

Health Risk Assessment for Rasp Mine Proposal, Broken Hill Volume II - Appendices

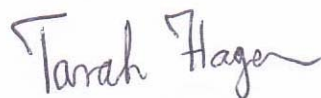
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About Toxikos Pty Ltd

Toxikos Pty Ltd is a consulting company formed on December 1st 2000 to provide clients with independent excellence in toxicology and health based risk assessment. Its charter is to assist industry and government make science based decisions regarding potential effects and management of environmental and occupational chemicals. For over twelve years, prior to and since the establishment of Toxikos, staff have provided toxicology and health risk assessment advice to clients in a wide range of industries and government in Australia, New Zealand and South Africa.

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Appendix 1: Supporting toxicological information & calculations

For chemicals of potential concern (CoPC), if available an air guideline value was provided for information. The basis for the selected acute and/or chronic air guideline value is briefly summarised in Section A1.1.2. Tolerable daily intakes (TDIs) for CoPC are supplied in Section A1.1.3, with a brief description of their source and derivation.

For mining components that significantly contribute to the hazard index a more detailed description of the health hazards is provided (Section A1.1.4).

A1.1 Supporting toxicological information

A1.1.1 Toxicity category summary

The toxicity category table summarises whether a component has been evaluated by a relevant competent authority for genotoxic, carcinogenic or reproductive toxicity potential. It also identifies the major target organs for which critical effects have been observed.

Additional toxicity information is provided for the key contaminants of potential concern in Section A1.1.2-A1.1.4.

Chemicals were placed into 'toxicity categories' by consulting the following sources:

1. IARC Monographs on the Evaluation of Carcinogenic Risks to Humans and Supplements. <http://monographs.iarc.fr/ENG/Monographs/allmonos90.php>
2. Environmental Health Criteria Monograph Series from the International Programme on Chemical Safety (IPCS) - a cooperative programme of the World Health Organization (WHO), the International Labour Organisation (ILO), and the United Nations Environment Programme (UNEP). <http://www.inchem.org/pages/ehc.html>
3. Screening Information Data Set Series from the Organisation for Economic Co-operation and Development (OECD) and produced by United Nations Environment Programme (UNEP). <http://www.inchem.org/pages/sids.html>
4. Concise International Chemical Assessment Documents from the International Programme on Chemical Safety (IPCS) - a cooperative programme of the World Health Organization (WHO), the International Labour Organisation (ILO), and the United Nations Environment Programme (UNEP). <http://www.inchem.org/pages/cicads.html>
5. Toxicological Profiles for Chemical Substances, Agency for Toxic substances and Disease Registry (ATSDR), US Department of Health and Human Services. <http://www.atsdr.cdc.gov/toxpro2.html>
6. Re-evaluation of Human Toxicological Maximum Permissible Risk Levels, Dutch National Institute of Public Health and the Environment (RIVM 2001).

7. WHO Guidelines for Air Quality (2000a); Air Quality Guidelines for Europe, 2nd Edition (2000b), World Health Organization.
8. Priority Existing Chemical (PEC) Reports. National Industrial Chemicals Notification and Assessment Scheme (NICNAS), Commonwealth of Australia.
<http://www.nicnas.gov.au/Publications/CAR/PEC.asp>
9. European Union Existing Chemical Risk Assessment Reports, European Commission, Joint Research Centre European Chemical Bureau, European Union.
<http://ecb.jrc.it/esis/index.php?PGM=ora>
10. Office of Environmental Human Hazard Assessment (OEHHA), Californian Environmental Protection Agency. <http://www.oehha.ca.gov/air.html>
11. EU Directive Dangerous Substances and Preparations, Annex 1 30th Adaption European Commission (2008). Directive 67\548\EEC.
12. WHO (2000c). Safety Evaluation of Certain Food Additives and Contaminants Simple Aliphatic and Aromatic Sulfides and Thiols. WHO Food Additives Series: 44 Prepared by the Fifty-Third Meeting of the Joint FAO/WHO Expert Committee on Food Additives (JECFA) World Health Organization, Geneva
13. Patty's Industrial hygiene and toxicology / George D. Clayton and Florence E. Clayton, editors. Electronic edition.
14. Dictionary of Substances and their Effects. Editor, M.L. Richardson; Cambridge, England: Royal Society of Chemistry. Electronic edition.

Table A1.1.1: Toxicity category summary table

Contaminant of Potential Concern	Target Organ of Concern	Toxicity Category		
		Genotoxic	Carcinogenic	Reproductive Toxicant
PM ₁₀	Respiratory system effects and decreased pulmonary function in 'at risk' subpopulations. Cardiovascular system.	N	N	N
Antimony (Sb)	Pneumoconiosis in humans.	N	Y (IARC 2B)	N
Arsenic (As)	Respiratory; skin; reproductive/developmental; cardiovascular; nervous system; lung cancer.	Y	Y (IARC 1, USEPA A)	N
Barium (Ba)	Cardiovascular system.	N	N (US EPA D)	N
Beryllium (Be)	Respiratory inflammation (pneumoconiosis) and lung cancer.	Y	Y (IARC 1, USEPA B1)	N
Cadmium (Cd)	Respiratory system; kidney; lung cancer.	Y	Y (IARC 1, USEPA B1)	Y
Chromium (as Cr ^{III})	Essential element.	N	N	N
Copper (Cu)	Respiratory system irritation.	N	N (USEPA D)	N
Iron (Fe)	Most effects of concern associated with Fe deficiency. Target organs include liver and heart.	N	N	N
Lead (Pb)	Impaired neurobehavioural functioning and IQ in children.	N	Y (IARC 2B, USEPA B2)	Y
Manganese (Mn)	Nervous system; lungs; reproductive system.	N	N (USEPA D)	Y
Mercury (Hg)	CNS; kidney.	N	N	Y
Nickel (Ni)	Lung and nasal tumours.	Y	Y (IARC 1, USEPA A)	N
Silver (Ag)	Liver effects.		N (USEPA D)	
Zinc (Zn)	Haematopoietic; kidney; pancreas.	N	N (USEPA D)	N

Carcinogen classifications of IARC and US EPA

IARC Carcinogen Classifications	
Group	Category
1	Is a human carcinogen.
2A	Is probably carcinogenic to humans.
2B	Is possibly carcinogenic to humans.
3	Is not classifiable as to its carcinogenicity.
4	Is probably not carcinogenic to humans.

US EPA Carcinogen classifications.	
Group	Category
A	Human carcinogen.
B	Probable human carcinogen.
B1	Indicates limited human evidence.
B2	Indicates sufficient evidence in animals and inadequate or no evidence in humans.
C	Possible human carcinogen.
D	Not classifiable as to human carcinogenicity.
E	Evidence of non-carcinogenicity for humans.

A1.1.2: Health based air guideline values

This table represents compounds for which readily identifiable guidelines from an authoritative source were not available.

Type of Guideline	Compound
Acute	Beryllium, Cadmium, Lead, Silver
Chronic	Zinc

Table A1.1.2: Summary acute health effects guidelines

Compound	Health endpoint for guideline value	Critical effect level [mg/m ³] ^b	UF ^c	Air Guideline Value [µg/m ³] ^a	Averaging time for guideline value	Source
Antimony (Sb)	No acute health guideline located.					
Arsenic (As)	Developmental toxicity	0.2 (LOAEL)	1,000	0.2	4 hours	OEHHA (2008)
Barium (Ba)	Effects of concern are associated with long term exposure. No acute health guideline located.					
Beryllium (Be)	Effects of concern are associated with long term exposure. No acute health guideline located.					
Cadmium (Cd)	Effects of concern are associated with long term exposure. No acute health guideline located.					
Chromium (as Cr ^{III})	No acute health guideline located.					
Copper (Cu)	Based on prevention of metal fume fever	1 (NOAEL)	10	100	1 hour	OEHHA (2008)
Iron (Fe)	No acute health guideline located.					
Lead (Pb)	Effects of concern are associated with long term exposure. No acute health guideline located.					

Compound	Health endpoint for guideline value	Critical effect level [mg/m ³] ^b	UF ^c	Air Guideline Value [µg/m ³] ^a	Averaging time for guideline value	Source
Manganese (Mn)	No acute health guideline located.					
Mercury (Hg)	CNS disturbances in offspring	1.8 (LOAEL)	3,000	0.6	1 hour	OEHHA (2008)
Nickel (Ni)	Slight changes in lung function in asthmatics	0.033 (LOAEL)	6	6	1 hour	OEHHA (2008)
PM ₁₀	Aggravation of existing respiratory & cardiovascular diseases			50 ^d	24 hours	NEPC (1998) WHO (2006)
Silver (Ag)	Effects of concern are associated with long term exposure. No acute health guideline located.					
Zinc (Zn)	Metal fume fever	Based on OEL of 2 (TWA) ^e	10	200	1 hour	ACGIH (2009)

^a Obtained from a variety of competent authorities where documentation is available for subsequent verification of the guideline if required.

^b NOAEL = No Observed Adverse Effect Level, LOAEL = Lowest Observed Adverse Effect Level, TWA = time weighted average

^c UF = Uncertainty factor applied to the critical effect level (i.e. NOAEL or LOAEL).

^d Department of Environment and Heritage State of the Environment 2001 Report states the characteristic concentration of PM₁₀ which typifies exposure for most of the population is 15 µg/m³ PM₁₀. Characteristic is defined as 37% of the population is exposed at least once per year.

^e The only acute air guideline value which could be located was from the Ontario Ministry of Environment (OME 2008), 120µg/m³ as a 24-hour average for zinc (particulate). Because the supporting documentation of the guideline value was unavailable and the basis of the guideline value is unknown, the ACGIH OEL for zinc oxide was chosen to derive a health-based air guideline value for zinc. The OEL is based on the development of "metal fume fever" following inhalation to zinc oxide fumes and to a lesser extent zinc metal and many other zinc compound fumes. Symptoms for "metal fume fever" generally appear a few hours after exposure, and are reversible 1-4 days following cessation of exposure. Therefore, the symptoms are related to acute exposure to zinc oxide. The OEL was converted to an acute air guideline value for zinc through the inclusion of an adjustment factor of 10 to account for 8 hours at work vs 24 hour ambient exposure and 5 day working week vs 7 day ambient exposure (7/5 x 24/8 = 4.2), multiplied by a factor of 3.2 (to account for human variability), giving an UF of 13.44. This was then multiplied by 0.8 to account for the molecular weight

ratio of zinc in zinc oxide, giving an UF of 10.8. This was rounded down to 10. The resulting AGV of 200 $\mu\text{g}/\text{m}^3$ over a 1-hour averaging time works out to be lower than the OME's AGV of 120 $\mu\text{g}/\text{m}^3$ over a 24-hour averaging time; therefore, the use of an OEL based on known acute effects in the derivation of an AGV for zinc is conservative.

Table A1.1.3: Summary chronic health effects guidelines

Compound	Annual bkgd ambient air level [$\mu\text{g}/\text{m}^3$] ^a	Health endpoint	Critical effect level [mg/m^3] ^d	UF	AGV ^b [$\mu\text{g}/\text{m}^3$] ^d	Av. Time	Source
Antimony (Sb) (as antimony trioxide)	0.001-0.17	Pulmonary toxicity; chronic interstitial inflammation.	0.074 (Adjusted BMC ₁₀ of 0.16 converted to a BMC ₁₀ (HEC) of 0.074)	300	0.2	NS ⁱ	US EPA IRIS (1995)
Arsenic (As)	0.001-0.03	Lung cancer	N/A	N/A	0.007 ^c	1 yr	WHO (2000a)
Barium (Ba)	0.0002-0.028	Cardiovascular effects	0.11 (NOAEL)	100	1	24 hour	RIVM (2001)
Beryllium (Be)	0.00002-0.002	Beryllium sensitisation and progression to chronic beryllium disease	0.0002 (LOAEL _{HEC})	10	0.02	1 yr	US EPA IRIS (1998a)
Cadmium (Cd)	0.0001-0.02	Renal effects in a population	N/A	N/A	0.005	1 yr	WHO (2000a)
Chromium (as Cr ^{III})	0.005-0.525	Renal effects	0.6 (NOAEC) for metallic chromium	10	60 ^h	NS ⁱ	RIVM (2001)
Copper (Cu)	0.005-0.2	Respiratory and immunological effects in rabbits	0.6 (NOAEC)	600	1	NS ⁱ	RIVM (2001)
Iron (Fe)	No chronic health guideline located.						
Lead (Pb)	0.01-2	Blood lead concentrations	Critical level of Pb in the blood is 100 μg Pb/L	N/A	0.5	1 yr	NEPC (1998) WHO (2000a)
Manganese (Mn)	0.01 – 0.07	Neurotoxic effects in workers	0.03 (NOAEL)	200	0.15	1 yr	WHO (2000a)
Mercury - inorganic (Hg)	0.002-0.01	Renal toxicity in workers.	0.02 (LOAEL)	20	1	1 yr	WHO (2000a)
Nickel (Ni)	1-180	Lung cancer	N/A	N/A	0.025 ^g	1 yr	WHO (2000a)

Compound	Annual bkgd ambient air level [$\mu\text{g}/\text{m}^3$] ^a	Health endpoint	Critical effect level [mg/m^3] ^d	UF	AGV ^b [$\mu\text{g}/\text{m}^3$] ^d	Av. Time	Source
PM ₁₀	15 ^f	Aggravation of existing respiratory diseases (increased use of bronchodilators among asthmatics)	Estimated (based on linear extrapolation of exposure response curves from epidemiological findings).	-	20	1 yr	EC (2005)
Silver (Ag)	No chronic health guideline located.						
Zinc	No chronic health guideline located.						

^a The source for all background levels is WHO (2000a) except for zinc (ATSDR 2005).

^b AGV is the air guideline value in units of $\mu\text{g}/\text{m}^3$.

^c Air concentration giving an excess lifetime risk level to develop lung cancer of 1:100,000, calculated from pooled estimates of unit risks from three cohort studies (WHO 2000a).

^d Conversions from ppm into $\mu\text{g}/\text{m}^3$ performed at 25°C and 101.7pa

^e The averaging period is not specified (NS) however it is a chronic duration guideline value, hence the averaging time of 1 yr is used.

^f The Department of Environment and Heritage State of the Environment 2001 Report states that the characteristic concentration which typifies the exposure for most of the population is only 15 $\mu\text{g}/\text{m}^3$ PM₁₀. Characteristic was defined as 37% of the population exposed at least once per year.

^g Air concentration giving an excess lifetime risk level to develop lung cancer of 1:100,000, from estimations in industrial populations (WHO 2000a).

^h The guideline value is for metallic and insoluble Chromium III.

ⁱ The averaging period is not specified (NS) however it is a chronic duration guideline value, hence the averaging time of 1 yr is used.

Table A1.1.4: Genotoxic carcinogen potency factors

Compound	Bkgd annual ambient air level ^a [µg/m ³]	Health endpoint	Unit Risk [µg/m ³] ⁻¹	IARC group	Source
Arsenic (As)	(1-30) x 10 ⁻³	Lung cancer in workers	1.5 x 10 ⁻³	1	WHO (2000a)
Arsenic (As)	NA	Oral slope factor for cancer based on Taiwanese drinking water studies	1.5 (mg/kg-bw/d) ⁻¹	1	US EPA (1988)
Beryllium (Be)	N/A	Lung cancer in workers	2.4 x 10 ⁻³	1	US EPA IRIS (1998a)
Cadmium (Cd)	(0.1-20) x 10 ⁻³	Lung cancer in workers	1.8 x 10 ⁻³	1	US EPA IRIS (1987)
Nickel (Ni)	1-180	Lung cancer in workers	3.8 x 10 ⁻⁴	1	WHO (2000a)

^a The source for all background levels is WHO (2000a).

A1.1.3 Tolerable Daily Intakes (TDIs)

Table A1.1.5: Tolerable daily intakes (TDIs) for COPCs

Metal	TDI (µg/kg/d)	Basis/ Description	Reference
Antimony (Sb)	6	TDI based on a NOAEL of 6 mg/kg/d for decreased body weight gain and reduced food and water intake in a 90-day study in which rats were administered potassium Sb tritrate in drinking water, using an UF of 1000 (100 for inter- and intra- species variation, 10 for short duration of study)	WHO (2008)
Arsenic (As)	2	Based on studies of human populations exposed to inorganic As in drinking water. Water concentrations of greater than 0.1 mg As/L were associated with mild symptoms and signs attributable to As intake. The TDI was derived as follows: (0.1 mg/L x 1.5 L/d ÷ 60 kg)	JECFA (1983a, 1988a)

Metal	TDI ($\mu\text{g/kg/d}$)	Basis/ Description	Reference
Barium (Ba)	20	TDI is based on an evaluation of human data of cardiovascular effects by Vermeire et al. (1991). It is based on a NOEL in a human volunteer study, where people were exposed to Ba in DW with 0.2 mg/kg/d as the lowest dose. Although no clear effect level was found in the study, the TDI was derived using an UF of 10. Insoluble salts are reported to be not biologically available and considered to be non-toxic.	RIVM (2001)
Beryllium (Be)	2	Based on calculated dose at the lower 95% confidence limit for a 10% incidence of lesions in the small intestine in dogs chronically exposed to beryllium sulphate tetrahydrate (0.46 mg/kg/day) (BMD ₁₀). The TDI was derived as follows: (0.46 mg/kg/d $\div$ UF of 300)	WHO (2001)
Cadmium (Cd)	1	Derived from a PTWI of 7 $\mu\text{g/kg}$ established at the 33 rd meeting (JECFA 1988b). The PTWI is to prevent levels of Cd exceeding 50 $\mu\text{g/g}$ in the renal cortex if exposed continuously for 50 years. They assumed an absorption rate of 5% and daily excretion of 0.005% of body burden, giving a total intake which should not exceed 1 $\mu\text{g/kg/day}$ over 50 years	JECFA (1988b)

Metal	TDI ($\mu\text{g/kg/d}$)	Basis/ Description	Reference
Chromium (Cr as Cr ^{III})	3	Based on an evaluation of available literature for a TDI by the UK EA. The TDI is based on an RfD set by the US EPA for chronic oral exposure to soluble Cr ^{VI} salts from a 1-year DW study in rats (NOAEL of 2.5 mg Cr ^{VI} /kg/d with an UF of 300 applied for intra- and inter-species variation and database deficiencies). The US EPA has also derived an RfD of 1,500 $\mu\text{g/kg/day}$ for Cr ^{III} . Because of the difficulties in characterizing oxidation state of Cr, but considering that it is expected that much of the Cr present in soil will be in the form of Cr ^{III} rather than Cr ^{VI} , the UK EA recommended to use the US EPA RfD as a TDI rather than an index dose.	UK EA (2002)
Copper (Cu)	140	The Who DWG note that intakes derived from consuming 2-3 L of water/day are not expected to exceed a tolerable upper intake level of 10 mg/day. This upper intake level is equal to a TDI of 0.14 mg/kg/day for an adult. This is consistent with an oral TDI of 0.14 mg/kg/day derived by RIVM (2001) based on an oral chronic mouse study.	WHO (2008)
Iron (Fe)	800	This is a provisional tolerable daily intake in man established by JECFA for Fe from all sources except for Fe oxides used as colouring agents, supplemental Fe taken during pregnancy and lactation and supplemental Fe for specific clinical requirements. JECFA does not clarify how this was derived.	JECFA (1983b)
Lead (Pb)	25 (PTWI)	This is a PTWI established in 1986 based on metabolic studies in infants and children showing mean daily intakes of 3-4 $\mu\text{g/kg}$ not associated with an increase in the body burden of lead. The PTWDI was derived as follows: (3.5 $\mu\text{g/kg/d}$ x 7 days)	JECFA (1986, 1999)

Metal	TDI (µg/kg/d)	Basis/ Description	Reference
Manganese (Mn)	140	Based on a NOAEL of 0.14 mg/kg/day associated with CNS effects in a number of dietary human studies reviewed by the WHO and the NRC. An UF of 1 was applied, therefore resulting in an RfD of 0.14 mg/kg/day.	US EPA IRIS (1996)
Mercury (Hg)	2	TDI derived from a NOAEL of 0.23 mg/day (applied dose) associated with nephrotoxicity in a 26-week oral study in rats (exposed to mercuric chloride), applying an UF of 100 (10 for interspecies extrapolation, 10 for intraspecies extrapolation).	WHO (2003)
Nickel (Ni)	12	Derived from an acute LOAEL of 0.012 mg/kg/day established after oral provocation (via drinking water) of fasted patients with an empty stomach. Because absorption from DW on an empty stomach is 10-40 fold higher than absorption from food, this was considered a worst-case scenario, and an UF of 1 was applied.	WHO (2008)
Silver (Ag)	400	TDI is based on an oral NOAEL for argyria in humans for a total lifetime intake of 10 g of silver on the basis of human case reports and long-term animal experiments. Use of UF factors is not described.	NHMRC (2004)

Metal	TDI (µg/kg/d)	Basis/ Description	Reference
Zinc (Zn)	500	This TDI is based on the upper limit of Zn intake for 1-3 year olds from food, water and supplements calculated by the NHMRC (2006). A study of 68 infants showed no adverse effect at 5.8 mg Zn/L of infant formula fed for 6 months. This translates to a NOAEL of 4.5 mg/d at 0.78L milk/d. An UF of 1 was applied, given the length and quality of the study and the fact that there is no evidence of harm from this intake. Rounding down, the NHMRC established an upper limit of 4 mg for infants 0-6 months. As there were no data for older children and adolescents, this figure was adjusted on a BW basis, for older children and values rounded down. Because body weight adjustment was used to calculate the values, the ref body weight provided by NMHRC for 1-3 year olds (13 kg) was used to convert the UL (7mg/d) of 1-3 year olds to a TDI. (7,000 µg/d ÷ BW of 13 kg)	NHMRC (2006) This is the same as the TDI derived by RIVM (2001), based on a LOAEL (adjusted) of 1 mg/kg.day associated with haematological effects in a human study (from supplements) & and UF of 2.

A1.1.4 Toxicity Profiles

Particulate matter (PM₁₀)

The detailed toxicological mechanism(s) by which particulate matter causes adverse health effects is not known. Most of the data indicates a role for oxidative stress causing inflammation and immunotoxicity in airways and lungs, or a mechanism involving impairment of respiratory and cardiac neurological functions. According to a publication from the Dutch Institute of Public Health and Environment ¹ (RIVM 2002), rather than assigning the observed association between particulate matter and adverse health effects to the toxicity of particulate matter itself, a more plausible explanation is that the association is the result of reduced capacity of an individual to withstand stress and maintain a stable, relatively constant internal environment. It is therefore plausible, and indeed consistent with observations, that the population at

¹ Although published by the Dutch Institute of Public Health and Environment (RIVM) the report was a collaborative effort of several Dutch institutes.

risk is largely defined in particular by individuals with failing health, attributable to ageing or illness (RIVM 2002).

Populations shown to be susceptible to the effects of airborne particles are primarily those with compromised health, especially respiratory and/or cardiopulmonary function. At risk groups include the elderly, people with existing respiratory disease such as asthma, chronic obstructive pulmonary disease (COPD) and bronchitis; people with cardiovascular disease; people with pulmonary infections such as pneumonia; and children (Streeton 1997). In relation to the data underpinning establishment of the national ambient air standard (NEPC 1998) most of the 'effects' due to particles are associated with exacerbation of existing disease states. The 'effects' observed with elevated PM₁₀ concentrations are increased hospital visits and/or admissions for respiratory conditions, decrements in pulmonary function (especially in adults with obstructive airways disease but also in young children), increases in prevalence of pulmonary symptoms and increased mortality (Streeton 1997, RIVM 2002).

Ambient air quality standards around the world are based primarily on data obtained from large urban populations where background incidences of the 'effects' are measurably increased during episodes of high ambient PM₁₀. Dose response relationships are commonly articulated in terms of percentage increase of effect per 10 µg/m³ increase in PM₁₀; for example changes in daily mortality are typically estimated at approximately 0.5 – 1.5% per 10 µg/m³ increase in PM₁₀ (Pope 2000).

From daily time series studies (these look at associations between short term, acute exposures to elevated ambient PM₁₀ and various population health measures) there is increasing evidence the health effects associated with particulate matter may occur at quite low particulate levels, and also primarily with the PM_{2.5} respirable fraction, furthermore studies have not identified a clear no effect(s) threshold (EU 2004, RIVM 2002, US EPA 2003a, WHO 2000a). It should not be assumed that only the most old and most frail who may be very near death, are at risk of dying from PM₁₀ exposure. There is evidence that mortality may also be advanced in other 'at risk' groups (Zeger et al. 1999). In addition the number of those susceptible to less serious health effects such as increased respiratory symptoms, decreased lung function, or other physiologic changes may be broader than those at risk of dying. For most people, these effects are likely to be small, transient, and maybe even unnoticed. For a few, the decline in lung function may be clinically relevant resulting in increased

bronchodilator use and/or emergency hospital visits, or the effects may result in short-term absence from work or school (Pope 2000).

In producing the health effects document for the Australian ambient air quality NEPM, Streeton (1997) considered there was satisfactory evidence that PM₁₀ pollution from crustal sources was significantly less harmful than that generated from combustion processes. Similarly more recent studies, summarised in RIVM (2002) and US EPA (2003c), implicate ambient PM₁₀ derived from fossil fuel combustion and vegetative burning, but not crustal particles, as important contributors to observed mortality effects. Laden et al. (2000) also concluded that fine combustion particles from mobile and coal combustion sources, but not fine crustal particles are associated with increased mortality.

