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Technical Memorandum for
Refinement of Streamlined Human Health Risk Assessment
Mammoth Mining Company Stamp Mill Site, Inyo National Forest, Mono County, California

Dear Ms. Scholten:

This technical memorandum summarizes the risk assessment refinement of the streamlined human health risk assessment (HHRA) originally included in the Preliminary Assessment/Site Inspection (PA/SI) Report for the Mammoth Mining Company Stamp Mill (Mammoth Mill) Site[1]. The streamlined HHRA was refined at the request of the Forest Service to ensure a conservative approach was used to assess risks to human health associated with metals at the Mammoth Mill Site in Inyo County, California (Enclosure 1, Figure 1). On December 13, 2016, the Forest Service tasked ERRG with conducting a risk refinement focused on modifying the assumptions used in developing the streamlined HHRA for recreational cabin occupants.

The following sections summarize the purpose of the risk refinement, site background, methods used to refine the streamlined HHRA, the results of the refined HHRA, and recommendations for further action. Enclosure 2 presents the complete results of the streamlined HHRA refinement.

1. Risk Refinement Purpose

The purpose of the risk assessment refinement was to adjust several assumptions made in developing the original streamlined HHRA to account for new site-specific information related to cabin occupants. Specifically, exposure durations and frequencies were adjusted from standard values (set based on typical seasonal cabin occupancy) to values that represent the maximum (or worst-case) exposure durations and frequencies of actual cabin occupants. In addition, toxicity criteria were updated to ensure the use of the most current toxicity criteria. Specifically, the refinement included modifying the exposure scenarios for cabin occupants to include a typical summer recreational cabin user (at 100 days per year; June–September) and a "worst-case" summer/winter recreational cabin user (at 200 days per year; May–October). Exposure durations for both scenarios were increased to 40 years.

[1] ERRG, 2016. "Final Preliminary Assessment/Site Inspection Report for the Mammoth Mining Company Stamp Mill Site, Inyo National Forest, Mono County, California." November.

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2. Site Background

The Mammoth Mill site is a former gold ore processing facility dating from the late 1870s. It is within the town of Mammoth Lakes in Mono County, California, about 4 miles east of Highway 395, at an elevation of 8,370 feet above mean sea level. A PA/SI was conducted at the site to identify whether a release of metals had occurred from former stamp mill operations. The PA/SI included collection of soil, waste rock, sediment, and surface water samples for analysis of metals and an evaluation of risks to human health and ecological receptors. Based on the PA/SI results, it was concluded that a release of metals had occurred (to soil and sediment) and exposure to metals posed a moderate to high risk to site visitors (from soil at the Mill Area and sediment in downstream tributaries) and moderate risks to cabin occupants (sample results are included in the attached Figure 2). Metals in soil and sediment were also found to pose a risk to wildlife. As a result, the PA/SI Report recommended further action to mitigate long-term impacts from soil and sediment at the site, including evaluating removal alternatives and institutional controls.

3. Methodology for Streamlined HHRA Refinement

As summarized in Table 2 of the original streamlined HHRA (included as Appendix F of the PA/SI Report), the initial risk evaluation used standard assumptions regarding typical exposure of an adult recreational cabin occupant using the cabins within the Mill City Tract with an exposure duration of 20 years at an exposure frequency of 48 days per year.

While these assumptions are based on the standard risk assessment approach for "typical" recreational cabins used during the summer months, they do not encompass all cabin occupant scenarios specific to the Mill City Tract. Based on their location, the Mill City Tract cabins are in high demand and may be passed down from generation to generation, with some occupants using the cabins regularly over the course of their lives or occupying them year-round in their retirement years[2]. Based on this site-specific information, ERRG refined the exposure assumptions in the streamlined HHRA to include an exposure duration of 40 years at an exposure frequency of 100 days per year. As a secondary sensitivity analysis, ERRG also calculated risks where an exposure duration of 40 years at an exposure frequency of 200 days per year was used. Finally, toxicity criteria were updated for all risk assessment scenarios and receptors for those metals where new toxicity criteria were available (i.e., arsenic, beryllium, cadmium, mercury, and nickel). In addition, the allowable level for lead in soil was updated based on the latest exposure parameters in California EPA's blood lead model[3].

3. Results of Streamlined HHRA Refinement

As presented in Enclosure 2, the refined risk results, concluded that exposure to metals (in soil and sediment) posed high risk to current and future recreational cabin occupants in the Mill Area and moderate risk in all other site areas. The following table summarizes the refined risk results, highlighting those areas where risks increased from the original streamlined HHRA.

[2] Scholten, 2016. Personal communication (email) regarding Mammoth Stamp Mill RFP. Between Tamara Scholten, Forest Service, and Caitlin Gorman, ERRG. December 7.

[3] https://dtsc.ca.gov/AssessingRisk/LeadSpread8.cfm

Exposure Area	Current and Future Recreational User		Current and Future Recreational Cabin Occupant	
	Cancer Risk	Noncancer Hazard	Cancer Risk	Noncancer Hazard
Mill Area	Moderate	High	High	High
Cabins Area	Moderate	Moderate	Moderate	High
Sediment Area	Moderate	High	Moderate	High
Sitewide	Moderate	High	Moderate	High

Note: Highlighted cells indicate areas where risks increased from moderate to high when compared with the original streamlined HHRA (presented in the 2016 PA/SI Report).

A sensitivity analysis was conducted that compared a typical seasonal exposure (at 100 days per year) to a "worst-case" exposure of 200 days per year. The results of the sensitivity analysis indicated that cancer risks remained "high" for cabin occupants in the Mill Area and increased to "high" for cabin occupants in the remaining areas of the site and noncancer hazards increased in the Mill Area to "extremely high" and remained "high" in the remaining areas of the site. The table below summarizes the results of the sensitivity analysis.

Exposure Area	Seasonal Exposure (100 days per year)		"Worst Case" Exposure (200 days per year)	
	Current and Future Recreational Cabin Occupant		Current and Future Recreational Cabin Occupant	
	Cancer Risk	Noncancer Hazard	Cancer Risk	Noncancer Hazard
Mill Area	High	High	High	Extremely High
Cabins Area	Moderate	High	High	High
Sediment Area	Moderate	High	High	High
Sitewide	Moderate	High	High	High

5. Recommendations

Based on the results of the risk refinement presented in this technical memorandum, additional action is recommended to ensure protection of the public and Mill City Tract cabin occupants. Immediate action should include implementation of institutional controls (including warning signs and/or trail closures to discourage visitors from accessing the mine waste piles) to limit access to the mill area. Additional actions should include an evaluation of source removal alternatives (including evaluation of the need for a time-critical removal action) to address exposure concerns.

Finally, collection of additional samples is planned in 2017 to further delineate metals concentrations in soil north of the northernmost samples, near cabins 5 and 6 (see Enclosure 1, Figure 2). This sampling event will be conducted at the earliest available opportunity (i.e., as soon as the snow melts and the site is accessible for sample collection).

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Sincerely,

Caitlin Gorman, PG
Regional Manager

Enc. 1 – Figures
2 – Streamlined HHRA Refinement

cc ERRG Project File

Enclosure 1. Figures

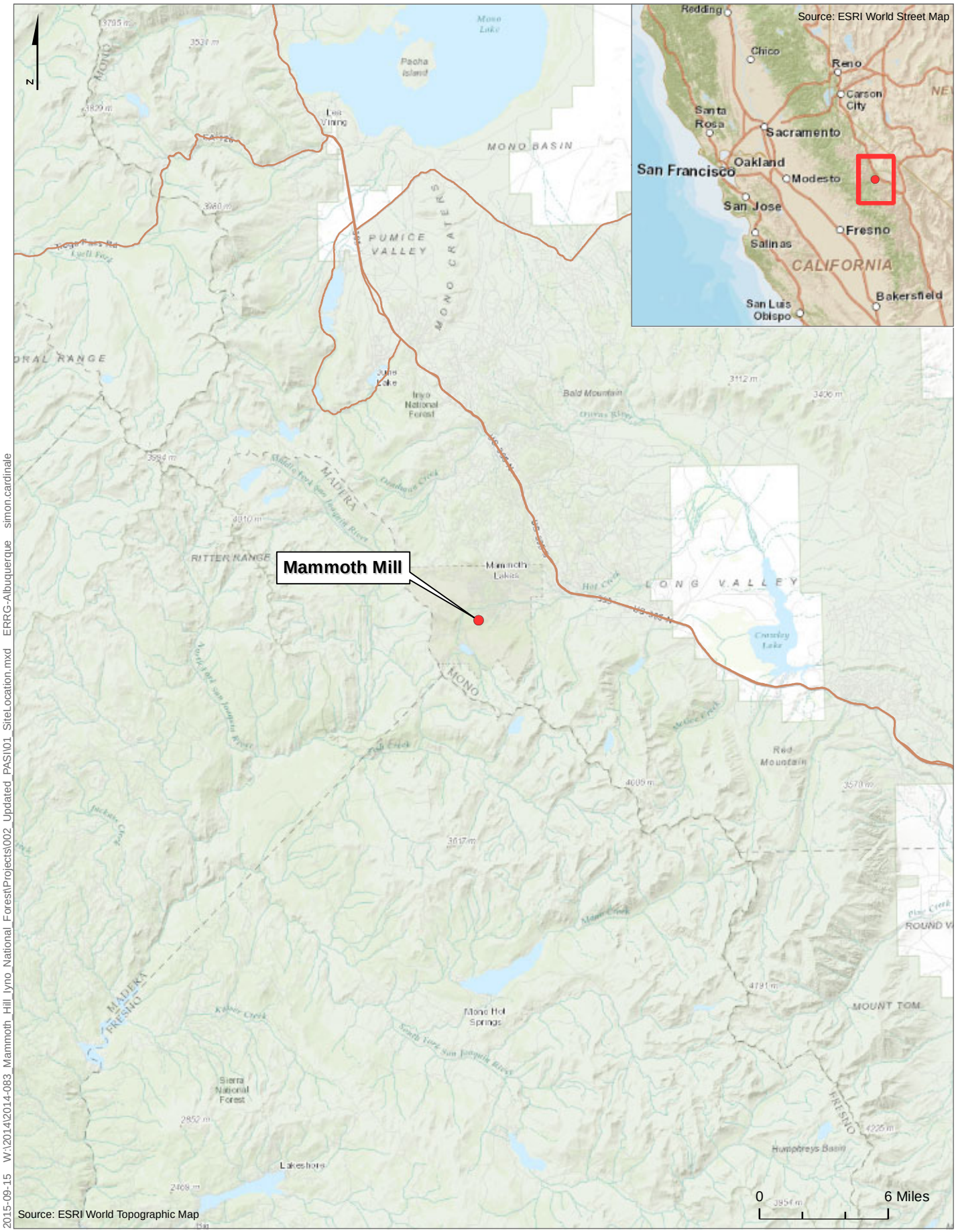

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Figure 1. Site Location and Vicinity Map

Mammoth Mill, Inyo National Forest

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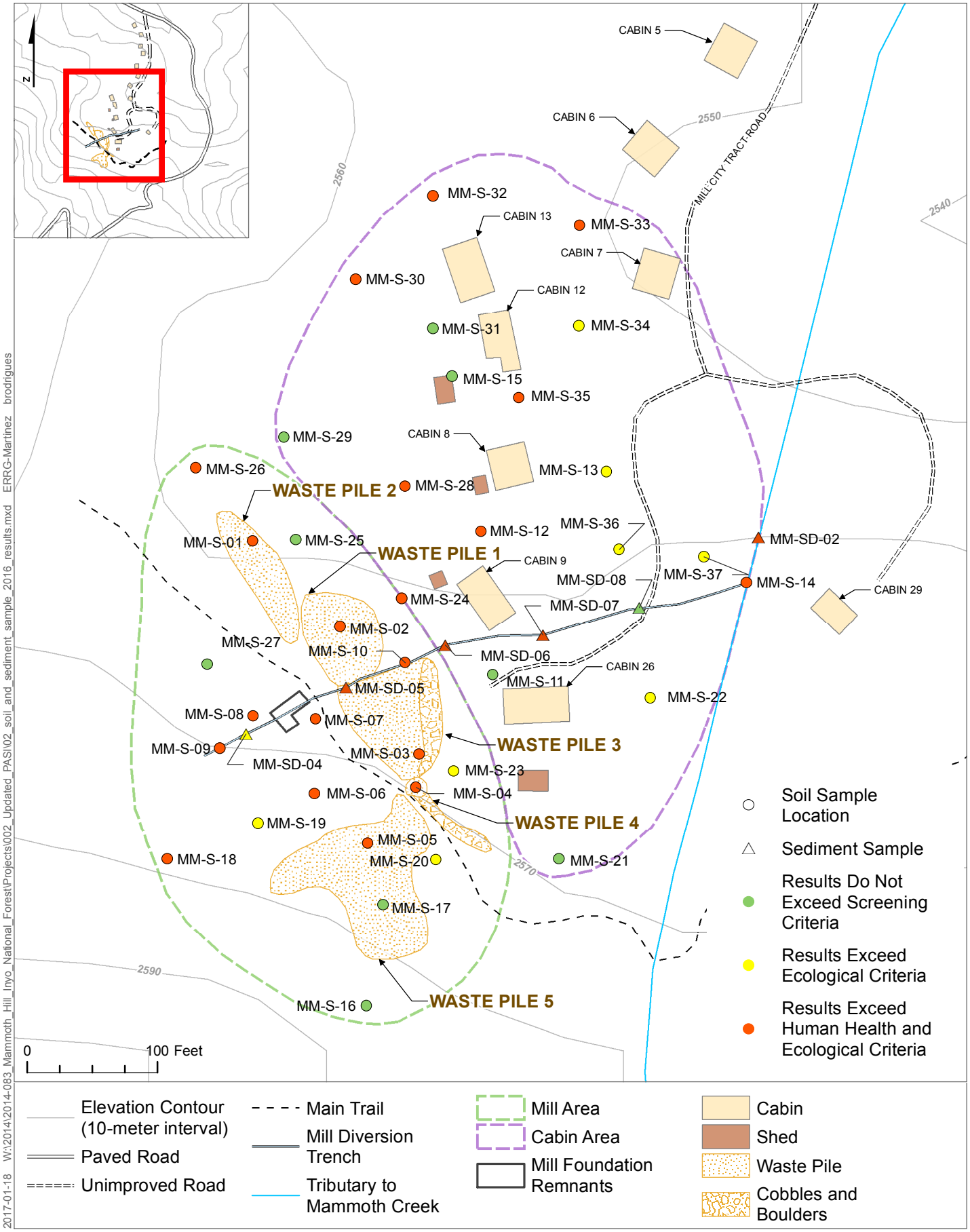

Figure 2. Soil and Sediment Sample Results from 2016 PA/SI Report

Mammoth Mill, Inyo National Forest

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Enclosure 2. Streamlined HHRA Refinement

Streamlined Human Health Risk Assessment Refinement

This appendix summarizes the refinement of the streamlined human health risk assessment (HHRA), including the potential risks to human health from exposure to metals in soil and sediments at the Mammoth Mining Company Stamp Mill Site.

The streamlined HHRA was refined at the request of the Forest Service to ensure a conservative approach was used to assess risks to human health associated with metals at the Mammoth Mill Site in Inyo County, California (Enclosure 1, Figure 1). On December 13, 2016, the Forest Service tasked ERRG with conducting a risk refinement focused on modifying the assumptions used in developing the streamlined HHRA for recreational cabin occupants.

The purpose of the risk assessment refinement was to adjust several assumptions made in developing the original streamlined HHRA to account for new site-specific information related to cabins occupants. Specifically, exposure durations and frequencies were adjusted from standard values (set based on typical seasonal cabin occupancy) to values that more accurately represent the maximum (or worst-case) exposure durations and frequencies of actual cabin occupants. In addition, toxicity criteria were updated for all metals to ensure the use of the most current toxicity criteria. Specifically, the refinement included modifying the exposure scenarios for cabin occupants to include a typical summer recreational cabin user (at 100 days per year; June–September) and a "worst-case" summer/winter recreational cabin user (at 200 days per year; October–May). Exposure durations for both scenarios were increased to 40 years.

The following metals were considered:

- Antimony (Sb)
- Arsenic (As)
- Barium (Ba)
- Beryllium (Be)
- Cadmium (Cd)
- Chromium (Cr)
- Cobalt (Co)
- Copper (Cu)
- Lead (Pb)
- Mercury (Hg)
- Molybdenum (Mo)
- Nickel (Ni)
- Selenium (Se)
- Silver (Ag)
- Thallium (Tl)
- Vanadium (V)
- Zinc (Zn)

Essential nutrients (i.e., calcium, iron, magnesium, potassium, and sodium), as identified in U.S. Environmental Protection Agency (EPA) guidance (EPA, 1989)[1], were not considered in this streamlined HHRA.

The data herein are deemed complete and usable with no data gaps based on the site-wide coverage provided by these samples, sample depths, the field sampling collection and sample control methods, the comprehensive list of metals tested, the analytical methods used and the reporting limits achieved by the state-certified (Environmental Laboratory Accreditation Program)[2] laboratory, and associated laboratory quality control data.

OVERVIEW

The streamlined HHRA is used to characterize potential risks, which may be used to develop removal action alternatives to reduce risk, as deemed necessary by the risk manager (i.e., the U.S. Department of Agriculture Forest Service [Forest Service]). Accordingly, the potential risks to human receptors from exposure to metals were evaluated by calculating risk values (i.e., incremental lifetime cancer risks [ILCR] values and noncancer hazard index [HI] values). The risk management criteria set forth in Bureau of Land Management (BLM) guidance (BLM, 2004)[3] are as follows:

- ILCR = 1×10^{-5} (also expressed as 1E-05)
- HI = 1.0 (also expressed as 1E+00)

The ILCR of 1E-05 means that there is only a 1-in-100,000 chance (0.001%) that a receptor would develop any type of cancer in a lifetime as a result of exposure to metals of concern at the site. Put another way, a risk manager would expect there to be 1 occurrence of cancer per 100,000 receptors exposed to metals at the site. An HI less than or equal to 1E+00 means that exposure to metals at the site by a receptor would not result in any adverse noncancer health effects. BLM (2004) sets forth the following risk management ranges:

Risk Management Range	ILCR	HI
Less than criteria: low risk	ILCR < 1E-05	HI < 1E+00
1-10 times the criteria: moderate risk	1E-05 ≤ ILCR ≤1E-04	1E+00 ≤ HI ≤1E+01
10-100 times the criteria: high risk	1E-04 < ILCR ≤1E-03	1E+01 < HI ≤ 1E+02
>100 times the criteria: extremely high risk	ILCR > 1E-03	HI > 1E+02

[1] EPA, 1989. "Risk Assessment Guidance for Superfund (RAGS), Volume I Human Health Evaluation Manual (Part A)." Office of Emergency and Remedial Response. December.

[2] Environmental Laboratory Accreditation Program (administered by the California State Water Resources Control Board).

[3] BLM, 2004 (Dr. Karl L. Ford). Risk Management Criteria for Metals at BLM Mining Sites, National Science and Technology Center, Denver, Colorado, Technical Note 390 (revised), BLM/RS/ST-97/001+1703. October.

Potential risks were evaluated for exposure to:

1. soil from the former mining operations; and
2. sediment in the onsite dry diversion trench and unnamed tributary to Mammoth Creek.

Four exposure areas were considered:

1. Mill Area;
2. Cabins Area;
3. Sediment Area (i.e., diversion trench and unnamed tributary); and
4. the entire site.

Four receptors were considered:

1. recreational user;
2. recreational cabin occupant;
3. construction worker; and
4. full-time resident.

CONCEPTUAL SITE MODEL

The identification of exposure pathways, environmental media of interest (i.e., exposure points), and chemicals of potential concern (COPCs) is supported by the conceptual site model (CSM) (EPA, 1989). Figure 1 shows the site-specific CSM on which the streamlined HHRA is based. As shown on the figure, the CSM identifies:

- primary source(s) and mechanism(s) for the chemical release;
- environmental transport media (i.e., the secondary source[s] and release mechanism[s]);
- a point of potential human contact with the media (i.e., migration pathways); and
- exposure pathway(s) (e.g., ingestion, dermal contact, and inhalation).

As shown on Figure 1, and consistent with ERRG (2015)[4], the following receptors are evaluated in this streamlined HHRA:

- current and future recreational user receptor (long-term [chronic] child and adult receptors);
- current and future recreational cabin occupant receptor (long-term [chronic] child and adult receptors);

[4] ERRG, 2015. "Technical Memorandum for Preliminary Assessment/Site Inspection at Mammoth Mill, Inyo National Forest, Mono County, California." April 24.

- future construction (trench) worker receptor (short-term [subchronic] worker); and
- future full-time residential receptor (long-term [chronic] child and adult receptors).[5]

Figure 1 also shows the potential exposure pathways for all receptors to be:

- incidental ingestion of metals-impacted soil and sediment;
- dermal contact of metals-impacted soil and sediment; and
- inhalation of metals-impacted soil and sediment.

The tendency of metals to strongly sorb to soil and sediments, as evidenced by site-specific leachability (soluble precipitation leachability procedure) tests, suggest that it is highly unlikely that metals are migrating in the aqueous phase (i.e., via surface water and/or infiltration and subsequent percolation to groundwater); therefore, the exposure pathways associated with these primary release mechanisms are deemed incomplete. The absence of any reasonably perennial water body that could support water recreational activities (e.g., swimming and fishing) at the site also eliminates the surface water release mechanism and associated exposure pathways. Therefore, the only the exposure pathways evaluated in this streamlined HHRA are those associated with soil and sediment. BLM and EPA considered these exposure pathways in their development of risk-based concentrations in soil (BLM, 2004[6]; EPA, 2015a[7]).

SELECTION OF CHEMICALS OF POTENTIAL CONCERN

COPCs are those chemicals for which ILCR and HI values are quantified and risk is characterized in the streamlined HHRA.

As in the overview, the streamlined HHRA will assist in developing removal action alternatives to reduce risks posed by metals contamination in soil and sediment. Given this function, and because metals are naturally present in both media, a distinction must be made in the streamlined HHRA as to whether measured concentrations of metals reflect a man-made release resulting in "contaminated media" or naturally occurring (non-contaminated media) "background" concentrations (hereinafter referred to as background threshold values [BTVs]). To accomplish this, soil and sediment data collected during the PA/SI were screened against site-specific BTVs. The site-specific BTVs are based on a statistical analysis (EPA, 2013)[8] of metals concentrations in soil samples collected from areas of the site far removed and upslope/upstream from mining operations. As such, concentrations of metals in the background samples (summarized in Table 1) are interpreted to reflect naturally occurring background concentrations indicative of non-contaminated media. Metals detected in at least one soil and/or sediment sample at a concentration

[5] The site is located on the Inyo National Forest and land use is expected to remain recreational into the foreseeable future; however, a hypothetical future full-time residential receptor is included in this streamlined HHRA to provide a conservative analysis.

[6] BLM, 2004 (Dr. Karl L. Ford). "Risk Management Criteria for Metals at BLM Mining Sites, National Science and Technology Center, Denver, Colorado, Technical Note 390 (revised), BLM/RS/ST-97/001+1703." October.

[7] EPA, 2015a. http://www.epa.gov/region9/superfund/prg/. June.

[8] EPA, 2013. "ProUCL Version 5.0.00 - Technical Guide, Statistical Software for Environmental Applications for Data Sets with and without Nondetect Observations." EPA/600/R-07/041. September.

exceeding its BTV were retained as COPCs for evaluation in the streamlined HHRA, as shown in Table 1. The methodology used to establish the BTVs is summarized in the notes to Table 1. As shown in Table 1, all metals were retained as COPCs except for chromium, thallium, and vanadium.

RISK-BASED CONCENTRATIONS

Risk-based concentrations (RBCs) for all COPCs (except lead) were calculated using the same equations used by EPA to derive their regional screening levels (EPA, 2015b[9]), which are of the same general form as those set forth in BLM (2004)[10]. The RBCs were calculated for all receptors for the cancer endpoint (for the carcinogenic COPCs [arsenic, beryllium, cadmium, cobalt, and nickel] only) and noncancer endpoint using the exposure parameters listed in Table 2 for all metals except for lead, as described below.

As described above, the cancer endpoint-based RBCs (ILCR-based RBCs) are based on a target ILCR of 1E-05 consistent with BLM (2004). Similarly, the noncancer endpoint-based RBCs (HI-based RBCs) are based on a target hazard quotient of 1E+00, also consistent with BLM (2004).

The RBC calculation worksheets are included in Attachment A (recreational user receptor), Attachment B (recreational cabin occupant receptor), Attachment C (construction worker receptor)[11], and Attachment D (residential receptor). The toxicity criteria on which the RBCs are based were obtained from California Environmental Protection Agency (CalEPA) guidance[12] and, secondarily, EPA guidance[13]. Tables 4 through 7 summarize the RBCs for the receptors evaluated.

The RBC for lead was based on the CalEPA blood lead model (CalEPA, 2011)[14] using the same approach used by CalEPA to develop the California Human Health Screening Level for lead (CalEPA, 2009)[15]. It is noted that this approach is based on an increase in the blood lead concentration of 1 micrograms per deciliter (µg/dL), as opposed to the 10 µg/dL noted in BLM (2004). The blood level-based lead screening concentrations in soil (rounded to the nearest 10 milligrams per kilogram [mg/kg]) are as follows:

- Current and Future Recreational Receptor – 700 mg/kg
- Current and Future Recreational Cabin Occupant Receptor – 280 mg/kg
- Future Construction Worker Receptor – 320 mg/kg

[9] EPA, 2015b. http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/equations.htm. June.

[10] BLM, 2004 (Dr. Karl L. Ford). "Risk Management Criteria for Metals at BLM Mining Sites, National Science and Technology Center, Denver, Colorado, Technical Note 390 (revised), BLM/RS/ST-97/001+1703." October.

[11] Chronic toxicity criteria, as opposed to subchronic criteria, are conservatively used for the construction worker (subchronic or short-term) receptor.

[12] https://www.dtsc.ca.gov/AssessingRisk/upload/HHRA_Note_3_-2016-06.pdf

[13] https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables-may-2016

[14] https://dtsc.ca.gov/AssessingRisk/LeadSpread8.cfm

[15] http://oehha.ca.gov/media/downloads/crnr/leadchhsl091709.pdf

- Future Full-Time Residential Receptor – 80 mg/kg

The blood lead model worksheets are included in Attachment E.

RISK CHARACTERIZATION

Consistent with Section 5.15.2 of EPA (2015a)[16], RBCs were used to estimate the total risk from multiple metals at the site. This methodology is often called the "sum-of-the-ratios" approach and is as follows:

$$ILCR_{sample} = \left(\frac{C_{COPC_1}}{RBC_{C,COPC_1}} + \frac{C_{COPC_2}}{RBC_{C,COPC_2}} + \ldots + \frac{C_{COPC_n}}{RBC_{C,COPC_n}} \right) \times TILCR \qquad \{Eq. 1\}$$

$$HI_{sample} = \left(\frac{C_{COPC_1}}{RBC_{NC,COPC_1}} + \frac{C_{COPC_2}}{RBC_{NC,COPC_2}} + \ldots + \frac{C_{COPC_n}}{RBC_{NC,COPC_n}} \right) \times THQ \qquad \{Eq. 2\}$$

where:

HI_{sample} = sample-specific hazard index (unitless)

C_{COPC1} = sample-specific concentration (or 95% upper confidence limit [UCL])[17] for first of "n" COPCs (mg/kg)

C_{COPC2} = sample-specific concentration (or 95% UCL) for second of "n" COPCs (mg/kg)

C_{COPCn} = sample-specific concentration (or 95% UCL) for last of "n" COPCs (mg/kg)

$RBC_{NC,COPC1}$ = RBC for noncancer endpoint for first of "n" COPCs (mg/kg)

$RBC_{NC,COPC2}$ = RBC for noncancer endpoint for second of "n" COPCs (mg/kg)

$RBC_{NC,COPCn}$ = RBC for noncancer endpoint for last of "n" COPCs (mg/kg)

$RBC_{C,COPC1}$ = RBC for cancer endpoint for first of "n" COPCs (mg/kg);

$RBC_{C,COPC2}$ = RBC for cancer endpoint for second of "n" COPCs (mg/kg); and

$RBC_{C,COPCn}$ = RBC for cancer endpoint for last of "n" COPCs (mg/kg).

Risk values were not calculated for metals (i.e., chromium, thallium, and vanadium) with concentrations less than their respective BTV.

The risk characterization tables are included as the following attachments:

[16] EPA, 2015a. http://www.epa.gov/region9/superfund/prg/. June.

[17] 95% UCL on the mean concentration of a particular COPC for a particular exposure area (i.e., the Mill Area, the Cabin Area, sediment in the diversion trench and unnamed tributary, and the entire site). The statistical software (ProUCL 5.0) used to calculate the BTVs is also used to calculate the 95% UCLs.

- Attachment F: Sample-specific (soil samples; all receptors)
- Attachment G: Sample-specific (sediment samples; all receptors)
- Attachment H: Sitewide 95% UCL (soil samples; all receptors); Mill Area 95% UCL (soil samples; all receptors); Cabin Area 95% UCL (soil samples; all receptors)
- Attachment I: Sediment 95% UCL (sediment samples; all receptors).

Based on the risk characterization tables, the risk values are driven primarily by arsenic for the cancer endpoint and arsenic and mercury for the noncancer endpoint. The risk values from these attachments are summarized in Table 8 and are color-coded below in the risk management range table (BLM, 2004).

Risk Management Range	ILCR	HI
less than criteria: low risk	ILCR < 1E-05	HI < 1E+00
1-10 times the criteria: moderate risk	1E-05 ≤ ILCR ≤1E-04	1E+00 ≤ HI ≤1E+01
10-100 times the criteria: high risk	1E-04 < ILCR ≤1E-03	1E+01 < HI ≤ 1E+02
>100 times the criteria: extremely high risk	ILCR > 1E-03	HI > 1E+02

When considered from an exposure area (95% UCL) perspective, the risk management ranges indicate the following:

Cancer Endpoint

- Current and Future Recreational User Receptor: moderate risk
- Current and Future Recreational Cabin Occupant Receptor: moderate to high risk
- Future Construction Worker Receptor: moderate risk
- Future Full-Time Residential Receptor: high risk

Noncancer Endpoint

- Current and Future Recreational User Receptor: moderate to high risk
- Current and Future Recreational Cabin Occupant Receptor: high risk
- Future Construction Worker Receptor: high risk
- Future Full-Time Residential Receptor: high to extremely high risk

The highest risk values are associated with the Mill Area, the Sediment Area, and sitewide. The lowest risk values are associated with the Cabins Area.

When considered from a sample-specific perspective, the risk management ranges indicate the following:

Mill Area

Current and Future Recreational Receptor

Cancer Endpoint

- low risk: 13 of 21 samples
- moderate risk: 7 of 21 samples
- high risk: 1 of 21 samples
- extremely high risk: none of the 21 samples

Noncancer Endpoint

- low risk: 11 of 21 samples
- moderate risk: 6 of 21 samples
- high risk: 4 of 21 samples
- extremely high risk: none of the 21 samples

Current and Future Recreational Cabin Occupant Receptor

Cancer Endpoint

- low risk: 13 of 21 samples
- moderate risk: 3 of 21 samples
- high risk: 5 of 21 samples
- extremely high risk: none of the 21 samples

Noncancer Endpoint

- low risk: 10 of 21 samples
- moderate risk: 3 of 21 samples
- high risk: 7 of 21 samples
- extremely high risk: 1 of the 21 samples

Future Construction Worker Receptor

Cancer Endpoint

- low risk: 15 of 21 samples
- moderate risk: 6 of 21 samples
- high risk: none of the 21 samples
- extremely high risk: none of the 21 samples

Noncancer Endpoint

- low risk: 9 of 21 samples

- moderate risk: 2 of 21 samples
- high risk: 8 of 21 samples
- extremely high risk: 2 of 21 samples

Future Full-Time Residential Receptor

Cancer Endpoint

- low risk: 13 of 21 samples
- moderate risk: none of the 21 samples
- high risk: 7 of 21 samples
- extremely high risk: 1 of 21 samples

Noncancer Endpoint

- low risk: 6 of 21 samples
- moderate risk: 5 of 21 samples
- high risk: 7 of 21 samples
- extremely high risk: 3 of 21 samples

Cabins Area

Current and Future Recreational Receptor

Cancer Endpoint

- low risk: 13 of 18 samples
- moderate risk: 5 of 18 samples
- high risk: none of the 18 samples
- extremely high risk: none of the 18 samples

Noncancer Endpoint

- low risk: 12 of 18 samples
- moderate risk: 4 of 18 samples
- high risk: 2 of 18 samples
- extremely high risk: none of the 18 samples

Current and Future Recreational Cabin Occupant Receptor

Cancer Endpoint

- low risk: 13 of 18 samples
- moderate risk: 3 of 18 samples

- high risk: 2 of 18 samples
- extremely high risk: none of the 18 samples

Noncancer Endpoint

- low risk: 12 of 18 samples
- moderate risk: 1 of 18 samples
- high risk: 5 of 18 samples
- extremely high risk: none of the 18 samples

Future Construction Worker Receptor

Cancer Endpoint

- low risk: 14 of 18 samples
- moderate risk: 4 of 18 samples
- high risk: none of the 18 samples
- extremely high risk: none of the 18 samples

Noncancer Endpoint

- low risk: 10 of 18 samples
- moderate risk: 3 of 18 samples
- high risk: 5 of 18 samples
- extremely high risk: none of the 18 samples

Future Full-Time Residential Receptor

Cancer Endpoint

- low risk: 13 of 18 samples
- moderate risk: none of the 18 samples
- high risk: 5 of 18 samples
- extremely high risk: none of the 18 samples

Noncancer Endpoint

- low risk: 10 of 18 samples
- moderate risk: 2 of 18 samples
- high risk: 5 of 18 samples
- extremely high risk: 1 of 18 samples

Sediment Area

Current and Future Recreational Receptor

Cancer Endpoint

- low risk: 3 of 7 samples
- moderate risk: 4 of 7 samples
- high risk: none of the 7 samples
- extremely high risk: none of the 7 samples

Noncancer Endpoint

- low risk: 3 of 7 samples
- moderate risk: none of the 7 samples
- high risk: 4 of 7 samples
- extremely high risk: none of the 7 samples

Current and Future Recreational Cabin Occupant Receptor

Cancer Endpoint

- low risk: 3 of 7 samples
- moderate risk: 2 of 7 samples
- high risk: 2of 7 samples
- extremely high risk: none of the 7 samples

Noncancer Endpoint

- low risk: 2 of 7 samples
- moderate risk: 1 of 7 samples
- high risk: 4 of 7 samples
- extremely high risk: none of the 7 samples

Future Construction Worker Receptor

Cancer Endpoint

- low risk: 5 of 7 samples
- moderate risk: 2 of 7 samples
- high risk: none of the 7 samples
- extremely high risk: none of the 7 samples

Noncancer Endpoint

- low risk: 1 of 7 samples
- moderate risk: 2 of 7 samples
- high risk: 4 of 7 samples

- extremely high risk: none of the 7 samples

Future Full-Time Residential Receptor

Cancer Endpoint

- low risk: 3 of 7 samples
- moderate risk: none of the 7 samples
- high risk: 4 of 7 samples
- extremely high risk: none of the 7 samples

Noncancer Endpoint

- low risk: 2 of 7 samples
- moderate risk: 1 of 7 samples
- high risk: 2 of 7 samples
- extremely high risk: 2 of 7 samples

The lead screening evaluation is summarized in Table 9. With the exception of the future full-time residential receptor, which had a single high exceedance in the Mill Area and several moderate exceedances in the Mill Area, Cabin Area, and Sediment Area, moderate exceedances for the other three receptors were limited to the Mill Area (with a single exception for the recreational cabin occupant receptor and construction worker receptor in the Sediment Area). No high or extremely high exceedances for lead were identified for the recreational, recreational cabin occupant, and construction worker receptors.

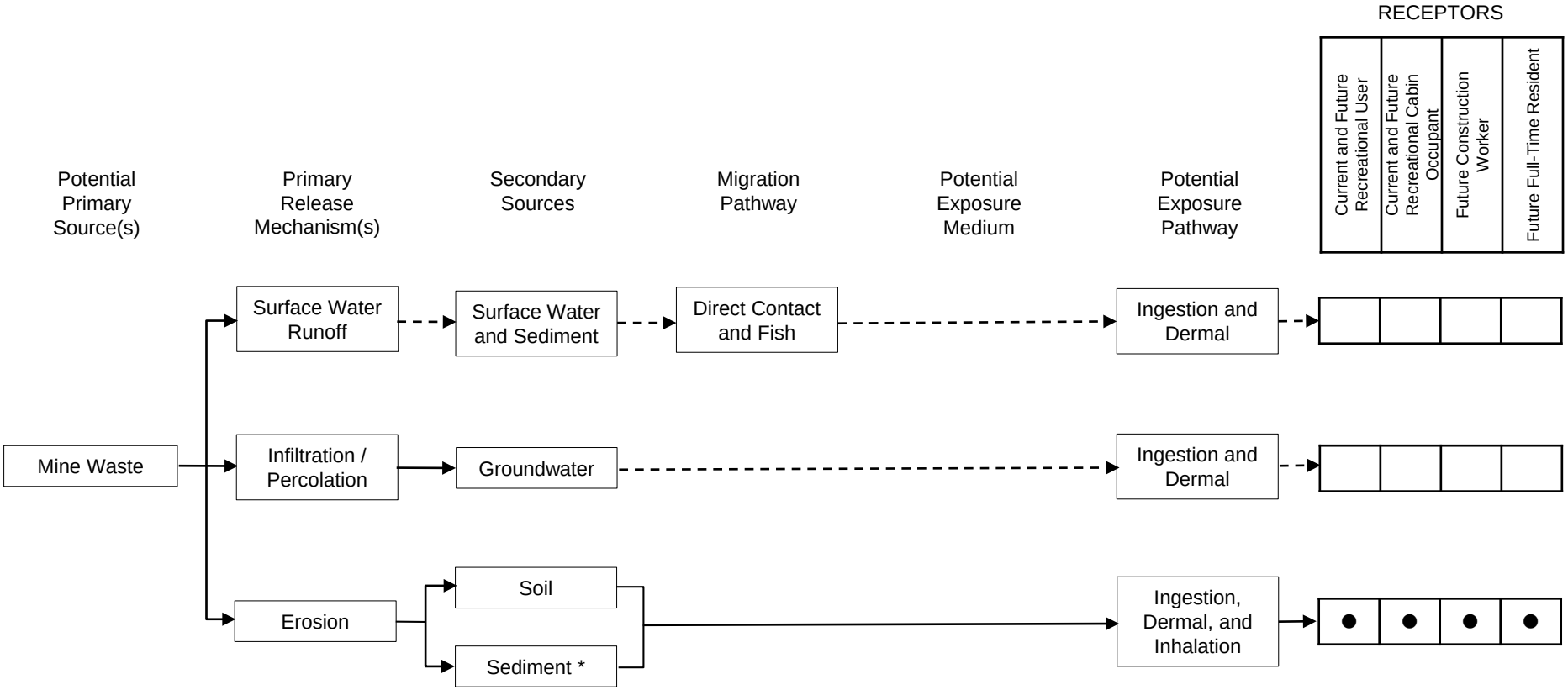
SENSITIVITY ANALYSIS

A sensitivity analysis was conducted for the recreational cabin occupant receptor by doubling the exposure frequency listed in Table 2 from 100 days per year to 200 days per year, thus doubling the risk values (for metals other than lead) and the screening ratios for lead. Table 10a and Table 10b provide the results of the sensitivity analysis, which are also summarized below.

- When considered from an exposure area (95% UCL) perspective, the most notable increase in risk values for metals other than lead is for the noncancer endpoint in the Mill Area.
- When considered from a sample-specific perspective, the most notable increases in risk values for metals other than lead are for the noncancer endpoint in the Mill Area for samples MM-S-03 and MM-S-04.
- For lead, when considered from both an exposure area (95% UCL) and sample-specific perspective, there are no notable increases in screening ratios.

FIGURES

Figure 1. Conceptual Site Model (after BLM, 2004)



Potentially complete pathway

Incomplete pathway

● Potentially complete exposure pathway

* Sediment in the drainage ditch and unnamed tributary is also considered a component of the surface water pathway.

TABLES

Table 1
Background Threshold Values (BTVs) and Identification of Chemicals of Potential Concern (COPCs)

		Maximum Concentrations (mg/kg)		COPC	
Analyte	**BTV (mg/kg)[a]**	**Soil**	**Sediment**	**Soil**	**Sediment**
Antimony	0.531	230	6.2	**Yes**	**Yes**
Arsenic	13.3	210	50	**Yes**	**Yes**
Barium	281	1300	400	**Yes**	**Yes**
Beryllium	0.118	0.33	0.19	**Yes**	**Yes**
Cadmium	0.172	2.4	1.4	**Yes**	**Yes**
Chromium	12.1	9.9	10	No	No
Cobalt	7.19	17	7.2	**Yes**	**Yes**
Copper	13.0	240	85	**Yes**	**Yes**
Lead	11.5	2500	360	**Yes**	**Yes**
Mercury	0.418	120	740	**Yes**	**Yes**
Molybdenum	0.650	21	1.8	**Yes**	**Yes**
Nickel	25.5	34	28	**Yes**	**Yes**
Selenium	1.08	2.4	2	**Yes**	**Yes**
Silver	0.534	140	19	**Yes**	**Yes**
Thallium	-	0.29	0.2	No[b]	No[b]
Vanadium	38.6	29	29	No	No
Zinc	60.6	570	140	**Yes**	**Yes**

Note [a]: BTVs established using 2014 dataset (1 sample) and 2015 dataset (9 samples).
Not detect' ('ND') values were retained at their method detection limit (MDL) for calculations. B flagged data were retained at their full values as the detections in the blank samples were negligible in comparison to detected concentrations. Outliers were removed from dataset using iterative process involving box plots and normal Q-Q plots until correlation R value > 0.9 for normal Q-Q plot and Dixon test as programmed into ProUCL 5.0 identified no additional outliers at the 10% significance level.
BTV based on 95th UCL for normal distribution after confirming normality of final dataset (i.e., dataset with all outliers removed).

Note [b]: BTV could not be calculated for thallium as all background samples were "ND". Detected concentrations in soil and sediment samples were J flagged within a narrow range for both soil (0.17J to 0.29J) and sediment (0.15J to 0.2J). Given the narrow range of estimated values, these estimated detections are attributed to background; therefore,. thallium is not retained as a COPC.

