg-day	3.0E-04	mg/kg/day	1.0E-02
				Barium	3.9E+02	mg/kg	4.70E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.48E-05	mg/kg-day	2.0E-01	mg/kg/day	7.4E-05
				Cadmium	3.6E+02	mg/kg	4.43E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.39E-05	mg/kg-day	1.0E-03	mg/kg/day	1.4E-02
				Chromium	4.8E+01	mg/kg	5.81E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.82E-06	mg/kg-day	1.5E+00	mg/kg/day	1.2E-06
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.9E+03	mg/kg	3.54E-05	mg/kg-day	NTV	1/mg/kg-day	NTV	1.11E-04	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	5.3E+00	mg/kg	6.43E-08	mg/kg-day	NC	1/mg/kg-day	NC	2.02E-07	mg/kg-day	3.0E-04	mg/kg/day	6.7E-04
				Selenium	5.3E+00	mg/kg	6.42E-08	mg/kg-day	NC	1/mg/kg-day	NC	2.02E-07	mg/kg-day	5.0E-03	mg/kg/day	4.0E-05
				Silver	3.3E+01	mg/kg	3.96E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.24E-06	mg/kg-day	5.0E-03	mg/kg/day	2.5E-04
				Zinc	3.9E+04	mg/kg	4.72E-04	mg/kg-day	NC	1/mg/kg-day	NC	1.48E-03	mg/kg-day	3.0E-01	mg/kg/day	4.9E-03
			Exp. Route Total								1.5E-06					3.0E-02
			Dermal Contact	Arsenic	*8.1E+01*	mg/kg	*1.80E-07*	mg/kg-day	*1.5E+00*	1/mg/kg-day	*2.7E-07*	*8.03E-07*	mg/kg-day	*3.0E-04*	mg/kg/day	*2.7E-03*
				Barium	3.9E+02	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	1.4E-02	mg/kg/day	0.0E+00
				Cadmium	3.6E+02	mg/kg	2.68E-08	mg/kg-day	NC	1/mg/kg-day	NC	1.20E-07	mg/kg-day	2.5E-05	mg/kg/day	4.8E-03
				Chromium	4.8E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-02	mg/kg/day	0.0E+00
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.9E+03	mg/kg	0.00E+00	mg/kg-day	NTV	1/mg/kg-day	NTV	0.00E+00	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	5.3E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.1E-05	mg/kg/day	0.0E+00
				Selenium	5.3E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	5.0E-03	mg/kg/day	0.0E+00
				Silver	3.3E-01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-04	mg/kg/day	0.0E+00
				Zinc	3.9E-04	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	3.0E-01	mg/kg/day	0.0E+00
			Exp. Route Total								2.7E-07					7.5E-03
		Exposure Point Total									1.8E-06					3.8E-02
Medium Total											*1.8E-06*					*3.8E-02*
											Total of Receptor Risks Across All Media: 3.2E-06					Total of Receptor Hazards Across All Media: 1.7E+00

Notes:

EPC = Exposure Point Concentration
NC = Not classified as a carcinogen
NE = Not evaluated as a volatile chemical
NTV = No Toxicity Value Available
RfD = Noncancer Reference Dose

Bolded Chemicals and Bold/Underlined Risks = Exceeds a cancer risk of 1E-06 or a HQ of 0.1.
NS - Not sampled or not detected.
EPC for Future Produce Ingestion based on maximum detected concentration in all soil samples collected at property, which may exceed the measured soil concentrations in existing garden.

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RAGS PART D TABLE 7.1 RME
CALCULATION OF CHEMICAL CANCER RISKS
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Current/Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child Adult (cancer)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF		Cancer	Intake/Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
Soil	Soil	Off-Facility	Ingestion	Arsenic	1.4E-01	mg/kg	2.19E-05	mg/kg-day	1.5E-00	1/mg/kg-day	3.3E-05	1.79E-04	mg/kg-day	3.0E-04	mg/kg/day	6.0E-01
		5507 Thomas		Barium	2.0E+02	mg/kg	3.13E-04	mg/kg-day	NC	1/mg/kg-day	NC	2.56E-03	mg/kg-day	2.0E-01	mg/kg/day	1.3E-02
				Cadmium	1.9E+01	mg/kg	2.97E-05	mg/kg-day	NC	1/mg/kg-day	NC	2.43E-04	mg/kg-day	1.0E-03	mg/kg/day	2.4E-01
				Chromium	1.8E+01	mg/kg	2.82E-05	mg/kg-day	NC	1/mg/kg-day	NC	2.30E-04	mg/kg-day	1.5E+00	mg/kg/day	1.5E-04
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.4E+02	mg/kg	3.76E-04	mg/kg-day	NTV	1/mg/kg-day	NTV	3.07E-03	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	2.4E-01	mg/kg	3.76E-07	mg/kg-day	NC	1/mg/kg-day	NC	3.07E-06	mg/kg-day	3.0E-04	mg/kg/day	1.0E-02
				Selenium	1.7E+00	mg/kg	2.66E-06	mg/kg-day	NC	1/mg/kg-day	NC	2.17E-05	mg/kg-day	5.0E-03	mg/kg/day	4.3E-03
				Silver	5.9E-01	mg/kg	9.24E-07	mg/kg-day	NC	1/mg/kg-day	NC	7.54E-06	mg/kg-day	5.0E-03	mg/kg/day	1.5E-03
				Zinc	1.0E+03	mg/kg	1.57E-03	mg/kg-day	NC	1/mg/kg-day	NC	1.28E-02	mg/kg-day	3.0E-01	mg/kg/day	4.3E-02
			Exp. Route Total								3.3E-05					9.1E-01
			Dermal Contact	Arsenic	1.4E+01	mg/kg	2.08E-06	mg/kg-day	1.5E+00	1/mg/kg-day	3.1E-06	1.50E-05	mg/kg-day	3.0E-04	mg/kg/day	5.0E-02
				Barium	2.0E+02	mg/kg	0.00E-00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	1.4E-02	mg/kg/day	0.0E+00
				Cadmium	1.9E+01	mg/kg	9.39E-08	mg/kg-day	NC	1/mg/kg-day	NC	6.80E-07	mg/kg-day	2.5E-05	mg/kg/day	2.7E-02
				Chromium (as III)	1.8E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-02	mg/kg/day	0.0E+00
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.4E+02	mg/kg	0.00E-00	mg/kg-day	NTV	1/mg/kg-day	NTV	0.00E+00	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	2.4E-01	mg/kg	0.00E-00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.1E-05	mg/kg/day	0.0E+00
				Selenium	1.7E+00	mg/kg	0.00E-00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	5.0E-03	mg/kg/day	0.0E+00
				Silver	5.9E-01	mg/kg	0.00E-00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-04	mg/kg/day	0.0E+00
				Zinc	1.0E+03	mg/kg	0.00E-00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	3.0E-01	mg/kg/day	0.0E+00
			Exp. Route Total								3.1E-06					7.7E-02
			Produce Ingestion	Arsenic	1.4E+01	mg/kg	1.40E-06	mg/kg-day	1.5E+00	1/mg/kg-day	2.1E-06	1.78E-04	mg/kg-day	3.0E-04	mg/kg/day	5.9E-01
			Future	Barium	2.0E+02	mg/kg	2.00E-05	mg/kg-day	NC	1/mg/kg-day	NC	2.54E-03	mg/kg-day	2.0E-01	mg/kg/day	1.3E-02
				Cadmium	1.9E+01	mg/kg	1.90E-06	mg/kg-day	NC	1/mg/kg-day	NC	2.41E-04	mg/kg-day	1.0E-03	mg/kg/day	2.4E-01
				Chromium	1.8E+01	mg/kg	1.80E-06	mg/kg-day	NC	1/mg/kg-day	NC	2.28E-04	mg/kg-day	1.5E+00	mg/kg/day	1.5E-04
				Copper	NS	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NS	0.00E+00	mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.4E+02	mg/kg	2.40E-05	mg/kg-day	NTV	1/mg/kg-day	NTV	3.04E-03	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	2.4E-01	mg/kg	2.40E-08	mg/kg-day	NC	1/mg/kg-day	NC	3.04E-06	mg/kg-day	3.0E-04	mg/kg/day	1.0E-02
				Selenium	1.7E+00	mg/kg	1.70E-07	mg/kg-day	NC	1/mg/kg-day	NC	2.16E-05	mg/kg-day	5.0E-03	mg/kg/day	4.3E-03
				Silver	5.9E-01	mg/kg	5.89E-08	mg/kg-day	NC	1/mg/kg-day	NC	7.48E-06	mg/kg-day	5.0E-03	mg/kg/day	1.5E-03
				Zinc	1.0E+03	mg/kg	9.98E-05	mg/kg-day	NC	1/mg/kg-day	NC	1.27E-02	mg/kg-day	3.0E-01	mg/kg/day	4.2E-02
			Exp. Route Total								2.1E-06					9.0E-01
	Exposure Medium Total										3.8E-05					1.9E+00
	Air	Off-Facility	Inhalation of Particulates	Arsenic	1.4E+01	mg/kg	1.46E-09	mg/kg-day	1.51E+01	1/mg/kg-day	2.2E-08	6.26E-09	mg/kg-day	NTV	mg/kg/day	NTV
		5507 Thomas		Barium	2.0E+02	mg/kg	2.08E-08	mg/kg-day	NC	1/mg/kg-day	NC	8.94E-08	mg/kg-day	1.4E-04	mg/kg/day	6.3E-04
				Cadmium	1.9E+01	mg/kg	1.98E-09	mg/kg-day	6.30E+00	1/mg/kg-day	1.2E-08	8.49E-09	mg/kg-day	NTV	mg/kg/day	NTV
				Chromium (as VI-nc; total-c	1.8E+01	mg/kg	1.87E-09	mg/kg-day	4.2E+01	1/mg/kg-day	7.9E-08	8.05E-09	mg/kg-day	2.9E-05	mg/kg/day	2.8E-04
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	NTV	mg/kg/day	NS
				Lead	2.4E+02	mg/kg	2.50E-08	mg/kg-day	NTV	1/mg/kg-day	NTV	1.07E-07	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	2.4E-01	mg/kg	2.50E-11	mg/kg-day	NC	1/mg/kg-day	NC	1.07E-10	mg/kg-day	8.6E-05	mg/kg/day	1.3E-06
				Selenium	1.7E+00	mg/kg	1.77E-10	mg/kg-day	NC	1/mg/kg-day	NC	7.60E-10	mg/kg-day	NTV	mg/kg/day	NTV
				Silver	5.9E-01	mg/kg	6.14E-11	mg/kg-day	NC	1/mg/kg-day	NC	2.64E-10	mg/kg-day	NTV	mg/kg/day	NTV
				Zinc	1.0E+03	mg/kg	1.04E-07	mg/kg-day	NC	1/mg/kg-day	NC	4.47E-07	mg/kg-day	NTV	mg/kg/day	NTV
			Exp. Route Total								1.1E-07					9.1E-04
Medium Total											3.8E-05					1.9E+00

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RAGS PART D TABLE 7.1 RME
CALCULATION OF CHEMICAL CANCER RISKS
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Current/Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF		Cancer Risk	Intake/Exposure Concentration		RfD		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Water	Surface Water	Off-Facility Surface Water	Dermal Contact	Arsenic	2.2E-02	mg/L	1.37E-08	mg/kg-day	1.5E+00	1/mg/kg-day	2.1E-08	3.70E-08	mg/kg-day	3.0E-04	mg/kg/day	1.2E-04
				Barium	3.9E-01	mg/L	2.43E-07	mg/kg-day	NC	1/mg/kg-day	NC	6.56E-07	mg/kg-day	1.4E-02	mg/kg/day	4.7E-05
				Cadmium	1.8E-01	mg/L	1.12E-07	mg/kg-day	NC	1/mg/kg-day	NC	3.03E-07	mg/kg-day	2.5E-05	mg/kg/day	1.2E-02
				Chromium	1.9E-02	mg/L	1.18E-08	mg/kg-day	NC	1/mg/kg-day	NC	3.20E-08	mg/kg-day	2.0E-02	mg/kg/day	1.6E-06
				Copper	NS	mg/L		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.7E-01	mg/L	1.68E-08	mg/kg-day	NTV	1/mg/kg-day	NTV	4.54E-08	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	NS	mg/L		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	2.1E-05	mg/kg/day	NS
				Selenium	4.6E-03	mg/L	2.86E-09	mg/kg-day	NC	1/mg/kg-day	NC	7.74E-09	mg/kg-day	5.0E-03	mg/kg/day	1.5E-06
				Silver	4.2E-01	mg/L	1.55E-05	mg/kg-day	NC	1/mg/kg-day	NC	4.19E-05	mg/kg-day	2.0E-04	mg/kg/day	2.1E-01
				Zinc	1.3E-03	mg/L	4.86E-10	mg/kg-day	NC	1/mg/kg-day	NC	1.31E-09	mg/kg-day	3.0E-01	mg/kg/day	4.4E-09
			Exp. Route Total								2.1E-08					2.2E-01
		Exposure Point Total									2.1E-08					2.2E-01
Medium Total											2.1E-08					2.2E-01
Sediment	Sediment	Off-Facility Sediment	Ingestion	Arsenic	8.1E-01	mg/kg	9.91E-07	mg/kg-day	1.5E+00	1/mg/kg-day	1.5E-06	3.11E-06	mg/kg-day	3.0E-04	mg/kg/day	1.0E-02
				Barium	3.9E-02	mg/kg	4.70E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.48E-05	mg/kg-day	2.0E-01	mg/kg/day	7.4E-05
				Cadmium	3.6E-02	mg/kg	4.43E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.39E-05	mg/kg-day	1.0E-03	mg/kg/day	1.4E-02
				Chromium	4.8E-01	mg/kg	5.81E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.82E-06	mg/kg-day	1.5E+00	mg/kg/day	1.2E-06
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.9E-03	mg/kg	3.54E-05	mg/kg-day	NTV	1/mg/kg-day	NTV	1.11E-04	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	5.3E-00	mg/kg	6.43E-08	mg/kg-day	NC	1/mg/kg-day	NC	2.02E-07	mg/kg-day	3.0E-04	mg/kg/day	6.7E-04
				Selenium	5.3E+00	mg/kg	6.42E-08	mg/kg-day	NC	1/mg/kg-day	NC	2.02E-07	mg/kg-day	5.0E-03	mg/kg/day	4.0E-05
				Silver	3.3E-01	mg/kg	3.96E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.24E-06	mg/kg-day	5.0E-03	mg/kg/day	2.5E-04
				Zinc	3.9E-04	mg/kg	4.72E-04	mg/kg-day	NC	1/mg/kg-day	NC	1.48E-03	mg/kg-day	3.0E-01	mg/kg/day	4.9E-03
			Exp. Route Total								1.5E-06					3.0E-02
			Dermal Contact	Arsenic	8.1E+01	mg/kg	1.80E-07	mg/kg-day	1.5E+00	1/mg/kg-day	2.7E-07	8.03E-07	mg/kg-day	3.0E-04	mg/kg/day	2.7E-03
				Barium	3.9E+02	mg/kg	0.00E-00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E-00	mg/kg-day	1.4E-02	mg/kg/day	0.0E+00
				Cadmium	3.6E-02	mg/kg	2.68E-08	mg/kg-day	NC	1/mg/kg-day	NC	1.20E-07	mg/kg-day	2.5E-05	mg/kg/day	4.8E-03
				Chromium	4.8E-01	mg/kg	0.00E-00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E-00	mg/kg-day	2.0E-02	mg/kg/day	0.0E-00
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.9E-03	mg/kg	0.00E-00	mg/kg-day	NTV	1/mg/kg-day	NTV	0.00E+00	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	5.3E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.1E-05	mg/kg/day	0.0E+00
				Selenium	5.3E+00	mg/kg	0.00E-00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	5.0E-03	mg/kg/day	0.0E+00
				Silver	3.3E+01	mg/kg	0.00E-00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-04	mg/kg/day	0.0E+00
				Zinc	3.9E-04	mg/kg	0.00E-00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E-00	mg/kg-day	3.0E-01	mg/kg/day	0.0E+00
			Exp. Route Total								2.7E-07					7.5E-03
		Exposure Point Total									1.8E-06					3.8E-02
Medium Total											1.8E-06					3.8E-02
											4.0E-05					2.2E+00

Total of Receptor Risks Across All Media

Total of Receptor Hazards Across All Media

Notes:

EPC = Exposure Point Concentration
NC = Not classified as a carcinogen
NE = Not evaluated as a volatile chemical
NTV = No Toxicity Value Available
RfD = Noncancer Reference Dose

Bolded Chemicals and Bold/Underlined Risks = Exceeds a cancer risk of 1E-06 or a HQ of 0.1.
NS - Not sampled or not detected.
No garden currently exists at property based on site visit.

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RAGS PART D TABLE 7.1 RME
CALCULATION OF CHEMICAL CANCER RISKS
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF		Cancer Risk	Intake/Exposure Concentration		RfD		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Soil	Soil	Off-Facility 42nd Street	Ingestion	Arsenic	2.0E+01	mg/kg	3.13E-05	mg/kg-day	1.5E+00	1/mg/kg-day	4.7E-05	2.56E-04	mg/kg-day	3.0E-04	mg/kg/day	8.5E-01
				Barium	2.8E+02	mg/kg	4.38E-04	mg/kg-day	NC	1/mg/kg-day	NC	3.58E-03	mg/kg-day	2.0E-01	mg/kg/day	1.8E-02
				Cadmium	1.7E+01	mg/kg	2.66E-05	mg/kg-day	NC	1/mg/kg-day	NC	2.17E-04	mg/kg-day	1.0E-03	mg/kg/day	2.2E-01
				Chromium	2.0E+01	mg/kg	3.13E-05	mg/kg-day	NC	1/mg/kg-day	NC	2.56E-04	mg/kg-day	1.5E+00	mg/kg/day	1.7E-04
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	4.3E+02	mg/kg	6.73E-04	mg/kg-day	NTV	1/mg/kg-day	NTV	5.50E-03	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.3E-01	mg/kg	2.04E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.66E-06	mg/kg-day	3.0E-04	mg/kg/day	5.5E-03
				Selenium	1.6E+00	mg/kg	2.50E-06	mg/kg-day	NC	1/mg/kg-day	NC	2.05E-05	mg/kg-day	5.0E-03	mg/kg/day	4.1E-03
				Silver	6.6E-01	mg/kg	1.03E-06	mg/kg-day	NC	1/mg/kg-day	NC	8.44E-06	mg/kg-day	5.0E-03	mg/kg/day	1.7E-03
				Zinc	1.2E+03	mg/kg	1.88E-03	mg/kg-day	NC	1/mg/kg-day	NC	1.53E-02	mg/kg-day	3.0E-01	mg/kg/day	5.1E-02
			Exp. Route Total								4.7E-05					1.2E+00
			Dermal Contact	Arsenic	2.0E+01	mg/kg	2.97E-06	mg/kg-day	1.5E+00	1/mg/kg-day	4.4E-06	2.15E-05	mg/kg-day	3.0E-04	mg/kg/day	7.2E-02
				Barium	2.8E+02	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	1.4E-02	mg/kg/day	0.0E+00
				Cadmium	1.7E+01	mg/kg	8.40E-08	mg/kg-day	NC	1/mg/kg-day	NC	6.09E-07	mg/kg-day	2.5E-05	mg/kg/day	2.4E-02
				Chromium (as III)	2.0E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-02	mg/kg/day	0.0E+00
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	4.3E+02	mg/kg	0.00E+00	mg/kg-day	NTV	1/mg/kg-day	NTV	0.00E+00	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.3E-01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.1E-05	mg/kg/day	0.0E+00
				Selenium	1.6E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	5.0E-03	mg/kg/day	0.0E+00
				Silver	6.6E-01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-04	mg/kg/day	0.0E+00
				Zinc	1.2E+03	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	3.0E-01	mg/kg/day	0.0E+00
			Exp. Route Total								4.4E-06					9.6E-02
			Produce Ingestion *Future*	Arsenic	2.0E+01	mg/kg	2.00E-06	mg/kg-day	1.5E+00	1/mg/kg-day	3.0E-06	2.54E-04	mg/kg-day	3.0E-04	mg/kg/day	8.5E-01
				Barium	2.8E+02	mg/kg	2.79E-05	mg/kg-day	NC	1/mg/kg-day	NC	3.55E-03	mg/kg-day	2.0E-01	mg/kg/day	1.8E-02
				Cadmium	1.7E+01	mg/kg	1.70E-06	mg/kg-day	NC	1/mg/kg-day	NC	2.16E-04	mg/kg-day	1.0E-03	mg/kg/day	2.2E-01
				Chromium	2.0E+01	mg/kg	2.00E-06	mg/kg-day	NC	1/mg/kg-day	NC	2.54E-04	mg/kg-day	1.5E+00	mg/kg/day	1.7E-04
				Copper	NS	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NS	0.00E+00	mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	4.3E+02	mg/kg	4.29E-05	mg/kg-day	NTV	1/mg/kg-day	NTV	5.45E-03	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.3E-01	mg/kg	1.30E-08	mg/kg-day	NC	1/mg/kg-day	NC	1.65E-06	mg/kg-day	3.0E-04	mg/kg/day	5.5E-03
				Selenium	1.6E+00	mg/kg	1.60E-07	mg/kg-day	NC	1/mg/kg-day	NC	2.03E-05	mg/kg-day	5.0E-03	mg/kg/day	4.1E-03
				Silver	6.6E-01	mg/kg	6.59E-08	mg/kg-day	NC	1/mg/kg-day	NC	8.37E-06	mg/kg-day	5.0E-03	mg/kg/day	1.7E-03
				Zinc	1.2E+03	mg/kg	1.20E-04	mg/kg-day	NC	1/mg/kg-day	NC	1.52E-02	mg/kg-day	3.0E-01	mg/kg/day	5.1E-02
			Exp. Route Total								3.0E-06					1.1E+00
	Exposure Medium Total										5.4E-05					2.4E+00
	Air	Off-Facility 42nd Street	Inhalation of Particulates	Arsenic	2.0E+01	mg/kg	2.08E-09	mg/kg-day	1.51E+01	1/mg/kg-day	3.1E-08	8.94E-09	mg/kg-day	NTV	mg/kg/day	NTV
				Barium	2.8E+02	mg/kg	2.91E-08	mg/kg-day	NC	1/mg/kg-day	NC	1.25E-07	mg/kg-day	1.4E-04	mg/kg/day	8.8E-04
				Cadmium	1.7E+01	mg/kg	1.77E-09	mg/kg-day	6.30E+00	1/mg/kg-day	1.1E-08	7.60E-09	mg/kg-day	NTV	mg/kg/day	NTV
				Chromium (as VI-nc; total-c	2.0E+01	mg/kg	2.08E-09	mg/kg-day	4.2E+01	1/mg/kg-day	8.7E-08	8.94E-09	mg/kg-day	2.9E-05	mg/kg/day	3.1E-04
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	NTV	mg/kg/day	NS
				Lead	4.3E+02	mg/kg	4.47E-08	mg/kg-day	NTV	1/mg/kg-day	NTV	1.92E-07	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.3E-01	mg/kg	1.35E-11	mg/kg-day	NC	1/mg/kg-day	NC	5.81E-11	mg/kg-day	8.6E-05	mg/kg/day	6.8E-07
				Selenium	1.6E+00	mg/kg	1.66E-10	mg/kg-day	NC	1/mg/kg-day	NC	7.15E-10	mg/kg-day	NTV	mg/kg/day	NTV
				Silver	6.6E-01	mg/kg	6.86E-11	mg/kg-day	NC	1/mg/kg-day	NC	2.95E-10	mg/kg-day	NTV	mg/kg/day	NTV
				Zinc	1.2E+03	mg/kg	1.25E-07	mg/kg-day	NC	1/mg/kg-day	NC	5.36E-07	mg/kg-day	NTV	mg/kg/day	NTV
			Exp. Route Total								1.3E-07					1.2E-03
Medium Total											5.5E-05					2.4E+00

RAGS PART D TABLE 7.1 RME
CALCULATION OF CHEMICAL CANCER RISKS
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF		Cancer Risk	Intake/Exposure Concentration		RfD		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Water	Surface Water	Off-Facility Surface Water	Dermal Contact	Arsenic	2.2E-02	mg/L	1.37E-08	mg/kg-day	1.5E+00	1/mg/kg-day	2.1E-08	3.70E-08	mg/kg-day	3.0E-04	mg/kg/day	1.2E-04
				Barium	3.9E-01	mg/L	2.43E-07	mg/kg-day	NC	1/mg/kg-day	NC	6.56E-07	mg/kg-day	1.4E-02	mg/kg/day	4.7E-05
				Cadmium	1.8E-01	mg/L	1.12E-07	mg/kg-day	NC	1/mg/kg-day	NC	3.03E-07	mg/kg-day	2.5E-05	mg/kg/day	1.2E-02
				Chromium	1.9E-02	mg/L	1.18E-08	mg/kg-day	NC	1/mg/kg-day	NC	3.20E-08	mg/kg-day	2.0E-02	mg/kg/day	1.6E-06
				Copper	NS	mg/L		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.7E-01	mg/L	1.68E-08	mg/kg-day	NTV	1/mg/kg-day	NTV	4.54E-08	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	NS	mg/L		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	2.1E-05	mg/kg/day	NS
				Selenium	4.6E-03	mg/L	2.86E-09	mg/kg-day	NC	1/mg/kg-day	NC	7.74E-09	mg/kg-day	5.0E-03	mg/kg/day	1.5E-06
				Silver	4.2E+01	mg/L	1.55E-05	mg/kg-day	NC	1/mg/kg-day	NC	4.19E-05	mg/kg-day	2.0E-04	mg/kg/day	2.1E-01
				Zinc	1.3E-03	mg/L	4.86E-10	mg/kg-day	NC	1/mg/kg-day	NC	1.31E-09	mg/kg-day	3.0E-01	mg/kg/day	4.4E-09
			Exp. Route Total								2.1E-08					2.2E-01
		Exposure Point Total									2.1E-08					2.2E-01
Medium Total											2.1E-08					2.2E-01
Sediment	Sediment	Off-Facility Sediment	Ingestion	Arsenic	8.1E+01	mg/kg	9.91E-07	mg/kg-day	1.5E+00	1/mg/kg-day	1.5E-06	3.11E-06	mg/kg-day	3.0E-04	mg/kg/day	1.0E-02
				Barium	3.9E+02	mg/kg	4.70E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.48E-05	mg/kg-day	2.0E-01	mg/kg/day	7.4E-05
				Cadmium	3.6E+02	mg/kg	4.43E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.39E-05	mg/kg-day	1.0E-03	mg/kg/day	1.4E-02
				Chromium	4.8E+01	mg/kg	5.81E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.82E-06	mg/kg-day	1.5E+00	mg/kg/day	1.2E-06
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.9E+03	mg/kg	3.54E-05	mg/kg-day	NTV	1/mg/kg-day	NTV	1.11E-04	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	5.3E+00	mg/kg	6.43E-08	mg/kg-day	NC	1/mg/kg-day	NC	2.02E-07	mg/kg-day	3.0E-04	mg/kg/day	6.7E-04
				Selenium	5.3E+00	mg/kg	6.42E-08	mg/kg-day	NC	1/mg/kg-day	NC	2.02E-07	mg/kg-day	5.0E-03	mg/kg/day	4.0E-05
				Silver	3.3E+01	mg/kg	3.96E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.24E-06	mg/kg-day	5.0E-03	mg/kg/day	2.5E-04
				Zinc	3.9E+04	mg/kg	4.72E-04	mg/kg-day	NC	1/mg/kg-day	NC	1.48E-03	mg/kg-day	3.0E-01	mg/kg/day	4.9E-03
			Exp. Route Total								1.5E-06					3.0E-02
			Dermal Contact	Arsenic	8.1E+01	mg/kg	1.80E-07	mg/kg-day	1.5E+00	1/mg/kg-day	2.7E-07	8.03E-07	mg/kg-day	3.0E-04	mg/kg/day	2.7E-03
				Barium	3.9E+02	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	1.4E-02	mg/kg/day	0.0E+00
				Cadmium	3.6E+02	mg/kg	2.68E-08	mg/kg-day	NC	1/mg/kg-day	NC	1.20E-07	mg/kg-day	2.5E-05	mg/kg/day	4.8E-03
				Chromium	4.8E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-02	mg/kg/day	0.0E+00
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.9E+03	mg/kg	0.00E+00	mg/kg-day	NTV	1/mg/kg-day	NTV	0.00E+00	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	5.3E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.1E-05	mg/kg/day	0.0E+00
				Selenium	5.3E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	5.0E-03	mg/kg/day	0.0E+00
				Silver	3.3E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-04	mg/kg/day	0.0E+00
				Zinc	3.9E+04	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	3.0E-01	mg/kg/day	0.0E+00
			Exp. Route Total								2.7E-07					7.5E-03
		Exposure Point Total									1.8E-06					3.8E-02
Medium Total											1.8E-06					3.8E-02
										Total of Receptor Risks Across All Media	5.6E-05			Total of Receptor Hazards Across All Media		2.6E+00

Notes:
EPC = Exposure Point Concentration
NC = Not classified as a carcinogen
NE = Not evaluated as a volatile chemical
NTV = No Toxicity Value Available
RfD = Noncancer Reference Dose

Bolded Chemicals and Bold/Underlined Risks = Exceeds a cancer risk of 1E-06 or a HQ of 0.1.
NS - Not sampled or not detected.
Property is currently vacant

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RAGS PART D TABLE 7.1 RME
CALCULATION OF CHEMICAL CANCER RISKS
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF		Cancer Risk	Intake/Exposure Concentration		RfD		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Soil	Soil	Off-Facility 2339 N 51st St	Ingestion	Arsenic	1.6E-01	mg/kg	2.50E-05	mg/kg-day	1.5E-00	1/mg/kg-day	3.8E-05	2.05E-04	mg/kg-day	3.0E-04	mg/kg/day	6.8E-01
				Barium	2.6E-02	mg/kg	4.07E-04	mg/kg-day	NC	1/mg/kg-day	NC	3.32E-03	mg/kg-day	2.0E-01	mg/kg/day	1.7E-02
				Cadmium	3.0E-01	mg/kg	4.70E-05	mg/kg-day	NC	1/mg/kg-day	NC	3.84E-04	mg/kg-day	1.0E-03	mg/kg/day	3.8E-01
				Chromium	*1.8E-01*	*mg/kg*	*2.82E-05*	*mg/kg-day*	*NC*	*1/mg/kg-day*	*NC*	2.30E-04	mg/kg-day	*1.5E+00*	mg/kg/day	1.5E-04
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		*mg/kg-day*	4.0E-02	mg/kg/day	NS
				Lead	7.1E-02	mg/kg	1.11E-03	mg/kg-day	NTV	1/mg/kg-day	NTV	9.08E-03	mg/kg-day	NTV	*mg/kg/day*	NTV
				Mercury	4.1E-01	mg/kg	6.42E-07	mg/kg-day	NC	1/mg/kg-day	NC	5.24E-06	mg/kg-day	3.0E-04	mg/kg/day	1.7E-02
				Selenium	1.4E-00	mg/kg	2.19E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.79E-05	mg/kg-day	5.0E-03	mg/kg/day	3.6E-03
				Silver	1.4E-00	mg/kg	2.19E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.79E-05	mg/kg-day	5.0E-03	mg/kg/day	3.6E-03
				Zinc	3.1E-03	mg/kg	4.85E-03	mg/kg-day	NC	1/mg/kg-day	NC	3.96E-02	mg/kg-day	3.0E-01	mg/kg/day	1.3E-01
			Exp. Route Total								3.8E-05					1.2E+00
			Dermal Contact	Arsenic	1.6E+01	mg/kg	2.37E-06	mg/kg-day	1.5E+00	1/mg/kg-day	3.6E-06	1.72E-05	mg/kg-day	3.0E-04	mg/kg/day	5.7E-02
				Barium	2.6E-02	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	1.4E-02	mg/kg/day	0.0E+00
				Cadmium	*3.0E-01*	*mg/kg*	*1.48E-07*	*mg/kg-day*	*NC*	*1/mg/kg-day*	*NC*	*1.07E-06*	mg/kg-day	*2.5E-05*	mg/kg/day	*4.3E-02*
				Chromium (as III)	1.8E-01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-02	mg/kg/day	0.0E+00
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	7.1E-02	mg/kg	0.00E+00	mg/kg-day	NTV	1/mg/kg-day	NTV	0.00E+00	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	*4.1E-01*	*mg/kg*	*0.00E+00*	*mg/kg-day*	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.1E-05	mg/kg/day	0.0E+00
				Selenium	*1.4E+00*	mg/kg	*0.00E+00*	mg/kg-day	NC	1/mg/kg-day	NC	*0.00E+00*	*mg/kg-day*	5.0E-03	mg/kg/day	0.0E+00
				Silver	1.4E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	*0.00E+00*	mg/kg-day	*2.0E-04*	mg/kg/day	*0.0E+00*
				Zinc	3.1E+03	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	3.0E-01	mg/kg/day	*0.0E+00*
			Exp. Route Total								3.6E-06					1.0E-01
			Produce Ingestion	Arsenic	1.6E-01	mg/kg	1.60E-06	mg/kg-day	1.5E+00	1/mg/kg-day	2.4E-06	2.03E-04	mg/kg-day	3.0E-04	mg/kg/day	6.8E-01
			Future	Barium	2.6E+02	mg/kg	2.59E-05	mg/kg-day	NC	1/mg/kg-day	NC	3.30E-03	mg/kg-day	2.0E-01	*mg/kg/day*	1.6E-02
				Cadmium	3.0E+01	mg/kg	2.99E-06	mg/kg-day	NC	1/mg/kg-day	NC	3.80E-04	mg/kg-day	1.0E-03	mg/kg/day	3.8E-01
				Chromium	1.8E-01	mg/kg	1.80E-06	mg/kg-day	NC	1/mg/kg-day	NC	2.28E-04	mg/kg-day	1.5E-00	mg/kg/day	1.5E-04
				Copper	NS	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NS	0.00E+00	mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	7.1E+02	mg/kg	7.09E-05	mg/kg-day	NTV	1/mg/kg-day	NTV	9.00E-03	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	4.1E-01	mg/kg	4.09E-08	mg/kg-day	NC	1/mg/kg-day	NC	5.20E-06	mg/kg-day	3.0E-04	mg/kg/day	1.7E-02
				Selenium	1.4E-00	mg/kg	1.40E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.78E-05	mg/kg-day	5.0E-03	mg/kg/day	3.6E-03
				Silver	1.4E-00	mg/kg	1.40E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.78E-05	mg/kg-day	5.0E-03	mg/kg/day	3.6E-03
				Zinc	3.1E-03	mg/kg	3.09E-04	mg/kg-day	NC	1/mg/kg-day	NC	3.93E-02	mg/kg-day	3.0E-01	mg/kg/day	1.3E-01
			Exp. Route Total								2.4E-06					1.2E+00
	Exposure Medium Total										*4.4E-05*					*2.6E+00*
	Air	Off-Facility 2339 N 51st St.	Inhalation of Particulates	Arsenic	1.6E-01	mg/kg	1.66E-09	mg/kg-day	1.51E-01	1/mg/kg-day	2.5E-08	7.15E-09	mg/kg-day	NTV	mg/kg/day	NTV
				Barium	2.6E-02	mg/kg	2.70E-08	mg/kg-day	NC	1/mg/kg-day	NC	1.16E-07	mg/kg-day	1.4E-04	mg/kg/day	8.1E-04
				Cadmium	3.0E-01	mg/kg	3.12E-09	mg/kg-day	6.30E+00	1/mg/kg-day	*2.0E-08*	*1.34E-08*	mg/kg-day	NTV	mg/kg/day	NTV
				Chromium (as VI-nc; total-c	1.8E-01	mg/kg	1.87E-09	mg/kg-day	4.2E-01	1/mg/kg-day	7.9E-08	8.05E-09	mg/kg-day	2.9E-05	mg/kg/day	2.8E-04
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	NTV	mg/kg/day	NS
				Lead	7.1E-02	mg/kg	7.38E-08	mg/kg-day	NTV	1/mg/kg-day	NTV	3.17E-07	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	4.1E-01	mg/kg	4.26E-11	mg/kg-day	NC	1/mg/kg-day	NC	1.83E-10	mg/kg-day	8.6E-05	mg/kg/day	2.1E-06
				Selenium	1.4E+00	mg/kg	*1.46E-10*	mg/kg-day	NC	1/mg/kg-day	NC	6.26E-10	mg/kg-day	NTV	mg/kg/day	NTV
				Silver	1.4E+00	mg/kg	1.46E-10	mg/kg-day	NC	1/mg/kg-day	NC	6.26E-10	mg/kg-day	NTV	*mg/kg/day*	NTV
				Zinc	3.1E-03	mg/kg	3.22E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.39E-06	mg/kg-day	NTV	mg/kg/day	NTV
			Exp. Route Total								1.3E-07					1.1E-03
Medium Total											4.4E-05					2.6E+00

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RAGS PART D TABLE 7.1 RME
CALCULATION OF CHEMICAL CANCER RISKS
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF		Cancer Risk	Intake/Exposure Concentration		RfD		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Water	Surface Water	Off-Facility Surface Water	Dermal Contact	Arsenic	2.2E-02	mg/L	1.37E-08	mg/kg-day	1.5E+00	1/mg/kg-day	2.1E-08	3.70E-08	mg/kg-day	3.0E-04	mg/kg/day	1.2E-04
				Barium	3.9E-01	mg/L	2.43E-07	mg/kg-day	NC	1/mg/kg-day	NC	6.56E-07	mg/kg-day	1.4E-02	mg/kg/day	4.7E-05
				Cadmium	1.8E-01	mg/L	1.12E-07	mg/kg-day	NC	1/mg/kg-day	NC	3.03E-07	mg/kg-day	2.5E-05	mg/kg/day	1.2E-02
				Chromium	1.9E-02	mg/L	1.18E-08	mg/kg-day	NC	1/mg/kg-day	NC	3.20E-08	mg/kg-day	2.0E-02	mg/kg/day	1.6E-06
				Copper	NS	mg/L		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.7E-01	mg/L	1.68E-08	mg/kg-day	NTV	1/mg/kg-day	NTV	4.54E-08	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	NS	mg/L		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	2.1E-05	mg/kg/day	NS
				Selenium	4.6E-03	mg/L	2.86E-09	mg/kg-day	NC	1/mg/kg-day	NC	7.74E-09	mg/kg-day	5.0E-03	mg/kg/day	1.5E-06
				Silver	4.2E-01	mg/L	1.55E-05	mg/kg-day	NC	1/mg/kg-day	NC	4.19E-05	mg/kg-day	2.0E-04	mg/kg/day	2.1E-01
				Zinc	1.3E-03	mg/L	4.86E-10	mg/kg-day	NC	1/mg/kg-day	NC	1.31E-09	mg/kg-day	3.0E-01	mg/kg/day	4.4E-09
			Exp. Route Total								2.1E-08					2.2E-01
		Exposure Point Total									2.1E-08					2.2E-01
Medium Total											2.1E-08					2.2E-01
Sediment	Sediment	Off-Facility Sediment	Ingestion	Arsenic	8.1E+01	mg/kg	9.91E-07	mg/kg-day	1.5E+00	1/mg/kg-day	1.5E-06	3.11E-06	mg/kg-day	3.0E-04	mg/kg/day	1.0E-02
				Barium	3.9E+02	mg/kg	4.70E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.48E-05	mg/kg-day	2.0E-01	mg/kg/day	7.4E-05
				Cadmium	3.6E+02	mg/kg	4.43E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.39E-05	mg/kg-day	1.0E-03	mg/kg/day	1.4E-02
				Chromium	4.8E+01	mg/kg	5.81E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.82E-06	mg/kg-day	1.5E+00	mg/kg/day	1.2E-06
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.9E+03	mg/kg	3.54E-05	mg/kg-day	NTV	1/mg/kg-day	NTV	1.11E-04	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	5.3E+00	mg/kg	6.43E-08	mg/kg-day	NC	1/mg/kg-day	NC	2.02E-07	mg/kg-day	3.0E-04	mg/kg/day	6.7E-04
				Selenium	5.3E+00	mg/kg	6.42E-08	mg/kg-day	NC	1/mg/kg-day	NC	2.02E-07	mg/kg-day	5.0E-03	mg/kg/day	4.0E-05
				Silver	3.3E+01	mg/kg	3.96E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.24E-06	mg/kg-day	5.0E-03	mg/kg/day	2.5E-04
				Zinc	3.9E+04	mg/kg	4.72E-04	mg/kg-day	NC	1/mg/kg-day	NC	1.48E-03	mg/kg-day	3.0E-01	mg/kg/day	4.9E-03
			Exp. Route Total								1.5E-06					3.0E-02
			Dermal Contact	Arsenic	8.1E+01	mg/kg	1.80E-07	mg/kg-day	1.5E+00	1/mg/kg-day	2.7E-07	8.03E-07	mg/kg-day	3.0E-04	mg/kg/day	2.7E-03
				Barium	3.9E+02	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	1.4E-02	mg/kg/day	0.0E+00
				Cadmium	3.6E+02	mg/kg	2.68E-08	mg/kg-day	NC	1/mg/kg-day	NC	1.20E-07	mg/kg-day	2.5E-05	mg/kg/day	4.8E-03
				Chromium	4.8E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-02	mg/kg/day	0.0E+00
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.9E+03	mg/kg	0.00E+00	mg/kg-day	NTV	1/mg/kg-day	NTV	0.00E+00	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	5.3E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.1E-05	mg/kg/day	0.0E+00
				Selenium	5.3E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	5.0E-03	mg/kg/day	0.0E+00
				Silver	3.3E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-04	mg/kg/day	0.0E+00
				Zinc	3.9E+04	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	3.0E-01	mg/kg/day	0.0E+00
			Exp. Route Total								2.7E-07					7.5E-03
		Exposure Point Total									1.8E-06					3.8E-02
Medium Total											1.8E-06					3.8E-02
										Total of Receptor Risks Across All Media	4.5E-05	Total of Receptor Hazards Across All Media				2.8E+00

Notes:

EPC = Exposure Point Concentration
NC = Not classified as a carcinogen
NE = Not evaluated as a volatile chemical
NTV = No Toxicity Value Available
RfD = Noncancer Reference Dose

Bolded Chemicals and Bold/Underlined Risks = Exceeds a cancer risk of 1E-06 or a HQ of 0.1.
NS - Not sampled or not detected.
Property is currently vacant

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RAGS PART D TABLE 7.1 RME
CALCULATION OF CHEMICAL CANCER RISKS
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF		Cancer	Intake/Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
Soil	Soil	Off-Facility	Ingestion	Arsenic	1.5E-01	mg/kg	2.35E-05	mg/kg-day	1.5E-00	1/mg/kg-day	3.5E-05	1.92E-04	mg/kg-day	3.0E-04	mg/kg/day	6.4E-01
		Maryland		Barium	2.2E+02	mg/kg	3.44E-04	mg/kg-day	NC	1/mg/kg-day	NC	2.81E-03	mg/kg-day	2.0E-01	mg/kg/day	1.4E-02
				Cadmium	6.3E-01	mg/kg	9.78E-05	mg/kg-day	NC	1/mg/kg-day	NC	7.99E-04	mg/kg-day	1.0E-03	mg/kg/day	8.0E-01
				Chromium	2.0E+01	mg/kg	3.13E-05	mg/kg-day	NC	1/mg/kg-day	NC	2.56E-04	mg/kg-day	1.5E+00	mg/kg/day	1.7E-04
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	4.3E+02	mg/kg	6.73E-04	mg/kg-day	NTV	1/mg/kg-day	NTV	5.50E-03	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.6E-01	mg/kg	2.50E-07	mg/kg-day	NC	1/mg/kg-day	NC	2.05E-06	mg/kg-day	3.0E-04	mg/kg/day	6.8E-03
				Selenium	1.3E+00	mg/kg	2.04E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.66E-05	mg/kg-day	5.0E-03	mg/kg/day	3.3E-03
				Silver	1.4E+00	mg/kg	2.19E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.79E-05	mg/kg-day	5.0E-03	mg/kg/day	3.6E-03
				Zinc	1.7E-03	mg/kg	2.66E-03	mg/kg-day	NC	1/mg/kg-day	NC	2.17E-02	mg/kg-day	3.0E-01	mg/kg/day	7.2E-02
			Exp. Route Total								3.5E-05					1.5E+00
			Dermal Contact	Arsenic	1.5E+01	mg/kg	2.22E-06	mg/kg-day	1.5E+00	1/mg/kg-day	3.3E-06	1.61E-05	mg/kg-day	3.0E-04	mg/kg/day	5.4E-02
				Barium	2.2E+02	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	1.4E-02	mg/kg/day	0.0E+00
				Cadmium	6.3E+01	mg/kg	3.09E-07	mg/kg-day	NC	1/mg/kg-day	NC	2.24E-06	mg/kg-day	2.5E-05	mg/kg/day	8.9E-02
				Chromium (as III)	2.0E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-02	mg/kg/day	0.0E+00
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	4.3E-02	mg/kg	0.00E+00	mg/kg-day	NTV	1/mg/kg-day	NTV	0.00E+00	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.6E-01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.1E-05	mg/kg/day	0.0E+00
				Selenium	1.3E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	5.0E-03	mg/kg/day	0.0E+00
				Silver	1.4E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-04	mg/kg/day	0.0E+00
				Zinc	1.7E-03	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	3.0E-01	mg/kg/day	0.0E+00
			Exp. Route Total								3.3E-06					1.4E-01
			Produce Ingestion	Arsenic	1.5E-01	mg/kg	1.50E-06	mg/kg-day	1.5E+00	1/mg/kg-day	2.2E-06	1.90E-04	mg/kg-day	3.0E-04	mg/kg/day	6.3E-01
			Future	Barium	2.2E+02	mg/kg	2.20E-05	mg/kg-day	NC	1/mg/kg-day	NC	2.79E-03	mg/kg-day	2.0E-01	mg/kg/day	1.4E-02
				Cadmium	6.3E+01	mg/kg	6.24E-06	mg/kg-day	NC	1/mg/kg-day	NC	7.92E-04	mg/kg-day	1.0E-03	mg/kg/day	7.9E-01
				Chromium	2.0E+01	mg/kg	2.00E-06	mg/kg-day	NC	1/mg/kg-day	NC	2.54E-04	mg/kg-day	1.5E+00	mg/kg/day	1.7E-04
				Copper	NS	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NS	0.00E+00	mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	4.3E-02	mg/kg	4.29E-05	mg/kg-day	NTV	1/mg/kg-day	NTV	5.45E-03	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.6E-01	mg/kg	1.60E-08	mg/kg-day	NC	1/mg/kg-day	NC	2.03E-06	mg/kg-day	3.0E-04	mg/kg/day	6.8E-03
				Selenium	1.3E+00	mg/kg	1.30E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.65E-05	mg/kg-day	5.0E-03	mg/kg/day	3.3E-03
				Silver	1.4E+00	mg/kg	1.40E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.78E-05	mg/kg-day	5.0E-03	mg/kg/day	3.6E-03
				Zinc	1.7E-03	mg/kg	1.70E-04	mg/kg-day	NC	1/mg/kg-day	NC	2.16E-02	mg/kg-day	3.0E-01	mg/kg/day	7.2E-02
			Exp. Route Total								2.2E-06					1.5E+00
	Exposure Medium Total										4.1E-05					3.2E+00
	Air	Off-Facility	Inhalation of Particulates	Arsenic	1.5E-01	mg/kg	1.56E-09	mg/kg-day	1.51E+01	1/mg/kg-day	2.4E-08	6.71E-09	mg/kg-day	NTV	mg/kg/day	NTV
		Maryland		Barium	2.2E-02	mg/kg	2.29E-08	mg/kg-day	NC	1/mg/kg-day	NC	9.83E-08	mg/kg-day	1.4E-04	mg/kg/day	6.9E-04
				Cadmium	6.3E-01	mg/kg	6.50E-09	mg/kg-day	6.30E-00	1/mg/kg-day	4.1E-08	2.79E-08	mg/kg-day	NTV	mg/kg/day	NTV
				Chromium (as VI-nc; total-c	2.0E+01	mg/kg	2.08E-09	mg/kg-day	4.2E-01	1/mg/kg-day	8.7E-08	8.94E-09	mg/kg-day	2.9E-05	mg/kg/day	3.1E-04
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	NTV	mg/kg/day	NS
				Lead	4.3E+02	mg/kg	4.47E-08	mg/kg-day	NTV	1/mg/kg-day	NTV	1.92E-07	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.6E-01	mg/kg	1.66E-11	mg/kg-day	NC	1/mg/kg-day	NC	7.15E-11	mg/kg-day	8.6E-05	mg/kg/day	8.3E-07
				Selenium	1.3E+00	mg/kg	1.35E-10	mg/kg-day	NC	1/mg/kg-day	NC	5.81E-10	mg/kg-day	NTV	mg/kg/day	NTV
				Silver	1.4E+00	mg/kg	1.46E-10	mg/kg-day	NC	1/mg/kg-day	NC	6.26E-10	mg/kg-day	NTV	mg/kg/day	NTV
				Zinc	1.7E-03	mg/kg	1.77E-07	mg/kg-day	NC	1/mg/kg-day	NC	7.60E-07	mg/kg-day	NTV	mg/kg/day	NTV
			Exp. Route Total								1.5E-07					1.0E-03
Medium Total											4.1E-05					3.2E+00

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RAGS PART D TABLE 7.1 RME
CALCULATION OF CHEMICAL CANCER RISKS
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF		Cancer	Intake/Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
Surface Water	Surface Water	Off-Facility Surface Water	Dermal Contact	Arsenic	2.2E-02	mg/L	1.37E-08	mg/kg-day	1.5E+00	1/mg/kg-day	2.1E-08	3.70E-08	mg/kg-day	3.0E-04	mg/kg/day	1.2E-04
				Barium	3.9E-01	mg/L	2.43E-07	mg/kg-day	NC	1/mg/kg-day	NC	6.56E-07	mg/kg-day	1.4E-02	mg/kg/day	4.7E-05
				Cadmium	1.8E-01	mg/L	1.12E-07	mg/kg-day	NC	1/mg/kg-day	NC	3.03E-07	mg/kg-day	2.5E-05	mg/kg/day	1.2E-02
				Chromium	1.9E-02	mg/L	1.18E-08	mg/kg-day	NC	1/mg/kg-day	NC	3.20E-08	mg/kg-day	2.0E-02	mg/kg/day	1.6E-06
				Copper	NS	mg/L		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.7E-01	mg/L	1.68E-08	mg/kg-day	NTV	1/mg/kg-day	NTV	4.54E-08	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	NS	mg/L		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	2.1E-05	mg/kg/day	NS
				Selenium	4.6E-03	mg/L	2.86E-09	mg/kg-day	NC	1/mg/kg-day	NC	7.74E-09	mg/kg-day	5.0E-03	mg/kg/day	1.5E-06
				Silver	4.2E+01	mg/L	1.55E-05	mg/kg-day	NC	1/mg/kg-day	NC	4.19E-05	mg/kg-day	2.0E-04	mg/kg/day	2.1E-01
				Zinc	1.3E-03	mg/L	4.86E-10	mg/kg-day	NC	1/mg/kg-day	NC	1.31E-09	mg/kg-day	3.0E-01	mg/kg/day	4.4E-09
			Exp. Route Total								2.1E-08					2.2E-01
		Exposure Point Total									2.1E-08					2.2E-01
Medium Total											2.1E-08					2.2E-01
Sediment	Sediment	Off-Facility Sediment	Ingestion	Arsenic	8.1E+01	mg/kg	9.91E-07	mg/kg-day	1.5E+00	1/mg/kg-day	1.5E-06	3.11E-06	mg/kg-day	3.0E-04	mg/kg/day	1.0E-02
				Barium	3.9E+02	mg/kg	4.70E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.48E-05	mg/kg-day	2.0E-01	mg/kg/day	7.4E-05
				Cadmium	3.6E+02	mg/kg	4.43E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.39E-05	mg/kg-day	1.0E-03	mg/kg/day	1.4E-02
				Chromium	4.8E+01	mg/kg	5.81E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.82E-06	mg/kg-day	1.5E+00	mg/kg/day	1.2E-06
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.9E+03	mg/kg	3.54E-05	mg/kg-day	NTV	1/mg/kg-day	NTV	1.11E-04	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	5.3E+00	mg/kg	6.43E-08	mg/kg-day	NC	1/mg/kg-day	NC	2.02E-07	mg/kg-day	3.0E-04	mg/kg/day	6.7E-04
				Selenium	5.3E+00	mg/kg	6.42E-08	mg/kg-day	NC	1/mg/kg-day	NC	2.02E-07	mg/kg-day	5.0E-03	mg/kg/day	4.0E-05
				Silver	3.3E+01	mg/kg	3.96E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.24E-06	mg/kg-day	5.0E-03	mg/kg/day	2.5E-04
				Zinc	3.9E+04	mg/kg	4.72E-04	mg/kg-day	NC	1/mg/kg-day	NC	1.48E-03	mg/kg-day	3.0E-01	mg/kg/day	4.9E-03
			Exp. Route Total								1.5E-06					3.0E-02
			Dermal Contact	Arsenic	8.1E+01	mg/kg	1.80E-07	mg/kg-day	1.5E+00	1/mg/kg-day	2.7E-07	8.03E-07	mg/kg-day	3.0E-04	mg/kg/day	2.7E-03
				Barium	3.9E+02	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	1.4E-02	mg/kg/day	0.0E+00
				Cadmium	3.6E+02	mg/kg	2.68E-08	mg/kg-day	NC	1/mg/kg-day	NC	1.20E-07	mg/kg-day	2.5E-05	mg/kg/day	4.8E-03
				Chromium	4.8E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-02	mg/kg/day	0.0E+00
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.9E+03	mg/kg	0.00E+00	mg/kg-day	NTV	1/mg/kg-day	NTV	0.00E+00	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	5.3E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.1E-05	mg/kg/day	0.0E+00
				Selenium	5.3E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	5.0E-03	mg/kg/day	0.0E+00
				Silver	3.3E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-04	mg/kg/day	0.0E+00
				Zinc	3.9E+04	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	3.0E-01	mg/kg/day	0.0E+00
			Exp. Route Total								2.7E-07					7.5E-03
		Exposure Point Total									1.8E-06					3.8E-02
Medium Total											1.8E-06					3.8E-02
										Total of Receptor Risks Across All Media	4.3E-05	Total of Receptor Hazards Across All Media				3.5E+00

Notes:

EPC = Exposure Point Concentration
NC = Not classified as a carcinogen
NE = Not evaluated as a volatile chemical
NTV = No Toxicity Value Available
RfD = Noncancer Reference Dose

Bolded Chemicals and Bold/Underlined Risks = Exceeds a cancer risk of 1E-06 or a HQ of 0.1.
NS - Not sampled or not detected.
Property is currently vacant

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RAGS PART D TABLE 7.1 RME
CALCULATION OF CHEMICAL CANCER RISKS
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF		Cancer Risk	Intake/Exposure Concentration		RfD		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Soil	Soil	Off-Facility N. 39th St & Locust	Ingestion	Arsenic	1.3E+01	mg/kg	2.04E-05	mg/kg-day	1.5E+00	1/mg/kg-day	3.1E-05	1.66E-04	mg/kg-day	3.0E-04	mg/kg/day	5.5E-01
				Barium	2.5E+02	mg/kg	3.91E-04	mg/kg-day	NC	1/mg/kg-day	NC	3.20E-03	mg/kg-day	2.0E-01	mg/kg/day	1.6E-02
				Cadmium	2.0E-01	mg/kg	3.13E-05	mg/kg-day	NC	1/mg/kg-day	NC	2.56E-04	mg/kg-day	1.0E-03	mg/kg/day	2.6E-01
				Chromium	2.7E-01	mg/kg	4.23E-05	mg/kg-day	NC	1/mg/kg-day	NC	3.45E-04	mg/kg-day	1.5E+00	mg/kg/day	2.3E-04
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	4.4E-02	mg/kg	6.89E-04	mg/kg-day	NTV	1/mg/kg-day	NTV	5.63E-03	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.3E-01	mg/kg	2.04E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.66E-06	mg/kg-day	3.0E-04	mg/kg/day	5.5E-03
				Selenium	1.2E+00	mg/kg	1.88E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.53E-05	mg/kg-day	5.0E-03	mg/kg/day	3.1E-03
				Silver	5.5E-01	mg/kg	8.61E-07	mg/kg-day	NC	1/mg/kg-day	NC	7.03E-06	mg/kg-day	5.0E-03	mg/kg/day	1.4E-03
				Zinc	1.6E-03	mg/kg	2.50E-03	mg/kg-day	NC	1/mg/kg-day	NC	2.05E-02	mg/kg-day	3.0E-01	mg/kg/day	6.8E-02
			Exp. Route Total								3.1E-05					9.0E-01
			Dermal Contact	Arsenic	1.3E+01	mg/kg	1.93E-06	mg/kg-day	1.5E+00	1/mg/kg-day	2.9E-06	1.40E-05	mg/kg-day	3.0E-04	mg/kg/day	4.7E-02
				Barium	2.5E+02	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	1.4E-02	mg/kg/day	0.0E+00
				Cadmium	2.0E-01	mg/kg	9.88E-08	mg/kg-day	NC	1/mg/kg-day	NC	7.16E-07	mg/kg-day	2.5E-05	mg/kg/day	2.9E-02
				Chromium (as III)	2.7E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-02	mg/kg/day	0.0E+00
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	4.4E-02	mg/kg	0.00E+00	mg/kg-day	NTV	1/mg/kg-day	NTV	0.00E+00	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.3E-01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.1E-05	mg/kg/day	0.0E+00
				Selenium	1.2E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	5.0E-03	mg/kg/day	0.0E+00
				Silver	5.5E-01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-04	mg/kg/day	0.0E+00
				Zinc	1.6E-03	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	3.0E-01	mg/kg/day	0.0E+00
			Exp. Route Total								2.9E-06					7.5E-02
			Produce Ingestion Future	Arsenic	1.3E+01	mg/kg	1.30E-06	mg/kg-day	1.5E+00	1/mg/kg-day	1.9E-06	1.65E-04	mg/kg-day	3.0E-04	mg/kg/day	5.5E-01
				Barium	2.5E+02	mg/kg	2.49E-05	mg/kg-day	NC	1/mg/kg-day	NC	3.17E-03	mg/kg-day	2.0E-01	mg/kg/day	1.6E-02
				Cadmium	2.0E-01	mg/kg	2.00E-06	mg/kg-day	NC	1/mg/kg-day	NC	2.54E-04	mg/kg-day	1.0E-03	mg/kg/day	2.5E-01
				Chromium	2.7E+01	mg/kg	2.69E-06	mg/kg-day	NC	1/mg/kg-day	NC	3.42E-04	mg/kg-day	1.5E+00	mg/kg/day	2.3E-04
				Copper	NS	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NS	0.00E+00	mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	4.4E-02	mg/kg	4.39E-05	mg/kg-day	NTV	1/mg/kg-day	NTV	5.58E-03	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.3E-01	mg/kg	1.30E-08	mg/kg-day	NC	1/mg/kg-day	NC	1.65E-06	mg/kg-day	3.0E-04	mg/kg/day	5.5E-03
				Selenium	1.2E+00	mg/kg	1.20E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.52E-05	mg/kg-day	5.0E-03	mg/kg/day	3.0E-03
				Silver	5.5E-01	mg/kg	5.49E-08	mg/kg-day	NC	1/mg/kg-day	NC	6.97E-06	mg/kg-day	5.0E-03	mg/kg/day	1.4E-03
				Zinc	1.6E+03	mg/kg	1.60E-04	mg/kg-day	NC	1/mg/kg-day	NC	2.03E-02	mg/kg-day	3.0E-01	mg/kg/day	6.8E-02
			Exp. Route Total								1.9E-06					9.0E-01
	Exposure Medium Total										3.5E-05					1.9E+00
	Air	Off-Facility N. 39th St & Locust	Inhalation of Particulates	Arsenic	1.3E+01	mg/kg	1.35E-09	mg/kg-day	1.51E+01	1/mg/kg-day	2.0E-08	5.81E-09	mg/kg-day	NTV	mg/kg/day	NTV
				Barium	2.5E+02	mg/kg	2.60E-08	mg/kg-day	NC	1/mg/kg-day	NC	1.12E-07	mg/kg-day	1.4E-04	mg/kg/day	7.8E-04
				Cadmium	2.0E-01	mg/kg	2.08E-09	mg/kg-day	6.30E+00	1/mg/kg-day	1.3E-08	8.94E-09	mg/kg-day	NTV	mg/kg/day	NTV
				Chromium (as VI-nc; total-c	2.7E+01	mg/kg	2.81E-09	mg/kg-day	4.2E+01	1/mg/kg-day	1.2E-07	1.21E-08	mg/kg-day	2.9E-05	mg/kg/day	4.2E-04
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	NTV	mg/kg/day	NS
				Lead	4.4E+02	mg/kg	4.58E-08	mg/kg-day	NTV	1/mg/kg-day	NTV	1.97E-07	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.3E-01	mg/kg	1.35E-11	mg/kg-day	NC	1/mg/kg-day	NC	5.81E-11	mg/kg-day	8.6E-05	mg/kg/day	6.8E-07
				Selenium	1.2E+00	mg/kg	1.25E-10	mg/kg-day	NC	1/mg/kg-day	NC	5.36E-10	mg/kg-day	NTV	mg/kg/day	NTV
				Silver	5.5E-01	mg/kg	5.72E-11	mg/kg-day	NC	1/mg/kg-day	NC	2.46E-10	mg/kg-day	NTV	mg/kg/day	NTV
				Zinc	1.6E+03	mg/kg	1.66E-07	mg/kg-day	NC	1/mg/kg-day	NC	7.15E-07	mg/kg-day	NTV	mg/kg/day	NTV
			Exp. Route Total								1.5E-07					1.2E-03
Medium Total											3.6E-05					1.9E+00

[redacted] 7am

RAGS PART D TABLE 7.1 RME
CALCULATION OF CHEMICAL CANCER RISKS
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF		Cancer Risk	Intake/Exposure Concentration		RfD		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Water	Surface Water	Off-Facility Surface Water	Dermal Contact	Arsenic	2.2E-02	mg/L	1.37E-08	mg/kg-day	1.5E+00	1/mg/kg-day	2.1E-08	3.70E-08	mg/kg-day	3.0E-04	mg/kg/day	1.2E-04
				Barium	3.9E-01	mg/L	2.43E-07	mg/kg-day	NC	1/mg/kg-day	NC	6.56E-07	mg/kg-day	1.4E-02	mg/kg/day	4.7E-05
				Cadmium	1.8E-01	mg/L	1.12E-07	mg/kg-day	NC	1/mg/kg-day	NC	3.03E-07	mg/kg-day	2.5E-05	mg/kg/day	1.2E-02
				Chromium	1.9E-02	mg/L	1.18E-08	mg/kg-day	NC	1/mg/kg-day	NC	3.20E-08	mg/kg-day	2.0E-02	mg/kg/day	1.6E-06
				Copper	NS	mg/L		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.7E-01	mg/L	1.68E-08	mg/kg-day	NTV	1/mg/kg-day	NTV	4.54E-08	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	NS	mg/L		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	2.1E-05	mg/kg/day	NS
				Selenium	4.6E-03	mg/L	2.86E-09	mg/kg-day	NC	1/mg/kg-day	NC	7.74E-09	mg/kg-day	5.0E-03	mg/kg/day	1.5E-06
				Silver	4.2E-01	mg/L	1.55E-05	mg/kg-day	NC	1/mg/kg-day	NC	4.19E-05	mg/kg-day	2.0E-04	mg/kg/day	2.1E-01
				Zinc	1.3E-03	mg/L	4.86E-10	mg/kg-day	NC	1/mg/kg-day	NC	1.31E-09	mg/kg-day	3.0E-01	mg/kg/day	4.4E-09
			Exp. Route Total								2.1E-08					2.2E-01
		Exposure Point Total									2.1E-08					2.2E-01
Medium Total											2.1E-08					2.2E-01
Sediment	Sediment	Off-Facility Sediment	Ingestion	Arsenic	8.1E-01	mg/kg	9.91E-07	mg/kg-day	1.5E+00	1/mg/kg-day	1.5E-06	3.11E-06	mg/kg-day	3.0E-04	mg/kg/day	1.0E-02
				Barium	3.9E-02	mg/kg	4.70E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.48E-05	mg/kg-day	2.0E-01	mg/kg/day	7.4E-05
				Cadmium	3.6E-02	mg/kg	4.43E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.39E-05	mg/kg-day	1.0E-03	mg/kg/day	1.4E-02
				Chromium	4.8E-01	mg/kg	5.81E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.82E-06	mg/kg-day	1.5E+00	mg/kg/day	1.2E-06
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.9E-03	mg/kg	3.54E-05	mg/kg-day	NTV	1/mg/kg-day	NTV	1.11E-04	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	5.3E+00	mg/kg	6.43E-08	mg/kg-day	NC	1/mg/kg-day	NC	2.02E-07	mg/kg-day	3.0E-04	mg/kg/day	6.7E-04
				Selenium	5.3E+00	mg/kg	6.42E-08	mg/kg-day	NC	1/mg/kg-day	NC	2.02E-07	mg/kg-day	5.0E-03	mg/kg/day	4.0E-05
				Silver	3.3E-01	mg/kg	3.96E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.24E-06	mg/kg-day	5.0E-03	mg/kg/day	2.5E-04
				Zinc	3.9E-04	mg/kg	4.72E-04	mg/kg-day	NC	1/mg/kg-day	NC	1.48E-03	mg/kg-day	3.0E-01	mg/kg/day	4.9E-03
			Exp. Route Total								1.5E-06					3.0E-02
			Dermal Contact	Arsenic	8.1E+01	mg/kg	1.80E-07	mg/kg-day	1.5E+00	1/mg/kg-day	2.7E-07	8.03E-07	mg/kg-day	3.0E-04	mg/kg/day	2.7E-03
				Barium	3.9E+02	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	1.4E-02	mg/kg/day	0.0E+00
				Cadmium	3.6E+02	mg/kg	2.68E-08	mg/kg-day	NC	1/mg/kg-day	NC	1.20E-07	mg/kg-day	2.5E-05	mg/kg/day	4.8E-03
				Chromium	4.8E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-02	mg/kg/day	0.0E+00
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.9E-03	mg/kg	0.00E+00	mg/kg-day	NTV	1/mg/kg-day	NTV	0.00E+00	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	5.3E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.1E-05	mg/kg/day	0.0E+00
				Selenium	5.3E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	5.0E-03	mg/kg/day	0.0E+00
				Silver	3.3E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-04	mg/kg/day	0.0E+00
				Zinc	3.9E-04	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	3.0E-01	mg/kg/day	0.0E+00
			Exp. Route Total								2.7E-07					7.5E-03
		Exposure Point Total									1.8E-06					3.8E-02
Medium Total											1.8E-06					3.8E-02
											Total of Receptor Risks Across All Media	3.7E-05		Total of Receptor Hazards Across All Media		2.1E+00

Notes:
EPC = Exposure Point Concentration
NC = Not classified as a carcinogen
NE = Not evaluated as a volatile chemical
NTV = No Toxicity Value Available
RfD = Noncancer Reference Dose

Bolded Chemicals and Bold/Underlined Risks = Exceeds a cancer risk of 1E-06 or a HQ of 0.1.
NS - Not sampled or not detected.
Property is currently vacant

RAGS PART D TABLE 7.1 RME
CALCULATION OF CHEMICAL CANCER RISKS
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Current/Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF		Cancer Risk	Intake/Exposure Concentration		RfD		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Soil	Soil	Off-Facility 5510 Thomas	Ingestion	Arsenic	1.3E+01	mg/kg	2.04E-05	mg/kg-day	1.5E+00	1/mg/kg-day	3.1E-05	1.66E-04	mg/kg-day	3.0E-04	mg/kg/day	5.5E-01
				Barium	2.0E+02	mg/kg	3.13E-04	mg/kg-day	NC	1/mg/kg-day	NC	2.56E-03	mg/kg-day	2.0E-01	mg/kg/day	1.3E-02
				Cadmium	2.4E+01	mg/kg	3.76E-05	mg/kg-day	NC	1/mg/kg-day	NC	3.07E-04	mg/kg-day	1.0E-03	mg/kg/day	3.1E-01
				Chromium	2.1E+01	mg/kg	3.29E-05	mg/kg-day	NC	1/mg/kg-day	NC	2.68E-04	mg/kg-day	1.5E+00	mg/kg/day	1.8E-04
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.8E+02	mg/kg	4.38E-04	mg/kg-day	NTV	1/mg/kg-day	NTV	3.58E-03	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.4E-01	mg/kg	2.19E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.79E-06	mg/kg-day	3.0E-04	mg/kg/day	6.0E-03
				Selenium	9.5E-01	mg/kg	1.49E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.21E-05	mg/kg-day	5.0E-03	mg/kg/day	2.4E-03
				Silver	8.8E-01	mg/kg	1.38E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.13E-05	mg/kg-day	5.0E-03	mg/kg/day	2.3E-03
				Zinc	1.2E-03	mg/kg	1.88E-03	mg/kg-day	NC	1/mg/kg-day	NC	1.53E-02	mg/kg-day	3.0E-01	mg/kg/day	5.1E-02
			Exp. Route Total								3.1E-05					9.4E-01
			Dermal Contact	Arsenic	1.3E-01	mg/kg	1.93E-06	mg/kg-day	1.5E+00	1/mg/kg-day	2.9E-06	1.40E-05	mg/kg-day	3.0E-04	mg/kg/day	4.7E-02
				Barium	2.0E+02	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	1.4E-02	mg/kg/day	0.0E+00
				Cadmium	2.4E+01	mg/kg	1.19E-07	mg/kg-day	NC	1/mg/kg-day	NC	8.59E-07	mg/kg-day	2.5E-05	mg/kg/day	3.4E-02
				Chromium (as III)	2.1E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-02	mg/kg/day	0.0E+00
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.8E+02	mg/kg	0.00E+00	mg/kg-day	NTV	1/mg/kg-day	NTV	0.00E+00	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.4E-01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.1E-05	mg/kg/day	0.0E+00
				Selenium	9.5E-01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	5.0E-03	mg/kg/day	0.0E+00
				Silver	8.8E-01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-04	mg/kg/day	0.0E+00
				Zinc	1.2E-03	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	3.0E-01	mg/kg/day	0.0E+00
			Exp. Route Total								2.9E-06					8.1E-02
			Produce Ingestion Future	Arsenic	1.3E-01	mg/kg	1.30E-06	mg/kg-day	1.5E+00	1/mg/kg-day	1.9E-06	1.65E-04	mg/kg-day	3.0E-04	mg/kg/day	5.5E-01
				Barium	2.0E+02	mg/kg	2.00E-05	mg/kg-day	NC	1/mg/kg-day	NC	2.54E-03	mg/kg-day	2.0E-01	mg/kg/day	1.3E-02
				Cadmium	2.4E+01	mg/kg	2.40E-06	mg/kg-day	NC	1/mg/kg-day	NC	3.04E-04	mg/kg-day	1.0E-03	mg/kg/day	3.0E-01
				Chromium	2.1E+01	mg/kg	2.10E-06	mg/kg-day	NC	1/mg/kg-day	NC	2.66E-04	mg/kg-day	1.5E+00	mg/kg/day	1.8E-04
				Copper	NS	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NS	0.00E+00	mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.8E+02	mg/kg	2.79E-05	mg/kg-day	NTV	1/mg/kg-day	NTV	3.55E-03	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.4E-01	mg/kg	1.40E-08	mg/kg-day	NC	1/mg/kg-day	NC	1.78E-06	mg/kg-day	3.0E-04	mg/kg/day	5.9E-03
				Selenium	9.5E-01	mg/kg	9.48E-08	mg/kg-day	NC	1/mg/kg-day	NC	1.20E-05	mg/kg-day	5.0E-03	mg/kg/day	2.4E-03
				Silver	8.8E-01	mg/kg	8.78E-08	mg/kg-day	NC	1/mg/kg-day	NC	1.12E-05	mg/kg-day	5.0E-03	mg/kg/day	2.2E-03
				Zinc	1.2E-03	mg/kg	1.20E-04	mg/kg-day	NC	1/mg/kg-day	NC	1.52E-02	mg/kg-day	3.0E-01	mg/kg/day	5.1E-02
			Exp. Route Total								1.9E-06					9.3E-01
	Exposure Medium Total										3.5E-05					1.9E+00
	Air	Off-Facility 5510 Thomas	Inhalation of Particulates	Arsenic	1.3E+01	mg/kg	1.35E-09	mg/kg-day	1.51E-01	1/mg/kg-day	2.0E-08	5.81E-09	mg/kg-day	NTV	mg/kg/day	NTV
				Barium	2.0E+02	mg/kg	2.08E-08	mg/kg-day	NC	1/mg/kg-day	NC	8.94E-08	mg/kg-day	1.4E-04	mg/kg/day	6.3E-04
				Cadmium	2.4E-01	mg/kg	2.50E-09	mg/kg-day	6.30E+00	1/mg/kg-day	1.6E-08	1.07E-08	mg/kg-day	NTV	mg/kg/day	NTV
				Chromium (as VI-nc; total-c	2.1E-01	mg/kg	2.18E-09	mg/kg-day	4.2E-01	1/mg/kg-day	9.2E-08	9.39E-09	mg/kg-day	2.9E-05	mg/kg/day	3.3E-04
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	NTV	mg/kg/day	NS
				Lead	2.8E-02	mg/kg	2.91E-08	mg/kg-day	NTV	1/mg/kg-day	NTV	1.25E-07	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.4E-01	mg/kg	1.46E-11	mg/kg-day	NC	1/mg/kg-day	NC	6.26E-11	mg/kg-day	8.6E-05	mg/kg/day	7.3E-07
				Selenium	9.5E-01	mg/kg	9.88E-11	mg/kg-day	NC	1/mg/kg-day	NC	4.25E-10	mg/kg-day	NTV	mg/kg/day	NTV
				Silver	8.8E-01	mg/kg	9.15E-11	mg/kg-day	NC	1/mg/kg-day	NC	3.93E-10	mg/kg-day	NTV	mg/kg/day	NTV
				Zinc	1.2E-03	mg/kg	1.25E-07	mg/kg-day	NC	1/mg/kg-day	NC	5.36E-07	mg/kg-day	NTV	mg/kg/day	NTV
			Exp. Route Total								1.3E-07					9.5E-04
Medium Total											3.5E-05					1.9E+00

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RAGS PART D TABLE 7.1 RME
CALCULATION OF CHEMICAL CANCER RISKS
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Current/Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF		Cancer Risk	Intake/Exposure Concentration		RfD		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Water	Surface Water	Off-Facility Surface Water	Dermal Contact	Arsenic	2.2E-02	mg/L	1.37E-08	mg/kg-day	1.5E+00	1/mg/kg-day	2.1E-08	3.70E-08	mg/kg-day	3.0E-04	mg/kg/day	1.2E-04
				Barium	3.9E-01	mg/L	2.43E-07	mg/kg-day	NC	1/mg/kg-day	NC	6.56E-07	mg/kg-day	1.4E-02	mg/kg/day	4.7E-05
				Cadmium	1.8E-01	mg/L	1.12E-07	mg/kg-day	NC	1/mg/kg-day	NC	3.03E-07	mg/kg-day	2.5E-05	mg/kg/day	1.2E-02
				Chromium	1.9E-02	mg/L	1.18E-08	mg/kg-day	NC	1/mg/kg-day	NC	3.20E-08	mg/kg-day	2.0E-02	mg/kg/day	1.6E-06
				Copper	NS	mg/L		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.7E-01	mg/L	1.68E-08	mg/kg-day	NTV	1/mg/kg-day	NTV	4.54E-08	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	NS	mg/L		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	2.1E-05	mg/kg/day	NS
				Selenium	4.6E-03	mg/L	2.86E-09	mg/kg-day	NC	1/mg/kg-day	NC	7.74E-09	mg/kg-day	5.0E-03	mg/kg/day	1.5E-06
				Silver	4.2E-01	mg/L	1.55E-05	mg/kg-day	NC	1/mg/kg-day	NC	4.19E-05	mg/kg-day	2.0E-04	mg/kg/day	2.1E-01
				Zinc	*1.3E-03*	*mg/L*	*4.86E-10*	*mg/kg-day*	*NC*	*1/mg/kg-day*	*NC*	*1.31E-09*	*mg/kg-day*	*3.0E-01*	*mg/kg/day*	*4.4E-09*
			Exp. Route Total								2.1E-08					2.2E-01
		Exposure Point Total									2.1E-08					2.2E-01
Medium Total											2.1E-08					2.2E-01
Sediment	Sediment	Off-Facility Sediment	Ingestion	Arsenic	8.1E-01	mg/kg	9.91E-07	mg/kg-day	1.5E+00	1/mg/kg-day	1.5E-06	3.11E-06	mg/kg-day	3.0E-04	mg/kg/day	1.0E-02
				Barium	3.9E-02	mg/kg	4.70E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.48E-05	mg/kg-day	2.0E-01	mg/kg/day	7.4E-05
				Cadmium	3.6E-02	mg/kg	4.43E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.39E-05	mg/kg-day	1.0E-03	mg/kg/day	1.4E-02
				Chromium	4.8E-01	mg/kg	5.81E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.82E-06	mg/kg-day	1.5E+00	mg/kg/day	1.2E-06
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.9E-03	mg/kg	3.54E-05	mg/kg-day	NTV	1/mg/kg-day	NTV	1.11E-04	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	5.3E-00	mg/kg	6.43E-08	mg/kg-day	NC	1/mg/kg-day	NC	2.02E-07	mg/kg-day	3.0E-04	mg/kg/day	6.7E-04
				Selenium	5.3E-00	mg/kg	6.42E-08	mg/kg-day	NC	1/mg/kg-day	NC	2.02E-07	mg/kg-day	5.0E-03	mg/kg/day	4.0E-05
				Silver	3.3E-01	mg/kg	3.96E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.24E-06	mg/kg-day	5.0E-03	mg/kg/day	2.5E-04
				Zinc	3.9E-04	mg/kg	4.72E-04	mg/kg-day	NC	1/mg/kg-day	NC	1.48E-03	mg/kg-day	3.0E-01	mg/kg/day	4.9E-03
			Exp. Route Total								1.5E-06					3.0E-02
			Dermal Contact	Arsenic	8.1E-01	mg/kg	1.80E-07	mg/kg-day	1.5E+00	1/mg/kg-day	2.7E-07	8.03E-07	mg/kg-day	3.0E-04	mg/kg/day	2.7E-03
				Barium	3.9E-02	*mg/kg*	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	1.4E-02	mg/kg/day	0.0E+00
				Cadmium	3.6E-02	mg/kg	2.68E-08	mg/kg-day	NC	1/mg/kg-day	NC	1.20E-07	mg/kg-day	2.5E-05	mg/kg/day	4.8E-03
				Chromium	4.8E-01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-02	mg/kg/day	0.0E+00
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.9E-03	mg/kg	0.00E+00	mg/kg-day	NTV	1/mg/kg-day	NTV	0.00E+00	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	5.3E-00	mg/kg	*0.00E+00*	mg/kg-day	*NC*	*1/mg/kg-day*	*NC*	*0.00E+00*	mg/kg-day	*2.1E-05*	mg/kg/day	*0.0E+00*
				Selenium	5.3E-00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	5.0E-03	mg/kg/day	0.0E+00
				Silver	3.3E-01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-04	mg/kg/day	0.0E+00
				Zinc	3.9E-04	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	3.0E-01	mg/kg/day	0.0E+00
			Exp. Route Total								2.7E-07					7.5E-03
		Exposure Point Total									1.8E-06					3.8E-02
Medium Total											1.8E-06					3.8E-02
											Total of Receptor Risks Across All Media	3.7E-05	Total of Receptor Hazards Across All Media			2.2E+00

Notes:

EPC = Exposure Point Concentration
NC = Not classified as a carcinogen
NE = Not evaluated as a volatile chemical
NTV = No Toxicity Value Available
RfD = Noncancer Reference Dose

Bolded Chemicals and Bold/Underlined Risks = Exceeds a cancer risk of 1E-06 or a HQ of 0.1.
NS - Not sampled or not detected.
No garden currently exists at property based on site visit.

RAGS PART D TABLE 7.1 RME
CALCULATION OF CHEMICAL CANCER RISKS
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Current/Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF		Cancer Risk	Intake/Exposure Concentration		RfD		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Soil	Soil	Off-Facility 5528 Delmar	Ingestion	Arsenic	1.3E-01	mg/kg	2.04E-05	mg/kg-day	1.5E+00	1/mg/kg-day	3.1E-05	1.66E-04	mg/kg-day	3.0E-04	mg/kg/day	5.5E-01
				Barium	1.8E-02	mg/kg	2.82E-04	mg/kg-day	NC	1/mg/kg-day	NC	2.30E-03	mg/kg-day	2.0E-01	mg/kg/day	1.2E-02
				Cadmium	2.1E-01	mg/kg	3.29E-05	mg/kg-day	NC	1/mg/kg-day	NC	2.68E-04	mg/kg-day	1.0E-03	mg/kg/day	2.7E-01
				Chromium	1.8E+01	mg/kg	2.82E-05	mg/kg-day	NC	1/mg/kg-day	NC	2.30E-04	mg/kg-day	1.5E+00	mg/kg/day	1.5E-04
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	1.8E+02	mg/kg	2.82E-04	mg/kg-day	NTV	1/mg/kg-day	NTV	2.30E-03	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	8.2E-02	mg/kg	1.28E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.05E-06	mg/kg-day	3.0E-04	mg/kg/day	3.5E-03
				Selenium	1.1E+00	mg/kg	1.72E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.41E-05	mg/kg-day	5.0E-03	mg/kg/day	2.8E-03
				Silver	3.8E-01	mg/kg	5.95E-07	mg/kg-day	NC	1/mg/kg-day	NC	4.86E-06	mg/kg-day	5.0E-03	mg/kg/day	9.7E-04
				Zinc	7.9E-02	mg/kg	1.24E-03	mg/kg-day	NC	1/mg/kg-day	NC	1.01E-02	mg/kg-day	3.0E-01	mg/kg/day	3.4E-02
			Exp. Route Total								3.1E-05					8.8E-01
			Dermal Contact	Arsenic	1.3E+01	mg/kg	1.93E-06	mg/kg-day	1.5E+00	1/mg/kg-day	2.9E-06	1.40E-05	mg/kg-day	3.0E-04	mg/kg/day	4.7E-02
				Barium	1.8E-02	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	1.4E-02	mg/kg/day	0.0E+00
				Cadmium	2.1E-01	mg/kg	1.04E-07	mg/kg-day	NC	1/mg/kg-day	NC	7.52E-07	mg/kg-day	2.5E-05	mg/kg/day	3.0E-02
				Chromium (as III)	1.8E-01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-02	mg/kg/day	0.0E+00
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	1.8E+02	mg/kg	0.00E+00	mg/kg-day	NTV	1/mg/kg-day	NTV	0.00E+00	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	8.2E-02	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.1E-05	mg/kg/day	0.0E+00
				Selenium	1.1E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	5.0E-03	mg/kg/day	0.0E+00
				Silver	3.8E-01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-04	mg/kg/day	0.0E+00
				Zinc	7.9E-02	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	3.0E-01	mg/kg/day	0.0E+00
			Exp. Route Total								2.9E-06					7.7E-02
			Produce Ingestion	Arsenic	1.3E+01	mg/kg	1.30E-06	mg/kg-day	1.5E+00	1/mg/kg-day	1.9E-06	1.65E-04	mg/kg-day	3.0E-04	mg/kg/day	5.5E-01
			Future	Barium	1.8E-02	mg/kg	1.80E-05	mg/kg-day	NC	1/mg/kg-day	NC	2.28E-03	mg/kg-day	2.0E-01	mg/kg/day	1.1E-02
				Cadmium	2.1E-01	mg/kg	2.10E-06	mg/kg-day	NC	1/mg/kg-day	NC	2.66E-04	mg/kg-day	1.0E-03	mg/kg/day	2.7E-01
				Chromium	1.8E-01	mg/kg	1.80E-06	mg/kg-day	NC	1/mg/kg-day	NC	2.28E-04	mg/kg-day	1.5E+00	mg/kg/day	1.5E-04
				Copper	NS	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NS	0.00E+00	mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	1.8E-02	mg/kg	1.80E-05	mg/kg-day	NTV	1/mg/kg-day	NTV	2.28E-03	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	8.2E-02	mg/kg	8.18E-09	mg/kg-day	NC	1/mg/kg-day	NC	1.04E-06	mg/kg-day	3.0E-04	mg/kg/day	3.5E-03
				Selenium	1.1E+00	mg/kg	1.10E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.39E-05	mg/kg-day	5.0E-03	mg/kg/day	2.8E-03
				Silver	3.8E-01	mg/kg	3.79E-08	mg/kg-day	NC	1/mg/kg-day	NC	4.82E-06	mg/kg-day	5.0E-03	mg/kg/day	9.6E-04
				Zinc	7.9E-02	mg/kg	7.88E-05	mg/kg-day	NC	1/mg/kg-day	NC	1.00E-02	mg/kg-day	3.0E-01	mg/kg/day	3.3E-02
			Exp. Route Total								1.9E-06					8.7E-01
	Exposure Medium Total										3.5E-05					1.8E+00
	Air	Off-Facility 5528 Delmar	Inhalation of Particulates	Arsenic	1.3E+01	mg/kg	1.35E-09	mg/kg-day	1.51E+01	1/mg/kg-day	2.0E-08	5.81E-09	mg/kg-day	NTV	mg/kg/day	NTV
				Barium	1.8E-02	mg/kg	1.87E-08	mg/kg-day	NC	1/mg/kg-day	NC	8.05E-08	mg/kg-day	1.4E-04	mg/kg/day	5.6E-04
				Cadmium	2.1E-01	mg/kg	2.18E-09	mg/kg-day	6.30E+00	1/mg/kg-day	1.4E-08	9.39E-09	mg/kg-day	NTV	mg/kg/day	NTV
				Chromium (as VI-oc; total-c	1.8E-01	mg/kg	1.87E-09	mg/kg-day	4.2E+01	1/mg/kg-day	7.9E-08	8.05E-09	mg/kg-day	2.9E-05	mg/kg/day	2.8E-04
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	NTV	mg/kg/day	NS
				Lead	1.8E+02	mg/kg	1.87E-08	mg/kg-day	NTV	1/mg/kg-day	NTV	8.05E-08	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	8.2E-02	mg/kg	8.53E-12	mg/kg-day	NC	1/mg/kg-day	NC	3.67E-11	mg/kg-day	8.6E-05	mg/kg/day	4.3E-07
				Selenium	1.1E+00	mg/kg	1.14E-10	mg/kg-day	NC	1/mg/kg-day	NC	4.92E-10	mg/kg-day	NTV	mg/kg/day	NTV
				Silver	3.8E-01	mg/kg	3.95E-11	mg/kg-day	NC	1/mg/kg-day	NC	1.70E-10	mg/kg-day	NTV	mg/kg/day	NTV
				Zinc	7.9E-02	mg/kg	8.22E-08	mg/kg-day	NC	1/mg/kg-day	NC	3.53E-07	mg/kg-day	NTV	mg/kg/day	NTV
			Exp. Route Total								1.1E-07					8.4E-04
Medium Total											3.5E-05					1.8E+00

RAGS PART D TABLE 7.1 RME
CALCULATION OF CHEMICAL CANCER RISKS
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Current/Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF		Cancer	Intake/Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
Surface Water	Surface Water	Off-Facility	Dermal Contact	Arsenic	2.2E-02	mg/L	1.37E-08	mg/kg-day	1.5E+00	1/mg/kg-day	2.1E-08	3.70E-08	mg/kg-day	3.0E-04	mg/kg/day	1.2E-04
		Surface Water		Barium	3.9E-01	mg/L	2.43E-07	mg/kg-day	NC	1/mg/kg-day	NC	6.56E-07	mg/kg-day	1.4E-02	mg/kg/day	4.7E-05
				Cadmium	1.8E-01	mg/L	1.12E-07	mg/kg-day	NC	1/mg/kg-day	NC	3.03E-07	mg/kg-day	2.5E-05	mg/kg/day	1.2E-02
				Chromium	1.9E-02	mg/L	1.18E-08	mg/kg-day	NC	1/mg/kg-day	NC	3.20E-08	mg/kg-day	2.0E-02	mg/kg/day	1.6E-06
				Copper	NS	mg/L		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.7E-01	mg/L	1.68E-08	mg/kg-day	NTV	1/mg/kg-day	NTV	4.54E-08	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	NS	mg/L		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	2.1E-05	mg/kg/day	NS
				Selenium	4.6E-03	mg/L	2.86E-09	mg/kg-day	NC	1/mg/kg-day	NC	7.74E-09	mg/kg-day	5.0E-03	mg/kg/day	1.5E-06
				Silver	4.2E+01	mg/L	1.55E-05	mg/kg-day	NC	1/mg/kg-day	NC	4.19E-05	mg/kg-day	2.0E-04	mg/kg/day	2.1E-01
				Zinc	1.3E-03	mg/L	4.86E-10	mg/kg-day	NC	1/mg/kg-day	NC	1.31E-09	mg/kg-day	3.0E-01	mg/kg/day	4.4E-09
			Exp. Route Total								2.1E-08					2.2E-01
		Exposure Point Total									2.1E-08					2.2E-01
Medium Total											2.1E-08					2.2E-01
Sediment	Sediment	Off-Facility	Ingestion	Arsenic	8.1E+01	mg/kg	9.91E-07	mg/kg-day	1.5E+00	1/mg/kg-day	1.5E-06	3.11E-06	mg/kg-day	3.0E-04	mg/kg/day	1.0E-02
		Sediment		Barium	3.9E+02	mg/kg	4.70E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.48E-05	mg/kg-day	2.0E-01	mg/kg/day	7.4E-05
				Cadmium	3.6E+02	mg/kg	4.43E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.39E-05	mg/kg-day	1.0E-03	mg/kg/day	1.4E-02
				Chromium	4.8E+01	mg/kg	5.81E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.82E-06	mg/kg-day	1.5E+00	mg/kg/day	1.2E-06
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.9E-03	mg/kg	3.54E-05	mg/kg-day	NTV	1/mg/kg-day	NTV	1.11E-04	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	5.3E+00	mg/kg	6.43E-08	mg/kg-day	NC	1/mg/kg-day	NC	2.02E-07	mg/kg-day	3.0E-04	mg/kg/day	6.7E-04
				Selenium	5.3E+00	mg/kg	6.42E-08	mg/kg-day	NC	1/mg/kg-day	NC	2.02E-07	mg/kg-day	5.0E-03	mg/kg/day	4.0E-05
				Silver	3.3E+01	mg/kg	3.96E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.24E-06	mg/kg-day	5.0E-03	mg/kg/day	2.5E-04
				Zinc	3.9E+04	mg/kg	4.72E-04	mg/kg-day	NC	1/mg/kg-day	NC	1.48E-03	mg/kg-day	3.0E-01	mg/kg/day	4.9E-03
			Exp. Route Total								1.5E-06					3.0E-02
			Dermal Contact	Arsenic	8.1E+01	mg/kg	1.80E-07	mg/kg-day	1.5E+00	1/mg/kg-day	2.7E-07	8.03E-07	mg/kg-day	3.0E-04	mg/kg/day	2.7E-03
				Barium	3.9E+02	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	1.4E-02	mg/kg/day	0.0E+00
				Cadmium	3.6E+02	mg/kg	2.68E-08	mg/kg-day	NC	1/mg/kg-day	NC	1.20E-07	mg/kg-day	2.5E-05	mg/kg/day	4.8E-03
				Chromium	4.8E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-02	mg/kg/day	0.0E+00
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.9E+03	mg/kg	0.00E+00	mg/kg-day	NTV	1/mg/kg-day	NTV	0.00E+00	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	5.3E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.1E-05	mg/kg/day	0.0E+00
				Selenium	5.3E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	5.0E-03	mg/kg/day	0.0E+00
				Silver	3.3E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-04	mg/kg/day	0.0E+00
				Zinc	3.9E+04	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	3.0E-01	mg/kg/day	0.0E+00
			Exp. Route Total								2.7E-07					7.5E-03
		Exposure Point Total									1.8E-06					3.8E-02
Medium Total											1.8E-06					3.8E-02
										Total of Receptor Risks Across All Media	3.7E-05	Total of Receptor Hazards Across All Media				2.1E+00

Notes:
EPC = Exposure Point Concentration
NC = Not classified as a carcinogen
NE = Not evaluated as a volatile chemical
NTV = No Toxicity Value Available
RfD = Noncancer Reference Dose

Bolded Chemicals and Bold/Underlined Risks = Exceeds a cancer risk of 1E-06 or a HQ of 0.1.
NS - Not sampled or not detected.
No garden currently exists at property based on site visit.

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RAGS PART D TABLE 7.1 RME
CALCULATION OF CHEMICAL CANCER RISKS
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Current/Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF		Cancer Risk	Intake/Exposure Concentration		RfD		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Soil	Soil	Off-Facility 5500 Maryland	Ingestion	Arsenic	1.3E+01	mg/kg	2.04E-05	mg/kg-day	1.5E+00	1/mg/kg-day	3.1E-05	1.66E-04	mg/kg-day	3.0E-04	mg/kg/day	5.5E-01
				Barium	2.1E-02	mg/kg	3.29E-04	mg/kg-day	NC	1/mg/kg-day	NC	2.68E-03	mg/kg-day	2.0E-01	mg/kg/day	1.3E-02
				Cadmium	2.4E-01	mg/kg	3.76E-05	mg/kg-day	NC	1/mg/kg-day	NC	3.07E-04	mg/kg-day	1.0E-03	mg/kg/day	3 1E-01
				Chromium	1.7E-01	mg/kg	2.66E-05	mg/kg-day	NC	1/mg/kg-day	NC	2.17E-04	mg/kg-day	1.5E+00	mg/kg/day	1.4E-04
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	1.6E-02	mg/kg	2.50E-04	mg/kg-day	NTV	1/mg/kg-day	NTV	2.05E-03	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.0E-01	mg/kg	1.57E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.28E-06	mg/kg-day	3.0E-04	mg/kg/day	4.3E-03
				Selenium	1.6E+00	mg/kg	2.50E-06	mg/kg-day	NC	1/mg/kg-day	NC	2.05E-05	mg/kg-day	5.0E-03	mg/kg/day	4.1E-03
				Silver	3.6E-01	mg/kg	5.64E-07	mg/kg-day	NC	1/mg/kg-day	NC	4.60E-06	mg/kg-day	5.0E-03	mg/kg/day	9.2E-04
				Zinc	1.0E-01	mg/kg	1.57E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.28E-06	mg/kg-day	3.0E-01	mg/kg/day	4.3E-06
			Exp. Route Total								3.1E-05					8.8E-01
			Dermal Contact	Arsenic	1.3E-01	mg/kg	1.93E-06	mg/kg-day	1.5E+00	1/mg/kg-day	2.9E-06	1.40E-05	mg/kg-day	3.0E-04	mg/kg/day	4.7E-02
				Barium	2.1E-02	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	1.4E-02	mg/kg/day	0.0E+00
				Cadmium	2.4E-01	mg/kg	1.19E-07	mg/kg-day	NC	1/mg/kg-day	NC	8.59E-07	mg/kg-day	2.5E-05	mg/kg/day	3.4E-02
				Chromium (as III)	1.7E-01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-02	mg/kg/day	0.0E+00
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	1.6E-02	mg/kg	0.00E+00	mg/kg-day	NTV	1/mg/kg-day	NTV	0.00E+00	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.0E-01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.1E-05	mg/kg/day	0.0E+00
				Selenium	1.6E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	5.0E-03	mg/kg/day	0.0E+00
				Silver	3.6E-01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-04	mg/kg/day	0.0E+00
				Zinc	1.0E-01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	3.0E-01	mg/kg/day	0.0E+00
			Exp. Route Total								2.9E-06					8.1E-02
			Produce Ingestion Future	Arsenic	1.3E-01	mg/kg	1.30E-06	mg/kg-day	1.5E+00	1/mg/kg-day	1.9E-06	1.65E-04	mg/kg-day	3.0E-04	mg/kg/day	5 5E-01
				Barium	2.1E-02	mg/kg	2.10E-05	mg/kg-day	NC	1/mg/kg-day	NC	2.66E-03	mg/kg-day	2.0E-01	mg/kg/day	1.3E-02
				Cadmium	2.4E-01	mg/kg	2.40E-06	mg/kg-day	NC	1/mg/kg-day	NC	3.04E-04	mg/kg-day	1.0E-03	mg/kg/day	3.0E-01
				Chromium	1.7E-01	mg/kg	1.70E-06	mg/kg-day	NC	1/mg/kg-day	NC	2.16E-04	mg/kg-day	1.5E+00	mg/kg/day	1.4E-04
				Copper	NS	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NS	0.00E+00	mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	1.6E-02	mg/kg	1.60E-05	mg/kg-day	NTV	1/mg/kg-day	NTV	2.03E-03	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.0E-01	mg/kg	9.98E-09	mg/kg-day	NC	1/mg/kg-day	NC	1.27E-06	mg/kg-day	3.0E-04	mg/kg/day	4.2E-03
				Selenium	1.6E+00	mg/kg	1.60E-07	mg/kg-day	NC	1/mg/kg-day	NC	2.03E-05	mg/kg-day	5.0E-03	mg/kg/day	4.1E-03
				Silver	3.6E-01	mg/kg	3.59E-08	mg/kg-day	NC	1/mg/kg-day	NC	4.56E-06	mg/kg-day	5.0E-03	mg/kg/day	9.1E-04
				Zinc	1.0E-01	mg/kg	9.98E-09	mg/kg-day	NC	1/mg/kg-day	NC	1.27E-06	mg/kg-day	3.0E-01	mg/kg/day	4.2E-06
			Exp. Route Total								1.9E-06					8.8E-01
	Exposure Medium Total										3.5E-05					1.8E+00
	Air	Off-Facility 5500 Maryland	Inhalation of Particulates	Arsenic	1.3E-01	mg/kg	1.35E-09	mg/kg-day	1.51E+01	1/mg/kg-day	2.0E-08	5.81E-09	mg/kg-day	NTV	mg/kg/day	NTV
				Barium	2.1E-02	mg/kg	2.18E-08	mg/kg-day	NC	1/mg/kg-day	NC	9.39E-08	mg/kg-day	1.4E-04	mg/kg/day	6 6E-04
				Cadmium	2.4E-01	mg/kg	2.50E-09	mg/kg-day	6.30E+00	1/mg/kg-day	1.6E-08	1.07E-08	mg/kg-day	NTV	mg/kg/day	NTV
				Chromium (as VI-nc; total-c	1.7E-01	mg/kg	1.77E-09	mg/kg-day	4.2E-01	1/mg/kg-day	7.4E-08	7.60E-09	mg/kg-day	2.9E-05	mg/kg/day	2.7E-04
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	NTV	mg/kg/day	NS
				Lead	1.6E-02	mg/kg	1.66E-08	mg/kg-day	NTV	1/mg/kg-day	NTV	7.15E-08	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.0E-01	mg/kg	1.04E-11	mg/kg-day	NC	1/mg/kg-day	NC	4.47E-11	mg/kg-day	8.6E-05	mg/kg/day	5.2E-07
				Selenium	1.6E+00	mg/kg	1.66E-10	mg/kg-day	NC	1/mg/kg-day	NC	7.15E-10	mg/kg-day	NTV	mg/kg/day	NTV
				Silver	3.6E-01	mg/kg	3.74E-11	mg/kg-day	NC	1/mg/kg-day	NC	1.61E-10	mg/kg-day	NTV	mg/kg/day	NTV
				Zinc	1.0E-01	mg/kg	1.04E-11	mg/kg-day	NC	1/mg/kg-day	NC	4.47E-11	mg/kg-day	NTV	mg/kg/day	NTV
			Exp. Route Total								1.1E-07					9.2E-04
Medium Total											3.5E-05					1.8E+00

RAGS PART D TABLE 7.1 RME
CALCULATION OF CHEMICAL CANCER RISKS
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Current/Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF		Cancer Risk	Intake/Exposure Concentration		RfD		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Water	Surface Water	Off-Facility Surface Water	Dermal Contact	Arsenic	2.2E-02	mg/L	1.37E-08	mg/kg-day	1.5E+00	1/mg/kg-day	2.1E-08	3.70E-08	mg/kg-day	3.0E-04	mg/kg/day	1.2E-04
				Barium	3.9E-01	mg/L	2.43E-07	mg/kg-day	NC	1/mg/kg-day	NC	6.56E-07	mg/kg-day	1.4E-02	mg/kg/day	4.7E-05
				Cadmium	1.8E-01	mg/L	1.12E-07	mg/kg-day	NC	1/mg/kg-day	NC	3.03E-07	mg/kg-day	2.5E-05	mg/kg/day	1.2E-02
				Chromium	1.9E-02	mg/L	1.18E-08	mg/kg-day	NC	1/mg/kg-day	NC	3.20E-08	mg/kg-day	2.0E-02	mg/kg/day	1.6E-06
				Copper	NS	mg/L		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.7E-01	mg/L	1.68E-08	mg/kg-day	NTV	1/mg/kg-day	NTV	4.54E-08	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	NS	mg/L		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	2.1E-05	mg/kg/day	NS
				Selenium	4.6E-03	mg/L	2.86E-09	mg/kg-day	NC	1/mg/kg-day	NC	7.74E-09	mg/kg-day	5.0E-03	mg/kg/day	1.5E-06
				Silver	4.2E-01	mg/L	1.55E-05	mg/kg-day	NC	1/mg/kg-day	NC	4.19E-05	mg/kg-day	2.0E-04	mg/kg/day	2.1E-01
				Zinc	1.3E-03	mg/L	4.86E-10	mg/kg-day	NC	1/mg/kg-day	NC	1.31E-09	mg/kg-day	3.0E-01	mg/kg/day	4.4E-09
			Exp. Route Total								2.1E-08					2.2E-01
		Exposure Point Total									2.1E-08					2.2E-01
Medium Total											2.1E-08					2.2E-01
Sediment	Sediment	Off-Facility Sediment	Ingestion	Arsenic	8.1E-01	mg/kg	9.91E-07	mg/kg-day	1.5E+00	1/mg/kg-day	1.5E-06	3.11E-06	mg/kg-day	3.0E-04	mg/kg/day	1.0E-02
				Barium	3.9E+02	mg/kg	4.70E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.48E-05	mg/kg-day	2.0E-01	mg/kg/day	7.4E-05
				Cadmium	3.6E+02	mg/kg	4.43E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.39E-05	mg/kg-day	1.0E-03	mg/kg/day	1.4E-02
				Chromium	4.8E-01	mg/kg	5.81E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.82E-06	mg/kg-day	1.5E+00	mg/kg/day	1.2E-06
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.9E-03	mg/kg	3.54E-05	mg/kg-day	NTV	1/mg/kg-day	NTV	1.11E-04	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	5.3E+00	mg/kg	6.43E-08	mg/kg-day	NC	1/mg/kg-day	NC	2.02E-07	mg/kg-day	3.0E-04	mg/kg/day	6.7E-04
				Selenium	5.3E+00	mg/kg	6.42E-08	mg/kg-day	NC	1/mg/kg-day	NC	2.02E-07	mg/kg-day	5.0E-03	mg/kg/day	4.0E-05
				Silver	3.3E+01	mg/kg	3.96E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.24E-06	mg/kg-day	5.0E-03	mg/kg/day	2.5E-04
				Zinc	3.9E+04	mg/kg	4.72E+04	mg/kg-day	NC	1/mg/kg-day	NC	1.48E-03	mg/kg-day	3.0E-01	mg/kg/day	4.9E-03
			Exp. Route Total								1.5E-06					3.0E-02
			Dermal Contact	Arsenic	8.1E-01	mg/kg	1.80E-07	mg/kg-day	1.5E+00	1/mg/kg-day	2.7E-07	8.03E-07	mg/kg-day	3.0E-04	mg/kg/day	2.7E-03
				Barium	3.9E+02	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	1.4E-02	mg/kg/day	0.0E+00
				Cadmium	3.6E+02	mg/kg	2.68E-08	mg/kg-day	NC	1/mg/kg-day	NC	1.20E-07	mg/kg-day	2.5E-05	mg/kg/day	4.8E-03
				Chromium	4.8E-01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-02	mg/kg/day	0.0E+00
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.9E-03	mg/kg	0.00E+00	mg/kg-day	NTV	1/mg/kg-day	NTV	0.00E+00	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	5.3E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.1E-05	mg/kg/day	0.0E+00
				Selenium	5.3E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	5.0E-03	mg/kg/day	0.0E+00
				Silver	3.3E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-04	mg/kg/day	0.0E+00
				Zinc	3.9E+04	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	3.0E-01	mg/kg/day	0.0E+00
			Exp. Route Total								2.7E-07					7.5E-03
		Exposure Point Total									1.8E-06					3.8E-02
Medium Total											1.8E-06					3.8E-02
										Total of Receptor Risks Across All Media	3.7E-05			Total of Receptor Hazards Across All Media		2.1E+00

Notes:
EPC = Exposure Point Concentration
NC = Not classified as a carcinogen
NE = Not evaluated as a volatile chemical
NTV = No Toxicity Value Available
RfD = Noncancer Reference Dose

Bolded Chemicals and Bold/Underlined Risks = Exceeds a cancer risk of 1E-06 or a HQ of 0.1.
NS - Not sampled or not detected.
No garden currently exists at property based on site visit.

RAGS PART D TABLE 7.1 RME
CALCULATION OF CHEMICAL CANCER RISKS
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Current/Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of *Potential Concern*	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	*Intake/Exposure Concentration*		*CSF*		Cancer Risk	*Intake/Exposure Concentration*		RfD		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Soil	Soil	Off-Facility 5515 Thomas	Ingestion	Arsenic	1.2E+01	mg/kg	1.80E-05	mg/kg-day	1.5E+00	1/mg/kg-day	2.7E-05	1.47E-04	mg/kg-day	3.0E-04	mg/kg/day	4.9E-01
				Barium	1.9E+02	mg/kg	2.97E-04	mg/kg-day	NC	1/mg/kg-day	NC	2.43E-03	mg/kg-day	2.0E-01	mg/kg/day	1.2E-02
				Cadmium	1.0E-01	mg/kg	1.57E-05	mg/kg-day	NC	1/mg/kg-day	NC	1.28E-04	mg/kg-day	1.0E-03	mg/kg/day	1.3E-01
				Chromium	1.6E-01	mg/kg	2.50E-05	mg/kg-day	NC	1/mg/kg-day	NC	2.05E-04	mg/kg-day	1.5E+00	mg/kg/day	1.4E-04
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	1.6E-02	mg/kg	2.50E-04	mg/kg-day	NTV	1/mg/kg-day	NTV	2.05E-03	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.1E-01	mg/kg	1.72E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.41E-06	mg/kg-day	3.0E-04	mg/kg/day	4.7E-03
				Selenium	9.6E-01	mg/kg	1.50E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.23E-05	mg/kg-day	5.0E-03	mg/kg/day	2.5E-03
				Silver	3.6E-01	mg/kg	5.64E-07	mg/kg-day	NC	1/mg/kg-day	NC	4.60E-06	mg/kg-day	5.0E-03	mg/kg/day	9.2E-04
				Zinc	6.4E-02	mg/kg	9.94E-04	mg/kg-day	NC	1/mg/kg-day	NC	8.12E-03	mg/kg-day	3.0E-01	mg/kg/day	2.7E-02
			Exp. Route Total								2.7E-05					6.7E-01
			Dermal Contact	Arsenic	1.2E-01	mg/kg	1.71E-06	mg/kg-day	1.5E-00	1/mg/kg-day	2.6E-06	1.24E-05	mg/kg-day	3.0E-04	mg/kg/day	4.1E-02
				Barium	1.9E-02	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	1.4E-02	mg/kg/day	0.0E+00
				Cadmium	*1.0E-01*	mg/kg	*4.94E-08*	mg/kg-day	*NC*	1/mg/kg-day	*NC*	*3.58E-07*	mg/kg-day	2.5E-05	mg/kg/day	1.4E-02
				Chromium (as III)	1.6E-01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-02	mg/kg/day	0.0E+00
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	1.6E-02	mg/kg	0.00E+00	mg/kg-day	NTV	1/mg/kg-day	NTV	0.00E+00	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.1E-01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.1E-05	mg/kg/day	0.0E+00
				Selenium	9.6E-01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	5.0E-03	mg/kg/day	0.0E+00
				Silver	3.6E-01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-04	mg/kg/day	0.0E+00
				Zinc	6.4E-02	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	3.0E-01	mg/kg/day	0.0E+00
			Exp. Route Total								2.6E-06					5.5E-02
			Produce Ingestion Future	Arsenic	*1.2E-01*	mg/kg	*1.15E-06*	mg/kg-day	*1.5E-00*	1/mg/kg-day	*1.7E-06*	*1.46E-04*	mg/kg-day	3.0E-04	mg/kg/day	*4.9E-01*
				Barium	1.9E-02	mg/kg	1.90E-05	mg/kg-day	NC	1/mg/kg-day	NC	2.41E-03	mg/kg-day	2.0E-01	mg/kg/day	1.2E-02
				Cadmium	1.0E-01	mg/kg	9.98E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.27E-04	mg/kg-day	1.0E-03	mg/kg/day	1.3E-01
				Chromium	*1.6E-01*	mg/kg	*1.60E-06*	mg/kg-day	*NC*	1/mg/kg-day	*NC*	*2.03E-04*	mg/kg-day	*1.5E+00*	mg/kg/day	*1.4E-04*
				Copper	NS	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NS	0.00E+00	mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	1.6E-02	mg/kg	1.60E-05	mg/kg-day	NTV	1/mg/kg-day	NTV	2.03E-03	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	*1.1E-01*	mg/kg	*1.10E-08*	mg/kg-day	*NC*	1/mg/kg-day	*NC*	*1.39E-06*	mg/kg-day	*3.0E-04*	mg/kg/day	*4.6E-03*
				Selenium	9.6E-01	mg/kg	9.58E-08	mg/kg-day	NC	1/mg/kg-day	NC	1.22E-05	mg/kg-day	5.0E-03	mg/kg/day	2.4E-03
				Silver	3.6E-01	mg/kg	3.59E-08	mg/kg-day	NC	1/mg/kg-day	NC	4.56E-06	mg/kg-day	5.0E-03	mg/kg/day	9.1E-04
				Zinc	6.4E-02	mg/kg	6.34E-05	mg/kg-day	*NC*	1/mg/kg-day	*NC*	*8.05E-03*	mg/kg-day	3.0E-01	mg/kg/day	2.7E-02
			Exp. Route Total								1.7E-06					6.6E-01
	Exposure Medium Total										3.1E-05					1.4E+00
	Air	Off-Facility 5515 Thomas	*Inhalation of* Particulates	Arsenic	1.2E+01	mg/kg	1.20E-09	mg/kg-day	1.51E+01	1/mg/kg-day	1.8E-08	5.14E-09	mg/kg-day	NTV	mg/kg/day	NTV
				Barium	1.9E-02	mg/kg	1.98E-08	mg/kg-day	NC	1/mg/kg-day	NC	8.49E-08	mg/kg-day	1.4E-04	mg/kg/day	5.9E-04
				Cadmium	1.0E+01	mg/kg	1.04E-09	mg/kg-day	6.30E+00	1/mg/kg-day	6.6E-09	4.47E-09	mg/kg-day	NTV	mg/kg/day	NTV
				Chromium (as VI-nc; total-c	1.6E-01	mg/kg	1.66E-09	mg/kg-day	4.2E+01	1/mg/kg-day	7.0E-08	7.15E-09	mg/kg-day	2.9E-05	mg/kg/day	2.5E-04
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	NTV	mg/kg/day	NS
				Lead	1.6E-02	mg/kg	1.66E-08	mg/kg-day	NTV	1/mg/kg-day	NTV	7.15E-08	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.1E-01	mg/kg	1.14E-11	mg/kg-day	NC	1/mg/kg-day	NC	4.92E-11	mg/kg-day	8.6E-05	mg/kg/day	5.7E-07
				Selenium	9.6E-01	mg/kg	9.98E-11	mg/kg-day	NC	1/mg/kg-day	NC	4.29E-10	mg/kg-day	NTV	mg/kg/day	NTV
				Silver	3.6E-01	mg/kg	3.74E-11	mg/kg-day	NC	1/mg/kg-day	NC	1.61E-10	mg/kg-day	NTV	mg/kg/day	NTV
				Zinc	6.4E-02	mg/kg	6.60E-08	mg/kg-day	NC	1/mg/kg-day	NC	2.84E-07	mg/kg-day	NTV	mg/kg/day	NTV
			Exp. Route Total								9.5E-08					8.4E-04
Medium Total											3.1E-05					1.4E+00

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RAGS PART D TABLE 7.1 RME
CALCULATION OF CHEMICAL CANCER RISKS
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Current/Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF		Cancer Risk	Intake/Exposure Concentration		RfD		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Water	Surface Water	Off-Facility Surface Water	Dermal Contact	Arsenic	2.2E-02	mg/L	1.37E-08	mg/kg-day	1.5E+00	1/mg/kg-day	2.1E-08	3.70E-08	mg/kg-day	3.0E-04	mg/kg/day	1.2E-04
				Barium	3.9E-01	mg/L	2.43E-07	mg/kg-day	NC	1/mg/kg-day	NC	6.56E-07	mg/kg-day	1.4E-02	mg/kg/day	4.7E-05
				Cadmium	1.8E-01	mg/L	1.12E-07	mg/kg-day	NC	1/mg/kg-day	NC	3.03E-07	mg/kg-day	2.5E-05	mg/kg/day	1.2E-02
				Chromium	1.9E-02	mg/L	1.18E-08	mg/kg-day	NC	1/mg/kg-day	NC	3.20E-08	mg/kg-day	2.0E-02	mg/kg/day	1.6E-06
				Copper	NS	mg/L		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.7E-01	mg/L	1.68E-08	mg/kg-day	NTV	1/mg/kg-day	NTV	4.54E-08	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	NS	mg/L		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	2.1E-05	mg/kg/day	NS
				Selenium	4.6E-03	mg/L	2.86E-09	mg/kg-day	NC	1/mg/kg-day	NC	7.74E-09	mg/kg-day	5.0E-03	mg/kg/day	1.5E-06
				Silver	4.2E-01	mg/L	1.55E-05	mg/kg-day	NC	1/mg/kg-day	NC	4.19E-05	mg/kg-day	2.0E-04	mg/kg/day	2.1E-01
				Zinc	1.3E-03	mg/L	4.86E-10	mg/kg-day	NC	1/mg/kg-day	NC	1.31E-09	mg/kg-day	3.0E-01	mg/kg/day	4.4E-09
			Exp. Route Total								2.1E-08					2.2E-01
		Exposure Point Total									2.1E-08					2.2E-01
Medium Total											2.1E-08					2.2E-01
Sediment	Sediment	Off-Facility Sediment	Ingestion	Arsenic	8.1E+01	mg/kg	9.91E-07	mg/kg-day	1.5E+00	1/mg/kg-day	1.5E-06	3.11E-06	mg/kg-day	3.0E-04	mg/kg/day	1.0E-02
				Barium	3.9E+02	mg/kg	4.70E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.48E-05	mg/kg-day	2.0E-01	mg/kg/day	7.4E-05
				Cadmium	3.6E+02	mg/kg	4.43E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.39E-05	mg/kg-day	1.0E-03	mg/kg/day	1.4E-02
				Chromium	4.8E+01	mg/kg	5.81E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.82E-06	mg/kg-day	1.5E+00	mg/kg/day	1.2E-06
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.9E+03	mg/kg	3.54E-05	mg/kg-day	NTV	1/mg/kg-day	NTV	1.11E-04	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	5.3E+00	mg/kg	6.43E-08	mg/kg-day	NC	1/mg/kg-day	NC	2.02E-07	mg/kg-day	3.0E-04	mg/kg/day	6.7E-04
				Selenium	5.3E+00	mg/kg	6.42E-08	mg/kg-day	NC	1/mg/kg-day	NC	2.02E-07	mg/kg-day	5.0E-03	mg/kg/day	4.0E-05
				Silver	3.3E+01	mg/kg	3.96E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.24E-06	mg/kg-day	5.0E-03	mg/kg/day	2.5E-04
				Zinc	3.9E+04	mg/kg	4.72E-04	mg/kg-day	NC	1/mg/kg-day	NC	1.48E-03	mg/kg-day	3.0E-01	mg/kg/day	4.9E-03
			Exp. Route Total								1.5E-06					3.0E-02
			Dermal Contact	Arsenic	8.1E+01	mg/kg	1.80E-07	mg/kg-day	1.5E+00	1/mg/kg-day	2.7E-07	8.03E-07	mg/kg-day	3.0E-04	mg/kg/day	2.7E-03
				Barium	3.9E+02	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	1.4E-02	mg/kg/day	0.0E+00
				Cadmium	3.6E+02	mg/kg	2.68E-08	mg/kg-day	NC	1/mg/kg-day	NC	1.20E-07	mg/kg-day	2.5E-05	mg/kg/day	4.8E-03
				Chromium	4.8E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-02	mg/kg/day	0.0E+00
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.9E+03	mg/kg	0.00E+00	mg/kg-day	NTV	1/mg/kg-day	NTV	0.00E+00	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	5.3E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.1E-05	mg/kg/day	0.0E+00
				Selenium	5.3E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	5.0E-03	mg/kg/day	0.0E+00
				Silver	3.3E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-04	mg/kg/day	0.0E+00
				Zinc	3.9E+04	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	3.0E-01	mg/kg/day	0.0E+00
			Exp. Route Total								2.7E-07					7.5E-03
		Exposure Point Total									1.8E-06					3.8E-02
Medium Total											1.8E-06					3.8E-02
											Total of Receptor Risks Across All Media	3.3E-05		Total of Receptor Hazards Across All Media		1.6E+00

Notes:

EPC = Exposure Point Concentration
NC = Not classified as a carcinogen
NE = Not evaluated as a volatile chemical
NTV = No Toxicity Value Available
RfD = Noncancer Reference Dose

Bolded Chemicals and Bold/Underlined Risks = Exceeds a cancer risk of 1E-06 or a HQ of 0.1.
NS - *Not sampled or not detected.*
No garden currently exists at property based on site visit.

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RAGS PART D TABLE 7.1 RME
CALCULATION OF CHEMICAL CANCER RISKS
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Current/Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF		Cancer	Intake/Exposure Concentration		RfD		Hazard
							Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
Soil	Soil	Off-Facility	Ingestion	Arsenic	1.1E+01	mg/kg	1.72E-05	mg/kg-day	1.5E+00	1/mg/kg-day	2.6E-05	1.41E-04	mg/kg-day	3.0E-04	mg/kg/day	4.7E-01
		5432 Maryland		Barium	2.1E+02	mg/kg	3.29E-04	mg/kg-day	NC	1/mg/kg-day	NC	2.68E-03	mg/kg-day	2.0E-01	mg/kg/day	1.3E-02
				Cadmium	2.1E+01	mg/kg	3.29E-05	mg/kg-day	NC	1/mg/kg-day	NC	2.68E-04	mg/kg-day	1.0E-03	mg/kg/day	2.7E-01
				Chromium	1.8E+01	mg/kg	2.82E-05	mg/kg-day	NC	1/mg/kg-day	NC	2.30E-04	mg/kg-day	1.5E+00	mg/kg/day	1.5E-04
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.7E+02	mg/kg	4.23E-04	mg/kg-day	NTV	1/mg/kg-day	NTV	3.45E-03	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.3E-01	mg/kg	2.04E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.66E-06	mg/kg-day	3.0E-04	mg/kg/day	5.5E-03
				Selenium	1.3E+00	mg/kg	2.04E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.66E-05	mg/kg-day	5.0E-03	mg/kg/day	3.3E-03
				Silver	5.4E-01	mg/kg	8.45E-07	mg/kg-day	NC	1/mg/kg-day	NC	6.90E-06	mg/kg-day	5.0E-03	mg/kg/day	1.4E-03
				Zinc	1.0E-03	mg/kg	1.57E-03	mg/kg-day	NC	1/mg/kg-day	NC	1.28E-02	mg/kg-day	3.0E-01	mg/kg/day	4.3E-02
			Exp. Route Total								2.6E-05					8.0E-01
			Dermal Contact	Arsenic	1.1E+01	mg/kg	1.63E-06	mg/kg-day	1.5E+00	1/mg/kg-day	2.4E-06	1.18E-05	mg/kg-day	3.0E-04	mg/kg/day	3.9E-02
				Barium	2.1E+02	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	1.4E-02	mg/kg/day	0.0E+00
				Cadmium	2.1E+01	mg/kg	1.04E-07	mg/kg-day	NC	1/mg/kg-day	NC	7.52E-07	mg/kg-day	2.5E-05	mg/kg/day	3.0E-02
				Chromium (as III)	1.8E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-02	mg/kg/day	0.0E+00
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.7E+02	mg/kg	0.00E+00	mg/kg-day	NTV	1/mg/kg-day	NTV	0.00E+00	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.3E-01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.1E-05	mg/kg/day	0.0E+00
				Selenium	1.3E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	5.0E-03	mg/kg/day	0.0E+00
				Silver	5.4E-01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-04	mg/kg/day	0.0E+00
				Zinc	1.0E+03	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	3.0E-01	mg/kg/day	0.0E+00
			Exp. Route Total								2.4E-06					6.9E-02
			Produce Ingestion	Arsenic	*1.1E-01*	*mg/kg*	1.10E-06	*mg/kg-day*	*1.5E+00*	*1/mg/kg-day*	*1.6E-06*	1.39E-04	*mg/kg-day*	3.0E-04	mg/kg/day	*4.6E-01*
			Future	Barium	2.1E+02	mg/kg	2.10E-05	mg/kg-day	NC	1/mg/kg-day	NC	2.66E-03	mg/kg-day	2.0E-01	mg/kg/day	1.3E-02
				Cadmium	2.1E+01	mg/kg	2.10E-06	mg/kg-day	NC	1/mg/kg-day	NC	2.66E-04	mg/kg-day	1.0E-03	mg/kg/day	2.7E-01
				Chromium	1.8E+01	mg/kg	1.80E-06	mg/kg-day	NC	1/mg/kg-day	NC	2.28E-04	mg/kg-day	1.5E+00	mg/kg/day	1.5E-04
				Copper	NS	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NS	0.00E+00	mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.7E+02	mg/kg	2.69E-05	mg/kg-day	NTV	1/mg/kg-day	NTV	3.42E-03	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.3E-01	mg/kg	1.30E-08	mg/kg-day	NC	1/mg/kg-day	NC	1.65E-06	mg/kg-day	3.0E-04	mg/kg/day	5.5E-03
				Selenium	1.3E+00	mg/kg	1.30E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.65E-05	mg/kg-day	5.0E-03	mg/kg/day	3.3E-03
				Silver	5.4E-01	mg/kg	5.39E-08	mg/kg-day	NC	1/mg/kg-day	NC	6.85E-06	mg/kg-day	5.0E-03	mg/kg/day	1.4E-03
				Zinc	1.0E+03	mg/kg	9.98E-05	mg/kg-day	NC	1/mg/kg-day	NC	1.27E-02	mg/kg-day	3.0E-01	mg/kg/day	4.2E-02
			Exp. Route Total								*1.6E-06*					*8.0E-01*
	Exposure Medium Total										3.0E-05					1.7E+00
	Air	Off-Facility	Inhalation of Particulates	Arsenic	1.1E-01	mg/kg	1.14E-09	mg/kg-day	1.51E-01	1/mg/kg-day	1.7E-08	4.92E-09	mg/kg-day	NTV	mg/kg/day	NTV
		5432 Maryland		Barium	2.1E-02	mg/kg	2.18E-08	mg/kg-day	NC	1/mg/kg-day	NC	9.39E-08	mg/kg-day	1.4E-04	mg/kg/day	6.6E-04
				Cadmium	2.1E-01	mg/kg	2.18E-09	mg/kg-day	6.30E+00	1/mg/kg-day	1.4E-08	9.39E-09	mg/kg-day	NTV	mg/kg/day	NTV
				Chromium (as VI-nc; total-c	1.8E-01	mg/kg	1.87E-09	mg/kg-day	4.2E-01	1/mg/kg-day	7.9E-08	8.05E-09	mg/kg-day	2.9E-05	mg/kg/day	2.8E-04
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	NTV	mg/kg/day	NS
				Lead	2.7E-02	mg/kg	2.81E-08	mg/kg-day	NTV	1/mg/kg-day	NTV	1.21E-07	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.3E-01	mg/kg	1.35E-11	mg/kg-day	NC	1/mg/kg-day	NC	5.81E-11	mg/kg-day	8.6E-05	mg/kg/day	6.8E-07
				Selenium	*1.3E-00*	*mg/kg*	*1.35E-10*	*mg/kg-day*	*NC*	*1/mg/kg-day*	*NC*	*5.81E-10*	*mg/kg-day*	*NTV*	*mg/kg/day*	*NTV*
				Silver	5.4E-01	mg/kg	5.62E-11	mg/kg-day	NC	1/mg/kg-day	NC	2.41E-10	mg/kg-day	NTV	mg/kg/day	NTV
				Zinc	1.0E-03	mg/kg	1.04E-07	mg/kg-day	NC	1/mg/kg-day	NC	4.47E-07	mg/kg-day	NTV	mg/kg/day	NTV
			Exp. Route Total								1.1E-07					9.4E-04
Medium Total											3.0E-05					1.7E+00

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RAGS PART D TABLE 7.1 RME
CALCULATION OF CHEMICAL CANCER RISKS
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Current/Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF		Cancer Risk	Intake/Exposure Concentration		RfD		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Water	Surface Water	Off-Facility Surface Water	Dermal Contact	Arsenic	2.2E-02	mg/L	1.37E-08	mg/kg-day	1.5E+00	1/mg/kg-day	2.1E-08	3.70E-08	mg/kg-day	3.0E-04	mg/kg/day	1.2E-04
				Barium	3.9E-01	mg/L	2.43E-07	mg/kg-day	NC	1/mg/kg-day	NC	6.56E-07	mg/kg-day	1.4E-02	mg/kg/day	4.7E-05
				Cadmium	1.8E-01	mg/L	1.12E-07	mg/kg-day	NC	1/mg/kg-day	NC	3.03E-07	mg/kg-day	2.5E-05	mg/kg/day	1.2E-02
				Chromium	1.9E-02	mg/L	1.18E-08	mg/kg-day	NC	1/mg/kg-day	NC	3.20E-08	mg/kg-day	2.0E-02	mg/kg/day	1.6E-06
				Copper	NS	mg/L		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.7E-01	mg/L	1.68E-08	mg/kg-day	NTV	1/mg/kg-day	NTV	4.54E-08	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	NS	mg/L		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	2.1E-05	mg/kg/day	NS
				Selenium	4.6E-03	mg/L	2.86E-09	mg/kg-day	NC	1/mg/kg-day	NC	7.74E-09	mg/kg-day	5.0E-03	mg/kg/day	1.5E-06
				Silver	4.2E-01	mg/L	1.55E-05	mg/kg-day	NC	1/mg/kg-day	NC	4.19E-05	mg/kg-day	2.0E-04	mg/kg/day	2.1E-01
				Zinc	1.3E-03	mg/L	4.86E-10	mg/kg-day	NC	1/mg/kg-day	NC	1.31E-09	mg/kg-day	3.0E-01	mg/kg/day	4.4E-09
			Exp. Route Total								2.1E-08					2.2E-01
		Exposure Point Total									2.1E-08					2.2E-01
Medium Total											2.1E-08					2.2E-01
Sediment	Sediment	Off-Facility Sediment	Ingestion	Arsenic	8.1E+01	mg/kg	9.91E-07	mg/kg-day	1.5E+00	1/mg/kg-day	1.5E-06	3.11E-06	mg/kg-day	3.0E-04	mg/kg/day	1.0E-02
				Barium	3.9E-02	mg/kg	4.70E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.48E-05	mg/kg-day	2.0E-01	mg/kg/day	7.4E-05
				Cadmium	3.6E-02	mg/kg	4.43E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.39E-05	mg/kg-day	1.0E-03	mg/kg/day	1.4E-02
				Chromium	4.8E-01	mg/kg	5.81E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.82E-06	mg/kg-day	1.5E+00	mg/kg/day	1.2E-06
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.9E-03	mg/kg	3.54E-05	mg/kg-day	NTV	1/mg/kg-day	NTV	1.11E-04	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	5.3E-00	mg/kg	6.43E-08	mg/kg-day	NC	1/mg/kg-day	NC	2.02E-07	mg/kg-day	3.0E-04	mg/kg/day	6.7E-04
				Selenium	5.3E-00	mg/kg	6.42E-08	mg/kg-day	NC	1/mg/kg-day	NC	2.02E-07	mg/kg-day	5.0E-03	mg/kg/day	4.0E-05
				Silver	3.3E-01	mg/kg	3.96E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.24E-06	mg/kg-day	5.0E-03	mg/kg/day	2.5E-04
				Zinc	3.9E-04	mg/kg	4.72E-04	mg/kg-day	NC	1/mg/kg-day	NC	1.48E-03	mg/kg-day	3.0E-01	mg/kg/day	4.9E-03
			Exp. Route Total								1.5E-06					3.0E-02
			Dermal Contact	Arsenic	8.1E+01	mg/kg	1.80E-07	mg/kg-day	1.5E+00	1/mg/kg-day	2.7E-07	8.03E-07	mg/kg-day	3.0E-04	mg/kg/day	2.7E-03
				Barium	3.9E-02	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	1.4E-02	mg/kg/day	0.0E+00
				Cadmium	3.6E-02	mg/kg	2.68E-08	mg/kg-day	NC	1/mg/kg-day	NC	1.20E-07	mg/kg-day	2.5E-05	mg/kg/day	4.8E-03
				Chromium	4.8E-01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-02	mg/kg/day	0.0E+00
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.9E-03	mg/kg	0.00E+00	mg/kg-day	NTV	1/mg/kg-day	NTV	0.00E+00	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	5.3E-00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.1E-05	mg/kg/day	0.0E+00
				Selenium	5.3E-00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	5.0E-03	mg/kg/day	0.0E+00
				Silver	3.3E-01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-04	mg/kg/day	0.0E+00
				Zinc	3.9E-04	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	3.0E-01	mg/kg/day	0.0E+00
			Exp. Route Total								2.7E-07					7.5E-03
		Exposure Point Total									1.8E-06					3.8E-02
Medium Total											1.8E-06					3.8E-02
											Total of Receptor Risks Across All Media	3.2E-05	Total of Receptor Hazards Across All Media			1.9E+00

Notes:

EPC = Exposure Point Concentration
NC = Not classified as a carcinogen
NE = Not evaluated as a volatile chemical
NTV = No Toxicity Value Available
RfD = Noncancer Reference Dose

Bolded Chemicals and Bold/Underlined Risks = Exceeds a cancer risk of 1E-06 or a HQ of 0.1.
NS - Not sampled or not detected.
No garden currently exists at property based on site visit.