The US EPA (2005) are currently considering a more narrowly defined indicator for thoracic coarse particles that would protect public health against effects linked with thoracic coarse particles present in urban areas. The US EPA have considered epidemiologic studies that examined exposures to particles generally found in urban environments and exposures to natural crustal materials and found that urban thoracic coarse particles are of concern to public health, in contrast to uncontaminated natural crustal dusts.

In summary, there is general agreement in the scientific literature that there is a concentration-response relationship (with no indication of a threshold) between PM₁₀/PM_{2.5} and various measures of population based health effects. The exact form of the relationship is unclear, depending upon the health measure some studies indicate the relationship to be linear while others suggest non-linearity (RIVM 2002). It is noted that people with compromised respiratory or cardiopulmonary function (either through disease or old age) are more susceptible to the effects of particulates.

Inorganic Lead (Pb)

Lead is a naturally occurring element, making up about 0.0013% of the Earth's crust (UNEP 2006). There are three chemical forms of lead: metallic lead, inorganic lead compounds and organic lead compounds (containing carbon). Lead is usually obtained from sulphide ores, often in combination with other elements such as zinc, copper and silver. The main lead mineral is galena (PbS). Other common varieties include cerussite (PbCO₃), plattnerite (PbO₂) and anglesite (PbSO₄). Lead exists in three oxidation states: Pb(0) - the elemental form, Pb(II) and Pb(IV). Metallic lead, Pb (0), exists in nature, but its occurrence is rare (UNEP 2006, ATSDR 2007). Some common chemical and physical properties for different forms of Pb are summarised in Table A1.1.6.

Table A1.1.6: Chemical and Physical Properties of Lead Compounds

Name	Lead Sulphide ^a	Pb Sulphate ^a	Lead Carbonate ^a	Lead Oxide ^a	Lead ^a
Formula	PbS	PbSO ₄	Pb CO ₃	PbO	Pb
Cas No.	1314-87-0	7446-14-2		1317-36-8	7439-92-1
Molecular Weight	239.27	303.26	267.2	223.20	207.20
Melting Point (°C)	1,114 °C	1,170 °C	315 °C (decomposes)	888 °C	327.4
Density (g/cm ³) at 20°C	7.57--7.59	6.2	6.6	9.3	11.34
Water Solubility (25°C)	0.86 mg/L at 13 °C	42.5	1.1 mg/L	17 mg/L at 20°C	insoluble

^a ATSDR (2007).

In general, lead is not very mobile in soil. The downward movement of elemental lead and inorganic lead compounds from soil to groundwater by leaching is very slow under most natural conditions (ATSDR 2007). Soil pH, content of humic acids and amount of organic matter influence the content and mobility of lead in soils (WHO 1995). More acidic conditions (lower pH) not only increase the solubility of lead, but also of other heavy metals. Lead is strongly adsorbed to organic matter in soil. Clays, silts, iron and manganese oxides, and soil organic matter can bind lead and other metals electrostatically (cation exchange) as well as chemically (specific adsorption) (ATSDR 2007). Lead adsorbed in a soil matrix may enter surface waters as a result of erosion of lead-containing soil particles.

Plants and animals may bioconcentrate lead but biomagnification has not been detected. In general, the highest lead concentrations are found in aquatic and terrestrial organisms that live near lead mining, smelting, and refining facilities; storage battery recycling plants; areas affected by high automobile and truck traffic; sewage sludge and spoil disposal areas; sites where dredging has occurred; areas of heavy hunting (lead source from spent shot); and in urban and industrialized areas. Lead may be present on plant surfaces as a result of atmospheric deposition; its presence in internal plant tissues indicates biological uptake from the soil and leaf surfaces. Although the bioavailability of lead in soil to plants is limited because of the strong absorption of lead to soil organic matter, the bioavailability increases as the pH and the organic matter content of the soil are reduced. Lead is not biomagnified in aquatic or terrestrial food chains. It may contaminate terrestrial plants as a result of atmospheric deposition and uptake from soil, and animals as a result of inhalation of contaminated ambient air or ingestion of contaminated plants. Older organisms tend to contain the greatest body burdens of lead. In aquatic organisms, lead concentrations are usually highest in benthic organisms and algae, and lowest in upper trophic level predators (e.g., carnivorous fish) (ATSDR 2007, WHO 1995).

According to WHO (1995), and ATSDR (1997) in humans, lead can result in a wide range of biological effects depending upon the level and duration of exposure. Health effects associated with exposure to inorganic lead and compounds include, but are not limited to, neurotoxicity, developmental delays, hypertension, impaired hearing acuity, impaired haemoglobin synthesis, and male reproductive impairment. Importantly, many of lead's health effects may occur without overt signs of toxicity. Such changes occur over a broad range of doses, the developing human generally being more sensitive than the adult.

Children under 6 years old have a high risk of exposure because of their more frequent hand-to-mouth behaviour (WHO 1995, ATSDR 2007):

For neurological, metabolic and behavioural reasons, children are more vulnerable to the effects of lead than adults. Both prospective and cross-sectional epidemiological studies have been conducted to assess the extent to which environmental lead exposure affects central nervous system (CNS) and have consistently shown an association with impaired neurobehavioural functioning in children.

In a recent review the US EPA critically examined the literature to identify the concentration (blood lead) response for Pb toxicity for both children and adults (US EPA 2006). Table A1.1.7 and A1.1.8 summarise the lowest effect levels identified by the US EPA (2006 Table 8-2) for children and adults respectively. Given the difficulties in the interpretation of studies identifying a correlation between effects at low blood lead concentrations and confounding factors within these studies, clear thresholds for neurological and haematological effects have not been established and there is uncertainty regarding the lowest concentration that cause such effects.

Table A1.1.7: Summary of lowest effect levels for key Pb-Induced health effects in children. (from US EPA 2006, Table 8-5)

Lowest Observed Effect Blood Lead Level	Neurological Effect	Haematological Effects	Immune Effects
30 µg/dL		Increased urinary δ-aminolevulinic acid	
15 µg/dL	Behavioural disturbances (e.g., inattention, delinquency) Altered electrophysiological responses	Erythrocyte protoporphyrin (EP) elevation	
10 µg/dL	Effects on neuromotor function CNS cognitive effects (e.g., IQ deficits)	Inhibition of δ-aminolevulinic acid dehydratase (ALAD) Pyrimidin-5'-nucleotidase (Py5N) activity inhibition	Effects on humoral (↑serum IgE) and cell mediated (↓ T-cell abundance) immunity
5 µg/dL	↓ (???) ^a	↓ (???) ^a	
0 µg/dL	↓	↓	

^a Arrows depict cases where weight of overall evidence strongly substantiates likely occurrence of type of effect in association with blood-Pb concentration in range 5-10 µg/dL, or possibly lower as implied by (???). Although no evident threshold has yet been clearly established for those effects, the existence of such effects at still lower blood-Pb levels cannot be ruled out on available data.

Table A1.1.8: Summary of lowest effect levels for key Pb-Induced health effects in adults. (from US EPA 2006, Table 8-6)

Lowest Observed Effect Blood Lead Level	Neurological Effect	Haematological Effects	Cardiovascular Effects	Renal Effects
30 µg/dL	Peripheral sensory nerve impairment	Erythrocyte protoporphyrin (EP) elevation in males		Impaired Renal Tubular Function
20 µg/dL	Cognitive Impairment			
15 µg/dL	Postural sway	Erythrocyte protoporphyrin (EP) elevation in females. Increased urinary δ-aminolevulinic acid		
10 µg/dL		Inhibition of δ-aminolevulinic acid dehydratase (ALAD)	Elevated blood pressure ↓	
5 µg/dL			(???)	Elevated serum creatine (↓ creatine clearance)
0 µg/dL			↓	

^a Arrows depict cases where weight of overall evidence strongly substantiates likely occurrence of type of effect in association with blood-Pb concentration in range 5-10 µg/dL, or possibly lower as implied by (???). Although no evident threshold has yet been clearly established for those effects, the existence of such effects at still lower blood-Pb levels cannot be ruled out on available data.

Tolerable daily intake

The World Health Organisation joint expert committee on food additives (JECFA) recently (JECFA 1999) confirmed a provisional tolerable weekly intake (PTWI) for Pb of 25 µg/kg b.w. originally set in 1986 (JECFA 1986). The PTWI was based on metabolic studies in infants showing mean daily intakes of 3-4 µg/kg are not associated with an increase in the body burden of lead ($3.5 \mu\text{g/kg/d} \times 7 \text{ days} = \text{PTWI of } 25 \mu\text{g/kg/week}$). The PTWI was confirmed based on the results of a quantitative risk assessment and concluded that the concentrations of lead found currently in food would have negligible effects on the neurobehavioural development of infants and children. The quantitative risk assessment did not consider non food and drinking water sources of Pb exposure. JECFA considered that at blood concentrations below 10-15 µg/dL, *the effect of confounding variables and limits to the precision of analytical and psychometric measurements increase the uncertainty of any estimate of effect*. Cognisant of these issues the committee acknowledged that there was some evidence of an association between neurobehavioural development deficits and exposure to concentrations even below 10 µg/dL (JECFA 1999).

The PTWI is the basis of the Australian health based soil investigation level (Maynard 1991), has been adopted by the Health Council of the Netherlands (RIVM 2001), the Australian and New Zealand Food Authority for assessment of residues in food (FSANZ 2003) and the National Health and Medical Research Council (NHMRC 2004) derivation of a drinking water guideline.

Ambient air guideline values

The Australian ambient air guideline value for Pb NEPC (1998) is 0.5 µg/m³. The derivation of the guideline is briefly described by Streeton (1997). The guideline was derived using the lowest end of the range for signs of an adverse effect of lead in populations of young children (IQ effects in children) beginning at 10 µg/dL. The guideline was converted to an air concentration using expert evaluations from the WHO (1987 cited in WHO 1995, 2000). The air guideline of 0.5 µg/m³ was derived to ensure that exposed populations including preschool children would not have a blood lead level exceeding 10 µg/dL. In order to achieve this, the WHO considered the contribution to blood lead concentration from anthropogenic (approximately 3 µg/dL) and non anthropogenic sources (3 µg/dL) and the contribution at various air Pb

concentrations. Given an assumption that air contributes 25%² of Pb intake and a conversion of 1 $\mu\text{g}/\text{m}^3$ Pb in air to 1.9 $\mu\text{g}/\text{dL}$ Pb and 1.6 $\mu\text{g}/\text{dL}$ for child and adult blood respectively the WHO estimated that at 0.5 $\mu\text{g}/\text{m}^3$ blood lead levels for the entire population of less than 10 $\mu\text{g}/\text{dL}$ were achievable.

A recent review of the recommended blood-lead levels was undertaken by the NHMRC and the conclusion was that the recommended blood lead level should remain at 10 $\mu\text{g}/\text{dL}$ for all population groups. The NHMRC (2009) recognised that the neurodevelopment of children was the critical effect and these effects are normally measured by such tools as Ability scales, IQ and standardised reports of emotional and behavioural problems. The NHMRC (2009) states there is agreement amongst researchers that higher lead exposure is associated with poorer developmental performance and behaviour however there is uncertainty regarding the extent to which low level lead exposure may cause poorer performance in such tests. These uncertainties are due to factors including genetics and early childhood experiences, consequently the relationship between low lead levels and children's abilities and behaviour become unclear.

The dose response relationship between lead exposure and children's IQ and behaviour is contentious. No safe threshold of lead exposure has been identified with respect to cognitive abilities however earlier studies have indicated that at a population level, an increase in blood lead exposure from around 10 – 30 $\mu\text{g}/\text{dL}$ is associated with an average decrease of 1 – 3 IQ points. Recent US studies have reported larger decreases in IQ at lower blood levels, however the NHMRC (2009) concluded that these two studies cannot be used to predict responses of individual children to a given lead exposure.

Recently the US EPA established a new National Ambient Air Quality Standard for Lead of 0.15 $\mu\text{g}/\text{m}^3$ (US EPA 2008). The value was derived based on epidemiological evidence of a dose response between blood-lead levels and IQ loss that was generated using mathematical log linear low exposure linearization. The key study used in deriving this guideline value was Lanphear et al (2005). This study

² The contribution to total intake of 25% (adults) was calculated at 0.5 mg/m^3 (WHO 1987 cited in WHO 1995) assuming an inhalation rate of 20 cubic meters / day (adults) and 5 cubic meters / day (children) and with 40 % respiratory absorption. Using the same assumptions it was concluded that airborne lead contributes approximately 3.2 % in young children, this lower contribution is due to the assumption the 25 % of children's lead intake is attributable to food and 2 % to water (WHO 1995).

polled data sets from seven studies in seven different locations. The US EPA (2008) extrapolated from the dataset of the pooled international dataset having a mean blood Pb of 9.7 $\mu\text{g/dL}$. The guideline was derived assuming a relationship between air levels of Pb to blood Pb of 1:5 - 1:10. The approach relies on mathematical extrapolation of a data set comprising pooled data from a combination of studies of differing quality.

Table A1.1.9: Summary of health based air guideline values for Pb

Authority	Guideline Value $\mu\text{g}/\text{m}^3$	Averaging period & Measurement	Key assumptions in derivation
NEPC (2003)	$0.5 \mu\text{g}/\text{m}^3$	1 year measured as lead in TSP	See WHO (2000)
NHMRC (2009)	$10 \mu\text{g}/\text{dL}$		$< 10 \mu\text{g}/\text{dL}$ are unlikely to lead to significant decrements in child IQ.
WHO (2000)	0.5	1 year	Linear relationship between air lead and blood lead at the lower levels of exposure. Baseline blood lead levels of minimal anthropogenic origin are $10 - 30 \mu\text{g}/\text{L}$ Adverse effects of lead in young children begin at $100 - 150 \mu\text{g}/\text{L}$ As an increase of lead in air contributes to other routes, it is assumed that $1 \mu\text{g}/\text{m}^3$ contributes to $50 \mu\text{g}/\text{L}$ blood
EC [European Commission] (2008)	0.5	1 year	See WHO (2000)
US EPA (2008) National Air Quality Standard	0.15	3 month over 3 year period measured as lead in TSP	No threshold for neurobehavioral effects IQ loss may occur at $3-9.7 \mu\text{g}/\text{dL}$ ¹ Pb in air to blood ratio of 1:5 to 1:10 based on kinetic modelling ²
US EPA IRIS (2004)	$10 \mu\text{g}/\text{dL}$	Not reported	No clinical interventions are known to lower the blood level in children below $10 \mu\text{g}/\text{dL}$. Children cannot adequately be classified as having a level above or below $10 \mu\text{g}/\text{dL}$ due to inaccuracy in laboratory testing.

¹ This assumption is based on a mathematical extrapolation of a data set from a pooled study evaluating the IQ effects on children in seven different locations of differing socioeconomic status in four different countries, using data of differing quality. US EPA (2008) p 15-17.

² Based on regression modeling of NHANES II data presented by Schwartz and Pitcher (1989) and Brunekreef et al (1983)

Health investigation level (HIL) for soil

The Australian health investigation level for soil of 300 mg Pb/kg soil was derived based on the JECFA tolerable weekly intake of 25 µg/kg body weight/week (Maynard 1991). Soil was estimated to account for 52% of total Pb intake for a 2 year old child (body weight 12.5 kg). Using a soil intake of 80 mg/day and a 100% bioavailability the HIL was calculated to be 300 mg Pb / kg soil (i.e. $((25 \text{ µg/kg bw/wk} \times 12.5 \text{ kg bw} / 7 \text{ d/wk}) \times 0.52 \div 0.08 \text{ g soil/d})$).

Surface dust guideline

The Residential Lead-Based Paint Hazard Reduction Act (Title X) Final Rule (40 CFR, Part 745, 1/5/01) established uniform national standards for lead in interior (residential dwelling or child occupied facility potentially contaminated with lead based paint) dust. Both US EPA and the United States Department of Housing and Urban Development (HUD) subsequently set a dust standard for lead of 40 µg/ft² (0.04 µg/cm²) for floors (including carpeted floors) and 250 µg/ft² (0.250 µg/cm²) for interior window sills based on weighted average of all wipe samples³. At 40 mg/ft² a multimedia analysis using the US EPA IEBUK model showed a 5.3% probability that a child's blood lead level would exceed 10 µg/dl. The modelling conducted to support the dust standard was specific to lead in paint because it was based on measured data of lead in dust from dwellings painted with lead based paint. (i.e. pre-1978 dwellings). The standard is not intended to identify potential hazards in other settings.

Occupational exposure limits

The current occupational exposure standard for lead in Australia is 0.15 mg Pb/m³ air (NOHSC 1995) and that of the ACGIH is 0.05 mg Pb/m³ (ACGIH 2001). Numerous investigations have indicated that at adult blood lead levels of 20-40 µg Pb/dL there is minimal potential for clinical adverse health effects (ASTDR 1999, ACGIH 2001).

The most sensitive effect of Pb in humans is impairment of neurological development of children. It is known a high lead body burden in women has an adverse impact on

³ According to US Federal Register (2001) a wipe sample means a sample collected by wiping a representative surface of known area, as determined by ASTM E1728, "Standard Practice for Field Collection of Settled Dust Samples Using Wipe Sampling Methods for Lead Determination by Atomic Spectrometry Techniques", or equivalent method, with an acceptable wipe material as defined in ASTM E 1792, "Standard Specification for Wipe Sampling Materials for Lead in Surface Dust." 1 ft² = 929 cm²

this end point during foetal development. The TLV Committee of the ACGIH believe that a blood lead level of 30 $\mu\text{g Pb/dL}$ will protect a women's ability to bear children that can develop normally. Using the steepest slope of the regression relating the blood lead to the airborne lead a value of 0.19 $\mu\text{g/dl}$ of lead in blood per $\mu\text{g/m}^3$ of airborne lead was used to evaluate the contribution of airborne lead to blood lead levels. ACGIH therefore established a TLV of 0.05 mg/m^3 on the toxicokinetic basis that this will contribute 9.5 $\mu\text{g Pb/dL}$ blood and will allow for blood lead from both occupational and non-occupational sources to be kept below 30 $\mu\text{g Pb/dL}$ (ACGIH 2001). In protecting the reproductive capacity of females, the ACGIH standard also provides protection for males from the subtle health effects that may result from long term lead exposure that produce blood Pb levels of $>40 \mu\text{g/dL}$. In addition by virtue of the method of derivation this standard inherently takes into account background sources of lead.

Recommendation

Table A1.1.10 summarises the toxicity reference values used in the present HRA to assess the impacts of lead.

Table A1.1.10: Toxicity reference values used in present HRA

Pathway	Value	Source & Justification
Resident exposure (blood Pb)	10 $\mu\text{g/dl}$	A recent review of the recommended blood-lead levels was undertaken by the Australian NHMRC (2009) and the conclusion was that the recommended blood lead level should remain at 10 $\mu\text{g/dL}$ for all population groups.
Resident exposure (intake)	0.0035 mg/kg bw/d	The WHO tolerable daily intake (WHO JECFA 1986) used by Australian regulatory authorities to evaluate food residues of lead (FSANZ 2003) and to derive a drinking water guideline (NHMRC 2004).

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Inorganic arsenic (As)

Arsenic is the 20th most abundant element in the earth's crust. It occurs most often as a sulphide or arsenopyrite in a variety of complex minerals containing copper, lead, iron, nickel, cobalt and other metals (ATSDR 2000). It occurs in trace quantities in all rock, soil, water and air. Arsenic can exist in four valency states: -3, 0, +3 and +5. Under reducing conditions, trivalent arsenite (AsO_2^+) is the dominant form, while pentavalent arsenate (AsO_4^{-3}) is the stable form in oxygenated environment. Elemental arsenic is insoluble in water while arsenic salts have a wide range of solubility depending on the pH and the ionic nature of the environment (WHO 2001).

Arsenic and its compounds are ubiquitous. As a result, non-occupational human exposure to arsenic occurs primarily through water and food and potentially through contaminated soil. Food sources of arsenic derive from marine organisms and from consumption of plants which accumulate arsenic by root uptake from the soil. As a result, meat, poultry, dairy products and cereals also contain arsenic (WHO 2001).

Arsenic is released into the atmosphere primarily as arsenic trioxide or, less frequently, in one of several volatile organic compounds, mainly arsines. Trivalent arsenic and methyl arsines in the atmosphere undergo oxidation to the pentavalent state, and arsenic in the atmosphere is usually a mixture of the trivalent and pentavalent forms.

The predominant dietary source of arsenic is seafood, followed by rice/rice cereal, mushrooms, and poultry. However, most of the arsenic in seafood is of the non-toxic arsenobetaine form.

Arsenic is largely immobile in agricultural soils; therefore, it tends to concentrate and remain in upper soil layers indefinitely. According to ATSDR (2000) studies indicate uptake of arsenic from soil by vegetables is generally not very high. Even when grown on highly polluted soil or soil naturally high in arsenic, the amount of arsenic taken up by the plants is comparatively low.

Because arsenic concentrations in organisms tended to decrease with increasing trophic levels, an extensive study of the factors affecting bioaccumulation of arsenic in two streams in western Maryland in 1997–1998 concluded there was no evidence of biomagnification. Arsenic is mainly accumulated in the exoskeleton of invertebrates and in the livers of fish. No differences were found in the arsenic levels

in different species of fish which included herbivorous, insectivorous, and carnivorous species. The major bioaccumulation transfer is between water and algae, at the base of the food chain and this has a strong impact on the concentration in fish.

Arsenic is not biomagnified through the food chain (ATSDR 2000).

Toxicological effects of arsenic in laboratory animals are dependent on the form of arsenic (inorganic or organic) and the oxidation state. Generally, inorganic arsenic compounds are more toxic than organic arsenic compounds and trivalent forms more toxic than the pentavalent forms. Several different organ systems are affected by arsenic, including skin, respiratory, cardiovascular, immune, genitourinary, reproductive, gastrointestinal and nervous systems. Many of the toxicological effects of arsenic are due to its propensity to bind to cellular sulphydryl groups and consequently inhibit critical enzyme systems involved in cellular metabolism.

In human acute or subacute poisoning the clinical signs include fever, diarrhoea, emaciation, anorexia, vomiting, increased irritability, exanthemata and hair loss. The presenting signs of chronic toxicity are often dermatological (melanosis, keratosis, desquamation, finger-nail changes), haematological (anaemia, leucopaenia) or hepatic enlargement. Dermatological effects of chronic ingestion of low doses of inorganic arsenic compounds show initially as cutaneous vasodilation then later as hyperpigmentation and hyperkeratosis with subsequent atrophy and degeneration of the skin. Evidence suggests that after a period of time malignant tumours develop.

Occupational exposure to arsenic causes lung cancer. Long-term exposure to arsenic in drinking-water is causally related to increased risks of cancer in the skin, lungs, bladder and kidney, as well as other skin changes such as hyperkeratosis and pigmentation changes. While there is good evidence that arsenic is carcinogenic in humans by both oral and inhalation routes, evidence of arsenic-induced carcinogenicity in animals is mostly absent despite a number of cancer bioassays being performed. The health effect of concern in humans is cancer. IARC have classified arsenic as being a human carcinogen, Group 1. Conclusions on the causality of the relationship between chronic arsenic exposure and other health effects are less clear-cut.

Arsenic is considered to be genotoxic on the basis of clastogenic effects in exposed individuals and findings *in vitro* however the mechanism by which chromosomes are

affected by arsenicals is unclear. For point mutations, the results are largely negative. In the past the methylation of arsenic and subsequent excretion of arsenic was considered to be a detoxification process, however recent studies demonstrating the methyl metabolites of arsenic are genotoxic challenges this view (Mass et al 2001, Thomas et al 2001, Hughes 2002). The genotoxic potential of arsenicals is somewhat difficult to reconcile with the negative outcome of animal carcinogenicity studies but does support the tumour data accumulated in man (JECFA 1983, 1989, ATSDR 2000, WHO 2001).

Absorption of arsenic in inhaled airborne particles is highly dependent on the solubility and the size of particles. Both pentavalent and trivalent soluble arsenic compounds are rapidly and extensively absorbed from the gastrointestinal tract. Inorganic arsenic in soil is absorbed to a lesser extent than solutions of arsenic salts. The rate of absorption of highly insoluble forms of arsenic (e.g., arsenic sulfide, lead arsenate) is much lower than that of more soluble forms via both oral and inhalation routes. Absorption by the dermal route has not been well characterized, but is very low compared to the other routes.

The metabolism and deposition of inorganic arsenic may be influenced by its valence state, particularly at high doses. After absorption arsenic is widely distributed throughout the body but the highest concentrations occur in the hair and nails due to the high sulphydryl content of keratin. Binding of arsenic to tissues is inversely dependent on the rate and extent of enzymic methylation. Levels of arsenic or its metabolites in blood, hair, nails and urine are used as biomarkers of arsenic exposure. Arsenic in blood is an indicator of acute or stable chronic high level exposure while arsenic in hair and nails are an indicator of past exposure. Urinary arsenic is used to monitor occupational exposure to arsenic. Inorganic arsenic has been assessed to have a biological half-life of from two to 40 or more days, depending upon body distribution and therefore has the potential to accumulate from the daily amounts absorbed from environmental exposure (JECFA 1983, ATSDR 2000, WHO 2001).