Table 2. Exposure Parameters

	Recreational User (day use)	Notes	Construction Worker	Notes	Recreational Cabin Occupant	Notes	Resident	Notes
General Parameters								
Exposure Frequency; in days/year	40	a	250	b	100	c	350	b
Exposure Duration; in years	20 (adult); 6 (child)	b	1	b	40 (adult); 6 (child)	b	20 (adult); 6 (child)	b
Body Weight; in kg	80 (adult); 15 (child)	b	80	b	80 (adult); 15 (child)	b	80 (adult); 15 (child)	b
Averaging Time; in days (cancer)	25,550	b	25,550	b	25,550	b	25,550	b
Averaging Time; in days (noncancer)	7,300 (adult); 2,190 (child)	b	365	b	7,300 (adult); 2,190 (child)	b	7,300 (adult); 2,190 (child)	b
Incidental Ingestion								
Ingestion Rate; in mg/day	100 (adult); 200 (child)	b	330	b	100 (adult); 200 (child)	b	100 (adult); 200 (child)	b
Dermal Contact								
Absorption Fraction for Metals; unitless	Chemical-specific	b	Chemical-specific	b	Chemical-specific	b	Chemical-specific	b
Surface Area; in cm^2	6,032 (adult); 2,900 (child)	b	6,032	b	6,032 (adult); 2,900 (child)	b	6,032 (adult); 2,900 (child)	b
Adherence Factor; in mg/cm^2	0.07 (adult); 0.20 (child)	b	0.8	b	0.07 (adult); 0.20 (child)	b	0.07 (adult); 0.20 (child)	b
Inhalation								
Inhalation Rate; in m^3/day	20 (adult); 10 (child)	b	20	b	20 (adult); 10 (child)	b	20 (adult); 10 (child)	b
Particulate Emission Factor; in m^3/kg	1.316E+09	b	1E+06	b	1.316E+09	b	1.316E+09	b

Notes:

a = From "Dermal Exposure Assessment: Principles and Application. Interim Report." EPA/600/8-91/011B. Office of Research and Development. Washington, DC. EPA, 1992 Available online at :http://www.epa.gov/oppt/exposure/presentations/efast/usepa_1992d_dermalea.pdf

b = HERO Note 1 Cal-DTSC Office of Human and Ecological Risk, September 2014

c = Site-specific cabin use assumption

cm^2 = centimeters squared

DTSC = Department of Toxic Substances Control

EPA = U.S. Environmental Protection Agency

kg = kilograms

m^3/day = cubic meters per day

m^3/kg = cubic meters per kilogram

mg/cm^2= milligrams per square centimeter

mg/day = milligrams per day

Table 3. Toxicity Criteria

	Ingestion/Dermal Contact		Inhalation	
	Cancer Effects	Noncancer Effects	Cancer Effects	Noncancer Effects
	SFO	RfD_o	IUR	RfC_i
COPC	$(mg/kg\text{-}day)^{-1}$	(mg/kg-day)	$(\mu g/m^3)^{-1}$	(mg/m^3)
Antimony	--	4.0E-04	--	--
Arsenic	**9.5E+00**	**3.5E-06**	**3.3E-03**	**1.5E-05**
Barium	--	2.0E-01	--	5.0E-04
Beryllium	--	**2.0E-04**	2.4E-03	**7.0E-06**
Cadmium	--	**6.3E-06**	1.8E-03	1.0E-05
Cobalt	--	3.0E-04	9.0E-03	6.0E-06
Copper	--	4.0E-02	--	--
Lead[a]	--	--	--	--
Mercury	--	**1.6E-04**	--	**3.0E-05**
Molybdenum	--	5.0E-03	--	--
Nickel	--	**1.1E-02**	**2.6E-04**	**1.4E-05**
Selenium	--	5.0E-03	--	2.0E-02
Silver	--	5.0E-03	--	--
Zinc	--	3.0E-01	--	--

Notes:

Bolded values from CalEPA HERO Note 3; unbolded values are from the USEPA RSL tables

a = Toxicity based on blood lead levels (see Attachment E)

COPC = chemical of potential concern

DTSC = Department of Toxic Substances Control

EPA = U.S. Environmental Protection Agency

IUR = cancer inhalation unit risk

RfC_i = noncancer inhalation reference concentration

RfD_o = noncancer oral reference dose

SFO = cancer oral slope factor

mg/kg-day = milligrams per kilogram per day

mg/m^3 = milligrams per cubic kilogram

$\mu g/m^3$ = micrograms per cubic meter

-- = no value

Table 4

Recreational User RBCs (Pathway-specific and total; in mg/kg)

~ see Attachment A ~

	Cancer Endpoint				Non-cancer Endpoint			
COPC	**Ingestion**	**Dermal**	**Particulate**	**TOTAL**	**Ingestion**	**Dermal**	**Particulate**	**TOTAL**
Antimony	Non-carcinogenic				2.7E+02	1.4E+03	-	2.3E+02
Arsenic	1.1E+01	6.6E+01	1.0E+05	9.2E+00	4.0E+00	2.8E+01	1.9E+05	3.5E+00
Barium	Non-carcinogenic				1.4E+05	3.3E+05	6.2E+06	9.5E+04
Beryllium	-	-	1.4E+05	1.4E+05	1.4E+02	3.3E+01	8.7E+04	2.7E+01
Cadmium	-	-	1.6E+05	1.6E+05	4.6E+01	2.7E+02	1.2E+05	3.9E+01
Cobalt	-	-	3.7E+04	3.7E+04	2.1E+02	7.1E+03	7.4E+04	2.0E+02
Copper	Non-carcinogenic				2.7E+04	9.4E+05	-	2.7E+04
Lead	Not applicable - based on blood lead level model							
Mercury	Non-carcinogenic				1.1E+02	2.6E+02	3.7E+05	7.7E+01
Molybdenum	Non-carcinogenic				3.4E+03	1.2E+05	-	3.3E+03
Nickel	-	-	1.3E+06	1.3E+06	7.5E+03	1.0E+04	1.7E+05	4.3E+03
Selenium	Non-carcinogenic				3.4E+03	1.2E+05	2.5E+08	3.3E+03
Silver	Non-carcinogenic				3.4E+03	4.7E+03	-	2.0E+03
Zinc	Non-carcinogenic				2.1E+05	7.1E+06	-	2.0E+05

Table 5

Recreational Cabin Occupant RBCs (Pathway-specific and total; in mg/kg)

~ see Attachment B ~

	Cancer Endpoint				Non-cancer Endpoint			
COPC	**Ingestion**	**Dermal**	**Particulate**	**TOTAL**	**Ingestion**	**Dermal**	**Particulate**	**TOTAL**
Antimony	Non-carcinogenic				1.1E+02	5.7E+02	-	9.2E+01
Arsenic	3.4E+00	2.0E+01	2.6E+04	2.9E+00	1.6E+00	1.1E+01	7.4E+04	1.4E+00
Barium	Non-carcinogenic				5.5E+04	1.3E+05	2.5E+06	3.8E+04
Beryllium	-	-	3.1E+04	3.1E+04	5.5E+01	1.3E+01	3.5E+04	1.1E+01
Cadmium	-	-	4.2E+04	4.2E+04	1.8E+01	1.1E+02	5.0E+04	1.6E+01
Cobalt	-	-	8.4E+03	8.4E+03	8.2E+01	2.8E+03	3.0E+04	8.0E+01
Copper	Non-carcinogenic				1.1E+04	3.8E+05	-	1.1E+04
Lead	Not applicable - based on blood lead level model							
Mercury	Non-carcinogenic				4.4E+01	1.1E+02	1.5E+05	3.1E+01
Molybdenum	Non-carcinogenic				1.4E+03	4.7E+04	-	1.3E+03
Nickel	-	-	2.9E+05	2.9E+05	3.0E+03	4.2E+03	6.9E+04	1.7E+03
Selenium	Non-carcinogenic				1.4E+03	4.7E+04	9.9E+07	1.3E+03
Silver	Non-carcinogenic				1.4E+03	1.9E+03	-	7.9E+02
Zinc	Non-carcinogenic				8.2E+04	2.8E+06	-	8.0E+04

Table 6

Construction Worker RBCs (Pathway-specific and total; in mg/kg)

~ see Attachment C ~

	Cancer Endpoint				Non-cancer Endpoint			
COPC	**Ingestion**	**Dermal**	**Particulate**	**TOTAL**	**Ingestion**	**Dermal**	**Particulate**	**TOTAL**
Antimony	Non-carcinogenic				1.4E+02	1.5E+02	-	7.2E+01
Arsenic	4.3E+01	5.9E+01	9.3E+02	2.4E+01	2.1E+00	2.8E+00	6.6E+01	1.2E+00
Barium	Non-carcinogenic				7.1E+04	3.4E+04	2.2E+03	2.0E+03
Beryllium	-	-	1.3E+03	1.3E+03	7.1E+01	3.4E+00	3.1E+01	2.9E+00
Cadmium	-	-	1.7E+03	1.7E+03	2.2E+00	3.8E+00	4.4E+01	1.4E+00
Cobalt	-	-	3.4E+02	3.4E+02	1.1E+02	7.3E+02	2.6E+01	2.0E+01
Copper	Non-carcinogenic				1.4E+04	9.7E+04	-	1.2E+04
Lead	Not applicable - based on blood lead level model							
Mercury	Non-carcinogenic				5.7E+01	2.7E+01	1.3E+02	1.6E+01
Molybdenum	Non-carcinogenic				1.8E+03	1.2E+04	-	1.5E+03
Nickel	-	-	1.2E+04	1.2E+04	3.9E+03	1.1E+03	6.1E+01	5.7E+01
Selenium	Non-carcinogenic				1.8E+03	1.2E+04	8.8E+04	1.5E+03
Silver	Non-carcinogenic				1.8E+03	4.8E+02	-	3.8E+02
Zinc	Non-carcinogenic				1.1E+05	7.3E+05	-	9.3E+04

Table 7

Residential RBCs (Pathway-specific and total; in mg/kg)

~ see Attachment D ~

	Cancer Endpoint				Non-cancer Endpoint			
COPC	**Ingestion**	**Dermal**	**Particulate**	**TOTAL**	**Ingestion**	**Dermal**	**Particulate**	**TOTAL**
Antimony	Non-carcinogenic				3.1E+01	1.6E+02	-	2.6E+01
Arsenic	1.2E+00	7.6E+00	1.2E+04	1.1E+00	4.6E-01	3.1E+00	2.1E+04	4.0E-01
Barium	Non-carcinogenic				1.6E+04	3.8E+04	7.1E+05	1.1E+04
Beryllium	-	-	1.6E+04	1.6E+04	1.6E+01	3.8E+00	9.9E+03	3.0E+00
Cadmium	-	-	1.8E+04	1.8E+04	5.3E+00	3.1E+01	1.4E+04	4.5E+00
Cobalt	-	-	4.2E+03	4.2E+03	2.3E+01	8.1E+02	8.5E+03	2.3E+01
Copper	Non-carcinogenic				3.1E+03	1.1E+05	-	3.0E+03
Lead	Not applicable - based on blood lead level model							
Mercury	Non-carcinogenic				1.3E+01	3.0E+01	4.3E+04	8.8E+00
Molybdenum	Non-carcinogenic				3.9E+02	1.3E+04	-	3.8E+02
Nickel	-	-	1.5E+05	1.5E+05	8.6E+02	1.2E+03	2.0E+04	4.9E+02
Selenium	Non-carcinogenic				3.9E+02	1.3E+04	2.8E+07	3.8E+02
Silver	Non-carcinogenic				3.9E+02	5.4E+02	-	2.3E+02
Zinc	Non-carcinogenic				2.3E+04	8.1E+05	-	2.3E+04

Table 8
Risk Characterization Summary

	UCL-Based Risk Values							
	Recreational User Receptor		Recreational Cabin Occupant Receptor		Construction Worker Receptor		Residential Receptor	
Exposure Area	ILCR	HI	ILCR	HI	ILCR	HI	ILCR	HI
Mill Area	8E-05	2.5E+01	2E-04	6.3E+01	3E-05	8.4E+01	7E-04	2.2E+02
Cabins Area	3E-05	8.7E+00	8E-05	2.2E+01	1E-05	3.0E+01	2E-04	7.6E+01
Sediment	4E-05	1.9E+01	1E-04	4.7E+01	1E-05	7.4E+01	3E-04	1.7E+02
Sitewide	5E-05	1.9E+01	2E-04	4.8E+01	2E-05	6.9E+01	4E-04	1.7E+02

	Sample-Specific Risk Values								Site Area		
	Recreational User Receptor		Recreational Cabin Occupant Receptor		Construction Worker Receptor		Residential Receptor				
Sample	ILCR	HI	ILCR	HI	ILCR	HI	ILCR	HI	Mill Area	Cabin Area	Sediment
MM-S-01	2E-05	7.3E+00	6E-05	1.8E+01	8E-06	2.4E+01	2E-04	6.3E+01	❍	-	-
MM-S-02	2E-11	2.7E+00	9E-11	6.9E+00	2E-09	1.3E+01	2E-10	2.4E+01	❍	-	-
MM-S-03	9E-05	2.8E+01	3E-04	6.9E+01	3E-05	9.0E+01	8E-04	2.4E+02	❍	-	-
MM-S-04	4E-05	3.9E+01	1E-04	9.7E+01	1E-05	1.7E+02	3E-04	3.4E+02	❍	-	-
MM-S-05	3E-11	4.9E-02	1E-10	1.2E-01	3E-09	3.8E-01	2E-10	4.3E-01	❍	-	-
MM-S-06	3E-05	8.8E+00	1E-04	2.2E+01	1E-05	2.8E+01	3E-04	7.7E+01	❍	-	-
MM-S-07	3E-11	7.7E-01	1E-10	1.9E+00	3E-09	3.9E+00	3E-10	6.8E+00	❍	-	-
MM-S-08	2E-05	4.8E+00	5E-05	1.2E+01	6E-06	1.5E+01	1E-04	4.2E+01	❍	-	-
MM-S-09	2E-04	6.1E+01	7E-04	1.5E+02	9E-05	1.8E+02	2E-03	5.3E+02	❍	-	-
MM-S-10	8E-11	2.0E+00	3E-10	5.0E+00	7E-09	1.0E+01	7E-10	1.7E+01	❍	-	-
MM-S-11	3E-11	2.5E-02	1E-10	6.3E-02	3E-09	3.0E-01	2E-10	2.2E-01	-	❍	-
MM-S-12	4E-11	2.6E-01	2E-10	6.4E-01	4E-09	1.6E+00	4E-10	2.2E+00	-	❍	-
MM-S-13	3E-11	6.4E-02	1E-10	1.6E-01	3E-09	5.4E-01	3E-10	5.6E-01	-	❍	-
MM-S-14	3E-05	7.8E+00	9E-05	1.9E+01	1E-05	2.4E+01	2E-04	6.8E+01	-	❍	-
MM-S-15	0E+00	7.0E-03	0E+00	1.7E-02	0E+00	3.4E-02	0E+00	6.1E-02	-	❍	-
MM-S-16	1E-11	1.6E-02	5E-11	4.0E-02	1E-09	1.0E-01	1E-10	1.4E-01	❍	-	-
MM-S-17	0E+00	7.1E-03	0E+00	1.8E-02	0E+00	3.4E-02	0E+00	6.2E-02	❍	-	-
MM-S-18	3E-05	8.7E+00	1E-04	2.2E+01	1E-05	2.6E+01	3E-04	7.6E+01	❍	-	-
MM-S-19	3E-09	1.2E-01	1E-08	3.0E-01	3E-07	1.6E+00	2E-08	1.0E+00	❍	-	-
MM-S-20	0E+00	1.2E-01	0E+00	3.0E-01	0E+00	5.9E-01	0E+00	1.1E+00	❍	-	-
MM-S-21	0E+00	9.9E-03	0E+00	2.5E-02	0E+00	4.8E-02	0E+00	8.7E-02	-	❍	-
MM-S-22	0E+00	7.7E-03	0E+00	1.9E-02	0E+00	3.7E-02	0E+00	6.8E-02	-	❍	-
MM-S-23	1E-11	1.2E-01	5E-11	2.9E-01	1E-09	6.9E-01	1E-10	1.0E+00	❍	-	-
MM-S-24	3E-05	1.0E+01	1E-04	2.6E+01	1E-05	3.4E+01	3E-04	9.0E+01	❍	❍	-
MM-S-25	0E+00	4.1E-02	0E+00	1.0E-01	0E+00	2.0E-01	0E+00	3.6E-01	❍	-	-
MM-S-26	0E+00	1.8E-01	0E+00	4.5E-01	0E+00	8.7E-01	0E+00	1.6E+00	❍	-	-
MM-S-27	0E+00	7.9E-03	0E+00	2.0E-02	0E+00	3.8E-02	0E+00	6.9E-02	❍	-	-
MM-S-28	3E-05	7.8E+00	8E-05	1.9E+01	1E-05	2.4E+01	2E-04	6.8E+01	-	❍	-
MM-S-29	1E-11	3.4E-02	6E-11	8.5E-02	1E-09	1.9E-01	1E-10	3.0E-01	❍	❍	-
MM-S-30	4E-05	1.3E+01	1E-04	3.2E+01	2E-05	4.1E+01	4E-04	1.1E+02	-	❍	-
MM-S-31	0E+00	1.1E-02	0E+00	2.8E-02	0E+00	5.5E-02	0E+00	9.9E-02	-	❍	-
MM-S-32	2E-11	1.8E+00	9E-11	4.6E+00	2E-09	9.3E+00	2E-10	1.6E+01	-	❍	-
MM-S-33	4E-11	2.1E-01	2E-10	5.2E-01	4E-09	1.2E+00	3E-10	1.8E+00	-	❍	-
MM-S-34	2E-11	6.8E-02	1E-10	1.7E-01	3E-09	3.7E-01	2E-10	5.9E-01	-	❍	-
MM-S-35	3E-05	7.9E+00	8E-05	2.0E+01	1E-05	2.6E+01	2E-04	6.9E+01	-	❍	-
MM-S-36	1E-11	1.6E-02	5E-11	4.0E-02	1E-09	9.8E-02	9E-11	1.4E-01	-	❍	-
MM-S-37	9E-12	3.7E-02	4E-11	9.2E-02	1E-09	1.9E-01	8E-11	3.2E-01	-	❍	-
MM-SD-02 (PPE)	5E-05	1.4E+01	2E-04	3.6E+01	2E-05	4.2E+01	5E-04	1.3E+02	-	-	❍
MM-SD-03 (Dwnstrm)	4E-05	1.0E+01	1E-04	2.6E+01	1E-05	3.1E+01	3E-04	9.1E+01	-	-	❍
MM-SD-04	3E-10	9.6E-02	1E-09	2.4E-01	3E-08	1.7E+00	3E-09	8.4E-01	-	-	❍
MM-SD-05	2E-09	8.9E-01	9E-09	2.2E+00	2E-07	4.6E+00	2E-08	7.8E+00	-	-	❍
MM-SD-06	2E-05	1.4E+01	5E-05	3.6E+01	7E-06	6.0E+01	2E-04	1.2E+02	-	-	❍
MM-SD-07	2E-05	1.0E+01	6E-05	2.6E+01	7E-06	4.1E+01	2E-04	9.0E+01	-	-	❍
MM-SD-08	1E-11	1.3E-02	6E-11	3.1E-02	1E-09	2.1E-01	1E-10	1.1E-01	-	-	❍

Highlighted values

1E-05 ≤ ILCR ≤ 1E-04; 1E+00 ≤ HI ≤ 1E+01	"moderate risk"
1E-04 < ILCR ≤ 1E-03; 1E+01 < HI ≤ 1E+02	"high risk"
ILCR > 1E-03; HI > 1E+02	"extremely high risk"

Table 9
Lead Screening Summary

	Ratio of UCL-Based Concentration to Lead Screening Level (unitless)			
Area	**Recreational User Receptor**	**Recreational Cabin Occupant Receptor**	**Construction Worker Receptor**	**Residential Receptor**
Mill Area	7.9E-01	2.0E+00	1.7E+00	6.9E+00
Cabins Area	1.3E-01	3.1E-01	2.7E-01	1.1E+00
Sediment	2.9E-01	7.2E-01	6.3E-01	2.5E+00
Sitewide	6.9E-01	1.7E+00	1.5E+00	6.0E+00

	Ratio of Sample-Specific Concentration to Lead Screening Level (unitless)				Site Area		
Sample	**Recreational User Receptor**	**Recreational Cabin Occupant Receptor**	**Construction Worker Receptor**	**Residential Receptor**	**Mill Area**	**Cabin Area**	**Sediment**
MM-S-01	3.6E+00	8.9E+00	7.8E+00	3.1E+01	❍	-	-
MM-S-02	2.1E-01	5.4E-01	4.7E-01	1.9E+00	❍	-	-
MM-S-03	6.1E-01	1.5E+00	1.3E+00	5.4E+00	❍	-	-
MM-S-04	5.4E-01	1.4E+00	1.2E+00	4.8E+00	❍	-	-
MM-S-05	2.6E-02	6.4E-02	5.6E-02	2.3E-01	❍	-	-
MM-S-06	8.6E-01	2.1E+00	1.9E+00	7.5E+00	❍	-	-
MM-S-07	5.6E-02	1.4E-01	1.2E-01	4.9E-01	❍	-	-
MM-S-08	3.1E-01	7.9E-01	6.9E-01	2.8E+00	❍	-	-
MM-S-09	1.1E+00	2.7E+00	2.3E+00	9.4E+00	❍	-	-
MM-S-10	2.6E-01	6.4E-01	5.6E-01	2.3E+00	❍	-	-
MM-S-11	1.4E-02	3.5E-02	3.1E-02	1.2E-01	-	❍	-
MM-S-12	2.4E-02	6.1E-02	5.3E-02	2.1E-01	-	❍	-
MM-S-13	6.3E-02	1.6E-01	1.4E-01	5.5E-01	-	❍	-
MM-S-14	4.6E-02	1.1E-01	1.0E-01	4.0E-01	-	❍	-
MM-S-15	3.9E-03	9.6E-03	8.4E-03	3.4E-02	-	❍	-
MM-S-16	1.3E-02	3.1E-02	2.8E-02	1.1E-01	❍	-	-
MM-S-17	8.0E-03	2.0E-02	1.8E-02	7.0E-02	❍	-	-
MM-S-18	1.3E-01	3.3E-01	2.8E-01	1.1E+00	❍	-	-
MM-S-19	7.3E-02	1.8E-01	1.6E-01	6.4E-01	❍	-	-
MM-S-20	2.4E-01	6.1E-01	5.3E-01	2.1E+00	❍	-	-
MM-S-21	1.2E-02	3.0E-02	2.6E-02	1.0E-01	-	❍	-
MM-S-22	2.4E-02	6.1E-02	5.3E-02	2.1E-01	-	❍	-
MM-S-23	1.4E-02	3.4E-02	3.0E-02	1.2E-01	❍	-	-
MM-S-24	1.3E-01	3.3E-01	2.9E-01	1.2E+00	❍	❍	-
MM-S-25	1.4E-02	3.6E-02	3.1E-02	1.3E-01	❍	-	-
MM-S-26	2.4E-02	6.1E-02	5.3E-02	2.1E-01	❍	-	-
MM-S-27	1.0E-02	2.5E-02	2.2E-02	8.9E-02	❍	-	-
MM-S-28	1.4E-01	3.5E-01	3.0E-01	1.2E+00	-	❍	-
MM-S-29	1.6E-02	3.9E-02	3.4E-02	1.4E-01	❍	❍	-
MM-S-30	1.6E-01	3.9E-01	3.4E-01	1.4E+00	-	❍	-
MM-S-31	5.9E-03	1.5E-02	1.3E-02	5.1E-02	-	❍	-
MM-S-32	7.1E-02	1.8E-01	1.6E-01	6.3E-01	-	❍	-
MM-S-33	7.0E-02	1.8E-01	1.5E-01	6.1E-01	-	❍	-
MM-S-34	1.2E-02	3.1E-02	2.7E-02	1.1E-01	-	❍	-
MM-S-35	1.4E-01	3.5E-01	3.1E-01	1.2E+00	-	❍	-
MM-S-36	1.7E-02	4.3E-02	3.8E-02	1.5E-01	-	❍	-
MM-S-37	3.4E-01	8.6E-01	7.5E-01	3.0E+00	-	❍	-
MM-SD-02 (PPE)	1.0E-02	2.6E-02	2.3E-02	9.0E-02	-	-	❍
MM-SD-03 (Dwnstrm)	1.0E-02	2.5E-02	2.2E-02	8.8E-02	-	-	❍
MM-SD-04	6.6E-02	1.6E-01	1.4E-01	5.8E-01	-	-	❍
MM-SD-05	1.9E-01	4.6E-01	4.1E-01	1.6E+00	-	-	❍
MM-SD-06	2.6E-01	6.4E-01	5.6E-01	2.3E+00	-	-	❍
MM-SD-07	5.1E-01	1.3E+00	1.1E+00	4.5E+00	-	-	❍
MM-SD-08	8.7E-03	2.2E-02	1.9E-02	7.6E-02	-	-	❍

Highlighted values

1E+00 ≤ Ratio ≤ 1E+01	"moderate risk"
1E+01 < Ratio ≤ 1E+02	"high risk"
Ratio > 1E+02	"extremely high risk"

Table 10a

Sensitivity Analysis for Recreational Cabin Occupant Risk Characterization Summary

	UCL-Based Risk Values			
	Recreational Cabin Occupant Receptor (100 days/year)		Recreational Cabin Occupant Receptor (200 days/year)	
Exposure Area	**ILCR**	**HI**	**ILCR**	**HI**
Mill Area	2E-04	6.3E+01	5E-04	1.3E+02
Cabins Area	8E-05	2.2E+01	2E-04	4.3E+01
Sediment	1E-04	4.7E+01	2E-04	9.5E+01
Sitewide	2E-04	4.8E+01	3E-04	9.7E+01

	Sample-Specific Risk Values				Site Area		
	Recreational Cabin Occupant Receptor (100 days/year)		Recreational Cabin Occupant Receptor (200 days/year)				
Sample	**ILCR**	**HI**	**ILCR**	**HI**	**Mill Area**	**Cabin Area**	**Sediment**
MM-S-01	6E-05	1.8E+01	1E-04	3.6E+01	❍	-	-
MM-S-02	9E-11	6.9E+00	2E-10	1.4E+01	❍	-	-
MM-S-03	3E-04	6.9E+01	6E-04	1.4E+02	❍	-	-
MM-S-04	1E-04	9.7E+01	2E-04	1.9E+02	❍	-	-
MM-S-05	1E-10	1.2E-01	2E-10	2.5E-01	❍	-	-
MM-S-06	1E-04	2.2E+01	2E-04	4.4E+01	❍	-	-
MM-S-07	1E-10	1.9E+00	3E-10	3.9E+00	❍	-	-
MM-S-08	5E-05	1.2E+01	1E-04	2.4E+01	❍	-	-
MM-S-09	7E-04	1.5E+02	1E-03	3.0E+02	❍	-	-
MM-S-10	3E-10	5.0E+00	6E-10	1.0E+01	❍	-	-
MM-S-11	1E-10	6.3E-02	2E-10	1.3E-01	-	❍	-
MM-S-12	2E-10	6.4E-01	3E-10	1.3E+00	-	❍	-
MM-S-13	1E-10	1.6E-01	2E-10	3.2E-01	-	❍	-
MM-S-14	9E-05	1.9E+01	2E-04	3.9E+01	-	❍	-
MM-S-15	0E+00	1.7E-02	0E+00	3.5E-02	-	❍	-
MM-S-16	5E-11	4.0E-02	1E-10	8.0E-02	❍	-	-
MM-S-17	0E+00	1.8E-02	0E+00	3.6E-02	❍	-	-
MM-S-18	1E-04	2.2E+01	2E-04	4.3E+01	❍	-	-
MM-S-19	1E-08	3.0E-01	2E-08	6.0E-01	❍	-	-
MM-S-20	0E+00	3.0E-01	0E+00	6.1E-01	❍	-	-
MM-S-21	0E+00	2.5E-02	0E+00	5.0E-02	-	❍	-
MM-S-22	0E+00	1.9E-02	0E+00	3.9E-02	-	❍	-
MM-S-23	5E-11	2.9E-01	1E-10	5.9E-01	❍	-	-
MM-S-24	1E-04	2.6E+01	2E-04	5.1E+01	❍	❍	-
MM-S-25	0E+00	1.0E-01	0E+00	2.1E-01	❍	-	-
MM-S-26	0E+00	4.5E-01	0E+00	9.0E-01	❍	-	-
MM-S-27	0E+00	2.0E-02	0E+00	3.9E-02	❍	-	-
MM-S-28	8E-05	1.9E+01	2E-04	3.9E+01	-	❍	-
MM-S-29	6E-11	8.5E-02	1E-10	1.7E-01	❍	❍	-
MM-S-30	1E-04	3.2E+01	3E-04	6.4E+01	-	❍	-
MM-S-31	0E+00	2.8E-02	0E+00	5.7E-02	-	❍	-
MM-S-32	9E-11	4.6E+00	2E-10	9.2E+00	-	❍	-
MM-S-33	2E-10	5.2E-01	3E-10	1.0E+00	-	❍	-
MM-S-34	1E-10	1.7E-01	2E-10	3.4E-01	-	❍	-
MM-S-35	8E-05	2.0E+01	2E-04	3.9E+01	-	❍	-
MM-S-36	5E-11	4.0E-02	1E-10	8.1E-02	-	❍	-
MM-S-37	4E-11	9.2E-02	8E-11	1.8E-01	-	❍	-
MM-SD-02 (PPE)	2E-04	3.6E+01	3E-04	7.2E+01	-	-	❍
MM-SD-03 (Dwnstrm)	1E-04	2.6E+01	2E-04	5.2E+01	-	-	❍
MM-SD-04	1E-09	2.4E-01	3E-09	4.8E-01	-	-	❍
MM-SD-05	9E-09	2.2E+00	2E-08	4.4E+00	-	-	❍
MM-SD-06	5E-05	3.6E+01	1E-04	7.1E+01	-	-	❍
MM-SD-07	6E-05	2.6E+01	1E-04	5.1E+01	-	-	❍
MM-SD-08	6E-11	3.1E-02	1E-10	6.3E-02	-	-	❍

Highlighted values

1E-05 ≤ ILCR ≤ 1E-04; 1E+00 ≤ HI ≤ 1E+01	"moderate risk"
1E-04 < ILCR ≤ 1E-03; 1E+01 < HI ≤ 1E+02	"high risk"
ILCR > 1E-03; HI > 1E+02	"extremely high risk"

Table 10b

Sensitivity Analysis for Recreational Cabin Occupant Lead Screening Summary

	Ratio of UCL-Based Concentration to Lead Screening Level (unitless)	
Area	**Recreational Cabin Occupant Receptor (100 days/year)**	**Recreational Cabin Occupant Receptor (200 days/year)**
Mill Area	2.0E+00	3.9E+00
Cabins Area	3.1E-01	6.3E-01
Sediment	7.2E-01	1.4E+00
Sitewide	1.7E+00	3.5E+00

	Ratio of Sample-Specific Concentration to Lead Screening Level (unitless)		Site Area		
Sample	**Recreational Cabin Occupant Receptor (100 days/year)**	**Recreational Cabin Occupant Receptor (200 days/year)**	**Mill Area**	**Cabin Area**	**Sediment**
MM-S-01	8.9E+00	1.8E+01	❍	-	-
MM-S-02	5.4E-01	1.1E+00	❍	-	-
MM-S-03	1.5E+00	3.1E+00	❍	-	-
MM-S-04	1.4E+00	2.7E+00	❍	-	-
MM-S-05	6.4E-02	1.3E-01	❍	-	-
MM-S-06	2.1E+00	4.3E+00	❍	-	-
MM-S-07	1.4E-01	2.8E-01	❍	-	-
MM-S-08	7.9E-01	1.6E+00	❍	-	-
MM-S-09	2.7E+00	5.4E+00	❍	-	-
MM-S-10	6.4E-01	1.3E+00	❍	-	-
MM-S-11	3.5E-02	7.1E-02	-	❍	-
MM-S-12	6.1E-02	1.2E-01	-	❍	-
MM-S-13	1.6E-01	3.1E-01	-	❍	-
MM-S-14	1.1E-01	2.3E-01	-	❍	-
MM-S-15	9.6E-03	1.9E-02	-	❍	-
MM-S-16	3.1E-02	6.3E-02	❍	-	-
MM-S-17	2.0E-02	4.0E-02	❍	-	-
MM-S-18	3.3E-01	6.5E-01	❍	-	-
MM-S-19	1.8E-01	3.6E-01	❍	-	-
MM-S-20	6.1E-01	1.2E+00	❍	-	-
MM-S-21	3.0E-02	5.9E-02	-	❍	-
MM-S-22	6.1E-02	1.2E-01	-	❍	-
MM-S-23	3.4E-02	6.9E-02	❍	-	-
MM-S-24	3.3E-01	6.6E-01	❍	❍	-
MM-S-25	3.6E-02	7.1E-02	❍	-	-
MM-S-26	6.1E-02	1.2E-01	❍	-	-
MM-S-27	2.5E-02	5.1E-02	❍	-	-
MM-S-28	3.5E-01	6.9E-01	-	❍	-
MM-S-29	3.9E-02	7.9E-02	❍	❍	-
MM-S-30	3.9E-01	7.9E-01	-	❍	-
MM-S-31	1.5E-02	2.9E-02	-	❍	-
MM-S-32	1.8E-01	3.6E-01	-	❍	-
MM-S-33	1.8E-01	3.5E-01	-	❍	-
MM-S-34	3.1E-02	6.2E-02	-	❍	-
MM-S-35	3.5E-01	7.0E-01	-	❍	-
MM-S-36	4.3E-02	8.6E-02	-	❍	-
MM-S-37	8.6E-01	1.7E+00	-	❍	-
MM-SD-02 (PPE)	2.6E-02	5.1E-02	-	-	❍
MM-SD-03 (Dwnstrm)	2.5E-02	5.0E-02	-	-	❍
MM-SD-04	1.6E-01	3.3E-01	-	-	❍
MM-SD-05	4.6E-01	9.3E-01	-	-	❍
MM-SD-06	6.4E-01	1.3E+00	-	-	❍
MM-SD-07	1.3E+00	2.6E+00	-	-	❍
MM-SD-08	2.2E-02	4.4E-02	-	-	❍

Highlighted values

1E+00 ≤ Ratio ≤ 1E+01	"moderate risk"
1E+01 < Ratio ≤ 1E+02	"high risk"
Ratio > 1E+02	"extremely high risk"

ATTACHMENT A

ABBREVIATIONS

COPC	chemical of potential concern
TR	target incremental lifetime cancer risk (1E-05 per BLM, 2004)
THQ	target hazard quotient (1E+00 per BLM, 2004)
AT (d)	averaging time (days)
BW (kg)	body weight (kilograms)
RfDo (mg/kg-d)	oral reference dose (milligram per kilogram per day)
EF (d/yr)	exposure frequency (days per year)
ED (yr)	exposure duration (years)
IR (mg/d)	ingestion rate (milligrams per day)
B oral (-)	bioavailability (dimensionless)
FI (-)	fraction ingested (dimensionless)
CF (kg/mg)	conversion factor (kilogram per milligram)
RBC (mg/kg)	risk-based concentration (milligram per kilogram)
GIABS	gastrointestinal absorption factor (dimensionless)
SA (cm2)	surface area (square centimeters)
AF (mg/cm2)	adherence factor (milligram per square centimeter)
ABS (-)	absorption factor (dimensionless)
RfC (mg/m3)	reference concentration (milligram per cubic meter)
REL (mg/m3)	reference exposure level (milligram per cubic meter)
PEF (m3/kg)	particulate emission factor (cubic meters per kilogram)
ET (hr/d)	exposure time (hours per day)
IFS (mg/kg)	receptor-weighted ingestion factor for soil (milligrams per kilogram)
DFS (mg/kg)	receptor-weighted dermal factor for soil (milligrams per kilogram)

ARSENIC (Cancer Endpoint)

Recreational User RBCs (Pathway-specific and total; in mg/kg)

Soil Ingestion (age 0-6 yrs and 7-26 yrs)

COPC	TR	AT (d)	BW (kg)	SFo $(mg/kg\text{-}d)^{-1}$	EF (d/yr)	ED (yr)	IR (mg/d)	B oral (-)	FI (-)	**IFS (mg/kg)**	CF (kg/mg)	**RBC (mg/kg)**
Arsenic	1E-05	25550	15 80	*9.5E+00*	40	6 20	200 100	0.6	1	**4200**	1E-06	**1.1E+01**

Dermal Contact (age 0-6 yrs and 7-26 yrs)

COPC	TR	AT (d)	BW (kg)	SFo $(mg/kg\text{-}d)^{-1}$	GIABS	EF (d/yr)	ED (yr)	SA (cm^2)	AF (mg/cm^2)	ABS (-)	**DFS (mg/kg)**	CF (kg/mg)	**RBC (mg/kg)**
Arsenic	1E-05	25550	15 80	*9.5E+00*	1.0E+00	40	6 20	*2900* 6032	0.2 0.07	3.0E-02	**13502**	1E-06	**6.6E+01**

Inhalation of Particulates (age 0-6 yrs and 7-26 yrs)

COPC	TR	AT (d)	IUR $(ug/m3)^{-1}$	PEF (m^3/kg)	ET (hr/d)	EF (d/yr)	ED (yr)	CF1 (hr/day)	CF2 (ug/mg)	**RBC (mg/kg)**
Arsenic	1E-05	25550	*3.3E-03*	1.36E+09	24	40	26	24	1000	**1.0E+05**

Total RBC => 9.2E+00

Chemical-specific values are gray-shaded.
Italicized values are CalEPA values that differ from those used by USEPA to derive RSLs.
Receptor-specific EF value is yellow-shaded. All other values are default values for residential receptor.

BERYLLIUM (Cancer Endpoint)

Recreational User RBCs (Pathway-specific and total; in mg/kg)

Soil Ingestion (age 0-6 yrs and 7-26 yrs)

COPC	TR	AT (d)	BW (kg)	SFo (mg/kg-d)$^{-1}$	EF (d/yr)	ED (yr)	IR (mg/d)	B oral (-)	FI (-)	**IFS (mg/kg)**	CF (kg/mg)	**RBC (mg/kg)**
Beryllium	1E-05	25550	15 80	-	40	6 20	200 100	1	1	**4200**	1E-06	**-**

Dermal Contact (age 0-6 yrs and 7-26 yrs)

COPC	TR	AT (d)	BW (kg)	SFo (mg/kg-d)$^{-1}$	GIABS	EF (d/yr)	ED (yr)	SA (cm^2)	AF (mg/cm^2)	ABS (-)	**DFS (mg/kg)**	CF (kg/mg)	**RBC (mg/kg)**
Beryllium	1E-05	25550	15 80	-	7.0E-03	40	6 20	*2900* 6032	0.2 0.07	*1.0E-02*	**13502**	1E-06	**-**

Inhalation of Particulates (age 0-6 yrs and 7-26 yrs)

COPC	TR	AT (d)	IUR (ug/m3)$^{-1}$	PEF (m^3/kg)	ET (hr/d)	EF (d/yr)	ED (yr)	CF1 (hr/day)	CF2 (ug/mg)	**RBC (mg/kg)**
Beryllium	1E-05	25550	2.4E-03	1.36E+09	24	40	26	24	1000	**1.4E+05**

Total RBC => 1.4E+05

Chemical-specific values are gray-shaded.
Italicized values are CalEPA values that differ from those used by USEPA to derive RSLs.
ABS value from Table 1 of PEA Manual (DTSC, 2015).
Receptor-specific EF value is yellow-shaded. All other values are default values for residential receptor.

CADMIUM (Cancer Endpoint)

Recreational User RBCs (Pathway-specific and total; in mg/kg)

Soil Ingestion (age 0-6 yrs and 7-26 yrs)

COPC	TR	AT (d)	BW (kg)	SFo (mg/kg-d)$^{-1}$	EF (d/yr)	ED (yr)	IR (mg/d)	B oral (-)	FI (-)	**IFS (mg/kg)**	CF (kg/mg)	**RBC (mg/kg)**
Cadmium	1E-05	25550	15 80	-	40	6 20	200 100	1	1	**4200**	1E-06	**-**

Dermal Contact (age 0-6 yrs and 7-26 yrs)

COPC	TR	AT (d)	BW (kg)	SFo (mg/kg-d)$^{-1}$	GIABS	EF (d/yr)	ED (yr)	SA (cm^2)	AF (mg/cm^2)	ABS (-)	**DFS (mg/kg)**	CF (kg/mg)	**RBC (mg/kg)**
Cadmium	1E-05	25550	15 80	-	2.5E-02	40	6 20	*2900* 6032	0.2 0.07	1.0E-03	**13502**	1E-06	**-**

Inhalation of Particulates (age 0-6 yrs and 7-26 yrs)

COPC	TR	AT (d)	IUR (ug/m3)$^{-1}$	PEF (m^3/kg)	ET (hr/d)	EF (d/yr)	ED (yr)	CF1 (hr/day)	CF2 (ug/mg)	**RBC (mg/kg)**
Cadmium	1E-05	25550	*1.8E-03*	1.36E+09	24	40	*30*	24	1000	**1.6E+05**

Total RBC => 1.6E+05

Chemical-specific values are gray-shaded.
Italicized values are CalEPA values that differ from those used by USEPA to derive RSLs.
Receptor-specific EF value is yellow-shaded. All other values are default values for residential receptor.

COBALT (Cancer Endpoint)

Recreational User RBCs (Pathway-specific and total; in mg/kg)

Soil Ingestion (age 0-6 yrs and 7-26 yrs)

COPC	TR	AT (d)	BW (kg)	SFo (mg/kg-d)$^{-1}$	EF (d/yr)	ED (yr)	IR (mg/d)	B oral (-)	FI (-)	**IFS (mg/kg)**	CF (kg/mg)	**RBC (mg/kg)**
Cobalt	1E-05	25550	15 80	-	40	6 20	200 100	1	1	**4200**	1E-06	**-**

Dermal Contact (age 0-6 yrs and 7-26 yrs)

COPC	TR	AT (d)	BW (kg)	SFo (mg/kg-d)$^{-1}$	GIABS	EF (d/yr)	ED (yr)	SA (cm^2)	AF (mg/cm^2)	ABS (-)	**DFS (mg/kg)**	CF (kg/mg)	**RBC (mg/kg)**
Cobalt	1E-05	25550	15 80	-	1.0E+00	40	6 20	*2900* 6032	0.2 0.07	*1.0E-02*	**13502**	1E-06	**-**

Inhalation of Particulates (age 0-6 yrs and 7-26 yrs)

COPC	TR	AT (d)	IUR (ug/m3)$^{-1}$	PEF (m^3/kg)	ET (hr/d)	EF (d/yr)	ED (yr)	CF1 (hr/day)	CF2 (ug/mg)	**RBC (mg/kg)**
Cobalt	1E-05	25550	9.0E-03	1.36E+09	24	40	26	24	1000	**3.7E+04**

Total RBC => 3.7E+04

Chemical-specific values are gray-shaded.
Italicized values are CalEPA values that differ from those used by USEPA to derive RSLs.
ABS value from Table 1 of PEA Manual (DTSC, 2015).
Receptor-specific EF value is yellow-shaded. All other values are default values for residential receptor.

NICKEL (Cancer Endpoint)

Recreational User RBCs (Pathway-specific and total; in mg/kg)

Soil Ingestion (age 0-6 yrs and 7-26 yrs)

COPC	TR	AT (d)	BW (kg)	SFo (mg/kg-d)$^{-1}$	EF (d/yr)	ED (yr)	IR (mg/d)	B oral (-)	FI (-)	**IFS (mg/kg)**	CF (kg/mg)	**RBC (mg/kg)**
Nickel	1E-05	25550	15 80	-	40	6 20	200 100	1	1	**4200**	1E-06	**-**

Dermal Contact (age 0-6 yrs and 7-26 yrs)

COPC	TR	AT (d)	BW (kg)	SFo (mg/kg-d)$^{-1}$	GIABS	EF (d/yr)	ED (yr)	SA (cm^2)	AF (mg/cm^2)	ABS (-)	**DFS (mg/kg)**	CF (kg/mg)	**RBC (mg/kg)**
Nickel	1E-05	25550	15 80	-	4.0E-02	40	6 20	*2900* 6032	0.2 0.07	*1.0E-02*	**13502**	1E-06	**-**

Inhalation of Particulates (age 0-6 yrs and 7-26 yrs)

COPC	TR	AT (d)	IUR (ug/m3)$^{-1}$	PEF (m^3/kg)	ET (hr/d)	EF (d/yr)	ED (yr)	CF1 (hr/day)	CF2 (ug/mg)	**RBC (mg/kg)**
Nickel	1E-05	25550	2.6E-04	1.36E+09	24	40	26	24	1000	**1.3E+06**

Total RBC => 1.3E+06

Chemical-specific values are gray-shaded.
Italicized values are CalEPA values that differ from those used by USEPA to derive RSLs.
ABS value from Table 1 of PEA Manual (DTSC, 2015).
Receptor-specific EF value is yellow-shaded. All other values are default values for residential receptor.

ANTIMONY (Non-Cancer Endpoint)

Recreational User RBCs (Pathway-specific and total; in mg/kg)

Soil Ingestion (age 0-6 yrs)

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)		EF (d/yr)	ED (yr)	IR (mg/d)	B oral (-)	FI (-)				CF (kg/mg)	**RBC (mg/kg)**
Antimony	1	2190	15	4.0E-04		40	6	200	1	1				1E-06	**2.7E+02**

Dermal Contact (age 0-6 yrs)

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)	GIABS	EF (d/yr)	ED (yr)			SA (cm^2)	AF (mg/cm^2)	ABS (-)	CF (kg/mg)	**RBC (mg/kg)**
Antimony	1	2190	15	4.0E-04	1.5E-01	40	6			*2900*	0.2	*1.0E-02*	1E-06	**1.4E+03**

Inhalation of Particulates (age 0-6 yrs)

COPC	THQ	AT (d)	RfC or REL (mg/m3)	PEF (m^3/kg)	ET (hr/d)	EF (d/yr)	ED (yr)						CF (hr/day)	**RBC (mg/kg)**
Antimony	1	2190	-	1.36E+09	24	40	6						24	**-**

Total RBC => 2.3E+02

Chemical-specific values are gray-shaded.
Italicized values are CalEPA values that differ from those used by USEPA to derive RSLs.
ABS value from Table 1 of PEA Manual (DTSC, 2015).
Receptor-specific EF value is yellow-shaded. All other values are default values for residential receptor.

ARSENIC (Non-Cancer Endpoint)

Recreational User RBCs (Pathway-specific and total; in mg/kg)

Soil Ingestion (age 0-6 yrs)

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)		EF (d/yr)	ED (yr)	IR (mg/d)	B oral (-)	FI (-)				CF (kg/mg)	**RBC (mg/kg)**
Arsenic	1	2190	15	*3.5E-06*		40	6	200	0.6	1				1E-06	**4.0E+00**

Dermal Contact (age 0-6 yrs)

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)	GIABS	EF (d/yr)	ED (yr)			SA (cm^2)	AF (mg/cm^2)	ABS (-)	CF (kg/mg)	**RBC (mg/kg)**
Arsenic	1	2190	15	*3.5E-06*	1.0E+00	40	6			*2900*	0.2	3.0E-02	1E-06	**2.8E+01**

Inhalation of Particulates (age 0-6 yrs)

COPC	THQ	AT (d)	RfC or REL (mg/m3)	PEF (m^3/kg)	ET (hr/d)	EF (d/yr)	ED (yr)						CF (hr/day)	**RBC (mg/kg)**
Arsenic	1	2190	1.5E-05	1.36E+09	24	40	6						24	**1.9E+05**

Total RBC => 3.5E+00

Chemical-specific values are gray-shaded.
Italicized values are CalEPA values that differ from those used by USEPA to derive RSLs.
Receptor-specific EF value is yellow-shaded. All other values are default values for residential receptor.

BARIUM (Non-Cancer Endpoint)

Recreational User RBCs (Pathway-specific and total; in mg/kg)

Soil Ingestion (age 0-6 yrs)

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)	EF (d/yr)	ED (yr)	IR (mg/d)	B oral (-)	FI (-)	CF (kg/mg)	**RBC (mg/kg)**
Barium	1	2190	15	2.0E-01	40	6	200	1	1	1E-06	**1.4E+05**

Dermal Contact (age 0-6 yrs)

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)	GIABS	EF (d/yr)	ED (yr)	SA (cm^2)	AF (mg/cm^2)	ABS (-)	CF (kg/mg)	**RBC (mg/kg)**
Barium	1	2190	15	2.0E-01	7.0E-02	40	6	*2900*	0.2	*1.0E-02*	1E-06	**3.3E+05**

Inhalation of Particulates (age 0-6 yrs)

COPC	THQ	AT (d)	RfC or REL (mg/m3)	PEF (m^3/kg)	ET (hr/d)	EF (d/yr)	ED (yr)	CF (hr/day)	**RBC (mg/kg)**
Barium	1	2190	5.0E-04	1.36E+09	24	40	6	24	**6.2E+06**

Total RBC => 9.5E+04

Chemical-specific values are gray-shaded.
Italicized values are CalEPA values that differ from those used by USEPA to derive RSLs.
ABS value from Table 1 of PEA Manual (DTSC, 2015).
Receptor-specific EF value is yellow-shaded. All other values are default values for residential receptor.

BERYLLIUM (Non-Cancer Endpoint)

Recreational User RBCs (Pathway-specific and total; in mg/kg)

Soil Ingestion (age 0-6 yrs)

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)	EF (d/yr)	ED (yr)	IR (mg/d)	B oral (-)	FI (-)	CF (kg/mg)	**RBC (mg/kg)**
Beryllium	1	2190	15	*2.0E-04*	40	6	200	1	1	1E-06	**1.4E+02**

Dermal Contact (age 0-6 yrs)

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)	GIABS	EF (d/yr)	ED (yr)	SA (cm^2)	AF (mg/cm^2)	ABS (-)	CF (kg/mg)	**RBC (mg/kg)**
Beryllium	1	2190	15	*2.0E-04*	7.0E-03	40	6	*2900*	0.2	*1.0E-02*	1E-06	**3.3E+01**

Inhalation of Particulates (age 0-6 yrs)

COPC	THQ	AT (d)	RfC or REL (mg/m3)	PEF (m^3/kg)	ET (hr/d)	EF (d/yr)	ED (yr)	CF (hr/day)	**RBC (mg/kg)**
Beryllium	1	2190	*7.0E-06*	1.36E+09	24	40	6	24	**8.7E+04**

Total RBC => 2.7E+01

Chemical-specific values are gray-shaded.
Italicized values are CalEPA values that differ from those used by USEPA to derive RSLs.
ABS value from Table 1 of PEA Manual (DTSC, 2015).
Receptor-specific EF value is yellow-shaded. All other values are default values for residential receptor.

CADMIUM (Non-Cancer Endpoint)

Recreational User RBCs (Pathway-specific and total; in mg/kg)

Soil Ingestion (age 0-30 yrs)

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)		EF (d/yr)	ED (yr)	IR (mg/d)	B oral (-)	FI (-)				CF (kg/mg)	**RBC (mg/kg)**
Cadmium	1	10950	*80*	*6.3E-06*		40	*30*	*100*	1	1				1E-06	**4.6E+01**

Dermal Contact (age 0-30 yrs)

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)	GIABS	EF (d/yr)	ED (yr)			SA (cm^2)	AF (mg/cm^2)	ABS (-)	CF (kg/mg)	**RBC (mg/kg)**
Cadmium	1	10950	*80*	*6.3E-06*	2.5E-02	40	*30*			*6032*	*0.07*	1.0E-03	1E-06	**2.7E+02**

Inhalation of Particulates (age 0-30 yrs)

COPC	THQ	AT (d)	RfC or REL (mg/m3)	PEF (m^3/kg)	ET (hr/d)	EF (d/yr)	ED (yr)						CF (hr/day)	**RBC (mg/kg)**
Cadmium	1	10950	1.0E-05	1.36E+09	24	40	*30*						24	**1.2E+05**

Total RBC => 3.9E+01

Chemical-specific values are gray-shaded.
Italicized values are CalEPA values that differ from those used by USEPA to derive RSLs.
Receptor-specific EF value is yellow-shaded. All other values are default values for residential receptor.

COBALT (Non-Cancer Endpoint)

Recreational User RBCs (Pathway-specific and total; in mg/kg)

Soil Ingestion (age 0-6 yrs)

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)	EF (d/yr)	ED (yr)	IR (mg/d)	B oral (-)	FI (-)	CF (kg/mg)	**RBC (mg/kg)**
Cobalt	1	2190	15	3.0E-04	40	6	200	1	1	1E-06	**2.1E+02**

Dermal Contact (age 0-6 yrs)

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)	GIABS	EF (d/yr)	ED (yr)	SA (cm^2)	AF (mg/cm^2)	ABS (-)	CF (kg/mg)	**RBC (mg/kg)**
Cobalt	1	2190	15	3.0E-04	1.0E+00	40	6	*2900*	0.2	*1.0E-02*	1E-06	**7.1E+03**

Inhalation of Particulates (age 0-6 yrs)

COPC	THQ	AT (d)	RfC or REL (mg/m3)	PEF (m^3/kg)	ET (hr/d)	EF (d/yr)	ED (yr)	CF (hr/day)	**RBC (mg/kg)**
Cobalt	1	2190	6.0E-06	1.36E+09	24	40	6	24	**7.4E+04**

Total RBC => 2.0E+02

Chemical-specific values are gray-shaded.
Italicized values are CalEPA values that differ from those used by USEPA to derive RSLs.
ABS value from Table 1 of PEA Manual (DTSC, 2015).
Receptor-specific EF value is yellow-shaded. All other values are default values for residential receptor.