RAGS PART D TABLE 7.1 RME
CALCULATION OF CHEMICAL CANCER RISKS
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Current/Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF		Cancer Risk	Intake/Exposure Concentration		RfD		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Soil	Soil	Off-Facility 4000 Collinsville Rd	Ingestion	Arsenic	8.8E-00	mg/kg	1.38E-05	mg/kg-day	1.5E-00	1/mg/kg-day	2.1E-05	1.13E-04	mg/kg-day	3.0E-04	mg/kg/day	3.8E-01
				Barium	1.7E-02	mg/kg	2.66E-04	mg/kg-day	NC	1/mg/kg-day	NC	2.17E-03	mg/kg-day	2.0E-01	mg/kg/day	1.1E-02
				Cadmium	1.8E-01	mg/kg	2.82E-05	mg/kg-day	NC	1/mg/kg-day	NC	2.30E-04	mg/kg-day	1.0E-03	mg/kg/day	2.3E-01
				Chromium	1.8E-01	mg/kg	2.82E-05	mg/kg-day	NC	1/mg/kg-day	NC	2.30E-04	mg/kg-day	1.5E+00	mg/kg/day	1.5E-04
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.4E-02	mg/kg	3.76E-04	mg/kg-day	NTV	1/mg/kg-day	NTV	3.07E-03	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.3E-01	mg/kg	2.04E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.66E-06	mg/kg-day	3.0E-04	mg/kg/day	5.5E-03
				Selenium	6.0E-01	mg/kg	9.39E-07	mg/kg-day	NC	1/mg/kg-day	NC	7.67E-06	mg/kg-day	5.0E-03	mg/kg/day	1.5E-03
				Silver	5.5E-01	mg/kg	8.61E-07	mg/kg-day	NC	1/mg/kg-day	NC	7.03E-06	mg/kg-day	5.0E-03	mg/kg/day	1.4E-03
				Zinc	8.4E-02	mg/kg	1.32E-03	mg/kg-day	NC	1/mg/kg-day	NC	1.07E-02	mg/kg-day	3.0E-01	mg/kg/day	3.6E-02
			Exp. Route Total								2.1E-05					6.6E-01
			Dermal Contact	Arsenic	8.8E-00	mg/kg	1.30E-06	mg/kg-day	1.5E-00	1/mg/kg-day	2.0E-06	9.45E-06	mg/kg-day	3.0E-04	mg/kg/day	3.2E-02
				Barium	1.7E-02	mg/kg	0.00E-00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	1.4E-02	mg/kg/day	0.0E+00
				Cadmium	1.8E-01	mg/kg	8.90E-08	mg/kg-day	NC	1/mg/kg-day	NC	6.44E-07	mg/kg-day	2.5E-05	mg/kg/day	2.6E-02
				Chromium (as III)	1.8E-01	mg/kg	0.00E-00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-02	mg/kg/day	0.0E+00
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.4E-02	mg/kg	0.00E-00	mg/kg-day	NTV	1/mg/kg-day	NTV	0.00E+00	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.3E-01	mg/kg	0.00E-00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.1E-05	mg/kg/day	0.0E+00
				Selenium	6.0E-01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	5.0E-03	mg/kg/day	0.0E+00
				Silver	5.5E-01	mg/kg	0.00E-00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-04	mg/kg/day	0.0E+00
				Zinc	8.4E-02	mg/kg	0.00E-00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	3.0E-01	mg/kg/day	0.0E+00
			Exp. Route Total								2.0E-06					5.7E-02
			Produce Ingestion Future	Arsenic	8.8E-00	mg/kg	8.78E-07	mg/kg-day	1.5E-00	1/mg/kg-day	1.3E-06	1.12E-04	mg/kg-day	3.0E-04	mg/kg/day	3.7E-01
				Barium	1.7E-02	mg/kg	1.70E-05	mg/kg-day	NC	1/mg/kg-day	NC	2.16E-03	mg/kg-day	2.0E-01	mg/kg/day	1.1E-02
				Cadmium	1.8E-01	mg/kg	1.80E-06	mg/kg-day	NC	1/mg/kg-day	NC	2.28E-04	mg/kg-day	1.0E-03	mg/kg/day	2.3E-01
				Chromium	1.8E+01	mg/kg	1.80E-06	mg/kg-day	NC	1/mg/kg-day	NC	2.28E-04	mg/kg-day	1.5E+00	mg/kg/day	1.5E-04
				Copper	NS	mg/kg	0.00E-00	mg/kg-day	NC	1/mg/kg-day	NS	0.00E+00	mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.4E+02	mg/kg	2.40E-05	mg/kg-day	NTV	1/mg/kg-day	NTV	3.04E-03	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.3E-01	mg/kg	1.30E-08	mg/kg-day	NC	1/mg/kg-day	NC	1.65E-06	mg/kg-day	3.0E-04	mg/kg/day	5.5E-03
				Selenium	6.0E-01	mg/kg	5.99E-08	mg/kg-day	NC	1/mg/kg-day	NC	7.61E-06	mg/kg-day	5.0E-03	mg/kg/day	1.5E-03
				Silver	5.5E-01	mg/kg	5.49E-08	mg/kg-day	NC	1/mg/kg-day	NC	6.97E-06	mg/kg-day	5.0E-03	mg/kg/day	1.4E-03
				Zinc	8.4E-02	mg/kg	8.38E-05	mg/kg-day	NC	1/mg/kg-day	NC	1.07E-02	mg/kg-day	3.0E-01	mg/kg/day	3.6E-02
			Exp. Route Total								1.3E-06					6.5E-01
	Exposure Medium Total										2.4E-05					1.4E+00
	Air	Off-Facility 4000 Collinsville Rd	Inhalation of Particulates	Arsenic	8.8E-00	mg/kg	9.15E-10	mg/kg-day	1.51E-01	1/mg/kg-day	1.4E-08	3.93E-09	mg/kg-day	NTV	mg/kg/day	NTV
				Barium	1.7E-02	mg/kg	1.77E-08	mg/kg-day	NC	1/mg/kg-day	NC	7.60E-08	mg/kg-day	1.4E-04	mg/kg/day	5.3E-04
				Cadmium	1.8E+01	mg/kg	1.87E-09	mg/kg-day	6.30E+00	1/mg/kg-day	1.2E-08	8.05E-09	mg/kg-day	NTV	mg/kg/day	NTV
				Chromium (as VI-nc; total-c	1.8E-01	mg/kg	1.87E-09	mg/kg-day	4.2E-01	1/mg/kg-day	7.9E-08	8.05E-09	mg/kg-day	2.9E-05	mg/kg/day	2.8E-04
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	NTV	mg/kg/day	NS
				Lead	2.4E+02	mg/kg	2.50E-08	mg/kg-day	NTV	1/mg/kg-day	NTV	1.07E-07	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.3E-01	mg/kg	1.35E-11	mg/kg-day	NC	1/mg/kg-day	NC	5.81E-11	mg/kg-day	8.6E-05	mg/kg/day	6.8E-07
				Selenium	6.0E-01	mg/kg	6.24E-11	mg/kg-day	NC	1/mg/kg-day	NC	2.68E-10	mg/kg-day	NTV	mg/kg/day	NTV
				Silver	5.5E-01	mg/kg	5.72E-11	mg/kg-day	NC	1/mg/kg-day	NC	2.46E-10	mg/kg-day	NTV	mg/kg/day	NTV
				Zinc	8.4E-02	mg/kg	8.74E-08	mg/kg-day	NC	1/mg/kg-day	NC	3.76E-07	mg/kg-day	NTV	mg/kg/day	NTV
			Exp. Route Total								1.0E-07					8.1E-04
Medium Total											2.4E-05					1.4E+00

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RAGS PART D TABLE 7.1 RME
CALCULATION OF CHEMICAL CANCER RISKS
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Current/Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF		Cancer Risk	Intake/Exposure Concentration		RfD		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Water	Surface Water	Off-Facility Surface Water	Dermal Contact	Arsenic	2 2E-02	mg/L	1.37E-08	mg/kg-day	1.5E+00	1/mg/kg-day	2.1E-08	3.70E-08	mg/kg-day	3.0E-04	mg/kg/day	1.2E-04
				Barium	3.9E-01	mg/L	2.43E-07	mg/kg-day	NC	1/mg/kg-day	NC	6.56E-07	mg/kg-day	1.4E-02	mg/kg/day	4.7E-05
				Cadmium	1.8E-01	mg/L	1.12E-07	mg/kg-day	NC	1/mg/kg-day	NC	3 03E-07	mg/kg-day	2.5E-05	mg/kg/day	1.2E-02
				Chromium	1 9E-02	mg/L	1.18E-08	mg/kg-day	NC	1/mg/kg-day	NC	3.20E-08	mg/kg-day	2.0E-02	mg/kg/day	1.6E-06
				Copper	NS	mg/L		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.7E-01	mg/L	1.68E-08	mg/kg-day	NTV	1/mg/kg-day	NTV	4.54E-08	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	NS	mg/L		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	2.1E-05	mg/kg/day	NS
				Selenium	4 6E-03	mg/L	2.86E-09	mg/kg-day	NC	1/mg/kg-day	NC	7.74E-09	mg/kg-day	5.0E-03	mg/kg/day	1.5E-06
				Silver	4.2E-01	mg/L	1.55E-05	mg/kg-day	NC	1/mg/kg-day	NC	4.19E-05	mg/kg-day	2.0E-04	mg/kg/day	2.1E-01
				Zinc	1.3E-03	mg/L	4.86E-10	mg/kg-day	NC	1/mg/kg-day	NC	1.31E-09	mg/kg-day	3.0E-01	mg/kg/day	4 4E-09
			Exp. Route Total								2 1E-08					2.2E-01
		Exposure Point Total									2.1E-08					2.2E-01
Medium Total											2.1E-08					2.2E-01
Sediment	Sediment	Off-Facility Sediment	Ingestion	Arsenic	8 1E+01	mg/kg	9.91E-07	mg/kg-day	1.5E+00	1/mg/kg-day	1.5E-06	3.11E-06	mg/kg-day	3.0E-04	mg/kg/day	1.0E-02
				Barium	3.9E-02	mg/kg	4.70E-06	mg/kg-day	NC	1/mg/kg-day	NC	1 48E-05	mg/kg-day	2.0E-01	mg/kg/day	7.4E-05
				Cadmium	3.6E-02	mg/kg	4.43E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.39E-05	mg/kg-day	1.0E-03	mg/kg/day	1.4E-02
				Chromium	4.8E-01	mg/kg	5.81E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.82E-06	mg/kg-day	1.5E+00	mg/kg/day	1.2E-06
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2 9E+03	mg/kg	3.54E-05	mg/kg-day	NTV	1/mg/kg-day	NTV	1.11E-04	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	5 3E-00	mg/kg	6.43E-08	mg/kg-day	NC	1/mg/kg-day	NC	2.02E-07	mg/kg-day	3.0E-04	mg/kg/day	6.7E-04
				Selenium	5.3E-00	mg/kg	6.42E-08	mg/kg-day	NC	1/mg/kg-day	NC	2.02E-07	mg/kg-day	5.0E-03	mg/kg/day	4.0E-05
				Silver	3.3E-01	mg/kg	3.96E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.24E-06	mg/kg-day	5.0E-03	mg/kg/day	2.5E-04
				Zinc	3.9E+04	mg/kg	4.72E-04	mg/kg-day	NC	1/mg/kg-day	NC	1.48E-03	mg/kg-day	3.0E-01	mg/kg/day	4.9E-03
			Exp. Route Total								1.5E-06					3 0E-02
			Dermal Contact	Arsenic	8.1E-01	mg/kg	1.80E-07	mg/kg-day	1.5E+00	1/mg/kg-day	2 7E-07	8.03E-07	mg/kg-day	3 0E-04	mg/kg/day	2.7E-03
				Barium	3.9E-02	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	1.4E-02	mg/kg/day	0.0E+00
				Cadmium	3.6E-02	mg/kg	2.68E-08	mg/kg-day	NC	1/mg/kg-day	NC	1.20E-07	mg/kg-day	2 5E-05	mg/kg/day	4.8E-03
				Chromium	4.8E-01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-02	mg/kg/day	0.0E+00
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.9E-03	mg/kg	0.00E+00	mg/kg-day	NTV	1/mg/kg-day	NTV	0.00E+00	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	5.3E-00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.1E-05	mg/kg/day	0.0E+00
				Selenium	5 3E-00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	5.0E-03	mg/kg/day	0.0E+00
				Silver	3.3E-01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-04	mg/kg/day	0.0E+00
				Zinc	3.9E-04	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	3.0E-01	mg/kg/day	0.0E+00
			Exp. Route Total								2.7E-07					7.5E-03
		Exposure Point Total									1.8E-06					3.8E-02
Medium Total											1.8E-06					3.8E-02
										Total of Receptor Risks Across All Media	2.6E-05	Total of Receptor Hazards Across All Media				1 6E+00

Notes:

EPC = Exposure Point Concentration
NC = Not classified as a carcinogen
NE = Not evaluated as a volatile chemical
NTV = No Toxicity Value Available
RfD = Noncancer Reference Dose

Bolded Chemicals and Bold/Underlined Risks = Exceeds a cancer risk of 1E-06 or a HQ of 0.1.
NS - Not sampled or not detected.
No garden currently exists at property based on site visit.

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RAGS PART D TABLE 7.1 RME
CALCULATION OF CHEMICAL CANCER RISKS
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Current/Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child Adult (cancer)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF		Cancer Risk	Intake/Exposure Concentration		RfD		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Soil	Soil	Off-Facility 2768 N. 42nd St	Ingestion	Arsenic	7.8E+00	mg/kg	1.22E-05	mg/kg-day	1.5E+00	1/mg/kg-day	1.8E-05	9.97E-05	mg/kg-day	3.0E-04	mg/kg/day	3.3E-01
				Barium	1.8E+02	mg/kg	2.82E-04	mg/kg-day	NC	1/mg/kg-day	NC	2.30E-03	mg/kg-day	2.0E-01	mg/kg/day	1.2E-02
				Cadmium	1.4E+01	mg/kg	2.11E-05	mg/kg-day	NC	1/mg/kg-day	NC	1.73E-04	mg/kg-day	1.0E-03	mg/kg/day	1.7E-01
				Chromium	1.6E+01	mg/kg	2.50E-05	mg/kg-day	NC	1/mg/kg-day	NC	2.05E-04	mg/kg-day	1.5E+00	mg/kg/day	1.4E-04
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	1.2E-02	mg/kg	1.88E-04	mg/kg-day	NTV	1/mg/kg-day	NTV	1.53E-03	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.0E-01	mg/kg	1.64E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.34E-06	mg/kg-day	3.0E-04	mg/kg/day	4.5E-03
				Selenium	9.1E-01	mg/kg	1.42E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.16E-05	mg/kg-day	5.0E-03	mg/kg/day	2.3E-03
				Silver	3.4E-01	mg/kg	5.32E-07	mg/kg-day	NC	1/mg/kg-day	NC	4.35E-06	mg/kg-day	5.0E-03	mg/kg/day	8.7E-04
				Zinc	6.9E-02	mg/kg	1.08E-03	mg/kg-day	NC	1/mg/kg-day	NC	8.82E-03	mg/kg-day	3.0E-01	mg/kg/day	2.9E-02
			Exp. Route Total								1.8E-05					5.5E-01
			Dermal Contact	Arsenic	7.8E+00	mg/kg	1.16E-06	mg/kg-day	1.5E+00	1/mg/kg-day	1.7E-06	8.38E-06	mg/kg-day	3.0E-04	mg/kg/day	2.8E-02
				Barium	1.8E+02	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	1.4E-02	mg/kg/day	0.0E+00
				Cadmium	1.4E+01	mg/kg	6.67E-08	mg/kg-day	NC	1/mg/kg-day	NC	4.83E-07	mg/kg-day	2.5E-05	mg/kg/day	1.9E-02
				Chromium (as III)	1.6E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-02	mg/kg/day	0.0E+00
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	1.2E-02	mg/kg	0.00E-00	mg/kg-day	NTV	1/mg/kg-day	NTV	0.00E-00	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.0E-01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.1E-05	mg/kg/day	0.0E+00
				Selenium	9.1E-01	mg/kg	0.00E-00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	5.0E-03	mg/kg/day	0.0E+00
				Silver	3.4E-01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-04	mg/kg/day	0.0E+00
				Zinc	6.9E-02	mg/kg	0.00E-00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E-00	mg/kg-day	3.0E-01	mg/kg/day	0.0E+00
			Exp. Route Total								1.7E-06					4.7E-02
			Produce Ingestion	Arsenic	7.8E+00	mg/kg	7.78E-07	mg/kg-day	1.5E+00	1/mg/kg-day	1.2E-06	9.89E-05	mg/kg-day	3.0E-04	mg/kg/day	3.3E-01
			Future	Barium	1.8E+02	mg/kg	1.80E-05	mg/kg-day	NC	1/mg/kg-day	NC	2.28E-03	mg/kg-day	2.0E-01	mg/kg/day	1.1E-02
				Cadmium	1.4E+01	mg/kg	1.35E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.71E-04	mg/kg-day	1.0E-03	mg/kg/day	1.7E-01
				Chromium	1.6E+01	mg/kg	1.60E-06	mg/kg-day	NC	1/mg/kg-day	NC	2.03E-04	mg/kg-day	1.5E+00	mg/kg/day	1.4E-04
				Copper	NS	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NS	0.00E+00	mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	1.2E-02	mg/kg	1.20E-05	mg/kg-day	NTV	1/mg/kg-day	NTV	1.52E-03	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.0E-01	mg/kg	1.04E-08	mg/kg-day	NC	1/mg/kg-day	NC	1.32E-06	mg/kg-day	3.0E-04	mg/kg/day	4.4E-03
				Selenium	9.1E-01	mg/kg	9.08E-08	mg/kg-day	NC	1/mg/kg-day	NC	1.15E-05	mg/kg-day	5.0E-03	mg/kg/day	2.3E-03
				Silver	3.4E-01	mg/kg	3.39E-08	mg/kg-day	NC	1/mg/kg-day	NC	4.31E-06	mg/kg-day	5.0E-03	mg/kg/day	8.6E-04
				Zinc	6.9E-02	mg/kg	6.89E-05	mg/kg-day	NC	1/mg/kg-day	NC	8.75E-03	mg/kg-day	3.0E-01	mg/kg/day	2.9E-02
			Exp. Route Total								1.2E-05					5.5E-01
	Exposure Medium Total										2.1E-05					1.2E+00
	Air	Off-Facility 2768 N. 42nd St	Inhalation of Particulates	Arsenic	7.8E-00	mg/kg	8.11E-10	mg/kg-day	1.51E+01	1/mg/kg-day	1.2E-08	3.49E-09	mg/kg-day	NTV	mg/kg/day	NTV
				Barium	1.8E-02	mg/kg	1.87E-08	mg/kg-day	NC	1/mg/kg-day	NC	8.05E-08	mg/kg-day	1.4E-04	mg/kg/day	5.6E-04
				Cadmium	1.4E+01	mg/kg	1.40E-09	mg/kg-day	6.30E+00	1/mg/kg-day	8.8E-09	6.04E-09	mg/kg-day	NTV	mg/kg/day	NTV
				Chromium (as VI-nc; total-c	1.6E-01	mg/kg	1.66E-09	mg/kg-day	4.2E+01	1/mg/kg-day	7.0E-08	7.15E-09	mg/kg-day	2.9E-05	mg/kg/day	2.5E-04
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	NTV	mg/kg/day	NS
				Lead	1.2E-02	mg/kg	1.25E-08	mg/kg-day	NTV	1/mg/kg-day	NTV	5.36E-08	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.0E-01	mg/kg	1.09E-11	mg/kg-day	NC	1/mg/kg-day	NC	4.67E-11	mg/kg-day	8.6E-05	mg/kg/day	5.5E-07
				Selenium	9.1E-01	mg/kg	9.46E-11	mg/kg-day	NC	1/mg/kg-day	NC	4.07E-10	mg/kg-day	NTV	mg/kg/day	NTV
				Silver	3.4E-01	mg/kg	3.54E-11	mg/kg-day	NC	1/mg/kg-day	NC	1.52E-10	mg/kg-day	NTV	mg/kg/day	NTV
				Zinc	6.9E-02	mg/kg	7.18E-08	mg/kg-day	NC	1/mg/kg-day	NC	3.08E-07	mg/kg-day	NTV	mg/kg/day	NTV
			Exp. Route Total								9.1E-08					8.1E-04
Medium Total											2.1E-05					1.2E+00

TABLE 7at

RAGS PART D TABLE 7.1 RME
CALCULATION OF CHEMICAL CANCER RISKS
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Current/Future
Receptor Population: *Resident*
Receptor Age: Child (noncancer) Child Adult (cancer)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF		Cancer	Intake/Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
Surface Water	Surface Water	*Off-Facility*	*Dermal Contact*	Arsenic	2.2E-02	*mg/L*	1.37E-08	*mg/kg-day*	1.5E+00	1/mg/kg-day	2.1E-08	3.70E-08	mg/kg-day	3.0E-04	mg/kg/day	1.2E-04
		Surface Water		Barium	3.9E-01	mg/L	2.43E-07	mg/kg-day	NC	1/mg/kg-day	NC	6.56E-07	mg/kg-day	1.4E-02	mg/kg/day	4.7E-05
				Cadmium	1.8E-01	mg/L	1.12E-07	mg/kg-day	NC	1/mg/kg-day	NC	3.03E-07	mg/kg-day	2.5E-05	mg/kg/day	1.2E-02
				Chromium	1.9E-02	mg/L	1.18E-08	mg/kg-day	NC	1/mg/kg-day	NC	3.20E-08	mg/kg-day	2.0E-02	mg/kg/day	1.6E-06
				Copper	NS	mg/L		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.7E-01	*mg/L*	1.68E-08	*mg/kg-day*	NTV	1/mg/kg-day	NTV	4.54E-08	*mg/kg-day*	NTV	*mg/kg/day*	NTV
				Mercury	NS	mg/L		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	2.1E-05	mg/kg/day	NS
				Selenium	4.6E-03	mg/L	2.86E-09	mg/kg-day	NC	1/mg/kg-day	NC	7.74E-09	mg/kg-day	5.0E-03	mg/kg/day	1.5E-06
				Silver	4.2E-01	mg/L	1.55E-05	mg/kg-day	NC	1/mg/kg-day	NC	4.19E-05	mg/kg-day	2.0E-04	mg/kg/day	2.1E-01
				Zinc	1.3E-03	mg/L	4.86E-10	mg/kg-day	NC	1/mg/kg-day	NC	1.31E-09	mg/kg-day	3.0E-01	mg/kg/day	4.4E-09
			Exp. Route Total								2.1E-08					2.2E-01
		Exposure Point Total									2.1E-08					2.2E-01
Medium Total											2.1E-08					2.2E-01
Sediment	Sediment	Off-Facility	Ingestion	Arsenic	8.1E+01	mg/kg	9.91E-07	mg/kg-day	1.5E+00	1/mg/kg-day	1.5E-06	3.11E-06	mg/kg-day	3.0E-04	mg/kg/day	1.0E-02
		Sediment		Barium	3.9E+02	mg/kg	4.70E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.48E-05	mg/kg-day	2.0E-01	mg/kg/day	7.4E-05
				Cadmium	3.6E+02	mg/kg	4.43E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.39E-05	mg/kg-day	1.0E-03	mg/kg/day	1.4E-02
				Chromium	4.8E+01	mg/kg	5.81E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.82E-06	mg/kg-day	1.5E+00	mg/kg/day	1.2E-06
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.9E+03	mg/kg	3.54E-05	mg/kg-day	NTV	1/mg/kg-day	NTV	1.11E-04	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	5.3E+00	mg/kg	6.43E-08	mg/kg-day	NC	1/mg/kg-day	NC	2.02E-07	mg/kg-day	3.0E-04	mg/kg/day	6.7E-04
				Selenium	5.3E+00	mg/kg	6.42E-08	mg/kg-day	NC	1/mg/kg-day	NC	2.02E-07	mg/kg-day	5.0E-03	mg/kg/day	4.0E-05
				Silver	3.3E+01	mg/kg	3.96E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.24E-06	mg/kg-day	5.0E-03	mg/kg/day	2.5E-04
				Zinc	3.9E+04	mg/kg	4.72E-04	mg/kg-day	NC	1/mg/kg-day	NC	1.48E-03	mg/kg-day	3.0E-01	mg/kg/day	4.9E-03
			Exp. Route Total								1.5E-06					3.0E-02
			Dermal Contact	Arsenic	8.1E+01	mg/kg	1.80E-07	mg/kg-day	1.5E+00	1/mg/kg-day	2.7E-07	8.03E-07	mg/kg-day	3.0E-04	mg/kg/day	2.7E-03
				Barium	3.9E+02	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	1.4E-02	mg/kg/day	0.0E+00
				Cadmium	3.6E+02	mg/kg	2.68E-08	mg/kg-day	NC	1/mg/kg-day	NC	1.20E-07	mg/kg-day	2.5E-05	mg/kg/day	4.8E-03
				Chromium	4.8E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-02	mg/kg/day	0.0E+00
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.9E+03	*mg/kg*	0.00E+00	*mg/kg-day*	NTV	1/mg/kg-day	NTV	0.00E+00	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	5.3E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.1E-05	mg/kg/day	0.0E+00
				Selenium	5.3E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	5.0E-03	mg/kg/day	0.0E+00
				Silver	3.3E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-04	mg/kg/day	0.0E+00
				Zinc	3.9E+04	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	3.0E-01	mg/kg/day	0.0E+00
			Exp. Route Total								2.7E-07					7.5E-03
		Exposure Point Total									1.8E-06					3.8E-02
Medium Total											1.8E-06					3.8E-02
											Total of Receptor Risks Across All Media	2.3E-05		Total of Receptor Hazards Across All Media		1.4E+00

Notes:

EPC = Exposure Point Concentration
NC = Not classified as a carcinogen
NE = Not evaluated as a volatile chemical
NTV = No Toxicity Value Available
RfD = Noncancer Reference Dose

Bolded Chemicals and Bold/Underlined Risks = Exceeds a cancer risk of 1E-06 or a HQ of 0.1.
NS - Not sampled or not detected.
No garden currently exists at property based on site visit.

RAGS PART D TABLE 7.1 RME
CALCULATION OF CHEMICAL CANCER RISKS
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF		Cancer	Intake/Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
Soil	Soil	Off-Facility	Ingestion	Arsenic	1.2E-01	mg/kg	1.88E-05	mg/kg-day	1.5E-00	1/mg/kg-day	2.8E-05	1.53E-04	mg/kg-day	3.0E-04	mg/kg/day	5.1E-01
		2521 N. 42nd St.		Barium	2.6E-02	mg/kg	4.07E-04	mg/kg-day	NC	1/mg/kg-day	NC	3.32E-03	mg/kg-day	2.0E-01	mg/kg/day	1.7E-02
				Cadmium	1.5E+01	mg/kg	2.35E-05	mg/kg-day	NC	1/mg/kg-day	NC	1.92E-04	mg/kg-day	1.0E-03	mg/kg/day	1.9E-01
				Chromium	2.4E+01	mg/kg	3.76E-05	mg/kg-day	NC	1/mg/kg-day	NC	3.07E-04	mg/kg-day	1.5E+00	mg/kg/day	2.0E-04
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	3.3E+02	mg/kg	5.17E-04	mg/kg-day	NTV	1/mg/kg-day	NTV	4.22E-03	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	2.1E-01	mg/kg	3.29E-07	mg/kg-day	NC	1/mg/kg-day	NC	2.68E-06	mg/kg-day	3.0E-04	mg/kg/day	8.9E-03
				Selenium	1.1E+00	mg/kg	1.72E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.41E-05	mg/kg-day	5.0E-03	mg/kg/day	2.8E-03
				Silver	6.5E-01	mg/kg	1.02E-06	mg/kg-day	NC	1/mg/kg-day	NC	8.31E-06	mg/kg-day	5.0E-03	mg/kg/day	1.7E-03
				Zinc	1.0E+03	mg/kg	1.57E-03	mg/kg-day	NC	1/mg/kg-day	NC	1.28E-02	mg/kg-day	3.0E-01	mg/kg/day	4.3E-02
			Exp. Route Total								2.8E-05					7.8E-01
			Dermal Contact	Arsenic	1.2E+01	mg/kg	1.78E-06	mg/kg-day	1.5E+00	1/mg/kg-day	2.7E-06	1.29E-05	mg/kg-day	3.0E-04	mg/kg/day	4.3E-02
				Barium	2.6E-02	mg/kg	*0.00E-00*	mg/kg-day	NC	1/mg/kg-day	NC	*0.00E+00*	mg/kg-day	1.4E-02	mg/kg/day	*0.0E+00*
				Cadmium	1.5E-01	mg/kg	7.41E-08	mg/kg-day	NC	1/mg/kg-day	NC	5.37E-07	mg/kg-day	2.5E-05	mg/kg/day	2.1E-02
				Chromium (as III)	2.4E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-02	mg/kg/day	0.0E+00
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	3.3E-02	mg/kg	0.00E+00	mg/kg-day	NTV	1/mg/kg-day	NTV	0.00E+00	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	2.1E-01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.1E-05	mg/kg/day	0.0E+00
				Selenium	1.1E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	5.0E-03	mg/kg/day	0.0E+00
				Silver	6.5E-01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-04	mg/kg/day	0.0E+00
				Zinc	1.0E-03	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	3.0E-01	mg/kg/day	0.0E+00
			Exp. Route Total								2.7E-06					6.4E-02
			Produce Ingestion	*Arsenic*	*1.2E+01*	*mg/kg*	*1.20E-06*	*mg/kg-day*	*1.5E+00*	*1/mg/kg-day*	*1.8E-06*	*1.52E-04*	*mg/kg-day*	*3.0E-04*	*mg/kg/day*	*5.1E-01*
			Future	*Barium*	*2.6E-02*	*mg/kg*	*2.59E-05*	*mg/kg-day*	*NC*	*1/mg/kg-day*	*NC*	*3.30E-03*	*mg/kg-day*	*2.0E-01*	*mg/kg/day*	*1.6E-02*
				Cadmium	1.5E-01	mg/kg	1.50E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.90E-04	mg/kg-day	1.0E-03	mg/kg/day	1.9E-01
				Chromium	2.4E+01	mg/kg	2.40E-06	mg/kg-day	NC	1/mg/kg-day	NC	3.04E-04	mg/kg-day	1.5E+00	mg/kg/day	2.0E-04
				Copper	NS	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NS	0.00E+00	mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	3.3E-02	mg/kg	3.29E-05	mg/kg-day	NTV	1/mg/kg-day	NTV	4.18E-03	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	2.1E-01	mg/kg	2.10E-08	mg/kg-day	NC	1/mg/kg-day	NC	2.66E-06	mg/kg-day	3.0E-04	mg/kg/day	8.9E-03
				Selenium	1.1E+00	mg/kg	1.10E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.39E-05	mg/kg-day	5.0E-03	mg/kg/day	2.8E-03
				Silver	6.5E-01	mg/kg	6.49E-08	mg/kg-day	NC	1/mg/kg-day	NC	8.24E-06	mg/kg-day	5.0E-03	mg/kg/day	1.6E-03
				Zinc	1.0E-03	mg/kg	9.98E-05	mg/kg-day	NC	1/mg/kg-day	NC	1.27E-02	mg/kg-day	3.0E-01	mg/kg/day	4.2E-02
			Exp. Route Total								1.8E-06					7.7E-01
	Exposure Medium Total										3.3E-05					1.6E+00
	Air	Off-Facility	Inhalation of Particulates	Arsenic	1.2E+01	mg/kg	1.25E-09	mg/kg-day	1.51E+01	1/mg/kg-day	1.9E-08	5.36E-09	mg/kg-day	NTV	mg/kg/day	NTV
		2521 N. 42nd St.		Barium	2.6E-02	mg/kg	2.70E-08	mg/kg-day	NC	1/mg/kg-day	NC	1.16E-07	mg/kg-day	1.4E-04	mg/kg/day	8.1E-04
				Cadmium	1.5E+01	mg/kg	1.56E-09	mg/kg-day	6.30E-00	1/mg/kg-day	9.8E-09	6.71E-09	mg/kg-day	NTV	mg/kg/day	NTV
				Chromium (as VI-nc; total-c	2.4E-01	mg/kg	2.50E-09	mg/kg-day	4.2E-01	1/mg/kg-day	1.0E-07	1.07E-08	mg/kg-day	2.9E-05	mg/kg/day	3.8E-04
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	NTV	mg/kg/day	NS
				Lead	3.3E-02	mg/kg	3.43E-08	mg/kg-day	NTV	1/mg/kg-day	NTV	1.48E-07	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	2.1E-01	mg/kg	2.18E-11	mg/kg-day	NC	1/mg/kg-day	NC	9.39E-11	mg/kg-day	8.6E-05	mg/kg/day	1.1E-06
				Selenium	1.1E+00	mg/kg	1.14E-10	mg/kg-day	NC	1/mg/kg-day	NC	4.92E-10	mg/kg-day	NTV	mg/kg/day	NTV
				Silver	6.5E-01	mg/kg	6.76E-11	mg/kg-day	NC	1/mg/kg-day	NC	2.91E-10	mg/kg-day	NTV	mg/kg/day	NTV
				Zinc	1.0E+03	mg/kg	1.04E-07	mg/kg-day	NC	1/mg/kg-day	NC	4.47E-07	mg/kg-day	NTV	mg/kg/day	NTV
			Exp. Route Total								1.3E-07					1.2E-03
Medium Total											3.3E-05					1.6E+00

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RAGS PART D TABLE 7.1 RME
CALCULATION OF CHEMICAL CANCER RISKS
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF		Cancer Risk	Intake/Exposure Concentration		RfD		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Water	Surface Water	Off-Facility Surface Water	Dermal Contact	Arsenic	2.2E-02	mg/L	1.37E-08	mg/kg-day	1.5E+00	1/mg/kg-day	2.1E-08	3.70E-08	mg/kg-day	3.0E-04	mg/kg/day	1.2E-04
				Barium	3.9E-01	mg/L	2.43E-07	mg/kg-day	NC	1/mg/kg-day	NC	6.56E-07	mg/kg-day	1.4E-02	mg/kg/day	4.7E-05
				Cadmium	1.8E-01	mg/L	1.12E-07	mg/kg-day	NC	1/mg/kg-day	NC	3.03E-07	mg/kg-day	2.5E-05	mg/kg/day	1.2E-02
				Chromium	1.9E-02	mg/L	1.18E-08	mg/kg-day	NC	1/mg/kg-day	NC	3.20E-08	mg/kg-day	2.0E-02	mg/kg/day	1.6E-06
				Copper	NS	mg/L		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.7E-01	mg/L	1.68E-08	mg/kg-day	NTV	1/mg/kg-day	NTV	4.54E-08	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	NS	mg/L		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	2.1E-05	mg/kg/day	NS
				Selenium	4.6E-03	mg/L	2.86E-09	mg/kg-day	NC	1/mg/kg-day	NC	7.74E-09	mg/kg-day	5 0E-03	mg/kg/day	1.5E-06
				Silver	4.2E-01	mg/L	1.55E-05	mg/kg-day	NC	1/mg/kg-day	NC	4.19E-05	mg/kg-day	2.0E-04	mg/kg/day	2.1E-01
				Zinc	1 3E-03	mg/L	4.86E-10	mg/kg-day	NC	1/mg/kg-day	NC	1.31E-09	mg/kg-day	3 0E-01	mg/kg/day	4.4E-09
			Exp. Route Total								2.1E-08					2.2E-01
		Exposure Point Total									2.1E-08					2 2E-01
Medium Total											2.1E-08					2.2E-01
Sediment	Sediment	Off-Facility Sediment	Ingestion	Arsenic	8.1E+01	mg/kg	9.91E-07	mg/kg-day	1.5E+00	1/mg/kg-day	1.5E-06	3.11E-06	mg/kg-day	3.0E-04	mg/kg/day	1.0E-02
				Barium	3.9E+02	mg/kg	4.70E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.48E-05	mg/kg-day	2.0E-01	mg/kg/day	7.4E-05
				Cadmium	3.6E+02	mg/kg	4.43E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.39E-05	mg/kg-day	1.0E-03	mg/kg/day	1.4E-02
				Chromium	4.8E+01	mg/kg	5.81E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.82E-06	mg/kg-day	1.5E+00	mg/kg/day	1.2E-06
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.9E+03	mg/kg	3.54E-05	mg/kg-day	NTV	1/mg/kg-day	NTV	1.11E-04	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	5.3E-00	mg/kg	6.43E-08	mg/kg-day	NC	1/mg/kg-day	NC	2.02E-07	mg/kg-day	3.0E-04	mg/kg/day	6.7E-04
				Selenium	5.3E-00	mg/kg	6.42E-08	mg/kg-day	NC	1/mg/kg-day	NC	2.02E-07	mg/kg-day	5.0E-03	mg/kg/day	4.0E-05
				Silver	3.3E-01	mg/kg	3.96E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.24E-06	mg/kg-day	5.0E-03	mg/kg/day	2.5E-04
				Zinc	3 9E-04	mg/kg	4.72E-04	mg/kg-day	NC	1/mg/kg-day	NC	1 48E-03	mg/kg-day	3.0E-01	mg/kg/day	4.9E-03
			Exp. Route Total								1.5E-06					3.0E-02
			Dermal Contact	Arsenic	8.1E+01	mg/kg	1.80E-07	mg/kg-day	1.5E+00	1/mg/kg-day	2.7E-07	8.03E-07	mg/kg-day	3.0E-04	mg/kg/day	2.7E-03
				Barium	3.9E+02	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	1.4E-02	mg/kg/day	0 0E+00
				Cadmium	3.6E+02	mg/kg	2 68E-08	mg/kg-day	NC	1/mg/kg-day	NC	1.20E-07	mg/kg-day	2.5E-05	mg/kg/day	4.8E-03
				Chromium	4.8E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-02	mg/kg/day	0.0E+00
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.9E+03	mg/kg	0.00E+00	mg/kg-day	NTV	1/mg/kg-day	NTV	0.00E+00	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	5.3E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.1E-05	mg/kg/day	0.0E+00
				Selenium	5.3E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	5.0E-03	mg/kg/day	0.0E+00
				Silver	3.3E-01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-04	mg/kg/day	0.0E+00
				Zinc	3 9E-04	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	3.0E-01	mg/kg/day	0.0E+00
			Exp. Route Total								2.7E-07					7.5E-03
		Exposure Point Total									1 8E-06					3.8E-02
Medium Total											1 8E-06					3.8E-02
											Total of Receptor Risks Across All Media	3 5E-05		Total of Receptor Hazards Across All Media		1.9E+00

Notes:

EPC = Exposure Point Concentration
NC = Not classified as a carcinogen
NE = Not evaluated as a volatile chemical
NTV = No Toxicity Value Available
RfD = Noncancer Reference Dose

Bolded Chemicals and Bold/Underlined Risks = Exceeds a cancer risk of 1E-06 or a HQ of 0.1.
NS - Not sampled or not detected.
Property is currently vacant

RAGS PART D TABLE 7.1 RME
CALCULATION OF CHEMICAL CANCER RISKS
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF		Cancer Risk	Intake/Exposure Concentration		RfD		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Soil	Soil	Off-Facility 2521 N. 42nd St.	Ingestion	Arsenic	1.1E-01	mg/kg	1.72E-05	mg/kg-day	1.5E-00	1/mg/kg-day	2.6E-05	1.41E-04	mg/kg-day	3.0E-04	mg/kg/day	4.7E-01
				Barium	2.2E-02	mg/kg	3.44E-04	mg/kg-day	NC	1/mg/kg-day	NC	2.81E-03	mg/kg-day	2.0E-01	mg/kg/day	1.4E-02
				Cadmium	1.6E-01	mg/kg	2.50E-05	mg/kg-day	NC	1/mg/kg-day	NC	2.05E-04	mg/kg-day	1.0E-03	mg/kg/day	2.0E-01
				Chromium	1.8E-01	mg/kg	2.82E-05	mg/kg-day	NC	1/mg/kg-day	NC	2.30E-04	mg/kg-day	1.5E+00	mg/kg/day	1.5E-04
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	4.1E-02	mg/kg	6.42E-04	mg/kg-day	NTV	1/mg/kg-day	NTV	5.24E-03	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.4E-01	mg/kg	2.19E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.79E-06	mg/kg-day	3.0E-04	mg/kg/day	6.0E-03
				Selenium	1.3E-00	mg/kg	2.04E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.66E-05	mg/kg-day	5.0E-03	mg/kg/day	3.3E-03
				Silver	9.2E-01	mg/kg	1.44E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.18E-05	mg/kg-day	5.0E-03	mg/kg/day	2.4E-03
				Zinc	1.2E-03	mg/kg	1.88E-03	mg/kg-day	NC	1/mg/kg-day	NC	1.53E-02	mg/kg-day	3.0E-01	mg/kg/day	5.1E-02
			Exp. Route Total								2.6E-05					7.5E-01
			Dermal Contact	Arsenic	1.1E-01	mg/kg	1.63E-06	mg/kg-day	1.5E-00	1/mg/kg-day	2.4E-06	1.18E-05	mg/kg-day	3.0E-04	mg/kg/day	3.9E-02
				Barium	2.2E-02	mg/kg	0.00E-00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	1.4E-02	mg/kg/day	0.0E+00
				Cadmium	1.6E-01	mg/kg	7.91E-08	mg/kg-day	NC	1/mg/kg-day	NC	5.73E-07	mg/kg-day	2.5E-05	mg/kg/day	2.3E-02
				Chromium (as III)	1.8E-01	mg/kg	0.00E-00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-02	mg/kg/day	0.0E+00
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	4.1E-02	mg/kg	0.00E+00	mg/kg-day	NTV	1/mg/kg-day	NTV	0.00E+00	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.4E-01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.1E-05	mg/kg/day	0.0E+00
				Selenium	1.3E-00	mg/kg	0.00E-00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	5.0E-03	mg/kg/day	0.0E+00
				Silver	9.2E-01	mg/kg	0.00E-00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-04	mg/kg/day	0.0E+00
				Zinc	1.2E-03	mg/kg	0.00E-00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	3.0E-01	mg/kg/day	0.0E+00
			Exp. Route Total								2.4E-06					6.2E-02
			Produce Ingestion Future	Arsenic	1.1E-01	mg/kg	1.10E-06	mg/kg-day	1.5E-00	1/mg/kg-day	1.6E-06	1.39E-04	mg/kg-day	3.0E-04	mg/kg/day	4.6E-01
				Barium	2.2E-02	mg/kg	2.20E-05	mg/kg-day	NC	1/mg/kg-day	NC	2.79E-03	mg/kg-day	2.0E-01	mg/kg/day	1.4E-02
				Cadmium	1.6E-01	mg/kg	1.60E-06	mg/kg-day	NC	1/mg/kg-day	NC	2.03E-04	mg/kg-day	1.0E-03	mg/kg/day	2.0E-01
				Chromium	1.8E-01	mg/kg	1.80E-06	mg/kg-day	NC	1/mg/kg-day	NC	2.28E-04	mg/kg-day	1.5E-00	mg/kg/day	1.5E-04
				Copper	NS	mg/kg	0.00E-00	mg/kg-day	NC	1/mg/kg-day	NS	0.00E+00	mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	4.1E-02	mg/kg	4.09E-05	mg/kg-day	NTV	1/mg/kg-day	NTV	5.20E-03	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.4E-01	mg/kg	1.40E-08	mg/kg-day	NC	1/mg/kg-day	NC	1.78E-06	mg/kg-day	3.0E-04	mg/kg/day	5.9E-03
				Selenium	1.3E-00	mg/kg	1.30E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.65E-05	mg/kg-day	5.0E-03	mg/kg/day	3.3E-03
				Silver	9.2E-01	mg/kg	9.18E-08	mg/kg-day	NC	1/mg/kg-day	NC	1.17E-05	mg/kg-day	5.0E-03	mg/kg/day	2.3E-03
				Zinc	1.2E-03	mg/kg	1.20E-04	mg/kg-day	NC	1/mg/kg-day	NC	1.52E-02	mg/kg-day	3.0E-01	mg/kg/day	5.1E-02
			Exp. Route Total								1.6E-06					7.4E-01
	Exposure Medium Total										3.0E-05					1.6E+00
	Air	Off-Facility 2521 N. 42nd St.	Inhalation of Particulates	Arsenic	1.1E-01	mg/kg	1.14E-09	mg/kg-day	1.51E-01	1/mg/kg-day	1.7E-08	4.92E-09	mg/kg-day	NTV	mg/kg/day	NTV
				Barium	2.2E-02	mg/kg	2.29E-08	mg/kg-day	NC	1/mg/kg-day	NC	9.83E-08	mg/kg-day	1.4E-04	mg/kg/day	6.9E-04
				Cadmium	1.6E-01	mg/kg	1.66E-09	mg/kg-day	6.30E+00	1/mg/kg-day	1.0E-08	7.15E-09	mg/kg-day	NTV	mg/kg/day	NTV
				Chromium (as VI-oc; total-c	1.8E-01	mg/kg	1.87E-09	mg/kg-day	4.2E-01	1/mg/kg-day	7.9E-08	8.05E-09	mg/kg-day	2.9E-05	mg/kg/day	2.8E-04
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	NTV	mg/kg/day	NS
				Lead	4.1E-02	mg/kg	4.26E-08	mg/kg-day	NTV	1/mg/kg-day	NTV	1.83E-07	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.4E-01	mg/kg	1.46E-11	mg/kg-day	NC	1/mg/kg-day	NC	6.26E-11	mg/kg-day	8.6E-05	mg/kg/day	7.3E-07
				Selenium	1.3E+00	mg/kg	1.35E-10	mg/kg-day	NC	1/mg/kg-day	NC	5.81E-10	mg/kg-day	NTV	mg/kg/day	NTV
				Silver	9.2E-01	mg/kg	9.57E-11	mg/kg-day	NC	1/mg/kg-day	NC	4.11E-10	mg/kg-day	NTV	mg/kg/day	NTV
				Zinc	1.2E-03	mg/kg	1.25E-07	mg/kg-day	NC	1/mg/kg-day	NC	5.36E-07	mg/kg-day	NTV	mg/kg/day	NTV
			Exp. Route Total								1.1E-07					9.7E-04
Medium Total											3.0E-05					1.6E+00

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RAGS PART D TABLE 7.1 RME

CALCULATION OF CHEMICAL CANCER RISKS

REASONABLE MAXIMUM EXPOSURE

Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF		Cancer Risk	Intake/Exposure Concentration		RfD		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Water	Surface Water	Off-Facility Surface Water	Dermal Contact	Arsenic	2.2E-02	mg/L	1.37E-08	mg/kg-day	1.5E+00	1/mg/kg-day	2.1E-08	3.70E-08	mg/kg-day	3.0E-04	mg/kg/day	1.2E-04
				Barium	3.9E-01	mg/L	2.43E-07	mg/kg-day	NC	1/mg/kg-day	NC	6.56E-07	mg/kg-day	1.4E-02	mg/kg/day	4.7E-05
				Cadmium	1.8E-01	mg/L	1.12E-07	mg/kg-day	NC	1/mg/kg-day	NC	3.03E-07	mg/kg-day	2.5E-05	mg/kg/day	1.2E-02
				Chromium	1.9E-02	mg/L	1.18E-08	mg/kg-day	NC	1/mg/kg-day	NC	3.20E-08	mg/kg-day	2.0E-02	mg/kg/day	1.6E-06
				Copper	NS	mg/L		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.7E-01	mg/L	1.68E-08	mg/kg-day	NTV	1/mg/kg-day	NTV	4.54E-08	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	NS	mg/L		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	2.1E-05	mg/kg/day	NS
				Selenium	4.6E-03	mg/L	2.86E-09	mg/kg-day	NC	1/mg/kg-day	NC	7.74E-09	mg/kg-day	5.0E-03	mg/kg/day	1.5E-06
				Silver	4.2E-01	mg/L	1.55E-05	mg/kg-day	NC	1/mg/kg-day	NC	4.19E-05	mg/kg-day	2.0E-04	mg/kg/day	2.1E-01
				Zinc	1.3E-03	mg/L	4.86E-10	mg/kg-day	NC	1/mg/kg-day	NC	1.31E-09	mg/kg-day	3.0E-01	mg/kg/day	4.4E-09
			Exp. Route Total								2.1E-08					2.2E-01
		Exposure Point Total									2.1E-08					2.2E-01
Medium Total											2.1E-08					2.2E-01
Sediment	Sediment	Off-Facility Sediment	Ingestion	Arsenic	8.1E-01	mg/kg	9.91E-07	mg/kg-day	1.5E+00	1/mg/kg-day	1.5E-06	3.11E-06	mg/kg-day	3.0E-04	mg/kg/day	1.0E-02
				Barium	3.9E-02	mg/kg	4.70E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.48E-05	mg/kg-day	2.0E-01	mg/kg/day	7.4E-05
				Cadmium	3.6E-02	mg/kg	4.43E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.39E-05	mg/kg-day	1.0E-03	mg/kg/day	1.4E-02
				Chromium	4.8E+01	mg/kg	5.81E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.82E-06	mg/kg-day	1.5E+00	mg/kg/day	1.2E-06
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.9E-03	mg/kg	3.54E-05	mg/kg-day	NTV	1/mg/kg-day	NTV	1.11E-04	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	5.3E+00	mg/kg	6.43E-08	mg/kg-day	NC	1/mg/kg-day	NC	2.02E-07	mg/kg-day	3.0E-04	mg/kg/day	6.7E-04
				Selenium	5.3E+00	mg/kg	6.42E-08	mg/kg-day	NC	1/mg/kg-day	NC	2.02E-07	mg/kg-day	5.0E-03	mg/kg/day	4.0E-05
				Silver	3.3E-01	mg/kg	3.96E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.24E-06	mg/kg-day	5.0E-03	mg/kg/day	2.5E-04
				Zinc	3.9E-04	mg/kg	4.72E-04	mg/kg-day	NC	1/mg/kg-day	NC	1.48E-03	mg/kg-day	3.0E-01	mg/kg/day	4.9E-03
			Exp. Route Total								1.5E-06					3.0E-02
			Dermal Contact	Arsenic	8.1E+01	mg/kg	1.80E-07	mg/kg-day	1.5E+00	1/mg/kg-day	2.7E-07	8.03E-07	mg/kg-day	3.0E-04	mg/kg/day	2.7E-03
				Barium	3.9E-02	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	1.4E-02	mg/kg/day	0.0E+00
				Cadmium	3.6E-02	mg/kg	2.68E-08	mg/kg-day	NC	1/mg/kg-day	NC	1.20E-07	mg/kg-day	2.5E-05	mg/kg/day	4.8E-03
				Chromium	4.8E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-02	mg/kg/day	0.0E+00
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.9E-03	mg/kg	0.00E+00	mg/kg-day	NTV	1/mg/kg-day	NTV	0.00E+00	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	5.3E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.1E-05	mg/kg/day	0.0E+00
				Selenium	5.3E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	5.0E-03	mg/kg/day	0.0E+00
				Silver	3.3E-01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-04	mg/kg/day	0.0E+00
				Zinc	3.9E-04	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	3.0E-01	mg/kg/day	0.0E+00
			Exp. Route Total								2.7E-07					7.5E-03
		Exposure Point Total									1.8E-06					3.8E-02
Medium Total											1.8E-06					3.8E-02
											3.2E-05					1.8E+00

Total of Receptor Risks Across All Media

Total of Receptor Hazards Across All Media

Notes:

EPC = Exposure Point Concentration
NC = Not classified as a carcinogen
NE = Not evaluated as a volatile chemical
NTV = No Toxicity Value Available
RfD = Noncancer Reference Dose

Bolded Chemicals and Bold/Underlined Risks = Exceeds a cancer risk of 1E-06 or a HQ of 0.1.
NS - Not sampled or not detected.
Property is currently vacant

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RAGS PART D TABLE 7.1 RME
CALCULATION OF CHEMICAL CANCER RISKS
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF		Cancer Risk	Intake/Exposure Concentration		RfD		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Soil	Soil	Off-Facility 3800 Roselake	Ingestion	Arsenic	1.0E-01	mg/kg	1.57E-05	mg/kg-day	1.5E+00	1/mg/kg-day	2.3E-05	1.28E-04	mg/kg-day	3.0E-04	mg/kg/day	4.3E-01
				Barium	2.7E-02	mg/kg	4.23E-04	mg/kg-day	NC	1/mg/kg-day	NC	3.45E-03	mg/kg-day	2.0E-01	mg/kg/day	1.7E-02
				Cadmium	9.5E+00	mg/kg	1.49E-05	mg/kg-day	NC	1/mg/kg-day	NC	1.21E-04	mg/kg-day	1.0E-03	mg/kg/day	1.2E-01
				Chromium	1.7E+01	mg/kg	2.66E-05	mg/kg-day	NC	1/mg/kg-day	NC	2.17E-04	mg/kg-day	1.5E+00	mg/kg/day	1.4E-04
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.9E-02	mg/kg	4.54E-04	mg/kg-day	NTV	1/mg/kg-day	NTV	3.71E-03	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	3.5E-01	mg/kg	5.48E-07	mg/kg-day	NC	1/mg/kg-day	NC	4.47E-06	mg/kg-day	3.0E-04	mg/kg/day	1.5E-02
				Selenium	9.0E-01	mg/kg	1.41E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.15E-05	mg/kg-day	5.0E-03	mg/kg/day	2.3E-03
				Silver	3.2E-01	mg/kg	5.01E-07	mg/kg-day	NC	1/mg/kg-day	NC	4.09E-06	mg/kg-day	5.0E-03	mg/kg/day	8.2E-04
				Zinc	9.8E-02	mg/kg	1.53E-03	mg/kg-day	NC	1/mg/kg-day	NC	1.25E-02	mg/kg-day	3.0E-01	mg/kg/day	4.2E-02
			Exp. Route Total								2.3E-05					6.2E-01
			Dermal Contact	Arsenic	1.0E-01	mg/kg	1.48E-06	mg/kg-day	1.5E+00	1/mg/kg-day	2.2E-06	1.07E-05	mg/kg-day	3.0E-04	mg/kg/day	3.6E-02
				Barium	2.7E-02	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	1.4E-02	mg/kg/day	0.0E+00
				Cadmium	9.5E+00	mg/kg	4.70E-08	mg/kg-day	NC	1/mg/kg-day	NC	3.40E-07	mg/kg-day	2.5E-05	mg/kg/day	1.4E-02
				Chromium (as III)	1.7E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-02	mg/kg/day	0.0E+00
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.9E-02	mg/kg	0.00E+00	mg/kg-day	NTV	1/mg/kg-day	NTV	0.00E+00	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	3.5E-01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.1E-05	mg/kg/day	0.0E+00
				Selenium	9.0E-01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	5.0E-03	mg/kg/day	0.0E+00
				Silver	3.2E-01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-04	mg/kg/day	0.0E+00
				Zinc	9.8E-02	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	3.0E-01	mg/kg/day	0.0E+00
			Exp. Route Total								2.2E-06					4.9E-02
			Produce Ingestion Future	Arsenic	1.0E-01	mg/kg	9.98E-07	mg/kg-day	1.5E+00	1/mg/kg-day	1.5E-06	1.27E-04	mg/kg-day	3.0E-04	mg/kg/day	4.2E-01
				Barium	2.7E-02	mg/kg	2.69E-05	mg/kg-day	NC	1/mg/kg-day	NC	3.42E-03	mg/kg-day	2.0E-01	mg/kg/day	1.7E-02
				Cadmium	9.5E+00	mg/kg	9.48E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.20E-04	mg/kg-day	1.0E-03	mg/kg/day	1.2E-01
				Chromium	1.7E+01	mg/kg	1.70E-06	mg/kg-day	NC	1/mg/kg-day	NC	2.16E-04	mg/kg-day	1.5E+00	mg/kg/day	1.4E-04
				Copper	NS	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NS	0.00E+00	mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.9E-02	mg/kg	2.89E-05	mg/kg-day	NTV	1/mg/kg-day	NTV	3.68E-03	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	3.5E-01	mg/kg	3.49E-08	mg/kg-day	NC	1/mg/kg-day	NC	4.44E-06	mg/kg-day	3.0E-04	mg/kg/day	1.5E-02
				Selenium	9.0E-01	mg/kg	8.98E-08	mg/kg-day	NC	1/mg/kg-day	NC	1.14E-05	mg/kg-day	5.0E-03	mg/kg/day	2.3E-03
				Silver	3.2E-01	mg/kg	3.19E-08	mg/kg-day	NC	1/mg/kg-day	NC	4.06E-06	mg/kg-day	5.0E-03	mg/kg/day	8.1E-04
				Zinc	9.8E-02	mg/kg	9.78E-05	mg/kg-day	NC	1/mg/kg-day	NC	1.24E-02	mg/kg-day	3.0E-01	mg/kg/day	4.1E-02
			Exp. Route Total								1.5E-06					6.2E-01
	Exposure Medium Total										2.7E-05					1.3E+00
	Air	Off-Facility 3800 Roselake	Inhalation of Particulates	Arsenic	1.0E-01	mg/kg	1.04E-09	mg/kg-day	1.51E+01	1/mg/kg-day	1.6E-08	4.47E-09	mg/kg-day	NTV	mg/kg/day	NTV
				Barium	2.7E-02	mg/kg	2.81E-08	mg/kg-day	NC	1/mg/kg-day	NC	1.21E-07	mg/kg-day	1.4E-04	mg/kg/day	8.4E-04
				Cadmium	9.5E+00	mg/kg	9.88E-10	mg/kg-day	6.30E+00	1/mg/kg-day	6.2E-09	4.25E-09	mg/kg-day	NTV	mg/kg/day	NTV
				Chromium (as VI-nc; total-c	1.7E+01	mg/kg	1.77E-09	mg/kg-day	4.2E+01	1/mg/kg-day	7.4E-08	7.60E-09	mg/kg-day	2.9E-05	mg/kg/day	2.7E-04
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	NTV	mg/kg/day	NS
				Lead	2.9E-02	mg/kg	3.02E-08	mg/kg-day	NTV	1/mg/kg-day	NTV	1.30E-07	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	3.5E-01	mg/kg	3.64E-11	mg/kg-day	NC	1/mg/kg-day	NC	1.56E-10	mg/kg-day	8.6E-05	mg/kg/day	1.8E-06
				Selenium	9.0E-01	mg/kg	9.36E-11	mg/kg-day	NC	1/mg/kg-day	NC	4.02E-10	mg/kg-day	NTV	mg/kg/day	NTV
				Silver	3.2E-01	mg/kg	3.33E-11	mg/kg-day	NC	1/mg/kg-day	NC	1.43E-10	mg/kg-day	NTV	mg/kg/day	NTV
				Zinc	9.8E-02	mg/kg	1.02E-07	mg/kg-day	NC	1/mg/kg-day	NC	4.38E-07	mg/kg-day	NTV	mg/kg/day	NTV
			Exp. Route Total								9.6E-08					1.1E-03
Medium Total											2.7E-05					1.3E+00

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RAGS PART D TABLE 7.1 RME
CALCULATION OF CHEMICAL CANCER RISKS
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF		Cancer	Intake/Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
Surface Water	Surface Water	Off-Facility Surface Water	Dermal Contact	Arsenic	2.2E-02	mg/L	1.37E-08	mg/kg-day	1.5E+00	1/mg/kg-day	2.1E-08	3.70E-08	mg/kg-day	3.0E-04	mg/kg/day	1.2E-04
				Barium	3.9E-01	mg/L	2.43E-07	mg/kg-day	NC	1/mg/kg-day	NC	6.56E-07	mg/kg-day	1.4E-02	mg/kg/day	4.7E-05
				Cadmium	1.8E-01	mg/L	1.12E-07	mg/kg-day	NC	1/mg/kg-day	NC	3.03E-07	mg/kg-day	2.5E-05	mg/kg/day	1.2E-02
				Chromium	1.9E-02	mg/L	1.18E-08	mg/kg-day	NC	1/mg/kg-day	NC	3.20E-08	mg/kg-day	2.0E-02	mg/kg/day	1.6E-06
				Copper	NS	mg/L		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.7E-01	mg/L	1.68E-08	mg/kg-day	NTV	1/mg/kg-day	NTV	4.54E-08	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	NS	mg/L		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	2.1E-05	mg/kg/day	NS
				Selenium	4.6E-03	mg/L	2.86E-09	mg/kg-day	NC	1/mg/kg-day	NC	7.74E-09	mg/kg-day	5.0E-03	mg/kg/day	1.5E-06
				Silver	4.2E-01	mg/L	1.55E-05	mg/kg-day	NC	1/mg/kg-day	NC	4.19E-05	mg/kg-day	2.0E-04	mg/kg/day	2.1E-01
				Zinc	1.3E-03	mg/L	4.86E-10	mg/kg-day	NC	1/mg/kg-day	NC	1.31E-09	mg/kg-day	3.0E-01	mg/kg/day	4.4E-09
			Exp. Route Total								2.1E-08					2.2E-01
		Exposure Point Total									2.1E-08					2.2E-01
Medium Total											2.1E-08					2.2E-01
Sediment	Sediment	Off-Facility Sediment	Ingestion	Arsenic	8.1E-01	mg/kg	9.91E-07	mg/kg-day	1.5E+00	1/mg/kg-day	1.5E-06	3.11E-06	mg/kg-day	3.0E-04	mg/kg/day	1.0E-02
				Barium	3.9E+02	mg/kg	4.70E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.48E-05	mg/kg-day	2.0E-01	mg/kg/day	7.4E-05
				Cadmium	3.6E-02	mg/kg	4.43E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.39E-05	mg/kg-day	1.0E-03	mg/kg/day	1.4E-02
				Chromium	4.8E+01	mg/kg	5.81E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.82E-06	mg/kg-day	1.5E+00	mg/kg/day	1.2E-06
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.9E+03	mg/kg	3.54E-05	mg/kg-day	NTV	1/mg/kg-day	NTV	1.11E-04	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	5.3E+00	mg/kg	6.43E-08	mg/kg-day	NC	1/mg/kg-day	NC	2.02E-07	mg/kg-day	3.0E-04	mg/kg/day	6.7E-04
				Selenium	5.3E+00	mg/kg	6.42E-08	mg/kg-day	NC	1/mg/kg-day	NC	2.02E-07	mg/kg-day	5.0E-03	mg/kg/day	4.0E-05
				Silver	3.3E+01	mg/kg	3.96E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.24E-06	mg/kg-day	5.0E-03	mg/kg/day	2.5E-04
				Zinc	3.9E-04	mg/kg	4.72E-04	mg/kg-day	NC	1/mg/kg-day	NC	1.48E-03	mg/kg-day	3.0E-01	mg/kg/day	4.9E-03
			Exp. Route Total								1.5E-06					3.0E-02
			Dermal Contact	Arsenic	8.1E+01	mg/kg	1.80E-07	mg/kg-day	1.5E+00	1/mg/kg-day	2.7E-07	8.03E-07	mg/kg-day	3.0E-04	mg/kg/day	2.7E-03
				Barium	3.9E+02	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	1.4E-02	mg/kg/day	0.0E+00
				Cadmium	3.6E-02	mg/kg	2.68E-08	mg/kg-day	NC	1/mg/kg-day	NC	1.20E-07	mg/kg-day	2.5E-05	mg/kg/day	4.8E-03
				Chromium	4.8E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-02	mg/kg/day	0.0E+00
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.9E+03	mg/kg	0.00E+00	mg/kg-day	NTV	1/mg/kg-day	NTV	0.00E+00	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	5.3E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.1E-05	mg/kg/day	0.0E+00
				Selenium	5.3E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	5.0E-03	mg/kg/day	0.0E+00
				Silver	3.3E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-04	mg/kg/day	0.0E+00
				Zinc	3.9E+04	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	3.0E-01	mg/kg/day	0.0E+00
			Exp. Route Total								2.7E-07					7.5E-03
		Exposure Point Total									1.8E-06					3.8E-02
Medium Total											1.8E-06					3.8E-02
										Total of Receptor Risks Across All Media	2.9E-05	Total of Receptor Hazards Across All Media				1.6E+00

Notes:

EPC = Exposure Point Concentration
NC = Not classified as a carcinogen
NE = Not evaluated as a volatile chemical
NTV = No Toxicity Value Available
RfD = Noncancer Reference Dose

Bolded Chemicals and Bold/Underlined Risks = Exceeds a cancer risk of 1E-06 or a HQ of 0.1.
NS - Not sampled or not detected.
Property is currently vacant

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RAGS PART D TABLE 7.1 RME
CALCULATION OF CHEMICAL CANCER RISKS
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF		Cancer Risk	Intake/Exposure Concentration		RfD		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Soil	Soil	Off-Facility 4012 Maple St	Ingestion	Arsenic	5.9E+01	mg/kg	9.24E-05	mg/kg-day	1.5E+00	1/mg/kg-day	1.4E-04	7.54E-04	mg/kg-day	3.0E-04	mg/kg/day	2.5E+00
				Barium	2.7E+02	mg/kg	4.23E-04	mg/kg-day	NC	1/mg/kg-day	NC	3.45E-03	mg/kg-day	2.0E-01	mg/kg/day	1.7E-02
				Cadmium	3.4E-01	mg/kg	5.32E-05	mg/kg-day	NC	1/mg/kg-day	NC	4.35E-04	mg/kg-day	1.0E-03	mg/kg/day	4.3E-01
				Chromium	2.1E+01	mg/kg	3.29E-05	mg/kg-day	NC	1/mg/kg-day	NC	2.68E-04	mg/kg-day	1.5E+00	mg/kg/day	1.8E-04
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	3.5E-03	mg/kg	5.48E-03	mg/kg-day	NTV	1/mg/kg-day	NTV	4.47E-02	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	4.0E-01	mg/kg	6.26E-07	mg/kg-day	NC	1/mg/kg-day	NC	5.11E-06	mg/kg-day	3.0E-04	mg/kg/day	1.7E-02
				Selenium	2.3E+00	mg/kg	3.60E-06	mg/kg-day	NC	1/mg/kg-day	NC	2.94E-05	mg/kg-day	5.0E-03	mg/kg/day	5.9E-03
				Silver	1.1E-01	mg/kg	1.72E-05	mg/kg-day	NC	1/mg/kg-day	NC	1.41E-04	mg/kg-day	5.0E-03	mg/kg/day	2.8E-02
				Zinc	4.6E-03	mg/kg	7.20E-03	mg/kg-day	NC	1/mg/kg-day	NC	5.88E-02	mg/kg-day	3.0E-01	mg/kg/day	2.0E-01
			Exp. Route Total								1.4E-04					3.2E+00
			Dermal Contact	Arsenic	5.9E+01	mg/kg	8.75E-06	mg/kg-day	1.5E+00	1/mg/kg-day	1.3E-05	6.34E-05	mg/kg-day	3.0E-04	mg/kg/day	2.1E-01
				Barium	2.7E+02	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	1.4E-02	mg/kg/day	0.0E+00
				Cadmium	3.4E+01	mg/kg	1.68E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.22E-06	mg/kg-day	2.5E-05	mg/kg/day	4.9E-02
				Chromium (as III)	2.1E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-02	mg/kg/day	0.0E+00
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	3.5E-03	mg/kg	0.00E+00	mg/kg-day	NTV	1/mg/kg-day	NTV	0.00E+00	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	4.0E-01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.1E-05	mg/kg/day	0.0E+00
				Selenium	2.3E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	5.0E-03	mg/kg/day	0.0E+00
				Silver	1.1E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-04	mg/kg/day	0.0E+00
				Zinc	4.6E-03	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	3.0E-01	mg/kg/day	0.0E+00
			Exp. Route Total								1.3E-05					2.6E-01
			Produce Ingestion Future	Arsenic	5.9E+01	mg/kg	5.89E-06	mg/kg-day	1.5E+00	1/mg/kg-day	8.8E-06	7.48E-04	mg/kg-day	3.0E-04	mg/kg/day	2.5E+00
				Barium	2.7E+02	mg/kg	2.69E-05	mg/kg-day	NC	1/mg/kg-day	NC	3.42E-03	mg/kg-day	2.0E-01	mg/kg/day	1.7E-02
				Cadmium	3.4E-01	mg/kg	3.39E-06	mg/kg-day	NC	1/mg/kg-day	NC	4.31E-04	mg/kg-day	1.0E-03	mg/kg/day	4.3E-01
				Chromium	2.1E+01	mg/kg	2.10E-06	mg/kg-day	NC	1/mg/kg-day	NC	2.66E-04	mg/kg-day	1.5E+00	mg/kg/day	1.8E-04
				Copper	NS	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NS	0.00E+00	mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	3.5E-03	mg/kg	3.49E-04	mg/kg-day	NTV	1/mg/kg-day	NTV	4.44E-02	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	4.0E-01	mg/kg	3.99E-08	mg/kg-day	NC	1/mg/kg-day	NC	5.07E-06	mg/kg-day	3.0E-04	mg/kg/day	1.7E-02
				Selenium	2.3E+00	mg/kg	2.30E-07	mg/kg-day	NC	1/mg/kg-day	NC	2.92E-05	mg/kg-day	5.0E-03	mg/kg/day	5.8E-03
				Silver	1.1E-01	mg/kg	1.10E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.39E-04	mg/kg-day	5.0E-03	mg/kg/day	2.8E-02
				Zinc	4.6E-03	mg/kg	4.59E-04	mg/kg-day	NC	1/mg/kg-day	NC	5.83E-02	mg/kg-day	3.0E-01	mg/kg/day	1.9E-01
			Exp. Route Total								8.8E-06					3.2E+00
	Exposure Medium Total										1.6E-04					6.7E+00
	Air	Off-Facility 4012 Maple St	Inhalation of Particulates	Arsenic	5.9E+01	mg/kg	6.14E-09	mg/kg-day	1.51E-01	1/mg/kg-day	9.3E-08	2.64E-08	mg/kg-day	NTV	mg/kg/day	NTV
				Barium	2.7E+02	mg/kg	2.81E-08	mg/kg-day	NC	1/mg/kg-day	NC	1.21E-07	mg/kg-day	1.4E-04	mg/kg/day	8.4E-04
				Cadmium	3.4E+01	mg/kg	3.54E-09	mg/kg-day	6.30E+00	1/mg/kg-day	2.2E-08	1.52E-08	mg/kg-day	NTV	mg/kg/day	NTV
				Chromium (as VI-nc; total-c	2.1E+01	mg/kg	2.18E-09	mg/kg-day	4.2E+01	1/mg/kg-day	9.2E-08	9.39E-09	mg/kg-day	2.9E-05	mg/kg/day	3.3E-04
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	NTV	mg/kg/day	NS
				Lead	3.5E-03	mg/kg	3.64E-07	mg/kg-day	NTV	1/mg/kg-day	NTV	1.56E-06	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	4.0E-01	mg/kg	4.16E-11	mg/kg-day	NC	1/mg/kg-day	NC	1.79E-10	mg/kg-day	8.6E-05	mg/kg/day	2.1E-06
				Selenium	2.3E+00	mg/kg	2.39E-10	mg/kg-day	NC	1/mg/kg-day	NC	1.03E-09	mg/kg-day	NTV	mg/kg/day	NTV
				Silver	1.1E+01	mg/kg	1.14E-09	mg/kg-day	NC	1/mg/kg-day	NC	4.92E-09	mg/kg-day	NTV	mg/kg/day	NTV
				Zinc	4.6E-03	mg/kg	4.78E-07	mg/kg-day	NC	1/mg/kg-day	NC	2.06E-06	mg/kg-day	NTV	mg/kg/day	NTV
			Exp. Route Total								2.1E-07					1.2E-03
Medium Total											1.6E-04					6.7E+00

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RAGS PART D TABLE 7.1 RME
CALCULATION OF CHEMICAL CANCER RISKS
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF		Cancer	Intake/Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
Surface Water	Surface Water	Off-Facility	Dermal Contact	Arsenic	2.2E-02	mg/L	1.37E-08	mg/kg-day	1.5E+00	1/mg/kg-day	2.1E-08	3.70E-08	mg/kg-day	3.0E-04	mg/kg/day	1.2E-04
		Surface Water		Barium	3.9E-01	mg/L	2.43E-07	mg/kg-day	NC	1/mg/kg-day	NC	6.56E-07	mg/kg-day	1.4E-02	mg/kg/day	4.7E-05
				Cadmium	1.8E-01	mg/L	1.12E-07	mg/kg-day	NC	1/mg/kg-day	NC	3.03E-07	mg/kg-day	2.5E-05	mg/kg/day	1.2E-02
				Chromium	1.9E-02	mg/L	1.18E-08	mg/kg-day	NC	1/mg/kg-day	NC	3.20E-08	mg/kg-day	2.0E-02	mg/kg/day	1.6E-06
				Copper	NS	mg/L		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.7E-01	mg/L	1.68E-08	mg/kg-day	NTV	1/mg/kg-day	NTV	4.54E-08	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	NS	mg/L		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	2.1E-05	mg/kg/day	NS
				Selenium	4.6E-03	mg/L	2.86E-09	mg/kg-day	NC	1/mg/kg-day	NC	7.74E-09	mg/kg-day	5.0E-03	mg/kg/day	1.5E-06
				Silver	4.2E-01	mg/L	1.55E-05	mg/kg-day	NC	1/mg/kg-day	NC	4.19E-05	mg/kg-day	2.0E-04	mg/kg/day	2.1E-01
				Zinc	1.3E-03	mg/L	4.86E-10	mg/kg-day	NC	1/mg/kg-day	NC	1.31E-09	mg/kg-day	3.0E-01	mg/kg/day	4.4E-09
			Exp. Route Total								2.1E-08					2.2E-01
		Exposure Point Total									2.1E-08					2.2E-01
Medium Total											2.1E-08					2.2E-01
Sediment	Sediment	Off-Facility	Ingestion	Arsenic	8.1E-01	mg/kg	9.91E-07	mg/kg-day	1.5E+00	1/mg/kg-day	1.5E-06	3.11E-06	mg/kg-day	3.0E-04	mg/kg/day	1.0E-02
		Sediment		Barium	3.9E+02	mg/kg	4.70E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.48E-05	mg/kg-day	2.0E-01	mg/kg/day	7.4E-05
				Cadmium	3.6E+02	mg/kg	4.43E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.39E-05	mg/kg-day	1.0E-03	mg/kg/day	1.4E-02
				Chromium	4.8E+01	mg/kg	5.81E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.82E-06	mg/kg-day	1.5E+00	mg/kg/day	1.2E-06
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.9E-03	mg/kg	3.54E-05	mg/kg-day	NTV	1/mg/kg-day	NTV	1.11E-04	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	5.3E+00	mg/kg	6.43E-08	mg/kg-day	NC	1/mg/kg-day	NC	2.02E-07	mg/kg-day	3.0E-04	mg/kg/day	6.7E-04
				Selenium	5.3E+00	mg/kg	6.42E-08	mg/kg-day	NC	1/mg/kg-day	NC	2.02E-07	mg/kg-day	5.0E-03	mg/kg/day	4.0E-05
				Silver	3.3E+01	mg/kg	3.96E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.24E-06	mg/kg-day	5.0E-03	mg/kg/day	2.5E-04
				Zinc	3.9E-04	mg/kg	4.72E-04	mg/kg-day	NC	1/mg/kg-day	NC	1.48E-03	mg/kg-day	3.0E-01	mg/kg/day	4.9E-03
			Exp. Route Total								1.5E-06					3.0E-02
			Dermal Contact	Arsenic	8.1E-01	mg/kg	1.80E-07	mg/kg-day	1.5E+00	1/mg/kg-day	2.7E-07	8.03E-07	mg/kg-day	3.0E-04	mg/kg/day	2.7E-03
				Barium	3.9E+02	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	1.4E-02	mg/kg/day	0.0E+00
				Cadmium	3.6E+02	mg/kg	2.68E-08	mg/kg-day	NC	1/mg/kg-day	NC	1.20E-07	mg/kg-day	2.5E-05	mg/kg/day	4.8E-03
				Chromium	4.8E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-02	mg/kg/day	0.0E+00
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.9E-03	mg/kg	0.00E+00	mg/kg-day	NTV	1/mg/kg-day	NTV	0.00E+00	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	5.3E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.1E-05	mg/kg/day	0.0E+00
				Selenium	5.3E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	5.0E-03	mg/kg/day	0.0E+00
				Silver	3.3E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-04	mg/kg/day	0.0E+00
				Zinc	3.9E-04	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	3.0E-01	mg/kg/day	0.0E+00
			Exp. Route Total								2.7E-07					7.5E-03
		Exposure Point Total									1.8E-06					3.8E-02
Medium Total											1.8E-06					3.8E-02
										Total of Receptor Risks Across All Media	1.6E-04	Total of Receptor Hazards Across All Media				6.9E+00

Notes:
EPC = Exposure Point Concentration
NC = Not classified as a carcinogen
NE = Not evaluated as a volatile chemical
NTV = No Toxicity Value Available
RfD = Noncancer Reference Dose

Bolded Chemicals and Bold/Underlined Risks = Exceeds a cancer risk of 1E-06 or a HQ of 0.1.
NS - Not sampled or not detected.
Property is currently vacant

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RAGS PART D TABLE 7.1 RME
CALCULATION OF CHEMICAL CANCER RISKS
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF		Cancer	Intake/Exposure Concentration		RfD		Hazard
							Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
Soil	Soil	Off-Facility	Ingestion	Arsenic	2.5E-01	mg/kg	3.91E-05	mg/kg-day	1.5E+00	1/mg/kg-day	5.9E-05	3.20E-04	mg/kg-day	3.0E-04	mg/kg/day	1.1E+00
		Cookson Rd & 44th St		Barium	2.4E+02	mg/kg	3.76E-04	mg/kg-day	NC	1/mg/kg-day	NC	3.07E-03	mg/kg-day	2.0E-01	mg/kg/day	1.5E-02
				Cadmium	3.1E+01	mg/kg	4.85E-05	mg/kg-day	NC	1/mg/kg-day	NC	3.96E-04	mg/kg-day	1.0E-03	mg/kg/day	4.0E-01
				Chromium	2.1E+01	mg/kg	3.29E-05	mg/kg-day	NC	1/mg/kg-day	NC	2.68E-04	mg/kg-day	1.5E+00	mg/kg/day	1.8E-04
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	4.3E+02	mg/kg	6.73E-04	mg/kg-day	NTV	1/mg/kg-day	NTV	5.50E-03	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	2.0E-01	mg/kg	3.13E-07	mg/kg-day	NC	1/mg/kg-day	NC	2.56E-06	mg/kg-day	3.0E-04	mg/kg/day	8.5E-03
				Selenium	1.3E+00	mg/kg	2.04E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.66E-05	mg/kg-day	5.0E-03	mg/kg/day	3.3E-03
				Silver	1.4E+00	mg/kg	2.19E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.79E-05	mg/kg-day	5.0E-03	mg/kg/day	3.6E-03
				Zinc	1.9E-03	mg/kg	2.97E-03	mg/kg-day	NC	1/mg/kg-day	NC	2.43E-02	mg/kg-day	3.0E-01	mg/kg/day	8.1E-02
			Exp. Route Total								5.9E-05					1.6E+00
			Dermal Contact	Arsenic	2.5E-01	mg/kg	3.71E-06	mg/kg-day	1.5E+00	1/mg/kg-day	5.6E-06	2.68E-05	mg/kg-day	3.0E-04	mg/kg/day	8.9E-02
				Barium	2.4E+02	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	1.4E-02	mg/kg/day	0.0E+00
				Cadmium	3.1E+01	mg/kg	1.53E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.11E-06	mg/kg-day	2.5E-05	mg/kg/day	4.4E-02
				Chromium (as III)	2.1E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-02	mg/kg/day	0.0E+00
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	4.3E+02	mg/kg	0.00E+00	mg/kg-day	NTV	1/mg/kg-day	NTV	0.00E+00	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	2.0E-01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.1E-05	mg/kg/day	0.0E+00
				Selenium	1.3E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	5.0E-03	mg/kg/day	0.0E+00
				Silver	1.4E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-04	mg/kg/day	0.0E+00
				Zinc	1.9E-03	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	3.0E-01	mg/kg/day	0.0E+00
			Exp. Route Total								5.6E-06					1.3E-01
			Produce Ingestion	Arsenic	2.5E-01	mg/kg	2.49E-06	mg/kg-day	1.5E+00	1/mg/kg-day	3.7E-06	3.17E-04	mg/kg-day	3.0E-04	mg/kg/day	1.1E+00
			Future	Barium	2.4E+02	mg/kg	2.40E-05	mg/kg-day	NC	1/mg/kg-day	NC	3.04E-03	mg/kg-day	2.0E-01	mg/kg/day	1.5E-02
				Cadmium	3.1E+01	mg/kg	3.09E-06	mg/kg-day	NC	1/mg/kg-day	NC	3.93E-04	mg/kg-day	1.0E-03	mg/kg/day	3.9E-01
				Chromium	2.1E-01	mg/kg	2.10E-06	mg/kg-day	NC	1/mg/kg-day	NC	2.66E-04	mg/kg-day	1.5E+00	mg/kg/day	1.8E-04
				Copper	NS	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NS	0.00E+00	mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	4.3E-02	mg/kg	4.29E-05	mg/kg-day	NTV	1/mg/kg-day	NTV	5.45E-03	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	2.0E-01	mg/kg	2.00E-08	mg/kg-day	NC	1/mg/kg-day	NC	2.54E-06	mg/kg-day	3.0E-04	mg/kg/day	8.5E-03
				Selenium	1.3E+00	mg/kg	1.30E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.65E-05	mg/kg-day	5.0E-03	mg/kg/day	3.3E-03
				Silver	1.4E+00	mg/kg	1.40E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.78E-05	mg/kg-day	5.0E-03	mg/kg/day	3.6E-03
				Zinc	1.9E-03	mg/kg	1.90E-04	mg/kg-day	NC	1/mg/kg-day	NC	2.41E-02	mg/kg-day	3.0E-01	mg/kg/day	8.0E-02
			Exp. Route Total								3.7E-06					1.6E+00
	Exposure Medium Total										6.8E-05					3.3E+00
	Air	Off-Facility	Inhalation of Particulates	Arsenic	2.5E-01	mg/kg	2.60E-09	mg/kg-day	1.51E+01	1/mg/kg-day	3.9E-08	1.12E-08	mg/kg-day	NTV	mg/kg/day	NTV
		Cookson Rd & 44th St		Barium	2.4E+02	mg/kg	2.50E-08	mg/kg-day	NC	1/mg/kg-day	NC	1.07E-07	mg/kg-day	1.4E-04	mg/kg/day	7.5E-04
				Cadmium	3.1E+01	mg/kg	3.22E-09	mg/kg-day	6.30E+00	1/mg/kg-day	2.0E-08	1.39E-08	mg/kg-day	NTV	mg/kg/day	NTV
				Chromium (as VI-nc; total-c	2.1E+01	mg/kg	2.18E-09	mg/kg-day	4.2E+01	1/mg/kg-day	9.2E-08	9.39E-09	mg/kg-day	2.9E-05	mg/kg/day	3.3E-04
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	NTV	mg/kg/day	NS
				Lead	4.3E+02	mg/kg	4.47E-08	mg/kg-day	NTV	1/mg/kg-day	NTV	1.92E-07	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	2.0E-01	mg/kg	2.08E-11	mg/kg-day	NC	1/mg/kg-day	NC	8.94E-11	mg/kg-day	8.6E-05	mg/kg/day	1.0E-06
				Selenium	1.3E+00	mg/kg	1.35E-10	mg/kg-day	NC	1/mg/kg-day	NC	5.81E-10	mg/kg-day	NTV	mg/kg/day	NTV
				Silver	1.4E+00	mg/kg	1.46E-10	mg/kg-day	NC	1/mg/kg-day	NC	6.26E-10	mg/kg-day	NTV	mg/kg/day	NTV
				Zinc	1.9E-03	mg/kg	1.98E-07	mg/kg-day	NC	1/mg/kg-day	NC	8.49E-07	mg/kg-day	NTV	mg/kg/day	NTV
			Exp. Route Total								1.5E-07					1.1E-03
Medium Total											6.8E-05					3.3E+00

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RAGS PART D TABLE 7.1 RME
CALCULATION OF CHEMICAL CANCER RISKS
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF		Cancer Risk	Intake/Exposure Concentration		RfD		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Water	Surface Water	Off-Facility Surface Water	Dermal Contact	Arsenic	2.2E-02	mg/L	1.37E-08	mg/kg-day	1.5E+00	1/mg/kg-day	2.1E-08	3.70E-08	mg/kg-day	3.0E-04	mg/kg/day	1.2E-04
				Barium	3.9E-01	mg/L	2.43E-07	mg/kg-day	NC	1/mg/kg-day	NC	6.56E-07	mg/kg-day	1.4E-02	mg/kg/day	4.7E-05
				Cadmium	1.8E-01	mg/L	1.12E-07	mg/kg-day	NC	1/mg/kg-day	NC	3.03E-07	mg/kg-day	2.5E-05	mg/kg/day	1.2E-02
				Chromium	1.9E-02	mg/L	1.18E-08	mg/kg-day	NC	1/mg/kg-day	NC	3.20E-08	mg/kg-day	2.0E-02	mg/kg/day	1.6E-06
				Copper	NS	mg/L		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.7E-01	mg/L	1.68E-08	mg/kg-day	NTV	1/mg/kg-day	NTV	4.54E-08	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	NS	mg/L		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	2.1E-05	mg/kg/day	NS
				Selenium	4.6E-03	mg/L	2.86E-09	mg/kg-day	NC	1/mg/kg-day	NC	7.74E-09	mg/kg-day	5.0E-03	mg/kg/day	1.5E-06
				Silver	4.2E-01	mg/L	1.55E-05	mg/kg-day	NC	1/mg/kg-day	NC	4.19E-05	mg/kg-day	2.0E-04	mg/kg/day	2.1E-01
				Zinc	1.3E-03	mg/L	4.86E-10	mg/kg-day	NC	1/mg/kg-day	NC	1.31E-09	mg/kg-day	3.0E-01	mg/kg/day	4.4E-09
			Exp. Route Total								2.1E-08					2.2E-01
		Exposure Point Total									2.1E-08					2.2E-01
Medium Total											2.1E-08					2.2E-01
Sediment	Sediment	Off-Facility Sediment	Ingestion	Arsenic	8.1E-01	mg/kg	9.91E-07	mg/kg-day	1.5E-00	1/mg/kg-day	1.5E-06	3.11E-06	mg/kg-day	3.0E-04	mg/kg/day	1.0E-02
				Barium	3.9E-02	mg/kg	4.70E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.48E-05	mg/kg-day	2.0E-01	mg/kg/day	7.4E-05
				Cadmium	3.6E-02	mg/kg	4.43E-06	mg/kg-day	NC	1/mg/kg-day	NC	1.39E-05	mg/kg-day	1.0E-03	mg/kg/day	1.4E-02
				Chromium	4.8E+01	mg/kg	5.81E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.82E-06	mg/kg-day	1.5E+00	mg/kg/day	1.2E-06
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.9E-03	mg/kg	3.54E-05	mg/kg-day	NTV	1/mg/kg-day	NTV	1.11E-04	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	5.3E-00	mg/kg	6.43E-08	mg/kg-day	NC	1/mg/kg-day	NC	2.02E-07	mg/kg-day	3.0E-04	mg/kg/day	6.7E-04
				Selenium	5.3E-00	mg/kg	6.42E-08	mg/kg-day	NC	1/mg/kg-day	NC	2.02E-07	mg/kg-day	5.0E-03	mg/kg/day	4.0E-05
				Silver	3.3E+01	mg/kg	3.96E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.24E-06	mg/kg-day	5.0E-03	mg/kg/day	2.5E-04
				Zinc	3.9E-04	mg/kg	4.72E-04	mg/kg-day	NC	1/mg/kg-day	NC	1.48E-03	mg/kg-day	3.0E-01	mg/kg/day	4.9E-03
			Exp. Route Total								1.5E-06					3.0E-02
			Dermal Contact	Arsenic	8.1E-01	mg/kg	1.80E-07	mg/kg-day	1.5E+00	1/mg/kg-day	2.7E-07	8.03E-07	mg/kg-day	3.0E-04	mg/kg/day	2.7E-03
				Barium	3.9E-02	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	1.4E-02	mg/kg/day	0.0E+00
				Cadmium	3.6E-02	mg/kg	2.68E-08	mg/kg-day	NC	1/mg/kg-day	NC	1.20E-07	mg/kg-day	2.5E-05	mg/kg/day	4.8E-03
				Chromium	4.8E-01	mg/kg	0.00E-00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E-00	mg/kg-day	2.0E-02	mg/kg/day	0.0E+00
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	2.9E-03	mg/kg	0.00E-00	mg/kg-day	NTV	1/mg/kg-day	NTV	0.00E+00	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	5.3E-00	mg/kg	0.00E-00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.1E-05	mg/kg/day	0.0E+00
				Selenium	5.3E-00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	5.0E-03	mg/kg/day	0.0E+00
				Silver	3.3E-01	mg/kg	0.00E-00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-04	mg/kg/day	0.0E+00
				Zinc	3.9E-04	mg/kg	0.00E-00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E-00	mg/kg-day	3.0E-01	mg/kg/day	0.0E+00
			Exp. Route Total								2.7E-07					7.5E-03
		Exposure Point Total									1.8E-06					3.8E-02
Medium Total											1.8E-06					3.8E-02
											Total of Receptor Risks Across All Media	7.0E-06		Total of Receptor Hazards Across All Media		3.5E+00

Notes:

EPC = Exposure Point Concentration
NC = Not classified as a carcinogen
NE = Not evaluated as a volatile chemical
NTV = No Toxicity Value Available
RfD = Noncancer Reference Dose

Bolded Chemicals and Bold/Underlined Risks = Exceeds a cancer risk of 1E-06 or a HQ of 0.1.
NS - Not sampled or not detected.
Property is currently vacant

RAGS PART D TABLE 7.1 RME
CALCULATION OF CHEMICAL CANCER RISKS
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plating Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF		Cancer	Intake/Exposure Concentration		RfD		Hazard
							Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
Soil	Soil	Off-Facility	Ingestion	Arsenic	2.0E+01	mg/kg	4.54E-06	mg/kg-day	1.5E+00	1/mg/kg-day	6.8E-06	3.71E-05	mg/kg-day	3.0E-04	mg/kg/day	1.2E-01
		Alleyways		Barium	3.0E+02	mg/kg	6.96E-05	mg/kg-day	NC	1/mg/kg-day	NC	5.69E-04	mg/kg-day	2.0E-01	mg/kg/day	2.8E-03
				Cadmium	2.0E+01	mg/kg	4.68E-06	mg/kg-day	NC	1/mg/kg-day	NC	3.82E-05	mg/kg-day	1.0E-03	mg/kg/day	3.8E-02
				Chromium	4.9E+01	mg/kg	1.14E-05	mg/kg-day	NC	1/mg/kg-day	NC	9.30E-05	mg/kg-day	1.5E+00	mg/kg/day	6.2E-05
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	5.2E+02	mg/kg	1.20E-04	mg/kg-day	NTV	1/mg/kg-day	NTV	9.79E-04	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.4E-01	mg/kg	3.23E-08	mg/kg-day	NC	1/mg/kg-day	NC	2.64E-07	mg/kg-day	3.0E-04	mg/kg/day	8.8E-04
				Selenium	1.1E+00	mg/kg	2.51E-07	mg/kg-day	NC	1/mg/kg-day	NC	2.05E-06	mg/kg-day	5.0E-03	mg/kg/day	4.1E-04
				Silver	2.8E+00	mg/kg	6.58E-07	mg/kg-day	NC	1/mg/kg-day	NC	5.37E-06	mg/kg-day	5.0E-03	mg/kg/day	1.1E-03
				Zinc	3.5E+03	mg/kg	8.08E-04	mg/kg-day	NC	1/mg/kg-day	NC	6.60E-03	mg/kg-day	3.0E-01	mg/kg/day	2.2E-02
			Exp. Route Total								6.8E-06					1.9E-01
			Dermal Contact	Arsenic	2.0E+01	mg/kg	2.89E-06	mg/kg-day	1.5E+00	1/mg/kg-day	4.3E-06	2.10E-05	mg/kg-day	3.0E-04	mg/kg/day	7.0E-02
				Barium	3.0E+02	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	1.4E-02	mg/kg/day	0.0E+00
				Cadmium	2.0E+01	mg/kg	9.94E-08	mg/kg-day	NC	1/mg/kg-day	NC	7.20E-07	mg/kg-day	2.5E-05	mg/kg/day	2.9E-02
				Chromium (as III)	4.9E+01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-02	mg/kg/day	0.0E+00
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	4.0E-02	mg/kg/day	NS
				Lead	5.2E+02	mg/kg	0.00E+00	mg/kg-day	NTV	1/mg/kg-day	NTV	0.00E+00	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.4E-01	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.1E-05	mg/kg/day	0.0E+00
				Selenium	1.1E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	5.0E-03	mg/kg/day	0.0E+00
				Silver	2.8E+00	mg/kg	0.00E+00	mg/kg-day	NC	1/mg/kg-day	NC	0.00E+00	mg/kg-day	2.0E-04	mg/kg/day	0.0E+00
				Zinc	*3.5E+03*	*mg/kg*	*0.00E+00*	*mg/kg-day*	*NC*	*1/mg/kg-day*	*NC*	*0.00E+00*	*mg/kg-day*	*3.0E-01*	*mg/kg/day*	*0.0E+00*
			Exp. Route Total								4.3E-06					9.9E-02
	Air	Off-Facility	Inhalation of Particulates	Arsenic	2.0E+01	mg/kg	2.03E-09	mg/kg-day	1.51E+01	1/mg/kg-day	3.1E-08	8.73E-09	mg/kg-day	NTV	mg/kg/day	NTV
		Alleyways		Barium	3.0E+02	mg/kg	3.11E-08	mg/kg-day	NC	1/mg/kg-day	NC	1.34E-07	mg/kg-day	1.4E-04	mg/kg/day	9.4E-04
				Cadmium	2.0E+01	mg/kg	2.09E-09	mg/kg-day	6.30E+00	1/mg/kg-day	1.3E-08	8.99E-09	mg/kg-day	NTV	mg/kg/day	NTV
				Chromium (as VI-nc; total-c	4.9E+01	mg/kg	5.09E-09	mg/kg-day	4.2E+01	1/mg/kg-day	2.1E-07	2.19E-08	mg/kg-day	2.9E-05	mg/kg/day	7.7E-04
				Copper	NS	mg/kg		mg/kg-day	NC	1/mg/kg-day	NS		mg/kg-day	NTV	mg/kg/day	NS
				Lead	5.2E+02	mg/kg	5.36E-08	mg/kg-day	NTV	1/mg/kg-day	NTV	2.30E-07	mg/kg-day	NTV	mg/kg/day	NTV
				Mercury	1.4E-01	mg/kg	1.45E-11	mg/kg-day	NC	1/mg/kg-day	NC	6.21E-11	mg/kg-day	8.6E-05	mg/kg/day	7.2E-07
				Selenium	1.1E+00	mg/kg	1.12E-10	mg/kg-day	NC	1/mg/kg-day	NC	4.83E-10	mg/kg-day	NTV	mg/kg/day	NTV
				Silver	2.8E+00	mg/kg	2.94E-10	mg/kg-day	NC	1/mg/kg-day	NC	1.26E-09	mg/kg-day	NTV	mg/kg/day	NTV
				Zinc	3.5E+03	mg/kg	3.61E-07	mg/kg-day	NC	1/mg/kg-day	NC	1.55E-06	mg/kg-day	NTV	mg/kg/day	NTV
			Exp. Route Total								2.6E-07					1.7E-03
Medium Total											1.1E-05					2.9E-01
										Total of Receptor Risks Across All Media	1.1E-05	Total of Receptor Hazards Across All Media				2.9E-01

Notes:
EPC = Exposure Point Concentration
NC = Not classified as a carcinogen
NE = Not evaluated as a volatile chemical
NTV = No Toxicity Value Available
RfD = Noncancer Reference Dose

Bolded Chemicals and Bold/Underlined Risks = Exceeds a cancer risk of 1E-06 or a HQ of 0.1.
NS - Not sampled or not detected.
Property is currently vacant

TABLE 9a
RAGS PART D TABLE 9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Facility Area Trespasser Exposure - Former American Zinc Plating Site, Fairmont City, IL

Scenario Timeframe: Current
Receptor Population: Trespasser
Receptor Age: Adolescent

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Inhalation Vapors	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Inhalation Vapors	Dermal	Exposure Routes Total
Surface Soil	Soil	Facility area soil	Arsenic	2.90E-05	2.72E-08	--	7.48E-06	3.65E-05	Skin	4.51E-01	NTV	--	1.16E-01	5.68E-01
fine fraction			Barium	NC	NC	--	NC	0.00E+00	Kidney	1.23E-03	1.60E-04	--	0.00E+00	1.39E-03
			Cadmium	NC	1.92E-08	--	NC	1.92E-08	Kidney	2.30E-01	NTV	--	7.91E-02	3.09E-01
			Chromium	NC	1.58E-08	--	NC	1.58E-08	Lung	1.89E-05	9.23E-05	--	0.00E+00	1.11E-04
			Copper	NS	NS	--	NS	0.00E+00	GI System	NS	NS	--	NS	0.00E+00
			Lead	NTV	NTV	--	NTV	0.00E+00	NA	NTV	NTV	--	NTV	0.00E+00
			Mercury	NC	NC	--	NC	0.00E+00	Immunological	1.16E-02	3.78E-06	--	0.00E+00	1.16E-02
			Selenium	NC	NC	--	NC	0.00E+00	Skin; central nervous system	4.07E-04	NTV	--	0.00E+00	4.07E-04
			Silver	NC	NC	--	NC	0.00E+00	central nervous system	6.68E-03	NTV	--	0.00E+00	6.68E-03
			Zinc	NC	NC	--	NC	0.00E+00	Circulatory system	4.33E-02	NTV	--	0.00E+00	4.33E-02
			Chemical Total	2.9E-05	6.2E-08	0.0E+00	7.5E-06	3.7E-05		7.4E-01	2.6E-04	0.0E+00	2.0E-01	9.4E-01
		Exposure Point Total						3.7E-05						9.4E-01
	Exposure Medium Total							3.7E-05						9.4E-01
Soil Total								3.7E-05						9.4E-01
Surface water	Surface water	Surface Water	Arsenic	--	--	--	1.59E-08	1.59E-08	Skin	--	--	--	2.5E-04	2.47E-04
			Barium	--	--	--	NC	0.00E+00	Kidney	--	--	--	9.4E-05	9.37E-05
			Cadmium	--	--	--	NC	0.00E+00	Kidney	--	--	--	2.4E-02	2.42E-02
			Chromium	--	--	--	NC	0.00E+00	Lung	--	--	--	3.3E-06	3.28E-06
			Copper	--	--	--	NS	0.00E+00	GI System	--	--	--	NS	0.00E+00
			Lead	--	--	--	NTV	0.00E+00	NA	--	--	--	NTV	0.00E+00
			Mercury	--	--	--	NS	0.00E+00	Immunological	--	--	--	NS	0.00E+00
			Selenium	--	--	--	NC	0.00E+00	Skin, central nervous system	--	--	--	3.1E-06	3.09E-06
			Silver	--	--	--	NC	0.00E+00	central nervous system	--	--	--	4.2E-01	4.19E-01
			Zinc	--	--	--	NC	0.00E+00	Circulatory system	--	--	--	8.7E-09	8.75E-09
			Chemical Total	0.0E+00	0.0E+00	0.0E+00	1.6E-08	1.6E-08		0.0E+00	0.0E+00	0.0E+00	4.4E-01	4.4E-01
		Exposure Point Total						1.6E-08						4.4E-01
	Exposure Medium Total							1.6E-08						4.4E-01
Surface water Total								1.6E-08						4.4E-01
Sediment	Sediment	Sediment	Arsenic	3.44E-07	--	--	1.33E-06	1.68E-06	Skin	5.4E-03	--	--	2.1E-02	2.61E-02
			Barium	NC	--	--	NC	0.00E+00	Kidney	0.0E+00	--	--	1.5E-04	1.48E-04
			Cadmium	NC	--	--	NC	0.00E+00	Kidney	9.6E-03	--	--	2.8E-02	3.74E-02
			Chromium	NC	--	--	NC	0.00E+00	Lung	0.0E+00	--	--	2.4E-06	2.43E-06
			Copper	NS	--	--	NS	0.00E+00	GI System	NS	--	--	NS	0.00E+00
			Lead	NTV	--	--	NTV	0.00E+00	NA	NTV	--	--	NTV	0.00E+00
			Mercury	NC	--	--	NC	0.00E+00	Immunological	0.0E+00	--	--	1.3E-03	1.35E-03
			Selenium	NC	--	--	NC	0.00E+00	Skin, central nervous system	0.0E+00	--	--	8.1E-05	8.06E-05
			Silver	NC	--	--	NC	0.00E+00	central nervous system	0.0E+00	--	--	5.0E-04	4.98E-04
			Zinc	NC	--	--	NC	0.00E+00	Circulatory system	0.0E+00	--	--	9.9E-03	9.89E-03
			Chemical Total	3.4E-07	0.0E+00	0.0E+00	1.3E-06	1.7E-06		1.5E-02	0.0E+00	0.0E+00	6.1E-02	7.5E-02
		Exposure Point Total						1.7E-06						7.5E-02
	Exposure Medium Total							1.7E-06						7.5E-02
Sediment Total								1.7E-06						7.5E-02
Receptor Total							Receptor Risk Total	3.8E-05					Receptor HI Total	1.5E+00

Total Skin HI Across All Media =	5.94E-01
Total Kidney HI Across All Media =	3.72E-01
Total Nervous System HI Across All Media =	4.26E-01
Total Lung HI Across All Media =	1.17E-04
Total Immune HI Across All Media =	1.30E-02

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TABLE 9b
RAGS PART D TABLE 9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Off- Facility Area Recreational Exposure - Former American Zinc Plating Site, Fairmont City, IL

Scenario Timeframe: Current/Future
Receptor Population: Recreational
Receptor Age: Adolescent

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Inhalation Vapors	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Inhalation Vapors	Dermal	Exposure Routes Total
Surface Soil	Soil	Off-Facility Area soil	Arsenic	1.22E-06	1.14E-09	--	3.14E-07	1.53E-06	Skin	1.90E-02	NTV	--	4.89E-03	2.38E-02
fine fraction			Barium	NC	NC	--	NC	0.00E+00	Kidney	4.23E-04	5.50E-05	--	0.00E+00	4.77E-04
residential lots			Cadmium	NC	1.77E-09	--	NC	1.77E-09	Kidney	2.11E-02	NTV	--	7.26E-03	2.84E-02
			Chromium	NC	4.08E-09	--	NC	4.08E-09	Lung	4.88E-06	2.38E-05	--	0.00E+00	2.87E-05
			Copper	NS	NS	--	NS	0.00E+00	GI System	NS	NS	--	NS	0.00E+00
			Lead	NTV	NTV	--	NTV	0.00E+00	NA	NTV	NTV	--	NTV	0.00E+00
			Mercury	NC	NC	--	NC	0.00E+00	Immunological	4.69E-04	1.53E-07	--	0.00E+00	4.70E-04
			Selenium	NC	NC	--	NC	0.00E+00	Skin, central nervous system	8.90E-05	NTV	--	0.00E+00	8.90E-05
			Silver	NC	NC	--	NC	0.00E+00	central nervous system	2.30E-04	NTV	--	0.00E+00	2.30E-04
			Zinc	NC	NC	--	NC	0.00E+00	Circulatory system	5.65E-03	NTV	--	0.00E+00	5.65E-03
			Chemical Total	1.2E-06	7.0E-09	0.0E+00	3.1E-07	1.5E-06		4.7E-02	7.9E-05	0.0E+00	1.2E-02	5.9E-02
		Exposure Point Total						1.5E-06						5.9E-02
	Exposure Medium Total							1.5E-06						5.9E-02
Soil Total								1.5E-06						5.9E-02
Surface water	Surface water	Surface Water	Arsenic	--	--	--	1.68E-08	1.68E-08	Skin	--	--	--	2.6E-04	2.61E-04
			Barium	--	--	--	NC	0.00E+00	Kidney	--	--	--	9.7E-05	9.73E-05
			Cadmium	--	--	--	NC	0.00E+00	Kidney	--	--	--	8.0E-02	7.97E-02
			Chromium	--	--	--	NC	0.00E+00	Lung	--	--	--	1.8E-05	1.81E-05
			Copper	--	--	--	NC	0.00E+00	GI System	--	--	--	7.4E-05	7.37E-05
			Lead	--	--	--	NTV	0.00E+00	NA	--	--	--	NTV	0.00E+00
			Mercury	--	--	--	NC	0.00E+00	Immunological	--	--	--	5.6E-05	5.57E-05
			Selenium	--	--	--	NC	0.00E+00	Skin, central nervous system	--	--	--	3.8E-06	3.84E-06
			Silver	--	--	--	NC	0.00E+00	central nervous system	--	--	--	5.4E-05	5.44E-05
			Zinc	--	--	--	NC	0.00E+00	Circulatory system	--	--	--	1.2E-03	1.24E-03
			Chemical Total	0.0E+00	0.0E+00	0.0E+00	1.7E-08	1.7E-08		0.0E+00	0.0E+00	0.0E+00	8.1E-02	8.1E-02
		Exposure Point Total						1.7E-08						8.1E-02
	Exposure Medium Total							1.7E-08						8.1E-02
Surface water Total								1.7E-08						8.1E-02
Sediment	Sediment	Sediment	Arsenic	2.34E-07	--	--	9.09E-07	1.14E-06	Skin	3.6E-03	--	--	1.4E-02	1.78E-02
			Barium	NC	--	--	NC	0.00E+00	Kidney	0.0E+00	--	--	1.1E-04	1.09E-04
			Cadmium	NC	--	--	NC	0.00E+00	Kidney	4.6E-03	--	--	1.3E-02	1.79E-02
			Chromium	NC	--	--	NC	0.00E+00	Lung	0.0E+00	--	--	4.2E-06	4.15E-06
			Copper	NC	--	--	NC	0.00E+00	GI System	0.0E+00	--	--	4.3E-03	4.25E-03
			Lead	NTV	--	--	NTV	0.00E+00	NA	NTV	--	--	NTV	0.00E+00
			Mercury	NC	--	--	NC	0.00E+00	Immunological	0.0E+00	--	--	3.6E-04	3.60E-04
			Selenium	NC	--	--	NC	0.00E+00	Skin, central nervous system	0.0E+00	--	--	4.2E-05	4.23E-05
			Silver	NC	--	--	NC	0.00E+00	central nervous system	0.0E+00	--	--	6.6E-05	6.60E-05
			Zinc	NC	--	--	NC	0.00E+00	Circulatory system	0.0E+00	--	--	3.0E-03	3.05E-03
			Chemical Total	2.3E-07	0.0E+00	0.0E+00	9.1E-07	1.1E-06		8.2E-03	0.0E+00	0.0E+00	3.5E-02	4.4E-02
		Exposure Point Total						1.1E-06						4.4E-02
	Exposure Medium Total							1.1E-06						4.4E-02
Sediment Total								1.1E-06						4.4E-02
Receptor Total							Receptor Risk Total	2.7E-06					Receptor HI Total	1.8E-01

Total Skin HI Across All Media =	4.20E-02
Total Kidney HI Across All Media =	1.27E-01
Total Nervous System HI Across All Media =	4.85E-04
Total Lung HI Across All Media =	5.10E-05
Total Immune HI Across All Media =	8.86E-04
Total GI HI Across All Media =	4.33E-03
Total Circulatory HI Across All Media =	9.94E-03

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TABLE 9c
RAGS PART D TABLE 9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child) Exposure - Former American Zinc Plating Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Inhalation Vapors	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Inhalation Vapors	Dermal	Exposure Routes Total
Surface Soil fine fraction	Soil	Facility Area	Arsenic	5 82E-04	2 05E-07	-	4 89E-05	6 31E-04	Skin	1.51E+01	NTV	--	1.27E+00	1.64E+01
			Barium	NC	NC	--	NC	0.00E+00	Kidney	4.12E-02	2 02E-03	--	0 00E+00	4 32E-02
			Cadmium	NC	1 45E-07	-	NC	1 45E-07	Kidney	7 69E+00	NTV	--	8 61E-01	8 55E+00
			Chromium	NC	1 19E-07	--	NC	1.19E-07	Lung	6 32E-04	1 16E-03	--	0.00E+00	1.79E-03
			Copper	NS	NS	-	NS	0 00E+00	GI System	NS	NS	--	NS	0 00E+00
			Lead	NTV	NTV	--	NTV	0.00E+00	NA	NTV	NTV	--	NTV	0 00E+00
			Mercury	NC	NC	--	NC	0 00E+00	Immunological	3 88E-01	4 75E-05	--	0 00E+00	3 88E-01
			Selenium	NC	NC	--	NC	0 00E+00	Skin; central nervous system	1.36E-02	NTV	--	0 00E+00	1 36E-02
			Silver	NC	NC	--	NC	0 00E+00	central nervous system	2.23E-01	NTV	--	0 00E+00	2 23E-01
			Zinc	NC	NC	-	NC	0 00E+00	Circulatory system	1.45E+00	NTV	--	0 00E+00	1 45E+00
			Chemical Total	5 8E-04	4.7E-07	0 0E+00	4 9E-05	6 3E-04		2.5E+01	3 2E-03	0.0E+00	2 1E+00	2 7E+01
		Exposure Point Total						6 3E-04						2 7E+01
	Exposure Medium Total							6 3E-04						2 7E+01
Soil Total								6 3E-04						2 7E+01
Surface water	Surface water	Surface Water	Arsenic	--	--	-	1 74E-08	1 74E-08	Skin	--	--	--	4 5E-04	4.50E-04
			Barium	--	--	--	NC	0 00E+00	Kidney	--	--	--	1 7E-04	1 71E-04
			Cadmium	--	--	--	NC	0 00E+00	Kidney	--	--	--	4 4E-02	4 42E-02
			Chromium	--	--	--	NC	0 00E+00	Lung	--	--	--	6 0E-06	5 98E-06
			Copper	--	--	--	NS	0 00E+00	GI System	--	--	--	NS	0.00E+00
			Lead	--	--	--	NTV	0 00E+00	NA	--	--	--	NTV	0 00E+00
			Mercury	--	--	--	NS	0 00E+00	Immunological	--	--	--	NS	0 00E+00
			Selenium	--	--	--	NC	0 00E+00	Skin; central nervous system	--	--	--	5 6E-06	5 65E-06
			Silver	--	--	-	NC	0 00E+00	central nervous system	--	--	--	7 6E-01	7.64E-01
			Zinc	--	--	--	NC	0 00E+00	Circulatory system	--	--	--	1 6E-08	1 60E-08
			Chemical Total	0 0E+00	0 0E+00	0.0E+00	1 7E-08	1 7E-08		0 0E+00	0 0E+00	0 0E+00	8 1E-01	8 1E-01
		Exposure Point Total						1.7E-08						8.1E-01
	Exposure Medium Total							1 7E-08						8 1E-01
Surface water Total								1 7E-08						8 1E-01
Sediment	Sediment	Sediment	Arsenic	3 86E-07	--	--	4 59E-06	4 97E-06	Skin	1 0E-02	--	--	1 2E-01	1 29E-01
			Barium	NC	--	--	NC	0 00E+00	Kidney	0 0E+00	--	--	8 5E-04	8 47E-04
			Cadmium	NC	--	--	NC	0 00E+00	Kidney	1 8E-02	--	--	1 6E-01	1 77E-01
			Chromium	NC	--	--	NC	0 00E+00	Lung	0 0E+00	--	--	1 4E-05	1 39E-05
			Copper	NS	--	--	NS	0 00E+00	GI System	NS	--	--	NS	0 00E+00
			Lead	NTV	--	--	NTV	0 00E+00	NA	NTV	--	--	NTV	0 00E+00
			Mercury	NC	--	--	NC	0 00E+00	Immunological	0.0E+00	--	--	7.7E-03	7 72E-03
			Selenium	NC	--	-	NC	0 00E+00	Skin; central nervous system	0 0E+00	--	--	4 6E-04	4.62E-04
			Silver	NC	--	--	NC	0 00E+00	central nervous system	0 0E+00	--	--	2 9E-03	2 85E-03
			Zinc	NC	--	-	NC	0 00E+00	Circulatory system	0 0E+00	--	--	5 7E-02	5 67E-02
			Chemical Total	3 9E-07	0.0E+00	0 0E+00	4 6E-06	5 0E-06		2 8E-02	0 0E+00	0 0E+00	3 5E-01	3 7E-01
		Exposure Point Total						5 0E-06						3 7E-01
	Exposure Medium Total							5 0E-06						3 7E-01
Sediment Total								5 0E-06						3.7E-01
Receptor Total							Receptor Risk Total	6 4E-04					Receptor HI Total	2 8E+01

Total Skin HI Across All Media =	1 65E+01
Total Kidney H Across All Media =	8.82E+00
Total Nervous System HI Across All Media =	1 00E+00
Total Lung HI Across All Media =	1 99E-05
Total Immune HI Across All Media =	3 96E-01

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TABLE 9f
RAGS PART D TABLE 9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Facility Area Site Worker Exposure - Former American Zinc Plating Site, Fairmont City, IL

Scenario Timeframe: Current/Future
Receptor Population: Site Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Inhalation Vapors	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Inhalation Vapors	Dermal	Exposure Routes Total
Surface Soil	Soil	Facility Area soil	Arsenic	1.86E-04	1.99E-07	--	3.67E-05	2.23E-04	Skin	1.15E+00	NTV	--	2.29E-01	1.38E+00
fine fraction			Barium	NC	NC	--	NC	0.00E+00	Kidney	3.15E-03	4.69E-04	--	0.00E+00	3.62E-03
			Cadmium	NC	1.41E-07	--	NC	1.41E-07	Kidney	5.88E-01	NTV	--	1.55E-01	7.44E-01
			Chromium	NC	1.16E-07	--	NC	1.16E-07	Lung	4.84E-05	2.70E-04	--	0.00E+00	3.18E-04
			Copper	NS	NS	--	NS	*0.00E+00*	GI System	NS	NS	--	NS	*0.00E+00*
			Lead	NTV	NTV	--	NTV	0.00E+00	NA	NTV	NTV	--	NTV	0.00E+00
			Mercury	NC	NC	--	NC	0.00E+00	Immunilogical	2.97E-02	1.11E-05	--	0.00E+00	2.97E-02
			Selenium	NC	NC	--	NC	0.00E+00	Skin, central nervous system	1.04E-03	NTV	--	0.00E+00	1.04E-03
			Silver	NC	NC	--	NC	0.00E+00	central nervous system	1.71E-02	NTV	--	0.00E+00	1.71E-02
			Zinc	NC	NC	--	NC	0.00E+00	Circulatory system	1.11E-01	NTV	--	0.00E+00	1.11E-01
			Chemical Total	1.9E-04	4.6E-07	0.0E+00	3.7E-05	2.2E-04		1.9E+00	7.5E-04	0.0E+00	3.8E-01	2.3E+00
		Exposure Point Total						2.2E-04						2.3E+00
	Exposure Medium Total							2.2E-04						2.3E+00
Soil Total								2.2E-04						2.3E+00
Surface water	Surface water	Surface Water	Arsenic	--	--	--	7.61E-08	7.61E-08	Skin	--	--	--	4.7E-04	4.74E-04
			Barium	--	--	--	NC	*0.00E+00*	Kidney	--	--	--	*1.8E-04*	*1.80E-04*
			Cadmium	--	--	--	NC	0.00E+00	Kidney	--	--	--	4.6E-02	4.65E-02
			Chromium	--	--	--	NC	0.00E+00	Lung	--	--	--	6.3E-06	6.29E-06
			Copper	--	--	--	NS	0.00E+00	GI System	--	--	--	NS	0.00E+00
			Lead	--	--	--	NTV	0.00E+00	NA	--	--	--	NTV	0.00E+00
			Mercury	--	--	--	NS	0.00E+00	Immunilogical	--	--	--	NS	0.00E+00
			Selenium	--	--	--	NC	0.00E+00	Skin, central nervous system	--	--	--	5.9E-06	5.94E-06
			Silver	--	--	--	NC	0.00E+00	central nervous system	--	--	--	8.0E-01	8.04E-01
			Zinc	--	--	--	NC	0.00E+00	Circulatory system	--	--	--	1.7E-08	1.68E-08
			Chemical Total	0.0E+00	0.0E+00	0.0E+00	7.6E-08	7.6E-08		0.0E+00	0.0E+00	0.0E+00	8.5E-01	8.5E-01
		Exposure Point Total						7.6E-08						8.5E-01
	Exposure Medium Total							7.6E-08						8.5E-01
Surface water Total								7.6E-08						8.5E-01
Sediment	Sediment	Sediment	Arsenic	1.69E-06	--	--	8.54E-06	1.02E-05	Skin	1.1E-02	--	--	5.3E-02	6.36E-02
			Barium	NC	--	--	NC	0.00E+00	Kidney	0.0E+00	--	--	3.8E-04	3.78E-04
			Cadmium	NC	--	--	NC	0.00E+00	Kidney	1.9E-02	--	--	7.1E-02	9.00E-02
			Chromium	NC	--	--	NC	0.00E+00	Lung	0.0E+00	--	--	6.2E-06	6.23E-06
			Copper	NS	--	--	NS	0.00E+00	GI System	NS	--	--	NS	0.00E+00
			Lead	NTV	--	--	NTV	0.00E+00	NA	NTV	--	--	NTV	0.00E+00
			Mercury	NC	--	--	NC	0.00E+00	Immunilogical	0.0E+00	--	--	3.4E-03	3.45E-03
			Selenium	NC	--	--	NC	0.00E+00	Skin, central nervous system	0.0E+00	--	--	2.1E-04	2.06E-04
			Silver	NC	--	--	NC	0.00E+00	central nervous system	0.0E+00	--	--	1.3E-03	1.27E-03
			Zinc	NC	--	--	NC	0.00E+00	Circulatory system	0.0E+00	--	--	2.5E-02	2.53E-02
			Chemical Total	1.7E-06	0.0E+00	0.0E+00	8.5E-06	1.0E-05		2.9E-02	0.0E+00	0.0E+00	1.5E-01	1.8E-01
		Exposure Point Total						1.0E-05						1.8E-01
	Exposure Medium Total							1.0E-05						1.8E-01
Sediment Total								1.0E-05						1.8E-01
Receptor Total							Receptor Risk Total	2.3E-04					Receptor HI Total	3.3E+00

Total Skin HI Across All Media =	1.45E+00
Total Kidney HI Across All Media =	8.84E-01
Total Nervous System HI Across All Media =	8.24E-01
Total Lung HI Across All Media =	*3.31E-04*
Total Immune HI Across All Media =	3.32E-02

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TABLE 9g
RAGS PART D TABLE 9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Facility Area Utility Worker Exposure - Former American Zinc Plating Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Utility Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	*Carcinogenic Risk*					*Non-Carcinogenic Hazard Quotient*					
				Ingestion	Inhalation Particulates	Inhalation Vapors	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Inhalation Vapors	Dermal	Exposure Routes Total
Soil Total	Surface Subsurface Soil	Facility Area soil	Arsenic	8 39E-06	1 65E-07	--	9.06E-08	8 65E-06	Skin	1 31E+00	NTV	--	1 41E-02	1 32E+00
			Barium	NC	NC	--	NC	0.00E+00	Kidney	6.40E-03	1 75E-02	--	0 00E+00	2.39E-02
			Cadmium	NC	2 84E-07	--	NC	2 84E-07	Kidney	1 61E+00	NTV	--	2 32E-02	1.64E+00
			Chromium	NC	6 66E-08	--	NC	6.66E-08	Lung	3 79E-05	3 89E-03	-	0 00E+00	3 92E-03
			Copper	NS	NS	--	NS	0 00E+00	GI System	NS	NS	-	NS	0.00E+00
			Lead	NTV	NTV	--	NTV	0 00E+00	NA	NTV	NTV	-	NTV	0.00E+00
			Mercury	NC	NC	--	NC	0 00E+00	Immunilogical	7 76E-01	5 31E-03	-	0 00E+00	7 81E-01
			Selenium	NC	NC	--	NC	0.00E+00	Skin, central nervous system	9 60E-03	NTV	-	0 00E+00	9.60E-03
			Silver	NC	NC	--	NC	0 00E+00	central nervous system	6 91E-02	NTV	-	0 00E+00	6 91E-02
			Zinc	NC	NC	--	NC	0 00E+00	Circulatory system	4 87E-01	NTV	-	0.00E+00	4 87E-01
			Chemical Total	8 4E-06	5 2E-07	0 0E+00	9.1E-08	9 0E-06		4.3E+00	2.7E-02	0.0E+00	3 7E-02	4 3E+00
		Exposure Point Total						9 0E-06						4 3E+00
	Exposure Medium Total							9 0E-06						4 3E+00
Soil Total								9 0E-06						4 3E+00
Surface water	Surface water	Surface Water	Arsenic	--	--	--	1 83E-09	1 83E-09	Skin	--	--	--	2 8E-04	2 84E-04
			Barium	--	--	--	NC	0.00E+00	Kidney	--	--	--	1 1E-04	1 08E-04
			Cadmium	--	--	--	NC	0 00E+00	Kidney	--	--	--	2 8E-02	2 79E-02
			Chromium	--	--	--	NC	0 00E+00	Lung	--	--	--	3 8E-06	3 78E-06
			Copper	--	--	--	NS	0 00E+00	GI System	--	--	--	NS	0 00E+00
			Lead	--	--	--	NTV	0.00E+00	NA	--	--	--	NTV	0 00E+00
			Mercury	--	--	--	NS	0.00E+00	Immunilogical	--	--	--	NS	0.00E+00
			Selenium	--	--	--	NC	0 00E+00	Skin, central nervous system	--	--	--	3 6E-06	3 56E-06
			Silver	--	--	--	NC	0 00E+00	central nervous system	--	--	--	4 8E-01	4 82E-01
			Zinc	--	--	--	NC	0 00E+00	Circulatory system	--	--	--	1 0E-08	1 01E-08
			Chemical Total	0 0E+00	0 0E+00	0 0E+00	1 8E-09	1 8E-09		0 0E+00	0 0E+00	0 0E+00	5 1E-01	5 1E-01
		Exposure Point Total						1 8E-09						5 1E-01
	Exposure Medium Total							1 8E-09						5 1E-01
Surface water Total								1 8E-09						5 1E-01
Sediment	Sediment	Sediment	Arsenic	6 08E-08	--	--	6 76E-07	7.37E-07	Skin	9 5E-03	--	--	1.1E-01	1.15E-01
			Barium	NC	--	--	NC	0 00E+00	Kidney	0 0E+00	--	--	7.5E-04	7 49E-04
			Cadmium	NC	--	--	NC	0 00E+00	Kidney	1 7E-02	--	--	1 4E-01	1 58E-01
			Chromium	NC	--	--	NC	0 00E+00	Lung	0 0E+00	--	--	1 2E-05	1 23E-05
			Copper	NS	--	--	NS	0 00E+00	GI System	NS	--	--	NS	0 00E+00
			Lead	NTV	--	--	NTV	0.00E+00	NA	NTV	--	--	NTV	0 00E+00
			Mercury	NC	--	--	NC	0 00E+00	Immunilogical	0 0E+00	--	--	6 8E-03	6 82E-03
			Selenium	NC	--	--	NC	0 00E+00	Skin: central nervous system	0 0E+00	--	--	4 1E-04	4 09E-04
			Silver	NC	--	--	NC	0 00E+00	central nervous system	0 0E+00	--	--	2 5E-03	2 52E-03
			Zinc	NC	--	--	NC	0.00E+00	Circulatory system	0 0E+00	--	--	5.0E-02	5.01E-02
			Chemical Total	6 1E-08	0 0E+00	0 0E+00	6 8E-07	7 4E-07		2 6E-02	0.0E+00	0 0E+00	3 1E-01	3 3E-01
		Exposure Point Total						7 4E-07						3 3E-01
	Exposure Medium Total							7.4E-07						3 3E-01
Sediment Total								7 4E-07						3 3F-01
Receptor Total								Receptor Risk Total 9.7E-06						Receptor HI Total 5.2E+00

Total Skin HI Across All Media =	1 44E+00
Total Kidney HI Across All Media =	1 85E+00
Total Nervous System HI Across All Media =	5 64E-01
Total Lung HI Across All Media =	3 94E-03
Total Immune HI Across All Media =	7 88E-01