Once absorbed, arsenites (As^{+3}) are partially oxidized to arsenates (As^{+5}) and arsenates are partially reduced to arsenites, yielding a mixture of As^{+3} and As^{+5} in the blood.

In many species arsenic metabolism is characterised by two main types of reactions

- Reduction reactions that interconvert pentavalent to trivalent arsenic
- Oxidative methylation, primarily in the liver, in which trivalent forms (As^{+3}) of arsenic are sequentially methylated to form mono-, di- and trimethylated products using S-adenosyl methionine (SAM) as the methyl donor and glutathione (GSH) as an essential co-factor (WHO 2001).

Humans and most laboratory animals extensively methylate arsenic and the metabolites are promptly excreted in the urine as a mixture of As^{+3} , As^{+5} , MMA (methylarsonic acid) and DMA (dimethylarsinic acid), however there is considerable inter-individual variation. Smaller amounts are excreted in feces. The rate and relative proportion of methylation production also varies between species and amongst tissues. Animal and human studies suggest that arsenic methylation may be inhibited at high acute exposures (ATSDR 2000, WHO 2001).

Human exposure to As has been strongly associated with increases in skin, lung and other internal cancers however even though several animal carcinogenicity studies have been carried out, limitations such as few and/or high dose levels, limited time of exposure and limited number of animals make these inconclusive and unsuitable for modelling. Although there is limited evidence for carcinogenicity following intratracheal instillation and subcutaneous injection, oral exposures of experimental animals to arsenic have generally failed to elicit a cancer response (IARC 1980, IARC 1987, Clewell et al 1999, Ng et al 1999). The International Agency for Research on Cancer (IARC) in 1980 and again in 1987 reviewed the available experimental data and considered the evidence for animal carcinogenicity as limited.

Oral toxicity reference values

JECFA (1983, 1988) determined a tolerable daily intake (TDI) for arsenic of 0.002 mg/kg/d. This was confirmed as a provisional tolerable weekly intake (TWI) of 15 $\mu\text{g}/\text{kg}$ bw in 1988 (JECFA 1988). In Australia the JECFA TDI was recently used to evaluate food safety for the Australian population (FSANZ 2003) and to characterise public risks to timber treated with arsenic compounds (APVMA 2005).

The JECFA (1989) review derived a Provisional Tolerable Weekly Intake of 15 $\mu\text{g}/\text{kg}$ bodyweight per week, this can be translated to a TDI by dividing the PTWI by 7 (7

days in a week) 2.14 µg/kg bw/day (rounded to 2 µg/kg bw/day). The JECFA deliberations were based on studies of human populations exposed to inorganic arsenic in drinking water, particularly but not exclusively communities in Taiwan. The available epidemiological evidence was considered by JECFA to indicate that a water concentration of greater than 0.1 mg arsenic/L was associated with mild symptoms and signs that were attributable to arsenic intake, however arsenic concentrations at 0.05-0.1 mg/l produced only “presumptive signs of toxicity”. Thus 0.1 mg/L was taken to be a no effect level. Using a daily water intake of 1.5 litres per person JECFA (1988) calculated a TDI of 0.002 mg/kg bw/day (i.e. 0.1 mg/L x 1.5 L/d ÷ 60 kg). It is noted that JECFA (1983, 1989) did not employ a safety margin in calculating the TDI of 0.002 mg/kg/day.

RIVM (2001) has concluded that inorganic arsenicals are inactive or only weak mutagens but acknowledge they are able to produce chromosomal effects in most *in vivo* and *in vitro* systems, and in humans. Nevertheless RIVM (2001) has taken the view there is a general consensus that the carcinogenicity of inorganic arsenic is based on a non-genotoxic mode of action. Consequently the TDI of JECFA, but with an additional uncertainty factor of two fold, has been adopted as the TDI for arsenic in the Netherlands.

It is noteworthy that none of the above evaluations considered recent data on the genotoxicity of the methylated metabolites of arsenic (Mass et al 2000, Hughes 2002). The WHO (2001), also without considering the recent information, has nonetheless concluded that arsenic is genotoxic. It is also noted that the WHO (1987) state: “Because arsenic is carcinogenic and there is no known safe threshold, no safe level for arsenic can be recommended”.

In the light of the documented clastogenicity of inorganic arsenic and the recent information on the genotoxicity of the methylated metabolites, it is consistent with international regulatory practice regarding other genotoxic carcinogens to evaluate arsenic, either by oral or inhalation exposure, as a chemical that theoretically does not have a threshold for induction of cancer.

The ATSDR (2007) set a chronic oral minimal risk level (MRL) for inorganic arsenic at 0.3 µg/kg/d based on the appearance of characteristic dermal lesions (hyperkeratosis and hyperpigmentation) in a large number of poor farmers exposed to high levels of As in well water in Taiwan (Tseng et al. 1968 and Tseng 1977). The MRL is based on a NOAEL of 0.8 µg/kg/d in a control group consisting of 17,000 people. An uncertainty factor of 3 was applied for human variability, resulting in an oral MRL of 0.3 µg/kg/d. The MRL was supported by a number of well conducted epidemiological studies that identified reliable NOAELs and LOAELs for dermal effects. The US EPA IRIS (1993) oral reference dose of 0.3 µg/kg/d is based on the same studies and calculations.

The JECFA (1983, 1988) TDI of 2 µg/kg/d was used in this risk assessment.

Table A1.1.11: Summary of oral toxicity reference values for arsenic

Source	Toxicity Reference Value ^a [µg/kg bw/d]
ATSDR 2007 Chronic oral MRL	0.3
JECFA 1983, 1988	2
RIVM 2001	1
US EPA IRIS (1993) Oral Rfd	0.3

^a. derivation of these values is described in detail in the text.

Oral cancer potency estimates

The only regulatory agency that has conducted a quantitative evaluation of the dose response for arsenic induced cancer by the oral route is the US EPA (1988, 1998). The data set used is that of Tseng et al (1968) and Tseng (1977).

The studies by Tseng et al (1968) and Tseng (1977) are for a population located along the southwest corner of Taiwan and includes 42 villages in six townships. The local population used artesian well water for drinking water. The Tseng studies

report a dose response relationship between arsenic concentration in well water and prevalence of skin cancer. The US EPA (1988) used this data to conduct risk assessments for inorganic arsenic. In 1998 the US EPA reviewed their cancer assessment of arsenic however the slope factors for oral exposure to arsenic are still based on the original US EPA (1988) considerations of the Tseng studies. The applicability of the data set to US conditions has been criticised primarily because the Taiwanese cohort may have had arsenic intake from media other than drinking water (e.g. Brown et al 2000, WHO 1996). This criticism suggests the cancer potency and risk associated with oral arsenic may be overestimated. Nevertheless the Tseng data sets are the most appropriate to use for deriving a cancer slope factor for inorganic arsenic.

Using the above dataset from the Taiwanese cohort US EPA (1998) derived an oral slope factor of $1.5 \text{ (mg/kg-bw/d)}^{-1}$ based on a multistage model with time to predict dose-specific and age-specific skin cancer prevalence rates associated with ingestion of inorganic arsenic.

Inhalation air guidelines

Acute health effect guideline

An acute reference exposure level (REL) of $0.2 \text{ } \mu\text{g As /m}^3$ was derived by the Californian OEHHA on the basis of a developmental toxicity study. Pregnant female mice (CFRP strain gestation days 9-12) were exposed in an inhalation chamber to an aqueous aerosol four hours per day. The aerosol was generated in the chamber by spraying an aqueous solution of arsenic trioxide at concentrations of 0, 0.26, 2.9, or $28.5 \text{ mg As}_2\text{O}_3/\text{m}^3$ (~ 0.2 , 2.2 , and 21.6 mg As/m^3). The aerosol particle size and aerosol generation are not described (Nagymajtenyi et al. 1985, OEHHA 2008). On the 18th day of gestation, the mice were sacrificed and the fetuses removed. A statistically significant decrease in fetal weight was observed in all dose groups with a 3, 9, and 29% reduction in average fetal weight with increasing dose. Significantly delayed bone maturation was observed in the highest dose group, and an apparent dose-related trend in the number of fetuses with skeletal malformations was observed. The LOAEL of 0.2 mg As/m^3 for decreased fetal weight was used as the basis of an acute reference exposure level (REL). An uncertainty factor of 10 was used for the use of a LOAEL, 10 was used for interspecies extrapolation, and 10 was

used to account for human variability, for a total uncertainty factor of 1000. This resulted in an acute REL of $0.2 \mu\text{g As/m}^3$ ($200 \mu\text{g As/m}^3 \div 1000 = 0.2 \mu\text{g As/m}^3$).

Chronic health effect guideline

Several reputable agencies have set chronic air guideline values for arsenic. These are summarised in Table A1.1.12.

Table A1.1.12: Summary of chronic air guideline values for arsenic

Source	Air Guideline Value [µg/m ³]	Basis
WHO 2000	0.007	Concentration equating to an excess lifetime cancer risk of 1 in 100,000, calculated from pooled estimated of unit risks from three cohort studies
RIVM 2001 TCA	1.0	Based on a LOAEC for trivalent arsenic of 10 µg/m ³ for lung cancer in humans. Application of an UF of 10 for human variability gives a TCA for chronic inhalation exposure of 1 µg/m ³ .
OEHHA 2008	0.015	Calculated from a chronic LOAEL of 2.27 µg/L for decreased intellectual function of children and adverse effects on neurobehavioral development after continuous exposure to arsenic in drinking water for 9.5-10.5 years. Route-to-route extrapolation gave a LOAEL of 0.23 µg As/m ³ , to which a total UF of 30 was applied (3 for a LOAEL estimated by quantitative analysis of study data and 10 for human variability).
DEFRA 2009	0.003	Based on the mid-point (125 µg/m ³) of an exposure range from a Swedish workforce study in which a statistically significant increase in lung cancer risk was noted at concentrations less than 250 µg/m ³ of As. This converts to an average concentrations of 3 µg/m ³ over a 40 year working lifetime, and was classified as a LOAEL. A total UF of 1000 was applied in the derivation of the guideline value (10 for use of LOAEL, 10 for greater exposure duration of general public, and 10 for human variability).

Inhalation cancer potency estimates

The current US EPA IRIS (US EPA 1998) unit risk estimate of $4.3 \times 10^{-3} (\mu\text{g}/\text{m}^3)^{-1}$ for airborne arsenic is based on the geometric mean unit risk derived from five sets of data involving independently exposed worker populations at two smelters, Tacoma and Montana, in the USA. The WHO (1987) used data in an early report of the Tacoma smelter (Pinto 1977) and derived a lifetime risk of lung cancer of 7.5×10^{-3}

per $\mu\text{g}/\text{m}^3$ arsenic. The form of arsenic was arsenic trioxide. The calculated risks from all the studies are consistent (Table A1.1.13). Viren and Silvers (1994) using updated results from the cohort mortality study in the Tacoma smelter workers together with findings from a cohort study of Swedish smelter workers, developed other unit risk estimates. A unit risk of 1.28×10^{-3} was estimated for the Tacoma smelter cohort and 0.89×10^{-3} for the Swedish cohort. WHO (2000) have pooled these new estimates with the US EPA estimates from the Montana smelter to yield a composite unit risk of 1.43×10^{-3} . This value is three times lower than the EPA (1998) estimate and two times lower than the value assumed by WHO (1987). The unit risk currently recommended by WHO (2000) for air borne arsenic is 1.5×10^{-3} .

Enterline et al (1987) used urinary arsenic concentrations as a biomarker for airborne arsenic exposure, and the dose response for arsenic-related lung cancer mortality experience of 2802 men who worked one year or more during the period 1940-1964 at a copper smelter in Tacoma, Washington. The exposure was expressed in terms of cumulative urinary arsenic exposure and the relationship between urinary arsenic concentration and airborne arsenic exposures was quantified.

Table A1.1.13: Unit risk estimates for airborne arsenic.

Unit Risk Estimates (per $\mu\text{g}/\text{m}^3$)				
Exposure Source	Study	Unit Risk		Geometric Mean Unit Risk
Montana smelter	Brown & Chu 1983	US EPA	1.25×10^{-3}	2.56×10^{-3}
	Feldstein 1983 (Lee- Feldstein (1986)	(1998)	2.80×10^{-3}	
			4.90×10^{-3}	
	Higgins & Welsh 1982			
Tacoma smelter	Enterline & Marsh (1982) Enterline et al (1987)	US EPA (1998)	6.81×10^{-3} 7.60×10^{-3}	7.19×10^{-3}
	Pinto et al (1977)	WHO (1987)	7.5×10^{-3}	
Combined	Viren & Silvers (1994)	WHO (2000)	1.5×10^{-3}	

Susceptible subpopulations

Ingestion of inorganic arsenic has been demonstrated to cause cancer of the skin, lung, and urinary bladder in humans. Historically, standard chronic bioassays with

exposure to inorganic arsenic in rodents have been negative for increased tumour formation. However, more recent studies following trans-placental exposures at high doses (42.5 and 85 mg/L), in mice (transgenic C3H mice) have provided evidence of cancer following 10 day in-utero exposure to inorganic arsenic. The study was intended to answer questions about arsenic mechanism of action and not for regulatory decision making. The US Science Advisory Board have very recently advised that epidemiology data, particularly from the southwestern Taiwanese studies provide the best dose-response data for evaluating the long-term effects of ingestion of inorganic arsenic (US EPA 2006). It is not clear whether children differ from adults with regard to their sensitivity to the carcinogenic effects of arsenic in drinking water. More data are needed to fully characterise the impact of trans-placental exposures. However, data from the studies in Southwestern Taiwan which include childhood exposures in the calculation of lifetime dose show that in the population under 30 years of age there were no bladder cancer cases, and only 5 lung cancer cases but few cases are actually expected in that age group (USEPA 2006). With further work the carcinogenicity studies in transgenic animals may influence the dose response assessment and therefore the tolerable daily intake for arsenic. It is noted that the carcinogenic response in the transgenic mice occurred at a concentration of approximately 425-fold greater than the no effect level identified in the southwestern Taiwanese studies.

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Zinc

Zinc is an element commonly found as a constituent in most rocks (WHO 2001) and in water. In Australia, which has very old soils developed on heavily weathered rocks, the range of total zinc concentrations is < 2-180 with a mean zinc concentration of 34 mg/kg (Imray & Neville 1996 pg108). Bertrand et al. (2003) identified a range of total zinc concentrations of 4-41 mg/kg in alkaline, noncalcareous (< 2% CaCO₃) arable soils in South Australia and Victoria, and 5-36 mg/kg in calcareous soils (>2% CaCO₃) in the same regions.

It exists predominantly as a divalent state mainly as either a sulphide, sulphate, oxide or chloride salt. Some common chemical and physical properties for these salts are provided in Table 1. The distribution and transformation of zinc in the environment depends to a large extent on the species of zinc and the size of the particles. These parameters will influence deposition, complexation, solubility and adsorption on clay and organic matter (ATSDR 2005, WHO 2001).

Table A1.1.14 – Chemical and Physical Properties of Zinc Compounds

Name	Zinc Sulphide ^a	Zinc Sulphate ^a	Zinc Chloride ^a	Zinc Oxide ^a	Zinc ^a
Formula	ZnS	ZnSO ₄	ZnCl ₂	ZnO	Zn
Cas No.	1314-98-3	77-33-02-0	7646-85-7	1314-13-2	7440-66-6
Molecular Weight	97.45	161.44	136.29	81.38	65.38
Melting Point (°C)	1700	680	290	1975	419.5
Density (g/cm ³)	3.98 at 20°C	3.54	2.907	5.607 (20°C)	7.14
Water Solubility (25°C)	6.9 mg/L	4.19 x 10 ⁵ at 0°C	4.32 x 10 ⁶ at 25°C	1.6 mg/L at 29°C	Insoluble
Conversion factor to mgZn	mg ZnS x 0.67	mgZnSO ₄ x 0.40	mgZnCl x 0.48	mgZnO x 0.80	

^a ATSDR (2005).

Zinc is found in all plant and animal tissues, particularly inside the nuclei. It is an essential nutrient and occurs in the tissues of organisms, even at normal ambient water and soil concentrations (WHO 2001).

Zinc can accumulate in freshwater animals at 51–1,130 times the concentration present in the water. Microcosm studies indicate, in general, that zinc does not

biomagnify through food chains. Steady-state zinc bioconcentration factors (BCFs) for 12 aquatic species range from 4 to 24,000 (ATSDR 2005).

With respect to bioconcentration from soil by terrestrial plants, invertebrates, and mammals, BCFs of 0.4, 8, and 0.6, respectively, have been reported. The concentration of zinc in plants depends on the plant species, soil pH, and the composition of the soil. Plant species do not concentrate zinc above the levels present in soil (ATSDR 2005).

Zinc is an essential nutrient required for normal growth and development in humans. It has structural, regulatory and catalytic roles associated with the function of many enzymes and is important in maintaining immune and neurological functions, the maturation of testicular tissue, and is involved in wound healing (ESCF 2002). The human body's requirement for zinc is usually adequately met by eating foods such as meat and cereal products rich in zinc. Food supplements and licensed medicines containing zinc salts, such as zinc chloride, zinc gluconate, zinc sulphate, zinc oxide and zinc acetate have been used for many years to supplement zinc deficient diets. A recommended intake of zinc from all sources is from 5 – 20 mg/person per day (CSTEE 2003).

In biological systems, zinc exists as the divalent cation (Zn^{2+}) and is present in all tissue and fluids of the body. Zinc is absorbed in the small intestine via a carrier-mediated transport process however some passive diffusion occurs when intake is high (ESCF 2002, WHO 2001). Homeostatic mechanisms adjust the extent of uptake of zinc salts from the gastrointestinal tract based on the body's demand for zinc. The carrier-mediated transport process is readily saturated (CSTEE 2003). Absorption of zinc from the diet ranges from 15 – 60% of ingested material (ESCF 2002). Zinc is not stored in the body and intake in excess of requirements results in reduced percentage absorption and an increased proportion of the ingested amount being excreted (CSTEE 2003). Greater than 90% of absorbed zinc is excreted in the faeces indicating significant biliary secretion (US IoM 2001).

Many dietary factors interfere with the absorption of zinc in the small intestine, e.g. phytate, copper, iron, amino acids and proteins (US IoM 2001, WHO 2001). Similarly, dietary levels of zinc effect copper absorption; as zinc absorption in the intestine increases there is a resulting decrease in copper absorption. This is a

significant effect since many health effects from repeated exposure to 'high' levels of zinc are due to resulting copper insufficiency.

Most reports of acute toxic effects of zinc in humans are for symptoms associated with gastrointestinal irritation; these include nausea, vomiting, abdominal cramps and diarrhoea (WHO 2001). Exposure levels resulting in these effects in humans generally range from approximately 2 – 8 mg Zn/kg bw/day (ATSDR 2005, WHO 2001, US EPA 2005).

With longer term doses (1-8 years) of between ~0.8 – 2 mg Zn/kg bw/day the effects observed in humans are generally considered to be the result of decreased absorption of dietary copper, leading to a state of copper deficiency (ATSDR 2005, ESCF 2002). Although clinical signs such as headache, nausea, and gastric discomfort have also been noted at these levels, the principal adverse effects associated with long term daily intake of zinc at the above doses are anaemia, reductions in haemoglobin and ferritin and decreased erythrocyte superoxide dismutase activity. (ATSDR 2005, USEPA 2005, CSTE 2003).

These clinical signs and blood effects in humans are regarded as the most sensitive indicators of chronic zinc toxicity and form the basis for risk assessments conducted by the ATSDR (2005), CSTE (2003), ESCF (2002), UK EGV (2003) and the US EPA (2005). The doses at which the effects occur are considered to be the lowest observed adverse effect level (LOAEL) (Table A1.1.15).

Although most of the reviews on zinc indicate unusually sensitive human subpopulations have not been located, according to the ATSDR (2005) data from animal studies suggest that certain human subpopulations may be more susceptible to excess zinc because of zinc's depleting effect on copper. People who are malnourished or have a marginal copper status may be more susceptible to the effects of excessive zinc than people who are adequately nourished. In addition, patients diagnosed with haemochromatosis, a genetic disease associated with increased iron absorption from the intestine, may theoretically have an increased susceptibility to the toxic effects of zinc (US IoM 2001). These patients have altered levels of iron or iron proteins in their liver that may lead to accumulation of zinc. Thus these individuals may have a greater likelihood of developing toxicity at levels of zinc exposure that would not normally result in any symptoms in the general population (ATSDR 2005, US IoM 2001).

The effects have also been observed in rats, mice, rabbits, dogs, ferrets and pre-ruminant calves but at higher dosage levels (ATSDR 2005). In rats, the lowest LOAEL for decreased haemoglobin and erythrocyte levels was 12 mg Zn/kg bw/day as zinc chloride found in a 4 week drinking water study. In mice the lowest LOAEL for severe anaemia was 68 mg Zn/kg bw/day as zinc oleate found in a 9 month feeding study. The LOAEL in rabbits for a decrease in haemoglobin levels was 174 mg Zn/kg bw/day as zinc carbonate, for a feeding study conducted over 22 weeks. In dogs, ferrets and pre-ruminant calves zinc oxide added to the feed caused anaemia at 76.5 mg Zn/kg bw/day for dogs (no details provided on length of exposure other than 'long-term'), 195 mg Zn/kg bw/day for ferrets (over 97 days) and 64 mg Zn/kg bw/day for pre-ruminant calves (over 5 weeks) (ATSDR 2005).

Effects on reproduction and developmental effects have been noted in animal studies administered zinc salts in their feed, but generally only at very high, ≥ 200 mg Zn/kg bw/day exposure levels (ATSDR 2005, ESCF 2002). There was increased pre-implantation loss in rats fed diets containing 200 mg Zn/kg bw/day as zinc sulphate on gestational days 0-18 and evidence of there being no reproduction in rats fed 500 mg Zn/kg bw/day for 5 months as zinc carbonate (ATSDR 2005).

Developmental effects include increased foetal resorptions, reduced offspring weight and growth; these effects are consistent with foetal toxicity (ATSDR 2005, ESCF 2002). Administration of zinc in rats at 200 mg Zn/kg bw/day, as zinc oxide in the diet 21 days prior to and during gestation resulted in the resorption of all foetuses. When the dose was reduced to 100 mg Zn/kg bw/day, starting 21 days prior to mating, there were no foetal resorptions, malformations or growth reduction. In contrast, there was no effect on resorptions, no difference in the number of offspring per litter and no change in the average weight of the foetuses in rats fed 250 mg Zn/kg bw/day as zinc carbonate in the diet for 53 days before and during gestation. ATSDR report that the reason for the difference in the results of these studies is unknown (ATSDR 2005).

There appears to be only one report in the literature suggestive of adverse developmental effects in humans due to excessive levels of zinc. Four women were given zinc supplements of 0.6 mg Zn/kg bw/day as zinc sulphate in the third trimester of pregnancy. Three of the women had premature deliveries and the fourth delivered a stillborn infant (ATSDR 2005). The ATSDR suggest that the significance of this

study cannot be determined since very few details were given regarding the actual study method, reproductive histories and nutritional status of the women (ATSDR 2005). Three other human studies have found no developmental effects in the newborns of mothers consuming 0.3 mg zinc/kg/day as zinc sulphate or zinc citrate, or 0.06 mg zinc/kg/day as zinc aspartate during the last two trimesters.

Carcinogenicity studies in test animals and epidemiological studies do not demonstrate an association between oral exposure to zinc compounds and the development of cancer (ATSDR 2005, WHO 2001).

Table A1.1.15: Important human dose levels of Zinc.

Dose (mg Zn ²⁺ /day)	Calculated as (mg Zn ²⁺ /kg bw/day) ^a	Endpoint	Reference
-	0.5	Tolerable daily intake (TDI) calculated by NHMRC. See text for description.	NHMRC (2006)
2	0.57	Recommended Dietary Intake (RDI) for children from birth to 6 months old (male and female)	US IoM (2001)
3	0.3	RDI for children aged 7 months to 3 years (male and female)	US IoM (2001)
5	0.23	RDI for children aged 4 to 8 years (male and female)	US IoM (2001)
8	0.23	RDI for children aged 9 to 13 years (male and female)	US IoM (2001)
11 & 9	0.16	RDI for children aged 14 to 18 years (male and female respectively)	US IoM (2001)
13 & 14	0.23 – 0.25	RDI for pregnant and lactating women aged 14-18 years respectively.	US IoM (2001)
11	0.16	RDI for men 19 years or greater..	US IoM (2001)
11 & 12	0.2	RDI for pregnant and lactating women aged 19+ respectively.	US IoM (2001)
5 - 20	0.08 – 0.33 0.6	Recommended daily intake. Unconfirmed suggestions of adverse pregnancy outcome.	CSTEE (2003) ATSDR (2005)
50 ^d	0.83	NOAEL ^b	CSTEE (2003)
50 ^d	0.83	LOAEL ^c (decrease in erythrocyte superoxide dismutase, ferritin and haematocrit).	ASTDR (2005) ESCF (2002) UK EGV (2003) US EPA (2003)
150 ^e	~ 2.5	LOAEL ^c (headache, nausea, gastric discomfort and effects on copper homeostasis).	CSTEE (2003)
225 - 450	~ 3.8 – 7.5	Emetic dose.	ESCF (2002) WHO (2001)

-	0.3 ^f	Intermediate Minimal Risk Level (MRL).	ATSDR (2005)
-	0.3 ^g	RfD Reference Dose.	US EPA (2005)

^a Values for adults (19+) are calculated using an average body weight of 60 kg, except for men where 70 kg was used. For other age groups the following body weights (kg) were used; 0-6months 3.5 kg, 7 months to 3 years – 10 kg, 4-8 years – 22 kg, 9-13 years – 35 kg, 14-18 years – 65 kg for males and 55.5 kg for females (ABS 1995).