COPPER (Non-Cancer Endpoint)

Recreational User RBCs (Pathway-specific and total; in mg/kg)

Soil Ingestion (age 0-6 yrs)

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)		EF (d/yr)	ED (yr)	IR (mg/d)	B oral (-)	FI (-)				CF (kg/mg)	**RBC (mg/kg)**
Copper	1	2190	15	4.0E-02		40	6	200	1	1				1E-06	**2.7E+04**

Dermal Contact (age 0-6 yrs)

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)	GIABS	EF (d/yr)	ED (yr)			SA (cm^2)	AF (mg/cm^2)	ABS (-)	CF (kg/mg)	**RBC (mg/kg)**
Copper	1	2190	15	4.0E-02	1.0E+00	40	6			*2900*	0.2	*1.0E-02*	1E-06	**9.4E+05**

Inhalation of Particulates (age 0-6 yrs)

COPC	THQ	AT (d)	RfC or REL (mg/m3)	PEF (m^3/kg)	ET (hr/d)	EF (d/yr)	ED (yr)						CF (hr/day)	**RBC (mg/kg)**
Copper	1	2190	-	1.36E+09	24	40	6						24	**-**

Total RBC => 2.7E+04

Chemical-specific values are gray-shaded.
Italicized values are CalEPA values that differ from those used by USEPA to derive RSLs.
ABS value from Table 1 of PEA Manual (DTSC, 2015).
Receptor-specific EF value is yellow-shaded. All other values are default values for residential receptor.

MERCURY (Non-Cancer Endpoint)

Recreational User RBCs (Pathway-specific and total; in mg/kg)

Soil Ingestion (age 0-6 yrs)

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)		EF (d/yr)	ED (yr)	IR (mg/d)	B oral (-)	FI (-)				CF (kg/mg)	**RBC (mg/kg)**
Mercury	1	2190	15	1.6E-04		40	6	200	1	1				1E-06	**1.1E+02**

Dermal Contact (age 0-6 yrs)

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)	GIABS	EF (d/yr)	ED (yr)			SA (cm^2)	AF (mg/cm^2)	ABS (-)	CF (kg/mg)	**RBC (mg/kg)**
Mercury	1	2190	15	1.6E-04	7.0E-02	40	6			*2900*	0.2	*1.0E-02*	1E-06	**2.6E+02**

Inhalation of Particulates (age 0-6 yrs)

COPC	THQ	AT (d)	RfC or REL (mg/m3)	PEF (m^3/kg)	ET (hr/d)	EF (d/yr)	ED (yr)						CF (hr/day)	**RBC (mg/kg)**
Mercury	1	2190	3.0E-05	1.36E+09	24	40	6						24	**3.7E+05**

Total RBC => 7.7E+01

Chemical-specific values are gray-shaded.
Italicized values are CalEPA values that differ from those used by USEPA to derive RSLs.
ABS value from Table 1 of PEA Manual (DTSC, 2015).
Receptor-specific EF value is yellow-shaded. All other values are default values for residential receptor.

MOLYBDENUM (Non-Cancer Endpoint)

Recreational User RBCs (Pathway-specific and total; in mg/kg)

Soil Ingestion (age 0-6 yrs)

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)	EF (d/yr)	ED (yr)	IR (mg/d)	B oral (-)	FI (-)	CF (kg/mg)	**RBC (mg/kg)**
Molybdenum	1	2190	15	5.0E-03	40	6	200	1	1	1E-06	**3.4E+03**

Dermal Contact (age 0-6 yrs)

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)	GIABS	EF (d/yr)	ED (yr)	SA (cm^2)	AF (mg/cm^2)	ABS (-)	CF (kg/mg)	**RBC (mg/kg)**
Molybdenum	1	2190	15	5.0E-03	1.0E+00	40	6	*2900*	0.2	*1.0E-02*	1E-06	**1.2E+05**

Inhalation of Particulates (age 0-6 yrs)

COPC	THQ	AT (d)	RfC or REL (mg/m3)	PEF (m^3/kg)	ET (hr/d)	EF (d/yr)	ED (yr)	CF (hr/day)	**RBC (mg/kg)**
Molybdenum	1	2190	-	1.36E+09	24	40	6	24	**-**

Total RBC => 3.3E+03

Chemical-specific values are gray-shaded.
Italicized values are CalEPA values that differ from those used by USEPA to derive RSLs.
ABS value from Table 1 of PEA Manual (DTSC, 2015).
Receptor-specific EF value is yellow-shaded. All other values are default values for residential receptor.

NICKEL (Non-Cancer Endpoint)

Recreational User RBCs (Pathway-specific and total; in mg/kg)

Soil Ingestion (age 0-6 yrs)

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)		EF (d/yr)	ED (yr)	IR (mg/d)	B oral (-)	FI (-)				CF (kg/mg)	**RBC (mg/kg)**
Nickel	1	2190	15	*1.1E-02*		40	6	200	1	1				1E-06	**7.5E+03**

Dermal Contact (age 0-6 yrs)

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)	GIABS	EF (d/yr)	ED (yr)			SA (cm^2)	AF (mg/cm^2)	ABS (-)	CF (kg/mg)	**RBC (mg/kg)**
Nickel	1	2190	15	*1.1E-02*	4.0E-02	40	6			*2900*	0.2	*1.0E-02*	1E-06	**1.0E+04**

Inhalation of Particulates (age 0-6 yrs)

COPC	THQ	AT (d)	RfC or REL (mg/m3)	PEF (m^3/kg)	ET (hr/d)	EF (d/yr)	ED (yr)						CF (hr/day)	**RBC (mg/kg)**
Nickel	1	2190	*1.4E-05*	1.36E+09	24	40	6						24	**1.7E+05**

Total RBC => 4.3E+03

Chemical-specific values are gray-shaded.
Italicized values are CalEPA values that differ from those used by USEPA to derive RSLs.
ABS value from Table 1 of PEA Manual (DTSC, 2015).
Receptor-specific EF value is yellow-shaded. All other values are default values for residential receptor.

SELENIUM (Non-Cancer Endpoint)

Recreational User RBCs (Pathway-specific and total; in mg/kg)

Soil Ingestion (age 0-6 yrs)

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)		EF (d/yr)	ED (yr)	IR (mg/d)	B oral (-)	FI (-)				CF (kg/mg)	**RBC (mg/kg)**
Selenium	1	2190	15	5.0E-03		40	6	200	1	1				1E-06	**3.4E+03**

Dermal Contact (age 0-6 yrs)

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)	GIABS	EF (d/yr)	ED (yr)			SA (cm^2)	AF (mg/cm^2)	ABS (-)	CF (kg/mg)	**RBC (mg/kg)**
Selenium	1	2190	15	5.0E-03	1.0E+00	40	6			*2900*	0.2	*1.0E-02*	1E-06	**1.2E+05**

Inhalation of Particulates (age 0-6 yrs)

COPC	THQ	AT (d)	RfC or REL (mg/m3)	PEF (m^3/kg)	ET (hr/d)	EF (d/yr)	ED (yr)						CF (hr/day)	**RBC (mg/kg)**
Selenium	1	2190	2.0E-02	1.36E+09	24	40	6						24	**2.5E+08**

Total RBC => 3.3E+03

Chemical-specific values are gray-shaded.
Italicized values are CalEPA values that differ from those used by USEPA to derive RSLs.
ABS value from Table 1 of PEA Manual (DTSC, 2015).
Receptor-specific EF value is yellow-shaded. All other values are default values for residential receptor.

SILVER (Non-Cancer Endpoint)

Recreational User RBCs (Pathway-specific and total; in mg/kg)

Soil Ingestion (age 0-6 yrs)

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)	EF (d/yr)	ED (yr)	IR (mg/d)	B oral (-)	FI (-)	CF (kg/mg)	**RBC (mg/kg)**
Silver	1	2190	15	5.0E-03	40	6	200	1	1	1E-06	**3.4E+03**

Dermal Contact (age 0-6 yrs)

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)	GIABS	EF (d/yr)	ED (yr)	SA (cm^2)	AF (mg/cm^2)	ABS (-)	CF (kg/mg)	**RBC (mg/kg)**
Silver	1	2190	15	5.0E-03	4.0E-02	40	6	*2900*	0.2	*1.0E-02*	1E-06	**4.7E+03**

Inhalation of Particulates (age 0-6 yrs)

COPC	THQ	AT (d)	RfC or REL (mg/m3)	PEF (m^3/kg)	ET (hr/d)	EF (d/yr)	ED (yr)	CF (hr/day)	**RBC (mg/kg)**
Silver	1	2190	-	1.36E+09	24	40	6	24	**-**

Total RBC => 2.0E+03

Chemical-specific values are gray-shaded.
Italicized values are CalEPA values that differ from those used by USEPA to derive RSLs.
ABS value from Table 1 of PEA Manual (DTSC, 2015).
Receptor-specific EF value is yellow-shaded. All other values are default values for residential receptor.

ZINC (Non-Cancer Endpoint)

Recreational User RBCs (Pathway-specific and total; in mg/kg)

Soil Ingestion (age 0-6 yrs)

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)	EF (d/yr)	ED (yr)	IR (mg/d)	B oral (-)	FI (-)	CF (kg/mg)	**RBC (mg/kg)**
Zinc	1	2190	15	3.0E-01	40	6	200	1	1	1E-06	**2.1E+05**

Dermal Contact (age 0-6 yrs)

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)	GIABS	EF (d/yr)	ED (yr)	SA (cm^2)	AF (mg/cm^2)	ABS (-)	CF (kg/mg)	**RBC (mg/kg)**
Zinc	1	2190	15	3.0E-01	1.0E+00	40	6	*2900*	0.2	*1.0E-02*	1E-06	**7.1E+06**

Inhalation of Particulates (age 0-6 yrs)

COPC	THQ	AT (d)	RfC or REL (mg/m3)	PEF (m^3/kg)	ET (hr/d)	EF (d/yr)	ED (yr)	CF (hr/day)	**RBC (mg/kg)**
Zinc	1	2190	-	1.36E+09	24	40	6	24	**-**

Total RBC => 2.0E+05

Chemical-specific values are gray-shaded.
Italicized values are CalEPA values that differ from those used by USEPA to derive RSLs.
ABS value from Table 1 of PEA Manual (DTSC, 2015).
Receptor-specific EF value is yellow-shaded. All other values are default values for residential receptor.

ATTACHMENT B

ABBREVIATIONS

COPC	chemical of potential concern
TR	target incremental lifetime cancer risk (1E-05 per BLM, 2004)
THQ	target hazard quotient (1E+00 per BLM, 2004)
AT (d)	averaging time (days)
BW (kg)	body weight (kilograms)
RfDo (mg/kg-d)	oral reference dose (milligram per kilogram per day)
EF (d/yr)	exposure frequency (days per year)
ED (yr)	exposure duration (years)
IR (mg/d)	ingestion rate (milligrams per day)
B oral (-)	bioavailability (dimensionless)
FI (-)	fraction ingested (dimensionless)
CF (kg/mg)	conversion factor (kilogram per milligram)
RBC (mg/kg)	risk-based concentration (milligram per kilogram)
GIABS	gastrointestinal absorption factor (dimensionless)
SA (cm2)	surface area (square centimeters)
AF (mg/cm2)	adherence factor (milligram per square centimeter)
ABS (-)	absorption factor (dimensionless)
RfC (mg/m3)	reference concentration (milligram per cubic meter)
REL (mg/m3)	reference exposure level (milligram per cubic meter)
PEF (m3/kg)	particulate emission factor (cubic meters per kilogram)
ET (hr/d)	exposure time (hours per day)
IFS (mg/kg)	receptor-weighted ingestion factor for soil (milligrams per kilogram)
DFS (mg/kg)	receptor-weighted dermal factor for soil (milligrams per kilogram)

ARSENIC (Cancer Endpoint)

Recreational Cabin Occupant RBCs (Pathway-specific and total; in mg/kg)

Soil Ingestion (age 0-6 yrs and 7-26 yrs)

COPC	TR	AT (d)	BW (kg)	SFo $(mg/kg\text{-}d)^{-1}$	EF (d/yr)	ED (yr)	IR (mg/d)	B oral (-)	FI (-)	**IFS (mg/kg)**	CF (kg/mg)	**RBC (mg/kg)**
Arsenic	1E-05	25550	15 80	*9.5E+00*	100	6 40	200 100	0.6	1	**13000**	1E-06	**3.4E+00**

Dermal Contact (age 0-6 yrs and 7-26 yrs)

COPC	TR	AT (d)	BW (kg)	SFo $(mg/kg\text{-}d)^{-1}$	GIABS	EF (d/yr)	ED (yr)	SA (cm^2)	AF (mg/cm^2)	ABS (-)	**DFS (mg/kg)**	CF (kg/mg)	**RBC (mg/kg)**
Arsenic	1E-05	25550	15 80	*9.5E+00*	1.0E+00	100	6 40	*2900* 6032	0.2 0.07	3.0E-02	**44312**	1E-06	**2.0E+01**

Inhalation of Particulates (age 0-6 yrs and 7-26 yrs)

COPC	TR	AT (d)	IUR $(ug/m3)^{-1}$	PEF (m^3/kg)	ET (hr/d)	EF (d/yr)	ED (yr)	CF1 (hr/day)	CF2 (ug/mg)	**RBC (mg/kg)**
Arsenic	1E-05	25550	*3.3E-03*	1.36E+09	24	100	40	24	1000	**2.6E+04**

Total RBC => 2.9E+00

Chemical-specific values are gray-shaded.
Italicized values are CalEPA values that differ from those used by USEPA to derive RSLs.
Receptor-specific EF value is yellow-shaded. All other values are default values for residential receptor.

BERYLLIUM (Cancer Endpoint)

Recreational Cabin Occupant RBCs (Pathway-specific and total; in mg/kg)

Soil Ingestion (age 0-6 yrs and 7-26 yrs)

COPC	TR	AT (d)	BW (kg)	SFo (mg/kg-d)$^{-1}$	EF (d/yr)	ED (yr)	IR (mg/d)	B oral (-)	FI (-)	**IFS (mg/kg)**	CF (kg/mg)	**RBC (mg/kg)**
Beryllium	1E-05	25550	15 80	-	100	6 40	200 100	1	1	**13000**	1E-06	**-**

Dermal Contact (age 0-6 yrs and 7-26 yrs)

COPC	TR	AT (d)	BW (kg)	SFo (mg/kg-d)$^{-1}$	GIABS	EF (d/yr)	ED (yr)	SA (cm^2)	AF (mg/cm^2)	ABS (-)	**DFS (mg/kg)**	CF (kg/mg)	**RBC (mg/kg)**
Beryllium	1E-05	25550	15 80	-	7.0E-03	100	6 40	*2900* 6032	0.2 0.07	*1.0E-02*	**44312**	1E-06	**-**

Inhalation of Particulates (age 0-6 yrs and 7-26 yrs)

COPC	TR	AT (d)	IUR (ug/m3)$^{-1}$	PEF (m^3/kg)	ET (hr/d)	EF (d/yr)	ED (yr)	CF1 (hr/day)	CF2 (ug/mg)	**RBC (mg/kg)**
Beryllium	1E-05	25550	2.4E-03	1.36E+09	24	100	46	24	1000	**3.1E+04**

Total RBC => 3.1E+04

Chemical-specific values are gray-shaded.
Italicized values are CalEPA values that differ from those used by USEPA to derive RSLs.
ABS value from Table 1 of PEA Manual (DTSC, 2015).
Receptor-specific EF value is yellow-shaded. All other values are default values for residential receptor.

CADMIUM (Cancer Endpoint)

Recreational Cabin Occupant RBCs (Pathway-specific and total; in mg/kg)

Soil Ingestion (age 0-6 yrs and 7-26 yrs)

COPC	TR	AT (d)	BW (kg)	SFo $(mg/kg\text{-}d)^{-1}$	EF (d/yr)	ED (yr)	IR (mg/d)	B oral (-)	FI (-)	**IFS (mg/kg)**	CF (kg/mg)	**RBC (mg/kg)**
Cadmium	1E-05	25550	15 80	-	100	6 40	200 100	1	1	**13000**	1E-06	**-**

Dermal Contact (age 0-6 yrs and 7-26 yrs)

COPC	TR	AT (d)	BW (kg)	SFo $(mg/kg\text{-}d)^{-1}$	GIABS	EF (d/yr)	ED (yr)	SA (cm^2)	AF (mg/cm^2)	ABS (-)	**DFS (mg/kg)**	CF (kg/mg)	**RBC (mg/kg)**
Cadmium	1E-05	25550	15 80	-	2.5E-02	100	6 40	*2900* 6032	0.2 0.07	1.0E-03	**44312**	1E-06	**-**

Inhalation of Particulates (age 0-6 yrs and 7-26 yrs)

COPC	TR	AT (d)	IUR $(ug/m3)^{-1}$	PEF (m^3/kg)	ET (hr/d)	EF (d/yr)	ED (yr)	CF1 (hr/day)	CF2 (ug/mg)	**RBC (mg/kg)**
Cadmium	1E-05	25550	1.8E-03	1.36E+09	24	100	46	24	1000	**4.2E+04**

Total RBC => 4.2E+04

Chemical-specific values are gray-shaded.
Italicized values are CalEPA values that differ from those used by USEPA to derive RSLs.
Receptor-specific EF value is yellow-shaded. All other values are default values for residential receptor.

COBALT (Cancer Endpoint)

Recreational Cabin Occupant RBCs (Pathway-specific and total; in mg/kg)

Soil Ingestion (age 0-6 yrs and 7-26 yrs)

COPC	TR	AT (d)	BW (kg)	SFo $(mg/kg\text{-}d)^{-1}$	EF (d/yr)	ED (yr)	IR (mg/d)	B oral (-)	FI (-)	**IFS (mg/kg)**	CF (kg/mg)	**RBC (mg/kg)**
Cobalt	1E-05	25550	15 80	-	100	6 40	200 100	1	1	**13000**	1E-06	**-**

Dermal Contact (age 0-6 yrs and 7-26 yrs)

COPC	TR	AT (d)	BW (kg)	SFo $(mg/kg\text{-}d)^{-1}$	GIABS	EF (d/yr)	ED (yr)	SA (cm^2)	AF (mg/cm^2)	ABS (-)	**DFS (mg/kg)**	CF (kg/mg)	**RBC (mg/kg)**
Cobalt	1E-05	25550	15 80	-	1.0E+00	100	6 40	*2900* 6032	0.2 0.07	*1.0E-02*	**44312**	1E-06	**-**

Inhalation of Particulates (age 0-6 yrs and 7-26 yrs)

COPC	TR	AT (d)	IUR $(ug/m3)^{-1}$	PEF (m^3/kg)	ET (hr/d)	EF (d/yr)	ED (yr)	CF1 (hr/day)	CF2 (ug/mg)	**RBC (mg/kg)**
Cobalt	1E-05	25550	9.0E-03	1.36E+09	24	100	46	24	1000	**8.4E+03**

Total RBC => 8.4E+03

Chemical-specific values are gray-shaded.
Italicized values are CalEPA values that differ from those used by USEPA to derive RSLs.
ABS value from Table 1 of PEA Manual (DTSC, 2015).
Receptor-specific EF value is yellow-shaded. All other values are default values for residential receptor.

NICKEL (Cancer Endpoint)

Recreational Cabin Occupant RBCs (Pathway-specific and total; in mg/kg)

Soil Ingestion (age 0-6 yrs and 7-26 yrs)

COPC	TR	AT (d)	BW (kg)	SFo $(mg/kg\text{-}d)^{-1}$	EF (d/yr)	ED (yr)	IR (mg/d)	B oral (-)	FI (-)	**IFS (mg/kg)**	CF (kg/mg)	**RBC (mg/kg)**
Nickel	1E-05	25550	15 80	-	100	6 40	200 100	1	1	**13000**	1E-06	**-**

Dermal Contact (age 0-6 yrs and 7-26 yrs)

COPC	TR	AT (d)	BW (kg)	SFo $(mg/kg\text{-}d)^{-1}$	GIABS	EF (d/yr)	ED (yr)	SA (cm^2)	AF (mg/cm^2)	ABS (-)	**DFS (mg/kg)**	CF (kg/mg)	**RBC (mg/kg)**
Nickel	1E-05	25550	15 80	-	4.0E-02	100	6 40	*2900* 6032	0.2 0.07	*1.0E-02*	**44312**	1E-06	**-**

Inhalation of Particulates (age 0-6 yrs and 7-26 yrs)

COPC	TR	AT (d)	IUR $(ug/m3)^{-1}$	PEF (m^3/kg)	ET (hr/d)	EF (d/yr)	ED (yr)	CF1 (hr/day)	CF2 (ug/mg)	**RBC (mg/kg)**
Nickel	1E-05	25550	2.6E-04	1.36E+09	24	100	46	24	1000	**2.9E+05**

Total RBC => 2.9E+05

Chemical-specific values are gray-shaded.
Italicized values are CalEPA values that differ from those used by USEPA to derive RSLs.
ABS value from Table 1 of PEA Manual (DTSC, 2015).
Receptor-specific EF value is yellow-shaded. All other values are default values for residential receptor.

ANTIMONY (Non-Cancer Endpoint)

Recreational Cabin Occupant RBCs (Pathway-specific and total; in mg/kg)

Soil Ingestion (age 0-6 yrs)

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)		EF (d/yr)	ED (yr)	IR (mg/d)	B oral (-)	FI (-)				CF (kg/mg)	**RBC (mg/kg)**
Antimony	1	2190	15	4.0E-04		100	6	200	1	1				1E-06	**1.1E+02**

Dermal Contact (age 0-6 yrs)

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)	GIABS	EF (d/yr)	ED (yr)			SA (cm^2)	AF (mg/cm^2)	ABS (-)	CF (kg/mg)	**RBC (mg/kg)**
Antimony	1	2190	15	4.0E-04	1.5E-01	100	6			*2900*	0.2	*1.0E-02*	1E-06	**5.7E+02**

Inhalation of Particulates (age 0-6 yrs)

COPC	THQ	AT (d)	RfC or REL (mg/m3)	PEF (m^3/kg)	ET (hr/d)	EF (d/yr)	ED (yr)						CF (hr/day)	**RBC (mg/kg)**
Antimony	1	2190	-	1.36E+09	24	100	6						24	**-**

Total RBC => 9.2E+01

Chemical-specific values are gray-shaded.
Italicized values are CalEPA values that differ from those used by USEPA to derive RSLs.
ABS value from Table 1 of PEA Manual (DTSC, 2015).
Receptor-specific EF value is yellow-shaded. All other values are default values for residential receptor.

ARSENIC (Non-Cancer Endpoint)

Recreational Cabin Occupant RBCs (Pathway-specific and total; in mg/kg)

Soil Ingestion (age 0-6 yrs)

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)		EF (d/yr)	ED (yr)	IR (mg/d)	B oral (-)	FI (-)				CF (kg/mg)	**RBC (mg/kg)**
Arsenic	1	2190	15	*3.5E-06*		100	6	200	0.6	1				1E-06	**1.6E+00**

Dermal Contact (age 0-6 yrs)

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)	GIABS	EF (d/yr)	ED (yr)				SA (cm^2)	AF (mg/cm^2)	ABS (-)	CF (kg/mg)	**RBC (mg/kg)**
Arsenic	1	2190	15	*3.5E-06*	1.0E+00	100	6				*2900*	0.2	3.0E-02	1E-06	**1.1E+01**

Inhalation of Particulates (age 0-6 yrs)

COPC	THQ	AT (d)	RfC or REL (mg/m3)	PEF (m^3/kg)	ET (hr/d)	EF (d/yr)	ED (yr)							CF (hr/day)	**RBC (mg/kg)**
Arsenic	1	2190	1.5E-05	1.36E+09	24	100	6							24	**7.4E+04**

Total RBC => 1.4E+00

Chemical-specific values are gray-shaded.
Italicized values are CalEPA values that differ from those used by USEPA to derive RSLs.
Receptor-specific EF value is yellow-shaded. All other values are default values for residential receptor.

BARIUM (Non-Cancer Endpoint)

Recreational Cabin Occupant RBCs (Pathway-specific and total; in mg/kg)

Soil Ingestion (age 0-6 yrs)

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)	EF (d/yr)	ED (yr)	IR (mg/d)	B oral (-)	FI (-)	CF (kg/mg)	**RBC (mg/kg)**
Barium	1	2190	15	2.0E-01	100	6	200	1	1	1E-06	**5.5E+04**

Dermal Contact (age 0-6 yrs)

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)	GIABS	EF (d/yr)	ED (yr)	SA (cm^2)	AF (mg/cm^2)	ABS (-)	CF (kg/mg)	**RBC (mg/kg)**
Barium	1	2190	15	2.0E-01	7.0E-02	100	6	*2900*	0.2	*1.0E-02*	1E-06	**1.3E+05**

Inhalation of Particulates (age 0-6 yrs)

COPC	THQ	AT (d)	RfC or REL (mg/m3)	PEF (m^3/kg)	ET (hr/d)	EF (d/yr)	ED (yr)	CF (hr/day)	**RBC (mg/kg)**
Barium	1	2190	5.0E-04	1.36E+09	24	100	6	24	**2.5E+06**

Total RBC => 3.8E+04

Chemical-specific values are gray-shaded.
Italicized values are CalEPA values that differ from those used by USEPA to derive RSLs.
ABS value from Table 1 of PEA Manual (DTSC, 2015).
Receptor-specific EF value is yellow-shaded. All other values are default values for residential receptor.

BERYLLIUM (Non-Cancer Endpoint)

Recreational Cabin Occupant RBCs (Pathway-specific and total; in mg/kg)

Soil Ingestion (age 0-6 yrs)

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)	EF (d/yr)	ED (yr)	IR (mg/d)	B oral (-)	FI (-)	CF (kg/mg)	**RBC (mg/kg)**
Beryllium	1	2190	15	*2.0E-04*	100	6	200	1	1	1E-06	**5.5E+01**

Dermal Contact (age 0-6 yrs)

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)	GIABS	EF (d/yr)	ED (yr)	SA (cm^2)	AF (mg/cm^2)	ABS (-)	CF (kg/mg)	**RBC (mg/kg)**
Beryllium	1	2190	15	*2.0E-04*	7.0E-03	100	6	*2900*	0.2	*1.0E-02*	1E-06	**1.3E+01**

Inhalation of Particulates (age 0-6 yrs)

COPC	THQ	AT (d)	RfC or REL (mg/m3)	PEF (m^3/kg)	ET (hr/d)	EF (d/yr)	ED (yr)	CF (hr/day)	**RBC (mg/kg)**
Beryllium	1	2190	*7.0E-06*	1.36E+09	24	100	6	24	**3.5E+04**

Total RBC => 1.1E+01

Chemical-specific values are gray-shaded.
Italicized values are CalEPA values that differ from those used by USEPA to derive RSLs.
ABS value from Table 1 of PEA Manual (DTSC, 2015).
Receptor-specific EF value is yellow-shaded. All other values are default values for residential receptor.

CADMIUM (Non-Cancer Endpoint)

Recreational Cabin Occupant RBCs (Pathway-specific and total; in mg/kg)

Soil Ingestion (age 0-30 yrs)

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)	EF (d/yr)	ED (yr)	IR (mg/d)	B oral (-)	FI (-)	CF (kg/mg)	**RBC (mg/kg)**
Cadmium	1	10950	*80*	*6.3E-06*	100	*30*	*100*	1	1	1E-06	**1.8E+01**

Dermal Contact (age 0-30 yrs)

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)	GIABS	EF (d/yr)	ED (yr)	SA (cm^2)	AF (mg/cm^2)	ABS (-)	CF (kg/mg)	**RBC (mg/kg)**
Cadmium	1	10950	*80*	*6.3E-06*	2.5E-02	100	*30*	*6032*	*0.07*	1.0E-03	1E-06	**1.1E+02**

Inhalation of Particulates (age 0-30 yrs)

COPC	THQ	AT (d)	RfC or REL (mg/m3)	PEF (m^3/kg)	ET (hr/d)	EF (d/yr)	ED (yr)	CF (hr/day)	**RBC (mg/kg)**
Cadmium	1	10950	1.0E-05	1.36E+09	24	100	*30*	24	**5.0E+04**

Total RBC => 1.6E+01

Chemical-specific values are gray-shaded.
Italicized values are CalEPA values that differ from those used by USEPA to derive RSLs.
Receptor-specific EF value is yellow-shaded. All other values are default values for residential receptor.

COBALT (Non-Cancer Endpoint)

Recreational Cabin Occupant RBCs (Pathway-specific and total; in mg/kg)

Soil Ingestion (age 0-6 yrs)

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)	EF (d/yr)	ED (yr)	IR (mg/d)	B oral (-)	FI (-)	CF (kg/mg)	**RBC (mg/kg)**
Cobalt	1	2190	15	3.0E-04	100	6	200	1	1	1E-06	**8.2E+01**

Dermal Contact (age 0-6 yrs)

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)	GIABS	EF (d/yr)	ED (yr)	SA (cm^2)	AF (mg/cm^2)	ABS (-)	CF (kg/mg)	**RBC (mg/kg)**
Cobalt	1	2190	15	3.0E-04	1.0E+00	100	6	*2900*	0.2	*1.0E-02*	1E-06	**2.8E+03**

Inhalation of Particulates (age 0-6 yrs)

COPC	THQ	AT (d)	RfC or REL (mg/m3)	PEF (m^3/kg)	ET (hr/d)	EF (d/yr)	ED (yr)	CF (hr/day)	**RBC (mg/kg)**
Cobalt	1	2190	6.0E-06	1.36E+09	24	100	6	24	**3.0E+04**

Total RBC => 8.0E+01

Chemical-specific values are gray-shaded.
Italicized values are CalEPA values that differ from those used by USEPA to derive RSLs.
ABS value from Table 1 of PEA Manual (DTSC, 2015).
Receptor-specific EF value is yellow-shaded. All other values are default values for residential receptor.

COPPER (Non-Cancer Endpoint)

Recreational Cabin Occupant RBCs (Pathway-specific and total; in mg/kg)

Soil Ingestion (age 0-6 yrs)

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)		EF (d/yr)	ED (yr)	IR (mg/d)	B oral (-)	FI (-)				CF (kg/mg)	**RBC (mg/kg)**
Copper	1	2190	15	4.0E-02		100	6	200	1	1				1E-06	**1.1E+04**

Dermal Contact (age 0-6 yrs)

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)	GIABS	EF (d/yr)	ED (yr)			SA (cm^2)	AF (mg/cm^2)	ABS (-)	CF (kg/mg)	**RBC (mg/kg)**
Copper	1	2190	15	4.0E-02	1.0E+00	100	6			*2900*	0.2	*1.0E-02*	1E-06	**3.8E+05**

Inhalation of Particulates (age 0-6 yrs)

COPC	THQ	AT (d)	RfC or REL (mg/m3)	PEF (m^3/kg)	ET (hr/d)	EF (d/yr)	ED (yr)						CF (hr/day)	**RBC (mg/kg)**
Copper	1	2190	-	1.36E+09	24	100	6						24	**-**

Total RBC => 1.1E+04

Chemical-specific values are gray-shaded.
Italicized values are CalEPA values that differ from those used by USEPA to derive RSLs.
ABS value from Table 1 of PEA Manual (DTSC, 2015).
Receptor-specific EF value is yellow-shaded. All other values are default values for residential receptor.

MERCURY (Non-Cancer Endpoint)

Recreational Cabin Occupant RBCs (Pathway-specific and total; in mg/kg)

Soil Ingestion (age 0-6 yrs)

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)		EF (d/yr)	ED (yr)	IR (mg/d)	B oral (-)	FI (-)				CF (kg/mg)	**RBC (mg/kg)**
Mercury	1	2190	15	1.6E-04		100	6	200	1	1				1E-06	**4.4E+01**

Dermal Contact (age 0-6 yrs)

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)	GIABS	EF (d/yr)	ED (yr)			SA (cm^2)	AF (mg/cm^2)	ABS (-)	CF (kg/mg)	**RBC (mg/kg)**
Mercury	1	2190	15	1.6E-04	7.0E-02	100	6			*2900*	0.2	*1.0E-02*	1E-06	**1.1E+02**

Inhalation of Particulates (age 0-6 yrs)

COPC	THQ	AT (d)	RfC or REL (mg/m3)	PEF (m^3/kg)	ET (hr/d)	EF (d/yr)	ED (yr)						CF (hr/day)	**RBC (mg/kg)**
Mercury	1	2190	3.0E-05	1.36E+09	24	100	6						24	**1.5E+05**

Total RBC => 3.1E+01

Chemical-specific values are gray-shaded.
Italicized values are CalEPA values that differ from those used by USEPA to derive RSLs.
ABS value from Table 1 of PEA Manual (DTSC, 2015).
Receptor-specific EF value is yellow-shaded. All other values are default values for residential receptor.

MOLYBDENUM (Non-Cancer Endpoint)

Recreational Cabin Occupant RBCs (Pathway-specific and total; in mg/kg)

Soil Ingestion (age 0-6 yrs)

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)	EF (d/yr)	ED (yr)	IR (mg/d)	B oral (-)	FI (-)	CF (kg/mg)	**RBC (mg/kg)**
Molybdenum	1	2190	15	5.0E-03	100	6	200	1	1	1E-06	**1.4E+03**

Dermal Contact (age 0-6 yrs)

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)	GIABS	EF (d/yr)	ED (yr)	SA (cm^2)	AF (mg/cm^2)	ABS (-)	CF (kg/mg)	**RBC (mg/kg)**
Molybdenum	1	2190	15	5.0E-03	1.0E+00	100	6	*2900*	0.2	*1.0E-02*	1E-06	**4.7E+04**

Inhalation of Particulates (age 0-6 yrs)

COPC	THQ	AT (d)	RfC or REL (mg/m3)	PEF (m^3/kg)	ET (hr/d)	EF (d/yr)	ED (yr)	CF (hr/day)	**RBC (mg/kg)**
Molybdenum	1	2190	-	1.36E+09	24	100	6	24	**-**

Total RBC => 1.3E+03

Chemical-specific values are gray-shaded.
Italicized values are CalEPA values that differ from those used by USEPA to derive RSLs.
ABS value from Table 1 of PEA Manual (DTSC, 2015).
Receptor-specific EF value is yellow-shaded. All other values are default values for residential receptor.

NICKEL (Non-Cancer Endpoint)

Recreational Cabin Occupant RBCs (Pathway-specific and total; in mg/kg)

Soil Ingestion (age 0-6 yrs)

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)		EF (d/yr)	ED (yr)	IR (mg/d)	B oral (-)	FI (-)				CF (kg/mg)	**RBC (mg/kg)**
Nickel	1	2190	15	*1.1E-02*		100	6	200	1	1				1E-06	**3.0E+03**

Dermal Contact (age 0-6 yrs)

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)	GIABS	EF (d/yr)	ED (yr)			SA (cm^2)	AF (mg/cm^2)	ABS (-)	CF (kg/mg)	**RBC (mg/kg)**
Nickel	1	2190	15	*1.1E-02*	4.0E-02	100	6			*2900*	0.2	*1.0E-02*	1E-06	**4.2E+03**

Inhalation of Particulates (age 0-6 yrs)

COPC	THQ	AT (d)	RfC or REL (mg/m3)	PEF (m^3/kg)	ET (hr/d)	EF (d/yr)	ED (yr)						CF (hr/day)	**RBC (mg/kg)**
Nickel	1	2190	*1.4E-05*	1.36E+09	24	100	6						24	**6.9E+04**

Total RBC => 1.7E+03

Chemical-specific values are gray-shaded.
Italicized values are CalEPA values that differ from those used by USEPA to derive RSLs.
ABS value from Table 1 of PEA Manual (DTSC, 2015).
Receptor-specific EF value is yellow-shaded. All other values are default values for residential receptor.

SELENIUM (Non-Cancer Endpoint)

Recreational Cabin Occupant RBCs (Pathway-specific and total; in mg/kg)

Soil Ingestion (age 0-6 yrs)

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)	EF (d/yr)	ED (yr)	IR (mg/d)	B oral (-)	FI (-)	CF (kg/mg)	**RBC (mg/kg)**
Selenium	1	2190	15	5.0E-03	100	6	200	1	1	1E-06	**1.4E+03**

Dermal Contact (age 0-6 yrs)

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)	GIABS	EF (d/yr)	ED (yr)	SA (cm^2)	AF (mg/cm^2)	ABS (-)	CF (kg/mg)	**RBC (mg/kg)**
Selenium	1	2190	15	5.0E-03	1.0E+00	100	6	*2900*	0.2	*1.0E-02*	1E-06	**4.7E+04**

Inhalation of Particulates (age 0-6 yrs)

COPC	THQ	AT (d)	RfC or REL (mg/m3)	PEF (m^3/kg)	ET (hr/d)	EF (d/yr)	ED (yr)	CF (hr/day)	**RBC (mg/kg)**
Selenium	1	2190	2.0E-02	1.36E+09	24	100	6	24	**9.9E+07**

Total RBC => 1.3E+03

Chemical-specific values are gray-shaded.
Italicized values are CalEPA values that differ from those used by USEPA to derive RSLs.
ABS value from Table 1 of PEA Manual (DTSC, 2015).
Receptor-specific EF value is yellow-shaded. All other values are default values for residential receptor.

SILVER (Non-Cancer Endpoint)

Recreational Cabin Occupant RBCs (Pathway-specific and total; in mg/kg)

Soil Ingestion (age 0-6 yrs)

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)	EF (d/yr)	ED (yr)	IR (mg/d)	B oral (-)	FI (-)	CF (kg/mg)	**RBC (mg/kg)**
Silver	1	2190	15	5.0E-03	100	6	200	1	1	1E-06	**1.4E+03**

Dermal Contact (age 0-6 yrs)

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)	GIABS	EF (d/yr)	ED (yr)	SA (cm^2)	AF (mg/cm^2)	ABS (-)	CF (kg/mg)	**RBC (mg/kg)**
Silver	1	2190	15	5.0E-03	4.0E-02	100	6	*2900*	0.2	*1.0E-02*	1E-06	**1.9E+03**

Inhalation of Particulates (age 0-6 yrs)

COPC	THQ	AT (d)	RfC or REL (mg/m3)	PEF (m^3/kg)	ET (hr/d)	EF (d/yr)	ED (yr)	CF (hr/day)	**RBC (mg/kg)**
Silver	1	2190	-	1.36E+09	24	100	6	24	**-**

Total RBC => 7.9E+02

Chemical-specific values are gray-shaded.
Italicized values are CalEPA values that differ from those used by USEPA to derive RSLs.
ABS value from Table 1 of PEA Manual (DTSC, 2015).
Receptor-specific EF value is yellow-shaded. All other values are default values for residential receptor.

ZINC (Non-Cancer Endpoint)

Recreational Cabin Occupant RBCs (Pathway-specific and total; in mg/kg)

Soil Ingestion (age 0-6 yrs)

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)	EF (d/yr)	ED (yr)	IR (mg/d)	B oral (-)	FI (-)	CF (kg/mg)	**RBC (mg/kg)**
Zinc	1	2190	15	3.0E-01	100	6	200	1	1	1E-06	**8.2E+04**

Dermal Contact (age 0-6 yrs)

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)	GIABS	EF (d/yr)	ED (yr)	SA (cm^2)	AF (mg/cm^2)	ABS (-)	CF (kg/mg)	**RBC (mg/kg)**
Zinc	1	2190	15	3.0E-01	1.0E+00	100	6	*2900*	0.2	*1.0E-02*	1E-06	**2.8E+06**

Inhalation of Particulates (age 0-6 yrs)

COPC	THQ	AT (d)	RfC or REL (mg/m3)	PEF (m^3/kg)	ET (hr/d)	EF (d/yr)	ED (yr)	CF (hr/day)	**RBC (mg/kg)**
Zinc	1	2190	-	1.36E+09	24	100	6	24	**-**

Total RBC => 8.0E+04

Chemical-specific values are gray-shaded.
Italicized values are CalEPA values that differ from those used by USEPA to derive RSLs.
ABS value from Table 1 of PEA Manual (DTSC, 2015).
Receptor-specific EF value is yellow-shaded. All other values are default values for residential receptor.

ATTACHMENT C

ABBREVIATIONS

COPC	chemical of potential concern
TR	target incremental lifetime cancer risk (1E-05 per BLM, 2004)
THQ	target hazard quotient (1E+00 per BLM, 2004)
AT (d)	averaging time (days)
BW (kg)	body weight (kilograms)
RfDo (mg/kg-d)	oral reference dose (milligram per kilogram per day)
EF (d/yr)	exposure frequency (days per year)
ED (yr)	exposure duration (years)
IR (mg/d)	ingestion rate (milligrams per day)
B oral (-)	bioavailability (dimensionless)
FI (-)	fraction ingested (dimensionless)
CF (kg/mg)	conversion factor (kilogram per milligram)
RBC (mg/kg)	risk-based concentration (milligram per kilogram)
GIABS	gastrointestinal absorption factor (dimensionless)
SA (cm2)	surface area (square centimeters)
AF (mg/cm2)	adherence factor (milligram per square centimeter)
ABS (-)	absorption factor (dimensionless)
RfC (mg/m3)	reference concentration (milligram per cubic meter)
REL (mg/m3)	reference exposure level (milligram per cubic meter)
PEF (m3/kg)	particulate emission factor (cubic meters per kilogram)
ET (hr/d)	exposure time (hours per day)
IFS (mg/kg)	receptor-weighted ingestion factor for soil (milligrams per kilogram)
DFS (mg/kg)	receptor-weighted dermal factor for soil (milligrams per kilogram)

ARSENIC (Cancer Endpoint)

Construction Worker RBCs (Pathway-specific and total; in mg/kg)

Soil Ingestion

COPC	TR	AT (d)	BW (kg)	SFo (mg/kg-d)$^{-1}$	EF (d/yr)	ED (yr)	IR (mg/d)	B oral (-)	FI (-)	**IFS (mg/kg)**	CF (kg/mg)	**RBC (mg/kg)**
Arsenic	1E-05	25550	80	*9.5E+00*	250	1	330	0.6	1	**1031**	1E-06	**4.3E+01**

Dermal Contact

COPC	TR	AT (d)	BW (kg)	SFo (mg/kg-d)$^{-1}$	GIABS	EF (d/yr)	ED (yr)	SA (cm^2)	AF (mg/cm^2)	ABS (-)	**DFS (mg/kg)**	CF (kg/mg)	**RBC (mg/kg)**
Arsenic	1E-05	25550	80	*9.5E+00*	1.0E+00	250	1	6032	0.8	3.0E-02	**15080**	1E-06	**5.9E+01**

Inhalation of Particulates

COPC	TR	AT (d)	IUR (ug/m3)$^{-1}$	PEF (m^3/kg)	ET (hr/d)	EF (d/yr)	ED (yr)	CF1 (hr/day)	CF2 (ug/mg)	**RBC (mg/kg)**
Arsenic	1E-05	25550	*3.3E-03*	1E+06	8	250	1	24	1000	**9.3E+02**

Total RBC => 2.4E+01

Chemical-specific values are gray-shaded.
Italicized values are CalEPA values that differ from those used by USEPA to derive RSLs.
Receptor-specific EF value is yellow-shaded. All other values are default values for residential receptor.

BERYLLIUM (Cancer Endpoint)

Construction Worker RBCs (Pathway-specific and total; in mg/kg)

Soil Ingestion

COPC	TR	AT (d)	BW (kg)	SFo $(mg/kg\text{-}d)^{-1}$	EF (d/yr)	ED (yr)	IR (mg/d)	B oral (-)	FI (-)	**IFS (mg/kg)**	CF (kg/mg)	**RBC (mg/kg)**
Beryllium	1E-05	25550	80	-	250	1	330	1	1	**1031**	1E-06	**-**

Dermal Contact

COPC	TR	AT (d)	BW (kg)	SFo $(mg/kg\text{-}d)^{-1}$	GIABS	EF (d/yr)	ED (yr)	SA (cm^2)	AF (mg/cm^2)	ABS (-)	**DFS (mg/kg)**	CF (kg/mg)	**RBC (mg/kg)**
Beryllium	1E-05	25550	80	-	7.0E-03	250	1	6032	0.8	*1.0E-02*	**15080**	1E-06	**-**

Inhalation of Particulates

COPC	TR	AT (d)	IUR $(ug/m3)^{-1}$	PEF (m^3/kg)	ET (hr/d)	EF (d/yr)	ED (yr)	CF1 (hr/day)	CF2 (ug/mg)	**RBC (mg/kg)**
Beryllium	1E-05	25550	2.4E-03	1E+06	8	250	1	24	1000	**1.3E+03**

Total RBC => 1.3E+03

Chemical-specific values are gray-shaded.
Italicized values are CalEPA values that differ from those used by USEPA to derive RSLs.
ABS value from Table 1 of PEA Manual (DTSC, 2015).
Receptor-specific EF value is yellow-shaded. All other values are default values for residential receptor.

CADMIUM (Cancer Endpoint)

Construction Worker RBCs (Pathway-specific and total; in mg/kg)

Soil Ingestion

COPC	TR	AT (d)	BW (kg)	SFo $(mg/kg\text{-}d)^{-1}$	EF (d/yr)	ED (yr)	IR (mg/d)	B oral (-)	FI (-)	**IFS (mg/kg)**	CF (kg/mg)	**RBC (mg/kg)**
Cadmium	1E-05	25550	80	-	250	1	330	1	1	**1031**	1E-06	**-**

Dermal Contact

COPC	TR	AT (d)	BW (kg)	SFo $(mg/kg\text{-}d)^{-1}$	GIABS	EF (d/yr)	ED (yr)	SA (cm^2)	AF (mg/cm^2)	ABS (-)	**DFS (mg/kg)**	CF (kg/mg)	**RBC (mg/kg)**
Cadmium	1E-05	25550	80	-	2.5E-02	250	1	6032	0.8	1.0E-03	**15080**	1E-06	**-**

Inhalation of Particulates

COPC	TR	AT (d)	IUR $(ug/m3)^{-1}$	PEF (m^3/kg)	ET (hr/d)	EF (d/yr)	ED (yr)	CF1 (hr/day)	CF2 (ug/mg)	**RBC (mg/kg)**
Cadmium	1E-05	25550	*1.8E-03*	1E+06	8	250	1	24	1000	**1.7E+03**

Total RBC => 1.7E+03

Chemical-specific values are gray-shaded.
Italicized values are CalEPA values that differ from those used by USEPA to derive RSLs.
Receptor-specific EF value is yellow-shaded. All other values are default values for residential receptor.

COBALT (Cancer Endpoint)

Construction Worker RBCs (Pathway-specific and total; in mg/kg)

Soil Ingestion

COPC	TR	AT (d)	BW (kg)	SFo $(mg/kg\text{-}d)^{-1}$	EF (d/yr)	ED (yr)	IR (mg/d)	B oral (-)	FI (-)	**IFS (mg/kg)**	CF (kg/mg)	**RBC (mg/kg)**
Cobalt	1E-05	25550	80	-	250	1	330	1	1	**1031**	1E-06	**-**

Dermal Contact

COPC	TR	AT (d)	BW (kg)	SFo $(mg/kg\text{-}d)^{-1}$	GIABS	EF (d/yr)	ED (yr)	SA (cm^2)	AF (mg/cm^2)	ABS (-)	**DFS (mg/kg)**	CF (kg/mg)	**RBC (mg/kg)**
Cobalt	1E-05	25550	80	-	1.0E+00	250	1	6032	0.8	*1.0E-02*	**15080**	1E-06	**-**

Inhalation of Particulates

COPC	TR	AT (d)	IUR $(ug/m3)^{-1}$	PEF (m^3/kg)	ET (hr/d)	EF (d/yr)	ED (yr)	CF1 (hr/day)	CF2 (ug/mg)	**RBC (mg/kg)**
Cobalt	1E-05	25550	9.0E-03	1E+06	8	250	1	24	1000	**3.4E+02**

Total RBC => 3.4E+02

Chemical-specific values are gray-shaded.
Italicized values are CalEPA values that differ from those used by USEPA to derive RSLs.
ABS value from Table 1 of PEA Manual (DTSC, 2015).
Receptor-specific EF value is yellow-shaded. All other values are default values for residential receptor.