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TABLE 9h
RAGS PART D TABLE 9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Off-Facility Area Utility Worker Exposure - Former American Zinc Plating Site, Fairmont City, IL

Scenario Timeframe: Current/Future
Receptor Population: Utility Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Inhalation Vapors	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Inhalation Vapors	Dermal	Exposure Routes Total
Soil Total	Surface Subsurface soil	Off-Facility Area soil	Arsenic	1.16E-06	1.09E-09	--	3.00E-07	1.46E-06	Skin	1.81E-02	NTV	--	4.67E-03	2.28E-02
residential lot	residential lot		Barium	NC	NC	--	NC	0.00E+00	Kidney	4.56E-04	5.93E-05	--	0.00E+00	5.15E-04
			Cadmium	NC	6.58E-10	--	NC	6.58E-10	Kidney	7.86E-03	NTV	--	2.70E-03	1.06E-02
			Chromium	NC	3.67E-09	--	NC	3.67E-09	Lung	4.38E-06	2.14E-05	--	0.00E+00	2.58E-05
			Copper	NS	NS	--	NS	0.00E+00	GI System	NS	NS	--	NS	0.00E+00
			Lead	NTV	NTV	--	NTV	0.00E+00	NA	NTV	NTV	--	NTV	0.00E+00
			Mercury	NC	NC	--	NC	*0.00E+00*	Immunological	*1.92E-04*	*6.25E-08*	--	*0.00E+00*	*1.92E-04*
			Selenium	NC	NC	--	NC	0.00E+00	Skin; central nervous system	7.79E-05	NTV	--	0.00E+00	7.79E-05
			Silver	NC	NC	--	NC	0.00E+00	central nervous system	7.99E-05	NTV	--	0.00E+00	7.99E-05
			Zinc	NC	NC	--	NC	0.00E+00	Circulatory system	2.39E-03	NTV	--	0.00E+00	2.39E-03
			Chemical Total	1.2E-06	5.4E-09	0.0E+00	3.0E-07	1.5E-06		2.9E-02	8.1E-05	0.0E+00	7.4E-03	3.7E-02
		Exposure Point Total						1.5E-06						3.7E-02
	Exposure Medium Total							1.5E-06						3.7E-02
Soil Total								1.5E-06						3.7E-02
Surface water	Surface water	Surface Water	Arsenic	--	--	--	1.68E-08	1.68E-08	Skin	--	--	--	2.6E-04	2.61E-04
			Barium	--	--	--	NC	0.00E+00	Kidney	--	--	--	9.7E-05	9.73E-05
			Cadmium	--	--	--	NC	0.00E+00	Kidney	--	--	--	8.0E-02	7.97E-02
			Chromium	--	--	--	NC	0.00E+00	Lung	--	--	--	1.8E-05	1.81E-05
			Copper	--	--	--	NC	*0.00E+00*	GI System	--	--	--	7.4E-05	7.37E-05
			Lead	--	--	--	NTV	0.00E+00	NA	--	--	--	NTV	0.00E+00
			Mercury	--	--	--	NC	0.00E+00	Immunological	--	--	--	5.6E-05	5.57E-05
			Selenium	--	--	--	NC	0.00E+00	Skin; central nervous system	--	--	--	3.8E-06	3.84E-06
			Silver	--	--	--	NC	0.00E+00	central nervous system	--	--	--	5.4E-05	5.44E-05
			Zinc	--	--	--	NC	0.00E+00	Circulatory system	--	--	--	1.2E-03	1.24E-03
			Chemical Total	0.0E+00	0.0E+00	0.0E+00	1.7E-08	1.7E-08		0.0E+00	0.0E+00	0.0E+00	8.1E-02	8.1E-02
		Exposure Point Total						1.7E-08						8.1E-02
	Exposure Medium Total							1.7E-08						8.1E-02
Surface water Total								1.7E-08						8.1E-02
Sediment	Sediment	Sediment	Arsenic	2.34E-07	--	--	9.00E-07	1.14E-06	Skin	3.6E-03	--	--	1.4E-02	1.78E-02
			Barium	NC	--	--	NC	0.00E+00	Kidney	0.0E+00	--	--	1.1E-04	1.09E-04
			Cadmium	NC	--	--	NC	0.00E+00	Kidney	4.6E-03	--	--	1.3E-02	1.79E-02
			Chromium	NC	--	--	NC	0.00E+00	Lung	0.0E+00	--	--	4.2E-06	4.15E-06
			Copper	NC	--	--	NC	0.00E+00	GI System	0.0E+00	--	--	4.3E-03	4.25E-03
			Lead	NTV	--	--	NTV	0.00E+00	NA	NTV	--	--	NTV	0.00E+00
			Mercury	NC	--	--	NC	0.00E+00	Immunological	0.0E+00	--	--	3.6E-04	3.60E-04
			Selenium	NC	--	--	NC	0.00E+00	Skin; central nervous system	0.0E+00	--	--	4.2E-05	4.23E-05
			Silver	NC	--	--	NC	0.00E+00	central nervous system	0.0E+00	--	--	6.6E-05	6.60E-05
			Zinc	NC	--	--	NC	0.00E+00	Circulatory system	0.0E+00	--	--	3.0E-03	3.05E-03
			Chemical Total	2.3E-07	0.0E+00	*0.0E+00*	9.1E-07	1.1E-06		8.2E-03	*0.0E+00*	*0.0E+00*	3.5E-02	4.4E-02
		Exposure Point Total						1.1E-06						4.4E-02
	Exposure Medium Total							1.1E-06						4.4E-02
Sediment Total								1.1E-06						4.4E-02
Receptor Total							Receptor Risk Total	2.6E-06					Receptor HI Total	1.6E-01

Total Skin HI Across All Media =	4.09E-02
Total Kidney HI Across All Media =	1.09E-01
Total Nervous System HI Across All Media =	3.24E-04
Total Lung HI Across All Media =	4.81E-05
Total Immune HI Across All Media =	6.08E-04

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TABLE 9I
RAGS PART D TABLE 9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Facility Area Trespasser Exposure - Former American Zinc Plating Site, Fairmont City, IL

Scenario Timeframe: Current
Receptor Population: Trespasser
Receptor Age: Adolescent

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Inhalation Vapors	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Inhalation Vapors	Dermal	Exposure Routes Total
Surface Slag fine fraction	Slag	Facility Area slag fine fraction	Arsenic	2.90E-05	2.72E-08	--	7.49E-06	3.66E-05	Skin	4.52E-01	NTV	--	1.17E-01	5.68E-01
			Barium	NC	NC	--	NC	0.00E+00	Kidney	1.35E-03	1.75E-04	--	0.00E+00	1.52E-03
			Cadmium	NC	2.22E-08	--	NC	2.22E-08	Kidney	2.66E-01	NTV	--	9.14E-02	3.57E-01
			Chromium	NC	1.75E-08	--	NC	1.75E-08	Lung	2.08E-05	1.02E-04	--	0.00E+00	1.23E-04
			Copper	NC	NC	--	NC	0.00E+00	GI System	3.82E-02	NTV	--	0.00E+00	3.82E-02
			Lead	NTV	NTV	--	NTV	0.00E+00	NA	NTV	NTV	--	NTV	0.00E+00
			Mercury	NC	NC	--	NC	0.00E+00	Immunological	1.27E-02	4.14E-06	--	0.00E+00	1.27E-02
			Selenium	NC	NC	--	NC	0.00E+00	Skin; central nervous system	4.56E-04	NTV	--	0.00E+00	4.56E-04
			Silver	NC	NC	--	NC	0.00E+00	central nervous system	7.51E-03	NTV	--	0.00E+00	7.51E-03
			Zinc	NC	NC	--	NC	0.00E+00	Circulatory system	4.87E-02	NTV	--	0.00E+00	4.87E-02
			Chemical Total	2.9E-05	6.7E-08	0.0E+00	7.5E-06	3.7E-05		8.3E-01	2.8E-04	0.0E+00	2.1E-01	1.0E+00
		Exposure Point Total						3.7E-05						1.0E+00
	Exposure Medium Total							3.7E-05						1.0E+00
Soil Total								3.7E-05						1.0E+00
Surface water	Surface water	Surface Water	Arsenic	--	--	--	1.59E-08	1.59E-08	Skin	--	--	--	2.5E-04	2.47E-04
			Barium	--	--	--	NC	0.00E+00	Kidney	--	--	--	9.4E-05	9.37E-05
			Cadmium	--	--	--	NC	0.00E+00	Kidney	--	--	--	2.4E-02	2.42E-02
			Chromium	--	--	--	NC	0.00E+00	Lung	--	--	--	3.3E-06	3.28E-06
			Copper	--	--	--	NS	0.00E+00	GI System	--	--	--	NS	0.00E+00
			Lead	--	--	--	NTV	0.00E+00	NA	--	--	--	NTV	0.00E+00
			Mercury	--	--	--	NS	0.00E+00	Immunological	--	--	--	NS	0.00E+00
			Selenium	--	--	--	NC	0.00E+00	Skin; central nervous system	--	--	--	3.1E-06	3.09E-06
			Silver	--	--	--	NC	0.00E+00	central nervous system	--	--	--	4.2E-01	4.19E-01
			Zinc	--	--	--	NC	0.00E+00	Circulatory system	--	--	--	8.7E-09	8.75E-09
			Chemical Total	0.0E+00	0.0E+00	0.0E+00	1.6E-08	1.6E-08		0.0E+00	0.0E+00	0.0E+00	4.4E-01	4.4E-01
		Exposure Point Total						1.6E-08						4.4E-01
	Exposure Medium Total							1.6E-08						4.4E-01
Surface water Total								1.6E-08						4.4E-01
Sediment	Sediment	Sediment	Arsenic	3.44E-07	--	--	1.33E-06	1.68E-06	Skin	5.4E-03	--	--	2.1E-02	2.61E-02
			Barium	NC	--	--	NC	0.00E+00	Kidney	0.0E+00	--	--	1.5E-04	1.48E-04
			Cadmium	NC	--	--	NC	0.00E+00	Kidney	9.6E-03	--	--	2.8E-02	3.74E-02
			Chromium	NC	--	--	NC	0.00E+00	Lung	0.0E+00	--	--	2.4E-06	2.43E-06
			Copper	NS	--	--	NS	0.00E+00	GI System	NS	--	--	NS	0.00E+00
			Lead	NTV	--	--	NTV	0.00E+00	NA	NTV	--	--	NTV	0.00E+00
			Mercury	NC	--	--	NC	0.00E+00	Immunological	0.0E+00	--	--	1.3E-03	1.35E-03
			Selenium	NC	--	--	NC	0.00E+00	Skin; central nervous system	0.0E+00	--	--	8.1E-05	8.06E-05
			Silver	NC	--	--	NC	0.00E+00	central nervous system	0.0E+00	--	--	5.0E-04	4.98E-04
			Zinc	NC	--	--	NC	0.00E+00	Circulatory system	0.0E+00	--	--	9.9E-03	9.89E-03
			Chemical Total	3.4E-07	0.0E+00	0.0E+00	1.3E-06	1.7E-06		1.5E-02	0.0E+00	0.0E+00	6.1E-02	7.5E-02
		Exposure Point Total						1.7E-06						7.5E-02
	Exposure Medium Total							1.7E-06						7.5E-02
Sediment Total								1.7E-06						7.5E-02
Receptor Total							Receptor Risk Total	3.8E-05					Receptor HI Total	1.6E+00

Total Skin HI Across All Media =	5.95E-01
Total Kidney HI Across All Media =	4.20E-01
Total Nervous System HI Across All Media =	4.27E-01
Total Lung HI Across All Media =	1.28E-04
Total Immune HI Across All Media =	1.41E-02

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TABLE 9m
RAGS PART D TABLE 9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child) Exposure - Former American Zinc Plating Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Inhalation Vapor	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Inhalation Vapor	Dermal	Exposure Routes Total
Surface Slag fine fraction	Slag	Facility Area slag fine fraction	Arsenic	5.83E-04	2.05E-07	--	4.90E-05	6.32E-04	Skin	1.51E+01	NTV	--	1.27E+00	1.64E+01
			Barium	NC	NC	--	NC	0.00E+00	Kidney	4.51E-02	2.21E-03	--	0.00E+00	4.73E-02
			Cadmium	NC	1.68E-07	--	NC	1.68E-07	Kidney	8.88E+00	NTV	--	9.95E-01	9.88E+00
			Chromium	NC	*1.32E-07*	--	NC	1.32E-07	*Lung*	*6.97E-04*	*1.28E-03*	--	*0.00E+00*	*1.98E-03*
			Copper	NC	NC	--	NC	0.00E+00	GI System	1.28E+00	NTV	--	0.00E+00	1.28E+00
			Lead	NTV	NTV	--	NTV	0.00E+00	NA	NTV	NTV	--	NTV	0.00E+00
			Mercury	NC	NC	--	NC	0.00E+00	Immunological	4.26E-01	5.21E-05	--	0.00E+00	4.26E-01
			Selenium	NC	NC	--	NC	0.00E+00	Skin, central nervous system	1.52E-02	NTV	--	0.00E+00	1.52E-02
			Silver	NC	NC	--	NC	0.00E+00	central nervous system	2.51E-01	NTV	--	0.00E+00	2.51E-01
			Zinc	NC	NC	--	NC	0.00E+00	Circulatory system	1.63E+00	NTV	--	0.00E+00	1.63E+00
			Chemical Total	5.8E-04	5.0E-07	0.0E+00	4.9E-05	6.3E-04		2.8E+01	3.5E-03	0.0E+00	2.3E+00	3.0E+01
		Exposure Point Total						6.3E-04						3.0E+01
	Exposure Medium Total							6.3E-04						3.0E+01
Soil Total								6.3E-04						3.0E+01
Surface water	Surface water	Surface Water	Arsenic	--	--	--	1.74E-08	1.74E-08	Skin	--	--	--	4.5E-04	4.50E-04
			Barium	--	--	--	NC	0.00E+00	Kidney	--	--	--	1.7E-04	1.71E-04
			Cadmium	--	--	--	NC	0.00E+00	Kidney	--	--	--	4.4E-02	4.42E-02
			Chromium	--	--	--	NC	0.00E+00	Lung	--	--	--	6.0E-06	5.98E-06
			Copper	--	--	--	NS	0.00E+00	GI System	--	--	--	NS	0.00E+00
			Lead	--	--	--	NTV	0.00E+00	NA	--	--	--	NTV	0.00E+00
			Mercury	--	--	--	NS	0.00E+00	Immunological	--	--	--	NS	0.00E+00
			Selenium	--	--	--	NC	0.00E+00	Skin; central nervous system	--	--	--	5.6E-06	5.65E-06
			Silver	--	--	--	NC	0.00E+00	central nervous system	--	--	--	7.6E-01	7.64E-01
			Zinc	--	--	--	NC	0.00E+00	Circulatory system	--	--	--	1.6E-08	1.60E-08
			Chemical Total	0.0E+00	0.0E+00	0.0E+00	1.7E-08	1.7E-08		0.0E+00	0.0E+00	0.0E+00	8.1E-01	8.1E-01
		Exposure Point Total						1.7E-08						8.1E-01
	Exposure Medium Total							1.7E-08						8.1E-01
Surface water Total								1.7E-08						8.1E-01
Sediment	Sediment	Sediment	Arsenic	3.86E-07	--	--	4.59E-06	4.97E-06	Skin	1.0E-02	--	--	1.2E-01	1.29E-01
			Barium	NC	--	--	NC	0.00E+00	Kidney	0.0E+00	--	--	8.5E-04	8.47E-04
			Cadmium	NC	--	--	NC	0.00E+00	Kidney	1.8E-02	--	--	1.6E-01	1.77E-01
			Chromium	NC	--	--	NC	0.00E+00	Lung	0.0E+00	--	--	1.4E-05	1.39E-05
			Copper	NS	--	--	NS	0.00E+00	GI System	NS	--	--	NS	0.00E+00
			Lead	NTV	--	--	NTV	0.00E+00	NA	NTV	--	--	NTV	0.00E+00
			Mercury	NC	--	--	NC	0.00E+00	Immunological	0.0E+00	--	--	7.7E-03	7.72E-03
			Selenium	NC	--	--	NC	0.00E+00	Skin, central nervous system	0.0E+00	--	--	4.6E-04	4.62E-04
			Silver	NC	--	--	NC	0.00E+00	central nervous system	0.0E+00	--	--	2.9E-03	2.85E-03
			Zinc	NC	--	--	NC	0.00E+00	Circulatory system	0.0E+00	--	--	5.7E-02	5.67E-02
			Chemical Total	3.9E-07	0.0E+00	0.0E+00	4.6E-06	5.0E-06		2.8E-02	0.0E+00	0.0E+00	3.5E-01	3.7E-01
		Exposure Point Total						5.0E-06						3.7E-01
	Exposure Medium Total							5.0E-06						3.7E-01
Sediment Total								5.0E-06						3.7E-01
Receptor Total							Receptor Risk Total	6.4E-04					Receptor HI Total	3.1E+01

Total Skin HI Across All Media =	1.65E+01
Total Kidney HI Across All Media =	1.01E+01
Total Nervous System HI Across All Media =	1.03E+00
Total Lung HI Across All Media =	1.99E-05
Total Immune HI Across All Media =	4.34E-01

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TABLE 9p
RAGS PART D TABLE 9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Facility Area Site Worker Exposure - Former American Zinc Plating Site, Fairmont City, IL

Scenario Timeframe: Current/Future
Receptor Population: Site Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk: Ingestion	Inhalation Particulates	Inhalation Vapors	Dermal	Exposure Routes Total	Non-Carcinogenic Hazard Quotient: Primary Target Organ(s)	Ingestion	Inhalation Particulates	Inhalation Vapors	Dermal	Exposure Routes Total
Surface Slag	Slag	Facility Area slag	Arsenic	1.86E-04	1.99E-07	-	3.68E-05	2.23E-04	Skin	1.16E+00	NTV	-	2.29E-01	1.39E+00
fine fraction		fine fraction	Barium	NC	NC	-	NC	0.00E+00	Kidney	3.45E-03	5.13E-04	--	0.00E+00	3.97E-03
			Cadmium	NC	1.63E-07		NC	1.63E-07	Kidney	6.80E-01	NTV	--	1.80E-01	8.59E-01
			Chromium	NC	1.28E-07	-	NC	1.28E-07	Lung	5.34E-05	2.98E-04	--	0.00E+00	3.51E-04
			Copper	NC	NC		NC	0.00E+00	GI System	9.78E-02	NTV		0.00E+00	9.78E-02
			Lead	NTV	NTV	-	NTV	0.00E+00	NA	NTV	NTV	-	NTV	0.00E+00
			Mercury	NC	NC	--	NC	0.00E+00	Immunological	3.26E-02	1.21E-05	-	0.00E+00	3.26E-02
			Selenium	NC	NC	--	NC	0.00E+00	Skin, central nervous system	1.17E-03	NTV	--	0.00E+00	1.17E-03
			Silver	NC	NC	--	NC	0.00E+00	central nervous system	1.92E-02	NTV	--	0.00E+00	1.92E-02
			Zinc	NC	NC	-	NC	0.00E+00	Circulatory system	1.25E-01	NTV	--	0.00E+00	1.25E-01
			Chemical Total	1.9E-04	4.9E-07	0.0E+00	3.7E-05	2.2E-04		2.1E+00	8.2E-04	0.0E+00	4.1E-01	2.5E+00
		Exposure Point Total						2.2E-04						2.5E+00
	Exposure Medium Total							2.2E-04						2.5E+00
Soil Total								2.2E-04						2.5E+00
Surface water	Surface water	Surface Water	Arsenic	--	--	--	7.61E-08	7.61E-08	Skin	--	--	--	4.7E-04	4.74E-04
			Barium	--	--	--	NC	0.00E+00	Kidney	--	--	--	1.8E-04	1.80E-04
			Cadmium	--	--	--	NC	0.00E+00	Kidney	--		--	4.6E-02	4.65E-02
			Chromium	-	--	--	NC	0.00E+00	Lung	--	--	--	6.3E-06	6.29E-06
			Copper	--	--	--	NS	0.00E+00	GI System	--	--	--	NS	0.00E+00
			Lead	--	--	--	NTV	0.00E+00	NA	--	--	--	NTV	0.00E+00
			Mercury	--	--	--	NS	0.00E+00	Immunological	--	--	--	NS	0.00E+00
			Selenium	--	--	--	NC	0.00E+00	Skin, central nervous system	--	--	--	5.9E-06	5.94E-06
			Silver	--	--	--	NC	0.00E+00	central nervous system	--	-	--	8.0E-01	8.04E-01
			Zinc	--	--	--	NC	0.00E+00	Circulatory system	-	-	--	1.7E-08	1.68E-08
			Chemical Total	0.0E+00	0.0E+00	0.0E+00	7.6E-08	7.6E-08		0.0E+00	0.0E+00	0.0E+00	8.5E-01	8.5E-01
		Exposure Point Total						7.6E-08						8.5E-01
	Exposure Medium Total							7.6E-08						8.5E-01
Surface water Total								7.6E-08						8.5E-01
Sediment	Sediment	Sediment	Arsenic	1.69E-06	--	--	8.54E-06	1.02E-05	Skin	1.1E-02	--	--	5.3E-02	6.36E-02
			Barium	NC	--	--	NC	0.00E+00	Kidney	0.0E+00	--	--	3.8E-04	3.78E-04
			Cadmium	NC	--	--	NC	0.00E+00	Kidney	1.9E-02	--	--	7.1E-02	9.00E-02
			Chromium	NC	--	--	NC	0.00E+00	Lung	0.0E+00	--	--	6.2E-06	6.23E-06
			Copper	NS	--	--	NS	0.00E+00	GI System	NS	--	-	NS	0.00E+00
			Lead	NTV	-	--	NTV	0.00E+00	NA	NTV	--	--	NTV	0.00E+00
			Mercury	NC	--	--	NC	0.00E+00	Immunological	0.0E+00	--	--	3.4E-03	3.45E-03
			Selenium	NC	--	-	NC	0.00E+00	Skin, central nervous system	0.0E+00	--	--	2.1E-04	2.06E-04
			Silver	NC	--	-	NC	0.00E+00	central nervous system	0.0E+00	--	--	1.3E-03	1.27E-03
			Zinc	NC	--	--	NC	0.00E+00	Circulatory system	0.0E+00	--	--	2.5E-02	2.53E-02
			Chemical Total	1.7E-06	0.0E+00	0.0E+00	8.5E-06	1.0E-05		2.9E-02	0.0E+00	0.0E+00	1.5E-01	1.8E-01
		Exposure Point Total						1.0E-05						1.8E-01
	Exposure Medium Total							1.0E-05						1.8E-01
Sediment Total								1.0E-05						1.8E-01
Receptor Total								Receptor Risk Total 2.3E-04					Receptor HI Total	3.6E+00

Total Skin HI Across All Media =	1.45E+00
Total Kidney HI Across All Media =	1.00E+00
Total Nervous System HI Across All Media =	8.26E-01
Total Lung HI Across All Media =	3.64E-04
Total Immune HI Across All Media =	1.60E-02

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TABLE 9q
RAGS PART D TABLE 9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child) Exposure - Former American Zinc Plating Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Inhalation Vapor	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Inhalation Vapor	Dermal	Exposure Routes Total
Native Surface Soil	Native soil	Facility Area native soil	Arsenic	8 99E-05	3 17E-08	--	7 55E-06	9.75E-05	Skin	2.33E+00	NTV	--	1 96E-01	2 53E+00
fine fraction		*fine fraction*	*Barium*	NC	NC	--	NC	*0 00E+00*	Kidney	*2 27E-02*	*1 11E-03*	--	*0 00E+00*	2 38E-02
			Cadmium	NC	1.73E-08	--	NC	1 73E-08	Kidney	9 16E-01	NTV	--	1 03E-01	1.02E+00
			Chromium	NC	5 89E-08	--	NC	5 89E-08	Lung	3 12E-04	5 73E-04	--	0 00E+00	8 85E-04
			Copper	NS	NS	--	NS	0 00E+00	GI System	NS	NS	--	NS	0 00E+00
			Lead	NTV	NTV	--	NTV	0.00E+00	NA	NTV	NTV	--	NTV	0 00E+00
			Mercury	NC	NC	--	NC	0 00E+00	Immunological	6 03E-02	7.38E-06	--	0 00E+00	6 03E-02
			Selenium	NC	NC	--	NC	0.00E+00	Skin; central nervous system	5 16E-03	NTV	--	0.00E+00	5 16E-03
			Silver	NC	NC	--	NC	0 00E+00	central nervous system	1 46E-01	NTV	--	0 00E+00	1 46E-01
			Zinc	NC	NC	--	NC	0.00E+00	Circulatory system	4 22E-01	NTV	--	0 00E+00	4 22E-01
			Chemical Total	9 0E-05	1 1E-07	0 0E+00	7 6E-06	9 8E-05		3.9E+00	1 7E-03	0 0E+00	3 0E-01	4 2E+00
		Exposure Point Total						9 8E-05						4 2E+00
	Exposure Medium Total							9 8E-05						4 2E+00
Soil Total								9 8E-05						4 2E+00
Surface water	Surface water	Surface Water	Arsenic	--	--	--	1 74E-08	1 74E-08	Skin	--	--	--	4 5E-04	4.50E-04
			Barium	--	--	--	NC	0 00E+00	Kidney	--	--	--	1 7E-04	1 71E-04
			Cadmium	--	--	--	NC	0 00E+00	Kidney	--	--	--	4 4E-02	4 42E-02
			Chromium	--	--	--	NC	0 00E+00	Lung	--	--	--	6 0E-06	5 98E-06
			Copper	--	--	--	NS	0 00E+00	GI System	--	--	--	NS	0 00E+00
			Lead	--	--	--	NTV	0 00E+00	NA	--	--	--	NTV	0 00E+00
			Mercury	--	--	--	NS	0 00E+00	Immunological	--	--	--	NS	0 00E+00
			Selenium	--	--	--	NC	0 00E+00	Skin; central nervous system	--	--	--	5 6E-06	5.65E-06
			Silver	--	--	--	NC	0 00E+00	central nervous system	--	--	--	7.6E-01	7 64E-01
			Zinc	--	--	--	NC	0 00E+00	Circulatory system	--	--	--	1 6E-08	1 60E-08
			Chemical Total	0 0E+00	0 0E+00	0 0E+00	1 7E-08	1 7E-08		0 0E+00	0 0E+00	0.0E+00	8 1E-01	8 1E-01
		Exposure Point Total						1.7E-08						8 1E-01
	Exposure Medium Total							1 7E-08						8 1E-01
Surface water Total								1.7E-08						8 1E-01
Sediment	Sediment	Sediment	Arsenic	3 86E-07	--	--	4 59E-06	4 97E-06	Skin	1 0E-02	--	--	1.2E-01	1 29E-01
			Barium	NC	--	--	NC	0 00E+00	Kidney	0 0E+00	--	--	8.5E-04	8 47E-04
			Cadmium	NC	--	--	NC	0 00E+00	Kidney	1 8E-02	--	--	1.6E-01	1 77E-01
			Chromium	NC	--	--	NC	0 00E+00	Lung	0 0E+00	--	--	1.4E-05	1 39E-05
			Copper	NS	--	--	NS	0.00E-00	GI System	NS	--	--	NS	0 00E+00
			Lead	NTV	--	--	NTV	0 00E+00	NA	NTV	--	--	NTV	0 00E+00
			Mercury	NC	--	--	NC	0.00E-00	Immunological	0.0E+00	--	--	7 7E-03	7 72E-03
			Selenium	NC	--	--	NC	0 00E+00	Skin; central nervous system	0 0E+00	--	--	4.6E-04	4 62E-04
			Silver	NC	--	--	NC	0.00E-00	central nervous system	0 0E+00	--	--	2 9E-03	2 85E-03
			Zinc	NC	--	--	NC	0 00E+00	Circulatory system	0 0E+00	--	--	5 7E-02	5 67E-02
			Chemical Total	3 9E-07	0 0E+00	0.0E+00	4 6E-06	5.0E-06		2 8E-02	0 0E+00	0 0E+00	3 5E-01	3 7E-01
		Exposure Point Total						5 0E-06						3 7E-01
	Exposure Medium Total							5 0E-06						3 7E-01
Sediment Total								5.0E-06						3 7E-01
Receptor Total							Receptor Risk Total	1 0E-04					Receptor HI Total	5 4E+00

Total Skin HI Across All Media =	2 66E+00
Total Kidney HI Across All Media =	*1 27E+00*
Total Nervous System HI Across All Media =	9 18E-01
Total Lung HI Across All Media =	1 99E-05
Total Immune HI Across All Media =	6 80E-02

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TABLE 9t
RAGS PART D TABLE 9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Facility Area Site Worker Exposure - Former American Zinc Plating Site, Fairmont City, IL

Scenario Timeframe: Current/Future
Receptor Population: Site Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Inhalation Vapors	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Inhalation Vapors	Dermal	Exposure Routes Total
Native Surface Soil	Native soil	Facility area native soil	Arsenic	2.87E-05	3.07E-08	--	5.68E-06	3.44E-05	Skin	1.78E-01	NTV	--	3.53E-02	2.14E-01
fine fraction		fine fraction	Barium	NC	NC	--	NC	0.00E+00	Kidney	1.74E-03	2.58E-04	--	0.00E+00	1.99E-03
			Cadmium	NC	1.68E-08	--	NC	1.68E-08	Kidney	7.01E-02	NTV	--	1.85E-02	8.86E-02
			Chromium	NC	5.71E-08	--	NC	5.71E-08	Lung	2.39E-05	1.33E-04	--	0.00E+00	1.57E-04
			Copper	NS	NS	--	NS	0.00E+00	GI System	NS	NS	--	NS	0.00E+00
			Lead	NTV	NTV	--	NTV	0.00E+00	NA	NTV	NTV	--	NTV	0.00E+00
			Mercury	NC	NC	--	NC	0.00E+00	Immunological	4.62E-03	1.72E-06	--	0.00E+00	4.62E-03
			Selenium	NC	NC	--	NC	0.00E+00	Skin, central nervous system	3.95E-04	NTV	--	0.00E+00	3.95E-04
			Silver	NC	NC	--	NC	0.00E+00	central nervous system	1.12E-02	NTV	--	0.00E+00	1.12E-02
			Zinc	NC	NC	--	NC	0.00E+00	Circulatory system	3.23E-02	NTV	--	0.00E+00	3.23E-02
			Chemical Total	2.9E-05	1.0E-07	0.0E+00	5.7E-06	3.4E-05		3.0E-01	3.9E-04	0.0E+00	5.4E-02	3.5E-01
		Exposure Point Total						3.4E-05						3.5E-01
	Exposure Medium Total							3.4E-05						3.5E-01
Soil Total								3.4E-05						3.5E-01
Surface water	Surface water	Surface Water	Arsenic	--	--	--	7.61E-08	7.61E-08	Skin	--	--	--	4.7E-04	4.74E-04
			Barium	--	--	--	NC	0.00E+00	Kidney	--	--	--	1.8E-04	1.80E-04
			Cadmium	--	--	--	NC	0.00E+00	Kidney	--	--	--	4.6E-02	4.65E-02
			Chromium	--	--	--	NC	0.00E+00	Lung	--	--	--	6.3E-06	6.29E-06
			Copper	--	--	--	NS	0.00E+00	GI System	--	--	-	NS	0.00E+00
			Lead	--	--	--	NTV	0.00E+00	NA	--	--	-	NTV	0.00E+00
			Mercury	--	--	--	NS	0.00E+00	Immunological	--	--	-	NS	0.00E+00
			Selenium	--	--	--	NC	0.00E+00	Skin, central nervous system	--	--	--	5.9E-06	5.94E-06
			Silver	--	--	--	NC	0.00E+00	central nervous system	--	--	-	8.0E-01	8.04E-01
			Zinc	--	--	--	NC	*0.00E+00*	*Circulatory system*	--	--	-	*1.7E-08*	*1.68E-08*
			Chemical Total	0.0E+00	0.0E+00	0.0E+00	7.6E-08	7.6E-08		0.0E+00	0.0E+00	0.0E+00	8.5E-01	8.5E-01
		Exposure Point Total						7.6E-08						8.5E-01
	Exposure Medium Total							7.6E-08						8.5E-01
Surface water Total								7.6E-08						8.5E-01
Sediment	Sediment	Sediment	Arsenic	1.69E-06	--	--	8.54E-06	1.02E-05	Skin	1.1E-02	--	-	5.3E-02	6.36E-02
			Barium	NC	--	--	NC	0.00E+00	Kidney	0.0E+00	--	-	3.8E-04	3.78E-04
			Cadmium	NC	--	--	NC	0.00E+00	Kidney	1.9E-02	--	--	7.1E-02	9.00E-02
			Chromium	NC	--	--	NC	0.00E+00	Lung	0.0E+00	--	-	6.2E-06	6.23E-06
			Copper	NS	--	--	NS	0.00E+00	GI System	NS	--	-	NS	0.00E+00
			Lead	NTV	--	--	NTV	0.00E+00	NA	NTV	--	-	NTV	0.00E+00
			Mercury	NC	--	--	NC	0.00E+00	Immunological	0.0E+00	--	--	3.4E-03	3.45E-03
			Selenium	NC	--	--	NC	0.00E+00	Skin, central nervous system	0.0E+00	--	-	2.1E-04	2.06E-04
			Silver	NC	--	--	NC	0.00E+00	central nervous system	0.0E+00	--	-	1.3E-03	1.27E-03
			Zinc	NC	--	--	NC	0.00E+00	Circulatory system	0.0E+00	--	--	2.5E-02	2.53E-02
			Chemical Total	1.7E-06	0.0E+00	0.0E+00	8.5E-06	1.0E-05		2.9E-02	0.0E+00	0.0E+00	1.5E-01	1.8E-01
		Exposure Point Total						1.0E-05						1.8E-01
	Exposure Medium Total							1.0E-05						1.8E-01
Sediment Total								1.0E-05						1.8E-01
Receptor Total							Receptor Risk Total	4.5E-05					Receptor HI Total	1.4E+00

Total Skin HI Across All Media =	*2.78E-01*
Total Kidney HI Across All Media =	2.28E-01
Total Nervous System HI Across All Media =	8.17E-01
Total Lung HI Across All Media =	*1.70E-04*
Total Immune HI Across All Media =	8.06E-03

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TABLE 9u
RAGS PART D TABLE 9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Facility Area Trespasser Exposure - Former American Zinc Plating Site, Fairmont City, IL

Scenario Timeframe: Current
Receptor Population: Trespasser
Receptor Age: Adolescent

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Inhalation Vapors	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Inhalation Vapors	Dermal	Exposure Routes Total
Native Surface So	Native surface soil	Facility area surface soil	Arsenic	4 48E-06	4 20E-09	--	1 16E-06	5.64E-06	Skin	6 97E-02	NTV	--	1.80E-02	8 77E-02
fine fraction		fine fraction	Barium	NC	NC	--	NC	0 00E+00	Kidney	6 78E-04	8 82E-05	--	0 00E+00	7.66E-04
			Cadmium	NC	2 29E-09	--	NC	2 29E-09	Kidney	2 74E-02	NTV	--	9 42E-03	3 68E-02
			Chromium	NC	7 81E-09	--	NC	7 81E-09	Lung	9 33E-06	4 56E-05	--	0 00E+00	5 49E-05
			Copper	NS	NS	--	NS	0 00E+00	GI System	NS	NS	--	NS	0 00E+00
			Lead	NTV	NTV	--	NTV	*0 00E+00*	NA	NTV	NTV	--	NTV	*0 00E+00*
			Mercury	NC	NC	--	NC	0 00E+00	Immunological	1 80E-03	5 87E-07	--	0 00E+00	1.80E-03
			Selenium	NC	NC	--	NC	0.00E+00	Skin, central nervous system	1 54E-04	NTV	--	0 00E+00	1.54E-04
			Silver	NC	NC	--	NC	0 00E+00	Central nervous system	4 36E-03	NTV	--	0 00E+00	4 36E-03
			Zinc	NC	NC	--	NC	0.00E+00	Circulatory system	1 26E-02	NTV	--	0 00E+00	1 26E-02
			Chemical Total	4 5E-06	1 4E-08	0 0E+00	1.2E-06	5 7E-06		1 2E-01	1 3E-04	0 0E+00	2.7E-02	1 4E-01
		Exposure Point Total						5 7E-06						1 4E-01
	Exposure Medium Total							5 7E-06						1 4E-01
Soil Total								5 7E-06						1 4E-01
Surface water	Surface water	Surface Water	Arsenic	--	--	--	1 59E-08	1 59E-08	Skin	--	--	--	2 5E-04	2 47E-04
			Barium	--	--	--	NC	0.00E+00	Kidney	--	--	--	9 4E-05	9 37E-05
			Cadmium	--	--	--	NC	0 00E+00	Kidney	--	--	--	2.4E-02	2.42E-02
			Chromium	--	--	--	NC	0.00E+00	Lung	--	--	--	3 3E-06	3 28E-06
			Copper	--	--	--	NS	0 00E+00	GI System	--	--	--	NS	0 00E+00
			Lead	--	--	--	NTV	0 00E+00	NA	--	--	--	NTV	0 00E+00
			Mercury	--	--	--	NS	0 00E+00	Immunological	--	--	--	NS	0 00E+00
			Selenium	--	--	--	NC	0 00E+00	Skin, central nervous system	--	--	--	3 1E-06	3.09E-06
			Silver	--	--	--	NC	0 00E+00	Central nervous system	--	--	--	4.2E-01	4 19E-01
			Zinc	--	--	--	NC	0 00E+00	Circulatory system	--	--	--	8 7E-09	8 75E-09
			Chemical Total	0 0E+00	0 0E+00	0 0E+00	1 6E-08	1.6E-08		0.0E+00	0 0E+00	0 0E+00	4.4E-01	4.4E-01
		Exposure Point Total						1 6E-08						4 4E-01
	Exposure Medium Total							1 6E-08						4 4E-01
Surface water Total								1.6E-08						4 4E-01
Sediment	Sediment	Sediment	Arsenic	3 44E-07	--	--	1 33E-06	1 68E-06	Skin	5 4E-03	--	--	2.1E-02	2 61E-02
			Barium	NC	--	--	NC	0 00E+00	Kidney	0 0E+00	--	--	1 5E-04	1 48E-04
			Cadmium	NC	--	--	NC	0 00E+00	Kidney	9 6E-03	--	--	2 8E-02	3 74E-02
			Chromium	NC	--	--	NC	0 00E+00	Lung	0 0E+00	--	--	2.4E-06	2.43E-06
			Copper	NS	--	--	NS	0.00E+00	GI System	NS	--	--	NS	0 00E+00
			Lead	NTV	--	--	NTV	0 00E+00	NA	NTV	--	--	NTV	0.00E+00
			Mercury	NC	--	--	NC	0.00E+00	Immunological	0 0E+00	--	--	1 3E-03	1.35E-03
			Selenium	NC	--	--	NC	0 00E+00	Skin; central nervous system	0.0E+00	--	--	8.1E-05	8 06E-05
			Silver	NC	--	--	NC	0 00E+00	Central nervous system	0.0E+00	--	--	5 0E-04	4 98E-04
			Zinc	NC	--	--	NC	0 00E+00	Circulatory system	0 0E+00	--	--	9 9E-03	9 89E-03
			Chemical Total	*3 4E-07*	*0 0E+00*	*0 0E+00*	1 3E-06	*1 7E-06*		*1 5E-02*	*0 0E+00*	*0 0E+00*	*6 1E-02*	7 5E-02
		Exposure Point Total						1 7E-06						7 5E-02
	Exposure Medium Total							1 7E-06						7 5E-02
Sediment Total								1 7E-06						7 5E-02
Receptor Total								Receptor Risk Total: 7 3E-06						Receptor HI Total: 6 6E-01

Total Skin HI Across All Media =	1 14E-01
Total Kidney HI Across All Media =	9.94E-02
Total Nervous System HI Across All Media =	4 24E-01
Total Lung HI Across All Media =	*6 06E-05*
Total Immune HI Across All Media =	3 15E-03

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TABLE 9v
RAGS PART D TABLE 9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Off-Facility Area Utility Worker Exposure - Former American Zinc Plating Site, Fairmont City, IL

Scenario Timeframe: Current/Future
Receptor Population: Utility Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk: Ingestion	Inhalation Particulates	Inhalation Vapors	Dermal	Exposure Routes Total	Non-Carcinogenic Hazard Quotient: Primary Target Organ(s)	Ingestion	Inhalation Particulates	Inhalation Vapors	Dermal	Exposure Routes Total
Soil Total - alleyway	Surface/Subsurface soil - alleyway	Off-Facility area soil- alleyway	Arsenic	1.85E-06	1.74E-09	--	4.78E-07	2.33E-06	Skin	2.88E-02	NTV	--	7.44E-03	3.63E-02
			Barium	NC	NC	--	NC	0.00E+00	Kidney	5.12E-04	6.66E-05	--	0.00E+00	5.78E-04
			Cadmium	NC	*5.76E-10*	--	NC	*5.76E-10*	Kidney	*6.89E-03*	NTV	--	*2.37E-03*	*9.26E-03*
			Chromium	NC	1.08E-08	--	NC	1.08E-08	Lung	1.29E-05	6.32E-05	--	0.00E+00	7.62E-05
			Copper	NS	NS	--	NS	0.00E+00	GI System	NS	NS	--	NS	0.00E+00
			Lead	NTV	NTV	--	NTV	0.00E+00	NA	NTV	NTV	-	NTV	0.00E+00
			Mercury	NC	NC	--	NC	0.00E+00	Immunological	9.15E-05	2.98E-08	-	0.00E+00	9.15E-05
			Selenium	NC	NC	--	NC	0.00E+00	Skin, central nervous system	1.25E-04	NTV	--	0.00E+00	1.25E-04
			Silver	NC	NC	--	NC	0.00E+00	central nervous system	1.14E-03	NTV	-	0.00E+00	1.14E-03
			Zinc	NC	NC	--	NC	0.00E+00	Circulatory system	4.10E-03	NTV	-	0.00E+00	4.10E-03
			Chemical Total	1.9E-06	1.3E-08	0.0E+00	4.8E-07	2.3E-06		4.2E-02	1.3E-04	0.0E+00	9.8E-03	5.2E-02
		Exposure Point Total						2.3E-06						5.2E-02
	Exposure Medium Total							2.3E-06						5.2E-02
Soil Total								2.3E-06						5.2E-02
Surface water	Surface water	Surface Water	Arsenic	--	--	--	1.68E-08	1.68E-08	Skin	--	--	--	2.6E-04	2.61E-04
		Off- Facility Area	Barium	--	--	--	NC	0.00E+00	Kidney	--	--	--	9.7E-05	9.73E-05
			Cadmium	--	--	--	NC	0.00E+00	Kidney	--	--	--	8.0E-02	7.97E-02
			Chromium	--	--	--	NC	0.00E+00	Lung	--	--	--	1.8E-05	1.81E-05
			Copper	--	--	--	NC	0.00E+00	GI System	--	--	--	7.4E-05	7.37E-05
			Lead	--	--	--	NTV	0.00E+00	NA	--	--	--	NTV	0.00E+00
			Mercury	--	--	--	NC	0.00E+00	Immunological	--	--	--	5.6E-05	5.57E-05
			Selenium	--	--	--	NC	0.00E+00	Skin, central nervous system	--	--	--	3.8E-06	3.84E-06
			Silver	--	--	--	NC	0.00E+00	central nervous system	--	--	-	5.4E-05	5.44E-05
			Zinc	--	--	--	NC	0.00E+00	Circulatory system	--	--	-	1.2E-03	1.24E-03
			Chemical Total	0.0E+00	0.0E+00	0.0E+00	1.7E-08	1.7E-08		0.0E+00	0.0E+00	0.0E+00	8.1E-02	8.1E-02
		Exposure Point Total						1.7E-08						8.1E-02
	Exposure Medium Total							1.7E-08						8.1E-02
Surface water Total								1.7E-08						8.1E-02
Sediment	Sediment	Sediment	Arsenic	2.34E-07	--	--	9.09E-07	1.14E-06	Skin	3.6E-03	--	-	1.4E-02	1.78E-02
		Off- Facility Area	Barium	NC	--	--	NC	0.00E+00	Kidney	0.0E+00	--	-	1.1E-04	1.09E-04
			Cadmium	NC	--	--	NC	0.00E+00	Kidney	4.6E-03	--	-	1.3E-02	1.79E-02
			Chromium	NC	--	--	NC	0.00E+00	Lung	0.0E+00	--	-	4.2E-06	4.15E-06
			Copper	NC	--	--	NC	0.00E+00	GI System	0.0E+00	--	-	4.3E-03	4.25E-03
			Lead	NTV	--	--	NTV	0.00E+00	NA	NTV	--	--	NTV	0.00E+00
			Mercury	NC	--	--	NC	0.00E+00	Immunological	0.0E+00	--	-	3.6E-04	3.60E-04
			Selenium	NC	--	--	NC	*0.00E+00*	Skin, central nervous system	0.0E+00	--	-	4.2E-05	4.23E-05
			Silver	NC	--	--	NC	*0.00E+00*	central nervous system	0.0E+00	--	--	6.6E-05	6.60E-05
			Zinc	NC	--	--	NC	0.00E+00	Circulatory system	0.0E+00	--	--	3.0E-03	3.05E-03
			Chemical Total	2.3E-07	0.0E+00	0.0E+00	9.1E-07	1.1E-06		8.2E-03	0.0E+00	0.0E+00	3.5E-02	4.4E-02
		Exposure Point Total						1.1E-06						4.4E-02
	Exposure Medium Total							1.1E-06						4.4E-02
Sediment Total								1.1E-06						4.4E-02
Receptor Total							Receptor Risk Total	3.5E-06					Receptor HI Total	1.8E-01

Total Skin HI Across All Media =	5.45E-02
Total Kidney HI Across All Media =	1.08E-01
Total Nervous System HI Across All Media =	1.43E-03
Total Lung HI Across All Media =	9.84E-05
Total Immune HI Across All Media =	5.08E-04

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TABLE 9w
RAGS PART D TABLE 9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Off-Facility Area Recreational Exposure - Former American Zinc Plating Site, Fairmont City, IL

Scenario Timeframe: Current Future
Receptor Population: Recreational
Receptor Age: Adolescent

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Inhalation Vapors	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Inhalation Vapors	Dermal	Exposure Routes Total
Surface Soil	Soil	Off-facility area soil	Arsenic	1.60E-06	1.50E-09	--	4.13E-07	2.01E-06	Skin	2.49E-02	NTV	--	6.42E-03	3.13E-02
fine fraction			Barium	NC	NC	--	NC	0.00E+00	Kidney	5.72E-04	7.44E-05	--	0.00E+00	6.47E-04
alleyways	alleyways		Cadmium	NC	6.44E-10	--	NC	6.44E-10	Kidney	7.69E-03	NTV	--	2.64E-03	1.03E-02
			Chromium	NC	1.04E-08	--	NC	1.04E-08	Lung	1.25E-05	6.09E-05	--	0.00E+00	7.34E-05
			Copper	NS	NS	--	NS	0.00E+00	GI System	NS	NS	--	NS	0.00E+00
			Lead	NTV	NTV	--	NTV	0.00E+00	NA	NTV	NTV	--	NTV	0.00E+00
			Mercury	NC	NC	--	NC	0.00E+00	Immunological	1.77E-04	5.77E-08	--	0.00E+00	1.77E-04
			Selenium	NC	NC	--	NC	0.00E+00	Skin, central nervous system	8.27E-05	NTV	--	0.00E+00	8.27E-05
			Silver	NC	NC	--	NC	0.00E+00	central nervous system	2.16E-04	NTV	--	0.00E+00	2.16E-04
			Zinc	NC	NC	--	NC	0.00E+00	Circulatory system	4.43E-03	NTV	--	0.00E+00	4.43E-03
			Chemical Total	1.6E-06	1.3E-08	0.0E+00	4.1E-07	2.0E-06		3.8E-02	1.4E-04	0.0E+00	9.1E-03	4.7E-02
		Exposure Point Total						2.0E-06						4.7E-02
	Exposure Medium Total							2.0E-06						4.7E-02
Soil Total								2.0E-06						4.7E-02
Surface water	Surface water	Surface Water	Arsenic	--	--	--	1.68E-08	1.68E-08	Skin	--	--	--	2.6E-04	2.61E-04
			Barium	--	--	--	NC	0.00E+00	Kidney	--	--	--	9.7E-05	9.73E-05
			Cadmium	--	--	--	NC	0.00E+00	Kidney	--	--	--	8.0E-02	7.97E-02
			Chromium	--	--	--	NC	0.00E+00	Lung	--	--	--	1.8E-05	1.81E-05
			Copper	--	--	--	NC	0.00E+00	GI System	--	--	--	7.4E-05	7.37E-05
			Lead	--	--	--	NTV	0.00E+00	NA	--	--	--	NTV	0.00E+00
			Mercury	--	--	--	NC	0.00E+00	Immunological	--	--	--	5.6E-05	5.57E-05
			Selenium	--	--	--	NC	0.00E+00	Skin: central nervous system	--	--	--	3.8E-06	3.84E-06
			Silver	--	--	--	NC	0.00E+00	central nervous system	--	--	--	5.4E-05	5.44E-05
			Zinc	--	--	--	NC	0.00E+00	Circulatory system	--	--	--	1.2E-03	1.24E-03
			Chemical Total	0.0E+00	0.0E+00	0.0E+00	1.7E-08	1.7E-08		0.0E+00	0.0E+00	0.0E 00	8.1E-02	8.1E-02
		Exposure Point Total						1.7E-08						8.1E-02
	Exposure Medium Total							1.7E-08						8.1E-02
Surface water Total								1.7E-08						8.1E-02
Sediment	Sediment	Sediment	Arsenic	2.34E-07	--	--	9.09E-07	1.14E-06	Skin	3.6E-03	--	--	1.4E-02	1.78E-02
			Barium	NC	--	--	NC	0.00E+00	Kidney	0.0E+00	--	--	1.1E-04	1.09E-04
			Cadmium	NC	--	--	NC	0.00E+00	Kidney	4.6E-03	--	--	1.3E-02	1.79E-02
			Chromium	NC	--	--	NC	0.00E+00	Lung	0.0E+00	--	--	4.2E-06	4.15E-06
			Copper	NC	--	--	NC	0.00E+00	GI System	0.0E+00	--	--	4.3E-03	4.25E-03
			Lead	NTV	--	--	NTV	0.00E+00	NA	NTV	--	--	NTV	0.00E+00
			Mercury	NC	--	--	NC	0.00E+00	Immunological	0.0E+00	--	--	3.6E-04	3.60E-04
			Selenium	NC	--	--	NC	0.00E+00	Skin, central nervous system	0.0E+00	--	--	4.2E-05	4.23E-05
			Silver	NC	--	--	NC	0.00E+00	central nervous system	0.0E+00	--	--	6.6E-05	6.60E-05
			Zinc	NC	--	--	NC	0.00E+00	Circulatory system	0.0E+00	--	--	3.0E-03	3.05E-03
			Chemical Total	2.3E-07	0.0E+00	0.0E+00	9.1E-07	1.1E-06		8.2E-03	0.0E+00	0.0E+00	3.5E-02	4.4E-02
		Exposure Point Total						1.1E-06						4.4E-02
	Exposure Medium Total							1.1E-06						4.4E-02
Sediment Total								1.1E-06						4.4E-02
Receptor Total							Receptor Risk Total	3.2E-06					Receptor HI Total	1.7E-01

Total Skin HI Across All Media =	4.95E-02
Total Kidney HI Across All Media =	1.09E-01
Total Nervous System HI Across All Media =	*4.65E-04*
Total Lung HI Across All Media =	9.56E-05
Total Immune HI Across All Media =	5.93E-04
Total GI HI Across All Media =	4.33E-03
Total Circulatory HI Across All Media =	*8.72E-03*

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TABLE 9x
RAGS PART D TABLE 9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Facility Area Utility Worker Exposure - Former American Zinc Plating Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Utility Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Inhalation Vapors	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Inhalation Vapors	Dermal	Exposure Routes Total
oil Total - Slag on	Surface Subsurface Soil - Slag only	Facility area soil	Arsenic	1 44E-05	2 84E-07	-	1 56E-07	1.49E-05	Skin	2 25E+00	NTV	--	2 42E-02	2 27E+00
			Barium	NC	NC	--	NC	0 00E+00	Kidney	6 75E-03	1 85E-02	--	0 00E+00	2 52E-02
			Cadmium	NC	1 65E-07	--	NC	1 65E-07	Kidney	9 38E-01	NTV	--	1 35E-02	9 52E-01
			Chromium	NC	8 84E-08	--	NC	8.84E-08	Lung	5.02E-05	5.16E-03	--	0 00E+00	5.21E-03
			Copper	NC	NC	-	NC	0 00E+00	GI System	3.47E-01	NTV	--	0 00E+00	3.47E-01
			Lead	NTV	NTV	--	NTV	0 00E+00	NA	NTV	NTV	--	NTV	0 00E+00
			Mercury	NC	NC	--	NC	0 00E+00	Immunological	1 04E+00	7 13E-03	--	0 00E+00	1.05E+00
			Selenium	NC	NC	--	NC	0.00E+00	Skin; central nervous system	6.24E-03	NTV	--	0 00E+00	6 24E-03
			Silver	NC	NC	--	NC	0 00E+00	central nervous system	1 68E-01	NTV	--	0 00E+00	1 68E-01
			Zinc	NC	NC	--	NC	0.00E+00	Circulatory system	4 97E-01	NTV	--	0 00E+00	4.97E-01
			Chemical Total	1 4E-05	5 4E-07	0 0E+00	1 6E-07	1 5E-05		5 3E+00	3 1E-02	0 0E+00	3 8E-02	5 3E+00
		Exposure Point Total						1.5E-05						5 3E+00
	Exposure Medium Total							1 5E-05						5 3E+00
Soil Total								1 5E-05						5 3E+00
Surface water	Surface water	Surface Water	Arsenic	--	--	--	1 83E-09	1 83E-09	Skin	--	--	--	2 8E-04	2.84E-04
			Barium	--	--	-	NC	0 00E+00	Kidney	--	--	--	1 1E-04	1 08E-04
			Cadmium	--	--	--	NC	0 00E+00	Kidney	--	--	--	2 8E-02	2.79E-02
			Chromium	--	--	--	NC	0 00E+00	Lung	--	--	--	3 8E-06	3.78E-06
			Copper	--	--	-	NS	0 00E+00	GI System	--	--	--	NS	0 00E+00
			Lead	--	--	--	NTV	0 00E+00	NA	--	--	--	NTV	0 00E+00
			Mercury	--	--	--	NS	0 00E+00	Immunological	--	--	--	NS	0 00E+00
			Selenium	--	--	--	NC	0.00E+00	Skin; central nervous system	--	--	--	3.6E-06	3 56E-06
			Silver	--	--	--	NC	0.00E+00	central nervous system	--	--	--	4.8E-01	4 82E-01
			Zinc	--	--	--	NC	0 00E+00	Circulatory system	--	--	--	1 0E-08	1.01E-08
			Chemical Total	0 0E+00	0 0E+00	0 0E+00	1 8E-09	1 8E-09		0 0E+00	0 0E+00	0 0E+00	5.1E-01	5.1E-01
		Exposure Point Total						1 8E-09						5 1E-01
	Exposure Medium Total							1 8E-09						5.1E-01
Surface water Total								1 8E-09						5 1E-01
Sediment	Sediment	Sediment	Arsenic	6 08E-08	--	--	6.76E-07	7 37E-07	Skin	9 5E-03	--	--	1 1E-01	1 15E-01
			Barium	NC	--	--	NC	0 00E+00	Kidney	0 0E+00	--	--	7 5E-04	7 49E-04
			Cadmium	NC	--	-	NC	0.00E+00	Kidney	1 7E-02	--	--	1 4E-01	1 58E-01
			Chromium	NC	--	--	NC	0.00E+00	Lung	0 0E+00	--	--	1 2E-05	1 23E-05
			Copper	NS	--	-	NS	0.00E+00	GI System	NS	--	--	NS	0 00E+00
			Lead	NTV	--	--	NTV	0 00E+00	NA	NTV	--	--	NTV	0 00E+00
			Mercury	NC	--	--	NC	0.00E+00	Immunological	0 0E+00	--	--	6 8E-03	6.82E-03
			Selenium	NC	--	--	NC	0 00E+00	Skin; central nervous system	0.0E+00	--	--	4 1E-04	4 09E-04
			Silver	NC	--	--	NC	0 00E+00	central nervous system	0 0E+00	--	--	2 5E-03	2 52E-03
			Zinc	NC	--	-	NC	0.00E+00	Circulatory system	0.0E+00	--	--	5 0E-02	5.01E-02
			Chemical Total	6 1E-08	0 0E+00	0 0E+00	6 8E-07	7 4E-07		2 6E-02	0 0E+00	0 0E+00	3 1E-01	3 3E-01
		Exposure Point Total						7 4E-07						3 3E-01
	Exposure Medium Total							7 4E-07						3 3E-01
Sediment Total								7 4E-07						3 3E-01
Receptor Total								Receptor Risk Total 1 6E-05					Receptor HI Total	6.2E+00

Total Skin HI Across All Media =	2 39E+00
Total Kidney Hi Across All Media =	1 16E+00
Total Nervous System HI Across All Media =	6 60E-01
Total Lung HI Across All Media =	5 22E-03
Total Immune HI Across All Media =	1 06E+00

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TABLE 9y
RAGS PART D TABLE 9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Facility Area Utility Worker Exposure - Former American Zinc Plating Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Utility Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Inhalation Vapors	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Inhalation Vapors	Dermal	Exposure Routes Total
Total - Native soil	Surface/Subsurface Soil - native soil only	Facility area soil	Arsenic	5.85E-07	1.15E-08	--	6.32E-09	6.03E-07	Skin	9.11E-02	NTV	--	9.83E-04	9.20E-02
			Barium	NC	NC	--	NC	0.00E+00	Kidney	3.51E-03	9.60E-03	--	0.00E+00	1.31E-02
			Cadmium	NC	3.13E-07	--	NC	3.13E-07	Kidney	1.78E+00	NTV	--	2.56E-02	1.80E+00
			Chromium	NC	6.70E-08	--	NC	6.70E-08	Lung	3.81E-05	3.91E-03	--	0.00E+00	3.95E-03
			Copper	NC	NC	--	NC	0.00E+00	GI System	1.37E-01	NTV	--	0.00E+00	1.37E-01
			Lead	NTV	NTV	--	NTV	0.00E+00	NA	NTV	NTV	--	NTV	0.00E+00
			Mercury	NC	NC	--	NC	0.00E+00	Immunological	1.92E-03	1.31E-05	--	0.00E+00	1.93E-03
			Selenium	NC	NC	--	NC	0.00E+00	Skin; central nervous system	5.64E-04	NTV	--	0.00E+00	5.64E-04
			Silver	NC	NC	--	NC	0.00E+00	central nervous system	4.57E-04	NTV	--	0.00E+00	4.57E-04
			Zinc	NC	NC	--	NC	0.00E+00	Circulatory system	4.83E-02	NTV	--	0.00E+00	4.83E-02
			Chemical Total	5.9E-07	3.9E-07	0.0E+00	6.3E-09	9.8E-07		2.1E+00	1.4E-02	0.0E+00	2.7E-02	2.1E+00
		Exposure Point Total						9.8E-07						2.1E+00
	Exposure Medium Total							9.8E-07						2.1E+00
Soil Total								9.8E-07						2.1E+00
Surface Water	Surface water	Surface Water	Arsenic	--	--	--	1.83E-09	1.83E-09	Skin	--	--	--	2.8E-04	2.84E-04
			Barium	--	--	--	NC	0.00E+00	Kidney	--	--	--	1.1E-04	1.08E-04
			Cadmium	--	--	--	NC	0.00E+00	Kidney	--	--	--	2.8E-02	2.79E-02
			Chromium	--	--	--	NC	0.00E+00	Lung	--	--	--	3.8E-06	3.78E-06
			Copper	--	--	--	NS	0.00E+00	GI System	--	--	--	NS	0.00E+00
			Lead	--	--	--	NTV	0.00E+00	NA	--	--	--	NTV	0.00E+00
			Mercury	--	--	--	NS	0.00E+00	Immunological	--	--	--	NS	0.00E+00
			Selenium	--	--	--	NC	0.00E+00	Skin; central nervous system	--	--	--	3.6E-06	3.56E-06
			Silver	--	--	--	NC	0.00E+00	central nervous system	--	--	--	4.8E-01	4.82E-01
			Zinc	--	--	--	NC	0.00E+00	Circulatory system	--	--	--	1.0E-08	1.01E-08
			Chemical Total	0.0E+00	0.0E+00	0.0E+00	1.8E-09	1.8E-09		0.0E+00	0.0E+00	0.0E+00	5.1E-01	5.1E-01
		Exposure Point Total						1.8E-09						5.1E-01
	Exposure Medium Total							1.8E-09						5.1E-01
Surface Water Total								1.8E-09						5.1E-01
Sediment	Sediment	Sediment	Arsenic	6.08E-08	--	--	6.76E-07	7.37E-07	Skin	9.5E-03	--	--	1.1E-01	1.15E-01
			Barium	NC	--	--	NC	0.00E+00	Kidney	0.0E+00	--	--	7.5E-04	7.49E-04
			Cadmium	NC	--	--	NC	0.00E+00	Kidney	1.7E-02	--	--	1.4E-01	1.58E-01
			Chromium	NC	--	--	NC	0.00E+00	Lung	0.0E+00	--	--	1.2E-05	1.23E-05
			Copper	NS	--	--	NS	0.00E+00	GI System	NS	--	--	NS	0.00E+00
			Lead	NTV	--	--	NTV	0.00E+00	NA	NTV	--	--	NTV	0.00E+00
			Mercury	NC	--	--	NC	0.00E+00	Immunological	0.0E+00	--	--	6.8E-03	6.82E-03
			Selenium	NC	--	--	NC	0.00E+00	Skin; central nervous system	0.0E+00	--	--	4.1E-04	4.09E-04
			Silver	NC	--	--	NC	0.00E+00	central nervous system	0.0E+00	--	--	2.5E-03	2.52E-03
			Zinc	NC	--	--	NC	0.00E+00	Circulatory system	0.0E+00	--	--	5.0E-02	5.01E-02
			Chemical Total	6.1E-08	0.0E+00	0.0E+00	6.8E-07	7.4E-07		2.6E-02	0.0E+00	0.0E+00	3.1E-01	3.3E-01
		Exposure Point Total						7.4E-07						3.3E-01
	Exposure Medium Total							7.4E-07						3.3E-01
Sediment Total								7.4E-07						3.3E-01
Receptor Total							Receptor Risk Total	1.7E-06					Receptor HI Total	2.9E+00

Total Skin HI Across All Media =	2.08E-01
Total Kidney HI Across All Media =	2.00E+00
Total Nervous System HI Across All Media =	4.86E-01
Total Lung HI Across All Media =	3.96E-03
Total Immune HI Across All Media =	8.75E-03

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TABLE 9z
RAGS PART D TABLE 9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Current
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total
Soil	Soil	Off-Facility 5517 Delmar	Arsenic	4.0E-05	2.7E-08	2.1E-06	3.8E-06	4.6E-05	Skin	7.2E-01	NTV	5.9E-01	6.1E-02	1.4E+00
			Barium	NC	NC	NC	NC	0.0E+00	Kidney	6.0E-02	2.9E-03	1.1E-02	0.0E+00	7.4E-02
			Cadmium	NC	3.6E-08	NC	NC	3.6E-08	Kidney	7.0E-01	NTV	1.3E-01	7.9E-02	9.1E-01
			Chromium	NC	1.1E-07	NC	NC	1.1E-07	Lung (Inhalation pathway) None Observed	2.2E-04	4.1E-04	1.2E-04	0.0E+00	7.5E-04
			Copper	NS	NS	NS	NS	0.0E+00	GI System	NS	NS	NS	NS	0.0E+00
			Lead	NTV	NTV	NTV	NTV	0.0E+00	NA	NTV	NTV	NTV	NTV	0.0E+00
			Mercury	NC	NC	NC	NC	0.0E+00	Immunilogical	8.5E-03	1.0E-06	7.6E-03	0.0E+00	1.6E-02
			Selenium	NC	NC	NC	NC	0.0E+00	Skin; central nervous system	2.4E-03	NTV	1.9E-03	0.0E+00	4.3E-03
			Silver	NC	NC	NC	NC	0.0E+00	central nervous system	1.6E-03	NTV	1.4E-03	0.0E+00	3.0E-03
			Zinc	NC	NC	NC	NC	0.0E+00	Circulatory system	2.9E-01	NTV	4.0E-02	0.0E+00	3.3E-01
			Chemical Total	4.0E-05	1.8E-07	2.1E-06	3.8E-06	4.6E-05		1.8E+00	3.3E-03	7.8E-01	1.4E-01	2.7E+00
		Exposure Point Total						4.6E-05						2.7E+00
	Exposure Medium Total							4.6E-05						2.7E+00
Soil Total								4.6E-05						2.7E+00
Surface water	Surface water	Off-Facility Surface Water	Arsenic	--	--	--	2.1E-08	2.1E-08	Skin	--	--	--	1.2E-04	1.2E-04
			Barium	--	--	--	NC	0.0E+00	Kidney	--	--	--	4.7E-05	4.7E-05
			Cadmium	--	--	--	NC	0.0E+00	Kidney	--	--	--	1.2E-02	1.2E-02
			Chromium	--	--	--	NC	0.0E+00	None Observed	--	--	--	1.6E-06	1.6E-06
			Copper	--	--	--	NS	0.0E+00	GI System	--	--	--	NS	0.0E+00
			Lead	--	--	--	NTV	0.0E+00	NA	--	--	--	NTV	0.0E+00
			Mercury	--	--	--	NS	0.0E+00	Immunilogical	--	--	--	NS	0.0E+00
			Selenium	--	--	--	NC	0.0E+00	Skin; central nervous system	--	--	--	1.5E-06	1.5E-06
			Silver	--	--	--	NC	0.0E+00	central nervous system	--	--	--	2.1E-01	2.1E-01
			Zinc	--	--	--	NC	0.0E+00	Circulatory system	--	--	--	4.4E-09	4.4E-09
			Chemical Total	0.0E+00	0.0E+00	0.0E+00	2.1E-08	2.1E-08		0.0E+00	0.0E+00	0.0E+00	2.2E-01	2.2E-01
		Exposure Point Total						2.1E-08						2.2E-01
	Exposure Medium Total							2.1E-08						2.2E-01
Surface water Total								2.1E-08						2.2E-01

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TABLE 9z
RAGS PART D TABLE 9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Current
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total
Sediment	Sediment	Off-Facility Sediment	Arsenic	2.7E-07	--	--	1.5E-06	1.8E-06	Skin	2.7E-03	--	--	1.0E-02	1.3E-02
			Barium	NC	--	--	NC	0.0E+00	Kidney	0.0E+00	--	--	7.4E-05	7.4E-05
			Cadmium	NC	--	--	NC	0.0E+00	Kidney	4.8E-03	--	--	1.4E-02	1.9E-02
			Chromium	NC	--	--	NC	0.0E+00	None Observed	0.0E+00	--	--	1.2E-06	1.2E-06
			Copper	NS	--	--	NS	0.0E+00	GI System	NS	--	--	NS	0.0E+00
			Lead	NTV	--	--	NTV	0.0E+00	NA	NTV	--	--	NTV	0.0E+00
			Mercury	NC	--	--	NC	0.0E+00	Immunilogical	0.0E+00	--	--	6.7E-04	6.7E-04
			Selenium	NC	--	--	NC	0.0E+00	Skin; central nervous system	0.0E+00	--	--	4.0E-05	4.0E-05
			Silver	NC	--	--	NC	0.0E+00	central nervous system	0.0E+00	--	--	2.5E-04	2.5E-04
			Zinc	NC	--	--	NC	0.0E+00	Circulatory system	0.0E+00	--	--	4.9E-03	4.9E-03
			Chemical Total	2.7E-07	0.0E+00	0.0E+00	1.5E-06	1.8E-06		7.5E-03	0.0E+00	0.0E+00	3.0E-02	3.8E-02
		Exposure Point Total						1.8E-06						3.8E-02
	Exposure Medium Total							1.8E-06						3.8E-02
Sediment Total								1.8E-06						3.8E-02
Receptor Total							*Receptor Risk Total*	*4.8E-05*					*Receptor HI Total*	*3.0E+00*

Note: EPC for Current Produce Ingestion based on measured soil concentrations in existing garden.

Total Skin	HI Across all Media =	1E+00
Total Kidney	HI Across all Media =	1E+00
Total Nervous System	HI Across all Media =	2E-01
Total Lung	*HI Across all Media =*	4E-04
Total Immune System	HI Across all Media =	2E-02
Total Circulatory	HI Across all Media =	3E-01
Total GI	HI Across all Media =	0E+00
Total Non-Observed (Chromium)	HI Across all Media =	3E-04

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TABLE 9aa
RAGS PART D TABLE 9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plating Site, Fairmont City, IL

Scenario Timeframe: Current/Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total
Soil	Soil	Off-Facility 5427 Kinder	Arsenic	2.8E-05	1.9E-08	1.8E-06	2.7E-06	3.3E-05	Skin	5.1E-01	NTV	5.1E-01	4.3E-02	1.1E+00
			Barium	NC	NC	NC	NC	0.0E+00	Kidney	1.5E-02	7 5E-04	1.5E-02	0.0E+00	3.1E-02
			Cadmium	NC	2.7E-08	NC	NC	2.7E-08	Kidney	5.2E-01	NTV	5.2E-01	5.9E-02	1.1E+00
			Chromium	NC	7.9E-08	NC	NC	7.9E-08	Lung (Inhalation pathway) None Observed	1.5E-04	2.8E-04	1.5E-04	0.0E+00	5.9E-04
			Copper	NS	NS	NS	NS	0.0E+00	GI System	NS	NS	NS	NS	0.0E+00
			Lead	NTV	NTV	NTV	NTV	0.0E+00	NA	NTV	NTV	NTV	NTV	0.0E+00
			Mercury	NC	NC	NC	NC	0.0E+00	Immunilogical	5.5E-03	6.8E-07	5.5E-03	0.0E+00	1.1E-02
			Selenium	NC	NC	NC	NC	0.0E+00	*Skin; central nervous system*	5.1E-03	NTV	5.1E-03	0.0E+00	1.0E-02
			Silver	NC	NC	NC	NC	0 0E+00	central nervous system	2.1E-03	NTV	2.1E-03	0.0E+00	4.2E-03
			Zinc	NC	NC	NC	NC	0.0E+00	Circulatory system	7.7E-02	NTV	7.6E-02	0.0E+00	1.5E-01
			Chemical Total	2.8E-05	1.2E-07	1.8E-06	2.7E-06	3.3E-05		1.1E+00	1.0E-03	1.1E+00	1.0E-01	2.4E+00
		Exposure Point Total						3.3E-05						2.4E+00
	Exposure Medium Total							3.3E-05						2.4E+00
Soil Total								3.3E-05						2 4E+00
Surface water	Surface water	Off-Facility Surface Water	Arsenic	--	--	--	2.1E-08	2.1E-08	Skin	--	--	--	1.2E-04	1.2E-04
			Barium	--	--	--	NC	0.0E+00	Kidney	--	--	--	4.7E-05	4.7E-05
			Cadmium	--	--	--	NC	0.0E+00	Kidney	--	--	--	1.2E-02	1.2E-02
			Chromium	--	--	--	NC	0.0E+00	None Observed	--	--	--	1.6E-06	1.6E-06
			Copper	--	--	--	NS	0.0E+00	GI System	--	--	--	NS	0.0E+00
			Lead	--	--	--	NTV	0.0E+00	NA	--	--	--	NTV	0.0E+00
			Mercury	--	--	--	NS	0.0E+00	Immunilogical	--	--	--	NS	0.0E+00
			Selenium	--	--	--	NC	0.0E+00	*Skin; central nervous system*	--	--	--	1.5E-06	1.5E-06
			Silver	--	--	--	NC	0.0E+00	central nervous system	--	--	--	2.1E-01	2.1E-01
			Zinc	--	--	--	NC	0.0E+00	*Circulatory system*	--	--	--	4.4E-09	4.4E-09
			Chemical Total	0.0E+00	0.0E+00	0.0E+00	2.1E-08	2.1E-08		0.0E+00	0.0E+00	0.0E+00	2.2E-01	2.2E-01
		Exposure Point Total						2.1E-08						2.2E-01
	Exposure Medium Total							2.1E-08						2.2E-01
Surface water Total								2.1E-08						2.2E-01

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TABLE 9aa
RAGS PART D TABLE 9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plating Site, Fairmont City, IL

Scenario Timeframe: Current/Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total
Sediment	Sediment	Off-Facility Sediment	Arsenic	2.7E-07	--	--	1.5E-06	1.8E-06	Skin	2.7E-03	--	--	1.0E-02	1.3E-02
			Barium	NC	--	--	NC	0.0E+00	Kidney	0.0E+00	--	--	7.4E-05	7.4E-05
			Cadmium	NC	--	--	NC	*0.0E+00*	*Kidney*	*4.8E-03*	--	--	*1.4E-02*	*1.9E-02*
			Chromium	NC	--	--	NC	0.0E+00	None Observed	0.0E+00	--	--	1.2E-06	1.2E-06
			Copper	NS	--	--	NS	0.0E+00	GI System	NS	--	--	NS	0.0E+00
			Lead	NTV	--	--	NTV	0.0E+00	NA	NTV	--	--	NTV	0.0E+00
			Mercury	NC	--	--	NC	0.0E+00	Immunological	0.0E+00	--	--	6.7E-04	6.7E-04
			Selenium	NC	--	--	NC	0.0E+00	Skin; central nervous system	0.0E+00	--	--	4.0E-05	4.0E-05
			Silver	NC	--	--	NC	0.0E+00	central nervous system	0.0E+00	--	--	2.5E-04	2.5E-04
			Zinc	NC	--	--	NC	0.0E+00	Circulatory system	0.0E+00	--	--	4.9E-03	4.9E-03
			Chemical Total	2.7E-07	0.0E+00	0.0E+00	1.5E-06	1.8E-06		7.5E-03	0.0E+00	0.0E+00	3.0E-02	3.8E-02
		Exposure Point Total						1.8E-06						3.8E-02
	Exposure Medium Total							1.8E-06						3.8E-02
Sediment Total								1.8E-06						3.8E-02
Receptor Total							Receptor Risk Total	3.5E-05					Receptor HI Total	2.6E+00

Note: No garden currently exists at property based on site visit.

Total Skin	HI Across all Media =	1E+00
Total Kidney	HI Across all Media =	1E+00
Total Nervous System	HI Across all Media =	2E-01
Total Lung	HI Across all Media =	3E-04
Total Immune System	HI Across all Media =	1E-02
Total Circulatory	HI Across all Media =	2E-01
Total GI	*HI Across all Media =*	*0E+00*
Total Non-Observed (Chromium)	HI Across all Media =	3E-04

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TABLE 9ab
RAGS PART D TABLE 9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Current/Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total
Soil	Soil	Off-Facility 5514 Kinder	Arsenic	4.5E-05	3.0E-08	2.8E-06	4.2E-06	5.2E-05	Skin	**8.1E-01**	NTV	**8.0E-01**	6.8E-02	**1.7E+00**
			Barium	NC	NC	NC	NC	0.0E+00	Kidney	2.2E-02	1.1E-03	2.2E-02	0.0E+00	4.6E-02
			Cadmium	NC	5.3E-08	NC	NC	5.3E-08	Kidney	**1.0E+00**	NTV	**1.0E+00**	1.2E-01	**2.2E+00**
			Chromium	NC	1.1E-07	NC	NC	1.1E-07	Lung (Inhalation pathway) None Observed	2.2E-04	4.1E-04	2.2E-04	0.0E+00	8.5E-04
			Copper	NS	NS	NS	NS	0.0E+00	GI System	NS	NS	NS	NS	0.0E+00
			Lead	NTV	NTV	NTV	NTV	0.0E+00	NA	NTV	NTV	NTV	NTV	0.0E+00
			Mercury	NC	NC	NC	NC	0.0E+00	Immunilogical	1.7E-02	2.1E-06	1.7E-02	0.0E+00	3.5E-02
			Selenium	NC	NC	NC	NC	0.0E+00	Skin; central nervous system	4.6E-03	NTV	4.6E-03	0.0E+00	9.2E-03
			Silver	NC	NC	NC	NC	0.0E+00	central nervous system	5.6E-03	NTV	5.6E-03	0.0E+00	1.1E-02
			Zinc	NC	NC	NC	NC	0.0E+00	Circulatory system	1.6E-01	NTV	1.6E-01	0.0E+00	3.1E-01
			Chemical Total	4.5E-05	2.0E-07	2.8E-06	4.2E-06	5.2E-05		2.1E+00	1.5E-03	2.0E+00	1.8E-01	4.3E+00
		Exposure Point Total						5.2E-05						4.3E+00
	Exposure Medium Total							5.2E-05						4.3E+00
Soil Total								5.2E-05						4.3E+00
Surface water	Surface water	Off-Facility Surface Water	Arsenic	--	--	--	2.1E-08	2.1E-08	Skin	--	--	--	1.2E-04	1.2E-04
			Barium	--	--	--	NC	0.0E+00	Kidney	--	--	--	4.7E-05	4.7E-05
			Cadmium	--	--	--	NC	0.0E+00	Kidney	--	--	--	1.2E-02	1.2E-02
			Chromium	--	--	--	NC	0.0E+00	None Observed	--	--	--	1.6E-06	1.6E-06
			Copper	--	--	--	NS	0.0E+00	GI System	--	--	--	NS	0.0E+00
			Lead	--	--	--	NTV	0.0E+00	NA	--	--	--	NTV	0.0E+00
			Mercury	--	--	--	NS	0.0E+00	Immunilogical	--	--	--	NS	0.0E+00
			Selenium	--	--	--	NC	0.0E+00	Skin; central nervous system	--	--	--	1.5E-06	1.5E-06
			Silver	--	--	--	NC	0.0E+00	central nervous system	--	--	--	2.1E-01	2.1E-01
			Zinc	--	--	--	NC	0.0E+00	Circulatory system	--	--	--	4.4E-09	4.4E-09
			Chemical Total	0.0E+00	0.0E+00	0.0E+00	2.1E-08	2.1E-08		0.0E+00	0.0E+00	0.0E+00	2.2E-01	2.2E-01
		Exposure Point Total						2.1E-08						2.2E-01
	Exposure Medium Total							2.1E-08						2.2E-01
Surface water Total								2.1E-08						2.2E-01

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TABLE 9ab
RAGS PART D TABLE 9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Current/Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total
Sediment	Sediment	Off-Facility Sediment	Arsenic	2.7E-07	--	--	1.5E-06	1.8E-06	Skin	2.7E-03	--	--	1.0E-02	1.3E-02
			Barium	NC	--	--	NC	0.0E+00	Kidney	0.0E+00	--	--	7.4E-05	7.4E-05
			Cadmium	NC	--	--	NC	0.0E+00	Kidney	4.8E-03	--	--	1.4E-02	1.9E-02
			Chromium	NC	--	--	NC	0.0E+00	None Observed	0.0E+00	--	--	1.2E-06	1.2E-06
			Copper	NS	--	--	NS	0.0E+00	GI System	NS	--	--	NS	0.0E+00
			Lead	NTV	--	--	NTV	0.0E+00	NA	NTV	--	--	NTV	0.0E+00
			Mercury	NC	--	--	NC	0.0E+00	Immunlogical	0.0E+00	--	--	6.7E-04	6.7E-04
			Selenium	NC	--	--	NC	0.0E+00	Skin; central nervous system	0.0E+00	--	--	4.0E-05	4.0E-05
			Silver	NC	--	--	NC	0.0E+00	central nervous system	0.0E+00	--	--	2.5E-04	2.5E-04
			Zinc	NC	--	--	NC	0.0E+00	Circulatory system	0.0E+00	--	--	4.9E-03	4.9E-03
			Chemical Total	2.7E-07	0.0E+00	0.0E+00	1.5E-06	1.8E-06		7.5E-03	0.0E+00	0.0E+00	3.0E-02	3.8E-02
		Exposure Point Total						1.8E-06						3.8E-02
	Exposure Medium Total							1.8E-06						3.8E-02
Sediment Total								1.8E-06						3.8E-02
Receptor Total							Receptor Risk Total	5.4E-05					Receptor HI Total	4.5E+00

Note: No garden currently exists at property based on site visit.

Total Skin	HI Across all Media =	2E+00
Total Kidney	HI Across all Media =	2E+00
Total Nervous System	HI Across all Media =	2E-01
Total Lung	HI Across all Media =	4E-04
Total Immune System	HI Across all Media =	4E-02
Total Circulatory	HI Across all Media =	3E-01
Total GI	HI Across all Media =	0E+00
Total Non-Observed (Chromium)	HI Across all Media =	4E-04

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TABLE 9ac
RAGS PART D TABLE 9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total
Soil	Soil	Off-Facility 5517 Delmar	Arsenic	3.3E-05	2.2E-08	2.1E-06	3.1E-06	3.8E-05	Skin	6.0E-01	NTV	5.9E-01	5.0E-02	1.2E+00
			Barium	NC	NC	NC	NC	0.0E+00	Kidney	1.1E-02	5.3E-04	1.1E-02	0.0E+00	2.2E-02
			Cadmium	NC	6.5E-09	NC	NC	6.5E-09	Kidney	1.3E-01	NTV	1.3E-01	1.4E-02	2.7E-01
			Chromium	NC	6.1E-08	NC	NC	6.1E-08	Lung (Inhalation pathway) None Observed	1.2E-04	2.2E-04	1.2E-04	0.0E+00	4.6E-04
			Copper	NS	NS	NS	NS	0.0E+00	GI System	NS	NS	NS	NS	0.0E+00
			Lead	NTV	NTV	NTV	NTV	0.0E+00	NA	NTV	NTV	NTV	NTV	0.0E+00
			Mercury	NC	NC	NC	NC	0.0E+00	Immunilogical	7.7E-03	9.4E-07	7.6E-03	0.0E+00	1.5E-02
			Selenium	NC	NC	NC	NC	0.0E+00	Skin; central nervous system	1.9E-03	NTV	1.9E-03	0.0E+00	3.8E-03
			Silver	NC	NC	NC	NC	0.0E+00	central nervous system	1.4E-03	NTV	1.4E-03	0.0E+00	2.8E-03
			Zinc	NC	NC	NC	NC	0.0E+00	Circulatory system	4.0E-02	NTV	4.0E-02	0.0E+00	8.1E-02
			Chemical Total	3.3E-05	9.0E-08	2.1E-06	3.1E-06	3.8E-05		7.9E-01	7.5E-04	7.8E-01	6.4E-02	1.6E+00
		Exposure Point Total						3.8E-05						1.6E+00
	Exposure Medium Total							3.8E-05						1.6E+00
Soil Total								3.8E-05						1.6E+00
Surface water	Surface water	Off-Facility Surface Water	Arsenic	--	--	--	2.1E-08	2.1E-08	Skin	--	--	--	1.2E-04	1.2E-04
			Barium	--	--	--	NC	0.0E+00	Kidney	--	--	--	4.7E-05	4.7E-05
			Cadmium	--	--	--	NC	0.0E+00	Kidney	--	--	--	1.2E-02	1.2E-02
			Chromium	--	--	--	NC	0.0E+00	None Observed	--	--	--	1.6E-06	1.6E-06
			Copper	--	--	--	NS	0.0E+00	GI System	--	--	--	NS	0.0E+00
			Lead	--	--	--	NTV	0.0E+00	NA	--	--	--	NTV	0.0E+00
			Mercury	--	--	--	NS	0.0E+00	Immunilogical	--	--	--	NS	0.0E+00
			Selenium	--	--	--	NC	0.0E+00	Skin; central nervous system	--	--	--	1.5E-06	1.5E-06
			Silver	--	--	--	NC	0.0E+00	central nervous system	--	--	--	2.1E-01	2.1E-01
			Zinc	--	--	--	NC	0.0E+00	Circulatory system	--	--	--	4.4E-09	4.4E-09
			Chemical Total	0.0E+00	0.0E+00	0.0E+00	2.1E-08	2.1E-08		0.0E+00	0.0E+00	0.0E+00	2.2E-01	2.2E-01
		Exposure Point Total						2.1E-08						2.2E-01
	Exposure Medium Total							2.1E-08						2.2E-01
Surface water Total								2.1E-08						2.2E-01

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TABLE 9ac
RAGS PART D TABLE 9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total
Sediment	Sediment	Off-Facility Sediment	Arsenic	2.7E-07	--	--	1.5E-06	1.8E-06	Skin	2.7E-03	--	--	1.0E-02	1.3E-02
			Barium	NC	--	--	NC	0.0E+00	Kidney	0.0E+00	--	--	7.4E-05	7.4E-05
			Cadmium	NC	--	--	NC	0.0E+00	Kidney	4.8E-03	--	--	1.4E-02	1.9E-02
			Chromium	NC	--	--	NC	0.0E+00	None Observed	0.0E+00	--	--	1.2E-06	1.2E-06
			Copper	NS	--	--	NS	0.0E+00	GI System	NS	--	--	NS	0.0E+00
			Lead	NTV	--	--	NTV	0.0E+00	NA	NTV	--	--	NTV	0.0E+00
			Mercury	NC	--	--	NC	0.0E+00	Immunilogical	0.0E+00	--	--	6.7E-04	6.7E-04
			Selenium	NC	--	--	NC	0.0E+00	Skin; central nervous system	0.0E+00	--	--	4.0E-05	4.0E-05
			Silver	NC	--	--	NC	0.0E+00	*central nervous system*	*0.0E+00*	--	--	*2.5E-04*	2.5E-04
			Zinc	NC	--	--	NC	0.0E+00	Circulatory system	0.0E+00	--	--	4.9E-03	4.9E-03
			Chemical Total	2.7E-07	0.0E+00	0.0E+00	1.5E-06	1.8E-06		7.5E-03	0.0E+00	0.0E+00	3.0E-02	3.8E-02
		Exposure Point Total						1.8E-06						3.8E-02
	Exposure Medium Total							1.8E-06						3.8E-02
Sediment Total								1.8E-06						3.8E-02
Receptor Total							Receptor Risk Total	4.0E-05					Receptor HI Total	2E+00

Note: EPC for Future Produce Ingestion based on maximum detected concentration in all soil samples collected at property, which may exceed the measured soil concentrations in existing garden.

Total Skin	HI Across all Media =	1E+00
Total Kidney	HI Across all Media =	3E-01
Total Nervous System	HI Across all Media =	2E-01
Total Lung	HI Across all Media =	2E-04
Total Immune System	HI Across all Media =	2E-02
Total Circulatory	HI Across all Media =	9E-02
Total GI	HI Across all Media =	0E+00
Total Non-Observed (Chromium)	HI Across all Media =	2E-04

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TABLE 9ad
RAGS PART D TABLE 9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total
Soil	Soil	Off-Facility	Arsenic	1.2E-04	8.0E-08	7.6E-06	1.1E-05	1.4E-04	Skin	**2.2E+00**	NTV	**2.2E+00**	1.8E-01	4.5E+00
		47 St (Schulmann)	Barium	NC	NC	NC	NC	0 0E+00	Kidney	2.4E-02	1.2E-03	2.3E-02	0.0E+00	4.8E-02
			Cadmium	NC	1.2E-07	NC	NC	1 2E-07	Kidney	**2.3E+00**	NTV	**2.3E+00**	2.6E-01	4.8E+00
			Chromium	NC	1.3E-07	NC	NC	1.3E-07	Lung (Inhalation pathway) None Observed	2.6E-04	4.7E-04	2.5E-04	0.0E+00	9.8E-04
			Copper	NS	NS	NS	NS	0.0E+00	GI System	NS	NS	NS	NS	0.0E+00
			Lead	NTV	NTV	NTV	NTV	0.0E+00	NA	NTV	NTV	NTV	NTV	0.0E+00
			Mercury	NC	NC	NC	NC	0.0E+00	Immunilogical	4.7E-02	5.7E-06	4.6E-02	0.0E+00	9.3E-02
			Selenium	NC	NC	NC	NC	0.0E+00	Skin; central nervous system	5.4E-03	NTV	5.3E-03	0.0E+00	1.1E-02
			Silver	NC	NC	NC	NC	0.0E+00	central nervous system	2.8E-02	NTV	2.8E-02	0.0E+00	5.6E-02
			Zinc	NC	NC	NC	NC	0.0E+00	Circulatory system	6.8E-01	NTV	6.8E-01	0.0E+00	1.4E+00
			Chemical Total	1.2E-04	3.3E-07	7.6E-06	1.1E-05	1.4E-04		5.3E+00	1.6E-03	5.2E+00	4.4E-01	1.1E+01
		Exposure Point Total						1.4E-04						1.1E+01
	Exposure Medium Total							1.4E-04						1.1E+01
Soil Total								1.4E-04						1.1E+01
Surface water	Surface water	Off-Facility Surface Water	Arsenic	--	--	--	2.1E-08	2.1E-08	Skin	--	--	--	1.2E-04	1.2E-04
			Barium	--	--	--	NC	0.0E+00	Kidney	--	--	--	4.7E-05	4.7E-05
			Cadmium	--	--	--	NC	0.0E+00	Kidney	--	--	--	1.2E-02	1.2E-02
			Chromium	--	--	--	NC	0.0E+00	None Observed	--	--	--	1.6E-06	1.6E-06
			Copper	--	--	--	NS	0.0E+00	GI System	--	--	--	NS	0.0E+00
			Lead	--	--	--	NTV	0.0E+00	NA	--	--	--	NTV	0.0E+00
			Mercury	--	--	--	NS	0.0E+00	Immunilogical	--	--	--	NS	0.0E+00
			Selenium	--	--	--	NC	0.0E+00	Skin; central nervous system	--	--	--	1.5E-06	1.5E-06
			Silver	--	--	--	NC	0.0E+00	central nervous system	--	--	--	2.1E-01	2.1E-01
			Zinc	--	--	--	NC	0.0E+00	Circulatory system	--	--	--	4.4E-09	4.4E-09
			Chemical Total	*0.0E+00*	*0.0E+00*	*0.0E+00*	*2.1E-08*	*2.1E-08*		0.0E+00	0.0E+00	0.0E+00	2.2E-01	2.2E-01
		Exposure Point Total						2.1E-08						2.2E-01
	Exposure Medium Total							2.1E-08						2.2E-01
Surface water Total								2.1E-08						2.2E-01

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TABLE 9ad
RAGS PART D TABLE 9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total
Sediment	Sediment	Off-Facility Sediment	Arsenic	2.7E-07	--	--	1.5E-06	1.8E-06	Skin	2.7E-03	--	--	1.0E-02	1.3E-02
			Barium	NC	--	--	NC	0.0E+00	Kidney	0.0E+00	--	--	7.4E-05	7.4E-05
			Cadmium	NC	--	--	NC	0.0E+00	Kidney	4.8E-03	--	--	1.4E-02	1.9E-02
			Chromium	NC	--	--	NC	0.0E+00	None Observed	0.0E+00	--	--	1.2E-06	1.2E-06
			Copper	NS	--	--	NS	0.0E+00	GI System	NS	--	--	NS	0.0E+00
			Lead	NTV	--	--	NTV	0.0E+00	NA	NTV	--	--	NTV	0.0E+00
			Mercury	NC	--	--	NC	0.0E+00	Immunilogical	0.0E+00	--	--	6.7E-04	6.7E-04
			Selenium	NC	--	--	NC	0.0E+00	Skin; central nervous system	0.0E+00	--	--	4.0E-05	4.0E-05
			Silver	NC	--	--	NC	0.0E+00	central nervous system	0.0E+00	--	--	2.5E-04	2.5E-04
			Zinc	NC	--	--	NC	0.0E+00	Circulatory system	0.0E+00	--	--	4.9E-03	4.9E-03
			Chemical Total	2.7E-07	0.0E+00	0.0E+00	1.5E-06	1.8E-06		7.5E-03	0.0E+00	0.0E+00	3.0E-02	3.8E-02
		Exposure Point Total						1.8E-06						3.8E-02
	Exposure Medium Total							1.8E-06						3.8E-02
Sediment Total								1.8E-06						3.8E-02
Receptor Total							Receptor Risk Total	1.4E-04					Receptor HI Total	1E+01

Note: Property is currently vacant

Total Skin	HI Across all Media =	5E+00
Total Kidney	HI Across all Media =	5E+00
Total Nervous System	HI Across all Media =	3E-01
Total Lung	HI Across all Media =	5E-04
Total Immune System	HI Across all Media =	9E-02
Total Circulatory	HI Across all Media =	1E+00
Total GI	HI Across all Media =	0E+00
Total Non-Observed (Chromium)	HI Across all Media =	5E-04

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TABLE 9ae
RAGS PART D TABLE 9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total
Soil	Soil	Off-Facility	Arsenic	6.1E-05	4.1E-08	3.9E-06	5.8E-06	7.1E-05	Skin	1.1E+00	NTV	1.1E+00	9.3E-02	2.3E+00
		2845 44th Street	Barium	NC	NC	NC	NC	0.0E+00	Kidney	1.5E-02	7.2E-04	1.5E-02	0.0E+00	3.0E-02
			Cadmium	NC	1.6E-08	NC	NC	1.6E-08	Kidney	3.1E-01	NTV	3.0E-01	3.4E-02	6.5E-01
			Chromium	NC	9.6E-08	NC	NC	9.6E-08	Lung (Inhalation pathway) None Observed	1.9E-04	3.4E-04	1.9E-04	0.0E+00	7.2E-04
			Copper	NS	NS	NS	NS	0.0E+00	GI System	NS	NS	NS	NS	0.0E+00
			Lead	NTV	NTV	NTV	NTV	0.0E+00	NA	NTV	NTV	NTV	NTV	0.0E+00
			Mercury	NC	NC	NC	NC	0.0E+00	Immunilogical	3.8E-02	4.7E-06	3.8E-02	0.0E+00	7.6E-02
			Selenium	NC	NC	NC	NC	0.0E+00	Skin; central nervous system	3.1E-03	NTV	3.0E-03	0.0E+00	6.1E-03
			Silver	NC	NC	NC	NC	0.0E+00	central nervous system	6.4E-03	NTV	6.3E-03	0.0E+00	1.3E-02
			Zinc	NC	NC	NC	NC	0.0E+00	Circulatory system	1.7E-01	NTV	1.6E-01	0.0E+00	3.3E-01
			Chemical Total	6.1E-05	1.5E-07	3.9E-06	5.8E-06	7.1E-05		1.6E+00	1.1E-03	1.6E+00	1.3E-01	3.4E+00
		Exposure Point Total						7.1E-05						3.4E+00
	Exposure Medium Total							7.1E-05						3.4E+00
Soil Total								7.1E-05						3.4E+00
Surface water	Surface water	Off-Facility	Arsenic	--	--	--	2.1E-08	2.1E-08	Skin	--	--	--	1.2E-04	1.2E-04
		Surface Water	Barium	--	--	--	NC	0.0E+00	Kidney	--	--	--	4.7E-05	4.7E-05
			Cadmium	--	--	--	NC	0.0E+00	Kidney	--	--	--	1.2E-02	1.2E-02
			Chromium	--	--	--	NC	0.0E+00	None Observed	--	--	--	1.6E-06	1.6E-06
			Copper	--	--	--	NS	0.0E+00	GI System	--	--	--	NS	0.0E+00
			Lead	--	--	--	NTV	0.0E+00	NA	--	--	--	NTV	0.0E+00
			Mercury	--	--	--	NS	0.0E+00	Immunilogical	--	--	--	NS	0.0E+00
			Selenium	--	--	--	NC	0.0E+00	Skin; central nervous system	--	--	--	1.5E-06	1.5E-06
			Silver	--	--	--	NC	0.0E+00	central nervous system	--	--	--	2.1E-01	2.1E-01
			Zinc	--	--	--	NC	0.0E+00	Circulatory system	--	--	--	4.4E-09	4.4E-09
			Chemical Total	0.0E+00	0.0E+00	0.0E+00	2.1E-08	2.1E-08		0.0E+00	0.0E+00	0.0E+00	2.2E-01	2.2E-01
		Exposure Point Total						2.1E-08						2.2E-01
	Exposure Medium Total							2.1E-08						2.2E-01
Surface water Total								2.1E-08						2.2E-01

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TABLE 9ae
RAGS PART D TABLE 9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total
Sediment	Sediment	Off-Facility Sediment	Arsenic	2.7E-07	--	--	1.5E-06	1.8E-06	Skin	2.7E-03	--	--	1.0E-02	1.3E-02
			Barium	NC	--	--	NC	0.0E+00	Kidney	0.0E+00	--	--	7.4E-05	7.4E-05
			Cadmium	NC	--	--	NC	0.0E+00	Kidney	4.8E-03	--	--	1.4E-02	1.9E-02
			Chromium	NC	--	--	NC	0.0E+00	None Observed	0.0E+00	--	--	1.2E-06	1.2E-06
			Copper	NS	--	--	NS	0.0E+00	GI System	NS	--	--	NS	0.0E+00
			Lead	NTV	--	--	NTV	0.0E+00	NA	NTV	--	--	NTV	0.0E+00
			Mercury	NC	--	--	NC	0.0E+00	Immunilogical	0.0E+00	--	--	6.7E-04	6.7E-04
			Selenium	NC	--	--	NC	0.0E+00	Skin; central nervous system	0.0E+00	--	--	4.0E-05	4.0E-05
			Silver	NC	--	--	NC	0.0E+00	central nervous system	0.0E+00	--	--	2.5E-04	2.5E-04
			Zinc	NC	--	--	NC	0.0E+00	Circulatory system	0.0E+00	--	--	4.9E-03	4.9E-03
			Chemical Total	2.7E-07	0.0E+00	0.0E+00	1.5E-06	1.8E-06		7.5E-03	0.0E+00	0.0E+00	3.0E-02	3.8E-02
		Exposure Point Total						1.8E-06						3.8E-02
	Exposure Medium Total							1.8E-06						3.8E-02
Sediment Total								1.8E-06						3.8E-02
Receptor Total							Receptor Risk Total	7.3E-05					Receptor HI Total	4E+00

Note: Property is currently vacant

Total Skin	HI Across all Media =	2E+00
Total Kidney	HI Across all Media =	7E-01
Total Nervous System	HI Across all Media =	2E-01
Total Lung	HI Across all Media =	3E-04
Total Immune System	HI Across all Media =	8E-02
Total Circulatory	HI Across all Media =	3E-01
Total GI	HI Across all Media =	0E+00
Total Non-Observed (Chromium)	HI Across all Media =	4E-04

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TABLE 9af
RAGS PART D TABLE 9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	*Carcinogenic Risk*					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total
Soil	Soil	Off-Facility	Arsenic	4.0E-05	2.7E-08	2.5E-06	3.8E-06	4.6E-05	Skin	7.2E-01	NTV	7.2E-01	6.1E-02	1.5E+00
		3022 N 48th St.	Barium	NC	NC	NC	NC	0.0E+00	Kidney	2.0E-02	1.0E-03	2.0E-02	0.0E+00	4.2E-02
			Cadmium	NC	4.0E-08	NC	NC	4.0E-08	Kidney	7.8E-01	NTV	7.7E-01	8.7E-02	1.6E+00
			Chromium	NC	1.0E-07	NC	NC	1.0E-07	Lung (Inhalation pathway) None Observed	2.0E-04	3.8E-04	2.0E-04	0.0E+00	7.8E-04
			Copper	NS	NS	NS	NS	0.0E+00	GI System	NS	NS	NS	NS	0.0E+00
			Lead	NTV	NTV	NTV	NTV	0.0E+00	NA	NTV	NTV	NTV	NTV	0.0E+00
			Mercury	NC	NC	NC	NC	0.0E+00	Immunilogical	7.7E-03	9.4E-07	7.6E-03	0.0E+00	1.5E-02
			Selenium	NC	NC	NC	NC	0.0E+00	Skin; central nervous system	2.4E-03	NTV	2.3E-03	0.0E+00	4.7E-03
			Silver	NC	NC	NC	NC	0.0E+00	central nervous system	3.6E-03	NTV	3.6E-03	0.0E+00	7.1E-03
			Zinc	NC	NC	NC	NC	0.0E+00	Circulatory system	1.5E-01	NTV	1.5E-01	0.0E+00	3.1E-01
			Chemical Total	4.0E-05	1.7E-07	2.5E-06	3.8E-06	4.6E-05		1.7E+00	1.4E-03	1.7E+00	1.5E-01	3.5E+00
		Exposure Point Total						4.6E-05						3.5E+00
	Exposure Medium Total							4.6E-05						3.5E+00
Soil Total								4.6E-05						3.5E+00
Surface water	Surface water	Off-Facility	Arsenic	--	--	--	2.1E-08	2.1E-08	Skin	--	--	--	1.2E-04	1.2E-04
		Surface Water	Barium	--	--	--	NC	0.0E+00	Kidney	--	--	--	4.7E-05	4.7E-05
			Cadmium	--	--	--	NC	0.0E+00	Kidney	--	--	--	1.2E-02	1.2E-02
			Chromium	--	--	--	NC	0.0E+00	None Observed	--	--	--	1.6E-06	1.6E-06
			Copper	--	--	--	NS	0.0E+00	GI System	--	--	--	NS	0.0E+00
			Lead	--	--	--	NTV	0.0E+00	NA	--	--	--	NTV	0.0E+00
			Mercury	--	--	--	NS	0.0E+00	Immunilogical	--	--	--	NS	0.0E+00
			Selenium	--	--	--	NC	0.0E+00	Skin; central nervous system	--	--	--	1.5E-06	1.5E-06
			Silver	--	--	--	NC	0.0E+00	central nervous system	--	--	--	2.1E-01	2.1E-01
			Zinc	--	--	--	NC	0.0E+00	Circulatory system	--	--	--	4.4E-09	4.4E-09
			Chemical Total	0.0E+00	0.0E+00	0.0E+00	2.1E-08	2.1E-08		0.0E+00	0.0E+00	0.0E+00	2.2E-01	2.2E-01
		Exposure Point Total						2.1E-08						2.2E-01
	Exposure Medium Total							2.1E-08						2.2E-01
Surface water Total								2.1E-08						2.2E-01

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TABLE 9af
RAGS PART D TABLE 9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total
Sediment	Sediment	Off-Facility Sediment	Arsenic	2.7E-07	--	--	1.5E-06	1.8E-06	Skin	2.7E-03	--	--	1.0E-02	1.3E-02
			Barium	NC	--	--	NC	0.0E+00	Kidney	0.0E+00	--	--	7.4E-05	7.4E-05
			Cadmium	NC	--	--	NC	0.0E+00	Kidney	4.8E-03	--	--	1.4E-02	1.9E-02
			Chromium	NC	--	--	NC	0.0E+00	None Observed	0.0E+00	--	--	1.2E-06	1.2E-06
			Copper	NS	--	--	NS	0.0E+00	GI System	NS	--	--	NS	0.0E+00
			Lead	NTV	--	--	NTV	0.0E+00	NA	NTV	--	--	NTV	0.0E+00
			Mercury	NC	--	--	NC	0.0E+00	Immunilogical	0.0E+00	--	--	6.7E-04	6.7E-04
			Selenium	NC	--	--	NC	0.0E+00	Skin, central nervous system	0.0E+00	--	--	4.0E-05	4.0E-05
			Silver	NC	--	--	NC	0.0E+00	central nervous system	0.0E+00	--	--	2.5E-04	2.5E-04
			Zinc	NC	--	--	NC	0.0E+00	Circulatory system	0.0E+00	--	--	4.9E-03	4.9E-03
			Chemical Total	2.7E-07	0.0E+00	0.0E+00	1.5E-06	1.8E-06		7.5E-03	0.0E+00	0.0E+00	3.0E-02	3.8E-02
		Exposure Point Total						1.8E-06						3.8E-02
	Exposure Medium Total							1.8E-06						3.8E-02
Sediment Total								1.8E-06						3.8E-02
Receptor Total							Receptor Risk Total	4.8E-05					Receptor HI Total	4E+00

Note: Property is currently vacant

Total Skin	HI Across all Media =	2E+00
Total Kidney	HI Across all Media =	2E+00
Total Nervous System	HI Across all Media =	2E-01
Total Lung	HI Across all Media =	4E-04
Total Immune System	HI Across all Media =	2E-02
Total Circulatory	HI Across all Media =	3E-01
Total GI	HI Across all Media =	0E+00
Total Non-Observed (Chromium)	HI Across all Media =	4E-04

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TABLE 9ag
RAGS PART D TABLE 9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Current
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total
Soil	Soil	Off-Facility	Arsenic	2.6E-05	1.7E-08	1.3E-06	2.4E-06	3.0E-05	Skin	4.7E-01	NTV	3.7E-01	3.9E-02	8.8E-01
		5508 Thomas	Barium	NC	NC	NC	NC	0.0E+00	Kidney	1.3E-02	6.3E-04	1.2E-02	0.0E+00	2.5E-02
			Cadmium	NC	7.9E-09	NC	NC	7.9E-09	Kidney	1.5E-01	NTV	1.3E-01	1.7E-02	3.0E-01
			Chromium	NC	7.9E-08	NC	NC	7.9E-08	Lung (Inhalation pathway) None Observed	1.5E-04	2.8E-04	1.0E-04	0.0E+00	5.4E-04
			Copper	NS	NS	NS	NS	0.0E+00	GI System	NS	NS	NS	NS	0.0E+00
			Lead	NTV	NTV	NTV	NTV	0.0E+00	NA	NTV	NTV	NTV	NTV	0.0E+00
			Mercury	NC	NC	NC	NC	0.0E+00	Immunilogical	4.7E-03	5.7E-07	3.3E-02	0.0E+00	3.8E-02
			Selenium	NC	NC	NC	NC	0.0E+00	Skin; central nervous system	2.6E-03	NTV	4.6E-04	0.0E+00	3.0E-03
			Silver	NC	NC	NC	NC	0.0E+00	central nervous system	1.2E-03	NTV	1.1E+00	0.0E+00	1.1E+00
			Zinc	NC	NC	NC	NC	0.0E+00	Circulatory system	3.7E-02	NTV	2.6E-06	0.0E+00	3.7E-02
			Chemical Total	2.6E-05	1.0E-07	1.3E-06	2.4E-06	3.0E-05		6.8E-01	9.1E-04	1.7E+00	5.7E-02	2.4E+00
		Exposure Point Total						3.0E-05						2.4E+00
	Exposure Medium Total							3.0E-05						2.4E+00
Soil Total								3.0E-05						2.4E+00
Surface water	Surface water	Off-Facility	Arsenic	--	--	--	2.1E-08	2.1E-08	Skin	--	--	--	1.2E-04	1.2E-04
		Surface Water	Barium	--	--	--	NC	0.0E+00	Kidney	--	--	--	4.7E-05	4.7E-05
			Cadmium	--	--	--	NC	0.0E+00	Kidney	--	--	--	1.2E-02	1.2E-02
			Chromium	--	--	--	NC	0.0E+00	None Observed	--	--	--	1.6E-06	1.6E-06
			Copper	--	--	--	NS	0.0E+00	GI System	--	--	--	NS	0.0E+00
			Lead	--	--	--	NTV	0.0E+00	NA	--	--	--	NTV	0.0E+00
			Mercury	--	--	--	NS	0.0E+00	Immunilogical	--	--	--	NS	0.0E+00
			Selenium	--	--	--	NC	0.0E+00	Skin; central nervous system	--	--	--	1.5E-06	1.5E-06
			Silver	--	--	--	NC	0.0E+00	central nervous system	--	--	--	2.1E-01	2.1E-01
			Zinc	--	--	--	NC	0.0E+00	Circulatory system	--	--	--	4.4E-09	4.4E-09
			Chemical Total	0.0E+00	0.0E+00	0.0E+00	2.1E-08	2.1E-08		0.0E+00	0.0E+00	0.0E+00	2.2E-01	2.2E-01
		Exposure Point Total						2.1E-08						2.2E-01
	Exposure Medium Total							2.1E-08						2.2E-01
Surface water Total								2.1E-08						2.2E-01

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TABLE 9ag
RAGS PART D TABLE 9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Current
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total
Sediment	Sediment	Off-Facility Sediment	Arsenic	2.7E-07	--	--	1.5E-06	1.8E-06	Skin	2.7E-03	--	--	1.0E-02	1.3E-02
			Barium	NC	--	--	NC	0.0E+00	Kidney	0.0E+00	--	--	7.4E-05	7.4E-05
			Cadmium	NC	--	--	NC	0.0E+00	Kidney	4.8E-03	--	--	1.4E-02	1.9E-02
			Chromium	NC	--	--	NC	0.0E+00	None Observed	0.0E+00	--	--	1.2E-06	1.2E-06
			Copper	NS	--	--	NS	0.0E+00	GI System	NS	--	--	NS	0.0E+00
			Lead	NTV	--	--	NTV	0.0E+00	NA	NTV	--	--	NTV	0.0E+00
			Mercury	NC	--	--	NC	0.0E+00	*Immunilogical*	0.0E+00	--	--	6.7E-04	6.7E-04
			Selenium	NC	--	--	NC	0.0E+00	Skin; central nervous system	0.0E+00	--	--	4.0E-05	4.0E-05
			Silver	NC	--	--	NC	0.0E+00	central nervous system	0.0E+00	--	--	2.5E-04	2.5E-04
			Zinc	NC	--	--	NC	0.0E+00	Circulatory system	0.0E+00	--	--	4.9E-03	4.9E-03
			Chemical Total	2.7E-07	0.0E+00	0.0E+00	1.5E-06	1.8E-06		7.5E-03	0.0E+00	0.0E+00	3.0E-02	3.8E-02
		Exposure Point Total						1.8E-06						3.8E-02
	Exposure Medium Total							1.8E-06						3.8E-02
Sediment Total								1.8E-06						3.8E-02
Receptor Total							Receptor Risk Total	3.1E-05					Receptor HI Total	3E+00

Note: EPC for Current Produce Ingestion based on measured soil concentrations in existing garden.

Total Skin	HI Across all Media =	9E-01
Total Kidney	HI Across all Media =	4E-01
Total Nervous System	HI Across all Media =	1E+00
Total Lung	HI Across all Media =	3E-04
Total Immune System	HI Across all Media =	4E-02
Total Circulatory	HI Across all Media =	4E-02
Total GI	HI Across all Media =	0E+00
Total Non-Observed (Chromium)	HI Across all Media =	3E-04

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TABLE 9ah
RAGS PART D TABLE 9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total
Soil	Soil	Off-Facility 5508 Thomas	Arsenic	2.6E-05	1.7E-08	1.6E-06	2.4E-06	3.0E-05	Skin	4.7E-01	NTV	4.6E-01	3.9E-02	9.7E-01
			Barium	NC	NC	NC	NC	0.0E+00	Kidney	1.3E-02	6.3E-04	1.3E-02	0.0E+00	2.6E-02
			Cadmium	NC	7.9E-09	NC	NC	7.9E-09	Kidney	1.5E-01	NTV	1.5E-01	1.7E-02	3.2E-01
			Chromium	NC	7.9E-08	NC	NC	7.9E-08	Lung (Inhalation pathway) None Observed	1.5E-04	2.8E-04	1.5E-04	0.0E+00	5.9E-04
			Copper	NS	NS	NS	NS	0.0E+00	GI System	NS	NS	NS	NS	0.0E+00
			Lead	NTV	NTV	NTV	NTV	0.0E+00	NA	NTV	NTV	NTV	NTV	0.0E+00
			Mercury	NC	NC	NC	NC	0.0E+00	Immunilogical	4.7E-03	5.7E-07	4.6E-03	0.0E+00	9.3E-03
			Selenium	NC	NC	NC	NC	0.0E+00	Skin; central nervous system	2.6E-03	NTV	2.5E-03	0.0E+00	5.1E-03
			Silver	NC	NC	NC	NC	0.0E+00	central nervous system	1.2E-03	NTV	1.2E-03	0.0E+00	2.3E-03
			Zinc	NC	NC	NC	NC	0.0E+00	Circulatory system	3.7E-02	NTV	3.7E-02	0.0E+00	7.4E-02
			Chemical Total	2.6E-05	1.0E-07	1.6E-06	2.4E-06	3.0E-05		6.8E-01	9.1E-04	6.8E-01	5.7E-02	1.4E+00
		Exposure Point Total						3.0E-05						1.4E+00
	Exposure Medium Total							3.0E-05						1.4E+00
Soil Total								3.0E-05						1.4E+00
Surface water	Surface water	Off-Facility Surface Water	Arsenic	--	--	--	2.1E-08	2.1E-08	Skin	--	--	--	1.2E-04	1.2E-04
			Barium	--	--	--	NC	0.0E+00	Kidney	--	--	--	4.7E-05	4.7E-05
			Cadmium	--	--	--	NC	0.0E+00	Kidney	--	--	--	1.2E-02	1.2E-02
			Chromium	--	--	--	NC	0.0E+00	None Observed	--	--	--	1.6E-06	1.6E-06
			Copper	--	--	--	NS	0.0E+00	GI System	--	--	--	NS	0.0E+00
			Lead	--	--	--	NTV	0.0E+00	NA	--	--	--	NTV	0.0E+00
			Mercury	--	--	--	NS	0.0E+00	Immunilogical	--	--	--	NS	0.0E+00
			Selenium	--	--	--	NC	0.0E+00	Skin; central nervous system	--	--	--	1.5E-06	1.5E-06
			Silver	--	--	--	NC	0.0E+00	central nervous system	--	--	--	2.1E-01	2.1E-01
			Zinc	--	--	--	NC	0.0E+00	Circulatory system	--	--	--	4.4E-09	4.4E-09
			Chemical Total	0.0E+00	0.0E+00	0.0E+00	2.1E-08	2.1E-08		0.0E+00	0.0E+00	0.0E+00	2.2E-01	2.2E-01
		Exposure Point Total						2.1E-08						2.2E-01
	Exposure Medium Total							2.1E-08						2.2E-01
Surface water Total								2.1E-08						2.2E-01

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TABLE 9ah
RAGS PART D TABLE 9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total
Sediment	Sediment	Off-Facility Sediment	Arsenic	2.7E-07	--	--	1.5E-06	1.8E-06	Skin	2.7E-03	--	--	1.0E-02	1.3E-02
			Barium	NC	--	--	NC	0.0E+00	Kidney	0.0E+00	--	--	7.4E-05	7.4E-05
			Cadmium	NC	--	--	NC	0.0E+00	Kidney	4.8E-03	--	--	1.4E-02	1.9E-02
			Chromium	NC	--	--	NC	0.0E+00	None Observed	0.0E+00	--	--	1.2E-06	1.2E-06
			Copper	NS	--	--	NS	0.0E+00	GI System	NS	--	--	NS	0.0E+00
			Lead	NTV	--	--	NTV	0.0E+00	NA	NTV	--	--	NTV	0.0E+00
			Mercury	NC	--	--	NC	0.0E+00	Immunilogical	0.0E+00	--	--	6.7E-04	6.7E-04
			Selenium	NC	--	--	NC	0.0E+00	Skin; central nervous system	0.0E+00	--	--	4.0E-05	4.0E-05
			Silver	NC	--	--	NC	0.0E+00	central nervous system	0.0E+00	--	--	2.5E-04	2.5E-04
			Zinc	NC	--	--	NC	0.0E+00	Circulatory system	0.0E+00	--	--	4.9E-03	4.9E-03
			Chemical Total	2.7E-07	0.0E+00	0.0E+00	1.5E-06	1.8E-06		7.5E-03	0.0E+00	0 0E+00	3.0E-02	3.8E-02
		Exposure Point Total						1.8E-06						3.8E-02
	Exposure Medium Total							1.8E-06						3.8E-02
Sediment Total								1.8E-06						3.8E-02
Receptor Total							Receptor Risk Total	3.2E-05					Receptor HI Total	2E+00

Note: EPC for Future Produce Ingestion based on maximum detected concentration in all soil samples collected at property, which may exceed the measured soil concentrations in existing garden.

Total Skin	HI Across all Media =	1E+00
Total Kidney	HI Across all Media =	4E-01
Total Nervous System	HI Across all Media =	2E-01
Total Lung	HI Across all Media =	3E-04
Total Immune System	HI Across all Media =	1E-02
Total Circulatory	HI Across all Media =	8E-02
Total GI	HI Across all Media =	0E+00
Total Non-Observed (Chromium)	HI Across all Media =	3E-04

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TABLE 9ai
RAGS PART D TABLE 9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Current/Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total
Soil	Soil	Off-Facility 5507 Thomas	Arsenic	3.3E-05	2.2E-08	2.1E-06	3.1E-06	3.8E-05	Skin	6.0E-01	NTV	5.9E-01	5.0E-02	1.2E+00
			Barium	NC	NC	NC	NC	0.0E+00	Kidney	1.3E-02	6.3E-04	1.3E-02	0.0E+00	2.6E-02
			Cadmium	NC	1.2E-08	NC	NC	1.2E-08	Kidney	2.4E-01	NTV	2.4E-01	2.7E-02	5.1E-01
			Chromium	NC	7.9E-08	NC	NC	7.9E-08	Lung (Inhalation pathway) None Observed	1.5E-04	2.8E-04	1.5E-04	0.0E+00	5.9E-04
			Copper	NS	NS	NS	NS	0.0E+00	GI System	NS	NS	NS	NS	0.0E+00
			Lead	NTV	NTV	NTV	NTV	0.0E+00	NA	NTV	NTV	NTV	NTV	0.0E+00
			Mercury	NC	NC	NC	NC	0.0E+00	Immunilogical	1.0E-02	1.3E-06	1.0E-02	0.0E+00	2.0E-02
			Selenium	NC	NC	NC	NC	0.0E+00	Skin; central nervous system	4.3E-03	NTV	4.3E-03	0.0E+00	8.7E-03
			Silver	NC	NC	NC	NC	0.0E+00	central nervous system	1.5E-03	NTV	1.5E-03	0.0E+00	3.0E-03
			Zinc	NC	NC	NC	NC	0.0E+00	Circulatory system	4.3E-02	NTV	4.2E-02	0.0E+00	8.5E-02
			Chemical Total	3.3E-05	1.1E-07	2.1E-06	3.1E-06	3.8E-05		9.1E-01	9.1E-04	9.0E-01	7.7E-02	1.9E+00
		Exposure Point Total						3.8E-05						1.9E+00
	Exposure Medium Total							3.8E-05						1.9E+00
Soil Total								3.8E-05						1.9E+00
Surface water	Surface water	Off-Facility Surface Water	Arsenic	--	--	--	2.1E-08	2.1E-08	Skin	--	--	--	1.2E-04	1.2E-04
			Barium	--	--	--	NC	0.0E+00	Kidney	--	--	--	4.7E-05	4.7E-05
			Cadmium	--	--	--	NC	0.0E+00	Kidney	--	--	--	1.2E-02	1.2E-02
			Chromium	--	--	--	NC	0.0E+00	None Observed	--	--	--	1.6E-06	1.6E-06
			Copper	--	--	--	NS	0.0E+00	GI System	--	--	--	NS	0.0E+00
			Lead	--	--	--	NTV	0.0E+00	NA	--	--	--	NTV	0.0E+00
			Mercury	--	--	--	NS	0.0E+00	Immunilogical	--	--	--	NS	0.0E+00
			Selenium	--	--	--	NC	0.0E+00	Skin; central nervous system	--	--	--	1.5E-06	1.5E-06
			Silver	--	--	--	NC	0.0E+00	central nervous system	--	--	--	2.1E-01	2.1E-01
			Zinc	--	--	--	NC	0.0E+00	Circulatory system	--	--	--	4.4E-09	4.4E-09
			Chemical Total	0.0E+00	0.0E+00	0.0E+00	2.1E-08	2.1E-08		0.0E+00	0.0E+00	0.0E+00	2.2E-01	2.2E-01
		Exposure Point Total						2.1E-08						2.2E-01
	Exposure Medium Total							2.1E-08						2.2E-01
Surface water Total								2.1E-08						2.2E-01

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TABLE 9ai
RAGS PART D TABLE 9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Current/Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total
Sediment	Sediment	Off-Facility Sediment	Arsenic	2.7E-07	--	--	1.5E-06	1.8E-06	Skin	2.7E-03	--	--	1.0E-02	1.3E-02
			Barium	NC	--	--	NC	0.0E+00	Kidney	0.0E+00	--	--	7.4E-05	7.4E-05
			Cadmium	NC	--	--	NC	0.0E+00	Kidney	4.8E-03	--	--	1.4E-02	1.9E-02
			Chromium	NC	--	--	NC	0.0E+00	None Observed	0.0E+00	--	--	1.2E-06	1.2E-06
			Copper	NS	--	--	NS	0.0E+00	GI System	NS	--	--	NS	0.0E+00
			Lead	NTV	--	--	NTV	0.0E+00	NA	NTV	--	--	NTV	0.0E+00
			Mercury	NC	--	--	NC	0.0E+00	Immunilogical	0.0E+00	--	--	6.7E-04	6.7E-04
			Selenium	NC	--	--	NC	0.0E+00	Skin; central nervous system	0.0E+00	--	--	4.0E-05	4.0E-05
			Silver	NC	--	--	NC	0.0E+00	central nervous system	0.0E+00	--	--	2.5E-04	2.5E-04
			Zinc	NC	--	--	NC	0.0E+00	Circulatory system	0.0E+00	--	--	4.9E-03	4.9E-03
			Chemical Total	2.7E-07	0.0E+00	0.0E+00	1.5E-06	1.8E-06		7.5E-03	0.0E+00	0.0E+00	3.0E-02	3.8E-02
		Exposure Point Total						1.8E-06						3.8E-02
	Exposure Medium Total							1.8E-06						3.8E-02
Sediment Total								1.8E-06						3.8E-02
Receptor Total							Receptor Risk Total	4.0E-05					Receptor HI Total	2.2E+00

Note: No garden currently exists at property based on site visit.