^b NOAEL = No Observed Adverse Effect Level.

^c LOAEL = Low Observed Adverse Effect level.

^d The NOAEL of 50 mg Zn²⁺ per day was identified from a study where eighteen healthy women were given a mineral supplement of zinc gluconate twice per day for 10 weeks, total daily dose was 50 mg Zn²⁺. Although CSTE (2003) regarded this dose as a NOAEL, some blood effects were observed, i.e. a decrease in erythrocyte superoxide dismutase activity, serum ferritin and hematocrit. However there is a consensus of opinion from other agencies that this dose level should be considered as a LOAEL (ATSDR 2005, ESCF 2002, UK EGV 2003, US EPA 2005). These agencies regarded the changes in blood effects as sensitive markers for early impact on copper homeostasis.

^e CSTE identify a dose of 150 mg Zn²⁺ per day from a repeated dose toxicity study in humans as a LOAEL where patients experienced headache, nausea and gastric discomfort and effects on copper homeostasis (CSTE 2003).

^f The MRL of 0.3 mg Zn/kg bw/day was derived for an intermediate oral exposure to zinc (ATSDR 2005), this is an estimate of daily human intake that is likely to be without an appreciable risk of adverse effect (non carcinogenic) for up to 365 days. The LOAEL of 50 mg Zn²⁺ per day (equivalent to 0.83 mg Zn/kg bw/day for a 60 kg female) was divided by an uncertainty factor of 3 to account for presumed human variability in response and the use of a minimal LOAEL (ATSDR 2005).

^g The Reference Dose of 0.3 mg/kg bw/day is a dose of zinc that is expected to be without adverse effects when consumed on a daily basis over a prolonged period of time. The US EPA has derived this value based on the same LOAEL and uncertainty factors as those used by ATSDR to derive the MRL (US EPA 2003).

The Australian Health-based soil Investigation Level (HIL) for zinc of 7000 mg/kg (enHealth 2001) was derived by assuming a child with a bodyweight of 10 kg ingests 100 mg of soil and the safe intake of zinc from soil is 0.07 mg/kg bw/d. The safe intake allocated to soil is derived from the US ATSDR MRL of 0.3 mg/kg bw/d minus the estimated average dietary intake (0.23 mg/kg bw/d) for Australians (Imray & Neville 1996).

The Australian Drinking water guideline for zinc of 3 mg/L is based on a taste threshold and a health based guideline is not available (NHMRC 2004).

The NHMRC (2006) derived a tolerable daily intake for zinc of 500 µg/kg bw/d, based on the upper limit of Zn intake for 1-3 years olds from food, water and supplements. A study of 68 infants showed no adverse effect at 5.8 mg Zn/L of infant formula fed for 6 months. This translates to a NOAEL of 4.5 mg/d at 0.78 L milk/d. An UF of 1 was applied, given the length and quality of the study and the fact that there is no evidence of harm from this intake. Rounding down, the NHMRC established an upper limit of 4 mg for infants 0-6 months old. As there were no data for older children and adolescents, this figure was adjusted on a body weight basis for older children and resulting values were rounded down. Because body weight adjustment was used to

calculate these values, the reference body weight provided by the NHMRC for 1-3 year olds (13 kg) was used to convert the upper limit (7 mg/d) of 1-3 year olds to a TDI ($7000 \mu\text{g/d} \div 13 \text{ kg} = 538$, rounded to $500 \mu\text{g/kg/d}$). This TDI is the same as the TDI derived by RIVM (2001), based on a LOAEL (adjusted) of 1 mg/kg/d associated with haematological effects in a human study (from supplements) and the application of an UF of 2. This TDI of $500 \mu\text{g Zn/kg bw/d}$ was applied in this risk assessment.

Ambient air guideline values for zinc or zinc compounds could not be located (Australian National Environment Protection Council, World Health Organisation, United States Environmental Protection Agency, United States Agency for Toxic Substances and Disease Registry, Dutch National Institute for Public Health and the Environment, California Office of Environmental Health Hazard Assessment).

The Australian occupational exposure standard (OES) for zinc oxide (respirable particles only) is 2 mg/m^3 as an eight hour time weighted average (TWA) and the short term exposure limit (STEL) is 10 mg/m^3 zinc oxide. Both the TWA and STEL only apply to respirable particles of zinc oxide. Non respirable zinc oxide particles (i.e. particles diameter of 10 microns or greater) are considered to be "*particulate matter that has little adverse effect on the lung and does not produce significant disease when exposures are kept under reasonable control*" (ACGIH 2003).

The occupational exposure standard is based on the development of "metal fume fever" following inhalation of zinc oxide fumes and to a lesser extent zinc metal and many other zinc compound fumes. Metal fume fever due to zinc oxide is characterized by chills, muscular pain, nausea and vomiting (ATSDR 2005, ACGIH 2003). Symptoms generally appear a few hours after exposure, and are reversible 1–4 days following cessation of exposure. In general high exposures in the range of $77\text{--}600 \text{ mg/m}^3$ are associated with the development of metal fume fever however metal fume fever has been observed following a 2 hour exposure at 2.5 mg/m^3 freshly formed zinc oxide fume at elevated temperature.

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Cadmium

Cadmium exists in the earth's crust and is commonly associated with zinc, lead and copper ores. Atmospheric cadmium is in the form of particulate matter. Cadmium emitted to the atmosphere from combustion processes is usually associated with very small particulates that are in the respirable range ($<10\text{ }\mu\text{m}$) and are subject to long-range transport. These cadmium pollutants may be transported from a hundred to a few thousand kilometres and have a typical atmospheric residence time of about 1 -10 days before deposition occurs.

The principal chemical species in air is cadmium oxide, although some cadmium salts, such as cadmium chloride, can enter the air, especially during incineration. These are stable compounds that do not undergo significant chemical transformation. The chief fate of airborne cadmium is to be dispersed by the wind and, subsequently, deposited by wet or dry processes.

Wet and dry deposition of cadmium from the atmosphere may also contribute sizable amounts of cadmium to soil in the areas surrounding sources of atmospheric emissions, such as coal power stations, incinerators and vehicular traffic, which may release cadmium from burned fuel and tire wear.

Contamination of soil by cadmium is of concern because cadmium is taken up efficiently by some plants and, therefore, enters the food chain for humans and other animals. A low soil pH increases the uptake of cadmium by plants. Cadmium is taken up and retained by aquatic and terrestrial plants and is concentrated in the liver and kidney of animals that eat the plants. Grain and cereal products usually contribute the greatest percentage of dietary cadmium; potatoes, leafy vegetables, and root vegetables also contain relatively high levels. Organ meats (liver and kidney) and shellfish can also contribute to cadmium intake for individuals who consume large amounts of these items (ATSDR 2008).

Since cadmium accumulates largely in the liver and kidneys of vertebrates and not in the muscle tissue and intestinal absorption of cadmium is low, biomagnification through the food chain may not be significant. Nevertheless, uptake of cadmium from soil by feed crops may result in high levels of cadmium in beef and poultry (especially in the liver and kidneys). This accumulation of cadmium in the food chain has important implications for human exposure to cadmium, whether or not significant

biomagnification occurs because these animal parts are often used to manufacture salami and other processed meat products (ATSDR 2008).

Approximately 25 % of cadmium and cadmium salts is absorbed via inhalation exposure and 1 – 10 % and < 1% is absorbed via oral and dermal exposure respectively. Following absorption cadmium is widely distributed throughout the body with most of the body burden retained in the kidneys and the liver. Absorbed cadmium is excreted slowly (IARC 1993, ATSDR 2008)

Cadmium induces synthesis of metallothionein. Adverse effects associated with the inhalation of cadmium were first established amongst workers in a cadmium battery factory where workers were primarily exposed to cadmium via fumes or dusts. Some gastrointestinal tract exposure may also occur associated with inhalation exposure, when dust is removed from the lungs by microciliary clearance and subsequently swallowed or by ingestion from hands, cigarettes or food. The mechanism of action of cadmium involves the cation's effects on the target organ system and the cation is the same regardless of the anionic species. In general the different forms of cadmium (cadmium oxide, cadmium chloride, cadmium sulphate etc) have similar toxicological effects via inhalation exposure, however differences may exist from differing absorption and distribution characteristics particularly for the less soluble forms (ATSDR 2008).

Exposure to high levels ($>0.5 \text{ mg/m}^3$) of cadmium oxide fume may result in acute pneumonitis with pulmonary oedema and ingestion of high levels of chromium salt may cause acute gastroenteritis (WHO 1992). The kidney is the most critical organ. Many cadmium workers have developed proteinuria, renal glucosuria and aminoaciduria and in environments where the level of cadmium is very high workers have developed hypercalciuria, phosphaturia and polyuria. Proteinuria is known to be an early sign of cadmium poisoning but the degree varies with time with several studies showing persistence and in some cases an increase in the degree of proteinuria several years following the cessation of cadmium exposure.

Other effects associated with cadmium exposure include glomerular effects. Cadmium may affect the glomerular filtration rate and decreased inulin clearance. Occupational studies have shown an increase in serum concentrations of creatine and β -microglobulin, indicating reduced glomerular filtration rate (WHO 1992). The mechanism for the glomerular effects is unclear, it has been suggested that the

cadmium induced tubular damage leads to a certain degree of interstitial nephritis which in turn results in a decreased glomerular filtration rate and that cadmium may exert a direct effect on the glomerulus (WHO 1992). The dose response relationship between cadmium content and pathology or dysfunction is difficult to establish.

IARC have evaluated and classified cadmium and cadmium compounds as carcinogenic to humans (group 1). A series of cohort studies have shown an increase of mortality due to lung cancer amongst workers in the manufacturing of nickel-cadmium batteries and in copper-cadmium plants. Studies in animals have reported increased incidences in malignant lung tumours in rats and mice following inhalation of cadmium chloride and cadmium sulphide and in mice following inhalation exposure to cadmium oxide (IARC 1993).

Studies of the genotoxic potential of cadmium have been conducted *in vivo* in cadmium workers, members of the general population and in rodents. The results have not always been shown to be consistent and suggest that cadmium is clastogenic. Cadmium exposure via inhalation has been associated with DNA damage and induction of micronuclei in rodent cells (ATSDR 2008).

Although cadmium is deposited in the testes, reproductive effects in humans have not been reliably demonstrated following inhalation exposure. However increased serum testosterone has been associated with increased blood cadmium levels following oral exposure. Low birth weights have been associated with inhalation exposure to cadmium as demonstrated in smokers. Increased oestrous cycle has been observed in female rats following 2 months exposure to cadmium oxide (ATSDR 2008, WHO 1992). Animal studies have associated decreased pup vitality, delays in ossification and impaired performance on neurobehavioral tests following both oral and inhalation exposure to cadmium salts and cadmium oxide prior to mating (ATSDR 2008).

Inhalation Toxicity Reference Values

WHO (2000) examined pooled data from seven studies in which the relationships between the occurrence of renal damage (tubular proteinuria) and cumulative cadmium exposure showed the prevalence of tubular dysfunction (background level 2.4%) increased sharply at a cumulative exposure of more than 500 $\mu\text{g Cd/m}^3\cdot\text{yrs}$. The lowest estimate of cumulative exposure to airborne cadmium in workers leading

to an increased risk of renal dysfunction or lung cancer is $100 \mu\text{g}/\text{m}^3 \cdot \text{yrs}$ for an 8-hour exposure. According to WHO (2000) extrapolation to a continuous lifetime exposure gives a value of around $0.3 \mu\text{g}/\text{m}^3$ (calculation details are not provided). This should be regarded as a LOAEL for continuous exposure.

WHO (2000) considered that renal effects observed in areas contaminated by past emissions of cadmium indicate the cadmium body burden of the general population in some parts of Europe cannot be further increased without endangering renal function. Since existing levels of cadmium in the air of most urban or industrial areas of Europe were around one-fiftieth of the continuous exposure LOAEL (data not given), WHO (2000) tacitly used 50 as the uncertainty factor to give a guideline value of $5 \text{ ng}/\text{m}^3$ ($0.3 \mu\text{g}/\text{m}^3 \div 50 = 6 \text{ ng}/\text{m}^3$, rounded to $5 \text{ ng}/\text{m}^3$).

OEHHA (1999) used the data presented by Lauwerys et al (1974) regarding the occupational exposure to cadmium with the critical effect being proteinuria and respiratory effects. Using a NOAEL of $4.1 \mu\text{g}/\text{m}^3$ over an assumed exposure of 5 days/week for 8 hours/day during which 10 m^3 is breathed. Uncertainty factors of 3 to account for the use of subchronic data and 10 to account for intraspecies variability were applied. The inhalation reference exposure level was therefore calculated to be $0.02 \mu\text{g}/\text{m}^3$ ($(1.4 \times 10/20 \times 5/7) 30$).

ASTDR (2008) derived an acute-duration inhalation minimal risk level (MRL) of $0.03 \mu\text{g}/\text{m}^3$ using a rodent study (NTP 1995). The critical effect was the histological alterations to the respiratory tract consisting of alveolar histolytic infiltrate and focal inflammation in alveolar septa in rats exposed to $0.088 \text{ mg}/\text{m}^3$. A regional deposited dose ratio (RDDR) for the pulmonary region of 0.617 and was calculated using the EPA's RDDR calculator (final body weight 0.194Kg, MMAD 1.5um and the midpoint 1.7). Using the RDDR and adjusting for continuous exposure the LOAEL of $0.088 \text{ mg}/\text{m}^3$ was adjusted to $0.01 \text{ mg}/\text{m}^3$ ($0.088 \times 6.2/24 \times 5/7 \times 0.617$) and an uncertainty factor of 300 was applied (10 for the use of an LOAEL, 10 to account for intraspecies variability and 3 for extrapolation from animals to humans).

ASTDR (2008) also derived a chronic MRL based on three human studies with the critical endpoint of renal effects. Using the lowest urinary cadmium level that would result in a 10% increase in the prevalence of $\beta 2$ -microglobulin proteinuria (UCD_{10}). The 95% confidence interval of the UCDL_{10} of $0.5 \mu\text{g}/\text{g}$ creatine was used as the point of departure for the MRL. Adjusted to account for the contribution of dietary

intake of cadmium to urinary levels, 0.1 µg/m³ and a dietary intake of 0.3 µg/Kg/day would result in 0.5 µg/g creatine. UF of 3 to account for human variability and a modifying factor of 3 to account for the lack of human data that could be used to compare the relative sensitivities of the respiratory tract and kidneys were applied to give an MRL of 0.01 µg/m³.

Table A1.1.16 : Summary of inhalation toxicity reference values for cadmium

Source	Toxicity Reference Value ^a [µg/m ³]
WHO 2000	0.005
EC 2000	0.3
OEHHA 1999	0.02
ATSDR 2008	0.03 ^b
ATSDR 2008	0.01 ^c

^a derivation of these values is described in detail in the text.

^b acute MRL

^c Chronic MRL

The US EPA (IRIS 1992) derived an inhalation unit risk of 1.8 x 10⁻³ per µg/m³ based on the incidence of lung, trachea and bronchus cancer (Thun et al 1985). Thun et al (1985) concluded that the lung cancer risk in this study was probably not due to the presence of arsenic or to smoking. It should be noted that the Carcinogen Assessment Group found that there was a lack of clear cut evidence of a casual relationship of the cadmium exposure only and the study is considered to supply limited evidence of human carcinogenicity. This unit risk is not appropriate for use if the air concentration is greater than 6 µg/m³ (US EPA IRIS 1992).

Oral toxicity reference values

The WHO (2008) has derived a drinking water guideline of 0.003 mg/L, stating that the drinking water levels are generally less than 1 µg/L. WHO (2008) stated that the daily oral intake is 10 – 35 µg with food contributing the most to the daily exposure. The PTWI is 7 µg/Kg, using a limit of 50 mg/Kg of cadmium in the renal cortex and the assumptions that the rate of absorption for dietary cadmium is 5 % and the excretion rate is 0.005 % of body burden, WHO (2008) stated that the total intake of cadmium should not exceed 1 µg/kg/day over 50 years. The PTWI was originally established at the 33rd meeting by JECFA (1988).

The US EPA IRIS (1992) gives an RfD of 0.5 µg/kg/day for water and 1 µg/Kg/day for food. Based on a concentration of 200 µg/g wet human renal cortex as the highest level not associated with significant proteinuria and using a toxicokinetic model the NOAEL which results in 200 µg/gm wet renal cortex was 0.005 and 0.01 mg/Kg/day from water and food respectively, assuming a 2.5 % absorption for food and 5 % absorption from water. An uncertainty factor of 10 for intraspecies variability was applied.

ATSDR (2008) derived an intermediate oral MRL of 0.5 µg/Kg/day based on the critical effect of decrease of bone mineral bone density. Using benchmark dose software, the 95 % benchmark dose (BMDL_{sd1}) of 0.05 mg/Kg/day estimated from a 9 month lumbar spine data set was selected as the point of departure for the MRL. An uncertainty factor of 100 was applied (10 for extrapolation from animals to human experience and 10 for intraspecies variability). A chronic oral MRL of 0.1 µg /Kg/day was also derived. Again using the three human studies a UCDL₁₀ of 0.5 µg/g urinary creatine, as used in the derivation of the chronic inhalation MRL, was used as the point of departure for the MRL. An uncertainty factor of 3 was applied to account for the intraspecies variability.

Table A1.1.17: Summary of oral toxicity reference values for cadmium

Source	Toxicity Reference Value ^a [µg/Kg/day]
WHO 2008 (JECFA 1988)	1
US EPA IRIS 1992	1 ^b
US EPA IRIS 1992	0.5 ^c
ATSDR 2008	0.5 ^d
ATSDR 2008	0.1 ^e

^a derivation of these values is described in detail in the text.

^b from food

^c from water

^d intermediate MRL

^e chronic MRL

In this risk assessment, the WHO TDI of 1 µg/kg bw/d was applied.

Unusually susceptible populations will exhibit different or enhanced responses to cadmium exposure, reasons for the unusual susceptibility may include genetic makeup, age, health and nutritional status and exposure to other toxic substances including cigarette smoke. Populations with depleted stores of calcium, iron or other dietary components which may be due to multiple pregnancies or dietary deficiencies may exhibit increased absorption of cadmium from the gastrointestinal tract. Nephrotoxicity at lower cadmium exposures may also be exhibited in those with kidney disease unrelated to cadmium exposure. There have been some suggestions that diabetics may be more susceptible to the toxicity of cadmium.

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Elemental/Inorganic Mercury

The most common natural forms of mercury found in the environment are elemental mercury, and inorganic mercury predominantly as either mercuric sulphide, or mercuric chloride. The present toxicity profile does not consider the health effects of methylmercury as it has a distinct set of properties, and is formed predominantly in marine environments.

Elemental mercury in the atmosphere can undergo transformation into inorganic mercury forms, providing a significant pathway for deposition of emitted elemental mercury. In soil mercury forms complexes with organic anions and such complexes control to a large extent the mobility of mercury in soil. Much of the mercury in soil is bound to bulk organic matter and is susceptible to wash out in runoff only when attached to suspended soil or humus. For these reasons mercury has a long retention (decades) time in soil (EU 2001).

The main route of exposure for elemental mercury is by inhalation of the vapours. About 80% of inhaled vapours are absorbed by the lung tissues. Intestinal absorption of elemental mercury is low. Elemental mercury can be oxidized in body tissues to the inorganic divalent form. Cationic forms of inorganic mercury are retained in the lungs about half as efficiently as inhaled elemental mercury vapour (40% versus 80% retained) thus less is available for transfer through the lungs into the body (UNEP 2002, WHO 2000). Uptake via skin of mercury vapour is about 1% of the uptake via inhalation however studies have shown substantial absorption and accumulation of inorganic mercury salts used in skin lightening creams and soaps (WHO 1991). It has been shown that following a single exposure to mercury vapour the elimination of inorganic mercury differs according to the tissue and the time after exposure, with the best approximation being that 90 % of the mercury having a half-life of 2-4 days, followed by a second phase with a half-life of 15 -30 days (WHO 1991).

Mercury has an affinity for ectodermal and endodermal epithelial cells and accumulates widely in the body in tissues including in the thyroid, pituitary, brain, liver, pancreas, testes, ovaries and prostate, with 50 – 90 % of the body burden found in the kidneys. The distribution is not uniform and studies have shown that biological half-life differs between each organ and within each organ (WHO 1991).

Metallic mercury vapour is oxidised to divalent ionic mercury soon after absorption, however some elemental mercury is distributed to the blood-brain barrier and the placenta before oxidation. Mercury's lipid solubility and high diffusability allow for rapid transport across these barriers. Once in these tissues, the mercury is oxidised to the ionic form and therefore less likely to cross the placenta and blood-brain barrier leading to accumulation in the brain and foetal tissues (WHO 1991). Inorganic mercury salts such as mercuric chloride do not enter the brain as readily as metallic mercury vapour. Some inorganic mercury also passes into breast milk. Most of the metallic mercury absorbed is excreted via urine and faeces and smaller amounts are excreted via exhaled breath (ATSDR 1999).

Acute exposure to high levels of metallic mercury vapour has been associated with moderate to high leukocytosis with neutrophilia, liver effects, respiratory symptoms, cardiovascular symptoms including increased blood pressure and heart rate as well as gastrointestinal effects such as inflammation of the oral mucosa (stomatitis), abdominal pains, vomiting and diarrhoea (ATSDR 1999, IARC 1993).

The kidney is a sensitive target of toxicity following inhalation exposure to metallic mercury, which may be due to the relatively high accumulation of mercury in the kidneys. Effects range in severity from mild transient proteinuria to frank proteinuria and acute renal failure with degeneration or necrosis of the proximal convoluted tubules (ATSDR 1999).

The central nervous system is the most sensitive target organ for metallic mercury vapour exposure. Neurological and behavioural disorders in humans have been observed and specific symptoms include tremors, emotional lability, insomnia, memory loss, neuromuscular changes, and headaches. Acute, intermediate and chronic exposures elicit similar neurological effects.

Table A1.1.18: Concentration response for nervous system effects due to inhalation of mercury vapours

100 $\mu\text{g}/\text{m}^3$	Clear increase in symptoms (studies in workers) of dysfunction of the central nervous system (Smith et al 1970)
25 $\mu\text{g}/\text{m}^3$ ^a	Self-reported memory disturbances, sleep disorders, anger, fatigue, and/or hand tremors were increased in workers chronically exposed Langworth et al. (1992) no objective findings in neuropsychological tests or tremor recordings.
20 $\mu\text{g}/\text{m}^3$	Subtle effects on the central nervous system in long-term occupational exposures (WHO 2003). This is a conclusion based on a weight of evidence evaluation of available studies.
~ 20 $\mu\text{g}/\text{m}^3$	No effect (no objective findings in neuropsychological tests or tremor recordings) Ellingsen et al. (2001)
5 μg Hg / g creatinine	Background levels of urinary mercury, adjusted for creatinine, in unexposed populations WHO (2003) cite: Gerhardsson & Brune, 1989; IPCS 1991; Schaller, 1996).

^aapproximately equal to urinary and blood mercury levels of about 25 $\mu\text{g}/\text{g}$ and 10 $\mu\text{g}/\text{l}$.

^bapproximate value based on measured urinary mercury 10-15 $\mu\text{g}/\text{g}$.

Several studies have shown no effect of metallic mercury on fertility however an increase in the rate of spontaneous abortions has been reported is association with increased mercury concentrations in the urine of the father. Increased rate of reproductive failures has also been reported in women who were occupationally exposed to metallic mercury vapours (ATSDR 1999).

There is inconclusive evidence that exposure to metallic mercury caused structural and numerical chromosomal aberrations in human lymphocytes. However mercuric chloride has been shown to cause single strand breaks in DNA. The damaging effects by mercuric chloride are enhanced by a concurrent inhibitor effect on DNA repair mechanisms (ATSDR 1999, WHO 1991). Inorganic mercury is generally not considered to be carcinogenic in humans. A few studies of cancer in humans for potentially exposed persons in occupations such as dentistry, industrial and miners have shown a slight increased cancer risk following exposure to inorganic mercury. However in most studies found no carcinogenic effects (IARC 1993, RIVM 2001).

Inhalation toxicity reference values

The WHO (2000) derived an inhalation guideline value for mercury based on three occupational exposure studies with LOAELS ranging for 15 – 30 $\mu\text{g}/\text{m}^3$. The critical effects for these studies were objective tremor, renal tubular effects, changes in plasma enzymes and other non-specific symptoms. Uncertainty factors were applied to account for the use of a LOAEL and for variable sensitivities in higher risk populations, the guideline value derived was 1 $\mu\text{g}/\text{m}^3$.

ATSDR (1999) derived an inhalation chronic MRL of 0.2 $\mu\text{g}/\text{m}^3$ based on the effect of hand tremors seen in workers exposed to metallic mercury. The LOAEL of 0.026 $\mu\text{g}/\text{m}^3$ was adjusted for occupational exposure and an uncertainty factor of 30 was applied to account for the intraspecies variability and for the use of an LOAEL. Using the same method, RIVM (2001) derived a TCA for metallic mercury vapour of 0.2 $\mu\text{g}/\text{m}^3$.