NICKEL (Cancer Endpoint)

Construction Worker RBCs (Pathway-specific and total; in mg/kg)

Soil Ingestion

COPC	TR	AT (d)	BW (kg)	SFo $(mg/kg\text{-}d)^{-1}$	EF (d/yr)	ED (yr)	IR (mg/d)	B oral (-)	FI (-)	**IFS (mg/kg)**	CF (kg/mg)	**RBC (mg/kg)**
Nickel	1E-05	25550	80	-	250	1	330	1	1	**1031**	1E-06	**-**

Dermal Contact

COPC	TR	AT (d)	BW (kg)	SFo $(mg/kg\text{-}d)^{-1}$	GIABS	EF (d/yr)	ED (yr)	SA (cm^2)	AF (mg/cm^2)	ABS (-)	**DFS (mg/kg)**	CF (kg/mg)	**RBC (mg/kg)**
Nickel	1E-05	25550	80	-	4.0E-02	250	1	6032	0.8	*1.0E-02*	**15080**	1E-06	**-**

Inhalation of Particulates

COPC	TR	AT (d)	IUR $(ug/m3)^{-1}$	PEF (m^3/kg)	ET (hr/d)	EF (d/yr)	ED (yr)	CF1 (hr/day)	CF2 (ug/mg)	**RBC (mg/kg)**
Nickel	1E-05	25550	2.6E-04	1E+06	8	250	1	24	1000	**1.2E+04**

Total RBC => 1.2E+04

Chemical-specific values are gray-shaded.
Italicized values are CalEPA values that differ from those used by USEPA to derive RSLs.
ABS value from Table 1 of PEA Manual (DTSC, 2015).
Receptor-specific EF value is yellow-shaded. All other values are default values for residential receptor.

ANTIMONY (Non-Cancer Endpoint)

Construction Worker RBCs (Pathway-specific and total; in mg/kg)

Soil Ingestion

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)		EF (d/yr)	ED (yr)	IR (mg/d)	B oral (-)	FI (-)				CF (kg/mg)	**RBC (mg/kg)**
Antimony	1	365	80	4.0E-04		250	1	330	1	1				1E-06	**1.4E+02**

Dermal Contact

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)	GIABS	EF (d/yr)	ED (yr)			SA (cm^2)	AF (mg/cm^2)	ABS (-)	CF (kg/mg)	**RBC (mg/kg)**
Antimony	1	365	80	4.0E-04	1.5E-01	250	1			6032	0.8	*1.0E-02*	1E-06	**1.5E+02**

Inhalation of Particulates

COPC	THQ	AT (d)	RfC or REL (mg/m3)	PEF (m^3/kg)	ET (hr/d)	EF (d/yr)	ED (yr)						CF (hr/day)	**RBC (mg/kg)**
Antimony	1	365	-	1E+06	8	250	1						24	**-**

Total RBC => 7.2E+01

Chemical-specific values are gray-shaded.
Italicized values are CalEPA values that differ from those used by USEPA to derive RSLs.
ABS value from Table 1 of PEA Manual (DTSC, 2015).
Receptor-specific EF value is yellow-shaded. All other values are default values for residential receptor.

ARSENIC (Non-Cancer Endpoint)

Construction Worker RBCs (Pathway-specific and total; in mg/kg)

Soil Ingestion

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)		EF (d/yr)	ED (yr)	IR (mg/d)	B oral (-)	FI (-)				CF (kg/mg)	**RBC (mg/kg)**
Arsenic	1	365	80	3.5E-06		250	1	330	0.6	1				1E-06	**2.1E+00**

Dermal Contact

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)	GIABS	EF (d/yr)	ED (yr)				SA (cm^2)	AF (mg/cm^2)	ABS (-)	CF (kg/mg)	**RBC (mg/kg)**
Arsenic	1	365	80	3.5E-06	1.0E+00	250	1				6032	0.8	3.0E-02	1E-06	**2.8E+00**

Inhalation of Particulates

COPC	THQ	AT (d)	RfC or REL (mg/m3)	PEF (m^3/kg)	ET (hr/d)	EF (d/yr)	ED (yr)							CF (hr/day)	**RBC (mg/kg)**
Arsenic	1	365	1.5E-05	1E+06	8	250	1							24	**6.6E+01**

Total RBC => 1.2E+00

Chemical-specific values are gray-shaded.
Italicized values are CalEPA values that differ from those used by USEPA to derive RSLs.
Receptor-specific EF value is yellow-shaded. All other values are default values for residential receptor.

BARIUM (Non-Cancer Endpoint)

Construction Worker RBCs (Pathway-specific and total; in mg/kg)

Soil Ingestion

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)		EF (d/yr)	ED (yr)	IR (mg/d)	B oral (-)	FI (-)				CF (kg/mg)	**RBC (mg/kg)**
Barium	1	365	80	2.0E-01		250	1	330	1	1				1E-06	**7.1E+04**

Dermal Contact

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)	GIABS	EF (d/yr)	ED (yr)			SA (cm^2)	AF (mg/cm^2)	ABS (-)	CF (kg/mg)	**RBC (mg/kg)**
Barium	1	365	80	2.0E-01	7.0E-02	250	1			6032	0.8	*1.0E-02*	1E-06	**3.4E+04**

Inhalation of Particulates

COPC	THQ	AT (d)	RfC or REL (mg/m3)	PEF (m^3/kg)	ET (hr/d)	EF (d/yr)	ED (yr)						CF (hr/day)	**RBC (mg/kg)**
Barium	1	365	5.0E-04	1E+06	8	250	1						24	**2.2E+03**

Total RBC => 2.0E+03

Chemical-specific values are gray-shaded.
Italicized values are CalEPA values that differ from those used by USEPA to derive RSLs.
ABS value from Table 1 of PEA Manual (DTSC, 2015).
Receptor-specific EF value is yellow-shaded. All other values are default values for residential receptor.

BERYLLIUM (Non-Cancer Endpoint)

Construction Worker RBCs (Pathway-specific and total; in mg/kg)

Soil Ingestion

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)		EF (d/yr)	ED (yr)	IR (mg/d)	B oral (-)	FI (-)				CF (kg/mg)	**RBC (mg/kg)**
Beryllium	1	365	80	2.0E-04		250	1	330	1	1				1E-06	**7.1E+01**

Dermal Contact

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)	GIABS	EF (d/yr)	ED (yr)				SA (cm^2)	AF (mg/cm^2)	ABS (-)	CF (kg/mg)	**RBC (mg/kg)**
Beryllium	1	365	80	2.0E-04	7.0E-03	250	1				6032	0.8	*1.0E-02*	1E-06	**3.4E+00**

Inhalation of Particulates

COPC	THQ	AT (d)	RfC or REL (mg/m3)	PEF (m^3/kg)	ET (hr/d)	EF (d/yr)	ED (yr)							CF (hr/day)	**RBC (mg/kg)**
Beryllium	1	365	*7.0E-06*	1E+06	8	250	1							24	**3.1E+01**

Total RBC => 2.9E+00

Chemical-specific values are gray-shaded.
Italicized values are CalEPA values that differ from those used by USEPA to derive RSLs.
ABS value from Table 1 of PEA Manual (DTSC, 2015).
Receptor-specific EF value is yellow-shaded. All other values are default values for residential receptor.

CADMIUM (Non-Cancer Endpoint)

Construction Worker RBCs (Pathway-specific and total; in mg/kg)

Soil Ingestion

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)		EF (d/yr)	ED (yr)	IR (mg/d)	B oral (-)	FI (-)				CF (kg/mg)	**RBC (mg/kg)**
Cadmium	1	365	80	6.3E-06		250	1	330	1	1				1E-06	**2.2E+00**

Dermal Contact

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)	GIABS	EF (d/yr)	ED (yr)				SA (cm^2)	AF (mg/cm^2)	ABS (-)	CF (kg/mg)	**RBC (mg/kg)**
Cadmium	1	365	80	6.3E-06	2.5E-02	250	1				6032	0.8	1.0E-03	1E-06	**3.8E+00**

Inhalation of Particulates

COPC	THQ	AT (d)	RfC or REL (mg/m3)	PEF (m^3/kg)	ET (hr/d)	EF (d/yr)	ED (yr)							CF (hr/day)	**RBC (mg/kg)**
Cadmium	1	365	1.0E-05	1E+06	8	250	1							24	**4.4E+01**

Total RBC => 1.4E+00

Chemical-specific values are gray-shaded.
Italicized values are CalEPA values that differ from those used by USEPA to derive RSLs.
Receptor-specific EF value is yellow-shaded. All other values are default values for residential receptor.

COBALT (Non-Cancer Endpoint)

Construction Worker RBCs (Pathway-specific and total; in mg/kg)

Soil Ingestion

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)		EF (d/yr)	ED (yr)	IR (mg/d)	B oral (-)	FI (-)				CF (kg/mg)	**RBC (mg/kg)**
Cobalt	1	365	80	3.0E-04		250	1	330	1	1				1E-06	**1.1E+02**

Dermal Contact

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)	GIABS	EF (d/yr)	ED (yr)			SA (cm^2)	AF (mg/cm^2)	ABS (-)	CF (kg/mg)	**RBC (mg/kg)**
Cobalt	1	365	80	3.0E-04	1.0E+00	250	1			6032	0.8	*1.0E-02*	1E-06	**7.3E+02**

Inhalation of Particulates

COPC	THQ	AT (d)	RfC or REL (mg/m3)	PEF (m^3/kg)	ET (hr/d)	EF (d/yr)	ED (yr)						CF (hr/day)	**RBC (mg/kg)**
Cobalt	1	365	6.0E-06	1E+06	8	250	1						24	**2.6E+01**

Total RBC => 2.0E+01

Chemical-specific values are gray-shaded.
Italicized values are CalEPA values that differ from those used by USEPA to derive RSLs.
ABS value from Table 1 of PEA Manual (DTSC, 2015).
Receptor-specific EF value is yellow-shaded. All other values are default values for residential receptor.

COPPER (Non-Cancer Endpoint)

Construction Worker RBCs (Pathway-specific and total; in mg/kg)

Soil Ingestion

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)	EF (d/yr)	ED (yr)	IR (mg/d)	B oral (-)	FI (-)	CF (kg/mg)	**RBC (mg/kg)**
Copper	1	365	80	4.0E-02	250	1	330	1	1	1E-06	**1.4E+04**

Dermal Contact

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)	GIABS	EF (d/yr)	ED (yr)	SA (cm^2)	AF (mg/cm^2)	ABS (-)	CF (kg/mg)	**RBC (mg/kg)**
Copper	1	365	80	4.0E-02	1.0E+00	250	1	6032	0.8	*1.0E-02*	1E-06	**9.7E+04**

Inhalation of Particulates

COPC	THQ	AT (d)	RfC or REL (mg/m3)	PEF (m^3/kg)	ET (hr/d)	EF (d/yr)	ED (yr)	CF (hr/day)	**RBC (mg/kg)**
Copper	1	365	-	1E+06	8	250	1	24	**-**

Total RBC => 1.2E+04

Chemical-specific values are gray-shaded.
Italicized values are CalEPA values that differ from those used by USEPA to derive RSLs.
ABS value from Table 1 of PEA Manual (DTSC, 2015).
Receptor-specific EF value is yellow-shaded. All other values are default values for residential receptor.

MERCURY (Non-Cancer Endpoint)

Construction Worker RBCs (Pathway-specific and total; in mg/kg)

Soil Ingestion

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)		EF (d/yr)	ED (yr)	IR (mg/d)	B oral (-)	FI (-)				CF (kg/mg)	**RBC (mg/kg)**
Mercury	1	365	80	1.6E-04		250	1	330	1	1				1E-06	**5.7E+01**

Dermal Contact

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)	GIABS	EF (d/yr)	ED (yr)			SA (cm^2)	AF (mg/cm^2)	ABS (-)	CF (kg/mg)	**RBC (mg/kg)**
Mercury	1	365	80	1.6E-04	7.0E-02	250	1			6032	0.8	*1.0E-02*	1E-06	**2.7E+01**

Inhalation of Particulates

COPC	THQ	AT (d)	RfC or REL (mg/m3)	PEF (m^3/kg)	ET (hr/d)	EF (d/yr)	ED (yr)						CF (hr/day)	**RBC (mg/kg)**
Mercury	1	365	3.0E-05	1E+06	8	250	1						24	**1.3E+02**

Total RBC => 1.6E+01

Chemical-specific values are gray-shaded.
Italicized values are CalEPA values that differ from those used by USEPA to derive RSLs.
ABS value from Table 1 of PEA Manual (DTSC, 2015).
Receptor-specific EF value is yellow-shaded. All other values are default values for residential receptor.

MOLYBDENUM (Non-Cancer Endpoint)

Construction Worker RBCs (Pathway-specific and total; in mg/kg)

Soil Ingestion

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)		EF (d/yr)	ED (yr)	IR (mg/d)	B oral (-)	FI (-)				CF (kg/mg)	**RBC (mg/kg)**
Molybdenum	1	365	80	5.0E-03		250	1	330	1	1				1E-06	**1.8E+03**

Dermal Contact

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)	GIABS	EF (d/yr)	ED (yr)			SA (cm^2)	AF (mg/cm^2)	ABS (-)	CF (kg/mg)	**RBC (mg/kg)**
Molybdenum	1	365	80	5.0E-03	1.0E+00	250	1			6032	0.8	*1.0E-02*	1E-06	**1.2E+04**

Inhalation of Particulates

COPC	THQ	AT (d)	RfC or REL (mg/m3)	PEF (m^3/kg)	ET (hr/d)	EF (d/yr)	ED (yr)						CF (hr/day)	**RBC (mg/kg)**
Molybdenum	1	365	-	1E+06	8	250	1						24	**-**

Total RBC => 1.5E+03

Chemical-specific values are gray-shaded.
Italicized values are CalEPA values that differ from those used by USEPA to derive RSLs.
ABS value from Table 1 of PEA Manual (DTSC, 2015).
Receptor-specific EF value is yellow-shaded. All other values are default values for residential receptor.

NICKEL (Non-Cancer Endpoint)

Construction Worker RBCs (Pathway-specific and total; in mg/kg)

Soil Ingestion

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)		EF (d/yr)	ED (yr)	IR (mg/d)	B oral (-)	FI (-)				CF (kg/mg)	**RBC (mg/kg)**
Nickel	1	365	80	*1.1E-02*		250	1	330	1	1				1E-06	**3.9E+03**

Dermal Contact

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)	GIABS	EF (d/yr)	ED (yr)			SA (cm^2)	AF (mg/cm^2)	ABS (-)	CF (kg/mg)	**RBC (mg/kg)**
Nickel	1	365	80	*1.1E-02*	4.0E-02	250	1			6032	0.8	*1.0E-02*	1E-06	**1.1E+03**

Inhalation of Particulates

COPC	THQ	AT (d)	RfC or REL (mg/m3)	PEF (m^3/kg)	ET (hr/d)	EF (d/yr)	ED (yr)						CF (hr/day)	**RBC (mg/kg)**
Nickel	1	365	*1.4E-05*	1E+06	8	250	1						24	**6.1E+01**

Total RBC => 5.7E+01

Chemical-specific values are gray-shaded.
Italicized values are CalEPA values that differ from those used by USEPA to derive RSLs.
ABS value from Table 1 of PEA Manual (DTSC, 2015).
Receptor-specific EF value is yellow-shaded. All other values are default values for residential receptor.

SELENIUM (Non-Cancer Endpoint)

Construction Worker RBCs (Pathway-specific and total; in mg/kg)

Soil Ingestion

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)		EF (d/yr)	ED (yr)	IR (mg/d)	B oral (-)	FI (-)				CF (kg/mg)	**RBC (mg/kg)**
Selenium	1	365	80	5.0E-03		250	1	330	1	1				1E-06	**1.8E+03**

Dermal Contact

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)	GIABS	EF (d/yr)	ED (yr)			SA (cm^2)	AF (mg/cm^2)	ABS (-)	CF (kg/mg)	**RBC (mg/kg)**
Selenium	1	365	80	5.0E-03	1.0E+00	250	1			6032	0.8	*1.0E-02*	1E-06	**1.2E+04**

Inhalation of Particulates

COPC	THQ	AT (d)	RfC or REL (mg/m3)	PEF (m^3/kg)	ET (hr/d)	EF (d/yr)	ED (yr)						CF (hr/day)	**RBC (mg/kg)**
Selenium	1	365	2.0E-02	1E+06	8	250	1						24	**8.8E+04**

Total RBC => 1.5E+03

Chemical-specific values are gray-shaded.
Italicized values are CalEPA values that differ from those used by USEPA to derive RSLs.
ABS value from Table 1 of PEA Manual (DTSC, 2015).
Receptor-specific EF value is yellow-shaded. All other values are default values for residential receptor.

SILVER (Non-Cancer Endpoint)

Construction Worker RBCs (Pathway-specific and total; in mg/kg)

Soil Ingestion

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)		EF (d/yr)	ED (yr)	IR (mg/d)	B oral (-)	FI (-)				CF (kg/mg)	**RBC (mg/kg)**
Silver	1	365	80	5.0E-03		250	1	330	1	1				1E-06	**1.8E+03**

Dermal Contact

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)	GIABS	EF (d/yr)	ED (yr)			SA (cm^2)	AF (mg/cm^2)	ABS (-)	CF (kg/mg)	**RBC (mg/kg)**
Silver	1	365	80	5.0E-03	4.0E-02	250	1			6032	0.8	*1.0E-02*	1E-06	**4.8E+02**

Inhalation of Particulates

COPC	THQ	AT (d)	RfC or REL (mg/m3)	PEF (m^3/kg)	ET (hr/d)	EF (d/yr)	ED (yr)						CF (hr/day)	**RBC (mg/kg)**
Silver	1	365	-	1E+06	8	250	1						24	**-**

Total RBC => 3.8E+02

Chemical-specific values are gray-shaded.
Italicized values are CalEPA values that differ from those used by USEPA to derive RSLs.
ABS value from Table 1 of PEA Manual (DTSC, 2015).
Receptor-specific EF value is yellow-shaded. All other values are default values for residential receptor.

ZINC (Non-Cancer Endpoint)

Construction Worker RBCs (Pathway-specific and total; in mg/kg)

Soil Ingestion

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)		EF (d/yr)	ED (yr)	IR (mg/d)	B oral (-)	FI (-)				CF (kg/mg)	**RBC (mg/kg)**
Zinc	1	365	80	3.0E-01		250	1	330	1	1				1E-06	**1.1E+05**

Dermal Contact

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)	GIABS	EF (d/yr)	ED (yr)			SA (cm^2)	AF (mg/cm^2)	ABS (-)	CF (kg/mg)	**RBC (mg/kg)**
Zinc	1	365	80	3.0E-01	1.0E+00	250	1			6032	0.8	*1.0E-02*	1E-06	**7.3E+05**

Inhalation of Particulates

COPC	THQ	AT (d)	RfC or REL (mg/m3)	PEF (m^3/kg)	ET (hr/d)	EF (d/yr)	ED (yr)						CF (hr/day)	**RBC (mg/kg)**
Zinc	1	365	-	1E+06	8	250	1						24	**-**

Total RBC => 9.3E+04

Chemical-specific values are gray-shaded.
Italicized values are CalEPA values that differ from those used by USEPA to derive RSLs.
ABS value from Table 1 of PEA Manual (DTSC, 2015).
Receptor-specific EF value is yellow-shaded. All other values are default values for residential receptor.

ATTACHMENT D

ABBREVIATIONS

COPC	chemical of potential concern
TR	target incremental lifetime cancer risk (1E-05 per BLM, 2004)
THQ	target hazard quotient (1E+00 per BLM, 2004)
AT (d)	averaging time (days)
BW (kg)	body weight (kilograms)
RfDo (mg/kg-d)	oral reference dose (milligram per kilogram per day)
EF (d/yr)	exposure frequency (days per year)
ED (yr)	exposure duration (years)
IR (mg/d)	ingestion rate (milligrams per day)
B oral (-)	bioavailability (dimensionless)
FI (-)	fraction ingested (dimensionless)
CF (kg/mg)	conversion factor (kilogram per milligram)
RBC (mg/kg)	risk-based concentration (milligram per kilogram)
GIABS	gastrointestinal absorption factor (dimensionless)
SA (cm2)	surface area (square centimeters)
AF (mg/cm2)	adherence factor (milligram per square centimeter)
ABS (-)	absorption factor (dimensionless)
RfC (mg/m3)	reference concentration (milligram per cubic meter)
REL (mg/m3)	reference exposure level (milligram per cubic meter)
PEF (m3/kg)	particulate emission factor (cubic meters per kilogram)
ET (hr/d)	exposure time (hours per day)
IFS (mg/kg)	receptor-weighted ingestion factor for soil (milligrams per kilogram)
DFS (mg/kg)	receptor-weighted dermal factor for soil (milligrams per kilogram)

ARSENIC (Cancer Endpoint)

Residential RBCs (Pathway-specific and total; in mg/kg)

Soil Ingestion (age 0-6 yrs and 7-26 yrs)

COPC	TR	AT (d)	BW (kg)	SFo $(mg/kg\text{-}d)^{-1}$	EF (d/yr)	ED (yr)	IR (mg/d)	B oral (-)	FI (-)	**IFS (mg/kg)**	CF (kg/mg)	**RBC (mg/kg)**
Arsenic	1E-05	25550	15 80	*9.5E+00*	350	6 20	200 100	0.6	1	**36750**	1E-06	**1.2E+00**

Dermal Contact (age 0-6 yrs and 7-26 yrs)

COPC	TR	AT (d)	BW (kg)	SFo $(mg/kg\text{-}d)^{-1}$	GIABS	EF (d/yr)	ED (yr)	SA (cm^2)	AF (mg/cm^2)	ABS (-)	**DFS (mg/kg)**	CF (kg/mg)	**RBC (mg/kg)**
Arsenic	1E-05	25550	15 80	*9.5E+00*	1.0E+00	350	6 20	*2900* 6032	0.2 0.07	3.0E-02	**118146**	1E-06	**7.6E+00**

Inhalation of Particulates (age 0-6 yrs and 7-26 yrs)

COPC	TR	AT (d)	IUR $(ug/m3)^{-1}$	PEF (m^3/kg)	ET (hr/d)	EF (d/yr)	ED (yr)	CF1 (hr/day)	CF2 (ug/mg)	**RBC (mg/kg)**
Arsenic	1E-05	25550	*3.3E-03*	1.36E+09	24	350	26	24	1000	**1.2E+04**

Total RBC => 1.1E+00

Chemical-specific values are gray-shaded.
Italicized values are CalEPA values that differ from those used by USEPA to derive RSLs.

BERYLLIUM (Cancer Endpoint)

Residential RBCs (Pathway-specific and total; in mg/kg)

Soil Ingestion (age 0-6 yrs and 7-26 yrs)

COPC	TR	AT (d)	BW (kg)	SFo (mg/kg-d)$^{-1}$	EF (d/yr)	ED (yr)	IR (mg/d)	B oral (-)	FI (-)	**IFS (mg/kg)**	CF (kg/mg)	**RBC (mg/kg)**
Beryllium	1E-05	25550	15 80	-	350	6 20	200 100	1	1	**36750**	1E-06	**-**

Dermal Contact (age 0-6 yrs and 7-26 yrs)

COPC	TR	AT (d)	BW (kg)	SFo (mg/kg-d)$^{-1}$	GIABS	EF (d/yr)	ED (yr)	SA (cm^2)	AF (mg/cm^2)	ABS (-)	**DFS (mg/kg)**	CF (kg/mg)	**RBC (mg/kg)**
Beryllium	1E-05	25550	15 80	-	7.0E-03	350	6 20	*2900* 6032	0.2 0.07	*1.0E-02*	**118146**	1E-06	**-**

Inhalation of Particulates (age 0-6 yrs and 7-26 yrs)

COPC	TR	AT (d)	IUR (ug/m3)$^{-1}$	PEF (m^3/kg)	ET (hr/d)	EF (d/yr)	ED (yr)	CF1 (hr/day)	CF2 (ug/mg)	**RBC (mg/kg)**
Beryllium	1E-05	25550	2.4E-03	1.36E+09	24	350	26	24	1000	**1.6E+04**

Total RBC => 1.6E+04

Chemical-specific values are gray-shaded.
Italicized values are CalEPA values that differ from those used by USEPA to derive RSLs.
ABS value from Table 1 of PEA Manual (DTSC, 2015).

CADMIUM (Cancer Endpoint)

Residential RBCs (Pathway-specific and total; in mg/kg)

Soil Ingestion (age 0-6 yrs and 7-26 yrs)

COPC	TR	AT (d)	BW (kg)	SFo $(mg/kg\text{-}d)^{-1}$	EF (d/yr)	ED (yr)	IR (mg/d)	B oral (-)	FI (-)	**IFS (mg/kg)**	CF (kg/mg)	**RBC (mg/kg)**
Cadmium	1E-05	25550	15 80	-	350	6 20	200 100	1	1	**36750**	1E-06	**-**

Dermal Contact (age 0-6 yrs and 7-26 yrs)

COPC	TR	AT (d)	BW (kg)	SFo $(mg/kg\text{-}d)^{-1}$	GIABS	EF (d/yr)	ED (yr)	SA (cm^2)	AF (mg/cm^2)	ABS (-)	**DFS (mg/kg)**	CF (kg/mg)	**RBC (mg/kg)**
Cadmium	1E-05	25550	15 80	-	2.5E-02	350	6 20	*2900* 6032	0.2 0.07	1.0E-03	**118146**	1E-06	**-**

Inhalation of Particulates (age 0-6 yrs and 7-26 yrs)

COPC	TR	AT (d)	IUR $(ug/m3)^{-1}$	PEF (m^3/kg)	ET (hr/d)	EF (d/yr)	ED (yr)	CF1 (hr/day)	CF2 (ug/mg)	**RBC (mg/kg)**
Cadmium	1E-05	25550	1.8E-03	1.36E+09	24	350	*30*	24	1000	**1.8E+04**

Total RBC => 1.8E+04

Chemical-specific values are gray-shaded.

Italicized values are CalEPA values that differ from those used by USEPA to derive RSLs.

COBALT (Cancer Endpoint)

Residential RBCs (Pathway-specific and total; in mg/kg)

Soil Ingestion (age 0-6 yrs and 7-26 yrs)

COPC	TR	AT (d)	BW (kg)	SFo $(mg/kg\text{-}d)^{-1}$	EF (d/yr)	ED (yr)	IR (mg/d)	B oral (-)	FI (-)	**IFS (mg/kg)**	CF (kg/mg)	**RBC (mg/kg)**
Cobalt	1E-05	25550	15 80	-	350	6 20	200 100	1	1	**36750**	1E-06	**-**

Dermal Contact (age 0-6 yrs and 7-26 yrs)

COPC	TR	AT (d)	BW (kg)	SFo $(mg/kg\text{-}d)^{-1}$	GIABS	EF (d/yr)	ED (yr)	SA (cm^2)	AF (mg/cm^2)	ABS (-)	**DFS (mg/kg)**	CF (kg/mg)	**RBC (mg/kg)**
Cobalt	1E-05	25550	15 80	-	1.0E+00	350	6 20	*2900* 6032	0.2 0.07	*1.0E-02*	**118146**	1E-06	**-**

Inhalation of Particulates (age 0-6 yrs and 7-26 yrs)

COPC	TR	AT (d)	IUR $(ug/m3)^{-1}$	PEF (m^3/kg)	ET (hr/d)	EF (d/yr)	ED (yr)	CF1 (hr/day)	CF2 (ug/mg)	**RBC (mg/kg)**
Cobalt	1E-05	25550	9.0E-03	1.36E+09	24	350	26	24	1000	**4.2E+03**

Total RBC => 4.2E+03

Chemical-specific values are gray-shaded.
Italicized values are CalEPA values that differ from those used by USEPA to derive RSLs.
ABS value from Table 1 of PEA Manual (DTSC, 2015).

NICKEL (Cancer Endpoint)

Residential RBCs (Pathway-specific and total; in mg/kg)

Soil Ingestion (age 0-6 yrs and 7-26 yrs)

COPC	TR	AT (d)	BW (kg)	SFo $(mg/kg\text{-}d)^{-1}$	EF (d/yr)	ED (yr)	IR (mg/d)	B oral (-)	FI (-)	**IFS (mg/kg)**	CF (kg/mg)	**RBC (mg/kg)**
Nickel	1E-05	25550	15 80	-	350	6 20	200 100	1	1	**36750**	1E-06	**-**

Dermal Contact (age 0-6 yrs and 7-26 yrs)

COPC	TR	AT (d)	BW (kg)	SFo $(mg/kg\text{-}d)^{-1}$	GIABS	EF (d/yr)	ED (yr)	SA (cm^2)	AF (mg/cm^2)	ABS (-)	**DFS (mg/kg)**	CF (kg/mg)	**RBC (mg/kg)**
Nickel	1E-05	25550	15 80	-	4.0E-02	350	6 20	*2900* 6032	0.2 0.07	*1.0E-02*	**118146**	1E-06	**-**

Inhalation of Particulates (age 0-6 yrs and 7-26 yrs)

COPC	TR	AT (d)	IUR $(ug/m3)^{-1}$	PEF (m^3/kg)	ET (hr/d)	EF (d/yr)	ED (yr)	CF1 (hr/day)	CF2 (ug/mg)	**RBC (mg/kg)**
Nickel	1E-05	25550	2.6E-04	1.36E+09	24	350	26	24	1000	**1.5E+05**

Total RBC => 1.5E+05

Chemical-specific values are gray-shaded.
Italicized values are CalEPA values that differ from those used by USEPA to derive RSLs.
ABS value from Table 1 of PEA Manual (DTSC, 2015).

ANTIMONY (Noncancer Endpoint)

Residential RBCs (Pathway-specific and total; in mg/kg)

Soil Ingestion (age 0-6 yrs)

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)	EF (d/yr)	ED (yr)	IR (mg/d)	B oral (-)	FI (-)	CF (kg/mg)	**RBC (mg/kg)**
Antimony	1	2190	15	4.0E-04	350	6	200	1	1	1E-06	**3.1E+01**

Dermal Contact (age 0-6 yrs)

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)	GIABS	EF (d/yr)	ED (yr)	SA (cm^2)	AF (mg/cm^2)	ABS (-)	CF (kg/mg)	**RBC (mg/kg)**
Antimony	1	2190	15	4.0E-04	1.5E-01	350	6	*2900*	0.2	*1.0E-02*	1E-06	**1.6E+02**

Inhalation of Particulates (age 0-6 yrs)

COPC	THQ	AT (d)	RfC or REL (mg/m3)	PEF (m^3/kg)	ET (hr/d)	EF (d/yr)	ED (yr)	CF (hr/day)	**RBC (mg/kg)**
Antimony	1	2190	-	1.36E+09	24	350	6	24	**-**

Total RBC => 2.6E+01

Chemical-specific values are gray-shaded.

Italicized values are CalEPA values that differ from those used by USEPA to derive RSLs.

ABS value from Table 1 of PEA Manual (DTSC, 2015).

ARSENIC (Noncancer Endpoint)

Residential RBCs (Pathway-specific and total; in mg/kg)

Soil Ingestion (age 0-6 yrs)

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)	EF (d/yr)	ED (yr)	IR (mg/d)	B oral (-)	FI (-)	CF (kg/mg)	**RBC (mg/kg)**
Arsenic	1	2190	15	*3.5E-06*	350	6	200	0.6	1	1E-06	**4.6E-01**

Dermal Contact (age 0-6 yrs)

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)	GIABS	EF (d/yr)	ED (yr)	SA (cm^2)	AF (mg/cm^2)	ABS (-)	CF (kg/mg)	**RBC (mg/kg)**
Arsenic	1	2190	15	*3.5E-06*	1.0E+00	350	6	*2900*	0.2	3.0E-02	1E-06	**3.1E+00**

Inhalation of Particulates (age 0-6 yrs)

COPC	THQ	AT (d)	RfC or REL (mg/m3)	PEF (m^3/kg)	ET (hr/d)	EF (d/yr)	ED (yr)	CF (hr/day)	**RBC (mg/kg)**
Arsenic	1	2190	1.5E-05	1.36E+09	24	350	6	24	**2.1E+04**

Total RBC => 4.0E-01

Chemical-specific values are gray-shaded.

Italicized values are CalEPA values that differ from those used by USEPA to derive RSLs.

BARIUM (Noncancer Endpoint)

Residential RBCs (Pathway-specific and total; in mg/kg)

Soil Ingestion (age 0-6 yrs)

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)		EF (d/yr)	ED (yr)	IR (mg/d)	B oral (-)	FI (-)				CF (kg/mg)	**RBC (mg/kg)**
Barium	1	2190	15	2.0E-01		350	6	200	1	1				1E-06	**1.6E+04**

Dermal Contact (age 0-6 yrs)

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)	GIABS	EF (d/yr)	ED (yr)			SA (cm^2)	AF (mg/cm^2)	ABS (-)	CF (kg/mg)	**RBC (mg/kg)**
Barium	1	2190	15	2.0E-01	7.0E-02	350	6			*2900*	0.2	*1.0E-02*	1E-06	**3.8E+04**

Inhalation of Particulates (age 0-6 yrs)

COPC	THQ	AT (d)	RfC or REL (mg/m3)	PEF (m^3/kg)	ET (hr/d)	EF (d/yr)	ED (yr)						CF (hr/day)	**RBC (mg/kg)**
Barium	1	2190	5.0E-04	1.36E+09	24	350	6						24	**7.1E+05**

Total RBC => 1.1E+04

Chemical-specific values are gray-shaded.
Italicized values are CalEPA values that differ from those used by USEPA to derive RSLs.
ABS value from Table 1 of PEA Manual (DTSC, 2015).

BERYLLIUM (Noncancer Endpoint)

Residential RBCs (Pathway-specific and total; in mg/kg)

Soil Ingestion (age 0-6 yrs)

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)	EF (d/yr)	ED (yr)	IR (mg/d)	B oral (-)	FI (-)	CF (kg/mg)	**RBC (mg/kg)**
Beryllium	1	2190	15	*2.0E-04*	350	6	200	1	1	1E-06	**1.6E+01**

Dermal Contact (age 0-6 yrs)

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)	GIABS	EF (d/yr)	ED (yr)	SA (cm^2)	AF (mg/cm^2)	ABS (-)	CF (kg/mg)	**RBC (mg/kg)**
Beryllium	1	2190	15	*2.0E-04*	7.0E-03	350	6	*2900*	0.2	*1.0E-02*	1E-06	**3.8E+00**

Inhalation of Particulates (age 0-6 yrs)

COPC	THQ	AT (d)	RfC or REL (mg/m3)	PEF (m^3/kg)	ET (hr/d)	EF (d/yr)	ED (yr)	CF (hr/day)	**RBC (mg/kg)**
Beryllium	1	2190	*7.0E-06*	1.36E+09	24	350	6	24	**9.9E+03**

Total RBC => 3.0E+00

Chemical-specific values are gray-shaded.
Italicized values are CalEPA values that differ from those used by USEPA to derive RSLs.
ABS value from Table 1 of PEA Manual (DTSC, 2015).

CADMIUM (Noncancer Endpoint)

Residential RBCs (Pathway-specific and total; in mg/kg)

Soil Ingestion (age 0-30 yrs)

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)		EF (d/yr)	ED (yr)	IR (mg/d)	B oral (-)	FI (-)				CF (kg/mg)	**RBC (mg/kg)**
Cadmium	1	10950	*80*	*6.3E-06*		350	*30*	*100*	1	1				1E-06	**5.3E+00**

Dermal Contact (age 0-30 yrs)

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)	GIABS	EF (d/yr)	ED (yr)			SA (cm^2)	AF (mg/cm^2)	ABS (-)	CF (kg/mg)	**RBC (mg/kg)**
Cadmium	1	10950	*80*	*6.3E-06*	2.5E-02	350	*30*			*6032*	*0.07*	1.0E-03	1E-06	**3.1E+01**

Inhalation of Particulates (age 0-30 yrs)

COPC	THQ	AT (d)	RfC or REL (mg/m3)	PEF (m^3/kg)	ET (hr/d)	EF (d/yr)	ED (yr)						CF (hr/day)	**RBC (mg/kg)**
Cadmium	1	10950	1.0E-05	1.36E+09	24	350	*30*						24	**1.4E+04**

Total RBC => 4.5E+00

Chemical-specific values are gray-shaded.

Italicized values are CalEPA values that differ from those used by USEPA to derive RSLs.

COBALT (Noncancer Endpoint)

Residential RBCs (Pathway-specific and total; in mg/kg)

Soil Ingestion (age 0-6 yrs)

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)	EF (d/yr)	ED (yr)	IR (mg/d)	B oral (-)	FI (-)	CF (kg/mg)	**RBC (mg/kg)**
Cobalt	1	2190	15	3.0E-04	350	6	200	1	1	1E-06	**2.3E+01**

Dermal Contact (age 0-6 yrs)

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)	GIABS	EF (d/yr)	ED (yr)	SA (cm^2)	AF (mg/cm^2)	ABS (-)	CF (kg/mg)	**RBC (mg/kg)**
Cobalt	1	2190	15	3.0E-04	1.0E+00	350	6	*2900*	0.2	*1.0E-02*	1E-06	**8.1E+02**

Inhalation of Particulates (age 0-6 yrs)

COPC	THQ	AT (d)	RfC or REL (mg/m3)	PEF (m^3/kg)	ET (hr/d)	EF (d/yr)	ED (yr)	CF (hr/day)	**RBC (mg/kg)**
Cobalt	1	2190	6.0E-06	1.36E+09	24	350	6	24	**8.5E+03**

Total RBC => 2.3E+01

Chemical-specific values are gray-shaded.
Italicized values are CalEPA values that differ from those used by USEPA to derive RSLs.
ABS value from Table 1 of PEA Manual (DTSC, 2015).

COPPER (Noncancer Endpoint)

Residential RBCs (Pathway-specific and total; in mg/kg)

Soil Ingestion (age 0-6 yrs)

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)	EF (d/yr)	ED (yr)	IR (mg/d)	B oral (-)	FI (-)	CF (kg/mg)	**RBC (mg/kg)**
Copper	1	2190	15	4.0E-02	350	6	200	1	1	1E-06	**3.1E+03**

Dermal Contact (age 0-6 yrs)

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)	GIABS	EF (d/yr)	ED (yr)	SA (cm^2)	AF (mg/cm^2)	ABS (-)	CF (kg/mg)	**RBC (mg/kg)**
Copper	1	2190	15	4.0E-02	1.0E+00	350	6	*2900*	0.2	*1.0E-02*	1E-06	**1.1E+05**

Inhalation of Particulates (age 0-6 yrs)

COPC	THQ	AT (d)	RfC or REL (mg/m3)	PEF (m^3/kg)	ET (hr/d)	EF (d/yr)	ED (yr)	CF (hr/day)	**RBC (mg/kg)**
Copper	1	2190	-	1.36E+09	24	350	6	24	**-**

Total RBC => 3.0E+03

Chemical-specific values are gray-shaded.

Italicized values are CalEPA values that differ from those used by USEPA to derive RSLs.

ABS value from Table 1 of PEA Manual (DTSC, 2015).

MERCURY (Noncancer Endpoint)

Residential RBCs (Pathway-specific and total; in mg/kg)

Soil Ingestion (age 0-6 yrs)

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)	EF (d/yr)	ED (yr)	IR (mg/d)	B oral (-)	FI (-)	CF (kg/mg)	**RBC (mg/kg)**
Mercury	1	2190	15	1.6E-04	350	6	200	1	1	1E-06	**1.3E+01**

Dermal Contact (age 0-6 yrs)

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)	GIABS	EF (d/yr)	ED (yr)	SA (cm^2)	AF (mg/cm^2)	ABS (-)	CF (kg/mg)	**RBC (mg/kg)**
Mercury	1	2190	15	1.6E-04	7.0E-02	350	6	*2900*	0.2	*1.0E-02*	1E-06	**3.0E+01**

Inhalation of Particulates (age 0-6 yrs)

COPC	THQ	AT (d)	RfC or REL (mg/m3)	PEF (m^3/kg)	ET (hr/d)	EF (d/yr)	ED (yr)	CF (hr/day)	**RBC (mg/kg)**
Mercury	1	2190	3.0E-05	1.36E+09	24	350	6	24	**4.3E+04**

Total RBC => 8.8E+00

Chemical-specific values are gray-shaded.
Italicized values are CalEPA values that differ from those used by USEPA to derive RSLs.
ABS value from Table 1 of PEA Manual (DTSC, 2015).

MOLYBDENUM (Noncancer Endpoint)

Residential RBCs (Pathway-specific and total; in mg/kg)

Soil Ingestion (age 0-6 yrs)

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)		EF (d/yr)	ED (yr)	IR (mg/d)	B oral (-)	FI (-)				CF (kg/mg)	**RBC (mg/kg)**
Molybdenum	1	2190	15	5.0E-03		350	6	200	1	1				1E-06	**3.9E+02**

Dermal Contact (age 0-6 yrs)

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)	GIABS	EF (d/yr)	ED (yr)				SA (cm^2)	AF (mg/cm^2)	ABS (-)	CF (kg/mg)	**RBC (mg/kg)**
Molybdenum	1	2190	15	5.0E-03	1.0E+00	350	6				*2900*	0.2	*1.0E-02*	1E-06	**1.3E+04**

Inhalation of Particulates (age 0-6 yrs)

COPC	THQ	AT (d)	RfC or REL (mg/m3)	PEF (m^3/kg)	ET (hr/d)	EF (d/yr)	ED (yr)							CF (hr/day)	**RBC (mg/kg)**
Molybdenum	1	2190	-	1.36E+09	24	350	6							24	**-**

Total RBC => 3.8E+02

Chemical-specific values are gray-shaded.

Italicized values are CalEPA values that differ from those used by USEPA to derive RSLs.

ABS value from Table 1 of PEA Manual (DTSC, 2015).

NICKEL (Noncancer Endpoint)

Residential RBCs (Pathway-specific and total; in mg/kg)

Soil Ingestion (age 0-6 yrs)

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)	EF (d/yr)	ED (yr)	IR (mg/d)	B oral (-)	FI (-)	CF (kg/mg)	**RBC (mg/kg)**
Nickel	1	2190	15	*1.1E-02*	350	6	200	1	1	1E-06	**8.6E+02**

Dermal Contact (age 0-6 yrs)

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)	GIABS	EF (d/yr)	ED (yr)	SA (cm^2)	AF (mg/cm^2)	ABS (-)	CF (kg/mg)	**RBC (mg/kg)**
Nickel	1	2190	15	*1.1E-02*	4.0E-02	350	6	*2900*	0.2	*1.0E-02*	1E-06	**1.2E+03**

Inhalation of Particulates (age 0-6 yrs)

COPC	THQ	AT (d)	RfC or REL (mg/m3)	PEF (m^3/kg)	ET (hr/d)	EF (d/yr)	ED (yr)	CF (hr/day)	**RBC (mg/kg)**
Nickel	1	2190	*1.4E-05*	1.36E+09	24	350	6	24	**2.0E+04**

Total RBC => 4.9E+02

Chemical-specific values are gray-shaded.
Italicized values are CalEPA values that differ from those used by USEPA to derive RSLs.
ABS value from Table 1 of PEA Manual (DTSC, 2015).

SELENIUM (Noncancer Endpoint)

Residential RBCs (Pathway-specific and total; in mg/kg)

Soil Ingestion (age 0-6 yrs)

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)	EF (d/yr)	ED (yr)	IR (mg/d)	B oral (-)	FI (-)	CF (kg/mg)	**RBC (mg/kg)**
Selenium	1	2190	15	5.0E-03	350	6	200	1	1	1E-06	**3.9E+02**

Dermal Contact (age 0-6 yrs)

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)	GIABS	EF (d/yr)	ED (yr)	SA (cm^2)	AF (mg/cm^2)	ABS (-)	CF (kg/mg)	**RBC (mg/kg)**
Selenium	1	2190	15	5.0E-03	1.0E+00	350	6	*2900*	0.2	*1.0E-02*	1E-06	**1.3E+04**

Inhalation of Particulates (age 0-6 yrs)

COPC	THQ	AT (d)	RfC or REL (mg/m3)	PEF (m^3/kg)	ET (hr/d)	EF (d/yr)	ED (yr)	CF (hr/day)	**RBC (mg/kg)**
Selenium	1	2190	2.0E-02	1.36E+09	24	350	6	24	**2.8E+07**

Total RBC => 3.8E+02

Chemical-specific values are gray-shaded.
Italicized values are CalEPA values that differ from those used by USEPA to derive RSLs.
ABS value from Table 1 of PEA Manual (DTSC, 2015).

SILVER (Noncancer Endpoint)

Residential RBCs (Pathway-specific and total; in mg/kg)

Soil Ingestion (age 0-6 yrs)

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)	EF (d/yr)	ED (yr)	IR (mg/d)	B oral (-)	FI (-)	CF (kg/mg)	**RBC (mg/kg)**
Silver	1	2190	15	5.0E-03	350	6	200	1	1	1E-06	**3.9E+02**

Dermal Contact (age 0-6 yrs)

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)	GIABS	EF (d/yr)	ED (yr)	SA (cm^2)	AF (mg/cm^2)	ABS (-)	CF (kg/mg)	**RBC (mg/kg)**
Silver	1	2190	15	5.0E-03	4.0E-02	350	6	*2900*	0.2	*1.0E-02*	1E-06	**5.4E+02**

Inhalation of Particulates (age 0-6 yrs)

COPC	THQ	AT (d)	RfC or REL (mg/m3)	PEF (m^3/kg)	ET (hr/d)	EF (d/yr)	ED (yr)	CF (hr/day)	**RBC (mg/kg)**
Silver	1	2190	-	1.36E+09	24	350	6	24	**-**

Total RBC => 2.3E+02

Chemical-specific values are gray-shaded.

Italicized values are CalEPA values that differ from those used by USEPA to derive RSLs.

ABS value from Table 1 of PEA Manual (DTSC, 2015).

ZINC (Noncancer Endpoint)

Residential RBCs (Pathway-specific and total; in mg/kg)

Soil Ingestion (age 0-6 yrs)

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)	EF (d/yr)	ED (yr)	IR (mg/d)	B oral (-)	FI (-)	CF (kg/mg)	**RBC (mg/kg)**
Zinc	1	2190	15	3.0E-01	350	6	200	1	1	1E-06	**2.3E+04**

Dermal Contact (age 0-6 yrs)

COPC	THQ	AT (d)	BW (kg)	RfDo (mg/kg-d)	GIABS	EF (d/yr)	ED (yr)	SA (cm^2)	AF (mg/cm^2)	ABS (-)	CF (kg/mg)	**RBC (mg/kg)**
Zinc	1	2190	15	3.0E-01	1.0E+00	350	6	*2900*	0.2	*1.0E-02*	1E-06	**8.1E+05**

Inhalation of Particulates (age 0-6 yrs)

COPC	THQ	AT (d)	RfC or REL (mg/m3)	PEF (m^3/kg)	ET (hr/d)	EF (d/yr)	ED (yr)	CF (hr/day)	**RBC (mg/kg)**
Zinc	1	2190	-	1.36E+09	24	350	6	24	**-**

Total RBC => 2.3E+04

Chemical-specific values are gray-shaded.

Italicized values are CalEPA values that differ from those used by USEPA to derive RSLs.

ABS value from Table 1 of PEA Manual (DTSC, 2015).