Total Skin	HI Across all Media =	1E+00
Total Kidney	HI Across all Media =	6E-01
Total Nervous System	HI Across all Media =	2E-01
Total Lung	HI Across all Media =	3E-04
Total Immune System	HI Across all Media =	2E-02
Total Circulatory	HI Across all Media =	9E-02
Total GI	HI Across all Media =	0E+00
Total Non-Observed (Chromium)	HI Across all Media =	3E-04

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TABLE 9aj
RAGS PART D TABLE 9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	*Inhalation* Particulates	*Produce* Ingestion	*Dermal*	*Exposure* Routes Total	*Primary* Target Organ(s)	*Ingestion*	*Inhalation* Particulates	*Produce* Ingestion	*Dermal*	*Exposure* Routes Total
Soil	Soil	Off-Facility 42nd Street	Arsenic	4.7E-05	3.1E-08	3.0E-06	4.4E-06	5.4E-05	Skin	**8.5E-01**	NTV	**8.5E-01**	7.2E-02	1.8E+00
			Barium	NC	NC	NC	NC	0.0E+00	Kidney	1.8E-02	8.8E-04	1.8E-02	0.0E+00	3.7E-02
			Cadmium	*NC*	*1.1E-08*	NC	NC	*1.1E-08*	Kidney	2.2E-01	NTV	2.2E-01	2.4E-02	4.6E-01
			Chromium	NC	8.7E-08	NC	NC	8.7E-08	Lung (Inhalation pathway) None Observed	1.7E-04	3.1E-04	1.7E-04	0.0E+00	6.5E-04
			Copper	NS	NS	NS	NS	0.0E+00	GI System	NS	NS	NS	NS	0.0E+00
			Lead	NTV	NTV	NTV	NTV	0.0E+00	NA	NTV	NTV	NTV	NTV	0.0E+00
			Mercury	NC	NC	NC	NC	0.0E+00	Immunilogical	5.5E-03	6.8E-07	5.5E-03	0.0E+00	1.1E-02
			Selenium	NC	NC	NC	NC	0.0E+00	Skin; central nervous system	4.1E-03	NTV	4.1E-03	0.0E+00	8.1E-03
			Silver	NC	NC	NC	NC	0.0E+00	central nervous system	1.7E-03	NTV	1.7E-03	0.0E+00	3.4E-03
			Zinc	NC	NC	NC	NC	0.0E+00	Circulatory system	5.1E-02	NTV	5.1E-02	0.0E+00	1.0E-01
			Chemical Total	4.7E-05	1.3E-07	3.0E-06	4.4E-06	5.5E-05		1.2E+00	1.2E-03	1.1E+00	9.6E-02	2.4E+00
		Exposure Point Total						5.5E-05						2.4E+00
	Exposure Medium Total							5.5E-05						2.4E+00
Soil Total								5.5E-05						2.4E+00
Surface water	Surface water	Off-Facility Surface Water	Arsenic	--	--	--	2.1E-08	2.1E-08	Skin	--	--	--	1.2E-04	1.2E-04
			Barium	--	--	--	NC	0.0E+00	Kidney	--	--	--	4.7E-05	4.7E-05
			Cadmium	--	--	--	NC	0.0E+00	Kidney	--	--	--	1.2E-02	1.2E-02
			Chromium	--	--	--	NC	0.0E+00	None Observed	--	--	--	1.6E-06	1.6E-06
			Copper	--	--	--	NS	0.0E+00	GI System	--	--	--	NS	0.0E+00
			Lead	--	--	--	NTV	0.0E+00	NA	--	--	--	NTV	0.0E+00
			Mercury	--	--	--	NS	0.0E+00	Immunilogical	--	--	--	NS	0.0E+00
			Selenium	--	--	--	NC	0.0E+00	Skin; central nervous system	--	--	--	1.5E-06	1.5E-06
			Silver	--	--	--	NC	0.0E+00	central nervous system	--	--	--	2.1E-01	2.1E-01
			Zinc	--	--	--	NC	0.0E+00	Circulatory system	--	--	--	4.4E-09	4.4E-09
			Chemical Total	0.0E+00	0.0E+00	0.0E+00	2.1E-08	2.1E-08		0.0E+00	0.0E+00	0.0E+00	2.2E-01	2.2E-01
		Exposure Point Total						2.1E-08						2.2E-01
	Exposure Medium Total							2.1E-08						2.2E-01
Surface water Total								2.1E-08						2.2E-01

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TABLE 9aj
RAGS PART D TABLE 9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total
Sediment	Sediment	Off-Facility Sediment	Arsenic	2.7E-07	--	--	1.5E-06	1.8E-06	Skin	2.7E-03	--	--	1.0E-02	1.3E-02
			Barium	NC	--	--	NC	0.0E+00	Kidney	0.0E+00	--	--	7.4E-05	7.4E-05
			Cadmium	NC	--	--	NC	0.0E+00	Kidney	4.8E-03	--	--	1.4E-02	1.9E-02
			Chromium	NC	--	--	NC	0.0E+00	None Observed	0.0E+00	--	--	1.2E-06	1.2E-06
			Copper	NS	--	--	NS	0.0E+00	GI System	NS	--	--	NS	0.0E+00
			Lead	NTV	--	--	NTV	0.0E+00	NA	NTV	--	--	NTV	0.0E+00
			Mercury	NC	--	--	NC	0.0E+00	Immunological	0.0E+00	--	--	6.7E-04	6.7E-04
			Selenium	NC	--	--	NC	0.0E+00	Skin; central nervous system	0.0E+00	--	--	4.0E-05	4.0E-05
			Silver	NC	--	--	NC	0.0E+00	central nervous system	0.0E+00	--	--	2.5E-04	2.5E-04
			Zinc	NC	--	--	NC	0.0E+00	Circulatory system	0.0E+00	--	--	4.9E-03	4.9E-03
			Chemical Total	2.7E-07	0.0E+00	0.0E+00	1.5E-06	1.8E-06		7.5E-03	0.0E+00	0.0E+00	3.0E-02	3.8E-02
		Exposure Point Total						1.8E-06						3.8E-02
	Exposure Medium Total							1.8E-06						3.8E-02
Sediment Total								1.8E-06						3.8E-02
Receptor Total							Receptor Risk Total	5.6E-05					Receptor HI Total	2.6E+00

Note: Property is currently vacant

Total Skin	HI Across all Media =	2E+00
Total Kidney	HI Across all Media =	5E-01
Total Nervous System	HI Across all Media =	2E-01
Total Lung	HI Across all Media =	3E-04
Total Immune System	HI Across all Media =	1E-02
Total Circulatory	HI Across all Media =	1E-01
Total GI	HI Across all Media =	0E+00
Total Non-Observed (Chromium)	HI Across all Media =	3E-04

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TABLE 9ak
RAGS PART D TABLE 9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total
Soil	Soil	Off-Facility	Arsenic	3.8E-05	2.5E-08	2.4E-06	3.6E-06	4.4E-05	Skin	6.8E-01	NTV	6.8E-01	5.7E-02	1.4E+00
		2339 N 51st St.	Barium	NC	NC	NC	NC	0.0E+00	Kidney	1.7E-02	8.1E-04	1.6E-02	0.0E+00	3.4E-02
			Cadmium	NC	2.0E-08	NC	NC	2.0E-08	Kidney	3.8E-01	NTV	3.8E-01	4.3E-02	8.1E-01
			Chromium	NC	7.9E-08	NC	NC	7.9E-08	Lung (Inhalation pathway) None Observed	1.5E-04	2.8E-04	1.5E-04	0.0E+00	5.9E-04
			Copper	NS	NS	NS	NS	0.0E+00	GI System	NS	NS	NS	NS	0.0E+00
			Lead	NTV	NTV	NTV	NTV	0.0E+00	NA	NTV	NTV	NTV	NTV	0.0E+00
			Mercury	NC	NC	NC	NC	0.0E+00	Immunilogical	1.7E-02	2.1E-06	1.7E-02	0.0E+00	3.5E-02
			Selenium	NC	NC	NC	NC	0.0E+00	Skin; central nervous system	3.6E-03	NTV	3.6E-03	0.0E+00	7.1E-03
			Silver	NC	NC	NC	NC	0.0E+00	central nervous system	3.6E-03	NTV	3.6E-03	0.0E+00	7.1E-03
			Zinc	NC	NC	NC	NC	0.0E+00	Circulatory system	1.3E-01	NTV	1.3E-01	0.0E+00	2.6E-01
			Chemical Total	3.8E-05	1.2E-07	2.4E-06	3.6E-06	4.4E-05		1.2E+00	1.1E-03	1.2E+00	1.0E-01	2.6E+00
		Exposure Point Total						4.4E-05						2.6E+00
	Exposure Medium Total							4.4E-05						2.6E+00
Soil Total								4.4E-05						2.6E+00
Surface water	Surface water	Off-Facility	Arsenic	--	--	--	2.1E-08	2.1E-08	Skin	--	--	--	1.2E-04	1.2E-04
		Surface Water	Barium	--	--	--	NC	0.0E+00	Kidney	--	--	--	4.7E-05	4.7E-05
			Cadmium	--	--	--	NC	0.0E+00	Kidney	--	--	--	1.2E-02	1.2E-02
			Chromium	--	--	--	NC	0.0E+00	None Observed	--	--	--	1.6E-06	1.6E-06
			Copper	--	--	--	NS	0.0E+00	GI System	--	--	--	NS	0.0E+00
			Lead	--	--	--	NTV	0.0E+00	NA	--	--	--	NTV	0.0E+00
			Mercury	--	--	--	NS	0.0E+00	Immunilogical	--	--	--	NS	0.0E+00
			Selenium	--	--	--	NC	0.0E+00	Skin; central nervous system	--	--	--	1.5E-06	1.5E-06
			Silver	--	--	--	NC	0.0E+00	central nervous system	--	--	--	2.1E-01	2.1E-01
			Zinc	--	--	--	NC	0.0E+00	Circulatory system	--	--	--	4.4E-09	4.4E-09
			Chemical Total	0.0E+00	0.0E+00	0.0E+00	2.1E-08	2.1E-08		0.0E+00	0.0E+00	0.0E+00	2.2E-01	2.2E-01
		Exposure Point Total						2.1E-08						2.2E-01
	Exposure Medium Total							2.1E-08						2.2E-01
Surface water Total								2.1E-08						2.2E-01

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TABLE 9ak
RAGS PART D TABLE 9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total
Sediment	Sediment	Off-Facility Sediment	Arsenic	2.7E-07	--	--	1.5E-06	1.8E-06	Skin	2.7E-03	--	--	1.0E-02	1.3E-02
			Barium	NC	--	--	NC	0.0E+00	Kidney	0.0E+00	--	--	7.4E-05	7.4E-05
			Cadmium	NC	--	--	NC	0.0E+00	Kidney	4.8E-03	--	--	1.4E-02	1.9E-02
			Chromium	NC	--	--	NC	0.0E+00	None Observed	0.0E+00	--	--	1.2E-06	1.2E-06
			Copper	NS	--	--	NS	0.0E+00	GI System	NS	--	--	NS	0.0E+00
			Lead	NTV	--	--	NTV	0.0E+00	NA	NTV	--	--	NTV	0.0E+00
			Mercury	NC	--	--	NC	0.0E+00	Immunological	0.0E+00	--	--	6.7E-04	6.7E-04
			Selenium	NC	--	--	NC	0.0E+00	Skin; central nervous system	0.0E+00	--	--	4.0E-05	4.0E-05
			Silver	NC	--	--	NC	0.0E+00	central nervous system	0.0E+00	--	--	2.5E-04	2.5E-04
			Zinc	NC	--	--	NC	0.0E+00	Circulatory system	0.0E+00	--	--	4.9E-03	4.9E-03
			Chemical Total	2.7E-07	0.0E+00	0.0E+00	1.5E-06	1.8E-06		7.5E-03	0.0E+00	0.0E+00	3.0E-02	3.8E-02
		Exposure Point Total						1.8E-06						3.8E-02
	Exposure Medium Total							1.8E-06						3.8E-02
Sediment Total								1.8E-06						3.8E-02
Receptor Total							Receptor Risk Total	4.5E-05					Receptor HI Total	2.8E+00

Note: Property is currently vacant

Total Skin	HI Across all Media =	1E+00
Total Kidney	HI Across all Media =	9E-01
Total Nervous System	HI Across all Media =	2E-01
Total Lung	HI Across all Media =	3E-04
Total Immune System	HI Across all Media =	4E-02
Total Circulatory	HI Across all Media =	3E-01
Total GI	HI Across all Media =	0E+00
Total Non-Observed (Chromium)	HI Across all Media =	3E-04

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TABLE 9al
RAGS PART D TABLE 9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total
Soil	Soil	Off-Facility Maryland	Arsenic	3.5E-05	2.4E-08	2.2E-06	3.3E-06	4.1E-05	Skin	6.4E-01	NTV	6.3E-01	5.4E-02	1.3E+00
			Barium	NC	NC	NC	NC	0.0E+00	Kidney	1.4E-02	6.9E-04	1.4E-02	0.0E+00	2.9E-02
			Cadmium	NC	4.1E-08	NC	NC	4.1E-08	Kidney	8.0E-01	NTV	7.9E-01	8.9E-02	1.7E+00
			Chromium	NC	8.7E-08	NC	NC	8.7E-08	Lung (Inhalation pathway) None Observed	1.7E-04	3.1E-04	1.7E-04	0.0E+00	6.5E-04
			Copper	NS	NS	NS	NS	0.0E+00	GI System	NS	NS	NS	NS	0.0E+00
			Lead	NTV	NTV	NTV	NTV	0.0E+00	NA	NTV	NTV	NTV	NTV	0.0E+00
			Mercury	NC	NC	NC	NC	0.0E+00	Immunilogical	6.8E-03	8.3E-07	6.8E-03	0.0E+00	1.4E-02
			Selenium	NC	NC	NC	NC	0.0E+00	Skin; central nervous system	3.3E-03	NTV	3.3E-03	0.0E+00	6.6E-03
			Silver	NC	NC	NC	NC	0.0E+00	central nervous system	3.6E-03	NTV	3.6E-03	0.0E+00	7.1E-03
			Zinc	NC	NC	NC	NC	0.0E+00	Circulatory system	7.2E-02	NTV	7.2E-02	0.0E+00	1.4E-01
			Chemical Total	3.5E-05	1.5E-07	2.2E-06	3.3E-06	4.1E-05		1.5E+00	1.0E-03	1.5E+00	1.4E-01	3.2E+00
		Exposure Point Total						4.1E-05						3.2E+00
	Exposure Medium Total							4.1E-05						3.2E+00
Soil Total								4.1E-05						3.2E+00
Surface water	Surface water	Off-Facility Surface Water	Arsenic	--	--	--	2.1E-08	2.1E-08	Skin	--	--	--	1.2E-04	1.2E-04
			Barium	--	--	--	NC	0.0E+00	Kidney	--	--	--	4.7E-05	4.7E-05
			Cadmium	--	--	--	NC	0.0E+00	Kidney	--	--	--	1.2E-02	1.2E-02
			Chromium	--	--	--	NC	0.0E+00	None Observed	--	--	--	1.6E-06	1.6E-06
			Copper	--	--	--	NS	0.0E+00	GI System	--	--	--	NS	0.0E+00
			Lead	--	--	--	NTV	0.0E+00	NA	--	--	--	NTV	0.0E+00
			Mercury	--	--	--	NS	0.0E+00	Immunilogical	--	--	--	NS	0.0E+00
			Selenium	--	--	--	NC	0.0E+00	Skin; central nervous system	--	--	--	1.5E-06	1.5E-06
			Silver	--	--	--	NC	0.0E+00	central nervous system	--	--	--	2.1E-01	2.1E-01
			Zinc	--	--	--	NC	0.0E+00	Circulatory system	--	--	--	4.4E-09	4.4E-09
			Chemical Total	0.0E+00	0.0E+00	0.0E+00	2.1E-08	2.1E-08		0.0E+00	0.0E+00	0.0E+00	2.2E-01	2.2E-01
		Exposure Point Total						2.1E-08						2.2E-01
	Exposure Medium Total							2.1E-08						2.2E-01
Surface water Total								2.1E-08						2.2E-01

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TABLE 9al
RAGS PART D TABLE 9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total
Sediment	*Sediment*	*Off-Facility*	Arsenic	2.7E-07	--	--	1.5E-06	1.8E-06	Skin	2.7E-03	--	--	1.0E-02	1.3E-02
		Sediment	Barium	NC	--	--	NC	0.0E+00	Kidney	0.0E+00	--	--	7.4E-05	7.4E-05
			Cadmium	NC	--	--	NC	0.0E+00	Kidney	4.8E-03	--	--	1.4E-02	1.9E-02
			Chromium	NC	--	--	NC	0.0E+00	None Observed	0.0E+00	--	--	1.2E-06	1.2E-06
			Copper	NS	--	--	NS	0.0E+00	GI System	NS	--	--	NS	0.0E+00
			Lead	NTV	--	--	NTV	0.0E+00	NA	NTV	--	--	NTV	0.0E+00
			Mercury	NC	--	--	NC	0.0E+00	Immunilogical	0.0E+00	--	--	6.7E-04	6.7E-04
			Selenium	NC	--	--	NC	0.0E+00	Skin; central nervous system	0.0E+00	--	--	4.0E-05	4.0E-05
			Silver	NC	--	--	NC	0.0E+00	central nervous system	0.0E+00	--	--	2.5E-04	2.5E-04
			Zinc	NC	--	--	NC	0.0E+00	Circulatory system	0.0E+00	--	--	4.9E-03	4.9E-03
			Chemical Total	2.7E-07	0.0E+00	0.0E+00	1.5E-06	1.8E-06		7.5E-03	0.0E+00	0.0E+00	3.0E-02	3.8E-02
		Exposure Point Total						1.8E-06						3.8E-02
	Exposure Medium Total							1.8E-06						3.8E-02
Sediment Total								1.8E-06						3.8E-02
Receptor Total							Receptor Risk Total	4.3E-05					Receptor HI Total	3.5E+00

Note: Property is currently vacant

Total Skin	HI Across all Media =	1E+00
Total Kidney	HI Across all Media =	2E+00
Total Nervous System	HI Across all Media =	2E-01
Total Lung	*HI Across all Media =*	3E-04
Total Immune System	HI Across all Media =	1E-02
Total Circulatory	HI Across all Media =	1E-01
Total GI	HI Across all Media =	0E+00
Total Non-Observed (Chromium)	HI Across all Media =	3E-04

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TABLE 9am
RAGS PART D TABLE 9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total
Soil	Soil	Off-Facility	Arsenic	3.1E-05	2.0E-08	1.9E-06	2.9E-06	3.5E-05	Skin	5.5E-01	NTV	5.5E-01	4.7E-02	1.2E+00
		N. 39th St & Locust	Barium	NC	NC	NC	NC	0.0E+00	Kidney	1.6E-02	7.8E-04	1.6E-02	0.0E+00	3.3E-02
			Cadmium	NC	1.3E-08	NC	NC	1.3E-08	Kidney	2.6E-01	NTV	2.5E-01	2.9E-02	5.4E-01
			Chromium	NC	1.2E-07	NC	NC	1.2E-07	*Lung (Inhalation pathway)* None Observed	2.3E-04	4.2E-04	2.3E-04	0.0E+00	8.8E-04
			Copper	NS	NS	NS	NS	0.0E+00	GI System	NS	NS	NS	NS	0.0E+00
			Lead	NTV	NTV	NTV	NTV	0.0E+00	NA	NTV	NTV	NTV	NTV	0.0E+00
			Mercury	NC	NC	NC	NC	0.0E+00	Immunilogical	5.5E-03	6.8E-07	5.5E-03	0.0E+00	1.1E-02
			Selenium	NC	NC	NC	NC	0.0E+00	Skin; central nervous system	3.1E-03	NTV	3.0E-03	0.0E+00	6.1E-03
			Silver	NC	NC	NC	NC	0.0E+00	central nervous system	1.4E-03	NTV	1.4E-03	0.0E+00	2.8E-03
			Zinc	NC	NC	NC	NC	0.0E+00	Circulatory system	6.8E-02	NTV	6.8E-02	0.0E+00	1.4E-01
			Chemical Total	3.1E-05	1.5E-07	1.9E-06	2.9E-06	3.6E-05		9.0E-01	1.2E-03	9.0E-01	7.5E-02	1.9E+00
		Exposure Point Total						3.6E-05						1.9E+00
	Exposure Medium Total							3.6E-05						1.9E+00
Soil Total								3.6E-05						1.9E+00
Surface water	Surface water	Off-Facility	Arsenic	--	--	--	2.1E-08	2.1E-08	Skin	--	--	--	1.2E-04	1.2E-04
		Surface Water	Barium	--	--	--	NC	0.0E+00	Kidney	--	--	--	4.7E-05	4.7E-05
			Cadmium	--	--	--	NC	0.0E+00	Kidney	--	--	--	1.2E-02	1.2E-02
			Chromium	--	--	--	NC	0.0E+00	None Observed	--	--	--	1.6E-06	1.6E-06
			Copper	--	--	--	NS	0.0E+00	GI System	--	--	--	NS	0.0E+00
			Lead	--	--	--	NTV	0.0E+00	NA	--	--	--	NTV	0.0E+00
			Mercury	--	--	--	NS	0.0E+00	Immunilogical	--	--	--	NS	0.0E+00
			Selenium	--	--	--	NC	0.0E+00	Skin; central nervous system	--	--	--	1.5E-06	1.5E-06
			Silver	--	--	--	NC	0.0E+00	central nervous system	--	--	--	2.1E-01	2.1E-01
			Zinc	--	--	--	NC	0.0E+00	*Circulatory system*	--	--	--	4.4E-09	4.4E-09
			Chemical Total	0.0E+00	0.0E+00	0.0E+00	2.1E-08	2.1E-08		0.0E+00	0.0E+00	0.0E+00	2.2E-01	2.2E-01
		Exposure Point Total						2.1E-08						2.2E-01
	Exposure Medium Total							2.1E-08						2.2E-01
Surface water Total								2.1E-08						2.2E-01

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TABLE 9am
RAGS PART D TABLE 9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total
Sediment	Sediment	Off-Facility Sediment	Arsenic	2.7E-07	--	--	1.5E-06	1.8E-06	Skin	2.7E-03	--	--	1.0E-02	1.3E-02
			Barium	NC	--	--	NC	0.0E+00	Kidney	0.0E+00	--	--	7.4E-05	7.4E-05
			Cadmium	NC	--	--	NC	0.0E+00	Kidney	4.8E-03	--	--	1.4E-02	1.9E-02
			Chromium	NC	--	--	NC	0.0E+00	None Observed	0.0E+00	--	--	1.2E-06	1.2E-06
			Copper	NS	--	--	NS	0.0E+00	GI System	NS	--	--	NS	0.0E+00
			Lead	NTV	--	--	NTV	0.0E+00	NA	NTV	--	--	NTV	0.0E+00
			Mercury	NC	--	--	NC	0.0E+00	Immunilogical	0.0E+00	--	--	6.7E-04	6.7E-04
			Selenium	NC	--	--	NC	0.0E+00	Skin; central nervous system	0.0E+00	--	--	4.0E-05	4.0E-05
			Silver	NC	--	--	NC	0.0E+00	central nervous system	0.0E+00	--	--	2.5E-04	2.5E-04
			Zinc	NC	--	--	NC	0.0E+00	Circulatory system	0.0E+00	--	--	4.9E-03	4.9E-03
			Chemical Total	2.7E-07	0.0E+00	0.0E+00	1.5E-06	1.8E-06		7.5E-03	0.0E+00	0.0E+00	3.0E-02	3.8E-02
		Exposure Point Total						1.8E-06						3.8E-02
	Exposure Medium Total							1.8E-06						3.8E-02
Sediment Total								1.8E-06						3.8E-02
Receptor Total							Receptor Risk Total	3.7E-05					Receptor HI Total	2.1E+00

Note: Property is currently vacant

Total Skin	HI Across all Media =	1E+00
Total Kidney	HI Across all Media =	6E-01
Total Nervous System	HI Across all Media =	2E-01
Total Lung	HI Across all Media =	4E-04
Total Immune System	HI Across all Media =	1E-02
Total Circulatory	HI Across all Media =	1E-01
Total GI	HI Across all Media =	0E+00
Total Non-Observed (Chromium)	HI Across all Media =	5E-04

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TABLE 9an
RAGS PART D TABLE 9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Current/Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total
Soil	Soil	Off-Facility 5510 Thomas	Arsenic	3.1E-05	2.0E-08	1.9E-06	2.9E-06	3.5E-05	Skin	5.5E-01	NTV	5.5E-01	4.7E-02	1.2E+00
			Barium	NC	NC	NC	NC	0.0E+00	Kidney	1.3E-02	6.3E-04	1.3E-02	0.0E+00	2.6E-02
			Cadmium	NC	1.6E-08	NC	NC	1.6E-08	Kidney	3.1E-01	NTV	3.0E-01	3.4E-02	6.5E-01
			Chromium	NC	9.2E-08	NC	NC	9.2E-08	Lung (Inhalation pathway) None Observed	1.8E-04	3.3E-04	1.8E-04	0.0E+00	6.9E-04
			Copper	NS	NS	NS	NS	0.0E+00	GI System	NS	NS	NS	NS	0.0E+00
			Lead	NTV	NTV	NTV	NTV	0.0E+00	NA	NTV	NTV	NTV	NTV	0.0E+00
			Mercury	NC	NC	NC	NC	0.0E+00	Immunilogical	6.0E-03	7.3E-07	5.9E-03	0.0E+00	1.2E-02
			Selenium	NC	NC	NC	NC	0.0E+00	Skin; central nervous system	2.4E-03	NTV	2.4E-03	0.0E+00	4.8E-03
			Silver	NC	NC	NC	NC	0.0E+00	central nervous system	2.3E-03	NTV	2.2E-03	0.0E+00	4.5E-03
			Zinc	NC	NC	NC	NC	0.0E+00	Circulatory system	5.1E-02	NTV	5.1E-02	0.0E+00	1.0E-01
			Chemical Total	3.1E-05	1.3E-07	1.9E-06	2.9E-06	3.5E-05		9.4E-01	9.5E-04	9.3E-01	8.1E-02	1.9E+00
		Exposure Point Total						3.5E-05						1.9E+00
	Exposure Medium Total							3.5E-05						1.9E+00
Soil Total								3.5E-05						1.9E+00
Surface water	Surface water	Off-Facility Surface Water	Arsenic	--	--	--	2.1E-08	2.1E-08	Skin	--	--	--	1.2E-04	1.2E-04
			Barium	--	--	--	NC	0.0E+00	Kidney	--	--	--	4.7E-05	4.7E-05
			Cadmium	--	--	--	NC	0.0E+00	Kidney	--	--	--	1.2E-02	1.2E-02
			Chromium	--	--	--	NC	0.0E+00	None Observed	--	--	--	1.6E-06	1.6E-06
			Copper	--	--	--	NS	0.0E+00	GI System	--	--	--	NS	0.0E+00
			Lead	--	--	--	NTV	0.0E+00	NA	--	--	--	NTV	0.0E+00
			Mercury	--	--	--	NS	0.0E+00	Immunilogical	--	--	--	NS	0.0E+00
			Selenium	--	--	--	NC	0.0E+00	Skin; central nervous system	--	--	--	1.5E-06	1.5E-06
			Silver	--	--	--	NC	0.0E+00	central nervous system	--	--	--	2.1E-01	2.1E-01
			Zinc	--	--	--	NC	0.0E+00	Circulatory system	--	--	--	4.4E-09	4.4E-09
			Chemical Total	0.0E+00	0.0E+00	0.0E+00	2.1E-08	2.1E-08		0.0E+00	0.0E+00	0.0E+00	2.2E-01	2.2E-01
		Exposure Point Total						2.1E-08						2.2E-01
	Exposure Medium Total							2.1E-08						2.2E-01
Surface water Total								2.1E-08						2.2E-01

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TABLE 9an
RAGS PART D TABLE 9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Current/Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total
Sediment	Sediment	Off-Facility Sediment	Arsenic	2.7E-07	--	--	1.5E-06	1.8E-06	Skin	2.7E-03	--	--	1.0E-02	1.3E-02
			Barium	NC	--	--	NC	0.0E+00	Kidney	0.0E+00	--	--	7.4E-05	7.4E-05
			Cadmium	NC	--	--	NC	0.0E+00	Kidney	4.8E-03	--	--	1.4E-02	1.9E-02
			Chromium	NC	--	--	NC	0.0E+00	None Observed	0.0E+00	--	--	1.2E-06	1.2E-06
			Copper	NS	--	--	NS	0.0E+00	GI System	NS	--	--	NS	0.0E+00
			Lead	NTV	--	--	NTV	0.0E+00	NA	NTV	--	--	NTV	0.0E+00
			Mercury	NC	--	--	NC	0.0E+00	Immunilogical	0.0E+00	--	--	6.7E-04	6.7E-04
			Selenium	NC	--	--	NC	0.0E+00	Skin; central nervous system	0.0E+00	--	--	4.0E-05	4.0E-05
			Silver	NC	--	--	NC	0.0E+00	central nervous system	0.0E+00	--	--	2.5E-04	2.5E-04
			Zinc	NC	--	--	NC	0.0E+00	Circulatory system	0.0E+00	--	--	4.9E-03	4.9E-03
			Chemical Total	2.7E-07	0.0E+00	0.0E+00	1.5E-06	1.8E-06		7.5E-03	0.0E+00	0.0E+00	3.0E-02	3.8E-02
		Exposure Point Total						1.8E-06						3.8E-02
	Exposure Medium Total							1.8E-06						3.8E-02
Sediment Total								1.8E-06						3.8E-02
Receptor Total							Receptor Risk Total	3.7E-05					Receptor HI Total	2.2E+00

Note: No garden currently exists at property based on site visit.

Total Skin	HI Across all Media =	1E+00
Total Kidney	HI Across all Media =	7E-01
Total Nervous System	HI Across all Media =	2E-01
Total Lung	HI Across all Media =	3E-04
Total Immune System	HI Across all Media =	1E-02
Total Circulatory	HI Across all Media =	1E-01
Total GI	HI Across all Media =	0E+00
Total Non-Observed (Chromium)	HI Across all Media =	4E-04

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TABLE 9ao
RAGS PART D TABLE 9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Current/Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total
Soil	Soil	Off-Facility 5528 Delmar	Arsenic	3.1E-05	2.0E-08	1.9E-06	2.9E-06	3.5E-05	Skin	5.5E-01	NTV	5.5E-01	4.7E-02	1.2E+00
			Barium	NC	NC	NC	NC	0.0E+00	Kidney	1.2E-02	5.6E-04	1.1E-02	0.0E+00	2.3E-02
			Cadmium	*NC*	*1.4E-08*	*NC*	NC	1.4E-08	Kidney	2.7E-01	NTV	2.7E-01	3.0E-02	5.6E-01
			Chromium	NC	7.9E-08	NC	NC	7.9E-08	Lung (Inhalation pathway) None Observed	1.5E-04	2.8E-04	1.5E-04	0.0E+00	5.9E-04
			Copper	NS	NS	NS	NS	0.0E+00	GI System	NS	NS	NS	NS	0.0E+00
			Lead	NTV	NTV	NTV	NTV	*0.0E+00*	NA	NTV	NTV	NTV	NTV	*0.0E+00*
			Mercury	NC	NC	NC	NC	0.0E+00	Immunilogical	3.5E-03	4.3E-07	3.5E-03	0.0E+00	7.0E-03
			Selenium	NC	NC	NC	NC	0.0E+00	Skin; central nervous system	2.8E-03	NTV	2.8E-03	0.0E+00	5.6E-03
			Silver	NC	NC	NC	NC	0.0E+00	central nervous system	9.7E-04	NTV	9.6E-04	0.0E+00	1.9E-03
			Zinc	NC	NC	NC	NC	0.0E+00	Circulatory system	3.4E-02	NTV	3.3E-02	0.0E+00	6.7E-02
			Chemical Total	3.1E-05	1.1E-07	1.9E-06	2.9E-06	3.5E-05		8.8E-01	8.4E-04	8.7E-01	7.7E-02	1.8E+00
		Exposure Point Total						3.5E-05						1.8E+00
	Exposure Medium Total							3.5E-05						1.8E+00
Soil Total								3.5E-05						1.8E+00
Surface water	Surface water	Off-Facility Surface Water	Arsenic	--	--	--	2.1E-08	2.1E-08	Skin	--	--	--	1.2E-04	1.2E-04
			Barium	--	--	--	NC	0.0E+00	Kidney	--	--	--	4.7E-05	4.7E-05
			Cadmium	--	--	--	NC	0.0E+00	Kidney	--	--	--	1.2E-02	1.2E-02
			Chromium	--	--	--	NC	0.0E+00	None Observed	--	--	--	1.6E-06	1.6E-06
			Copper	--	--	--	NS	0.0E+00	GI System	--	--	--	NS	0.0E+00
			Lead	--	--	--	NTV	0.0E+00	NA	--	--	--	NTV	0.0E+00
			Mercury	--	--	--	NS	0.0E+00	Immunilogical	--	--	--	NS	0.0E+00
			Selenium	--	--	--	NC	0.0E+00	Skin; central nervous system	--	--	--	1.5E-06	1.5E-06
			Silver	--	--	--	NC	0.0E+00	central nervous system	--	--	--	2.1E-01	2.1E-01
			Zinc	--	--	--	NC	0.0E+00	Circulatory system	--	--	--	4.4E-09	4.4E-09
			Chemical Total	0.0E+00	0.0E+00	0.0E+00	2.1E-08	2.1E-08		0.0E+00	0.0E+00	0.0E+00	2.2E-01	2.2E-01
		Exposure Point Total						2.1E-08						2.2E-01
	Exposure Medium Total							2.1E-08						*2.2E-01*
Surface water Total								2.1E-08						2.2E-01

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TABLE 9ao
RAGS PART D TABLE 9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Current/Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total
Sediment	Sediment	Off-Facility Sediment	Arsenic	2.7E-07	--	--	1.5E-06	1.8E-06	Skin	2.7E-03	--	--	1.0E-02	1.3E-02
			Barium	NC	--	--	NC	0.0E+00	Kidney	0.0E+00	--	--	7.4E-05	7.4E-05
			Cadmium	NC	--	--	NC	0.0E+00	Kidney	4.8E-03	--	--	1.4E-02	1.9E-02
			Chromium	NC	--	--	NC	0.0E+00	None Observed	0.0E+00	--	--	1.2E-06	1.2E-06
			Copper	NS	--	--	NS	0.0E+00	GI System	NS	--	--	NS	0.0E+00
			Lead	NTV	--	--	NTV	0.0E+00	NA	NTV	--	--	NTV	0.0E+00
			Mercury	NC	--	--	NC	0.0E+00	Immunilogical	0.0E+00	--	--	6.7E-04	6.7E-04
			Selenium	NC	--	--	NC	0.0E+00	Skin; central nervous system	0.0E+00	--	--	4.0E-05	4.0E-05
			Silver	NC	--	--	NC	0.0E+00	central nervous system	0.0E+00	--	--	2.5E-04	2.5E-04
			Zinc	NC	--	--	NC	0.0E+00	Circulatory system	0.0E+00	--	--	4.9E-03	4.9E-03
			Chemical Total	2.7E-07	0.0E+00	0.0E+00	1.5E-06	1.8E-06		7.5E-03	0.0E+00	0.0E+00	3.0E-02	3.8E-02
		Exposure Point Total						1.8E-06						3.8E-02
	Exposure Medium Total							1.8E-06						3.8E-02
Sediment Total								1.8E-06						3.8E-02
Receptor Total							Receptor Risk Total	3.7E-05					Receptor HI Total	2.1E+00

Note: No garden currently exists at property based on site visit.

Total Skin	HI Across all Media =	1E+00
Total Kidney	HI Across all Media =	6E-01
Total Nervous System	HI Across all Media =	2E-01
Total Lung	HI Across all Media =	3E-04
Total Immune System	HI Across all Media =	8E-03
Total Circulatory	HI Across all Media =	7E-02
Total GI	HI Across all Media =	0E+00
Total Non-Observed (Chromium)	HI Across all Media =	3E-04

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TABLE 9ap
RAGS PART D TABLE 9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Current/Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total
Soil	Soil	Off-Facility 5500 Maryland	Arsenic	3.1E-05	2.0E-08	1.9E-06	2.9E-06	3.5E-05	Skin	5.5E-01	NTV	5.5E-01	4.7E-02	1.2E+00
			Barium	NC	NC	NC	NC	0.0E+00	Kidney	1.3E-02	6.6E-04	1.3E-02	0.0E+00	2.7E-02
			Cadmium	NC	1.6E-08	NC	NC	1.6E-08	Kidney	3.1E-01	NTV	3.0E-01	3.4E-02	6.5E-01
			Chromium	NC	7.4E-08	NC	NC	7.4E-08	Lung (Inhalation pathway) None Observed	1.4E-04	2.7E-04	1.4E-04	0.0E+00	5.5E-04
			Copper	NS	NS	NS	NS	0.0E+00	GI System	NS	NS	NS	NS	0.0E+00
			Lead	NTV	NTV	NTV	NTV	0.0E+00	NA	NTV	NTV	NTV	NTV	0.0E+00
			Mercury	NC	NC	NC	NC	0.0E+00	Immunilogical	4.3E-03	5.2E-07	4.2E-03	0.0E+00	8.5E-03
			Selenium	NC	NC	NC	NC	0.0E+00	Skin; central nervous system	4.1E-03	NTV	4.1E-03	0.0E+00	8.1E-03
			Silver	NC	NC	NC	NC	0.0E+00	central nervous system	9.2E-04	NTV	9.1E-04	0.0E+00	1.8E-03
			Zinc	NC	NC	NC	NC	0.0E+00	Circulatory system	4.3E-06	NTV	4.2E-06	0.0E+00	8.5E-06
			Chemical Total	3.1E-05	1.1E-07	1.9E-06	2.9E-06	3.5E-05		8.8E-01	9.2E-04	8.8E-01	8.1E-02	1.8E+00
		Exposure Point Total						3.5E-05						1.8E+00
	Exposure Medium Total							3.5E-05						1.8E+00
Soil Total								3.5E-05						1.8E+00
Surface water	Surface water	Off-Facility Surface Water	Arsenic	--	--	--	2.1E-08	2.1E-08	Skin	--	--	--	1.2E-04	1.2E-04
			Barium	--	--	--	NC	0.0E+00	Kidney	--	--	--	4.7E-05	4.7E-05
			Cadmium	--	--	--	NC	0.0E+00	Kidney	--	--	--	1.2E-02	1.2E-02
			Chromium	--	--	--	NC	0.0E+00	None Observed	--	--	--	1.6E-06	1.6E-06
			Copper	--	--	--	NS	0.0E+00	GI System	--	--	--	NS	0.0E+00
			Lead	--	--	--	NTV	0.0E+00	NA	--	--	--	NTV	0.0E+00
			Mercury	--	--	--	NS	0.0E+00	Immunilogical	--	--	--	NS	0.0E+00
			Selenium	--	--	--	NC	0.0E+00	Skin; central nervous system	--	--	--	1.5E-06	1.5E-06
			Silver	--	--	--	NC	0.0E+00	central nervous system	--	--	--	2.1E-01	2.1E-01
			Zinc	--	--	--	NC	0.0E+00	Circulatory system	--	--	--	4.4E-09	4.4E-09
			Chemical Total	0.0E+00	0.0E+00	0.0E+00	2.1E-08	2.1E-08		0.0E+00	0.0E+00	0.0E+00	2.2E-01	2.2E-01
		Exposure Point Total						2.1E-08						2.2E-01
	Exposure Medium Total							2.1E-08						2.2E-01
Surface water Total								2.1E-08						2.2E-01

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TABLE 9ap
RAGS PART D TABLE 9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Current/Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total
Sediment	Sediment	Off-Facility Sediment	Arsenic	2.7E-07	--	--	1.5E-06	1.8E-06	Skin	2.7E-03	--	--	1.0E-02	1.3E-02
			Barium	NC	--	--	NC	0.0E+00	Kidney	0.0E+00	--	--	7.4E-05	7.4E-05
			Cadmium	NC	--	--	NC	0.0E+00	Kidney	4.8E-03	--	--	1.4E-02	1.9E-02
			Chromium	NC	--	--	NC	0.0E+00	None Observed	0.0E+00	--	--	1.2E-06	1.2E-06
			Copper	NS	--	--	NS	0.0E+00	GI System	NS	--	--	NS	0.0E+00
			Lead	NTV	--	--	NTV	0.0E+00	NA	NTV	--	--	NTV	0.0E+00
			Mercury	NC	--	--	NC	0.0E+00	Immunilogical	0.0E+00	--	--	6.7E-04	6.7E-04
			Selenium	NC	--	--	NC	0.0E+00	Skin; central nervous system	0.0E+00	--	--	4.0E-05	4.0E-05
			Silver	NC	--	--	NC	0.0E+00	central nervous system	0.0E+00	--	--	2.5E-04	2.5E-04
			Zinc	NC	--	--	NC	0.0E+00	Circulatory system	0.0E+00	--	--	4.9E-03	4.9E-03
			Chemical Total	2.7E-07	0.0E+00	0.0E+00	1.5E-06	1.8E-06		7.5E-03	0.0E+00	0.0E+00	3.0E-02	3.8E-02
		Exposure Point Total						1.8E-06						3.8E-02
	Exposure Medium Total							1.8E-06						3.8E-02
Sediment Total								1.8E-06						3.8E-02
Receptor Total							Receptor Risk Total	3.7E-05					Receptor HI Total	2.1E+00

Note: No garden currently exists at property based on site visit.

Total Skin	HI Across all Media =	1E+00
Total Kidney	HI Across all Media =	7E-01
Total Nervous System	HI Across all Media =	2E-01
Total Lung	HI Across all Media =	3E-04
Total Immune System	HI Across all Media =	9E-03
Total Circulatory	HI Across all Media =	5E-03
Total GI	HI Across all Media =	0E+00
Total Non-Observed (Chromium)	HI Across all Media =	3E-04

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TABLE 9aq
RAGS PART D TABLE 9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Current/Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total
Soil	Soil	Off-Facility 5515 Thomas	Arsenic	2.7E-05	1.8E-08	1.7E-06	2.6E-06	3.1E-05	Skin	4.9E-01	NTV	4.9E-01	4.1E-02	1.0E+00
			Barium	NC	NC	NC	NC	0.0E+00	Kidney	1.2E-02	5.9E-04	1.2E-02	0.0E+00	2.5E-02
			Cadmium	NC	6.6E-09	NC	NC	6.6E-09	Kidney	1.3E-01	NTV	1.3E-01	1.4E-02	2.7E-01
			Chromium	NC	7.0E-08	NC	NC	7.0E-08	Lung (Inhalation pathway) None Observed	1.4E-04	2.5E-04	1.4E-04	0.0E+00	5.2E-04
			Copper	NS	NS	NS	NS	0.0E+00	GI System	NS	NS	NS	NS	0.0E+00
			Lead	NTV	NTV	NTV	NTV	0.0E+00	NA	NTV	NTV	NTV	NTV	0.0E+00
			Mercury	NC	NC	NC	NC	0.0E+00	Immunilogical	4.7E-03	5.7E-07	4.6E-03	0.0E+00	9.3E-03
			Selenium	NC	NC	NC	NC	0.0E+00	Skin; central nervous system	2.5E-03	NTV	2.4E-03	0.0E+00	4.9E-03
			Silver	NC	NC	NC	NC	0.0E+00	central nervous system	9.2E-04	NTV	9.1E-04	0.0E+00	1.8E-03
			Zinc	NC	NC	NC	NC	0.0E+00	Circulatory system	2.7E-02	NTV	2.7E-02	0.0E+00	5.4E-02
			Chemical Total	2.7E-05	9.5E-08	1.7E-06	2.6E-06	3.1E-05		6.7E-01	8.4E-04	6.6E-01	5.5E-02	1.4E+00
		Exposure Point Total						3.1E-05						1.4E+00
	Exposure Medium Total							3.1E-05						1.4E+00
Soil Total								3.1E-05						1.4E+00
Surface water	Surface water	Off-Facility Surface Water	Arsenic	--	--	--	2.1E-08	2.1E-08	Skin	--	--	--	1.2E-04	1.2E-04
			Barium	--	--	--	NC	0.0E+00	Kidney	--	--	--	4.7E-05	4.7E-05
			Cadmium	--	--	--	NC	0.0E+00	Kidney	--	--	--	1.2E-02	1.2E-02
			Chromium	--	--	--	NC	0.0E+00	None Observed	--	--	--	1.6E-06	1.6E-06
			Copper	--	--	--	NS	0.0E+00	GI System	--	--	--	NS	0.0E+00
			Lead	--	--	--	NTV	0.0E+00	NA	--	--	--	NTV	0.0E+00
			Mercury	--	--	--	NS	0.0E+00	Immunilogical	--	--	--	NS	0.0E+00
			Selenium	--	--	--	NC	0.0E+00	Skin; central nervous system	--	--	--	1.5E-06	1.5E-06
			Silver	--	--	--	NC	0.0E+00	central nervous system	--	--	--	2.1E-01	2.1E-01
			Zinc	--	--	--	NC	0.0E+00	Circulatory system	--	--	--	4.4E-09	4.4E-09
			Chemical Total	0.0E+00	0.0E+00	0.0E+00	2.1E-08	2.1E-08		0.0E+00	0.0E+00	0.0E+00	2.2E-01	2.2E-01
		Exposure Point Total						2.1E-08						2.2E-01
	Exposure Medium Total							2.1E-08						2.2E-01
Surface water Total								2.1E-08						2.2E-01

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TABLE 9aq
RAGS PART D TABLE 9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Current/Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total
Sediment	Sediment	Off-Facility Sediment	Arsenic	2.7E-07	--	--	1.5E-06	1.8E-06	Skin	2.7E-03	--	--	1.0E-02	1.3E-02
			Barium	NC	--	--	NC	0.0E+00	Kidney	0.0E+00	--	--	7.4E-05	7.4E-05
			Cadmium	NC	--	--	NC	0.0E+00	Kidney	4.8E-03	--	--	1.4E-02	1.9E-02
			Chromium	NC	--	--	NC	0.0E+00	None Observed	0.0E+00	--	--	1.2E-06	1.2E-06
			Copper	NS	--	--	NS	0.0E+00	GI System	NS	--	--	NS	0.0E+00
			Lead	NTV	--	--	NTV	0.0E+00	NA	NTV	--	--	NTV	0.0E+00
			Mercury	NC	--	--	NC	0.0E+00	Immunilogical	0.0E+00	--	--	6.7E-04	6.7E-04
			Selenium	NC	--	--	NC	0.0E+00	Skin; central nervous system	0.0E+00	--	--	4.0E-05	4.0E-05
			Silver	NC	--	--	NC	0.0E+00	central nervous system	0.0E+00	--	--	2.5E-04	2.5E-04
			Zinc	NC	--	--	NC	0.0E+00	Circulatory system	0.0E+00	--	--	4.9E-03	4.9E-03
			Chemical Total	2.7E-07	0.0E+00	0.0E+00	1.5E-06	1.8E-06		7.5E-03	0.0E+00	0.0E+00	3.0E-02	3.8E-02
		Exposure Point Total						1.8E-06						3.8E-02
	Exposure Medium Total							1.8E-06						3.8E-02
Sediment Total								1.8E-06						3.8E-02
Receptor Total							Receptor Risk Total	3.3E-05					Receptor HI Total	1.6E+00

Note: No garden currently exists at property based on site visit.

Total Skin	HI Across all Media =	1E+00
Total Kidney	HI Across all Media =	3E-01
Total Nervous System	HI Across all Media =	2E-01
Total Lung	HI Across all Media =	3E-04
Total Immune System	HI Across all Media =	1E-02
Total Circulatory	HI Across all Media =	6E-02
Total GI	HI Across all Media =	0E+00
Total Non-Observed (Chromium)	HI Across all Media =	3E-04

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TABLE 9ar
RAGS PART D TABLE 9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Current/Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total
Soil	Soil	Off-Facility 5432 Maryland	Arsenic	2.6E-05	1.7E-08	1.6E-06	2.4E-06	3.0E-05	Skin	4.7E-01	NTV	4.6E-01	3.9E-02	9.7E-01
			Barium	NC	NC	NC	NC	0.0E+00	Kidney	1.3E-02	6.6E-04	1.3E-02	0.0E+00	2.7E-02
			Cadmium	NC	1.4E-08	NC	NC	1.4E-08	Kidney	2.7E-01	NTV	2.7E-01	3.0E-02	5.6E-01
			Chromium	NC	7.9E-08	NC	NC	7.9E-08	Lung (Inhalation pathway) None Observed	1.5E-04	2.8E-04	1.5E-04	0.0E+00	5.9E-04
			Copper	NS	NS	NS	NS	0.0E+00	GI System	NS	NS	NS	NS	0.0E+00
			Lead	NTV	NTV	NTV	NTV	0.0E+00	NA	NTV	NTV	NTV	NTV	0.0E+00
			Mercury	NC	NC	NC	NC	0.0E+00	Immunilogical	5.5E-03	6.8E-07	5.5E-03	0.0E+00	1.1E-02
			Selenium	NC	NC	NC	NC	0.0E+00	Skin; central nervous system	3.3E-03	NTV	3.3E-03	0.0E+00	6.6E-03
			Silver	NC	NC	NC	NC	0.0E+00	central nervous system	1.4E-03	NTV	1.4E-03	0.0E+00	2.8E-03
			Zinc	NC	NC	NC	NC	0.0E+00	Circulatory system	4.3E-02	NTV	4.2E-02	0.0E+00	8.5E-02
			Chemical Total	2.6E-05	1.1E-07	1.6E-06	2.4E-06	3.0E-05		8.0E-01	9.4E-04	8.0E-01	6.9E-02	1.7E+00
		Exposure Point Total						3.0E-05						1.7E+00
	Exposure Medium Total							3.0E-05						1.7E+00
Soil Total								3.0E-05						1.7E+00
Surface water	Surface water	Off-Facility Surface Water	Arsenic	--	--	--	2.1E-08	2.1E-08	Skin	--	--	--	1.2E-04	1.2E-04
			Barium	--	--	--	NC	0.0E+00	Kidney	--	--	--	4.7E-05	4.7E-05
			Cadmium	--	--	--	NC	0.0E+00	Kidney	--	--	--	1.2E-02	1.2E-02
			Chromium	--	--	--	NC	0.0E+00	None Observed	--	--	--	1.6E-06	1.6E-06
			Copper	--	--	--	NS	0.0E+00	GI System	--	--	--	NS	0.0E+00
			Lead	--	--	--	NTV	0.0E+00	NA	--	--	--	NTV	0.0E+00
			Mercury	--	--	--	NS	0.0E+00	Immunilogical	--	--	--	NS	0.0E+00
			Selenium	--	--	--	NC	0.0E+00	Skin; central nervous system	--	--	--	1.5E-06	1.5E-06
			Silver	--	--	--	NC	0.0E+00	central nervous system	--	--	--	2.1E-01	2.1E-01
			Zinc	--	--	--	NC	0.0E+00	Circulatory system	--	--	--	4.4E-09	4.4E-09
			Chemical Total	0.0E+00	0.0E+00	0.0E+00	2.1E-08	2.1E-08		0.0E+00	0.0E+00	0.0E+00	2.2E-01	2.2E-01
		Exposure Point Total						2.1E-08						2.2E-01
	Exposure Medium Total							2.1E-08						2.2E-01
Surface water Total								2.1E-08						2.2E-01

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TABLE 9ar
RAGS PART D TABLE 9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Current/Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total
Sediment	Sediment	Off-Facility Sediment	Arsenic	2.7E-07	--	--	1.5E-06	1.8E-06	Skin	2.7E-03	--	--	1.0E-02	1.3E-02
			Barium	NC	--	--	NC	0.0E+00	Kidney	0.0E+00	--	--	7.4E-05	7.4E-05
			Cadmium	NC	--	--	NC	0.0E+00	Kidney	4.8E-03	--	--	1.4E-02	1.9E-02
			Chromium	NC	--	--	NC	0.0E+00	None Observed	0.0E+00	--	--	1.2E-06	1.2E-06
			Copper	NS	--	--	NS	0.0E+00	GI System	NS	--	--	NS	0.0E+00
			Lead	NTV	--	--	NTV	0.0E+00	NA	NTV	--	--	NTV	0.0E+00
			Mercury	NC	--	--	NC	0.0E+00	Immunilogical	0.0E+00	--	--	6.7E-04	6.7E-04
			Selenium	NC	--	--	NC	0.0E+00	Skin; central nervous system	0.0E+00	--	--	4.0E-05	4.0E-05
			Silver	NC	--	--	NC	0.0E+00	central nervous system	0.0E+00	--	--	2.5E-04	2.5E-04
			Zinc	NC	--	--	NC	0.0E+00	Circulatory system	0.0E+00	--	--	4.9E-03	4.9E-03
			Chemical Total	2.7E-07	0.0E+00	0.0E+00	1.5E-06	1.8E-06		7.5E-03	0.0E+00	0.0E+00	3.0E-02	3.8E-02
		Exposure Point Total						1.8E-06						3.8E-02
	Exposure Medium Total							1.8E-06						3.8E-02
Sediment Total								1.8E-06						3.8E-02
Receptor Total							Receptor Risk Total	3.2E-05					Receptor HI Total	1.9E+00

Note: No garden currently exists at property based on site visit.

Total Skin	HI Across all Media =	1E+00
Total Kidney	HI Across all Media =	6E-01
Total Nervous System	HI Across all Media =	2E-01
Total Lung	HI Across all Media =	3E-04
Total Immune System	HI Across all Media =	1E-02
Total Circulatory	HI Across all Media =	9E-02
Total GI	HI Across all Media =	0E+00
Total Non-Observed (Chromium)	HI Across all Media =	3E-04

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TABLE 9as
RAGS PART D TABLE 9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Current/Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total
Soil	Soil	Off-Facility	Arsenic	2.1E-05	1.4E-08	1.3E-06	2.0E-06	2.4E-05	Skin	3.8E-01	NTV	3.7E-01	3.2E-02	7.8E-01
		4000 Collinsville Rd	Barium	NC	NC	NC	NC	0.0E+00	Kidney	1.1E-02	5.3E-04	1.1E-02	0.0E+00	2.2E-02
			Cadmium	NC	1.2E-08	NC	NC	1.2E-08	Kidney	2.3E-01	NTV	2.3E-01	2.6E-02	4.8E-01
			Chromium	NC	7.9E-08	NC	NC	7.9E-08	Lung (Inhalation pathway) None Observed	1.5E-04	2.8E-04	1.5E-04	0.0E+00	5.9E-04
			Copper	NS	NS	NS	NS	0.0E+00	GI System	NS	NS	NS	NS	0.0E+00
			Lead	NTV	NTV	NTV	NTV	0.0E+00	NA	NTV	NTV	NTV	NTV	0.0E+00
			Mercury	NC	NC	NC	NC	0.0E+00	Immunilogical	5.5E-03	6.8E-07	5.5E-03	0.0E+00	1.1E-02
			Selenium	NC	NC	NC	NC	0.0E+00	Skin; central nervous system	1.5E-03	NTV	1.5E-03	0.0E+00	3.1E-03
			Silver	NC	NC	NC	NC	0.0E+00	central nervous system	1.4E-03	NTV	1.4E-03	0.0E+00	2.8E-03
			Zinc	NC	NC	NC	NC	0.0E+00	Circulatory system	3.6E-02	NTV	3.6E-02	0.0E+00	7.1E-02
			Chemical Total	2.1E-05	1.0E-07	1.3E-06	2.0E-06	2.4E-05		6.6E-01	8.1E-04	6.5E-01	5.7E-02	1.4E+00
		Exposure Point Total						2.4E-05						1.4E+00
	Exposure Medium Total							2.4E-05						1.4E+00
Soil Total								2.4E-05						1.4E+00
Surface water	Surface water	Off-Facility Surface Water	Arsenic	--	--	--	2.1E-08	2.1E-08	Skin	--	--	--	1.2E-04	1.2E-04
			Barium	--	--	--	NC	0.0E+00	Kidney	--	--	--	4.7E-05	4.7E-05
			Cadmium	--	--	--	NC	0.0E+00	Kidney	--	--	--	1.2E-02	1.2E-02
			Chromium	--	--	--	NC	0.0E+00	None Observed	--	--	--	1.6E-06	1.6E-06
			Copper	--	--	--	NS	0.0E+00	GI System	--	--	--	NS	0.0E+00
			Lead	--	--	--	NTV	0.0E+00	NA	--	--	--	NTV	0.0E+00
			Mercury	--	--	--	NS	0.0E+00	Immunilogical	--	--	--	NS	0.0E+00
			Selenium	--	--	--	NC	0.0E+00	Skin; central nervous system	--	--	--	1.5E-06	1.5E-06
			Silver	--	--	--	NC	0.0E+00	central nervous system	--	--	--	2.1E-01	2.1E-01
			Zinc	--	--	--	NC	0.0E+00	Circulatory system	--	--	--	4.4E-09	4.4E-09
			Chemical Total	0.0E+00	0.0E+00	0.0E+00	2.1E-08	2.1E-08		0.0E+00	0.0E+00	0.0E+00	2.2E-01	2.2E-01
		Exposure Point Total						2.1E-08						2.2E-01
	Exposure Medium Total							2.1E-08						2.2E-01
Surface water Total								2.1E-08						2.2E-01

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TABLE 9as
RAGS PART D TABLE 9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: *Current/Future*
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total
Sediment	Sediment	Off-Facility Sediment	Arsenic	2.7E-07	--	--	1.5E-06	1.8E-06	Skin	2.7E-03	--	--	1.0E-02	1.3E-02
			Barium	NC	--	--	NC	0.0E+00	Kidney	0.0E+00	--	--	7.4E-05	7.4E-05
			Cadmium	NC	--	--	NC	0.0E+00	Kidney	4.8E-03	--	--	1.4E-02	1.9E-02
			Chromium	NC	--	--	NC	0.0E+00	*None Observed*	0.0E+00	--	--	1.2E-06	1.2E-06
			Copper	NS	--	--	NS	0.0E+00	GI System	NS	--	--	NS	0.0E+00
			Lead	NTV	--	--	NTV	0.0E+00	NA	NTV	--	--	NTV	0.0E+00
			Mercury	NC	--	--	NC	0.0E+00	Immunilogical	0.0E+00	--	--	6.7E-04	6.7E-04
			Selenium	NC	--	--	NC	0.0E+00	Skin; central nervous system	0.0E+00	--	--	4.0E-05	4.0E-05
			Silver	NC	--	--	NC	0.0E+00	central nervous system	0.0E+00	--	--	2.5E-04	2.5E-04
			Zinc	NC	--	--	NC	0.0E+00	Circulatory system	0.0E+00	--	--	4.9E-03	4.9E-03
			Chemical Total	2.7E-07	0.0E+00	0.0E+00	1.5E-06	1.8E-06		7.5E-03	0.0E+00	0.0E+00	3.0E-02	3.8E-02
		Exposure Point Total						1.8E-06						3.8E-02
	Exposure Medium Total							1.8E-06						3.8E-02
Sediment Total								1.8E-06						3.8E-02
Receptor Total							Receptor Risk Total	2.6E-05					Receptor HI Total	1.6E+00

Note: No garden currently exists at property based on site visit.

Total Skin	HI Across all Media =	8E-01
Total Kidney	HI Across all Media =	5E-01
Total Nervous System	HI Across all Media =	2E-01
Total Lung	HI Across all Media =	3E-04
Total Immune System	HI Across all Media =	1E-02
Total Circulatory	HI Across all Media =	8E-02
Total GI	HI Across all Media =	0E+00
Total Non-Observed (Chromium)	HI Across all Media =	3E-04

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TABLE 9at
RAGS PART D TABLE 9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Current/Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total
Soil	Soil	Off-Facility	Arsenic	1.8E-05	1.2E-08	1.2E-06	1.7E-06	2.1E-05	Skin	3.3E-01	NTV	3.3E-01	2.8E-02	6.9E-01
		2768 N 42nd St	Barium	NC	NC	NC	NC	0.0E+00	Kidney	1.2E-02	5.6E-04	1.1E-02	0.0E+00	2.3E-02
			Cadmium	NC	8.8E-09	NC	NC	8.8E-09	Kidney	1.7E-01	NTV	1.7E-01	1.9E-02	3.6E-01
			Chromium	NC	7.0E-08	NC	NC	7.0E-08	Lung (Inhalation pathway) None Observed	1.4E-04	2.5E-04	1.4E-04	0.0E+00	5.2E-04
			Copper	NS	NS	NS	NS	0.0E+00	GI System	NS	NS	NS	NS	0.0E+00
			Lead	NTV	NTV	NTV	NTV	0.0E+00	NA	NTV	NTV	NTV	NTV	0.0E+00
			Mercury	NC	NC	NC	NC	0.0E+00	Immunilogical	4.5E-03	5.5E-07	4.4E-03	0.0E+00	8.9E-03
			Selenium	NC	NC	NC	NC	0.0E+00	Skin; central nervous system	2.3E-03	NTV	2.3E-03	0.0E+00	4.6E-03
			Silver	NC	NC	NC	NC	0.0E+00	central nervous system	8.7E-04	NTV	8.6E-04	0.0E+00	1.7E-03
			Zinc	NC	NC	NC	NC	0.0E+00	Circulatory system	2.9E-02	NTV	2.9E-02	0.0E+00	5.9E-02
			Chemical Total	1.8E-05	9.1E-08	1.2E-06	1.7E-06	2.1E-05		5.5E-01	8.1E-04	5.5E-01	4.7E-02	1.2E+00
		Exposure Point Total						2.1E-05						1.2E+00
	Exposure Medium Total							2.1E-05						1.2E+00
Soil Total								2.1E-05						1.2E+00
Surface water	Surface water	Off-Facility	Arsenic	--	--	--	2.1E-08	2.1E-08	Skin	--	--	--	1.2E-04	1.2E-04
		Surface Water	Barium	--	--	--	NC	0.0E+00	Kidney	--	--	--	4.7E-05	4.7E-05
			Cadmium	--	--	--	NC	0.0E+00	Kidney	--	--	--	1.2E-02	1.2E-02
			Chromium	--	--	--	NC	0.0E+00	None Observed	--	--	--	1.6E-06	1.6E-06
			Copper	--	--	--	NS	0.0E+00	GI System	--	--	--	NS	0.0E+00
			Lead	--	--	--	NTV	0.0E+00	NA	--	--	--	NTV	0.0E+00
			Mercury	--	--	--	NS	0.0E+00	Immunilogical	--	--	--	NS	0.0E+00
			Selenium	--	--	--	NC	0.0E+00	Skin; central nervous system	--	--	--	1.5E-06	1.5E-06
			Silver	--	--	--	NC	0.0E+00	central nervous system	--	--	--	2.1E-01	2.1E-01
			Zinc	--	--	--	NC	0.0E+00	Circulatory system	--	--	--	4.4E-09	4.4E-09
			Chemical Total	0.0E+00	0.0E+00	0.0E+00	2.1E-08	2.1E-08		0.0E+00	0.0E+00	0.0E+00	2.2E-01	2.2E-01
		Exposure Point Total						2.1E-08						2.2E-01
	Exposure Medium Total							2.1E-08						2.2E-01
Surface water Total								2.1E-08						2.2E-01

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TABLE 9at
RAGS PART D TABLE 9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Current/Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total
Sediment	Sediment	Off-Facility Sediment	Arsenic	2.7E-07	--	--	1.5E-06	1.8E-06	Skin	2.7E-03	--	--	1.0E-02	1.3E-02
			Barium	NC	--	--	NC	0.0E+00	Kidney	0.0E+00	--	--	7.4E-05	7.4E-05
			Cadmium	NC	--	--	NC	0.0E+00	Kidney	4.8E-03	--	--	1.4E-02	1.9E-02
			Chromium	NC	--	--	NC	0.0E+00	None Observed	0.0E+00	--	--	1.2E-06	1.2E-06
			Copper	NS	--	--	NS	0.0E+00	GI System	NS	--	--	NS	0.0E+00
			Lead	NTV	--	--	NTV	0.0E+00	NA	NTV	--	--	NTV	0.0E+00
			Mercury	NC	--	--	NC	0.0E+00	Immunilogical	0.0E+00	--	--	6.7E-04	6.7E-04
			Selenium	NC	--	--	NC	0.0E+00	Skin; central nervous system	0.0E+00	--	--	4.0E-05	4.0E-05
			Silver	NC	--	--	NC	0.0E+00	central nervous system	0.0E+00	--	--	2.5E-04	2.5E-04
			Zinc	NC	--	--	NC	0.0E+00	Circulatory system	0.0E+00	--	--	4.9E-03	4.9E-03
			Chemical Total	2.7E-07	0.0E+00	0.0E+00	1.5E-06	1.8E-06		7.5E-03	0.0E+00	0.0E+00	3.0E-02	3.8E-02
		Exposure Point Total						1.8E-06						3.8E-02
	Exposure Medium Total							1.8E-06						3.8E-02
Sediment Total								1.8E-06						3.8E-02
Receptor Total							*Receptor Risk Total*	2.3E-05					*Receptor HI Total*	1.4E+00

Note: No garden currently exists at property based on site visit.

Total Skin	HI Across all Media =	7E-01
Total Kidney	HI Across all Media =	4E-01
Total Nervous System	HI Across all Media =	2E-01
Total Lung	HI Across all Media =	3E-04
Total Immune System	HI Across all Media =	1E-02
Total Circulatory	HI Across all Media =	6E-02
Total GI	HI Across all Media =	0E+00
Total Non-Observed (Chromium)	HI Across all Media =	3E-04

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TABLE 9au
RAGS PART D TABLE 9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total
Soil	Soil	Off-Facility	Arsenic	2.8E-05	1.9E-08	1.8E-06	2.7E-06	3.3E-05	Skin	5.1E-01	NTV	5.1E-01	4.3E-02	1.1E+00
		2521 N. 42nd St.	Barium	NC	NC	NC	NC	0.0E+00	Kidney	1.7E-02	8.1E-04	1.6E-02	0.0E+00	3.4E-02
			Cadmium	NC	9.8E-09	NC	NC	9.8E-09	Kidney	1.9E-01	NTV	1.9E-01	2.1E-02	4.0E-01
			Chromium	NC	1.0E-07	NC	NC	1.0E-07	Lung (Inhalation pathway) None Observed	2.0E-04	3.8E-04	2.0E-04	0.0E+00	7.8E-04
			Copper	NS	NS	NS	NS	0.0E+00	GI System	NS	NS	NS	NS	0.0E+00
			Lead	NTV	NTV	NTV	NTV	0.0E+00	NA	NTV	NTV	NTV	NTV	0.0E+00
			Mercury	NC	NC	NC	NC	0.0E+00	Immunilogical	8.9E-03	1.1E-06	8.9E-03	0.0E+00	1.8E-02
			Selenium	NC	NC	NC	NC	0.0E+00	Skin; central nervous system	2.8E-03	NTV	2.8E-03	0.0E+00	5.6E-03
			Silver	NC	NC	NC	NC	0.0E+00	central nervous system	1.7E-03	NTV	1.6E-03	0.0E+00	3.3E-03
			Zinc	NC	NC	NC	NC	0.0E+00	Circulatory system	4.3E-02	NTV	4.2E-02	0.0E+00	8.5E-02
			Chemical Total	2.8E-05	1.3E-07	1.8E-06	2.7E-06	3.3E-05		7.8E-01	1.2E-03	7.7E-01	6.4E-02	1.6E+00
		Exposure Point Total						3.3E-05						1.6E+00
	Exposure Medium Total							3.3E-05						1.6E+00
Soil Total								3.3E-05						1.6E+00
Surface water	Surface water	Off-Facility Surface Water	Arsenic	--	--	--	2.1E-08	2.1E-08	Skin	--	--	--	1.2E-04	1.2E-04
			Barium	--	--	--	NC	0.0E+00	Kidney	--	--	--	4.7E-05	4.7E-05
			Cadmium	--	--	--	NC	0.0E+00	Kidney	--	--	--	1.2E-02	1.2E-02
			Chromium	--	--	--	NC	0.0E+00	None Observed	--	--	--	1.6E-06	1.6E-06
			Copper	--	--	--	NS	0.0E+00	GI System	--	--	--	NS	0.0E+00
			Lead	--	--	--	NTV	0.0E+00	NA	--	--	--	NTV	0.0E+00
			Mercury	--	--	--	NS	0.0E+00	Immunilogical	--	--	--	NS	0.0E+00
			Selenium	--	--	--	NC	0.0E+00	Skin; central nervous system	--	--	--	1.5E-06	1.5E-06
			Silver	--	--	--	NC	0.0E+00	central nervous system	--	--	--	2.1E-01	2.1E-01
			Zinc	--	--	--	NC	0.0E+00	Circulatory system	--	--	--	4.4E-09	4.4E-09
			Chemical Total	0.0E+00	0.0E+00	0.0E+00	2.1E-08	2.1E-08		0.0E+00	0.0E+00	0.0E+00	2.2E-01	2.2E-01
		Exposure Point Total						2.1E-08						2.2E-01
	Exposure Medium Total							2.1E-08						2.2E-01
Surface water Total								2.1E-08						2.2E-01

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TABLE 9au
RAGS PART D TABLE 9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: *Child (noncancer) Child/Adult (cancer)*

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total
Sediment	Sediment	Off-Facility *Sediment*	Arsenic	2.7E-07	--	--	1.5E-06	1.8E-06	Skin	2.7E-03	--	--	1.0E-02	1.3E-02
			Barium	NC	--	--	NC	0.0E+00	Kidney	0.0E+00	--	--	7.4E-05	7.4E-05
			Cadmium	NC	--	--	NC	0.0E+00	Kidney	4.8E-03	--	--	1.4E-02	1.9E-02
			Chromium	NC	--	--	NC	0.0E+00	***None Observed***	0.0E+00	--	--	1.2E-06	1.2E-06
			Copper	NS	--	--	NS	0.0E+00	GI System	NS	--	--	NS	0.0E+00
			Lead	NTV	--	--	NTV	0.0E+00	NA	NTV	--	--	NTV	0.0E+00
			Mercury	NC	--	--	NC	0.0E+00	Immunlogical	0.0E+00	--	--	6.7E-04	6.7E-04
			Selenium	NC	--	--	NC	0.0E+00	*Skin; central nervous system*	0.0E+00	--	--	4.0E-05	4.0E-05
			Silver	NC	--	--	NC	0.0E+00	central nervous system	0.0E+00	--	--	2.5E-04	2.5E-04
			Zinc	NC	--	--	NC	0.0E+00	Circulatory system	0.0E+00	--	--	4.9E-03	4.9E-03
			Chemical Total	2.7E-07	0.0E+00	0.0E+00	1.5E-06	1.8E-06		7.5E-03	0.0E+00	0.0E+00	3.0E-02	3.8E-02
		Exposure Point Total						1.8E-06						3.8E-02
	Exposure Medium Total							1.8E-06						3.8E-02
Sediment Total								1.8E-06						3.8E-02
Receptor Total							Receptor Risk Total	3.5E-05					Receptor HI Total	1.9E+00

Note: Property is currently vacant

Total Skin	HI Across all Media =	1E+00
Total Kidney	HI Across all Media =	5E-01
Total Nervous System	HI Across all Media =	2E-01
Total Lung	HI Across all Media =	4E-04
Total Immune System	HI Across all Media =	2E-02
Total Circulatory	HI Across all Media =	9E-02
Total GI	HI Across all Media =	0E+00
Total Non-Observed (Chromium)	HI Across all Media =	4E-04

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TABLE 9av
RAGS PART D TABLE 9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total
Soil	Soil	Off-Facility	Arsenic	2.6E-05	1.7E-08	1.6E-06	2.4E-06	3.0E-05	Skin	4.7E-01	NTV	4.6E-01	3.9E-02	9.7E-01
		2521 N. 42nd St.	Barium	NC	NC	NC	NC	0.0E+00	Kidney	1.4E-02	6.9E-04	1.4E-02	0.0E+00	2.9E-02
			Cadmium	NC	1.0E-08	NC	NC	1.0E-08	Kidney	2.0E-01	NTV	2.0E-01	2.3E-02	4.3E-01
			Chromium	NC	7.9E-08	NC	NC	7.9E-08	Lung (Inhalation pathway) None Observed	1.5E-04	2.8E-04	1.5E-04	0.0E+00	5.9E-04
			Copper	NS	NS	NS	NS	0.0E+00	GI System	NS	NS	NS	NS	0.0E+00
			Lead	NTV	NTV	NTV	NTV	0.0E+00	NA	NTV	NTV	NTV	NTV	0.0E+00
			Mercury	NC	NC	NC	NC	0.0E+00	Immunilogical	6.0E-03	7.3E-07	5.9E-03	0.0E+00	1.2E-02
			Selenium	NC	NC	NC	NC	0.0E+00	Skin; central nervous system	3.3E-03	NTV	3.3E-03	0.0E+00	6.6E-03
			Silver	NC	NC	NC	NC	0.0E+00	central nervous system	2.4E-03	NTV	2.3E-03	0.0E+00	4.7E-03
			Zinc	NC	NC	NC	NC	0.0E+00	Circulatory system	5.1E-02	NTV	5.1E-02	0.0E+00	1.0E-01
			Chemical Total	2.6E-05	1.1E-07	1.6E-06	2.4E-06	3.0E-05		7.5E-01	9.7E-04	7.4E-01	6.2E-02	1.6E+00
		Exposure Point Total						3.0E-05						1.6E+00
	Exposure Medium Total							3.0E-05						1.6E+00
Soil Total								3.0E-05						1.6E+00
Surface water	Surface water	Off-Facility	Arsenic	--	--	--	2.1E-08	2.1E-08	Skin	--	--	--	1.2E-04	1.2E-04
		Surface Water	Barium	--	--	--	NC	0.0E+00	Kidney	--	--	--	4.7E-05	4.7E-05
			Cadmium	--	--	--	NC	0.0E+00	Kidney	--	--	--	1.2E-02	1.2E-02
			Chromium	--	--	--	NC	0.0E+00	None Observed	--	--	--	1.6E-06	1.6E-06
			Copper	--	--	--	NS	0.0E+00	GI System	--	--	--	NS	0.0E+00
			Lead	--	--	--	NTV	0.0E+00	NA	--	--	--	NTV	0.0E+00
			Mercury	--	--	--	NS	0.0E+00	Immunilogical	--	--	--	NS	0.0E+00
			Selenium	--	--	--	NC	0.0E+00	Skin; central nervous system	--	--	--	1.5E-06	1.5E-06
			Silver	--	--	--	NC	0.0E+00	central nervous system	--	--	--	2.1E-01	2.1E-01
			Zinc	--	--	--	NC	0.0E+00	Circulatory system	--	--	--	4.4E-09	4.4E-09
			Chemical Total	0.0E+00	0.0E+00	0.0E+00	2.1E-08	2.1E-08		0.0E+00	0.0E+00	0.0E+00	2.2E-01	2.2E-01
		Exposure Point Total						2.1E-08						2.2E-01
	Exposure Medium Total							2.1E-08						2.2E-01
Surface water Total								2.1E-08						2.2E-01

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TABLE 9av
RAGS PART D TABLE 9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total
Sediment	Sediment	Off-Facility Sediment	Arsenic	2.7E-07	--	--	1.5E-06	1.8E-06	Skin	2.7E-03	--	--	1.0E-02	1.3E-02
			Barium	NC	--	--	NC	0.0E+00	Kidney	0.0E+00	--	--	7.4E-05	7.4E-05
			Cadmium	NC	--	--	NC	0.0E+00	Kidney	4.8E-03	--	--	1.4E-02	1.9E-02
			Chromium	NC	--	--	NC	0.0E+00	None Observed	0.0E+00	--	--	1.2E-06	1.2E-06
			Copper	NS	--	--	NS	0.0E+00	GI System	NS	--	--	NS	0.0E+00
			Lead	NTV	--	--	NTV	0.0E+00	NA	NTV	--	--	NTV	0.0E+00
			Mercury	NC	--	--	NC	0.0E+00	Immunilogical	0.0E+00	--	--	6.7E-04	6.7E-04
			Selenium	NC	--	--	NC	0.0E+00	Skin; central nervous system	0.0E+00	--	--	4.0E-05	4.0E-05
			Silver	NC	--	--	NC	0.0E+00	central nervous system	0.0E+00	--	--	2.5E-04	2.5E-04
			Zinc	NC	--	--	NC	0.0E+00	Circulatory system	0.0E+00	--	--	4.9E-03	4.9E-03
			Chemical Total	2.7E-07	0.0E+00	0.0E+00	1.5E-06	1.8E-06		7.5E-03	0.0E+00	0.0E+00	3.0E-02	3.8E-02
		Exposure Point Total						1.8E-06						3.8E-02
	Exposure Medium Total							1.8E-06						3.8E-02
Sediment Total								1.8E-06						3.8E-02
Receptor Total							Receptor Risk Total	3.2E-05					Receptor HI Total	1.8E+00

Note: Property is currently vacant

Total Skin	HI Across all Media =	1E+00
Total Kidney	HI Across all Media =	5E-01
Total Nervous System	HI Across all Media =	2E-01
Total Lung	HI Across all Media =	3E-04
Total Immune System	HI Across all Media =	1E-02
Total Circulatory	HI Across all Media =	1E-01
Total GI	HI Across all Media =	0E+00
Total Non-Observed (Chromium)	HI Across all Media =	3E-04

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TABLE 9aw
RAGS PART D TABLE 9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total
Soil	Soil	Off-Facility	Arsenic	2.3E-05	1.6E-08	1.5E-06	2.2E-06	2.7E-05	Skin	4.3E-01	NTV	4.2E-01	3.6E-02	8.8E-01
		3800 Roselake	Barium	NC	NC	NC	NC	0.0E+00	Kidney	1.7E-02	8.4E-04	1.7E-02	0.0E+00	3.5E-02
			Cadmium	NC	6.2E-09	NC	NC	6.2E-09	Kidney	1.2E-01	NTV	1.2E-01	1.4E-02	2.6E-01
			Chromium	NC	7.4E-08	NC	NC	7.4E-08	Lung (Inhalation pathway) None Observed	1.4E-04	2.7E-04	1.4E-04	0.0E+00	5.5E-04
			Copper	NS	NS	NS	NS	0.0E+00	GI System	NS	NS	NS	NS	0.0E+00
			Lead	NTV	NTV	NTV	NTV	0.0E+00	NA	NTV	NTV	NTV	NTV	0.0E+00
			Mercury	NC	NC	NC	NC	0.0E+00	Immunilogical	1.5E-02	1.8E-06	1.5E-02	0.0E+00	3.0E-02
			Selenium	NC	NC	NC	NC	0.0E+00	Skin; central nervous system	2.3E-03	NTV	2.3E-03	0.0E+00	4.6E-03
			Silver	NC	NC	NC	NC	0.0E+00	central nervous system	8.2E-04	NTV	8.1E-04	0.0E+00	1.6E-03
			Zinc	NC	NC	NC	NC	0.0E+00	Circulatory system	4.2E-02	NTV	4.1E-02	0.0E+00	8.3E-02
			Chemical Total	2.3E-05	9.6E-08	1.5E-06	2.2E-06	2.7E-05		6.2E-01	1.1E-03	6.2E-01	4.9E-02	1.3E+00
		Exposure Point Total						2.7E-05						1.3E+00
	Exposure Medium Total							2.7E-05						1.3E+00
Soil Total								2.7E-05						1.3E+00
Surface water	Surface water	Off-Facility	Arsenic	--	--	--	2.1E-08	2.1E-08	Skin	--	--	--	1.2E-04	1.2E-04
		Surface Water	Barium	--	--	--	NC	0.0E+00	Kidney	--	--	--	4.7E-05	4.7E-05
			Cadmium	--	--	--	NC	0.0E+00	Kidney	--	--	--	1.2E-02	1.2E-02
			Chromium	--	--	--	NC	0.0E+00	None Observed	--	--	--	1.6E-06	1.6E-06
			Copper	--	--	--	NS	0.0E+00	GI System	--	--	--	NS	0.0E+00
			Lead	--	--	--	NTV	0.0E+00	NA	--	--	--	NTV	0.0E+00
			Mercury	--	--	--	NS	0.0E+00	Immunilogical	--	--	--	NS	0.0E+00
			Selenium	--	--	--	NC	0.0E+00	Skin; central nervous system	--	--	--	1.5E-06	1.5E-06
			Silver	--	--	--	NC	0.0E+00	central nervous system	--	--	--	2.1E-01	2.1E-01
			Zinc	--	--	--	NC	0.0E+00	Circulatory system	--	--	--	4.4E-09	4.4E-09
			Chemical Total	0.0E+00	0.0E+00	0.0E+00	2.1E-08	2.1E-08		0.0E+00	0.0E+00	0.0E+00	2.2E-01	2.2E-01
		Exposure Point Total						2.1E-08						2.2E-01
	Exposure Medium Total							2.1E-08						2.2E-01
Surface water Total								2.1E-08						2.2E-01

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TABLE 9aw
RAGS PART D TABLE 9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total
Sediment	Sediment	Off-Facility Sediment	Arsenic	2.7E-07	--	--	1.5E-06	1.8E-06	Skin	2.7E-03	--	--	1.0E-02	1.3E-02
			Barium	NC	--	--	NC	0.0E+00	Kidney	0.0E+00	--	--	7.4E-05	7.4E-05
			Cadmium	NC	--	--	NC	0.0E+00	Kidney	4.8E-03	--	--	1.4E-02	1.9E-02
			Chromium	NC	--	--	NC	0.0E+00	None Observed	0.0E+00	--	--	1.2E-06	1.2E-06
			Copper	NS	--	--	NS	0.0E+00	GI System	NS	--	--	NS	0.0E+00
			Lead	NTV	--	--	NTV	0.0E+00	NA	NTV	--	--	NTV	0.0E+00
			Mercury	NC	--	--	NC	0.0E+00	Immunilogical	0.0E+00	--	--	6.7E-04	6.7E-04
			Selenium	NC	--	--	NC	0.0E+00	Skin; central nervous system	0.0E+00	--	--	4.0E-05	4.0E-05
			Silver	NC	--	--	NC	0.0E+00	central nervous system	0.0E+00	--	--	2.5E-04	2.5E-04
			Zinc	NC	--	--	NC	0.0E+00	Circulatory system	0.0E+00	--	--	4.9E-03	4.9E-03
			Chemical Total	2.7E-07	0.0E+00	0.0E+00	1.5E-06	1.8E-06		7.5E-03	0.0E+00	0.0E+00	3.0E-02	3.8E-02
		Exposure Point Total						1.8E-06						3.8E-02
	Exposure Medium Total							1.8E-06						3.8E-02
Sediment Total								1.8E-06						3.8E-02
Receptor Total							Receptor Risk Total	2.9E-05					Receptor HI Total	1.6E+00

Note: Property is currently vacant

Total Skin	HI Across all Media =	9E-01
Total Kidney	HI Across all Media =	3E-01
Total Nervous System	HI Across all Media =	2E-01
Total Lung	HI Across all Media =	3E-04
Total Immune System	HI Across all Media =	3E-02
Total Circulatory	HI Across all Media =	9E-02
Total GI	HI Across all Media =	0E+00
Total Non-Observed (Chromium)	HI Across all Media =	3E-04

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TABLE 9ax
RAGS PART D TABLE 9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation *Particulates*	Produce *Ingestion*	Dermal	Exposure *Routes Total*	Primary *Target Organ(s)*	Ingestion	Inhalation *Particulates*	Produce *Ingestion*	Dermal	Exposure Routes Total
Soil	Soil	Off-Facility	Arsenic	1.4E-04	9.3E-08	8.8E-06	1.3E-05	1.6E-04	Skin	2.5E+00	NTV	2.5E+00	2.1E-01	5.2E+00
		4012 Maple St	Barium	NC	NC	NC	NC	0.0E+00	Kidney	1.7E-02	8.4E-04	1.7E-02	0.0E+00	3.5E-02
			Cadmium	NC	2.2E-08	NC	NC	2.2E-08	Kidney	4.3E-01	NTV	4.3E-01	4.9E-02	9.1E-01
			Chromium	NC	9.2E-08	NC	NC	9.2E-08	Lung (Inhalation pathway) *None Observed*	1.8E-04	3.3E-04	1.8E-04	0.0E+00	6.9E-04
			Copper	NS	NS	NS	NS	0.0E+00	GI System	NS	NS	NS	NS	0.0E+00
			Lead	NTV	NTV	NTV	NTV	0.0E+00	NA	NTV	NTV	NTV	NTV	0.0E+00
			Mercury	NC	NC	NC	NC	0.0E+00	Immunilogical	1.7E-02	2.1E-06	1.7E-02	0.0E+00	3.4E-02
			Selenium	NC	NC	NC	NC	0.0E+00	Skin; central nervous system	5.9E-03	NTV	5.8E-03	0.0E+00	1.2E-02
			Silver	NC	NC	NC	NC	0.0E+00	central nervous system	2.8E-02	NTV	2.8E-02	0.0E+00	5.6E-02
			Zinc	NC	NC	NC	NC	0.0E+00	Circulatory system	2.0E-01	NTV	1.9E-01	0.0E+00	3.9E-01
			Chemical Total	1.4E-04	2.1E-07	8.8E-06	1.3E-05	1.6E-04		3.2E+00	1.2E-03	3.2E+00	2.6E-01	6.7E+00
		Exposure Point Total						1.6E-04						6.7E+00
	Exposure Medium Total							1.6E-04						6.7E+00
Soil Total								1.6E-04						6.7E+00
Surface water	Surface water	Off-Facility	Arsenic	--	--	--	2.1E-08	2.1E-08	Skin	--	--	--	1.2E-04	1.2E-04
		Surface Water	Barium	--	--	--	*NC*	*0.0E+00*	*Kidney*	--	--	--	*4.7E-05*	*4.7E-05*
			Cadmium	--	--	--	NC	0.0E+00	Kidney	--	--	--	1.2E-02	1.2E-02
			Chromium	--	--	--	NC	0.0E+00	**None Observed**	--	--	--	*1.6E-06*	*1.6E-06*
			Copper	--	--	--	NS	0.0E+00	GI System	--	--	--	NS	0.0E+00
			Lead	--	--	--	NTV	0.0E+00	NA	--	--	--	NTV	0.0E+00
			Mercury	--	--	--	NS	0.0E+00	Immunilogical	--	--	--	NS	0.0E+00
			Selenium	--	--	--	NC	*0.0E+00*	*Skin; central nervous system*	--	--	--	1.5E-06	*1.5E-06*
			Silver	--	--	--	NC	0.0E+00	central nervous system	--	--	--	2.1E-01	2.1E-01
			Zinc	--	--	--	NC	0.0E+00	Circulatory system	--	--	--	4.4E-09	4.4E-09
			Chemical Total	0.0E+00	0.0E+00	0.0E+00	2.1E-08	2.1E-08		0.0E+00	0.0E+00	0.0E+00	2.2E-01	2.2E-01
		Exposure Point Total						2.1E-08						2.2E-01
	Exposure Medium Total							2.1E-08						2.2E-01
Surface water Total								2.1E-08						2.2E-01

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TABLE 9ax
RAGS PART D TABLE 9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total
Sediment	Sediment	Off-Facility Sediment	Arsenic	2.7E-07	--	--	1.5E-06	1.8E-06	Skin	2.7E-03	--	--	1.0E-02	1.3E-02
			Barium	NC	--	--	NC	0.0E+00	Kidney	0.0E+00	--	--	7.4E-05	7.4E-05
			Cadmium	NC	--	--	NC	0.0E+00	Kidney	4.8E-03	--	--	1.4E-02	1.9E-02
			Chromium	NC	--	--	NC	0.0E+00	None Observed	0.0E+00	--	--	1.2E-06	1.2E-06
			Copper	NS	--	--	NS	0.0E+00	GI System	NS	--	--	NS	0.0E+00
			Lead	NTV	--	--	NTV	0.0E+00	NA	NTV	--	--	NTV	0.0E+00
			Mercury	NC	--	--	NC	0.0E+00	*Immunilogical*	0.0E+00	--	--	6.7E-04	6.7E-04
			Selenium	NC	--	--	NC	0.0E+00	Skin; central nervous system	0.0E+00	--	--	4.0E-05	4.0E-05
			Silver	NC	--	--	NC	0.0E+00	central nervous system	0.0E+00	--	--	2.5E-04	2.5E-04
			Zinc	NC	--	--	NC	0.0E+00	Circulatory system	0.0E+00	--	--	4.9E-03	4.9E-03
			Chemical Total	2.7E-07	0.0E+00	0.0E+00	1.5E-06	1.8E-06		7.5E-03	0.0E+00	0.0E+00	3.0E-02	3.8E-02
		Exposure Point Total						1.8E-06						3.8E-02
	Exposure Medium Total							1.8E-06						3.8E-02
Sediment Total								1.8E-06						3.8E-02
Receptor Total							Receptor Risk Total	1.6E-04					Receptor HI Total	6.9E+00

Note: Property is currently vacant

Total Skin	HI Across all Media =	5E+00
Total Kidney	HI Across all Media =	1E+00
Total Nervous System	HI Across all Media =	3E-01
Total Lung	HI Across all Media =	3E-04
Total Immune System	HI Across all Media =	3E-02
Total Circulatory	HI Across all Media =	4E-01
Total GI	HI Across all Media =	0E+00
Total Non-Observed (Chromium)	HI Across all Media =	4E-04

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TABLE 9ay
RAGS PART D TABLE 9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total
Soil	Soil	Off-Facility	Arsenic	5.9E-05	3.9E-08	3.7E-06	5.6E-06	6.8E-05	Skin	1.1E+00	NTV	1.1E+00	8.9E-02	2.2E+00
		Cookson Rd & 44th St	Barium	NC	NC	NC	NC	0.0E+00	Kidney	1.5E-02	7.5E-04	1.5E-02	0.0E+00	3.1E-02
			Cadmium	NC	2.0E-08	NC	NC	2.0E-08	Kidney	4.0E-01	NTV	3.9E-01	4.4E-02	8.3E-01
			Chromium	NC	9.2E-08	NC	NC	9.2E-08	Lung (Inhalation pathway)	1.8E-04	3.3E-04	1.8E-04	0.0E+00	6.9E-04
			Copper	NS	NS	NS	NS	0.0E+00	None Observed GI System	NS	NS	NS	NS	0.0E+00
			Lead	NTV	NTV	NTV	NTV	0.0E+00	NA	NTV	NTV	NTV	NTV	0.0E+00
			Mercury	NC	NC	NC	NC	0.0E+00	Immunilogical	8.5E-03	1.0E-06	8.5E-03	0.0E+00	1.7E-02
			Selenium	NC	NC	NC	NC	0.0E+00	Skin; central nervous system	3.3E-03	NTV	3.3E-03	0.0E+00	6.6E-03
			Silver	NC	NC	NC	NC	0.0E+00	central nervous system	3.6E-03	NTV	3.6E-03	0.0E+00	7.1E-03
			Zinc	NC	NC	NC	NC	0.0E+00	Circulatory system	8.1E-02	NTV	8.0E-02	0.0E+00	1.6E-01
			Chemical Total	5.9E-05	1.5E-07	3.7E-06	5.6E-06	6.8E-05		1.6E+00	1.1E-03	1.6E+00	1.3E-01	3.3E+00
		Exposure Point Total						6.8E-05						3.3E+00
	Exposure Medium Total							6.8E-05						3.3E+00
Soil Total								6.8E-05						3.3E+00
Surface water	Surface water	Off-Facility	Arsenic	--	--	--	2.1E-08	2.1E-08	Skin	--	--	--	1.2E-04	1.2E-04
		Surface Water	Barium	--	--	--	NC	0.0E+00	Kidney	--	--	--	4.7E-05	4.7E-05
			Cadmium	--	--	--	NC	0.0E+00	Kidney	--	--	--	1.2E-02	1.2E-02
			Chromium	--	--	--	NC	0.0E+00	None Observed	--	--	--	1.6E-06	1.6E-06
			Copper	--	--	--	NS	0.0E+00	GI System	--	--	--	NS	0.0E+00
			Lead	--	--	--	NTV	0.0E+00	NA	--	--	--	NTV	0.0E+00
			Mercury	--	--	--	NS	0.0E+00	Immunilogical	--	--	--	NS	0.0E+00
			Selenium	--	--	--	NC	0.0E+00	Skin; central nervous system	--	--	--	1.5E-06	1.5E-06
			Silver	--	--	--	NC	0.0E+00	central nervous system	--	--	--	2.1E-01	2.1E-01
			Zinc	--	--	--	NC	0.0E+00	Circulatory system	--	--	--	4.4E-09	4.4E-09
			Chemical Total	0.0E+00	0.0E+00	0.0E+00	2.1E-08	2.1E-08		0.0E+00	0.0E+00	0.0E+00	2.2E-01	2.2E-01
		Exposure Point Total						2.1E-08						2.2E-01
	Exposure Medium Total							2.1E-08						2.2E-01
Surface water Total								2.1E-08						2.2E-01

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TABLE 9ay
RAGS PART D TABLE 9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total
Sediment	Sediment	Off-Facility Sediment	Arsenic	2.7E-07	--	--	1.5E-06	1.8E-06	Skin	2.7E-03	--	--	1.0E-02	1.3E-02
			Barium	NC	--	--	NC	0.0E+00	Kidney	0.0E+00	--	--	7.4E-05	7.4E-05
			Cadmium	NC	--	--	NC	0.0E+00	Kidney	4.8E-03	--	--	1.4E-02	1.9E-02
			Chromium	NC	--	--	NC	0.0E+00	None Observed	0.0E+00	--	--	1.2E-06	1.2E-06
			Copper	NS	--	--	NS	0.0E+00	GI System	NS	--	--	NS	0.0E+00
			Lead	NTV	--	--	NTV	0.0E+00	NA	NTV	--	--	NTV	0.0E+00
			Mercury	NC	--	--	NC	0.0E+00	Immunilogical	0.0E+00	--	--	6.7E-04	6.7E-04
			Selenium	NC	--	--	NC	0.0E+00	Skin; central nervous system	0.0E+00	--	--	4.0E-05	4.0E-05
			Silver	NC	--	--	NC	0.0E+00	central nervous system	0.0E+00	--	--	2.5E-04	2.5E-04
			Zinc	NC	--	--	NC	0.0E+00	Circulatory system	0.0E+00	--	--	4.9E-03	4.9E-03
			Chemical Total	2.7E-07	0.0E+00	0.0E+00	1.5E-06	1.8E-06		7.5E-03	0.0E+00	0.0E+00	3.0E-02	3.8E-02
		Exposure Point Total						1.8E-06						3.8E-02
	Exposure Medium Total							1.8E-06						3.8E-02
Sediment Total								1.8E-06						3.8E-02
Receptor Total							Receptor Risk Total	7.0E-05					Receptor HI Total	3.5E+00

Note: Property is currently vacant

Total Skin	HI Across all Media =	2E+00
Total Kidney	HI Across all Media =	9E-01
Total Nervous System	HI Across all Media =	2E-01
Total Lung	HI Across all Media =	3E-04
Total Immune System	HI Across all Media =	2E-02
Total Circulatory	HI Across all Media =	2E-01
Total GI	HI Across all Media =	0E+00
Total Non-Observed (Chromium)	HI Across all Media =	4E-04

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TABLE 9az
RAGS PART D TABLE 9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation Particulates	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Dermal	Exposure Routes Total
Soil	Soil	Off-Facility	Arsenic	6.8E-06	3.1E-08	4.3E-06	1.1E-05	Skin	1.2E-01	NTV	7.0E-02	1.9E-01
		Alleyways	Barium	NC	NC	NC	0.0E+00	Kidney	2.8E-03	9.4E-04	0.0E+00	3.8E-03
			Cadmium	NC	1.3E-08	NC	1.3E-08	Kidney	3.8E-02	NTV	2.9E-02	6.7E-02
			Chromium	NC	2.1E-07	NC	2.1E-07	Lung (Inhalation pathway) None Observed	6.2E-05	7.7E-04	0.0E+00	8.3E-04
			Copper	NS	NS	NS	0.0E+00	GI System	NS	NS	NS	0.0E+00
			Lead	NTV	NTV	NTV	0.0E+00	NA	NTV	NTV	NTV	0.0E+00
			Mercury	NC	NC	NC	0.0E+00	Immunilogical	8.8E-04	7.2E-07	0.0E+00	8.8E-04
			Selenium	NC	NC	NC	0.0E+00	Skin; central nervous system	4.1E-04	NTV	0.0E+00	4.1E-04
			Silver	NC	NC	NC	0.0E+00	central nervous system	1.1E-03	NTV	0.0E+00	1.1E-03
			Zinc	NC	NC	NC	0.0E+00	Circulatory system	2.2E-02	NTV	0.0E+00	2.2E-02
			Chemical Total	6.8E-06	2.6E-07	4.3E-06	1.1E-05		1.9E-01	1.7E-03	9.9E-02	2.9E-01
		Exposure Point Total					1.1E-05					2.9E-01
	Exposure Medium Total						1.1E-05					2.9E-01
Soil Total							1.1E-05					2.9E-01
Receptor Total						Receptor Risk Total	1.1E-05				Receptor HI Total	2.9E-01

Note: Property is currently vacant

Total Skin	Across all Media =	2E-01
Total Kidney	Across all Media =	7E-02
Total Nervous System	Across all Media =	1E-03
Total Lung	Across all Media =	8E-04
Total Immune System	Across all Media =	9E-04
Total Circulatory	Across all Media =	2E-02
Total GI	Across all Media =	0E+00
Total Non-Observed (C	Across all Media =	6E-05

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TABLE 10a
RAGS PART D TABLE 10.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Facility Area Trespasser Exposure - Former American Zinc Plating Site, Fairmont City, IL

Scenario Timeframe: Current
Receptor Population: Trespasser
Receptor Age: Adolescent

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Inhalation Vapors	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Inhalation Vapors	Dermal	Exposure Routes Total
Surface Soil	Soil	Soil	Arsenic	2.90E-05	2.72E-08	--	7.48E-06	3.65E-05	Skin	4.51E-01	NTV	--	1.16E-01	5.68E-01
			Chemical Total	2.9E-05	2.7E-08	0.0E+00	7.5E-06	3.7E-05		4.5E-01	0.0E+00	0.0E+00	1.2E-01	5.7E-01
		Exposure Point Total						3.7E-05						5.7E-01
	Exposure Medium Total							3.7E-05						5.7E-01
Soil Total								3.7E-05						5.7E-01
Surface water	Surface water	Surface Water	Arsenic	--	--	--	1.59E-08	1.59E-08	Skin	--	--	--	2.5E-04	2.47E-04
			Chemical Total	0.0E+00	0.0E+00	0.0E+00	1.6E-08	1.6E-08		0.0E+00	0.0E+00	0.0E+00	2.5E-04	2.5E-04
		Exposure Point Total						1.6E-08						2.5E-04
	Exposure Medium Total							1.6E-08						2.5E-04
Surface water Total								1.6E-08						2.5E-04
Sediment	Sediment	Sediment	Arsenic	3.44E-07	--	--	1.33E-06	1.68E-06	Skin	5.4E-03	--	--	2.1E-02	2.61E-02
			Chemical Total	3.4E-07	0.0E+00	0.0E+00	1.3E-06	1.7E-06		5.4E-03	0.0E+00	0.0E+00	2.1E-02	2.6E-02
		Exposure Point Total						1.7E-06						2.6E-02
	Exposure Medium Total							1.7E-06						2.6E-02
Sediment Total								1.7E-06						2.6E-02
Receptor Total							Receptor Risk Total	3.8E-05					Receptor HI Total	5.9E-01

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TABLE 10b
RAGS PART D TABLE 10.1.RME
RISK SUMMARY
REASONABLE MAXIMUM EXPOSURE
Off-Facility Area Recreational Exposure - Former American Zinc Plating Site, Fairmont City, IL

Scenario Timeframe: Current/Future
Receptor Population: Recreational
Receptor Age: Adolescent

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Inhalation Vapors	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Inhalation Vapors	Dermal	Exposure Routes Total
Surface Soil	Soil	Off-Facility Area soil	Arsenic	1.22E-06	1.14E-09	--	3.14E-07	1.53E-06	Skin	1.90E-02	NTV	--	4.89E-03	2.38E-02
residential lots			Chemical Total	1.2E-06	1.1E-09	0.0E+00	3.1E-07	1.5E-06		1.9E-02	0.0E+00	0.0E+00	4.9E-03	2.4E-02
		Exposure Point Total						1.5E-06						2.4E-02
	Exposure Medium Total							1.5E-06						2.4E-02
Soil Total								1.5E-06						2.4E-02
Surface water	Surface water	Surface Water	Arsenic	--	--	--	1.68E-08	1.68E-08	Skin	--	--	--	2.6E-04	2.61E-04
			Chemical Total	0.0E-00	0.0E-00	0.0E-00	1.7E-08	1.7E-08		0.0E+00	0.0E-00	0.0E+00	2.6E-04	2.6E-04
		Exposure Point Total						1.7E-08						2.6E-04
	Exposure Medium Total							1.7E-08						2.6E-04
Surface water Total								1.7E-08						2.6E-04
Sediment	Sediment	Sediment	Arsenic	2.34E-07	--	--	9.09E-07	1.14E-06	Skin	3.6E-03	--	--	1.4E-02	1.78E-02
			Chemical Total	2.3E-07	0.0E-00	0.0E-00	9.1E-07	1.1E-06		3.6E-03	0.0E-00	0.0E-00	1.4E-02	1.8E-02
		Exposure Point Total						1.1E-06						1.8E-02
	Exposure Medium Total							1.1E-06						1.8E-02
Sediment Total								1.1E-06						1.8E-02
Receptor Total							Receptor Risk Total	2.7E-06					Receptor HI Total	4.2E-02

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TABLE 10c
RAGS PART D TABLE 10.1.RME
RISK SUMMARY
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child) Exposure - Former American Zinc Plating Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Inhalation Vapors	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total
Surface Soil fine fraction	Soil	Soil	Arsenic	5.82E-04	2.05E-07	--	4.89E-05	6.31E-04	Skin	1.51E+01	NTV	--	1.27E+00	1.64E+01
			Barium	NC	NC	--	NC	0.00E+00	Kidney	4.12E-02	2.02E-03	--	0.00E+00	4.32E-02
			Cadmium	NC	1.45E-07	--	NC	1.45E-07	Kidney	7.69E+00	NTV	--	8.61E-01	8.55E+00
			Chromium	NC	1.19E-07	--	NC	1.19E-07	Lung	6.32E-04	1.16E-03	--	0.00E+00	1.79E-03
			Mercury	NC	NC	--	NC	0.00E+00	Immunological	3.88E-01	4.75E-05	--	0.00E+00	3.88E-01
			Selenium	NC	NC	--	NC	0.00E+00	Skin; central nervous system	1.36E-02	NTV	--	0.00E+00	1.36E-02
			Silver	NC	NC	--	NC	0.00E+00	central nervous system	2.23E-01	NTV	--	0.00E+00	2.23E-01
			Zinc	NC	NC	--	NC	0.00E+00	Circulatory system	1.45E+00	NTV	--	0.00E+00	1.45E+00
			Chemical Total	5.8E-04	4.7E-07	0.0E+00	4.9E-05	6.3E-04		2.5E+01	3.2E-03	0.0E+00	2.1E+00	2.7E+01
		Exposure Point Total						6.3E-04						2.7E+01
	Exposure Medium Total							6.3E-04						2.7E+01
Soil Total								6.3E-04						2.7E+01
Surface water	Surface water	Surface Water	Arsenic	--	--	--	1.74E-08	1.74E-08	Skin	--	--	--	4.5E-04	4.50E-04
			Barium	--	--	--	NC	0.00E+00	Kidney	--	--	--	1.7E-04	1.71E-04
			Cadmium	--	--	--	NC	0.00E+00	Kidney	--	--	--	4.4E-02	4.42E-02
			Chromium	--	--	--	NC	0.00E+00	Lung	--	--	--	6.0E-06	5.98E-06
			Mercury	--	--	--	NS	0.00E+00	Immunological	--	--	--	NS	0.00E+00
			Selenium	--	--	--	NC	0.00E+00	Skin; central nervous system	--	--	--	5.6E-06	5.65E-06
			Silver	--	--	--	NC	0.00E+00	central nervous system	--	--	--	7.6E-01	7.64E-01
			Zinc	--	--	--	NC	0.00E+00	Circulatory system	--	--	--	1.6E-08	1.60E-08
			Chemical Total	0.0E+00	0.0E+00	0.0E+00	1.7E-08	1.7E-08		0.0E+00	0.0E+00	0.0E+00	8.1E-01	8.1E-01
		Exposure Point Total						1.7E-08						8.1E-01
	Exposure Medium Total							1.7E-08						8.1E-01
Surface water Total								1.7E-08						8.1E-01
Sediment	Sediment	Sediment	Arsenic	3.86E-07	--	--	4.59E-06	4.97E-06	Skin	1.0E-02	--	--	1.2E-01	1.29E-01
			Barium	NC	--	--	NC	0.00E+00	Kidney	0.0E+00	--	--	8.5E-04	8.47E-04
			Cadmium	NC	--	--	NC	0.00E+00	Kidney	1.8E-02	--	--	1.6E-01	1.77E-01
			Chromium	NC	--	--	NC	0.00E+00	Lung	0.0E+00	--	--	1.4E-05	1.39E-05
			Mercury	NC	--	--	NC	0.00E+00	Immunological	0.0E+00	--	--	7.7E-03	7.72E-03
			Selenium	NC	--	--	NC	0.00E+00	Skin; central nervous system	0.0E+00	--	--	4.6E-04	4.62E-04
			Silver	NC	--	--	NC	0.00E+00	central nervous system	0.0E+00	--	--	2.9E-03	2.85E-03
			Zinc	NC	--	--	NC	0.00E+00	Circulatory system	0.0E+00	--	--	5.7E-02	5.67E-02
			Chemical Total	3.9E-07	0.0E+00	0.0E+00	4.6E-06	5.0E-06		2.8E-02	0.0E+00	0.0E+00	3.5E-01	3.7E-01
		Exposure Point Total						5.0E-06						3.7E-01
	Exposure Medium Total							5.0E-06						3.7E-01
Sediment Total								5.0E-06						3.7E-01
Receptor Total							Receptor Risk Total	6.4E-04					Receptor HI Total	2.8E+01

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TABLE 10f
RAGS PART D TABLE 10.1.RME
RISK SUMMARY
REASONABLE MAXIMUM EXPOSURE
Facility Area Site Worker Exposure - Former American Zinc Plating Site, Fairmont City, IL

Scenario Timeframe: Current/Future
Receptor Population: Site Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Inhalation Vapors	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Inhalation Vapors	Dermal	Exposure Routes Total
Surface Soil	Soil	Facility Area soil	Arsenic	1.86E-04	1.99E-07	--	3.67E-05	2.23E-04	Skin	1.15E+00	NTV	--	2.29E-01	1.38E+00
			Cadmium	NC	1.41E-07	--	NC	1.41E-07	Kidney	5.88E-01	NTV	--	1.55E-01	7.44E-01
			Silver	NC	NC	--	NC	0.00E+00	central nervous system	1.71E-02	NTV	--	0.00E+00	1.71E-02
			Zinc	NC	NC	--	NC	0.00E+00	Circulatory system	1.11E-01	NTV	--	0.00E+00	1.11E-01
			Chemical Total	1.9E-04	3.4E-07	0.0E+00	3.7E-05	2.2E-04		1.9E+00	0.0E+00	0.0E+00	3.8E-01	2.3E+00
		Exposure Point Total						2.2E-04						2.3E+00
	Exposure Medium Total							2.2E-04						2.3E+00
Soil Total								2.2E-04						2.3E+00
Surface water	Surface water	Surface Water	Arsenic	--	--	--	7.61E-08	7.61E-08	Skin	--	--	--	4.7E-04	4.74E-04
			Cadmium	--	--	--	NC	0.00E+00	Kidney	--	--	--	4.6E-02	4.65E-02
			Silver	--	--	--	NC	0.00E+00	central nervous system	--	--	--	8.0E-01	8.04E-01
			Zinc	--	--	--	NC	0.00E+00	Circulatory system	--	--	--	1.7E-08	1.68E-08
			Chemical Total	0.0E+00	0.0E+00	0.0E+00	7.6E-08	7.6E-08		0.0E+00	0.0E+00	0.0E+00	8.5E-01	8.5E-01
		Exposure Point Total						7.6E-08						8.5E-01
	Exposure Medium Total							7.6E-08						8.5E-01
Surface water Total								7.6E-08						8.5E-01
Sediment	Sediment	Sediment	Arsenic	1.69E-06	--	--	8.54E-06	1.02E-05	Skin	1.1E-02	--	--	5.3E-02	6.36E-02
			Cadmium	NC	--	--	NC	0.00E+00	Kidney	1.9E-02	--	--	7.1E-02	9.00E-02
			Silver	NC	--	--	NC	0.00E+00	central nervous system	0.0E+00	--	--	1.3E-03	1.27E-03
			Zinc	NC	--	--	NC	0.00E+00	Circulatory system	0.0E+00	--	--	2.5E-02	2.53E-02
			Chemical Total	1.7E-06	0.0E+00	0.0E+00	8.5E-06	1.0E-05		2.9E-02	0.0E+00	0.0E+00	1.5E-01	1.8E-01
		Exposure Point Total						1.0E-05						1.8E-01
	Exposure Medium Total							1.0E-05						1.8E-01
Sediment Total								1.0E-05						1.8E-01
Receptor Total							Receptor Risk Total	2.3E-04					Receptor HI Total	3.3E-00

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TABLE 10g
RAGS PART D TABLE 10.1.RME
RISK SUMMARY
REASONABLE MAXIMUM EXPOSURE
Facility Area Utility Worker Exposure - Former American Zinc Plating Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Utility Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Inhalation Vapors	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Inhalation Vapors	Dermal	Exposure Routes Total
Soil Total	Surface/Subsurface Soil	Facility Area soil	Arsenic	8.39E-06	1.65E-07	--	9.06E-08	8.65E-06	Skin	1.31E+00	NTV	--	1.41E-02	1.32E+00
			Cadmium	NC	2.84E-07	--	NC	2.84E-07	Kidney	1.61E+00	NTV	--	2.32E-02	1.64E+00
			Mercury	NC	NC	--	NC	0.00E+00	Immunilogical	7.76E-01	5.31E-03	--	0.00E+00	7.81E-01
			Silver	NC	NC	--	NC	0.00E+00	central nervous system	6.91E-02	NTV	--	0.00E+00	6.91E-02
			Zinc	NC	NC	--	NC	0.00E+00	*Circulatory system*	4.87E-01	NTV	--	0.00E+00	4.87E-01
			Chemical Total	8.4E-06	4.5E-07	0.0E+00	9.1E-08	8.9E-06		4.3E+00	5.3E-03	0.0E+00	3.7E-02	4.3E+00
		Exposure Point Total						8.9E-06						4.3E+00
	Exposure Medium Total							8.9E-06						4.3E+00
Soil Total								8.9E-06						4.3E+00
Surface water	Surface water	Surface Water	Arsenic	--	--	--	1.83E-09	1.83E-09	Skin	--	--	--	2.8E-04	2.84E-04
			Cadmium	--	--	--	NC	0.00E+00	Kidney	--	--	--	2.8E-02	2.79E-02
			Mercury	--	--	--	NS	0.00E+00	Immunilogical	--	--	--	NS	0.00E+00
			Silver	--	--	--	NC	0.00E+00	central nervous system	--	--	--	4.8E-01	4.82E-01
			Zinc	--	--	--	NC	0.00E+00	Circulatory system	--	--	--	1.0E-08	1.01E-08
			Chemical Total	0.0E+00	0.0E+00	0.0E+00	1.8E-09	1.8E-09		0.0E+00	0.0E+00	0.0E+00	5.1E-01	5.1E-01
		Exposure Point Total						1.8E-09						5.1E-01
	Exposure Medium Total							1.8E-09						5.1E-01
Surface water Total								1.8E-09						5.1E-01
Sediment	Sediment	Sediment	Arsenic	6.08E-08	--	--	6.76E-07	7.37E-07	Skin	9.5E-03	--	--	1.1E-01	1.15E-01
			Cadmium	NC	--	--	NC	0.00E+00	Kidney	1.7E-02	--	--	1.4E-01	1.58E-01
			Mercury	NC	--	--	NC	0.00E+00	Immunilogical	0.0E+00	--	--	6.8E-03	6.82E-03
			Silver	NC	--	--	NC	0.00E+00	central nervous system	0.0E+00	--	--	2.5E-03	2.52E-03
			Zinc	NC	--	--	NC	0.00E+00	Circulatory system	0.0E+00	--	--	5.0E-02	5.01E-02
			Chemical Total	6.1E-08	0.0E+00	0.0E+00	6.8E-07	7.4E-07		2.6E-02	0.0E+00	0.0E+00	3.1E-01	3.3E-01
		Exposure Point Total						7.4E-07						3.3E-01
	Exposure Medium Total							7.4E-07						3.3E-01
Sediment Total								7.4E-07						3.3E-01
Receptor Total							Receptor Risk Total	9.7E-06					Receptor HI Total	5.1E+00

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TABLE 10h
RAGS PART D TABLE 10.1.RME
RISK SUMMARY
REASONABLE MAXIMUM EXPOSURE
Off-Facility Area Utility Worker Exposure - Former American Zinc Plating Site, Fairmont City, IL

Scenario Timeframe: Current/Future
Receptor Population: Utility Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Inhalation Vapors	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Inhalation Vapors	Dermal	Exposure Routes Total
Soil Total	Surface/Subsurface soil	Off-Facility Area soil	Arsenic	1.16E-06	1.09E-09	--	3.00E-07	1.46E-06	Skin	1.81E-02	NTV	--	4.67E-03	2.28E-02
residential lot			Chemical Total	1.2E-06	1.1E-09	0.0E+00	3.0E-07	1.5E-06		1.8E-02	0.0E+00	0.0E+00	4.7E-03	2.3E-02
		Exposure Point Total						1.5E-06						2.3E-02
	Exposure Medium Total							1.5E-06						2.3E-02
Soil Total								1.5E-06						2.3E-02
Surface water	Surface water	Surface Water	Arsenic	--	--	--	1.68E-08	1.68E-08	Skin	--	--	--	2.6E-04	2.61E-04
			Chemical Total	0.0E+00	0.0E+00	0.0E+00	1.7E-08	1.7E-08		0.0E+00	0.0E+00	0.0E+00	2.6E-04	2.6E-04
		Exposure Point Total						1.7E-08						2.6E-04
	Exposure Medium Total							1.7E-08						2.6E-04
Surface water Total								1.7E-08						2.6E-04
Sediment	Sediment	Sediment	Arsenic	2.34E-07	--	--	9.09E-07	1.14E-06	Skin	3.6E-03	--	--	1.4E-02	1.78E-02
			Chemical Total	2.3E-07	0.0E+00	0.0E+00	9.1E-07	1.1E-06		3.6E-03	0.0E+00	0.0E+00	1.4E-02	1.8E-02
		Exposure Point Total						1.1E-06						1.8E-02
	Exposure Medium Total							1.1E-06						1.8E-02
Sediment Total								1.1E-06						1.8E-02
Receptor Total							Receptor Risk Total	2.6E-06					Receptor HI Total	4.1E-02

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TABLE 10I
RAGS PART D TABLE 10.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Facility Area Trespasser Exposure - Former American Zinc Plating Site, Fairmont City, IL

Scenario Timeframe: Current
Receptor Population: Trespasser
Receptor Age: Adolescent

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Inhalation Vapors	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Inhalation Vapors	Dermal	Exposure Routes Total
Surface Soil- Slag only	Soil-slag only	Facility Area soil	Arsenic	2.90E-05	2.72E-08	--	7.49E-06	3.66E-05	Skin	4.52E-01	NTV	--	1.17E-01	5.68E-01
			Chemical Total	2.9E-05	2.7E-08	0.0E+00	7.5E-06	3.7E-05		4.5E-01	0.0E+00	0.0E+00	1.2E-01	5.7E-01
		Exposure Point Total						3.7E-05						5.7E-01
	Exposure Medium Total							3.7E-05						5.7E-01
Soil Total								3.7E-05						5.7E-01
Surface water	Surface water	Surface Water	Arsenic	--	--	--	1.59E-08	1.59E-08	Skin	--	--	--	2.5E-04	2.47E-04
			Chemical Total	0.0E+00	0.0E+00	0.0E+00	1.6E-08	1.6E-08		0.0E+00	0.0E+00	0.0E+00	2.5E-04	2.5E-04
		Exposure Point Total						1.6E-08						2.5E-04
	Exposure Medium Total							1.6E-08						2.5E-04
Surface water Total								1.6E-08						2.5E-04
Sediment	Sediment	Sediment	Arsenic	3.44E-07	--	--	1.33E-06	1.68E-06	Skin	5.4E-03	--	--	2.1E-02	2.61E-02
			Chemical Total	3.4E-07	0.0E+00	0.0E+00	1.3E-06	1.7E-06		5.4E-03	0.0E+00	0.0E+00	2.1E-02	2.6E-02
		Exposure Point Total						1.7E-06						2.6E-02
	Exposure Medium Total							1.7E-06						2.6E-02
Sediment Total								1.7E-06						2.6E-02
Receptor Total							Receptor Risk Total	3.8E-05					Receptor HI Total	5.9E-01

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TABLE 10m
RAGS PART D TABLE 10.1.RME
RISK SUMMARY
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child) Exposure - Former American Zinc Plating Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Inhalation Vapor	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Inhalation Vapor	Dermal	Exposure Routes Total
Surface Soil- Slag only	Soil	Facility Area	Arsenic	5 83E-04	2.05E-07	--	4.90E-05	6.32E-04	Skin	1.51E+01	NTV	--	1 27E+00	1.64E+01
			Barium	NC	NC	--	NC	0.00E+00	Kidney	4.51E-02	2.21E-03	--	0.00E+00	4.73E-02
			Cadmium	NC	1 68E-07	--	NC	1.68E-07	Kidney	8.88E+00	NTV	--	9.95E-01	9.88E+00
			Chromium	NC	1.32E-07	--	NC	1.32E-07	Lung	6 97E-04	1.28E-03	--	0 00E+00	1.98E-03
			Copper	NC	NC	--	NC	0 00E+00	GI System	1.28E+00	NTV	--	0.00E+00	1.28E+00
			Mercury	NC	NC	--	NC	0.00E+00	Immunilogical	4 26E-01	5 21E-05	--	0.00E+00	4.26E-01
			Selenium	NC	NC	--	NC	0 00E+00	Skin; central nervous system	1.52E-02	NTV	--	0.00E+00	1.52E-02
			Silver	NC	NC	--	NC	0.00E+00	central nervous system	2 51E-01	NTV	--	0.00E+00	2.51E-01
			Zinc	NC	NC	--	NC	0.00E+00	Circulatory system	1.63E+00	NTV	--	0.00E+00	1.63E+00
			Chemical Total	5.8E-04	5.0E-07	0.0E+00	4.9E-05	6.3E-04		2 8E+01	3.5E-03	0.0E+00	2.3E+00	3 0E+01
		Exposure Point Total						6 3E-04						3.0E+01
	Exposure Medium Total							6.3E-04						3.0E+01
Soil Total								6 3E-04						3.0E+01
Surface water	Surface water	Surface Water	Arsenic	--	--	--	1 74E-08	1.74E-08	Skin	--	--	--	4.5E-04	4.50E-04
			Barium	--	--	--	NC	0.00E+00	Kidney	--	--	--	1.7E-04	1.71E-04
			Cadmium	--	--	--	NC	0.00E+00	Kidney	--	--	--	4 4E-02	4 42E-02
			Chromium	--	--	--	NC	0.00E+00	Lung	--	--	--	6.0E-06	5 98E-06
			Mercury	--	--	--	NS	0.00E+00	Immunilogical	--	--	--	NS	0.00E+00
			Selenium	--	--	--	NC	0.00E+00	Skin; central nervous system	--	--	--	5.6E-06	5.65E-06
			Silver	--	--	--	NC	0.00E+00	central nervous system	--	--	--	7.6E-01	7.64E-01
			Zinc	--	--	--	NC	0 00E+00	Circulatory system	--	--	--	1.6E-08	1.60E-08
			Chemical Total	0.0E+00	0 0E+00	0 0E+00	1.7E-08	1 7E-08		0.0E+00	0.0E+00	0 0E+00	8 1E-01	8.1E-01
		Exposure Point Total						1.7E-08						8.1E-01
	Exposure Medium Total							1.7E-08						8.1E-01
Surface water Total								1.7E-08						8 1E-01
Sediment	Sediment	Sediment	Arsenic	3.86E-07	--	--	4.59E-06	4 97E-06	Skin	1.0E-02	--	--	1.2E-01	1.29E-01
			Barium	NC	--	--	NC	0.00E+00	Kidney	0.0E+00	-	--	8.5E-04	8.47E-04
			Cadmium	NC	--	--	NC	0 00E+00	Kidney	1 8E-02	--	--	1.6E-01	1.77E-01
			Chromium	NC	--	--	NC	0.00E+00	Lung	0.0E+00	--	--	1.4E-05	1 39E-05
			Mercury	NC	--	--	NC	0.00E+00	Immunilogical	0.0E+00	--	--	7.7E-03	7 72E-03
			Selenium	NC	--	--	NC	0 00E+00	Skin, central nervous system	0.0E+00	--	--	4.6E-04	4.62E-04
			Silver	NC	--	--	NC	0.00E+00	central nervous system	0.0E+00	--	--	2 9E-03	2.85E-03
			Zinc	NC	--	--	NC	0.00E+00	Circulatory system	0.0E+00	--	--	5.7E-02	5 67E-02
			Chemical Total	3.9E-07	0 0E+00	0 0E+00	4.6E-06	5.0E-06		2 8E-02	0 0E+00	0 0E+00	3 5E-01	3 7E-01
		Exposure Point Total						5 0E-06						3.7E-01
	Exposure Medium Total							5.0E-06						3.7E-01
Sediment Total								5 0E-06						3.7E-01
Receptor Total							Receptor Risk Total	6 4E-04					Receptor HI Total	3.1E+01

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TABLE 10p
RAGS PART D TABLE 10.1.RME
RISK SUMMARY
REASONABLE MAXIMUM EXPOSURE
Facility Area Site Worker Exposure - Former American Zinc Plating Site, Fairmont City, IL

Scenario Timeframe: Current/Future
Receptor Population: Site Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Inhalation Vapors	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Inhalation Vapors	Dermal	Exposure Routes Total
Surface Soil- Slag only	Soil	Facility Area soil	Arsenic	1.86E-04	1.99E-07	--	3.68E-05	2.23E-04	Skin	1.16E+00	NTV	--	2.29E-01	1.39E+00
			Cadmium	NC	1.63E-07	--	NC	1.63E-07	Kidney	6.80E-01	NTV	--	1.80E-01	8.59E-01
			Silver	NC	NC	--	NC	0.00E+00	central nervous system	1.92E-02	NTV	--	0.00E+00	1.92E-02
			Zinc	NC	NC	--	NC	0.00E+00	Circulatory system	1.25E-01	NTV	--	0.00E+00	1.25E-01
			Chemical Total	1.9E-04	3.6E-07	0.0E+00	3.7E-05	2.2E-04		2.0E+00	0.0E+00	0.0E+00	4.1E-01	2.4E+00
		Exposure Point Total						2.2E-04						2.4E+00
	Exposure Medium Total							2.2E-04						2.4E+00
Soil Total								2.2E-04						2.4E+00
Surface water	Surface water	Surface Water	Arsenic	--	--	--	7.61E-08	7.61E-08	Skin	--	--	--	4.7E-04	4.74E-04
			Cadmium	--	--	--	NC	0.00E+00	Kidney	--	--	--	4.6E-02	4.65E-02
			Silver	--	--	--	NC	0.00E+00	central nervous system	--	--	--	8.0E-01	8.04E-01
			Zinc	--	--	--	NC	0.00E+00	Circulatory system	--	--	--	1.7E-08	1.68E-08
			Chemical Total	0.0E+00	0.0E+00	0.0E+00	7.6E-08	7.6E-08		0.0E+00	0.0E+00	0.0E+00	8.5E-01	8.5E-01
		Exposure Point Total						7.6E-08						8.5E-01
	Exposure Medium Total							7.6E-08						8.5E-01
Surface water Total								7.6E-08						8.5E-01
Sediment	Sediment	Sediment	Arsenic	1.69E-06	--	--	8.54E-06	1.02E-05	Skin	1.1E-02	--	--	5.3E-02	6.36E-02
			Cadmium	NC	--	--	NC	0.00E+00	Kidney	1.9E-02	--	--	7.1E-02	9.00E-02
			Silver	NC	--	--	NC	0.00E+00	central nervous system	0.0E+00	--	--	1.3E-03	1.27E-03
			Zinc	NC	--	--	NC	0.00E+00	Circulatory system	0.0E+00	--	--	2.5E-02	2.53E-02
			Chemical Total	1.7E-06	0.0E+00	0.0E+00	8.5E-06	1.0E-05		2.9E-02	0.0E+00	0.0E+00	1.5E-01	1.8E-01
		Exposure Point Total						1.0E-05						1.8E-01
	Exposure Medium Total							1.0E-05						1.8E-01
Sediment Total								1.0E-05						1.8E-01
Receptor Total							Receptor Risk Total	2.3E-04					Receptor HI Total	3.4E+00

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TABLE 10q
RAGS PART D TABLE 10.1.RME
RISK SUMMARY
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child) Exposure - Former American Zinc Plating Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Inhalation Vapor	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Inhalation Vapor	Dermal	Exposure Routes Total
Surface Soil-native soil only	Native soil	Facility Area soil	Arsenic	8.99E-05	3.17E-08	--	7.55E-06	9.75E-05	Skin	2.33E+00	NTV	--	1.96E-01	2.53E+00
			Barium	NC	NC	--	NC	0.00E+00	Kidney	2.27E-02	1.11E-03	--	0.00E+00	2.38E-02
			Cadmium	NC	1.73E-08	--	NC	1.73E-08	Kidney	9.16E-01	NTV	--	1.03E-01	1.02E+00
			Chromium	NC	5.89E-08	--	NC	5.89E-08	Lung	3.12E-04	5.73E-04	--	0.00E+00	8.85E-04
			Mercury	NC	NC	--	NC	0.00E+00	Immunological	6.03E-02	7.38E-06	--	0.00E+00	6.03E-02
			Selenium	NC	NC	--	NC	0.00E+00	Skin; central nervous system	5.16E-03	NTV	--	0.00E+00	5.16E-03
			Silver	NC	NC	--	NC	0.00E+00	central nervous system	1.46E-01	NTV	--	0.00E+00	1.46E-01
			Zinc	NC	NC	--	NC	0.00E+00	Circulatory system	4.22E-01	NTV	--	0.00E+00	4.22E-01
			Chemical Total	9.0E-05	1.1E-07	0.0E+00	7.6E-06	9.8E-05		3.9E+00	1.7E-03	0.0E+00	3.0E-01	4.2E+00
		Exposure Point Total						9.8E-05						4.2E+00
	Exposure Medium Total							9.8E-05						4.2E+00
Soil Total								9.8E-05						4.2E+00
Surface water	Surface water	Surface Water	Arsenic	--	--	--	1.74E-08	1.74E-08	Skin	--	--	--	4.5E-04	4.50E-04
			Barium	--	--	--	NC	0.00E+00	Kidney	--	--	--	1.7E-04	1.71E-04
			Cadmium	--	--	--	NC	0.00E+00	Kidney	--	--	--	4.4E-02	4.42E-02
			Chromium	--	--	--	NC	0.00E+00	Lung	--	--	--	6.0E-06	5.98E-06
			Mercury	--	--	--	NS	0.00E+00	Immunological	--	--	--	NS	0.00E+00
			Selenium	--	--	--	NC	0.00E+00	Skin; central nervous system	--	--	--	5.6E-06	5.65E-06
			Silver	--	--	--	NC	0.00E+00	central nervous system	--	--	--	7.6E-01	7.64E-01
			Zinc	--	--	--	NC	0.00E+00	Circulatory system	--	--	--	1.6E-08	1.60E-08
			Chemical Total	0.0E+00	0.0E+00	0.0E+00	1.7E-08	1.7E-08		0.0E+00	0.0E+00	0.0E+00	8.1E-01	8.1E-01
		Exposure Point Total						1.7E-08						8.1E-01
	Exposure Medium Total							1.7E-08						8.1E-01
Surface water Total								1.7E-08						8.1E-01
Sediment	Sediment	Sediment	Arsenic	3.86E-07	--	--	4.59E-06	4.97E-06	Skin	1.0E-02	--	--	1.2E-01	1.29E-01
			Barium	NC	--	--	NC	0.00E+00	Kidney	0.0E+00	--	--	8.5E-04	8.47E-04
			Cadmium	NC	--	--	NC	0.00E+00	Kidney	1.8E-02	--	--	1.6E-01	1.77E-01
			Chromium	NC	--	--	NC	0.00E+00	Lung	0.0E+00	--	--	1.4E-05	1.39E-05
			Mercury	NC	--	--	NC	0.00E+00	Immunological	0.0E+00	--	--	7.7E-03	7.72E-03
			Selenium	NC	--	--	NC	0.00E+00	Skin; central nervous system	0.0E+00	--	--	4.6E-04	4.62E-04
			Silver	NC	--	--	NC	0.00E+00	central nervous system	0.0E+00	--	--	2.9E-03	2.85E-03
			Zinc	NC	--	--	NC	0.00E+00	Circulatory system	0.0E+00	--	--	5.7E-02	5.67E-02
			Chemical Total	3.9E-07	0.0E+00	0.0E+00	4.6E-06	5.0E-06		2.8E-02	0.0E+00	0.0E+00	3.5E-01	3.7E-01
		Exposure Point Total						5.0E-06						3.7E-01
	Exposure Medium Total							5.0E-06						3.7E-01
Sediment Total								5.0E-06						3.7E-01
Receptor Total							Receptor Risk Total	1.0E-04					Receptor HI Total	5.4E+00

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TABLE 10t
RAGS PART D TABLE 10.1.RME
RISK SUMMARY
REASONABLE MAXIMUM EXPOSURE
Facility Area Site Worker Exposure - Former American Zinc Plating Site, Fairmont City, IL

Scenario Timeframe: Current/Future
Receptor Population: Site Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Inhalation Vapors	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Inhalation Vapors	Dermal	Exposure Routes Total
Native Surface Soil	Soil- Native	Facility area native soil (fine fraction)	Arsenic	2.87E-05	3.07E-08	--	5.68E-06	3.44E-05	Skin	1.78E-01	NTV	--	3.53E-02	2.14E-01
			Cadmium	NC	1.68E-08	--	NC	1.68E-08	Kidney	7.01E-02	NTV	--	1.85E-02	8.86E-02
			Silver	NC	NC	--	NC	0.00E+00	central nervous system	1.12E-02	NTV	--	0.00E+00	1.12E-02
			Zinc	NC	NC	--	NC	0.00E+00	Circulatory system	3.23E-02	NTV	--	0.00E+00	3.23E-02
			Chemical Total	2.9E-05	4.7E-08	0.0E-00	5.7E-06	3.4E-05		2.9E-01	0.0E-00	0.0E-00	5.4E-02	3.5E-01
		Exposure Point Total						3.4E-05						3.5E-01
	Exposure Medium Total							3.4E-05						3.5E-01
Soil Total								3.4E-05						3.5E-01
Surface water	Surface water	Surface Water	Arsenic	--	--	--	7.61E-08	7.61E-08	Skin	--	--	--	4.7E-04	4.74E-04
			Cadmium	--	--	--	NC	0.00E+00	Kidney	--	--	--	4.6E-02	4.65E-02
			Silver	--	--	--	NC	0.00E+00	central nervous system	--	--	--	8.0E-01	8.04E-01
			Zinc	--	--	--	NC	0.00E+00	Circulatory system	--	--	--	1.7E-08	1.68E-08
			Chemical Total	0.0E-00	0.0E-00	0.0E-00	7.6E-08	7.6E-08		0.0E-00	0.0E-00	0.0E-00	8.5E-01	8.5E-01
		Exposure Point Total						7.6E-08						8.5E-01
	Exposure Medium Total							7.6E-08						8.5E-01
Surface water Total								7.6E-08						8.5E-01
Sediment	Sediment	Sediment	Arsenic	1.69E-06	--	--	8.54E-06	1.02E-05	Skin	1.1E-02	--	--	5.3E-02	6.36E-02
			Cadmium	NC	--	--	NC	0.00E+00	Kidney	1.9E-02	--	--	7.1E-02	9.00E-02
			Silver	NC	--	--	NC	0.00E+00	central nervous system	0.0E-00	--	--	1.3E-03	1.27E-03
			Zinc	NC	--	--	NC	0.00E+00	Circulatory system	0.0E-00	--	--	2.5E-02	2.53E-02
			Chemical Total	1.7E-06	0.0E-00	0.0E-00	8.5E-06	1.0E-05		2.9E-02	0.0E+00	0.0E-00	1.5E-01	1.8E-01
		Exposure Point Total						1.0E-05						1.8E-01
	Exposure Medium Total							1.0E-05						1.8E-01
Sediment Total								1.0E-05						1.8E-01
Receptor Total							Receptor Risk Total	4.5E-05					Receptor HI Total	1.4E+00

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TABLE 10u
RAGS PART D TABLE 10.1.RME
RISK SUMMARY
REASONABLE MAXIMUM EXPOSURE
Facility Area Trespasser Exposure - Former American Zinc Plating Site, Fairmont City, IL

Scenario Timeframe: Current
Receptor Population: Trespasser
Receptor Age: Adolescent