The US EPA IRIS (1995) based the derivation of an inhalation RfD on six occupational studies with the critical effects being hand tremor, increase in memory disturbance and slight subjective and objective evidence of autonomic dysfunction. An uncertainty factor of 300 was applied to account for the use of LOAEL and for intraspecies variability.

The OEHHA (2008) set an acute REL of 0.6 $\mu\text{g}/\text{m}^3$ based on the critical effect of CNS disturbances in offspring. The study by Danielsson et al (1993) exposed 12 pregnant rats to metallic mercury vapours for 1 hour per day. The LOAEL was 1.8 mg/m^3 of metallic mercury vapour. An uncertainty factor of 3000 was applied to account for the use of an LOAEL (10), intraspecies variability (10) and interspecies variability (30 – greater human vs. rat susceptibility). The OEHHA also derived a chronic REL of 0.3 $\mu\text{g}/\text{m}^3$ with the critical effect being the impairment of neurobehavioral functions in humans based on 5 occupational studies where the time adjusted LOAEL was 9 $\mu\text{g}/\text{m}^3$. An uncertainty factor of 300 was applied to account for the use of an LOAEL and intraspecies variability.

Table A1.1.19: Summary of inhalation toxicity reference values for Mercury

Source	Toxicity Reference Value ^a [µg/m ³]
ATSDR 1999	0.2 µg/m ³ ^b
OEHHA 2008	0.6 µg/m ³ ^c
OEHHA 2008	0.03 µg/m ³ ^d
US EPA IRIS 1995	0.3 µg/m ³
WHO 2000	1 µg/m ³

^a. derivation of these values is described in detail in the text.

^b Chronic MRL

^c Acute REL

^d Chronic REL

Oral toxicity reference values

ATSDR (1999) derived an acute and an intermediate oral MRL. The acute value is based on a study involving the administration of mercuric chloride by gavage to rats for 5 days. The critical effect was renal effects with an NOAEL of 0.93 mg/Kg/day. The NOAEL was adjusted to continuous exposure (5/7) and an uncertainty factor of 100 was applied to account for the extrapolation from animals to humans and for intraspecies variation to give a MRL of 7 µg/kg/day.

The intermediate oral MRL was based on a study involving rats fed mercuric chloride for 5 days per week for 26 weeks. The critical effects were renal effects. The NOAEL for this study was 0.23 mg/Kg/day which was adjusted to 0.16 mg/Kg/day for continuous exposure. An uncertainty factor of 100 was applied to account for the extrapolation from animals to humans and for intraspecies variability giving an MRL of 2 µg/kg/day. RIVM (1991) used the method to derive an oral TDI of 2 µg/kg/day for inorganic mercury. The WHO (2003b) have derived a drinking water guideline based on the same study. A TDI of 2 µg/Kg/day was derived using the same methodology as the ATSDR intermediate oral MRL. A similar TDI was also derived using a 2 year rat study with a LOAEL of 1.9 mg/Kg with an uncertainty factor of 1000. Assuming that the weight of an adult is 60 Kg and that 2 litres of water is consumed and allocating 10 % of the TDI to drinking water, the guideline derived was 6 µg/L drinking water. This TDI was also described in WHO (2003a).

The TDI of 2 µg/kg bw/d for mercury has been applied in this risk assessment.

Susceptible subpopulations

The most widely recognised form of hypersensitivity to mercury is acrodynia (pink disease). Acrodynia has been determined to be an idiosyncratic reaction to mercury exposure with only a few children developing symptoms despite the widespread exposure to mercury-containing laxatives, antiascariasis medications and teething powders in the 1940s and 1950s. Those affected were not the most highly exposed and the physiological basis for this hypersensitivity is unknown (ATSDR 1999).

Animal studies have shown that neonates may be susceptible to mercury toxicity as mercury is excreted in the milk. Suckling rats exhibit a high absorption of inorganic mercury as a percentage of diet (30 -40%) compared to adult rats (approximately 1 %). Individuals with a dietary insufficiency of zinc, glutathione, antioxidants or selenium or those who are malnourished may be more susceptible to the toxic effects of mercury as well as those with diseases of the liver, kidneys, lungs and nerves (ATSDR 1999).

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Appendix 2. Data Received

All the data in this appendix have not been reviewed for accuracy or veracity by Toxikos, they were taken on face value.

A2.1 Environ (2010) : FINAL BHO Operational Phase AQ Predictions 220210r_copy to Toxikos

1) Worksheet entitled 'SCENARIOS & SPREADSHEET INDEX' provided by ENVIRON Pty Ltd

SCENARIOS MODELLED:

Project Increment	Sources Included: Baghouse (crushing and screening) Concentrate handling Project-related exposed areas Ore shaping and transfer (including front end loading) ROM ore stockpile (wind erosion) Paved roads (other than haul road) Paved haul road TSF inactive cell Unpaved haul road Ventilation shaft General vehicle entrainment (light vehicle)
"Future Baseline"	Wind erosion from existing free areas (as defined in report) assuming 80% control efficiency due to chemical suppression
Cumulative (site related cumulative)	Project Increment + "Future Baseline" scenarios

SPREADSHEET INDEX:

Discrete receptors	Locations of sensitive receptors
TSP concentrations	(a) Annual TSP Concentrations - Project Increment; Measured Background Concentrations (based on BHO-HVAS TSP data)
PM10 concentrations	(b) Annual PM10 Concentrations - Project Increment; Projected Background Concentrations (informed by Bemax PM10 and BHO-HVAS TSP monitoring data)
PM10 concentrations	(c) Highest daily average PM10 concentrations - Project Increment only (see cumulative daily average PM10 spreadsheet for cumulative assessment)
PM2.5 concentrations	(d) Highest daily and annual average PM2.5 concentrations - Project Increment only
TSP, PM10, PM2.5 concentrations	(e) Stats for TSP, PM10, PM2.5 concentrations - Project Incremental only
Metal concentrations (summary)	(f) Screening of 99.9th highest hourly and annual average metal concentrations (across Receptors) against DECCW criteria - including Project Incremental, "Future Baseline" and Cumulative (Project Increment + "Future Baseline")
Metal concentrations (summary)	(g) Screening of highest hourly and annual average metal concentrations (across Receptors) against Inhalation HRA criteria - including Project Incremental, "Future Baseline" and Cumulative (Project Increment + "Future Baseline")
Lead concentrations (TSP fraction) by receptor	(h) Annual average TSP concentrations by Receptor due to Project Incremental, "Future Baseline" and Cumulative (Project Increment + "Future Baseline") scenarios
Metal concentrations (PM10 fraction) by receptor	(i) Metal concentrations (PM10 fraction) by receptor - "Future Baseline" scenario
Metal concentrations (PM10 fraction) by receptor	(j) Metal concentrations (PM10 fraction) by receptor - Project Incremental scenario
Metal concentrations (PM10 fraction) by receptor	(k) Metal concentrations (PM10 fraction) by receptor - Cumulative Scenario ("Future Baseline" + Project Increment)
Total dust deposition	(l) Annual average Dust Deposition - project Increment; Measured Background and Cumulative (Project Increment + Measured Background)
Metal deposition (TSP) by receptor	(m) Metal deposition (total) by receptor - "Future Baseline" scenario
Metal deposition (TSP) by receptor	(n) Metal deposition (total) by receptor - Project Incremental scenario
Metal deposition (TSP) by receptor	(o) Metal deposition (total) by receptor - Cumulative Scenario ("Future Baseline" + Project Increment)
Lead concentrations (TSP fraction) by source profile#	(p) Lead concentration (as TSP) by receptor and source profile ("free areas" or "ore") for each Emission Scenario
Lead concentrations (PM10 fraction) by source profile#	(q) Lead concentration (as PM10 fraction) by receptor and source profile ("free areas" or "ore") for each Emission Scenario
Lead deposition by source profile#	(r) Lead deposition by receptor and source profile ("free areas" or "ore") for each Emission Scenario

#Source Profiles:

"Free areas" profile - allocated to: paved roads; unpaved roads; open areas

"Ore" profile - allocated to: ore handling; ore stockpile emissions; ventilation shaft.

Suitable profile for tailings material and concentrate not known - but the contribution of these sources are negligible. "Ore" profile allocated.

2) Worksheet entitled 'Discrete Receptors' provided by ENVIRON Pty Ltd

Sensitive Receptors			
Residence # Identifier	Description	MGA Dwelling Coordinates	
		East (m)	North (m)
R1	Piper Street North	544110	6462598
R2	Piper Street Central	543763	6462312
R3	Eyre Street North	543555	6462322
R4	Eyre Street Central	543324	6462003
R5	Eyre Street South	543140	6461859
R6	South Road	542833	6462000
R7	Carbon Lane	542604	6462718
R8	Old South Road	542923	6462744
R9	South Rd	542926	6463052
R10	Cnr Garnet and Blende Streets	543158	6463633
R11	Alma Bugldi Pre-school	543150	6461692
R12	Playtime Pre-school	543587	6461665
R13	Alma Primary School	543631	6461566
R14	Broken Hill High School	543019	6463916
R15	Broken Hill Hospital	543133	6465290
R16	North Broken Hill Primary School	544570	6465713
R17	Broken Hill Public School	543245	6464378
R18	Rainbow Pre-school	542815	6461151
R19	Willyama High School	544599	6466299
R20	Morgan Street Primary School	543420	6465782
R21	Eyre Street North	544212	6462762
R22	Eyre Street North	544288	6462828
R23	Eyre Street North	544456	6462974
R24	Eyre Street North	544591	6463090
R25	Water tank, Lawton Street #	544460	6462723
R26	Quarry offices	544723	6463208
R27	Proprietary Square	544666	6463926
R28	Proprietary Square	544731	6463988
R29	Iodide Street	544592	6464026
R30	Iodide Street	544728	6464112
R31	Crystal Street	544503	6464328
R32	Crystal Street	544637	6464415
R33	Browns Shaft Dwelling	545231	6464450
R34	Crystal Street	543572	6463746
R35	Crystal Street	543748	6463873
R36	Crystal Street	543934	6464002
R37	Crystal Street	544127	6464141
R38	Gypsum Street	542459	6462467
R39	Gypsum Street	542512	6462581
R40	Silver City Hwy	543099	6463321
R41	Silver City Hwy	543249	6463439
R42	Silver City Hwy	543394	6463551
# Discrete receptor point to be used in air quality monitoring network planning. Coincides with a covered water tank; not currently a sensitive receptor.			

3) Worksheet entitled '(a) TSP annual' provided by ENVIRON Pty Ltd

Sensitive Receptors - Annual TSP Concentrations (µg/m³)					
Receptor Number	Year	Measured Background Concentration	Project-Related Increment	Cumulative TSP Concentrations (Background + Project Increment)	Cumulative Concentration as a Fraction of the Guideline Value
1	Annual (max)	64.9	0.7	65.6	0.73
2	Annual (max)	64.9	1.0	65.9	0.73
3	Annual (max)	64.9	1.8	66.8	0.74
4	Annual (max)	64.9	1.4	66.3	0.74
5	Annual (max)	64.9	1.1	66.0	0.73
6	Annual (max)	64.9	1.5	66.4	0.74
7	Annual (max)	64.9	0.7	65.7	0.73
8	Annual (max)	64.9	3.0	68.0	0.76
9	Annual (max)	64.9	1.3	66.3	0.74
10	Annual (max)	64.9	0.7	65.7	0.73
11	Annual (max)	64.9	0.6	65.6	0.73
12	Annual (max)	64.9	0.4	65.4	0.73
13	Annual (max)	64.9	0.3	65.3	0.73
14	Annual (max)	64.9	0.4	65.4	0.73
15	Annual (max)	64.9	0.1	65.1	0.72
16	Annual (max)	64.9	0.1	65.1	0.72
17	Annual (max)	64.9	0.3	65.2	0.72
18	Annual (max)	64.9	0.3	65.2	0.72
19	Annual (max)	64.9	0.1	65.0	0.72
20	Annual (max)	64.9	0.1	65.1	0.72
21	Annual (max)	64.9	0.8	65.8	0.73
22	Annual (max)	64.9	0.9	65.8	0.73
23	Annual (max)	64.9	0.8	65.7	0.73
24	Annual (max)	64.9	0.8	65.8	0.73
25	Annual (max)	64.9	0.5	65.4	0.73
26	Annual (max)	64.9	0.8	65.8	0.73
27	Annual (max)	64.9	0.3	65.3	0.73
28	Annual (max)	64.9	0.3	65.3	0.73
29	Annual (max)	64.9	0.5	65.4	0.73
30	Annual (max)	64.9	0.4	65.3	0.73
31	Annual (max)	64.9	0.4	65.3	0.73
32	Annual (max)	64.9	0.3	65.3	0.73
33	Annual (max)	64.9	0.6	65.5	0.73
34	Annual (max)	64.9	0.8	65.8	0.73
35	Annual (max)	64.9	0.7	65.7	0.73
36	Annual (max)	64.9	0.7	65.6	0.73
37	Annual (max)	64.9	0.5	65.5	0.73
38	Annual (max)	64.9	0.5	65.5	0.73
39	Annual (max)	64.9	0.6	65.6	0.73
40	Annual (max)	64.9	1.1	66.1	0.73
41	Annual (max)	64.9	1.2	66.1	0.73
42	Annual (max)	64.9	1.0	66.0	0.73
Maximum across sensitive receptors			3.0	68.0	0.76

4) Worksheet entitled '(b) PM10 annual' provided by ENVIRON Pty Ltd

Sensitive Receptors - Annual PM10 Concentrations (µg/m³)					
Receptor Number	Year	Projected Background Concentration	Project-Related Increment	Cumulative PM10 Concentrations	Cumulative Concentration as a Fraction of the Guideline Value
1	Annual (max)	27.7	0.4	28.1	0.94
2	Annual (max)	27.7	0.5	28.2	0.94
3	Annual (max)	27.7	0.9	28.6	0.95
4	Annual (max)	27.7	0.8	28.5	0.95
5	Annual (max)	27.7	0.6	28.3	0.94
6	Annual (max)	27.7	0.8	28.5	0.95
7	Annual (max)	27.7	0.4	28.1	0.94
8	Annual (max)	27.7	1.7	29.4	0.98
9	Annual (max)	27.7	0.7	28.4	0.95
10	Annual (max)	27.7	0.4	28.1	0.94
11	Annual (max)	27.7	0.4	28.1	0.94
12	Annual (max)	27.7	0.2	27.9	0.93
13	Annual (max)	27.7	0.2	27.9	0.93
14	Annual (max)	27.7	0.2	27.9	0.93
15	Annual (max)	27.7	0.1	27.8	0.93
16	Annual (max)	27.7	0.1	27.8	0.93
17	Annual (max)	27.7	0.2	27.9	0.93
18	Annual (max)	27.7	0.2	27.9	0.93
19	Annual (max)	27.7	0.0	27.7	0.92
20	Annual (max)	27.7	0.1	27.8	0.93
21	Annual (max)	27.7	0.4	28.1	0.94
22	Annual (max)	27.7	0.5	28.2	0.94
23	Annual (max)	27.7	0.4	28.1	0.94
24	Annual (max)	27.7	0.4	28.1	0.94
25	Annual (max)	27.7	0.3	28.0	0.93
26	Annual (max)	27.7	0.4	28.1	0.94
27	Annual (max)	27.7	0.2	27.9	0.93
28	Annual (max)	27.7	0.2	27.9	0.93
29	Annual (max)	27.7	0.3	28.0	0.93
30	Annual (max)	27.7	0.2	27.9	0.93
31	Annual (max)	27.7	0.2	27.9	0.93
32	Annual (max)	27.7	0.2	27.9	0.93
33	Annual (max)	27.7	0.2	27.9	0.93
34	Annual (max)	27.7	0.4	28.1	0.94
35	Annual (max)	27.7	0.4	28.1	0.94
36	Annual (max)	27.7	0.3	28.0	0.93
37	Annual (max)	27.7	0.3	28.0	0.93
38	Annual (max)	27.7	0.3	28.0	0.93
39	Annual (max)	27.7	0.3	28.0	0.93
40	Annual (max)	27.7	0.6	28.3	0.94
41	Annual (max)	27.7	0.5	28.2	0.94
42	Annual (max)	27.7	0.5	28.2	0.94
Maximum across sensitive receptors			1.7	29.4	0.98

5) Worksheet entitled '(c) PM10 highest daily' provided by ENVIRON Pty Ltd

Sensitive Receptors - Highest Daily Average PM10 Concentrations (µg/m³)		
Receptor Number	Year	Project-Related Increment
1	Highest daily average (maximum)	2.3
2	Highest daily average (maximum)	3.6
3	Highest daily average (maximum)	5.9
4	Highest daily average (maximum)	4.2
5	Highest daily average (maximum)	4.3
6	Highest daily average (maximum)	6.5
7	Highest daily average (maximum)	3.1
8	Highest daily average (maximum)	10.5
9	Highest daily average (maximum)	3.4
10	Highest daily average (maximum)	1.8
11	Highest daily average (maximum)	2.8
12	Highest daily average (maximum)	1.7
13	Highest daily average (maximum)	1.5
14	Highest daily average (maximum)	1.5
15	Highest daily average (maximum)	0.9
16	Highest daily average (maximum)	0.7
17	Highest daily average (maximum)	1.2
18	Highest daily average (maximum)	1.3
19	Highest daily average (maximum)	0.5
20	Highest daily average (maximum)	0.7
21	Highest daily average (maximum)	3.0
22	Highest daily average (maximum)	3.6
23	Highest daily average (maximum)	2.6
24	Highest daily average (maximum)	2.4
25	Highest daily average (maximum)	1.9
26	Highest daily average (maximum)	2.6
27	Highest daily average (maximum)	2.0
28	Highest daily average (maximum)	2.2
29	Highest daily average (maximum)	1.8
30	Highest daily average (maximum)	1.5
31	Highest daily average (maximum)	1.4
32	Highest daily average (maximum)	1.4
33	Highest daily average (maximum)	1.6
34	Highest daily average (maximum)	2.2
35	Highest daily average (maximum)	2.0
36	Highest daily average (maximum)	1.5
37	Highest daily average (maximum)	1.4
38	Highest daily average (maximum)	2.3
39	Highest daily average (maximum)	2.5
40	Highest daily average (maximum)	2.6
41	Highest daily average	2.7

	(maximum)	
42	Highest daily average (maximum)	2.7
Maximum across sensitive receptors		10.5

6) Worksheet entitled '(d) PM2.5 increment' provided by ENVIRON Pty Ltd

Sensitive Receptors - PM2.5 Concentrations (µg/m³) due to Project Only (Incremental)					
Receptor Number	Year	Highest Daily Average (µg/m³)	Annual Average (µg/m³)	Highest daily Incremental concentration as Fraction of NEPM Criterion	Annual Average Incremental concentration as Fraction of NEPM Criterion
1	2008-9	0.88	0.10	0.04	0.01
2	2008-9	1.32	0.14	0.05	0.02
3	2008-9	1.64	0.25	0.07	0.03
4	2008-9	1.35	0.22	0.05	0.03
5	2008-9	1.09	0.17	0.04	0.02
6	2008-9	1.75	0.21	0.07	0.03
7	2008-9	0.81	0.12	0.03	0.01
8	2008-9	3.48	0.46	0.14	0.06
9	2008-9	1.09	0.19	0.04	0.02
10	2008-9	0.43	0.10	0.02	0.01
11	2008-9	0.61	0.10	0.02	0.01
12	2008-9	0.53	0.07	0.02	0.01
13	2008-9	0.47	0.06	0.02	0.01
14	2008-9	0.32	0.06	0.01	0.01
15	2008-9	1.22	0.03	0.05	0.00
16	2008-9	0.17	0.02	0.01	0.00
17	2008-9	0.28	0.04	0.01	0.01
18	2008-9	0.34	0.04	0.01	0.01
19	2008-9	0.14	0.02	0.01	0.00
20	2008-9	0.15	0.02	0.01	0.00
21	2008-9	1.18	0.13	0.05	0.02
22	2008-9	1.15	0.13	0.05	0.02
23	2008-9	0.94	0.12	0.04	0.02
24	2008-9	0.93	0.12	0.04	0.02
25	2008-9	0.56	0.08	0.02	0.01
26	2008-9	0.90	0.12	0.04	0.01
27	2008-9	0.64	0.11	0.03	0.01
28	2008-9	0.60	0.10	0.02	0.01
29	2008-9	0.60	0.09	0.02	0.01
30	2008-9	0.52	0.08	0.02	0.01
31	2008-9	0.42	0.06	0.02	0.01
32	2008-9	0.40	0.06	0.02	0.01
33	2008-9	0.77	0.07	0.03	0.01
34	2008-9	0.62	0.10	0.02	0.01
35	2008-9	0.59	0.09	0.02	0.01
36	2008-9	0.56	0.08	0.02	0.01
37	2008-9	0.50	0.07	0.02	0.01
38	2008-9	0.61	0.08	0.02	0.01
39	2008-9	0.71	0.09	0.03	0.01
40	2008-9	0.63	0.15	0.03	0.02
41	2008-9	0.60	0.14	0.02	0.02
42	2008-9	0.70	0.12	0.03	0.02
Maximum across sensitive receptors		3.48	0.46	0.14	0.06

7) Worksheet entitled '(e) Stats_PM10 TSP PM2.5 Conc' provided by ENVIRON Pty Ltd

Predicted Project-related Incremental PM10, TSP and PM2.5 Concentrations (ug/m3)

Receptor	Statistic	PM10	TSP	PM2.5
1	Daily - Highest (max)	2.3	4.8	0.9
1	Daily -99.9th (max)	2.3	4.5	0.8
1	Daily - 95th (max)	1.3	2.4	0.3
1	Annual (max)	0.4	0.7	0.1
2	Daily - Highest (max)	3.6	5.7	1.3
2	Daily -99.9th (max)	3.2	5.4	1.2
2	Daily - 95th (max)	1.7	3.0	0.5
2	Annual (max)	0.5	1.0	0.1
3	Daily - Highest (max)	5.9	8.5	1.6
3	Daily -99.9th (max)	5.4	8.0	1.5
3	Daily - 95th (max)	2.7	5.2	0.7
3	Annual (max)	0.9	1.8	0.3
4	Daily - Highest (max)	4.2	7.1	1.4
4	Daily -99.9th (max)	4.1	6.7	1.3
4	Daily - 95th (max)	2.3	3.9	0.7
4	Annual (max)	0.8	1.4	0.2
5	Daily - Highest (max)	4.3	5.5	1.1
5	Daily -99.9th (max)	4.1	5.5	1.0
5	Daily - 95th (max)	2.2	3.7	0.6
5	Annual (max)	0.6	1.1	0.2
6	Daily - Highest (max)	6.5	10.1	1.8
6	Daily -99.9th (max)	5.9	9.7	1.6
6	Daily - 95th (max)	2.7	4.8	0.7
6	Annual (max)	0.8	1.5	0.2
7	Daily - Highest (max)	3.1	4.8	0.8
7	Daily -99.9th (max)	3.0	4.7	0.8
7	Daily - 95th (max)	1.5	2.5	0.5
7	Annual (max)	0.4	0.7	0.1
8	Daily - Highest (max)	10.5	21.3	3.5
8	Daily -99.9th (max)	10.1	20.6	3.4
8	Daily - 95th (max)	5.3	8.8	1.5
8	Annual (max)	1.7	3.0	0.5
9	Daily - Highest (max)	3.4	6.4	1.1
9	Daily -99.9th (max)	3.3	6.1	1.0
9	Daily - 95th (max)	2.0	3.6	0.6
9	Annual (max)	0.7	1.3	0.2
10	Daily - Highest (max)	1.8	3.4	0.4
10	Daily -99.9th (max)	1.7	3.2	0.4
10	Daily - 95th (max)	1.0	2.2	0.3
10	Annual (max)	0.4	0.7	0.1
11	Daily - Highest (max)	2.8	3.8	0.6
11	Daily -99.9th (max)	2.7	3.6	0.6
11	Daily - 95th (max)	1.3	2.2	0.4
11	Annual (max)	0.4	0.6	0.1
12	Daily - Highest (max)	1.7	3.2	0.5
12	Daily -99.9th (max)	1.6	2.9	0.5
12	Daily - 95th (max)	0.8	1.6	0.2
12	Annual (max)	0.2	0.4	0.1
13	Daily - Highest (max)	1.5	2.9	0.5
13	Daily -99.9th (max)	1.4	2.6	0.4
13	Daily - 95th (max)	0.7	1.3	0.2
13	Annual (max)	0.2	0.3	0.1
14	Daily - Highest (max)	1.5	2.3	0.3
14	Daily -99.9th (max)	1.4	2.2	0.3
14	Daily - 95th (max)	0.7	1.4	0.2
14	Annual (max)	0.2	0.4	0.1
15	Daily - Highest (max)	0.9	1.5	1.2
15	Daily -99.9th (max)	0.8	1.4	1.1
15	Daily - 95th (max)	0.3	0.5	0.1
15	Annual (max)	0.1	0.1	0.0
16	Daily - Highest (max)	0.7	1.3	0.2
16	Daily -99.9th (max)	0.7	1.1	0.2
16	Daily - 95th (max)	0.3	0.4	0.1
16	Annual (max)	0.1	0.1	0.0
17	Daily - Highest (max)	1.2	1.6	0.3
17	Daily -99.9th (max)	1.1	1.6	0.3
17	Daily - 95th (max)	0.5	1.0	0.2
17	Annual (max)	0.2	0.3	0.0
18	Daily - Highest (max)	1.3	1.8	0.3
18	Daily -99.9th (max)	1.2	1.8	0.3
18	Daily - 95th (max)	0.8	1.1	0.2
18	Annual (max)	0.2	0.3	0.0
19	Daily - Highest (max)	0.5	0.5	0.1
19	Daily -99.9th (max)	0.5	0.5	0.1
19	Daily - 95th (max)	0.2	0.3	0.1
19	Annual (max)	0.0	0.1	0.0
20	Daily - Highest (max)	0.7	1.4	0.1