ATTACHMENT E

LEAD RISK ASSESSMENT SPREADSHEET 8 - RECREATIONAL USER (CHILD)

CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL

Click here for ABBREVIATED INSTRUCTIONS FOR LEADSPREAD 8

INPUT	
MEDIUM	LEVEL
Lead in Soil/Dust (ug/g)	702
Respirable Dust (ug/m^3)	1.5

OUTPUT						
Percentile Estimate of Blood Pb (ug/dl)						PRG-90
	50th	90th	95th	98th	99th	(ug/g)
BLOOD Pb, CHILD	0.5	1.0	1.2	1.4	1.6	702
BLOOD Pb, PICA CHILD	1.1	2.0	2.4	2.9	3.3	352

EXPOSURE PARAMETERS		
	units	children
Days per week	**days/wk**	**0.77**
Geometric Standard Deviation		1.6
Blood lead level of concern (ug/dl)		1
Skin area, residential	cm^2	2900
Soil adherence	ug/cm^2	200
Dermal uptake constant	(ug/dl)/(ug/day)	0.0001
Soil ingestion	mg/day	100
Soil ingestion, pica	mg/day	200
Ingestion constant	(ug/dl)/(ug/day)	0.16
Bioavailability	unitless	0.44
Breathing rate	m^3/day	6.8
Inhalation constant	(ug/dl)/(ug/day)	0.192

PATHWAYS						
CHILDREN	typical			with pica		
	Pathway contribution			Pathway contribution		
Pathway	PEF	ug/dl	percent	PEF	ug/dl	percent
Soil Contact	6.4E-6	0.00	0.82%		0.00	0%
Soil Ingestion	7.7E-4	0.54	99.16%	1.5E-3	1.09	100%
Inhalation	2.2E-7	0.00	0.03%		0.00	0%

Click here for REFERENCES

LEAD RISK ASSESSMENT SPREADSHEET 8 - RECREATIONAL CABIN OCCUPANT (CHILD)

CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL

Click here for ABBREVIATED INSTRUCTIONS FOR LEADSPREAD 8

INPUT	
MEDIUM	LEVEL
Lead in Soil/Dust (ug/g)	281
Respirable Dust (ug/m^3)	1.5

OUTPUT						
Percentile Estimate of Blood Pb (ug/dl)						PRG-90
	50th	90th	95th	98th	99th	(ug/g)
BLOOD Pb, CHILD	0.5	1.0	1.2	1.4	1.6	281
BLOOD Pb, PICA CHILD	1.1	2.0	2.4	2.9	3.3	141

EXPOSURE PARAMETERS		
	units	children
Days per week	**days/wk**	**1.92**
Geometric Standard Deviation		1.6
Blood lead level of concern (ug/dl)		1
Skin area, residential	cm^2	2900
Soil adherence	ug/cm^2	200
Dermal uptake constant	(ug/dl)/(ug/day)	0.0001
Soil ingestion	mg/day	100
Soil ingestion, pica	mg/day	200
Ingestion constant	(ug/dl)/(ug/day)	0.16
Bioavailability	unitless	0.44
Breathing rate	m^3/day	6.8
Inhalation constant	(ug/dl)/(ug/day)	0.192

PATHWAYS						
CHILDREN	typical			with pica		
	Pathway contribution			Pathway contribution		
Pathway	PEF	ug/dl	percent	PEF	ug/dl	percent
Soil Contact	1.6E-5	0.00	0.82%		0.00	0%
Soil Ingestion	1.9E-3	0.54	99.16%	3.9E-3	1.09	100%
Inhalation	5.4E-7	0.00	0.03%		0.00	0%

Click here for REFERENCES

MODIFIED VERSION OF USEPA ADULT LEAD MODEL

CONSTRUCTION WORKER

CALCULATIONS OF BLOOD LEAD CONCENTRATIONS (PbBs) AND PRELMIINARY REMEDIATION GOAL (PRG)

EDIT RED CELL

Variable	Description of Variable	Units	
PbS	Soil lead concentration	ug/g or ppm	318
$R_{fetal/maternal}$	Fetal/maternal PbB ratio	--	0.9
BKSF	Biokinetic Slope Factor	ug/dL per ug/day	0.4
GSD_i	Geometric standard deviation PbB	--	1.8
PbB_0	Baseline PbB	ug/dL	0.0
IR_S	Soil ingestion rate (including soil-derived indoor dust)	g/day	0.050
$AF_{S, D}$	Absorption fraction (same for soil and dust)	--	0.12
$EF_{S, D}$	Exposure frequency (same for soil and dust)	days/yr	250
$AT_{S, D}$	Averaging time (same for soil and dust)	days/yr	365
PbB_{adult}	**PbB of adult worker, geometric mean**	**ug/dL**	**0.5**
$PbB_{fetal, 0.90}$	90th percentile PbB among fetuses of adult workers	ug/dL	1.0
PbB_t	Target PbB level of concern (e.g., 10 ug/dL)	ug/dL	**1.0**
$P(PbB_{fetal} > PbB_t)$	**Probability that fetal PbB > PbB_t, assuming lognormal distribution**	**%**	**10.0%**

PRG90 **318**

LEAD RISK ASSESSMENT SPREADSHEET 8 - RESIDENTIAL (CHILD)

CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL

Click here for ABBREVIATED INSTRUCTIONS FOR LEADSPREAD 8

INPUT	
MEDIUM	LEVEL
Lead in Soil/Dust (ug/g)	77
Respirable Dust (ug/m^3)	1.5

OUTPUT						
Percentile Estimate of Blood Pb (ug/dl)						PRG-90
	50th	90th	95th	98th	99th	(ug/g)
BLOOD Pb, CHILD	0.5	1.0	1.2	1.4	1.6	77
BLOOD Pb, PICA CHILD	1.1	2.0	2.4	2.9	3.3	39

EXPOSURE PARAMETERS		
	units	children
Days per week	**days/wk**	**7.00**
Geometric Standard Deviation		1.6
Blood lead level of concern (ug/dl)		1
Skin area, residential	cm^2	2900
Soil adherence	ug/cm^2	200
Dermal uptake constant	(ug/dl)/(ug/day)	0.0001
Soil ingestion	mg/day	100
Soil ingestion, pica	mg/day	200
Ingestion constant	(ug/dl)/(ug/day)	0.16
Bioavailability	unitless	0.44
Breathing rate	m^3/day	6.8
Inhalation constant	(ug/dl)/(ug/day)	0.192

PATHWAYS						
CHILDREN	typical			with pica		
	Pathway contribution			Pathway contribution		
Pathway	PEF	ug/dl	percent	PEF	ug/dl	percent
Soil Contact	5.8E-5	0.00	0.82%		0.00	0%
Soil Ingestion	7.0E-3	0.54	99.16%	1.4E-2	1.08	100%
Inhalation	2.0E-6	0.00	0.03%		0.00	0%

Click here for REFERENCES

ATTACHMENT F

Risk Calculations for Recreational User Receptor
~ SOIL SAMPLES (sample-specific risk values) ~

CONCENTRATIONS (mg/kg)

COPC	MM-S-01	MM-S-02	MM-S-03	MM-S-04	MM-S-05	MM-S-06
Antimony	230	4.2	25	19	0.71	23
Arsenic	19	12	84	36	9.7	28
Barium	210	230	1,000	950	150	750
Beryllium	*0.12*	0.27	0.17	0.21	0.24	0.17
Cadmium	0.62	0.15	2.4	1.4	0.18	0.97
Cobalt	17	5.4	3.7	4.9	5.6	4.9
Copper	190	21	130	100	12	58
Lead	2,500	150	430	380	18	600
Mercury	52	210	260	2,200	2.4	51
Molybdenum	0.83	0.37	5.3	2.6	0.34	0.87
Nickel	34	16	11	17	19	15
Selenium	0.8	0.17	6.6	2.7	*0.11*	1.2
Silver	5.4	3.8	85	64	2.6	9.3
Zinc	570	42	150	110	48	160

Italicized values are reporting limits for non-detect' results.

BACKGROUND COMPARISON

COPC	BTV (mg/kg)	MM-S-01	MM-S-02	MM-S-03	MM-S-04	MM-S-05	MM-S-06
Antimony	0.531	230	4.2	25	19	0.71	23
Arsenic	13.3	19	-	84	36	-	28
Barium	281	-	-	1000	950	-	750
Beryllium	0.118	0.12	0.27	0.17	0.21	0.24	0.17
Cadmium	0.172	0.62	-	2.4	1.4	0.18	0.97
Cobalt	7.19	17	-	-	-	-	-
Copper	13.0	190	21	130	100	-	58
Lead	11.5	2500	150	430	380	18	600
Mercury	0.418	52	210	260	2200	2.4	51
Molybdenum	0.650	0.83	-	5.3	2.6	-	0.87
Nickel	25.5	34	-	-	-	-	-
Selenium	1.08	-	-	6.6	2.7	-	1.2
Silver	0.534	5.4	3.8	85	64	2.6	9.3
Zinc	60.6	570	-	150	110	-	160

HQ and HI VALUES

COPC	RBC_{HI} (mg/kg)	MM-S-01	MM-S-02	MM-S-03	MM-S-04	MM-S-05	MM-S-06
Antimony	2.3E+02	1.0E+00	1.8E-02	1.1E-01	8.3E-02	3.1E-03	1.0E-01
Arsenic	3.5E+00	5.4E+00	-	2.4E+01	1.0E+01	-	8.0E+00
Barium	9.5E+04	-	-	1.0E-02	1.0E-02	-	7.9E-03
Beryllium	2.7E+01	4.5E-03	1.0E-02	6.4E-03	7.9E-03	9.0E-03	6.4E-03
Cadmium	3.9E+01	1.6E-02	-	6.1E-02	3.6E-02	4.6E-03	2.5E-02
Cobalt	2.0E+02	8.5E-02	-	-	-	-	-
Copper	2.7E+04	7.1E-03	7.9E-04	4.9E-03	3.8E-03	-	2.2E-03
Lead	-	-	-	-	-	-	-
Mercury	7.7E+01	6.7E-01	2.7E+00	3.4E+00	2.8E+01	3.1E-02	6.6E-01
Molybdenum	3.3E+03	2.5E-04	-	1.6E-03	7.8E-04	-	2.6E-04
Nickel	4.3E+03	8.0E-03	-	-	-	-	-
Selenium	3.3E+03	-	-	2.0E-03	8.1E-04	-	3.6E-04
Silver	2.0E+03	2.7E-03	1.9E-03	4.3E-02	3.2E-02	1.3E-03	4.7E-03
Zinc	2.0E+05	2.9E-03	-	7.5E-04	5.5E-04	-	8.0E-04
	HI =>	**7.3E+00**	**2.7E+00**	**2.8E+01**	**3.9E+01**	**4.9E-02**	**8.8E+00**

ILCR VALUES

COPC	RBC_{ILCR} (mg/kg)	MM-S-01	MM-S-02	MM-S-03	MM-S-04	MM-S-05	MM-S-06
Antimony	-	-	-	-	-	-	-
Arsenic	9.2E+00	2E-05	-	9E-05	4E-05	-	3E-05
Barium	-	-	-	-	-	-	-
Beryllium	1.4E+05	9E-12	2E-11	1E-11	2E-11	2E-11	1E-11
Cadmium	1.6E+05	4E-11	-	1E-10	9E-11	1E-11	6E-11
Cobalt	3.7E+04	5E-09	-	-	-	-	-
Copper	-	-	-	-	-	-	-
Lead	-	-	-	-	-	-	-
Mercury	-	-	-	-	-	-	-
Molybdenum	-	-	-	-	-	-	-
Nickel	1.3E+06	3E-10	-	-	-	-	-
Selenium	-	-	-	-	-	-	-
Silver	-	-	-	-	-	-	-
Zinc	-	-	-	-	-	-	-
	ILCR =>	**2E-05**	**2E-11**	**9E-05**	**4E-05**	**3E-11**	**3E-05**

Risk Calculations for Recreational User Receptor
~ SOIL SAMPLES (sample-specific risk values) ~

CONCENTRATIONS (mg/kg)

COPC	MM-S-07	MM-S-08	MM-S-09	MM-S-10	MM-S-11	MM-S-12
Antimony	1.0	4.0	35	5.1	0.28	0.55
Arsenic	11	15	210	12	4.4	9.1
Barium	220	240	1,300	250	160	140
Beryllium	0.2	0.12	0.12	0.2	0.16	0.19
Cadmium	0.31	0.99	1.5	1.0	0.25	0.48
Cobalt	6.0	5.7	1.1	6.1	4.2	4.5
Copper	95	69	240	59	8.3	17
Lead	39	220	750	180	9.9	17
Mercury	58	31	27	150	0.98	18
Molybdenum	0.46	1.5	21	0.55	0.45	0.69
Nickel	21	16	2.3	21	9	13
Selenium	0.34	0.61	14	0.57	0.14	0.38
Silver	2.2	8.0	140	6.8	0.58	2.7
Zinc	55	120	370	100	43	63

Italicized values are reporting limits for non-detect' results.

BACKGROUND COMPARISON

COPC	BTV (mg/kg)	MM-S-07	MM-S-08	MM-S-09	MM-S-10	MM-S-11	MM-S-12
Antimony	0.531	1	4	35	5.1	-	0.55
Arsenic	13.3	-	15	210	-	-	-
Barium	281	-	-	1300	-	-	-
Beryllium	0.118	0.2	0.12	0.12	0.2	0.16	0.19
Cadmium	0.172	0.31	0.99	1.5	1	0.25	0.48
Cobalt	7.19	-	-	-	-	-	-
Copper	13.0	95	69	240	59	-	17
Lead	11.5	39	220	750	180	-	17
Mercury	0.418	58	31	27	150	0.98	18
Molybdenum	0.650	-	1.5	21	-	-	0.69
Nickel	25.5	-	-	-	-	-	-
Selenium	1.08	-	-	14	-	-	-
Silver	0.534	2.2	8	140	6.8	0.58	2.7
Zinc	60.6	-	120	370	100	-	63

HQ and HI VALUES

COPC	RBC_{HI} (mg/kg)	MM-S-07	MM-S-08	MM-S-09	MM-S-10	MM-S-11	MM-S-12
Antimony	2.3E+02	4.4E-03	1.7E-02	1.5E-01	2.2E-02	-	2.4E-03
Arsenic	3.5E+00	-	4.3E+00	6.0E+01	-	-	-
Barium	9.5E+04	-	-	1.4E-02	-	-	-
Beryllium	2.7E+01	7.5E-03	4.5E-03	4.5E-03	7.5E-03	6.0E-03	7.1E-03
Cadmium	3.9E+01	7.9E-03	2.5E-02	3.8E-02	2.5E-02	6.4E-03	1.2E-02
Cobalt	2.0E+02	-	-	-	-	-	-
Copper	2.7E+04	3.6E-03	2.6E-03	9.0E-03	2.2E-03	-	6.4E-04
Lead	-	-	-	-	-	-	-
Mercury	7.7E+01	7.5E-01	4.0E-01	3.5E-01	1.9E+00	1.3E-02	2.3E-01
Molybdenum	3.3E+03	-	4.5E-04	6.3E-03	-	-	2.1E-04
Nickel	4.3E+03	-	-	-	-	-	-
Selenium	3.3E+03	-	-	4.2E-03	-	-	-
Silver	2.0E+03	1.1E-03	4.0E-03	7.1E-02	3.4E-03	2.9E-04	1.4E-03
Zinc	2.0E+05	-	6.0E-04	1.9E-03	5.0E-04	-	3.2E-04
	HI =>	**7.7E-01**	**4.8E+00**	**6.1E+01**	**2.0E+00**	**2.5E-02**	**2.6E-01**

ILCR VALUES

COPC	RBC_{ILCR} (mg/kg)	MM-S-07	MM-S-08	MM-S-09	MM-S-10	MM-S-11	MM-S-12
Antimony	-	-	-	-	-	-	-
Arsenic	9.2E+00	-	2E-05	2E-04	-	-	-
Barium	-	-	-	-	-	-	-
Beryllium	1.4E+05	1E-11	9E-12	9E-12	1E-11	1E-11	1E-11
Cadmium	1.6E+05	2E-11	6E-11	9E-11	6E-11	2E-11	3E-11
Cobalt	3.7E+04	-	-	-	-	-	-
Copper	-	-	-	-	-	-	-
Lead	-	-	-	-	-	-	-
Mercury	-	-	-	-	-	-	-
Molybdenum	-	-	-	-	-	-	-
Nickel	1.3E+06	-	-	-	-	-	-
Selenium	-	-	-	-	-	-	-
Silver	-	-	-	-	-	-	-
Zinc	-	-	-	-	-	-	-
	ILCR =>	**3E-11**	**2E-05**	**2E-04**	**8E-11**	**3E-11**	**4E-11**

Risk Calculations for Recreational User Receptor
~ SOIL SAMPLES (sample-specific risk values) ~

CONCENTRATIONS (mg/kg)

COPC	MM-S-13	MM-S-14	MM-S-15	MM-S-16	MM-S-17	MM-S-18
Antimony	0.19	1.0	*0.072*	*0.059*	*0.064*	1.3
Arsenic	4.0	26	3.3	6.1	7.4	30
Barium	100	120	49	88	110	260
Beryllium	0.12	*0.069*	0.11	0.17	*0.025*	*0.03*
Cadmium	0.35	0.39	0.071	0.11	0.083	0.34
Cobalt	4.5	3.8	4.3	4.3	5.8	7.4
Copper	9.1	12	5.2	6.7	8.5	21
Lead	44	32	2.7	8.8	5.6	91
Mercury	3.9	23	0.54	0.75	0.55	1.8
Molybdenum	0.55	0.42	0.3	0.45	0.28	0.47
Nickel	8.7	8.5	16	12	16	28
Selenium	0.17	0.44	*0.13*	*0.11*	*0.12*	0.28
Silver	0.43	7.7	0.064	0.31	0.098	2.3
Zinc	63	46	24	29	29	75

Italicized values are reporting limits for non-detect' results.

BACKGROUND COMPARISON

COPC	BTV (mg/kg)	MM-S-13	MM-S-14	MM-S-15	MM-S-16	MM-S-17	MM-S-18
Antimony	0.531	-	1	-	-	-	1.3
Arsenic	13.3	-	26	-	-	-	30
Barium	281	-	-	-	-	-	-
Beryllium	0.118	0.12	-	-	0.17	-	-
Cadmium	0.172	0.35	0.39	-	-	-	0.34
Cobalt	7.19	-	-	-	-	-	7.4
Copper	13.0	-	-	-	-	-	21
Lead	11.5	44	32	-	-	-	91
Mercury	0.418	3.9	23	0.54	0.75	0.55	1.8
Molybdenum	0.650	-	-	-	-	-	-
Nickel	25.5	-	-	-	-	-	28
Selenium	1.08	-	-	-	-	-	-
Silver	0.534	-	7.7	-	-	-	2.3
Zinc	60.6	63	-	-	-	-	75

HQ and HI VALUES

COPC	RBC_{HI} (mg/kg)	MM-S-13	MM-S-14	MM-S-15	MM-S-16	MM-S-17	MM-S-18
Antimony	2.3E+02	-	4.4E-03	-	-	-	5.7E-03
Arsenic	3.5E+00	-	7.5E+00	-	-	-	8.6E+00
Barium	9.5E+04	-	-	-	-	-	-
Beryllium	2.7E+01	4.5E-03	-	-	6.4E-03	-	-
Cadmium	3.9E+01	8.9E-03	9.9E-03	-	-	-	8.6E-03
Cobalt	2.0E+02	-	-	-	-	-	3.7E-02
Copper	2.7E+04	-	-	-	-	-	7.9E-04
Lead	-	-	-	-	-	-	-
Mercury	7.7E+01	5.0E-02	3.0E-01	7.0E-03	9.7E-03	7.1E-03	2.3E-02
Molybdenum	3.3E+03	-	-	-	-	-	-
Nickel	4.3E+03	-	-	-	-	-	6.6E-03
Selenium	3.3E+03	-	-	-	-	-	-
Silver	2.0E+03	-	3.9E-03	-	-	-	1.2E-03
Zinc	2.0E+05	3.2E-04	-	-	-	-	3.8E-04
	HI =>	**6.4E-02**	**7.8E+00**	**7.0E-03**	**1.6E-02**	**7.1E-03**	**8.7E+00**

ILCR VALUES

COPC	RBC_{ILCR} (mg/kg)	MM-S-13	MM-S-14	MM-S-15	MM-S-16	MM-S-17	MM-S-18
Antimony	-	-	-	-	-	-	-
Arsenic	9.2E+00	-	3E-05	-	-	-	3E-05
Barium	-	-	-	-	-	-	-
Beryllium	1.4E+05	9E-12	-	-	1E-11	-	-
Cadmium	1.6E+05	2E-11	2E-11	-	-	-	2E-11
Cobalt	3.7E+04	-	-	-	-	-	2E-09
Copper	-	-	-	-	-	-	-
Lead	-	-	-	-	-	-	-
Mercury	-	-	-	-	-	-	-
Molybdenum	-	-	-	-	-	-	-
Nickel	1.3E+06	-	-	-	-	-	2E-10
Selenium	-	-	-	-	-	-	-
Silver	-	-	-	-	-	-	-
Zinc	-	-	-	-	-	-	-
	ILCR =>	**3E-11**	**3E-05**	**0E+00**	**1E-11**	**0E+00**	**3E-05**

Risk Calculations for Recreational User Receptor
~ SOIL SAMPLES (sample-specific risk values) ~

CONCENTRATIONS (mg/kg)

COPC	MM-S-19	MM-S-20	MM-S-21	MM-S-22	MM-S-23	MM-S-24
Antimony	1	0.47	*0.075*	*0.07*	*0.073*	5.8
Arsenic	11	9.6	6.4	4.6	6.4	30
Barium	290	97	87	74	84	720
Beryllium	*0.03*	0.031	*0.03*	0.036	*0.029*	0.029
Cadmium	0.28	0.11	0.086	0.14	0.2	1.3
Cobalt	8.6	4.3	3.7	4.2	3.2	4.1
Copper	18	11	6	11	11	42
Lead	51	170	8.3	17	9.6	93
Mercury	4	9.3	0.77	0.58	8.7	120
Molybdenum	0.53	0.58	0.52	0.78	0.55	1.9
Nickel	30	9.1	8.4	9.4	9.4	9.5
Selenium	0.17	0.25	*0.14*	*0.13*	0.16	2.2
Silver	3.1	2.7	0.13	0.19	0.89	15
Zinc	77	36	31	20	39	130

Italicized values are reporting limits for non-detect' results.

BACKGROUND COMPARISON

COPC	BTV (mg/kg)	MM-S-19	MM-S-20	MM-S-21	MM-S-22	MM-S-23	MM-S-24
Antimony	0.531	1	-	-	-	-	5.8
Arsenic	13.3	-	-	-	-	-	30
Barium	281	290	-	-	-	-	720
Beryllium	0.118	-	-	-	-	-	-
Cadmium	0.172	0.28	-	-	-	0.2	1.3
Cobalt	7.19	8.6	-	-	-	-	-
Copper	13.0	18	-	-	-	-	42
Lead	11.5	51	170	-	17	-	93
Mercury	0.418	4	9.3	0.77	0.58	8.7	120
Molybdenum	0.650	-	-	-	0.78	-	1.9
Nickel	25.5	30	-	-	-	-	-
Selenium	1.08	-	-	-	-	-	2.2
Silver	0.534	3.1	2.7	-	-	0.89	15
Zinc	60.6	77	-	-	-	-	130

HQ and HI VALUES

COPC	RBC_{HI} (mg/kg)	MM-S-19	MM-S-20	MM-S-21	MM-S-22	MM-S-23	MM-S-24
Antimony	2.3E+02	4.4E-03	-	-	-	-	2.5E-02
Arsenic	3.5E+00	-	-	-	-	-	8.6E+00
Barium	9.5E+04	3.0E-03	-	-	-	-	7.6E-03
Beryllium	2.7E+01	-	-	-	-	-	-
Cadmium	3.9E+01	7.1E-03	-	-	-	5.1E-03	3.3E-02
Cobalt	2.0E+02	4.3E-02	-	-	-	-	-
Copper	2.7E+04	6.8E-04	-	-	-	-	1.6E-03
Lead	-	-	-	-	-	-	-
Mercury	7.7E+01	5.2E-02	1.2E-01	9.9E-03	7.5E-03	1.1E-01	1.6E+00
Molybdenum	3.3E+03	-	-	-	2.3E-04	-	5.7E-04
Nickel	4.3E+03	7.0E-03	-	-	-	-	-
Selenium	3.3E+03	-	-	-	-	-	6.6E-04
Silver	2.0E+03	1.6E-03	1.4E-03	-	-	4.5E-04	7.6E-03
Zinc	2.0E+05	3.9E-04	-	-	-	-	6.5E-04
	HI =>	**1.2E-01**	**1.2E-01**	**9.9E-03**	**7.7E-03**	**1.2E-01**	**1.0E+01**

ILCR VALUES

COPC	RBC_{ILCR} (mg/kg)	MM-S-19	MM-S-20	MM-S-21	MM-S-22	MM-S-23	MM-S-24
Antimony	-	-	-	-	-	-	-
Arsenic	9.2E+00	-	-	-	-	-	3E-05
Barium	-	-	-	-	-	-	-
Beryllium	1.4E+05	-	-	-	-	-	-
Cadmium	1.6E+05	2E-11	-	-	-	1E-11	8E-11
Cobalt	3.7E+04	2E-09	-	-	-	-	-
Copper	-	-	-	-	-	-	-
Lead	-	-	-	-	-	-	-
Mercury	-	-	-	-	-	-	-
Molybdenum	-	-	-	-	-	-	-
Nickel	1.3E+06	2E-10	-	-	-	-	-
Selenium	-	-	-	-	-	-	-
Silver	-	-	-	-	-	-	-
Zinc	-	-	-	-	-	-	-
	ILCR =>	**3E-09**	**0E+00**	**0E+00**	**0E+00**	**1E-11**	**3E-05**

Risk Calculations for Recreational User Receptor
~ SOIL SAMPLES (sample-specific risk values) ~

CONCENTRATIONS (mg/kg)

COPC	MM-S-25	MM-S-26	MM-S-27	MM-S-28	MM-S-29	MM-S-30
Antimony	*0.066*	*0.07*	*0.057*	5.6	0.31	5.4
Arsenic	4.4	4.5	5.9	25	4.6	39
Barium	76	97	87	450	99	520
Beryllium	*0.026*	*0.028*	*0.022*	0.039	0.18	*0.027*
Cadmium	0.12	0.16	0.13	0.69	0.17	1.1
Cobalt	4.8	4.4	6.1	5.2	4.8	3.9
Copper	6.2	9.2	9.4	36	8.3	45
Lead	10	17	7.1	97	11	110
Mercury	3.2	14	0.61	42	2.1	120
Molybdenum	0.37	0.49	0.33	2	0.52	1.8
Nickel	15	15	21	13	14	12
Selenium	0.14	0.17	*0.1*	1.5	*0.14*	2.4
Silver	0.21	0.053	0.12	12	0.36	19
Zinc	34	34	37	74	33	110

Italicized values are reporting limits for non-detect' results.

BACKGROUND COMPARISON

COPC	BTV (mg/kg)	MM-S-25	MM-S-26	MM-S-27	MM-S-28	MM-S-29	MM-S-30
Antimony	0.531	-	-	-	5.6	-	5.4
Arsenic	13.3	-	-	-	25	-	39
Barium	281	-	-	-	450	-	520
Beryllium	0.118	-	-	-	-	0.18	-
Cadmium	0.172	-	-	-	0.69	-	1.1
Cobalt	7.19	-	-	-	-	-	-
Copper	13.0	-	-	-	36	-	45
Lead	11.5	-	17	-	97	-	110
Mercury	0.418	3.2	14	0.61	42	2.1	120
Molybdenum	0.650	-	-	-	2	-	1.8
Nickel	25.5	-	-	-	-	-	-
Selenium	1.08	-	-	-	1.5	-	2.4
Silver	0.534	-	-	-	12	-	19
Zinc	60.6	-	-	-	74	-	110

HQ and HI VALUES

COPC	RBC_{HI} (mg/kg)	MM-S-25	MM-S-26	MM-S-27	MM-S-28	MM-S-29	MM-S-30
Antimony	2.3E+02	-	-	-	2.4E-02	-	2.4E-02
Arsenic	3.5E+00	-	-	-	7.2E+00	-	1.1E+01
Barium	9.5E+04	-	-	-	4.7E-03	-	5.5E-03
Beryllium	2.7E+01	-	-	-	-	6.8E-03	-
Cadmium	3.9E+01	-	-	-	1.8E-02	-	2.8E-02
Cobalt	2.0E+02	-	-	-	-	-	-
Copper	2.7E+04	-	-	-	1.4E-03	-	1.7E-03
Lead	-	-	-	-	-	-	-
Mercury	7.7E+01	4.1E-02	1.8E-01	7.9E-03	5.4E-01	2.7E-02	1.6E+00
Molybdenum	3.3E+03	-	-	-	6.0E-04	-	5.4E-04
Nickel	4.3E+03	-	-	-	-	-	-
Selenium	3.3E+03	-	-	-	4.5E-04	-	7.2E-04
Silver	2.0E+03	-	-	-	6.0E-03	-	9.6E-03
Zinc	2.0E+05	-	-	-	3.7E-04	-	5.5E-04
	HI =>	**4.1E-02**	**1.8E-01**	**7.9E-03**	**7.8E+00**	**3.4E-02**	**1.3E+01**

ILCR VALUES

COPC	RBC_{ILCR} (mg/kg)	MM-S-25	MM-S-26	MM-S-27	MM-S-28	MM-S-29	MM-S-30
Antimony	-	-	-	-	-	-	-
Arsenic	9.2E+00	-	-	-	3E-05	-	4E-05
Barium	-	-	-	-	-	-	-
Beryllium	1.4E+05	-	-	-	-	1E-11	-
Cadmium	1.6E+05	-	-	-	4E-11	-	7E-11
Cobalt	3.7E+04	-	-	-	-	-	-
Copper	-	-	-	-	-	-	-
Lead	-	-	-	-	-	-	-
Mercury	-	-	-	-	-	-	-
Molybdenum	-	-	-	-	-	-	-
Nickel	1.3E+06	-	-	-	-	-	-
Selenium	-	-	-	-	-	-	-
Silver	-	-	-	-	-	-	-
Zinc	-	-	-	-	-	-	-
	ILCR =>	**0E+00**	**0E+00**	**0E+00**	**3E-05**	**1E-11**	**4E-05**

Risk Calculations for Recreational User Receptor
~ SOIL SAMPLES (sample-specific risk values) ~

CONCENTRATIONS (mg/kg)

COPC	MM-S-31	MM-S-32	MM-S-33	MM-S-34	MM-S-35	MM-S-36	MM-S-37
Antimony	*0.071*	4.2	1.3	0.67	6.6	0.57	0.98
Arsenic	3.1	10	8.4	6.8	24	4.3	6.4
Barium	73	390	200	94	630	85	91
Beryllium	*0.028*	*0.022*	0.28	0.33	0.19	0.15	0.13
Cadmium	0.085	0.39	0.27	0.12	0.78	0.15	0.15
Cobalt	4.6	3.9	5	6.9	3.9	3.7	4.1
Copper	5.1	21	15	8.8	33	8.5	17
Lead	4.1	50	49	8.7	98	12	240
Mercury	0.88	140	14	4	72	0.62	2
Molybdenum	0.39	0.73	1.8	0.79	2.1	0.45	0.42
Nickel	13	14	12	19	13	10	7.8
Selenium	*0.13*	0.59	0.21	*0.098*	1.3	*0.12*	*0.15*
Silver	*0.21*	6.3	3	0.68	9.8	0.3	1.5
Zinc	37	64	63	40	79	40	63

Italicized values are reporting limits for non-detect' results.

BACKGROUND COMPARISON

COPC	BTV (mg/kg)	MM-S-31	MM-S-32	MM-S-33	MM-S-34	MM-S-35	MM-S-36	MM-S-37
Antimony	0.531	-	4.2	1.3	0.67	6.6	0.57	0.98
Arsenic	13.3	-	-	-	-	24	-	-
Barium	281	-	390	-	-	630	-	-
Beryllium	0.118	-	-	0.28	0.33	0.19	0.15	0.13
Cadmium	0.172	-	0.39	0.27	-	0.78	-	-
Cobalt	7.19	-	-	-	-	-	-	-
Copper	13.0	-	21	15	-	33	-	17
Lead	11.5	-	50	49	-	98	12	240
Mercury	0.418	0.88	140	14	4	72	0.62	2
Molybdenum	0.650	-	0.73	1.8	0.79	2.1	-	-
Nickel	25.5	-	-	-	-	-	-	-
Selenium	1.08	-	-	-	-	1.3	-	-
Silver	0.534	-	6.3	3	0.68	9.8	-	1.5
Zinc	60.6	-	64	63	-	79	-	63

HQ and HI VALUES

COPC	RBC_{HI} (mg/kg)	MM-S-31	MM-S-32	MM-S-33	MM-S-34	MM-S-35	MM-S-36	MM-S-37
Antimony	2.3E+02	-	1.8E-02	5.7E-03	2.9E-03	2.9E-02	2.5E-03	4.3E-03
Arsenic	3.5E+00	-	-	-	-	6.9E+00	-	-
Barium	9.5E+04	-	4.1E-03	-	-	6.6E-03	-	-
Beryllium	2.7E+01	-	-	1.1E-02	1.2E-02	7.1E-03	5.6E-03	4.9E-03
Cadmium	3.9E+01	-	9.9E-03	6.9E-03	-	2.0E-02	-	-
Cobalt	2.0E+02	-	-	-	-	-	-	-
Copper	2.7E+04	-	7.9E-04	5.6E-04	-	1.2E-03	-	6.4E-04
Lead	-	-	-	-	-	-	-	-
Mercury	7.7E+01	1.1E-02	1.8E+00	1.8E-01	5.2E-02	9.3E-01	8.0E-03	2.6E-02
Molybdenum	3.3E+03	-	2.2E-04	5.4E-04	2.4E-04	6.3E-04	-	-
Nickel	4.3E+03	-	-	-	-	-	-	-
Selenium	3.3E+03	-	-	-	-	3.9E-04	-	-
Silver	2.0E+03	-	3.2E-03	1.5E-03	3.4E-04	4.9E-03	-	7.6E-04
Zinc	2.0E+05	-	3.2E-04	3.2E-04	-	4.0E-04	-	3.2E-04
	HI =>	**1.1E-02**	**1.8E+00**	**2.1E-01**	**6.8E-02**	**7.9E+00**	**1.6E-02**	**3.7E-02**

ILCR VALUES

COPC	RBC_{ILCR} (mg/kg)	MM-S-31	MM-S-32	MM-S-33	MM-S-34	MM-S-35	MM-S-36	MM-S-37
Antimony	-	-	-	-	-	-	-	-
Arsenic	9.2E+00	-	-	-	-	3E-05	-	-
Barium	-	-	-	-	-	-	-	-
Beryllium	1.4E+05	-	-	2E-11	2E-11	1E-11	1E-11	9E-12
Cadmium	1.6E+05	-	2E-11	2E-11	-	5E-11	-	-
Cobalt	3.7E+04	-	-	-	-	-	-	-
Copper	-	-	-	-	-	-	-	-
Lead	-	-	-	-	-	-	-	-
Mercury	-	-	-	-	-	-	-	-
Molybdenum	-	-	-	-	-	-	-	-
Nickel	1.3E+06	-	-	-	-	-	-	-
Selenium	-	-	-	-	-	-	-	-
Silver	-	-	-	-	-	-	-	-
Zinc	-	-	-	-	-	-	-	-
	ILCR =>	**0E+00**	**2E-11**	**4E-11**	**2E-11**	**3E-05**	**1E-11**	**9E-12**

Risk Calculations for Recreational Cabin Occupant Receptor
~ SOIL SAMPLES (sample-specific risk values) ~

CONCENTRATIONS (mg/kg)

COPC	MM-S-01	MM-S-02	MM-S-03	MM-S-04	MM-S-05	MM-S-06
Antimony	230	4.2	25	19	0.71	23
Arsenic	19	12	84	36	9.7	28
Barium	210	230	1,000	950	150	750
Beryllium	*0.12*	0.27	0.17	0.21	0.24	0.17
Cadmium	0.62	0.15	2.4	1.4	0.18	0.97
Cobalt	17	5.4	3.7	4.9	5.6	4.9
Copper	190	21	130	100	12	58
Lead	2,500	150	430	380	18	600
Mercury	52	210	260	2,200	2.4	51
Molybdenum	0.83	0.37	5.3	2.6	0.34	0.87
Nickel	34	16	11	17	19	15
Selenium	0.8	0.17	6.6	2.7	*0.11*	1.2
Silver	5.4	3.8	85	64	2.6	9.3
Zinc	570	42	150	110	48	160

Italicized values are reporting limits for non-detect' results.

BACKGROUND COMPARISON

COPC	BTV (mg/kg)	MM-S-01	MM-S-02	MM-S-03	MM-S-04	MM-S-05	MM-S-06
Antimony	0.531	230	4.2	25	19	0.71	23
Arsenic	13.3	19	-	84	36	-	28
Barium	281	-	-	1000	950	-	750
Beryllium	0.118	0.12	0.27	0.17	0.21	0.24	0.17
Cadmium	0.172	0.62	-	2.4	1.4	0.18	0.97
Cobalt	7.19	17	-	-	-	-	-
Copper	13.0	190	21	130	100	-	58
Lead	11.5	2500	150	430	380	18	600
Mercury	0.418	52	210	260	2200	2.4	51
Molybdenum	0.650	0.83	-	5.3	2.6	-	0.87
Nickel	25.5	34	-	-	-	-	-
Selenium	1.08	-	-	6.6	2.7	-	1.2
Silver	0.534	5.4	3.8	85	64	2.6	9.3
Zinc	60.6	570	-	150	110	-	160

HQ and HI VALUES

COPC	RBC_{HI} (mg/kg)	MM-S-01	MM-S-02	MM-S-03	MM-S-04	MM-S-05	MM-S-06
Antimony	9.2E+01	2.5E+00	4.6E-02	2.7E-01	2.1E-01	7.7E-03	2.5E-01
Arsenic	1.4E+00	1.4E+01	-	6.0E+01	2.6E+01	-	2.0E+01
Barium	3.8E+04	-	-	2.6E-02	2.5E-02	-	2.0E-02
Beryllium	1.1E+01	1.1E-02	2.5E-02	1.6E-02	2.0E-02	2.3E-02	1.6E-02
Cadmium	1.6E+01	3.9E-02	-	1.5E-01	8.9E-02	1.1E-02	6.2E-02
Cobalt	8.0E+01	2.1E-01	-	-	-	-	-
Copper	1.1E+04	1.8E-02	2.0E-03	1.2E-02	9.4E-03	-	5.5E-03
Lead	-	-	-	-	-	-	-
Mercury	3.1E+01	1.7E+00	6.8E+00	8.4E+00	7.1E+01	7.8E-02	1.6E+00
Molybdenum	1.3E+03	6.2E-04	-	4.0E-03	2.0E-03	-	6.5E-04
Nickel	1.7E+03	2.0E-02	-	-	-	-	-
Selenium	1.3E+03	-	-	5.0E-03	2.0E-03	-	9.0E-04
Silver	7.9E+02	6.8E-03	4.8E-03	1.1E-01	8.1E-02	3.3E-03	1.2E-02
Zinc	8.0E+04	7.1E-03	-	1.9E-03	1.4E-03	-	2.0E-03
	HI =>	**1.8E+01**	**6.9E+00**	**6.9E+01**	**9.7E+01**	**1.2E-01**	**2.2E+01**

ILCR VALUES

COPC	RBC_{ILCR} (mg/kg)	MM-S-01	MM-S-02	MM-S-03	MM-S-04	MM-S-05	MM-S-06
Antimony	-	-	-	-	-	-	-
Arsenic	2.9E+00	6E-05	-	3E-04	1E-04	-	1E-04
Barium	-	-	-	-	-	-	-
Beryllium	3.1E+04	4E-11	9E-11	5E-11	7E-11	8E-11	5E-11
Cadmium	4.2E+04	1E-10	-	6E-10	3E-10	4E-11	2E-10
Cobalt	8.4E+03	2E-08	-	-	-	-	-
Copper	-	-	-	-	-	-	-
Lead	-	-	-	-	-	-	-
Mercury	-	-	-	-	-	-	-
Molybdenum	-	-	-	-	-	-	-
Nickel	2.9E+05	1E-09	-	-	-	-	-
Selenium	-	-	-	-	-	-	-
Silver	-	-	-	-	-	-	-
Zinc	-	-	-	-	-	-	-
	ILCR =>	**6E-05**	**9E-11**	**3E-04**	**1E-04**	**1E-10**	**1E-04**

Risk Calculations for Recreational Cabin Occupant Receptor
~ SOIL SAMPLES (sample-specific risk values) ~

CONCENTRATIONS (mg/kg)

COPC	MM-S-07	MM-S-08	MM-S-09	MM-S-10	MM-S-11	MM-S-12
Antimony	1.0	4.0	35	5.1	0.28	0.55
Arsenic	11	15	210	12	4.4	9.1
Barium	220	240	1,300	250	160	140
Beryllium	0.2	0.12	0.12	0.2	0.16	0.19
Cadmium	0.31	0.99	1.5	1.0	0.25	0.48
Cobalt	6.0	5.7	1.1	6.1	4.2	4.5
Copper	95	69	240	59	8.3	17
Lead	39	220	750	180	9.9	17
Mercury	58	31	27	150	0.98	18
Molybdenum	0.46	1.5	21	0.55	0.45	0.69
Nickel	21	16	2.3	21	9	13
Selenium	0.34	0.61	14	0.57	0.14	0.38
Silver	2.2	8.0	140	6.8	0.58	2.7
Zinc	55	120	370	100	43	63

Italicized values are reporting limits for non-detect' results.

BACKGROUND COMPARISON

COPC	BTV (mg/kg)	MM-S-07	MM-S-08	MM-S-09	MM-S-10	MM-S-11	MM-S-12
Antimony	0.531	1	4	35	5.1	-	0.55
Arsenic	13.3	-	15	210	-	-	-
Barium	281	-	-	1300	-	-	-
Beryllium	0.118	0.2	0.12	0.12	0.2	0.16	0.19
Cadmium	0.172	0.31	0.99	1.5	1	0.25	0.48
Cobalt	7.19	-	-	-	-	-	-
Copper	13.0	95	69	240	59	-	17
Lead	11.5	39	220	750	180	-	17
Mercury	0.418	58	31	27	150	0.98	18
Molybdenum	0.650	-	1.5	21	-	-	0.69
Nickel	25.5	-	-	-	-	-	-
Selenium	1.08	-	-	14	-	-	-
Silver	0.534	2.2	8	140	6.8	0.58	2.7
Zinc	60.6	-	120	370	100	-	63

HQ and HI VALUES

COPC	RBC_{HI} (mg/kg)	MM-S-07	MM-S-08	MM-S-09	MM-S-10	MM-S-11	MM-S-12
Antimony	9.2E+01	1.1E-02	4.4E-02	3.8E-01	5.6E-02	-	6.0E-03
Arsenic	1.4E+00	-	1.1E+01	1.5E+02	-	-	-
Barium	3.8E+04	-	-	3.4E-02	-	-	-
Beryllium	1.1E+01	1.9E-02	1.1E-02	1.1E-02	1.9E-02	1.5E-02	1.8E-02
Cadmium	1.6E+01	2.0E-02	6.3E-02	9.5E-02	6.4E-02	1.6E-02	3.1E-02
Cobalt	8.0E+01	-	-	-	-	-	-
Copper	1.1E+04	8.9E-03	6.5E-03	2.3E-02	5.5E-03	-	1.6E-03
Lead	-	-	-	-	-	-	-
Mercury	3.1E+01	1.9E+00	1.0E+00	8.7E-01	4.8E+00	3.2E-02	5.8E-01
Molybdenum	1.3E+03	-	1.1E-03	1.6E-02	-	-	5.2E-04
Nickel	1.7E+03	-	-	-	-	-	-
Selenium	1.3E+03	-	-	1.1E-02	-	-	-
Silver	7.9E+02	2.8E-03	1.0E-02	1.8E-01	8.6E-03	7.3E-04	3.4E-03
Zinc	8.0E+04	-	1.5E-03	4.6E-03	1.3E-03	-	7.9E-04
	HI =>	**1.9E+00**	**1.2E+01**	**1.5E+02**	**5.0E+00**	**6.3E-02**	**6.4E-01**

ILCR VALUES

COPC	RBC_{ILCR} (mg/kg)	MM-S-07	MM-S-08	MM-S-09	MM-S-10	MM-S-11	MM-S-12
Antimony	-	-	-	-	-	-	-
Arsenic	2.9E+00	-	5E-05	7E-04	-	-	-
Barium	-	-	-	-	-	-	-
Beryllium	3.1E+04	6E-11	4E-11	4E-11	6E-11	5E-11	6E-11
Cadmium	4.2E+04	7E-11	2E-10	4E-10	2E-10	6E-11	1E-10
Cobalt	8.4E+03	-	-	-	-	-	-
Copper	-	-	-	-	-	-	-
Lead	-	-	-	-	-	-	-
Mercury	-	-	-	-	-	-	-
Molybdenum	-	-	-	-	-	-	-
Nickel	2.9E+05	-	-	-	-	-	-
Selenium	-	-	-	-	-	-	-
Silver	-	-	-	-	-	-	-
Zinc	-	-	-	-	-	-	-
	ILCR =>	**1E-10**	**5E-05**	**7E-04**	**3E-10**	**1E-10**	**2E-10**

Risk Calculations for Recreational Cabin Occupant Receptor
~ SOIL SAMPLES (sample-specific risk values) ~

CONCENTRATIONS (mg/kg)

COPC	MM-S-13	MM-S-14	MM-S-15	MM-S-16	MM-S-17	MM-S-18
Antimony	0.19	1.0	*0.072*	*0.059*	*0.064*	1.3
Arsenic	4.0	26	3.3	6.1	7.4	30
Barium	100	120	49	88	110	260
Beryllium	0.12	*0.069*	0.11	0.17	*0.025*	*0.03*
Cadmium	0.35	0.39	0.071	0.11	0.083	0.34
Cobalt	4.5	3.8	4.3	4.3	5.8	7.4
Copper	9.1	12	5.2	6.7	8.5	21
Lead	44	32	2.7	8.8	5.6	91
Mercury	3.9	23	0.54	0.75	0.55	1.8
Molybdenum	0.55	0.42	0.3	0.45	0.28	0.47
Nickel	8.7	8.5	16	12	16	28
Selenium	0.17	0.44	*0.13*	*0.11*	*0.12*	0.28
Silver	0.43	7.7	0.064	0.31	0.098	2.3
Zinc	63	46	24	29	29	75

Italicized values are reporting limits for non-detect' results.

BACKGROUND COMPARISON

COPC	BTV (mg/kg)	MM-S-13	MM-S-14	MM-S-15	MM-S-16	MM-S-17	MM-S-18
Antimony	0.531	-	1	-	-	-	1.3
Arsenic	13.3	-	26	-	-	-	30
Barium	281	-	-	-	-	-	-
Beryllium	0.118	0.12	-	-	0.17	-	-
Cadmium	0.172	0.35	0.39	-	-	-	0.34
Cobalt	7.19	-	-	-	-	-	7.4
Copper	13.0	-	-	-	-	-	21
Lead	11.5	44	32	-	-	-	91
Mercury	0.418	3.9	23	0.54	0.75	0.55	1.8
Molybdenum	0.650	-	-	-	-	-	-
Nickel	25.5	-	-	-	-	-	28
Selenium	1.08	-	-	-	-	-	-
Silver	0.534	-	7.7	-	-	-	2.3
Zinc	60.6	63	-	-	-	-	75

HQ and HI VALUES

COPC	RBC_{HI} (mg/kg)	MM-S-13	MM-S-14	MM-S-15	MM-S-16	MM-S-17	MM-S-18
Antimony	9.2E+01	-	1.1E-02	-	-	-	1.4E-02
Arsenic	1.4E+00	-	1.9E+01	-	-	-	2.2E+01
Barium	3.8E+04	-	-	-	-	-	-
Beryllium	1.1E+01	1.1E-02	-	-	1.6E-02	-	-
Cadmium	1.6E+01	2.2E-02	2.5E-02	-	-	-	2.2E-02
Cobalt	8.0E+01	-	-	-	-	-	9.3E-02
Copper	1.1E+04	-	-	-	-	-	2.0E-03
Lead	-	-	-	-	-	-	-
Mercury	3.1E+01	1.3E-01	7.4E-01	1.7E-02	2.4E-02	1.8E-02	5.8E-02
Molybdenum	1.3E+03	-	-	-	-	-	-
Nickel	1.7E+03	-	-	-	-	-	1.6E-02
Selenium	1.3E+03	-	-	-	-	-	-
Silver	7.9E+02	-	9.7E-03	-	-	-	2.9E-03
Zinc	8.0E+04	7.9E-04	-	-	-	-	9.4E-04
	HI =>	**1.6E-01**	**1.9E+01**	**1.7E-02**	**4.0E-02**	**1.8E-02**	**2.2E+01**

ILCR VALUES

COPC	RBC_{ILCR} (mg/kg)	MM-S-13	MM-S-14	MM-S-15	MM-S-16	MM-S-17	MM-S-18
Antimony	-	-	-	-	-	-	-
Arsenic	2.9E+00	-	9E-05	-	-	-	1E-04
Barium	-	-	-	-	-	-	-
Beryllium	3.1E+04	4E-11	-	-	5E-11	-	-
Cadmium	4.2E+04	8E-11	9E-11	-	-	-	8E-11
Cobalt	8.4E+03	-	-	-	-	-	9E-09
Copper	-	-	-	-	-	-	-
Lead	-	-	-	-	-	-	-
Mercury	-	-	-	-	-	-	-
Molybdenum	-	-	-	-	-	-	-
Nickel	2.9E+05	-	-	-	-	-	1E-09
Selenium	-	-	-	-	-	-	-
Silver	-	-	-	-	-	-	-
Zinc	-	-	-	-	-	-	-
	ILCR =>	**1E-10**	**9E-05**	**0E+00**	**5E-11**	**0E+00**	**1E-04**

Risk Calculations for Recreational Cabin Occupant Receptor
~ SOIL SAMPLES (sample-specific risk values) ~

CONCENTRATIONS (mg/kg)

COPC	MM-S-19	MM-S-20	MM-S-21	MM-S-22	MM-S-23	MM-S-24
Antimony	1	0.47	*0.075*	*0.07*	*0.073*	5.8
Arsenic	11	9.6	6.4	4.6	6.4	30
Barium	290	97	87	74	84	720
Beryllium	*0.03*	0.031	*0.03*	0.036	*0.029*	0.029
Cadmium	0.28	0.11	0.086	0.14	0.2	1.3
Cobalt	8.6	4.3	3.7	4.2	3.2	4.1
Copper	18	11	6	11	11	42
Lead	51	170	8.3	17	9.6	93
Mercury	4	9.3	0.77	0.58	8.7	120
Molybdenum	0.53	0.58	0.52	0.78	0.55	1.9
Nickel	30	9.1	8.4	9.4	9.4	9.5
Selenium	0.17	0.25	*0.14*	*0.13*	0.16	2.2
Silver	3.1	2.7	0.13	0.19	0.89	15
Zinc	77	36	31	20	39	130

Italicized values are reporting limits for non-detect' results.