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Inhalation Vapors	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Inhalation Vapors	Dermal	Exposure Routes Total
Native Surface Soil-fine fraction	Soil-native soil only	Facility area soil	Arsenic	4.48E-06	4.20E-09	--	1.16E-06	5.64E-06	Skin	6.97E-02	NTV	--	1.80E-02	8.77E-02
			Chemical Total	4.5E-06	4.2E-09	0.0E+00	1.2E-06	5.6E-06		7.0E-02	0.0E+00	0.0E+00	1.8E-02	8.8E-02
		Exposure Point Total						5.6E-06						8.8E-02
	Exposure Medium Total							5.6E-06						8.8E-02
Soil Total								5.6E-06						8.8E-02
Surface water	Surface water	Surface Water	Arsenic	--	--	--	1.59E-08	1.59E-08	Skin	--	--	--	2.5E-04	2.47E-04
			Chemical Total	*0.0E+00*	*0.0E+00*	*0.0E+00*	*1.6E-08*	1.6E-08		*0.0E+00*	*0.0E+00*	*0.0E+00*	*2.5E-04*	2.5E-04
		Exposure Point Total						1.6E-08						2.5E-04
	Exposure Medium Total							1.6E-08						2.5E-04
Surface water Total								1.6E-08						2.5E-04
Sediment	Sediment	Sediment	Arsenic	3.44E-07	--	--	1.33E-06	1.68E-06	Skin	5.4E-03	--	--	2.1E-02	2.61E-02
			Chemical Total	3.4E-07	0.0E+00	0.0E+00	1.3E-06	1.7E-06		5.4E-03	0.0E+00	0.0E+00	2.1E-02	2.6E-02
		Exposure Point Total						1.7E-06						2.6E-02
	Exposure Medium Total							1.7E-06						2.6E-02
Sediment Total								1.7E-06						2.6E-02
Receptor Total							*Receptor Risk Total*	7.3E-06					*Receptor HI Total*	1.1E-01

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TABLE 10v
RAGS PART D TABLE 10.1.RME
RISK SUMMARY
REASONABLE MAXIMUM EXPOSURE
Off-Facility Area Utility Worker Exposure - Former American Zinc Plating Site, Fairmont City, IL

Scenario Timeframe: Current/Future
Receptor Population: Utility Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Inhalation Vapors	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Inhalation Vapors	Dermal	Exposure Routes Total
oil Total- alleyw	Surface/Subsurface soil	Off-Facility area soil- alleayway	Arsenic	1.85E-06	1.74E-09	--	4.78E-07	2.33E-06	Skin	2.88E-02	NTV	--	7.44E-03	3.63E-02
			Chemical Total	1.9E-06	1.7E-09	0.0E+00	4.8E-07	2.3E-06		2.9E-02	0.0E+00	0.0E+00	7.4E-03	3.6E-02
		Exposure Point Total						2.3E-06						3.6E-02
	Exposure Medium Total							2.3E-06						3.6E-02
Soil Total								2.3E-06						3.6E-02
Surface water	Surface water	Surface Water	Arsenic	--	--	--	1.68E-08	1.68E-08	Skin	--	--	--	2.6E-04	2.61E-04
			Chemical Total	0.0E+00	0.0E+00	0.0E+00	1.7E-08	1.7E-08		0.0E+00	0.0E+00	0.0E+00	2.6E-04	2.6E-04
		Exposure Point Total						1.7E-08						2.6E-04
	Exposure Medium Total							1.7E-08						2.6E-04
Surface water Total								1.7E-08						2.6E-04
Sediment	Sediment	Sediment	Arsenic	2.34E-07	--	--	9.09E-07	1.14E-06	Skin	3.6E-03	--	--	1.4E-02	1.78E-02
			Chemical Total	2.3E-07	0.0E+00	0.0E+00	9.1E-07	1.1E-06		3.6E-03	0.0E+00	0.0E+00	1.4E-02	1.8E-02
		Exposure Point Total						1.1E-06						1.8E-02
	Exposure Medium Total							1.1E-06						1.8E-02
Sediment Total								1.1E-06						1.8E-02
Receptor Total							Receptor Risk Total	3.5E-06					Receptor HI Total	5.4E-02

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TABLE 10w
RAGS PART D TABLE 10.1.RME
RISK SUMMARY
REASONABLE MAXIMUM EXPOSURE
Off-Facility Area Recreational Exposure - Former American Zinc Plating Site, Fairmont City, IL

Scenario Timeframe: Current/Future
Receptor Population: Recreational
Receptor Age: Adolescent

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Inhalation Vapors	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Inhalation Vapors	Dermal	Exposure Routes Total
Surface Soil	Soil	Off-Facility area soil	Arsenic	1.60E-06	1.50E-09	--	4.13E-07	2.01E-06	Skin	2.49E-02	NTV	--	6.42E-03	3.13E-02
alleyways			Chemical Total	1.6E-06	1.5E-09	0.0E+00	4.1E-07	2.0E-06		2.5E-02	0.0E+00	0.0E+00	6.4E-03	3.1E-02
		Exposure Point Total						2.0E-06						3.1E-02
	Exposure Medium Total							2.0E-06						3.1E-02
Soil Total								2.0E-06						3.1E-02
Surface water	Surface water	Surface Water	Arsenic	--	--	--	1.68E-08	1.68E-08	Skin	--	--	--	2.6E-04	2.61E-04
			Chemical Total	0.0E+00	0.0E+00	0.0E+00	1.7E-08	1.7E-08		0.0E+00	0.0E+00	0.0E+00	2.6E-04	2.6E-04
		Exposure Point Total						1.7E-08						2.6E-04
	Exposure Medium Total							1.7E-08						2.6E-04
Surface water Total								1.7E-08						2.6E-04
Sediment	Sediment	Sediment	Arsenic	2.34E-07	--	--	9.09E-07	1.14E-06	Skin	3.6E-03	--	--	1.4E-02	1.78E-02
			Chemical Total	2.3E-07	0.0E+00	0.0E+00	9.1E-07	1.1E-06		3.6E-03	0.0E+00	0.0E+00	1.4E-02	1.8E-02
		Exposure Point Total						1.1E-06						1.8E-02
	Exposure Medium Total							1.1E-06						1.8E-02
Sediment Total								1.1E-06						1.8E-02
Receptor Total							Receptor Risk Total	3.2E-06					Receptor HI Total	4.9E-02

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TABLE 10x
RAGS PART D TABLE 10.1.RME
RISK SUMMARY
REASONABLE MAXIMUM EXPOSURE
Facility Area Utility Worker Exposure - Former American Zinc Plating Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Utility Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Inhalation Vapors	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Inhalation Vapors	Dermal	Exposure Routes Total
oil Total - Slag on	Surface Subsurface Soil - Slag	Facility area soil-Slag	Arsenic	1.44E-05	2.84E-07	--	1.56E-07	1.49E-05	Skin	2.25E+00	NTV	--	2.42E-02	2.27E+00
			Cadmium	NC	1.65E-07	--	NC	1.65E-07	Kidney	9.38E-01	NTV	--	1.35E-02	9.52E-01
			Mercury	NC	NC	--	NC	0.00E+00	Immunilogical	1.04E+00	7.13E-03	--	0.00E+00	1.05E+00
			Silver	NC	NC	--	NC	0.00E+00	central nervous system	1.68E-01	NTV	--	0.00E+00	1.68E-01
			Zinc	NC	NC	--	NC	0.00E+00	Circulatory system	4.97E-01	NTV	--	0.00E+00	4.97E-01
			Chemical Total	1.4E-05	4.5E-07	0.0E+00	1.6E-07	1.5E-05		4.9E+00	7.1E-03	0.0E+00	3.8E-02	4.9E+00
		Exposure Point Total						1.5E-05						4.9E+00
	Exposure Medium Total							1.5E-05						4.9E+00
Soil Total								1.5E-05						4.9E+00
Surface water	Surface water	Surface Water	Arsenic	--	--	--	1.83E-09	1.83E-09	Skin	--	--	--	2.8E-04	2.84E-04
			Cadmium	--	--	--	NC	0.00E+00	Kidney	--	--	--	2.8E-02	2.79E-02
			Mercury	--	--	--	NS	0.00E+00	Immunilogical	--	--	--	NS	0.00E+00
			Silver	--	--	--	NC	0.00E+00	central nervous system	--	--	--	4.8E-01	4.82E-01
			Zinc	--	--	--	NC	0.00E+00	Circulatory system	--	--	--	1.0E-08	1.01E-08
			Chemical Total	0.0E+00	0.0E+00	0.0E+00	1.8E-09	1.8E-09		0.0E+00	0.0E+00	0.0E+00	5.1E-01	5.1E-01
		Exposure Point Total						1.8E-09						5.1E-01
	Exposure Medium Total							1.8E-09						5.1E-01
Surface water Total								1.8E-09						5.1E-01
Sediment	Sediment	Sediment	Arsenic	6.08E-08	--	--	6.76E-07	7.37E-07	Skin	9.5E-03	--	--	1.1E-01	1.15E-01
			Cadmium	NC	--	--	NC	0.00E+00	Kidney	1.7E-02	--	--	1.4E-01	1.58E-01
			Mercury	NC	--	--	NC	0.00E+00	Immunilogical	0.0E+00	--	--	6.8E-03	6.82E-03
			Silver	NC	--	--	NC	0.00E+00	central nervous system	0.0E+00	--	--	2.5E-03	2.52E-03
			Zinc	NC	--	--	NC	0.00E+00	Circulatory system	0.0E+00	--	--	5.0E-02	5.01E-02
			Chemical Total	6.1E-08	0.0E+00	0.0E+00	6.8E-07	7.4E-07		2.6E-02	0.0E+00	0.0E+00	3.1E-01	3.3E-01
		Exposure Point Total						7.4E-07						3.3E-01
	Exposure Medium Total							7.4E-07						3.3E-01
Sediment Total								7.4E-07						3.3E-01
Receptor Total							Receptor Risk Total	1.6E-05					Receptor HI Total	5.8E+00

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TABLE 10y
RAGS PART D TABLE 10.1.RME
RISK SUMMARY
REASONABLE MAXIMUM EXPOSURE
Facility Area Utility Worker Exposure - Former American Zinc Plating Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Utility Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Inhalation Vapors	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Inhalation Vapors	Dermal	Exposure Routes Total
Total - Native soil	Surface Subsurface Soil - Native soil	Facility area soil-Native Soil	Arsenic	5.85E-07	1.15E-08	--	6.32E-09	6.03E-07	Skin	9.11E-02	NTV	--	9.83E-04	9.20E-02
			Cadmium	NC	3.13E-07	--	NC	3.13E-07	Kidney	1.78E+00	NTV	--	2.56E-02	1.80E+00
			Mercury	NC	NC	--	NC	0.00E+00	Immunilogical	1.92E-03	1.31E-05	--	0.00E+00	1.93E-03
			Silver	NC	NC	--	NC	0.00E+00	central nervous system	4.57E-04	NTV	--	0.00E+00	4.57E-04
			Zinc	NC	NC	--	NC	0.00E+00	Circulatory system	4.83E-02	NTV	--	0.00E+00	4.83E-02
			Chemical Total	5.9E-07	3.2E-07	0.0E+00	6.3E-09	9.2E-07		1.9E+00	1.3E-05	0.0E+00	2.7E-02	1.9E+00
		Exposure Point Total						9.2E-07						1.9E+00
	Exposure Medium Total							9.2E-07						1.9E+00
Soil Total								9.2E-07						1.9E+00
Surface water	Surface water	Surface Water	Arsenic	--	--	--	1.83E-09	1.83E-09	Skin	--	--	--	2.8E-04	2.84E-04
			Cadmium	--	--	--	NC	0.00E+00	Kidney	--	--	--	2.8E-02	2.79E-02
			Mercury	--	--	--	NS	0.00E+00	Immunilogical	--	--	--	NS	0.00E+00
			Silver	--	--	--	NC	0.00E+00	central nervous system	--	--	--	4.8E-01	4.82E-01
			Zinc	--	--	--	NC	0.00E+00	Circulatory system	--	--	--	1.0E-08	1.01E-08
			Chemical Total	0.0E+00	0.0E+00	0.0E+00	1.8E-09	1.8E-09		0.0E+00	0.0E+00	0.0E+00	5.1E-01	5.1E-01
		Exposure Point Total						1.8E-09						5.1E-01
	Exposure Medium Total							1.8E-09						5.1E-01
Surface water Total								1.8E-09						5.1E-01
Sediment	Sediment	Sediment	Arsenic	6.08E-08	--	--	6.76E-07	7.37E-07	Skin	9.5E-03	--	--	1.1E-01	1.15E-01
			Cadmium	NC	--	--	NC	0.00E+00	Kidney	1.7E-02	--	--	1.4E-01	1.58E-01
			Mercury	NC	--	--	NC	0.00E+00	Immunilogical	0.0E+00	--	--	6.8E-03	6.82E-03
			Silver	NC	--	--	NC	0.00E+00	central nervous system	0.0E+00	--	--	2.5E-03	2.52E-03
			Zinc	NC	--	--	NC	0.00E+00	Circulatory system	0.0E+00	--	--	5.0E-02	5.01E-02
			Chemical Total	6.1E-08	0.0E+00	0.0E+00	6.8E-07	7.4E-07		2.6E-02	0.0E+00	0.0E+00	3.1E-01	3.3E-01
		Exposure Point Total						7.4E-07						3.3E-01
	Exposure Medium Total							7.4E-07						3.3E-01
Sediment Total								7.4E-07						3.3E-01
Receptor Total							Receptor Risk Total	1.7E-06					Receptor HI Total	2.8E+00

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TABLE 10z
RAGS PART D TABLE 10.1.RME
RISK SUMMARY
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Current
Receptor Population: Resident
Receptor Age: *Child (noncancer) Child/Adult (cancer)*

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total
Soil	Soil	Off-Facility 5517 Delmar	Arsenic	3.99E-05	2.67E-08	2.10E-06	3.78E-06	4.58E-05	Skin	7.25E-01	NTV	5.92E-01	6.09E-02	1.38E+00
			Barium	NC	NC	NC	NC	0.00E+00	Kidney	6.01E-02	2.94E-03	1.08E-02	0.00E+00	7.38E-02
			Cadmium	NC	3.60E-08	NC	NC	3.60E-08	Kidney	7.03E-01	NTV	1.26E-01	7.88E-02	9.07E-01
			Chromium	NC	1.14E-07	NC	NC	1.14E-07	Lung (Inhalation pathway) None Observed	2.22E-04	4.07E-04	1.18E-04	0.00E+00	7.47E-04
			Mercury	NC	NC	NC	NC	0.00E+00	Immunological	8.52E-03	1.04E-06	7.61E-03	0.00E+00	1.61E-02
			Selenium	NC	NC	NC	NC	0.00E+00	Skin; central nervous system	2.40E-03	NTV	1.90E-03	0.00E+00	4.31E-03
			Silver	NC	NC	NC	NC	0.00E+00	central nervous system	1.61E-03	NTV	1.37E-03	0.00E+00	2.98E-03
			Zinc	NC	NC	NC	NC	0.00E+00	Circulatory system	2.90E-01	NTV	4.02E-02	0.00E+00	3.30E-01
			Chemical Total	4.0E-05	1.8E-07	2.1E-06	3.8E-06	4.6E-05		1.8E+00	3.3E-03	7.8E-01	1.4E-01	2.7E+00
		Exposure Point Total						4.6E-05						2.7E+00
	Exposure Medium Total							4.6E-05						2.7E+00
Soil Total								4.6E-05						2.7E+00
Surface water	Surface water	Off-Facility Surface Water	Arsenic	--	--	--	2.06E-08	2.06E-08	Skin	--	--	--	1.2E-04	1.23E-04
			Barium	--	--	--	NC	0.00E+00	Kidney	--	--	--	4.7E-05	4.69E-05
			Cadmium	--	--	--	NC	0.00E+00	Kidney	--	--	--	1.2E-02	1.21E-02
			Chromium	--	--	--	NC	0.00E+00	None Observed	--	--	--	1.6E-06	1.64E-06
			Mercury	--	--	--	NS	0.00E+00	Immunological	--	--	--	NS	0.00E+00
			Selenium	--	--	--	NC	0.00E+00	Skin; central nervous system	--	--	--	1.5E-06	1.55E-06
			Silver	--	--	--	NC	0.00E+00	central nervous system	--	--	--	2.1E-01	2.09E-01
			Zinc	--	--	--	NC	0.00E+00	Circulatory system	--	--	--	4.4E-09	4.37E-09
			Chemical Total	*0.0E+00*	*0.0E+00*	*0.0E+00*	*2.1E-08*	2.1E-08		*0.0E+00*	*0.0E+00*	*0.0E+00*	*2.2E-01*	2.2E-01
		Exposure Point Total						2.1E-08						2.2E-01
	Exposure Medium Total							2.1E-08						2.2E-01
Surface water Total								2.1E-08						2.2E-01
Sediment	Sediment	Off-Facility Sediment	Arsenic	2.70E-07	--	--	1.49E-06	1.76E-06	Skin	2.7E-03	--	--	1.0E-02	1.31E-02
			Barium	NC	--	--	NC	0.00E+00	Kidney	0.0E+00	--	--	7.4E-05	7.39E-05
			Cadmium	NC	--	--	NC	0.00E+00	Kidney	4.8E-03	--	--	1.4E-02	1.87E-02
			Chromium	NC	--	--	NC	0.00E+00	None Observed	0.0E+00	--	--	1.2E-06	1.22E-06
			Mercury	NC	--	--	NC	0.00E+00	Immunological	0.0E+00	--	--	6.7E-04	6.73E-04
			Selenium	NC	--	--	NC	0.00E+00	Skin; central nervous system	0.0E+00	--	--	4.0E-05	4.03E-05
			Silver	NC	--	--	NC	0.00E+00	central nervous system	*0.0E+00*	--	--	2.5E-04	2.49E-04
			Zinc	NC	--	--	NC	0.00E+00	Circulatory system	0.0E+00	--	--	4.9E-03	4.95E-03
			Chemical Total	2.7E-07	0.0E+00	0.0E+00	1.5E-06	1.8E-06		7.5E-03	0.0E+00	0.0E+00	3.0E-02	3.8E-02
		Exposure Point Total						1.8E-06						3.8E-02
	Exposure Medium Total							1.8E-06						3.8E-02
Sediment Total								1.8E-06						3.8E-02
Receptor Total							Receptor Risk Total	4.8E-05					Receptor HI Total	3.0E+00

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TABLE 10aa
RAGS PART D TABLE 10.1.RME
RISK SUMMARY
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plating Site, Fairmont City, IL

Scenario Timeframe: Current/Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child Adult (cancer)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	*Carcinogenic Risk*					*Non-Carcinogenic Hazard Quotient*					
				Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total
Soil	Soil	Off-Facility	Arsenic	2.82E-05	1.88E-08	1.80E-06	2.67E-06	3.27E-05	Skin	5.11E-01	NTV	5.07E-01	4.30E-02	1.06E+00
		5427 Kinder	Barium	NC	NC	NC	NC	0.00E+00	Kidney	1.53E-02	7.50E-04	1.52E-02	0.00E+00	3.13E-02
			Cadmium	NC	2.69E-08	NC	NC	2.69E-08	Kidney	5.24E-01	NTV	5.20E-01	5.87E-02	1.10E+00
			Chromium	NC	7.86E-08	NC	NC	7.86E-08	Lung (Inhalation pathway) None Observed	1.53E-04	2.82E-04	1.52E-04	0.00E+00	5.87E-04
			Mercury	NC	NC	NC	NC	0.00E+00	Immunological	5.54E-03	6.78E-07	5.49E-03	0.00E+00	1.10E-02
			Selenium	NC	NC	NC	NC	0.00E+00	Skin, central nervous system	5.11E-03	NTV	5.07E-03	0.00E+00	1.02E-02
			Silver	NC	NC	NC	NC	0.00E+00	central nervous system	2.10E-03	NTV	2.08E-03	0.00E+00	4.18E-03
			Zinc	NC	NC	NC	NC	0.00E+00	Circulatory system	7.67E-02	NTV	7.61E-02	0.00E+00	1.53E-01
			Chemical Total	2.8E-05	1.2E-07	1.8E-06	2.7E-06	3.3E-05		1.1E+00	1.0E-03	1.1E+00	1.0E-01	2.4E+00
		Exposure Point Total						3.3E-05						2.4E+00
	Exposure Medium Total							3.3E-05						2.4E+00
Soil Total								3.3E-05						2.4E+00
Surface water	Surface water	Off-Facility	Arsenic	--	--	--	2.06E-08	2.06E-08	Skin	--	--	--	1.2E-04	1.23E-04
		Surface Water	Barium	--	--	--	NC	0.00E+00	Kidney	--	--	--	4.7E-05	4.69E-05
			Cadmium	--	--	--	NC	0.00E+00	Kidney	--	--	--	1.2E-02	1.21E-02
			Chromium	--	--	--	NC	0.00E+00	None Observed	--	--	--	1.6E-06	1.64E-06
			Mercury	--	--	--	NS	0.00E+00	Immunological	--	--	--	NS	0.00E+00
			Selenium	--	--	--	NC	0.00E+00	Skin, central nervous system	--	--	--	1.5E-06	1.55E-06
			Silver	--	--	--	NC	0.00E+00	central nervous system	--	--	--	2.1E-01	2.09E-01
			Zinc	--	--	--	NC	0.00E+00	Circulatory system	--	--	--	4.4E-09	4.37E-09
			Chemical Total	0.0E+00	0.0E+00	0.0E+00	2.1E-08	2.1E-08		0.0E+00	0.0E+00	0.0E+00	2.2E-01	2.2E-01
		Exposure Point Total						2.1E-08						2.2E-01
	Exposure Medium Total							2.1E-08						2.2E-01
Surface water Total								2.1E-08						2.2E-01
Sediment	Sediment	Off-Facility	Arsenic	2.70E-07	--	--	1.49E-06	1.76E-06	Skin	2.7E-03	--	--	1.0E-02	1.31E-02
		Sediment	Barium	NC	--	--	NC	0.00E+00	Kidney	0.0E+00	--	--	7.4E-05	7.39E-05
			Cadmium	NC	--	--	NC	0.00E+00	Kidney	4.8E-03	--	--	1.4E-02	1.87E-02
			Chromium	NC	--	--	NC	0.00E+00	None Observed	0.0E+00	--	--	1.2E-06	1.22E-06
			Mercury	NC	--	--	NC	0.00E+00	Immunological	0.0E+00	--	--	6.7E-04	6.73E-04
			Selenium	NC	--	--	NC	0.00E+00	Skin, central nervous system	0.0E+00	--	--	4.0E-05	4.03E-05
			Silver	NC	--	--	NC	0.00E+00	central nervous system	0.0E+00	--	--	2.5E-04	2.49E-04
			Zinc	NC	--	--	NC	0.00E+00	Circulatory system	0.0E+00	--	--	4.9E-03	4.95E-03
			Chemical Total	2.7E-07	0.0E+00	0.0E+00	1.5E-06	1.8E-06		7.5E-03	0.0E+00	0.0E+00	3.0E-02	3.8E-02
		Exposure Point Total						1.8E-06						3.8E-02
	Exposure Medium Total							1.8E-06						3.8E-02
Sediment Total								1.8E-06						3.8E-02
Receptor Total							Receptor Risk Total	3.5E-05					Receptor HI Total	2.6E+00

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TABLE 10ab
RAGS PART D TABLE 10.1.RME
RISK SUMMARY
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Current/Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child Adult (cancer)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total
Soil	Soil	Off-Facility 5514 Kinder	Arsenic	4.46E-05	2.98E-08	2.84E-06	4.23E-06	5.17E-05	Skin	8.10E-01	NTV	8.03E-01	6.80E-02	1.68E+00
			Barium	NC	NC	NC	NC	0.00E+00	Kidney	2.24E-02	1.09E-03	2.22E-02	0.00E+00	4.57E-02
			Cadmium	NC	5.31E-08	NC	NC	5.31E-08	Kidney	1.04E+00	NTV	1.03E+00	1.16E-01	2.18E+00
			Chromium	NC	1.14E-07	NC	NC	1.14E-07	Lung (Inhalation pathway) None Observed	2.22E-04	4.07E-04	2.20E-04	0.00E+00	8.48E-04
			Mercury	NC	NC	NC	NC	0.00E+00	Immunological	1.75E-02	2.14E-06	1.73E-02	0.00E+00	3.48E-02
			Selenium	NC	NC	NC	NC	0.00E+00	Skin; central nervous system	4.60E-03	NTV	4.56E-03	0.00E+00	9.17E-03
			Silver	NC	NC	NC	NC	0.00E+00	central nervous system	5.63E-03	NTV	5.58E-03	0.00E+00	1.12E-02
			Zinc	NC	NC	NC	NC	0.00E+00	Circulatory system	1.58E-01	NTV	1.56E-01	0.00E+00	3.14E-01
			Chemical Total	4.5E-05	2.0E-07	2.8E-06	4.2E-06	5.2E-05		2.1E+00	1.5E-03	2.0E+00	1.8E-01	4.3E+00
		Exposure Point Total						5.2E-05						4.3E+00
	Exposure Medium Total							5.2E-05						4.3E+00
Soil Total								5.2E-05						4.3E+00
Surface water	Surface water	Off-Facility Surface Water	Arsenic	--	--	--	2.06E-08	2.06E-08	Skin	--	--	--	1.2E-04	1.23E-04
			Barium	--	--	--	NC	0.00E+00	Kidney	--	--	--	4.7E-05	4.69E-05
			Cadmium	--	--	--	NC	0.00E+00	Kidney	--	--	--	1.2E-02	1.21E-02
			Chromium	--	--	--	NC	0.00E+00	None Observed	--	--	--	1.6E-06	1.64E-06
			Mercury	--	--	--	NS	0.00E+00	Immunological	--	--	--	NS	0.00E+00
			Selenium	--	--	--	NC	0.00E+00	Skin; central nervous system	--	--	--	1.5E-06	1.55E-06
			Silver	--	--	--	NC	0.00E+00	central nervous system	--	--	--	2.1E-01	2.09E-01
			Zinc	--	--	--	NC	0.00E+00	Circulatory system	--	--	--	4.4E-09	4.37E-09
			Chemical Total	0.0E+00	0.0E+00	0.0E+00	2.1E-08	2.1E-08		0.0E+00	0.0E+00	0.0E+00	2.2E-01	2.2E-01
		Exposure Point Total						2.1E-08						2.2E-01
	Exposure Medium Total							2.1E-08						2.2E-01
Surface water Total								2.1E-08						2.2E-01
Sediment	Sediment	Off-Facility Sediment	Arsenic	2.70E-07	--	--	1.49E-06	1.76E-06	Skin	2.7E-03	--	--	1.0E-02	1.31E-02
			Barium	NC	--	--	NC	0.00E+00	Kidney	0.0E+00	--	--	7.4E-05	7.39E-05
			Cadmium	NC	--	--	NC	0.00E+00	Kidney	4.8E-03	--	--	1.4E-02	1.87E-02
			Chromium	NC	--	--	NC	0.00E+00	None Observed	0.0E+00	--	--	1.2E-06	1.22E-06
			Mercury	NC	--	--	NC	0.00E+00	Immunological	0.0E+00	--	--	6.7E-04	6.73E-04
			Selenium	NC	--	--	NC	0.00E+00	Skin; central nervous system	0.0E+00	--	--	4.0E-05	4.03E-05
			Silver	NC	--	--	NC	0.00E+00	central nervous system	0.0E+00	--	--	2.5E-04	2.49E-04
			Zinc	NC	--	--	NC	0.00E+00	Circulatory system	0.0E+00	--	--	4.9E-03	4.95E-03
			Chemical Total	2.7E-07	0.0E+00	0.0E+00	1.5E-06	1.8E-06		7.5E-03	0.0E+00	0.0E+00	3.0E-02	3.8E-02
		Exposure Point Total						1.8E-06						3.8E-02
	Exposure Medium Total							1.8E-06						3.8E-02
Sediment Total								1.8E-06						3.8E-02
Receptor Total							Receptor Risk Total	5.4E-05					Receptor HI Total	4.5E+00

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TABLE 10ac
RAGS PART D TABLE 10.1.RME
RISK SUMMARY
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk: Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total	Non-Carcinogenic Hazard Quotient: Primary Target Organ(s)	Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total
Soil	Soil	Off-Facility	Arsenic	3.29E-05	2.20E-08	2.10E-06	3.11E-06	3.81E-05	Skin	5.97E-01	NTV	5.92E-01	5.01E-02	1.2E+00
		5517 Delmar	Barium	NC	NC	NC	NC	*0.00E+00*	Kidney	*1.09E-02*	*5.31E-04*	*1.08E-02*	*0.00E+00*	2.2E-02
			Cadmium	NC	6.49E-09	NC	NC	6.49E-09	Kidney	1.27E-01	NTV	1.26E-01	1.42E-02	2.7E-01
			Chromium	NC	6.12E-08	NC	NC	6.12E-08	Lung (Inhalation pathway) None Observed	1.19E-04	2.19E-04	1.18E-04	0.00E+00	4.6E-04
			Mercury	NC	NC	NC	NC	0.00E+00	Immunological	7.67E-03	9.39E-07	7.61E-03	0.00E+00	1.5E-02
			Selenium	NC	NC	NC	NC	0.00E+00	Skin, central nervous system	1.92E-03	NTV	1.90E-03	0.00E+00	3.8E-03
			Silver	NC	NC	NC	NC	0.00E+00	central nervous system	1.38E-03	NTV	1.37E-03	0.00E+00	2.8E-03
			Zinc	NC	NC	NC	NC	0.00E+00	Circulatory system	4.05E-02	NTV	4.02E-02	0.00E+00	8.1E-02
			Chemical Total	3.3E-05	9.0E-08	2.1E-06	3.1E-06	3.8E-05		7.9E-01	7.5E-04	7.8E-01	6.4E-02	2E+00
		Exposure Point Total						3.8E-05						2E+00
	Exposure Medium Total							3.8E-05						2E+00
Soil Total								3.8E-05						2E+00
Surface water	Surface water	Off-Facility	Arsenic	--	--	--	*2.06E-08*	*2.06E-08*	*Skin*	--	--	--	*1.2E-04*	*1.2E-04*
		Surface Water	Barium	--	--	--	NC	0.00E+00	Kidney	--	--	--	4.7E-05	4.7E-05
			Cadmium	--	--	--	NC	0.00E+00	Kidney	--	--	--	1.2E-02	1.2E-02
			Chromium	--	--	--	NC	0.00E+00	None Observed	--	--	--	1.6E-06	1.6E-06
			Mercury	--	--	--	NS	0.00E+00	Immunological	--	--	--	NS	0.0E+00
			Selenium	--	--	--	NC	0.00E+00	Skin, central nervous system	--	--	--	1.5E-06	1.5E-06
			Silver	--	--	--	NC	0.00E+00	central nervous system	--	--	--	2.1E-01	2.1E-01
			Zinc	--	--	--	NC	0.00E+00	Circulatory system	--	--	--	4.4E-09	4.4E-09
			Chemical Total	0.0E+00	0.0E+00	0.0E+00	2.1E-08	2.1E-08		0.0E+00	0.0E+00	0.0E+00	2.2E-01	2.2E-01
		Exposure Point Total						2.1E-08						2.2E-01
	Exposure Medium Total							2.1E-08						2.2E-01
Surface water Total								2.1E-08						2.2E-01
Sediment	Sediment	Off-Facility	Arsenic	2.70E-07	--	--	1.49E-06	1.76E-06	Skin	*2.7E-03*	--	--	*1.0E-02*	1.3E-02
		Sediment	Barium	NC	--	--	NC	0.00E+00	Kidney	0.0E+00	--	--	7.4E-05	7.4E-05
			Cadmium	NC	--	--	NC	0.00E+00	Kidney	4.8E-03	--	--	1.4E-02	1.9E-02
			Chromium	NC	--	--	NC	0.00E+00	None Observed	0.0E+00	--	--	1.2E-06	1.2E-06
			Mercury	NC	--	--	NC	0.00E+00	Immunological	0.0E+00	--	--	6.7E-04	6.7E-04
			Selenium	NC	--	--	NC	0.00E+00	Skin, central nervous system	0.0E+00	--	--	4.0E-05	4.0E-05
			Silver	NC	--	--	NC	0.00E+00	central nervous system	0.0E+00	--	--	2.5E-04	2.5E-04
			Zinc	NC	--	--	NC	0.00E+00	Circulatory system	0.0E+00	--	--	4.9E-03	4.9E-03
			Chemical Total	2.7E-07	0.0E+00	0.0E+00	1.5E-06	1.8E-06		7.5E-03	0.0E+00	0.0E+00	3.0E-02	3.8E-02
		Exposure Point Total						1.8E-06						3.8E-02
	Exposure Medium Total							1.8E-06						3.8E-02
Sediment Total								1.8E-06						3.8E-02
Receptor Total							Receptor Risk Total	*4.0E-05*					Receptor *HI* Total	*2E+00*

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TABLE 10ad
RAGS PART D TABLE 10.1.RME
RISK SUMMARY
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total
Soil	Soil	Off-Facility	Arsenic	1.20E-04	8.01E-08	7.63E-06	1.13E-05	1.39E-04	Skin	2.17E+00	NTV	2.16E+00	1.83E-01	4.5E+00
		47 St (Schulmann)	Barium	NC	NC	NC	NC	0.00E+00	Kidney	2.37E-02	1.16E-03	2.35E-02	0.00E+00	4.8E-02
			Cadmium	NC	1.18E-07	NC	NC	1.18E-07	Kidney	2.30E+00	NTV	2.28E+00	2.58E-01	4.8E+00
			Chromium	NC	1.31E-07	NC	NC	1.31E-07	Lung (Inhalation pathway) None Observed	2.56E-04	4.69E-04	2.54E-04	0.00E+00	9.8E-04
			Mercury	NC	NC	NC	NC	0.00E+00	Immunological	4.69E-02	5.74E-06	4.65E-02	0.00E+00	9.3E-02
			Selenium	NC	NC	NC	NC	0.00E+00	Skin, central nervous system	5.37E-03	NTV	5.33E-03	0.00E+00	1.1E-02
			Silver	NC	NC	NC	NC	0.00E+00	central nervous system	2.81E-02	NTV	2.79E-02	0.00E+00	5.6E-02
			Zinc	NC	NC	NC	NC	0.00E+00	Circulatory system	6.82E-01	NTV	6.76E-01	0.00E+00	1.4E+00
			Chemical Total	1.2E-04	3.3E-07	7.6E-06	1.1E-05	1.4E-04		5.3E+00	1.6E-03	5.2E+00	4.4E-01	1E+01
		Exposure Point Total						1.4E-04						1E+01
	Exposure Medium Total							1.4E-04						1E+01
Soil Total								1.4E-04						1E+01
Surface water	Surface water	Off-Facility Surface Water	Arsenic	--	--	--	2.06E-08	2.06E-08	Skin	--	--	--	1.2E-04	1.2E-04
			Barium	--	--	--	NC	0.00E+00	Kidney	--	--	--	4.7E-05	4.7E-05
			Cadmium	--	--	--	NC	0.00E+00	Kidney	--	--	--	1.2E-02	1.2E-02
			Chromium	--	--	--	NC	0.00E+00	None Observed	--	--	--	1.6E-06	1.6E-06
			Mercury	--	--	--	NS	0.00E+00	Immunological	--	--	--	NS	0.0E+00
			Selenium	--	--	--	NC	0.00E+00	Skin, central nervous system	--	--	--	1.5E-06	1.5E-06
			Silver	--	--	--	NC	0.00E+00	central nervous system	--	--	--	2.1E-01	2.1E-01
			Zinc	--	--	--	NC	0.00E+00	Circulatory system	--	--	--	4.4E-09	4.4E-09
			Chemical Total	0.0E+00	0.0E+00	0.0E+00	2.1E-08	2.1E-08		0.0E+00	0.0E+00	0.0E+00	2.2E-01	2.2E-01
		Exposure Point Total						2.1E-08						2.2E-01
	Exposure Medium Total							2.1E-08						2.2E-01
Surface water Total								2.1E-08						2.2E-01
Sediment	Sediment	Off-Facility Sediment	Arsenic	2.70E-07	--	--	1.49E-06	1.76E-06	Skin	2.7E-03	--	--	1.0E-02	1.3E-02
			Barium	NC	--	--	NC	0.00E+00	Kidney	0.0E+00	--	--	7.4E-05	7.4E-05
			Cadmium	NC	--	--	NC	0.00E+00	Kidney	4.8E-03	--	--	1.4E-02	1.9E-02
			Chromium	NC	--	--	NC	0.00E+00	None Observed	0.0E+00	--	--	1.2E-06	1.2E-06
			Mercury	NC	--	--	NC	0.00E+00	Immunological	0.0E+00	--	--	6.7E-04	6.7E-04
			Selenium	NC	--	--	NC	0.00E+00	Skin, central nervous system	0.0E+00	--	--	4.0E-05	4.0E-05
			Silver	NC	--	--	NC	0.00E+00	central nervous system	0.0E+00	--	--	2.5E-04	2.5E-04
			Zinc	NC	--	--	NC	0.00E+00	Circulatory system	0.0E+00	--	--	4.9E-03	4.9E-03
			Chemical Total	2.7E-07	0.0E+00	0.0E+00	1.5E-06	1.8E-06		7.5E-03	0.0E+00	0.0E+00	3.0E-02	3.8E-02
		Exposure Point Total						1.8E-06						3.8E-02
	Exposure Medium Total							1.8E-06						3.8E-02
Sediment Total								1.8E-06						3.8E-02
Receptor Total							Receptor Risk Total	1.4E-04					Receptor HI Total	1E+01

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TABLE 10ae
RAGS PART D TABLE 10.1.RME
RISK SUMMARY
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total
Soil	Soil	Off-Facility	Arsenic	6.11E-05	4.08E-08	3.89E-06	5.78E-06	7.08E-05	Skin	1.1E+00	NTV	1.10E+00	9.31E-02	2.3E+00
		2845 44th Street	Barium	NC	NC	NC	NC	0.00E+00	Kidney	1.47E-02	7.19E-04	1.46E-02	0.00E+00	3.0E-02
			Cadmium	NC	*1.57E-08*	NC	NC	*1.57E-08*	*Kidney*	*3.07E-01*	*NTV*	*3.04E-01*	*3.44E-02*	*6.5E-01*
			Chromium	NC	9.61E-08	NC	NC	9.61E-08	Lung (Inhalation pathway) None Observed	1.88E-04	3.44E-04	1.86E-04	0.00E+00	7.2E-04
			Mercury	NC	NC	NC	NC	0.00E+00	Immunological	3.84E-02	4.69E-06	3.80E-02	0.00E+00	7.6E-02
			Selenium	NC	NC	NC	NC	0.00E+00	Skin, central nervous system	3.07E-03	NTV	3.04E-03	0.00E+00	6.1E-03
			Silver	NC	NC	NC	NC	0.00E+00	central nervous system	6.39E-03	NTV	6.34E-03	0.00E+00	1.3E-02
			Zinc	NC	NC	NC	NC	0.00E+00	Circulatory system	1.66E-01	NTV	1.65E-01	0.00E+00	3.3E-01
			Chemical Total	6.1E-05	1.5E-07	3.9E-06	5.8E-06	7.1E-05		1.6E+00	1.1E-03	1.6E+00	1.3E-01	3E+00
		Exposure Point Total						7.1E-05						3E+00
	Exposure Medium Total							7.1E-05						3E+00
Soil Total								7.1E-05						3E+00
Surface water	Surface water	Off-Facility	Arsenic	--	--	--	2.06E-08	2.06E-08	Skin	--	--	--	1.2E-04	1.2E-04
		Surface Water	Barium	--	--	--	NC	0.00E+00	Kidney	--	--	--	4.7E-05	4.7E-05
			Cadmium	--	--	--	NC	0.00E+00	Kidney	--	--	--	1.2E-02	1.2E-02
			Chromium	--	--	--	NC	0.00E+00	None Observed	--	--	--	1.6E-06	1.6E-06
			Mercury	--	--	--	NS	0.00E+00	Immunological	--	--	--	NS	0.0E+00
			Selenium	--	--	--	NC	0.00E+00	Skin; central nervous system	--	--	--	1.5E-06	1.5E-06
			Silver	--	--	--	NC	0.00E+00	central nervous system	--	--	--	2.1E-01	2.1E-01
			Zinc	--	--	--	NC	0.00E+00	Circulatory system	--	--	--	4.4E-09	4.4E-09
			Chemical Total	0.0E+00	0.0E+00	0.0E+00	2.1E-08	2.1E-08		0.0E+00	0.0E+00	0.0E+00	2.2E-01	2.2E-01
		Exposure Point Total						2.1E-08						2.2E-01
	Exposure Medium Total							2.1E-08						2.2E-01
Surface water Total								2.1E-08						2.2E-01
Sediment	Sediment	Off-Facility	Arsenic	2.70E-07	--	--	1.49E-06	1.76E-06	Skin	2.7E-03	--	--	1.0E-02	1.3E-02
		Sediment	Barium	NC	--	--	NC	0.00E+00	Kidney	0.0E+00	--	--	7.4E-05	7.4E-05
			Cadmium	NC	--	--	NC	0.00E+00	Kidney	4.8E-03	--	--	1.4E-02	1.9E-02
			Chromium	NC	--	--	NC	0.00E+00	None Observed	0.0E+00	--	--	1.2E-06	1.2E-06
			Mercury	NC	--	--	NC	0.00E+00	Immunological	0.0E+00	--	--	6.7E-04	6.7E-04
			Selenium	NC	--	--	NC	0.00E+00	Skin, central nervous system	0.0E+00	--	--	4.0E-05	4.0E-05
			Silver	NC	--	--	NC	0.00E+00	central nervous system	0.0E+00	--	--	2.5E-04	2.5E-04
			Zinc	NC	--	--	NC	0.00E+00	Circulatory system	0.0E+00	--	--	4.9E-03	4.9E-03
			Chemical Total	*2.7E-07*	*0.0E+00*	*0.0E+00*	*1.5E-06*	*1.8E-06*		*7.5E-03*	*0.0E+00*	*0.0E+00*	*3.0E-02*	*3.8E-02*
		Exposure Point Total						1.8E-06						3.8F-02
	Exposure Medium Total							1.8E-06						3.8E-02
Sediment Total								1.8E-06						3.8E-02
Receptor Total							Receptor Risk Total	7.3E-05					Receptor HI Total	4E+00

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TABLE 10af
RAGS PART D TABLE 10.1.RME
RISK SUMMARY
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child Adult (cancer)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total
Soil	Soil	Off-Facility	Arsenic	3.99E-05	2.67E-08	2.54E-06	3.78E-06	4.63E-05	Skin	7.25E-01	NTV	7.18E-01	6.09E-02	1.5E+00
		3022 N 48th St.	Barium	NC	NC	NC	NC	0.00E+00	Kidney	2.05E-02	1.00E-03	2.03E-02	0.00E+00	4.2E-02
			Cadmium	NC	4.00E-08	NC	NC	4.00E-08	Kidney	7.80E-01	NTV	7.73E-01	8.73E-02	1.6E+00
			Chromium	NC	1.05E-07	NC	NC	1.05E-07	Lung (Inhalation pathway) None Observed	2.05E-04	3.76E-04	2.03E-04	0.00E+00	7.8E-04
			Mercury	NC	NC	NC	NC	0.00E+00	Immunological	7.67E-03	9.39E-07	7.61E-03	0.00E+00	1.5E-02
			Selenium	NC	NC	NC	NC	0.00E+00	Skin, central nervous system	2.35E-03	NTV	2.33E-03	0.00E+00	4.7E-03
			Silver	NC	NC	NC	NC	0.00E+00	central nervous system	3.58E-03	NTV	3.55E-03	0.00E+00	7.1E-03
			Zinc	NC	NC	NC	NC	0.00E+00	Circulatory system	1.53E-01	NTV	1.52E-01	0.00E+00	3.1E-01
			Chemical Total	4.0E-05	1.7E-07	2.5E-06	3.8E-06	4.6E-05		1.7E+00	1.4E-03	1.7E+00	1.5E-01	4E+00
		Exposure Point Total						4.6E-05						4E+00
	Exposure Medium Total							4.6E-05						4E+00
Soil Total								4.6E-05						4E+00
Surface water	Surface water	Off-Facility Surface Water	Arsenic	--	--	--	2.06E-08	2.06E-08	Skin	--	--	--	1.2E-04	1.2E-04
			Barium	--	--	--	NC	0.00E+00	Kidney	--	--	--	4.7E-05	4.7E-05
			Cadmium	--	--	--	NC	0.00E+00	Kidney	--	--	--	1.2E-02	1.2E-02
			Chromium	--	--	--	NC	0.00E+00	None Observed	--	--	--	1.6E-06	1.6E-06
			Mercury	--	--	--	NS	0.00E+00	Immunological	--	--	--	NS	0.0E+00
			Selenium	--	--	--	NC	0.00E+00	Skin; central nervous system	--	--	--	1.5E-06	1.5E-06
			Silver	--	--	--	NC	0.00E+00	central nervous system	--	--	--	2.1E-01	2.1E-01
			Zinc	--	--	--	NC	0.00E+00	Circulatory system	--	--	--	4.4E-09	4.4E-09
			Chemical Total	0.0E+00	0.0E+00	0.0E+00	2.1E-08	2.1E-08		0.0E+00	0.0E+00	0.0E+00	2.2E-01	2.2E-01
		Exposure Point Total						2.1E-08						2.2E-01
	Exposure Medium Total							2.1E-08						2.2E-01
Surface water Total								2.1E-08						2.2E-01
Sediment	Sediment	Off-Facility Sediment	Arsenic	2.70E-07	--	--	1.49E-06	1.76E-06	Skin	2.7E-03	--	--	1.0E-02	1.3E-02
			Barium	NC	--	--	NC	0.00E+00	Kidney	0.0E+00	--	--	7.4E-05	7.4E-05
			Cadmium	NC	--	--	NC	0.00E+00	Kidney	4.8E-03	--	--	1.4E-02	1.9E-02
			Chromium	NC	--	--	NC	0.00E+00	None Observed	0.0E+00	--	--	1.2E-06	1.2E-06
			Mercury	NC	--	--	NC	0.00E+00	Immunological	0.0E+00	--	--	6.7E-04	6.7E-04
			Selenium	NC	--	--	NC	0.00E+00	Skin; central nervous system	0.0E+00	--	--	4.0E-05	4.0E-05
			Silver	NC	--	--	NC	0.00E+00	central nervous system	0.0E+00	--	--	2.5E-04	2.5E-04
			Zinc	NC	--	--	NC	0.00E+00	Circulatory system	0.0E+00	--	--	4.9E-03	4.9E-03
			Chemical Total	2.7E-07	0.0E+00	0.0E+00	1.5E-06	1.8E-06		7.5E-03	0.0E+00	0.0E+00	3.0E-02	3.8E-02
		Exposure Point Total						1.8E-06						3.8E-02
	Exposure Medium Total							1.8E-06						3.8E-02
Sediment Total								1.8E-06						3.8E-02
Receptor Total							Receptor Risk Total	4.8E-05					Receptor HI Total	4E+00

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TABLE 10ag
RAGS PART D TABLE 10.1.RME
RISK SUMMARY
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Current
Receptor Population: Resident
Receptor Age: Child (noncancer) Child Adult (cancer)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total
Soil	Soil	Off-Facility	Arsenic	2.58E-05	1.73E-08	1.32E-06	2.45E-06	2.96E-05	Skin	4.69E-01	NTV	3.72E-01	3.94E-02	8.8E-01
		5508 Thomas	Barium	NC	NC	NC	NC	0.00E+00	Kidney	1.28E-02	6.25E-04	1.20E-02	0.00E+00	2.5E-02
			Cadmium	NC	7.86E-09	NC	NC	7.86E-09	Kidney	1.53E-01	NTV	1.27E-01	1.72E-02	3.0E-01
			Chromium	NC	7.86E-08	NC	NC	7.86E-08	Lung (Inhalation pathway) None Observed	1.53E-04	2.82E-04	1.01E-04	0.00E+00	5.4E-04
			Mercury	NC	NC	NC	NC	0.00E+00	Immunological	4.69E-03	5.74E-07	3.30E-02	0.00E+00	3.8E-02
			Selenium	NC	NC	NC	NC	0.00E+00	Skin, central nervous system	2.56E-03	NTV	4.56E-04	0.00E+00	3.0E-03
			Silver	NC	NC	NC	NC	0.00E+00	central nervous system	1.18E-03	NTV	1.12E+00	0.00E+00	1.1E+00
			Zinc	NC	NC	NC	NC	0.00E+00	Circulatory system	3.71E-02	NTV	2.58E-06	0.00E+00	3.7E-02
			Chemical Total	2.6E-05	1.0E-07	1.3E-06	2.4E-06	3.0E-05		6.8E-01	9.1E-04	1.7E+00	5.7E-02	2E+00
		Exposure Point Total						3.0E-05						2E+00
	Exposure Medium Total							3.0E-05						2E+00
Soil Total								3.0E-05						2E+00
Surface water	Surface water	Off-Facility	Arsenic	--	--	--	2.06E-08	2.06E-08	Skin	--	--	--	1.2E-04	1.2E-04
		Surface Water	Barium	--	--	--	NC	0.00E+00	Kidney	--	--	--	4.7E-05	4.7E-05
			Cadmium	--	--	--	NC	0.00E+00	Kidney	--	--	--	1.2E-02	1.2E-02
			Chromium	--	--	--	NC	0.00E+00	None Observed	--	--	--	1.6E-06	1.6E-06
			Mercury	--	--	--	NS	0.00E+00	Immunological	--	--	--	NS	0.0E+00
			Selenium	--	--	--	NC	0.00E+00	Skin, central nervous system	--	--	--	1.5E-06	1.5E-06
			Silver	--	--	--	NC	0.00E+00	central nervous system	--	--	--	2.1E-01	2.1E-01
			Zinc	--	--	--	NC	0.00E+00	Circulatory system	--	--	--	4.4E-09	4.4E-09
			Chemical Total	0.0E+00	0.0E+00	0.0E+00	2.1E-08	2.1E-08		0.0E+00	0.0E+00	0.0E+00	2.2E-01	2.2E-01
		Exposure Point Total						2.1E-08						2.2E-01
	Exposure Medium Total							2.1E-08						2.2E-01
Surface water Total								2.1E-08						2.2E-01
Sediment	Sediment	Off-Facility	Arsenic	2.70E-07	--	--	1.49E-06	1.76E-06	Skin	2.7E-03	--	--	1.0E-02	1.3E-02
		Sediment	Barium	NC	--	--	NC	0.00E+00	Kidney	0.0E+00	--	--	7.4E-05	7.4E-05
			Cadmium	NC	--	--	NC	0.00E+00	Kidney	4.8E-03	--	--	1.4E-02	1.9E-02
			Chromium	NC	--	--	NC	0.00E+00	None Observed	0.0E+00	--	--	1.2E-06	1.2E-06
			Mercury	NC	--	--	NC	0.00E+00	Immunological	0.0E+00	--	--	6.7E-04	6.7E-04
			Selenium	NC	--	--	NC	0.00E+00	Skin; central nervous system	0.0E+00	--	--	4.0E-05	4.0E-05
			Silver	NC	--	--	NC	0.00E+00	central nervous system	0.0E+00	--	--	2.5E-04	2.5E-04
			Zinc	NC	--	--	NC	0.00E+00	Circulatory system	0.0E+00	--	--	4.9E-03	4.9E-03
			Chemical Total	2.7E-07	0.0E+00	0.0E+00	1.5E-06	1.8E-06		7.5E-03	0.0E+00	0.0E+00	3.0E-02	3.8E-02
		Exposure Point Total						1.8E-06						3.8E-02
	Exposure Medium Total							1.8E-06						3.8E-02
Sediment Total								1.8E-06						3.8E-02
Receptor Total							Receptor Risk Total	3.1E-05					Receptor HI Total	3E+00

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TABLE 10ah
RAGS PART D TABLE 10.1.RME
RISK SUMMARY
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total
Soil	Soil	Off-Facility	Arsenic	2.58E-05	1.73E-08	1.65E-06	2.45E-06	2.99E-05	Skin	4.69E-01	NTV	4.65E-01	3.94E-02	9.7E-01
		5508 Thomas	Barium	NC	NC	NC	NC	0.00E+00	Kidney	1.28E-02	6.25E-04	1.27E-02	0.00E+00	2.6E-02
			Cadmium	NC	7.86E-09	NC	NC	7.86E-09	Kidney	1.53E-01	NTV	1.52E-01	1.72E-02	3.2E-01
			Chromium	NC	7.86E-08	NC	NC	7.86E-08	Lung (Inhalation pathway) None Observed	1.53E-04	2.82E-04	1.52E-04	0.00E+00	5.9E-04
			Mercury	NC	NC	NC	NC	0.00E+00	Immunilogical	4.69E-03	5.74E-07	4.65E-03	0.00E+00	9.3E-03
			Selenium	NC	NC	NC	NC	0.00E+00	Skin, central nervous system	2.56E-03	NTV	2.54E-03	0.00E+00	5.1E-03
			Silver	NC	NC	NC	NC	0.00E+00	central nervous system	1.18E-03	NTV	1.17E-03	0.00E+00	2.3E-03
			Zinc	NC	NC	NC	NC	0.00E+00	Circulatory system	3.71E-02	NTV	3.68E-02	0.00E+00	7.4E-02
			Chemical Total	2.6E-05	1.0E-07	1.6E-06	2.4E-06	3.0E-05		6.8E-01	9.1E-04	6.8E-01	5.7E-02	1E+00
		Exposure Point Total						3.0E-05						1E+00
	Exposure Medium Total							3.0E-05						1E+00
Soil Total								3.0E-05						1E+00
Surface water	Surface water	Off-Facility	Arsenic	--	--	--	2.06E-08	2.06E-08	Skin	--	--	--	1.2E-04	1.2E-04
		Surface Water	Barium	--	--	--	NC	0.00E+00	Kidney	--	--	--	4.7E-05	4.7E-05
			Cadmium	--	--	--	NC	0.00E+00	Kidney	--	--	--	1.2E-02	1.2E-02
			Chromium	--	--	--	NC	0.00E+00	None Observed	--	--	--	1.6E-06	1.6E-06
			Mercury	--	--	--	NS	0.00E+00	Immunilogical	--	--	--	NS	0.0E+00
			Selenium	--	--	--	NC	0.00E+00	Skin; central nervous system	--	--	--	1.5E-06	1.5E-06
			Silver	--	--	--	NC	0.00E+00	central nervous system	--	--	--	2.1E-01	2.1E-01
			Zinc	--	--	--	NC	0.00E+00	Circulatory system	--	--	--	4.4E-09	4.4E-09
			Chemical Total	0.0E+00	0.0E+00	0.0E+00	2.1E-08	2.1E-08		0.0E+00	0.0E+00	0.0E+00	2.2E-01	2.2E-01
		Exposure Point Total						2.1E-08						2.2E-01
	Exposure Medium Total							2.1E-08						2.2E-01
Surface water Total								2.1E-08						2.2E-01
Sediment	Sediment	Off-Facility	Arsenic	2.70E-07	--	--	1.49E-06	1.76E-06	Skin	2.7E-03	--	--	1.0E-02	1.3E-02
		Sediment	Barium	NC	--	--	NC	0.00E+00	Kidney	0.0E+00	--	--	7.4E-05	7.4E-05
			Cadmium	NC	--	--	NC	0.00E+00	Kidney	4.8E-03	--	--	1.4E-02	1.9E-02
			Chromium	NC	--	--	NC	0.00E+00	None Observed	0.0E+00	--	--	1.2E-06	1.2E-06
			Mercury	NC	--	--	NC	0.00E+00	Immunilogical	0.0E+00	--	--	6.7E-04	6.7E-04
			Selenium	NC	--	--	NC	0.00E+00	Skin; central nervous system	0.0E+00	--	--	4.0E-05	4.0E-05
			Silver	NC	--	--	NC	0.00E+00	central nervous system	0.0E+00	--	--	2.5E-04	2.5E-04
			Zinc	NC	--	--	NC	0.00E+00	Circulatory system	0.0E+00	--	--	4.9E-03	4.9E-03
			Chemical Total	2.7E-07	0.0E+00	0.0E+00	1.5E-06	1.8E-06		7.5E-03	0.0E+00	0.0E+00	3.0E-02	3.8E-02
		Exposure Point Total						1.8E-06						3.8E-02
	Exposure Medium Total							1.8E-06						3.8E-02
Sediment Total								1.8E-06						3.8E-02
Receptor Total							Receptor Risk Total	3.2E-05					Receptor HI Total	2E+00

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TABLE 10ai
RAGS PART D TABLE 10.1.RME
RISK SUMMARY
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Current/Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total
Soil	Soil	Off-Facility	Arsenic	3.29E-05	2.20E-08	2.10E-06	3.11E-06	3.81E-05	Skin	5.97E-01	NTV	5.92E-01	5.01E-02	1.24E+00
		5507 Thomas	Barium	NC	NC	NC	NC	0.00E+00	Kidney	1.28E-02	6.25E-04	1.27E-02	0.00E+00	2.61E-02
			Cadmium	NC	1.24E-08	NC	NC	1.24E-08	Kidney	2.43E-01	NTV	2.41E-01	2.72E-02	5.11E-01
			Chromium	NC	7.86E-08	NC	NC	7.86E-08	Lung (Inhalation pathway) None Observed	1.53E-04	2.82E-04	1.52E-04	0.00E+00	5.87E-04
			Mercury	NC	NC	NC	NC	0.00E+00	Immunological	1.02E-02	1.25E-06	1.01E-02	0.00E+00	2.04E-02
			Selenium	NC	NC	NC	NC	0.00E+00	Skin, central nervous system	4.35E-03	NTV	4.31E-03	0.00E+00	8.66E-03
			Silver	NC	NC	NC	NC	0.00E+00	central nervous system	1.51E-03	NTV	1.50E-03	0.00E+00	3.00E-03
			Zinc	NC	NC	NC	NC	0.00E+00	Circulatory system	4.26E-02	NTV	4.23E-02	0.00E+00	8.49E-02
			Chemical Total	3.3E-05	1.1E-07	2.1E-06	3.1E-06	3.8E-05		9.1E-01	9.1E-04	9.0E-01	7.7E-02	1.9E+00
		Exposure Point Total						3.8E-05						1.9E+00
	Exposure Medium Total							3.8E-05						1.9E+00
Soil Total								3.8E-05						1.9E+00
Surface water	Surface water	Off-Facility	Arsenic	--	--	--	2.06E-08	2.06E-08	Skin	--	--	--	1.2E-04	1.23E-04
		Surface Water	Barium	--	--	--	NC	0.00E+00	Kidney	--	--	--	4.7E-05	4.69E-05
			Cadmium	--	--	--	NC	0.00E+00	Kidney	--	--	--	1.2E-02	1.21E-02
			Chromium	--	--	--	NC	0.00E+00	None Observed	--	--	--	1.6E-06	1.64E-06
			Mercury	--	--	--	NS	0.00E+00	Immunological	--	--	--	NS	0.00E+00
			Selenium	--	--	--	NC	0.00E+00	Skin; central nervous system	--	--	--	1.5E-06	1.55E-06
			Silver	--	--	--	NC	0.00E+00	central nervous system	--	--	--	2.1E-01	2.09E-01
			Zinc	--	--	--	NC	0.00E+00	Circulatory system	--	--	--	4.4E-09	4.37E-09
			Chemical Total	0.0E+00	0.0E+00	0.0E+00	2.1E-08	2.1E-08		0.0E+00	0.0E-00	0.0E+00	2.2E-01	2.2E-01
		Exposure Point Total						2.1E-08						2.2E-01
	Exposure Medium Total							2.1E-08						2.2E-01
Surface water Total								2.1E-08						2.2E-01
Sediment	Sediment	Off-Facility	Arsenic	2.70E-07	--	--	1.49E-06	1.76E-06	Skin	2.7E-03	--	--	1.0E-02	1.31E-02
		Sediment	Barium	NC	--	--	NC	0.00E+00	Kidney	0.0E+00	--	--	7.4E-05	7.39E-05
			Cadmium	NC	--	--	NC	0.00E+00	Kidney	4.8E-03	--	--	1.4E-02	1.87E-02
			Chromium	NC	--	--	NC	0.00E+00	None Observed	0.0E+00	--	--	1.2E-06	1.22E-06
			Mercury	NC	--	--	NC	0.00E+00	Immunological	0.0E+00	--	--	6.7E-04	6.73E-04
			Selenium	NC	--	--	NC	0.00E+00	Skin; central nervous system	0.0E+00	--	--	4.0E-05	4.03E-05
			Silver	NC	--	--	NC	0.00E+00	central nervous system	0.0E+00	--	--	2.5E-04	2.49E-04
			Zinc	NC	--	--	NC	0.00E+00	Circulatory system	0.0E+00	--	--	4.9E-03	4.95E-03
			Chemical Total	2.7E-07	0.0E+00	0.0E+00	1.5E-06	1.8E-06		7.5E-03	0.0E-00	0.0E+00	3.0E-02	3.8E-02
		Exposure Point Total						1.8E-06						3.8E-02
	Exposure Medium Total							1.8E-06						3.8E-02
Sediment Total								1.8E-06						3.8E-02
Receptor Total							Receptor Risk Total	4.0E-05					Receptor HI Total	2.2E+00

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TABLE 10aj
RAGS PART D TABLE 10.1.RME
RISK SUMMARY
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child Adult (cancer)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total
Soil	Soil	Off-Facility	Arsenic	4.70E-05	3.14E-08	2.99E-06	4.45E-06	5.44E-05	Skin	8.52E-01	NTV	8.45E-01	7.16E-02	1.77E+00
		42nd Street	Barium	NC	NC	NC	NC	0.00E+00	Kidney	1.79E-02	8.75E-04	1.78E-02	0.00E+00	3.65E-02
			Cadmium	NC	1.11E-08	NC	NC	1.11E-08	Kidney	2.17E-01	NTV	2.16E-01	2.43E-02	4.57E-01
			Chromium	NC	8.74E-08	NC	NC	8.74E-08	Lung (Inhalation pathway) None Observed	1.70E-04	3.13E-04	1.69E-04	0.00E+00	6.52E-04
			Mercury	NC	NC	NC	NC	0.00E+00	Immunological	5.54E-03	6.78E-07	5.49E-03	0.00E+00	1.10E-02
			Selenium	NC	NC	NC	NC	0.00E+00	Skin; central nervous system	4.09E-03	NTV	4.06E-03	0.00E+00	8.15E-03
			Silver	NC	NC	NC	NC	0.00E+00	central nervous system	1.69E-03	NTV	1.67E-03	0.00E+00	3.36E-03
			Zinc	NC	NC	NC	NC	0.00E+00	Circulatory system	5.11E-02	NTV	5.07E-02	0.00E+00	1.02E-01
			Chemical Total	4.7E-05	1.3E-07	3.0E-06	4.4E-06	5.5E-05		1.2E+00	1.2E-03	1.1E+00	9.6E-02	2.4E+00
		Exposure Point Total						5.5E-05						2.4E+00
	Exposure Medium Total							5.5E-05						2.4E+00
Soil Total								5.5E-05						2.4E+00
Surface water	Surface water	Off-Facility	Arsenic	--	--	--	2.06E-08	2.06E-08	Skin	--	--	--	1.2E-04	1.23E-04
		Surface Water	Barium	--	--	--	NC	0.00E+00	Kidney	--	--	--	4.7E-05	4.69E-05
			Cadmium	--	--	--	NC	0.00E+00	Kidney	--	--	--	1.2E-02	1.21E-02
			Chromium	--	--	--	NC	0.00E+00	None Observed	--	--	--	1.6E-06	1.64E-06
			Mercury	--	--	--	NS	0.00E+00	Immunological	--	--	--	NS	0.00E+00
			Selenium	--	--	--	NC	0.00E+00	Skin, central nervous system	--	--	--	1.5E-06	1.55E-06
			Silver	--	--	--	NC	0.00E+00	central nervous system	--	--	--	2.1E-01	2.09E-01
			Zinc	--	--	--	NC	0.00E+00	Circulatory system	--	--	--	4.4E-09	4.37E-09
			Chemical Total	0.0E+00	0.0E+00	0.0E+00	2.1E-08	2.1E-08		0.0E+00	0.0E+00	0.0E+00	2.2E-01	2.2E-01
		Exposure Point Total						2.1E-08						2.2E-01
	Exposure Medium Total							2.1E-08						2.2E-01
Surface water Total								2.1E-08						2.2E-01
Sediment	Sediment	Off-Facility	Arsenic	2.70E-07	--	--	1.49E-06	1.76E-06	Skin	2.7E-03	--	--	1.0E-02	1.31E-02
		Sediment	Barium	NC	--	--	NC	0.00E+00	Kidney	0.0E+00	--	--	7.4E-05	7.39E-05
			Cadmium	NC	--	--	NC	0.00E+00	Kidney	4.8E-03	--	--	1.4E-02	1.87E-02
			Chromium	NC	--	--	NC	0.00E+00	None Observed	0.0E+00	--	--	1.2E-06	1.22E-06
			Mercury	NC	--	--	NC	0.00E+00	Immunological	0.0E+00	--	--	6.7E-04	6.73E-04
			Selenium	NC	--	--	NC	0.00E+00	Skin, central nervous system	0.0E+00	--	--	4.0E-05	4.03E-05
			Silver	NC	--	--	NC	0.00E+00	central nervous system	0.0E+00	--	--	2.5E-04	2.49E-04
			Zinc	NC	--	--	NC	0.00E+00	Circulatory system	0.0E+00	--	--	4.9E-03	4.95E-03
			Chemical Total	2.7E-07	0.0E+00	0.0E+00	1.5E-06	1.8E-06		7.5E-03	0.0E+00	0.0E+00	3.0E-02	3.8E-02
		Exposure Point Total						1.8E-06						3.8E-02
	Exposure Medium Total							1.8E-06						3.8E-02
Sediment Total								1.8E-06						3.8E-02
Receptor Total							Receptor Risk Total	5.6E-05					Receptor HI Total	2.6E+00

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TABLE 10ak
RAGS PART D TABLE 10.1.RME
RISK SUMMARY
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total
Soil	Soil	Off-Facility 2339 N 51st St.	Arsenic	3.76E-05	2.51E-08	2.40E-06	3.56E-06	4.36E-05	Skin	6.82E-01	NTV	6.76E-01	5.73E-02	1.42E+00
			Barium	NC	NC	NC	NC	0.00E+00	Kidney	1.66E-02	8.13E-04	1.65E-02	0.00E+00	3.39E-02
			Cadmium	NC	1.97E-08	NC	NC	1.97E-08	Kidney	3.84E-01	NTV	3.80E-01	4.30E-02	8.07E-01
			Chromium	NC	7.86E-08	NC	NC	7.86E-08	Lung (Inhalation pathway) None Observed	1.53E-04	2.82E-04	1.52E-04	0.00E+00	5.87E-04
			Mercury	NC	NC	NC	NC	0.00E+00	Immunological	1.75E-02	2.14E-06	1.73E-02	0.00E+00	3.48E-02
			Selenium	NC	NC	NC	NC	0.00E+00	Skin, central nervous system	3.58E-03	NTV	3.55E-03	0.00E+00	7.13E-03
			Silver	NC	NC	NC	NC	0.00E+00	central nervous system	3.58E-03	NTV	3.55E-03	0.00E+00	7.13E-03
			Zinc	NC	NC	NC	NC	0.00E+00	Circulatory system	1.32E-01	NTV	1.31E-01	0.00E+00	2.63E-01
			Chemical Total	3.8E-05	1.2E-07	2.4E-06	3.6E-06	4.4E-05		1.2E+00	1.1E-03	1.2E+00	1.0E-01	2.6E+00
		Exposure Point Total						4.4E-05						2.6E+00
	Exposure Medium Total							4.4E-05						2.6E+00
Soil Total								4.4E-05						2.6E+00
Surface water	Surface water	Off-Facility Surface Water	Arsenic	--	--	--	2.06E-08	2.06E-08	Skin	--	--	--	1.2E-04	1.23E-04
			Barium	--	--	--	NC	0.00E+00	Kidney	--	--	--	4.7E-05	4.69E-05
			Cadmium	--	--	--	NC	0.00E+00	Kidney	--	--	--	1.2E-02	1.21E-02
			Chromium	--	--	--	NC	0.00E+00	None Observed	--	--	--	1.6E-06	1.64E-06
			Mercury	--	--	--	NS	0.00E+00	Immunological	--	--	--	NS	0.00E+00
			Selenium	--	--	--	NC	0.00E+00	Skin; central nervous system	--	--	--	1.5E-06	1.55E-06
			Silver	--	--	--	NC	0.00E+00	central nervous system	--	--	--	2.1E-01	2.09E-01
			Zinc	--	--	--	NC	0.00E+00	Circulatory system	--	--	--	4.4E-09	4.37E-09
			Chemical Total	0.0E+00	0.0E+00	0.0E+00	2.1E-08	2.1E-08		0.0E+00	0.0E+00	0.0E+00	2.2E-01	2.2E-01
		Exposure Point Total						2.1E-08						2.2E-01
	Exposure Medium Total							2.1E-08						2.2E-01
Surface water Total								2.1E-08						2.2E-01
Sediment	Sediment	Off-Facility Sediment	Arsenic	2.70E-07	--	--	1.49E-06	1.76E-06	Skin	2.7E-03	--	--	1.0E-02	1.31E-02
			Barium	NC	--	--	NC	0.00E+00	Kidney	0.0E+00	--	--	7.4E-05	7.39E-05
			Cadmium	NC	--	--	NC	0.00E+00	Kidney	4.8E-03	--	--	1.4E-02	1.87E-02
			Chromium	NC	--	--	NC	0.00E+00	None Observed	0.0E+00	--	--	1.2E-06	1.22E-06
			Mercury	NC	--	--	NC	0.00E+00	Immunological	0.0E+00	--	--	6.7E-04	6.73E-04
			Selenium	NC	--	--	NC	0.00E+00	Skin, central nervous system	0.0E+00	--	--	4.0E-05	4.03E-05
			Silver	NC	--	--	NC	0.00E+00	central nervous system	0.0E+00	--	--	2.5E-04	2.49E-04
			Zinc	NC	--	--	NC	0.00E+00	Circulatory system	0.0E+00	--	--	4.9E-03	4.95E-03
			Chemical Total	2.7E-07	0.0E+00	0.0E+00	1.5E-06	1.8E-06		7.5E-03	0.0E+00	0.0E+00	3.0E-02	3.8E-02
		Exposure Point Total						1.8E-06						3.8E-02
	Exposure Medium Total							1.8E-06						3.8E-02
Sediment Total								1.8E-06						3.8E-02
Receptor Total							Receptor Risk Total	4.5E-05					Receptor HI Total	2.8E+00

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TABLE 10a1
RAGS PART D TABLE 10.1.RME
RISK SUMMARY
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total
Soil	Soil	Off-Facility Maryland	Arsenic	3.52E-05	2.36E-08	2.25E-06	3.34E-06	4.08E-05	Skin	6.39E-01	NTV	6.34E-01	5.37E-02	1.33E+00
			Barium	NC	NC	NC	NC	0.00E+00	Kidney	1.41E-02	6.88E-04	1.39E-02	0.00E+00	2.87E-02
			Cadmium	NC	4.10E-08	NC	NC	4.10E-08	Kidney	7.99E-01	NTV	7.92E-01	8.95E-02	1.68E+00
			Chromium	NC	8.74E-08	NC	NC	8.74E-08	Lung (Inhalation pathway) None Observed	1.70E-04	3.13E-04	1.69E-04	0.00E+00	6.52E-04
			Mercury	NC	NC	NC	NC	0.00E+00	Immunological	6.82E-03	8.34E-07	6.76E-03	0.00E+00	1.36E-02
			Selenium	NC	NC	NC	NC	0.00E+00	Skin; central nervous system	3.32E-03	NTV	3.30E-03	0.00E+00	6.62E-03
			Silver	NC	NC	NC	NC	0.00E+00	central nervous system	3.58E-03	NTV	3.55E-03	0.00E+00	7.13E-03
			Zinc	NC	NC	NC	NC	0.00E+00	Circulatory system	7.25E-02	NTV	7.18E-02	0.00E+00	1.44E-01
			Chemical Total	3.5E-05	1.5E-07	2.2E-06	3.3E-06	4.1E-05		1.5E+00	1.0E-03	1.5E+00	1.4E-01	3.2E+00
		Exposure Point Total						4.1E-05						3.2E+00
	Exposure Medium Total							4.1E-05						3.2E+00
Soil Total								4.1E-05						3.2E+00
Surface water	Surface water	Off-Facility Surface Water	Arsenic	--	--	--	2.06E-08	2.06E-08	Skin	--	--	--	1.2E-04	1.23E-04
			Barium	--	--	--	NC	0.00E+00	Kidney	--	--	--	4.7E-05	4.69E-05
			Cadmium	--	--	--	NC	0.00E+00	Kidney	--	--	--	1.2E-02	1.21E-02
			Chromium	--	--	--	NC	0.00E+00	None Observed	--	--	--	1.6E-06	1.64E-06
			Mercury	--	--	--	NS	0.00E+00	Immunological	--	--	--	NS	0.00E+00
			Selenium	--	--	--	NC	0.00E+00	Skin, central nervous system	--	--	--	1.5E-06	1.55E-06
			Silver	--	--	--	NC	0.00E+00	central nervous system	--	--	--	2.1E-01	2.09E-01
			Zinc	--	--	--	NC	0.00E+00	Circulatory system	--	--	--	4.4E-09	4.37E-09
			Chemical Total	0.0E+00	0.0E+00	0.0E+00	2.1E-08	2.1E-08		0.0E+00	0.0E+00	0.0E+00	2.2E-01	2.2E-01
		Exposure Point Total						2.1E-08						2.2E-01
	Exposure Medium Total							2.1E-08						2.2E-01
Surface water Total								2.1E-08						2.2E-01
Sediment	Sediment	Off-Facility Sediment	Arsenic	2.70E-07	--	--	1.49E-06	1.76E-06	Skin	2.7E-03	--	--	1.0E-02	1.31E-02
			Barium	NC	--	--	NC	0.00E+00	Kidney	0.0E+00	--	--	7.4E-05	7.39E-05
			Cadmium	NC	--	--	NC	0.00E+00	Kidney	4.8E-03	--	--	1.4E-02	1.87E-02
			Chromium	NC	--	--	NC	0.00E+00	None Observed	0.0E+00	--	--	1.2E-06	1.22E-06
			Mercury	NC	--	--	NC	0.00E+00	Immunological	0.0E+00	--	--	6.7E-04	6.73E-04
			Selenium	NC	--	--	NC	0.00E+00	Skin; central nervous system	0.0E+00	--	--	4.0E-05	4.03E-05
			Silver	NC	--	--	NC	0.00E+00	central nervous system	0.0E+00	--	--	2.5E-04	2.49E-04
			Zinc	NC	--	--	NC	0.00E+00	Circulatory system	0.0E+00	--	--	4.9E-03	4.95E-03
			Chemical Total	2.7E-07	0.0E+00	0.0E+00	1.5E-06	1.8E-06		7.5E-03	0.0E+00	0.0E+00	3.0E-02	3.8E-02
		Exposure Point Total						1.8E-06						3.8E-02
	Exposure Medium Total							1.8E-06						3.8E-02
Sediment Total								1.8E-06						3.8E-02
Receptor Total							Receptor Risk Total	4.3E-05					Receptor HI Total	3.5E+00

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TABLE 10am
RAGS PART D TABLE 10.1.RME
RISK SUMMARY
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total
Soil	Soil	Off-Facility	Arsenic	3.05E-05	2.04E-08	1.95E-06	2.89E-06	3.54E-05	Skin	5.54E-01	NTV	5.49E-01	4.65E-02	1.15E+00
		N. 39th St & Locust	Barium	NC	NC	NC	NC	0.00E+00	Kidney	1.60E-02	7.82E-04	1.58E-02	0.00E+00	3.26E-02
			Cadmium	NC	1.31E-08	NC	NC	1.31E-08	Kidney	2.56E-01	NTV	2.54E-01	2.86E-02	5.38E-01
			Chromium	NC	1.18E-07	NC	NC	1.18E-07	Lung (Inhalation pathway) None Observed	2.30E-04	4.22E-04	2.28E-04	0.00E+00	8.81E-04
			Mercury	NC	NC	NC	NC	0.00E+00	Immunological	5.54E-03	6.78E-07	5.49E-03	0.00E+00	1.10E-02
			Selenium	NC	NC	NC	NC	0.00E+00	Skin, central nervous system	3.07E-03	NTV	3.04E-03	0.00E+00	6.11E-03
			Silver	NC	NC	NC	NC	0.00E+00	central nervous system	1.41E-03	NTV	1.39E-03	0.00E+00	2.80E-03
			Zinc	NC	NC	NC	NC	0.00E+00	Circulatory system	6.82E-02	NTV	6.76E-02	0.00E+00	1.36E-01
			Chemical Total	3.1E-05	1.5E-07	1.9E-06	2.9E-06	3.6E-05		9.0E-01	1.2E-03	9.0E-01	7.5E-02	1.9E+00
		Exposure Point Total						3.6E-05						1.9E+00
	Exposure Medium Total							3.6E-05						1.9E+00
Soil Total								3.6E-05						1.9E+00
Surface water	Surface water	Off-Facility	Arsenic	--	--	--	2.06E-08	2.06E-08	Skin	--	--	--	1.2E-04	1.23E-04
		Surface Water	Barium	--	--	--	NC	0.00E+00	Kidney	--	--	--	4.7E-05	4.69E-05
			Cadmium	--	--	--	NC	0.00E+00	Kidney	--	--	--	1.2E-02	1.21E-02
			Chromium	--	--	--	NC	0.00E+00	None Observed	--	--	--	1.6E-06	1.64E-06
			Mercury	--	--	--	NS	0.00E+00	Immunological	--	--	--	NS	0.00E+00
			Selenium	--	--	--	NC	0.00E+00	Skin; central nervous system	--	--	--	1.5E-06	1.55E-06
			Silver	--	--	--	NC	0.00E+00	central nervous system	--	--	--	2.1E-01	2.09E-01
			Zinc	--	--	--	NC	0.00E+00	Circulatory system	--	--	--	4.4E-09	4.37E-09
			Chemical Total	0.0E+00	0.0E+00	0.0E+00	2.1E-08	2.1E-08		0.0E+00	0.0E+00	0.0E+00	2.2E-01	2.2E-01
		Exposure Point Total						2.1E-08						2.2E-01
	Exposure Medium Total							2.1E-08						2.2E-01
Surface water Total								2.1E-08						2.2E-01
Sediment	Sediment	Off-Facility	Arsenic	2.70E-07	--	--	1.49E-06	1.76E-06	Skin	2.7E-03	--	--	1.0E-02	1.31E-02
		Sediment	Barium	NC	--	--	NC	0.00E+00	Kidney	0.0E+00	--	--	7.4E-05	7.39E-05
			Cadmium	NC	--	--	NC	0.00E+00	Kidney	4.8E-03	--	--	1.4E-02	1.87E-02
			Chromium	NC	--	--	NC	0.00E+00	None Observed	0.0E+00	--	--	1.2E-06	1.22E-06
			Mercury	NC	--	--	NC	0.00E+00	Immunological	0.0E+00	--	--	6.7E-04	6.73E-04
			Selenium	NC	--	--	NC	0.00E+00	Skin; central nervous system	0.0E+00	--	--	4.0E-05	4.03E-05
			Silver	NC	--	--	NC	0.00E+00	central nervous system	0.0E+00	--	--	2.5E-04	2.49E-04
			Zinc	NC	--	--	NC	0.00E+00	Circulatory system	0.0E+00	--	--	4.9E-03	4.95E-03
			Chemical Total	2.7E-07	0.0E+00	0.0E+00	1.5E-06	1.8E-06		7.5E-03	0.0E+00	0.0E+00	3.0E-02	3.8E-02
		Exposure Point Total						1.8E-06						3.8E-02
	Exposure Medium Total							1.8E-06						3.8E-02
Sediment Total								1.8E-06						3.8E-02
Receptor Total							Receptor Risk Total	3.7E-05					Receptor HI Total	2.1E+00

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TABLE 10an
RAGS PART D TABLE 10.1.RME
RISK SUMMARY
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Current/Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total
Soil	Soil	Off-Facility	Arsenic	3 05E-05	2.04E-08	1 95E-06	2.89E-06	3.54E-05	Skin	5.54E-01	NTV	5.49E-01	4.65E-02	1.15E+00
		5510 Thomas	Barium	NC	NC	NC	NC	0.00E+00	Kidney	1.28E-02	6.25E-04	1.27E-02	0.00E+00	2 61E-02
			Cadmium	NC	1 57E-08	NC	NC	1.57E-08	Kidney	3.07E-01	NTV	3.04E-01	3.44E-02	6.46E-01
			Chromium	NC	9 17E-08	NC	NC	9.17E-08	Lung (Inhalation pathway) None Observed	1.79E-04	3.29E-04	1.78E-04	0.00E+00	6.85E-04
			Mercury	NC	NC	NC	NC	0 00E+00	Immunological	5.97E-03	7.30E-07	5.92E-03	0.00E+00	1.19E-02
			Selenium	NC	NC	NC	NC	0.00E+00	Skin, central nervous system	2.43E-03	NTV	2.41E-03	0.00E+00	4.84E-03
			Silver	NC	NC	NC	NC	0.00E+00	central nervous system	2.25E-03	NTV	2.23E-03	0 00E+00	4.48E-03
			Zinc	NC	NC	NC	NC	0 00E+00	Circulatory system	5.11E-02	NTV	5.07E-02	0 00E+00	1 02E-01
			Chemical Total	3 1E-05	1.3E-07	1.9E-06	2 9E-06	3.5E-05		9.4E-01	9.5E-04	9.3E-01	8.1E-02	1.9E+00
		Exposure Point Total						3 5E-05						1.9E+00
	Exposure Medium Total							3.5E-05						1.9E+00
Soil Total								3.5E-05						1.9E+00
Surface water	Surface water	Off-Facility	Arsenic	--	--	--	2.06E-08	2 06E-08	Skin	--	--	--	1.2E-04	1 23E-04
		Surface Water	Barium	--	--	--	NC	0 00E+00	Kidney	--	--	--	4.7E-05	4 69E-05
			Cadmium	--	--	--	NC	0 00E+00	Kidney	--	--	--	1.2E-02	1.21E-02
			Chromium	--	--	--	NC	0.00E+00	None Observed	--	--	--	1.6E-06	1.64E-06
			Mercury	--	--	--	NS	0.00E+00	Immunilogical	--	--	--	NS	0.00E+00
			Selenium	--	--	--	NC	0.00E+00	Skin, central nervous system	--	--	--	1.5E-06	1.55E-06
			Silver	--	--	--	NC	0.00E+00	central nervous system	--	--	--	2 1E-01	2 09E-01
			Zinc	--	--	--	NC	0.00E+00	Circulatory system	--	--	--	4.4E-09	4.37E-09
			Chemical Total	0 0E+00	0.0E+00	0.0E+00	2.1E-08	2 1E-08		0 0E+00	0 0E+00	0.0E+00	2.2E-01	2.2E-01
		Exposure Point Total						2.1E-08						2.2E-01
	Exposure Medium Total							2.1E-08						2.2E-01
Surface water Total								2 1E-08						2 2E-01
Sediment	Sediment	Off-Facility	Arsenic	2.70E-07	--	--	1.49E-06	1.76E-06	Skin	2.7E-03	--	--	1.0E-02	1.31E-02
		Sediment	Barium	NC	--	--	NC	0.00E+00	Kidney	0 0E+00	--	--	7.4E-05	7.39E-05
			Cadmium	NC	--	--	NC	0.00E+00	Kidney	4 8E-03	--	--	1.4E-02	1.87E-02
			Chromium	NC	--	--	NC	0.00E+00	None Observed	0 0E+00	--	--	1.2E-06	1 22E-06
			Mercury	NC	--	--	NC	0.00E+00	Immunological	0.0E+00	--	--	6 7E-04	6.73E-04
			Selenium	NC	--	--	NC	0.00E+00	Skin, central nervous system	0.0E+00	--	--	4.0E-05	4.03E-05
			Silver	NC	--	--	NC	0.00E+00	central nervous system	0.0E+00	--	--	2.5E-04	2.49E-04
			Zinc	NC	--	--	NC	0.00E+00	Circulatory system	0 0E+00	--	--	4.9E-03	4.95E-03
			Chemical Total	2.7E-07	0 0E+00	0.0E+00	1.5E-06	1.8E-06		7 5E-03	0.0E+00	0.0E+00	3.0E-02	3.8E-02
		Exposure Point Total						1.8E-06						3 8E-02
	Exposure Medium Total							1.8E-06						3.8E-02
Sediment Total								1.8E-06						3.8E-02
Receptor Total							Receptor Risk Total	3.7E-05					Receptor HI Total	2 2E+00

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TABLE 10ao
RAGS PART D TABLE 10.1.RME
RISK SUMMARY
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Current/Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total
Soil	Soil	Off-Facility	Arsenic	3.05E-05	2.04E-08	1.95E-06	2.89E-06	3.54E-05	Skin	5.54E-01	NTV	5.49E-01	4.65E-02	1.15E+00
		5528 Delmar	Barium	NC	NC	NC	NC	0.00E+00	Kidney	1.15E-02	5.63E-04	1.14E-02	0.00E+00	2.35E-02
			Cadmium	NC	1.38E-08	NC	NC	1.38E-08	Kidney	2.68E-01	NTV	2.66E-01	3.01E-02	5.65E-01
			Chromium	NC	7.86E-08	NC	NC	7.86E-08	Lung (Inhalation pathway) None Observed	1.53E-04	2.82E-04	1.52E-04	0.00E+00	5.87E-04
			Mercury	NC	NC	NC	NC	0.00E+00	Immunological	3.49E-03	4.28E-07	3.47E-03	0.00E+00	6.96E-03
			Selenium	NC	NC	NC	NC	0.00E+00	Skin, central nervous system	2.81E-03	NTV	2.79E-03	0.00E+00	5.60E-03
			Silver	NC	NC	NC	NC	0.00E+00	central nervous system	9.72E-04	NTV	9.64E-04	0.00E+00	1.94E-03
			Zinc	NC	NC	NC	NC	0.00E+00	Circulatory system	3.37E-02	NTV	3.34E-02	0.00E+00	6.71E-02
			Chemical Total	3.1E-05	1.1E-07	1.9E-06	2.9E-06	3.5E-05		8.8E-01	8.4E-04	8.7E-01	7.7E-02	1.8E+00
		Exposure Point Total						3.5E-05						1.8E+00
	Exposure Medium Total							3.5E-05						1.8E+00
Soil Total								3.5E-05						1.8E+00
Surface water	Surface water	Off-Facility	Arsenic	--	--	--	2.06E-08	2.06E-08	Skin	--	--	--	1.2E-04	1.23E-04
		Surface Water	Barium	--	--	--	NC	0.00E+00	Kidney	--	--	--	4.7E-05	4.69E-05
			Cadmium	--	--	--	NC	0.00E+00	Kidney	--	--	--	1.2E-02	1.21E-02
			Chromium	--	--	--	NC	0.00E+00	None Observed	--	--	--	1.6E-06	1.64E-06
			Mercury	--	--	--	NS	0.00E+00	Immunological	--	--	--	NS	0.00E+00
			Selenium	--	--	--	NC	0.00E+00	Skin, central nervous system	--	--	--	1.5E-06	1.55E-06
			Silver	--	--	--	NC	0.00E+00	central nervous system	--	--	--	2.1E-01	2.09E-01
			Zinc	--	--	--	NC	0.00E+00	Circulatory system	--	--	--	4.4E-09	4.37E-09
			Chemical Total	0.0E+00	0.0E+00	0.0E+00	2.1E-08	2.1E-08		0.0E+00	0.0E+00	0.0E+00	2.2E-01	2.2E-01
		Exposure Point Total						2.1E-08						2.2E-01
	Exposure Medium Total							2.1E-08						2.2E-01
Surface water Total								2.1E-08						2.2E-01
Sediment	Sediment	Off-Facility	Arsenic	2.70E-07	--	--	1.49E-06	1.76E-06	Skin	2.7E-03	--	--	1.0E-02	1.31E-02
		Sediment	Barium	NC	--	--	NC	0.00E+00	Kidney	0.0E+00	--	--	7.4E-05	7.39E-05
			Cadmium	NC	--	--	NC	0.00E+00	Kidney	4.8E-03	--	--	1.4E-02	1.87E-02
			Chromium	NC	--	--	NC	0.00E+00	None Observed	0.0E+00	--	--	1.2E-06	1.22E-06
			Mercury	NC	--	--	NC	0.00E+00	Immunological	0.0E+00	--	--	6.7E-04	6.73E-04
			Selenium	NC	--	--	NC	0.00E+00	Skin, central nervous system	0.0E+00	--	--	4.0E-05	4.03E-05
			Silver	NC	--	--	NC	0.00E+00	central nervous system	0.0E+00	--	--	2.5E-04	2.49E-04
			Zinc	NC	--	--	NC	0.00E+00	Circulatory system	0.0E+00	--	--	4.9E-03	4.95E-03
			Chemical Total	2.7E-07	0.0E+00	0.0E+00	1.5E-06	1.8E-06		7.5E-03	0.0E+00	0.0E+00	3.0E-02	3.8E-02
		Exposure Point Total						1.8E-06						3.8E-02
	Exposure Medium Total							1.8E-06						3.8E-02
Sediment Total								1.8E-06						3.8E-02
Receptor Total							Receptor Risk Total	3.7E-05					Receptor HI Total	2.1E+00

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TABLE 10ap
RAGS PART D TABLE 10.1.RME
RISK SUMMARY
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Current/Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total
Soil	Soil	Off-Facility	Arsenic	3.05E-05	2.04E-08	1.95E-06	2.89E-06	3.54E-05	Skin	5.54E-01	NTV	5.49E-01	4.65E-02	1.15E+00
		5500 Maryland	Barium	NC	NC	NC	NC	0.00E+00	Kidney	1.34E-02	6.56E-04	1.33E-02	0.00E+00	2.74E-02
			Cadmium	NC	1.57E-08	NC	NC	1.57E-08	Kidney	3.07E-01	NTV	3.04E-01	3.44E-02	6.46E-01
			Chromium	NC	7.43E-08	NC	NC	7.43E-08	Lung (Inhalation pathway) None Observed	1.45E-04	2.66E-04	1.44E-04	0.00E+00	5.55E-04
			Mercury	NC	NC	NC	NC	0.00E+00	Immunological	4.26E-03	5.22E-07	4.23E-03	0.00E+00	8.49E-03
			Selenium	NC	NC	NC	NC	0.00E+00	Skin; central nervous system	4.09E-03	NTV	4.06E-03	0.00E+00	8.15E-03
			Silver	NC	NC	NC	NC	0.00E+00	central nervous system	9.21E-04	NTV	9.13E-04	0.00E+00	1.83E-03
			Zinc	NC	NC	NC	NC	0.00E+00	Circulatory system	4.26E-06	NTV	4.23E-06	0.00E+00	8.49E-06
			Chemical Total	3.1E-05	1.1E-07	1.9E-06	2.9E-06	3.5E-05		8.8E-01	9.2E-04	8.8E-01	8.1E-02	1.8E+00
		Exposure Point Total						3.5E-05						1.8E+00
	Exposure Medium Total							3.5E-05						1.8E+00
Soil Total								3.5E-05						1.8E+00
Surface water	Surface water	Off-Facility	Arsenic	--	--	--	2.06E-08	2.06E-08	Skin	--	--	--	1.2E-04	1.23E-04
		Surface Water	Barium	--	--	--	NC	0.00E+00	Kidney	--	--	--	4.7E-05	4.69E-05
			Cadmium	--	--	--	NC	0.00E+00	Kidney	--	--	--	1.2E-02	1.21E-02
			Chromium	--	--	--	NC	0.00E+00	None Observed	--	--	--	1.6E-06	1.64E-06
			Mercury	--	--	--	NS	0.00E+00	Immunological	--	--	--	NS	0.00E+00
			Selenium	--	--	--	NC	0.00E+00	Skin, central nervous system	--	--	--	1.5E-06	1.55E-06
			Silver	--	--	--	NC	*0.00E+00*	*central nervous system*	--	--	--	2.1E-01	*2.09E-01*
			Zinc	--	--	--	NC	0.00E+00	Circulatory system	--	--	--	4.4E-09	4.37E-09
			Chemical Total	0.0E+00	*0.0E+00*	*0.0E+00*	*2.1E-08*	2.1E-08		*0.0E+00*	*0.0E+00*	0.0E+00	2.2E-01	2.2E-01
		Exposure Point Total						2.1E-08						2.2E-01
	Exposure Medium Total							*2.1E-08*						*2.2E-01*
Surface water Total								*2.1E-08*						*2.2E-01*
Sediment	Sediment	Off-Facility	Arsenic	2.70E-07	--	--	1.49E-06	1.76E-06	Skin	2.7E-03	--	--	1.0E-02	1.31E-02
		Sediment	Barium	NC	--	--	NC	0.00E+00	Kidney	0.0E+00	--	--	7.4E-05	7.39E-05
			Cadmium	NC	--	--	NC	*0.00E+00*	*Kidney*	*4.8E-03*	--	--	*1.4E-02*	*1.87E-02*
			Chromium	NC	--	--	NC	0.00E+00	None Observed	0.0E+00	--	--	1.2E-06	1.22E-06
			Mercury	NC	--	--	NC	0.00E+00	Immunological	0.0E+00	--	--	6.7E-04	6.73E-04
			Selenium	NC	--	--	NC	0.00E+00	Skin, central nervous system	*0.0E+00*	--	--	*4.0E-05*	4.03E-05
			Silver	NC	--	--	NC	0.00E+00	central nervous system	0.0E+00	--	--	2.5E-04	2.49E-04
			Zinc	NC	--	--	NC	0.00E+00	Circulatory system	0.0E+00	--	--	4.9E-03	4.95E-03
			Chemical Total	2.7E-07	0.0E+00	0.0E+00	1.5E-06	1.8E-06		7.5E-03	0.0E+00	0.0E+00	3.0E-02	3.8E-02
		Exposure Point Total						1.8E-06						3.8E-02
	Exposure Medium Total							1.8E-06						3.8E-02
Sediment Total								1.8E-06						3.8E-02
Receptor Total							Receptor Risk Total	3.7E-05					Receptor HI Total	2.1E+00

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TABLE 10aq
RAGS PART D TABLE 10.1.RME
RISK SUMMARY
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Current/Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total
Soil	Soil	Off-Facility	Arsenic	2.70E-05	1.81E-08	1.72E-06	2.56E-06	3.13E-05	Skin	4.90E-01	NTV	4.86E-01	4.12E-02	1.02E+00
		5515 Thomas	Barium	NC	NC	NC	NC	0.00E+00	Kidney	1.21E-02	5.94E-04	1.20E-02	0.00E+00	2.48E-02
			Cadmium	NC	6.55E-09	NC	NC	6.55E-09	Kidney	1.28E-01	NTV	1.27E-01	1.43E-02	2.69E-01
			Chromium	NC	6.99E-08	NC	NC	6.99E-08	Lung (Inhalation pathway) None Observed	1.36E-04	2.50E-04	1.35E-04	0.00E+00	5.22E-04
			Mercury	NC	NC	NC	NC	0.00E+00	Immunological	4.69E-03	5.74E-07	4.65E-03	0.00E+00	9.34E-03
			Selenium	NC	NC	NC	NC	0.00E+00	Skin; central nervous system	2.45E-03	NTV	2.43E-03	0.00E+00	4.89E-03
			Silver	NC	NC	NC	NC	0.00E+00	central nervous system	9.21E-04	NTV	9.13E-04	0.00E+00	1.83E-03
			Zinc	NC	NC	NC	NC	0.00E+00	Circulatory system	2.71E-02	NTV	2.68E-02	0.00E+00	5.39E-02
			Chemical Total	2.7E-05	9.5E-08	1.7E-06	2.6E-06	3.1E-05		6.7E-01	8.4E-04	6.6E-01	5.5E-02	1.4E+00
		Exposure Point Total						3.1E-05						1.4E+00
	Exposure Medium Total							3.1E-05						1.4E+00
Soil Total								3.1E-05						1.4E+00
Surface water	Surface water	Off-Facility	Arsenic	--	--	--	2.06E-08	2.06E-08	Skin	--	--	--	1.2E-04	1.23E-04
		Surface Water	Barium	--	--	--	NC	0.00E+00	Kidney	--	--	--	4.7E-05	4.69E-05
			Cadmium	--	--	--	NC	0.00E+00	Kidney	--	--	--	1.2E-02	1.21E-02
			Chromium	--	--	--	NC	0.00E+00	None Observed	--	--	--	1.6E-06	1.64E-06
			Mercury	--	--	--	NS	0.00E+00	Immunological	--	--	--	NS	0.00E+00
			Selenium	--	--	--	NC	0.00E+00	Skin; central nervous system	--	--	--	1.5E-06	1.55E-06
			Silver	--	--	--	NC	0.00E+00	central nervous system	--	--	--	2.1E-01	2.09E-01
			Zinc	--	--	--	NC	0.00E+00	Circulatory system	--	--	--	4.4E-09	4.37E-09
			Chemical Total	0.0E+00	0.0E+00	0.0E+00	2.1E-08	2.1E-08		0.0E+00	0.0E+00	0.0E+00	2.2E-01	2.2E-01
		Exposure Point Total						2.1E-08						2.2E-01
	Exposure Medium Total							2.1E-08						2.2E-01
Surface water Total								2.1E-08						2.2E-01
Sediment	Sediment	Off-Facility	Arsenic	2.70E-07	--	--	1.49E-06	1.76E-06	Skin	2.7E-03	--	--	1.0E-02	1.31E-02
		Sediment	Barium	NC	--	--	NC	0.00E+00	Kidney	0.0E+00	--	--	7.4E-05	7.39E-05
			Cadmium	NC	--	--	NC	0.00E+00	Kidney	4.8E-03	--	--	1.4E-02	1.87E-02
			Chromium	NC	--	--	NC	0.00E+00	None Observed	0.0E+00	--	--	1.2E-06	1.22E-06
			Mercury	NC	--	--	NC	0.00E+00	Immunological	0.0E+00	--	--	6.7E-04	6.73E-04
			Selenium	NC	--	--	NC	0.00E+00	Skin, central nervous system	0.0E+00	--	--	4.0E-05	4.03E-05
			Silver	NC	--	--	NC	0.00E+00	central nervous system	0.0E+00	--	--	2.5E-04	2.49E-04
			Zinc	NC	--	--	NC	0.00E+00	Circulatory system	0.0E+00	--	--	4.9E-03	4.95E-03
			Chemical Total	2.7E-07	0.0E+00	0.0E+00	1.5E-06	1.8E-06		7.5E-03	0.0E+00	0.0E+00	3.0E-02	3.8E-02
		Exposure Point Total						1.8E-06						3.8E-02
	Exposure Medium Total							1.8E-06						3.8E-02
Sediment Total								1.8E-06						3.8E-02
Receptor Total							Receptor Risk Total	3.3E-05					Receptor HI Total	1.6E+00

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TABLE 10ar
RAGS PART D TABLE 10.1.RME
RISK SUMMARY
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: *Current/Future*
Receptor Population: Resident
Receptor Age: *Child (noncancer) Child/Adult (cancer)*

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk: Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total	Non-Carcinogenic Hazard Quotient: Primary Target Organ(s)	Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total
Soil	Soil	Off-Facility	Arsenic	2.58E-05	1.73E-08	1.65E-06	2.45E-06	2.99E-05	Skin	4.69E-01	NTV	4.65E-01	3.94E-02	9.73E-01
		5432 Maryland	Barium	NC	NC	NC	NC	*0.00E+00*	*Kidney*	*1.34E-02*	*6.56E-04*	*1.33E-02*	*0.00E+00*	*2.74E-02*
			Cadmium	NC	1.38E-08	NC	NC	1.38E-08	Kidney	2.68E-01	NTV	2.66E-01	3.01E-02	5.65E-01
			Chromium	NC	7.86E-08	NC	NC	7.86E-08	Lung (Inhalation pathway) None Observed	1.53E-04	2.82E-04	1.52E-04	0.00E+00	5.87E-04
			Mercury	NC	NC	NC	NC	0.00E+00	Immunological	5.54E-03	6.78E-07	5.49E-03	0.00E+00	1.10E-02
			Selenium	NC	NC	NC	NC	0.00E+00	Skin; central nervous system	3.32E-03	NTV	3.30E-03	0.00E+00	6.62E-03
			Silver	NC	NC	NC	NC	*0.00E+00*	central nervous system	*1.38E-03*	NTV	*1.37E-03*	*0.00E+00*	*2.75E-03*
			Zinc	NC	NC	NC	NC	0.00E+00	Circulatory system	4.26E-02	NTV	4.23E-02	0.00E+00	8.49E-02
			Chemical Total	2.6E-05	1.1E-07	1.6E-06	2.4E-06	3.0E-05		8.0E-01	9.4E-04	8.0E-01	6.9E-02	1.7E+00
		Exposure Point Total						3.0E-05						1.7E+00
	Exposure Medium Total							3.0E-05						1.7E+00
Soil Total								3.0E-05						1.7E+00
Surface water	*Surface water*	*Off-Facility*	Arsenic	--	--	--	2.06E-08	2.06E-08	Skin	--	--	--	1.2E-04	1.23E-04
		Surface Water	Barium	--	--	--	NC	0.00E+00	Kidney	--	--	--	4.7E-05	4.69E-05
			Cadmium	--	--	--	NC	0.00E+00	Kidney	--	--	--	1.2E-02	1.21E-02
			Chromium	--	--	--	NC	0.00E+00	None Observed	--	--	--	1.6E-06	1.64E-06
			Mercury	--	--	--	NS	0.00E+00	Immunological	--	--	--	NS	0.00E+00
			Selenium	--	--	--	NC	0.00E+00	Skin, central nervous system	--	--	--	1.5E-06	1.55E-06
			Silver	--	--	--	NC	0.00E+00	central nervous system	--	--	--	2.1E-01	2.09E-01
			Zinc	--	--	--	NC	0.00E+00	Circulatory system	--	--	--	4.4E-09	4.37E-09
			Chemical Total	0.0E+00	0.0E+00	0.0E+00	2.1E-08	2.1E-08		0.0E+00	0.0E+00	0.0E+00	2.2E-01	2.2E-01
		Exposure Point Total						*2.1E-08*						2.2E-01
	Exposure Medium Total							2.1E-08						2.2E-01
Surface water Total								2.1E-08						2.2E-01
Sediment	Sediment	Off-Facility	Arsenic	2.70E-07	--	--	1.49E-06	1.76E-06	Skin	2.7E-03	--	--	1.0E-02	1.31E-02
		Sediment	Barium	NC	--	--	NC	0.00E+00	Kidney	0.0E+00	--	--	7.4E-05	7.39E-05
			Cadmium	NC	--	--	NC	0.00E+00	Kidney	4.8E-03	--	--	1.4E-02	1.87E-02
			Chromium	NC	--	--	NC	0.00E+00	None Observed	0.0E+00	--	--	1.2E-06	1.22E-06
			Mercury	NC	--	--	NC	0.00E+00	Immunological	0.0E+00	--	--	6.7E-04	6.73E-04
			Selenium	NC	--	--	NC	0.00E+00	Skin; central nervous system	0.0E+00	--	--	4.0E-05	4.03E-05
			Silver	NC	--	--	NC	0.00E+00	central nervous system	*0.0E+00*	--	--	*2.5E-04*	2.49E-04
			Zinc	NC	--	--	NC	0.00E+00	Circulatory system	0.0E+00	--	--	4.9E-03	4.95E-03
			Chemical Total	*2.7E-07*	*0.0E+00*	*0.0E+00*	*1.5E-06*	1.8E-06		*7.5E-03*	*0.0E+00*	*0.0E+00*	*3.0E-02*	*3.8E-02*
		Exposure Point Total						1.8E-06						3.8E-02
	Exposure Medium Total							1.8E-06						3.8E-02
Sediment Total								1.8E-06						3.8E-02
Receptor Total							Receptor Risk Total	3.2E-05					Receptor HI Total	1.9E+00

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TABLE 10as
RAGS PART D TABLE 10.1.RME
RISK SUMMARY
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Current/Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk: Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total	Non-Carcinogenic Hazard Quotient: Primary Target Organ(s)	Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total
Soil	Soil	Off-Facility	Arsenic	2.07E-05	1.38E-08	1.32E-06	1.96E-06	2.40E-05	Skin	3.75E-01	NTV	3.72E-01	3.15E-02	7.78E-01
		4000 Collinsville Rd	Barium	NC	NC	NC	NC	0.00E+00	Kidney	1.09E-02	5.31E-04	1.08E-02	0.00E+00	2.22E-02
			Cadmium	NC	1.18E-08	NC	NC	1.18E-08	Kidney	2.30E-01	NTV	2.28E-01	2.58E-02	4.84E-01
			Chromium	NC	7.86E-08	NC	NC	7.86E-08	Lung (Inhalation pathway) None Observed	1.53E-04	2.82E-04	1.52E-04	0.00E+00	5.87E-04
			Mercury	NC	NC	NC	NC	0.00E+00	Immunological	5.54E-03	6.78E-07	5.49E-03	0.00E+00	1.10E-02
			Selenium	NC	NC	NC	NC	0.00E+00	Skin; central nervous system	1.53E-03	NTV	1.52E-03	0.00E+00	3.06E-03
			Silver	NC	NC	NC	NC	0.00E+00	central nervous system	1.41E-03	NTV	1.39E-03	0.00E+00	2.80E-03
			Zinc	NC	NC	NC	NC	0.00E+00	Circulatory system	3.58E-02	NTV	3.55E-02	0.00E+00	7.13E-02
			Chemical Total	2.1E-05	1.0E-07	1.3E-06	2.0E-06	2.4E-05		6.6E-01	8.1E-04	6.5E-01	5.7E-02	1.4E+00
		Exposure Point Total						2.4E-05						1.4E+00
	Exposure Medium Total							2.4E-05						1.4E+00
Soil Total								2.4E-05						1.4E+00
Surface water	Surface water	Off-Facility	Arsenic	--	--	--	2.06E-08	2.06E-08	Skin	--	--	--	1.2E-04	1.23E-04
		Surface Water	Barium	--	--	--	NC	0.00E+00	Kidney	--	--	--	4.7E-05	4.69E-05
			Cadmium	--	--	--	NC	0.00E+00	Kidney	--	-	--	1.2E-02	1.21E-02
			Chromium	--	--	--	NC	0.00E+00	None Observed	--	--	--	1.6E-06	1.64E-06
			Mercury	--	--	--	NS	0.00E+00	Immunological	--	--	--	NS	0.00E+00
			Selenium	--	--	--	NC	0.00E+00	Skin; central nervous system	--	--	--	1.5E-06	1.55E-06
			Silver	--	--	--	NC	0.00E+00	central nervous system	--	--	--	2.1E-01	2.09E-01
			Zinc	--	--	--	NC	0.00E+00	Circulatory system	--	--	--	4.4E-09	4.37E-09
			Chemical Total	0.0E+00	0.0E+00	0.0E+00	2.1E-08	2.1E-08		0.0E+00	0.0E+00	0.0E+00	2.2E-01	2.2E-01
		Exposure Point Total						2.1E-08						2.2E-01
	Exposure Medium Total							2.1E-08						2.2E-01
Surface water Total								2.1E-08						2.2E-01
Sediment	Sediment	Off-Facility	Arsenic	2.70E-07	--	--	1.49E-06	1.76E-06	Skin	2.7E-03	--	--	1.0E-02	1.31E-02
		Sediment	Barium	NC	--	--	NC	0.00E+00	Kidney	0.0E+00	--	--	7.4E-05	7.39E-05
			Cadmium	NC	--	--	NC	0.00E+00	Kidney	4.8E-03	--	--	1.4E-02	1.87E-02
			Chromium	NC	--	--	NC	0.00E+00	None Observed	0.0E+00	--	--	1.2E-06	1.22E-06
			Mercury	NC	--	--	NC	0.00E+00	Immunological	0.0E+00	--	--	6.7E-04	6.73E-04
			Selenium	NC	--	--	NC	0.00E+00	Skin; central nervous system	0.0E+00	--	--	4.0E-05	4.03E-05
			Silver	NC	--	--	NC	0.00E+00	central nervous system	0.0E+00	--	--	2.5E-04	2.49E-04
			Zinc	NC	--	--	NC	0.00E+00	Circulatory system	0.0E+00	--	--	4.9E-03	4.95E-03
			Chemical Total	2.7E-07	0.0E+00	0.0E+00	1.5E-06	1.8E-06		7.5E-03	0.0E+00	0.0E+00	3.0E-02	3.8E-02
		Exposure Point Total						1.8E-06						3.8E-02
	Exposure Medium Total							1.8E-06						3.8E-02
Sediment Total								1.8E-06						3.8E-02
Receptor Total							Receptor Risk Total	2.6E-05					Receptor HI Total	1.6E+00

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TABLE 10at
RAGS PART D TABLE 10.1.RME
RISK SUMMARY
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: *Current/Future*
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total
Soil	Soil	Off-Facility	Arsenic	1.83E-05	1.22E-08	1.17E-06	1.73E-06	2.12E-05	Skin	3.32E-01	NTV	3.30E-01	2.79E-02	6.90E-01
		2768 N. 42nd St	Barium	NC	NC	NC	NC	0.00E+00	Kidney	1.15E-02	5.63E-04	1.14E-02	0.00E+00	2.35E-02
			Cadmium	NC	*8.85E-09*	NC	NC	*8.85E-09*	Kidney	*1.73E-01*	*NTV*	*1.71E-01*	*1.93E-02*	*3.63E-01*
			Chromium	NC	6.99E-08	NC	NC	6.99E-08	Lung (inhalation pathway) None Observed	1.36E-04	2.50E-04	1.35E-04	0.00E+00	5.22E-04
			Mercury	NC	NC	NC	NC	*0.00E+00*	Immunilogical	*4.45E-03*	*5.45E-07*	*4.42E-03*	*0.00E+00*	8.87E-03
			Selenium	NC	NC	NC	NC	0.00E+00	Skin; central nervous system	2.33E-03	NTV	2.31E-03	0.00E+00	4.63E-03
			Silver	NC	NC	NC	NC	0.00E+00	central nervous system	8.69E-04	NTV	8.62E-04	0.00E+00	1.73E-03
			Zinc	NC	NC	NC	NC	0.00E+00	Circulatory system	2.94E-02	NTV	2.92E-02	0.00E+00	5.86E-02
			Chemical Total	1.8E-05	9.1E-08	1.2E-06	1.7E-06	2.1E-05		5.5E-01	8.1E-04	5.5E-01	4.7E-02	1.2E+00
		Exposure Point Total						2.1E-05						1.2E+00
	Exposure Medium Total							2.1E-05						1.2E+00
Soil Total								2.1E-05						1.2E+00
Surface water	Surface water	Off-Facility	Arsenic	--	--	--	2.06E-08	2.06E-08	Skin	--	--	--	1.2E-04	1.23E-04
		Surface Water	Barium	--	--	--	NC	0.00E+00	Kidney	--	--	--	4.7E-05	4.69E-05
			Cadmium	--	--	--	NC	0.00E+00	Kidney	--	--	--	1.2E-02	1.21E-02
			Chromium	--	--	--	NC	0.00E+00	None Observed	--	--	--	1.6E-06	1.64E-06
			Mercury	--	--	--	NS	0.00E+00	Immunilogical	--	--	--	NS	0.00E+00
			Selenium	--	--	--	NC	0.00E+00	Skin; central nervous system	--	--	--	1.5E-06	1.55E-06
			Silver	--	--	--	NC	0.00E+00	central nervous system	--	--	--	2.1E-01	2.09E-01
			Zinc	--	--	--	NC	0.00E+00	Circulatory system	--	--	--	4.4E-09	4.37E-09
			Chemical Total	0.0E+00	0.0E+00	0.0E+00	2.1E-08	2.1E-08		0.0E+00	0.0E+00	0.0E+00	2.2E-01	2.2E-01
		Exposure Point Total						2.1E-08						2.2E-01
	Exposure Medium Total							2.1E-08						2.2E-01
Surface water Total								2.1E-08						2.2E-01
Sediment	Sediment	Off-Facility	Arsenic	2.70E-07	--	--	1.49E-06	1.76E-06	Skin	2.7E-03	--	--	1.0E-02	1.31E-02
		Sediment	Barium	NC	--	--	NC	0.00E+00	Kidney	0.0E+00	--	--	7.4E-05	7.39E-05
			Cadmium	NC	--	--	NC	0.00E+00	Kidney	4.8E-03	--	--	1.4E-02	1.87E-02
			Chromium	NC	--	--	NC	0.00E+00	None Observed	0.0E+00	--	--	1.2E-06	1.22E-06
			Mercury	NC	--	--	NC	0.00E+00	Immunilogical	0.0E+00	--	--	6.7E-04	6.73E-04
			Selenium	NC	--	--	NC	0.00E+00	Skin; central nervous system	0.0E+00	--	--	4.0E-05	4.03E-05
			Silver	NC	--	--	NC	0.00E+00	central nervous system	0.0E+00	--	--	2.5E-04	2.49E-04
			Zinc	NC	--	--	NC	0.00E+00	Circulatory system	0.0E+00	--	--	4.9E-03	4.95E-03
			Chemical Total	2.7E-07	*0.0E+00*	*0.0E+00*	1.5E-06	1.8E-06		7.5E-03	0.0E+00	*0.0E+00*	3.0E-02	3.8E-02
		Exposure Point Total						1.8E-06						3.8E-02
	Exposure Medium Total							1.8E-06						3.8E-02
Sediment Total								1.8E-06						3.8E-02
Receptor Total							Receptor Risk Total	2.3E-05					Receptor HI Total	1.4E+00

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TABLE 10au
RAGS PART D TABLE 10.1.RME
RISK SUMMARY
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk: Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total	Non-Carcinogenic Hazard Quotient: Primary Target Organ(s)	Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total
Soil	Soil	Off-Facility	Arsenic	2.82E-05	1.88E-08	1.80E-06	2.67E-06	3.27E-05	Skin	5.11E-01	NTV	5.07E-01	4.30E-02	1.06E+00
		2521 N 42nd St.	Barium	NC	NC	NC	NC	0.00E+00	Kidney	1.66E-02	8.13E-04	1.65E-02	0.00E+00	3.39E-02
			Cadmium	NC	9.83E-09	NC	NC	9.83E-09	Kidney	1.92E-01	NTV	1.90E-01	2.15E-02	4.03E-01
			Chromium	NC	1.05E-07	NC	NC	1.05E-07	Lung (Inhalation pathway) None Observed	2.05E-04	3.76E-04	2.03E-04	0.00E+00	7.83E-04
			Mercury	NC	NC	NC	NC	0.00E+00	Immunological	8.95E-03	1.10E-06	8.88E-03	0.00E+00	1.78E-02
			Selenium	NC	NC	NC	NC	0.00E+00	Skin; central nervous system	2.81E-03	NTV	2.79E-03	0.00E+00	5.60E-03
			Silver	NC	NC	NC	NC	0.00E+00	central nervous system	1.66E-03	NTV	1.65E-03	0.00E+00	3.31E-03
			Zinc	NC	NC	NC	NC	0.00E+00	Circulatory system	4.26E-02	NTV	4.23E-02	0.00E+00	8.49E-02
			Chemical Total	2.8E-05	1.3E-07	1.8E-06	2.7E-06	3.3E-05		7.8E-01	1.2E-03	7.7E-01	6.4E-02	1.6E+00
		Exposure Point Total						3.3E-05						1.6E+00
	Exposure Medium Total							3.3E-05						1.6E+00
Soil Total								3.3E-05						1.6E+00
Surface water	Surface water	Off-Facility	Arsenic	--	--	--	2.06E-08	2.06E-08	Skin	--	--	--	1.2E-04	1.23E-04
		Surface Water	Barium	--	--	--	NC	0.00E+00	Kidney	--	--	--	4.7E-05	4.69E-05
			Cadmium	--	--	--	NC	0.00E+00	Kidney	--	--	--	1.2E-02	1.21E-02
			Chromium	--	--	--	NC	0.00E+00	None Observed	--	--	--	1.6E-06	1.64E-06
			Mercury	--	--	--	NS	0.00E+00	Immunological	--	--	--	NS	0.00E+00
			Selenium	--	--	--	NC	0.00E+00	Skin; central nervous system	--	--	--	1.5E-06	1.55E-06
			Silver	--	--	--	NC	0.00E+00	central nervous system	--	--	--	2.1E-01	2.09E-01
			Zinc	--	--	--	NC	0.00E+00	Circulatory system	--	--	--	4.4E-09	4.37E-09
			Chemical Total	0.0E+00	0.0E+00	0.0E+00	2.1E-08	2.1E-08		0.0E+00	0.0E+00	0.0E+00	2.2E-01	2.2E-01
		Exposure Point Total						2.1E-08						2.2E-01
	Exposure Medium Total							2.1E-08						2.2E-01
Surface water Total								2.1E-08						2.2E-01
Sediment	Sediment	Off-Facility	Arsenic	2.70E-07	--	--	1.49E-06	1.76E-06	Skin	2.7E-03	--	--	1.0E-02	1.31E-02
		Sediment	Barium	NC	--	--	NC	0.00E+00	Kidney	0.0E+00	--	--	7.4E-05	7.39E-05
			Cadmium	NC	--	--	NC	0.00E+00	Kidney	4.8E-03	--	--	1.4E-02	1.87E-02
			Chromium	NC	--	--	NC	0.00E+00	None Observed	0.0E+00	--	--	1.2E-06	1.22E-06
			Mercury	NC	--	--	NC	0.00E+00	Immunological	0.0E+00	--	--	6.7E-04	6.73E-04
			Selenium	NC	--	--	NC	0.00E+00	Skin; central nervous system	0.0E+00	--	--	4.0E-05	4.03E-05
			Silver	NC	--	--	NC	0.00E+00	central nervous system	0.0E+00	--	--	2.5E-04	2.49E-04
			Zinc	NC	--	--	NC	0.00E+00	Circulatory system	0.0E+00	--	--	4.9E-03	4.95E-03
			Chemical Total	2.7E-07	0.0E+00	0.0E+00	1.5E-06	1.8E-06		7.5E-03	0.0E+00	0.0E+00	3.0E-02	3.8E-02
		Exposure Point Total						1.8E-06						3.8E-02
	Exposure Medium Total							1.8E-06						3.8E-02
Sediment Total								1.8E-06						3.8E-02
Receptor Total							Receptor Risk Total	3.5E-05					Receptor HI Total	1.9E+00

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TABLE 10av
RAGS PART D TABLE 10.1.RME
RISK SUMMARY
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total
Soil	Soil	Off-Facility	Arsenic	2.58E-05	1.73E-08	1.65E-06	2.45E-06	2.99E-05	Skin	4.69E-01	NTV	4.65E-01	3.94E-02	9.73E-01
		2521 N. 42nd St.	Barium	NC	NC	NC	NC	0.00E+00	Kidney	1.41E-02	6.88E-04	1.39E-02	0.00E+00	2.87E-02
			Cadmium	NC	1.05E-08	NC	NC	1.05E-08	Kidney	2.05E-01	NTV	2.03E-01	2.29E-02	4.30E-01
			Chromium	NC	7.86E-08	NC	NC	7.86E-08	Lung (Inhalation pathway) None Observed	1.53E-04	2.82E-04	1.52E-04	0.00E+00	5.87E-04
			Mercury	NC	NC	NC	NC	0.00E+00	Immunological	5.97E-03	7.30E-07	5.92E-03	0.00E+00	1.19E-02
			Selenium	NC	NC	NC	NC	0.00E+00	Skin, central nervous system	3.32E-03	NTV	3.30E-03	0.00E+00	6.62E-03
			Silver	NC	NC	NC	NC	0.00E+00	central nervous system	2.35E-03	NTV	2.33E-03	0.00E+00	4.69E-03
			Zinc	NC	NC	NC	NC	0.00E+00	Circulatory system	5.11E-02	NTV	5.07E-02	0.00E+00	1.02E-01
			Chemical Total	2.6E-05	1.1E-07	1.6E-06	2.4E-06	3.0E-05		7.5E-01	9.7E-04	7.4E-01	6.2E-02	1.6E+00
		Exposure Point Total						3.0E-05						1.6E+00
	Exposure Medium Total							3.0E-05						1.6E+00
Soil Total								3.0E-05						1.6E+00
Surface water	Surface water	Off-Facility	Arsenic	--	--	--	2.06E-08	2.06E-08	Skin	--	--	--	1.2E-04	1.23E-04
		Surface Water	Barium	--	--	--	NC	0.00E+00	Kidney	--	--	--	4.7E-05	4.69E-05
			Cadmium	--	--	--	NC	0.00E+00	Kidney	--	--	--	1.2E-02	1.21E-02
			Chromium	--	--	--	NC	0.00E+00	None Observed	--	--	--	1.6E-06	1.64E-06
			Mercury	--	--	--	NS	0.00E+00	Immunological	--	--	--	NS	0.00E+00
			Selenium	--	--	--	NC	0.00E+00	Skin; central nervous system	--	--	--	1.5E-06	1.55E-06
			Silver	--	--	--	NC	0.00E+00	central nervous system	--	--	--	2.1E-01	2.09E-01
			Zinc	--	--	--	NC	0.00E+00	Circulatory system	--	--	--	4.4E-09	4.37E-09
			Chemical Total	0.0E+00	0.0E+00	0.0E+00	2.1E-08	2.1E-08		0.0E+00	0.0E+00	0.0E+00	2.2E-01	2.2E-01
		Exposure Point Total						2.1E-08						2.2E-01
	Exposure Medium Total							2.1E-08						2.2E-01
Surface water Total								2.1E-08						2.2E-01
Sediment	Sediment	Off-Facility	Arsenic	2.70E-07	--	--	1.49E-06	1.76E-06	Skin	2.7E-03	--	--	1.0E-02	1.31E-02
		Sediment	Barium	NC	--	--	NC	0.00E+00	Kidney	0.0E+00	--	--	7.4E-05	7.39E-05
			Cadmium	NC	--	--	NC	0.00E+00	Kidney	4.8E-03	--	--	1.4E-02	1.87E-02
			Chromium	NC	--	--	NC	0.00E+00	None Observed	0.0E+00	--	--	1.2E-06	1.22E-06
			Mercury	NC	--	--	NC	0.00E+00	Immunological	0.0E+00	--	--	6.7E-04	6.73E-04
			Selenium	NC	--	--	NC	0.00E+00	Skin, central nervous system	0.0E+00	--	--	4.0E-05	4.03E-05
			Silver	NC	--	--	NC	0.00E+00	central nervous system	0.0E+00	--	--	2.5E-04	2.49E-04
			Zinc	NC	--	--	NC	0.00E+00	Circulatory system	0.0E+00	--	--	4.9E-03	4.95E-03
			Chemical Total	2.7E-07	0.0E+00	0.0E+00	1.5E-06	1.8E-06		7.5E-03	0.0E+00	0.0E+00	3.0E-02	3.8E-02
		Exposure Point Total						1.8E-06						3.8E-02
	Exposure Medium Total							1.8E-06						3.8E-02
Sediment Total								1.8E-06						3.8E-02
Receptor Total							Receptor Risk Total	3.2E-05					Receptor HI Total	1.8E+00

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TABLE 10aw
RAGS PART D TABLE 10.1.RME
RISK SUMMARY
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	*Exposure Medium*	*Exposure Point*	*Chemical of Potential Concern*	*Carcinogenic Risk*					*Non-Carcinogenic Hazard Quotient*					
				Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total
Soil	Soil	Off-Facility	Arsenic	2.35E-05	1.57E-08	1.50E-06	2.22E-06	2.72E-05	Skin	4.26E-01	NTV	4.23E-01	3.58E-02	8.85E-01
		3800 Roselake	Barium	NC	NC	NC	NC	0.00E+00	Kidney	1.73E-02	8.44E-04	1.71E-02	0.00E+00	3.52E-02
			Cadmium	NC	6.22E-09	NC	NC	6.22E-09	Kidney	1.21E-01	NTV	1.20E-01	1.36E-02	2.56E-01
			Chromium	NC	7.43E-08	NC	NC	7.43E-08	Lung (Inhalation pathway) None Observed	1.45E-04	2.66E-04	1.44E-04	0.00E+00	5.55E-04
			Mercury	NC	NC	NC	NC	0.00E+00	Immunological	1.49E-02	1.83E-06	1.48E-02	0.00E+00	2.97E-02
			Selenium	NC	NC	NC	NC	0.00E+00	Skin; central nervous system	2.30E-03	NTV	2.28E-03	0.00E+00	4.58E-03
			Silver	NC	NC	NC	NC	0.00E+00	central nervous system	8.18E-04	NTV	8.11E-04	0.00E+00	1.63E-03
			Zinc	NC	NC	NC	NC	0.00E+00	Circulatory system	4.18E-02	NTV	4.14E-02	0.00E+00	8.32E-02
			Chemical Total	2.3E-05	9.6E-08	1.5E-06	2.2E-06	2.7E-05		6.2E-01	1.1E-03	6.2E-01	4.9E-02	1.3E+00
		Exposure Point Total						2.7E-05						1.3E+00
	Exposure Medium Total							2.7E-05						1.3E+00
Soil Total								2.7E-05						1.3E+00
Surface water	Surface water	Off-Facility Surface Water	Arsenic	--	--	--	2.06E-08	2.06E-08	Skin	--	--	--	1.2E-04	1.23E-04
			Barium	--	--	--	NC	0.00E+00	Kidney	--	--	--	4.7E-05	4.69E-05
			Cadmium	--	--	--	NC	0.00E+00	Kidney	--	--	--	1.2E-02	1.21E-02
			Chromium	--	--	--	NC	0.00E+00	None Observed	--	--	--	1.6E-06	1.64E-06
			Mercury	--	--	--	NS	0.00E+00	Immunological	--	--	--	NS	0.00E+00
			Selenium	--	--	--	NC	0.00E+00	Skin, central nervous system	--	--	--	1.5E-06	1.55E-06
			Silver	--	--	--	NC	0.00E+00	central nervous system	--	--	--	2.1E-01	2.09E-01
			Zinc	--	--	--	NC	0.00E+00	Circulatory system	--	--	--	4.4E-09	4.37E-09
			Chemical Total	0.0E+00	0.0E+00	0.0E+00	2.1E-08	2.1E-08		0.0E+00	0.0E+00	0.0E+00	2.2E-01	2.2E-01
		Exposure Point Total						2.1E-08						2.2E-01
	Exposure Medium Total							2.1E-08						2.2E-01
Surface water Total								2.1E-08						2.2E-01
Sediment	Sediment	Off-Facility Sediment	Arsenic	2.70E-07	--	--	1.49E-06	1.76E-06	Skin	2.7E-03	--	--	1.0E-02	1.31E-02
			Barium	NC	--	--	NC	0.00E+00	Kidney	0.0E+00	--	--	7.4E-05	7.39E-05
			Cadmium	NC	--	--	NC	0.00E+00	Kidney	4.8E-03	--	--	1.4E-02	1.87E-02
			Chromium	NC	--	--	NC	0.00E+00	None Observed	0.0E+00	--	--	1.2E-06	1.22E-06
			Mercury	NC	--	--	NC	0.00E+00	Immunological	0.0E+00	--	--	6.7E-04	6.73E-04
			Selenium	NC	--	--	NC	0.00E+00	Skin, central nervous system	0.0E+00	--	--	4.0E-05	4.03E-05
			Silver	NC	--	--	NC	0.00E+00	central nervous system	0.0E+00	--	--	2.5E-04	2.49E-04
			Zinc	NC	--	--	NC	0.00E+00	Circulatory system	0.0E+00	--	--	4.9E-03	4.95E-03
			Chemical Total	2.7E-07	0.0E+00	0.0E+00	1.5E-06	1.8E-06		7.5E-03	0.0E+00	0.0E+00	3.0E-02	3.8E-02
		Exposure Point Total						1.8E-06						3.8E-02
	Exposure Medium Total							1.8E-06						3.8E-02
Sediment Total								1.8E-06						3.8E-02
Receptor Total							Receptor Risk Total	2.9E-05					Receptor HI Total	1.6E+00