20	Daily -99.9th (max)	0.6	1.3	0.1
20	Daily - 95th (max)	0.3	0.5	0.1
20	Annual (max)	0.1	0.1	0.0
21	Daily - Highest (max)	3.0	6.2	1.2
21	Daily -99.9th (max)	3.0	6.2	1.2
21	Daily - 95th (max)	1.5	2.8	0.5
21	Annual (max)	0.4	0.8	0.1
22	Daily - Highest (max)	3.6	7.6	1.2
22	Daily -99.9th (max)	3.3	7.1	1.1
22	Daily - 95th (max)	1.7	3.4	0.6
22	Annual (max)	0.5	0.9	0.1
23	Daily - Highest (max)	2.6	5.5	0.9
23	Daily -99.9th (max)	2.6	5.5	0.9
23	Daily - 95th (max)	1.4	2.8	0.5
23	Annual (max)	0.4	0.8	0.1
24	Daily - Highest (max)	2.4	5.0	0.9
24	Daily -99.9th (max)	2.3	4.7	0.9
24	Daily - 95th (max)	1.4	2.6	0.5
24	Annual (max)	0.4	0.8	0.1
25	Daily - Highest (max)	1.9	3.8	0.6
25	Daily -99.9th (max)	1.8	3.5	0.6
25	Daily - 95th (max)	0.9	1.8	0.3
25	Annual (max)	0.3	0.5	0.1
26	Daily - Highest (max)	2.6	5.5	0.9
26	Daily -99.9th (max)	2.6	5.3	0.9
26	Daily - 95th (max)	1.5	2.9	0.5
26	Annual (max)	0.4	0.8	0.1
27	Daily - Highest (max)	2.0	3.1	0.6
27	Daily -99.9th (max)	2.0	3.1	0.6
27	Daily - 95th (max)	0.9	1.3	0.3
27	Annual (max)	0.2	0.3	0.1
28	Daily - Highest (max)	2.1	3.0	0.6
28	Daily -99.9th (max)	2.0	2.7	0.6
28	Daily - 95th (max)	0.9	1.2	0.3
28	Annual (max)	0.2	0.3	0.1
29	Daily - Highest (max)	1.8	3.9	0.6
29	Daily -99.9th (max)	1.6	3.5	0.6
29	Daily - 95th (max)	1.0	1.5	0.3
29	Annual (max)	0.3	0.5	0.1
30	Daily - Highest (max)	1.5	2.2	0.5
30	Daily -99.9th (max)	1.4	2.0	0.5
30	Daily - 95th (max)	0.8	1.1	0.3
30	Annual (max)	0.2	0.4	0.1
31	Daily - Highest (max)	1.4	2.4	0.4
31	Daily -99.9th (max)	1.4	2.3	0.4
31	Daily - 95th (max)	0.7	1.2	0.2
31	Annual (max)	0.2	0.4	0.1
32	Daily - Highest (max)	1.4	2.2	0.4
32	Daily -99.9th (max)	1.3	2.1	0.4
32	Daily - 95th (max)	0.7	1.1	0.2
32	Annual (max)	0.2	0.3	0.1
33	Daily - Highest (max)	1.6	3.8	0.8
33	Daily -99.9th (max)	1.5	3.8	0.7
33	Daily - 95th (max)	0.8	2.0	0.2
33	Annual (max)	0.2	0.6	0.1
34	Daily - Highest (max)	2.2	3.5	0.6
34	Daily -99.9th (max)	2.1	3.5	0.6
34	Daily - 95th (max)	1.3	2.4	0.3
34	Annual (max)	0.4	0.8	0.1
35	Daily - Highest (max)	2.0	3.8	0.6
35	Daily -99.9th (max)	1.9	3.6	0.6
35	Daily - 95th (max)	1.2	2.2	0.3
35	Annual (max)	0.4	0.7	0.1
36	Daily - Highest (max)	1.5	3.3	0.6
36	Daily -99.9th (max)	1.5	3.1	0.5
36	Daily - 95th (max)	1.0	1.9	0.3
36	Annual (max)	0.3	0.7	0.1
37	Daily - Highest (max)	1.4	2.8	0.5
37	Daily -99.9th (max)	1.3	2.6	0.5
37	Daily - 95th (max)	0.9	1.5	0.2
37	Annual (max)	0.3	0.5	0.1
38	Daily - Highest (max)	2.3	3.2	0.6
38	Daily -99.9th (max)	2.3	3.1	0.6
38	Daily - 95th (max)	1.2	1.9	0.3
38	Annual (max)	0.3	0.5	0.1
39	Daily - Highest (max)	2.5	7.7	0.7
39	Daily -99.9th (max)	2.3	6.9	0.7
39	Daily - 95th (max)	1.4	2.2	0.3
39	Annual (max)	0.3	0.6	0.1
40	Daily - Highest (max)	2.6	4.7	0.6
40	Daily -99.9th (max)	2.5	4.5	0.6
40	Daily - 95th (max)	1.6	3.3	0.4
40	Annual (max)	0.6	1.1	0.1
41	Daily - Highest (max)	2.7	4.5	0.6

41	Daily -99.9th (max)	2.5	4.4	0.6
41	Daily - 95th (max)	1.6	3.3	0.4
41	Annual (max)	0.5	1.2	0.1
42	Daily - Highest (max)	2.7	4.0	0.7
42	Daily -99.9th (max)	2.5	4.0	0.6
42	Daily - 95th (max)	1.5	3.1	0.3
42	Annual (max)	0.5	1.0	0.1

8) Worksheet entitled '(f) Metals Screen DECCW Criteria' provided by ENVIRON Pty Ltd

SUMMARY - Metal/Metalloid Concentrations (µg/m³) - Maximum across Sensitive Receptors					
	Metals/Metalloids as PM10 fraction unless otherwise indicated	Project-Related Increment (99.9th Percentile) (µg/m³)	DECCW Impact Assessment Criteria (µg/m³)	Project-related Incremental Concentration as a Fraction of Criterion	
99.9th Percentile Hourly	Antimony	0.0036	9	0.00	
	Arsenic	0.0210	0.09	0.23	
	Barium	0.0001	9	0.00	
	Beryllium	0.0000	0.004	0.00	
	Cadmium	0.0086	0.018	0.48	
	Chromium	0.0009	9	0.00	
	Copper	0.0383	18	0.00	
	Iron	2.4695	90	0.03	
	Lead	1.9028			
	Manganese	0.0623	18	0.00	
	Mercury	0.0001	0.18	0.00	
	Nickel	0.0006	0.18	0.00	
	Silver	0.0020	0.18	0.01	
	Zinc	2.4463	90	0.03	
Annual Average (max)	Antimony	0.0001			
	Arsenic	0.0007			
	Barium	0.0000			
	Beryllium	0.0000			
	Cadmium	0.0003			
	Chromium	0.0000			
	Copper	0.0015			
	Iron	0.0857			
	Lead (TSP)	0.1088	0.500	0.22	
	Manganese	0.0018			
	Mercury	0.0000			
	Nickel	0.0000			
	Silver	0.0001			
	Zinc	0.0810			

9) Worksheet entitled '(g) Metals Screen Inhalation HR' provided by ENVIRON Pty Ltd

SUMMARY - Metal/Metalloid Concentrations (µg/m³) - Maximum across Sensitive Receptors								Concentration as Fraction of Criterion		
	Metals/Metalloids as PM10 fraction	"Future Baseline" (Existing Free Areas, 80%CE)	Project-Related Increment	Sum of "Future Baseline" and Project Related (at Individual Receptors)		Health Risk Criteria		"Future Baseline" (Existing Free Areas, 80%CE)	Project-Related Increment	Sum of "Future Baseline" and Project Related (at Individual Receptors)
Highest Hourly	Antimony	0.0294	0.010	0.033		5		0.01	0.00	0.01
	Arsenic	0.0466	0.057	0.057		0.2		0.23	0.28	0.28
	Barium	0.0000	0.000	0.000		5		0.00	0.00	0.00
	Beryllium	0.0000	0.000	0.000		0.2		0.00	0.00	0.00
	Cadmium	0.0131	0.023	0.023						
	Chromium	0.0512	0.008	0.057		1		0.05	0.01	0.06
	Copper	0.4217	0.092	0.470		100		0.00	0.00	0.00
	Iron	12.4989	4.159	14.156		50		0.25	0.08	0.28
	Lead	7.1543	4.891	7.980						
	Manganese	3.7873	0.601	4.194						
	Mercury	0.0060	0.001	0.007		0.6		0.01	0.00	0.01
	Nickel	0.0372	0.006	0.041		6		0.01	0.00	0.01
	Silver	0.0067	0.005	0.007		0.1		0.07	0.05	0.07
	Zinc	2.9292	6.273	6.273		50		0.06	0.13	0.13
Annual Average (max)	Antimony	0.0002	0.000	0.000		0.5		0.00	0.00	0.00
	Arsenic	0.0004	0.001	0.001		0.015		0.03	0.04	0.07
	Barium	0.0000	0.000	0.000		0.5		0.00	0.00	0.00
	Beryllium	0.0000	0.000	0.000		0.007		0.00	0.00	0.00
	Cadmium	0.0001	0.000	0.000		0.005		0.02	0.05	0.07
	Chromium	0.0004	0.000	0.000		0.1		0.00	0.00	0.00
	Copper	0.0035	0.001	0.005		1		0.00	0.00	0.00
	Iron	0.1027	0.086	0.186		5		0.02	0.02	0.04
	Lead (PM10)	0.0588	0.064	0.123		0.5		0.12	0.13	0.25
	Manganese	0.0311	0.002	0.032		0.15		0.21	0.01	0.21
	Mercury	0.0000	0.000	0.000		0.03		0.00	0.00	0.00
	Nickel	0.0003	0.000	0.000		0.05		0.01	0.00	0.01
	Silver	0.0001	0.000	0.000		0.01		0.01	0.01	0.01
	Zinc	0.0241	0.081	0.105		5		0.00	0.02	0.02

10) Worksheet entitled '(h) Lead TSP by Receptor' provided by ENVIRON Pty Ltd

Ambient Annual Average Lead Concentrations (ug/m3) as TSP					Projected Lead Concentrations as Fraction of DECCW Guideline Value of 0.5 ug/m3		
Receptor	Annual Only	"Future Baseline" (Existing Free Areas, 80%CE)	Project-Related Increment	Cumulative Lead Concentration (Future Baseline + Project Increment)	"Future Baseline" (Existing Free Areas, 80%CE)	Project-Related Increment	Cumulative Lead Concentration (Future Baseline + Project Increment)
1	Annual Average (max)	0.041	0.015	0.056	0.08	0.03	0.11
2	Annual Average (max)	0.026	0.026	0.052	0.05	0.05	0.10
3	Annual Average (max)	0.028	0.049	0.076	0.06	0.10	0.15
4	Annual Average (max)	0.018	0.037	0.056	0.04	0.07	0.11
5	Annual Average (max)	0.014	0.030	0.044	0.03	0.06	0.09
6	Annual Average (max)	0.023	0.041	0.063	0.05	0.08	0.13
7	Annual Average (max)	0.017	0.023	0.040	0.03	0.05	0.08
8	Annual Average (max)	0.119	0.109	0.228	0.24	0.22	0.46
9	Annual Average (max)	0.046	0.040	0.086	0.09	0.08	0.17
10	Annual Average (max)	0.028	0.018	0.046	0.06	0.04	0.09
11	Annual Average (max)	0.010	0.018	0.028	0.02	0.04	0.06
12	Annual Average (max)	0.008	0.011	0.020	0.02	0.02	0.04
13	Annual Average (max)	0.007	0.009	0.016	0.01	0.02	0.03
14	Annual Average (max)	0.015	0.011	0.026	0.03	0.02	0.05
15	Annual Average (max)	0.006	0.004	0.009	0.01	0.01	0.02
16	Annual Average (max)	0.006	0.003	0.009	0.01	0.01	0.02
17	Annual Average (max)	0.012	0.007	0.020	0.02	0.01	0.04
18	Annual Average (max)	0.004	0.007	0.011	0.01	0.01	0.02
19	Annual Average (max)	0.004	0.002	0.006	0.01	0.00	0.01
20	Annual Average (max)	0.005	0.003	0.008	0.01	0.01	0.02
21	Annual Average (max)	0.050	0.015	0.064	0.10	0.03	0.13
22	Annual Average (max)	0.042	0.014	0.056	0.08	0.03	0.11
23	Annual Average (max)	0.031	0.014	0.045	0.06	0.03	0.09
24	Annual Average (max)	0.030	0.017	0.047	0.06	0.03	0.09
25	Annual Average (max)	0.025	0.010	0.035	0.05	0.02	0.07
26	Annual Average (max)	0.031	0.018	0.048	0.06	0.04	0.10
27	Annual Average (max)	0.056	0.015	0.071	0.11	0.03	0.14
28	Annual Average (max)	0.042	0.014	0.055	0.08	0.03	0.11
29	Annual Average (max)	0.047	0.013	0.059	0.09	0.03	0.12
30	Annual Average (max)	0.033	0.011	0.044	0.07	0.02	0.09
31	Annual Average (max)	0.026	0.008	0.035	0.05	0.02	0.07
32	Annual Average (max)	0.021	0.008	0.029	0.04	0.02	0.06
33	Annual Average (max)	0.027	0.011	0.036	0.05	0.02	0.07
34	Annual Average (max)	0.044	0.018	0.063	0.09	0.04	0.13
35	Annual Average (max)	0.037	0.016	0.053	0.07	0.03	0.11
36	Annual Average (max)	0.030	0.013	0.043	0.06	0.03	0.09
37	Annual Average (max)	0.027	0.011	0.038	0.05	0.02	0.08
38	Annual Average (max)	0.010	0.016	0.023	0.02	0.03	0.05
39	Annual Average (max)	0.017	0.020	0.036	0.03	0.04	0.07
40	Annual Average (max)	0.044	0.029	0.074	0.09	0.06	0.15
41	Annual Average (max)	0.045	0.028	0.073	0.09	0.06	0.15
42	Annual Average (max)	0.048	0.024	0.071	0.10	0.05	0.14

	Maximum across receptor points	0.119	0.109	0.228		0.24	0.22	0.46

11) Worksheet entitled '(i) Base Metal Conc by Receptor' provided by ENVIRON Pty Ltd

"Future Baseline" Ambient Air Metal Concentrations in the PM10 fraction (ug/m3) - based on modelling of existing free areas (80% controls)

Receptor	Statistic	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Iron	Lead	Manganese	Mercury	Nickel	Silver	Zinc	Arsenic -4hrly
1	Highest Hourly (maximum)	0.004	0.006	0.000	0.000	0.002	0.006	0.051	1.518	0.869	0.460	0.001	0.005	0.001	0.356	0.004
2	Highest Hourly (maximum)	0.002	0.003	0.000	0.000	0.001	0.004	0.030	0.884	0.506	0.268	0.000	0.003	0.000	0.207	0.002
3	Highest Hourly (maximum)	0.004	0.006	0.000	0.000	0.002	0.007	0.056	1.645	0.942	0.499	0.001	0.005	0.001	0.386	0.002
4	Highest Hourly (maximum)	0.002	0.003	0.000	0.000	0.001	0.003	0.023	0.685	0.392	0.207	0.000	0.002	0.000	0.160	0.001
5	Highest Hourly (maximum)	0.001	0.002	0.000	0.000	0.001	0.002	0.020	0.592	0.339	0.179	0.000	0.002	0.000	0.139	0.002
6	Highest Hourly (maximum)	0.004	0.006	0.000	0.000	0.002	0.006	0.053	1.557	0.891	0.472	0.001	0.005	0.001	0.365	0.005
7	Highest Hourly (maximum)	0.002	0.003	0.000	0.000	0.001	0.003	0.028	0.821	0.470	0.249	0.000	0.002	0.000	0.192	0.002
8	Highest Hourly (maximum)	0.009	0.015	0.000	0.000	0.004	0.016	0.133	3.930	2.249	1.191	0.002	0.012	0.002	0.921	0.009
9	Highest Hourly (maximum)	0.003	0.005	0.000	0.000	0.001	0.005	0.041	1.221	0.699	0.370	0.001	0.004	0.001	0.286	0.003
10	Highest Hourly (maximum)	0.002	0.003	0.000	0.000	0.001	0.004	0.030	0.893	0.511	0.271	0.000	0.003	0.000	0.209	0.002
11	Highest Hourly (maximum)	0.001	0.002	0.000	0.000	0.000	0.002	0.016	0.471	0.270	0.143	0.000	0.001	0.000	0.110	0.001
12	Highest Hourly (maximum)	0.001	0.001	0.000	0.000	0.000	0.001	0.011	0.330	0.189	0.100	0.000	0.001	0.000	0.077	0.001
13	Highest Hourly (maximum)	0.001	0.001	0.000	0.000	0.000	0.001	0.011	0.321	0.184	0.097	0.000	0.001	0.000	0.075	0.001
14	Highest Hourly (maximum)	0.001	0.002	0.000	0.000	0.000	0.002	0.015	0.452	0.259	0.137	0.000	0.001	0.000	0.106	0.001
15	Highest Hourly (maximum)	0.001	0.001	0.000	0.000	0.000	0.001	0.009	0.258	0.148	0.078	0.000	0.001	0.000	0.061	0.001
16	Highest Hourly (maximum)	0.001	0.001	0.000	0.000	0.000	0.001	0.009	0.268	0.153	0.081	0.000	0.001	0.000	0.063	0.001
17	Highest Hourly (maximum)	0.001	0.002	0.000	0.000	0.000	0.002	0.015	0.430	0.246	0.130	0.000	0.001	0.000	0.101	0.001
18	Highest Hourly (maximum)	0.001	0.001	0.000	0.000	0.000	0.001	0.011	0.340	0.195	0.103	0.000	0.001	0.000	0.080	0.001
19	Highest Hourly (maximum)	0.000	0.001	0.000	0.000	0.000	0.001	0.007	0.208	0.119	0.063	0.000	0.001	0.000	0.049	0.001
20	Highest Hourly (maximum)	0.000	0.001	0.000	0.000	0.000	0.001	0.007	0.208	0.119	0.063	0.000	0.001	0.000	0.049	0.001
21	Highest Hourly (maximum)	0.004	0.007	0.000	0.000	0.002	0.008	0.063	1.863	1.066	0.564	0.001	0.006	0.001	0.437	0.007
22	Highest Hourly (maximum)	0.004	0.006	0.000	0.000	0.002	0.007	0.054	1.592	0.911	0.482	0.001	0.005	0.001	0.373	0.004
23	Highest Hourly (maximum)	0.002	0.004	0.000	0.000	0.001	0.004	0.035	1.034	0.592	0.313	0.000	0.003	0.001	0.242	0.002
24	Highest Hourly (maximum)	0.002	0.003	0.000	0.000	0.001	0.003	0.024	0.723	0.414	0.219	0.000	0.002	0.000	0.169	0.002
25	Highest Hourly (maximum)	0.002	0.004	0.000	0.000	0.001	0.004	0.035	1.043	0.597	0.316	0.001	0.003	0.001	0.244	0.003
26	Highest Hourly (maximum)	0.002	0.004	0.000	0.000	0.001	0.004	0.032	0.963	0.551	0.292	0.000	0.003	0.001	0.226	0.003
27	Highest Hourly (maximum)	0.004	0.007	0.000	0.000	0.002	0.007	0.060	1.786	1.022	0.541	0.001	0.005	0.001	0.419	0.004
28	Highest Hourly (maximum)	0.029	0.047	0.000	0.000	0.013	0.051	0.422	12.499	7.154	3.787	0.006	0.037	0.007	2.929	0.022
29	Highest Hourly (maximum)	0.003	0.005	0.000	0.000	0.001	0.005	0.041	1.221	0.699	0.370	0.001	0.004	0.001	0.286	0.003
30	Highest Hourly (maximum)	0.002	0.004	0.000	0.000	0.001	0.004	0.032	0.963	0.551	0.292	0.000	0.003	0.001	0.226	0.002
31	Highest Hourly (maximum)	0.002	0.003	0.000	0.000	0.001	0.003	0.025	0.744	0.426	0.226	0.000	0.002	0.000	0.174	0.002
32	Highest Hourly (maximum)	0.001	0.002	0.000	0.000	0.001	0.002	0.020	0.595	0.341	0.180	0.000	0.002	0.000	0.140	0.002
33	Highest Hourly (maximum)	0.002	0.003	0.000	0.000	0.001	0.004	0.029	0.863	0.494	0.262	0.000	0.003	0.000	0.202	0.002
34	Highest Hourly (maximum)	0.003	0.005	0.000	0.000	0.001	0.005	0.043	1.280	0.733	0.388	0.001	0.004	0.001	0.300	0.003
35	Highest Hourly (maximum)	0.003	0.004	0.000	0.000	0.001	0.005	0.037	1.102	0.631	0.334	0.001	0.003	0.001	0.258	0.003
36	Highest Hourly (maximum)	0.002	0.003	0.000	0.000	0.001	0.004	0.029	0.868	0.497	0.263	0.000	0.003	0.000	0.203	0.002
37	Highest Hourly (maximum)	0.002	0.003	0.000	0.000	0.001	0.003	0.023	0.680	0.390	0.206	0.000	0.002	0.000	0.159	0.002
38	Highest Hourly (maximum)	0.002	0.003	0.000	0.000	0.001	0.003	0.025	0.743	0.425	0.225	0.000	0.002	0.000	0.174	0.001
39	Highest Hourly (maximum)	0.002	0.003	0.000	0.000	0.001	0.003	0.027	0.786	0.450	0.238	0.000	0.002	0.000	0.184	0.002
40	Highest Hourly (maximum)	0.003	0.005	0.000	0.000	0.001	0.005	0.042	1.248	0.714	0.378	0.001	0.004	0.001	0.292	0.003
41	Highest Hourly (maximum)	0.003	0.005	0.000	0.000	0.001	0.006	0.047	1.399	0.801	0.424	0.001	0.004	0.001	0.328	0.003
42	Highest Hourly (maximum)	0.003	0.004	0.000	0.000	0.001	0.004	0.037	1.097	0.628	0.332	0.001	0.003	0.001	0.257	0.003
1	99.9th percentile Hourly (max)	0.002	0.004	0.000	0.000	0.001	0.004	0.034	0.996	0.570	0.302	0.000	0.003	0.001	0.234	0.003
2	99.9th percentile Hourly (max)	0.001	0.002	0.000	0.000	0.001	0.002	0.020	0.602	0.345	0.182	0.000	0.002	0.000	0.141	0.002
3	99.9th percentile Hourly (max)	0.001	0.002	0.000	0.000	0.001	0.002	0.019	0.552	0.316	0.167	0.000	0.002	0.000	0.129	0.002
4	99.9th percentile Hourly (max)	0.001	0.002	0.000	0.000	0.000	0.002	0.015	0.430	0.246	0.130	0.000	0.001	0.000	0.101	0.001
5	99.9th percentile Hourly (max)	0.001	0.002	0.000	0.000	0.001	0.002	0.017	0.490	0.280	0.148	0.000	0.001	0.000	0.115	0.001