BACKGROUND COMPARISON

COPC	BTV (mg/kg)	MM-S-19	MM-S-20	MM-S-21	MM-S-22	MM-S-23	MM-S-24
Antimony	0.531	1	-	-	-	-	5.8
Arsenic	13.3	-	-	-	-	-	30
Barium	281	290	-	-	-	-	720
Beryllium	0.118	-	-	-	-	-	-
Cadmium	0.172	0.28	-	-	-	0.2	1.3
Cobalt	7.19	8.6	-	-	-	-	-
Copper	13.0	18	-	-	-	-	42
Lead	11.5	51	170	-	17	-	93
Mercury	0.418	4	9.3	0.77	0.58	8.7	120
Molybdenum	0.650	-	-	-	0.78	-	1.9
Nickel	25.5	30	-	-	-	-	-
Selenium	1.08	-	-	-	-	-	2.2
Silver	0.534	3.1	2.7	-	-	0.89	15
Zinc	60.6	77	-	-	-	-	130

HQ and HI VALUES

COPC	RBC_{HI} (mg/kg)	MM-S-19	MM-S-20	MM-S-21	MM-S-22	MM-S-23	MM-S-24
Antimony	9.2E+01	1.1E-02	-	-	-	-	6.3E-02
Arsenic	1.4E+00	-	-	-	-	-	2.2E+01
Barium	3.8E+04	7.6E-03	-	-	-	-	1.9E-02
Beryllium	1.1E+01	-	-	-	-	-	-
Cadmium	1.6E+01	1.8E-02	-	-	-	1.3E-02	8.3E-02
Cobalt	8.0E+01	1.1E-01	-	-	-	-	-
Copper	1.1E+04	1.7E-03	-	-	-	-	3.9E-03
Lead	-	-	-	-	-	-	-
Mercury	3.1E+01	1.3E-01	3.0E-01	2.5E-02	1.9E-02	2.8E-01	3.9E+00
Molybdenum	1.3E+03	-	-	-	5.9E-04	-	1.4E-03
Nickel	1.7E+03	1.8E-02	-	-	-	-	-
Selenium	1.3E+03	-	-	-	-	-	1.7E-03
Silver	7.9E+02	3.9E-03	3.4E-03	-	-	1.1E-03	1.9E-02
Zinc	8.0E+04	9.6E-04	-	-	-	-	1.6E-03
	HI =>	**3.0E-01**	**3.0E-01**	**2.5E-02**	**1.9E-02**	**2.9E-01**	**2.6E+01**

ILCR VALUES

COPC	RBC_{ILCR} (mg/kg)	MM-S-19	MM-S-20	MM-S-21	MM-S-22	MM-S-23	MM-S-24
Antimony	-	-	-	-	-	-	-
Arsenic	2.9E+00	-	-	-	-	-	1E-04
Barium	-	-	-	-	-	-	-
Beryllium	3.1E+04	-	-	-	-	-	-
Cadmium	4.2E+04	7E-11	-	-	-	5E-11	3E-10
Cobalt	8.4E+03	1E-08	-	-	-	-	-
Copper	-	-	-	-	-	-	-
Lead	-	-	-	-	-	-	-
Mercury	-	-	-	-	-	-	-
Molybdenum	-	-	-	-	-	-	-
Nickel	2.9E+05	1E-09	-	-	-	-	-
Selenium	-	-	-	-	-	-	-
Silver	-	-	-	-	-	-	-
Zinc	-	-	-	-	-	-	-
	ILCR =>	**1E-08**	**0E+00**	**0E+00**	**0E+00**	**5E-11**	**1E-04**

Risk Calculations for Recreational Cabin Occupant Receptor
~ SOIL SAMPLES (sample-specific risk values) ~

CONCENTRATIONS (mg/kg)

COPC	MM-S-25	MM-S-26	MM-S-27	MM-S-28	MM-S-29	MM-S-30
Antimony	*0.066*	*0.07*	*0.057*	5.6	0.31	5.4
Arsenic	4.4	4.5	5.9	25	4.6	39
Barium	76	97	87	450	99	520
Beryllium	*0.026*	*0.028*	*0.022*	0.039	0.18	*0.027*
Cadmium	0.12	0.16	0.13	0.69	0.17	1.1
Cobalt	4.8	4.4	6.1	5.2	4.8	3.9
Copper	6.2	9.2	9.4	36	8.3	45
Lead	10	17	7.1	97	11	110
Mercury	3.2	14	0.61	42	2.1	120
Molybdenum	0.37	0.49	0.33	2	0.52	1.8
Nickel	15	15	21	13	14	12
Selenium	0.14	0.17	*0.1*	1.5	*0.14*	2.4
Silver	0.21	0.053	0.12	12	0.36	19
Zinc	34	34	37	74	33	110

Italicized values are reporting limits for non-detect' results.

BACKGROUND COMPARISON

COPC	BTV (mg/kg)	MM-S-25	MM-S-26	MM-S-27	MM-S-28	MM-S-29	MM-S-30
Antimony	0.531	-	-	-	5.6	-	5.4
Arsenic	13.3	-	-	-	25	-	39
Barium	281	-	-	-	450	-	520
Beryllium	0.118	-	-	-	-	0.18	-
Cadmium	0.172	-	-	-	0.69	-	1.1
Cobalt	7.19	-	-	-	-	-	-
Copper	13.0	-	-	-	36	-	45
Lead	11.5	-	17	-	97	-	110
Mercury	0.418	3.2	14	0.61	42	2.1	120
Molybdenum	0.650	-	-	-	2	-	1.8
Nickel	25.5	-	-	-	-	-	-
Selenium	1.08	-	-	-	1.5	-	2.4
Silver	0.534	-	-	-	12	-	19
Zinc	60.6	-	-	-	74	-	110

HQ and HI VALUES

COPC	RBC_{HI} (mg/kg)	MM-S-25	MM-S-26	MM-S-27	MM-S-28	MM-S-29	MM-S-30
Antimony	9.2E+01	-	-	-	6.1E-02	-	5.9E-02
Arsenic	1.4E+00	-	-	-	1.8E+01	-	2.8E+01
Barium	3.8E+04	-	-	-	1.2E-02	-	1.4E-02
Beryllium	1.1E+01	-	-	-	-	1.7E-02	-
Cadmium	1.6E+01	-	-	-	4.4E-02	-	7.0E-02
Cobalt	8.0E+01	-	-	-	-	-	-
Copper	1.1E+04	-	-	-	3.4E-03	-	4.2E-03
Lead	-	-	-	-	-	-	-
Mercury	3.1E+01	1.0E-01	4.5E-01	2.0E-02	1.4E+00	6.8E-02	3.9E+00
Molybdenum	1.3E+03	-	-	-	1.5E-03	-	1.4E-03
Nickel	1.7E+03	-	-	-	-	-	-
Selenium	1.3E+03	-	-	-	1.1E-03	-	1.8E-03
Silver	7.9E+02	-	-	-	1.5E-02	-	2.4E-02
Zinc	8.0E+04	-	-	-	9.3E-04	-	1.4E-03
	HI =>	**1.0E-01**	**4.5E-01**	**2.0E-02**	**1.9E+01**	**8.5E-02**	**3.2E+01**

ILCR VALUES

COPC	RBC_{ILCR} (mg/kg)	MM-S-25	MM-S-26	MM-S-27	MM-S-28	MM-S-29	MM-S-30
Antimony	-	-	-	-	-	-	-
Arsenic	2.9E+00	-	-	-	8E-05	-	1E-04
Barium	-	-	-	-	-	-	-
Beryllium	3.1E+04	-	-	-	-	6E-11	-
Cadmium	4.2E+04	-	-	-	2E-10	-	3E-10
Cobalt	8.4E+03	-	-	-	-	-	-
Copper	-	-	-	-	-	-	-
Lead	-	-	-	-	-	-	-
Mercury	-	-	-	-	-	-	-
Molybdenum	-	-	-	-	-	-	-
Nickel	2.9E+05	-	-	-	-	-	-
Selenium	-	-	-	-	-	-	-
Silver	-	-	-	-	-	-	-
Zinc	-	-	-	-	-	-	-
	ILCR =>	**0E+00**	**0E+00**	**0E+00**	**8E-05**	**6E-11**	**1E-04**

Risk Calculations for Recreational Cabin Occupant Receptor
~ SOIL SAMPLES (sample-specific risk values) ~

CONCENTRATIONS (mg/kg)

COPC	MM-S-31	MM-S-32	MM-S-33	MM-S-34	MM-S-35	MM-S-36	MM-S-37
Antimony	*0.071*	4.2	1.3	0.67	6.6	0.57	0.98
Arsenic	3.1	10	8.4	6.8	24	4.3	6.4
Barium	73	390	200	94	630	85	91
Beryllium	*0.028*	*0.022*	0.28	0.33	0.19	0.15	0.13
Cadmium	0.085	0.39	0.27	0.12	0.78	0.15	0.15
Cobalt	4.6	3.9	5	6.9	3.9	3.7	4.1
Copper	5.1	21	15	8.8	33	8.5	17
Lead	4.1	50	49	8.7	98	12	240
Mercury	0.88	140	14	4	72	0.62	2
Molybdenum	0.39	0.73	1.8	0.79	2.1	0.45	0.42
Nickel	13	14	12	19	13	10	7.8
Selenium	*0.13*	0.59	0.21	*0.098*	1.3	*0.12*	*0.15*
Silver	*0.21*	6.3	3	0.68	9.8	0.3	1.5
Zinc	37	64	63	40	79	40	63

Italicized values are reporting limits for non-detect' results.

BACKGROUND COMPARISON

COPC	BTV (mg/kg)	MM-S-31	MM-S-32	MM-S-33	MM-S-34	MM-S-35	MM-S-36	MM-S-37
Antimony	0.531	-	4.2	1.3	0.67	6.6	0.57	0.98
Arsenic	13.3	-	-	-	-	24	-	-
Barium	281	-	390	-	-	630	-	-
Beryllium	0.118	-	-	0.28	0.33	0.19	0.15	0.13
Cadmium	0.172	-	0.39	0.27	-	0.78	-	-
Cobalt	7.19	-	-	-	-	-	-	-
Copper	13.0	-	21	15	-	33	-	17
Lead	11.5	-	50	49	-	98	12	240
Mercury	0.418	0.88	140	14	4	72	0.62	2
Molybdenum	0.650	-	0.73	1.8	0.79	2.1	-	-
Nickel	25.5	-	-	-	-	-	-	-
Selenium	1.08	-	-	-	-	1.3	-	-
Silver	0.534	-	6.3	3	0.68	9.8	-	1.5
Zinc	60.6	-	64	63	-	79	-	63

HQ and HI VALUES

COPC	RBC_{HI} (mg/kg)	MM-S-31	MM-S-32	MM-S-33	MM-S-34	MM-S-35	MM-S-36	MM-S-37
Antimony	9.2E+01	-	4.6E-02	1.4E-02	7.3E-03	7.2E-02	6.2E-03	1.1E-02
Arsenic	1.4E+00	-	-	-	-	1.7E+01	-	-
Barium	3.8E+04	-	1.0E-02	-	-	1.7E-02	-	-
Beryllium	1.1E+01	-	-	2.6E-02	3.1E-02	1.8E-02	1.4E-02	1.2E-02
Cadmium	1.6E+01	-	2.5E-02	1.7E-02	-	5.0E-02	-	-
Cobalt	8.0E+01	-	-	-	-	-	-	-
Copper	1.1E+04	-	2.0E-03	1.4E-03	-	3.1E-03	-	1.6E-03
Lead	-	-	-	-	-	-	-	-
Mercury	3.1E+01	2.8E-02	4.5E+00	4.5E-01	1.3E-01	2.3E+00	2.0E-02	6.5E-02
Molybdenum	1.3E+03	-	5.5E-04	1.4E-03	5.9E-04	1.6E-03	-	-
Nickel	1.7E+03	-	-	-	-	-	-	-
Selenium	1.3E+03	-	-	-	-	9.8E-04	-	-
Silver	7.9E+02	-	7.9E-03	3.8E-03	8.6E-04	1.2E-02	-	1.9E-03
Zinc	8.0E+04	-	8.0E-04	7.9E-04	-	9.9E-04	-	7.9E-04
	HI =>	**2.8E-02**	**4.6E+00**	**5.2E-01**	**1.7E-01**	**2.0E+01**	**4.0E-02**	**9.2E-02**

ILCR VALUES

COPC	RBC_{ILCR} (mg/kg)	MM-S-31	MM-S-32	MM-S-33	MM-S-34	MM-S-35	MM-S-36	MM-S-37
Antimony	-	-	-	-	-	-	-	-
Arsenic	2.9E+00	-	-	-	-	8E-05	-	-
Barium	-	-	-	-	-	-	-	-
Beryllium	3.1E+04	-	-	9E-11	1E-10	6E-11	5E-11	4E-11
Cadmium	4.2E+04	-	9E-11	6E-11	-	2E-10	-	-
Cobalt	8.4E+03	-	-	-	-	-	-	-
Copper	-	-	-	-	-	-	-	-
Lead	-	-	-	-	-	-	-	-
Mercury	-	-	-	-	-	-	-	-
Molybdenum	-	-	-	-	-	-	-	-
Nickel	2.9E+05	-	-	-	-	-	-	-
Selenium	-	-	-	-	-	-	-	-
Silver	-	-	-	-	-	-	-	-
Zinc	-	-	-	-	-	-	-	-
	ILCR =>	**0E+00**	**9E-11**	**2E-10**	**1E-10**	**8E-05**	**5E-11**	**4E-11**

Risk Calculations for Construction Worker Receptor
~ SOIL SAMPLES (sample-specific risk values) ~

CONCENTRATIONS (mg/kg)

COPC	MM-S-01	MM-S-02	MM-S-03	MM-S-04	MM-S-05	MM-S-06
Antimony	230	4.2	25	19	0.71	23
Arsenic	19	12	84	36	9.7	28
Barium	210	230	1,000	950	150	750
Beryllium	*0.12*	0.27	0.17	0.21	0.24	0.17
Cadmium	0.62	0.15	2.4	1.4	0.18	0.97
Cobalt	17	5.4	3.7	4.9	5.6	4.9
Copper	190	21	130	100	12	58
Lead	2,500	150	430	380	18	600
Mercury	52	210	260	2,200	2.4	51
Molybdenum	0.83	0.37	5.3	2.6	0.34	0.87
Nickel	34	16	11	17	19	15
Selenium	0.8	0.17	6.6	2.7	*0.11*	1.2
Silver	5.4	3.8	85	64	2.6	9.3
Zinc	570	42	150	110	48	160

Italicized values are reporting limits for non-detect' results.

BACKGROUND COMPARISON

COPC	BTV (mg/kg)	MM-S-01	MM-S-02	MM-S-03	MM-S-04	MM-S-05	MM-S-06
Antimony	0.531	230	4.2	25	19	0.71	23
Arsenic	13.3	19	-	84	36	-	28
Barium	281	-	-	1000	950	-	750
Beryllium	0.118	0.12	0.27	0.17	0.21	0.24	0.17
Cadmium	0.172	0.62	-	2.4	1.4	0.18	0.97
Cobalt	7.19	17	-	-	-	-	-
Copper	13.0	190	21	130	100	-	58
Lead	11.5	2500	150	430	380	18	600
Mercury	0.418	52	210	260	2200	2.4	51
Molybdenum	0.650	0.83	-	5.3	2.6	-	0.87
Nickel	25.5	34	-	-	-	-	-
Selenium	1.08	-	-	6.6	2.7	-	1.2
Silver	0.534	5.4	3.8	85	64	2.6	9.3
Zinc	60.6	570	-	150	110	-	160

HQ and HI VALUES

COPC	RBC_{HI} (mg/kg)	MM-S-01	MM-S-02	MM-S-03	MM-S-04	MM-S-05	MM-S-06
Antimony	7.2E+01	3.2E+00	5.9E-02	3.5E-01	2.7E-01	9.9E-03	3.2E-01
Arsenic	1.2E+00	1.6E+01	-	7.0E+01	3.0E+01	-	2.3E+01
Barium	2.0E+03	-	-	5.0E-01	4.8E-01	-	3.8E-01
Beryllium	2.9E+00	4.1E-02	9.2E-02	5.8E-02	7.2E-02	8.2E-02	5.8E-02
Cadmium	1.4E+00	4.5E-01	-	1.8E+00	1.0E+00	1.3E-01	7.1E-01
Cobalt	2.0E+01	8.3E-01	-	-	-	-	-
Copper	1.2E+04	1.5E-02	1.7E-03	1.1E-02	8.1E-03	-	4.7E-03
Lead	-	-	-	-	-	-	-
Mercury	1.6E+01	3.2E+00	1.3E+01	1.6E+01	1.4E+02	1.5E-01	3.2E+00
Molybdenum	1.5E+03	5.4E-04	-	3.4E-03	1.7E-03	-	5.6E-04
Nickel	5.7E+01	6.0E-01	-	-	-	-	-
Selenium	1.5E+03	-	-	4.4E-03	1.8E-03	-	7.9E-04
Silver	3.8E+02	1.4E-02	1.0E-02	2.2E-01	1.7E-01	6.8E-03	2.4E-02
Zinc	9.3E+04	6.2E-03	-	1.6E-03	1.2E-03	-	1.7E-03
	HI =>	**2.4E+01**	**1.3E+01**	**9.0E+01**	**1.7E+02**	**3.8E-01**	**2.8E+01**

ILCR VALUES

COPC	RBC_{ILCR} (mg/kg)	MM-S-01	MM-S-02	MM-S-03	MM-S-04	MM-S-05	MM-S-06
Antimony	-	-	-	-	-	-	-
Arsenic	2.4E+01	8E-06	-	3E-05	1E-05	-	1E-05
Barium	-	-	-	-	-	-	-
Beryllium	1.3E+03	9E-10	2E-09	1E-09	2E-09	2E-09	1E-09
Cadmium	1.7E+03	4E-09	-	1E-08	8E-09	1E-09	6E-09
Cobalt	3.4E+02	5E-07	-	-	-	-	-
Copper	-	-	-	-	-	-	-
Lead	-	-	-	-	-	-	-
Mercury	-	-	-	-	-	-	-
Molybdenum	-	-	-	-	-	-	-
Nickel	1.2E+04	3E-08	-	-	-	-	-
Selenium	-	-	-	-	-	-	-
Silver	-	-	-	-	-	-	-
Zinc	-	-	-	-	-	-	-
	ILCR =>	**8E-06**	**2E-09**	**3E-05**	**1E-05**	**3E-09**	**1E-05**

Risk Calculations for Construction Worker Receptor
~ SOIL SAMPLES (sample-specific risk values) ~

CONCENTRATIONS (mg/kg)

COPC	MM-S-07	MM-S-08	MM-S-09	MM-S-10	MM-S-11	MM-S-12
Antimony	1.0	4.0	35	5.1	0.28	0.55
Arsenic	11	15	210	12	4.4	9.1
Barium	220	240	1,300	250	160	140
Beryllium	0.2	0.12	0.12	0.2	0.16	0.19
Cadmium	0.31	0.99	1.5	1.0	0.25	0.48
Cobalt	6.0	5.7	1.1	6.1	4.2	4.5
Copper	95	69	240	59	8.3	17
Lead	39	220	750	180	9.9	17
Mercury	58	31	27	150	0.98	18
Molybdenum	0.46	1.5	21	0.55	0.45	0.69
Nickel	21	16	2.3	21	9	13
Selenium	0.34	0.61	14	0.57	0.14	0.38
Silver	2.2	8.0	140	6.8	0.58	2.7
Zinc	55	120	370	100	43	63

Italicized values are reporting limits for non-detect' results.

BACKGROUND COMPARISON

COPC	BTV (mg/kg)	MM-S-07	MM-S-08	MM-S-09	MM-S-10	MM-S-11	MM-S-12
Antimony	0.531	1	4	35	5.1	-	0.55
Arsenic	13.3	-	15	210	-	-	-
Barium	281	-	-	1300	-	-	-
Beryllium	0.118	0.2	0.12	0.12	0.2	0.16	0.19
Cadmium	0.172	0.31	0.99	1.5	1	0.25	0.48
Cobalt	7.19	-	-	-	-	-	-
Copper	13.0	95	69	240	59	-	17
Lead	11.5	39	220	750	180	-	17
Mercury	0.418	58	31	27	150	0.98	18
Molybdenum	0.650	-	1.5	21	-	-	0.69
Nickel	25.5	-	-	-	-	-	-
Selenium	1.08	-	-	14	-	-	-
Silver	0.534	2.2	8	140	6.8	0.58	2.7
Zinc	60.6	-	120	370	100	-	63

HQ and HI VALUES

COPC	RBC_{HI} (mg/kg)	MM-S-07	MM-S-08	MM-S-09	MM-S-10	MM-S-11	MM-S-12
Antimony	7.2E+01	1.4E-02	5.6E-02	4.9E-01	7.1E-02	-	7.7E-03
Arsenic	1.2E+00	-	1.3E+01	1.8E+02	-	-	-
Barium	2.0E+03	-	-	6.5E-01	-	-	-
Beryllium	2.9E+00	6.8E-02	4.1E-02	4.1E-02	6.8E-02	5.5E-02	6.5E-02
Cadmium	1.4E+00	2.3E-01	7.3E-01	1.1E+00	7.3E-01	1.8E-01	3.5E-01
Cobalt	2.0E+01	-	-	-	-	-	-
Copper	1.2E+04	7.7E-03	5.6E-03	1.9E-02	4.8E-03	-	1.4E-03
Lead	-	-	-	-	-	-	-
Mercury	1.6E+01	3.6E+00	1.9E+00	1.7E+00	9.3E+00	6.1E-02	1.1E+00
Molybdenum	1.5E+03	-	9.7E-04	1.4E-02	-	-	4.5E-04
Nickel	5.7E+01	-	-	-	-	-	-
Selenium	1.5E+03	-	-	9.2E-03	-	-	-
Silver	3.8E+02	5.8E-03	2.1E-02	3.7E-01	1.8E-02	1.5E-03	7.1E-03
Zinc	9.3E+04	-	1.3E-03	4.0E-03	1.1E-03	-	6.8E-04
	HI =>	**3.9E+00**	**1.5E+01**	**1.8E+02**	**1.0E+01**	**3.0E-01**	**1.6E+00**

ILCR VALUES

COPC	RBC_{ILCR} (mg/kg)	MM-S-07	MM-S-08	MM-S-09	MM-S-10	MM-S-11	MM-S-12
Antimony	-	-	-	-	-	-	-
Arsenic	2.4E+01	-	6E-06	9E-05	-	-	-
Barium	-	-	-	-	-	-	-
Beryllium	1.3E+03	2E-09	9E-10	9E-10	2E-09	1E-09	1E-09
Cadmium	1.7E+03	2E-09	6E-09	9E-09	6E-09	1E-09	3E-09
Cobalt	3.4E+02	-	-	-	-	-	-
Copper	-	-	-	-	-	-	-
Lead	-	-	-	-	-	-	-
Mercury	-	-	-	-	-	-	-
Molybdenum	-	-	-	-	-	-	-
Nickel	1.2E+04	-	-	-	-	-	-
Selenium	-	-	-	-	-	-	-
Silver	-	-	-	-	-	-	-
Zinc	-	-	-	-	-	-	-
	ILCR =>	**3E-09**	**6E-06**	**9E-05**	**7E-09**	**3E-09**	**4E-09**

Risk Calculations for Construction Worker Receptor
~ SOIL SAMPLES (sample-specific risk values) ~

CONCENTRATIONS (mg/kg)

COPC	MM-S-13	MM-S-14	MM-S-15	MM-S-16	MM-S-17	MM-S-18
Antimony	0.19	1.0	*0.072*	*0.059*	*0.064*	1.3
Arsenic	4.0	26	3.3	6.1	7.4	30
Barium	100	120	49	88	110	260
Beryllium	0.12	*0.069*	0.11	0.17	*0.025*	*0.03*
Cadmium	0.35	0.39	0.071	0.11	0.083	0.34
Cobalt	4.5	3.8	4.3	4.3	5.8	7.4
Copper	9.1	12	5.2	6.7	8.5	21
Lead	44	32	2.7	8.8	5.6	91
Mercury	3.9	23	0.54	0.75	0.55	1.8
Molybdenum	0.55	0.42	0.3	0.45	0.28	0.47
Nickel	8.7	8.5	16	12	16	28
Selenium	0.17	0.44	*0.13*	*0.11*	*0.12*	0.28
Silver	0.43	7.7	0.064	0.31	0.098	2.3
Zinc	63	46	24	29	29	75

Italicized values are reporting limits for non-detect' results.

BACKGROUND COMPARISON

COPC	BTV (mg/kg)	MM-S-13	MM-S-14	MM-S-15	MM-S-16	MM-S-17	MM-S-18
Antimony	0.531	-	1	-	-	-	1.3
Arsenic	13.3	-	26	-	-	-	30
Barium	281	-	-	-	-	-	-
Beryllium	0.118	0.12	-	-	0.17	-	-
Cadmium	0.172	0.35	0.39	-	-	-	0.34
Cobalt	7.19	-	-	-	-	-	7.4
Copper	13.0	-	-	-	-	-	21
Lead	11.5	44	32	-	-	-	91
Mercury	0.418	3.9	23	0.54	0.75	0.55	1.8
Molybdenum	0.650	-	-	-	-	-	-
Nickel	25.5	-	-	-	-	-	28
Selenium	1.08	-	-	-	-	-	-
Silver	0.534	-	7.7	-	-	-	2.3
Zinc	60.6	63	-	-	-	-	75

HQ and HI VALUES

COPC	RBC_{HI} (mg/kg)	MM-S-13	MM-S-14	MM-S-15	MM-S-16	MM-S-17	MM-S-18
Antimony	7.2E+01	-	1.4E-02	-	-	-	1.8E-02
Arsenic	1.2E+00	-	2.2E+01	-	-	-	2.5E+01
Barium	2.0E+03	-	-	-	-	-	-
Beryllium	2.9E+00	4.1E-02	-	-	5.8E-02	-	-
Cadmium	1.4E+00	2.6E-01	2.9E-01	-	-	-	2.5E-01
Cobalt	2.0E+01	-	-	-	-	-	3.6E-01
Copper	1.2E+04	-	-	-	-	-	1.7E-03
Lead	-	-	-	-	-	-	-
Mercury	1.6E+01	2.4E-01	1.4E+00	3.4E-02	4.7E-02	3.4E-02	1.1E-01
Molybdenum	1.5E+03	-	-	-	-	-	-
Nickel	5.7E+01	-	-	-	-	-	4.9E-01
Selenium	1.5E+03	-	-	-	-	-	-
Silver	3.8E+02	-	2.0E-02	-	-	-	6.1E-03
Zinc	9.3E+04	6.8E-04	-	-	-	-	8.1E-04
	HI =>	**5.4E-01**	**2.4E+01**	**3.4E-02**	**1.0E-01**	**3.4E-02**	**2.6E+01**

ILCR VALUES

COPC	RBC_{ILCR} (mg/kg)	MM-S-13	MM-S-14	MM-S-15	MM-S-16	MM-S-17	MM-S-18
Antimony	-	-	-	-	-	-	-
Arsenic	2.4E+01	-	1E-05	-	-	-	1E-05
Barium	-	-	-	-	-	-	-
Beryllium	1.3E+03	9E-10	-	-	1E-09	-	-
Cadmium	1.7E+03	2E-09	2E-09	-	-	-	2E-09
Cobalt	3.4E+02	-	-	-	-	-	2E-07
Copper	-	-	-	-	-	-	-
Lead	-	-	-	-	-	-	-
Mercury	-	-	-	-	-	-	-
Molybdenum	-	-	-	-	-	-	-
Nickel	1.2E+04	-	-	-	-	-	2E-08
Selenium	-	-	-	-	-	-	-
Silver	-	-	-	-	-	-	-
Zinc	-	-	-	-	-	-	-
	ILCR =>	**3E-09**	**1E-05**	**0E+00**	**1E-09**	**0E+00**	**1E-05**

Risk Calculations for Construction Worker Receptor
~ SOIL SAMPLES (sample-specific risk values) ~

CONCENTRATIONS (mg/kg)

COPC	MM-S-19	MM-S-20	MM-S-21	MM-S-22	MM-S-23	MM-S-24
Antimony	1	0.47	*0.075*	*0.07*	*0.073*	5.8
Arsenic	11	9.6	6.4	4.6	6.4	30
Barium	290	97	87	74	84	720
Beryllium	*0.03*	0.031	*0.03*	0.036	*0.029*	0.029
Cadmium	0.28	0.11	0.086	0.14	0.2	1.3
Cobalt	8.6	4.3	3.7	4.2	3.2	4.1
Copper	18	11	6	11	11	42
Lead	51	170	8.3	17	9.6	93
Mercury	4	9.3	0.77	0.58	8.7	120
Molybdenum	0.53	0.58	0.52	0.78	0.55	1.9
Nickel	30	9.1	8.4	9.4	9.4	9.5
Selenium	0.17	0.25	*0.14*	*0.13*	0.16	2.2
Silver	3.1	2.7	0.13	0.19	0.89	15
Zinc	77	36	31	20	39	130

Italicized values are reporting limits for non-detect' results.

BACKGROUND COMPARISON

COPC	BTV (mg/kg)	MM-S-19	MM-S-20	MM-S-21	MM-S-22	MM-S-23	MM-S-24
Antimony	0.531	1	-	-	-	-	5.8
Arsenic	13.3	-	-	-	-	-	30
Barium	281	290	-	-	-	-	720
Beryllium	0.118	-	-	-	-	-	-
Cadmium	0.172	0.28	-	-	-	0.2	1.3
Cobalt	7.19	8.6	-	-	-	-	-
Copper	13.0	18	-	-	-	-	42
Lead	11.5	51	170	-	17	-	93
Mercury	0.418	4	9.3	0.77	0.58	8.7	120
Molybdenum	0.650	-	-	-	0.78	-	1.9
Nickel	25.5	30	-	-	-	-	-
Selenium	1.08	-	-	-	-	-	2.2
Silver	0.534	3.1	2.7	-	-	0.89	15
Zinc	60.6	77	-	-	-	-	130

HQ and HI VALUES

COPC	RBC_{HI} (mg/kg)	MM-S-19	MM-S-20	MM-S-21	MM-S-22	MM-S-23	MM-S-24
Antimony	7.2E+01	1.4E-02	-	-	-	-	8.1E-02
Arsenic	1.2E+00	-	-	-	-	-	2.5E+01
Barium	2.0E+03	1.5E-01	-	-	-	-	3.6E-01
Beryllium	2.9E+00	-	-	-	-	-	-
Cadmium	1.4E+00	2.1E-01	-	-	-	1.5E-01	9.5E-01
Cobalt	2.0E+01	4.2E-01	-	-	-	-	-
Copper	1.2E+04	1.5E-03	-	-	-	-	3.4E-03
Lead	-	-	-	-	-	-	-
Mercury	1.6E+01	2.5E-01	5.8E-01	4.8E-02	3.6E-02	5.4E-01	7.5E+00
Molybdenum	1.5E+03	-	-	-	5.1E-04	-	1.2E-03
Nickel	5.7E+01	5.3E-01	-	-	-	-	-
Selenium	1.5E+03	-	-	-	-	-	1.5E-03
Silver	3.8E+02	8.2E-03	7.1E-03	-	-	2.3E-03	3.9E-02
Zinc	9.3E+04	8.3E-04	-	-	-	-	1.4E-03
	HI =>	**1.6E+00**	**5.9E-01**	**4.8E-02**	**3.7E-02**	**6.9E-01**	**3.4E+01**

ILCR VALUES

COPC	RBC_{ILCR} (mg/kg)	MM-S-19	MM-S-20	MM-S-21	MM-S-22	MM-S-23	MM-S-24
Antimony	-	-	-	-	-	-	-
Arsenic	2.4E+01	-	-	-	-	-	1E-05
Barium	-	-	-	-	-	-	-
Beryllium	1.3E+03	-	-	-	-	-	-
Cadmium	1.7E+03	2E-09	-	-	-	1E-09	8E-09
Cobalt	3.4E+02	3E-07	-	-	-	-	-
Copper	-	-	-	-	-	-	-
Lead	-	-	-	-	-	-	-
Mercury	-	-	-	-	-	-	-
Molybdenum	-	-	-	-	-	-	-
Nickel	1.2E+04	3E-08	-	-	-	-	-
Selenium	-	-	-	-	-	-	-
Silver	-	-	-	-	-	-	-
Zinc	-	-	-	-	-	-	-
	ILCR =>	**3E-07**	**0E+00**	**0E+00**	**0E+00**	**1E-09**	**1E-05**

Risk Calculations for Construction Worker Receptor
~ SOIL SAMPLES (sample-specific risk values) ~

CONCENTRATIONS (mg/kg)

COPC	MM-S-25	MM-S-26	MM-S-27	MM-S-28	MM-S-29	MM-S-30
Antimony	*0.066*	*0.07*	*0.057*	5.6	0.31	5.4
Arsenic	4.4	4.5	5.9	25	4.6	39
Barium	76	97	87	450	99	520
Beryllium	*0.026*	*0.028*	*0.022*	0.039	0.18	*0.027*
Cadmium	0.12	0.16	0.13	0.69	0.17	1.1
Cobalt	4.8	4.4	6.1	5.2	4.8	3.9
Copper	6.2	9.2	9.4	36	8.3	45
Lead	10	17	7.1	97	11	110
Mercury	3.2	14	0.61	42	2.1	120
Molybdenum	0.37	0.49	0.33	2	0.52	1.8
Nickel	15	15	21	13	14	12
Selenium	0.14	0.17	*0.1*	1.5	*0.14*	2.4
Silver	0.21	0.053	0.12	12	0.36	19
Zinc	34	34	37	74	33	110

Italicized values are reporting limits for non-detect' results.

BACKGROUND COMPARISON

COPC	BTV (mg/kg)	MM-S-25	MM-S-26	MM-S-27	MM-S-28	MM-S-29	MM-S-30
Antimony	0.531	-	-	-	5.6	-	5.4
Arsenic	13.3	-	-	-	25	-	39
Barium	281	-	-	-	450	-	520
Beryllium	0.118	-	-	-	-	0.18	-
Cadmium	0.172	-	-	-	0.69	-	1.1
Cobalt	7.19	-	-	-	-	-	-
Copper	13.0	-	-	-	36	-	45
Lead	11.5	-	17	-	97	-	110
Mercury	0.418	3.2	14	0.61	42	2.1	120
Molybdenum	0.650	-	-	-	2	-	1.8
Nickel	25.5	-	-	-	-	-	-
Selenium	1.08	-	-	-	1.5	-	2.4
Silver	0.534	-	-	-	12	-	19
Zinc	60.6	-	-	-	74	-	110

HQ and HI VALUES

COPC	RBC_{HI} (mg/kg)	MM-S-25	MM-S-26	MM-S-27	MM-S-28	MM-S-29	MM-S-30
Antimony	7.2E+01	-	-	-	7.8E-02	-	7.5E-02
Arsenic	1.2E+00	-	-	-	2.1E+01	-	3.3E+01
Barium	2.0E+03	-	-	-	2.3E-01	-	2.6E-01
Beryllium	2.9E+00	-	-	-	-	6.2E-02	-
Cadmium	1.4E+00	-	-	-	5.1E-01	-	8.1E-01
Cobalt	2.0E+01	-	-	-	-	-	-
Copper	1.2E+04	-	-	-	2.9E-03	-	3.6E-03
Lead	-	-	-	-	-	-	-
Mercury	1.6E+01	2.0E-01	8.7E-01	3.8E-02	2.6E+00	1.3E-01	7.5E+00
Molybdenum	1.5E+03	-	-	-	1.3E-03	-	1.2E-03
Nickel	5.7E+01	-	-	-	-	-	-
Selenium	1.5E+03	-	-	-	9.9E-04	-	1.6E-03
Silver	3.8E+02	-	-	-	3.2E-02	-	5.0E-02
Zinc	9.3E+04	-	-	-	8.0E-04	-	1.2E-03
	HI =>	**2.0E-01**	**8.7E-01**	**3.8E-02**	**2.4E+01**	**1.9E-01**	**4.1E+01**

ILCR VALUES

COPC	RBC_{ILCR} (mg/kg)	MM-S-25	MM-S-26	MM-S-27	MM-S-28	MM-S-29	MM-S-30
Antimony	-	-	-	-	-	-	-
Arsenic	2.4E+01	-	-	-	1E-05	-	2E-05
Barium	-	-	-	-	-	-	-
Beryllium	1.3E+03	-	-	-	-	1E-09	-
Cadmium	1.7E+03	-	-	-	4E-09	-	6E-09
Cobalt	3.4E+02	-	-	-	-	-	-
Copper	-	-	-	-	-	-	-
Lead	-	-	-	-	-	-	-
Mercury	-	-	-	-	-	-	-
Molybdenum	-	-	-	-	-	-	-
Nickel	1.2E+04	-	-	-	-	-	-
Selenium	-	-	-	-	-	-	-
Silver	-	-	-	-	-	-	-
Zinc	-	-	-	-	-	-	-
	ILCR =>	**0E+00**	**0E+00**	**0E+00**	**1E-05**	**1E-09**	**2E-05**

Risk Calculations for Construction Worker Receptor
~ SOIL SAMPLES (sample-specific risk values) ~

CONCENTRATIONS (mg/kg)

COPC	MM-S-31	MM-S-32	MM-S-33	MM-S-34	MM-S-35	MM-S-36	MM-S-37
Antimony	*0.071*	4.2	1.3	0.67	6.6	0.57	0.98
Arsenic	3.1	10	8.4	6.8	24	4.3	6.4
Barium	73	390	200	94	630	85	91
Beryllium	*0.028*	*0.022*	0.28	0.33	0.19	0.15	0.13
Cadmium	0.085	0.39	0.27	0.12	0.78	0.15	0.15
Cobalt	4.6	3.9	5	6.9	3.9	3.7	4.1
Copper	5.1	21	15	8.8	33	8.5	17
Lead	4.1	50	49	8.7	98	12	240
Mercury	0.88	140	14	4	72	0.62	2
Molybdenum	0.39	0.73	1.8	0.79	2.1	0.45	0.42
Nickel	13	14	12	19	13	10	7.8
Selenium	*0.13*	0.59	0.21	*0.098*	1.3	*0.12*	*0.15*
Silver	*0.21*	6.3	3	0.68	9.8	0.3	1.5
Zinc	37	64	63	40	79	40	63

Italicized values are reporting limits for non-detect' results.

BACKGROUND COMPARISON

COPC	BTV (mg/kg)	MM-S-31	MM-S-32	MM-S-33	MM-S-34	MM-S-35	MM-S-36	MM-S-37
Antimony	0.531	-	4.2	1.3	0.67	6.6	0.57	0.98
Arsenic	13.3	-	-	-	-	24	-	-
Barium	281	-	390	-	-	630	-	-
Beryllium	0.118	-	-	0.28	0.33	0.19	0.15	0.13
Cadmium	0.172	-	0.39	0.27	-	0.78	-	-
Cobalt	7.19	-	-	-	-	-	-	-
Copper	13.0	-	21	15	-	33	-	17
Lead	11.5	-	50	49	-	98	12	240
Mercury	0.418	0.88	140	14	4	72	0.62	2
Molybdenum	0.650	-	0.73	1.8	0.79	2.1	-	-
Nickel	25.5	-	-	-	-	-	-	-
Selenium	1.08	-	-	-	-	1.3	-	-
Silver	0.534	-	6.3	3	0.68	9.8	-	1.5
Zinc	60.6	-	64	63	-	79	-	63

HQ and HI VALUES

COPC	RBC_{HI} (mg/kg)	MM-S-31	MM-S-32	MM-S-33	MM-S-34	MM-S-35	MM-S-36	MM-S-37
Antimony	7.2E+01	-	5.9E-02	1.8E-02	9.3E-03	9.2E-02	8.0E-03	1.4E-02
Arsenic	1.2E+00	-	-	-	-	2.0E+01	-	-
Barium	2.0E+03	-	2.0E-01	-	-	3.2E-01	-	-
Beryllium	2.9E+00	-	-	9.6E-02	1.1E-01	6.5E-02	5.1E-02	4.4E-02
Cadmium	1.4E+00	-	2.9E-01	2.0E-01	-	5.7E-01	-	-
Cobalt	2.0E+01	-	-	-	-	-	-	-
Copper	1.2E+04	-	1.7E-03	1.2E-03	-	2.7E-03	-	1.4E-03
Lead	-	-	-	-	-	-	-	-
Mercury	1.6E+01	5.5E-02	8.7E+00	8.7E-01	2.5E-01	4.5E+00	3.9E-02	1.2E-01
Molybdenum	1.5E+03	-	4.7E-04	1.2E-03	5.1E-04	1.4E-03	-	-
Nickel	5.7E+01	-	-	-	-	-	-	-
Selenium	1.5E+03	-	-	-	-	8.6E-04	-	-
Silver	3.8E+02	-	1.7E-02	7.9E-03	1.8E-03	2.6E-02	-	3.9E-03
Zinc	9.3E+04	-	6.9E-04	6.8E-04	-	8.5E-04	-	6.8E-04
	HI =>	**5.5E-02**	**9.3E+00**	**1.2E+00**	**3.7E-01**	**2.6E+01**	**9.8E-02**	**1.9E-01**

ILCR VALUES

COPC	RBC_{ILCR} (mg/kg)	MM-S-31	MM-S-32	MM-S-33	MM-S-34	MM-S-35	MM-S-36	MM-S-37
Antimony	-	-	-	-	-	-	-	-
Arsenic	2.4E+01	-	-	-	-	1E-05	-	-
Barium	-	-	-	-	-	-	-	-
Beryllium	1.3E+03	-	-	2E-09	3E-09	1E-09	1E-09	1E-09
Cadmium	1.7E+03	-	2E-09	2E-09	-	5E-09	-	-
Cobalt	3.4E+02	-	-	-	-	-	-	-
Copper	-	-	-	-	-	-	-	-
Lead	-	-	-	-	-	-	-	-
Mercury	-	-	-	-	-	-	-	-
Molybdenum	-	-	-	-	-	-	-	-
Nickel	1.2E+04	-	-	-	-	-	-	-
Selenium	-	-	-	-	-	-	-	-
Silver	-	-	-	-	-	-	-	-
Zinc	-	-	-	-	-	-	-	-
	ILCR =>	**0E+00**	**2E-09**	**4E-09**	**3E-09**	**1E-05**	**1E-09**	**1E-09**

Risk Calculations for Residential Receptor
~ SOIL SAMPLES (sample-specific risk values) ~

CONCENTRATIONS (mg/kg)

COPC	MM-S-01	MM-S-02	MM-S-03	MM-S-04	MM-S-05	MM-S-06
Antimony	230	4.2	25	19	0.71	23
Arsenic	19	12	84	36	9.7	28
Barium	210	230	1,000	950	150	750
Beryllium	*0.12*	0.27	0.17	0.21	0.24	0.17
Cadmium	0.62	0.15	2.4	1.4	0.18	0.97
Cobalt	17	5.4	3.7	4.9	5.6	4.9
Copper	190	21	130	100	12	58
Lead	2,500	150	430	380	18	600
Mercury	52	210	260	2,200	2.4	51
Molybdenum	0.83	0.37	5.3	2.6	0.34	0.87
Nickel	34	16	11	17	19	15
Selenium	0.8	0.17	6.6	2.7	*0.11*	1.2
Silver	5.4	3.8	85	64	2.6	9.3
Zinc	570	42	150	110	48	160

Italicized values are reporting limits for non-detect' results.

BACKGROUND COMPARISON

COPC	BTV (mg/kg)	MM-S-01	MM-S-02	MM-S-03	MM-S-04	MM-S-05	MM-S-06
Antimony	0.531	230	4.2	25	19	0.71	23
Arsenic	13.3	19	-	84	36	-	28
Barium	281	-	-	1000	950	-	750
Beryllium	0.118	0.12	0.27	0.17	0.21	0.24	0.17
Cadmium	0.172	0.62	-	2.4	1.4	0.18	0.97
Cobalt	7.19	17	-	-	-	-	-
Copper	13.0	190	21	130	100	-	58
Lead	11.5	2500	150	430	380	18	600
Mercury	0.418	52	210	260	2200	2.4	51
Molybdenum	0.650	0.83	-	5.3	2.6	-	0.87
Nickel	25.5	34	-	-	-	-	-
Selenium	1.08	-	-	6.6	2.7	-	1.2
Silver	0.534	5.4	3.8	85	64	2.6	9.3
Zinc	60.6	570	-	150	110	-	160

HQ and HI VALUES

COPC	RBC_{HI} (mg/kg)	MM-S-01	MM-S-02	MM-S-03	MM-S-04	MM-S-05	MM-S-06
Antimony	2.6E+01	8.8E+00	1.6E-01	9.5E-01	7.2E-01	2.7E-02	8.8E-01
Arsenic	4.0E-01	4.8E+01	-	2.1E+02	9.0E+01	-	7.0E+01
Barium	1.1E+04	-	-	9.2E-02	8.7E-02	-	6.9E-02
Beryllium	3.0E+00	3.9E-02	8.9E-02	5.6E-02	6.9E-02	7.9E-02	5.6E-02
Cadmium	4.5E+00	1.4E-01	-	5.3E-01	3.1E-01	4.0E-02	2.2E-01
Cobalt	2.3E+01	7.5E-01	-	-	-	-	-
Copper	3.0E+03	6.2E-02	6.9E-03	4.3E-02	3.3E-02	-	1.9E-02
Lead	-	-	-	-	-	-	-
Mercury	8.8E+00	5.9E+00	2.4E+01	2.9E+01	2.5E+02	2.7E-01	5.8E+00
Molybdenum	3.8E+02	2.2E-03	-	1.4E-02	6.8E-03	-	2.3E-03
Nickel	4.9E+02	7.0E-02	-	-	-	-	-
Selenium	3.8E+02	-	-	1.7E-02	7.1E-03	-	3.2E-03
Silver	2.3E+02	2.4E-02	1.7E-02	3.7E-01	2.8E-01	1.1E-02	4.1E-02
Zinc	2.3E+04	2.5E-02	-	6.6E-03	4.8E-03	-	7.0E-03
	HI =>	**6.3E+01**	**2.4E+01**	**2.4E+02**	**3.4E+02**	**4.3E-01**	**7.7E+01**

ILCR VALUES

COPC	RBC_{ILCR} (mg/kg)	MM-S-01	MM-S-02	MM-S-03	MM-S-04	MM-S-05	MM-S-06
Antimony	-	-	-	-	-	-	-
Arsenic	1.1E+00	2E-04	-	8E-04	3E-04	-	3E-04
Barium	-	-	-	-	-	-	-
Beryllium	1.6E+04	8E-11	2E-10	1E-10	1E-10	2E-10	1E-10
Cadmium	1.8E+04	3E-10	-	1E-09	8E-10	1E-10	5E-10
Cobalt	4.2E+03	4E-08	-	-	-	-	-
Copper	-	-	-	-	-	-	-
Lead	-	-	-	-	-	-	-
Mercury	-	-	-	-	-	-	-
Molybdenum	-	-	-	-	-	-	-
Nickel	1.5E+05	2E-09	-	-	-	-	-
Selenium	-	-	-	-	-	-	-
Silver	-	-	-	-	-	-	-
Zinc	-	-	-	-	-	-	-
	ILCR =>	**2E-04**	**2E-10**	**8E-04**	**3E-04**	**2E-10**	**3E-04**

Risk Calculations for Residential Receptor
~ SOIL SAMPLES (sample-specific risk values) ~

CONCENTRATIONS (mg/kg)

COPC	MM-S-07	MM-S-08	MM-S-09	MM-S-10	MM-S-11	MM-S-12
Antimony	1.0	4.0	35	5.1	0.28	0.55
Arsenic	11	15	210	12	4.4	9.1
Barium	220	240	1,300	250	160	140
Beryllium	0.2	0.12	0.12	0.2	0.16	0.19
Cadmium	0.31	0.99	1.5	1.0	0.25	0.48
Cobalt	6.0	5.7	1.1	6.1	4.2	4.5
Copper	95	69	240	59	8.3	17
Lead	39	220	750	180	9.9	17
Mercury	58	31	27	150	0.98	18
Molybdenum	0.46	1.5	21	0.55	0.45	0.69
Nickel	21	16	2.3	21	9	13
Selenium	0.34	0.61	14	0.57	0.14	0.38
Silver	2.2	8.0	140	6.8	0.58	2.7
Zinc	55	120	370	100	43	63

Italicized values are reporting limits for non-detect' results.