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TABLE 10ax
RAGS PART D TABLE 10.1.RME
RISK SUMMARY
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk: Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total	Non-Carcinogenic Hazard Quotient: Primary Target Organ(s)	Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total
Soil	Soil	Off-Facility	Arsenic	1.39E-04	9.27E-08	8.83E-06	1.31E-05	1.61E-04	Skin	2.51E+00	NTV	2.49E+00	2.11E-01	5.22E+00
		4012 Maple St	Barium	NC	NC	NC	NC	0.00E+00	Kidney	1.73E-02	8.44E-04	1.71E-02	0.00E+00	3.52E-02
			Cadmium	NC	2.23E-08	NC	NC	2.23E-08	Kidney	4.35E-01	NTV	4.31E-01	4.87E-02	9.14E-01
			Chromium	NC	9.17E-08	NC	NC	9.17E-08	Lung (Inhalation pathway) None Observed	1.79E-04	3.29E-04	1.78E-04	0.00E+00	6.85E-04
			Mercury	NC	NC	NC	NC	0.00E+00	Immunological	1.70E-02	2.09E-06	1.69E-02	0.00E+00	3.40E-02
			Selenium	NC	NC	NC	NC	0.00E+00	Skin; central nervous system	5.88E-03	NTV	5.83E-03	0.00E+00	1.17E-02
			Silver	NC	NC	NC	NC	0.00E+00	central nervous system	2.81E-02	NTV	2.79E-02	0.00E+00	5.60E-02
			Zinc	NC	NC	NC	NC	0.00E+00	Circulatory system	1.96E-01	NTV	1.94E-01	0.00E+00	3.90E-01
			Chemical Total	1.4E-04	2.1E-07	8.8E-06	1.3E-05	1.6E-04		3.2E+00	1.2E-03	3.2E+00	2.6E-01	6.7E+00
		Exposure Point Total						1.6E-04						6.7E+00
	Exposure Medium Total							1.6E-04						6.7E+00
Soil Total								1.6E-04						6.7E+00
Surface water	Surface water	Off-Facility	Arsenic	--	--	--	2.06E-08	2.06E-08	Skin	--	--	--	1.2E-04	1.23E-04
		Surface Water	Barium	--	--	--	NC	0.00E+00	Kidney	--	--	--	4.7E-05	4.69E-05
			Cadmium	--	--	--	NC	0.00E+00	Kidney	--	--	--	1.2E-02	1.21E-02
			Chromium	--	--	--	NC	0.00E+00	None Observed	--	--	--	1.6E-06	1.64E-06
			Mercury	--	--	--	NS	0.00E+00	Immunological	--	--	--	NS	0.00E+00
			Selenium	--	--	--	NC	0.00E+00	Skin; central nervous system	--	--	--	1.5E-06	1.55E-06
			Silver	--	--	--	NC	0.00E+00	central nervous system	--	--	--	2.1E-01	2.09E-01
			Zinc	--	--	--	NC	0.00E+00	Circulatory system	--	--	--	4.4E-09	4.37E-09
			Chemical Total	0.0E+00	0.0E+00	0.0E+00	2.1E-08	2.1E-08		0.0E+00	0.0E+00	0.0E+00	2.2E-01	2.2E-01
		Exposure Point Total						2.1E-08						2.2E-01
	Exposure Medium Total							2.1E-08						2.2E-01
Surface water Total								2.1E-08						2.2E-01
Sediment	Sediment	Off-Facility	Arsenic	2.70E-07	--	--	1.49E-06	1.76E-06	Skin	2.7E-03	--	--	1.0E-02	1.31E-02
		Sediment	Barium	NC	--	--	NC	0.00E+00	Kidney	0.0E+00	--	--	7.4E-05	7.39E-05
			Cadmium	NC	--	--	NC	0.00E+00	Kidney	4.8E-03	--	--	1.4E-02	1.87E-02
			Chromium	NC	--	--	NC	0.00E+00	None Observed	0.0E+00	--	--	1.2E-06	1.22E-06
			Mercury	NC	--	--	NC	0.00E+00	Immunological	0.0E+00	--	--	6.7E-04	6.73E-04
			Selenium	NC	--	--	NC	0.00E+00	Skin; central nervous system	0.0E+00	--	--	4.0E-05	4.03E-05
			Silver	NC	--	--	NC	0.00E+00	central nervous system	0.0E+00	--	--	2.5E-04	2.49E-04
			Zinc	NC	--	--	NC	0.00E+00	Circulatory system	0.0E+00	--	--	4.9E-03	4.95E-03
			Chemical Total	2.7E-07	0.0E+00	0.0E+00	1.5E-06	1.8E-06		7.5E-03	0.0E+00	0.0E+00	3.0E-02	3.8E-02
		Exposure Point Total						1.8E-06						3.8E-02
	Exposure Medium Total							1.8E-06						3.8E-02
Sediment Total								1.8E-06						3.8E-02
Receptor Total							Receptor Risk Total	1.6E-04					Receptor HI Total	6.9E+00

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TABLE 10ay
RAGS PART D TABLE 10.1.RME
RISK SUMMARY
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Produce Ingestion	Dermal	Exposure Routes Total
Soil	Soil	Off-Facility	Arsenic	5.87E-05	3.93E-08	3.74E-06	5.56E-06	6.81E-05	Skin	1.07E+00	NTV	1.06E+00	8.95E-02	2.21E+00
		Cookson Rd & 44th St	Barium	NC	NC	NC	NC	0.00E+00	Kidney	1.53E-02	7.50E-04	1.52E-02	0.00E+00	3.13E-02
			Cadmium	NC	2.03E-08	NC	NC	2.03E-08	Kidney	3.96E-01	NTV	3.93E-01	4.44E-02	8.34E-01
			Chromium	NC	9.17E-08	NC	NC	9.17E-08	Lung (Inhalation pathway) None Observed	1.79E-04	3.29E-04	1.78E-04	0.00E+00	6.85E-04
			Mercury	NC	NC	NC	NC	0.00E+00	Immunilogical	8.52E-03	1.04E-06	8.45E-03	0.00E+00	1.70E-02
			Selenium	NC	NC	NC	NC	0.00E+00	Skin; central nervous system	3.32E-03	NTV	3.30E-03	0.00E+00	6.62E-03
			Silver	NC	NC	NC	NC	0.00E+00	central nervous system	3.58E-03	NTV	3.55E-03	0.00E+00	7.13E-03
			Zinc	NC	NC	NC	NC	0.00E+00	Circulatory system	8.10E-02	NTV	8.03E-02	0.00E+00	1.61E-01
			Chemical Total	5.9E-05	1.5E-07	3.7E-06	5.6E-06	6.8E-05		1.6E+00	1.1E-03	1.6E+00	1.3E-01	3.3E+00
		Exposure Point Total						6.8E-05						3.3E+00
	Exposure Medium Total							6.8E-05						3.3E+00
Soil Total								6.8E-05						3.3E+00
Surface water	Surface water	Off-Facility	Arsenic	--	--	--	2.06E-08	2.06E-08	Skin	--	--	--	1.2E-04	1.23E-04
		Surface Water	Barium	--	--	--	NC	0.00E+00	Kidney	--	--	--	4.7E-05	4.69E-05
			Cadmium	--	--	--	NC	0.00E+00	Kidney	--	--	--	1.2E-02	1.21E-02
			Chromium	--	--	--	NC	0.00E+00	None Observed	--	--	--	1.6E-06	1.64E-06
			Mercury	--	--	--	NS	0.00E+00	Immunilogical	--	--	--	NS	0.00E+00
			Selenium	--	--	--	NC	0.00E+00	Skin, central nervous system	--	--	--	1.5E-06	1.55E-06
			Silver	--	--	--	NC	0.00E+00	central nervous system	--	--	--	2.1E-01	2.09E-01
			Zinc	--	--	--	NC	0.00E+00	Circulatory system	--	--	--	4.4E-09	4.37E-09
			Chemical Total	0.0E+00	0.0E+00	0.0E+00	2.1E-08	2.1E-08		0.0E+00	0.0E+00	0.0E+00	2.2E-01	2.2E-01
		Exposure Point Total						2.1E-08						2.2E-01
	Exposure Medium Total							2.1E-08						2.2E-01
Surface water Total								2.1E-08						2.2E-01
Sediment	Sediment	Off-Facility	Arsenic	2.70E-07	--	--	1.49E-06	1.76E-06	Skin	2.7E-03	--	--	1.0E-02	1.31E-02
		Sediment	Barium	NC	--	--	NC	0.00E+00	Kidney	0.0E+00	--	--	7.4E-05	7.39E-05
			Cadmium	NC	--	--	NC	0.00E+00	Kidney	4.8E-03	--	--	1.4E-02	1.87E-02
			Chromium	NC	--	--	NC	0.00E+00	None Observed	0.0E+00	--	--	1.2E-06	1.22E-06
			Mercury	NC	--	--	NC	0.00E+00	Immunilogical	0.0E+00	--	--	6.7E-04	6.73E-04
			Selenium	NC	--	--	NC	0.00E+00	Skin, central nervous system	0.0E+00	--	--	4.0E-05	4.03E-05
			Silver	NC	--	--	NC	0.00E+00	central nervous system	0.0E+00	--	--	2.5E-04	2.49E-04
			Zinc	NC	--	--	NC	0.00E+00	Circulatory system	0.0E+00	--	--	4.9E-03	4.95E-03
			Chemical Total	2.7E-07	0.0E+00	0.0E+00	1.5E-06	1.8E-06		7.5E-03	0.0E+00	0.0E+00	3.0E-02	3.8E-02
		Exposure Point Total						1.8E-06						3.8E-02
	Exposure Medium Total							1.8E-06						3.8E-02
Sediment Total								1.8E-06						3.8E-02
Receptor Total							Receptor Risk Total	7.0E-05					Receptor HI Total	3.5E+00

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TABLE 10az
RAGS PART D TABLE 10.1.RME
RISK SUMMARY
REASONABLE MAXIMUM EXPOSURE
Facility Area Residential (Child and Adult) Exposure - Former American Zinc Plant Site, Fairmont City, IL

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child (noncancer) Child/Adult (cancer)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation Particulates	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation Particulates	Dermal	Exposure Routes Total
Soil	Soil	Off-Facility	Arsenic	6.81E-06	3.07E-08	4.34E-06	1.12E-05	Skin	1.24E-01	NTV	6.99E-02	1.93E-01
		Alleyways	Barium	NC	NC	NC	0.00E+00	Kidney	2.84E-03	9.36E-04	0.00E+00	3.78E-03
			Cadmium	NC	1.32E-08	NC	1.32E-08	Kidney	3.82E-02	NTV	2.88E-02	6.70E-02
			Chromium	NC	2.14E-07	NC	2.14E-07	Lung (Inhalation pathway) None Observed	6.20E-05	7.66E-04	0.00E+00	8.28E-04
			Mercury	NC	NC	NC	0.00E+00	Immunilogical	8.80E-04	7.25E-07	0.00E+00	8.81E-04
			Selenium	NC	NC	NC	0.00E+00	Skin; central nervous system	4.11E-04	NTV	0.00E+00	4.11E-04
			Silver	NC	NC	NC	0.00E+00	central nervous system	1.07E-03	NTV	0.00E+00	1.07E-03
			Zinc	NC	NC	NC	0.00E+00	Circulatory system	2.20E-02	NTV	0.00E+00	2.20E-02
			Chemical Total	6.8E-06	2.6E-07	4.3E-06	1.1E-05		1.9E-01	1.7E-03	9.9E-02	2.9E-01
		Exposure Point Total					1.1E-05					2.9E-01
	Exposure Medium Total						1.1E-05					2.9E-01
Soil Total							1.1E-05					2.9E-01
Receptor Total						Receptor Risk Total	#REF!				Receptor HI Total	2.9E-01

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ATTACHMENT B

95 % UCL CALCULATIONS

Table B-1a
Facility Area Sediment Samples
Old American Zinc Plant Site, Fairmont City, Illinois
All metals in mg/kg; all pesticides in ug/kg

Sample ID:	Date Collected	Depth (ft - ft)	Location	Arsenic	Barium	Cadmium	Chromium	Copper	Lead	Selenium	Silver	Zinc	Mercury	Aldrin	Dieldrin	4,4'-DDT	gamma-Chlordane
SD-01-0.5	5/31/2006	0 - 0.5	East Ditch 1	**17**	**240**	**130**	**33**	na	**870**	**4.5**	**29**	**10,000**	**6.1**	30	30	30	30
SD-05-0.5	5/31/2006	0 - 0.5	East Ditch 1	**130**	**480**	**270**	**24**	na	**3,300**	**5.4**	**64**	**18,000**	**8.8**	**96**	**180**	20	**69**
SD-06-0.5	5/31/2006	0 - 0.5	East Ditch 1	**8.5**	**200**	**61**	**14**	na	**100**	1.7	1.2	**2,600**	**2.2**	na	na	na	na
SD-02-0.5	5/31/2006	0 - 0.5	East Ditch 2	**9.3**	**320**	**24**	**50**	na	**440**	**1.9**	**1.9**	**1,800**	**1.0**	na	na	na	na
SD-08-0.5	5/31/2006	0 - 0.5	Rose Creek (at-site)	**29**	**380**	**460**	**74**	na	**1,700**	**5.5**	**17**	**25,000**	**6.4**	23	**93**	23	**67**
SD-07-0.5*	6/2/2006	0 - 0.5	West Ditch 2	**71.5**	**81**	**37**	**10.5**	na	**2,000**	**1.26**	**11.35**	**28,000**	**0.765**	na	na	na	na
SD-09-0.5	5/30/2006	0 - 0.5	Rose Creek (on site)	**60**	**150**	**100**	**32**	na	**1,800**	**3.4**	**10**	**15,000**	**1.9**	10.5	**43**	**14**	10.5
SD-24-0.5	6/1/2006	0 - 0.5	West Ditch 1	**130**	**610**	**630**	**61**	na	**5,600**	**7.2**	**33**	**40,000**	**0.93**	15	**41**	15	15
SD-25-0.5*	6/1/2006	0 - 0.5	West Ditch 1	**60**	**480**	**650**	**69**	na	**3,300**	**7.8**	**40**	**95,000**	**6.3**	na	na	na	na
SD-26-0.5	6/1/2006	0 - 0.5	West Ditch 1	**24**	**230**	**64**	**19**	na	**810**	**1.3**	**3.8**	**21,000**	**0.24**	na	na	na	na
SD-27-0.5	6/1/2006	0 - 0.5	West Ditch 1	**29**	**400**	**61**	**15**	na	**980**	**1.8**	**3.2**	**20,000**	**0.16**	na	na	na	na
SD-28-0.5	6/1/2006	0 - 0.5	West Ditch 1	**27**	**200**	**51**	**16**	na	**730**	**1.1**	**5.1**	**15,000**	**0.33**	na	na	na	na
SD-23-0.5*	6/2/2006	0 - 0.5	West Ditch 1	**79.5**	**280**	**125**	**22.5**	na	**1,750**	**2.3**	**13.5**	**14,500**	**1.3**	na	na	na	na

Non-detect presented at 1/2 DL.
Average of duplicates, except at SD-25 the higher detected concentration used due to large differences in duplicate concentrations.
Bold indicates detected concentration.
All metals in mg/kg; all pesticides in ug/kg

Table B-1b
Facility Area Sediment ProUCL Outpu
All Concentrations in mg/kg

Data File

Variable: Arsenic

Raw Statistics	
Number of Valid Samples	13
Number of Unique Samples	10
Minimum	8.5
Maximum	130
Mean	51.90769
Median	29
Standard Deviation	41.67326
Variance	1736.661
Coefficient of Variation	0.802834
Skewness	0.978635

Gamma Statistics	
k hat	1.636926
k star (bias corrected)	1.310456
Theta hat	31.71047
Theta star	39.61041
nu hat	42.56007
nu star	34.07185
Approx.Chi Square Value (.05)	21.71964
Adjusted Level of Significance	0.03009
Adjusted Chi Square Value	20.32302

Log-transformed Statistics	
Minimum of log data	2.140066
Maximum of log data	4.867534
Mean of log data	3.613922
Standard Deviation of log data	0.900227
Variance of log data	0.810408

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Approximate Gamma UCL

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.858088
Shapiro-Wilk 5% Critical Value	0.866
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	72.50752

Gamma Distribution Test	
A-D Test Statistic	0.346543
A-D 5% Critical Value	0.748358
K-S Test Statistic	0.196008
K-S 5% Critical Value	0.240511
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	81.42819
Adjusted Gamma UCL	87.02401

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.94031
Shapiro-Wilk 5% Critical Value	0.866
Data are lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	111.9273
95% Chebyshev (MVUE) UCL	115.545
97.5% Chebyshev (MVUE) UCL	142.4182
99% Chebyshev (MVUE) UCL	195.2056

95% Non-parametric UCLs	
CLT UCL	70.91905
Adj-CLT UCL (Adjusted for skewness)	74.27114
Mod-t UCL (Adjusted for skewness)	73.03038
Jackknife UCL	72.50752
Standard Bootstrap UCL	70.57656
Bootstrap-t UCL	80.28789
Hall's Bootstrap UCL	80.1216
Percentile Bootstrap UCL	70.56154
BCA Bootstrap UCL	74.76923
95% Chebyshev (Mean, Sd) UCL	102.2882
97.5% Chebyshev (Mean, Sd) UCL	124.0879
99% Chebyshev (Mean, Sd) UCL	166.9092

Table B-1b
Facility Area Sediment ProUCL Outpu
All Concentrations in mg/kg

Data File

Variable: Selenium

Raw Statistics	
Number of Valid Samples	13
Number of Unique Samples	13
Minimum	1.1
Maximum	7.8
Mean	3.473846
Median	2.3
Standard Deviation	2.35476
Variance	5.544892
Coefficient of Variation	0.677854
Skewness	0.74642

Gamma Statistics	
k hat	2.426979
k star (bias corrected)	1.918189
Theta hat	1.431346
Theta star	1.811003
nu hat	63.10145
nu star	49.87291
Approx.Chi Square Value (.05)	34.65542
Adjusted Level of Significance	0.03009
Adjusted Chi Square Value	32.85469

Log-transformed Statistics	
Minimum of log data	0.09531
Maximum of log data	2.054124
Mean of log data	1.025321
Standard Deviation of log data	0.696649
Variance of log data	0.48532

RECOMMENDATION
Data follow gamma distribution (0.05)

Use Approximate Gamma UCL

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.865279
Shapiro-Wilk 5% Critical Value	0.866
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	4.637845

Gamma Distribution Test	
A-D Test Statistic	0.549204
A-D 5% Critical Value	0.741439
K-S Test Statistic	0.197108
K-S 5% Critical Value	0.2389
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	4.999241
Adjusted Gamma UCL	5.273245

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.913497
Shapiro-Wilk 5% Critical Value	0.866
Data are lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	5.7273
95% Chebyshev (MVUE) UCL	6.538158
97.5% Chebyshev (MVUE) UCL	7.863193
99% Chebyshev (MVUE) UCL	10.46597

95% Non-parametric UCLs	
CLT UCL	4.548088
Adj-CLT UCL (Adjusted for skewness)	4.692555
Mod-t UCL (Adjusted for skewness)	4.660379
Jackknife UCL	4.637845
Standard Bootstrap UCL	4.508422
Bootstrap-t UCL	4.917153
Hall's Bootstrap UCL	4.611544
Percentile Bootstrap UCL	4.443077
BCA Bootstrap UCL	4.689231
95% Chebyshev (Mean, Sd) UCL	6.320612
97.5% Chebyshev (Mean, Sd) UCL	7.552409
99% Chebyshev (Mean, Sd) UCL	9.972037

Table B-1b
Facility Area Sediment ProUCL Outpu
All Concentrations in mg/kg

Data File

Variable: Barium

Raw Statistics	
Number of Valid Samples	13
Number of Unique Samples	11
Minimum	81
Maximum	610
Mean	311.6154
Median	280
Standard Deviation	151.467
Variance	22942.26
Coefficient of Variation	0.48607
Skewness	0.47941

Gamma Statistics	
k hat	4.154966
k star (bias corrected)	3.24741
Theta hat	74.9983
Theta star	95.95813
nu hat	108.0291
nu star	84.43266
Approx.Chi Square Value (.05)	64.25008
Adjusted Level of Significance	0.03009
Adjusted Chi Square Value	61.74594

Log-transformed Statistics	
Minimum of log data	4.394449
Maximum of log data	6.413459
Mean of log data	5.616632
Standard Deviation of log data	0.550627
Variance of log data	0.30319

RECOMMENDATION
Data are normal (0.05)

Use Student's-t UCL

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.965959
Shapiro-Wilk 5% Critical Value	0.866
Data are normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	386.4882

Gamma Distribution Test	
A-D Test Statistic	0.168968
A-D 5% Critical Value	0.737029
K-S Test Statistic	0.103617
K-S 5% Critical Value	0.237634
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	409.5017
Adjusted Gamma UCL	426.1092

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.960016
Shapiro-Wilk 5% Critical Value	0.866
Data are lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	452.3229
95% Chebyshev (MVUE) UCL	532.5662
97.5% Chebyshev (MVUE) UCL	626.3489
99% Chebyshev (MVUE) UCL	810.5668

95% Non-parametric UCLs	
CLT UCL	380.7147
Adj-CLT UCL (Adjusted for skewness)	386.6831
Mod-t UCL (Adjusted for skewness)	387.4192
Jackknife UCL	386.4882
Standard Bootstrap UCL	376.7932
Bootstrap-t UCL	393.024
Hall's Bootstrap UCL	391.1202
Percentile Bootstrap UCL	380.0769
BCA Bootstrap UCL	386.9231
95% Chebyshev (Mean, Sd) UCL	494.7301
97.5% Chebyshev (Mean, Sd) UCL	573.9639
99% Chebyshev (Mean, Sd) UCL	729.6036

Table B-1b
Facility Area Sediment ProUCL Outpu
All Concentrations in mg/kg

Data File

Variable: Silver

Raw Statistics	
Number of Valid Samples	13
Number of Unique Samples	13
Minimum	1.2
Maximum	64
Mean	17.92692
Median	11.35
Standard Deviation	18.71707
Variance	350.3286
Coefficient of Variation	1.044076
Skewness	1.435066

Gamma Statistics	
k hat	0.97819
k star (bias corrected)	0.803736
Theta hat	18.32663
Theta star	22.3045
nu hat	25.43294
nu star	20.89713
Approx.Chi Square Value (.05)	11.51359
Adjusted Level of Significance	0.03009
Adjusted Chi Square Value	10.53264

Log-transformed Statistics	
Minimum of log data	0.182322
Maximum of log data	4.158883
Mean of log data	2.29468
Standard Deviation of log data	1.233391
Variance of log data	1.521253

RECOMMENDATION
Data follow gamma distribution (0.05)

Use Approximate Gamma UCL

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.836718
Shapiro-Wilk 5% Critical Value	0.866
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	27.1791

Gamma Distribution Test	
A-D Test Statistic	0.216389
A-D 5% Critical Value	0.758526
K-S Test Statistic	0.132158
K-S 5% Critical Value	0.243278
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	32.5373
Adjusted Gamma UCL	35.56765

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.967407
Shapiro-Wilk 5% Critical Value	0.866
Data are lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	68.29656
95% Chebyshev (MVUE) UCL	51.1597
97.5% Chebyshev (MVUE) UCL	64.90298
99% Chebyshev (MVUE) UCL	91.89899

95% Non-parametric UCLs	
CLT UCL	26.46565
Adj-CLT UCL (Adjusted for skewness)	28.67339
Mod-t UCL (Adjusted for skewness)	27.52346
Jackknife UCL	27.1791
Standard Bootstrap UCL	26.17285
Bootstrap-t UCL	31.77988
Hall's Bootstrap UCL	31.36611
Percentile Bootstrap UCL	26.92308
BCA Bootstrap UCL	28.17308
95% Chebyshev (Mean, Sd) UCL	40.55475
97.5% Chebyshev (Mean, Sd) UCL	50.34583
99% Chebyshev (Mean, Sd) UCL	69.57852

Table B-1b
Facility Area Sediment ProUCL Outpu
All Concentrations in mg/kg

Data File

Variable: Cadmium

Raw Statistics	
Number of Valid Samples	13
Number of Unique Samples	12
Minimum	24
Maximum	650
Mean	204.8462
Median	100
Standard Deviation	226.7531
Variance	51416.97
Coefficient of Variation	1.106943
Skewness	1.324826

Gamma Statistics	
k hat	1.046258
k star (bias corrected)	0.856096
Theta hat	195.7894
Theta star	239.2795
nu hat	27.2027
nu star	22.25849
Approx.Chi Square Value (.05)	12.53063
Adjusted Level of Significance	0.03009
Adjusted Chi Square Value	11.50172

Log-transformed Statistics	
Minimum of log data	3.178054
Maximum of log data	6.476972
Mean of log data	4.773445
Standard Deviation of log data	1.084881
Variance of log data	1.176967

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Approximate Gamma UCL

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.744684
Shapiro-Wilk 5% Critical Value	0.866
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	316.9342

Gamma Distribution Test	
A-D Test Statistic	0.743071
A-D 5% Critical Value	0.756746
K-S Test Statistic	0.229351
K-S 5% Critical Value	0.242836
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	363.8735
Adjusted Gamma UCL	396.4247

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.924826
Shapiro-Wilk 5% Critical Value	0.866
Data are lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	546.6797
95% Chebyshev (MVUE) UCL	484.374
97.5% Chebyshev (MVUE) UCL	607.5114
99% Chebyshev (MVUE) UCL	849.3908

95% Non-parametric UCLs	
CLT UCL	308.291
Adj-CLT UCL (Adjusted for skewness)	332.9826
Mod-t UCL (Adjusted for skewness)	320.7856
Jackknife UCL	316.9342
Standard Bootstrap UCL	304.7232
Bootstrap-t UCL	384.6183
Hall's Bootstrap UCL	314.6795
Percentile Bootstrap UCL	309.7692
BCA Bootstrap UCL	330.3077
95% Chebyshev (Mean, Sd) UCL	478.9773
97.5% Chebyshev (Mean, Sd) UCL	597.5941
99% Chebyshev (Mean, Sd) UCL	830.5937

Table B-1b
Facility Area Sediment ProUCL Outpu
All Concentrations in mg/kg

Data File

Variable: Zinc

Raw Statistics	
Number of Valid Samples	13
Number of Unique Samples	12
Minimum	1800
Maximum	95000
Mean	23530.77
Median	18000
Standard Deviation	23754.28
Variance	5.64E+08
Coefficient of Variation	1.009499
Skewness	2.538567

Gamma Statistics	
k hat	1.346581
k star (bias corrected)	1.087113
Theta hat	17474.46
Theta star	21645.18
nu hat	35.0111
nu star	28.26495
Approx.Chi Square Value (.05)	17.13252
Adjusted Level of Significance	0.03009
Adjusted Chi Square Value	15.90721

Log-transformed Statistics	
Minimum of log data	7.495542
Maximum of log data	11.46163
Mean of log data	9.650878
Standard Deviation of log data	1.039443
Variance of log data	1.080442

RECOMMENDATION
Data follow gamma distribution (0.05)

Use Approximate Gamma UCL

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.712209
Shapiro-Wilk 5% Critical Value	0.866
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	35272.93

Gamma Distribution Test	
A-D Test Statistic	0.49206
A-D 5% Critical Value	0.752499
K-S Test Statistic	0.182094
K-S 5% Critical Value	0.241574
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	38820.66
Adjusted Gamma UCL	41810.98

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.906402
Shapiro-Wilk 5% Critical Value	0.866
Data are lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	64173.7
95% Chebyshev (MVUE) UCL	59369.28
97.5% Chebyshev (MVUE) UCL	74170.5
99% Chebyshev (MVUE) UCL	103244.6

95% Non-parametric UCLs	
CLT UCL	34367.48
Adj-CLT UCL (Adjusted for skewness)	39323.89
Mod-t UCL (Adjusted for skewness)	36046.03
Jackknife UCL	35272.93
Standard Bootstrap UCL	33990.31
Bootstrap-t UCL	48661.65
Hall's Bootstrap UCL	86889.05
Percentile Bootstrap UCL	34884.62
BCA Bootstrap UCL	39846.15
95% Chebyshev (Mean, Sd) UCL	52248.29
97.5% Chebyshev (Mean, Sd) UCL	64674.38
99% Chebyshev (Mean, Sd) UCL	89083.04

Table B-1b
Facility Area Sediment ProUCL Outpu
All Concentrations in mg/kg

Data File

Variable: Chromium

Raw Statistics	
Number of Valid Samples	13
Number of Unique Samples	13
Minimum	10.5
Maximum	74
Mean	33.84615
Median	24
Standard Deviation	22.19082
Variance	492.4327
Coefficient of Variation	0.655638
Skewness	0.845449

Gamma Statistics	
k hat	2.700755
k star (bias corrected)	2.128786
Theta hat	12.53211
Theta star	15.89928
nu hat	70.21962
nu star	55.34843
Approx.Chi Square Value (.05)	39.24873
Adjusted Level of Significance	0.03009
Adjusted Chi Square Value	37.32323

Log-transformed Statistics	
Minimum of log data	2.351375
Maximum of log data	4.304065
Mean of log data	3.325415
Standard Deviation of log data	0.652677
Variance of log data	0.425987

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Approximate Gamma UCL

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.859501
Shapiro-Wilk 5% Critical Value	0.866
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	44.81547

Gamma Distribution Test	
A-D Test Statistic	0.465836
A-D 5% Critical Value	0.740355
K-S Test Statistic	0.165838
K-S 5% Critical Value	0.23858
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	47.72973
Adjusted Gamma UCL	50.1921

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.937649
Shapiro-Wilk 5% Critical Value	0.866
Data are lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	53.19364
95% Chebyshev (MVUE) UCL	61.50476
97.5% Chebyshev (MVUE) UCL	73.50887
99% Chebyshev (MVUE) UCL	97.08861

95% Non-parametric UCLs	
CLT UCL	43.96961
Adj-CLT UCL (Adjusted for skewness)	45.51166
Mod-t UCL (Adjusted for skewness)	45.056
Jackknife UCL	44.81547
Standard Bootstrap UCL	43.56358
Bootstrap-t UCL	47.25226
Hall's Bootstrap UCL	43.12818
Percentile Bootstrap UCL	43.53846
BCA Bootstrap UCL	45.80769
95% Chebyshev (Mean, Sd) UCL	60.67355
97.5% Chebyshev (Mean, Sd) UCL	72.28179
99% Chebyshev (Mean, Sd) UCL	95.08392

Table B-1b
Facility Area Sediment ProUCL Outpu
All Concentrations in mg/kg

Data File

Variable: Selenium

Raw Statistics	
Number of Valid Samples	13
Number of Unique Samples	13
Minimum	1.1
Maximum	7.8
Mean	3.473846
Median	2.3
Standard Deviation	2.35476
Variance	5.544892
Coefficient of Variation	0.677854
Skewness	0.74642

Gamma Statistics	
k hat	2.426979
k star (bias corrected)	1.918189
Theta hat	1.431346
Theta star	1.811003
nu hat	63.10145
nu star	49.87291
Approx.Chi Square Value (.05)	34.65542
Adjusted Level of Significance	0.03009
Adjusted Chi Square Value	32.85469

Log-transformed Statistics	
Minimum of log data	0.09531
Maximum of log data	2.054124
Mean of log data	1.025321
Standard Deviation of log data	0.696649
Variance of log data	0.48532

RECOMMENDATION
Data follow gamma distribution (0.05)

Use Approximate Gamma UCL

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.865279
Shapiro-Wilk 5% Critical Value	0.866
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	4.637845

Gamma Distribution Test	
A-D Test Statistic	0.549204
A-D 5% Critical Value	0.741439
K-S Test Statistic	0.197108
K-S 5% Critical Value	0.2389
Data follow gamma distribution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	4.999241
Adjusted Gamma UCL	5.273245

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.913497
Shapiro-Wilk 5% Critical Value	0.866
Data are lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	5.7273
95% Chebyshev (MVUE) UCL	6.538158
97.5% Chebyshev (MVUE) UCL	7.863193
99% Chebyshev (MVUE) UCL	10.46597

95% Non-parametric UCLs	
CLT UCL	4.548088
Adj-CLT UCL (Adjusted for skewness)	4.692555
Mod-t UCL (Adjusted for skewness)	4.660379
Jackknife UCL	4.637845
Standard Bootstrap UCL	4.495909
Bootstrap-t UCL	4.845093
Hall's Bootstrap UCL	4.53023
Percentile Bootstrap UCL	4.566154
BCA Bootstrap UCL	4.743077
95% Chebyshev (Mean, Sd) UCL	6.320612
97.5% Chebyshev (Mean, Sd) UCL	7.552409
99% Chebyshev (Mean, Sd) UCL	9.972037

Table B-1b
Facility Area Sediment ProUCL Outpu
All Concentrations in mg/kg

Data File

Variable: Lead

Raw Statistics	
Number of Valid Samples	13
Number of Unique Samples	12
Minimum	100
Maximum	5600
Mean	1798.462
Median	1700
Standard Deviation	1510.915
Variance	2282864
Coefficient of Variation	0.840115
Skewness	1.449793

Gamma Statistics	
k hat	1.455532
k star (bias corrected)	1.170922
Theta hat	1235.605
Theta star	1535.937
nu hat	37.84382
nu star	30.44397
Approx.Chi Square Value (.05)	18.84015
Adjusted Level of Significance	0.03009
Adjusted Chi Square Value	17.5487

Log-transformed Statistics	
Minimum of log data	4.60517
Maximum of log data	8.630522
Mean of log data	7.113396
Standard Deviation of log data	1.033962
Variance of log data	1.069077

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Approximate Gamma UCL

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.864026
Shapiro-Wilk 5% Critical Value	0.866
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	2545.333

Gamma Distribution Test	
A-D Test Statistic	0.228532
A-D 5% Critical Value	0.750959
K-S Test Statistic	0.122863
K-S 5% Critical Value	0.241117
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	2906.15
Adjusted Gamma UCL	3120.02

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.931269
Shapiro-Wilk 5% Critical Value	0.866
Data are lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	5007.414
95% Chebyshev (MVUE) UCL	4655.557
97.5% Chebyshev (MVUE) UCL	5813.385
99% Chebyshev (MVUE) UCL	8087.715

95% Non-parametric UCLs	
CLT UCL	2487.741
Adj-CLT UCL (Adjusted for skewness)	2667.787
Mod-t UCL (Adjusted for skewness)	2573.417
Jackknife UCL	2545.333
Standard Bootstrap UCL	2462.952
Bootstrap-t UCL	2850.23
Hall's Bootstrap UCL	3034.795
Percentile Bootstrap UCL	2455.385
BCA Bootstrap UCL	2582.308
95% Chebyshev (Mean, Sd) UCL	3625.069
97.5% Chebyshev (Mean, Sd) UCL	4415.443
99% Chebyshev (Mean, Sd) UCL	5967.98

Table B-1b
Facility Area Sediment ProUCL Outpu
All Concentrations in mg/kg

Data File

Variable: Mercury

Raw Statistics	
Number of Valid Samples	13
Number of Unique Samples	13
Minimum	0.16
Maximum	8.8
Mean	2.801923
Median	1.3
Standard Deviation	2.972403
Variance	8.835181
Coefficient of Variation	1.060844
Skewness	0.995628

Gamma Statistics	
k hat	0.873762
k star (bias corrected)	0.723407
Theta hat	3.206736
Theta star	3.873235
nu hat	22.71781
nu star	18.80857
Approx.Chi Square Value (.05)	9.976298
Adjusted Level of Significance	0.03009
Adjusted Chi Square Value	9.071943

Log-transformed Statistics	
Minimum of log data	-1.83258
Maximum of log data	2.174752
Mean of log data	0.35875
Standard Deviation of log data	1.321724
Variance of log data	1.746954

RECOMMENDATION
Data follow gamma distribution (0.05)

Use Approximate Gamma UCL

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.801295
Shapiro-Wilk 5% Critical Value	0.866
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	4.271234

Gamma Distribution Test	
A-D Test Statistic	0.469834
A-D 5% Critical Value	0.763919
K-S Test Statistic	0.1873
K-S 5% Critical Value	0.244464
Data follow gamma distribution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	5.282537
Adjusted Gamma UCL	5.809137

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.937941
Shapiro-Wilk 5% Critical Value	0.866
Data are lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	12.79029
95% Chebyshev (MVUE) UCL	8.504401
97.5% Chebyshev (MVUE) UCL	10.85287
99% Chebyshev (MVUE) UCL	15.46597

95% Non-parametric UCLs	
CLT UCL	4.157934
Adj-CLT UCL (Adjusted for skewness)	4.401178
Mod-t UCL (Adjusted for skewness)	4.309175
Jackknife UCL	4.271234
Standard Bootstrap UCL	4.103102
Bootstrap-t UCL	4.693916
Hall's Bootstrap UCL	4.031585
Percentile Bootstrap UCL	4.125385
BCA Bootstrap UCL	4.343462
95% Chebyshev (Mean, Sd) UCL	6.395383
97.5% Chebyshev (Mean, Sd) UCL	7.950277
99% Chebyshev (Mean, Sd) UCL	11.00456

Table B-2a
Off-Facility Area Sediment Samples (0-6" bgs)
Old American Zinc Plant Site, Fairmont City, Illinois
All metals in mg/kg; all pesticides in ug/kg

Sample ID:	Location	Arsenic	Barium	Cadmium	Chromium	Copper	Lead	Selenium	Silver	Zinc	Mercury	Dieldrin	4,4"-DDE	4,4'-DDT	Endrin
SD-03-0.5	Ditch along Kingshwy	10	150	38	26	na	520	0.97	2.5	3,900	0.32	170	14	43	53
SD-42	Rose Creek	72	200	510	33	950	2,700	5.2	18	1,200	2.8	na	na	na	na
SD-10-0.5	Rose Creek	23	150	180	24	na	860	2.7	6.1	13,000	1.5	na	na	na	na
SD-11-0.5	Rose Creek	10	140	29	33	na	300	1.5	1.2	4,800	0.66	na	na	na	na
SD-12-0.5*	Rose Creek	6.4	150	33.5	26	na	155	0.7	0.585	2,850	0.29	na	na	na	na
SD-13-0.5	Rose Creek	140	290	100	31	na	680	2.4	1.8	9,200	1.0	na	na	na	na
SD-43	Rose Creek	16	270	130	71	160	580	1.9	3.0	7,300	3.4	na	na	na	na
SD-44	Rose Creek	120	300	79	31	100	750	2.4	3.7	5,300	2.7	na	na	na	na
SD-14-0.5	Rose Creek Outfall	10	310	12	23	na	430	0.72	0.64	1,100	0.29	na	na	na	na
SD-15-0.5	*Rose Creek Outfall*	9.7	250	7.4	21	*na*	230	1.2	0.35	740	0.26	*na*	*na*	na	na
SD-41*	Rose Creek	77.5	170	165	42.5	940	3,350	5.25	16	27,500	1.26	na	na	na	na
SD-16-0.5	Rose Creek Outfall	8.2	220	1.1	19	na	33	0.7	0.24	140	0.078	na	na	na	na
SD-17-0.5	Rose Creek Outfall	20	120	15	16	na	160	0.56	0.35	1,700	0.46	na	na	na	na
SD-18-0.5	Rose Creek Outfall	9.5	250	26	22	na	210	1.2	0.64	810	0.45	na	na	na	na
SD-20-0.5*	Sch. Creek	12	495	23	109.5	na	160	0.95	0.645	965	0.57	na	na	na	na
SD-21-0.5	Sch. Creek	13	510	27	110	na	160	1.35	0.67	980	0.38	na	na	na	na
SD-22-0.5	Sch. Creek	12	*640*	21	250	na	230	1.3	*0.86*	*940*	*0.30*	na	*na*	na	na
SD-36	Sch. Creek	13	270	19	53	na	70	0.89	0.23	750	0.22	na	na	na	na
SD-037	Sch. Creek	15	340	44	230	na	150	1.8	0.96	1,100	0.25	na	na	na	na
SD-29-0.5	West Ditch 1 Outfall	11	190	43	15	na	380	0.83	1.4	4,000	0.11	na	na	na	na
SD-30-0.5	West Ditch 1 Outfall	13	180	72	17	na	510	0.95	1.8	3,800	0.14	na	na	na	na
SD-31-0.5	West Ditch 1 Outfall	8.0	220	32	14	na	52	0.89	0.24	7,900	0.042	na	na	na	na
SD-32-0.5	West Ditch 1 Outfall	25	270	69	22	na	870	1.3	4	6,400	0.19	na	na	na	na
SD-33-0.5	West Ditch 1 Outfall	5	140	6.6	9.6	na	46	0.5	0.25	590	0.034	na	na	na	na
SD-45	Cahokia Wetland	15	210	56	19	1,800	220	1.1	1.2	16,000	0.11	na	na	na	na
SD-46	Cahokia Wetland	19	250	150	21	4,200	590	1.8	3.6	23,000	0.32	na	na	na	na
SD-47	Cahokia Wetland	19	220	90	17	3,400	420	1.4	2.2	25,000	0.19	na	na	na	na
SD-48	Cahokia Wetland	25	210	89	21	5,300	670	1.9	4.6	26,000	0.36	na	na	na	na
SD-034*	Cahokia Watershed	16	220	340	19	na	495	2.5	3.2	39,000	0.245	na	na	na	na
SD-38	Reference	15	220	140	21	1,100	340	4.85	3.0	14,000	0.27	na	na	na	na
SD-39	Reference	20	120	25	15	260	240	4.85	2.1	3,500	0.105	na	na	na	na
SD-40	Reference	11	140	99	14	320	190	4.65	1.1	8,900	0.085	na	na	na	na
TWD-02-C-0-6	Old Cahokia Watershed	15	200	71	28	340	210	1.8	1	12,000	0.15				
TWD-02-S-0-6	Old Cahokia Watershed	5.9	320	140	31	790	260	1.05	1.2	16,000	0.13				
TRC-2-S-0-6	Old Cahokia Watershed	160	400	1300	63	430	1600	10	12	15,000	11				
TRC-2-S1-0-6	Old Cahokia Watershed	61	320	290	48	460	1200	5.6	12	8,600	3.4				
TRC-3-S-0-6	Old Cahokia Watershed	12	300	36	43	230	79	1.4	0.29	1,100	0.18				
Updgradient Sediment															
SD-04-0.5	Rose Creek (upstream)	6.7	190	6.5	60	na	280	3.3	1.0	1,100	0.26	27	19	19	19
SD-52	Shoenberger Creek	26	260	80	630	75	180	1.7	1.1	1,800	0.15				
RSD-1	Rose Creek (upstream)	16	240	4.9	53	210	620	2.7	2.1	710	5.3				
RSD-2	*Rose Creek (upstream)*	21	320	9.9	59	250	780	2.1	2.3	1,300	4.1				
RSD-3	Rose Creek (upstream)	4.9	120	5	90	140	380	0.73	2.4	820	0.0068				
RSD-4	Rose Creek (upstream)	23	380	9.9	91	340	630	2.3	2.9	1,600	4.1				
SD-50-0-6	Old Cahokia Creek	4.4	220	22	18	29	58	1	0.335	780	0.13				
SD-51-DITCH-0-6	Engineered drainage	75	400	100	49	98	300	4	2.2	1900	2				
TWD-02-N-0-6	Old Cahokia Watershed	10	250	32	32	61	140	1	0.48	1,800	0.073				
TWD-01-N-0-6	Old Cahokia Watershed	7.7	250	55	29	61	140	2	0.58	2000	0.07				
TWD-01-C-0-6	*Old Cahokia Watershed*	*16*	*230*	*44*	33	53	*78*	2	0.35	2900	*0.076*				
TWD-01-S-0-6	Old Cahokia Watershed	7.1	420	90	30	130	390	2	1.5	4600	0.2				
TWD-03-N-0-6	*Old Cahokia Watershed*	7.7	*230*	*28*	*30*	*51*	130	1	0.49	1,900	0.063				
TWD-03-C-0-6	Old Cahokia Watershed	7.3	270	25	29	75	180	2	0.62	2,700	0.11				
TWD-03-S-0-6	Old Cahokia Watershed	10	210	23	20	79	150	1.6	0.78	2,400	0.1				
Impoundment Sediments															
TRC-3-N-0-6	Old Cahokia Watershed	1.6	74	0.48	5.5	5.7	7.1	0.7	0.34	42	0.014				
TRC-2-N-0-6	Old Cahokia Watershed	2.3	160	0.11	8.3	6.4	9	0.55	0.28	38	0.02				
TRC-2-N1-0-6	Old Cahokia Watershed	6.9	170	0.125	14	16	11	0.8	0.32	53	0.033				
TRC-1-N-0-6	*Old Cahokia Watershed*	*5.8*	*330*	*13*	*24*	*37*	*38*	*1.3*	*0.48*	*880*	*0.11*				
TRC-1-S-0-6	Old Cahokia Watershed	19	305	7.75	26	35.5	73.5	1.45	0.44	740	0.165				
TRC-2-C-0-6	Old Cahokia Watershed	5.6	310	4.8	23	31	33	1.8	0.22	240	0.051				

Non-detect presented at 1/2 DL.
Average of duplicates.
Bold indicates detected concentration.

Table B-2b
Off-Facility Area Sediment (Total) ProUCL Output
All Concentrations in mg/kg

General UCL Statistics for Full Data Sets

User Selected Options	
From File	WorkSheet.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operatior	2000

Arsenic

General Statistics			
Number of Valid Samples	37	Number of Unique Samples	23
Number of Missing Values	1		
Raw Statistics		Log-transformed Statistics	
Minimum	5	Minimum of Log Data	1.609
Maximum	160	Maximum of Log Data	5.075
Mean	28.46	Mean of log Data	2.87
Median	15	SD of log Data	0.865
SD	37.69		
Coefficient of Variation	1.324		
Skewness	2.484		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.58	Shapiro Wilk Test Statistic	0.855
Shapiro Wilk Critical Value	0.936	Shapiro Wilk Critical Value	0.936
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% *Student's-t* UCL	38.93	95% H-UCL	35.4
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	42.93
95% Adjusted-CLT UCL	41.36	97.5% Chebyshev (MVUE) UCL	50.57
95% Modified-t UCL	39.35	99% Chebyshev (MVUE) UCL	65.57
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	1.105	Data do not follow a Discernable Distribution (0.05)	
Theta Star	25.77		
nu star	81.74		
Approximate Chi Square Value (.05)	61.91	Nonparametric Statistics	
Adjusted Level of Significance	0.0431	95% CLT UCL	38.66
Adjusted Chi Square Value	*61.16*	*95% Jackknife UCL*	*38.93*
		95% Standard Bootstrap UCL	38.51
Anderson-Darling Test Statistic	3.742	95% Bootstrap-t UCL	44.76
Anderson-Darling 5% Critical Value	0.773	95% Hall's Bootstrap UCL	40.07
Kolmogorov-Smirnov Test Statistic	0.275	95% *Percentile* Bootstrap UCL	39.31
Kolmogorov-Smirnov 5% Critical Value	0.149	95% BCA Bootstrap UCL	41.44
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	55.47
		97.5% Chebyshev(Mean, Sd) UCL	67.16
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	90.12
95% Approximate Gamma UCL	37.58		
95% Adjusted Gamma UCL	38.05		
Potential UCL to Use		Use 95% Chebyshev (Mean, Sd) UCL	55.47

Table B-2b
Off-Facility Area Sediment (Total) ProUCL Output
All Concentrations in mg/kg

General UCL Statistics for Full Data Sets

User Selected Options	
From File	WorkSheet.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operatior	2000

Barium

General Statistics			
Number of Valid Samples	37	Number of Unique Samples	20
Number of Missing Values	1		
Raw Statistics		Log-transformed Statistics	
Minimum	120	Minimum of Log Data	4.787
Maximum	640	Maximum of Log Data	6.461
Mean	252.8	Mean of log Data	5.451
Median	220	SD of log Data	0.398
SD	112.9		
Coefficient of Variation	0.447		
Skewness	1.633		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.857	Shapiro Wilk Test Statistic	0.964
Shapiro Wilk Critical Value	0.936	Shapiro Wilk Critical Value	0.936
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	284.2	95% H-UCL	285.1
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	325.7
95% Adjusted-CLT UCL	288.7	97.5% Chebyshev (MVUE) UCL	357.7
95% Modified-t UCL	285	99% Chebyshev (MVUE) UCL	420.7
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	5.807	Data appear Gamma Distributed at 5% Significance Level	
Theta Star	43.54		
nu star	429.7		
Approximate Chi Square Value (.05)	382.7	Nonparametric Statistics	
Adjusted Level of Significance	0.0431	95% CLT UCL	283.4
Adjusted Chi Square Value	380.8	95% Jackknife UCL	284.2
		95% Standard Bootstrap UCL	283.1
Anderson-Darling Test Statistic	0.552	95% Bootstrap-t UCL	293.1
Anderson-Darling 5% Critical Value	0.75	95% Hall's Bootstrap UCL	294.7
Kolmogorov-Smirnov Test Statistic	0.122	95% Percentile Bootstrap UCL	283.6
Kolmogorov-Smirnov 5% Critical Value	0.145	95% BCA Bootstrap UCL	289.5
Data appear Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	333.7
		97.5% Chebyshev(Mean, Sd) UCL	368.8
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	437.5
95% Approximate Gamma UCL	283.9		
95% Adjusted Gamma UCL	285.4		
Potential UCL to Use		Use 95% Approximate Gamma UCL	283.9

Table B-2b
Off-Facility Area Sediment (Total) ProUCL Output
All Concentrations in mg/kg

General UCL Statistics for Full Data Sets

User Selected Options	
From File	WorkSheet.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operatior	2000

Cadmium

General Statistics			
Number of Valid Samples	37	*Number of Unique Samples*	36
Number of Missing Values	1		
Raw Statistics		Log-transformed Statistics	
Minimum	1.1	Minimum of Log Data	0.0953
Maximum	1300	Maximum of Log Data	7.17
Mean	121.9	Mean of log Data	3.987
Median	56	SD of log Data	1.316
SD	224.4		
Coefficient of Variation	1.841		
Skewness	4.397		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.491	Shapiro Wilk Test Statistic	0.983
Shapiro Wilk Critical Value	0.936	Shapiro Wilk Critical Value	0.936
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	184.1	95% H-UCL	235.3
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	267.2
95% Adjusted-CLT UCL	211	97.5% Chebyshev (MVUE) UCL	329.6
95% Modified-t UCL	188.6	99% Chebyshev (MVUE) UCL	452.2
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	0.694	Data Follow Appr. Gamma Distribution at 5% Significance Level	
Theta Star	175.6		
nu star	51.34		
Approximate Chi Square Value (.05)	35.89	Nonparametric Statistics	
Adjusted Level of Significance	0.0431	95% CLT UCL	182.5
Adjusted Chi Square Value	35.32	95% Jackknife UCL	184.1
		95% Standard Bootstrap UCL	184.2
Anderson-Darling Test Statistic	1.052	95% Bootstrap-t UCL	275.2
Anderson-Darling 5% Critical Value	0.79	95% *Hall's Bootstrap* UCL	419.6
Kolmogorov-Smirnov Test Statistic	0.137	95% Percentile Bootstrap UCL	186.9
Kolmogorov-Smirnov 5% Critical Value	0.151	95% BCA Bootstrap UCL	222.4
Data follow Appr. Gamma Distribution at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	282.6
		97.5% *Chebyshev(Mean, Sd)* UCL	352.2
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	488.9
95% Approximate Gamma UCL	174.3		
95% Adjusted Gamma UCL	177.1		
Potential UCL to Use		Use 95% Approximate Gamma UCL	174.3

Table B-2b
Off-Facility Area Sediment (Total) ProUCL Output
All Concentrations in mg/kg

General UCL Statistics for Full Data Sets

User Selected Options	
From File	WorkSheet.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operatior	2000

Chromium

General Statistics			
Number of Valid Samples	37	Number of Unique Samples	24
Number of Missing Values	1		
Raw Statistics		Log-transformed Statistics	
Minimum	9.6	Minimum of Log Data	2.262
Maximum	250	Maximum of Log Data	5.521
Mean	43.48	Mean of log Data	3.41
Median	24	SD of log Data	0.747
SD	53.02		
Coefficient of Variation	1.22		
Skewness	3.066		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.56	Shapiro Wilk Test Statistic	0.878
Shapiro Wilk Critical Value	0.936	Shapiro Wilk Critical Value	0.936
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	58.19	95% H-UCL	52.07
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	62.88
95% Adjusted-CLT UCL	62.51	97.5% Chebyshev (MVUE) UCL	72.95
95% Modified-t UCL	58.93	99% Chebyshev (MVUE) UCL	92.73
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	1.419	Data do not follow a Discernable Distribution (0.05)	
Theta Star	30.64		
nu star	105		
Approximate Chi Square Value (.05)	82.36	Nonparametric Statistics	
Adjusted Level of Significance	0.0431	95% CLT UCL	57.81
Adjusted Chi Square Value	81.49	95% Jackknife UCL	58.19
		95% Standard Bootstrap UCL	56.96
Anderson-Darling Test Statistic	2.954	95% Bootstrap-t UCL	74.87
Anderson-Darling 5% Critical Value	0.766	95% Hall's Bootstrap UCL	115.7
Kolmogorov-Smirnov Test Statistic	0.249	95% Percentile Bootstrap UCL	59.35
Kolmogorov-Smirnov 5% Critical Value	0.148	95% BCA Bootstrap UCL	64.25
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	81.47
		97.5% Chebyshev(Mean, Sd) UCL	97.91
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	130.2
95% Approximate Gamma UCL	55.43		
95% Adjusted Gamma UCL	56.02		
Potential UCL to Use		Use 95% Chebyshev (Mean, Sd) UCL	81.47

Table B-2b
Off-Facility Area Sediment (Total) ProUCL Output
All Concentrations in mg/kg

General UCL Statistics for Full Data Sets

User Selected Options	
From File	WorkSheet.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operatior	2000

Copper

General Statistics			
Number of Valid Samples	16	Number of Unique Samples	16
Number of Missing Values	1		
Raw Statistics		*Log-transformed Statistics*	
Minimum	100	Minimum of Log Data	4.605
Maximum	5300	Maximum of Log Data	8.575
Mean	1299	Mean of log Data	6.525
Median	625	SD of log Data	1.178
SD	1590		
Coefficient of Variation	1.224		
Skewness	1.687		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.731	Shapiro Wilk Test Statistic	0.962
Shapiro Wilk Critical Value	0.887	Shapiro Wilk Critical Value	0.887
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	1996	95% H-UCL	3400
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	3117
95% Adjusted-CLT UCL	2132	97.5% Chebyshev (MVUE) UCL	3913
95% Modified-t UCL	2024	99% Chebyshev (MVUE) UCL	5476
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	0.778	Data appear Gamma Distributed at 5% Significance Level	
Theta Star	1669		
nu star	24.9		
Approximate Chi Square Value (.05)	14.53	Nonparametric Statistics	
Adjusted Level of Significance	0.0335	95% CLT UCL	1953
Adjusted Chi Square Value	13.64	95% Jackknife UCL	1996
		95% Standard Bootstrap UCL	1938
Anderson-Darling Test Statistic	0.624	95% Bootstrap-t UCL	2455
Anderson-Darling 5% Critical Value	0.768	95% Hall's Bootstrap UCL	2057
Kolmogorov-Smirnov Test Statistic	0.181	95% Percentile Bootstrap UCL	1979
Kolmogorov-Smirnov 5% Critical Value	0.222	95% BCA Bootstrap UCL	2125
Data appear Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	3032
		97.5% Chebyshev(Mean, Sd) UCL	3782
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	5254
95% Approximate Gamma UCL	2225		
95% Adjusted Gamma UCL	2371		
Potential UCL to Use		Use 95% Approximate Gamma UCL	2225

Table B-2b
Off-Facility Area Sediment (Total) ProUCL Output
All Concentrations in mg/kg

General UCL Statistics for Full Data Sets

User Selected Options	
From File	WorkSheet.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operatior	2000

Lead

General Statistics			
Number of Valid Samples	37	Number of Unique Samples	33
Number of Missing Values	1		
Raw Statistics		Log-transformed Statistics	
Minimum	33	Minimum of Log Data	3.497
Maximum	3350	Maximum of Log Data	8.117
Mean	543.2	Mean of log Data	5.759
Median	300	SD of log Data	1.053
SD	692.8		
Coefficient of Variation	1.275		
Skewness	2.872		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.647	Shapiro Wilk Test Statistic	0.981
Shapiro Wilk Critical Value	0.936	Shapiro Wilk Critical Value	0.936
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	735.5	95% H-UCL	848.8
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	1019
95% Adjusted-CLT UCL	788	97.5% Chebyshev (MVUE) UCL	1226
95% Modified-t UCL	744.5	99% Chebyshev (MVUE) UCL	1633
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	0.997	Data Follow Appr. Gamma Distribution at 5% Significance Level	
Theta Star	545.1		
nu star	73.75		
Approximate Chi Square Value (.05)	54.97	Nonparametric Statistics	
Adjusted Level of Significance	0.0431	95% CLT UCL	730.6
Adjusted Chi Square Value	54.27	95% Jackknife UCL	735.5
		95% Standard Bootstrap UCL	727.9
Anderson-Darling Test Statistic	0.786	95% Bootstrap-t UCL	877.9
Anderson-Darling 5% Critical Value	0.776	95% Hall's Bootstrap UCL	1515
Kolmogorov-Smirnov Test Statistic	0.118	95% Percentile Bootstrap UCL	739.5
Kolmogorov-Smirnov 5% Critical Value	0.149	95% BCA Bootstrap UCL	821.5
Data follow Appr. Gamma Distribution at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	1040
		97.5% Chebyshev(Mean, Sd) UCL	1255
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	1676
95% Approximate Gamma UCL	728.8		
95% Adjusted Gamma UCL	738.3		
Potential UCL to Use		Use 95% Approximate Gamma UCL	728.8

Table B-2b
Off-Facility Area Sediment (Total) ProUCL Output
All Concentrations in mg/kg

General UCL Statistics for Full Data Sets

User Selected Options	
From File	WorkSheet.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operatior	2000

Selenium

General Statistics			
Number of Valid Samples	37	Number of Unique Samples	26
Number of Missing Values	1		
Raw Statistics		Log-transformed Statistics	
Minimum	0.5	Minimum of Log Data	-0.693
Maximum	10	Maximum of Log Data	2.303
Mean	2.191	Mean of log Data	0.494
Median	1.4	SD of log Data	0.731
SD	1.991		
Coefficient of Variation	0.909		
Skewness	2.175		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.733	Shapiro Wilk Test Statistic	0.941
Shapiro Wilk Critical Value	0.936	Shapiro Wilk Critical Value	0.936
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	2.743	95% H-UCL	2.767
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	3.337
95% Adjusted-CLT UCL	2.854	97.5% Chebyshev (MVUE) UCL	3.863
95% Modified-t UCL	2.763	99% Chebyshev (MVUE) UCL	4.896
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	1.738	Data appear Lognormal at 5% Significance Level	
Theta Star	1.26		
nu star	128.6		
Approximate Chi Square Value (.05)	103.4	Nonparametric Statistics	
Adjusted Level of Significance	0.0431	95% CLT UCL	2.729
Adjusted Chi Square Value	102.5	95% Jackknife UCL	2.743
		95% Standard Bootstrap UCL	2.714
Anderson-Darling Test Statistic	1.542	95% Bootstrap-t UCL	2.911
Anderson-Darling 5% Critical Value	0.761	95% Hall's Bootstrap UCL	2.953
Kolmogorov-Smirnov Test Statistic	0.18	95% Percentile Bootstrap UCL	2.722
Kolmogorov-Smirnov 5% Critical Value	0.147	95% BCA Bootstrap UCL	2.828
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	3.617
		97.5% Chebyshev(Mean, Sd) UCL	4.235
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	5.447
95% Approximate Gamma UCL	2.724		
95% Adjusted Gamma UCL	2.751		
Potential UCL to Use		Use 95% H-UCL	2.767

Table B-2b
Off-Facility Area Sediment (Total) ProUCL Output
All Concentrations in mg/kg

General UCL Statistics for Full Data Sets

User Selected Options	
From File	WorkSheet.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operatior	2000

Silver

General Statistics			
Number of Valid Samples	37	Number of Unique Samples	29
Number of Missing Values	1		
Raw Statistics		**Log-transformed Statistics**	
Minimum	0.23	Minimum of Log Data	-1.47
Maximum	18	Maximum of Log Data	2.89
Mean	3.072	Mean of log Data	0.389
Median	1.2	SD of log Data	1.217
SD	4.355		
Coefficient of Variation	1.418		
Skewness	2.364		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.644	Shapiro Wilk Test Statistic	0.954
Shapiro Wilk Critical Value	0.936	Shapiro Wilk Critical Value	0.936
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	4.28	95% H-UCL	5.293
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	6.175
95% Adjusted-CLT UCL	4.547	97.5% Chebyshev (MVUE) UCL	7.551
95% Modified-t UCL	4.327	99% Chebyshev (MVUE) UCL	10.26
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	0.761	Data Follow Appr. Gamma Distribution at 5% Significance Level	
Theta Star	4.037		
nu star	56.31		
Approximate Chi Square Value (.05)	40.06	Nonparametric Statistics	
Adjusted Level of Significance	0.0431	95% CLT UCL	4.249
Adjusted Chi Square Value	39.47	95% Jackknife UCL	4.28
		95% Standard Bootstrap UCL	4.227
Anderson-Darling Test Statistic	1.17	95% Bootstrap-t UCL	4.894
Anderson-Darling 5% Critical Value	0.786	95% Hall's Bootstrap UCL	4.522
Kolmogorov-Smirnov Test Statistic	0.146	95% Percentile Bootstrap UCL	4.284
Kolmogorov-Smirnov 5% Critical Value	0.15	95% BCA Bootstrap UCL	4.58
Data follow Appr. Gamma Distribution at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	6.193
		97.5% Chebyshev(Mean, Sd) UCL	7.543
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	10.2
95% Approximate Gamma UCL	4.317		
95% Adjusted Gamma UCL	4.382		
Potential UCL to Use		*Use 95% Approximate Gamma UCL*	4.317

Table B-2b
Off-Facility Area Sediment (Total) ProUCL Output
All Concentrations in mg/kg

General UCL Statistics for Full Data Sets

User Selected Options	
From File	WorkSheet.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operatior	2000

Zinc

General Statistics			
Number of Valid Samples	37	Number of Unique Samples	34
Number of Missing Values	1		
Raw Statistics		Log-transformed Statistics	
Minimum	140	Minimum of Log Data	4.942
Maximum	39000	Maximum of Log Data	10.57
Mean	8515	Mean of log Data	8.319
Median	4800	SD of log Data	1.376
SD	9421		
Coefficient of Variation	1.106		
Skewness	1.512		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.811	Shapiro Wilk Test Statistic	0.947
Shapiro Wilk Critical Value	0.936	Shapiro Wilk Critical Value	0.936
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	11130	95% H-UCL	20319
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	22613
95% Adjusted-CLT UCL	11474	97.5% Chebyshev (MVUE) UCL	28035
95% Modified-t UCL	11194	99% Chebyshev (MVUE) UCL	38684
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	0.763	Data appear Gamma Distributed at 5% Significance Level	
Theta Star	11161		
nu star	56.46		
Approximate Chi Square Value (.05)	40.19	Nonparametric Statistics	
Adjusted Level of Significance	0.0431	95% CLT UCL	11063
Adjusted Chi Square Value	39.59	95% Jackknife UCL	11130
		95% Standard Bootstrap UCL	11056
Anderson-Darling Test Statistic	0.608	95% Bootstrap-t UCL	11752
Anderson-Darling 5% Critical Value	0.785	95% Hall's Bootstrap UCL	11575
Kolmogorov-Smirnov Test Statistic	0.149	95% Percentile Bootstrap UCL	11085
Kolmogorov-Smirnov 5% Critical Value	0.15	95% BCA Bootstrap UCL	11555
Data appear Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	15266
		97.5% Chebyshev(Mean, Sd) UCL	18187
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	23925
95% Approximate Gamma UCL	11963		
95% Adjusted Gamma UCL	12143		
Potential UCL to Use		Use 95% Approximate Gamma UCL	11963

Table B-2b
Off-Facility Area Sediment (Total) ProUCL Output
All Concentrations in mg/kg

General UCL Statistics for Full Data Sets

User Selected Options	
From File	WorkSheet.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operatior	2000

Mercury

General Statistics			
Number of Valid Samples	37	Number of Unique Samples	32
Number of Missing Values	1		
Raw Statistics		Log-transformed Statistics	
Minimum	0.034	Minimum of Log Data	-3.381
Maximum	11	Maximum of Log Data	2.398
Mean	0.926	Mean of log Data	-1.058
Median	0.29	SD of log Data	1.282
SD	1.935		
Coefficient of Variation	2.091		
Skewness	4.274		
Relevant UCL Statistics			
Normal Distribution Test		*Lognormal Distribution Test*	
Shapiro Wilk Test Statistic	0.467	Shapiro Wilk Test Statistic	0.947
Shapiro Wilk Critical Value	0.936	Shapiro Wilk Critical Value	0.936
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	1.463	95% H-UCL	1.414
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	1.622
95% Adjusted-CLT UCL	1.688	97.5% Chebyshev (MVUE) UCL	1.996
95% Modified-t UCL	1.5	99% Chebyshev (MVUE) UCL	2.729
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	0.594	Data appear Lognormal at 5% Significance Level	
Theta Star	1.56		
nu star	43.92		
Approximate Chi Square Value (.05)	29.72	Nonparametric Statistics	
Adjusted Level of Significance	0.0431	95% CLT UCL	1.449
Adjusted Chi Square Value	29.21	95% Jackknife UCL	1.463
		95% Standard Bootstrap UCL	1.433
Anderson-Darling Test Statistic	2.678	95% Bootstrap-t UCL	2.078
Anderson-Darling 5% Critical Value	0.8	95% Hall's Bootstrap UCL	3.24
Kolmogorov-Smirnov Test Statistic	0.251	95% Percentile Bootstrap UCL	1.503
Kolmogorov-Smirnov 5% Critical Value	0.152	95% BCA Bootstrap UCL	1.837
Data not Gamma Distributed at 5% Significance Level		*95% Chebyshev(Mean, Sd) UCL*	2.312
		97.5% Chebyshev(Mean, Sd) UCL	2.912
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	4.091
95% Approximate Gamma UCL	1.368		
95% Adjusted Gamma UCL	1.392		
Potential UCL to Use		Use 95% H-UCL	1.414

Table B-3a (No PROUCL output-- dataset <10)
Facility Area Surface Water
Old American Zinc Plant Site, Fairmont City, Illinois
All concentrations in mg/L

Sample ID:	Location	Total Arsenic	Total Barium	Total Cadmium	Total Chromium	Total Copper	Total Lead	Total Selenium	Total Silver	Total Zinc	Total Mercury
SW-01	East Ditch 1	**0.022**	**0.39**	**0.094**	**0.019**	na	**0.27**	0.005	**0.0046**	**5.5**	**0.0013**
SW-05	East Ditch 1	0.005	**0.011**	**0.0027**	0.005	na	**0.0076**	0.005	0.0025	**0.28**	0.0001
SW-06	East Ditch 1	0.005	**0.02**	**0.0086**	**0.0014**	na	**0.043**	0.005	0.0025	**0.47**	**0.00027**
SW-07*	West Ditch 2	**0.003**	**0.0895**	**0.18**	0.005	na	**0.23**	0.005	0.0025	**41.5**	0.0001
SW-08	Rose Creek (on site)	0.005	**0.067**	**0.055**	**0.0037**	na	**0.2**	0.005	0.0025	**3.1**	**0.00067**
SW-24	West Ditch 1	**0.0065**	**0.046**	**0.012**	0.005	na	**0.0094**	0.005	0.0025	**24**	0.0001
	Mean	**0.00775**	**0.104**	**0.059**	**0.007**		**0.127**	**ND**	**0.00285**	**12.48**	**0.00042**
	Maximum Detected	**0.022**	**0.39**	**0.18**	**0.019**		**0.27**	**ND**	**0.0046**	**41.5**	**0.0013**

Non-detect presented at 1/2 DL.
Average of duplicates.
Bold indicates detected concentration.

Table B-4a
Off-Facility Area Surface Water Samples
Old American Zinc Plant Site, Fairmont City, Illinois
All concentrations in mg/L

Sample ID	Date Collected	Location	Total Arsenic	Total Barium	Total Cadmium	Total Chromium	Total Copper	Total Lead	Total Selenium	Total Silver	Total Zinc	Total Mercury
SW-10	6/12/2006	Rose Creek	**0.012**	**0.094**	**0.064**	**0.0064**	na	**0.16**	0.005	**0.0012**	**6.1**	**0.00017**
SW-11	6/12/2006	Rose Creek	**0.0055**	**0.054**	**0.0059**	**0.0024**	na	**0.013**	0.005	0.0025	**0.65**	0.0001
SW-12	6/12/2006	Rose Creek	**0.0046**	**0.09**	**0.003**	**0.0048**	na	**0.040**	0.005	0.0025	**0.49**	0.0001
SW-13	6/12/2006	Rose Creek	0.005	**0.071**	**0.0040**	**0.0017**	na	**0.0033**	0.005	0.0025	**0.38**	0.0001
SW-41	12/12/2006	Rose Creek	0.005	**0.045**	**0.195**	**0.0019**	**0.0165**	**0.013**	**0.0050**	0.0025	**29.5**	0.00010
SW-41 Re	7/19/2007	Rose Creek	**0.0099**	**0.05**	**0.0455**	0.005	**0.018**	**0.0105**	0.0050	0.00215	**8.65**	0.00010
SW-42	12/12/2006	Rose Creek	0.005	**0.056**	**0.19**	**0.0024**	**0.017**	**0.015**	**0.0045**	0.0025	**23**	0.00010
SW-42 Re	7/19/2007	Rose Creek	No water in creek at this re-sample location.									
SW-43	12/12/2006	Rose Creek	0.005	**0.063**	**0.0079**	**0.0048**	**0.022**	**0.017**	0.005	0.0025	**1.1**	0.00010
SW-43 Re	7/18/2007	Rose Creek	0.005	**0.041**	0.001	0.005	**0.0039**	**0.0024**	0.005	0.0015	**0.15**	0.00010
SW-44	12/12/2006	Rose Creek	0.005	**0.072**	**0.011**	**0.0042**	**0.02**	**0.018**	0.005	0.0025	**1.6**	0.00010
SW-44 Re	7/18/2007	Rose Creek	**0.021**	**0.045**	**0.0037**	0.005	**0.0053**	0.003	0.005	0.0017	**0.56**	0.00010
SW-17	6/12/2006	Rose Creek Outfall	0.005	**0.078**	**0.0090**	**0.0033**	na	**0.023**	0.005	0.0025	**0.79**	**0.000098**
SW-20	6/13/2006	Sch. Creek	0.005	**0.105**	0.001	**0.0023**	na	**0.0032**	0.005	0.0025	**0.0185**	0.0001
SW-21	6/12/2006	Sch. Creek	**0.020**	**0.80**	**0.043**	**0.17**	na	**0.23**	0.005	0.0025	**1.6**	**0.00079**
SW-22	6/13/2006	Sch. Creek	0.005	**0.10**	0.001	**0.0033**	na	**0.0052**	0.005	0.0025	**0.021**	0.0001
SW-36	6/29/2006	Sch. Creek	**0.0057**	**0.17**	**0.00069**	**0.0035**	na	**0.0078**	0.005	0.0025	**0.045**	**0.00011**
SW-37	6/29/2006	Sch. Creek	**0.0048**	**0.15**	**0.00091**	**0.0061**	na	**0.0094**	0.005	0.0025	**0.051**	0.0001
SW-34	6/28/2006	Cahokia Watershed	**0.06**	**0.895**	**1.75**	**0.0795**	na	**1.9**	**0.01035**	**0.014**	**205**	**0.000515**
SW-45	12/12/2006	Cahokia Wetland	0.005	**0.043**	**0.99**	**0.0027**	**2.0**	**0.0070**	0.005	**0.0018**	**260**	0.00010
SW-45 Re	7/18/2007	Cahokia Wetland	No water in discharge channel at this re-sample location.									
SW-TRC-3-S	7/19/2007	Rose Creek Outfall	**0.018**	**0.290**	**0.03**	**0.0100**	**0.042**	**0.074**	0.005	**0.0012**	**1.3**	0.00036
SW-38	12/12/2006	Cahokia Wetland	0.005	**0.055**	**0.27**	**0.0022**	**0.033**	0.0025	0.005	0.0025	**51**	0.0001
SW-38 Re	7/18/2007	Cahokia Wetland	**0.01**	**0.11**	**0.038**	**0.0034**	**0.14**	**0.022**	0.005	0.0029	**5.3**	0.0001
SW-39	12/12/2006	Cahokia Wetland	0.005	**0.048**	**0.17**	**0.0014**	**0.030**	0.0025	0.005	0.0025	**47**	0.00010
SW-39 Re	7/18/2007	Cahokia Wetland	0.005	**0.063**	0.001	0.005	**0.008**	<0.0050	0.005	0.0014	**0.25**	0.00010
SW-40	12/12/2006	Cahokia Wetland	0.005	**0.053**	**0.20**	**0.0018**	**0.025**	0.0025	0.005	**0.0016**	**47**	0.00010
SW-40 Re	7/18/2007	Cahokia Wetland	0.005	**0.140**	**0.01**	**0.0019**	**0.007**	<0.0050	0.005	**0.0025**	**2.6**	0.00010
SW-50	12/12/2006	Reference	0.0059	**0.045**	0.0010	0.0050	**0.002**	0.0022	0.005	0.0025	**0.02**	0.00010
SW-52	12/12/2006	Reference	0.0039	**0.150**	0.0010	**0.0052**	**0.004**	0.0057	0.005	**0.0019**	**0.035**	0.00010

Non-detect presented at 1/2 DL.
Average of duplicates.
Bold indicates detected concentration.
Re-samples used in calculation of 95UCL.

Table B-4b
Off-Facility Area Surface Water (Total) ProUCL Output
All Concentrations in mg/L

General UCL Statistics for Full Data Sets

User Selected Options	
From File	WorkSheet.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Arsenic

General Statistics

Number of Valid Samples	20	*Number of Unique Samples*	12
Raw Statistics		Log-transformed Statistics	
Minimum	0.0046	Minimum of Log Data	-5.382
Maximum	0.06	Maximum of Log Data	-2.813
Mean	0.0108	Mean of log Data	-4.851
Median	0.005	SD of log Data	0.709
SD	0.0128		
Coefficient of Variation	1.179		
Skewness	3.335		

Relevant UCL Statistics

Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.527	Shapiro Wilk Test Statistic	0.727
Shapiro Wilk Critical Value	0.905	Shapiro Wilk Critical Value	0.905
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	0.0158	95% H-UCL	0.0144
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	0.0172
95% Adjusted-CLT UCL	0.0178	97.5% Chebyshev (MVUE) UCL	0.0204
95% Modified-t UCL	0.0161	99% Chebyshev (MVUE) UCL	0.0266
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	1.465	Data do not follow a Discernable Distribution (0.05)	
Theta Star	0.00739		
nu star	58.59		
Approximate Chi Square Value (.05)	41.99	Nonparametric Statistics	
Adjusted Level of Significance	0.038	95% CLT UCL	0.0155
Adjusted Chi Square Value	40.88	95% Jackknife UCL	0.0158
		95% Standard Bootstrap UCL	0.0156
Anderson-Darling Test Statistic	2.618	95% Bootstrap-t UCL	0.0231
Anderson-Darling 5% Critical Value	0.756	95% Hall's Bootstrap UCL	0.0312
Kolmogorov-Smirnov Test Statistic	0.335	95% Percentile Bootstrap UCL	0.0158
Kolmogorov-Smirnov 5% Critical Value	0.197	95% BCA Bootstrap UCL	0.018
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	0.0233
		97.5% Chebyshev(Mean, Sd) UCL	0.0286
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	0.0392
95% Approximate Gamma UCL	0.0151		
95% Adjusted Gamma UCL	0.0155		
Potential UCL to Use		*Use 95% Chebyshev (Mean, Sd) UCL*	0.0233

Table B-4b
Off-Facility Area Surface Water (Total) ProUCL Output
All Concentrations in mg/L

General UCL Statistics for Full Data Sets

User Selected Options	
From File	WorkSheet.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Barium

General Statistics			
Number of Valid Samples	20	Number of Unique Samples	20
Raw Statistics		Log-transformed Statistics	
Minimum	0.041	Minimum of Log Data	-3.194
Maximum	0.895	Maximum of Log Data	-0.111
Mean	0.172	Mean of log Data	-2.247
Median	0.092	SD of log Data	0.874
SD	0.239		
Coefficient of Variation	1.385		
Skewness	2.624		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.549	Shapiro Wilk Test Statistic	0.854
Shapiro Wilk Critical Value	0.905	Shapiro Wilk Critical Value	0.905
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	0.265	95% H-UCL	0.252
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	0.292
95% Adjusted-CLT UCL	0.293	97.5% Chebyshev (MVUE) UCL	0.353
95% Modified-t UCL	0.27	99% Chebyshev (MVUE) UCL	0.473
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	1.021	Data do not follow a Discernable Distribution (0.05)	
Theta Star	0.169		
nu star	40.85		
Approximate Chi Square Value (.05)	27.2	Nonparametric Statistics	
Adjusted Level of Significance	0.038	95% CLT UCL	0.26
Adjusted Chi Square Value	26.32	95% Jackknife UCL	0.265
		95% Standard Bootstrap UCL	0.256
Anderson-Darling Test Statistic	1.925	95% Bootstrap-t UCL	0.497
Anderson-Darling 5% Critical Value	0.765	95% Hall's Bootstrap UCL	0.653
Kolmogorov-Smirnov Test Statistic	0.251	95% Percentile Bootstrap UCL	0.27
Kolmogorov-Smirnov 5% Critical Value	0.199	95% BCA Bootstrap UCL	0.303
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	0.405
		97.5% Chebyshev(Mean, Sd) UCL	0.505
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	0.703
95% Approximate Gamma UCL	0.259		
95% Adjusted Gamma UCL	0.267		
Potential UCL to Use		Use 95% Chebyshev (Mean, Sd) UCL	0.405

Table B-4b
Off-Facility Area Surface Water (Total) ProUCL Output
All Concentrations in mg/L

General UCL Statistics for Full Data Sets

User Selected Options	
From File	WorkSheet.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Cadmium

General Statistics			
Number of Valid Samples	20	Number of Unique Samples	17
Raw Statistics		Log-transformed Statistics	
Minimum	6.90E-04	Minimum of Log Data	-7.279
Maximum	1.75	Maximum of Log Data	0.56
Mean	0.16	Mean of log Data	-4.508
Median	0.00745	SD of log Data	2.349
SD	0.434		
Coefficient of Variation	2.72		
Skewness	3.247		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.42	Shapiro Wilk Test Statistic	0.91
Shapiro Wilk Critical Value	0.905	Shapiro Wilk Critical Value	0.905
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		*Assuming Lognormal Distribution*	
95% Student's-t UCL	0.327	95% H-UCL	2.344
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	0.448
95% Adjusted-CLT UCL	0.395	97.5% Chebyshev (MVUE) UCL	0.592
95% Modified-t UCL	0.339	99% Chebyshev (MVUE) UCL	0.873
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	0.257	Data appear Lognormal at 5% Significance Level	
Theta Star	0.62		
nu star	10.29		
Approximate Chi Square Value (.05)	4.125	Nonparametric Statistics	
Adjusted Level of Significance	0.038	95% CLT UCL	0.319
Adjusted Chi Square Value	3.82	95% Jackknife UCL	0.327
		95% Standard Bootstrap UCL	0.307
Anderson-Darling Test Statistic	1.9	95% Bootstrap-t UCL	1.549
Anderson-Darling 5% Critical Value	0.861	95% Hall's Bootstrap UCL	1.47
Kolmogorov-Smirnov Test Statistic	0.251	95% Percentile Bootstrap UCL	0.335
Kolmogorov-Smirnov 5% Critical Value	0.212	95% BCA Bootstrap UCL	0.424
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	0.583
		97.5% Chebyshev(Mean, Sd) UCL	0.766
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	1.125
95% Approximate Gamma UCL	0.398		
95% Adjusted Gamma UCL	0.43		
Potential UCL to Use		Use 97.5% Chebyshev (MVUE) UCL	0.592

Table B-4b
Off-Facility Area Surface Water (Total) ProUCL Output
All Concentrations in mg/L

General UCL Statistics for Full Data Sets

User Selected Options	
From File	WorkSheet.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Chromium

General Statistics			
Number of Valid Samples	20	Number of Unique Samples	15
Raw Statistics		Log-transformed Statistics	
Minimum	0.0017	Minimum of Log Data	-6.377
Maximum	0.17	Maximum of Log Data	-1.772
Mean	0.0162	Mean of log Data	-5.253
Median	0.00415	SD of log Data	1.156
SD	0.04		
Coefficient of Variation	2.47		
Skewness	3.533		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.389	Shapiro Wilk Test Statistic	0.725
Shapiro Wilk Critical Value	0.905	Shapiro Wilk Critical Value	0.905
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	0.0316	95% H-UCL	0.0216
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	0.0222
95% Adjusted-CLT UCL	0.0384	97.5% Chebyshev (MVUE) UCL	0.0276
95% Modified-t UCL	0.0328	99% Chebyshev (MVUE) UCL	0.0383
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	0.504	Data do not follow a Discernable Distribution (0.05)	
Theta Star	0.0321		
nu star	20.16		
Approximate Chi Square Value (.05)	10.97	Nonparametric Statistics	
Adjusted Level of Significance	0.038	95% CLT UCL	0.0309
Adjusted Chi Square Value	10.44	95% Jackknife UCL	0.0316
		95% Standard Bootstrap UCL	0.0307
Anderson-Darling Test Statistic	3.821	95% Bootstrap-t UCL	0.262
Anderson-Darling 5% Critical Value	0.798	95% Hall's Bootstrap UCL	0.129
Kolmogorov-Smirnov Test Statistic	0.4	95% Percentile Bootstrap UCL	0.0323
Kolmogorov-Smirnov 5% Critical Value	0.204	95% BCA Bootstrap UCL	0.0452
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	0.0551
		97.5% Chebyshev(Mean, Sd) UCL	0.072
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	0.105
95% Approximate Gamma UCL	0.0297		
95% Adjusted Gamma UCL	0.0313		
Potential UCL to Use		Use 99% Chebyshev (Mean, Sd) UCL	0.105

Table B-4b
Off-Facility Area Surface Water (Total) ProUCL Output
All Concentrations in mg/L

General UCL Statistics for Full Data Sets

User Selected Options	
From File	WorkSheet.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	*2000*

Copper

General Statistics			
Number of Valid Samples	9	Number of Unique Samples	9
Raw Statistics		*Log-transformed Statistics*	
Minimum	0.0039	Minimum of Log Data	-5.547
Maximum	2	Maximum of Log Data	0.693
Mean	0.249	Mean of log Data	-3.679
Median	0.017	SD of log Data	1.983
SD	0.658		
Coefficient of Variation	2.642		
Skewness	2.976		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.435	Shapiro Wilk Test Statistic	0.848
Shapiro Wilk Critical Value	0.829	Shapiro Wilk Critical Value	0.829
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	0.657	95% H-UCL	10.55
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	0.449
95% Adjusted-CLT UCL	0.842	97.5% Chebyshev (MVUE) UCL	0.593
95% Modified-t UCL	0.693	99% Chebyshev (MVUE) UCL	0.876
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	0.275	*Data appear Lognormal at 5% Significance Level*	
Theta Star	0.906		
nu star	4.946		
Approximate Chi Square Value (.05)	1.127	Nonparametric Statistics	
Adjusted Level of Significance	0.0231	95% CLT UCL	0.61
Adjusted Chi Square Value	0.793	95% Jackknife UCL	0.657
		95% Standard Bootstrap UCL	0.578
Anderson-Darling Test Statistic	1.36	95% Bootstrap-t UCL	13.17
Anderson-Darling 5% Critical Value	0.807	95% Hall's Bootstrap UCL	9.54
Kolmogorov-Smirnov Test Statistic	0.329	95% Percentile Bootstrap UCL	0.681
Kolmogorov-Smirnov 5% Critical Value	0.301	95% BCA Bootstrap UCL	0.898
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	1.205
		97.5% Chebyshev(Mean, Sd) UCL	1.619
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	2.431
95% Approximate Gamma UCL	1.092		
95% Adjusted Gamma UCL	1.552		
Potential UCL to Use		Use 99% Chebyshev (MVUE) UCL	0.876

Table B-4b
Off-Facility Area Surface Water (Total) ProUCL Output
All Concentrations in mg/L

General UCL Statistics for Full Data Sets

User Selected Options	
From File	WorkSheet.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Lead

General Statistics			
Number of Valid Samples	20	Number of Unique Samples	19
Raw Statistics		*Log-transformed Statistics*	
Minimum	0.0024	Minimum of Log Data	-6.032
Maximum	1.9	Maximum of Log Data	0.642
Mean	0.127	Mean of log Data	-4.21
Median	0.00995	SD of log Data	1.775
SD	0.422		
Coefficient of Variation	3.327		
Skewness	4.334		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.319	Shapiro Wilk Test Statistic	0.879
Shapiro Wilk Critical Value	0.905	Shapiro Wilk Critical Value	0.905
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	0.29	95% H-UCL	0.341
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	0.189
95% Adjusted-CLT UCL	0.379	97.5% Chebyshev (MVUE) UCL	0.244
95% Modified-t UCL	0.305	99% Chebyshev (MVUE) UCL	0.353
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	0.304	Data do not follow a Discernable Distribution (0.05)	
Theta Star	0.417		
nu star	12.16		
Approximate Chi Square Value (.05)	5.335	Nonparametric Statistics	
Adjusted Level of Significance	0.038	95% CLT UCL	0.282
Adjusted Chi Square Value	4.981	95% Jackknife UCL	0.29
		95% Standard Bootstrap UCL	0.275
Anderson-Darling Test Statistic	2.585	95% Bootstrap-t UCL	1.443
Anderson-Darling 5% Critical Value	0.841	95% Hall's Bootstrap UCL	1.282
Kolmogorov-Smirnov Test Statistic	0.305	95% Percentile Bootstrap UCL	0.308
Kolmogorov-Smirnov 5% Critical Value	0.21	95% BCA Bootstrap UCL	0.409
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	0.538
		97.5% Chebyshev(Mean, Sd) UCL	0.715
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	1.065
95% Approximate Gamma UCL	0.289		
95% Adjusted Gamma UCL	0.309		
Potential UCL to Use		Use 99% Chebyshev (Mean, Sd) UCL	1.065

Table B-4b
Off-Facility Area Surface Water (Total) ProUCL Output
All Concentrations in mg/L

General UCL Statistics for Full Data Sets

User Selected Options	
From File	WorkSheet.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Selenium

General Statistics

Number of Valid Samples	20	Number of Unique Samples	3
Raw Statistics		*Log-transformed Statistics*	
Minimum	0.0045	Minimum of Log Data	-5.404
Maximum	0.0104	Maximum of Log Data	-4.571
Mean	0.00524	*Mean of log Data*	-5.267
Median	0.005	SD of log Data	0.166
SD	0.00121		
Coefficient of Variation	0.23		
Skewness	4.405		

Relevant UCL Statistics

Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.277	Shapiro Wilk Test Statistic	0.298
Shapiro Wilk Critical Value	0.905	Shapiro Wilk Critical Value	0.905
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	0.00571	95% H-UCL	0.00559
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	0.00607
95% Adjusted-CLT UCL	0.00597	97.5% Chebyshev (MVUE) UCL	0.00644
95% Modified-t UCL	0.00575	99% Chebyshev (MVUE) UCL	0.00716
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	26.33	Data do not follow a Discernable Distribution (0.05)	
Theta Star	1.99E-04		
nu star	1053		
Approximate Chi Square Value (.05)	978.7	Nonparametric Statistics	
Adjusted Level of Significance	0.038	95% CLT UCL	0.00569
Adjusted Chi Square Value	973.1	95% Jackknife UCL	0.00571
		95% Standard Bootstrap UCL	0.00568
Anderson-Darling Test Statistic	6.568	95% Bootstrap-t UCL	0.00813
Anderson-Darling 5% Critical Value	0.74	95% Hall's Bootstrap UCL	0.00978
Kolmogorov-Smirnov Test Statistic	0.53	95% Percentile Bootstrap UCL	0.00578
Kolmogorov-Smirnov 5% Critical Value	0.193	95% BCA Bootstrap UCL	0.00578
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	0.00642
		97.5% Chebyshev(Mean, Sd) UCL	0.00693
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	0.00793
95% Approximate Gamma UCL	0.00564		
95% Adjusted Gamma UCL	0.00567		
Potential UCL to Use		Use 95% Student's-t UCL	0.00571

Table B-4b
Off-Facility Area Surface Water (Total) ProUCL Output
All Concentrations in mg/L

General UCL Statistics for Full Data Sets

User Selected Options	
From File	WorkSheet.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

or 95% Modified-t UCL 0.00575

Silver

General Statistics			
Number of Valid Samples	20	Number of Unique Samples	9
Raw Statistics		Log-transformed Statistics	
Minimum	0.0012	Minimum of Log Data	-6.725
Maximum	0.014	Maximum of Log Data	-4.269
Mean	0.00277	Mean of log Data	-6.069
Median	0.0025	SD of log Data	0.504
SD	0.00269		
Coefficient of Variation	0.973		
Skewness	4.198		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.393	Shapiro Wilk Test Statistic	0.691
Shapiro Wilk Critical Value	0.905	Shapiro Wilk Critical Value	0.905
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	0.00381	95% H-UCL	0.00331
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	0.00394
95% Adjusted-CLT UCL	0.00436	97.5% Chebyshev (MVUE) UCL	0.00451
95% Modified-t UCL	0.0039	99% Chebyshev (MVUE) UCL	0.00564
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	2.537	Data do not follow a Discernable Distribution (0.05)	
Theta Star	0.00109		
nu star	101.5		
Approximate Chi Square Value (.05)	79.23	Nonparametric Statistics	
Adjusted Level of Significance	0.038	95% CLT UCL	0.00376
Adjusted Chi Square Value	77.67	95% Jackknife UCL	0.00381
		95% Standard Bootstrap UCL	0.00378
Anderson-Darling Test Statistic	2.992	95% Bootstrap-t UCL	0.00631
Anderson-Darling 5% Critical Value	0.748	95% Hall's Bootstrap UCL	0.00838
Kolmogorov-Smirnov Test Statistic	0.39	95% Percentile Bootstrap UCL	0.00394
Kolmogorov-Smirnov 5% Critical Value	0.195	95% BCA Bootstrap UCL	0.00457
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	0.00539
		97.5% Chebyshev(Mean, Sd) UCL	0.00653
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	0.00876
95% Approximate Gamma UCL	0.00354		
95% Adjusted Gamma UCL	0.00362		
Potential UCL to Use		Use 95% Chebyshev (Mean, Sd) UCL	0.00539

Table B-4b
Off-Facility Area Surface Water (Total) ProUCL Output
All Concentrations in mg/L

General UCL Statistics for Full Data Sets

User Selected Options	
From File	WorkSheet.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Zinc

General Statistics			
Number of Valid Samples	20	Number of Unique Samples	20
Raw Statistics		Log-transformed Statistics	
Minimum	0.0185	Minimum of Log Data	-3.99
Maximum	260	Maximum of Log Data	5.561
Mean	25.85	Mean of log Data	0.06
Median	0.72	SD of log Data	2.693
SD	71.43		
Coefficient of Variation	2.764		
Skewness	2.943		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.407	Shapiro Wilk Test Statistic	0.958
Shapiro Wilk Critical Value	0.905	Shapiro Wilk Critical Value	0.905
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	53.47	95% H-UCL	1159
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	91.95
95% Adjusted-CLT UCL	63.35	97.5% Chebyshev (MVUE) UCL	122.2
95% Modified-t UCL	55.22	99% Chebyshev (MVUE) UCL	181.7
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	0.226	Data appear Lognormal at 5% Significance Level	
Theta Star	114.6		
nu star	9.021		
Approximate Chi Square Value (.05)	3.34	Nonparametric Statistics	
Adjusted Level of Significance	0.038	95% CLT UCL	52.12
Adjusted Chi Square Value	3.071	95% Jackknife UCL	53.47
		95% Standard Bootstrap UCL	51.07
Anderson-Darling Test Statistic	1.846	95% Bootstrap-t UCL	342.7
Anderson-Darling 5% Critical Value	0.877	95% Hall's Bootstrap UCL	358.4
Kolmogorov-Smirnov Test Statistic	0.246	95% Percentile Bootstrap UCL	52.34
Kolmogorov-Smirnov 5% Critical Value	0.213	95% BCA Bootstrap UCL	65.42
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	95.47
		97.5% Chebyshev(Mean, Sd) UCL	125.6
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	184.8
95% Approximate Gamma UCL	69.82		
95% Adjusted Gamma UCL	75.92		
Potential UCL to Use		Use 99% Chebyshev (Mean, Sd) UCL	184.8

Table B-4b
Off-Facility Area Surface Water (Total) ProUCL Output
All Concentrations in mg/L

General UCL Statistics for Full Data Sets

User Selected Options	
From File	WorkSheet.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Mercury

General Statistics			
Number of Valid Samples	20	Number of Unique Samples	7
Raw Statistics		Log-transformed Statistics	
Minimum	9.80E-05	Minimum of Log Data	-9.231
Maximum	7.90E-04	Maximum of Log Data	-7.143
Mean	*1.72E-04*	*Mean of log Data*	-8.931
Median	1.00E-04	SD of log Data	0.621
SD	1.80E-04		
Coefficient of Variation	1.047		
Skewness	2.768		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.479	Shapiro Wilk Test Statistic	0.529
Shapiro Wilk Critical Value	0.905	Shapiro Wilk Critical Value	0.905
Data not Normal at 5% Significance Level		*Data not Lognormal at 5% Significance Level*	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	2.42E-04	95% H-UCL	2.17E-04
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	2.60E-04
95% Adjusted-CLT UCL	2.65E-04	97.5% Chebyshev (MVUE) UCL	3.04E-04
95% Modified-t UCL	2.46E-04	99% Chebyshev (MVUE) UCL	3.90E-04
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	1.774	Data do not follow a Discernable Distribution (0.05)	
Theta Star	9.70E-05		
nu star	70.97		
Approximate Chi Square Value (.05)	52.57	Nonparametric Statistics	
Adjusted Level of Significance	0.038	95% CLT UCL	2.38E-04
Adjusted Chi Square Value	51.32	95% Jackknife UCL	2.42E-04
		95% Standard Bootstrap UCL	*2.35E-04*
Anderson-Darling Test Statistic	4.776	95% Bootstrap-t UCL	3.40E-04
Anderson-Darling 5% Critical Value	0.752	95% Hall's Bootstrap UCL	2.68E-04
Kolmogorov-Smirnov Test Statistic	0.438	95% Percentile Bootstrap UCL	2.45E-04
Kolmogorov-Smirnov 5% Critical Value	0.196	95% BCA Bootstrap UCL	2.58E-04
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	3.48E-04
		97.5% Chebyshev(Mean, Sd) UCL	4.24E-04
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	5.73E-04
95% Approximate Gamma UCL	2.32E-04		
95% Adjusted Gamma UCL	2.38E-04		
Potential UCL to Use		Use 95% Chebyshev (Mean, Sd) UCL	3.48E-04

Table B-5a
Facility Area Soil (Fine Fraction)
All concentrations in mg/kg

Sample ID:	Date Collected:	Depth (ft - ft)	Arsenic	Barium	Cadmium	Chromium	Lead	Selenium	Silver	Zinc	Mercury
CSS-01	5/30/2006	0.0 - 0.5	15	180	62	14	370	0.73	2.0	4,900	0.15
CSS-02	5/31/2006	0.0 - 0.5	58	350	170	19	1,600	1.9	10	18,000	0.43
CSS-03	6/1/2006	0.0 - 0.5	62	330	94	19	1,200	1.7	43	21,000	1.0
CSS-04	6/1/2006	0.0 - 0.5	190	270	92	31	7,200	4.8	63	23,000	18
CSS-05	6/1/2006	0.0 - 0.5	160	310	130	28	7,700	2	72	61,000	1.1
CSS-06	6/1/2006	0.0 - 0.5	8.6	85	4.9	14	910	0.49	1.5	990	0.29
CSS-07	6/1/2006	0.0 - 0.5	4.8	83	3.2	13	730	0.445	0.86	380	0.062
CSS-08	6/1/2006	0.0 - 0.5	4.3	130	3.8	14	110	0.91	0.73	510	0.066
CSS-09	6/1/2006	0.0 - 0.5	84	200	120	21	1,900	1.3	27	26,000	0.66
CSS-10	6/2/2006	0.0 - 0.5	49	150	33	20	890	0.49	3.4	3,500	0.55
CSS-11	6/13/2006	0.0 - 0.5	31	280	51	19	870	1.4	5.7	8,400	0.13
CSS-12	6/2/2006	0.0 - 0.5	78	290	110	16	1,500	2.1	7.5	27,000	1.3
CSS-13	6/2/2006	0.0 - 0.5	31,000	300	5,000	270	13,000	36	270	50,000	5.2
CSS-14	6/2/2006	0.0 - 0.5	500	750	510	480	13,000	11	110	110,000	34
CSS-15	6/2/2006	0.0 - 0.5	480	4,000	260	40	23,000	5.6	150	110,000	3.7
CSS-16	6/5/2006	0.0 - 0.5	87	250	80	32	2,900	1.7	24	32,000	0.96
CSS-17	6/5/2006	0.0 - 0.5	66	220	67	23	2,300	2.6	17	21,000	0.40
CSS-18	6/5/2006	0.0 - 0.5	96	110	37	17	4,300	1.3	20	23,000	0.14
CSS-19	6/5/2006	0.0 - 0.5	47	230	45	24	2,200	1	11	9,400	0.39
CSS-20	9/20/2006	0.0 - 0.5	53	270	**110**	34	1,900	2.6	9.9	18,000	1.1
CSS-21	9/20/2006	0.0 - 0.5	290	540	**47**	27	2,200	5	180	12,000	0.64
CSS-22	6/5/2006	0.0 - 0.5	120	260	63	24	2,300	3	17	58,000	1.7
CSS-23	6/5/2006	0.0 - 0.5	340	350	390	37	9,500	5.6	90	200,000	6.0
CSS-24	6/5/2006	0.0 - 0.5	330	430	650	240	12,000	7.1	72	130,000	4.5
CSS-25	6/5/2006	0.0 - 0.5	230	750	370	72	7,200	5.7	51	64,000	1.6
CSS-26	6/5/2006	0.0 - 0.5	190	400	130	37	4,700	6.2	69	49,000	0.0091
CSS-27	6/5/2006	0.0 - 0.5	72	180	110	26	2,100	3.3	17	26,000	0.47
CSS-28	6/5/2006	0.0 - 0.5	190	260	95	21	5,800	4.5	35	25,000	1.2
CSS-29	6/5/2006	0.0 - 0.5	94	400	110	33	3,900	3	22	25,000	2.3
CSS-30	6/13/2006	0.0 - 0.5	30	220	83	19	860	1.2	4.6	6,100	0.16
CSS-31	6/13/2006	0.0 - 0.5	470	320	100	23	3,700	4.1	85	18,000	1.8
CSS-32	6/5/2006	0.0 - 0.5	320	350	230	30	110,000	68	150	50,000	210
CSS-33	6/5/2006	0.0 - 0.5	210	290	81	25	3,000	2.1	74	17,000	4.5
CSS-34	6/5/2006	0.0 - 0.5	270	280	160	34	4,800	4.3	48	21,000	2.3
CSS-35	6/5/2006	0.0 - 0.5	220	160	250	50	4,600	4.2	44	31,000	2.8
CSS-36	6/5/2006	0.0 - 0.5	110	620	110	26	4,000	2.8	28	26,000	0.76
CSS-37	6/5/2006	0.0 - 0.5	190	500	130	27	3,400	3.6	110	27,000	1.1
CSS-38	6/5/2006	0.0 - 0.5	100	250	130	23	3,800	1.4	26	34,000	0.53
CSS-39	6/13/2006	0.0 - 0.5	27	240	65	21	880	1.7	6.4	6,100	0.19
CSS-40	6/13/2006	0.0 - 0.5	98	350	44	47	2,600	3.8	49	15,000	0.54
CSS-41	6/6/2006	0.0 - 0.5	480	370	22	32	2,600	8.4	300	10,000	3.1
CSS-42	6/6/2006	0.0 - 0.5	360	460	110	39	3,400	5.2	170	34,000	2.4
CSS-43	6/7/2006	0.0 - 0.5	470	210	82	43	2,300	9.4	190	18,000	3.1
CSS-44	6/7/2006	0.0 - 0.5	130	150	90	33	1,800	3.2	47	15,000	1.5
CSS-45	6/7/2006	0.0 - 0.5	170	190	140	32	2,800	4.5	82	21,000	1.4
CSS-46	6/7/2006	0.0 - 0.5	160	270	150	30	3,900	4.3	44	28,000	2.2
CSS-47	6/7/2006	0.0 - 0.5	110	350	560	26	5,100	3.3	85	69,000	2.5
CSS-48	6/13/2006	0.0 - 0.5	22	670	93	58	2,600	1.2	6.0	11,000	0.14
CSS-49	6/13/2006	0.0 - 0.5	88	260	47	20	1,300	2.3	64	7,400	0.21
CSS-50	6/7/2006	0.0 - 0.5	260	430	18	25	1,900	2.6	220	7,300	10
CSS-51	6/7/2006	0.0 - 0.5	140	680	15	25	1,500	0.64	140	4,500	3.6
CSS-52	6/7/2006	0.0 - 0.5	230	870	110	43	8,300	3.6	180	62,000	13
CSS-53	6/8/2006	0.0 - 0.5	280	510	260	33	4,200	4.9	210	68,000	3.7
CSS-54	6/8/2006	0.0 - 0.5	240	360	200	42	5,600	4.3	110	35,000	2.7

Table B-5a
Facility Area Soil (Fine Fraction)
All concentrations in mg/kg

Sample ID:	Date Collected:	Depth (ft - ft)	Arsenic	Barium	Cadmium	Chromium	Lead	Selenium	Silver	Zinc	Mercury
CSS-55	6/8/2006	0.0 - 0.5	280	380	190	27	12,000	6.5	91	47,000	9.4
CSS-56	6/13/2006	0.0 - 0.5	60	300	130	18	1,400	2.1	21	27,000	0.39
CSS-57	6/13/2006	0.0 - 0.5	86	390	140	48	1,500	3.6	57	14,000	1.9
CSS-58	6/13/2006	0.0 - 0.5	20	220	130	64	2,300	2.5	12	12,000	4.8
CSS-59	6/8/2006	0.0 - 0.5	92	180	16	16	910	1.2	53	4,900	1.8
CSS-60	6/8/2006	0.0 - 0.5	13	130	9.7	15	240	0.6	8.4	980	0.29
CSS-61	6/8/2006	0.0 - 0.5	350	530	310	37	11,000	18	190	59,000	43
CSS-62	6/8/2006	0.0 - 0.5	42	130	53	19	800	1.8	17	4,100	3.0
CSS-63	6/8/2006	0.0 - 0.5	270	1,000	110	28	2,500	5.5	190	21,000	7.5
CSS-64	6/9/2006	0.0 - 0.5	32	310	43	26	790	0.71	8.7	7,900	2.3
CSS-65	6/13/2006	0.0 - 0.5	42	1,200	120	68	3,000	2.9	10	9,800	0.29
CSS-66	6/13/2006	0.0 - 0.5	50	310	34	36	810	0.99	33	5,400	0.28
CSS-67	6/8/2006	0.0 - 0.5	120	380	70	31	1,700	2	78	11,000	3.5
CSS-68	6/8/2006	0.0 - 0.5	390	1,200	71	37	2,100	3.3	340	10,000	7.0
CSS-69	6/8/2006	0.0 - 0.5	78	300	91	32	1,800	13	40	5,800	11
CSS-70	6/8/2006	0.0 - 0.5	87	270	32	20	1,200	2.9	54	10,000	4.8
CSS-71	6/9/2006	0.0 - 0.5	130	330	54	22	1,200	2.3	86	9,200	1.2
CSS-72	6/13/2006	0.0 - 0.5	43	310	18	26	550	0.8	33	4,600	0.16
CSS-73	6/9/2006	0.0 - 0.5	16	170	19	24	370	1.4	7.1	3,200	1.1
CSS-74	6/9/2006	0.0 - 0.5	11	170	16	23	260	1	4.4	1,300	0.28
CSS-75	6/9/2006	0.0 - 0.5	19	420	28	53	530	0.85	4.9	2,500	3.0

Table B-5b
Facility Area Soil (Fine Fraction) ProUCL Output
All Concentrations in mg/kg

Data File

Variable: Arsenic

Raw Statistics	
Number of Valid Samples	75
Number of Unique Samples	60
Minimum	4.3
Maximum	31000
Mean	564.6093
Median	100
Standard Deviation	3564.375
Variance	12704771
Coefficient of Variation	6.312994
Skewness	8.641546

Gamma Statistics	
k hat	0.386281
k star (bias corrected)	0.379718
Theta hat	1461.655
Theta star	1486.916
nu hat	57.94212
nu star	56.95777
Approx.Chi Square Value (.05)	40.60723
Adjusted Level of Significance	0.0468
Adjusted Chi Square Value	40.33706

Log-transformed Statistics	
Minimum of log data	1.458615
Maximum of log data	10.34174
Mean of log data	4.622989
Standard Deviation of log data	1.30899
Variance of log data	1.713455

RECOMMENDATION
Data are lognormal (0.05)

Use H-UCL

Normal Distribution Test	
Lilliefors Test Statisitic	0.493898
Lilliefors 5% Critical Value	0.102306
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	1250.179

Gamma Distribution Test	
A-D Test Statistic	10.34281
A-D 5% Critical Value	0.844823
K-S Test Statistic	0.307055
K-S 5% Critical Value	0.110707
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	791.9498
Adjusted Gamma UCL	797.2541

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.098676
Lilliefors 5% Critical Value	0.102306
Data are lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	354.0427
95% Chebyshev (MVUE) UCL	435.7157
97.5% Chebyshev (MVUE) UCL	522.6095
99% Chebyshev (MVUE) UCL	693.2956

95% Non-parametric UCLs	
CLT UCL	1241.596
Adj-CLT UCL (Adjusted for skewness)	1680.424
Mod-t UCL (Adjusted for skewness)	1318.627
Jackknife UCL	1250.179
Standard Bootstrap UCL	1233.752
Bootstrap-t UCL	13298.36
Hall's Bootstrap UCL	4448.252
Percentile Bootstrap UCL	1385.929
BCA Bootstrap UCL	2200.451
95% Chebyshev (Mean, Sd) UCL	2358.639
97.5% Chebyshev (Mean, Sd) UCL	3134.917
99% Chebyshev (Mean, Sd) UCL	4659.765

Table B-5b
Facility Area Soil (Fine Fraction) ProUCL Output
All Concentrations in mg/kg

Data File

Variable: Selenium

Raw Statistics	
Number of Valid Samples	75
Number of Unique Samples	50
Minimum	0.445
Maximum	68
Mean	4.6994
Median	2.8
Standard Deviation	8.820008
Variance	77.79255
Coefficient of Variation	1.876837
Skewness	5.791386

Gamma Statistics	
k hat	1.028864
k star (bias corrected)	0.996599
Theta hat	4.56756
Theta star	4.715439
nu hat	154.3297
nu star	149.4898
Approx.Chi Square Value (.05)	122.2247
Adjusted Level of Significance	0.0468
Adjusted Chi Square Value	121.744

Log-transformed Statistics	
Minimum of log data	-0.80968
Maximum of log data	4.219508
Mean of log data	0.988267
Standard Deviation of log data	0.942211
Variance of log data	0.887761

RECOMMENDATION
Data are lognormal (0.05)

Use H-UCL

Normal Distribution Test	
Lilliefors Test Statisitic	0.321505
Lilliefors 5% Critical Value	0.102306
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	6.395834

Gamma Distribution Test	
A-D Test Statistic	2.943201
A-D 5% Critical Value	0.780545
K-S Test Statistic	0.164647
K-S 5% Critical Value	0.10605
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	5.74771
Adjusted Gamma UCL	5.770406

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.079005
Lilliefors 5% Critical Value	0.102306
Data are lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	5.322296
95% Chebyshev (MVUE) UCL	6.461808
97.5% Chebyshev (MVUE) UCL	7.460989
99% Chebyshev (MVUE) UCL	9.423688

95% Non-parametric UCLs	
CLT UCL	6.374596
Adj-CLT UCL (Adjusted for skewness)	7.102327
Mod-t UCL (Adjusted for skewness)	6.509345
Jackknife UCL	6.395834
Standard Bootstrap UCL	6.36286
Bootstrap-t UCL	9.209198
Hall's Bootstrap UCL	13.66637
Percentile Bootstrap UCL	6.4728
BCA Bootstrap UCL	7.5898
95% Chebyshev (Mean, Sd) UCL	9.138707
97.5% Chebyshev (Mean, Sd) UCL	11.0596
99% Chebyshev (Mean, Sd) UCL	14.83282

Table B-5b
Facility Area Soil (Fine Fraction) ProUCL Output
All Concentrations in mg/kg

Data File

Variable: Barium

Raw Statistics	
Number of Valid Samples	75
Number of Unique Samples	44
Minimum	83
Maximum	4000
Mean	404.64
Median	300
Standard Deviation	477.2571
Variance	227774.3
Coefficient of Variation	1.179461
Skewness	6.076086

Gamma Statistics	
k hat	2.137096
k star (bias corrected)	2.060501
Theta hat	189.341
Theta star	196.3794
nu hat	320.5644
nu star	309.0752
Approx.Chi Square Value (.05)	269.3399
Adjusted Level of Significance	0.0468
Adjusted Chi Square Value	268.618

Log-transformed Statistics	
Minimum of log data	4.418841
Maximum of log data	8.29405
Mean of log data	5.751154
Standard Deviation of log data	0.626538
Variance of log data	0.39255

RECOMMENDATION
Data are Non-parametric (0.05)

Use 95% Chebyshev (Mean, Sd) UCL

Normal Distribution Test	
Lilliefors Test Statisitic	0.278811
Lilliefors 5% Critical Value	0.102306
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	496.4353

Gamma Distribution Test	
A-D Test Statistic	2.951558
A-D 5% Critical Value	0.762561
K-S Test Statistic	0.175522
K-S 5% Critical Value	0.10434
Data do not follow gamma distribution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	464.3359
Adjusted Gamma UCL	465.5837

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.110655
Lilliefors 5% Critical Value	0.102306
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	440.552
95% Chebyshev (MVUE) UCL	511.8147
97.5% Chebyshev (MVUE) UCL	568.1671
99% Chebyshev (MVUE) UCL	678.8605

95% Non-parametric UCLs	
CLT UCL	495.2861
Adj-CLT UCL (Adjusted for skewness)	536.5999
Mod-t UCL (Adjusted for skewness)	502.8794
Jackknife UCL	496.4353
Standard Bootstrap UCL	495.3608
Bootstrap-t UCL	605.0502
Hall's Bootstrap UCL	870.0885
Percentile Bootstrap UCL	507.52
BCA Bootstrap UCL	554.9333
95% Chebyshev (Mean, Sd) UCL	644.8541
97.5% Chebyshev (Mean, Sd) UCL	748.795
99% Chebyshev (Mean, Sd) UCL	952.9666

Table B-5b
Facility Area Soil (Fine Fraction) ProUCL Output
All Concentrations in mg/kg

Data File

Variable: Silver

Raw Statistics	
Number of Valid Samples	75
Number of Unique Samples	61
Minimum	0.73
Maximum	340
Mean	69.50787
Median	44
Standard Deviation	75.93758
Variance	5766.516
Coefficient of Variation	1.092503
Skewness	1.593172

Gamma Statistics	
k hat	0.809915
k star (bias corrected)	0.786407
Theta hat	85.82117
Theta star	88.38658
nu hat	121.4873
nu star	117.9611
Approx.Chi Square Value (.05)	93.87887
Adjusted Level of Significance	0.0468
Adjusted Chi Square Value	93.45962

Log-transformed Statistics	
Minimum of log data	-0.31471
Maximum of log data	5.828946
Mean of log data	3.509841
Standard Deviation of log data	1.42204
Variance of log data	2.022197

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Approximate Gamma UCL

Normal Distribution Test	
Lilliefors Test Statisitic	0.182543
Lilliefors 5% Critical Value	0.102306
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	84.11364

Gamma Distribution Test	
A-D Test Statistic	0.298487
A-D 5% Critical Value	0.790065
K-S Test Statistic	0.062105
K-S 5% Critical Value	0.106929
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	87.33835
Adjusted Gamma UCL	87.73014

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.103485
Lilliefors 5% Critical Value	0.102306
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	143.3223
95% Chebyshev (MVUE) UCL	175.2941
97.5% Chebyshev (MVUE) UCL	212.3959
99% Chebyshev (MVUE) UCL	285.2753

95% Non-parametric UCLs	
CLT UCL	83.93079
Adj-CLT UCL (Adjusted for skewness)	85.6544
Mod-t UCL (Adjusted for skewness)	84.38249
Jackknife UCL	84.11364
Standard Bootstrap UCL	84.05982
Bootstrap-t UCL	86.58628
Hall's Bootstrap UCL	86.10428
Percentile Bootstrap UCL	83.77453
BCA Bootstrap UCL	84.77187
95% Chebyshev (Mean, Sd) UCL	107.7289
97.5% Chebyshev (Mean, Sd) UCL	124.2672
99% Chebyshev (Mean, Sd) UCL	156.7535

Table B-5b
Facility Area Soil (Fine Fraction) ProUCL Output
All Concentrations in mg/kg

Data File

Variable: Cadmium

Raw Statistics	
Number of Valid Samples	75
Number of Unique Samples	57
Minimum	3.2
Maximum	5000
Mean	185.5013
Median	93
Standard Deviation	576.7001
Variance	332583
Coefficient of Variation	3.108873
Skewness	8.084215

Gamma Statistics	
k hat	0.715981
k star (bias corrected)	0.696231
Theta hat	259.0869
Theta star	266.4366
nu hat	107.3972
nu star	104.4346
Approx.Chi Square Value (.05)	81.84837
Adjusted Level of Significance	0.0468
Adjusted Chi Square Value	81.45801

Log-transformed Statistics	
Minimum of log data	1.163151
Maximum of log data	8.517193
Mean of log data	4.381627
Standard Deviation of log data	1.171111
Variance of log data	1.371501

RECOMMENDATION
Data are Non-parametric (0.05)

Use 97.5% Chebyshev (Mean, Sd) UCL

Normal Distribution Test	
Lilliefors Test Statisitic	0.375959
Lilliefors 5% Critical Value	0.102306
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	296.4234

Gamma Distribution Test	
A-D Test Statistic	3.984709
A-D 5% Critical Value	0.796255
K-S Test Statistic	0.216005
K-S 5% Critical Value	0.107436
Data do not follow gamma distribution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	236.6908
Adjusted Gamma UCL	237.8251

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.102924
Lilliefors 5% Critical Value	0.102306
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	220.5219
95% Chebyshev (MVUE) UCL	271.5406
97.5% Chebyshev (MVUE) UCL	321.3668
99% Chebyshev (MVUE) UCL	419.2408

95% Non-parametric UCLs	
CLT UCL	295.0347
Adj-CLT UCL (Adjusted for skewness)	361.456
Mod-t UCL (Adjusted for skewness)	306.7838
Jackknife UCL	296.4234
Standard Bootstrap UCL	294.3527
Bootstrap-t UCL	653.4832
Hall's Bootstrap UCL	686.3307
Percentile Bootstrap UCL	311.428
BCA Bootstrap UCL	440.9013
95% Chebyshev (Mean, Sd) UCL	475.7673
97.5% Chebyshev (Mean, Sd) UCL	601.3657
99% Chebyshev (Mean, Sd) UCL	848.0793

Table B-5b
Facility Area Soil (Fine Fraction) ProUCL Output
All Concentrations in mg/kg

Data File

Variable: Zinc

Raw Statistics	
Number of Valid Samples	75
Number of Unique Samples	52
Minimum	380
Maximum	200000
Mean	27588.8
Median	18000
Standard Deviation	32961.21
Variance	1.09E+09
Coefficient of Variation	1.194732
Skewness	2.847523

Gamma Statistics	
k hat	0.954669
k star (bias corrected)	0.925372
Theta hat	28898.8
Theta star	29813.75
nu hat	143.2004
nu star	138.8057
Approx.Chi Square Value (.05)	112.5777
Adjusted Level of Significance	0.0468
Adjusted Chi Square Value	112.1171

Log-transformed Statistics	
Minimum of log data	5.940171
Maximum of log data	12.20607
Mean of log data	9.617198
Standard Deviation of log data	1.239439
Variance of log data	1.536208

RECOMMENDATION
Data follow gamma distribution (0.05)

Use Approximate Gamma UCL

Normal Distribution Test	
Lilliefors Test Statisitic	0.228357
Lilliefors 5% Critical Value	0.102306
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	33928.53

Gamma Distribution Test	
A-D Test Statistic	0.465322
A-D 5% Critical Value	0.783326
K-S Test Statistic	0.092924
K-S 5% Critical Value	0.106309
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	34016.35
Adjusted Gamma UCL	34156.12

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.091363
Lilliefors 5% Critical Value	0.102306
Data are lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	46327.67
95% Chebyshev (MVUE) UCL	57081.39
97.5% Chebyshev (MVUE) UCL	68014.18
99% Chebyshev (MVUE) UCL	89489.52

95% Non-parametric UCLs	
CLT UCL	33849.17
Adj-CLT UCL (Adjusted for skewness)	35186.35
Mod-t UCL (Adjusted for skewness)	34137.11
Jackknife UCL	33928.53
Standard Bootstrap UCL	33682.48
Bootstrap-t UCL	36269.28
Hall's Bootstrap UCL	37209.44
Percentile Bootstrap UCL	34310.27
BCA Bootstrap UCL	35490.13
95% Chebyshev (Mean, Sd) UCL	44178.91
97.5% Chebyshev (Mean, Sd) UCL	51357.47
99% Chebyshev (Mean, Sd) UCL	65458.35

Table B-5b
Facility Area Soil (Fine Fraction) ProUCL Output
All Concentrations in mg/kg

Data File

Variable: Chromium

Raw Statistics	
Number of Valid Samples	75
Number of Unique Samples	38
Minimum	13
Maximum	480
Mean	41.88
Median	27
Standard Deviation	64.19669
Variance	4121.215
Coefficient of Variation	1.532872
Skewness	5.426159

Gamma Statistics	
k hat	1.719807
k star (bias corrected)	1.659903
Theta hat	24.35158
Theta star	25.23039
nu hat	257.971
nu star	248.9855
Approx.Chi Square Value (.05)	213.4446
Adjusted Level of Significance	0.0468
Adjusted Chi Square Value	212.8039

Log-transformed Statistics	
Minimum of log data	2.564949
Maximum of log data	6.173786
Mean of log data	3.416738
Standard Deviation of log data	0.615901
Variance of log data	0.379334

RECOMMENDATION
Data are Non-parametric (0.05)

Use 95% Chebyshev (Mean, Sd) UCL

Normal Distribution Test	
Lilliefors Test Statisitic	0.346374
Lilliefors 5% Critical Value	0.102306
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	54.22754

Gamma Distribution Test	
A-D Test Statistic	7.910518
A-D 5% Critical Value	0.766818
K-S Test Statistic	0.246889
K-S 5% Critical Value	0.104742
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	48.85348
Adjusted Gamma UCL	49.00057

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.162942
Lilliefors 5% Critical Value	0.102306
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	42.27029
95% Chebyshev (MVUE) UCL	49.01497
97.5% Chebyshev (MVUE) UCL	54.33348
99% Chebyshev (MVUE) UCL	64.78065

95% Non-parametric UCLs	
CLT UCL	54.07296
Adj-CLT UCL (Adjusted for skewness)	59.03574
Mod-t UCL (Adjusted for skewness)	55.00163
Jackknife UCL	54.22754
Standard Bootstrap UCL	53.9469
Bootstrap-t UCL	67.02011
Hall's Bootstrap UCL	58.76548
Percentile Bootstrap UCL	55.09333
BCA Bootstrap UCL	59.84
95% Chebyshev (Mean, Sd) UCL	74.19163
97.5% Chebyshev (Mean, Sd) UCL	88.17289
99% Chebyshev (Mean, Sd) UCL	115.6364

Table B-5b
Facility Area Soil (Fine Fraction) ProUCL Output
All Concentrations in mg/kg

Data File

Variable: Mercury

Raw Statistics	
Number of Valid Samples	75
Number of Unique Samples	57
Minimum	0.0091
Maximum	210
Mean	6.256895
Median	1.5
Standard Deviation	24.76883
Variance	613.4948
Coefficient of Variation	3.958645
Skewness	7.786738

Gamma Statistics	
k hat	0.420881
k star (bias corrected)	0.412934
Theta hat	14.8662
Theta star	15.15228
nu hat	63.1321
nu star	61.94015
Approx.Chi Square Value (.05)	44.83488
Adjusted Level of Significance	0.0468
Adjusted Chi Square Value	44.55018

Log-transformed Statistics	
Minimum of log data	-4.69948
Maximum of log data	5.347108
Mean of log data	0.282932
Standard Deviation of log data	1.649505
Variance of log data	2.720866

RECOMMENDATION
Data are lognormal (0.05)

Use H-UCL

Normal Distribution Test	
Lilliefors Test Statisitic	0.400426
Lilliefors 5% Critical Value	0.102306
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	11.02091

Gamma Distribution Test	
A-D Test Statistic	4.441574
A-D 5% Critical Value	0.836613
K-S Test Statistic	0.201454
K-S 5% Critical Value	0.110197
Data do not follow gamma distribution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	8.644008
Adjusted Gamma UCL	8.699246

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.068053
Lilliefors 5% Critical Value	0.102306
Data are lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	9.111006
95% Chebyshev (MVUE) UCL	10.81182
97.5% Chebyshev (MVUE) UCL	13.34146
99% Chebyshev (MVUE) UCL	18.31046

95% Non-parametric UCLs	
CLT UCL	10.96127
Adj-CLT UCL (Adjusted for skewness)	13.70904
Mod-t UCL (Adjusted for skewness)	11.44951
Jackknife UCL	11.02091
Standard Bootstrap UCL	11.101
Bootstrap-t UCL	25.41261
Hall's Bootstrap UCL	27.19931
Percentile Bootstrap UCL	11.66003
BCA Bootstrap UCL	15.2264
95% Chebyshev (Mean, Sd) UCL	18.7236
97.5% Chebyshev (Mean, Sd) UCL	24.11795
99% Chebyshev (Mean, Sd) UCL	34.71411

Table B-5b
Facility Area Soil (Fine Fraction) ProUCL Output
All Concentrations in mg/kg

Data File

Variable: Lead

Raw Statistics	
Number of Valid Samples	75
Number of Unique Samples	53
Minimum	110
Maximum	110000
Mean	4975.733
Median	2300
Standard Deviation	12881.19
Variance	1.66E+08
Coefficient of Variation	2.588802
Skewness	7.56199

Gamma Statistics	
k hat	0.785713
k star (bias corrected)	0.763173
Theta hat	6332.763
Theta star	6519.795
nu hat	117.8569
nu star	114.476
Approx.Chi Square Value (.05)	90.77057
Adjusted Level of Significance	0.0468
Adjusted Chi Square Value	90.35861

Log-transformed Statistics	
Minimum of log data	4.70048
Maximum of log data	11.60824
Mean of log data	7.755171
Standard Deviation of log data	1.111007
Variance of log data	1.234336

RECOMMENDATION
Data are lognormal (0.05)

Use H-UCL

Normal Distribution Test	
Lilliefors Test Statisitic	0.352812
Lilliefors 5% Critical Value	0.102306
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	7453.291

Gamma Distribution Test	
A-D Test Statistic	3.099563
A-D 5% Critical Value	0.791192
K-S Test Statistic	0.163189
K-S 5% Critical Value	0.107032
Data do not follow gamma distribution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	6275.183
Adjusted Gamma UCL	6303.793

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.058134
Lilliefors 5% Critical Value	0.102306
Data are lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	5861.395
95% Chebyshev (MVUE) UCL	7203.008
97.5% Chebyshev (MVUE) UCL	8472.197
99% Chebyshev (MVUE) UCL	10965.27

95% Non-parametric UCLs	
CLT UCL	7422.275
Adj-CLT UCL (Adjusted for skewness)	8810.025
Mod-t UCL (Adjusted for skewness)	7669.752
Jackknife UCL	7453.291
Standard Bootstrap UCL	7465.459
Bootstrap-t UCL	13255.22
Hall's Bootstrap UCL	16683.42
Percentile Bootstrap UCL	7824.4
BCA Bootstrap UCL	9433.733
95% Chebyshev (Mean, Sd) UCL	11459.12
97.5% Chebyshev (Mean, Sd) UCL	14264.49
99% Chebyshev (Mean, Sd) UCL	19775.09