6	99.9th percentile Hourly (max)	0.002	0.004	0.000	0.000	0.001	0.004	0.035	1.024	0.586	0.310	0.000	0.003	0.001	0.240	0.003
7	99.9th percentile Hourly (max)	0.001	0.002	0.000	0.000	0.001	0.002	0.018	0.536	0.307	0.162	0.000	0.002	0.000	0.126	0.002
8	99.9th percentile Hourly (max)	0.005	0.009	0.000	0.000	0.002	0.009	0.077	2.288	1.309	0.693	0.001	0.007	0.001	0.536	0.007
9	99.9th percentile Hourly (max)	0.002	0.003	0.000	0.000	0.001	0.003	0.028	0.821	0.470	0.249	0.000	0.002	0.000	0.193	0.003
10	99.9th percentile Hourly (max)	0.001	0.002	0.000	0.000	0.001	0.002	0.019	0.558	0.319	0.169	0.000	0.002	0.000	0.131	0.002
11	99.9th percentile Hourly (max)	0.001	0.001	0.000	0.000	0.000	0.001	0.012	0.359	0.205	0.109	0.000	0.001	0.000	0.084	0.001
12	99.9th percentile Hourly (max)	0.001	0.001	0.000	0.000	0.000	0.001	0.008	0.234	0.134	0.071	0.000	0.001	0.000	0.055	0.001
13	99.9th percentile Hourly (max)	0.000	0.001	0.000	0.000	0.000	0.001	0.007	0.194	0.111	0.059	0.000	0.001	0.000	0.045	0.001
14	99.9th percentile Hourly (max)	0.001	0.001	0.000	0.000	0.000	0.001	0.011	0.320	0.183	0.097	0.000	0.001	0.000	0.075	0.001
15	99.9th percentile Hourly (max)	0.000	0.001	0.000	0.000	0.000	0.001	0.006	0.164	0.094	0.050	0.000	0.000	0.000	0.039	0.000
16	99.9th percentile Hourly (max)	0.000	0.001	0.000	0.000	0.000	0.001	0.006	0.179	0.103	0.054	0.000	0.001	0.000	0.042	0.001
17	99.9th percentile Hourly (max)	0.001	0.001	0.000	0.000	0.000	0.001	0.009	0.269	0.154	0.081	0.000	0.001	0.000	0.063	0.001
18	99.9th percentile Hourly (max)	0.000	0.001	0.000	0.000	0.000	0.001	0.006	0.191	0.109	0.058	0.000	0.001	0.000	0.045	0.001
19	99.9th percentile Hourly (max)	0.000	0.001	0.000	0.000	0.000	0.001	0.005	0.138	0.079	0.042	0.000	0.000	0.000	0.032	0.000
20	99.9th percentile Hourly (max)	0.000	0.001	0.000	0.000	0.000	0.001	0.005	0.143	0.082	0.043	0.000	0.000	0.000	0.033	0.000
21	99.9th percentile Hourly (max)	0.004	0.006	0.000	0.000	0.002	0.006	0.052	1.533	0.878	0.465	0.001	0.005	0.001	0.359	0.005
22	99.9th percentile Hourly (max)	0.003	0.004	0.000	0.000	0.001	0.005	0.039	1.141	0.653	0.346	0.001	0.003	0.001	0.267	0.004
23	99.9th percentile Hourly (max)	0.002	0.002	0.000	0.000	0.001	0.003	0.023	0.670	0.384	0.203	0.000	0.002	0.000	0.157	0.002
24	99.9th percentile Hourly (max)	0.001	0.002	0.000	0.000	0.001	0.002	0.021	0.609	0.349	0.184	0.000	0.002	0.000	0.143	0.002
25	99.9th percentile Hourly (max)	0.002	0.003	0.000	0.000	0.001	0.003	0.026	0.782	0.448	0.237	0.000	0.002	0.000	0.183	0.003
26	99.9th percentile Hourly (max)	0.002	0.002	0.000	0.000	0.001	0.003	0.022	0.649	0.371	0.197	0.000	0.002	0.000	0.152	0.002
27	99.9th percentile Hourly (max)	0.003	0.004	0.000	0.000	0.001	0.004	0.036	1.081	0.619	0.328	0.001	0.003	0.001	0.253	0.003
28	99.9th percentile Hourly (max)	0.003	0.005	0.000	0.000	0.001	0.005	0.042	1.252	0.717	0.380	0.001	0.004	0.001	0.294	0.005
29	99.9th percentile Hourly (max)	0.002	0.003	0.000	0.000	0.001	0.003	0.029	0.853	0.488	0.259	0.000	0.003	0.000	0.200	0.003
30	99.9th percentile Hourly (max)	0.001	0.002	0.000	0.000	0.001	0.003	0.022	0.638	0.365	0.193	0.000	0.002	0.000	0.149	0.002
31	99.9th percentile Hourly (max)	0.001	0.002	0.000	0.000	0.001	0.002	0.017	0.511	0.293	0.155	0.000	0.002	0.000	0.120	0.002
32	99.9th percentile Hourly (max)	0.001	0.002	0.000	0.000	0.000	0.002	0.015	0.457	0.262	0.138	0.000	0.001	0.000	0.107	0.001
33	99.9th percentile Hourly (max)	0.001	0.002	0.000	0.000	0.001	0.002	0.020	0.580	0.332	0.176	0.000	0.002	0.000	0.136	0.002
34	99.9th percentile Hourly (max)	0.002	0.003	0.000	0.000	0.001	0.003	0.028	0.824	0.471	0.250	0.000	0.002	0.000	0.193	0.003
35	99.9th percentile Hourly (max)	0.002	0.003	0.000	0.000	0.001	0.003	0.025	0.728	0.417	0.221	0.000	0.002	0.000	0.171	0.002
36	99.9th percentile Hourly (max)	0.001	0.002	0.000	0.000	0.001	0.002	0.019	0.569	0.326	0.173	0.000	0.002	0.000	0.133	0.002

37	99.9th percentile Hourly (max)	0.001	0.002	0.000	0.000	0.001	0.002	0.017	0.495	0.283	0.150	0.000	0.001	0.000	0.116	0.001
38	99.9th percentile Hourly (max)	0.001	0.002	0.000	0.000	0.001	0.002	0.016	0.482	0.276	0.146	0.000	0.001	0.000	0.113	0.001
39	99.9th percentile Hourly (max)	0.001	0.002	0.000	0.000	0.000	0.002	0.015	0.436	0.250	0.132	0.000	0.001	0.000	0.102	0.001
40	99.9th percentile Hourly (max)	0.002	0.003	0.000	0.000	0.001	0.003	0.026	0.778	0.446	0.236	0.000	0.002	0.000	0.182	0.002
41	99.9th percentile Hourly (max)	0.002	0.003	0.000	0.000	0.001	0.004	0.029	0.868	0.497	0.263	0.000	0.003	0.000	0.204	0.003
42	99.9th percentile Hourly (max)	0.002	0.003	0.000	0.000	0.001	0.003	0.028	0.839	0.480	0.254	0.000	0.003	0.000	0.197	0.003
1	95th percentile Hourly (max)	0.001	0.001	0.000	0.000	0.000	0.001	0.007	0.219	0.125	0.066	0.000	0.001	0.000	0.051	0.001
2	95th percentile Hourly (max)	0.000	0.001	0.000	0.000	0.000	0.001	0.005	0.151	0.087	0.046	0.000	0.000	0.000	0.035	0.001
3	95th percentile Hourly (max)	0.000	0.001	0.000	0.000	0.000	0.001	0.006	0.172	0.098	0.052	0.000	0.001	0.000	0.040	0.001
4	95th percentile Hourly (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.109	0.062	0.033	0.000	0.000	0.000	0.026	0.000
5	95th percentile Hourly (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.071	0.040	0.021	0.000	0.000	0.000	0.017	0.000
6	95th percentile Hourly (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.064	0.037	0.019	0.000	0.000	0.000	0.015	0.000
7	95th percentile Hourly (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.069	0.040	0.021	0.000	0.000	0.000	0.016	0.000
8	95th percentile Hourly (max)	0.002	0.002	0.000	0.000	0.001	0.003	0.022	0.645	0.369	0.195	0.000	0.002	0.000	0.151	0.002
9	95th percentile Hourly (max)	0.001	0.001	0.000	0.000	0.000	0.001	0.009	0.270	0.155	0.082	0.000	0.001	0.000	0.063	0.001
10	95th percentile Hourly (max)	0.000	0.001	0.000	0.000	0.000	0.001	0.006	0.167	0.095	0.050	0.000	0.000	0.000	0.039	0.001
11	95th percentile Hourly (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.049	0.028	0.015	0.000	0.000	0.000	0.011	0.000
12	95th percentile Hourly (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.050	0.029	0.015	0.000	0.000	0.000	0.012	0.000
13	95th percentile Hourly (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.041	0.024	0.012	0.000	0.000	0.000	0.010	0.000
14	95th percentile Hourly (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.091	0.052	0.028	0.000	0.000	0.000	0.021	0.000
15	95th percentile Hourly (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.037	0.021	0.011	0.000	0.000	0.000	0.009	0.000
16	95th percentile Hourly (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.040	0.023	0.012	0.000	0.000	0.000	0.009	0.000
17	95th percentile Hourly (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.084	0.048	0.026	0.000	0.000	0.000	0.020	0.000
18	95th percentile Hourly (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.011	0.006	0.003	0.000	0.000	0.000	0.003	0.000
19	95th percentile Hourly (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.028	0.016	0.008	0.000	0.000	0.000	0.007	0.000
20	95th percentile Hourly (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.033	0.019	0.010	0.000	0.000	0.000	0.008	0.000
21	95th percentile Hourly (max)	0.001	0.001	0.000	0.000	0.000	0.001	0.008	0.227	0.130	0.069	0.000	0.001	0.000	0.053	0.001
22	95th percentile Hourly (max)	0.000	0.001	0.000	0.000	0.000	0.001	0.007	0.195	0.112	0.059	0.000	0.001	0.000	0.046	0.001
23	95th percentile Hourly (max)	0.000	0.001	0.000	0.000	0.000	0.001	0.006	0.176	0.101	0.053	0.000	0.001	0.000	0.041	0.001
24	95th percentile Hourly (max)	0.000	0.001	0.000	0.000	0.000	0.001	0.006	0.176	0.101	0.053	0.000	0.001	0.000	0.041	0.001
25	95th percentile Hourly (max)	0.000	0.000	0.000	0.000	0.000	0.001	0.004	0.126	0.072	0.038	0.000	0.000	0.000	0.030	0.000
26	95th percentile Hourly (max)	0.000	0.001	0.000	0.000	0.000	0.001	0.006	0.186	0.107	0.056	0.000	0.001	0.000	0.044	0.001
27	95th percentile Hourly (max)	0.001	0.001	0.000	0.000	0.000	0.001	0.011	0.340	0.195	0.103	0.000	0.001	0.000	0.080	0.001
28	95th percentile Hourly (max)	0.001	0.001	0.000	0.000	0.000	0.001	0.009	0.259	0.148	0.079	0.000	0.001	0.000	0.061	0.001
29	95th percentile Hourly (max)	0.001	0.001	0.000	0.000	0.000	0.001	0.010	0.285	0.163	0.086	0.000	0.001	0.000	0.067	0.001
30	95th percentile Hourly (max)	0.000	0.001	0.000	0.000	0.000	0.001	0.007	0.207	0.118	0.063	0.000	0.001	0.000	0.048	0.001
31	95th percentile Hourly (max)	0.000	0.001	0.000	0.000	0.000	0.001	0.006	0.168	0.096	0.051	0.000	0.001	0.000	0.039	0.001
32	95th percentile Hourly (max)	0.000	0.000	0.000	0.000	0.000	0.001	0.004	0.132	0.076	0.040	0.000	0.000	0.000	0.031	0.000
33	95th percentile Hourly (max)	0.000	0.001	0.000	0.000	0.000	0.001	0.006	0.177	0.101	0.054	0.000	0.001	0.000	0.041	0.001
34	95th percentile Hourly (max)	0.001	0.001	0.000	0.000	0.000	0.001	0.009	0.263	0.151	0.080	0.000	0.001	0.000	0.062	0.001
35	95th percentile Hourly (max)	0.001	0.001	0.000	0.000	0.000	0.001	0.007	0.219	0.125	0.066	0.000	0.001	0.000	0.051	0.001
36	95th percentile Hourly (max)	0.000	0.001	0.000	0.000	0.000	0.001	0.006	0.177	0.101	0.054	0.000	0.001	0.000	0.041	0.001
37	95th percentile Hourly (max)	0.000	0.001	0.000	0.000	0.000	0.001	0.006	0.163	0.093	0.049	0.000	0.000	0.000	0.038	0.001
38	95th percentile Hourly (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.025	0.015	0.008	0.000	0.000	0.000	0.006	0.000
39	95th percentile Hourly (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.034	0.020	0.010	0.000	0.000	0.000	0.008	0.000
40	95th percentile Hourly (max)	0.001	0.001	0.000	0.000	0.000	0.001	0.009	0.274	0.157	0.083	0.000	0.001	0.000	0.064	0.001
41	95th percentile Hourly (max)	0.001	0.001	0.000	0.000	0.000	0.001	0.009	0.253	0.145	0.077	0.000	0.001	0.000	0.059	0.001
42	95th percentile Hourly (max)	0.001	0.001	0.000	0.000	0.000	0.001	0.010	0.284	0.162	0.086	0.000	0.001	0.000	0.066	0.001
1	Annual average (maximum)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.035	0.020	0.010	0.000	0.000	0.000	0.008	0.000
2	Annual average (maximum)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.022	0.013	0.007	0.000	0.000	0.000	0.005	0.000
3	Annual average (maximum)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.024	0.014	0.007	0.000	0.000	0.000	0.006	0.000
4	Annual average (maximum)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.016	0.009	0.005	0.000	0.000	0.000	0.004	0.000

5	Annual average (maximum)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.012	0.007	0.004	0.000	0.000	0.000	0.003	0.000
6	Annual average (maximum)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.020	0.011	0.006	0.000	0.000	0.000	0.005	0.000
7	Annual average (maximum)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.015	0.008	0.004	0.000	0.000	0.000	0.003	0.000
8	Annual average (maximum)	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.103	0.059	0.031	0.000	0.000	0.000	0.024	0.000
9	Annual average (maximum)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.040	0.023	0.012	0.000	0.000	0.000	0.009	0.000
10	Annual average (maximum)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.024	0.014	0.007	0.000	0.000	0.000	0.006	0.000
11	Annual average (maximum)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.009	0.005	0.003	0.000	0.000	0.000	0.002	0.000
12	Annual average (maximum)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.007	0.004	0.002	0.000	0.000	0.000	0.002	0.000
13	Annual average (maximum)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.006	0.004	0.002	0.000	0.000	0.000	0.001	0.000
14	Annual average (maximum)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.013	0.008	0.004	0.000	0.000	0.000	0.003	0.000
15	Annual average (maximum)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.005	0.003	0.002	0.000	0.000	0.000	0.001	0.000
16	Annual average (maximum)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.006	0.003	0.002	0.000	0.000	0.000	0.001	0.000
17	Annual average (maximum)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.011	0.006	0.003	0.000	0.000	0.000	0.003	0.000
18	Annual average (maximum)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.002	0.001	0.000	0.000	0.000	0.001	0.000
19	Annual average (maximum)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.002	0.001	0.000	0.000	0.000	0.001	0.000
20	Annual average (maximum)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.003	0.001	0.000	0.000	0.000	0.001	0.000
21	Annual average (maximum)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.043	0.024	0.013	0.000	0.000	0.000	0.010	0.000
22	Annual average (maximum)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.036	0.020	0.011	0.000	0.000	0.000	0.008	0.000
23	Annual average (maximum)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.027	0.015	0.008	0.000	0.000	0.000	0.006	0.000
24	Annual average (maximum)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.026	0.015	0.008	0.000	0.000	0.000	0.006	0.000
25	Annual average (maximum)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.022	0.013	0.007	0.000	0.000	0.000	0.005	0.000
26	Annual average (maximum)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.026	0.015	0.008	0.000	0.000	0.000	0.006	0.000
27	Annual average (maximum)	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.049	0.028	0.015	0.000	0.000	0.000	0.012	0.000
28	Annual average (maximum)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.041	0.024	0.012	0.000	0.000	0.000	0.010	0.000
29	Annual average (maximum)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.041	0.024	0.012	0.000	0.000	0.000	0.010	0.000
30	Annual average (maximum)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.029	0.017	0.009	0.000	0.000	0.000	0.007	0.000
31	Annual average (maximum)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.023	0.013	0.007	0.000	0.000	0.000	0.005	0.000
32	Annual average (maximum)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.019	0.011	0.006	0.000	0.000	0.000	0.004	0.000
33	Annual average (maximum)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.024	0.014	0.007	0.000	0.000	0.000	0.006	0.000
34	Annual average (maximum)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.039	0.022	0.012	0.000	0.000	0.000	0.009	0.000
35	Annual average (maximum)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.033	0.019	0.010	0.000	0.000	0.000	0.008	0.000
36	Annual average (maximum)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.026	0.015	0.008	0.000	0.000	0.000	0.006	0.000
37	Annual average (maximum)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.024	0.014	0.007	0.000	0.000	0.000	0.006	0.000
38	Annual average (maximum)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.008	0.005	0.003	0.000	0.000	0.000	0.002	0.000
39	Annual average (maximum)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.011	0.006	0.003	0.000	0.000	0.000	0.002	0.000
40	Annual average (maximum)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.039	0.022	0.012	0.000	0.000	0.000	0.009	0.000
41	Annual average (maximum)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.040	0.023	0.012	0.000	0.000	0.000	0.009	0.000
42	Annual average (maximum)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.042	0.024	0.013	0.000	0.000	0.000	0.010	0.000
Highest Hourly (across receptors)		0.029	0.047	0.000	0.000	0.013	0.051	0.422	12.499	7.154	3.787	0.006	0.037	0.007	2.929	0.022
Highest Annual (across receptors)		0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.103	0.059	0.031	0.000	0.000	0.000	0.024	0.000

12) Worksheet entitled '(j) Project Metal conc Receptor' provided by ENVIRON Pty Ltd

Receptor	Statistic	Predicted Project-related (Incremental) Ambient Air Metal Concentrations in the PM10 fraction (ug/m3) - excluding existing free areas													Zinc	Arsenic -4hrly
		Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Iron	Lead	Manganese	Mercury	Nickel	Silver		
1	Highest Hourly (maximum)	0.001	0.009	0.000	0.000	0.004	0.000	0.017	1.202	0.808	0.015	0.000	0.000	0.001	1.045	0.003
2	Highest Hourly (maximum)	0.006	0.034	0.000	0.000	0.014	0.000	0.056	2.633	2.949	0.020	0.000	0.000	0.003	3.784	0.008
3	Highest Hourly (maximum)	0.007	0.043	0.000	0.000	0.017	0.001	0.069	3.117	3.690	0.040	0.000	0.000	0.004	4.729	0.011
4	Highest Hourly (maximum)	0.005	0.026	0.000	0.000	0.011	0.001	0.046	2.304	2.317	0.069	0.000	0.001	0.002	2.980	0.009
5	Highest Hourly (maximum)	0.003	0.018	0.000	0.000	0.007	0.001	0.035	2.374	1.653	0.050	0.000	0.000	0.002	2.129	0.006
6	Highest Hourly (maximum)	0.003	0.020	0.000	0.000	0.008	0.002	0.044	3.369	1.800	0.124	0.000	0.001	0.002	2.317	0.006
7	Highest Hourly (maximum)	0.004	0.024	0.000	0.000	0.010	0.000	0.039	1.838	2.056	0.014	0.000	0.000	0.002	2.638	0.006
8	Highest Hourly (maximum)	0.010	0.057	0.000	0.000	0.023	0.000	0.092	4.159	4.891	0.027	0.000	0.000	0.005	6.273	0.014
9	Highest Hourly (maximum)	0.003	0.018	0.000	0.000	0.008	0.000	0.033	1.652	1.652	0.018	0.000	0.000	0.002	2.123	0.005
10	Highest Hourly (maximum)	0.001	0.007	0.000	0.000	0.003	0.000	0.013	0.859	0.595	0.013	0.000	0.000	0.001	0.766	0.002
11	Highest Hourly (maximum)	0.002	0.012	0.000	0.000	0.005	0.000	0.022	1.414	1.090	0.025	0.000	0.000	0.001	1.404	0.003
12	Highest Hourly (maximum)	0.001	0.007	0.000	0.000	0.003	0.000	0.017	1.158	0.688	0.016	0.000	0.000	0.001	0.895	0.002
13	Highest Hourly (maximum)	0.001	0.005	0.000	0.000	0.002	0.000	0.015	1.069	0.557	0.011	0.000	0.000	0.001	0.729	0.002
14	Highest Hourly (maximum)	0.001	0.004	0.000	0.000	0.002	0.000	0.010	0.626	0.410	0.010	0.000	0.000	0.000	0.530	0.002
15	Highest Hourly (maximum)	0.000	0.002	0.000	0.000	0.001	0.000	0.007	0.570	0.199	0.006	0.000	0.000	0.000	0.267	0.001
16	Highest Hourly (maximum)	0.000	0.002	0.000	0.000	0.001	0.000	0.008	0.654	0.222	0.007	0.000	0.000	0.000	0.297	0.001
17	Highest Hourly (maximum)	0.001	0.003	0.000	0.000	0.001	0.000	0.008	0.612	0.301	0.009	0.000	0.000	0.000	0.393	0.001
18	Highest Hourly (maximum)	0.001	0.006	0.000	0.000	0.002	0.000	0.015	1.155	0.531	0.011	0.000	0.000	0.001	0.703	0.001
19	Highest Hourly (maximum)	0.000	0.001	0.000	0.000	0.001	0.000	0.006	0.543	0.188	0.006	0.000	0.000	0.000	0.252	0.001
20	Highest Hourly (maximum)	0.000	0.002	0.000	0.000	0.001	0.000	0.006	0.504	0.224	0.005	0.000	0.000	0.000	0.295	0.001
21	Highest Hourly (maximum)	0.002	0.010	0.000	0.000	0.004	0.000	0.019	1.413	0.914	0.022	0.000	0.000	0.001	1.180	0.003
22	Highest Hourly (maximum)	0.002	0.011	0.000	0.000	0.004	0.001	0.021	1.452	0.976	0.025	0.000	0.000	0.001	1.260	0.003
23	Highest Hourly (maximum)	0.001	0.007	0.000	0.000	0.003	0.000	0.019	1.275	0.762	0.031	0.000	0.000	0.001	0.998	0.002
24	Highest Hourly (maximum)	0.001	0.006	0.000	0.000	0.002	0.001	0.018	1.268	0.637	0.055	0.000	0.001	0.001	0.839	0.001
25	Highest Hourly (maximum)	0.001	0.006	0.000	0.000	0.002	0.000	0.010	0.759	0.510	0.020	0.000	0.000	0.001	0.659	0.002
26	Highest Hourly (maximum)	0.001	0.004	0.000	0.000	0.002	0.001	0.014	1.075	0.492	0.067	0.000	0.001	0.001	0.648	0.001
27	Highest Hourly (maximum)	0.001	0.003	0.000	0.000	0.001	0.001	0.016	1.328	0.480	0.039	0.000	0.000	0.001	0.642	0.002
28	Highest Hourly	0.005	0.007	0.000	0.000	0.002	0.008	0.071	2.361	1.205	0.601	0.001	0.006	0.001	0.620	0.003

	(maximum)															
29	Highest Hourly (maximum)	0.001	0.003	0.000	0.000	0.001	0.000	0.016	1.295	0.464	0.029	0.000	0.000	0.001	0.622	0.001
30	Highest Hourly (maximum)	0.001	0.003	0.000	0.000	0.001	0.000	0.013	1.130	0.403	0.028	0.000	0.000	0.000	0.534	0.001
31	Highest Hourly (maximum)	0.000	0.003	0.000	0.000	0.001	0.000	0.013	1.071	0.399	0.019	0.000	0.000	0.000	0.531	0.001
32	Highest Hourly (maximum)	0.000	0.003	0.000	0.000	0.001	0.000	0.012	1.023	0.359	0.017	0.000	0.000	0.000	0.481	0.001
33	Highest Hourly (maximum)	0.000	0.003	0.000	0.000	0.001	0.001	0.012	0.989	0.382	0.045	0.000	0.000	0.000	0.508	0.001
34	Highest Hourly (maximum)	0.001	0.005	0.000	0.000	0.002	0.000	0.015	1.119	0.561	0.028	0.000	0.000	0.001	0.735	0.002
35	Highest Hourly (maximum)	0.001	0.006	0.000	0.000	0.002	0.000	0.017	1.148	0.656	0.033	0.000	0.000	0.001	0.857	0.002
36	Highest Hourly (maximum)	0.001	0.004	0.000	0.000	0.002	0.000	0.015	1.316	0.482	0.023	0.000	0.000	0.001	0.628	0.001
37	Highest Hourly (maximum)	0.001	0.004	0.000	0.000	0.002	0.000	0.013	1.035	0.462	0.018	0.000	0.000	0.001	0.600	0.001
38	Highest Hourly (maximum)	0.004	0.023	0.000	0.000	0.009	0.000	0.037	1.674	1.958	0.012	0.000	0.000	0.002	2.513	0.006
39	Highest Hourly (maximum)	0.004	0.020	0.000	0.000	0.008	0.000	0.034	1.632	1.779	0.012	0.000	0.000	0.002	2.285	0.005
40	Highest Hourly (maximum)	0.002	0.010	0.000	0.000	0.004	0.000	0.021	1.132	0.970	0.017	0.000	0.000	0.001	1.249	0.003
41	Highest Hourly (maximum)	0.001	0.008	0.000	0.000	0.003	0.000	0.017	1.068	0.773	0.021	0.000	0.000	0.001	0.995	0.002
42	Highest Hourly (maximum)	0.001	0.006	0.000	0.000	0.003	0.000	0.018	1.187	0.681	0.023	0.000	0.000	0.001	0.883	0.002
1	99.9th percentile Hourly (max)	0.000	0.003	0.000	0.000	0.001	0.000	0.011	0.954	0.354	0.012	0.000	0.000	0.000	0.475	0.001
2	99.9th percentile Hourly (max)	0.001	0.006	0.000	0.000	0.002	0.000	0.015	1.329	0.555	0.017	0.000	0.000	0.001	0.718	0.004
3	99.9th percentile Hourly (max)	0.002	0.011	0.000	0.000	0.005	0.000	0.022	1.587	1.032	0.033	0.000	0.000	0.001	1.332	0.007
4	99.9th percentile Hourly (max)	0.002	0.010	0.000	0.000	0.004	0.001	0.021	1.387	0.925	0.055	0.000	0.001	0.001	1.194	0.005
5	99.9th percentile Hourly (max)	0.002	0.010	0.000	0.000	0.004	0.000	0.022	1.522	0.972	0.034	0.000	0.000	0.001	1.258	0.004
6	99.9th percentile Hourly (max)	0.002	0.010	0.000	0.000	0.004	0.001	0.027	2.469	0.923	0.058	0.000	0.001	0.001	1.241	0.004
7	99.9th percentile Hourly (max)	0.002	0.010	0.000	0.000	0.004	0.000	0.018	0.979	0.907	0.008	0.000	0.000	0.001	1.166	0.005
8	99.9th percentile Hourly (max)	0.004	0.021	0.000	0.000	0.009	0.000	0.038	1.917	1.903	0.016	0.000	0.000	0.002	2.446	0.010
9	99.9th percentile Hourly (max)	0.001	0.007	0.000	0.000	0.003	0.000	0.015	0.977	0.688	0.011	0.000	0.000	0.001	0.888	0.003
10	99.9th percentile Hourly (max)	0.001	0.003	0.000	0.000	0.001	0.000	0.008	0.698	0.346	0.009	0.000	0.000	0.000	0.449	0.001
11	99.9th percentile Hourly (max)	0.001	0.005	0.000	0.000	0.002	0.000	0.015	1.038	0.509	0.019	0.000	0.000	0.001	0.670	0.002
12	99.9th percentile Hourly (max)	0.001	0.004	0.000	0.000	0.002	0.000	0.009	0.762	0.377	0.010	0.000	0.000	0.000	0.486	0.001
13	99.9th percentile Hourly (max)	0.001	0.003	0.000	0.000	0.001	0.000	0.008	0.709	0.333	0.008	0.000	0.000	0.000	0.431	0.001
14	99.9th percentile Hourly (max)	0.000	0.002	0.000	0.000	0.001	0.000	0.006	0.511	0.248	0.006	0.000	0.000	0.000	0.321	0.001
15	99.9th percentile Hourly (max)	0.000	0.001	0.000	0.000	0.000	0.000	0.004	0.342	0.133	0.004	0.000	0.000	0.000	0.177	0.000
16	99.9th percentile Hourly (max)	0.000	0.001	0.000	0.000	0.000	0.000	0.005	0.421	0.154	0.005	0.000	0.000	0.000	0.206	0.000