BACKGROUND COMPARISON

COPC	BTV (mg/kg)	MM-S-07	MM-S-08	MM-S-09	MM-S-10	MM-S-11	MM-S-12
Antimony	0.531	1	4	35	5.1	-	0.55
Arsenic	13.3	-	15	210	-	-	-
Barium	281	-	-	1300	-	-	-
Beryllium	0.118	0.2	0.12	0.12	0.2	0.16	0.19
Cadmium	0.172	0.31	0.99	1.5	1	0.25	0.48
Cobalt	7.19	-	-	-	-	-	-
Copper	13.0	95	69	240	59	-	17
Lead	11.5	39	220	750	180	-	17
Mercury	0.418	58	31	27	150	0.98	18
Molybdenum	0.650	-	1.5	21	-	-	0.69
Nickel	25.5	-	-	-	-	-	-
Selenium	1.08	-	-	14	-	-	-
Silver	0.534	2.2	8	140	6.8	0.58	2.7
Zinc	60.6	-	120	370	100	-	63

HQ and HI VALUES

COPC	RBC_{HI} (mg/kg)	MM-S-07	MM-S-08	MM-S-09	MM-S-10	MM-S-11	MM-S-12
Antimony	2.6E+01	3.8E-02	1.5E-01	1.3E+00	1.9E-01	-	2.1E-02
Arsenic	4.0E-01	-	3.8E+01	5.3E+02	-	-	-
Barium	1.1E+04	-	-	1.2E-01	-	-	-
Beryllium	3.0E+00	6.6E-02	3.9E-02	3.9E-02	6.6E-02	5.3E-02	6.2E-02
Cadmium	4.5E+00	6.9E-02	2.2E-01	3.3E-01	2.2E-01	5.6E-02	1.1E-01
Cobalt	2.3E+01	-	-	-	-	-	-
Copper	3.0E+03	3.1E-02	2.3E-02	7.9E-02	1.9E-02	-	5.6E-03
Lead	-	-	-	-	-	-	-
Mercury	8.8E+00	6.6E+00	3.5E+00	3.1E+00	1.7E+01	1.1E-01	2.0E+00
Molybdenum	3.8E+02	-	3.9E-03	5.5E-02	-	-	1.8E-03
Nickel	4.9E+02	-	-	-	-	-	-
Selenium	3.8E+02	-	-	3.7E-02	-	-	-
Silver	2.3E+02	9.7E-03	3.5E-02	6.2E-01	3.0E-02	2.6E-03	1.2E-02
Zinc	2.3E+04	-	5.3E-03	1.6E-02	4.4E-03	-	2.8E-03
	HI =>	**6.8E+00**	**4.2E+01**	**5.3E+02**	**1.7E+01**	**2.2E-01**	**2.2E+00**

ILCR VALUES

COPC	RBC_{ILCR} (mg/kg)	MM-S-07	MM-S-08	MM-S-09	MM-S-10	MM-S-11	MM-S-12
Antimony	-	-	-	-	-	-	-
Arsenic	1.1E+00	-	1E-04	2E-03	-	-	-
Barium	-	-	-	-	-	-	-
Beryllium	1.6E+04	1E-10	8E-11	8E-11	1E-10	1E-10	1E-10
Cadmium	1.8E+04	2E-10	5E-10	8E-10	5E-10	1E-10	3E-10
Cobalt	4.2E+03	-	-	-	-	-	-
Copper	-	-	-	-	-	-	-
Lead	-	-	-	-	-	-	-
Mercury	-	-	-	-	-	-	-
Molybdenum	-	-	-	-	-	-	-
Nickel	1.5E+05	-	-	-	-	-	-
Selenium	-	-	-	-	-	-	-
Silver	-	-	-	-	-	-	-
Zinc	-	-	-	-	-	-	-
	ILCR =>	**3E-10**	**1E-04**	**2E-03**	**7E-10**	**2E-10**	**4E-10**

Risk Calculations for Residential Receptor
~ SOIL SAMPLES (sample-specific risk values) ~

CONCENTRATIONS (mg/kg)

COPC	MM-S-13	MM-S-14	MM-S-15	MM-S-16	MM-S-17	MM-S-18
Antimony	0.19	1.0	*0.072*	*0.059*	*0.064*	1.3
Arsenic	4.0	26	3.3	6.1	7.4	30
Barium	100	120	49	88	110	260
Beryllium	0.12	*0.069*	0.11	0.17	*0.025*	*0.03*
Cadmium	0.35	0.39	0.071	0.11	0.083	0.34
Cobalt	4.5	3.8	4.3	4.3	5.8	7.4
Copper	9.1	12	5.2	6.7	8.5	21
Lead	44	32	2.7	8.8	5.6	91
Mercury	3.9	23	0.54	0.75	0.55	1.8
Molybdenum	0.55	0.42	0.3	0.45	0.28	0.47
Nickel	8.7	8.5	16	12	16	28
Selenium	0.17	0.44	*0.13*	*0.11*	*0.12*	0.28
Silver	0.43	7.7	0.064	0.31	0.098	2.3
Zinc	63	46	24	29	29	75

Italicized values are reporting limits for non-detect' results.

BACKGROUND COMPARISON

COPC	BTV (mg/kg)	MM-S-13	MM-S-14	MM-S-15	MM-S-16	MM-S-17	MM-S-18
Antimony	0.531	-	1	-	-	-	1.3
Arsenic	13.3	-	26	-	-	-	30
Barium	281	-	-	-	-	-	-
Beryllium	0.118	0.12	-	-	0.17	-	-
Cadmium	0.172	0.35	0.39	-	-	-	0.34
Cobalt	7.19	-	-	-	-	-	7.4
Copper	13.0	-	-	-	-	-	21
Lead	11.5	44	32	-	-	-	91
Mercury	0.418	3.9	23	0.54	0.75	0.55	1.8
Molybdenum	0.650	-	-	-	-	-	-
Nickel	25.5	-	-	-	-	-	28
Selenium	1.08	-	-	-	-	-	-
Silver	0.534	-	7.7	-	-	-	2.3
Zinc	60.6	63	-	-	-	-	75

HQ and HI VALUES

COPC	RBC_{HI} (mg/kg)	MM-S-13	MM-S-14	MM-S-15	MM-S-16	MM-S-17	MM-S-18
Antimony	2.6E+01	-	3.8E-02	-	-	-	5.0E-02
Arsenic	4.0E-01	-	6.5E+01	-	-	-	7.5E+01
Barium	1.1E+04	-	-	-	-	-	-
Beryllium	3.0E+00	3.9E-02	-	-	5.6E-02	-	-
Cadmium	4.5E+00	7.8E-02	8.7E-02	-	-	-	7.6E-02
Cobalt	2.3E+01	-	-	-	-	-	3.3E-01
Copper	3.0E+03	-	-	-	-	-	6.9E-03
Lead	-	-	-	-	-	-	-
Mercury	8.8E+00	4.4E-01	2.6E+00	6.1E-02	8.5E-02	6.2E-02	2.0E-01
Molybdenum	3.8E+02	-	-	-	-	-	-
Nickel	4.9E+02	-	-	-	-	-	5.8E-02
Selenium	3.8E+02	-	-	-	-	-	-
Silver	2.3E+02	-	3.4E-02	-	-	-	1.0E-02
Zinc	2.3E+04	2.8E-03	-	-	-	-	3.3E-03
	HI =>	**5.6E-01**	**6.8E+01**	**6.1E-02**	**1.4E-01**	**6.2E-02**	**7.6E+01**

ILCR VALUES

COPC	RBC_{ILCR} (mg/kg)	MM-S-13	MM-S-14	MM-S-15	MM-S-16	MM-S-17	MM-S-18
Antimony	-	-	-	-	-	-	-
Arsenic	1.1E+00	-	2E-04	-	-	-	3E-04
Barium	-	-	-	-	-	-	-
Beryllium	1.6E+04	8E-11	-	-	1E-10	-	-
Cadmium	1.8E+04	2E-10	2E-10	-	-	-	2E-10
Cobalt	4.2E+03	-	-	-	-	-	2E-08
Copper	-	-	-	-	-	-	-
Lead	-	-	-	-	-	-	-
Mercury	-	-	-	-	-	-	-
Molybdenum	-	-	-	-	-	-	-
Nickel	1.5E+05	-	-	-	-	-	2E-09
Selenium	-	-	-	-	-	-	-
Silver	-	-	-	-	-	-	-
Zinc	-	-	-	-	-	-	-
	ILCR =>	**3E-10**	**2E-04**	**0E+00**	**1E-10**	**0E+00**	**3E-04**

Risk Calculations for Residential Receptor
~ SOIL SAMPLES (sample-specific risk values) ~

CONCENTRATIONS (mg/kg)

COPC	MM-S-19	MM-S-20	MM-S-21	MM-S-22	MM-S-23	MM-S-24
Antimony	1	0.47	*0.075*	*0.07*	*0.073*	5.8
Arsenic	11	9.6	6.4	4.6	6.4	30
Barium	290	97	87	74	84	720
Beryllium	*0.03*	0.031	*0.03*	0.036	*0.029*	0.029
Cadmium	0.28	0.11	0.086	0.14	0.2	1.3
Cobalt	8.6	4.3	3.7	4.2	3.2	4.1
Copper	18	11	6	11	11	42
Lead	51	170	8.3	17	9.6	93
Mercury	4	9.3	0.77	0.58	8.7	120
Molybdenum	0.53	0.58	0.52	0.78	0.55	1.9
Nickel	30	9.1	8.4	9.4	9.4	9.5
Selenium	0.17	0.25	*0.14*	*0.13*	0.16	2.2
Silver	3.1	2.7	0.13	0.19	0.89	15
Zinc	77	36	31	20	39	130

Italicized values are reporting limits for non-detect' results.

BACKGROUND COMPARISON

COPC	BTV (mg/kg)	MM-S-19	MM-S-20	MM-S-21	MM-S-22	MM-S-23	MM-S-24
Antimony	0.531	1	-	-	-	-	5.8
Arsenic	13.3	-	-	-	-	-	30
Barium	281	290	-	-	-	-	720
Beryllium	0.118	-	-	-	-	-	-
Cadmium	0.172	0.28	-	-	-	0.2	1.3
Cobalt	7.19	8.6	-	-	-	-	-
Copper	13.0	18	-	-	-	-	42
Lead	11.5	51	170	-	17	-	93
Mercury	0.418	4	9.3	0.77	0.58	8.7	120
Molybdenum	0.650	-	-	-	0.78	-	1.9
Nickel	25.5	30	-	-	-	-	-
Selenium	1.08	-	-	-	-	-	2.2
Silver	0.534	3.1	2.7	-	-	0.89	15
Zinc	60.6	77	-	-	-	-	130

HQ and HI VALUES

COPC	RBC_{HI} (mg/kg)	MM-S-19	MM-S-20	MM-S-21	MM-S-22	MM-S-23	MM-S-24
Antimony	2.6E+01	3.8E-02	-	-	-	-	2.2E-01
Arsenic	4.0E-01	-	-	-	-	-	7.5E+01
Barium	1.1E+04	2.7E-02	-	-	-	-	6.6E-02
Beryllium	3.0E+00	-	-	-	-	-	-
Cadmium	4.5E+00	6.2E-02	-	-	-	4.4E-02	2.9E-01
Cobalt	2.3E+01	3.8E-01	-	-	-	-	-
Copper	3.0E+03	5.9E-03	-	-	-	-	1.4E-02
Lead	-	-	-	-	-	-	-
Mercury	8.8E+00	4.5E-01	1.1E+00	8.7E-02	6.6E-02	9.8E-01	1.4E+01
Molybdenum	3.8E+02	-	-	-	2.1E-03	-	5.0E-03
Nickel	4.9E+02	6.2E-02	-	-	-	-	-
Selenium	3.8E+02	-	-	-	-	-	5.8E-03
Silver	2.3E+02	1.4E-02	1.2E-02	-	-	3.9E-03	6.6E-02
Zinc	2.3E+04	3.4E-03	-	-	-	-	5.7E-03
	HI =>	**1.0E+00**	**1.1E+00**	**8.7E-02**	**6.8E-02**	**1.0E+00**	**9.0E+01**

ILCR VALUES

COPC	RBC_{ILCR} (mg/kg)	MM-S-19	MM-S-20	MM-S-21	MM-S-22	MM-S-23	MM-S-24
Antimony	-	-	-	-	-	-	-
Arsenic	1.1E+00	-	-	-	-	-	3E-04
Barium	-	-	-	-	-	-	-
Beryllium	1.6E+04	-	-	-	-	-	-
Cadmium	1.8E+04	2E-10	-	-	-	1E-10	7E-10
Cobalt	4.2E+03	2E-08	-	-	-	-	-
Copper	-	-	-	-	-	-	-
Lead	-	-	-	-	-	-	-
Mercury	-	-	-	-	-	-	-
Molybdenum	-	-	-	-	-	-	-
Nickel	1.5E+05	2E-09	-	-	-	-	-
Selenium	-	-	-	-	-	-	-
Silver	-	-	-	-	-	-	-
Zinc	-	-	-	-	-	-	-
	ILCR =>	**2E-08**	**0E+00**	**0E+00**	**0E+00**	**1E-10**	**3E-04**

Risk Calculations for Residential Receptor
~ SOIL SAMPLES (sample-specific risk values) ~

CONCENTRATIONS (mg/kg)

COPC	MM-S-25	MM-S-26	MM-S-27	MM-S-28	MM-S-29	MM-S-30
Antimony	*0.066*	*0.07*	*0.057*	5.6	0.31	5.4
Arsenic	4.4	4.5	5.9	25	4.6	39
Barium	76	97	87	450	99	520
Beryllium	*0.026*	*0.028*	*0.022*	0.039	0.18	*0.027*
Cadmium	0.12	0.16	0.13	0.69	0.17	1.1
Cobalt	4.8	4.4	6.1	5.2	4.8	3.9
Copper	6.2	9.2	9.4	36	8.3	45
Lead	10	17	7.1	97	11	110
Mercury	3.2	14	0.61	42	2.1	120
Molybdenum	0.37	0.49	0.33	2	0.52	1.8
Nickel	15	15	21	13	14	12
Selenium	0.14	0.17	*0.1*	1.5	*0.14*	2.4
Silver	0.21	0.053	0.12	12	0.36	19
Zinc	34	34	37	74	33	110

Italicized values are reporting limits for non-detect' results.

BACKGROUND COMPARISON

COPC	BTV (mg/kg)	MM-S-25	MM-S-26	MM-S-27	MM-S-28	MM-S-29	MM-S-30
Antimony	0.531	-	-	-	5.6	-	5.4
Arsenic	13.3	-	-	-	25	-	39
Barium	281	-	-	-	450	-	520
Beryllium	0.118	-	-	-	-	0.18	-
Cadmium	0.172	-	-	-	0.69	-	1.1
Cobalt	7.19	-	-	-	-	-	-
Copper	13.0	-	-	-	36	-	45
Lead	11.5	-	17	-	97	-	110
Mercury	0.418	3.2	14	0.61	42	2.1	120
Molybdenum	0.650	-	-	-	2	-	1.8
Nickel	25.5	-	-	-	-	-	-
Selenium	1.08	-	-	-	1.5	-	2.4
Silver	0.534	-	-	-	12	-	19
Zinc	60.6	-	-	-	74	-	110

HQ and HI VALUES

COPC	RBC_{HI} (mg/kg)	MM-S-25	MM-S-26	MM-S-27	MM-S-28	MM-S-29	MM-S-30
Antimony	2.6E+01	-	-	-	2.1E-01	-	2.1E-01
Arsenic	4.0E-01	-	-	-	6.3E+01	-	9.8E+01
Barium	1.1E+04	-	-	-	4.1E-02	-	4.8E-02
Beryllium	3.0E+00	-	-	-	-	5.9E-02	-
Cadmium	4.5E+00	-	-	-	1.5E-01	-	2.4E-01
Cobalt	2.3E+01	-	-	-	-	-	-
Copper	3.0E+03	-	-	-	1.2E-02	-	1.5E-02
Lead	-	-	-	-	-	-	-
Mercury	8.8E+00	3.6E-01	1.6E+00	6.9E-02	4.7E+00	2.4E-01	1.4E+01
Molybdenum	3.8E+02	-	-	-	5.3E-03	-	4.7E-03
Nickel	4.9E+02	-	-	-	-	-	-
Selenium	3.8E+02	-	-	-	3.9E-03	-	6.3E-03
Silver	2.3E+02	-	-	-	5.3E-02	-	8.4E-02
Zinc	2.3E+04	-	-	-	3.2E-03	-	4.8E-03
	HI =>	**3.6E-01**	**1.6E+00**	**6.9E-02**	**6.8E+01**	**3.0E-01**	**1.1E+02**

ILCR VALUES

COPC	RBC_{ILCR} (mg/kg)	MM-S-25	MM-S-26	MM-S-27	MM-S-28	MM-S-29	MM-S-30
Antimony	-	-	-	-	-	-	-
Arsenic	1.1E+00	-	-	-	2E-04	-	4E-04
Barium	-	-	-	-	-	-	-
Beryllium	1.6E+04	-	-	-	-	1E-10	-
Cadmium	1.8E+04	-	-	-	4E-10	-	6E-10
Cobalt	4.2E+03	-	-	-	-	-	-
Copper	-	-	-	-	-	-	-
Lead	-	-	-	-	-	-	-
Mercury	-	-	-	-	-	-	-
Molybdenum	-	-	-	-	-	-	-
Nickel	1.5E+05	-	-	-	-	-	-
Selenium	-	-	-	-	-	-	-
Silver	-	-	-	-	-	-	-
Zinc	-	-	-	-	-	-	-
	ILCR =>	**0E+00**	**0E+00**	**0E+00**	**2E-04**	**1E-10**	**4E-04**

Risk Calculations for Residential Receptor
~ SOIL SAMPLES (sample-specific risk values) ~

CONCENTRATIONS (mg/kg)

COPC	MM-S-31	MM-S-32	MM-S-33	MM-S-34	MM-S-35	MM-S-36	MM-S-37
Antimony	*0.071*	4.2	1.3	0.67	6.6	0.57	0.98
Arsenic	3.1	10	8.4	6.8	24	4.3	6.4
Barium	73	390	200	94	630	85	91
Beryllium	*0.028*	*0.022*	0.28	0.33	0.19	0.15	0.13
Cadmium	0.085	0.39	0.27	0.12	0.78	0.15	0.15
Cobalt	4.6	3.9	5	6.9	3.9	3.7	4.1
Copper	5.1	21	15	8.8	33	8.5	17
Lead	4.1	50	49	8.7	98	12	240
Mercury	0.88	140	14	4	72	0.62	2
Molybdenum	0.39	0.73	1.8	0.79	2.1	0.45	0.42
Nickel	13	14	12	19	13	10	7.8
Selenium	*0.13*	0.59	0.21	*0.098*	1.3	*0.12*	*0.15*
Silver	*0.21*	6.3	3	0.68	9.8	0.3	1.5
Zinc	37	64	63	40	79	40	63

Italicized values are reporting limits for non-detect' results.

BACKGROUND COMPARISON

COPC	BTV (mg/kg)	MM-S-31	MM-S-32	MM-S-33	MM-S-34	MM-S-35	MM-S-36	MM-S-37
Antimony	0.531	-	4.2	1.3	0.67	6.6	0.57	0.98
Arsenic	13.3	-	-	-	-	24	-	-
Barium	281	-	390	-	-	630	-	-
Beryllium	0.118	-	-	0.28	0.33	0.19	0.15	0.13
Cadmium	0.172	-	0.39	0.27	-	0.78	-	-
Cobalt	7.19	-	-	-	-	-	-	-
Copper	13.0	-	21	15	-	33	-	17
Lead	11.5	-	50	49	-	98	12	240
Mercury	0.418	0.88	140	14	4	72	0.62	2
Molybdenum	0.650	-	0.73	1.8	0.79	2.1	-	-
Nickel	25.5	-	-	-	-	-	-	-
Selenium	1.08	-	-	-	-	1.3	-	-
Silver	0.534	-	6.3	3	0.68	9.8	-	1.5
Zinc	60.6	-	64	63	-	79	-	63

HQ and HI VALUES

COPC	RBC_{HI} (mg/kg)	MM-S-31	MM-S-32	MM-S-33	MM-S-34	MM-S-35	MM-S-36	MM-S-37
Antimony	2.6E+01	-	1.6E-01	5.0E-02	2.6E-02	2.5E-01	2.2E-02	3.7E-02
Arsenic	4.0E-01	-	-	-	-	6.0E+01	-	-
Barium	1.1E+04	-	3.6E-02	-	-	5.8E-02	-	-
Beryllium	3.0E+00	-	-	9.2E-02	1.1E-01	6.2E-02	4.9E-02	4.3E-02
Cadmium	4.5E+00	-	8.7E-02	6.0E-02	-	1.7E-01	-	-
Cobalt	2.3E+01	-	-	-	-	-	-	-
Copper	3.0E+03	-	6.9E-03	4.9E-03	-	1.1E-02	-	5.6E-03
Lead	-	-	-	-	-	-	-	-
Mercury	8.8E+00	9.9E-02	1.6E+01	1.6E+00	4.5E-01	8.1E+00	7.0E-02	2.3E-01
Molybdenum	3.8E+02	-	1.9E-03	4.7E-03	2.1E-03	5.5E-03	-	-
Nickel	4.9E+02	-	-	-	-	-	-	-
Selenium	3.8E+02	-	-	-	-	3.4E-03	-	-
Silver	2.3E+02	-	2.8E-02	1.3E-02	3.0E-03	4.3E-02	-	6.6E-03
Zinc	2.3E+04	-	2.8E-03	2.8E-03	-	3.5E-03	-	2.8E-03
	HI =>	**9.9E-02**	**1.6E+01**	**1.8E+00**	**5.9E-01**	**6.9E+01**	**1.4E-01**	**3.2E-01**

ILCR VALUES

COPC	RBC_{ILCR} (mg/kg)	MM-S-31	MM-S-32	MM-S-33	MM-S-34	MM-S-35	MM-S-36	MM-S-37
Antimony	-	-	-	-	-	-	-	-
Arsenic	1.1E+00	-	-	-	-	2E-04	-	-
Barium	-	-	-	-	-	-	-	-
Beryllium	1.6E+04	-	-	2E-10	2E-10	1E-10	9E-11	8E-11
Cadmium	1.8E+04	-	2E-10	1E-10	-	4E-10	-	-
Cobalt	4.2E+03	-	-	-	-	-	-	-
Copper	-	-	-	-	-	-	-	-
Lead	-	-	-	-	-	-	-	-
Mercury	-	-	-	-	-	-	-	-
Molybdenum	-	-	-	-	-	-	-	-
Nickel	1.5E+05	-	-	-	-	-	-	-
Selenium	-	-	-	-	-	-	-	-
Silver	-	-	-	-	-	-	-	-
Zinc	-	-	-	-	-	-	-	-
	ILCR =>	**0E+00**	**2E-10**	**3E-10**	**2E-10**	**2E-04**	**9E-11**	**8E-11**

ATTACHMENT G

Risk Calculations for Recreational User Receptor
~ SEDIMENT SAMPLES (sample-specific risk values) ~

CONCENTRATIONS (mg/kg)

COPC	MM-SD-02 (PPE)	MM-SD-03 (Dwnstrm)	MM-SD-04	MM-SD-05	MM-SD-06	MM-SD-07	MM-SD-08
Antimony	0.34	0.24	0.93	2.4	2.7	6.2	0.3
Arsenic	50	36	8.7	8.9	16	17	5.7
Barium	81	38	280	210	270	400	86
Beryllium	*0.091*	0.032	0.12	0.14	0.19	0.14	0.061
Cadmium	0.18	0.22	1.2	0.29	0.93	1.4	0.24
Cobalt	2.8	2.2	7	7.2	6.9	4.7	3.0
Copper	5.2	5.1	19	30	78	85	7
Lead	7	7	46	130	180	360	6.1
Mercury	2.9	2.6	3.6	64	740	410	0.5
Molybdenum	0.52	0.38	0.36	0.4	0.71	1.8	0.39
Nickel	6.3	3.7	28	23	24	12	8.5
Selenium	0.53	0.7	0.23	0.29	*0.77*	2	0.61
Silver	1.1	0.66	4.6	4.5	19	17	0.23
Zinc	33	25	140	59	99	100	38

Italicized values are reporting limits for non-detect' results.

BACKGROUND COMPARISON

COPC	BTV (mg/kg)	MM-SD-02 (PPE)	MM-SD-03 (Dwnstrm)	MM-SD-04	MM-SD-05	MM-SD-06	MM-SD-07	MM-SD-08
Antimony	0.531	-	-	0.93	2.4	2.7	6.2	-
Arsenic	13.3	50	36	-	-	16	17	-
Barium	281	-	-	-	-	-	400	-
Beryllium	0.118	-	-	0.12	0.14	0.19	0.14	-
Cadmium	0.172	0.18	0.22	1.2	0.29	0.93	1.4	0.24
Cobalt	7.19	-	-	-	7.2	-	-	-
Copper	13.0	-	-	19	30	78	85	-
Lead	11.5	-	-	46	130	180	360	-
Mercury	0.418	2.9	2.6	3.6	64	740	410	0.5
Molybdenum	0.650	-	-	-	-	0.71	1.8	-
Nickel	25.5	-	-	28	-	-	-	-
Selenium	1.08	-	-	-	-	-	2	-
Silver	0.534	1.1	0.66	4.6	4.5	19	17	-
Zinc	60.6	-	-	140	-	99	100	-

HQ and HI VALUES

COPC	RBC_{HI} (mg/kg)	MM-SD-02 (PPE)	MM-SD-03 (Dwnstrm)	MM-SD-04	MM-SD-05	MM-SD-06	MM-SD-07	MM-SD-08
Antimony	2.3E+02	-	-	4.1E-03	1.0E-02	1.2E-02	2.7E-02	-
Arsenic	3.5E+00	1.4E+01	1.0E+01	-	-	4.6E+00	4.9E+00	-
Barium	9.5E+04	-	-	-	-	-	4.2E-03	-
Beryllium	2.7E+01	-	-	4.5E-03	5.3E-03	7.1E-03	5.3E-03	-
Cadmium	3.9E+01	4.6E-03	5.6E-03	3.1E-02	7.4E-03	2.4E-02	3.6E-02	6.1E-03
Cobalt	2.0E+02	-	-	-	3.6E-02	-	-	-
Copper	2.7E+04	-	-	7.1E-04	1.1E-03	2.9E-03	3.2E-03	-
Lead	-	-	-	-	-	-	-	-
Mercury	7.7E+01	3.7E-02	3.4E-02	4.7E-02	8.3E-01	9.6E+00	5.3E+00	6.5E-03
Molybdenum	3.3E+03	-	-	-	-	2.1E-04	5.4E-04	-
Nickel	4.3E+03	-	-	6.6E-03	-	-	-	-
Selenium	3.3E+03	-	-	-	-	-	6.0E-04	-
Silver	2.0E+03	5.5E-04	3.3E-04	2.3E-03	2.3E-03	9.6E-03	8.6E-03	-
Zinc	2.0E+05	-	-	7.0E-04	-	5.0E-04	5.0E-04	-
	HI =>	**1.4E+01**	**1.0E+01**	**9.6E-02**	**8.9E-01**	**1.4E+01**	**1.0E+01**	**1.3E-02**

ILCR VALUES

COPC	RBC_{ILCR} (mg/kg)	MM-SD-02 (PPE)	MM-SD-03 (Dwnstrm)	MM-SD-04	MM-SD-05	MM-SD-06	MM-SD-07	MM-SD-08
Antimony	-	-	-	-	-	-	-	-
Arsenic	9.2E+00	5E-05	4E-05	-	-	2E-05	2E-05	-
Barium	-	-	-	-	-	-	-	-
Beryllium	1.4E+05	-	-	9E-12	1E-11	1E-11	1E-11	-
Cadmium	1.6E+05	1E-11	1E-11	7E-11	2E-11	6E-11	9E-11	1E-11
Cobalt	3.7E+04	-	-	-	2E-09	-	-	-
Copper	-	-	-	-	-	-	-	-
Lead	-	-	-	-	-	-	-	-
Mercury	-	-	-	-	-	-	-	-
Molybdenum	-	-	-	-	-	-	-	-
Nickel	1.3E+06	-	-	2E-10	-	-	-	-
Selenium	-	-	-	-	-	-	-	-
Silver	-	-	-	-	-	-	-	-
Zinc	-	-	-	-	-	-	-	-
	ILCR =>	**5E-05**	**4E-05**	**3E-10**	**2E-09**	**2E-05**	**2E-05**	**1E-11**

Risk Calculations for Recreational Cabin Occupant Receptor
~ SEDIMENT SAMPLES (sample-specific risk values) ~

CONCENTRATIONS (mg/kg)

COPC	MM-SD-02 (PPE)	MM-SD-03 (Dwnstrm)	MM-SD-04	MM-SD-05	MM-SD-06	MM-SD-07	MM-SD-08
Antimony	0.34	0.24	0.93	2.4	2.7	6.2	0.3
Arsenic	50	36	8.7	8.9	16	17	5.7
Barium	81	38	280	210	270	400	86
Beryllium	*0.091*	0.032	0.12	0.14	0.19	0.14	0.061
Cadmium	0.18	0.22	1.2	0.29	0.93	1.4	0.24
Cobalt	2.8	2.2	7	7.2	6.9	4.7	3.0
Copper	5.2	5.1	19	30	78	85	7
Lead	7	7	46	130	180	360	6.1
Mercury	2.9	2.6	3.6	64	740	410	0.5
Molybdenum	0.52	0.38	0.36	0.4	0.71	1.8	0.39
Nickel	6.3	3.7	28	23	24	12	8.5
Selenium	0.53	0.7	0.23	0.29	*0.77*	2	0.61
Silver	1.1	0.66	4.6	4.5	19	17	0.23
Zinc	33	25	140	59	99	100	38

Italicized values are reporting limits for non-detect' results.

BACKGROUND COMPARISON

COPC	BTV (mg/kg)	MM-SD-02 (PPE)	MM-SD-03 (Dwnstrm)	MM-SD-04	MM-SD-05	MM-SD-06	MM-SD-07	MM-SD-08
Antimony	0.531	-	-	0.93	2.4	2.7	6.2	-
Arsenic	13.3	50	36	-	-	16	17	-
Barium	281	-	-	-	-	-	400	-
Beryllium	0.118	-	-	0.12	0.14	0.19	0.14	-
Cadmium	0.172	0.18	0.22	1.2	0.29	0.93	1.4	0.24
Cobalt	7.19	-	-	-	7.2	-	-	-
Copper	13.0	-	-	19	30	78	85	-
Lead	11.5	-	-	46	130	180	360	-
Mercury	0.418	2.9	2.6	3.6	64	740	410	0.5
Molybdenum	0.650	-	-	-	-	0.71	1.8	-
Nickel	25.5	-	-	28	-	-	-	-
Selenium	1.08	-	-	-	-	-	2	-
Silver	0.534	1.1	0.66	4.6	4.5	19	17	-
Zinc	60.6	-	-	140	-	99	100	-

HQ and HI VALUES

COPC	RBC_{HI} (mg/kg)	MM-SD-02 (PPE)	MM-SD-03 (Dwnstrm)	MM-SD-04	MM-SD-05	MM-SD-06	MM-SD-07	MM-SD-08
Antimony	9.2E+01	-	-	1.0E-02	2.6E-02	2.9E-02	6.8E-02	-
Arsenic	1.4E+00	3.6E+01	2.6E+01	-	-	1.1E+01	1.2E+01	-
Barium	3.8E+04	-	-	-	-	-	1.0E-02	-
Beryllium	1.1E+01	-	-	1.1E-02	1.3E-02	1.8E-02	1.3E-02	-
Cadmium	1.6E+01	1.1E-02	1.4E-02	7.6E-02	1.8E-02	5.9E-02	8.9E-02	1.5E-02
Cobalt	8.0E+01	-	-	-	9.0E-02	-	-	-
Copper	1.1E+04	-	-	1.8E-03	2.8E-03	7.3E-03	8.0E-03	-
Lead	-	-	-	-	-	-	-	-
Mercury	3.1E+01	9.4E-02	8.4E-02	1.2E-01	2.1E+00	2.4E+01	1.3E+01	1.6E-02
Molybdenum	1.3E+03	-	-	-	-	5.3E-04	1.4E-03	-
Nickel	1.7E+03	-	-	1.6E-02	-	-	-	-
Selenium	1.3E+03	-	-	-	-	-	1.5E-03	-
Silver	7.9E+02	1.4E-03	8.3E-04	5.8E-03	5.7E-03	2.4E-02	2.1E-02	-
Zinc	8.0E+04	-	-	1.8E-03	-	1.2E-03	1.3E-03	-
	HI =>	**3.6E+01**	**2.6E+01**	**2.4E-01**	**2.2E+00**	**3.6E+01**	**2.6E+01**	**3.1E-02**

ILCR VALUES

COPC	RBC_{ILCR} (mg/kg)	MM-SD-02 (PPE)	MM-SD-03 (Dwnstrm)	MM-SD-04	MM-SD-05	MM-SD-06	MM-SD-07	MM-SD-08
Antimony	-	-	-	-	-	-	-	-
Arsenic	2.9E+00	2E-04	1E-04	-	-	5E-05	6E-05	-
Barium	-	-	-	-	-	-	-	-
Beryllium	3.1E+04	-	-	4E-11	4E-11	6E-11	4E-11	-
Cadmium	4.2E+04	4E-11	5E-11	3E-10	7E-11	2E-10	3E-10	6E-11
Cobalt	8.4E+03	-	-	-	9E-09	-	-	-
Copper	-	-	-	-	-	-	-	-
Lead	-	-	-	-	-	-	-	-
Mercury	-	-	-	-	-	-	-	-
Molybdenum	-	-	-	-	-	-	-	-
Nickel	2.9E+05	-	-	1E-09	-	-	-	-
Selenium	-	-	-	-	-	-	-	-
Silver	-	-	-	-	-	-	-	-
Zinc	-	-	-	-	-	-	-	-
	ILCR =>	**2E-04**	**1E-04**	**1E-09**	**9E-09**	**5E-05**	**6E-05**	**6E-11**

Risk Calculations for Construction Worker Receptor
~ SEDIMENT SAMPLES (sample-specific risk values) ~

CONCENTRATIONS (mg/kg)

COPC	MM-SD-02 (PPE)	MM-SD-03 (Dwnstrm)	MM-SD-04	MM-SD-05	MM-SD-06	MM-SD-07	MM-SD-08
Antimony	0.34	0.24	0.93	2.4	2.7	6.2	0.3
Arsenic	50	36	8.7	8.9	16	17	5.7
Barium	81	38	280	210	270	400	86
Beryllium	*0.091*	0.032	0.12	0.14	0.19	0.14	0.061
Cadmium	0.18	0.22	1.2	0.29	0.93	1.4	0.24
Cobalt	2.8	2.2	7	7.2	6.9	4.7	3.0
Copper	5.2	5.1	19	30	78	85	7
Lead	7	7	46	130	180	360	6.1
Mercury	2.9	2.6	3.6	64	740	410	0.5
Molybdenum	0.52	0.38	0.36	0.4	0.71	1.8	0.39
Nickel	6.3	3.7	28	23	24	12	8.5
Selenium	0.53	0.7	0.23	0.29	*0.77*	2	0.61
Silver	1.1	0.66	4.6	4.5	19	17	0.23
Zinc	33	25	140	59	99	100	38

Italicized values are reporting limits for non-detect' results.

BACKGROUND COMPARISON

COPC	BTV (mg/kg)	MM-SD-02 (PPE)	MM-SD-03 (Dwnstrm)	MM-SD-04	MM-SD-05	MM-SD-06	MM-SD-07	MM-SD-08
Antimony	0.531	-	-	0.93	2.4	2.7	6.2	-
Arsenic	13.3	50	36	-	-	16	17	-
Barium	281	-	-	-	-	-	400	-
Beryllium	0.118	-	-	0.12	0.14	0.19	0.14	-
Cadmium	0.172	0.18	0.22	1.2	0.29	0.93	1.4	0.24
Cobalt	7.19	-	-	-	7.2	-	-	-
Copper	13.0	-	-	19	30	78	85	-
Lead	11.5	-	-	46	130	180	360	-
Mercury	0.418	2.9	2.6	3.6	64	740	410	0.5
Molybdenum	0.650	-	-	-	-	0.71	1.8	-
Nickel	25.5	-	-	28	-	-	-	-
Selenium	1.08	-	-	-	-	-	2	-
Silver	0.534	1.1	0.66	4.6	4.5	19	17	-
Zinc	60.6	-	-	140	-	99	100	-

HQ and HI VALUES

COPC	RBC_{HI} (mg/kg)	MM-SD-02 (PPE)	MM-SD-03 (Dwnstrm)	MM-SD-04	MM-SD-05	MM-SD-06	MM-SD-07	MM-SD-08
Antimony	7.2E+01	-	-	1.3E-02	3.3E-02	3.8E-02	8.6E-02	-
Arsenic	1.2E+00	4.2E+01	3.0E+01	-	-	1.3E+01	1.4E+01	-
Barium	2.0E+03	-	-	-	-	-	2.0E-01	-
Beryllium	2.9E+00	-	-	4.1E-02	4.8E-02	6.5E-02	4.8E-02	-
Cadmium	1.4E+00	1.3E-01	1.6E-01	8.8E-01	2.1E-01	6.8E-01	1.0E+00	1.8E-01
Cobalt	2.0E+01	-	-	-	3.5E-01	-	-	-
Copper	1.2E+04	-	-	1.5E-03	2.4E-03	6.3E-03	6.9E-03	-
Lead	-	-	-	-	-	-	-	-
Mercury	1.6E+01	1.8E-01	1.6E-01	2.2E-01	4.0E+00	4.6E+01	2.5E+01	3.1E-02
Molybdenum	1.5E+03	-	-	-	-	4.6E-04	1.2E-03	-
Nickel	5.7E+01	-	-	4.9E-01	-	-	-	-
Selenium	1.5E+03	-	-	-	-	-	1.3E-03	-
Silver	3.8E+02	2.9E-03	1.7E-03	1.2E-02	1.2E-02	5.0E-02	4.5E-02	-
Zinc	9.3E+04	-	-	1.5E-03	-	1.1E-03	1.1E-03	-
	HI =>	**4.2E+01**	**3.1E+01**	**1.7E+00**	**4.6E+00**	**6.0E+01**	**4.1E+01**	**2.1E-01**

ILCR VALUES

COPC	RBC_{ILCR} (mg/kg)	MM-SD-02 (PPE)	MM-SD-03 (Dwnstrm)	MM-SD-04	MM-SD-05	MM-SD-06	MM-SD-07	MM-SD-08
Antimony	-	-	-	-	-	-	-	-
Arsenic	2.4E+01	2E-05	1E-05	-	-	7E-06	7E-06	-
Barium	-	-	-	-	-	-	-	-
Beryllium	1.3E+03	-	-	9E-10	1E-09	1E-09	1E-09	-
Cadmium	1.7E+03	1E-09	1E-09	7E-09	2E-09	5E-09	8E-09	1E-09
Cobalt	3.4E+02	-	-	-	2E-07	-	-	-
Copper	-	-	-	-	-	-	-	-
Lead	-	-	-	-	-	-	-	-
Mercury	-	-	-	-	-	-	-	-
Molybdenum	-	-	-	-	-	-	-	-
Nickel	1.2E+04	-	-	2E-08	-	-	-	-
Selenium	-	-	-	-	-	-	-	-
Silver	-	-	-	-	-	-	-	-
Zinc	-	-	-	-	-	-	-	-
	ILCR =>	**2E-05**	**1E-05**	**3E-08**	**2E-07**	**7E-06**	**7E-06**	**1E-09**

Risk Calculations for Residential Receptor
~ SEDIMENT SAMPLES (sample-specific risk values) ~

CONCENTRATIONS (mg/kg)

COPC	MM-SD-02 (PPE)	MM-SD-03 (Dwnstrm)	MM-SD-04	MM-SD-05	MM-SD-06	MM-SD-07	MM-SD-08
Antimony	0.34	0.24	0.93	2.4	2.7	6.2	0.3
Arsenic	50	36	8.7	8.9	16	17	5.7
Barium	81	38	280	210	270	400	86
Beryllium	*0.091*	0.032	0.12	0.14	0.19	0.14	0.061
Cadmium	0.18	0.22	1.2	0.29	0.93	1.4	0.24
Cobalt	2.8	2.2	7	7.2	6.9	4.7	3.0
Copper	5.2	5.1	19	30	78	85	7
Lead	7	7	46	130	180	360	6.1
Mercury	2.9	2.6	3.6	64	740	410	0.5
Molybdenum	0.52	0.38	0.36	0.4	0.71	1.8	0.39
Nickel	6.3	3.7	28	23	24	12	8.5
Selenium	0.53	0.7	0.23	0.29	*0.77*	2	0.61
Silver	1.1	0.66	4.6	4.5	19	17	0.23
Zinc	33	25	140	59	99	100	38

Italicized values are reporting limits for non-detect' results.