Table B-6a
Facility Area Soil (Total to 10 ft bgs)
All concentrations in mg/kg

Sample ID:	Date Collected:	Depth (ft - ft)	Depth of Slag/Fill (ft)[1]	Arsenic	Barium	Cadmium	Chromium	Lead	Selenium	Silver	Zinc	Mercury
MW-01-6	6/19/2006	5.0 - 6.0	0	6.7	92	0.065 U	23	14	0.65 U	0.325 U	120	0.056
MW-02-3	6/15/2006	2.0 - 3.0	0	6.4	220	**38**	13	15	0.71 B	0.27 B	1,200	0.034
MW-03-7	6/14/2006	6.0 - 7.0	4.5	5.4	210	0.83	20	15	0.91 B	0.28 B	4,700	0.037
MW-04-2	6/15/2006	1.0 - 2.0	1.5	**14**	270	**87**	13	**560**	1.4	0.82	5,100	0.037
MW-04-9	6/15/2006	8.0 - 9.0	1.5	5.8	200	0.37	17	8.9	0.69 B	0.23 B	560	0.041
MW-05-2	6/15/2006	1.0 - 2.0	3	**31**	59	**140**	17	2,000	3.5	1.8	120,000	**35**
MW-06-8	6/19/2006	7.0 - 8.0	0	7.4	180	0.12 B	15	14	0.65 U	0.325 U	89	0.060
MW-07-4	6/19/2006	3.0 - 4.0	0	6.3	130	0.87	11	10	0.6 U	0.14 B	61	0.036
P-01-10	6/19/2006	9.0 - 10.0	4	8.4	200	**53**	16	13	0.90 B	0.22 B	3,100	0.052
P-01-5	6/19/2006	4.0 - 5.0	4	5.8	260	620	20	13	1.6	0.325 U	6,600	0.043
P-02-5	6/19/2006	4.0 - 5.0	5	**18**	64	2500	19	3,500	1.4 B	1.4	170,000	0.048
SB-01-N-1	6/6/2006	0.0 - 1.0	5	**410**	190	2.1	26	**560**	9.1	320	6,700	0.03
SB-03-SW-1.0	6/14/2006	0.0 - 1.0	0	9.7	300	**47**	14	140	1.7	0.45 B	9,600	0.059
SB-04-SW-7.0	5/30/2006	6.0 - 7.0	4	10	160	1.3	18	30	0.7 U	0.355 U	2,800	0.048
SB-05-SW-2.0	5/31/2006	1.0 - 2.0	9	**110**	180	**110**	17	3,100	2.8	20	**59,000**	0.64
SB-05-SW-9.0	5/31/2006	8.0 - 9.0	9	43	130	12	6.2	8,700	2.4	3.8	**37,000**	0.064
SB-06-SW-8.0	5/31/2006	7.0 - 8.0	3	6.3	250	**130**	20	15	0.65 U	0.325 U	7,100	0.044
SB-08-SW-3.0	5/31/2006	2.0 - 3.0	1	7.2	210	12	19	15	1.0 B	0.32 U	2,300	0.038
SB-09-SE-3.0	5/31/2006	2.0 - 3.0	5	12	130	**50**	9.8	2,100	1.3 B	0.45 B	**61,000**	0.040
SB-13-SW-5.0	6/1/2006	4.0 - 5.0	5	140	120	**66**	16	**640**	4.3	88	7,200	0.16
SB-14-NE-7.0	6/1/2006	6.0 - 7.0	6	5.5	260	650	16	38	0.6 U	0.31 U	4,300	0.031
SB-15-SE-3.0	6/1/2006	2.0 - 3.0	3	120	66	**52**	7.4	910	1.7	6.1	140,000	0.23
SB-15-SW-6.5 [2]	6/1/2006	6.0 - 6.5	6.5	330	75	**74**	9.1	19,000	9.7	76	**51,000**	0.25
SB-16-SE-1.0	6/1/2006	0.0 - 1.0	3.3	320	100	**38**	16	12,000	3.2	60	**24,000**	0.18
SB-17-SW-2.0	5/31/2006	1.0 - 2.0	6	22	130	30	13	900	1.7	4.7	6,800	0.40
SB-18-NE-4.0	5/31/2006	3.0 - 4.0	2.5-3	7.8	220	8.9	19	14	0.6 U	0.31 U	4,400	0.047
SB-19-SE-7.0	5/31/2006	6.0 - 7.0	5.5	7.4	200	**80**	16	15	0.6 U	0.305 U	3,400	0.023
SB-20-SE-1	6/7/2006	0.0 - 1.0	0	6.6	150	15	12	56	0.47 B	1.0	940	0.051
SB-21-SE-4	6/7/2006	3.0 - 4.0	4.5	**21**	54	**59**	12	1,300	1.3	2.8	**68,000**	0.12
SB-22-SE-3.0	6/1/2006	2.0 - 3.0	2	5.0	130	30	9.3	10	0.6 U	0.295 U	1,900	0.031
SB-23-NE-1A	6/7/2006	0.0 - 1.0	3.5	240	260	**110**	20	3,600	4.0	81	**39,000**	3.3
SB-24-SE-2	6/7/2006	1.0 - 2.0	5	150	320	**200**	12	11,000	4.5	35	**68,000**	0.067
SB-25-SW-5	6/14/2006	4.0 - 5.0	1.5	6.5	170	0.12 B	14	14	0.6 U	0.14 B	67	0.038
SB-26-NW-4	6/13/2006	3.0 - 4.0	3	4.8	150	0.2 B	17	16	0.6 U	0.13 B	51	0.059
SB-27-NE-4.0	6/14/2006	3.0 - 4.0	2	7.3	190	3.3	16	14	0.58 B	0.16 B	720	0.04
SB-27-NE-4.0/FD	6/14/2006	3.0 - 4.0	2	4.9	180	6.7	12	13	0.78 B	0.14 B	720	0.041
SB-28-SW-4	6/7/2006	3.0 - 4.0	6	66	650	**60**	13	1,800	5.6	7.1	**42,000**	0.037
SB-29-NW-5	6/6/2006	4.0 - 5.0	3	4.6	13	20	2.9	3.7	0.485 U	0.245 U	1,300	0.0085 U
SB-31-NE-1 [2]	6/19/2006	0.0 - 1.0	0	7.0	100	**50**	17	20	0.67 B	0.15 B	4,200	0.039
SB-32-NE-1	6/6/2006	0.0 - 1.0	6.5	470	320	6.7	14	9,900	5.3	500	21,000	2.3
SB-33-SE-3	6/9/2006	2.0 - 3.0	7	26	120	**200**	9.8	2,900	5.4	19	16,000	**77**

Table B-6a
Facility Area Soil (Total to 10 ft bgs)
All concentrations in mg/kg

Sample ID:	Date Collected:	Depth (ft - ft)	Depth of Slag/Fill (ft)[1]	Arsenic		Barium		Cadmium		Chromium		Lead		Selenium		Silver		Zinc		Mercury	
SB-33-SW-1	6/9/2006	0.0 - 1.0	5	450		2,300		490		18		20,000		6.0		190		110,000		3.2	
SB-34-NE-3	6/12/2006	2.0 - 3.0	6	1.5		16		1.1		2.9		17		0.5	U	0.255	U	390		0.031	
SB-34-NE-7	6/12/2006	6.0 - 7.0	7.5	4.8		42		**44**		5.5		**550**		0.53	B	0.38	B	**32,000**		0.0078	B
SB-35-NE-5	6/13/2006	4.0 - 5.0	4	7.4		190		650		16		81		1.4		0.34	B	6,000		0.033	
SB-35-NW-6	6/13/2006	5.0 - 6.0	5	8.5		250		1,800		14		110		0.6	U	0.73		7,500		0.031	
SB-37-NE-3	6/7/2006	2.0 - 3.0	6.5	6.7		43		2.7		16		150		1.8		0.35	B	750		0.032	
SB-38-SE-8 [2]	6/6/2006	7.0 - 8.0	9.3	150		160		**63**		7.9		19,000		3.7		39		**80,000**		0.047	
SB-39-NW-4	6/20/2006	3.0 - 4.0	0	8.3		130		**44**		19		21		0.67	B	0.24	B	6,100		0.050	
SB-39-SE-2	6/19/2006	1.0 - 2.0	0	22		300		**42**		18		**470**		1.2	B	2.2		3,900		0.20	
SB-39-SW-3.0	6/19/2006	2.0 - 3.0	0	7.0		270		23		13		110		0.96	B	0.82		1,900		0.042	
SB-40-NE-1.0	6/19/2006	0.5 - 1.0	0	14		340		**52**		15		**460**		1.2		1.8		5,600		0.21	
SB-40-NE-3.0	6/19/2006	2.0 - 3.0	0	10		190		**61**		15		150		0.72	B	0.98		6,000		0.062	
SB-40-NW-0.5	6/19/2006	0.0 - 0.5	0	57		250		30		17		1,400		1.2		10		4,400		0.52	
SB-40-NW-4.0	6/19/2006	3.0 - 4.0	0	4.4		180		**41**		15		12		0.89	B	0.3	U	3,400		0.023	
SB-41-SW-7.0	6/2/2006	6.0 - 7.0	5	3.7		230		**65**		12		110		0.6	U	0.31	U	9,600		0.44	
SB-42-NE-2	6/9/2006	1.0 - 2.0	3	63		190		23		19		16,000		4.4		16		8,700		2.6	
SB-43-NW-4	6/12/2006	3.0 - 4.0	3	8.0		250		**83**		14		42		0.59	B	0.29	U	3,700		0.047	
SB-43-SE-6	6/12/2006	5.0 - 6.0	5	10		200		**210**		19		39		1.1	B	0.22	B	5,700		0.046	
SB-43-SW-6	6/12/2006	5.0 - 6.0	4	9.4		230		**320**		19		120		0.6	U	0.83		12,000		0.12	
SB-44-NE-4	6/13/2006	3.0 - 4.0	2.5	11		220		**300**		**31**		62		1.2	B	0.32	B	5,600		0.034	
SB-45-NE-4	6/7/2006	3.0 - 4.0	4	200		520		**94**		18		18,000		6.9		75		**55,000**		0.53	
SB-46-SW-1	6/6/2006	0.0 - 1.0	6.5	40		150		**100**		14		1,300		2.2		6.4		9,800		0.95	U
SB-47-SE-6	6/5/2006	5.0 - 6.0	3.5	6.3		250		6.0		15		16		0.92	B	0.13	B	6,700		0.036	
SB-48-NE-3	6/6/2006	2.0 - 3.0	0	7.4		240		27		15		42		0.6	U	0.26	B	1,700		0.026	
SB-49-SW-3.0	6/5/2006	2.0 - 3.0	1	6.1		230		26		17		22		0.6	U	0.31	U	6,800		0.016	B
SB-50-SE-5.0	6/2/2006	4.0 - 5.0	5.5	7.6		37		30		15		**470**		1.1		0.23	B	9,600		0.11	
SB-51-NE-6	6/9/2006	5.0 - 6.0	5	10		230		**290**		13		400		0.93	B	1.8		3,900		0.034	
SB-51-SE-4.0	6/9/2006	3.0 --5.0	3.5	51		310		**100**		13		4,000		11		19		7,300		8.1	
SB-51-SW-3	6/9/2006	2.0 - 3.0	4.5	32		320		4.5		9.7		350		1.3		1.1		440		1.2	
SB-52-NE-4	6/13/2006	3.0 - 4.0	3.5	13		160		34		11		29		0.58	B	0.12	B	980		0.085	
SB-52-SE-5	6/12/2006	4.0 - 5.0	4.5	30		150		**130**		2.2		1,700		1.2		3.0		19,000		0.52	
SB-52-SW-5	6/12/2006	4.0 - 5.0	4.5	29		190		**190**		19		5,400		2.2		3.2		**48,000**		0.64	
SB-53-NE-3	6/8/2006	2.0 - 3.0	7	140		1,100		35		**32**		1,900		6.0		170		**25,000**		4.2	
SB-53-NE-5A	6/8/2006	4.0 - 5.0	7	18		90		16		4.5		5,900		14		9.6		1,100		**52**	
SB-53-NW-2	6/8/2006	1.0 - 2.0	4.5	84		400		8.3		18		2,500		2.8		2.8		2,500		0.76	
SB-53-SW-2	6/8/2006	1.0 - 2.0	3	24		69		**48**		16		2,800		3.6		2.6		7,000		1.4	
SB-54-NE-5	6/8/2006	4.0 - 5.0	4.5-5	35		170		**110**		11		23,000		140		4.8		15,000		**210**	
SB-54-NW-6	6/8/2006	5.0 - 6.0	6-7	110		170		**40**		13		25,000		11		8.9		7,200		**35**	
SB-55-N-4	6/8/2006	3.0 - 4.0	5	9.0		180		**83**		14		320		0.98	B	0.30	B	21,000		0.85	
SB-57-NE-2	6/6/2006	1.0 - 2.0	0	7.4		180		1.7		15		32		0.58	B	0.25	B	400		0.032	
SB-58-SW-2.0	6/5/2006	1.0 - 2.0	1.5	18		44		8.0		19		**680**		1.4		2.2		8,200		0.019	B

Table B-6a
Facility Area Soil (Total to 10 ft bgs)
All concentrations in mg/kg

Sample ID:	Date Collected:	Depth (ft - ft)	Depth of Slag/Fill (ft)[1]	Arsenic		Barium		Cadmium		Chromium		Lead		Selenium		Silver		Zinc		Mercury	
SB-59-NE-3.0	6/2/2006	2.0 - 3.0	3.5	57		160		**180**		20		55,000		70		19		9,700		540	
SB-60-NE-2.0	6/2/2006	1.0 - 2.0	6	230		1,200		7.7		16		3,600		3.5		230		16,000		0.44	
SB-61-NE-2	6/5/2006	1.0 - 2.0	2.5	200		98		1,500		**61**		31,000		25		110		**73,000**		**86**	
SB-62-NE-5	6/5/2006	4.0 - 5.0	2	9.5		380		4.3		15		20		1.5		0.16	B	300		0.039	
SB-63-SE-1.0	6/5/2006	0.0 - 1.0	1.5	230		1,300		2.0		**33**		**610**		6.1		300		3,300		0.32	
SB-64-NW-4.0	6/5/2006	3.0 - 4.0	3.5	33		320		**120**		20		3,000		8.1		8.1		5,900		**30**	
SB-65-NE-2	6/6/2006	1.0 - 2.0	0	7.7		190		0.93		15		16		0.6	U	0.30	B	88		0.028	
SB-67-NE-4.0	6/2/2006	3.0 - 4.0	3.5	160		310		**330**		**39**		3,100		6.9		26		12,000		21	
SB-67-SE-A-9	6/14/2006	9.0	1	8.9		190		**89**		32		23		0.65	U	0.36	B	880		0.045	
SB-67-SE-B-9	6/14/2006	9.0	1.5	7.8		170		**46**		14		12		0.99	B	0.15	B	900		0.097	
SB-69-NE-1.0	6/5/2006	0.0 - 1.0	1	31		360		27		19		2,000		11		3.6		1,100		14	
SB-70-SE-3.0	6/5/2006	2.0 - 3.0	2	10		140		7.5		14		74		0.6	U	0.30	B	810		1.05	U
SB-71-NE-3-4	6/5/2006	3.0 - 4.0	3	6.3		210		10		22		25		0.7	U	0.17	B	1,300		0.033	
SB-73-N-2.0	6/2/2006	1.0 - 2.0	2	210		1,300		13		21		1,100		3.6		230		7,900		1.4	
SB-74-N-2.0	6/5/2006	1.0 - 2.0	0	7.2		190		17		23		24		0.65	U	0.18	B	1,000		0.054	

Table B-6b
Facility Area Soil (Total) ProUCL Outpu
All Concentrations in mg/kg

Data File

Variable: Arsenic

Raw Statistics	
Number of Valid Samples	97
Number of Unique Samples	69
Minimum	1.5
Maximum	470
Mean	58.13093
Median	10
Standard Deviation	99.63334
Variance	9926.802
Coefficient of Variation	1.713947
Skewness	2.511896

Gamma Statistics	
k hat	0.581094
k star (bias corrected)	0.569995
Theta hat	100.037
Theta star	101.985
nu hat	112.7323
nu star	110.579
Approx.Chi Square Value (.05)	87.30188
Adjusted Level of Significance	0.047526
Adjusted Chi Square Value	86.99152

Log-transformed Statistics	
Minimum of log data	0.405465
Maximum of log data	6.152733
Mean of log data	2.99434
Standard Deviation of log data	1.380297
Variance of log data	1.90522

RECOMMENDATION
Data are Non-parametric (0.05)

Use 97.5% Chebyshev (Mean, Sd) UCL

Normal Distribution Test	
Lilliefors Test Statisitic	0.313443
Lilliefors 5% Critical Value	0.08996
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	74.93279

Gamma Distribution Test	
A-D Test Statistic	7.954226
A-D 5% Critical Value	0.810694
K-S Test Statistic	0.231726
K-S 5% Critical Value	0.095568
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	73.63029
Adjusted Gamma UCL	73.89298

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.207336
Lilliefors 5% Critical Value	0.08996
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	74.5842
95% Chebyshev (MVUE) UCL	92.36872
97.5% Chebyshev (MVUE) UCL	110.3471
99% Chebyshev (MVUE) UCL	145.6622

95% Non-parametric UCLs	
CLT UCL	74.77065
Adj-CLT UCL (Adjusted for skewness)	77.52751
Mod-t UCL (Adjusted for skewness)	75.3628
Jackknife UCL	74.93279
Standard Bootstrap UCL	74.42972
Bootstrap-t UCL	79.32743
Hall's Bootstrap UCL	78.41389
Percentile Bootstrap UCL	74.84742
BCA Bootstrap UCL	78.55567
95% Chebyshev (Mean, Sd) UCL	102.2266
97.5% Chebyshev (Mean, Sd) UCL	121.3068
99% Chebyshev (Mean, Sd) UCL	158.7862

Table B-6b
Facility Area Soil (Total) ProUCL Outpu
All Concentrations in mg/kg

Data File

Variable: Selenium

Raw Statistics	
Number of Valid Samples	97
Number of Unique Samples	56
Minimum	0.47
Maximum	140
Mean	4.799845
Median	1.2
Standard Deviation	15.88537
Variance	252.345
Coefficient of Variation	3.309559
Skewness	7.308583

Gamma Statistics	
k hat	0.586882
k star (bias corrected)	0.575604
Theta hat	8.178548
Theta star	8.338795
nu hat	113.8552
nu star	111.6672
Approx.Chi Square Value (.05)	88.26972
Adjusted Level of Significance	0.047526
Adjusted Chi Square Value	87.95757

Log-transformed Statistics	
Minimum of log data	-0.75502
Maximum of log data	4.941642
Mean of log data	0.512322
Standard Deviation of log data	1.141368
Variance of log data	1.30272

RECOMMENDATION
Data are Non-parametric (0.05)

Use 97.5% Chebyshev (Mean, Sd) UCL

Normal Distribution Test	
Lilliefors Test Statisitic	0.392593
Lilliefors 5% Critical Value	0.08996
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	7.478705

Gamma Distribution Test	
A-D Test Statistic	9.716419
A-D 5% Critical Value	0.810142
K-S Test Statistic	0.235821
K-S 5% Critical Value	0.095529
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	6.072132
Adjusted Gamma UCL	6.093681

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.15916
Lilliefors 5% Critical Value	0.08996
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	4.207108
95% Chebyshev (MVUE) UCL	5.164672
97.5% Chebyshev (MVUE) UCL	6.029049
99% Chebyshev (MVUE) UCL	7.72695

95% Non-parametric UCLs	
CLT UCL	7.452854
Adj-CLT UCL (Adjusted for skewness)	8.731762
Mod-t UCL (Adjusted for skewness)	7.678189
Jackknife UCL	7.478705
Standard Bootstrap UCL	7.484418
Bootstrap-t UCL	15.21874
Hall's Bootstrap UCL	18.26248
Percentile Bootstrap UCL	8.071598
BCA Bootstrap UCL	9.177526
95% Chebyshev (Mean, Sd) UCL	11.83038
97.5% Chebyshev (Mean, Sd) UCL	14.8725
99% Chebyshev (Mean, Sd) UCL	20.84815

Table B-6b
Facility Area Soil (Total) ProUCL Outpu
All Concentrations in mg/kg

Data File

Variable: Barium

Raw Statistics	
Number of Valid Samples	97
Number of Unique Samples	45
Minimum	13
Maximum	2300
Mean	258.7835
Median	190
Standard Deviation	310.778
Variance	96582.94
Coefficient of Variation	1.200919
Skewness	4.288233

Gamma Statistics	
k hat	1.603408
k star (bias corrected)	1.560691
Theta hat	161.3959
Theta star	165.8134
nu hat	311.0611
nu star	302.774
Approx.Chi Square Value (.05)	263.4581
Adjusted Level of Significance	0.047526
Adjusted Chi Square Value	262.9095

Log-transformed Statistics	
Minimum of log data	2.564949
Maximum of log data	7.740664
Mean of log data	5.212829
Standard Deviation of log data	0.799702
Variance of log data	0.639524

RECOMMENDATION
Data are Non-parametric (0.05)

Use 95% Chebyshev (Mean, Sd) UCL

Normal Distribution Test	
Lilliefors Test Statisitic	0.30852
Lilliefors 5% Critical Value	0.08996
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	311.1921

Gamma Distribution Test	
A-D Test Statistic	4.620289
A-D 5% Critical Value	0.769204
K-S Test Statistic	0.181119
K-S 5% Critical Value	0.092462
Data do not follow gamma distribution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	297.4018
Adjusted Gamma UCL	298.0224

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.137075
Lilliefors 5% Critical Value	0.08996
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	298.5716
95% Chebyshev (MVUE) UCL	352.6745
97.5% Chebyshev (MVUE) UCL	396.3615
99% Chebyshev (MVUE) UCL	482.1763

95% Non-parametric UCLs	
CLT UCL	310.6864
Adj-CLT UCL (Adjusted for skewness)	325.3668
Mod-t UCL (Adjusted for skewness)	313.482
Jackknife UCL	311.1921
Standard Bootstrap UCL	309.8856
Bootstrap-t UCL	337.8786
Hall's Bootstrap UCL	341.2725
Percentile Bootstrap UCL	318.299
BCA Bootstrap UCL	326.5979
95% Chebyshev (Mean, Sd) UCL	396.3273
97.5% Chebyshev (Mean, Sd) UCL	455.8427
99% Chebyshev (Mean, Sd) UCL	572.749

Table B-6b
Facility Area Soil (Total) ProUCL Outpu
All Concentrations in mg/kg

Data File

Variable: Silver

Raw Statistics	
Number of Valid Samples	97
Number of Unique Samples	*71*
Minimum	0.12
Maximum	500
Mean	28.2516
Median	0.82
Standard Deviation	77.92602
Variance	6072.465
Coefficient of Variation	2.758287
Skewness	3.8897

Gamma Statistics	
k hat	0.253948
k star (bias corrected)	0.252966
Theta hat	111.2497
Theta star	111.6813
nu hat	49.26582
nu star	49.07547
Approx.Chi Square Value (.05)	33.99047
Adjusted Level of Significance	0.047526
Adjusted Chi Square Value	33.80143

Log-transformed Statistics	
Minimum of log data	-2.12026
Maximum of log data	6.214608
Mean of log data	0.551219
Standard Deviation of log data	2.340354
Variance of log data	5.477258

RECOMMENDATION
Data are Non-parametric (0.05)

Use 99% Chebyshev (Mean, Sd) UCL

Normal Distribution Test	
Lilliefors Test Statisitic	0.377217
Lilliefors 5% Critical Value	*0.08996*
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	41.3928

Gamma Distribution Test	
A-D Test Statistic	9.910772
A-D 5% Critical Value	0.888111
K-S Test Statistic	0.225499
K-S 5% Critical Value	0.099569
Data do not follow gamma distribution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	40.78969
Adjusted Gamma UCL	41.0178

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.205736
Lilliefors 5% Critical Value	0.08996
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	65.44323
95% Chebyshev (MVUE) UCL	66.79286
97.5% Chebyshev (MVUE) UCL	85.16788
99% Chebyshev (MVUE) UCL	121.262

95% Non-parametric UCLs	
CLT UCL	41.26599
Adj-CLT UCL (Adjusted for skewness)	44.60492
Mod-t UCL (Adjusted for skewness)	41.91361
Jackknife UCL	41.3928
Standard Bootstrap UCL	41.43867
Bootstrap-t UCL	47.83476
Hall's Bootstrap UCL	45.31437
Percentile Bootstrap UCL	42.39098
BCA Bootstrap UCL	46.43356
95% Chebyshev (Mean, Sd) UCL	62.74003
97.5% Chebyshev (Mean, Sd) UCL	77.6632
99% Chebyshev (Mean, Sd) UCL	106.9769

Table B-6b
Facility Area Soil (Total) ProUCL Outpu
All Concentrations in mg/kg

Data File

Variable: Cadmium

Raw Statistics	
Number of Valid Samples	97
Number of Unique Samples	78
Minimum	0.065
Maximum	2500
Mean	140.6732
Median	42
Standard Deviation	355.1479
Variance	126130
Coefficient of Variation	2.52463
Skewness	4.876392

Gamma Statistics	
k hat	0.410227
k star (bias corrected)	0.404412
Theta hat	342.916
Theta star	347.8464
nu hat	79.58396
nu star	78.45593
Approx.Chi Square Value (.05)	59.04606
Adjusted Level of Significance	0.047526
Adjusted Chi Square Value	58.79304

Log-transformed Statistics	
Minimum of log data	-2.73337
Maximum of log data	7.824046
Mean of log data	3.348858
Standard Deviation of log data	2.090485
Variance of log data	4.370129

RECOMMENDATION
Data are Non-parametric (0.05)

Use 99% Chebyshev (Mean, Sd) UCL

Normal Distribution Test	
Lilliefors Test Statisitic	0.346084
Lilliefors 5% Critical Value	0.08996
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	200.5643

Gamma Distribution Test	
A-D Test Statistic	2.389985
A-D 5% Critical Value	0.840549
K-S Test Statistic	0.146724
K-S 5% Critical Value	0.097246
Data do not follow gamma distribution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	186.9159
Adjusted Gamma UCL	187.7203

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.12186
Lilliefors 5% Critical Value	0.08996
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	524.9674
95% Chebyshev (MVUE) UCL	587.5752
97.5% Chebyshev (MVUE) UCL	739.4571
99% Chebyshev (MVUE) UCL	1037.8

95% Non-parametric UCLs	
CLT UCL	199.9863
Adj-CLT UCL (Adjusted for skewness)	219.0636
Mod-t UCL (Adjusted for skewness)	203.54
Jackknife UCL	200.5643
Standard Bootstrap UCL	199.9766
Bootstrap-t UCL	247.2838
Hall's Bootstrap UCL	233.4398
Percentile Bootstrap UCL	206.2458
BCA Bootstrap UCL	224.0242
95% Chebyshev (Mean, Sd) UCL	297.8543
97.5% Chebyshev (Mean, Sd) UCL	365.8666
99% Chebyshev (Mean, Sd) UCL	499.4638

Table B-6b
Facility Area Soil (Total) ProUCL Outpu
All Concentrations in mg/kg

Data File

Variable: Zinc

Raw Statistics	
Number of Valid Samples	97
Number of Unique Samples	79
Minimum	51
Maximum	170000
Mean	17588.31
Median	6000
Standard Deviation	30949.2
Variance	9.58E+08
Coefficient of Variation	1.759646
Skewness	2.872819

Gamma Statistics	
k hat	0.493996
k star (bias corrected)	0.485591
Theta hat	35604.15
Theta star	36220.44
nu hat	95.83523
nu star	94.20459
Approx.Chi Square Value (.05)	72.81565
Adjusted Level of Significance	0.047526
Adjusted Chi Square Value	72.5333

Log-transformed Statistics	
Minimum of log data	3.931826
Maximum of log data	12.04355
Mean of log data	8.486772
Standard Deviation of log data	1.820871
Variance of log data	3.315572

RECOMMENDATION
Data are lognormal (0.05)

Use H-UCL

Normal Distribution Test	
Lilliefors Test Statisitic	0.320993
Lilliefors 5% Critical Value	0.08996
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	22807.49

Gamma Distribution Test	
A-D Test Statistic	2.254455
A-D 5% Critical Value	0.819906
K-S Test Statistic	0.175041
K-S 5% Critical Value	0.096189
Data do not follow gamma distribution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	22754.72
Adjusted Gamma UCL	22843.29

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.086356
Lilliefors 5% Critical Value	0.08996
Data are lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	45211.4
95% Chebyshev (MVUE) UCL	53961.69
97.5% Chebyshev (MVUE) UCL	66765.78
99% Chebyshev (MVUE) UCL	91916.92

95% Non-parametric UCLs	
CLT UCL	22757.12
Adj-CLT UCL (Adjusted for skewness)	23736.54
Mod-t UCL (Adjusted for skewness)	22960.26
Jackknife UCL	22807.49
Standard Bootstrap UCL	22524.46
Bootstrap-t UCL	24328.48
Hall's Bootstrap UCL	24040.54
Percentile Bootstrap UCL	22999.77
BCA Bootstrap UCL	23285.4
95% Chebyshev (Mean, Sd) UCL	31285.78
97.5% Chebyshev (Mean, Sd) UCL	37212.68
99% Chebyshev (Mean, Sd) UCL	48854.94

Table B-6b
Facility Area Soil (Total) ProUCL Outpu
All Concentrations in mg/kg

Data File

Variable: Chromium

Raw Statistics	
Number of Valid Samples	97
Number of Unique Samples	30
Minimum	2.2
Maximum	61
Mean	16.31134
Median	16
Standard Deviation	7.594157
Variance	57.67122
Coefficient of Variation	0.465575
Skewness	2.502946

Gamma Statistics	
k hat	5.101821
k star (bias corrected)	4.950905
Theta hat	3.197161
Theta star	3.294618
nu hat	989.7532
nu star	960.4756
Approx.Chi Square Value (.05)	889.5238
Adjusted Level of Significance	0.047526
Adjusted Chi Square Value	888.5046

Log-transformed Statistics	
Minimum of log data	0.788457
Maximum of log data	4.110874
Mean of log data	2.690667
Standard Deviation of log data	0.483662
Variance of log data	0.233929

RECOMMENDATION
Data are Non-parametric (0.05)

Use Student's-t UCL
or Modified-t UCL

Normal Distribution Test	
Lilliefors Test Statisitic	0.20018
Lilliefors 5% Critical Value	0.08996
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	17.592

Gamma Distribution Test	
A-D Test Statistic	3.134581
A-D 5% Critical Value	0.754415
K-S Test Statistic	0.153457
K-S 5% Critical Value	0.09104
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	17.6124
Adjusted Gamma UCL	17.6326

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.180965
Lilliefors 5% Critical Value	0.08996
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	18.13103
95% Chebyshev (MVUE) UCL	20.27411
97.5% Chebyshev (MVUE) UCL	21.88623
99% Chebyshev (MVUE) UCL	25.05293

95% Non-parametric UCLs	
CLT UCL	17.57964
Adj-CLT UCL (Adjusted for skewness)	17.78902
Mod-t UCL (Adjusted for skewness)	17.62465
Jackknife UCL	17.592
Standard Bootstrap UCL	17.60084
Bootstrap-t UCL	17.85744
Hall's Bootstrap UCL	18.22327
Percentile Bootstrap UCL	17.61546
BCA Bootstrap UCL	17.79897
95% Chebyshev (Mean, Sd) UCL	19.67236
97.5% Chebyshev (Mean, Sd) UCL	21.12667
99% Chebyshev (Mean, Sd) UCL	23.98339

Table B-6b
Facility Area Soil (Total) ProUCL Outpu
All Concentrations in mg/kg

Data File

Variable: Mercury

Raw Statistics	
Number of Valid Samples	97
Number of Unique Samples	72
Minimum	0.0078
Maximum	540
Mean	11.74896
Median	0.059
Standard Deviation	59.72629
Variance	3567.23
Coefficient of Variation	5.083538
Skewness	7.780428

Gamma Statistics	
k hat	0.182746
k star (bias corrected)	0.183967
Theta hat	64.29113
Theta star	63.86446
nu hat	35.45277
nu star	35.68962
Approx.Chi Square Value (.05)	23.01674
Adjusted Level of Significance	0.047526
Adjusted Chi Square Value	22.86328

Log-transformed Statistics	
Minimum of log data	-4.85363
Maximum of log data	6.291569
Mean of log data	-1.61978
Standard Deviation of log data	2.452026
Variance of log data	6.01243

RECOMMENDATION
Data are Non-parametric (0.05)

Use 99% Chebyshev (Mean, Sd) UCL

Normal Distribution Test	
Lilliefors Test Statisitic	0.436887
Lilliefors 5% Critical Value	0.08996
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	21.82102

Gamma Distribution Test	
A-D Test Statistic	16.43086
A-D 5% Critical Value	0.930107
K-S Test Statistic	0.298458
K-S 5% Critical Value	0.101341
Data do not follow gamma distribution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	18.21787
Adjusted Gamma UCL	18.34015

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.227381
Lilliefors 5% Critical Value	0.08996
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	10.54957
95% Chebyshev (MVUE) UCL	10.21787
97.5% Chebyshev (MVUE) UCL	13.09592
99% Chebyshev (MVUE) UCL	18.74929

95% Non-parametric UCLs	
CLT UCL	21.72383
Adj-CLT UCL (Adjusted for skewness)	26.84274
Mod-t UCL (Adjusted for skewness)	22.61947
Jackknife UCL	21.82102
Standard Bootstrap UCL	21.56788
Bootstrap-t UCL	48.53778
Hall's Bootstrap UCL	56.57542
Percentile Bootstrap UCL	22.48446
BCA Bootstrap UCL	29.72072
95% Chebyshev (Mean, Sd) UCL	38.18257
97.5% Chebyshev (Mean, Sd) UCL	49.62042
99% Chebyshev (Mean, Sd) UCL	72.08785

Table B-6b
Facility Area Soil (Total) ProUCL Outpu
All Concentrations in mg/kg

Data File

Variable: Lead

Raw Statistics	
Number of Valid Samples	97
Number of Unique Samples	71
Minimum	3.7
Maximum	55000
Mean	3477.893
Median	320
Standard Deviation	8107.336
Variance	65728905
Coefficient of Variation	2.331106
Skewness	3.815017

Gamma Statistics	
k hat	0.274173
k star (bias corrected)	0.272566
Theta hat	12685.03
Theta star	12759.81
nu hat	53.18956
nu star	52.87785
Approx.Chi Square Value (.05)	37.17049
Adjusted Level of Significance	0.047526
Adjusted Chi Square Value	36.97227

Log-transformed Statistics	
Minimum of log data	1.308333
Maximum of log data	10.91509
Mean of log data	5.601954
Standard Deviation of log data	2.610047
Variance of log data	6.812343

RECOMMENDATION
Data are Non-parametric (0.05)

Use 99% Chebyshev (Mean, Sd) UCL

Normal Distribution Test	
Lilliefors Test Statisitic	0.334135
Lilliefors 5% Critical Value	0.08996
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	4845.089

Gamma Distribution Test	
A-D Test Statistic	4.534305
A-D 5% Critical Value	0.879153
K-S Test Statistic	0.167183
K-S 5% Critical Value	0.09916
Data do not follow gamma distribution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	4947.567
Adjusted Gamma UCL	4974.093

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.143914
Lilliefors 5% Critical Value	0.08996
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	24209.69
95% Chebyshev (MVUE) UCL	21515.09
97.5% Chebyshev (MVUE) UCL	27757.13
99% Chebyshev (MVUE) UCL	40018.43

95% Non-parametric UCLs	
CLT UCL	4831.896
Adj-CLT UCL (Adjusted for skewness)	5172.605
Mod-t UCL (Adjusted for skewness)	4898.233
Jackknife UCL	4845.089
Standard Bootstrap UCL	4833.363
Bootstrap-t UCL	5388.443
Hall's Bootstrap UCL	5526.096
Percentile Bootstrap UCL	4981.619
BCA Bootstrap UCL	5234.947
95% Chebyshev (Mean, Sd) UCL	7066.031
97.5% Chebyshev (Mean, Sd) UCL	8618.621
99% Chebyshev (Mean, Sd) UCL	11668.38

Table B-7a
Off-Facility Area Soil (Fine Fraction
All concentrations in mg/kg

Sample ID	Date Collected:	Depth	Arsenic	Barium	Cadmium	Chromium	Lead	Selenium		Silver		Zinc	Mercury
2339 N. 51ST-0.1	7/18/2006	0.0 - 0.5	4.7	100	2.9	11	82	0.59	B	0.18	B	410	0.072
4000 Collinsville Rd-0.1	7/18/2006	0.0 - 0.5	6.6	140	5.6	14	87	0.60	B	0.21	B	480	0.072
5517 Delmar-0.1	7/18/2006	0.0 - 0.5	7.0	160	6.3	14	90	0.62	B	0.22	B	550	0.073
5427 Kinder-0.1	7/11/2006	0.0 - 0.5	7.1	160	7.2	15	98	0.68	B	0.28	B	570	0.079
5528 Delmar-0.1	6/29/2006	0.0 - 0.5	7.3	160	8.3	15	110	0.70	B	0.29	B	570	0.082
2521 N. 42ND-0.1	7/18/2006	0.0 - 0.5	7.3	170	9.2	15	110	0.86	B	0.31	J	580	0.084
2539 N. 41ST-0.1	7/18/2006	0.0 - 0.5	7.7	170	9.5	15	120	0.90	B	0.32	B	590	0.086
2768.N.42ND-0.1	6/26/2006	0.0 - 0.5	7.8	180	9.6	16	120	0.91	B	0.34	B	590	0.098
5500 Maryland-0.1	6/29/2006	0.0 - 0.5	8.5	190	9.9	16	160	0.92	B	0.36	B	610	0.10
5515 Thomas-0.1	6/28/2009	0.0 - 0.5	8.5	190	10	16	160	0.94	B	0.36	B	620	0.11
5510 Thomas-0.1	7/18/2006	0.0 - 0.5	8.6	200	10	17	160	0.95	B	0.38	B	650	0.11
42nd ST-0.1	7/18/2006	0.0 - 0.5	8.7	200	11	17	180	0.97	B	0.40	B	760	0.11
N 39TH-0.1	7/20/2006	0.0 - 0.5	8.9	200	11	18	210	0.98	J	0.45	B	770	0.11
5508 Thomas-0.1	6/30/2006	0.0 - 0.5	9.0	200	11	18	220	1.0	B	0.46	B	870	0.11
5507 Thomas-0.1	7/7/2006	0.0 - 0.5	9.1	200	12	18	240	1.1		0.53	B	1,000	0.12
5432 Maryland-0.1	7/7/2006	0.0 - 0.5	9.3	210	12	18	270	1.1	B	0.54		1,000	0.13
N. 48TH-0.1	7/20/2006	0.0 - 0.5	11	210	15	18	340	0.55	U	0.54	B	1,100	0.14
3800 Roselake-0.1	12/13/2006	0.0 - 0.5	11	220	16	18	**410**	1.2	B	0.92		1,200	0.14
2845 N, 44TH ST-0.1	7/18/2006	0.0 - 0.5	13	220	16	19	**410**	1.2	B	1.1		1,200	0.14
Maryland-0.1	9/22/2006	0.0 - 0.5	**14**	220	16	20	**430**	1.3	B	1.4		1,700	0.16
Cookson-0.1	9/21/2006	0.0 - 0.5	17	240	31	21	**430**	1.3		1.4		1,800	0.2
4012 Maple-0.1	7/7/2006	0.0 - 0.5	**18**	270	34	21	**470**	1.4		1.5		2,000	0.40
5514 Kinder-0.1	7/11/2006	0.0 - 0.5	19	270	**81**	26	**510**	1.8		2.2		3,700	0.41
47th ST-0.1	9/22/2006	0.0 - 0.5	**51**	370	**180**	30	1,600	2.1		11		16,000	1.1

Table B-7b
Off-Facility Area Soil (Fine Fraction) ProUCL Outpu
All Concentrations in mg/kg

Data File

Variable: Arsenic

Raw Statistics	
Number of Valid Samples	24
Number of Unique Samples	*21*
Minimum	4.7
Maximum	51
Mean	11.67083
Median	8.8
Standard Deviation	9.156679
Variance	83.84476
Coefficient of Variation	0.784578
Skewness	3.737863

Gamma Statistics	
k hat	3.545867
k star (bias corrected)	3.130412
Theta hat	3.29139
Theta star	3.72821
nu hat	170.2016
nu star	150.2598
Approx.Chi Square Value (.05)	122.9214
Adjusted Level of Significance	*0.0392*
Adjusted Chi Square Value	121.1839

Log-transformed Statistics	
Minimum of log data	1.547563
Maximum of log data	3.931826
Mean of log data	2.309507
Standard Deviation of log data	0.481921
Variance of log data	0.232248

RECOMMENDATION
Data are Non-parametric (0.05)

Use Student's-t UCL
or Modified-t UCL

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.547318
Shapiro-Wilk 5% Critical Value	0.916
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	14.87423

Gamma Distribution Test	
A-D Test Statistic	1.908552
A-D 5% Critical Value	0.7498
K-S Test Statistic	0.257961
K-S 5% Critical Value	0.178933
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	14.26648
Adjusted Gamma UCL	14.47103

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.843903
Shapiro-Wilk 5% Critical Value	0.916
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	13.76484
95% Chebyshev (MVUE) UCL	16.25417
97.5% Chebyshev (MVUE) UCL	18.4198
99% Chebyshev (MVUE) UCL	22.67375

95% Non-parametric UCLs	
CLT UCL	14.74523
Adj-CLT UCL (Adjusted for skewness)	16.26904
Mod-t UCL (Adjusted for skewness)	15.11191
Jackknife UCL	14.87423
Standard Bootstrap UCL	14.73952
Bootstrap-t UCL	19.12263
Hall's Bootstrap UCL	26.21013
Percentile Bootstrap UCL	15.07083
BCA Bootstrap UCL	16.6
95% Chebyshev (Mean, Sd) UCL	19.81805
97.5% Chebyshev (Mean, Sd) UCL	23.34335
99% Chebyshev (Mean, Sd) UCL	30.26814

Table B-7b
Off-Facility Area Soil (Fine Fraction) ProUCL Outpu
All Concentrations in mg/kg

Data File

Variable: Selenium

Raw Statistics	
Number of Valid Samples	24
Number of Unique Samples	21
Minimum	0.55
Maximum	2.1
Mean	1.027917
Median	0.96
Standard Deviation	0.37243
Variance	0.138704
Coefficient of Variation	0.362315
Skewness	1.255379

Gamma Statistics	
k hat	8.928902
k star (bias corrected)	7.840567
Theta hat	0.115122
Theta star	0.131102
nu hat	428.5873
nu star	376.3472
Approx.Chi Square Value (.05)	332.3765
Adjusted Level of Significance	0.0392
Adjusted Chi Square Value	329.4759

Log-transformed Statistics	
Minimum of log data	-0.59784
Maximum of log data	0.741937
Mean of log data	-0.02951
Standard Deviation of log data	0.340671
Variance of log data	0.116057

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Approximate Gamma UCL

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.897058
Shapiro-Wilk 5% Critical Value	0.916
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	1.158209

Gamma Distribution Test	
A-D Test Statistic	0.393533
A-D 5% Critical Value	0.744724
K-S Test Statistic	0.112958
K-S 5% Critical Value	0.17787
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	1.163902
Adjusted Gamma UCL	1.174148

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.963073
Shapiro-Wilk 5% Critical Value	0.916
Data are lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	1.17326
95% Chebyshev (MVUE) UCL	1.343444
97.5% Chebyshev (MVUE) UCL	1.480663
99% Chebyshev (MVUE) UCL	1.750204

95% Non-parametric UCLs	
CLT UCL	1.152962
Adj-CLT UCL (Adjusted for skewness)	1.173777
Mod-t UCL (Adjusted for skewness)	1.161455
Jackknife UCL	1.158209
Standard Bootstrap UCL	1.15007
Bootstrap-t UCL	1.192226
Hall's Bootstrap UCL	1.219314
Percentile Bootstrap UCL	1.155
BCA Bootstrap UCL	1.175
95% Chebyshev (Mean, Sd) UCL	1.359289
97.5% Chebyshev (Mean, Sd) UCL	1.502674
99% Chebyshev (Mean, Sd) UCL	1.784326

Table B-7b
Off-Facility Area Soil (Fine Fraction) ProUCL Outpu
All Concentrations in mg/kg

Data File

Variable: Barium

Raw Statistics	
Number of Valid Samples	24
Number of Unique Samples	12
Minimum	100
Maximum	370
Mean	202.0833
Median	200
Standard Deviation	52.08514
Variance	2712.862
Coefficient of Variation	0.257741
Skewness	1.284564

Gamma Statistics	
k hat	16.83819
k star (bias corrected)	14.76119
Theta hat	12.00149
Theta star	13.69018
nu hat	808.233
nu star	708.5372
Approx.Chi Square Value (.05)	647.7632
Adjusted Level of Significance	0.0392
Adjusted Chi Square Value	643.6866

Log-transformed Statistics	
Minimum of log data	4.60517
Maximum of log data	5.913503
Mean of log data	5.278692
Standard Deviation of log data	0.250289
Variance of log data	0.062645

RECOMMENDATION
Data follow gamma distribution (0.05)

Use Approximate Gamma UCL

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.896592
Shapiro-Wilk 5% Critical Value	0.916
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	220.3049

Gamma Distribution Test	
A-D Test Statistic	0.592785
A-D 5% Critical Value	0.742928
K-S Test Statistic	0.165352
K-S 5% Critical Value	0.177593
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	221.043
Adjusted Gamma UCL	222.443

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.944116
Shapiro-Wilk 5% Critical Value	0.916
Data are lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	222.1712
95% Chebyshev (MVUE) UCL	247.5627
97.5% Chebyshev (MVUE) UCL	267.2423
99% Chebyshev (MVUE) UCL	305.899

95% Non-parametric UCLs	
CLT UCL	219.5711
Adj-CLT UCL (Adjusted for skewness)	222.5499
Mod-t UCL (Adjusted for skewness)	220.7696
Jackknife UCL	220.3049
Standard Bootstrap UCL	218.6452
Bootstrap-t UCL	225.1894
Hall's Bootstrap UCL	233.2875
Percentile Bootstrap UCL	221.25
BCA Bootstrap UCL	221.6667
95% Chebyshev (Mean, Sd) UCL	248.4264
97.5% Chebyshev (Mean, Sd) UCL	268.4791
99% Chebyshev (Mean, Sd) UCL	307.8688

Table B-7b
Off-Facility Area Soil (Fine Fraction) ProUCL Outpu
All Concentrations in mg/kg

Data File

Variable: Silver

Raw Statistics	
Number of Valid Samples	24
Number of Unique Samples	21
Minimum	0.18
Maximum	11
Mean	1.070417
Median	0.425
Standard Deviation	2.177061
Variance	4.739595
Coefficient of Variation	2.033845
Skewness	4.477963

Gamma Statistics	
k hat	0.909024
k star (bias corrected)	0.823174
Theta hat	1.177545
Theta star	1.300354
nu hat	43.63314
nu star	39.51233
Approx.Chi Square Value (.05)	26.10976
Adjusted Level of Significance	0.0392
Adjusted Chi Square Value	25.34325

Log-transformed Statistics	
Minimum of log data	-1.7148
Maximum of log data	2.397895
Mean of log data	-0.57428
Standard Deviation of log data	0.927482
Variance of log data	0.860223

RECOMMENDATION
Data are Non-parametric (0.05)

Use 95% Chebyshev (Mean, Sd) UCL

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.385881
Shapiro-Wilk 5% Critical Value	0.916
Data not normal at 5% significance level	
95% UCL (Assuming Normal Distribution)	
Student's-t UCL	1.832045

Gamma Distribution Test	
A-D Test Statistic	2.417914
A-D 5% Critical Value	0.775718
K-S Test Statistic	0.294523
K-S 5% Critical Value	0.183712
Data do not follow gamma distribution	
at 5% significance level	
95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	1.619879
Adjusted Gamma UCL	1.668872

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.85955
Shapiro-Wilk 5% Critical Value	0.916
Data not lognormal at 5% significance level	
95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	1.384972
95% Chebyshev (MVUE) UCL	1.624736
97.5% Chebyshev (MVUE) UCL	1.962202
99% Chebyshev (MVUE) UCL	2.625088

95% Non-parametric UCLs	
CLT UCL	1.801374
Adj-CLT UCL (Adjusted for skewness)	2.235405
Mod-t UCL (Adjusted for skewness)	1.899745
Jackknife UCL	1.832045
Standard Bootstrap UCL	1.790338
Bootstrap-t UCL	3.928743
Hall's Bootstrap UCL	4.379932
Percentile Bootstrap UCL	1.98
BCA Bootstrap UCL	2.4
95% Chebyshev (Mean, Sd) UCL	3.007471
97.5% Chebyshev (Mean, Sd) UCL	3.845636
99% Chebyshev (Mean, Sd) UCL	5.492049

Table B-7b
Off-Facility Area Soil (Fine Fraction) ProUCL Outpu
All Concentrations in mg/kg

Data File

Variable: Cadmium

Raw Statistics	
Number of Valid Samples	24
Number of Unique Samples	18
Minimum	2.9
Maximum	180
Mean	22.27083
Median	11
Standard Deviation	37.05665
Variance	1373.195
Coefficient of Variation	1.663909
Skewness	3.809729

Gamma Statistics	
k hat	1.105136
k star (bias corrected)	0.994772
Theta hat	20.15212
Theta star	22.38788
nu hat	53.04653
nu star	47.74904
Approx.Chi Square Value (.05)	32.88683
Adjusted Level of Significance	0.0392
Adjusted Chi Square Value	32.01908

Log-transformed Statistics	
Minimum of log data	1.064711
Maximum of log data	5.192957
Mean of log data	2.586892
Standard Deviation of log data	0.852739
Variance of log data	0.727163

RECOMMENDATION
Data are Non-parametric (0.05)

Use 95% Chebyshev (Mean, Sd) UCL

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.449703
Shapiro-Wilk 5% Critical Value	0.916
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	35.23482

Gamma Distribution Test	
A-D Test Statistic	2.832416
A-D 5% Critical Value	0.769682
K-S Test Statistic	0.333946
K-S 5% Critical Value	0.182625
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	32.33546
Adjusted Gamma UCL	33.21179

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.847769
Shapiro-Wilk 5% Critical Value	0.916
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	28.96611
95% Chebyshev (MVUE) UCL	34.43087
97.5% Chebyshev (MVUE) UCL	41.22058
99% Chebyshev (MVUE) UCL	54.55767

95% Non-parametric UCLs	
CLT UCL	34.71276
Adj-CLT UCL (Adjusted for skewness)	40.99811
Mod-t UCL (Adjusted for skewness)	36.21521
Jackknife UCL	35.23482
Standard Bootstrap UCL	34.1539
Bootstrap-t UCL	79.97659
Hall's Bootstrap UCL	82.8934
Percentile Bootstrap UCL	36
BCA Bootstrap UCL	42.9625
95% Chebyshev (Mean, Sd) UCL	55.24223
97.5% Chebyshev (Mean, Sd) UCL	69.50898
99% Chebyshev (Mean, Sd) UCL	97.53324

Table B-7b
Off-Facility Area Soil (Fine Fraction) ProUCL Outpu
All Concentrations in mg/kg

Data File

Variable: Zinc

Raw Statistics	
Number of Valid Samples	24
Number of Unique Samples	20
Minimum	410
Maximum	16000
Mean	1638.333
Median	765
Standard Deviation	3141.452
Variance	9868719
Coefficient of Variation	1.917468
Skewness	4.520389

Gamma Statistics	
k hat	1.094929
k star (bias corrected)	0.985841
Theta hat	1496.292
Theta star	1661.864
nu hat	52.55659
nu star	47.32035
Approx.Chi Square Value (.05)	32.53081
Adjusted Level of Significance	0.0392
Adjusted Chi Square Value	31.6681

Log-transformed Statistics	
Minimum of log data	6.016157
Maximum of log data	9.680344
Mean of log data	6.879698
Standard Deviation of log data	0.795672
Variance of log data	0.633094

RECOMMENDATION
Data are Non-parametric (0.05)

Use 95% Chebyshev (Mean, Sd) UCL

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.366316
Shapiro-Wilk 5% Critical Value	0.916
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	2737.347

Gamma Distribution Test	
A-D Test Statistic	3.046178
A-D 5% Critical Value	0.769893
K-S Test Statistic	0.283943
K-S 5% Critical Value	0.182663
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	2383.172
Adjusted Gamma UCL	2448.095

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.787513
Shapiro-Wilk 5% Critical Value	0.916
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	1944.85
95% Chebyshev (MVUE) UCL	2327.024
97.5% Chebyshev (MVUE) UCL	2766.127
99% Chebyshev (MVUE) UCL	3628.661

95% Non-parametric UCLs	
CLT UCL	2693.089
Adj-CLT UCL (Adjusted for skewness)	3325.32
Mod-t UCL (Adjusted for skewness)	2835.962
Jackknife UCL	2737.347
Standard Bootstrap UCL	2626.731
Bootstrap-t UCL	7315.641
Hall's Bootstrap UCL	6699.466
Percentile Bootstrap UCL	2835.833
BCA Bootstrap UCL	3664.583
95% Chebyshev (Mean, Sd) UCL	4433.46
97.5% Chebyshev (Mean, Sd) UCL	5642.914
99% Chebyshev (Mean, Sd) UCL	8018.652

Table B-7b
Off-Facility Area Soil (Fine Fraction) ProUCL Outpu
All Concentrations in mg/kg

Data File

Variable: Chromium

Raw Statistics	
Number of Valid Samples	24
Number of Unique Samples	11
Minimum	11
Maximum	30
Mean	17.75
Median	17.5
Standard Deviation	3.959029
Variance	15.67391
Coefficient of Variation	0.223044
Skewness	1.504822

Gamma Statistics	
k hat	23.68989
k star (bias corrected)	20.75644
Theta hat	0.749265
Theta star	0.855156
nu hat	1137.115
nu star	996.3089
Approx.Chi Square Value (.05)	924.024
Adjusted Level of Significance	0.0392
Adjusted Chi Square Value	919.1414

Log-transformed Statistics	
Minimum of log data	2.397895
Maximum of log data	3.401197
Mean of log data	2.855131
Standard Deviation of log data	0.206195
Variance of log data	0.042516

RECOMMENDATION
Assuming gamma distribution (0.05)

Use Approximate Gamma UCL

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.870389
Shapiro-Wilk 5% Critical Value	0.916
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	19.13504

Gamma Distribution Test	
A-D Test Statistic	0.73456
A-D 5% Critical Value	0.742258
K-S Test Statistic	0.195631
K-S 5% Critical Value	0.177505
Data follow approximate gamma distibution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	19.13855
Adjusted Gamma UCL	19.24022

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.939023
Shapiro-Wilk 5% Critical Value	0.916
Data are lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	19.14994
95% Chebyshev (MVUE) UCL	21.01118
97.5% Chebyshev (MVUE) UCL	22.4292
99% Chebyshev (MVUE) UCL	25.21462

95% Non-parametric UCLs	
CLT UCL	19.07926
Adj-CLT UCL (Adjusted for skewness)	19.3445
Mod-t UCL (Adjusted for skewness)	19.17641
Jackknife UCL	19.13504
Standard Bootstrap UCL	19.06218
Bootstrap-t UCL	19.54751
Hall's Bootstrap UCL	20.18432
Percentile Bootstrap UCL	19
BCA Bootstrap UCL	19.375
95% Chebyshev (Mean, Sd) UCL	21.27257
97.5% Chebyshev (Mean, Sd) UCL	22.79679
99% Chebyshev (Mean, Sd) UCL	25.79083

Table B-7b
Off-Facility Area Soil (Fine Fraction) ProUCL Outpu
All Concentrations in mg/kg

Data File

Variable: Mercury

Raw Statistics	
Number of Valid Samples	24
Number of Unique Samples	17
Minimum	0.072
Maximum	1.1
Mean	0.1765
Median	0.11
Standard Deviation	0.215625
Variance	0.046494
Coefficient of Variation	1.221671
Skewness	3.794311

Gamma Statistics	
k hat	1.839772
k star (bias corrected)	1.637579
Theta hat	*0.095936*
Theta star	0.107781
nu hat	88.30907
nu star	*78.60377*
Approx.Chi Square Value (.05)	59.17444
Adjusted Level of Significance	0.0392
Adjusted Chi Square Value	57.98891

Log-transformed Statistics	
Minimum of log data	-2.63109
Maximum of log data	0.09531
Mean of log data	-2.03018
Standard Deviation of log data	0.643819
Variance of log data	0.414503

RECOMMENDATION
Data are Non-parametric (0.05)

Use 95% Chebyshev (Mean, Sd) UCL

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.474549
Shapiro-Wilk 5% Critical Value	0.916
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	0.251935

Gamma Distribution Test	
A-D Test Statistic	2.868177
A-D 5% Critical Value	0.757137
K-S Test Statistic	0.311722
K-S 5% Critical Value	0.180514
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	0.234452
Adjusted Gamma UCL	*0.239245*

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.774061
Shapiro-Wilk 5% Critical Value	0.916
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	0.214333
95% Chebyshev (MVUE) UCL	0.257378
97.5% Chebyshev (MVUE) UCL	0.299551
99% Chebyshev (MVUE) UCL	0.38239

95% Non-parametric UCLs	
CLT UCL	0.248897
Adj-CLT UCL (Adjusted for skewness)	0.285322
Mod-t UCL (Adjusted for skewness)	0.257616
Jackknife UCL	0.251935
Standard Bootstrap UCL	0.247793
Bootstrap-t UCL	0.370045
Hall's Bootstrap UCL	0.458811
Percentile Bootstrap UCL	0.250625
BCA Bootstrap UCL	0.293833
95% Chebyshev (Mean, Sd) UCL	0.368354
97.5% Chebyshev (Mean, Sd) UCL	0.451369
99% Chebyshev (Mean, Sd) UCL	0.614436

Table B-7b
Off-Facility Area Soil (Fine Fraction) ProUCL Outpu
All Concentrations in mg/kg

Data File

Variable: Lead

Raw Statistics	
Number of Valid Samples	24
Number of Unique Samples	18
Minimum	82
Maximum	1600
Mean	292.375
Median	195
Standard Deviation	311.2528
Variance	96878.33
Coefficient of Variation	1.064567
Skewness	3.452548

Gamma Statistics	
k hat	1.781723
k star (bias corrected)	1.586785
Theta hat	164.0968
Theta star	184.2562
nu hat	85.52269
nu star	76.16569
Approx.Chi Square Value (.05)	57.05973
Adjusted Level of Significance	0.0392
Adjusted Chi Square Value	55.89674

Log-transformed Statistics	
Minimum of log data	4.406719
Maximum of log data	7.377759
Mean of log data	5.37189
Standard Deviation of log data	0.735757
Variance of log data	0.541339

RECOMMENDATION
Assuming gamma distribution (0.05)

Use Approximate Gamma UCL

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.601331
Shapiro-Wilk 5% Critical Value	0.916
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	401.2645

Gamma Distribution Test	
A-D Test Statistic	0.903117
A-D 5% Critical Value	0.757889
K-S Test Statistic	0.13885
K-S 5% Critical Value	0.180628
Data follow approximate gamma distibution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	390.2743
Adjusted Gamma UCL	398.3943

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.927318
Shapiro-Wilk 5% Critical Value	0.916
Data are lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	395.6507
95% Chebyshev (MVUE) UCL	475.1925
97.5% Chebyshev (MVUE) UCL	560.3933
99% Chebyshev (MVUE) UCL	727.7537

95% Non-parametric UCLs	
CLT UCL	396.8795
Adj-CLT UCL (Adjusted for skewness)	444.7229
Mod-t UCL (Adjusted for skewness)	408.7271
Jackknife UCL	401.2645
Standard Bootstrap UCL	392.882
Bootstrap-t UCL	512.8226
Hall's Bootstrap UCL	817.3076
Percentile Bootstrap UCL	405.5833
BCA Bootstrap UCL	461.125
95% Chebyshev (Mean, Sd) UCL	569.3142
97.5% Chebyshev (Mean, Sd) UCL	689.1461
99% Chebyshev (Mean, Sd) UCL	924.5325

Table B-7c
Off-Site Soil Samples by Property
Old American Zinc Plant Site, Fairmont City, Illinois
All concentrations in mg/Kg

Address	Off-Facility Location	Depth	Arsenic	Barium	Cadmium	Total Chromium	Lead	Mercury	Selenium	Silver	Zinc	Sample Type	Property Type
	4012 Maple-0.1	0.0 - 0.5	18	**270**	**34**	**21**	470	**0.4**	1.4	1.5	2000	fines	commercial
	4012 Maple-BY-1	0.5-1.0	11	190	3	17	81	0.1	1.1	0.27	440	total	commercial
	4012 Maple-SY-2	0.5-1.0	**59**	190	8.7	16	**3500**	0.08	**2.3**	**11**	**4600**	total	commercial
4012 Maple Ave	Average		**29**	**217**	**15**	**18**	**1350**	**0.19**	**1.60**	**4.26**	**2346.67**		commercial
4012 Maple Ave	Max		**59**	**270**	**34**	**21**	**3500**	**0.40**	**2.30**	**11**	**4600**		commercial
	Cookson-0.1	0.0 - 0.5	17	**240**	**31**	**21**	**430**	**0.2**	**1.3**	**1.4**	1800	fines	commercial
	Cookson-BK-1.5	1.0-1.5	**25**	210	21	18	360	0.062	0.86	1.2	**1900**	total	commercial
Cookson Rd & 44th St	Average		**21**	**225**	**26**	**20**	**395**	**0.13**	**1.08**	**1.30**	**1850**		commercial
Cookson Rd & 44th St	max		**25**	**240**	**31**	**21**	**430**	**0.20**	**1.30**	**1.40**	**1900**		commercial
	2768.N.42ND-0.1	0.0 - 0.5	**7.8**	**180**	9.6	**16**	**120**	0.098	**0.91**	**0.34**	590	fines	Resident
	2768 N 42ND FY-2*	1.0-2.0	5.5	130	3.85	9.3	49	**0.1045**	0.59	*0.26*	340	total	Resident
	2768.N.42ND BY-1*	0.5-1.0	6.75	130	**13.5**	9.8	78.5	0.047	0.84	0.18	690	total	Resident
2768 N 42nd Street	Average		**6.7**	**147**	**9**	**12**	**83**	**0.08**	**0.78**	**0.26**	**540**		Resident
2768 N 42nd Street	Max		**8**	**180**	**14**	**16**	**120**	**0.10**	**0.91**	**0**	**690**		Resident
	4000 Collinsville Rd-0.1	0.0 - 0.5	6.6	140	5.6	14	87	0.072	**0.6**	0.21	480	fines	Resident
	4000 Collinsville Rd-DS-0.5	0.1-0.5	7.9	150	8.6	**18**	130	**0.13**	*0.5*	**0.55**	**840**	total	Resident
	4000 Collinsville Rd-DZ-1	0.5-1.0	8.1	170	17	13	100	0.078	*0.55*	0.23	780	total	Resident
	4000 Collinsville Rd-NE-1	0.5-1.0	**8.8**	**170**	**18**	15	**240**	0.11	*0.6*	0.32	770	total	Resident
4000 Collinsville Rd	Average		**7.9**	**157.5**	**12.3**	**15.0**	**139.3**	**0.098**	**0.56**	**0.33**	**717.5**		Resident
4000 Collinsville Rd	max		**8.8**	**170.0**	**18.0**	**18.0**	**240.0**	**0.1**	**0.6**	**0.6**	**840.0**		Resident
	5427 Kinder-0.1	0.0 - 0.5	7.1	160	7.2	15	98	0.079	0.68	0.28	570	fines	Resident
	5427 Kinder-NE-1.0	0.5-1.0	**12**	**240**	**41**	16	**520**	**0.13**	1.3	**0.82**	**1800**	total	Resident
	5427 Kinder-NW-0.5	0.1-0.5	12	230	20	**18**	190	0.032	**2**	0.43	760	total	Resident
	5427 Kinder-SE-1.0	0.5-1.0	7.3	180	9.3	13	93	0.073	0.41	0.24	490	total	Resident
5427 Kinder	Average		**9.6**	**202.5**	**19.4**	**15.5**	**225.3**	**0.079**	**1.10**	**0.44**	**905.0**		Resident
5427 Kinder	max		**12.0**	**240.0**	**41.0**	**18.0**	**520.0**	**0.1**	**2.0**	**0.8**	**1800.0**		Resident
	5432 Maryland-0.1	0.0 - 0.5	9.3	**210**	12	**18**	**270**	**0.13**	1.1	**0.54**	**1000**	fines	Resident
	5432 Maryland-DS-0.5	0.1-0.5	9.8	190	14	**18**	100	0.1	**1.3**	0.28	470	total	Resident
	5432 Maryland-FY-0.5	0.1-0.5	**11**	180	**21**	15	150	0.071	1.1	0.37	630	total	Resident
5432 Maryland	Average		**10**	**193**	**16**	**17**	**173**	**0.100**	**1.17**	**0.40**	**700**		Resident
5432 Maryland	Max		**11**	**210**	**21**	**18**	**270**	**0.13**	**1.30**	**1**	**1000**		Resident
	5500 Maryland-0.1	0.0 - 0.5	8.5	190	9.9	16	**160**	**0.1**	0.92	**0.36**	610	fines	Resident
	5500 Maryland-BY-1.5	1.0-1.5	7.9	**210**	6	**17**	38	0.035	**1.6**	*0.28*	400	total	Resident
	5500 Maryland-FY-1.0	0.5-1.0	**13**	200	**24**	14	91	0.062	0.85	0.26	**700**	total	Resident
5500 Maryland	Average		**10**	**200**	**13**	**16**	**96**	**0.066**	**1.12**	**0.30**	**570**		Resident
5500 Maryland	Max		**13**	**210**	**24**	**17**	**160**	**0.10**	**1.60**	**0**	**700**		Resident
	5507 Thomas-0.1	0.0 - 0.5	9.1	**200**	12	**18**	**240**	0.12	1.1	0.53	**1000**	fines	Resident
	5507 Thomas-DS-0.5	0.1-0.5	9.1	180	14	14	100	0.14	0.96	0.25	810	total	Resident
	5507 Thomas-DZ-0.5	0.1-0.5	9.6	180	16	17	110	**0.24**	1.1	**0.59**	780	total	Resident
	5507 Thomas-NW-0.5	0.1-0.5	**14**	190	**19**	17	150	0.08	**1.7**	0.47	620	total	Resident
5507 Thomas	Average		**10.5**	**187.5**	**15.3**	**16.5**	**150.0**	**0.15**	**1.22**	**0.46**	**802.5**		Resident
5507 Thomas	max		**14.0**	**200.0**	**19.0**	**18.0**	**240.0**	**0.2**	**1.7**	**0.6**	**1000.0**		Resident

Table B-7c
Off-Site Soil Samples by Property
Old American Zinc Plant Site, Fairmont City, Illinois
All concentrations in mg/Kg

Address	Off-Facility Location	Depth	Arsenic	Barium	Cadmium	Total Chromium	Lead	Mercury	Selenium	Silver	Zinc	Sample Type	Property Type
	5508 Thomas-0.1	0.0 - 0.5	9	**200**	11	**18**	**220**	**0.11**	**1**	0.46	**870**	fines	Resident
	5508 Thomas-BY-0.5	0.1-0.5	9.8	**200**	11	14	140	0.067	0.85	**0.29**	490	total	Resident
	5508 Thomas-FY-1.0	0.5-1.0	**11**	**200**	**12**	14	54	0.054	0.94	0.18	410	total	Resident
	5508 Thomas-GR-0.5	0.1-0.5	8.8	190	10	12	100	0.061	0.78	0.18	440	total	Resident
5508 Thomas	Average		**9.7**	**197.5**	**11.0**	**14.5**	**128.5**	**0.07**	**0.89**	**0.28**	**552.5**		Resident
5508 Thomas	max		**11.0**	**200.0**	**12.0**	**18.0**	**220.0**	**0.1**	**1.0**	**0.5**	**870.0**		Resident
	5510 Thomas-0.1	0.0 - 0.5	8.6	**200**	10	17	160	0.11	**0.95**	0.38	650	fines	Resident
	5510 Thomas-DS-0.5	0.1-0.5	**13**	130	21	**21**	200	**0.14**	0.79	**0.88**	**1200**	total	Resident
	5510 Thomas-SE-1.5	1.0-1.5	12	170	18	15	140	**0.14**	*0.55*	0.34	690	total	Resident
	5510 Thomas-SW-0.5	0.1-0.5	12	**200**	**24**	18	**280**	0.097	0.89	0.49	900	total	Resident
5510 Thomas	Average		**11.4**	**175.0**	**18.3**	**17.8**	**195.0**	**0.12**	**0.80**	**0.52**	**860.0**		Resident
5510 Thomas	max		**13.0**	**200.0**	**24.0**	**21.0**	**280.0**	**0.1**	**1.0**	**0.9**	**1200.0**		Resident
	5514 Kinder-0.1	0.0 - 0.5	**19**	270	**81**	**26**	**510**	**0.41**	**1.8**	**2.2**	**3700**	fines	Resident
	5514 Kinder-NE-1.0	0.5-1.0	9.8	160	12	13	68	0.038	0.86	0.12	440	total	Resident
	5514 Kinder-NW-0.5	0.1-0.5	8	170	13	12	110	0.079	0.56	0.38	610	total	Resident
	5514 Kinder-SE-0.5	0.1-0.5	15	**350**	17	20	300	0.33	0.93	0.58	740	total	Resident
5514 Kinder	Average		**13.0**	**237.5**	**30.8**	**17.8**	**247.0**	**0.21**	**1.04**	**0.82**	**1372.5**		Resident
5514 Kinder	max		**19.0**	**350.0**	**81.0**	**26.0**	**510.0**	**0.4**	**1.8**	**2.2**	**3700.0**		Resident
	5515 Thomas-0.1	0.0 - 0.5	8.5	**190**	**10**	**16**	**160**	**0.11**	0.94	**0.36**	620	fines	Resident
	5515 Thomas-BY-1*	0.5-1.0	**11.5**	175	10	13.5	120	0.0675	**0.96**	0.3	515	total	Resident
	5515 Thomas-DZ-0.5*	0.1-0.5	9.15	170	7.2	11	143.5	0.077	0.64	0.255	**635**	total	Resident
	5515 Thomas-FY-2*	1.0-2.0	8.6	150	4.65	11	19.5	0.0455	0.545	***0.27***	280	total	Resident
5515 Thomas	Average		**9.4**	**171.3**	**8.0**	**12.9**	**110.8**	**0.075**	**0.77**	**0.30**	**512.5**		Resident
5515 Thomas	max		**11.5**	**190.0**	**10.0**	**16.0**	**160.0**	**0.1**	**1.0**	**0.4**	**635.0**		Resident
	5517 Delmar-0.1	0.0 - 0.5	7	160	6.3	14	90	0.073	0.62	0.22	550	fines	Resident
	5517 Delmar-GD-1.5	1.0-1.5	14	170	9.9	14	220	0.18	0.75	0.54	950	total	Resident
	5517 Delmar-NE-2	1.5-2.0	14	260	14	**26**	220	**0.2**	0.58	**0.63**	630	total	Resident
	5517 Delmar-SE-2	1.5-2.0	**17**	**940**	**55**	24	**990**	0.084	**0.94**	0.62	**6800**	total	Resident
5517 Delmar	Average		**13.0**	**382.5**	**21.3**	**19.5**	**380.0**	**0.13**	**0.72**	**0.50**	**2232.5**		Resident
5517 Delmar	max		**17.0**	**940.0**	**55.0**	**26.0**	**990.0**	**0.2**	**0.9**	**0.6**	**6800.0**		Resident
	5528 Delmar-0.1	0.0 - 0.5	7.3	160	8.3	15	110	**0.082**	0.7	0.29	570	fines	Resident
	5528 Delmar-BY-SE-1	0.5-1.0	12	150	8.6	11	53	0.058	*0.55*	0.14	400	total	Resident
	5528 Delmar-DS-2	1.0-2.0	**13**	**180**	**21**	**18**	**180**	0.077	**1.1**	**0.38**	**790**	total	Resident
	5528 Delmar-FY-NE-1.5	1.0-1.5	10	**180**	11	13	76	0.042	0.62	0.19	500	total	Resident
5528 Delmar	Average		**10.6**	**167.5**	**12.2**	**14.3**	**104.8**	**0.06**	**0.74**	**0.25**	**565.0**		Resident
5528 Delmar	max		**13.0**	**180.0**	**21.0**	**18.0**	**180.0**	**0.1**	**1.1**	**0.4**	**790.0**		Resident
	2339 N. 51ST-0.1	0.0 - 0.5	4.7	100	2.9	11	82	0.072	0.59	0.18	410	fines	Vacant
	2339 N. 51st St-1	0.5-1.0	**16**	**260**	**30**	**18**	**710**	**0.41**	**1.4**	**1.4**	**3100**	total	Vacant
2339 51st St	Average		**10**	**180**	**16**	**15**	**396**	**0.24**	**1.00**	**0.79**	**1755**		Vacant
2339 51st St	max		**16**	**260**	**30**	**18**	**710**	**0.41**	**1.40**	**1.40**	**3100**		Vacant

Table B-7c
Off-Site Soil Samples by Property
Old American Zinc Plant Site, Fairmont City, Illinois
All concentrations in mg/Kg

Address	Off-Facility Location	Depth	Arsenic	Barium	Cadmium	Total Chromium	Lead	Mercury	Selenium	Silver	Zinc	Sample Type	Property Type
	2521 N. 42ND-0.1	0.0 - 0.5	7.3	170	9.2	15	110	0.084	0.86	0.31	580	fines	Vacant
	2521 N. 42nd St-NW-0.5	0.1-0.5	11	220	**15**	**24**	**330**	**0.21**	**1.1**	**0.65**	**1000**	total	Vacant
	2521 N. 42nd St-SW-0.5	0.1-0.5	**12**	**260**	12	20	280	0.17	0.93	0.58	820	total	Vacant
2521 42nd St	Average		**10**	**217**	**12**	**20**	**240**	**0.15**	**0.96**	**0.51**	**800.00**		Vacant
2521 42nd St	Max		**12**	**260**	**15**	**24**	**330**	**0.21**	**1.10**	**1**	**1000**		Vacant
	2539 N. 41ST-0.1	0.0 - 0.5	7.7	170	**9.5**	15	120	0.086	**0.9**	**0.32**	590	fines	Vacant
	2539 N. 41st St-BY-1	0.5-1.0	**10**	**270**	4	**17**	**290**	**0.35**	0.78	0.039	**980**	total	Vacant
2539 41st St	Average		**9**	**220**	**7**	**16**	**205**	**0.22**	**0.84**	**0.18**	**785**		Vacant
2539 41st St	max		**10**	**270**	**10**	**17**	**290**	**0.35**	**0.90**	**0.32**	**980**		Vacant
	2845 N, 44TH ST-0.1	0.0 - 0.5	13	220	16	19	410	0.14	**1.2**	1.1	1200	fines	Vacant
	2845 N. 44th St-SE-1	0.5-1.0	**26**	200	**24**	**22**	**1100**	**0.9**	0.65	**2.5**	**3900**	total	Vacant
	2845 N. 44th St-SW-0.5	0.1-0.5	13	**230**	21	16	510	0.11	*0.495*	0.83	1700	total	Vacant
2845 44th St	Average		**17**	**217**	**20**	**19**	**673**	**0.38**	**0.78**	**1.48**	**2267**		Vacant
2845 44th St	Max		**26**	**230**	**24**	**22**	**1100**	**0.90**	**1.20**	**3**	**3900**		Vacant
	3800 Roselake-0.1	0.0 - 0.5	**11**	**220**	**16**	**18**	**410**	**0.14**	1.2	**0.92**	**1200**	fines	Vacant
	3800 Roselake-0.5	0.1-0.5	8	**220**	9.2	16	94	0.04	**1.3**	0.27	510	total	Vacant
	3800 Roselake-1.5	1.0-1.5	6.1	160	0.96	14	13	0.019	0.78	*0.29*	140	total	Vacant
3800 Roselake Rd	Average		**8**	**200**	**9**	**16**	**172**	**0.07**	**1.09**	**0.49**	**616.67**		Vacant
3800 Roselake Rd	Max		**11**	**220**	**16**	**18**	**410**	**0.14**	**1.30**	**1**	**1200**		Vacant
	42nd ST-0.1	0.0 - 0.5	8.7	200	11	17	180	0.11	0.97	0.40	760.00	fines	Vacant
	42nd St-NE-1.5	1.0-1.5	7.6	170	1.9	13	18	0.03	*0.55*	*0.27*	270.00	total	Vacant
	42nd St-SE-0.5	0.1-0.5	**20**	**280**	**17**	**20**	**430**	**0.13**	**1.60**	**0.66**	**1200.00**	total	Vacant
42nd St	Average		**12**	**217**	**10**	**17**	**209**	**0.09**	**1.04**	**0.44**	**743.33**		Vacant
42nd St	Max		**20**	**280**	**17**	**20**	**430**	**0.13**	**1.60**	**1**	**1200**		Vacant
	47th ST-0.1	0.0 - 0.5	**51**	**370**	**180**	**30**	**1600**	**1.1**	**2.1**	**11**	**16000**	fines	Vacant
	47th-FR-1.5	1.0-1.5	6.8	140	6.8	14	22	0.025	0.78	0.12	1500	total	Vacant
47th Street (Schurman Ave)	Average		**29**	**255**	**93**	**22**	**811**	**0.56**	**1.44**	**5.56**	**8750**		Vacant
47th Street (Schurman Ave)	max		**51**	**370**	**180**	**30**	**1600**	**1.10**	**2.10**	**11.00**	**16000**		Vacant
	Maryland-0.1	0.0 - 0.5	14	**220**	16	**20**	**430**	**0.16**	**1.3**	**1.4**	**1700**	fines	Vacant
	Maryland-NE-1.0	0.5-1.0	6.8	150	44	12	46	0.035	0.53	0.22	1200	total	Vacant
	Maryland-SW-0.5*	0.1-0.5	**15**	190	**62.5**	13.5	390	0.135	1.1	1.1	1450	total	Vacant
Maryland Ave	Average		**12**	**187**	**41**	**15**	**289**	**0.11**	**0.98**	**0.91**	**1450.00**		Vacant
Maryland Ave	Max		**15**	**220**	**63**	**20**	**430**	**0.16**	**1.30**	**1**	**1700**		Vacant
	N 39TH-0.1	0.0 - 0.5	8.9	200	11	18	210	0.11	0.98	0.45	770	fines	Vacant
	N. 39th-SE-0.5	0.1-0.5	**13**	**250**	**20**	**27**	**440**	**0.13**	**1.2**	**0.55**	**1600**	total	Vacant
	N. 39th-SW-0.5	0.1-0.5	9.2	**250**	10	18	310	**0.13**	*0.65*	0.35	940	total	Vacant
N 39th St and Locust St	Average		**10**	**233**	**14**	**21**	**320**	**0.12**	**0.94**	**0.45**	**1103.33**		Vacant
N 39th St and Locust St	Max		**13**	**250**	**20**	**27**	**440**	**0.13**	**1.20**	**1**	**1600**		
	N. 48TH-0.1	0.0 - 0.5	11	210	15	18	340	0.14	0.55	0.54	1100	fines	Vacant
	N. 48th-1	0.5-1.0	**17**	**320**	**61**	**24**	**720**	**0.18**	**0.92**	**1.4**	**3600**	total	Vacant
3022 N 48th St	Average		**14**	**265**	**38**	**21**	**530**	**0.16**	**0.74**	**0.97**	**2350**		Vacant
3022 N 48th St	max		**17**	**320**	**61**	**24**	**720**	**0.18**	**0.92**	**1.40**	**3600**		Vacant

Table B-7c
Off-Site Soil Samples by Property
Old American Zinc Plant Site, Fairmont City, Illinois
All concentrations in mg/Kg

Address	Off-Facility Location	Depth	Arsenic	Barium	Cadmium	Total Chromium	Lead	Mercury	Selenium	Silver	Zinc	Sample Type	Property Type
	Commercial Properties												
	Min		11	190	3	16	81	0.062	0.86	0.27	440		
	Max		**59**	270	34	21	**3500**	0.4	**2.3**	**11**	4600		
	Mean		26	220	19.54	18.6	968.2	0.1684	1.392	3.074	2148		
	SD		17.09	30.98	12.11	2.06	1273	0.13	0.49	3.99	1352		
	Residential Properties												
	Min		5.50	130	3.85	9.30	19.50	0.03	0.41	0.12	280		
	Max		19.00	**940**	81.00	26.00	990.00	0.41	2.00	2.20	6800		
	Mean		10.20	203	15.72	15.72	172.86	0.11	0.90	0.41	878		
	SD		2.84	117.61	13.32	3.66	159.76	0.07	0.35	0.32	1030		
	Vacant Properties												
	Min		4.70	100	0.96	11.00	13	0.02	0.50	0.04	140		
	Max		51.00	370	**180**	**30.00**	1,600	**1.10**	2.10	**11**	**16,000**		
	Mean		12.88	217.31	24.08	18.06	369	0.20	0.98	1.07	1,855		
	SD		8.93	56.33	34.83	4.46	349	0.25	0.37	2.06	2,974		
	All combined												
	Min		4.7	100	0.96	9.3	13	0.019	0.41	0.039	140		
	Max		59	940	180	30	3500	1.1	2.3	11	16000		
	Mean		12.16	209.01	18.83	16.71	292.30	0.14	0.96	0.81	1296		
	SD		8.14	96.91	23.34	4.05	451.62	0.16	0.39	1.73	2008		

Table B-8a
Concentrations of 8 RCRA Metals and Zinc in Residential and Vacant Property Samples (total metals)
Old American Zinc Plant Site Remedial Investigation, May - June 2006
Fairmont City, Illinois
All concentrations in mg/kg

Location	Sample Date	Depth	Arsenic	Barium	Cadmium	Total Chromium	Lead	Selenium	Silver	Zinc	Mercury
2768.N.42ND BY-1*	6/22/2006	0.5-1.0	6.75	130	13.5	9.8	78.5	0.84	0.18	690	0.047
2768 N 42ND FY-2*	6/22/2006	1.0-2.0	5.5	130	3.85	9.3	49	0.59	<0.51	340	0.105
4012 Maple-BY-1	7/5/2006	0.5-1.0	11	190	3	17	81	1.1	0.27	440	0.10
4012 Maple-SY-2	7/5/2006	0.5-1.0	**59**	190	8.7	16	**3,500**	2.3	11	4,600	0.080
2845 N. 44th St-SW-0.5	7/13/2006	0.1-0.5	13	230	21	16	**510**	<0.99	0.83	1,700	0.11
2845 N. 44th St-SE-1	7/13/2006	0.5-1.0	**26**	200	24	22	**1100**	0.65	2.5	3,900	0.90
2521 N. 42nd St-NW-0.5	7/13/2006	0.1-0.5	11	220	15	24	330	1.1	0.65	1,000	0.21
2521 N. 42nd St-SW-0.5	7/13/2006	0.1-0.5	12	260	12	20	280	0.93	0.58	820	0.17
42nd St-SE-0.5	7/14/2006	0.1-0.5	**20**	280	17	20	**430**	1.6	0.66	1,200	0.13
42nd St-NE-1.5	7/14/2006	1.0-1.5	7.6	170	1.9	13	18	<1.1	<0.54	270	0.032
4000 Collinsville Rd-NE-1	7/12/2006	0.5-1.0	8.8	170	18	15	240	<1.2	0.32	770	0.11
4000 Collinsville Rd-DS-0.5	7/12/2006	0.1-0.5	7.9	150	8.6	18	130	<1.0	0.55	840	0.13
4000 Collinsville Rd-DZ-1	7/12/2006	0.5-1.0	8.1	170	17	13	100	<1.1	0.23	780	0.078
2539 N. 41st St-BY-1	7/13/2006	0.5-1.0	10	270	4	17	290	0.78	0.039	980	0.35
N. 48th-1	7/20/2006	0.5-1.0	**17**	320	61	24	**720**	0.92	1.4	3,600	0.18
N. 39th-SE-0.5	7/20/2006	0.1-0.5	13	250	20	27	**440**	1.2	0.55	1,600	0.13
N. 39th-SW-0.5	7/20/2006	0.1-0.5	9.2	250	10	18	310	<1.3	0.35	940	0.13
2339 N. 51st St-1	7/13/2006	0.5-1.0	**16**	260	30	18	**710**	1.4	1.4	3,100	0.41
Cookson-BK-1.5	9/20/2006	1.0-1.5	**25**	210	21	18	360	0.86	1.2	1,900	0.062
47th-FR-1.5	9/21/2006	1.0-1.5	6.8	140	6.8	14	22	0.78	0.12	1,500	0.025
Maryland-SW-0.5*	9/21/2006	0.1-0.5	**15**	190	**62.5**	13.5	390	1.1	1.1	1,450	0.14
Maryland-NE-1.0	9/21/2006	0.5-1.0	6.8	150	**44**	12	46	0.53	0.22	1,200	0.035
3800 Roselake-0.5	12/13/2006	0.1-0.5	8.0	220	9.2	16	94	1.3	0.27	510	0.040
3800 Roselake-1.5	12/13/2006	1.0-1.5	6.1	160	0.96	14	13	0.78	<0.58	140	0.019
5514 Kinder-SE-0.5	7/10/2006	0.1-0.5	**15**	350	17	20	300	0.93	0.58	740	0.330
5514 Kinder-NW-0.5	7/10/2006	0.1-0.5	8	170	13	12	110	0.56	0.38	610	0.079
5514 Kinder-NE-1.0	7/10/2006	0.5-1.0	9.8	160	12	13	68	0.86	0.12	440	0.038
5427 Kinder-NW-0.5	7/10/2006	0.1-0.5	12	230	20	18	190	2.0	0.43	760	0.032
5427 Kinder-NE-1.0	7/10/2006	0.5-1.0	12	240	**41**	16	**520**	1.3	0.82	1,800	0.130
5427 Kinder-SE-1.0	7/10/2006	0.5-1.0	7.3	180	9.3	13	93	0.41 B	0.24	490	0.073
5432 Maryland-DS-0.5	7/5/2006	0.1-0.5	9.8	190	14	18	100	1.3	0.28	470	0.100
5432 Maryland-FY-0.5	6/30/2006	0.1-0.5	11	180	21	15	150	1.1	0.37	630	0.071
5500 Maryland-FY-1.0	6/29/2006	0.5-1.0	13	200	24	14	91	0.85 B	0.26	700	0.062
5500 Maryland-BY-1.5	6/30/2006	1.0-1.5	7.9	210	6	17	38	1.6	<0.56	400	0.035
5507 Thomas-DZ-0.5	7/6/2006	0.1-0.5	9.6	180	16	17	110	1.1 B	0.59	780	0.240
5507 Thomas-DS-0.5	7/6/2006	0.1-0.5	9.1	180	14	14	100	0.96	0.25	810	0.140
5507 Thomas-NW-0.5	7/6/2006	0.1-0.5	**14**	190	19	17	150	1.7	0.47	620	0.080
5515 Thomas-DZ-0.5*	6/27/2006	0.1-0.5	9.15	170	7.2	11	143.5	0.64	0.255	635	0.077
5515 Thomas-BY-1*	6/27/2006	0.5-1.0	11.5	175	10	13.5	120	0.96	0.3	515	0.068
5515 Thomas-FY-2*	6/27/2006	1.0-2.0	8.6	150	4.65	11	19.5	0.545	<0.54	280	0.046
5510 Thomas-DS-0.5	7/11/2006	0.1-0.5	13	130	21	21	200	0.79	0.88	1,200	0.140
5510 Thomas-SW-0.5	7/11/2006	0.1-0.5	12	200	24	18	280	0.89	0.49	900	0.097
5510 Thomas-SE-1.5	7/11/2006	1.0-1.5	12	170	18	15	140	<1.1	0.34	690	0.140
5517 Delmar-NE-2	7/11/2006	1.5-2.0	**14**	260	14	26	220	0.58	0.63	630	0.200
5517 Delmar-SE-2	7/11/2006	1.5-2.0	**17**	940	**55**	24	**990**	0.94	0.62	6,800	0.084
5517 Delmar-GD-1.5	7/11/2006	1.0-1.5	**14**	170	9.9	14	220	0.75	0.54	950	0.180
5528 Delmar-DS-2	6/28/2006	1.0-2.0	13	180	21	18	180	1.1	0.38	790	0.077
5528 Delmar-FY-NE-1.5	6/28/2006	1.0-1.5	10	180	11	13	76	0.62	0.19	500	0.042
5528 Delmar-BY-SE-1	6/28/2006	0.5-1.0	12	150	8.6	11	53	<1.1	0.14	400	0.058
5508 Thomas-GR-0.5	6/29/2006	0.1-0.5	8.8	190	10	12	100	0.78	0.18	440	0.061
5508 Thomas-BY-0.5	6/29/2006	0.1-0.5	9.8	200	11	14	140	0.85	0.29	490	0.067
5508 Thomas-FY-1.0	6/29/2006	0.5-1.0	11	200	12	14	54	0.94	0.18	410	0.054

Underline indicates maximum concentration for a sample location; used to evaluate garden exposure pathway.

Table B-8b
Off-Facility Area Soil (Total) ProUCL Outpu
All Concentrations in mg/kg

Data File

Variable: Arsenic

Raw Statistics	
Number of Valid Samples	52
Number of Unique Samples	29
Minimum	5.5
Maximum	59
Mean	12.38269
Median	11
Standard Deviation	7.798076
Variance	60.80999
Coefficient of Variation	0.629756
Skewness	4.491651

Gamma Statistics	
k hat	5.1194
k star (bias corrected)	4.83687
Theta hat	2.418778
Theta star	2.560063
nu hat	532.4176
nu star	503.0345
Approx.Chi Square Value (.05)	452.013
Adjusted Level of Significance	0.045385
Adjusted Chi Square Value	450.6408

Log-transformed Statistics	
Minimum of log data	1.704748
Maximum of log data	4.077537
Mean of log data	2.415464
Standard Deviation of log data	0.404342
Variance of log data	0.163493

RECOMMENDATION
Data are Non-parametric (0.05)

Use Student's-t UCL
or Modified-t UCL

Normal Distribution Test	
Lilliefors Test Statisitic	0.244773
Lilliefors 5% Critical Value	0.122866
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	14.19434

Gamma Distribution Test	
A-D Test Statistic	1.943309
A-D 5% Critical Value	0.753515
K-S Test Statistic	0.167305
K-S 5% Critical Value	0.123452
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	13.7804
Adjusted Gamma UCL	13.82236

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.125034
Lilliefors 5% Critical Value	0.122866
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	13.46293
95% Chebyshev (MVUE) UCL	15.19215
97.5% Chebyshev (MVUE) UCL	16.51801
99% Chebyshev (MVUE) UCL	19.1224

95% Non-parametric UCLs	
CLT UCL	14.16143
Adj-CLT UCL (Adjusted for skewness)	14.88117
Mod-t UCL (Adjusted for skewness)	14.30661
Jackknife UCL	14.19434
Standard Bootstrap UCL	14.16543
Bootstrap-t UCL	15.85896
Hall's Bootstrap UCL	21.92925
Percentile Bootstrap UCL	14.20673
BCA Bootstrap UCL	15.25096
95% Chebyshev (Mean, Sd) UCL	17.0964
97.5% Chebyshev (Mean, Sd) UCL	19.13602
99% Chebyshev (Mean, Sd) UCL	23.14247

Table B-8b
Off-Facility Area Soil (Total) ProUCL Outpu
All Concentrations in mg/kg

Data File

Variable: Selenium

Raw Statistics	
Number of Valid Samples	52
Number of Unique Samples	32
Minimum	0.41
Maximum	2.3
Mean	0.928077
Median	0.855
Standard Deviation	0.39402
Variance	0.155252
Coefficient of Variation	0.424556
Skewness	1.423665

Gamma Statistics	
k hat	6.689981
k star (bias corrected)	6.316841
Theta hat	0.138726
Theta star	0.146921
nu hat	695.758
nu star	656.9515
Approx.Chi Square Value (.05)	598.4755
Adjusted Level of Significance	0.045385
Adjusted Chi Square Value	596.8926

Log-transformed Statistics	
Minimum of log data	-0.8916
Maximum of log data	0.832909
Mean of log data	-0.15124
Standard Deviation of log data	0.38638
Variance of log data	0.14929

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Approximate Gamma UCL

Normal Distribution Test	
Lilliefors Test Statisitic	0.160021
Lilliefors 5% Critical Value	0.122866
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	1.019616

Gamma Distribution Test	
A-D Test Statistic	0.711375
A-D 5% Critical Value	0.752349
K-S Test Statistic	0.106446
K-S 5% Critical Value	0.12334
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	1.018758
Adjusted Gamma UCL	1.021459

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.092236
Lilliefors 5% Critical Value	0.122866
Data are lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	1.021251
95% Chebyshev (MVUE) UCL	1.147514
97.5% Chebyshev (MVUE) UCL	1.243862
99% Chebyshev (MVUE) UCL	1.433121

95% Non-parametric UCLs	
CLT UCL	1.017953
Adj-CLT UCL (Adjusted for skewness)	1.02948
Mod-t UCL (Adjusted for skewness)	1.021414
Jackknife UCL	1.019616
Standard Bootstrap UCL	1.013061
Bootstrap-t UCL	1.035365
Hall's Bootstrap UCL	1.041943
Percentile Bootstrap UCL	1.013942
BCA Bootstrap UCL	1.030481
95% Chebyshev (Mean, Sd) UCL	1.166251
97.5% Chebyshev (Mean, Sd) UCL	1.269309
99% Chebyshev (Mean, Sd) UCL	1.471746

Table B-8b
Off-Facility Area Soil (Total) ProUCL Outpu
All Concentrations in mg/kg

Data File

Variable: Barium

Raw Statistics	
Number of Valid Samples	52
Number of Unique Samples	20
Minimum	130
Maximum	940
Mean	212.2115
Median	190
Standard Deviation	112.8656
Variance	12738.64
Coefficient of Variation	0.531854
Skewness	5.477454

Gamma Statistics	
k hat	7.943263
k star (bias corrected)	7.497818
Theta hat	26.71592
Theta star	28.30311
nu hat	826.0993
nu star	779.7731
Approx.Chi Square Value (.05)	715.9594
Adjusted Level of Significance	0.045385
Adjusted Chi Square Value	714.2257

Log-transformed Statistics	
Minimum of log data	4.867534
Maximum of log data	6.84588
Mean of log data	5.293319
Standard Deviation of log data	0.310976
Variance of log data	0.096706

RECOMMENDATION
Data are Non-parametric (0.05)

Use Student's-t UCL
or Modified-t UCL

Normal Distribution Test	
Lilliefors Test Statisitic	0.239844
Lilliefors 5% Critical Value	0.122866
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	238.4325

Gamma Distribution Test	
A-D Test Statistic	3.205441
A-D 5% Critical Value	0.751419
K-S Test Statistic	0.191511
K-S 5% Critical Value	0.123252
Data do not follow gamma distribution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	231.126
Adjusted Gamma UCL	231.687

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.166664
Lilliefors 5% Critical Value	0.122866
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	225.5505
95% Chebyshev (MVUE) UCL	248.6733
97.5% Chebyshev (MVUE) UCL	265.9877
99% Chebyshev (MVUE) UCL	299.9986

95% Non-parametric UCLs	
CLT UCL	237.9562
Adj-CLT UCL (Adjusted for skewness)	250.6595
Mod-t UCL (Adjusted for skewness)	240.414
Jackknife UCL	238.4325
Standard Bootstrap UCL	237.2591
Bootstrap-t UCL	269.0316
Hall's Bootstrap UCL	343.5865
Percentile Bootstrap UCL	239.8077
BCA Bootstrap UCL	252.7885
95% Chebyshev (Mean, Sd) UCL	280.4355
97.5% Chebyshev (Mean, Sd) UCL	309.956
99% Chebyshev (Mean, Sd) UCL	367.9434

Table B-8b
Off-Facility Area Soil (Total) ProUCL Outpu
All Concentrations in mg/kg

Data File

Variable: Silver

Raw Statistics	
Number of Valid Samples	52
Number of Unique Samples	39
Minimum	0.039
Maximum	11
Mean	0.692096
Median	0.345
Standard Deviation	1.516741
Variance	2.300504
Coefficient of Variation	2.191518
Skewness	6.423883

Gamma Statistics	
k hat	1.049781
k star (bias corrected)	1.002037
Theta hat	0.659277
Theta star	0.690689
nu hat	109.1772
nu star	104.2119
Approx.Chi Square Value (.05)	81.65106
Adjusted Level of Significance	0.045385
Adjusted Chi Square Value	81.08232

Log-transformed Statistics	
Minimum of log data	-3.24419
Maximum of log data	2.397895
Mean of log data	-0.91479
Standard Deviation of log data	0.862617
Variance of log data	0.744108

RECOMMENDATION
Data are lognormal (0.05)

Use H-UCL

Normal Distribution Test	
Lilliefors Test Statisitic	0.335365
Lilliefors 5% Critical Value	0.122866
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	1.044466

Gamma Distribution Test	
A-D Test Statistic	3.691071
A-D 5% Critical Value	0.778578
K-S Test Statistic	0.21583
K-S 5% Critical Value	0.126608
Data do not follow gamma distribution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	0.883328
Adjusted Gamma UCL	0.889524

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.108287
Lilliefors 5% Critical Value	0.122866
Data are lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	0.755075
95% Chebyshev (MVUE) UCL	0.917181
97.5% Chebyshev (MVUE) UCL	1.064988
99% Chebyshev (MVUE) UCL	1.355327

95% Non-parametric UCLs	
CLT UCL	1.038065
Adj-CLT UCL (Adjusted for skewness)	1.238275
Mod-t UCL (Adjusted for skewness)	1.075695
Jackknife UCL	1.044466
Standard Bootstrap UCL	1.035451
Bootstrap-t UCL	1.992418
Hall's Bootstrap UCL	2.346326
Percentile Bootstrap UCL	1.098442
BCA Bootstrap UCL	1.329404
95% Chebyshev (Mean, Sd) UCL	1.608922
97.5% Chebyshev (Mean, Sd) UCL	2.005633
99% Chebyshev (Mean, Sd) UCL	2.784895

Table B-8b
Off-Facility Area Soil (Total) ProUCL Outpu
All Concentrations in mg/kg

Data File

Variable: Cadmium

Raw Statistics	
Number of Valid Samples	52
Number of Unique Samples	34
Minimum	0.96
Maximum	62.5
Mean	17.24346
Median	14
Standard Deviation	13.57895
Variance	184.3879
Coefficient of Variation	0.787484
Skewness	1.949952

Gamma Statistics	
k hat	1.96149
k star (bias corrected)	1.861148
Theta hat	8.791001
Theta star	9.264961
nu hat	203.995
nu star	193.5594
Approx.Chi Square Value (.05)	162.3663
Adjusted Level of Significance	0.045385
Adjusted Chi Square Value	161.5541

Log-transformed Statistics	
Minimum of log data	-0.04082
Maximum of log data	4.135167
Mean of log data	2.571372
Standard Deviation of log data	0.801512
Variance of log data	0.642422

RECOMMENDATION
Assuming gamma distribution (0.05)

Use Approximate Gamma UCL

Normal Distribution Test	
Lilliefors Test Statisitic	0.21795
Lilliefors 5% Critical Value	0.122866
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	20.39813

Gamma Distribution Test	
A-D Test Statistic	0.714438
A-D 5% Critical Value	0.763256
K-S Test Statistic	0.127834
K-S 5% Critical Value	0.124784
Data follow approximate gamma distibution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	20.55619
Adjusted Gamma UCL	20.65954

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.127228
Lilliefors 5% Critical Value	0.122866
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	22.86267
95% Chebyshev (MVUE) UCL	27.61845
97.5% Chebyshev (MVUE) UCL	31.82548
99% Chebyshev (MVUE) UCL	40.08938

95% Non-parametric UCLs	
CLT UCL	20.34082
Adj-CLT UCL (Adjusted for skewness)	20.88491
Mod-t UCL (Adjusted for skewness)	20.48299
Jackknife UCL	20.39813
Standard Bootstrap UCL	20.28261
Bootstrap-t UCL	21.29464
Hall's Bootstrap UCL	21.41021
Percentile Bootstrap UCL	20.47346
BCA Bootstrap UCL	21.05673
95% Chebyshev (Mean, Sd) UCL	25.45154
97.5% Chebyshev (Mean, Sd) UCL	29.00318
99% Chebyshev (Mean, Sd) UCL	35.97969

Table B-8b
Off-Facility Area Soil (Total) ProUCL Outpu
All Concentrations in mg/kg

Data File

Variable: Zinc

Raw Statistics	
Number of Valid Samples	52
Number of Unique Samples	43
Minimum	140
Maximum	6800
Mean	1137.5
Median	765
Standard Deviation	1214.67
Variance	1475422
Coefficient of Variation	1.067841
Skewness	2.956112

Gamma Statistics	
k hat	1.695523
k star (bias corrected)	1.610525
Theta hat	670.8846
Theta star	706.2916
nu hat	176.3344
nu star	167.4946
Approx.Chi Square Value (.05)	138.5627
Adjusted Level of Significance	0.045385
Adjusted Chi Square Value	137.8143

Log-transformed Statistics	
Minimum of log data	4.941642
Maximum of log data	8.824678
Mean of log data	6.713587
Standard Deviation of log data	0.745637
Variance of log data	0.555974

RECOMMENDATION
Data are Non-parametric (0.05)

Use 95% Chebyshev (Mean, Sd) UCL

Normal Distribution Test	
Lilliefors Test Statisitic	0.275833
Lilliefors 5% Critical Value	0.122866
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	1419.692

Gamma Distribution Test	
A-D Test Statistic	2.456007
A-D 5% Critical Value	0.765739
K-S Test Statistic	0.192217
K-S 5% Critical Value	0.125114
Data do not follow gamma distribution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	1375.01
Adjusted Gamma UCL	1382.477

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.128045
Lilliefors 5% Critical Value	0.122866
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	1348.597
95% Chebyshev (MVUE) UCL	1618.893
97.5% Chebyshev (MVUE) UCL	1852.013
99% Chebyshev (MVUE) UCL	2309.931

95% Non-parametric UCLs	
CLT UCL	1414.566
Adj-CLT UCL (Adjusted for skewness)	1488.349
Mod-t UCL (Adjusted for skewness)	1431.201
Jackknife UCL	1419.692
Standard Bootstrap UCL	1416.457
Bootstrap-t UCL	1561.438
Hall's Bootstrap UCL	1534.692
Percentile Bootstrap UCL	1437.5
BCA Bootstrap UCL	1514.712
95% Chebyshev (Mean, Sd) UCL	1871.732
97.5% Chebyshev (Mean, Sd) UCL	2189.435
99% Chebyshev (Mean, Sd) UCL	2813.5

Table B-8b
Off-Facility Area Soil (Total) ProUCL Outpu
All Concentrations in mg/kg

Data File

Variable: Total Chromium

Raw Statistics	
Number of Valid Samples	52
Number of Unique Samples	17
Minimum	9.3
Maximum	27
Mean	16.23269
Median	16
Standard Deviation	4.084918
Variance	16.68656
Coefficient of Variation	0.251648
Skewness	0.76076

Gamma Statistics	
k hat	16.97514
k star (bias corrected)	16.00863
Theta hat	0.956262
Theta star	1.013996
nu hat	1765.415
nu star	1664.897
Approx.Chi Square Value (.05)	1571.113
Adjusted Level of Significance	0.045385
Adjusted Chi Square Value	1568.532

Log-transformed Statistics	
Minimum of log data	2.230014
Maximum of log data	3.295837
Mean of log data	2.757283
Standard Deviation of log data	0.244925
Variance of log data	0.059988

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Approximate Gamma UCL

Normal Distribution Test	
Lilliefors Test Statisitic	0.14033
Lilliefors 5% Critical Value	0.122866
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	17.1817

Gamma Distribution Test	
A-D Test Statistic	0.501673
A-D 5% Critical Value	0.7488
K-S Test Statistic	0.119101
K-S 5% Critical Value	0.122916
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	17.20167
Adjusted Gamma UCL	17.22997

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.108424
Lilliefors 5% Critical Value	0.122866
Data are lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	17.23248
95% Chebyshev (MVUE) UCL	18.65986
97.5% Chebyshev (MVUE) UCL	19.71251
99% Chebyshev (MVUE) UCL	21.78022

95% Non-parametric UCLs	
CLT UCL	17.16446
Adj-CLT UCL (Adjusted for skewness)	17.22832
Mod-t UCL (Adjusted for skewness)	17.19166
Jackknife UCL	17.1817
Standard Bootstrap UCL	17.14061
Bootstrap-t UCL	17.35612
Hall's Bootstrap UCL	17.26163
Percentile Bootstrap UCL	17.17885
BCA Bootstrap UCL	17.28077
95% Chebyshev (Mean, Sd) UCL	18.70191
97.5% Chebyshev (Mean, Sd) UCL	19.77034
99% Chebyshev (Mean, Sd) UCL	21.86906

Table B-8b
Off-Facility Area Soil (Total) ProUCL Outpu
All Concentrations in mg/kg

Data File

Variable: Mercury

Raw Statistics	
Number of Valid Samples	52
Number of Unique Samples	37
Minimum	0.019
Maximum	0.9
Mean	0.125462
Median	0.082
Standard Deviation	0.136465
Variance	0.018623
Coefficient of Variation	1.0877
Skewness	4.007374

Gamma Statistics	
k hat	1.748406
k star (bias corrected)	1.660357
Theta hat	0.071758
Theta star	0.075563
nu hat	181.8342
nu star	172.6771
Approx.Chi Square Value (.05)	143.2823
Adjusted Level of Significance	0.045385
Adjusted Chi Square Value	142.5209

Log-transformed Statistics	
Minimum of log data	-3.96332
Maximum of log data	-0.10536
Mean of log data	-2.38821
Standard Deviation of log data	0.747414
Variance of log data	0.558628

RECOMMENDATION
Data are lognormal (0.05)

Use H-UCL

Normal Distribution Test	
Lilliefors Test Statisitic	0.265271
Lilliefors 5% Critical Value	0.122866
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	0.157165

Gamma Distribution Test	
A-D Test Statistic	1.179115
A-D 5% Critical Value	0.765245
K-S Test Statistic	0.152245
K-S 5% Critical Value	0.125048
Data do not follow gamma distribution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	0.1512
Adjusted Gamma UCL	0.152008

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.093818
Lilliefors 5% Critical Value	0.122866
Data are lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	0.150623
95% Chebyshev (MVUE) UCL	0.180852
97.5% Chebyshev (MVUE) UCL	0.206943
99% Chebyshev (MVUE) UCL	0.258194

95% Non-parametric UCLs	
CLT UCL	0.156589
Adj-CLT UCL (Adjusted for skewness)	0.167826
Mod-t UCL (Adjusted for skewness)	0.158918
Jackknife UCL	0.157165
Standard Bootstrap UCL	0.15625
Bootstrap-t UCL	0.18321
Hall's Bootstrap UCL	0.292268
Percentile Bootstrap UCL	0.158212
BCA Bootstrap UCL	0.171442
95% Chebyshev (Mean, Sd) UCL	0.20795
97.5% Chebyshev (Mean, Sd) UCL	0.243643
99% Chebyshev (Mean, Sd) UCL	0.313755

Table B-8b
Off-Facility Area Soil (Total) ProUCL Outpu
All Concentrations in mg/kg

Data File

Variable: Lead

Raw Statistics	
Number of Valid Samples	52
Number of Unique Samples	44
Minimum	13
Maximum	3500
Mean	292.2596
Median	141.75
Standard Deviation	510.1463
Variance	260249.2
Coefficient of Variation	1.745524
Skewness	5.185916

Gamma Statistics	
k hat	0.911979
k star (bias corrected)	0.872185
Theta hat	320.4675
Theta star	335.0889
nu hat	94.8458
nu star	90.70726
Approx.Chi Square Value (.05)	69.74251
Adjusted Level of Significance	0.045385
Adjusted Chi Square Value	69.21873

Log-transformed Statistics	
Minimum of log data	2.564949
Maximum of log data	8.160518
Mean of log data	5.037657
Standard Deviation of log data	1.096437
Variance of log data	1.202174

RECOMMENDATION
Data are lognormal (0.05)

Use H-UCL

Normal Distribution Test	
Lilliefors Test Statisitic	0.292048
Lilliefors 5% Critical Value	0.122866
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	410.7769

Gamma Distribution Test	
A-D Test Statistic	1.354341
A-D 5% Critical Value	0.784477
K-S Test Statistic	0.139403
K-S 5% Critical Value	0.127242
Data do not follow gamma distribution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	380.1135
Adjusted Gamma UCL	382.9898

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.067523
Lilliefors 5% Critical Value	0.122866
Data are lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	406.6123
95% Chebyshev (MVUE) UCL	496.9949
97.5% Chebyshev (MVUE) UCL	592.571
99% Chebyshev (MVUE) UCL	780.3118

95% Non-parametric UCLs	
CLT UCL	408.6241
Adj-CLT UCL (Adjusted for skewness)	462.9863
Mod-t UCL (Adjusted for skewness)	419.2563
Jackknife UCL	410.7769
Standard Bootstrap UCL	407.1983
Bootstrap-t UCL	553.9823
Hall's Bootstrap UCL	864.3775
Percentile Bootstrap UCL	418.3173
BCA Bootstrap UCL	478.9519
95% Chebyshev (Mean, Sd) UCL	600.628
97.5% Chebyshev (Mean, Sd) UCL	734.0592
99% Chebyshev (Mean, Sd) UCL	996.1591

TABLE B-9a (No ProUCL output - Dataset <10)
Groundwater Data - Maximum Detections from 2006 and 2007 Sampling Events
Old American Zinc Plant Site, Fairmont City, Illinois
All concentrations in mg/L

Sample ID:	Total Arsenic	Total Barium	Total Cadmium	Total Chromium, total	Total Copper	Total Lead	Total Selenium	Total Silver	Total Zinc
MW-03	**0.0024**	**0.036**	**0.95**	**0.0024**	**0.0045**	**0.010**	0.005	**0.0012**	**225**
MW-05	**0.0024**	**0.099**	**0.036**	**0.0024**	**0.0063**	**0.010**	0.005	**0.0011**	**2.2**
MW-06	0.005	**0.14**	**0.0022**	**0.0018**	**0.0028**	0.0025	0.005	0.0025	**0.073**
MW-07	0.005	**0.12**	**0.0015**	**0.0036**	**0.0024**	0.0025	0.005	**0.0010**	**0.056**
P-01*	0.005	**0.13**	**3.4**	**0.0059**	**0.0057**	**0.044**	**0.0097**	0.0025	**64**
P-02*	0.005	**0.036**	**0.275**	0.005	0.005	**0.0033**	**0.0079**	**0.0021**	**10.35**
P-03	**0.012**	**0.032**	**0.40**	0.005	0.005	0.0025	**0.0060**	0.0012	**13**
Maximum	0.012	0.14	3.4	0.0059	0.0063	0.044	0.0097	0.0021	225
Average	0.005257143	0.08471429	0.723528571	0.003728571	0.00452857	0.010686	0.006228571	0.0016571	44.95414
Upgradient wells									
Sample ID:	Total Arsenic	Total Barium	Total Cadmium	Total Chromium, total	Total Copper	Total Lead	Total Selenium	Total Silver	Total Zinc
MW-24	**0.0045**	**0.15**	**0.038**	**0.0064**	**0.040**	**0.036**	0.005	**0.0014**	**1.2**
MW-29	**0.0033**	**0.10**	**0.11**	0.0055	**0.025**	**0.011**	**0.0048**	**0.0019**	**0.59**
MW-01	**0.0030**	**0.26**	**0.0099**	**0.0048**	**0.041**	**0.0065**	0.005	0.0025	**0.33**
MW-02	0.005	**0.11**	**0.00061**	**0.0018**	0.005	0.0025	0.005	0.0025	**0.029**
MW-04	**0.12**	**0.42**	**0.0032**	**0.0032**	0.005	**0.0035**	**0.006**	**0.0024**	**0.28**
Maximum	0.12	0.42	0.11	0.0064	0.041	0.036	0.006	0.0024	1.2
Average	0.02716	0.208	0.032342	0.00434	0.0232	0.0119	0.00516	0.00214	0.4858

* Duplicate sample was averaged.
Bold indicates detected concentrations; one-half the detection limit is presented for non-detects.
Maximum detections from 2006 and 2007 sampling events.

Table B-10a
Concentrations of 8 RCRA Metals and Zinc (mg/Kg) in Alleyway Samples
Old American Zinc Plant Site Remedial Investigation, March 2007
Fairmont City, Illinois

					(mg/Kg)								
				EPA Region IX Residential PRGS	0.39	5,400	37	210	400	390	390	23,000	23
				Ill. Background	13	110	0.6	19.6	36	0.48	0.55	95	0.060
					Laboratory Analytical Results (mg/Kg)								
Alleyway Transect	Sample ID	Sample Date	Depth Interval (ft)	Fine-Fraction	Arsenic	Barium	Cadmium	Total Chromium	Lead	Selenium	Silver	Zinc	Mercury
AT1	OS-AT1-0.1	3/27/2007	0.0-0.1	√	8.3	230	9.9	30	210	0.66 J	0.80	1,200 B	0.065
	OS-AT1-NA-0.5	3/27/2007	0.1-0.5		7	120	5.2	13	140	0.59 J	1.3	600 B	0.016 J
	OS-AT1-SB-1.0	3/27/2007	0.5-1.0		20	85	43	31	300	2.0	1.5	2,100 B, V	0.100
AT2	OS-AT2-0.1	3/27/2007	0.0-0.1	√	14	210	13	31	760	<1.0	2.1	1,600 B	0.061
	OS-AT2-SB-0.5	3/27/2007	0.1-0.5		65	150	17	15	6,600	2.0	18	11,000 B	0.075
	OS-AT2-NA-4.0	3/27/2007	3.0-4.0		6.4	180	0.69	10	9.4	0.63 J	<0.55	320 B	0.021
AT3	OS-AT3-0.1	3/28/2007	0.0-0.1	√	9.4	200	12	34	260	0.72 J	1.1	880 B	0.056
	OS-AT3-SC-2.0	3/27/2007	1.0-2.0		7.8	680	6.1	16	280	0.90 J	0.24 J	1,900 B	0.068
	OS-AT3-NC-2.0	3/27/2007	1.0-2.0		6.1	250	<0.22	12	9.4	0.62 J	<0.54	55 B	0.012 J
AT4	OS-AT4-0.1	3/28/2007	0.0-0.1	√	17	190	11	75	220	0.71 J	2.1	1,100 B	0.071
	OS-AT4-B-1.0	3/27/2007	0.5-1.0		30	250	8.5	120	370	2.8	11	1,700 B	0.110
	OS-AT4-C-1.0	3/27/2007	0.5-1.0		15	330	12	14	430	1.8	1.3	1,100 B	0.047
AT5	OS-AT5-0.1	3/28/2007	0.0-0.1	√	25	420	26	32	460	1.5	1.3	2,300 B	0.170
	OS-AT5-A-3.0	3/27/2007	2.0-3.0		4.5	120	0.24 J	12	13	0.68 J	<0.64	72 B	0.015 J
	OS-AT5-B-2.0	3/28/2007	1.0-2.0		7.2	120	1.8	18	15	0.71 J	<0.69	570	0.044
AT6	OS-AT6-0.1	3/28/2007	0.0-0.1	√	26	300	29	43	630	1.2 J	4.6	6,600 B	0.190
	OS-AT6-B-2.0	3/27/2007	1.0-2.0		6.5	180	2.9	11	9.6	0.83 J	<0.59	230 B	<0.021
	OS-AT6-B-2.0/FD	3/27/2007	1.0-2.0		7.1	170	4.4	12	11	<1.2	<0.60	270 V	0.018 J
	OS-AT6-C-0.5	3/27/2007	0.0-0.5		18	230	15	21	290	1.7	4.3	2,500 B	0.100
AT7	OS-AT7-0.1	3/28/2007	0.0-0.1	√	9.1	170	10	24	240	0.93 J	0.87	1,100 B	0.044
	OS-AT7-A-1.0	3/27/2007	0.5-1.0		16	100	9.5	11	240	1.3	0.93	1,200 B	0.036
	OS-AT7-B-3.0	3/27/2007	2.0-3.0		5.9	240	<0.25	15	13	1.2 J	<0.62	62 B	0.032
	OS-AT7-B-3.0/FD	3/27/2007	2.0-3.0		6.2	180	0.14 J	17	14	0.53 J	<0.62	72	0.021 J
AT8	OS-AT8-0.1	3/28/2007	0.0-0.1	√	6.7	170	4.5	22	110	0.61 J	0.58 J	980 B	0.030
	OS-AT8-W-2.0	3/26/2007	1.0-2.0		8.5	180	13	15	26	1.4	<0.59	1,400 B	0.030
	OS-AT8-C-1.0	3/26/2007	0.5-1.0		18	140	15	12	810	1.8	2.3	2,900 B	0.098

B - compound was found in the blank and sample
J - result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value
V - serial dilution exceeds the control limits
Red BOLD values indicate the value exceeds EPA Region IX PRG for residential direct contact

Table B-10b
Alleyway Soil (Total) ProUCL Output
All Concentrations in mg/kg

Data File

Variable: Arsenic

Raw Statistics	
Number of Valid Samples	16
Number of Unique Samples	14
Minimum	4.5
Maximum	65
Mean	15.15
Median	8.15
Standard Deviation	15.04978
Variance	226.496
Coefficient of Variation	0.993385
Skewness	2.718782

Gamma Statistics	
k hat	1.870892
k star (bias corrected)	1.561766
Theta hat	8.097742
Theta star	9.700554
nu hat	59.86854
nu star	49.97653
Approx.Chi Square Value (.05)	34.7419
Adjusted Level of Significance	0.03348
Adjusted Chi Square Value	33.29868

Log-transformed Statistics	
Minimum of log data	1.504077
Maximum of log data	4.174387
Mean of log data	2.427547
Standard Deviation of log data	0.721801
Variance of log data	0.520996

RECOMMENDATION
Data are lognormal (0.05)

Use H-UCL

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.655928
Shapiro-Wilk 5% Critical Value	0.887
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	21.74576

Gamma Distribution Test	
A-D Test Statistic	0.997951
A-D 5% Critical Value	0.751419
K-S Test Statistic	0.241761
K-S 5% Critical Value	0.218136
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	21.7934
Adjusted Gamma UCL	22.73797

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.893983
Shapiro-Wilk 5% Critical Value	0.887
Data are lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	22.63454
95% Chebyshev (MVUE) UCL	26.43709
97.5% Chebyshev (MVUE) UCL	31.63842
99% Chebyshev (MVUE) UCL	41.85543

95% Non-parametric UCLs	
CLT UCL	21.33867
Adj-CLT UCL (Adjusted for skewness)	24.0712
Mod-t UCL (Adjusted for skewness)	22.17198
Jackknife UCL	21.74576
Standard Bootstrap UCL	21.17255
Bootstrap-t UCL	29.18545
Hall's Bootstrap UCL	47.51166
Percentile Bootstrap UCL	21.45625
BCA Bootstrap UCL	24.2625
95% Chebyshev (Mean, Sd) UCL	31.55012
97.5% Chebyshev (Mean, Sd) UCL	38.64647
99% Chebyshev (Mean, Sd) UCL	52.58587

Table B-10b
Alleyway Soil (Total) ProUCL Output
All Concentrations in mg/kg

Data File

Variable: Selenium

Raw Statistics	
Number of Valid Samples	16
Number of Unique Samples	14
Minimum	0.59
Maximum	2.8
Mean	1.289063
Median	1.1
Standard Deviation	0.664134
Variance	0.441074
Coefficient of Variation	0.515207
Skewness	0.761083

Gamma Statistics	
k hat	4.211617
k star (bias corrected)	3.463606
Theta hat	0.306073
Theta star	0.372174
nu hat	134.7718
nu star	110.8354
Approx.Chi Square Value (.05)	87.52982
Adjusted Level of Significance	0.03348
Adjusted Chi Square Value	85.17373

Log-transformed Statistics	
Minimum of log data	-0.527633
Maximum of log data	1.029619
Mean of log data	0.130524
Standard Deviation of log data	0.51357
Variance of log data	0.263755

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Approximate Gamma UCL

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.884196
Shapiro-Wilk 5% Critical Value	0.887
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	1.580128

Gamma Distribution Test	
A-D Test Statistic	0.661258
A-D 5% Critical Value	0.741784
K-S Test Statistic	0.201272
K-S 5% Critical Value	0.216056
Data follow gamma distribution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	1.632286
Adjusted Gamma UCL	1.677439

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.90773
Shapiro-Wilk 5% Critical Value	0.887
Data are lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	1.710458
95% Chebyshev (MVUE) UCL	2.033103
97.5% Chebyshev (MVUE) UCL	2.355407
99% Chebyshev (MVUE) UCL	2.988511

95% Non-parametric UCLs	
CLT UCL	1.562163
Adj-CLT UCL (Adjusted for skewness)	1.595919
Mod-t UCL (Adjusted for skewness)	1.585393
Jackknife UCL	1.580128
Standard Bootstrap UCL	1.548525
Bootstrap-t UCL	1.626815
Hall's Bootstrap UCL	1.608525
Percentile Bootstrap UCL	1.5525
BCA Bootstrap UCL	1.58875
95% Chebyshev (Mean, Sd) UCL	2.012786
97.5% Chebyshev (Mean, Sd) UCL	2.325941
99% Chebyshev (Mean, Sd) UCL	2.941075

Table B-10b
Alleyway Soil (Total) ProUCL Output
All Concentrations in mg/kg

Data File

Variable: Barium

Raw Statistics	
Number of Valid Samples	16
Number of Unique Samples	12
Minimum	85
Maximum	680
Mean	207.5
Median	177.5
Standard Deviation	141.9742
Variance	20156.67
Coefficient of Variation	0.684213
Skewness	2.711061

Gamma Statistics	
k hat	3.637217
k star (bias corrected)	2.996906
Theta hat	57.04911
Theta star	69.23808
nu hat	116.391
nu star	95.90099
Approx.Chi Square Value (.05)	74.30914
Adjusted Level of Significance	0.03348
Adjusted Chi Square Value	72.14721

Log-transformed Statistics	
Minimum of log data	4.442651
Maximum of log data	6.522093
Mean of log data	5.191411
Standard Deviation of log data	0.512022
Variance of log data	0.262166

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Approximate Gamma UCL

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.697756
Shapiro-Wilk 5% Critical Value	0.887
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	269.722

Gamma Distribution Test	
A-D Test Statistic	0.628785
A-D 5% Critical Value	0.742774
K-S Test Statistic	0.169666
K-S 5% Critical Value	0.216322
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	267.7928
Adjusted Gamma UCL	275.8174

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.935244
Shapiro-Wilk 5% Critical Value	0.887
Data are lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	269.2959
95% Chebyshev (MVUE) UCL	320.0721
97.5% Chebyshev (MVUE) UCL	370.7098
99% Chebyshev (MVUE) UCL	470.1778

95% Non-parametric UCLs	
CLT UCL	265.8817
Adj-CLT UCL (Adjusted for skewness)	291.5862
Mod-t UCL (Adjusted for skewness)	273.7313
Jackknife UCL	269.722
Standard Bootstrap UCL	265.7269
Bootstrap-t UCL	339.2384
Hall's Bootstrap UCL	524.1431
Percentile Bootstrap UCL	270.3125
BCA Bootstrap UCL	294.6875
95% Chebyshev (Mean, Sd) UCL	362.2128
97.5% Chebyshev (Mean, Sd) UCL	429.1571
99% Chebyshev (Mean, Sd) UCL	560.6563

Table B-10b
Alleyway Soil (Total) ProUCL Output
All Concentrations in mg/kg

Data File

Variable: Silver

Raw Statistics	
Number of Valid Samples	16
Number of Unique Samples	14
Minimum	0.24
Maximum	18
Mean	2.68625
Median	0.6375
Standard Deviation	4.9025
Variance	24.03451
Coefficient of Variation	1.825035
Skewness	2.617507

Gamma Statistics	
k hat	0.577479
k star (bias corrected)	0.510869
Theta hat	4.651682
Theta star	5.258201
nu hat	18.47934
nu star	16.3478
Approx.Chi Square Value (.05)	8.206825
Adjusted Level of Significance	0.03348
Adjusted Chi Square Value	7.557154

Log-transformed Statistics	
Minimum of log data	-1.427116
Maximum of log data	2.890372
Mean of log data	-0.0879
Standard Deviation of log data	1.397854
Variance of log data	1.953997

RECOMMENDATION
Data are Non-parametric (0.05)

Use 99% Chebyshev (Mean, Sd) UCL

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.56377
Shapiro-Wilk 5% Critical Value	0.887
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	4.834832

Gamma Distribution Test	
A-D Test Statistic	1.514628
A-D 5% Critical Value	0.789578
K-S Test Statistic	0.256824
K-S 5% Critical Value	0.225967
Data do not follow gamma distribution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	5.350945
Adjusted Gamma UCL	5.810953

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.844762
Shapiro-Wilk 5% Critical Value	0.887
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	8.236996
95% Chebyshev (MVUE) UCL	6.012236
97.5% Chebyshev (MVUE) UCL	7.665899
99% Chebyshev (MVUE) UCL	10.9142

95% Non-parametric UCLs	
CLT UCL	4.702224
Adj-CLT UCL (Adjusted for skewness)	5.559194
Mod-t UCL (Adjusted for skewness)	4.968502
Jackknife UCL	4.834832
Standard Bootstrap UCL	4.676622
Bootstrap-t UCL	10.7513
Hall's Bootstrap UCL	13.02305
Percentile Bootstrap UCL	4.810938
BCA Bootstrap UCL	5.674063
95% Chebyshev (Mean, Sd) UCL	8.028625
97.5% Chebyshev (Mean, Sd) UCL	10.34028
99% Chebyshev (Mean, Sd) UCL	14.88106

Table B-10b
Alleyway Soil (Total) ProUCL Output
All Concentrations in mg/kg

Data File

Variable: Cadmium

Raw Statistics	
Number of Valid Samples	16
Number of Unique Samples	15
Minimum	0.11
Maximum	43
Mean	9.433125
Median	7.3
Standard Deviation	10.71179
Variance	114.7424
Coefficient of Variation	1.13555
Skewness	2.160409

Gamma Statistics	
k hat	0.647929
k star (bias corrected)	0.568109
Theta hat	14.55888
Theta star	16.60442
nu hat	20.73374
nu star	18.1795
Approx.Chi Square Value (.05)	9.519326
Adjusted Level of Significance	0.03348
Adjusted Chi Square Value	8.812327

Log-transformed Statistics	
Minimum of log data	-2.207275
Maximum of log data	3.7612
Mean of log data	1.301226
Standard Deviation of log data	1.845237
Variance of log data	3.404899

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Approximate Gamma UCL

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.773615
Shapiro-Wilk 5% Critical Value	0.887
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	14.1277

Gamma Distribution Test	
A-D Test Statistic	0.433377
A-D 5% Critical Value	0.783429
K-S Test Statistic	0.132749
K-S 5% Critical Value	0.224845
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	18.01488
Adjusted Gamma UCL	19.46018

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.874764
Shapiro-Wilk 5% Critical Value	0.887
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	149.0537
95% Chebyshev (MVUE) UCL	53.6673
97.5% Chebyshev (MVUE) UCL	69.95901
99% Chebyshev (MVUE) UCL	101.9609

95% Non-parametric UCLs	
CLT UCL	13.83796
Adj-CLT UCL (Adjusted for skewness)	15.38342
Mod-t UCL (Adjusted for skewness)	14.36876
Jackknife UCL	14.1277
Standard Bootstrap UCL	13.69384
Bootstrap-t UCL	16.67421
Hall's Bootstrap UCL	33.75678
Percentile Bootstrap UCL	14.01688
BCA Bootstrap UCL	15.48438
95% Chebyshev (Mean, Sd) UCL	21.10603
97.5% Chebyshev (Mean, Sd) UCL	26.1569
99% Chebyshev (Mean, Sd) UCL	36.07836

Table B-10b
Alleyway Soil (Total) ProUCL Output
All Concentrations in mg/kg

Data File

Variable: Zinc

Raw Statistics	
Number of Valid Samples	16
Number of Unique Samples	16
Minimum	55
Maximum	11000
Mean	1733.375
Median	1150
Standard Deviation	2632.731
Variance	6931272
Coefficient of Variation	1.518847
Skewness	3.232966

Gamma Statistics	
k hat	0.703875
k star (bias corrected)	0.613565
Theta hat	2462.616
Theta star	2825.086
nu hat	22.52401
nu star	19.6341
Approx.Chi Square Value (.05)	10.58038
Adjusted Level of Significance	0.03348
Adjusted Chi Square Value	9.82979

Log-transformed Statistics	
Minimum of log data	4.007333
Maximum of log data	9.305651
Mean of log data	6.599891
Standard Deviation of log data	1.506538
Variance of log data	2.269656

RECOMMENDATION
Data follow gamma distribution (0.05)

Use Approximate Gamma UCL

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.589421
Shapiro-Wilk 5% Critical Value	0.887
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	2887.202

Gamma Distribution Test	
A-D Test Statistic	0.363289
A-D 5% Critical Value	0.778546
K-S Test Statistic	0.132712
K-S 5% Critical Value	0.223954
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	3216.639
Adjusted Gamma UCL	3462.256

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.935972
Shapiro-Wilk 5% Critical Value	0.887
Data are lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	9180.085
95% Chebyshev (MVUE) UCL	5817.031
97.5% Chebyshev (MVUE) UCL	7464.62
99% Chebyshev (MVUE) UCL	10700.99

95% Non-parametric UCLs	
CLT UCL	2815.989
Adj-CLT UCL (Adjusted for skewness)	3384.408
Mod-t UCL (Adjusted for skewness)	2975.864
Jackknife UCL	2887.202
Standard Bootstrap UCL	2751.797
Bootstrap-t UCL	4507.701
Hall's Bootstrap UCL	7052.402
Percentile Bootstrap UCL	2913
BCA Bootstrap UCL	3519.438
95% Chebyshev (Mean, Sd) UCL	4602.327
97.5% Chebyshev (Mean, Sd) UCL	5843.725
99% Chebyshev (Mean, Sd) UCL	8282.21

Table B-10b
Alleyway Soil (Total) ProUCL Output
All Concentrations in mg/kg

Data File

Variable: Total Chromium

Raw Statistics	
Number of Valid Samples	16
Number of Unique Samples	12
Minimum	10
Maximum	120
Mean	21.71875
Median	14.5
Standard Deviation	26.69705
Variance	712.7323
Coefficient of Variation	1.229217
Skewness	3.769117

Gamma Statistics	
k hat	1.9975
k star (bias corrected)	1.664636
Theta hat	10.87296
Theta star	13.04715
nu hat	63.92001
nu star	53.26834
Approx.Chi Square Value (.05)	37.49836
Adjusted Level of Significance	0.03348
Adjusted Chi Square Value	35.99475

Log-transformed Statistics	
Minimum of log data	2.302585
Maximum of log data	4.787492
Mean of log data	2.80745
Standard Deviation of log data	0.597415
Variance of log data	0.356905

RECOMMENDATION
Data are Non-parametric (0.05)

Use 95% Chebyshev (Mean, Sd) UCL

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.418301
Shapiro-Wilk 5% Critical Value	0.887
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	33.41907

Gamma Distribution Test	
A-D Test Statistic	2.584318
A-D 5% Critical Value	0.750302
K-S Test Statistic	0.318917
K-S 5% Critical Value	0.217875
Data do not follow gamma distribution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	30.85259
Adjusted Gamma UCL	32.1414

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.680041
Shapiro-Wilk 5% Critical Value	0.887
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	27.6436
95% Chebyshev (MVUE) UCL	32.83603
97.5% Chebyshev (MVUE) UCL	38.58351
99% Chebyshev (MVUE) UCL	49.87332

95% Non-parametric UCLs	
CLT UCL	32.69693
Adj-CLT UCL (Adjusted for skewness)	39.41684
Mod-t UCL (Adjusted for skewness)	34.46724
Jackknife UCL	33.41907
Standard Bootstrap UCL	32.12959
Bootstrap-t UCL	95.6774
Hall's Bootstrap UCL	77.24282
Percentile Bootstrap UCL	34.3125
BCA Bootstrap UCL	42.4375
95% Chebyshev (Mean, Sd) UCL	50.81118
97.5% Chebyshev (Mean, Sd) UCL	63.3995
99% Chebyshev (Mean, Sd) UCL	88.12681

Table B-10b
Alleyway Soil (Total) ProUCL Output
All Concentrations in mg/kg

Data File

Variable: Mercury

Raw Statistics	
Number of Valid Samples	16
Number of Unique Samples	15
Minimum	0.012
Maximum	0.11
Mean	0.051063
Median	0.04
Standard Deviation	*0.035303*
Variance	0.001246
Coefficient of Variation	0.691376
Skewness	0.555983

Gamma Statistics	
k hat	2.111997
k star (bias corrected)	1.757664
Theta hat	0.024177
Theta star	0.029051
nu hat	67.58391
nu star	56.24526
Approx.Chi Square Value (.05)	40.00533
Adjusted Level of Significance	0.03348
Adjusted Chi Square Value	38.44869

Log-transformed Statistics	
Minimum of log data	-4.422849
Maximum of log data	-2.207275
Mean of log data	-3.229748
Standard Deviation of log data	0.764536
Variance of log data	0.584515

RECOMMENDATION
Data follow gamma distribution (0.05)

Use Approximate Gamma UCL

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.866847
Shapiro-Wilk 5% Critical Value	0.887
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	0.066535

Gamma Distribution Test	
A-D Test Statistic	0.526816
A-D 5% Critical Value	0.749611
K-S Test Statistic	0.149837
K-S 5% Critical Value	0.217734
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	0.071791
Adjusted Gamma UCL	0.074698

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.921543
Shapiro-Wilk 5% Critical Value	0.887
Data are lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	*0.084642*
95% Chebyshev (MVUE) UCL	0.097839
97.5% Chebyshev (MVUE) UCL	0.117753
99% Chebyshev (MVUE) UCL	0.156868

95% Non-parametric UCLs	
CLT UCL	0.06558
Adj-CLT UCL (Adjusted for skewness)	0.066891
Mod-t UCL (Adjusted for skewness)	0.066739
Jackknife UCL	0.066535
Standard Bootstrap UCL	0.065443
Bootstrap-t UCL	0.067728
Hall's Bootstrap UCL	0.064923
Percentile Bootstrap UCL	0.065563
BCA Bootstrap UCL	0.06675
95% Chebyshev (Mean, Sd) UCL	0.089533
97.5% Chebyshev (Mean, Sd) UCL	0.10618
99% Chebyshev (Mean, Sd) UCL	0.138879

Table B-10b
Alleyway Soil (Total) ProUCL Output
All Concentrations in mg/kg

Data File

Variable: Lead

Raw Statistics	
Number of Valid Samples	16
Number of Unique Samples	15
Minimum	9.4
Maximum	6600
Mean	597.2875
Median	190
Standard Deviation	1615.778
Variance	2610740
Coefficient of Variation	2.705194
Skewness	3.877219

Gamma Statistics	
k hat	0.363346
k star (bias corrected)	0.336885
Theta hat	1643.854
Theta star	1772.971
nu hat	11.62707
nu star	10.78032
Approx.Chi Square Value (.05)	4.434253
Adjusted Level of Significance	0.03348
Adjusted Chi Square Value	3.980564

Log-transformed Statistics	
Minimum of log data	2.24071
Maximum of log data	8.794825
Mean of log data	4.552952
Standard Deviation of log data	1.998986
Variance of log data	3.995946

RECOMMENDATION
Assuming gamma distribution (0.05)

Use Adjusted Gamma UCL

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.379829
Shapiro-Wilk 5% Critical Value	0.887
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	1305.423

Gamma Distribution Test	
A-D Test Statistic	1.24114
A-D 5% Critical Value	0.824696
K-S Test Statistic	0.229376
K-S 5% Critical Value	0.231122
Data follow approximate gamma distibution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	1452.094
Adjusted Gamma UCL	1617.598

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.881246
Shapiro-Wilk 5% Critical Value	0.887
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	7109.437
95% Chebyshev (MVUE) UCL	1856.586
97.5% Chebyshev (MVUE) UCL	2433.434
99% Chebyshev (MVUE) UCL	3566.538

95% Non-parametric UCLs	
CLT UCL	1261.717
Adj-CLT UCL (Adjusted for skewness)	1680.089
Mod-t UCL (Adjusted for skewness)	1370.68
Jackknife UCL	1305.423
Standard Bootstrap UCL	1232.855
Bootstrap-t UCL	5344.335
Hall's Bootstrap UCL	4234.346
Percentile Bootstrap UCL	1396
BCA Bootstrap UCL	1800.794
95% Chebyshev (Mean, Sd) UCL	2358.041
97.5% Chebyshev (Mean, Sd) UCL	3119.921
99% Chebyshev (Mean, Sd) UCL	4616.486

Table B-10c
Alleyway Soil (Total) ProUCL Output
All Concentrations in mg/kg

General UCL Statistics for Full Data Sets

User Selected Options	
From File	WorkSheet.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

arsenic

General Statistics			
Number of Valid Samples	8	Number of Unique Samples	8
Raw Statistics		Log-transformed Statistics	
Minimum	6.7	Minimum of Log Data	1.902
Maximum	26	Maximum of Log Data	3.258
Mean	14.44	Mean of log Data	2.552
Median	11.7	SD of log Data	0.515
SD	7.592		
Coefficient of Variation	0.526		
Skewness	0.769		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.858	Shapiro Wilk Test Statistic	0.911
Shapiro Wilk Critical Value	0.818	Shapiro Wilk Critical Value	0.818
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	19.52	95% H-UCL	23.43
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	25.94
95% Adjusted-CLT UCL	19.63	97.5% Chebyshev (MVUE) UCL	30.93
95% Modified-t UCL	19.64	99% Chebyshev (MVUE) UCL	40.74
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	2.837	*Data appear Normal at 5% Significance Level*	
Theta Star	5.089		
nu star	45.39		
Approximate Chi Square Value (.05)	30.94	Nonparametric Statistics	
Adjusted Level of Significance	0.0195	95% CLT UCL	18.85
Adjusted Chi Square Value	27.95	95% Jackknife UCL	19.52
		95% Standard Bootstrap UCL	18.41
Anderson-Darling Test Statistic	0.44	95% Bootstrap-t UCL	21.77
Anderson-Darling 5% Critical Value	0.719	95% Hall's Bootstrap UCL	20.46
Kolmogorov-Smirnov Test Statistic	0.25	95% Percentile Bootstrap UCL	18.79
Kolmogorov-Smirnov 5% Critical Value	0.295	95% BCA Bootstrap UCL	19.11
Data appear Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	26.14
		97.5% Chebyshev(Mean, Sd) UCL	31.2
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	41.14
95% Approximate Gamma UCL	21.18		
95% Adjusted Gamma UCL	23.45		
Potential UCL to Use		Use 95% Student's-t UCL	19.52

Table B-10c
Alleyway Soil (Total) ProUCL Output
All Concentrations in mg/kg

General UCL Statistics for Full Data Sets

User Selected Options	
From File	WorkSheet.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

barium

General Statistics			
Number of Valid Samples	8	Number of Unique Samples	7
Raw Statistics		Log-transformed Statistics	
Minimum	170	Minimum of Log Data	5.136
Maximum	420	Maximum of Log Data	6.04
Mean	236.3	Mean of log Data	5.418
Median	205	SD of log Data	0.311
SD	85.18		
Coefficient of Variation	0.361		
Skewness	1.762		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.787	Shapiro Wilk Test Statistic	0.86
Shapiro Wilk Critical Value	0.818	Shapiro Wilk Critical Value	0.818
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		*Assuming Lognormal Distribution*	
95% Student's-t UCL	293.3	95% H-UCL	302.6
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	348.4
95% Adjusted-CLT UCL	305.8	97.5% Chebyshev (MVUE) UCL	397.4
95% Modified-t UCL	296.4	99% Chebyshev (MVUE) UCL	493.6
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	6.889	Data appear Gamma Distributed at 5% Significance Level	
Theta Star	34.29		
nu star	110.2		
Approximate Chi Square Value (.05)	86.99	Nonparametric Statistics	
Adjusted Level of Significance	0.0195	95% CLT UCL	285.8
Adjusted Chi Square Value	81.78	95% Jackknife UCL	293.3
		95% Standard Bootstrap UCL	282.5
Anderson-Darling Test Statistic	0.609	95% Bootstrap-t UCL	397
Anderson-Darling 5% Critical Value	0.715	95% Hall's Bootstrap UCL	555.1
Kolmogorov-Smirnov Test Statistic	0.245	95% Percentile Bootstrap UCL	286.3
Kolmogorov-Smirnov 5% Critical Value	0.294	95% BCA Bootstrap UCL	300
Data appear Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	367.5
		97.5% Chebyshev(Mean, Sd) UCL	424.3
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	535.9
95% Approximate Gamma UCL	299.3		
95% Adjusted Gamma UCL	318.4		
Potential UCL to Use		Use 95% Approximate Gamma UCL	299.3

Table B-10c
Alleyway Soil (Total) ProUCL Output
All Concentrations in mg/kg

General UCL Statistics for Full Data Sets

User Selected Options	
From File	WorkSheet.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

cadmium

General Statistics

Number of Valid Samples	8	*Number of Unique Samples*	8

Raw Statistics		Log-transformed Statistics	
Minimum	4.5	Minimum of Log Data	1.504
Maximum	29	Maximum of Log Data	3.367
Mean	14.43	Mean of log Data	2.522
Median	11.5	SD of log Data	0.587
SD	8.49		
Coefficient of Variation	0.589		
Skewness	1.068		

Relevant UCL Statistics

Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.833	Shapiro Wilk Test Statistic	0.913
Shapiro Wilk Critical Value	0.818	Shapiro Wilk Critical Value	0.818
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	20.11	95% H-UCL	26.01
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	27.67
95% Adjusted-CLT UCL	20.57	97.5% Chebyshev (MVUE) UCL	33.39
95% Modified-t UCL	20.3	99% Chebyshev (MVUE) UCL	44.63

Gamma Distribution Test		Data Distribution	
k star (bias corrected)	2.302	Data appear Normal at 5% Significance Level	
Theta Star	6.267		
nu star	36.83		
Approximate Chi Square Value (.05)	23.94	Nonparametric Statistics	
Adjusted Level of Significance	0.0195	95% CLT UCL	19.36
Adjusted Chi Square Value	21.35	95% Jackknife UCL	20.11
		95% Standard Bootstrap UCL	19.03
Anderson-Darling Test Statistic	0.523	95% Bootstrap-t UCL	28.52
Anderson-Darling 5% Critical Value	0.72	95% Hall's Bootstrap UCL	67.39
Kolmogorov-Smirnov Test Statistic	0.255	95% Percentile Bootstrap UCL	19.24
Kolmogorov-Smirnov 5% Critical Value	0.296	95% BCA Bootstrap UCL	19.81
Data appear Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	27.51
		97.5% Chebyshev(Mean, Sd) UCL	33.17
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	44.29
95% Approximate Gamma UCL	22.19		
95% Adjusted Gamma UCL	24.89		

Potential UCL to Use	Use 95% Student's-t UCL	20.11

Table B-10c
Alleyway Soil (Total) ProUCL Output
All Concentrations in mg/kg

General UCL Statistics for Full Data Sets

User Selected Options	
From File	WorkSheet.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

chromium

General Statistics			
Number of Valid Samples	8	Number of Unique Samples	8
Raw Statistics		Log-transformed Statistics	
Minimum	22	Minimum of Log Data	3.091
Maximum	75	Maximum of Log Data	4.317
Mean	36.38	Mean of log Data	3.522
Median	31.5	SD of log Data	0.382
SD	16.86		
Coefficient of Variation	0.464		
Skewness	2.088		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.758	Shapiro Wilk Test Statistic	0.886
Shapiro Wilk Critical Value	0.818	Shapiro Wilk Critical Value	0.818
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	47.67	95% H-UCL	49.93
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	57.4
95% Adjusted-CLT UCL	50.88	97.5% Chebyshev (MVUE) UCL	66.64
95% Modified-t UCL	48.4	99% Chebyshev (MVUE) UCL	84.78
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	4.525	Data appear Gamma Distributed at 5% Significance Level	
Theta Star	8.038		
nu star	72.4		
Approximate Chi Square Value (.05)	53.81	Nonparametric Statistics	
Adjusted Level of Significance	0.0195	95% CLT UCL	46.18
Adjusted Chi Square Value	49.78	95% Jackknife UCL	47.67
		95% Standard Bootstrap UCL	45.53
Anderson-Darling Test Statistic	0.594	95% Bootstrap-t UCL	66.27
Anderson-Darling 5% Critical Value	0.717	95% Hall's Bootstrap UCL	99.2
Kolmogorov-Smirnov Test Statistic	0.271	95% Percentile Bootstrap UCL	46.88
Kolmogorov-Smirnov 5% Critical Value	0.295	95% BCA Bootstrap UCL	50.88
Data appear Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	62.36
		97.5% Chebyshev(Mean, Sd) UCL	73.6
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	95.69
95% Approximate Gamma UCL	48.94		
95% Adjusted Gamma UCL	52.91		
Potential UCL to Use		Use 95% Approximate Gamma UCL	48.94

Table B-10c
Alleyway Soil (Total) ProUCL Output
All Concentrations in mg/kg

General UCL Statistics for Full Data Sets

User Selected Options	
From File	WorkSheet.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

lead

General Statistics			
Number of Valid Samples	8	Number of Unique Samples	8
Raw Statistics		Log-transformed Statistics	
Minimum	110	Minimum of Log Data	4.7
Maximum	760	Maximum of Log Data	6.633
Mean	361.3	Mean of log Data	5.712
Median	250	SD of log Data	0.643
SD	230.5		
Coefficient of Variation	0.638		
Skewness	0.915		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.871	Shapiro Wilk Test Statistic	0.94
Shapiro Wilk Critical Value	0.818	Shapiro Wilk Critical Value	0.818
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	515.6	95% H-UCL	709.9
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	724.3
95% Adjusted-CLT UCL	523.5	97.5% Chebyshev (MVUE) UCL	881.5
95% Modified-t UCL	520	99% Chebyshev (MVUE) UCL	1190
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	1.937	Data appear Normal at 5% Significance Level	
Theta Star	186.5		
nu star	30.99		
Approximate Chi Square Value (.05)	19.27	Nonparametric Statistics	
Adjusted Level of Significance	0.0195	95% CLT UCL	495.3
Adjusted Chi Square Value	16.98	95% Jackknife UCL	515.6
		95% Standard Bootstrap UCL	487
Anderson-Darling Test Statistic	0.406	95% Bootstrap-t UCL	635.7
Anderson-Darling 5% Critical Value	0.722	95% Hall's Bootstrap UCL	548.3
Kolmogorov-Smirnov Test Statistic	0.257	95% Percentile Bootstrap UCL	500
Kolmogorov-Smirnov 5% Critical Value	0.296	95% BCA Bootstrap UCL	508.8
Data appear Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	716.5
		97.5% Chebyshev(Mean, Sd) UCL	870.2
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	1172
95% Approximate Gamma UCL	580.9		
95% Adjusted Gamma UCL	659.5		
Potential UCL to Use		Use 95% Student's-t UCL	515.6

Table B-10c
Alleyway Soil (Total) ProUCL Output
All Concentrations in mg/kg

General UCL Statistics for Full Data Sets

User Selected Options	
From File	WorkSheet.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

selenium

General Statistics			
Number of Valid Samples	8	Number of Unique Samples	8
Raw Statistics		**Log-transformed Statistics**	
Minimum	0.5	Minimum of Log Data	-0.693
Maximum	1.5	Maximum of Log Data	0.405
Mean	0.854	Mean of log Data	-0.22
Median	0.715	SD of log Data	0.366
SD	0.339		
Coefficient of Variation	0.397		
Skewness	1.177		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.877	Shapiro Wilk Test Statistic	0.94
Shapiro Wilk Critical Value	0.818	Shapiro Wilk Critical Value	0.818
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		**Assuming Lognormal Distribution**	
95% Student's-t UCL	1.081	95% H-UCL	1.159
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	1.334
95% Adjusted-CLT UCL	1.104	97.5% Chebyshev (MVUE) UCL	1.543
95% Modified-t UCL	1.089	99% Chebyshev (MVUE) UCL	1.953
Gamma Distribution Test		**Data Distribution**	
k star (bias corrected)	5.248	Data appear Normal at 5% Significance Level	
Theta Star	0.163		
nu star	83.97		
Approximate Chi Square Value (.05)	63.85	**Nonparametric Statistics**	
Adjusted Level of Significance	0.0195	95% CLT UCL	1.051
Adjusted Chi Square Value	59.43	95% Jackknife UCL	1.081
		95% Standard Bootstrap UCL	1.038
Anderson-Darling Test Statistic	0.394	95% Bootstrap-t UCL	1.309
Anderson-Darling 5% Critical Value	0.716	95% Hall's Bootstrap UCL	1.477
Kolmogorov-Smirnov Test Statistic	0.265	95% Percentile Bootstrap UCL	1.046
Kolmogorov-Smirnov 5% Critical Value	0.295	95% BCA Bootstrap UCL	1.09
Data appear Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	1.376
		97.5% Chebyshev(Mean, Sd) UCL	1.602
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	2.046
95% Approximate Gamma UCL	1.123		
95% Adjusted Gamma UCL	1.206		
Potential UCL to Use		Use 95% Student's-t UCL	1.081

Table B-10c
Alleyway Soil (Total) ProUCL Output
All Concentrations in mg/kg

General UCL Statistics for Full Data Sets

User Selected Options	
From File	WorkSheet.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

silver

General Statistics			
Number of Valid Samples	8	Number of Unique Samples	7
Raw Statistics		Log-transformed Statistics	
Minimum	0.58	Minimum of Log Data	-0.545
Maximum	4.6	Maximum of Log Data	1.526
Mean	1.681	Mean of log Data	0.308
Median	1.2	SD of log Data	0.667
SD	1.309		
Coefficient of Variation	0.779		
Skewness	1.884		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.785	Shapiro Wilk Test Statistic	0.951
Shapiro Wilk Critical Value	0.818	Shapiro Wilk Critical Value	0.818
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	2.558	95% H-UCL	3.365
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	3.364
95% Adjusted-CLT UCL	2.772	97.5% Chebyshev (MVUE) UCL	4.108
95% Modified-t UCL	2.61	99% Chebyshev (MVUE) UCL	5.569
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	1.654	Data appear Gamma Distributed at 5% Significance Level	
Theta Star	1.017		
nu star	26.46		
Approximate Chi Square Value (.05)	15.74	Nonparametric Statistics	
Adjusted Level of Significance	0.0195	95% CLT UCL	2.443
Adjusted Chi Square Value	13.69	95% Jackknife UCL	2.558
		95% Standard Bootstrap UCL	2.399
Anderson-Darling Test Statistic	0.388	95% Bootstrap-t UCL	3.409
Anderson-Darling 5% Critical Value	0.723	95% Hall's Bootstrap UCL	5.096
Kolmogorov-Smirnov Test Statistic	0.194	95% Percentile Bootstrap UCL	2.471
Kolmogorov-Smirnov 5% Critical Value	0.297	95% BCA Bootstrap UCL	2.694
Data appear Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	3.699
		97.5% Chebyshev(Mean, Sd) UCL	4.572
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	6.287
95% Approximate Gamma UCL	2.827		
95% Adjusted Gamma UCL	3.25		
Potential UCL to Use		Use 95% Approximate Gamma UCL	2.827

Table B-10c
Alleyway Soil (Total) ProUCL Output
All Concentrations in mg/kg

General UCL Statistics for Full Data Sets

User Selected Options	
From File	WorkSheet.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

zinc

General Statistics			
Number of Valid Samples	8	Number of Unique Samples	7
Raw Statistics		Log-transformed Statistics	
Minimum	880	Minimum of Log Data	6.78
Maximum	6600	Maximum of Log Data	8.795
Mean	1970	Mean of log Data	7.335
Median	1150	SD of log Data	0.664
SD	1926		
Coefficient of Variation	0.978		
Skewness	2.539		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.608	Shapiro Wilk Test Statistic	0.788
Shapiro Wilk Critical Value	0.818	Shapiro Wilk Critical Value	0.818
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	3260	95% H-UCL	3764
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	3774
95% Adjusted-CLT UCL	3743	97.5% Chebyshev (MVUE) UCL	4606
95% Modified-t UCL	3362	99% Chebyshev (MVUE) UCL	6240
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	1.422	Data Follow Appr. Gamma Distribution at 5% Significance Level	
Theta Star	1385		
nu star	22.76		
Approximate Chi Square Value (.05)	12.91	Nonparametric Statistics	
Adjusted Level of Significance	0.0195	95% CLT UCL	3090
Adjusted Chi Square Value	11.08	95% Jackknife UCL	3260
		95% Standard Bootstrap UCL	3008
Anderson-Darling Test Statistic	1.028	95% Bootstrap-t UCL	9070
Anderson-Darling 5% Critical Value	0.724	95% Hall's Bootstrap UCL	7643
Kolmogorov-Smirnov Test Statistic	0.292	95% Percentile Bootstrap UCL	3238
Kolmogorov-Smirnov 5% Critical Value	0.297	95% BCA Bootstrap UCL	3638
Data follow Appr. Gamma Distribution at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	4938
		97.5% Chebyshev(Mean, Sd) UCL	6222
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	8744
95% Approximate Gamma UCL	3473		
95% Adjusted Gamma UCL	4047		
Potential UCL to Use		Use 95% Approximate Gamma UCL	3473

Table B-10c
Alleyway Soil (Total) ProUCL Output
All Concentrations in mg/kg

General UCL Statistics for Full Data Sets

User Selected Options	
From File	WorkSheet.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

mercury

General Statistics			
Number of Valid Samples	8	Number of Unique Samples	8
Raw Statistics		Log-transformed Statistics	
Minimum	0.03	Minimum of Log Data	-3.507
Maximum	0.19	Maximum of Log Data	-1.661
Mean	0.0859	Mean of log Data	-2.64
Median	0.063	SD of log Data	0.631
SD	0.0597		
Coefficient of Variation	0.695		
Skewness	1.272		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.78	Shapiro Wilk Test Statistic	0.906
Shapiro Wilk Critical Value	0.818	Shapiro Wilk Critical Value	0.818
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	0.126	95% H-UCL	0.163
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	0.168
95% Adjusted-CLT UCL	0.131	97.5% Chebyshev (MVUE) UCL	0.204
95% Modified-t UCL	0.127	99% Chebyshev (MVUE) UCL	0.275
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	1.868	Data appear Gamma Distributed at 5% Significance Level	
Theta Star	0.046		
nu star	29.89		
Approximate Chi Square Value (.05)	18.4	Nonparametric Statistics	
Adjusted Level of Significance	0.0195	95% CLT UCL	0.121
Adjusted Chi Square Value	16.17	95% Jackknife UCL	0.126
		95% Standard Bootstrap UCL	0.118
Anderson-Darling Test Statistic	0.618	95% Bootstrap-t UCL	0.222
Anderson-Darling 5% Critical Value	0.722	95% Hall's Bootstrap UCL	0.441
Kolmogorov-Smirnov Test Statistic	0.294	95% Percentile Bootstrap UCL	0.12
Kolmogorov-Smirnov 5% Critical Value	0.296	95% BCA Bootstrap UCL	0.125
Data appear Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	0.178
		97.5% Chebyshev(Mean, Sd) UCL	0.218
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	0.296
95% Approximate Gamma UCL	0.139		
95% Adjusted Gamma UCL	0.159		
Potential UCL to Use		Use 95% Approximate Gamma UCL	0.139

Table B-11a

On-Site SurfaceSlag/ Soil Samples (Fine Fraction)

Sample ID:	Date Collected:	Soil or Slag	Grid No.	Arsenic	Barium	Cadmium	Chromium	Copper	Lead	Selenium	Silver	Zinc	Mercury
C33-51	6/7/2006	mixed	51	140	680	15	25		1,500	0.64	140	4,500	3.6
CSS-10	6/2/2006	mixed	10	49	150	33	20		890	0.49 B	3.4	3,500	0.55
CSS-11	6/13/2006	mixed	11	31	280	51	19		870	1.4	5.7	8,400	0.13
CSS-16	6/5/2006	mixed	16	87	250	80	32		2,900	1.7	24	32,000	0.96
CSS-17	6/5/2006	mixed	17	66	220	67	23		2,300	2.6	17	21,000	0.40
CSS-19	6/5/2006	mixed	19	47	230	45	24		2,200	1.0 B	11	9,400	0.39
CSS-20	9/21/2006	mixed	20	53	270	110	34	850	1,900	2.6	9.9	18,000	1.1
CSS-28	6/5/2006	mixed	28	190	260	95	21		5,800	4.5	35	25,000	1.2
CSS-33	6/5/2006	mixed	33	210	290	81	25		3,000	2.1	74	17,000	4.5
CSS-35*	6/5/2006	mixed	35	205	160	230	48		4,300	4.05	42	30,000	2.7
CSS-39	6/13/2006	mixed	39	27	240	65	21		880	1.7	6.4	6,100	0.19
CSS-41	6/6/2006	mixed	41	480	370	22	32		2,600	8.4	300	10,000	3.1
CSS-44	6/7/2006	mixed	44	130	150	90	33		1,800	3.2	47	15,000	1.5
CSS-48	6/13/2006	mixed	48	22	670	93	58		2,600	1.2	6.0	11,000	0.14
CSS-49	6/13/2006	mixed	49	88	260	47	20		1,300	2.3	64	7,400	0.21
CSS-50	6/7/2006	mixed	50	260	430	18	25		1,900	2.6	220	7,300	10
CSS-52	6/7/2006	mixed	52	230	870	110	43		8,300	3.6	180	62,000	13
CSS-53	6/8/2006	mixed	53	280	510	260	33		4,200	4.9 B	210	68,000	3.7
CSS-57	6/13/2006	mixed	57	86	390	140	48		1,500	3.6	57	14,000	1.9
CSS-02*	5/31/2006	slag	2	57.5	345	170	19		1,600	1.9	10	17,500	0.42
CSS-04	6/1/2006	slag	4	190	270	92	31		7,200	4.8	63	23,000	18
CSS-05	6/1/2006	slag	5	160	310	130	28		7,700	2.0	72	61,000	1.1
CSS-09	6/1/2006	slag	9	84	200	120	21		1,900	1.3	27	26,000	0.66
CSS-12	6/2/2006	slag	12	78	290	110	16		1,500	2.1	7.5	27,000	1.3
CSS-13	6/2/2006	slag	13	31,000	300	5,000	270		13,000	36	270	50,000	5.2
CSS-14	6/2/2006	slag	14	500	750	510	480		13,000	11	110	110,000	34
CSS-15	6/2/2006	slag	15	480	4,000	260	40		23,000	5.6	150	110,000	3.7
CSS-18	6/5/2006	slag	18	96	110	37	17		4,300	1.3	20	23,000	0.14
CSS-21	9/20/2006	slag	21	290	540	47	27	4,000	2,200	5	180	12,000	0.64
CSS-22	6/5/2006	slag	22	120	260	63	24		2,300	3.0	17	58,000	1.7
CSS-23	6/5/2006	slag	23	340	350	390	37		9,500	5.6	90	200,000	6.0
CSS-24	6/5/2006	slag	24	330	430	650	240		12,000	7.1	72	130,000	4.5
CSS-25*	6/5/2006	slag	25	220	740	370	69.5		7,050	5.55	51	62,500	1.5
CSS-26	6/5/2006	slag	26	190	400	130	37		4,700	6.2	69	49,000	0.0091 B
CSS-27	6/5/2006	slag	27	72	180	110	26		2,100	3.3	17	26,000	0.47
CSS-29	6/5/2006	slag	29	94	400	110	33		3,900	3.0	22	25,000	2.3
CSS-31*	6/13/2006	slag	31	455	315	93	22.5		3,550	4.0	83	16,500	1.7
CSS-32*	6/5/2006	slag	32	315	350	225	29.5		103,000	66	150	48,000	205
CSS-34	6/5/2006	slag	34	270	280	160	34		4,800	4.3	48	21,000	2.3
CSS-36	6/5/2006	slag	36	110	620	110	26		4,000	2.8	28	26,000	0.76
CSS-37	6/5/2006	slag	37	190	500	130	27		3,400	3.6	110	27,000	1.1
CSS-38	6/5/2006	slag	38	100	250	130	23		3,800	1.4	26	34,000	0.53
CSS-40*	6/13/2006	slag	40	96	340	43	35		2,450	3.7	48	14,000	0.515
CSS-42*	6/6/2006	slag	42	355	455	110	39		3,300	5.15	165	33,500	2.2
CSS-43	6/7/2006	slag	43	470	210	82	43		2,300	9.4	190	18,000	3.1
CSS-45	6/7/2006	slag	45	170	190	140	32		2,800	4.5	82	21,000	1.4
CSS-46	6/7/2006	slag	46	160	270	150	30		3,900	4.3	44	28,000	2.2
CSS-47*	6/7/2006	slag	47	110	345	540	25.5		5,100	3.1	83.5	66,500	2.4
CSS-54	6/8/2006	slag	54	240	360	200	42		5,600	4.3	110	35,000	2.7
CSS-55*	6/8/2006	slag	55	280	365	190	26		11,500	6.2	90	46,500	6.6
CSS-56	6/13/2006	slag	56	60	300	130	18		1,400	2.1	21	27,000	0.39
CSS-01	5/30/2006	soil	1	15	180	62	14		370	0.73 B	2.0	4,900	0.15
CSS-03	6/1/2006	soil	3	62	330	94	19		1,200	1.7	43	21,000	1.0
CSS-06	6/1/2006	soil	6	8.6	85	4.9	14		910	0.98 U	1.5	990	0.29
CSS-07	6/1/2006	soil	7	4.8	83	3.2	13		730	0.89 U	0.86	380	0.062
CSS-08	6/1/2006	soil	8	4.3	130	3.8	14		110	0.91 B	0.73	510	0.066
CSS-30	6/13/2006	soil	30	30	220	83	19		860	1.2	4.6	6,100	0.16

Table B-11b
ProUCL Output: Surface Soil and Slag (Fine Fraction)

General UCL Statistics for Full Data Sets

User Selected Options	
From File	WorkSheet.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Slag Arsenic

General Statistics			
Number of Valid Samples	51	Number of Unique Samples	43
Raw Statistics		Log-transformed Statistics	
Minimum	22	Minimum of Log Data	3.091
Maximum	31000	Maximum of Log Data	10.34
Mean	791.4	Mean of log Data	5.066
Median	160	SD of log Data	1.085
SD	4317		
Coefficient of Variation	5.454		
Skewness	7.131		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Lilliefors Test Statistic	0.507	Lilliefors Test Statistic	0.125
Lilliefors Critical Value	0.124	Lilliefors Critical Value	0.124
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	1804	95% H-UCL	412.7
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	504.4
95% Adjusted-CLT UCL	2431	97.5% Chebyshev (MVUE) UCL	601.1
95% Modified-t UCL	1905	99% Chebyshev (MVUE) UCL	791.2
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	0.397	Data do not follow a Discernable Distribution (0.05)	
Theta Star	1993		
nu star	40.51		
Approximate Chi Square Value (.05)	26.92	Nonparametric Statistics	
Adjusted Level of Significance	0.0453	95% CLT UCL	1786
Adjusted Chi Square Value	26.6	95% Jackknife UCL	1804
		95% Standard Bootstrap UCL	1769
Anderson-Darling Test Statistic	9.811	95% Bootstrap-t UCL	23973
Anderson-Darling 5% Critical Value	0.837	95% Hall's Bootstrap UCL	6826
Kolmogorov-Smirnov Test Statistic	0.377	95% Percentile Bootstrap UCL	1991
Kolmogorov-Smirnov 5% Critical Value	0.133	95% BCA Bootstrap UCL	2629
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	3426
		97.5% Chebyshev(Mean, Sd) UCL	4566
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	6806
95% Approximate Gamma UCL	1191		
95% Adjusted Gamma UCL	1205		
Potential UCL to Use		Use 97.5% Chebyshev (Mean, Sd) UCL	4566

Table B-11b
ProUCL Output: Surface Soil and Slag (Fine Fraction)

Barium - Slag

General Statistics			
Number of Valid Samples	51	Number of Unique Samples	38
Raw Statistics		Log-transformed Statistics	
Minimum	110	Minimum of Log Data	4.7
Maximum	4000	Maximum of Log Data	8.294
Mean	425.6	Mean of log Data	5.82
Median	310	SD of log Data	0.565
SD	536.9		
Coefficient of Variation	1.262		
Skewness	6.137		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Lilliefors Test Statistic	0.284	Lilliefors Test Statistic	0.126
Lilliefors Critical Value	0.124	Lilliefors Critical Value	0.124
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	551.6	95% H-UCL	460.8
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	538.3
95% Adjusted-CLT UCL	618.3	97.5% Chebyshev (MVUE) UCL	600.8
95% Modified-t UCL	562.4	99% Chebyshev (MVUE) UCL	723.5
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	2.176	Data do not follow a Discernable Distribution (0.05)	
Theta Star	195.6		
nu star	221.9		
Approximate Chi Square Value (.05)	188.4	Nonparametric Statistics	
Adjusted Level of Significance	0.0453	95% CLT UCL	549.3
Adjusted Chi Square Value	187.5	95% Jackknife UCL	551.6
		95% Standard Bootstrap UCL	550.7
Anderson-Darling Test Statistic	3.07	95% Bootstrap-t UCL	775
Anderson-Darling 5% Critical Value	0.761	95% Hall's Bootstrap UCL	1017
Kolmogorov-Smirnov Test Statistic	0.193	95% Percentile Bootstrap UCL	565.3
Kolmogorov-Smirnov 5% Critical Value	0.126	95% BCA Bootstrap UCL	648.1
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	753.3
		97.5% Chebyshev(Mean, Sd) UCL	895.1
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	1174
95% Approximate Gamma UCL	501.2		
95% Adjusted Gamma UCL	503.6		
Potential UCL to Use		Use 95% Chebyshev (Mean, Sd) UCL	753.3

Table B-11b
ProUCL Output: Surface Soil and Slag (Fine Fraction)

Cadmium - Slag

General Statistics			
Number of Valid Samples	51	Number of Unique Samples	37
Raw Statistics		Log-transformed Statistics	
Minimum	15	Minimum of Log Data	2.708
Maximum	5000	Maximum of Log Data	8.517
Mean	242.8	Mean of log Data	4.753
Median	110	SD of log Data	0.968
SD	692.2		
Coefficient of Variation	2.851		
Skewness	6.753		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Lilliefors Test Statistic	0.372	Lilliefors Test Statistic	0.129
Lilliefors Critical Value	0.124	Lilliefors Critical Value	0.124
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	405.3	95% H-UCL	252.9
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	309
95% Adjusted-CLT UCL	500.2	97.5% Chebyshev (MVUE) UCL	363.6
95% Modified-t UCL	420.6	99% Chebyshev (MVUE) UCL	470.8
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	0.768	Data do not follow a Discernable Distribution (0.05)	
Theta Star	316.1		
nu star	78.35		
Approximate Chi Square Value (.05)	58.96	Nonparametric Statistics	
Adjusted Level of Significance	0.0453	95% CLT UCL	402.3
Adjusted Chi Square Value	58.47	95% Jackknife UCL	405.3
		95% Standard Bootstrap UCL	405.4
Anderson-Darling Test Statistic	4.305	95% Bootstrap-t UCL	1002
Anderson-Darling 5% Critical Value	0.79	95% Hall's Bootstrap UCL	958.3
Kolmogorov-Smirnov Test Statistic	0.231	95% Percentile Bootstrap UCL	433.9
Kolmogorov-Smirnov 5% Critical Value	0.129	95% BCA Bootstrap UCL	550.5
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	665.3
		97.5% Chebyshev(Mean, Sd) UCL	848.2
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	1207
95% Approximate Gamma UCL	322.7		
95% Adjusted Gamma UCL	325.4		
Potential UCL to Use		Use 95% Chebyshev (Mean, Sd) UCL	665.3

Table B-11b
ProUCL Output: Surface Soil and Slag (Fine Fraction)

Chromium - Slag

General Statistics			
Number of Valid Samples	51	Number of Unique Samples	32
Raw Statistics		Log-transformed Statistics	
Minimum	16	Minimum of Log Data	2.773
Maximum	480	Maximum of Log Data	6.174
Mean	48.08	Mean of log Data	3.504
Median	29.5	SD of log Data	0.652
SD	76.55		
Coefficient of Variation	1.592		
Skewness	4.553		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Lilliefors Test Statistic	0.402	Lilliefors Test Statistic	0.209
Lilliefors Critical Value	0.124	Lilliefors Critical Value	0.124
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	66.04	95% H-UCL	49.36
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	58.52
95% Adjusted-CLT UCL	73.01	97.5% Chebyshev (MVUE) UCL	66.15
95% Modified-t UCL	67.18	99% Chebyshev (MVUE) UCL	81.12
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	1.424	Data do not follow a Discernable Distribution (0.05)	
Theta Star	33.75		
nu star	145.3		
Approximate Chi Square Value (.05)	118.4	Nonparametric Statistics	
Adjusted Level of Significance	0.0453	95% CLT UCL	65.71
Adjusted Chi Square Value	117.7	95% Jackknife UCL	66.04
		95% Standard Bootstrap UCL	65.51
Anderson-Darling Test Statistic	7.61	95% Bootstrap-t UCL	134.9
Anderson-Darling 5% Critical Value	0.767	95% Hall's Bootstrap UCL	154.2
Kolmogorov-Smirnov Test Statistic	0.306	95% Percentile Bootstrap UCL	67.1
Kolmogorov-Smirnov 5% Critical Value	0.126	95% BCA Bootstrap UCL	74.21
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	94.8
		97.5% Chebyshev(Mean, Sd) UCL	115
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	154.7
95% Approximate Gamma UCL	58.98		
95% Adjusted Gamma UCL	59.33		
Potential UCL to Use		Use 95% Chebyshev (Mean, Sd) UCL	94.8

Table B-11b
ProUCL Output: Surface Soil and Slag (Fine Fraction)

Lead - Slag

General Statistics			
Number of Valid Samples	51	Number of Unique Samples	40
Raw Statistics		Log-transformed Statistics	
Minimum	870	Minimum of Log Data	6.768
Maximum	103000	Maximum of Log Data	11.54
Mean	6443	Mean of log Data	8.184
Median	3300	SD of log Data	0.885
SD	14385		
Coefficient of Variation	2.233		
Skewness	6.316		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Lilliefors Test Statistic	0.349	Lilliefors Test Statistic	0.105
Lilliefors Critical Value	0.124	Lilliefors Critical Value	0.124
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	9819	95% H-UCL	6978
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	8492
95% Adjusted-CLT UCL	11660	97.5% Chebyshev (MVUE) UCL	9895
95% Modified-t UCL	10116	99% Chebyshev (MVUE) UCL	12652
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	0.941	Data appear Lognormal at 5% Significance Level	
Theta Star	6847		
nu star	95.98		
Approximate Chi Square Value (.05)	74.38	Nonparametric Statistics	
Adjusted Level of Significance	0.0453	95% CLT UCL	9756
Adjusted Chi Square Value	73.83	95% Jackknife UCL	9819
		95% Standard Bootstrap UCL	9730
Anderson-Darling Test Statistic	3.361	95% Bootstrap-t UCL	17546
Anderson-Darling 5% Critical Value	0.781	95% Hall's Bootstrap UCL	22152
Kolmogorov-Smirnov Test Statistic	0.198	95% Percentile Bootstrap UCL	10236
Kolmogorov-Smirnov 5% Critical Value	0.128	95% BCA Bootstrap UCL	12669
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	15223
		97.5% Chebyshev(Mean, Sd) UCL	19022
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	26485
95% Approximate Gamma UCL	8314		
95% Adjusted Gamma UCL	8376		
Potential UCL to Use		Use 95% H-UCL	6978

Table B-11b
ProUCL Output: Surface Soil and Slag (Fine Fraction)

Selenium - Slag

General Statistics			
Number of Valid Samples	51	Number of Unique Samples	36
Raw Statistics		Log-transformed Statistics	
Minimum	0.49	Minimum of Log Data	-0.713
Maximum	66	Maximum of Log Data	4.19
Mean	5.533	Mean of log Data	1.221
Median	3.6	SD of log Data	0.847
SD	9.99		
Coefficient of Variation	1.806		
Skewness	5.185		
Relevant UCL Statistics			
Normal Distribution Test		*Lognormal Distribution Test*	
Lilliefors Test Statistic	0.356	Lilliefors Test Statistic	0.12
Lilliefors Critical Value	0.124	*Lilliefors Critical Value*	0.124
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	7.877	95% H-UCL	6.283
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	7.625
95% Adjusted-CLT UCL	8.919	97.5% Chebyshev (MVUE) UCL	8.844
95% Modified-t UCL	8.047	99% Chebyshev (MVUE) UCL	11.24
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	1.105	Data appear Lognormal at 5% Significance Level	
Theta Star	5.007		
nu star	112.7		
Approximate Chi Square Value (.05)	89.2	Nonparametric Statistics	
Adjusted Level of Significance	0.0453	95% CLT UCL	7.834
Adjusted Chi Square Value	88.59	95% Jackknife UCL	7.877
		95% Standard Bootstrap UCL	7.769
Anderson-Darling Test Statistic	3.21	95% Bootstrap-t UCL	14.91
Anderson-Darling 5% Critical Value	0.776	95% Hall's Bootstrap UCL	18.92
Kolmogorov-Smirnov Test Statistic	0.215	95% Percentile Bootstrap UCL	8.017
Kolmogorov-Smirnov 5% Critical Value	0.127	95% BCA Bootstrap UCL	9.438
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	11.63
		97.5% Chebyshev(Mean, Sd) UCL	14.27
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	19.45
95% Approximate Gamma UCL	6.991		
95% Adjusted Gamma UCL	7.039		
Potential UCL to Use		Use 95% H-UCL	6.283

Table B-11b

ProUCL Output: Surface Soil and Slag (Fine Fraction)

Silver - Slag

General Statistics			
Number of Valid Samples	51	Number of Unique Samples	42
Raw Statistics		Log-transformed Statistics	
Minimum	3.4	Minimum of Log Data	1.224
Maximum	300	Maximum of Log Data	5.704
Mean	78.01	Mean of log Data	3.852
Median	57	SD of log Data	1.127
SD	72.47		
Coefficient of Variation	0.929		
Skewness	1.288		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Lilliefors Test Statistic	0.16	Lilliefors Test Statistic	0.0922
Lilliefors Critical Value	0.124	Lilliefors Critical Value	0.124
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	95.01	95% H-UCL	131
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	159.8
95% Adjusted-CLT UCL	96.66	97.5% Chebyshev (MVUE) UCL	191.3
95% Modified-t UCL	95.32	99% Chebyshev (MVUE) UCL	253.2
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	1.075	Data appear Gamma Distributed at 5% Significance Level	
Theta Star	72.59		
nu star	109.6		
Approximate Chi Square Value (.05)	86.44	Nonparametric Statistics	
Adjusted Level of Significance	0.0453	95% CLT UCL	94.7
Adjusted Chi Square Value	85.85	95% Jackknife UCL	95.01
		95% Standard Bootstrap UCL	94.34
Anderson-Darling Test Statistic	0.27	95% Bootstrap-t UCL	96.67
Anderson-Darling 5% Critical Value	0.777	95% Hall's Bootstrap UCL	95.97
Kolmogorov-Smirnov Test Statistic	0.0769	95% Percentile Bootstrap UCL	95.49
Kolmogorov-Smirnov 5% Critical Value	0.127	95% BCA Bootstrap UCL	97.48
Data appear Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	122.2
		97.5% Chebyshev(Mean, Sd) UCL	141.4
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	179
95% Approximate Gamma UCL	98.91		
95% Adjusted Gamma UCL	99.6		
Potential UCL to Use		Use 95% Approximate Gamma UCL	98.91

Table B-11b
ProUCL Output: Surface Soil and Slag (Fine Fraction)
Zinc - Slag

General Statistics			
Number of Valid Samples	51	Number of Unique Samples	40
Raw Statistics		Log-transformed Statistics	
Minimum	3500	Minimum of Log Data	8.161
Maximum	200000	Maximum of Log Data	12.21
Mean	36110	Mean of log Data	10.14
Median	26000	SD of log Data	0.853
SD	35983		
Coefficient of Variation	0.997		
Skewness	2.614		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Lilliefors Test Statistic	0.238	Lilliefors Test Statistic	0.0786
Lilliefors Critical Value	0.124	Lilliefors Critical Value	0.124
Data not Normal at 5% Significance Level		*Data appear Lognormal at 5% Significance Level*	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	44554	95% H-UCL	47112
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	57205
95% Adjusted-CLT UCL	46368	97.5% Chebyshev (MVUE) UCL	66401
95% Modified-t UCL	44862	99% Chebyshev (MVUE) UCL	84467
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	1.461	Data appear Lognormal at 5% Significance Level	
Theta Star	24723		
nu star	149		
Approximate Chi Square Value (.05)	121.8	Nonparametric Statistics	
Adjusted Level of Significance	0.0453	95% CLT UCL	44398
Adjusted Chi Square Value	121.1	95% Jackknife UCL	44554
		95% Standard Bootstrap UCL	44364
Anderson-Darling Test Statistic	0.811	95% Bootstrap-t UCL	48235
Anderson-Darling 5% Critical Value	0.767	95% Hall's Bootstrap UCL	50130
Kolmogorov-Smirnov Test Statistic	0.138	95% Percentile Bootstrap UCL	44845
Kolmogorov-Smirnov 5% Critical Value	0.126	95% BCA Bootstrap UCL	46812
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	58073
		97.5% Chebyshev(Mean, Sd) UCL	67576
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	86244
95% Approximate Gamma UCL	44179		
95% Adjusted Gamma UCL	44440		
Potential UCL to Use		Use 95% H-UCL	47112

Table B-11b
ProUCL Output: Surface Soil and Slag (Fine Fraction)
Mercury - Slag

General Statistics			
Number of Valid Samples	51	Number of Unique Samples	39
Raw Statistics		Log-transformed Statistics	
Minimum	0.0091	Minimum of Log Data	-4.699
Maximum	205	Maximum of Log Data	5.323
Mean	7.133	Mean of log Data	0.38
Median	1.5	SD of log Data	1.593
SD	28.79		
Coefficient of Variation	4.036		
Skewness	6.766		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Lilliefors Test Statistic	0.409	Lilliefors Test Statistic	0.0857
Lilliefors Critical Value	0.124	Lilliefors Critical Value	0.124
Data not Normal at 5% Significance Level		*Data appear Lognormal at 5% Significance Level*	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	13.89	95% H-UCL	10.23
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	11.45
95% Adjusted-CLT UCL	17.85	97.5% Chebyshev (MVUE) UCL	14.27
95% Modified-t UCL	14.53	99% Chebyshev (MVUE) UCL	19.81
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	0.402	Data appear Lognormal at 5% Significance Level	
Theta Star	17.75		
nu star	41		
Approximate Chi Square Value (.05)	27.32	Nonparametric Statistics	
Adjusted Level of Significance	0.0453	95% CLT UCL	13.77
Adjusted Chi Square Value	27	95% Jackknife UCL	13.89
		95% Standard Bootstrap UCL	13.61
Anderson-Darling Test Statistic	4.297	95% Bootstrap-t UCL	51.13
Anderson-Darling 5% Critical Value	0.835	95% Hall's Bootstrap UCL	36.72
Kolmogorov-Smirnov Test Statistic	0.242	95% Percentile Bootstrap UCL	14.96
Kolmogorov-Smirnov 5% Critical Value	0.133	95% BCA Bootstrap UCL	23.06
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	24.71
		97.5% Chebyshev(Mean, Sd) UCL	32.31
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	47.25
95% Approximate Gamma UCL	10.7		
95% Adjusted Gamma UCL	10.83		
Potential UCL to Use		Use 95% H-UCL	10.23

Table B-11b
ProUCL Output: Surface Soil and Slag (Fine Fraction)

General UCL Statistics for Full Data Sets

User Selected Options	
From File	WorkSheet.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Soil Arsenic

General Statistics			
Number of Valid Samples	6	Number of Unique Samples	6
Raw Statistics		Log-transformed Statistics	
Minimum	4.3	Minimum of Log Data	1.459
Maximum	62	Maximum of Log Data	4.127
Mean	20.78	Mean of log Data	2.569
Median	11.8	SD of log Data	1.053
SD	22.33		
Coefficient of Variation	1.074		
Skewness	1.623		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.803	Shapiro Wilk Test Statistic	0.936
Shapiro Wilk Critical Value	0.788	Shapiro Wilk Critical Value	0.788
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	39.15	95% H-UCL	188.7
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	57.25
95% Adjusted-CLT UCL	42.23	97.5% Chebyshev (MVUE) UCL	73.29
95% Modified-t UCL	40.16	99% Chebyshev (MVUE) UCL	104.8
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	0.719	Data appear Normal at 5% Significance Level	
Theta Star	28.92		
nu star	8.624		
Approximate Chi Square Value (.05)	3.101	Nonparametric Statistics	
Adjusted Level of Significance	0.0122	95% CLT UCL	35.78
Adjusted Chi Square Value	2.035	95% Jackknife UCL	39.15
		95% Standard Bootstrap UCL	34.36
Anderson-Darling Test Statistic	0.333	95% Bootstrap-t UCL	77.97
Anderson-Darling 5% Critical Value	0.712	95% Hall's Bootstrap UCL	106.9
Kolmogorov-Smirnov Test Statistic	0.201	95% Percentile Bootstrap UCL	35.67
Kolmogorov-Smirnov 5% Critical Value	0.339	95% BCA Bootstrap UCL	39.3
Data appear Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	60.52
		97.5% Chebyshev(Mean, Sd) UCL	77.71
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	111.5
95% Approximate Gamma UCL	57.79		
95% Adjusted Gamma UCL	88.08		
Potential UCL to Use		Use 95% Student's-t UCL	39.15

Table B-11b
ProUCL Output: Surface Soil and Slag (Fine Fraction)

Soil Barium

General Statistics			
Number of Valid Samples	6	Number of Unique Samples	6
Raw Statistics		Log-transformed Statistics	
Minimum	83	Minimum of Log Data	4.419
Maximum	330	Maximum of Log Data	5.799
Mean	171.3	Mean of log Data	5.019
Median	155	SD of log Data	0.547
SD	94.43		
Coefficient of Variation	0.551		
Skewness	0.965		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.907	Shapiro Wilk Test Statistic	0.936
Shapiro Wilk Critical Value	0.788	Shapiro Wilk Critical Value	0.788
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	249	95% H-UCL	350.9
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	337
95% Adjusted-CLT UCL	251	97.5% Chebyshev (MVUE) UCL	408.8
95% Modified-t UCL	251.5	99% Chebyshev (MVUE) UCL	549.9
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	2.199	Data appear Normal at 5% Significance Level	
Theta Star	77.92		
nu star	26.39		
Approximate Chi Square Value (.05)	15.68	Nonparametric Statistics	
Adjusted Level of Significance	0.0122	95% CLT UCL	234.7
Adjusted Chi Square Value	12.8	95% Jackknife UCL	249
		95% Standard Bootstrap UCL	229.6
Anderson-Darling Test Statistic	0.269	95% Bootstrap-t UCL	269.3
Anderson-Darling 5% Critical Value	0.7	95% Hall's Bootstrap UCL	279.1
Kolmogorov-Smimov Test Statistic	0.2	95% Percentile Bootstrap UCL	235
Kolmogorov-Smimov 5% Critical Value	0.333	95% BCA Bootstrap UCL	237.5
Data appear Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	339.4
		97.5% Chebyshev(Mean, Sd) UCL	412.1
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	554.9
95% Approximate Gamma UCL	288.4		
95% Adjusted Gamma UCL	353.3		
Potential UCL to Use		Use 95% Student's-t UCL	249

Table B-11b
ProUCL Output: Surface Soil and Slag (Fine Fraction)

Soil Cadmium

General Statistics			
Number of Valid Samples	6	Number of Unique Samples	6
Raw Statistics		Log-transformed Statistics	
Minimum	3.2	Minimum of Log Data	1.163
Maximum	94	Maximum of Log Data	4.543
Mean	41.82	Mean of log Data	2.863
Median	33.45	SD of log Data	1.655
SD	42.72		
Coefficient of Variation	1.022		
Skewness	0.221		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.803	Shapiro Wilk Test Statistic	0.777
Shapiro Wilk Critical Value	0.788	Shapiro Wilk Critical Value	0.788
Data appear Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	76.96	95% H-UCL	10085
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	176.9
95% Adjusted-CLT UCL	72.18	97.5% Chebyshev (MVUE) UCL	232.9
95% Modified-t UCL	77.22	99% Chebyshev (MVUE) UCL	342.8
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	0.459	Data appear Normal at 5% Significance Level	
Theta Star	91.19		
nu star	5.503		
Approximate Chi Square Value (.05)	1.391	Nonparametric Statistics	
Adjusted Level of Significance	0.0122	95% CLT UCL	70.5
Adjusted Chi Square Value	0.779	95% Jackknife UCL	76.96
		95% Standard Bootstrap UCL	67.87
Anderson-Darling Test Statistic	0.739	95% Bootstrap-t UCL	74.61
Anderson-Darling 5% Critical Value	0.724	95% Hall's Bootstrap UCL	57.04
Kolmogorov-Smirnov Test Statistic	0.313	95% Percentile Bootstrap UCL	68.2
Kolmogorov-Smirnov 5% Critical Value	0.345	95% BCA Bootstrap UCL	68.03
Data follow Appr. Gamma Distribution at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	117.8
		97.5% Chebyshev(Mean, Sd) UCL	150.7
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	215.4
95% Approximate Gamma UCL	165.4		
95% Adjusted Gamma UCL	295.6		
Potential UCL to Use		Use 95% Student's-t UCL	76.96

Table B-11b
ProUCL Output: Surface Soil and Slag (Fine Fraction)

Soil Chromium

General Statistics			
Number of Valid Samples	6	Number of Unique Samples	3
Raw Statistics		*Log-transformed Statistics*	
Minimum	13	Minimum of Log Data	2.565
Maximum	19	Maximum of Log Data	2.944
Mean	15.5	Mean of log Data	2.728
Median	14	SD of log Data	0.17
SD	2.739		
Coefficient of Variation	0.177		
Skewness	0.876		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.738	Shapiro Wilk Test Statistic	0.755
Shapiro Wilk Critical Value	0.788	*Shapiro Wilk Critical Value*	0.788
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		*Assuming Lognormal Distribution*	
95% Student's-t UCL	17.75	95% H-UCL	18.15
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	20.17
95% Adjusted-CLT UCL	17.77	97.5% Chebyshev (MVUE) UCL	22.2
95% Modified-t UCL	17.82	99% Chebyshev (MVUE) UCL	26.18
Gamma Distribution Test		*Data Distribution*	
k star (bias corrected)	20.45	Data do not follow a Discernable Distribution (0.05)	
Theta Star	0.758		
nu star	245.4		
Approximate Chi Square Value (.05)	210.2	*Nonparametric Statistics*	
Adjusted Level of Significance	0.0122	95% CLT UCL	17.34
Adjusted Chi Square Value	198.3	95% Jackknife UCL	17.75
		95% Standard Bootstrap UCL	17.15
Anderson-Darling Test Statistic	0.905	95% Bootstrap-t UCL	25.22
Anderson-Darling 5% Critical Value	0.697	95% Hall's Bootstrap UCL	37.11
Kolmogorov-Smirnov Test Statistic	0.388	95% Percentile Bootstrap UCL	17.33
Kolmogorov-Smirnov 5% Critical Value	0.332	95% BCA Bootstrap UCL	17.17
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	20.37
		97.5% Chebyshev(Mean, Sd) UCL	22.48
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	26.62
95% Approximate Gamma UCL	18.1		
95% Adjusted Gamma UCL	19.18		
Potential UCL to Use		Use 95% Student's-t UCL	17.75
		or 95% Modified-t UCL	17.82

Table B-11b
ProUCL Output: Surface Soil and Slag (Fine Fraction)

Soil Lead

General Statistics			
Number of Valid Samples	6	Number of Unique Samples	6
Raw Statistics		Log-transformed Statistics	
Minimum	110	Minimum of Log Data	4.7
Maximum	1200	Maximum of Log Data	7.09
Mean	696.7	Mean of log Data	6.311
Median	795	SD of log Data	0.882
SD	394.3		
Coefficient of Variation	0.566		
Skewness	-0.466		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.96	Shapiro Wilk Test Statistic	0.836
Shapiro Wilk Critical Value	0.788	Shapiro Wilk Critical Value	0.788
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	1021	95% H-UCL	3764
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	1917
95% Adjusted-CLT UCL	928.8	97.5% Chebyshev (MVUE) UCL	2422
95% Modified-t UCL	1016	99% Chebyshev (MVUE) UCL	3413
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	1.251	Data appear Normal at 5% Significance Level	
Theta Star	556.9		
nu star	15.01		
Approximate Chi Square Value (.05)	7.27	Nonparametric Statistics	
Adjusted Level of Significance	0.0122	95% CLT UCL	961.5
Adjusted Chi Square Value	5.442	95% Jackknife UCL	1021
		95% Standard Bootstrap UCL	941.5
Anderson-Darling Test Statistic	0.441	95% Bootstrap-t UCL	992
Anderson-Darling 5% Critical Value	0.703	95% Hall's Bootstrap UCL	911.9
Kolmogorov-Smirnov Test Statistic	0.282	95% Percentile Bootstrap UCL	938.3
Kolmogorov-Smirnov 5% Critical Value	0.335	95% BCA Bootstrap UCL	921.7
Data appear Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	1398
		97.5% Chebyshev(Mean, Sd) UCL	1702
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	2298
95% Approximate Gamma UCL	1439		
95% Adjusted Gamma UCL	1922		
Potential UCL to Use		Use 95% Student's-t UCL	1021

Table B-11b
ProUCL Output: Surface Soil and Slag (Fine Fraction)

Soil Selenium

General Statistics			
Number of Valid Samples	6	Number of Unique Samples	6
Raw Statistics		Log-transformed Statistics	
Minimum	0.445	Minimum of Log Data	-0.81
Maximum	1.7	Maximum of Log Data	0.531
Mean	0.913	Mean of log Data	-0.203
Median	0.82	SD of log Data	0.518
SD	0.476		
Coefficient of Variation	0.522		
Skewness	0.913		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.922	Shapiro Wilk Test Statistic	0.958
Shapiro Wilk Critical Value	0.788	Shapiro Wilk Critical Value	0.788
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	1.304	95% H-UCL	1.764
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	1.749
95% Adjusted-CLT UCL	1.31	97.5% Chebyshev (MVUE) UCL	2.111
95% Modified-t UCL	1.316	99% Chebyshev (MVUE) UCL	2.823
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	2.431	Data appear Normal at 5% Significance Level	
Theta Star	0.375		
nu star	29.17		
Approximate Chi Square Value (.05)	17.84	Nonparametric Statistics	
Adjusted Level of Significance	0.0122	95% CLT UCL	1.232
Adjusted Chi Square Value	14.74	95% Jackknife UCL	1.304
		95% Standard Bootstrap UCL	1.203
Anderson-Darling Test Statistic	0.227	95% Bootstrap-t UCL	1.53
Anderson-Darling 5% Critical Value	0.699	95% Hall's Bootstrap UCL	1.874
Kolmogorov-Smirnov Test Statistic	0.187	95% Percentile Bootstrap UCL	1.206
Kolmogorov-Smirnov 5% Critical Value	0.333	95% BCA Bootstrap UCL	1.253
Data appear Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	1.76
		97.5% Chebyshev(Mean, Sd) UCL	2.126
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	2.846
95% Approximate Gamma UCL	1.492		
95% Adjusted Gamma UCL	1.806		
Potential UCL to Use		Use 95% Student's-t UCL	1.304

Table B-11b
ProUCL Output: Surface Soil and Slag (Fine Fraction)

Soil Silver

General Statistics			
Number of Valid Samples	6	Number of Unique Samples	6
Raw Statistics		Log-transformed Statistics	
Minimum	0.73	Minimum of Log Data	-0.315
Maximum	43	Maximum of Log Data	3.761
Mean	8.782	Mean of log Data	0.987
Median	1.75	SD of log Data	1.51
SD	16.82		
Coefficient of Variation	1.916		
Skewness	2.412		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.565	Shapiro Wilk Test Statistic	0.852
Shapiro Wilk Critical Value	0.788	Shapiro Wilk Critical Value	0.788
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	22.62	95% H-UCL	548.2
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	22.09
95% Adjusted-CLT UCL	27.3	97.5% Chebyshev (MVUE) UCL	28.94
95% Modified-t UCL	23.75	99% Chebyshev (MVUE) UCL	42.4
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	0.376	Data Follow Appr. Gamma Distribution at 5% Significance Level	
Theta Star	23.33		
nu star	4.518		
Approximate Chi Square Value (.05)	0.936	Nonparametric Statistics	
Adjusted Level of Significance	*0.0122*	*95% CLT UCL*	*20.08*
Adjusted Chi Square Value	0.481	95% Jackknife UCL	22.62
		95% Standard Bootstrap UCL	19.28
Anderson-Darling Test Statistic	0.823	95% Bootstrap-t UCL	250
Anderson-Darling 5% Critical Value	0.734	95% Hall's Bootstrap UCL	113
Kolmogorov-Smirnov Test Statistic	0.314	95% Percentile Bootstrap UCL	22.23
Kolmogorov-Smirnov 5% Critical Value	0.348	95% BCA Bootstrap UCL	22.93
Data follow Appr. Gamma Distribution at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	38.72
		97.5% Chebyshev(Mean, Sd) UCL	51.67
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	77.11
95% Approximate Gamma UCL	42.38		
95% Adjusted Gamma UCL	82.44		
Potential UCL to Use		Use 95% Approximate Gamma UCL	42.38

Table B-11b
ProUCL Output: Surface Soil and Slag (Fine Fraction)

Soil Zinc

General Statistics			
Number of Valid Samples	6	Number of Unique Samples	6
Raw Statistics		Log-transformed Statistics	
Minimum	380	Minimum of Log Data	5.94
Maximum	21000	Maximum of Log Data	9.952
Mean	5647	Mean of log Data	7.706
Median	2945	SD of log Data	1.589
SD	7903		
Coefficient of Variation	1.4		
Skewness	1.967		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.737	Shapiro Wilk Test Statistic	0.924
Shapiro Wilk Critical Value	0.788	Shapiro Wilk Critical Value	0.788
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	12148	95% H-UCL	791934
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	20467
95% Adjusted-CLT UCL	*13722*	*97.5% Chebyshev (MVUE) UCL*	*26886*
95% Modified-t UCL	12580	99% Chebyshev (MVUE) UCL	39494
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	*0.438*	*Data appear Gamma Distributed at 5% Significance Level*	
Theta Star	12885		
nu star	5.259		
Approximate Chi Square Value (.05)	1.274	Nonparametric Statistics	
Adjusted Level of Significance	0.0122	95% CLT UCL	10954
Adjusted Chi Square Value	0.699	95% Jackknife UCL	12148
		95% Standard Bootstrap UCL	10551
Anderson-Darling Test Statistic	0.365	95% Bootstrap-t UCL	20225
Anderson-Darling 5% Critical Value	0.727	95% Hall's Bootstrap UCL	30006
Kolmogorov-Smirnov Test Statistic	0.243	95% Percentile Bootstrap UCL	11465
Kolmogorov-Smirnov 5% Critical Value	0.345	95% BCA Bootstrap UCL	12498
Data appear Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	19710
		97.5% Chebyshev(Mean, Sd) UCL	25796
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	37749
95% Approximate Gamma UCL	23315		
95% Adjusted Gamma UCL	42461		
Potential UCL to Use		Use 95% Approximate Gamma UCL	23315
Recommended UCL exceeds the maximum observation			

Table B-11b
ProUCL Output: Surface Soil and Slag (Fine Fraction)

Soil Mercury

General Statistics			
Number of Valid Samples	6	Number of Unique Samples	6
Raw Statistics		Log-transformed Statistics	
Minimum	*0.062*	*Minimum of Log Data*	-2.781
Maximum	1	Maximum of Log Data	0
Mean	0.288	Mean of log Data	-1.744
Median	0.155	SD of log Data	1.035
SD	0.359		
Coefficient of Variation	1.245		
Skewness	2.172		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.692	Shapiro Wilk Test Statistic	0.912
Shapiro Wilk Critical Value	0.788	Shapiro Wilk Critical Value	0.788
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	0.583	95% H-UCL	2.313
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	0.747
95% Adjusted-CLT UCL	0.667	97.5% Chebyshev (MVUE) UCL	0.955
95% Modified-t UCL	0.605	99% Chebyshev (MVUE) UCL	1.364
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	0.68	Data appear Gamma Distributed at 5% Significance Level	
Theta Star	0.423		
nu star	8.165		
Approximate Chi Square Value (.05)	2.831	Nonparametric Statistics	
Adjusted Level of Significance	0.0122	95% CLT UCL	0.529
Adjusted Chi Square Value	1.827	95% Jackknife UCL	0.583
		95% Standard Bootstrap UCL	0.504
Anderson-Darling Test Statistic	0.495	95% Bootstrap-t UCL	1.605
Anderson-Darling 5% Critical Value	0.713	95% Hall's Bootstrap UCL	1.723
Kolmogorov-Smirnov Test Statistic	0.263	95% Percentile Bootstrap UCL	0.532
Kolmogorov-Smirnov 5% Critical Value	*0.34*	*95% BCA Bootstrap UCL*	0.622
Data appear Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	0.926
		97.5% Chebyshev(Mean, Sd) UCL	1.202
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	1.744
95% Approximate Gamma UCL	0.831		
95% Adjusted Gamma UCL	1.287		
Potential UCL to Use		Use 95% Approximate Gamma UCL	0.831

Table 12a
Subsurface (0 - 10 ft bgs) Native Soil Data (Total Metals)

SAMPLE ID	DATE	DEPTH	GRID	DEPTH OF SLAG	Arsenic	Barium	Cadmium	Chromium	Lead	Selenium	Silver	Zinc	Mercury	Copper
MW-01-6	**6/19/2006**	**5.0 - 6.0**	**72**	**0**	6.7	92	<0.26 U	23	14	<1.3 U	<0.65 U	120	0.056	
MW-02-3	**6/15/2006**	**2.0 - 3.0**	**75**	**0**	6.4	220	38	13	15	0.71 B	0.27 B	1,200	0.034	
MW-03-7	**6/14/2006**	**6.0 - 7.0**	**56**	**4.5**	5.4	210	0.83	20	15	0.91 B	0.28 B	4,700	0.037	
MW-04-9	**6/15/2006**	**8.0 - 9.0**	**10**	**1.5**	5.8	200	0.37	17	8.9	0.69 B	0.23 B	560	0.041	
MW-06-8	**6/19/2006**	**7.0 - 8.0**	**2**	**0**	7.4	180	0.12 B	15	14	<1.3 U	<0.65 U	89	0.060	
MW-07-4	**6/19/2006**	**3.0 - 4.0**	**30**	**0**	6.3	130	0.87	11	10	<1.2 U	0.14 B	61	0.036	
P-01-10	**6/19/2006**	**9.0 - 10.0**	**36**	**4**	8.4	200	53	16	13	0.90 B	0.22 B	3,100	0.052	
P-01-5	**6/19/2006**	**4.0 - 5.0**	**36**	**4**	5.8	260	620	20	13	1.6	<0.65 U	6,600	0.043	
SB-03-SW-1.0	**6/14/2006**	**0.0 - 1.0**	**3**	**0**	9.7	300	47	14	140	1.7	0.45 B	9,600	0.059	
SB-04-SW-7.0	**5/30/2006**	**6.0 - 7.0**	**4**	**4**	10	160	1.3	18	30	<1.4 U	<0.71 U	2,800	0.048	
SB-06-SW-8.0	**5/31/2006**	**7.0 - 8.0**	**6**	**3**	6.3	250	130	20	15	<1.3 U	<0.65 U	7,100	0.044	
SB-08-SW-3.0	**5/31/2006**	**2.0 - 3.0**	**8**	**1**	7.2	210	12	19	15	1.0 B	<0.64 U	2,300	0.038	
SB-14-NE-7.0	**6/1/2006**	**6.0 - 7.0**	**14**	**6**	5.5	260	650	16	38	<1.2 U	<0.62 U	4,300	0.031	
SB-18-NE-4.0	**5/31/2006**	**3.0 - 4.0**	**18**	**2.5-3**	7.8	200	8.9	19	14	<1.2 U	<0.62 U	4,400	0.047	
SB-19-SE-7.0	**5/31/2006**	**6.0 - 7.0**	**19**	**5.5**	7.4	200	80	16	15	<1.2 U	<0.61 U	3,400	0.023	
SB-20-SE-1	**6/7/2006**	**0,0 - 1.0**	**20**	**0**	6.6	150	15	12	56	0.47 B	1.0	940	0.051	
SB-22-SE-3.0	**6/1/2006**	**2.0 - 3.0**	**22**	**2**	5.0	130	30	9.3	10	<1.2 U	<0.59 U	1,900	0.031	
SB-25-SW-5	**6/14/2006**	**4.0 - 5.0**	**25**	**1.5**	6.5	170	0.12 B	14	14	<1.2 U	0.14 B	67	0.038	
SB-26-NW-4	**6/13/2006**	**3.0 - 4.0**	**26**	**3**	4.8	150	0.2 B	17	16	<1.2 U	0.13 B	51	0.059	
SB-27-NE-4.0	**6/14/2006**	**3.0 - 4.0**	**27**	**2**	7.3	190	6.7	16	14	0.78 B	0.16 B	720	0.041	
SB-29-NW-5	**6/6/2006**	**4.0 - 5.0**	**29**	**3**	4.6	13	20	2.9	3.7	<0.97 U	<0.49 U	1,300	<0.017 U	
SB-31-NE-1 [2]	**6/19/2006**	**0.0 - 1.0**	**31**	**0**	7.0	100	50	17	20	0.67 B	0.15 B	4,200	0.039	
SB-35-NE-5	**6/13/2006**	**4.0 - 5.0**	**35**	**4**	7.4	190	650	16	81	1.4	0.34 B	6,000	0.033	
SB-35-NW-6	**6/13/2006**	**5.0 - 6.0**	**35**	**5**	8.5	250	1,800	14	110	<1.2 U	0.73	7,500	0.031	
SB-39-NW-4	**6/20/2006**	**3.0 - 4.0**	**39**	**0**	8.3	130	44	19	21	0.67 B	0.24 B	6,100	0.050	
SB-39-SE-2	**6/19/2006**	**1.0 - 2.0**	**39**	**0**	22	300	42	18	470	1.2 B	2.2	3,900	0.20	1700
SB-39-SW-3.0	**6/19/2006**	**2.0 - 3.0**	**39**	**0**	7.0	270	23	13	110	0.96 B	0.82	1,900	0.042	1700
SB-40-NE-1.0	**6/19/2006**	**0.5 - 1.0**	**40**	**powdery fill - 0.5**	14	340	52	15	460	1.2	1.8	5,600	0.21	
SB-40-NE-3.0	**6/19/2006**	**2.0 - 3.0**	**40**	**powdery fill - 0.5**	10	190	61	15	150	0.72 B	0.98	6,000	0.062	380
SB-40-NW-4.0	**6/19/2006**	**3.0 - 4.0**	**40**	**powdery fill - 0.5**	4.4	180	41	15	12	0.89 B	<0.60 U	3,400	0.023	
SB-41-SW-7.0	**6/2/2006**	**6.0 - 7.0**	**41**	**5**	3.7	230	65	12	110	<1.2 U	<0.62 U	9,600	0.44	
SB-43-NW-4	**6/12/2006**	**3.0 - 4.0**	**43**	**3**	8.0	250	83	14	42	0.59 B	<0.58 U	3,700	0.047	
SB-43-SE-6	**6/12/2006**	**5.0 - 6.0**	**43**	**5**	10	200	210	19	39	1.1 B	0.22 B	5,700	0.046	
SB-43-SW-6	**6/12/2006**	**5.0 - 6.0**	**43**	**4**	9.4	230	320	19	120	<1.2 U	0.83	12,000	0.12	
SB-44-NE-4	**6/13/2006**	**3.0 - 4.0**	**44**	**2.5**	11	220	300	31	62	1.2 B	0.32 B	5,600	0.034	
SB-47-SE-6	**6/5/2006**	**5.0 - 6.0**	**47**	**3.5**	6.3	250	6.0	15	16	0.92 B	0.13 B	6,700	0.036	
SB-48-NE-3	**6/6/2006**	**2.0 - 3.0**	**48**	**0**	7.4	240	27	15	42	<1.2 U	0.26 B	1,700	0.026	
SB-49-SW-3.0	**6/5/2006**	**2.0 - 3.0**	**49**	**1**	6.1	230	26	17	22	<1.2 U	<0.62 U	6,800	0.016 B	
SB-51-NE-6	**6/9/2006**	**5.0 - 6.0**	**51**	**5**	10	230	290	13	400	0.93 B	1.8	3,900	0.034	
SB-57-NE-2	**6/6/2006**	**1.0 - 2.0**	**57**	**0**	7.4	180	1.7	15	32	0.58 B	0.25 B	400	0.032	
SB-62-NE-5	**6/5/2006**	**4.0 - 5.0**	**62**	**2**	9.5	380	4.3	15	20	1.5	0.16 B	300	0.039	
SB-65-NE-2	**6/6/2006**	**1.0 - 2.0**	**65**	**0**	7.7	190	0.93	15	16	<1.2 U	0.30 B	88	0.028	
SB-67-SE-A-9	**6/14/2006**	**9.0**	**67 XTRA Vault**	**1**	8.9	190	89	32	23	<1.3 U	0.36 B	880	0.045	
SB-67-SE-B-9	**6/14/2006**	**9.0**	**67 XTRA Vault**	**1.5**	7.8	170	46	14	12	0.99 B	0.15 B	900	0.097	
SB-67-SE-C-11	**6/14/2006**	**11.0**	**67 XTRA Vault**	**1**	9.3	150	93	19	14	<1.2 U	0.12 B	1,200	0.039	
SB-70-SE-3.0	**6/5/2006**	**2.0 - 3.0**	**70**	**2**	10	140	7.5	14	74	<1.2 U	0.30 B	810	<2.1 U	
SB-71-NE-3-4	**6/5/2006**	**3.0 - 4.0**	**71**	**3**	6.3	210	10	22	25	<1.4 U	0.17 B	1,300	0.033	
SB-74-N-2.0	**6/5/2006**	**1.0 - 2.0**	**74**	**0**	7.2	190	17	23	24	<1.3 U	0.18 B	1,000	0.054	

Table B-12b
ProUCL Output: On-site Native Soil (0-10 ft bgs)

General UCL Statistics for Full Data Sets

User Selected Options	
From File	WorkSheet.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operatic	2000

arsenic

General Statistics			
Number of Valid Samples	48	Number of Unique Samples	33
Raw Statistics		Log-transformed Statistics	
Minimum	3.7	Minimum of Log Data	1.308
Maximum	22	Maximum of Log Data	3.091
Mean	7.823	Mean of log Data	2.007
Median	7.4	SD of log Data	0.305
SD	2.858		
Coefficient of Variation	0.365		
Skewness	2.779		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.788	Shapiro Wilk Test Statistic	0.961
Shapiro Wilk Critical Value	0.947	Shapiro Wilk Critical Value	0.947
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	8.515	95% H-UCL	8.438
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	9.316
95% Adjusted-CLT UCL	8.678	97.5% Chebyshev (MVUE) UCL	9.976
95% Modified-t UCL	8.543	99% Chebyshev (MVUE) UCL	11.27
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	9.62	Data Follow Appr. Gamma Distribution at 5% Significance Level	
Theta Star	0.813		
nu star	923.5		
Approximate Chi Square Value (.05)	854	Nonparametric Statistics	
Adjusted Level of Significance	0.045	95% CLT UCL	8.501
Adjusted Chi Square Value	852	95% Jackknife UCL	8.515
		95% Standard Bootstrap UCL	8.506
Anderson-Darling Test Statistic	0.808	95% Bootstrap-t UCL	8.804
Anderson-Darling 5% Critical Value	0.749	95% Hall's Bootstrap UCL	9.537
Kolmogorov-Smirnov Test Statistic	0.116	95% Percentile Bootstrap UCL	8.525
Kolmogorov-Smirnov 5% Critical Value	0.128	95% BCA Bootstrap UCL	8.646
Data follow Appr. Gamma Distribution at 5% Significance Lev		95% Chebyshev(Mean, Sd) UCL	9.621
		97.5% Chebyshev(Mean, Sd) UCL	10.4
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	11.93
95% Approximate Gamma UCL	8.46		
95% Adjusted Gamma UCL	8.48		
Potential UCL to Use		Use 95% Approximate Gamma UCL	8.46

Table B-12b
ProUCL Output: On-site Native Soil (0-10 ft bgs)

barium

General Statistics			
Number of Valid Samples	48	Number of Unique Samples	21
Raw Statistics		Log-transformed Statistics	
Minimum	13	Minimum of Log Data	2.565
Maximum	380	Maximum of Log Data	5.94
Mean	202.2	Mean of log Data	5.234
Median	200	SD of log Data	0.484
SD	63.21		
Coefficient of Variation	0.313		
Skewness	0.0213		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.978	Shapiro Wilk Test Statistic	0.702
Shapiro Wilk Critical Value	0.947	Shapiro Wilk Critical Value	0.947
Data appear Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	217.5	95% H-UCL	240.6
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	277.3
95% Adjusted-CLT UCL	217.2	97.5% Chebyshev (MVUE) UCL	306.3
95% Modified-t UCL	217.5	99% Chebyshev (MVUE) UCL	363.3
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	6.364	Data appear Normal at 5% Significance Level	
Theta Star	31.77		
nu star	611		
Approximate Chi Square Value (.05)	554.6	Nonparametric Statistics	
Adjusted Level of Significance	0.045	95% CLT UCL	217.2
Adjusted Chi Square Value	553	95% Jackknife UCL	217.5
		95% Standard Bootstrap UCL	217.5
Anderson-Darling Test Statistic	1.638	95% Bootstrap-t UCL	217.7
Anderson-Darling 5% Critical Value	0.752	95% Hall's Bootstrap UCL	218.4
Kolmogorov-Smirnov Test Statistic	0.163	95% Percentile Bootstrap UCL	216.7
Kolmogorov-Smirnov 5% Critical Value	0.128	95% BCA Bootstrap UCL	217.8
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	242
		97.5% Chebyshev(Mean, Sd) UCL	259.2
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	293
95% Approximate Gamma UCL	222.7		
95% Adjusted Gamma UCL	223.4		
Potential UCL to Use		Use 95% Student's-t UCL	217.5

Table B-12b
ProUCL Output: On-site Native Soil (0-10 ft bgs)

chromium

General Statistics			
Number of Valid Samples	48	Number of Unique Samples	16
Raw Statistics		Log-transformed Statistics	
Minimum	2.9	Minimum of Log Data	1.065
Maximum	32	Maximum of Log Data	3.466
Mean	16.55	Mean of log Data	2.76
Median	16	SD of log Data	0.34
SD	4.723		
Coefficient of Variation	0.285		
Skewness	0.861		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.904	Shapiro Wilk Test Statistic	0.798
Shapiro Wilk Critical Value	0.947	Shapiro Wilk Critical Value	0.947
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	17.69	95% H-UCL	18.28
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	20.37
95% Adjusted-CLT UCL	17.76	97.5% Chebyshev (MVUE) UCL	21.95
95% Modified-t UCL	17.7	99% Chebyshev (MVUE) UCL	25.06
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	10.22	Data do not follow a Discernable Distribution (0.05)	
Theta Star	1.619		
nu star	981.1		
Approximate Chi Square Value (.05)	909.4	Nonparametric Statistics	
Adjusted Level of Significance	0.045	95% CLT UCL	17.67
Adjusted Chi Square Value	907.3	95% Jackknife UCL	17.69
		95% Standard Bootstrap UCL	17.63
Anderson-Darling Test Statistic	1.668	95% Bootstrap-t UCL	17.71
Anderson-Darling 5% Critical Value	0.749	95% Hall's Bootstrap UCL	17.81
Kolmogorov-Smirnov Test Statistic	0.166	95% Percentile Bootstrap UCL	17.66
Kolmogorov-Smirnov 5% Critical Value	0.128	95% BCA Bootstrap UCL	17.81
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	19.52
		97.5% Chebyshev(Mean, Sd) UCL	20.8
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	23.33
95% Approximate Gamma UCL	17.85		
95% Adjusted Gamma UCL	17.89		
Potential UCL to Use		Use 95% Student's-t UCL	17.69
		or 95% Modified-t UCL	17.7

Table B-12b
ProUCL Output: On-site Native Soil (0-10 ft bgs)

cadmium

General Statistics			
Number of Valid Samples	48	Number of Unique Samples	46
Raw Statistics		Log-transformed Statistics	
Minimum	0.12	Minimum of Log Data	-2.12
Maximum	1800	Maximum of Log Data	7.496
Mean	126.5	Mean of log Data	2.958
Median	34	SD of log Data	2.399
SD	295.3		
Coefficient of Variation	2.334		
Skewness	4.366		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.465	Shapiro Wilk Test Statistic	0.942
Shapiro Wilk Critical Value	0.947	Shapiro Wilk Critical Value	0.947
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	198.1	95% H-UCL	1453
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	922.2
95% Adjusted-CLT UCL	225.4	97.5% Chebyshev (MVUE) UCL	1200
95% Modified-t UCL	202.5	99% Chebyshev (MVUE) UCL	1747
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	0.348	Data do not follow a Discernable Distribution (0.05)	
Theta Star	363.8		
nu star	33.4		
Approximate Chi Square Value (.05)	21.18	Nonparametric Statistics	
Adjusted Level of Significance	0.045	95% CLT UCL	196.7
Adjusted Chi Square Value	20.88	95% Jackknife UCL	198.1
		95% Standard Bootstrap UCL	195.1
Anderson-Darling Test Statistic	1.012	95% Bootstrap-t UCL	275.3
Anderson-Darling 5% Critical Value	0.849	95% Hall's Bootstrap UCL	433.7
Kolmogorov-Smirnov Test Statistic	0.16	95% Percentile Bootstrap UCL	202.4
Kolmogorov-Smirnov 5% Critical Value	0.138	95% BCA Bootstrap UCL	227.3
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	312.4
		97.5% Chebyshev(Mean, Sd) UCL	392.8
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	550.7
95% Approximate Gamma UCL	199.5		
95% Adjusted Gamma UCL	202.4		
Potential UCL to Use		Use 99% Chebyshev (Mean, Sd) UCL	550.7

Table B-12b
ProUCL Output: On-site Native Soil (0-10 ft bgs)

lead

General Statistics			
Number of Valid Samples	48	Number of Unique Samples	30
Raw Statistics		Log-transformed Statistics	
Minimum	3.7	Minimum of Log Data	1.308
Maximum	470	Maximum of Log Data	6.153
Mean	62.72	Mean of log Data	3.399
Median	20.5	SD of log Data	1.09
SD	106.3		
Coefficient of Variation	1.695		
Skewness	3.084		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.524	Shapiro Wilk Test Statistic	0.89
Shapiro Wilk Critical Value	0.947	Shapiro Wilk Critical Value	0.947
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	88.47	95% H-UCL	79.74
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	97.09
95% Adjusted-CLT UCL	95.26	97.5% Chebyshev (MVUE) UCL	116.1
95% Modified-t UCL	89.61	99% Chebyshev (MVUE) UCL	153.3
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	0.766	Data do not follow a Discernable Distribution (0.05)	
Theta Star	81.88		
nu star	73.54		
Approximate Chi Square Value (.05)	54.79	Nonparametric Statistics	
Adjusted Level of Significance	0.045	95% CLT UCL	87.96
Adjusted Chi Square Value	54.29	95% Jackknife UCL	88.47
		95% Standard Bootstrap UCL	87.77
Anderson-Darling Test Statistic	3.966	95% Bootstrap-t UCL	102.6
Anderson-Darling 5% Critical Value	0.789	95% Hall's Bootstrap UCL	89.81
Kolmogorov-Smirnov Test Statistic	0.23	95% Percentile Bootstrap UCL	89.99
Kolmogorov-Smirnov 5% Critical Value	0.133	95% BCA Bootstrap UCL	96.93
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	129.6
		97.5% Chebyshev(Mean, Sd) UCL	158.6
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	215.4
95% Approximate Gamma UCL	84.18		
95% Adjusted Gamma UCL	84.96		
Potential UCL to Use		Use 99% Chebyshev (Mean, Sd) UCL	215.4

Table B-12b
ProUCL Output: On-site Native Soil (0-10 ft bgs)

selenium

General Statistics			
Number of Valid Samples	48	Number of Unique Samples	26
Raw Statistics		Log-transformed Statistics	
Minimum	0.47	Minimum of Log Data	-0.755
Maximum	1.7	Maximum of Log Data	0.531
Mean	0.8	Mean of log Data	-0.277
Median	0.66	SD of log Data	0.318
SD	0.296		
Coefficient of Variation	0.37		
Skewness	1.543		
Relevant UCL Statistics			
Normal Distribution Test		*Lognormal Distribution Test*	
Shapiro Wilk Test Statistic	0.785	Shapiro Wilk Test Statistic	0.856
Shapiro Wilk Critical Value	0.947	Shapiro Wilk Critical Value	0.947
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	0.872	95% H-UCL	0.866
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	0.959
95% Adjusted-CLT UCL	0.881	97.5% Chebyshev (MVUE) UCL	1.029
95% Modified-t UCL	0.874	99% Chebyshev (MVUE) UCL	1.168
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	8.761	Data do not follow a Discernable Distribution (0.05)	
Theta Star	0.0913		
nu star	841.1		
Approximate Chi Square Value (.05)	774.8	Nonparametric Statistics	
Adjusted Level of Significance	0.045	95% CLT UCL	0.871
Adjusted Chi Square Value	772.8	95% Jackknife UCL	0.872
		95% Standard Bootstrap UCL	0.869
Anderson-Darling Test Statistic	3.19	95% *Bootstrap-t UCL*	*0.888*
Anderson-Darling 5% Critical Value	0.75	95% *Hall's Bootstrap* UCL	0.884
Kolmogorov-Smirnov Test Statistic	0.228	95% Percentile Bootstrap UCL	0.873
Kolmogorov-Smirnov 5% Critical Value	0.128	95% BCA Bootstrap UCL	0.88
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	0.987
		97.5% Chebyshev(Mean, Sd) UCL	1.067
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	1.226
95% Approximate Gamma UCL	0.869		
95% Adjusted Gamma UCL	0.871		
Potential UCL to Use		Use 95% Student's-t UCL	0.872
		or 95% Modified-t UCL	0.874

Table B-12b
ProUCL Output: On-site Native Soil (0-10 ft bgs)

zinc

General Statistics			
Number of Valid Samples	48	Number of Unique Samples	40
Raw Statistics		Log-transformed Statistics	
Minimum	51	Minimum of Log Data	3.932
Maximum	12000	Maximum of Log Data	9.393
Mean	3385	Mean of log Data	7.457
Median	2950	SD of log Data	1.487
SD	2965		
Coefficient of Variation	0.876		
Skewness	0.854		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.9	Shapiro Wilk Test Statistic	0.872
Shapiro Wilk Critical Value	0.947	Shapiro Wilk Critical Value	0.947
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	4103	95% H-UCL	9801
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	11167
95% Adjusted-CLT UCL	4145	97.5% Chebyshev (MVUE) UCL	13836
95% Modified-t UCL	4112	99% Chebyshev (MVUE) UCL	19078
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	0.835	Data appear Gamma Distributed at 5% Significance Level	
Theta Star	4054		
nu star	80.17		
Approximate Chi Square Value (.05)	60.54	Nonparametric Statistics	
Adjusted Level of Significance	0.045	95% CLT UCL	4089
Adjusted Chi Square Value	60.01	95% Jackknife UCL	4103
		95% Standard Bootstrap UCL	4072
Anderson-Darling Test Statistic	0.775	95% Bootstrap-t UCL	4145
Anderson-Darling 5% Critical Value	0.785	95% Hall's Bootstrap UCL	4138
Kolmogorov-Smirnov Test Statistic	0.121	95% Percentile Bootstrap UCL	4134
Kolmogorov-Smirnov 5% Critical Value	0.132	95% BCA Bootstrap UCL	4135
Data appear Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	5251
		97.5% Chebyshev(Mean, Sd) UCL	6058
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	7643
95% Approximate Gamma UCL	4483		
95% Adjusted Gamma UCL	4522		
Potential UCL to Use		Use 95% Approximate Gamma UCL	4483

Table B-12b
ProUCL Output: On-site Native Soil (0-10 ft bgs)

silver

General Statistics			
Number of Valid Samples	48	Number of Unique Samples	33
Raw Statistics		Log-transformed Statistics	
Minimum	0.12	Minimum of Log Data	-2.12
Maximum	2.2	Maximum of Log Data	0.788
Mean	0.427	Mean of log Data	-1.149
Median	0.3	SD of log Data	0.69
SD	0.446		
Coefficient of Variation	1.045		
Skewness	2.739		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.599	Shapiro Wilk Test Statistic	0.866
Shapiro Wilk Critical Value	0.947	Shapiro Wilk Critical Value	0.947
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	*0.535*	*95% H-UCL*	*0.493*
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	0.589
95% Adjusted-CLT UCL	0.56	97.5% Chebyshev (MVUE) UCL	0.671
95% Modified-t UCL	0.539	99% Chebyshev (MVUE) UCL	0.832
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	1.733	Data do not follow a Discernable Distribution (0.05)	
Theta Star	0.246		
nu star	166.3		
Approximate Chi Square Value (.05)	137.5	Nonparametric Statistics	
Adjusted Level of Significance	0.045	95% CLT UCL	0.533
Adjusted Chi Square Value	136.7	*95% Jackknife UCL*	0.535
		95% Standard Bootstrap UCL	0.53
Anderson-Darling Test Statistic	3.941	95% Bootstrap-t UCL	0.584
Anderson-Darling 5% Critical Value	0.764	95% Hall's Bootstrap UCL	0.555
Kolmogorov-Smirnov Test Statistic	0.301	95% Percentile Bootstrap UCL	0.535
Kolmogorov-Smirnov 5% Critical Value	0.13	95% BCA Bootstrap UCL	0.562
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	0.707
		97.5% Chebyshev(Mean, Sd) UCL	0.829
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	1.067
95% Approximate Gamma UCL	0.516		
95% Adjusted Gamma UCL	0.519		
Potential UCL to Use		Use 95% Chebyshev (Mean, Sd) UCL	0.707

Table B-12b
ProUCL Output: On-site Native Soil (0-10 ft bgs)
mercury

General Statistics			
Number of Valid Samples	48	Number of Unique Samples	35
Raw Statistics		Log-transformed Statistics	
Minimum	0.0085	Minimum of Log Data	-4.768
Maximum	1.05	Maximum of Log Data	0.0488
Mean	0.0788	Mean of log Data	-3.047
Median	0.041	SD of log Data	0.773
SD	0.158		
Coefficient of Variation	2.008		
Skewness	5.396		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.348	Shapiro Wilk Test Statistic	0.806
Shapiro Wilk Critical Value	0.947	Shapiro Wilk Critical Value	0.947
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	0.117	95% H-UCL	0.0812
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	0.0979
95% Adjusted-CLT UCL	0.135	97.5% Chebyshev (MVUE) UCL	0.113
95% Modified-t UCL	0.12	99% Chebyshev (MVUE) UCL	0.142
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	1.068	Data do not follow a Discernable Distribution (0.05)	
Theta Star	0.0738		
nu star	102.5		
Approximate Chi Square Value (.05)	80.17	Nonparametric Statistics	
Adjusted Level of Significance	0.045	95% CLT UCL	0.116
Adjusted Chi Square Value	79.56	95% Jackknife UCL	0.117
		95% Standard Bootstrap UCL	0.116
Anderson-Darling Test Statistic	6.782	95% Bootstrap-t UCL	0.218
Anderson-Darling 5% Critical Value	0.776	95% Hall's Bootstrap UCL	0.248
Kolmogorov-Smirnov Test Statistic	0.344	95% Percentile Bootstrap UCL	0.122
Kolmogorov-Smirnov 5% Critical Value	0.131	95% BCA Bootstrap UCL	0.144
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	0.178
		97.5% Chebyshev(Mean, Sd) UCL	0.222
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	0.306
95% Approximate Gamma UCL	0.101		
95% Adjusted Gamma UCL	0.102		
Potential UCL to Use		Use 95% Chebyshev (Mean, Sd) UCL	0.178

Table B-13a
Subsurface On-site Slag Samples (Total Metals)

Sample ID	Data	Depth	GRID	Depth of Slag	Arsenic	Barium	Cadmium	Chromium	Copper	Lead	Selenium	Silver	Zinc	Mercury
MW-04-2	6/15/2006	1.0 - 2.0	10	1.5	14	270	87	13	na	560	1.4	0.82	5,100	0.037
MW-05-2	6/15/2006	1.0 - 2.0	6/7	3	31	59	140	17	na	2,000	3.5	1.8	120,000	35
P-02-5	6/19/2006	4.0 - 5.0	23	5	18	64	2500	19	na	3,500	1.4 B	1.4	170,000	0.048
SB-01-N-1	6/6/2006	0.0 - 1.0	1	5	410	190	2.1	26	na	560	9.1	320	6,700	0.03
SB-05-SW-2.0	5/31/2006	1.0 - 2.0	5	9	110	180	110	17	na	3,100	2.8	20	59,000	0.64
SB-05-SW-9.0	5/31/2006	8.0 - 9.0	5	9	43	130	12	6.2	na	8,700	2.4	3.8	37,000	0.064
SB-09-NE-1.0	12/13/2006	0.5-1.0	9	1	230	350 B	45	16 B	4,300	4,500	3.5	94	170,000	0.1
SB-09-NW-0 5	12/13/2006	0 0-0.5	9	0.5	25	160 B	73	50 B	470	1,700	2.6	4.2	20,000	0.41
SB-09-SE-3.0	5/31/2006	2.0 - 3.0	9	5	12	130	50	9.8	na	2,100	1.3 B	0.45 B	61,000	0.040
SB-13-SW-5.0	6/1/2006	4.0 - 5.0	13	5	140	120 B	66	16 B	na	640	4.3	88	7,200	0.16
SB-15-SE-3.0	6/1/2006	2.0 - 3.0	15	3	120	66	52	7.4	na	910	1.7	6.1	140,000	0.23
SB-15-SW-6.5 [2]	6/1/2006	6.0 - 6.5	15	6.5	330	75	74	9.1	na	19,000	9.7	76	51,000	0.25
SB-16-SE-1.0	6/1/2006	0.0 - 1.0	16	3.3	320	100	38	16	na	12,000	3.2	60	24,000	0.18
SB-17-SW-2.0	5/31/2006	1.0 - 2.0	17	6	22	130	30	13	na	900	1.7	4.7	6,800	0.40
SB-21-SE-4	6/7/2006	3.0 - 4.0	21	4.5	21	54	59	12	na	1,300	1.3	2.8	68,000	0.12
SB-23-NE-1A	6/7/2006	0.0 - 1.0	23	3.5	240	260	110	20	na	3,600	4.0	81	39,000	3.3
SB-24-SE-2	6/7/2006	1.0 - 2.0	24	5	150	320	200	12	na	11,000	4.5	35	68,000	0.067
SB-28-SW-4	6/7/2006	3.0 - 4.0	28	6	66	650	60	13	na	1,800	5.6	7.1	42,000	0.078
SB-32-NE-1	6/6/2006	0.0 - 1.0	32	6.5	470	320	6.7	14	na	9,900	5.3	500	21,000	2.3
SB-33-SE-3	6/9/2006	2.0 - 3.0	33	7	26	120	200	9.8	na	2,900	5.4	19	16,000	77
SB-33-SW-1	6/9/2006	0.0 - 1.0	33	5	450	2,300	490	18	na	20,000	6.0	190	110,000	3.2
SB-34-NE-3	6/12/2006	2.0 - 3.0	34	6	1.5	16	1.1	2.9	na	17	<1.0 U	<0.51 U	390	0.031
SB-34-NE-7	6/12/2006	6.0 - 7.0	34	7.5	4.8	42	44	5.5	na	550	0.53 B	0.38 B	32,000	0.0078 B
SB-37-NE-3	6/7/2006	2.0 - 3.0	37	6.5	6.7	43	2.7	16	na	150	1.8	0.35 B	750	0.032
SB-38-SE-8 [2]	6/6/2006	7.0 - 8.0	38	9.3	150	160	63	7.9	na	19,000	3.7	39	80,000	0.047
SB-40-NW-0.5	6/19/2006	0.0 - 0.5	40	Powdery Fill -0.5	57	250	30	17	3,300	1,400	1.2	10	4,400	0.52
SB-42-NE-2	6/9/2006	1.0 - 2.0	42	3	63	190	23	19	na	16,000	4.4	16	8,700	2.6
SB-45-NE-4	6/7/2006	3.0 - 4.0	45	4	200	520	94	18	na	18,000	6.9	75	55,000	0.53
SB-46-SW-1	6/6/2006	0.0 - 1.0	46	6.5	40	150	100	14	na	1,300	2.2	6.4	9,800	<1.9 U
SB-50-SE-5.0	6/2/2006	4.0 - 5.0	50	5.5	7.6	37	30	15	na	470	1.1	0.23 B	9,600	0.11
SB-51-SE-4.0	6/9/2006	3.0 –5.0	51	3.5	51	310	100	13	na	4,000	11	19	7,300	8.1
SB-51-SW-3	6/9/2006	2.0 - 3.0	51	4.5	32	320	4.5	9.7	na	350	1.3	1.1	440	1.2
SB-52-NE-4	6/13/2006	3.0 - 4.0	52	3.5	13	160	34	11	na	29	0.58 B	0.12 B	980	0.085
SB-52-SE-5	6/12/2006	4.0 - 5.0	52	4.5	30	150	130	2.2	na	1,700	1.2	3.0	19,000	0.52
SB-52-SW-5	6/12/2006	4.0 - 5.0	52	4.5	29	190	190	19	na	5,400	2.2	3.2	48,000	0.64
SB-53-NE-3	6/8/2006	2.0 - 3.0	53	7	140	1,100	35	32	na	1,900	6.0	170	25,000	4.2
SB-53-NE-5A	6/8/2006	4.0 - 5.0	53	7	18	90	16	4.5	na	5,900	14	9.6	1,100	52
SB-53-NW-2	6/8/2006	1.0 - 2.0	53	4.5	84	400	8.3	18	na	2,500	2.8	2.8	2,500	0.76
SB-53-SW-2	6/8/2006	1.0 - 2.0	53	3	24	69	48	16	na	2,800	3.6	2.6	7,000	1.4
SB-54-NE-5	6/8/2006	4.0 - 5.0	54	4.5-5	35	170	110	11	na	23,000	140	4.8	15,000	210
SB-54-NW-6	6/8/2006	5.0 - 6.0	54	6-7	110	170	40	13	na	25,000	11	8.9	7,200	35
SB-55-N-4	6/8/2006	3.0 - 4.0	55	5	9.0	180	83	14	na	320	0.98 B	0.30 B	21,000	0.85
SB-58-SW-2.0	*6/5/2006*	*1.0 - 2.0*	*58*	*1.5*	*18*	*44*	*8.0*	*19*	*na*	*680*	*1.4*	*2.2*	*8,200*	*0.019* B
SB-59-NE-3.0	6/2/2006	2.0 - 3.0	59	3.5	57	160	180	20	na	55,000	70	19	9,700	540
SB-60-NE-2.0	6/2/2006	1.0 - 2.0	60	6	230	1,200	7.7	16	na	3,600	3.5	230	16,000	0.44
SB-61-NE-2	6/5/2006	1.0 - 2.0	61	2.5	200	98	1,500	61	na	31,000	25	110	73,000	86
SB-63-SE-1.0	6/5/2006	0.0 - 1.0	63	1.5	230	1,300	2.0	33	na	610	6.1	300	3,300	0.32
SB-64-NW-4.0	6/5/2006	3.0 - 4.0	64	3.5	33	320	120	20	na	3,000	8.1	8.1	5,900	30
SB-67-NE-4.0	6/2/2006	3.0 - 4.0	67	3.5	160	310	330	39	na	3,100	6.9	26	12,000	21
SB-69-NE-1.0	6/5/2006	0.0 - 1.0	69	1	31	360	27	19	na	2,000	11	3.6	1,100	14
SB-73-N-2.0	6/2/2006	1.0 - 2.0	73	2	210	1,300	13	21	na	1,100	3.6	230	7,900	1.4

Table B-13b
Pro UCL Output: On-site Slag (0-10 ft bgs)

General UCL Statistics for Full Data Sets

User Selected Options	
From File	WorkSheet.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Arsenic

General Statistics

Number of Valid Samples	51	Number of Unique Samples	41
Raw Statistics		Log-transformed Statistics	
Minimum	1.5	Minimum of Log Data	0.405
Maximum	470	Maximum of Log Data	6.153
Mean	108.3	Mean of log Data	3.988
Median	51	SD of log Data	1.312
SD	121.1		
Coefficient of Variation	1.118		
Skewness	1.502		

Relevant UCL Statistics

Normal Distribution Test		Lognormal Distribution Test	
Lilliefors Test Statistic	0.225	Lilliefors Test Statistic	0.0997
Lilliefors Critical Value	0.124	Lilliefors Critical Value	0.124
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	136.7	95% H-UCL	208.6
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	249.9
95% Adjusted-CLT UCL	140	97.5% Chebyshev (MVUE) UCL	304.4
95% Modified-t UCL	137.3	99% Chebyshev (MVUE) UCL	411.6
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	0.809	Data appear Lognormal at 5% Significance Level	
Theta Star	133.8		
nu star	82.52		
Approximate Chi Square Value (.05)	62.59	Nonparametric Statistics	
Adjusted Level of Significance	0.0453	95% CLT UCL	136.2
Adjusted Chi Square Value	62.08	95% Jackknife UCL	136.7
		95% Standard Bootstrap UCL	136.2
Anderson-Darling Test Statistic	0.853	95% Bootstrap-t UCL	142.2
Anderson-Darling 5% Critical Value	0.788	95% Hall's Bootstrap UCL	139.1
Kolmogorov-Smirnov Test Statistic	0.138	95% Percentile Bootstrap UCL	136.2
Kolmogorov-Smirnov 5% Critical Value	0.129	95% BCA Bootstrap UCL	139.3
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	182.2
		97.5% Chebyshev(Mean, Sd) UCL	214.2
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	277
95% Approximate Gamma UCL	142.8		
95% Adjusted Gamma UCL	143.9		

Potential UCL to Use		Use 95% H-UCL	208.6

Table B-13b
Pro UCL Output: On-site Slag (0-10 ft bgs)

Barium

General Statistics			
Number of Valid Samples	51	Number of Unique Samples	35
Raw Statistics		Log-transformed Statistics	
Minimum	16	Minimum of Log Data	2.773
Maximum	2300	Maximum of Log Data	7.741
Mean	310.9	Mean of log Data	5.198
Median	170	SD of log Data	1.008
SD	419.9		
Coefficient of Variation	1.351		
Skewness	3.023		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Lilliefors Test Statistic	0.297	Lilliefors Test Statistic	0.108
Lilliefors Critical Value	0.124	Lilliefors Critical Value	0.124
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	409.5	95% H-UCL	418
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	511.1
95% Adjusted-CLT UCL	434.2	97.5% Chebyshev (MVUE) UCL	604.1
95% Modified-t UCL	413.6	99% Chebyshev (MVUE) UCL	786.8
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	1.009	Data appear Lognormal at 5% Significance Level	
Theta Star	308		
nu star	103		
Approximate Chi Square Value (.05)	80.54	Nonparametric Statistics	
Adjusted Level of Significance	0.0453	95% CLT UCL	407.6
Adjusted Chi Square Value	79.97	95% Jackknife UCL	409.5
		95% Standard Bootstrap UCL	404.6
Anderson-Darling Test Statistic	1.899	95% Bootstrap-t UCL	459.9
Anderson-Darling 5% Critical Value	0.778	95% Hall's Bootstrap UCL	462.6
Kolmogorov-Smirnov Test Statistic	0.179	95% Percentile Bootstrap UCL	417.3
Kolmogorov-Smirnov 5% Critical Value	0.128	95% BCA Bootstrap UCL	433.5
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	567.2
		97.5% Chebyshev(Mean, Sd) UCL	678.1
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	896
95% Approximate Gamma UCL	397.4		
95% Adjusted Gamma UCL	400.3		
Potential UCL to Use		Use 95% H-UCL	418

Table B-13b
Pro UCL Output: On-site Slag (0-10 ft bgs)

Cadmium

General Statistics			
Number of Valid Samples	51	Number of Unique Samples	45
Raw Statistics		Log-transformed Statistics	
Minimum	1.1	Minimum of Log Data	0.0953
Maximum	2500	Maximum of Log Data	7.824
Mean	152.5	Mean of log Data	3.823
Median	52	SD of log Data	1.551
SD	399.7		
Coefficient of Variation	2.621		
Skewness	5.007		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Lilliefors Test Statistic	0.374	Lilliefors Test Statistic	0.118
Lilliefors Critical Value	0.124	Lilliefors Critical Value	0.124
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	*246.3*	*95% H-UCL*	*290.5*
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	329.6
95% Adjusted-CLT UCL	286.5	97.5% Chebyshev (MVUE) UCL	409.4
95% Modified-t UCL	252.9	99% Chebyshev (MVUE) UCL	566.3
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	0.506	Data appear Lognormal at 5% Significance Level	
Theta Star	301.5		
nu star	51.6		
Approximate Chi Square Value (.05)	36.1	Nonparametric Statistics	
Adjusted Level of Significance	0.0453	95% CLT UCL	244.6
Adjusted Chi Square Value	35.72	95% Jackknife UCL	246.3
		95% Standard Bootstrap UCL	244.6
Anderson-Darling Test Statistic	2.385	95% Bootstrap-t UCL	554.7
Anderson-Darling 5% Critical Value	0.812	95% Hall's Bootstrap UCL	637
Kolmogorov-Smirnov Test Statistic	0.186	95% Percentile Bootstrap UCL	250.9
Kolmogorov-Smirnov 5% Critical Value	0.131	95% BCA Bootstrap UCL	305.2
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	396.5
		97.5% Chebyshev(Mean, Sd) UCL	502.1
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	709.5
95% Approximate Gamma UCL	218		
95% Adjusted Gamma UCL	220.3		
Potential UCL to Use		Use 95% H-UCL	290.5

Table B-13b
Pro UCL Output: On-site Slag (0-10 ft bgs)

Chromium

General Statistics			
Number of Valid Samples	51	Number of Unique Samples	27
Raw Statistics		Log-transformed Statistics	
Minimum	2.2	Minimum of Log Data	0.788
Maximum	61	Maximum of Log Data	4.111
Mean	16.88	Mean of log Data	2.66
Median	16	SD of log Data	0.604
SD	10.58		
Coefficient of Variation	0.626		
Skewness	2.235		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Lilliefors Test Statistic	0.247	Lilliefors Test Statistic	0.152
Lilliefors Critical Value	0.124	Lilliefors Critical Value	0.124
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	19.36	95% H-UCL	20.28
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	23.86
95% Adjusted-CLT UCL	19.81	97.5% Chebyshev (MVUE) UCL	26.79
95% Modified-t UCL	19.44	99% Chebyshev (MVUE) UCL	32.54
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	2.999	Data do not follow a Discernable Distribution (0.05)	
Theta Star	5.63		
nu star	305.9		
Approximate Chi Square Value (.05)	266.3	Nonparametric Statistics	
Adjusted Level of Significance	0.0453	95% CLT UCL	19.32
Adjusted Chi Square Value	265.3	95% Jackknife UCL	19.36
		95% Standard Bootstrap UCL	19.22
Anderson-Darling Test Statistic	1.26	95% Bootstrap-t UCL	19.89
Anderson-Darling 5% Critical Value	0.756	95% Hall's Bootstrap UCL	20.2
Kolmogorov-Smirnov Test Statistic	0.173	95% Percentile Bootstrap UCL	19.28
Kolmogorov-Smirnov 5% Critical Value	0.125	95% BCA Bootstrap UCL	19.86
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	23.34
		97.5% Chebyshev(Mean, Sd) UCL	26.13
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	31.62
95% Approximate Gamma UCL	19.39		
95% Adjusted Gamma UCL	19.47		
Potential UCL to Use		Use 95% Chebyshev (Mean, Sd) UCL	23.34

Table B-13b
Pro UCL Output: On-site Slag (0-10 ft bgs)

copper

General Statistics			
Number of Valid Samples	3	Number of Unique Samples	3
Raw Statistics		Log-transformed Statistics	
Minimum	470	Minimum of Log Data	6.153
Maximum	4300	Maximum of Log Data	8.366
Mean	2690	Mean of log Data	7.54
Median	3300	SD of log Data	1.209
SD	1987		
Coefficient of Variation	0.738		
Skewness	-1.252		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.929	Shapiro Wilk Test Statistic	0.838
Shapiro Wilk Critical Value	0.767	Shapiro Wilk Critical Value	0.767
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	6039	95% H-UCL	2.85E+09
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	10491
95% Adjusted-CLT UCL	3691	97.5% Chebyshev (MVUE) UCL	13768
95% Modified-t UCL	5901	99% Chebyshev (MVUE) UCL	20205
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	N/A	Data appear Normal at 5% Significance Level	
Theta Star	N/A		
nu star	N/A		
Approximate Chi Square Value (.05)	N/A	Nonparametric Statistics	
Adjusted Level of Significance	N/A	95% CLT UCL	4577
Adjusted Chi Square Value	N/A	95% Jackknife UCL	6039
		95% Standard Bootstrap UCL	4013
Anderson-Darling Test Statistic	0.444	95% Bootstrap-t UCL	4242
Anderson-Darling 5% Critical Value	N/A	95% Hall's Bootstrap UCL	3250
Kolmogorov-Smirnov Test Statistic	0.368	95% Percentile Bootstrap UCL	3967
Kolmogorov-Smirnov 5% Critical Value	N/A	95% BCA Bootstrap UCL	3633
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	7689
		97.5% Chebyshev(Mean, Sd) UCL	9853
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	14102
95% Approximate Gamma UCL	N/A		
95% Adjusted Gamma UCL	N/A		
Potential UCL to Use		Use 95% Student's-t UCL	6039
Recommended UCL exceeds the maximum observation			

Table B-13b
Pro UCL Output: On-site Slag (0-10 ft bgs)

lead

General Statistics			
Number of Valid Samples	51	Number of Unique Samples	44
Raw Statistics		Log-transformed Statistics	
Minimum	17	Minimum of Log Data	2.833
Maximum	55000	Maximum of Log Data	10.92
Mean	6677	Mean of log Data	7.768
Median	2500	SD of log Data	1.654
SD	10229		
Coefficient of Variation	1.532		
Skewness	2.746		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Lilliefors Test Statistic	0.29	Lilliefors Test Statistic	0.0714
Lilliefors Critical Value	0.124	Lilliefors Critical Value	0.124
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	9078	95% H-UCL	19060
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	20886
95% Adjusted-CLT UCL	9622	97.5% Chebyshev (MVUE) UCL	26139
95% Modified-t UCL	9170	99% Chebyshev (MVUE) UCL	36457
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	0.574	Data appear Lognormal at 5% Significance Level	
Theta Star	11643		
nu star	58.5		
Approximate Chi Square Value (.05)	41.91	Nonparametric Statistics	
Adjusted Level of Significance	0.0453	95% CLT UCL	9033
Adjusted Chi Square Value	41.51	95% Jackknife UCL	9078
		95% Standard Bootstrap UCL	8957
Anderson-Darling Test Statistic	1.096	95% Bootstrap-t UCL	9895
Anderson-Darling 5% Critical Value	0.806	95% Hall's Bootstrap UCL	10281
Kolmogorov-Smirnov Test Statistic	0.159	95% Percentile Bootstrap UCL	8944
Kolmogorov-Smirnov 5% Critical Value	0.131	95% BCA Bootstrap UCL	9567
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	12921
		97.5% Chebyshev(Mean, Sd) UCL	15622
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	20929
95% Approximate Gamma UCL	9319		
95% Adjusted Gamma UCL	9411		
Potential UCL to Use		Use 95% H-UCL	19060

Table B-13b
Pro UCL Output: On-site Slag (0-10 ft bgs)

selenium

General Statistics			
Number of Valid Samples	51	Number of Unique Samples	36
Raw Statistics		Log-transformed Statistics	
Minimum	0.5	Minimum of Log Data	-0.693
Maximum	140	Maximum of Log Data	4.942
Mean	8.496	Mean of log Data	1.279
Median	3.5	SD of log Data	1.105
SD	21.34		
Coefficient of Variation	2.511		
Skewness	5.363		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Lilliefors Test Statistic	0.375	Lilliefors Test Statistic	0.0814
Lilliefors Critical Value	0.124	Lilliefors Critical Value	0.124
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	13.5	95% H-UCL	9.655
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	11.79
95% Adjusted-CLT UCL	15.81	97.5% Chebyshev (MVUE) UCL	14.08
95% Modified-t UCL	13.88	99% Chebyshev (MVUE) UCL	18.58
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	0.674	Data appear Lognormal at 5% Significance Level	
Theta Star	12.61		
nu star	68.75		
Approximate Chi Square Value (.05)	50.66	Nonparametric Statistics	
Adjusted Level of Significance	0.0453	95% CLT UCL	13.41
Adjusted Chi Square Value	50.21	95% Jackknife UCL	13.5
		95% Standard Bootstrap UCL	13.26
Anderson-Darling Test Statistic	3.707	95% Bootstrap-t UCL	31.1
Anderson-Darling 5% Critical Value	0.797	95% Hall's Bootstrap UCL	33.85
Kolmogorov-Smirnov Test Statistic	0.209	95% Percentile Bootstrap UCL	13.77
Kolmogorov-Smirnov 5% Critical Value	0.13	95% BCA Bootstrap UCL	16.9
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	21.52
		97.5% Chebyshev(Mean, Sd) UCL	27.15
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	38.22
95% Approximate Gamma UCL	11.53		
95% Adjusted Gamma UCL	11.63		
Potential UCL to Use		Use 95% H-UCL	9.655

Table B-13b
Pro UCL Output: On-site Slag (0-10 ft bgs)

silver

General Statistics			
Number of Valid Samples	51	Number of Unique Samples	47
Raw Statistics		Log-transformed Statistics	
Minimum	0.12	Minimum of Log Data	-2.12
Maximum	500	Maximum of Log Data	6.215
Mean	55.26	Mean of log Data	2.244
Median	8.1	SD of log Data	2.173
SD	101.3		
Coefficient of Variation	1.834		
Skewness	2.635		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Lilliefors Test Statistic	0.303	Lilliefors Test Statistic	0.0849
Lilliefors Critical Value	0.124	Lilliefors Critical Value	0.124
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	79.04	95% H-UCL	318.7
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	260.4
95% Adjusted-CLT UCL	84.19	97.5% Chebyshev (MVUE) UCL	335.5
95% Modified-t UCL	79.91	99% Chebyshev (MVUE) UCL	482.9
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	0.367	Data appear Lognormal at 5% Significance Level	
Theta Star	150.6		
nu star	37.42		
Approximate Chi Square Value (.05)	24.41	Nonparametric Statistics	
Adjusted Level of Significance	0.0453	95% CLT UCL	78.6
Adjusted Chi Square Value	24.11	95% Jackknife UCL	79.04
		95% Standard Bootstrap UCL	78.13
Anderson-Darling Test Statistic	1.462	95% Bootstrap-t UCL	87.17
Anderson-Darling 5% Critical Value	0.844	95% Hall's Bootstrap UCL	87.51
Kolmogorov-Smirnov Test Statistic	0.166	95% Percentile Bootstrap UCL	79.53
Kolmogorov-Smirnov 5% Critical Value	0.134	95% BCA Bootstrap UCL	84.43
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	117.1
		97.5% Chebyshev(Mean, Sd) UCL	143.9
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	196.5
95% Approximate Gamma UCL	84.69		
95% Adjusted Gamma UCL	85.77		
Potential UCL to Use		Use 95% Chebyshev (MVUE) UCL	260.4

Table B-13b
Pro UCL Output: On-site Slag (0-10 ft bgs)

zinc

General Statistics			
Number of Valid Samples	51	Number of Unique Samples	45
Raw Statistics		Log-transformed Statistics	
Minimum	390	Minimum of Log Data	5.966
Maximum	170000	Maximum of Log Data	12.04
Mean	34001	Mean of log Data	9.563
Median	16000	SD of log Data	1.533
SD	42741		
Coefficient of Variation	1.257		
Skewness	1.861		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Lilliefors Test Statistic	0.23	Lilliefors Test Statistic	0.0959
Lilliefors Critical Value	0.124	Lilliefors Critical Value	0.124
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	44031	95% H-UCL	86736
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	98948
95% Adjusted-CLT UCL	45512	97.5% Chebyshev (MVUE) UCL	122756
95% Modified-t UCL	44291	99% Chebyshev (MVUE) UCL	169523
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	0.667	Data appear Gamma Distributed at 5% Significance Level	
Theta Star	50994		
nu star	68.01		
Approximate Chi Square Value (.05)	50.03	Nonparametric Statistics	
Adjusted Level of Significance	0.0453	95% CLT UCL	43845
Adjusted Chi Square Value	49.58	95% Jackknife UCL	44031
		95% Standard Bootstrap UCL	43663
Anderson-Darling Test Statistic	0.525	95% Bootstrap-t UCL	46308
Anderson-Darling 5% Critical Value	0.798	95% Hall's Bootstrap UCL	46192
Kolmogorov-Smirnov Test Statistic	0.118	95% Percentile Bootstrap UCL	44588
Kolmogorov-Smirnov 5% Critical Value	0.13	95% BCA Bootstrap UCL	45478
Data appear Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	60089
		97.5% Chebyshev(Mean, Sd) UCL	71377
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	93550
95% Approximate Gamma UCL	46222		
95% Adjusted Gamma UCL	46640		
Potential UCL to Use		Use 95% Approximate Gamma UCL	46222

Table B-13b
Pro UCL Output: On-site Slag (0-10 ft bgs)

mercury

General Statistics			
Number of Valid Samples	51	Number of Unique Samples	47
Raw Statistics		*Log-transformed Statistics*	
Minimum	0.0078	Minimum of Log Data	-4.854
Maximum	540	Maximum of Log Data	6.292
Mean	22.28	Mean of log Data	-0.261
Median	0.52	SD of log Data	2.67
SD	81.3		
Coefficient of Variation	3.649		
Skewness	5.632		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Lilliefors Test Statistic	0.392	Lilliefors Test Statistic	0.0977
Lilliefors Critical Value	0.124	Lilliefors Critical Value	0.124
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	41.36	95% H-UCL	146.8
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	73.83
95% Adjusted-CLT UCL	50.6	97.5% Chebyshev (MVUE) UCL	96.82
95% Modified-t UCL	42.86	99% Chebyshev (MVUE) UCL	142
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	0.216	Data appear Lognormal at 5% Significance Level	
Theta Star	103		
nu star	22.07		
Approximate Chi Square Value (.05)	12.39	Nonparametric Statistics	
Adjusted Level of Significance	0.0453	95% CLT UCL	41.01
Adjusted Chi Square Value	12.18	95% Jackknife UCL	41.36
		95% *Standard Bootstrap* UCL	41.13
Anderson-Darling Test Statistic	4.528	95% Bootstrap-t UCL	92.59
Anderson-Darling 5% Critical Value	0.9	95% Hall's Bootstrap UCL	108.3
Kolmogorov-Smirnov Test Statistic	0.255	95% *Percentile* Bootstrap UCL	42.53
Kolmogorov-Smirnov 5% Critical Value	0.137	95% BCA Bootstrap UCL	54.04
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	71.91
		97.5% Chebyshev(Mean, Sd) UCL	93.38
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	135.6
95% Approximate Gamma UCL	39.69		
95% Adjusted Gamma UCL	40.38		
Potential UCL to Use		Use 97.5% Chebyshev (MVUE) UCL	96.82

ATTACHMENT C

IEUBK AND ALM RESULTS

Appendix C-1
Calculations of Preliminary Remediation Goals (PRGs)

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

Version date 05/19/03

Site Worker

Exposure Variable	PRG Equation[1] 1*	PRG Equation[1] 2**	Description of Exposure Variable	Units	Values for Non-Residential Exposure Scenario: Using Equation 1 GSDi = Hom	Using Equation 1 GSDi = Het	Using Equation 2 GSDi = Hom	Using Equation 2 GSDi = Het
$PbB_{fetal,\ 0.95}$	X	X	95th percentile PbB in fetus	ug/dL	10	10	10	10
$R_{fetal/maternal}$	X	X	Fetal/maternal PbB ratio	--	0.9	0.9	0.9	0.9
BKSF	X	X	Biokinetic Slope Factor	ug/dL per ug/day	0.4	0.4	0.4	0.4
GSD_i	X	X	Geometric standard deviation PbB	--	2.1	2.3	2.1	2.3
PbB_0	X	X	Baseline PbB	ug/dL	1.5	1.7	1.5	1.7
IR_S	X		Soil ingestion rate (including soil-derived indoor dust)	g/day	0.050	0.050	--	--
IR_{S+D}		X	Total ingestion rate of outdoor soil and indoor dust	g/day	--	--	0.050	0.050
W_S		X	Weighting factor; fraction of IR_{S+D} ingested as outdoor soil	--	--	--	1.0	1.0
K_{SD}		X	Mass fraction of soil in dust	--	--	--	0.7	0.7
$AF_{S,\ D}$	X	X	Absorption fraction (same for soil and dust)	--	0.12	0.12	0.12	0.12
$EF_{S,\ D}$	X	X	Exposure frequency (same for soil and dust)	days/yr	250	250	250	250
$AT_{S,\ D}$	X	X	Averaging time (same for soil and dust)	days/yr	365	365	365	365
PRG	**Preliminary Remediation Goal**			**ppm**	**1,082**	**683**	**1,082**	**683**

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

***Equation 1, based on Eq. 4 in USEPA (1996).**

$$PRG = \frac{([PbB_{95}fetal/(R*(GSD_i^{1.645})])-PbB_0)*AT_{S,D}}{BKSF*(IR_{S+D}*AF_{S,D}*EF_{S,D})}$$

****Equation 2, alternate approach based on Eq. 4 and Eq. A-19 in USEPA (1996).**

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

Source: U.S. EPA (1996). Recommendations of the Technical Review Workgroup for Lead for an Interim Approach to Assessing Risks Associated with Adult Exposures to Lead in Soil

Appendix C-2
Calculations of Preliminary Remediation Goals (PRGs)

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

Version date 05/19/03

Utility Worker

Exposure Variable	PRG Equation[1] 1*	2**	Description of Exposure Variable	Units	Values for Non-Residential Exposure Scenario			
					Using Equation 1		Using Equation 2	
					GSDi = Hom	GSDi = Het	GSDi = Hom	GSDi = Het
$PbB_{fetal,\ 0.95}$	X	X	95th percentile PbB in fetus	ug/dL	10	10	10	10
$R_{fetal/maternal}$	X	X	Fetal/maternal PbB ratio	--	0.9	0.9	0.9	0.9
BKSF	X	X	Biokinetic Slope Factor	ug/dL per ug/day	0.4	0.4	0.4	0.4
GSD_i	X	X	Geometric standard deviation PbB	--	2.1	2.3	2.1	2.3
PbB_0	X	X	Baseline PbB	ug/dL	1.5	1.7	1.5	1.7
IR_S	X		Soil ingestion rate (including soil-derived indoor dust)	g/day	0.330	0.330	--	--
IR_{S+D}		X	Total ingestion rate of outdoor soil and indoor dust	g/day	--	--	0.330	0.330
W_S		X	Weighting factor; fraction of IR_{S+D} ingested as outdoor soil	--	--	--	1.0	1.0
K_{SD}		X	Mass fraction of soil in dust	--	--	--	0.7	0.7
$AF_{S,\ D}$	X	X	Absorption fraction (same for soil and dust)	--	0.12	0.12	0.12	0.12
$EF_{S,\ D}$	X	X	Exposure frequency (same for soil and dust)	days/yr	30	30	30	30
$AT_{S,\ D}$	X	X	Averaging time (same for soil and dust)	days/yr	365	365	365	365
PRG	**Preliminary Remediation Goal**			**ppm**	**1,366**	**863**	**1,366**	**863**

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

***Equation 1, based on Eq. 4 in USEPA (1996).**

$$PRG = \frac{([PbB_{95}fetal/(R*(GSD_i^{1.645})])-PbB_0)*AT_{S,D}}{BKSF*(IR_{S+D}*AF_{S,D}*EF_{S,D})}$$

****Equation 2, alternate approach based on Eq. 4 and Eq. A-19 in USEPA (1996).**

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

Source: U.S. EPA (1996). Recommendations of the Technical Review Workgroup for Lead for an Interim Approach to Assessing Risks Associated with Adult Exposures to Lead in Soil