BACKGROUND COMPARISON

COPC	BTV (mg/kg)	MM-SD-02 (PPE)	MM-SD-03 (Dwnstrm)	MM-SD-04	MM-SD-05	MM-SD-06	MM-SD-07	MM-SD-08
Antimony	0.531	-	-	0.93	2.4	2.7	6.2	-
Arsenic	13.3	50	36	-	-	16	17	-
Barium	281	-	-	-	-	-	400	-
Beryllium	0.118	-	-	0.12	0.14	0.19	0.14	-
Cadmium	0.172	0.18	0.22	1.2	0.29	0.93	1.4	0.24
Cobalt	7.19	-	-	-	7.2	-	-	-
Copper	13.0	-	-	19	30	78	85	-
Lead	11.5	-	-	46	130	180	360	-
Mercury	0.418	2.9	2.6	3.6	64	740	410	0.5
Molybdenum	0.650	-	-	-	-	0.71	1.8	-
Nickel	25.5	-	-	28	-	-	-	-
Selenium	1.08	-	-	-	-	-	2	-
Silver	0.534	1.1	0.66	4.6	4.5	19	17	-
Zinc	60.6	-	-	140	-	99	100	-

HQ and HI VALUES

COPC	RBC_{HI} (mg/kg)	MM-SD-02 (PPE)	MM-SD-03 (Dwnstrm)	MM-SD-04	MM-SD-05	MM-SD-06	MM-SD-07	MM-SD-08
Antimony	2.6E+01	-	-	3.5E-02	9.2E-02	1.0E-01	2.4E-01	-
Arsenic	4.0E-01	1.3E+02	9.0E+01	-	-	4.0E+01	4.3E+01	-
Barium	1.1E+04	-	-	-	-	-	3.7E-02	-
Beryllium	3.0E+00	-	-	3.9E-02	4.6E-02	6.2E-02	4.6E-02	-
Cadmium	4.5E+00	4.0E-02	4.9E-02	2.7E-01	6.5E-02	2.1E-01	3.1E-01	5.3E-02
Cobalt	2.3E+01	-	-	-	3.2E-01	-	-	-
Copper	3.0E+03	-	-	6.2E-03	9.9E-03	2.6E-02	2.8E-02	-
Lead	-	-	-	-	-	-	-	-
Mercury	8.8E+00	3.3E-01	2.9E-01	4.1E-01	7.2E+00	8.4E+01	4.6E+01	5.7E-02
Molybdenum	3.8E+02	-	-	-	-	1.9E-03	4.7E-03	-
Nickel	4.9E+02	-	-	5.8E-02	-	-	-	-
Selenium	3.8E+02	-	-	-	-	-	5.3E-03	-
Silver	2.3E+02	4.9E-03	2.9E-03	2.0E-02	2.0E-02	8.4E-02	7.5E-02	-
Zinc	2.3E+04	-	-	6.1E-03	-	4.3E-03	4.4E-03	-
	HI =>	**1.3E+02**	**9.1E+01**	**8.4E-01**	**7.8E+00**	**1.2E+02**	**9.0E+01**	**1.1E-01**

ILCR VALUES

COPC	RBC_{ILCR} (mg/kg)	MM-SD-02 (PPE)	MM-SD-03 (Dwnstrm)	MM-SD-04	MM-SD-05	MM-SD-06	MM-SD-07	MM-SD-08
Antimony	-	-	-	-	-	-	-	-
Arsenic	1.1E+00	5E-04	3E-04	-	-	2E-04	2E-04	-
Barium	-	-	-	-	-	-	-	-
Beryllium	1.6E+04	-	-	8E-11	9E-11	1E-10	9E-11	-
Cadmium	1.8E+04	1E-10	1E-10	7E-10	2E-10	5E-10	8E-10	1E-10
Cobalt	4.2E+03	-	-	-	2E-08	-	-	-
Copper	-	-	-	-	-	-	-	-
Lead	-	-	-	-	-	-	-	-
Mercury	-	-	-	-	-	-	-	-
Molybdenum	-	-	-	-	-	-	-	-
Nickel	1.5E+05	-	-	2E-09	-	-	-	-
Selenium	-	-	-	-	-	-	-	-
Silver	-	-	-	-	-	-	-	-
Zinc	-	-	-	-	-	-	-	-
	ILCR =>	**5E-04**	**3E-04**	**3E-09**	**2E-08**	**2E-04**	**2E-04**	**1E-10**

ATTACHMENT H

Summary Statistics and 95% UCL for Sitewide Soil Samples

~ all values are in units of mg/kg ~

Sample	Antimony	Arsenic	Barium	Beryllium	Cadmium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Zinc
MM-S-01	230	19	210	0.12	0.62	17	190	2500	52	0.83	34	0.8	5.4	570
MM-S-02	4.2	12	230	0.27	0.15	5.4	21	150	210	0.37	16	0.17	3.8	42
MM-S-03	25	84	1000	0.17	2.4	3.7	130	430	260	5.3	11	6.6	85	150
MM-S-04	19	36	950	0.21	1.4	4.9	100	380	2200	2.6	17	2.7	64	110
MM-S-05	0.71	9.7	150	0.24	0.18	5.6	12	18	2.4	0.34	19	0.11	2.6	48
MM-S-06	23	28	750	0.17	0.97	4.9	58	600	51	0.87	15	1.2	9.3	160
MM-S-07	1	11	220	0.2	0.31	6	95	39	58	0.46	21	0.34	2.2	55
MM-S-08	4	15	240	0.12	0.99	5.7	69	220	31	1.5	16	0.61	8	120
MM-S-09	35	210	1300	0.12	1.5	1.1	240	750	27	21	2.3	14	140	370
MM-S-10	5.1	12	250	0.2	1	6.1	59	180	150	0.55	21	0.57	6.8	100
MM-S-11	0.28	4.4	160	0.16	0.25	4.2	8.3	9.9	0.98	0.45	9	0.14	0.58	43
MM-S-12	0.55	9.1	140	0.19	0.48	4.5	17	17	18	0.69	13	0.38	2.7	63
MM-S-13	0.19	4	100	0.12	0.35	4.5	9.1	44	3.9	0.55	8.7	0.17	0.43	63
MM-S-14	1	26	120	0.069	0.39	3.8	12	32	23	0.42	8.5	0.44	7.7	46
MM-S-15	0.072	3.3	49	0.11	0.071	4.3	5.2	2.7	0.54	0.3	16	0.13	0.064	24
MM-S-16	0.059	6.1	88	0.17	0.11	4.3	6.7	8.8	0.75	0.45	12	0.11	0.31	29
MM-S-17	0.064	7.4	110	0.025	0.083	5.8	8.5	5.6	0.55	0.28	16	0.12	0.098	29
MM-S-18	1.3	30	260	0.03	0.34	7.4	21	91	1.8	0.47	28	0.28	2.3	75
MM-S-19	1	11	290	0.03	0.28	8.6	18	51	4	0.53	30	0.17	3.1	77
MM-S-20	0.47	9.6	97	0.031	0.11	4.3	11	170	9.3	0.58	9.1	0.25	2.7	36
MM-S-21	0.075	6.4	87	0.03	0.086	3.7	6	8.3	0.77	0.52	8.4	0.14	0.13	31
MM-S-22	0.07	4.6	74	0.036	0.14	4.2	11	17	0.58	0.78	9.4	0.13	0.19	20
MM-S-23	0.073	6.4	84	0.029	0.2	3.2	11	9.6	8.7	0.55	9.4	0.16	0.89	39
MM-S-24	5.8	30	720	0.029	1.3	4.1	42	93	120	1.9	9.5	2.2	15	130
MM-S-25	0.066	4.4	76	0.026	0.12	4.8	6.2	10	3.2	0.37	15	0.14	0.21	34
MM-S-26	0.07	4.5	97	0.028	0.16	4.4	9.2	17	14	0.49	15	0.17	0.053	34
MM-S-27	0.057	5.9	87	0.022	0.13	6.1	9.4	7.1	0.61	0.33	21	0.1	0.12	37
MM-S-28	5.6	25	450	0.039	0.69	5.2	36	97	42	2	13	1.5	12	74
MM-S-29	0.31	4.6	99	0.18	0.17	4.8	8.3	11	2.1	0.52	14	0.14	0.36	33
MM-S-30	5.4	39	520	0.027	1.1	3.9	45	110	120	1.8	12	2.4	19	110
MM-S-31	0.071	3.1	73	0.028	0.085	4.6	5.1	4.1	0.88	0.39	13	0.13	0.21	37
MM-S-32	4.2	10	390	0.022	0.39	3.9	21	50	140	0.73	14	0.59	6.3	64
MM-S-33	1.3	8.4	200	0.28	0.27	5	15	49	14	1.8	12	0.21	3	63
MM-S-34	0.67	6.8	94	0.33	0.12	6.9	8.8	8.7	4	0.79	19	0.098	0.68	40
MM-S-35	6.6	24	630	0.19	0.78	3.9	33	98	72	2.1	13	1.3	9.8	79
MM-S-36	0.57	4.3	85	0.15	0.15	3.7	8.5	12	0.62	0.45	10	0.12	0.3	40
MM-S-37	0.98	6.4	91	0.13	0.15	4.1	17	240	2	0.42	7.8	0.15	1.5	63
Minimum =>	**0.057**	**3.1**	**49**	**0.022**	**0.071**	**1.1**	**5.1**	**2.7**	**0.54**	**0.28**	**2.3**	**0.098**	**0.053**	**20**
95% UCL =>	**49.4**	**45.5**	**504**	**0.180**	**0.862**	**5.80**	**75.1**	**484**	**469**	**3.93**	**16.6**	**2.84**	**39.6**	**158**
Maximum =>	**230**	**210**	**1300**	**0.33**	**2.4**	**17**	**240**	**2500**	**2200**	**21**	**34**	**14**	**140**	**570**

Risk Calculations for Recreational User Receptor
~ SOIL SAMPLES (Sitewide 95% UCL risk values) ~

CONCENTRATIONS (mg/kg)

COPC	95% UCL
Antimony	49.4
Arsenic	45.5
Barium	504
Beryllium	0.180
Cadmium	0.862
Cobalt	5.80
Copper	75.1
Lead	484
Mercury	469
Molybdenum	3.93
Nickel	16.6
Selenium	2.84
Silver	39.6
Zinc	158

BACKGROUND COMPARISON

COPC	BTV (mg/kg)	95% UCL
Antimony	0.531	49.4
Arsenic	13.3	45.5
Barium	281	504
Beryllium	0.118	0.180
Cadmium	0.172	0.862
Cobalt	7.19	-
Copper	13.0	75.1
Lead	11.5	484
Mercury	0.418	469
Molybdenum	0.650	3.93
Nickel	25.5	-
Selenium	1.08	2.84
Silver	0.534	39.6
Zinc	60.6	158

HQ and HI VALUES

COPC	RBC_{HI} (mg/kg)	HQ
Antimony	2.3E+02	2.2E-01
Arsenic	3.5E+00	1.3E+01
Barium	9.5E+04	5.3E-03
Beryllium	2.7E+01	6.8E-03
Cadmium	3.9E+01	2.2E-02
Cobalt	2.0E+02	-
Copper	2.7E+04	2.8E-03
Lead	-	-
Mercury	7.7E+01	6.1E+00
Molybdenum	3.3E+03	1.2E-03
Nickel	4.3E+03	-
Selenium	3.3E+03	8.5E-04
Silver	2.0E+03	2.0E-02
Zinc	2.0E+05	7.9E-04
		HI => **1.9E+01**

ILCR VALUES

COPC	RBC_{ILCR} (mg/kg)	ILCR
Antimony	-	-
Arsenic	9.2E+00	5E-05
Barium	-	-
Beryllium	1.4E+05	1E-11
Cadmium	1.6E+05	5E-11
Cobalt	3.7E+04	-
Copper	-	-
Lead	-	-
Mercury	-	-
Molybdenum	-	-
Nickel	1.3E+06	-
Selenium	-	-
Silver	-	-
Zinc	-	-
		ILCR => **5E-05**

Risk Calculations for Recreational Cabin Occupant Receptor
~ SOIL SAMPLES (Sitewide 95% UCL risk values) ~

CONCENTRATIONS (mg/kg)

COPC	95% UCL
Antimony	49.4
Arsenic	45.5
Barium	504
Beryllium	0.180
Cadmium	0.862
Cobalt	5.80
Copper	75.1
Lead	484
Mercury	469
Molybdenum	3.93
Nickel	16.6
Selenium	2.84
Silver	39.6
Zinc	158

BACKGROUND COMPARISON

COPC	BTV (mg/kg)	95% UCL
Antimony	0.531	49.4
Arsenic	13.3	45.5
Barium	281	504
Beryllium	0.118	0.180
Cadmium	0.172	0.862
Cobalt	7.19	-
Copper	13.0	75.1
Lead	11.5	484
Mercury	0.418	469
Molybdenum	0.650	3.93
Nickel	25.5	-
Selenium	1.08	2.84
Silver	0.534	39.6
Zinc	60.6	158

HQ and HI VALUES

COPC	RBC_{HI} (mg/kg)	HQ
Antimony	9.2E+01	5.4E-01
Arsenic	1.4E+00	3.3E+01
Barium	3.8E+04	1.3E-02
Beryllium	1.1E+01	1.7E-02
Cadmium	1.6E+01	5.5E-02
Cobalt	8.0E+01	-
Copper	1.1E+04	7.1E-03
Lead	-	-
Mercury	3.1E+01	1.5E+01
Molybdenum	1.3E+03	3.0E-03
Nickel	1.7E+03	-
Selenium	1.3E+03	2.1E-03
Silver	7.9E+02	5.0E-02
Zinc	8.0E+04	2.0E-03
		HI => **4.8E+01**

ILCR VALUES

COPC	RBC_{ILCR} (mg/kg)	ILCR
Antimony	-	-
Arsenic	2.9E+00	2E-04
Barium	-	-
Beryllium	3.1E+04	6E-11
Cadmium	4.2E+04	2E-10
Cobalt	8.4E+03	-
Copper	-	-
Lead	-	-
Mercury	-	-
Molybdenum	-	-
Nickel	2.9E+05	-
Selenium	-	-
Silver	-	-
Zinc	-	-
		ILCR => **2E-04**

Risk Calculations for Construction Worker Receptor
~ SOIL SAMPLES (Sitewide 95% UCL risk values) ~

CONCENTRATIONS (mg/kg)

COPC	95% UCL
Antimony	49.4
Arsenic	45.5
Barium	504
Beryllium	0.180
Cadmium	0.862
Cobalt	5.80
Copper	75.1
Lead	484
Mercury	469
Molybdenum	3.93
Nickel	16.6
Selenium	2.84
Silver	39.6
Zinc	158

BACKGROUND COMPARISON

COPC	BTV (mg/kg)	95% UCL
Antimony	0.531	49.4
Arsenic	13.3	45.5
Barium	281	504
Beryllium	0.118	0.180
Cadmium	0.172	0.862
Cobalt	7.19	-
Copper	13.0	75.1
Lead	11.5	484
Mercury	0.418	469
Molybdenum	0.650	3.93
Nickel	25.5	-
Selenium	1.08	2.84
Silver	0.534	39.6
Zinc	60.6	158

HQ and HI VALUES

COPC	RBC_{HI} (mg/kg)	HQ
Antimony	7.2E+01	6.9E-01
Arsenic	1.2E+00	3.8E+01
Barium	2.0E+03	2.5E-01
Beryllium	2.9E+00	6.2E-02
Cadmium	1.4E+00	6.3E-01
Cobalt	2.0E+01	-
Copper	1.2E+04	6.1E-03
Lead	-	-
Mercury	1.6E+01	2.9E+01
Molybdenum	1.5E+03	2.5E-03
Nickel	5.7E+01	-
Selenium	1.5E+03	1.9E-03
Silver	3.8E+02	1.0E-01
Zinc	9.3E+04	1.7E-03
		HI => **6.9E+01**

ILCR VALUES

COPC	RBC_{ILCR} (mg/kg)	ILCR
Antimony	-	-
Arsenic	2.4E+01	2E-05
Barium	-	-
Beryllium	1.3E+03	1E-09
Cadmium	1.7E+03	5E-09
Cobalt	3.4E+02	-
Copper	-	-
Lead	-	-
Mercury	-	-
Molybdenum	-	-
Nickel	1.2E+04	-
Selenium	-	-
Silver	-	-
Zinc	-	-
		ILCR => **2E-05**

Risk Calculations for Residential Receptor

~ SOIL SAMPLES (Sitewide 95% UCL risk values) ~

CONCENTRATIONS (mg/kg)

COPC	95% UCL
Antimony	49.4
Arsenic	45.5
Barium	504
Beryllium	0.180
Cadmium	0.862
Cobalt	5.80
Copper	75.1
Lead	484
Mercury	469
Molybdenum	3.93
Nickel	16.6
Selenium	2.84
Silver	39.6
Zinc	158

BACKGROUND COMPARISON

COPC	BTV (mg/kg)	95% UCL
Antimony	0.531	49.4
Arsenic	13.3	45.5
Barium	281	504
Beryllium	0.118	0.180
Cadmium	0.172	0.862
Cobalt	7.19	-
Copper	13.0	75.1
Lead	11.5	484
Mercury	0.418	469
Molybdenum	0.650	3.93
Nickel	25.5	-
Selenium	1.08	2.84
Silver	0.534	39.6
Zinc	60.6	158

HQ and HI VALUES

COPC	RBC_{HI} (mg/kg)	HQ
Antimony	2.6E+01	1.9E+00
Arsenic	4.0E-01	1.1E+02
Barium	1.1E+04	4.6E-02
Beryllium	3.0E+00	5.9E-02
Cadmium	4.5E+00	1.9E-01
Cobalt	2.3E+01	-
Copper	3.0E+03	2.5E-02
Lead	-	-
Mercury	8.8E+00	5.3E+01
Molybdenum	3.8E+02	1.0E-02
Nickel	4.9E+02	-
Selenium	3.8E+02	7.5E-03
Silver	2.3E+02	1.7E-01
Zinc	2.3E+04	6.9E-03
		HI => **1.7E+02**

ILCR VALUES

COPC	RBC_{ILCR} (mg/kg)	ILCR
Antimony	-	-
Arsenic	1.1E+00	4E-04
Barium	-	-
Beryllium	1.6E+04	1E-10
Cadmium	1.8E+04	5E-10
Cobalt	4.2E+03	-
Copper	-	-
Lead	-	-
Mercury	-	-
Molybdenum	-	-
Nickel	1.5E+05	-
Selenium	-	-
Silver	-	-
Zinc	-	-
		ILCR => **4E-04**

Summary Statistics and 95% UCL for Mill Area Soil Samples

~ all values are in units of mg/kg ~

Sample	Antimony	Arsenic	Barium	Beryllium	Cadmium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Zinc
MM-S-01	230	19	210	0.12	0.62	17	190	2500	52	0.83	34	0.8	5.4	570
MM-S-02	4.2	12	230	0.27	0.15	5.4	21	150	210	0.37	16	0.17	3.8	42
MM-S-03	25	84	1000	0.17	2.4	3.7	130	430	260	5.3	11	6.6	85	150
MM-S-04	19	36	950	0.21	1.4	4.9	100	380	2200	2.6	17	2.7	64	110
MM-S-05	0.71	9.7	150	0.24	0.18	5.6	12	18	2.4	0.34	19	0.11	2.6	48
MM-S-06	23	28	750	0.17	0.97	4.9	58	600	51	0.87	15	1.2	9.3	160
MM-S-07	1	11	220	0.2	0.31	6	95	39	58	0.46	21	0.34	2.2	55
MM-S-08	4	15	240	0.12	0.99	5.7	69	220	31	1.5	16	0.61	8	120
MM-S-09	35	210	1300	0.12	1.5	1.1	240	750	27	21	2.3	14	140	370
MM-S-10	5.1	12	250	0.2	1	6.1	59	180	150	0.55	21	0.57	6.8	100
MM-S-16	0.059	6.1	88	0.17	0.11	4.3	6.7	8.8	0.75	0.45	12	0.11	0.31	29
MM-S-17	0.064	7.4	110	0.025	0.083	5.8	8.5	5.6	0.55	0.28	16	0.12	0.098	29
MM-S-18	1.3	30	260	0.03	0.34	7.4	21	91	1.8	0.47	28	0.28	2.3	75
MM-S-19	1	11	290	0.03	0.28	8.6	18	51	4	0.53	30	0.17	3.1	77
MM-S-20	0.47	9.6	97	0.031	0.11	4.3	11	170	9.3	0.58	9.1	0.25	2.7	36
MM-S-23	0.073	6.4	84	0.029	0.2	3.2	11	9.6	8.7	0.55	9.4	0.16	0.89	39
MM-S-24	5.8	30	720	0.029	1.3	4.1	42	93	120	1.9	9.5	2.2	15	130
MM-S-25	0.066	4.4	76	0.026	0.12	4.8	6.2	10	3.2	0.37	15	0.14	0.21	34
MM-S-26	0.07	4.5	97	0.028	0.16	4.4	9.2	17	14	0.49	15	0.17	0.053	34
MM-S-27	0.057	5.9	87	0.022	0.13	6.1	9.4	7.1	0.61	0.33	21	0.1	0.12	37
MM-S-29	0.31	4.6	99	0.18	0.17	4.8	8.3	11	2.1	0.52	14	0.14	0.36	33
Minimum =>	**0.057**	**4.4**	**76**	**0.022**	**0.083**	**1.1**	**6.2**	**5.6**	**0.55**	**0.28**	**2.3**	**0.1**	**0.053**	**29**
95% UCL =>	**43.3**	**70.0**	**694**	**0.196**	**1.20**	**6.83**	**116**	**551**	**372**	**6.22**	**19.5**	**4.55**	**65.5**	**161**
Maximum =>	**230**	**210**	**1300**	**0.27**	**2.4**	**17**	**240**	**2500**	**2200**	**21**	**34**	**14**	**140**	**570**

Risk Calculations for Recreational User Receptor
~ SOIL SAMPLES (Mill Area 95% UCL risk values) ~

CONCENTRATIONS (mg/kg)

COPC	95% UCL
Antimony	43.3
Arsenic	70.0
Barium	694
Beryllium	0.196
Cadmium	1.20
Cobalt	6.83
Copper	116
Lead	551
Mercury	372
Molybdenum	6.22
Nickel	19.5
Selenium	4.55
Silver	65.5
Zinc	161

BACKGROUND COMPARISON

COPC	BTV (mg/kg)	95% UCL
Antimony	0.531	43.3
Arsenic	13.3	70.0
Barium	281	694
Beryllium	0.118	0.196
Cadmium	0.172	1.20
Cobalt	7.19	-
Copper	13.0	116
Lead	11.5	551
Mercury	0.418	372
Molybdenum	0.650	6.22
Nickel	25.5	-
Selenium	1.08	4.55
Silver	0.534	65.5
Zinc	60.6	161

HQ and HI VALUES

COPC	RBC_{HI} (mg/kg)	HQ
Antimony	2.3E+02	1.9E-01
Arsenic	3.5E+00	2.0E+01
Barium	9.5E+04	7.3E-03
Beryllium	2.7E+01	7.4E-03
Cadmium	3.9E+01	3.0E-02
Cobalt	2.0E+02	-
Copper	2.7E+04	4.3E-03
Lead	-	-
Mercury	7.7E+01	4.8E+00
Molybdenum	3.3E+03	1.9E-03
Nickel	4.3E+03	-
Selenium	3.3E+03	1.4E-03
Silver	2.0E+03	3.3E-02
Zinc	2.0E+05	8.0E-04
	HI =>	**2.5E+01**

ILCR VALUES

COPC	RBC_{ILCR} (mg/kg)	ILCR
Antimony	-	-
Arsenic	9.2E+00	8E-05
Barium	-	-
Beryllium	1.4E+05	1E-11
Cadmium	1.6E+05	7E-11
Cobalt	3.7E+04	-
Copper	-	-
Lead	-	-
Mercury	-	-
Molybdenum	-	-
Nickel	1.3E+06	-
Selenium	-	-
Silver	-	-
Zinc	-	-
	ILCR =>	**8E-05**

Risk Calculations for Recreational Cabin Occupant Receptor
~ SOIL SAMPLES (Mill Area 95% UCL risk values) ~

CONCENTRATIONS (mg/kg)

COPC	95% UCL
Antimony	43.3
Arsenic	70.0
Barium	694
Beryllium	0.196
Cadmium	1.20
Cobalt	6.83
Copper	116
Lead	551
Mercury	372
Molybdenum	6.22
Nickel	19.5
Selenium	4.55
Silver	65.5
Zinc	161

BACKGROUND COMPARISON

COPC	BTV (mg/kg)	95% UCL
Antimony	0.531	43.3
Arsenic	13.3	70.0
Barium	281	694
Beryllium	0.118	0.196
Cadmium	0.172	1.20
Cobalt	7.19	-
Copper	13.0	116
Lead	11.5	551
Mercury	0.418	372
Molybdenum	0.650	6.22
Nickel	25.5	-
Selenium	1.08	4.55
Silver	0.534	65.5
Zinc	60.6	161

HQ and HI VALUES

COPC	RBC_{HI} (mg/kg)	HQ
Antimony	9.2E+01	4.7E-01
Arsenic	1.4E+00	5.0E+01
Barium	3.8E+04	1.8E-02
Beryllium	1.1E+01	1.8E-02
Cadmium	1.6E+01	7.6E-02
Cobalt	8.0E+01	-
Copper	1.1E+04	1.1E-02
Lead	-	-
Mercury	3.1E+01	1.2E+01
Molybdenum	1.3E+03	4.7E-03
Nickel	1.7E+03	-
Selenium	1.3E+03	3.4E-03
Silver	7.9E+02	8.2E-02
Zinc	8.0E+04	2.0E-03
		HI => **6.3E+01**

ILCR VALUES

COPC	RBC_{ILCR} (mg/kg)	ILCR
Antimony	-	-
Arsenic	2.9E+00	2E-04
Barium	-	-
Beryllium	3.1E+04	6E-11
Cadmium	4.2E+04	3E-10
Cobalt	8.4E+03	-
Copper	-	-
Lead	-	-
Mercury	-	-
Molybdenum	-	-
Nickel	2.9E+05	-
Selenium	-	-
Silver	-	-
Zinc	-	-
		ILCR => **2E-04**

Risk Calculations for Construction Worker Receptor
~ SOIL SAMPLES (Mill Area 95% UCL risk values) ~

CONCENTRATIONS (mg/kg)

COPC	95% UCL
Antimony	43.3
Arsenic	70.0
Barium	694
Beryllium	0.196
Cadmium	1.20
Cobalt	6.83
Copper	116
Lead	551
Mercury	372
Molybdenum	6.22
Nickel	19.5
Selenium	4.55
Silver	65.5
Zinc	161

BACKGROUND COMPARISON

COPC	BTV (mg/kg)	95% UCL
Antimony	0.531	43.3
Arsenic	13.3	70.0
Barium	281	694
Beryllium	0.118	0.196
Cadmium	0.172	1.20
Cobalt	7.19	-
Copper	13.0	116
Lead	11.5	551
Mercury	0.418	372
Molybdenum	0.650	6.22
Nickel	25.5	-
Selenium	1.08	4.55
Silver	0.534	65.5
Zinc	60.6	161

HQ and HI VALUES

COPC	RBC_{HI} (mg/kg)	HQ
Antimony	7.2E+01	6.0E-01
Arsenic	1.2E+00	5.9E+01
Barium	2.0E+03	3.5E-01
Beryllium	2.9E+00	6.7E-02
Cadmium	1.4E+00	8.8E-01
Cobalt	2.0E+01	-
Copper	1.2E+04	9.4E-03
Lead	-	-
Mercury	1.6E+01	2.3E+01
Molybdenum	1.5E+03	4.0E-03
Nickel	5.7E+01	-
Selenium	1.5E+03	3.0E-03
Silver	3.8E+02	1.7E-01
Zinc	9.3E+04	1.7E-03
		HI => **8.4E+01**

ILCR VALUES

COPC	RBC_{ILCR} (mg/kg)	ILCR
Antimony	-	-
Arsenic	2.4E+01	3E-05
Barium	-	-
Beryllium	1.3E+03	2E-09
Cadmium	1.7E+03	7E-09
Cobalt	3.4E+02	-
Copper	-	-
Lead	-	-
Mercury	-	-
Molybdenum	-	-
Nickel	1.2E+04	-
Selenium	-	-
Silver	-	-
Zinc	-	-
		ILCR => **3E-05**

Risk Calculations for Residential Receptor
~ SOIL SAMPLES (Mill Area 95% UCL risk values) ~

CONCENTRATIONS (mg/kg)

COPC	95% UCL
Antimony	43.3
Arsenic	70.0
Barium	694
Beryllium	0.196
Cadmium	1.20
Cobalt	6.83
Copper	116
Lead	551
Mercury	372
Molybdenum	6.22
Nickel	19.5
Selenium	4.55
Silver	65.5
Zinc	161

BACKGROUND COMPARISON

COPC	BTV (mg/kg)	95% UCL
Antimony	0.531	43.3
Arsenic	13.3	70.0
Barium	281	694
Beryllium	0.118	0.196
Cadmium	0.172	1.20
Cobalt	7.19	-
Copper	13.0	116
Lead	11.5	551
Mercury	0.418	372
Molybdenum	0.650	6.22
Nickel	25.5	-
Selenium	1.08	4.55
Silver	0.534	65.5
Zinc	60.6	161

HQ and HI VALUES

COPC	RBC_{HI} (mg/kg)	HQ
Antimony	2.6E+01	1.7E+00
Arsenic	4.0E-01	1.8E+02
Barium	1.1E+04	6.4E-02
Beryllium	3.0E+00	6.4E-02
Cadmium	4.5E+00	2.7E-01
Cobalt	2.3E+01	-
Copper	3.0E+03	3.8E-02
Lead	-	-
Mercury	8.8E+00	4.2E+01
Molybdenum	3.8E+02	1.6E-02
Nickel	4.9E+02	-
Selenium	3.8E+02	1.2E-02
Silver	2.3E+02	2.9E-01
Zinc	2.3E+04	7.0E-03
		HI => **2.2E+02**

ILCR VALUES

COPC	RBC_{ILCR} (mg/kg)	ILCR
Antimony	-	-
Arsenic	1.1E+00	7E-04
Barium	-	-
Beryllium	1.6E+04	1E-10
Cadmium	1.8E+04	7E-10
Cobalt	4.2E+03	-
Copper	-	-
Lead	-	-
Mercury	-	-
Molybdenum	-	-
Nickel	1.5E+05	-
Selenium	-	-
Silver	-	-
Zinc	-	-
		ILCR => **7E-04**

Summary Statistics and 95% UCL for Cabin Area Soil Samples

~ all values are in units of mg/kg ~

Sample	Antimony	Arsenic	Barium	Beryllium	Cadmium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Zinc
MM-S-11	0.28	4.4	160	0.16	0.25	4.2	8.3	9.9	0.98	0.45	9	0.14	0.58	43
MM-S-12	0.55	9.1	140	0.19	0.48	4.5	17	17	18	0.69	13	0.38	2.7	63
MM-S-13	0.19	4	100	0.12	0.35	4.5	9.1	44	3.9	0.55	8.7	0.17	0.43	63
MM-S-14	1	26	120	0.069	0.39	3.8	12	32	23	0.42	8.5	0.44	7.7	46
MM-S-15	0.072	3.3	49	0.11	0.071	4.3	5.2	2.7	0.54	0.3	16	0.13	0.064	24
MM-S-21	0.075	6.4	87	0.03	0.086	3.7	6	8.3	0.77	0.52	8.4	0.14	0.13	31
MM-S-22	0.07	4.6	74	0.036	0.14	4.2	11	17	0.58	0.78	9.4	0.13	0.19	20
MM-S-24	5.8	30	720	0.029	1.3	4.1	42	93	120	1.9	9.5	2.2	15	130
MM-S-28	5.6	25	450	0.039	0.69	5.2	36	97	42	2	13	1.5	12	74
MM-S-29	0.31	4.6	99	0.18	0.17	4.8	8.3	11	2.1	0.52	14	0.14	0.36	33
MM-S-30	5.4	39	520	0.027	1.1	3.9	45	110	120	1.8	12	2.4	19	110
MM-S-31	0.071	3.1	73	0.028	0.085	4.6	5.1	4.1	0.88	0.39	13	0.13	0.21	37
MM-S-32	4.2	10	390	0.022	0.39	3.9	21	50	140	0.73	14	0.59	6.3	64
MM-S-33	1.3	8.4	200	0.28	0.27	5	15	49	14	1.8	12	0.21	3	63
MM-S-34	0.67	6.8	94	0.33	0.12	6.9	8.8	8.7	4	0.79	19	0.098	0.68	40
MM-S-35	6.6	24	630	0.19	0.78	3.9	33	98	72	2.1	13	1.3	9.8	79
MM-S-36	0.57	4.3	85	0.15	0.15	3.7	8.5	12	0.62	0.45	10	0.12	0.3	40
MM-S-37	0.98	6.4	91	0.13	0.15	4.1	17	240	2	0.42	7.8	0.15	1.5	63
Minimum =>	**0.07**	**3.1**	**49**	**0.022**	**0.071**	**3.7**	**5.1**	**2.7**	**0.54**	**0.3**	**7.8**	**0.098**	**0.064**	**20**
95% UCL =>	**3.74**	**23.7**	**447**	**0.156**	**0.590**	**4.72**	**24.0**	**87.7**	**143**	**1.59**	**12.9**	**1.34**	**9.4**	**68.7**
Maximum =>	**6.6**	**39**	**720**	**0.33**	**1.3**	**6.9**	**45**	**240**	**140**	**2.1**	**19**	**2.4**	**19**	**130**

95% UCL exceeds maximum value.

Risk Calculations for Recreational User Receptor
~ SOIL SAMPLES (Cabin Area 95% UCL risk values) ~

CONCENTRATIONS (mg/kg)

COPC	95% UCL
Antimony	3.74
Arsenic	23.7
Barium	447
Beryllium	0.156
Cadmium	0.590
Cobalt	4.72
Copper	24.0
Lead	87.7
Mercury	143
Molybdenum	1.59
Nickel	12.9
Selenium	1.34
Silver	9.36
Zinc	68.7

BACKGROUND COMPARISON

COPC	BTV (mg/kg)	95% UCL
Antimony	0.531	3.7
Arsenic	13.3	23.7
Barium	281	447
Beryllium	0.118	0.156
Cadmium	0.172	0.59
Cobalt	7.19	-
Copper	13.0	24
Lead	11.5	88
Mercury	0.418	143
Molybdenum	0.650	1.59
Nickel	25.5	-
Selenium	1.08	1.34
Silver	0.534	9.4
Zinc	60.6	69

HQ and HI VALUES

COPC	RBC_{HI} (mg/kg)	HQ
Antimony	2.3E+02	1.6E-02
Arsenic	3.5E+00	6.8E+00
Barium	9.5E+04	4.7E-03
Beryllium	2.7E+01	5.9E-03
Cadmium	3.9E+01	1.5E-02
Cobalt	2.0E+02	-
Copper	2.7E+04	9.0E-04
Lead	-	-
Mercury	7.7E+01	1.9E+00
Molybdenum	3.3E+03	4.8E-04
Nickel	4.3E+03	-
Selenium	3.3E+03	4.0E-04
Silver	2.0E+03	4.7E-03
Zinc	2.0E+05	3.4E-04
		HI => **8.7E+00**

ILCR VALUES

COPC	RBC_{ILCR} (mg/kg)	ILCR
Antimony	-	-
Arsenic	9.2E+00	3E-05
Barium	-	-
Beryllium	1.4E+05	1E-11
Cadmium	1.6E+05	4E-11
Cobalt	3.7E+04	-
Copper	-	-
Lead	-	-
Mercury	-	-
Molybdenum	-	-
Nickel	1.3E+06	-
Selenium	-	-
Silver	-	-
Zinc	-	-
		ILCR => **3E-05**

Risk Calculations for Recreational Cabin Occupant Receptor
~ SOIL SAMPLES (Cabin Area 95% UCL risk values) ~

CONCENTRATIONS (mg/kg)

COPC	95% UCL
Antimony	3.74
Arsenic	23.7
Barium	447
Beryllium	0.156
Cadmium	0.590
Cobalt	4.72
Copper	24.0
Lead	87.7
Mercury	143
Molybdenum	1.59
Nickel	12.9
Selenium	1.34
Silver	9.36
Zinc	68.7

BACKGROUND COMPARISON

COPC	BTV (mg/kg)	95% UCL
Antimony	0.531	3.7
Arsenic	13.3	23.7
Barium	281	447
Beryllium	0.118	0.156
Cadmium	0.172	0.59
Cobalt	7.19	-
Copper	13.0	24
Lead	11.5	88
Mercury	0.418	143
Molybdenum	0.650	1.59
Nickel	25.5	-
Selenium	1.08	1.34
Silver	0.534	9.4
Zinc	60.6	69

HQ and HI VALUES

COPC	RBC_{HI} (mg/kg)	HQ
Antimony	9.2E+01	4.1E-02
Arsenic	1.4E+00	1.7E+01
Barium	3.8E+04	1.2E-02
Beryllium	1.1E+01	1.5E-02
Cadmium	1.6E+01	3.8E-02
Cobalt	8.0E+01	-
Copper	1.1E+04	2.3E-03
Lead	-	-
Mercury	3.1E+01	4.6E+00
Molybdenum	1.3E+03	1.2E-03
Nickel	1.7E+03	-
Selenium	1.3E+03	1.0E-03
Silver	7.9E+02	1.2E-02
Zinc	8.0E+04	8.6E-04
		HI => **2.2E+01**

ILCR VALUES

COPC	RBC_{ILCR} (mg/kg)	ILCR
Antimony	-	-
Arsenic	2.9E+00	8E-05
Barium	-	-
Beryllium	3.1E+04	5E-11
Cadmium	4.2E+04	1E-10
Cobalt	8.4E+03	-
Copper	-	-
Lead	-	-
Mercury	-	-
Molybdenum	-	-
Nickel	2.9E+05	-
Selenium	-	-
Silver	-	-
Zinc	-	-
		ILCR => **8E-05**

Risk Calculations for Construction Worker Receptor
~ SOIL SAMPLES (Cabin Area 95% UCL risk values) ~

CONCENTRATIONS (mg/kg)

COPC	95% UCL
Antimony	3.74
Arsenic	23.7
Barium	447
Beryllium	0.156
Cadmium	0.590
Cobalt	4.72
Copper	24.0
Lead	87.7
Mercury	143
Molybdenum	1.59
Nickel	12.9
Selenium	1.34
Silver	9.36
Zinc	68.7

BACKGROUND COMPARISON

COPC	BTV (mg/kg)	95% UCL
Antimony	0.531	3.7
Arsenic	13.3	23.7
Barium	281	447
Beryllium	0.118	0.156
Cadmium	0.172	0.59
Cobalt	7.19	-
Copper	13.0	24
Lead	11.5	88
Mercury	0.418	143
Molybdenum	0.650	1.59
Nickel	25.5	-
Selenium	1.08	1.34
Silver	0.534	9.4
Zinc	60.6	69

HQ and HI VALUES

COPC	RBC_{HI} (mg/kg)	HQ
Antimony	7.2E+01	5.2E-02
Arsenic	1.2E+00	2.0E+01
Barium	2.0E+03	2.2E-01
Beryllium	2.9E+00	5.3E-02
Cadmium	1.4E+00	4.3E-01
Cobalt	2.0E+01	-
Copper	1.2E+04	1.9E-03
Lead	-	-
Mercury	1.6E+01	8.9E+00
Molybdenum	1.5E+03	1.0E-03
Nickel	5.7E+01	-
Selenium	1.5E+03	8.9E-04
Silver	3.8E+02	2.5E-02
Zinc	9.3E+04	7.4E-04

HI => 3.0E+01

ILCR VALUES

COPC	RBC_{ILCR} (mg/kg)	ILCR
Antimony	-	-
Arsenic	2.4E+01	1E-05
Barium	-	-
Beryllium	1.3E+03	1E-09
Cadmium	1.7E+03	3E-09
Cobalt	3.4E+02	-
Copper	-	-
Lead	-	-
Mercury	-	-
Molybdenum	-	-
Nickel	1.2E+04	-
Selenium	-	-
Silver	-	-
Zinc	-	-

ILCR => 1E-05

Risk Calculations for Residential Receptor

~ SOIL SAMPLES (Cabin Area 95% UCL risk values) ~

CONCENTRATIONS (mg/kg)

COPC	95% UCL
Antimony	3.74
Arsenic	23.7
Barium	447
Beryllium	0.156
Cadmium	0.590
Cobalt	4.72
Copper	24.0
Lead	87.7
Mercury	143
Molybdenum	1.59
Nickel	12.9
Selenium	1.34
Silver	9.36
Zinc	68.7

BACKGROUND COMPARISON

COPC	BTV (mg/kg)	95% UCL
Antimony	0.531	3.7
Arsenic	13.3	23.7
Barium	281	447
Beryllium	0.118	0.156
Cadmium	0.172	0.59
Cobalt	7.19	-
Copper	13.0	24
Lead	11.5	88
Mercury	0.418	143
Molybdenum	0.650	1.59
Nickel	25.5	-
Selenium	1.08	1.34
Silver	0.534	9.4
Zinc	60.6	69

HQ and HI VALUES

COPC	RBC_{HI} (mg/kg)	HQ
Antimony	2.6E+01	1.4E-01
Arsenic	4.0E-01	5.9E+01
Barium	1.1E+04	4.1E-02
Beryllium	3.0E+00	5.1E-02
Cadmium	4.5E+00	1.3E-01
Cobalt	2.3E+01	-
Copper	3.0E+03	7.9E-03
Lead	-	-
Mercury	8.8E+00	1.6E+01
Molybdenum	3.8E+02	4.2E-03
Nickel	4.9E+02	-
Selenium	3.8E+02	3.5E-03
Silver	2.3E+02	4.1E-02
Zinc	2.3E+04	3.0E-03
		HI => **7.6E+01**

ILCR VALUES

COPC	RBC_{ILCR} (mg/kg)	ILCR
Antimony	-	-
Arsenic	1.1E+00	2E-04
Barium	-	-
Beryllium	1.6E+04	1E-10
Cadmium	1.8E+04	3E-10
Cobalt	4.2E+03	-
Copper	-	-
Lead	-	-
Mercury	-	-
Molybdenum	-	-
Nickel	1.5E+05	-
Selenium	-	-
Silver	-	-
Zinc	-	-
		ILCR => **2E-04**

ATTACHMENT I

Summary Statistics and 95% UCL for Sediment Samples

~ all values are in units of mg/kg ~

Sample	Antimony	Arsenic	Barium	Beryllium	Cadmium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Zinc
MM-SD-02 (PPE)	0.34	50	81	0.091	0.18	2.8	5.2	7.2	2.9	0.52	6.3	0.53	1.1	33
MM-SD-03 (Dwnstrm)	0.24	36	38	0.032	0.22	2.2	5.1	7.0	2.6	0.38	3.7	0.7	0.66	25
MM-SD-04	0.93	8.7	280	0.12	1.2	7	19	46	3.6	0.36	28	0.23	4.6	140
MM-SD-05	2.4	8.9	210	0.14	0.29	7.2	30	130	64	0.4	23	0.29	4.5	59
MM-SD-06	2.7	16	270	0.19	0.93	6.9	78	180	740	0.71	24	0.77	19	99
MM-SD-07	6.2	17	400	0.14	1.4	4.7	85	360	410	1.8	12	2	17	100
MM-SD-08	0.26	5.7	86	0.061	0.24	3	7	6.1	0.5	0.39	8.5	0.61	0.23	38
Minimum =>	**0.24**	**5.7**	**38**	**0.032**	**0.18**	**2.2**	**5.1**	**6.1**	**0.50**	**0.36**	**3.7**	**0.23**	**0.23**	**25**
95% UCL =>	**3.46**	**32.5**	**292**	**0.150**	**1.02**	**6.4**	**58.1**	**202**	**2020**	**1.03**	**22.2**	**1.17**	**12.5**	**102**
Maximum =>	**6.2**	**50**	**400**	**0.19**	**1.4**	**7.2**	**85**	**360**	**740**	**1.8**	**28**	**2**	**19**	**140**

95% UCL exceeds maximum value. Maximum value used in risk calculations.

Risk Calculations for Recreational User Receptor
~ SEDIMENT SAMPLES (Sediment 95% UCL risk values) ~

CONCENTRATIONS (mg/kg)

COPC	95% UCL
Antimony	3.46
Arsenic	32.5
Barium	292
Beryllium	0.150
Cadmium	1.02
Cobalt	6.44
Copper	58.1
Lead	202
Mercury*	740
Molybdenum	1.03
Nickel	22.2
Selenium	1.17
Silver	12.5
Zinc	102

* Maximum detected concentration.

BACKGROUND COMPARISON

COPC	BTV (mg/kg)	95% UCL
Antimony	0.531	3.46
Arsenic	13.3	32.5
Barium	281	292
Beryllium	0.118	0.150
Cadmium	0.172	1.02
Cobalt	7.19	-
Copper	13.0	58.1
Lead	11.5	202
Mercury	0.418	740
Molybdenum	0.650	1.03
Nickel	25.5	-
Selenium	1.08	1.17
Silver	0.534	12.5
Zinc	60.6	102

HQ and HI VALUES

COPC	RBC_{HI} (mg/kg)	HQ
Antimony	2.3E+02	1.5E-02
Arsenic	3.5E+00	9.3E+00
Barium	9.5E+04	3.1E-03
Beryllium	2.7E+01	5.6E-03
Cadmium	3.9E+01	2.6E-02
Cobalt	2.0E+02	-
Copper	2.7E+04	2.2E-03
Lead	-	-
Mercury	7.7E+01	9.6E+00
Molybdenum	3.3E+03	3.1E-04
Nickel	4.3E+03	-
Selenium	3.3E+03	3.5E-04
Silver	2.0E+03	6.3E-03
Zinc	2.0E+05	5.1E-04
		HI => **1.9E+01**

ILCR VALUES

COPC	RBC_{ILCR} (mg/kg)	ILCR
Antimony	-	-
Arsenic	9.2E+00	4E-05
Barium	-	-
Beryllium	1.4E+05	1E-11
Cadmium	1.6E+05	6E-11
Cobalt	3.7E+04	-
Copper	-	-
Lead	-	-
Mercury	-	-
Molybdenum	-	-
Nickel	1.3E+06	-
Selenium	-	-
Silver	-	-
Zinc	-	-
		ILCR => **4E-05**

Risk Calculations for Recreational Cabin Occupant Receptor
~ SEDIMENT SAMPLES (Sediment 95% UCL risk values) ~

CONCENTRATIONS (mg/kg)

COPC	95% UCL
Antimony	3.46
Arsenic	32.5
Barium	292
Beryllium	0.150
Cadmium	1.02
Cobalt	6.44
Copper	58.1
Lead	202
Mercury	740
Molybdenum	1.03
Nickel	22.2
Selenium	1.17
Silver	12.5
Zinc	102

* Maximum detected concentration.

BACKGROUND COMPARISON

COPC	BTV (mg/kg)	95% UCL
Antimony	0.531	3.46
Arsenic	13.3	32.5
Barium	281	292
Beryllium	0.118	0.150
Cadmium	0.172	1.02
Cobalt	7.19	-
Copper	13.0	58.1
Lead	11.5	202
Mercury	0.418	740
Molybdenum	0.650	1.03
Nickel	25.5	-
Selenium	1.08	1.17
Silver	0.534	12.5
Zinc	60.6	102

HQ and HI VALUES

COPC	RBC_{HI} (mg/kg)	HQ
Antimony	9.2E+01	3.8E-02
Arsenic	1.4E+00	2.3E+01
Barium	3.8E+04	7.7E-03
Beryllium	1.1E+01	1.4E-02
Cadmium	1.6E+01	6.5E-02
Cobalt	8.0E+01	-
Copper	1.1E+04	5.5E-03
Lead	-	-
Mercury	3.1E+01	2.4E+01
Molybdenum	1.3E+03	7.8E-04
Nickel	1.7E+03	-
Selenium	1.3E+03	8.8E-04
Silver	7.9E+02	1.6E-02
Zinc	8.0E+04	1.3E-03
		HI => **4.7E+01**

ILCR VALUES

COPC	RBC_{ILCR} (mg/kg)	ILCR
Antimony	-	-
Arsenic	2.9E+00	1E-04
Barium	-	-
Beryllium	3.1E+04	5E-11
Cadmium	4.2E+04	2E-10
Cobalt	8.4E+03	-
Copper	-	-
Lead	-	-
Mercury	-	-
Molybdenum	-	-
Nickel	2.9E+05	-
Selenium	-	-
Silver	-	-
Zinc	-	-
		ILCR => **1E-04**

Risk Calculations for Construction Worker Receptor
~ SEDIMENT SAMPLES (Sediment 95% UCL risk values) ~

CONCENTRATIONS (mg/kg)

COPC	95% UCL
Antimony	3.46
Arsenic	32.5
Barium	292
Beryllium	0.150
Cadmium	1.02
Cobalt	6.44
Copper	58.1
Lead	202
Mercury	740
Molybdenum	1.03
Nickel	22.2
Selenium	1.17
Silver	12.5
Zinc	102

* Maximum detected concentration.

BACKGROUND COMPARISON

COPC	BTV (mg/kg)	95% UCL
Antimony	0.531	3.46
Arsenic	13.3	32.5
Barium	281	292
Beryllium	0.118	0.150
Cadmium	0.172	1.02
Cobalt	7.19	-
Copper	13.0	58.1
Lead	11.5	202
Mercury	0.418	740
Molybdenum	0.650	1.03
Nickel	25.5	-
Selenium	1.08	1.17
Silver	0.534	12.5
Zinc	60.6	102

HQ and HI VALUES

COPC	RBC_{HI} (mg/kg)	HQ
Antimony	7.2E+01	4.8E-02
Arsenic	1.2E+00	2.7E+01
Barium	2.0E+03	1.5E-01
Beryllium	2.9E+00	5.1E-02
Cadmium	1.4E+00	7.5E-01
Cobalt	2.0E+01	-
Copper	1.2E+04	4.7E-03
Lead	-	-
Mercury	1.6E+01	4.6E+01
Molybdenum	1.5E+03	6.7E-04
Nickel	5.7E+01	-
Selenium	1.5E+03	7.7E-04
Silver	3.8E+02	3.3E-02
Zinc	9.3E+04	1.1E-03
		HI =>	**7.4E+01**

ILCR VALUES

COPC	RBC_{ILCR} (mg/kg)	ILCR
Antimony	-	-
Arsenic	2.4E+01	1E-05
Barium	-	-
Beryllium	1.3E+03	1E-09
Cadmium	1.7E+03	6E-09
Cobalt	3.4E+02	-
Copper	-	-
Lead	-	-
Mercury	-	-
Molybdenum	-	-
Nickel	1.2E+04	-
Selenium	-	-
Silver	-	-
Zinc	-	-
		ILCR =>	**1E-05**

Risk Calculations for Residential Receptor

~ SEDIMENT SAMPLES (Sediment 95% UCL risk values) ~

CONCENTRATIONS (mg/kg)

COPC	95% UCL
Antimony	3.46
Arsenic	32.5
Barium	292
Beryllium	0.150
Cadmium	1.02
Cobalt	6.44
Copper	58.1
Lead	202
Mercury	740
Molybdenum	1.03
Nickel	22.2
Selenium	1.17
Silver	12.5
Zinc	102

* Maximum detected concentration.

BACKGROUND COMPARISON

COPC	BTV (mg/kg)	95% UCL
Antimony	0.531	3.46
Arsenic	13.3	32.5
Barium	281	292
Beryllium	0.118	0.150
Cadmium	0.172	1.02
Cobalt	7.19	-
Copper	13.0	58.1
Lead	11.5	202
Mercury	0.418	740
Molybdenum	0.650	1.03
Nickel	25.5	-
Selenium	1.08	1.17
Silver	0.534	12.5
Zinc	60.6	102

HQ and HI VALUES

COPC	RBC_{HI} (mg/kg)	HQ
Antimony	2.6E+01	1.3E-01
Arsenic	4.0E-01	8.1E+01
Barium	1.1E+04	2.7E-02
Beryllium	3.0E+00	4.9E-02
Cadmium	4.5E+00	2.3E-01
Cobalt	2.3E+01	-
Copper	3.0E+03	1.9E-02
Lead	-	-
Mercury	8.8E+00	8.4E+01
Molybdenum	3.8E+02	2.7E-03
Nickel	4.9E+02	-
Selenium	3.8E+02	3.1E-03
Silver	2.3E+02	5.5E-02
Zinc	2.3E+04	4.5E-03
		HI => **1.7E+02**

ILCR VALUES

COPC	RBC_{ILCR} (mg/kg)	ILCR
Antimony	-	-
Arsenic	1.1E+00	3E-04
Barium	-	-
Beryllium	1.6E+04	9E-11
Cadmium	1.8E+04	6E-10
Cobalt	4.2E+03	-
Copper	-	-
Lead	-	-
Mercury	-	-
Molybdenum	-	-
Nickel	1.5E+05	-
Selenium	-	-
Silver	-	-
Zinc	-	-
		ILCR => **3E-04**