17	99.9th percentile Hourly (max)	0.000	0.002	0.000	0.000	0.001	0.000	0.006	0.485	0.181	0.006	0.000	0.000	0.000	0.235	0.001
18	99.9th percentile Hourly (max)	0.000	0.002	0.000	0.000	0.001	0.000	0.008	0.763	0.288	0.007	0.000	0.000	0.000	0.384	0.001
19	99.9th percentile Hourly (max)	0.000	0.001	0.000	0.000	0.000	0.000	0.004	0.347	0.127	0.004	0.000	0.000	0.000	0.168	0.000
20	99.9th percentile Hourly (max)	0.000	0.001	0.000	0.000	0.000	0.000	0.004	0.348	0.132	0.003	0.000	0.000	0.000	0.178	0.001
21	99.9th percentile Hourly (max)	0.000	0.003	0.000	0.000	0.001	0.000	0.013	1.070	0.387	0.014	0.000	0.000	0.000	0.517	0.002
22	99.9th percentile Hourly (max)	0.000	0.003	0.000	0.000	0.001	0.000	0.013	1.079	0.368	0.017	0.000	0.000	0.000	0.496	0.002
23	99.9th percentile Hourly (max)	0.000	0.002	0.000	0.000	0.001	0.000	0.012	0.940	0.342	0.022	0.000	0.000	0.000	0.460	0.001
24	99.9th percentile Hourly (max)	0.000	0.002	0.000	0.000	0.001	0.001	0.010	0.867	0.283	0.039	0.000	0.000	0.000	0.379	0.001
25	99.9th percentile Hourly (max)	0.000	0.003	0.000	0.000	0.001	0.000	0.008	0.608	0.284	0.013	0.000	0.000	0.000	0.372	0.001
26	99.9th percentile Hourly (max)	0.000	0.002	0.000	0.000	0.001	0.001	0.009	0.850	0.258	0.052	0.000	0.001	0.000	0.347	0.001
27	99.9th percentile Hourly (max)	0.000	0.002	0.000	0.000	0.001	0.000	0.012	1.107	0.324	0.025	0.000	0.000	0.000	0.439	0.001
28	99.9th percentile Hourly (max)	0.000	0.002	0.000	0.000	0.001	0.001	0.012	1.020	0.324	0.062	0.000	0.001	0.000	0.420	0.001
29	99.9th percentile Hourly (max)	0.000	0.002	0.000	0.000	0.001	0.000	0.011	0.948	0.297	0.020	0.000	0.000	0.000	0.403	0.001
30	99.9th percentile Hourly (max)	0.000	0.002	0.000	0.000	0.001	0.000	0.010	0.885	0.285	0.018	0.000	0.000	0.000	0.385	0.001
31	99.9th percentile Hourly (max)	0.000	0.002	0.000	0.000	0.001	0.000	0.010	0.832	0.268	0.013	0.000	0.000	0.000	0.359	0.001
32	99.9th percentile Hourly (max)	0.000	0.001	0.000	0.000	0.001	0.000	0.009	0.784	0.250	0.012	0.000	0.000	0.000	0.334	0.001
33	99.9th percentile Hourly (max)	0.000	0.001	0.000	0.000	0.001	0.000	0.009	0.818	0.247	0.031	0.000	0.000	0.000	0.334	0.001
34	99.9th percentile Hourly (max)	0.001	0.003	0.000	0.000	0.001	0.000	0.011	0.897	0.350	0.016	0.000	0.000	0.000	0.452	0.001
35	99.9th percentile Hourly (max)	0.000	0.002	0.000	0.000	0.001	0.000	0.010	0.938	0.311	0.020	0.000	0.000	0.000	0.406	0.001
36	99.9th percentile Hourly (max)	0.000	0.002	0.000	0.000	0.001	0.000	0.010	0.908	0.308	0.016	0.000	0.000	0.000	0.412	0.001
37	99.9th percentile Hourly (max)	0.000	0.002	0.000	0.000	0.001	0.000	0.010	0.886	0.301	0.013	0.000	0.000	0.000	0.398	0.001
38	99.9th percentile Hourly (max)	0.002	0.009	0.000	0.000	0.004	0.000	0.016	1.006	0.811	0.007	0.000	0.000	0.001	1.044	0.004
39	99.9th percentile Hourly (max)	0.001	0.008	0.000	0.000	0.003	0.000	0.016	0.980	0.752	0.008	0.000	0.000	0.001	0.969	0.004
40	99.9th percentile Hourly (max)	0.001	0.005	0.000	0.000	0.002	0.000	0.011	0.821	0.494	0.011	0.000	0.000	0.001	0.637	0.002
41	99.9th percentile Hourly (max)	0.001	0.004	0.000	0.000	0.002	0.000	0.011	0.840	0.390	0.013	0.000	0.000	0.000	0.504	0.002
42	99.9th percentile Hourly (max)	0.001	0.003	0.000	0.000	0.001	0.000	0.011	0.918	0.389	0.014	0.000	0.000	0.000	0.500	0.002
1	95th percentile Hourly (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.098	0.035	0.005	0.000	0.000	0.000	0.042	0.000
2	95th percentile Hourly (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.152	0.058	0.006	0.000	0.000	0.000	0.071	0.000
3	95th percentile Hourly (max)	0.000	0.001	0.000	0.000	0.000	0.000	0.004	0.283	0.107	0.012	0.000	0.000	0.000	0.128	0.001
4	95th percentile Hourly (max)	0.000	0.001	0.000	0.000	0.000	0.000	0.003	0.202	0.087	0.011	0.000	0.000	0.000	0.099	0.001
5	95th percentile Hourly	0.000	0.001	0.000	0.000	0.000	0.000	0.003	0.181	0.081	0.007	0.000	0.000	0.000	0.094	0.001

	(max)															
6	95th percentile Hourly (max)	0.000	0.001	0.000	0.000	0.000	0.000	0.004	0.290	0.112	0.004	0.000	0.000	0.000	0.139	0.001
7	95th percentile Hourly (max)	0.000	0.001	0.000	0.000	0.000	0.000	0.002	0.105	0.071	0.001	0.000	0.000	0.000	0.090	0.001
8	95th percentile Hourly (max)	0.001	0.003	0.000	0.000	0.001	0.000	0.006	0.318	0.288	0.005	0.000	0.000	0.000	0.363	0.003
9	95th percentile Hourly (max)	0.000	0.001	0.000	0.000	0.000	0.000	0.003	0.157	0.095	0.003	0.000	0.000	0.000	0.120	0.001
10	95th percentile Hourly (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.104	0.040	0.003	0.000	0.000	0.000	0.050	0.000
11	95th percentile Hourly (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.106	0.049	0.003	0.000	0.000	0.000	0.060	0.000
12	95th percentile Hourly (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.063	0.030	0.002	0.000	0.000	0.000	0.037	0.000
13	95th percentile Hourly (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.052	0.025	0.002	0.000	0.000	0.000	0.031	0.000
14	95th percentile Hourly (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.064	0.028	0.002	0.000	0.000	0.000	0.033	0.000
15	95th percentile Hourly (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.020	0.009	0.001	0.000	0.000	0.000	0.011	0.000
16	95th percentile Hourly (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.017	0.007	0.001	0.000	0.000	0.000	0.007	0.000
17	95th percentile Hourly (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.043	0.019	0.002	0.000	0.000	0.000	0.023	0.000
18	95th percentile Hourly (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.043	0.021	0.000	0.000	0.000	0.000	0.025	0.000
19	95th percentile Hourly (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.012	0.005	0.001	0.000	0.000	0.000	0.005	0.000
20	95th percentile Hourly (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.015	0.007	0.001	0.000	0.000	0.000	0.009	0.000
21	95th percentile Hourly (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.107	0.031	0.005	0.000	0.000	0.000	0.037	0.000
22	95th percentile Hourly (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.112	0.030	0.005	0.000	0.000	0.000	0.035	0.000
23	95th percentile Hourly (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.114	0.031	0.006	0.000	0.000	0.000	0.033	0.000
24	95th percentile Hourly (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.130	0.040	0.010	0.000	0.000	0.000	0.037	0.000
25	95th percentile Hourly (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.070	0.022	0.004	0.000	0.000	0.000	0.026	0.000
26	95th percentile Hourly (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.120	0.044	0.012	0.000	0.000	0.000	0.033	0.000
27	95th percentile Hourly (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.102	0.033	0.009	0.000	0.000	0.000	0.031	0.000
28	95th percentile Hourly (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.099	0.031	0.008	0.000	0.000	0.000	0.029	0.000
29	95th percentile Hourly (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.084	0.028	0.007	0.000	0.000	0.000	0.028	0.000
30	95th percentile Hourly (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.077	0.025	0.006	0.000	0.000	0.000	0.025	0.000
31	95th percentile Hourly (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.057	0.020	0.004	0.000	0.000	0.000	0.021	0.000
32	95th percentile Hourly (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.051	0.018	0.004	0.000	0.000	0.000	0.018	0.000
33	95th percentile Hourly (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.072	0.027	0.007	0.000	0.000	0.000	0.020	0.000
34	95th percentile Hourly (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.100	0.038	0.005	0.000	0.000	0.000	0.044	0.000
35	95th percentile Hourly (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.089	0.035	0.005	0.000	0.000	0.000	0.040	0.000

36	95th percentile Hourly (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.083	0.031	0.004	0.000	0.000	0.000	0.038	0.000
37	95th percentile Hourly (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.072	0.024	0.004	0.000	0.000	0.000	0.028	0.000
38	95th percentile Hourly (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.082	0.046	0.001	0.000	0.000	0.000	0.060	0.000
39	95th percentile Hourly (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.095	0.055	0.001	0.000	0.000	0.000	0.070	0.000
40	95th percentile Hourly (max)	0.000	0.001	0.000	0.000	0.000	0.000	0.002	0.164	0.063	0.004	0.000	0.000	0.000	0.078	0.001
41	95th percentile Hourly (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.155	0.053	0.005	0.000	0.000	0.000	0.067	0.000
42	95th percentile Hourly (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.129	0.047	0.005	0.000	0.000	0.000	0.057	0.000
1	Annual average (maximum)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.027	0.008	0.001	0.000	0.000	0.000	0.010	0.000
2	Annual average (maximum)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.038	0.014	0.001	0.000	0.000	0.000	0.017	0.000
3	Annual average (maximum)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.068	0.026	0.002	0.000	0.000	0.000	0.032	0.000
4	Annual average (maximum)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.050	0.022	0.002	0.000	0.000	0.000	0.026	0.000
5	Annual average (maximum)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.042	0.018	0.001	0.000	0.000	0.000	0.022	0.000
6	Annual average (maximum)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.064	0.025	0.001	0.000	0.000	0.000	0.032	0.000
7	Annual average (maximum)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.025	0.015	0.000	0.000	0.000	0.000	0.019	0.000
8	Annual average (maximum)	0.000	0.001	0.000	0.000	0.000	0.000	0.001	0.086	0.064	0.001	0.000	0.000	0.000	0.081	0.001
9	Annual average (maximum)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.042	0.023	0.000	0.000	0.000	0.000	0.029	0.000
10	Annual average (maximum)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.025	0.010	0.000	0.000	0.000	0.000	0.012	0.000
11	Annual average (maximum)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.025	0.011	0.000	0.000	0.000	0.000	0.013	0.000
12	Annual average (maximum)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.017	0.007	0.000	0.000	0.000	0.000	0.008	0.000
13	Annual average (maximum)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.014	0.005	0.000	0.000	0.000	0.000	0.007	0.000
14	Annual average (maximum)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.015	0.006	0.000	0.000	0.000	0.000	0.008	0.000
15	Annual average (maximum)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.005	0.002	0.000	0.000	0.000	0.000	0.003	0.000
16	Annual average (maximum)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.005	0.002	0.000	0.000	0.000	0.000	0.002	0.000
17	Annual average (maximum)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.011	0.004	0.000	0.000	0.000	0.000	0.005	0.000
18	Annual average (maximum)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.011	0.005	0.000	0.000	0.000	0.000	0.006	0.000
19	Annual average (maximum)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.001	0.000	0.000	0.000	0.000	0.002	0.000
20	Annual average (maximum)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.002	0.000	0.000	0.000	0.000	0.002	0.000
21	Annual average (maximum)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.028	0.008	0.001	0.000	0.000	0.000	0.010	0.000
22	Annual average (maximum)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.028	0.008	0.001	0.000	0.000	0.000	0.009	0.000
23	Annual average (maximum)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.029	0.008	0.001	0.000	0.000	0.000	0.009	0.000
24	Annual average	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.034	0.009	0.002	0.000	0.000	0.000	0.010	0.000

	(maximum)															
25	Annual average (maximum)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.018	0.005	0.001	0.000	0.000	0.000	0.006	0.000
26	Annual average (maximum)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.032	0.009	0.002	0.000	0.000	0.000	0.010	0.000
27	Annual average (maximum)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.031	0.009	0.001	0.000	0.000	0.000	0.010	0.000
28	Annual average (maximum)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.030	0.009	0.002	0.000	0.000	0.000	0.009	0.000
29	Annual average (maximum)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.025	0.007	0.001	0.000	0.000	0.000	0.008	0.000
30	Annual average (maximum)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.023	0.007	0.001	0.000	0.000	0.000	0.008	0.000
31	Annual average (maximum)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.016	0.005	0.001	0.000	0.000	0.000	0.006	0.000
32	Annual average (maximum)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.015	0.005	0.001	0.000	0.000	0.000	0.006	0.000
33	Annual average (maximum)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.019	0.006	0.001	0.000	0.000	0.000	0.006	0.000
34	Annual average (maximum)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.029	0.010	0.001	0.000	0.000	0.000	0.012	0.000
35	Annual average (maximum)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.026	0.009	0.001	0.000	0.000	0.000	0.011	0.000
36	Annual average (maximum)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.023	0.008	0.001	0.000	0.000	0.000	0.010	0.000
37	Annual average (maximum)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.020	0.007	0.001	0.000	0.000	0.000	0.008	0.000
38	Annual average (maximum)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.020	0.011	0.000	0.000	0.000	0.000	0.014	0.000
39	Annual average (maximum)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.022	0.012	0.000	0.000	0.000	0.000	0.015	0.000
40	Annual average (maximum)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.039	0.016	0.001	0.000	0.000	0.000	0.020	0.000
41	Annual average (maximum)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.038	0.014	0.001	0.000	0.000	0.000	0.018	0.000
42	Annual average (maximum)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.036	0.012	0.001	0.000	0.000	0.000	0.015	0.000
	Highest Hourly (across receptors)	0.010	0.057	0.000	0.000	0.023	0.008	0.092	4.159	4.891	0.601	0.001	0.006	0.005	6.273	0.014
	Highest Annual (across receptors)	0.000	0.001	0.000	0.000	0.000	0.000	0.001	0.086	0.064	0.002	0.000	0.000	0.000	0.081	0.001

13) Worksheet entitled '(k) Cumul Metal Conc by Recept' provided by ENVIRON Pty Ltd

Recep tor	Statistic	Predicted Cumulative Ambient Air Metal Concentrations in the PM10 fraction (ug/m3) - includes Project Incremental AND "Future Baseline" (comprising Existing Free Areas with 80%CE)														
		Antimo ny	Arsenic	Barium	Berylliu m	Cadmiu m	Chromi um	Copper	Iron	Lead	Mangan ese	Mercury	Nickel	Silver	Zinc	Arsenic -4hrly
1	Highest Hourly (max)	0.004	0.009	0.000	0.000	0.004	0.006	0.053	1.576	0.898	0.474	0.001	0.005	0.001	1.045	0.004
2	Highest Hourly (max)	0.006	0.034	0.000	0.000	0.014	0.004	0.056	2.633	2.949	0.280	0.000	0.003	0.003	3.784	0.008
3	Highest Hourly (max)	0.007	0.043	0.000	0.000	0.017	0.007	0.069	3.117	3.690	0.523	0.001	0.005	0.004	4.729	0.011
4	Highest Hourly (max)	0.005	0.026	0.000	0.000	0.011	0.004	0.046	2.304	2.317	0.262	0.000	0.003	0.002	2.980	0.009
5	Highest Hourly (max)	0.003	0.018	0.000	0.000	0.007	0.003	0.035	2.374	1.653	0.210	0.000	0.002	0.002	2.129	0.006
6	Highest Hourly (max)	0.004	0.020	0.000	0.000	0.008	0.007	0.056	3.369	1.800	0.483	0.001	0.005	0.002	2.317	0.006
7	Highest Hourly (max)	0.004	0.024	0.000	0.000	0.010	0.004	0.039	1.838	2.056	0.263	0.000	0.003	0.002	2.638	0.006
8	Highest Hourly (max)	0.011	0.057	0.000	0.000	0.023	0.016	0.147	4.525	4.891	1.205	0.002	0.012	0.005	6.273	0.016
9	Highest Hourly (max)	0.003	0.018	0.000	0.000	0.008	0.005	0.046	1.652	1.652	0.378	0.001	0.004	0.002	2.123	0.005
10	Highest Hourly (max)	0.002	0.007	0.000	0.000	0.003	0.004	0.033	0.988	0.599	0.283	0.000	0.003	0.001	0.766	0.003
11	Highest Hourly (max)	0.002	0.012	0.000	0.000	0.005	0.002	0.022	1.414	1.090	0.161	0.000	0.002	0.001	1.404	0.003
12	Highest Hourly (max)	0.001	0.007	0.000	0.000	0.003	0.001	0.017	1.158	0.688	0.110	0.000	0.001	0.001	0.895	0.002
13	Highest Hourly (max)	0.001	0.005	0.000	0.000	0.002	0.001	0.015	1.069	0.557	0.105	0.000	0.001	0.001	0.729	0.002
14	Highest Hourly (max)	0.001	0.004	0.000	0.000	0.002	0.002	0.017	0.626	0.410	0.147	0.000	0.001	0.000	0.530	0.002
15	Highest Hourly (max)	0.001	0.002	0.000	0.000	0.001	0.001	0.010	0.570	0.199	0.084	0.000	0.001	0.000	0.267	0.001
16	Highest Hourly (max)	0.001	0.002	0.000	0.000	0.001	0.001	0.010	0.654	0.222	0.088	0.000	0.001	0.000	0.297	0.001
17	Highest Hourly (max)	0.001	0.003	0.000	0.000	0.001	0.002	0.016	0.612	0.301	0.139	0.000	0.001	0.000	0.393	0.001
18	Highest Hourly (max)	0.001	0.006	0.000	0.000	0.002	0.002	0.015	1.155	0.531	0.111	0.000	0.001	0.001	0.703	0.001
19	Highest Hourly (max)	0.001	0.001	0.000	0.000	0.001	0.001	0.008	0.543	0.188	0.069	0.000	0.001	0.000	0.252	0.001
20	Highest Hourly (max)	0.001	0.002	0.000	0.000	0.001	0.001	0.008	0.504	0.224	0.067	0.000	0.001	0.000	0.295	0.001
21	Highest Hourly (max)	0.004	0.010	0.000	0.000	0.004	0.008	0.064	1.961	1.094	0.577	0.001	0.006	0.001	1.180	0.007
22	Highest Hourly (max)	0.004	0.011	0.000	0.000	0.004	0.007	0.055	1.673	0.976	0.492	0.001	0.005	0.001	1.260	0.005
23	Highest Hourly (max)	0.003	0.007	0.000	0.000	0.003	0.004	0.037	1.275	0.762	0.324	0.001	0.003	0.001	0.998	0.003
24	Highest Hourly (max)	0.002	0.006	0.000	0.000	0.002	0.003	0.028	1.268	0.637	0.248	0.000	0.002	0.001	0.839	0.003
25	Highest Hourly (max)	0.003	0.006	0.000	0.000	0.002	0.004	0.037	1.115	0.621	0.327	0.001	0.003	0.001	0.659	0.003
26	Highest Hourly (max)	0.002	0.004	0.000	0.000	0.002	0.004	0.036	1.075	0.603	0.319	0.001	0.003	0.001	0.648	0.003
27	Highest Hourly (max)	0.005	0.007	0.000	0.000	0.002	0.008	0.065	1.924	1.097	0.580	0.001	0.006	0.001	0.642	0.005
28	Highest Hourly (max)	0.033	0.052	0.000	0.000	0.014	0.057	0.470	14.156	7.980	4.194	0.007	0.041	0.007	3.327	0.025
29	Highest Hourly (max)	0.003	0.005	0.000	0.000	0.001	0.005	0.045	1.343	0.765	0.399	0.001	0.004	0.001	0.622	0.003
30	Highest Hourly (max)	0.002	0.004	0.000	0.000	0.001	0.004	0.035	1.130	0.601	0.310	0.000	0.003	0.001	0.534	0.003
31	Highest Hourly (max)	0.002	0.003	0.000	0.000	0.001	0.003	0.027	1.071	0.463	0.244	0.000	0.002	0.000	0.531	0.002
32	Highest Hourly (max)	0.002	0.003	0.000	0.000	0.001	0.003	0.022	1.023	0.374	0.198	0.000	0.002	0.000	0.481	0.002
33	Highest Hourly (max)	0.002	0.003	0.000	0.000	0.001	0.004	0.032	0.989	0.535	0.283	0.000	0.003	0.000	0.508	0.002
34	Highest Hourly (max)	0.003	0.005	0.000	0.000	0.002	0.006	0.046	1.381	0.790	0.408	0.001	0.004	0.001	0.735	0.004
35	Highest Hourly (max)	0.003	0.006	0.000	0.000	0.002	0.005	0.041	1.232	0.701	0.366	0.001	0.004	0.001	0.857	0.003
36	Highest Hourly (max)	0.002	0.004	0.000	0.000	0.002	0.004	0.031	1.316	0.547	0.275	0.000	0.003	0.001	0.628	0.002
37	Highest Hourly (max)	0.002	0.004	0.000	0.000	0.002	0.003	0.025	1.035	0.462	0.222	0.000	0.002	0.001	0.600	0.002
38	Highest Hourly (max)	0.004	0.023	0.000	0.000	0.009	0.003	0.037	1.674	1.958	0.236	0.000	0.002	0.002	2.513	0.006
39	Highest Hourly (max)	0.004	0.020	0.000	0.000	0.008	0.003	0.034	1.632	1.779	0.250	0.000	0.002	0.002	2.285	0.005
40	Highest Hourly (max)	0.003	0.010	0.000	0.000	0.004	0.005	0.045	1.365	0.970	0.395	0.001	0.004	0.001	1.249	0.004
41	Highest Hourly (max)	0.004	0.008	0.000	0.000	0.003	0.006	0.051	1.529	0.907	0.445	0.001	0.004	0.001	0.995	0.004
42	Highest Hourly (max)	0.003	0.006	0.000	0.000	0.003	0.005	0.039	1.187	0.681	0.349	0.001	0.003	0.001	0.883	0.003
1	Hourly - 99.9th (max)	0.002	0.004	0.000	0.000	0.001	0.004	0.035	1.111	0.608	0.312	0.000	0.003	0.001	0.475	0.004
2	Hourly - 99.9th (max)	0.002	0.006	0.000	0.000	0.002	0.003	0.023	1.329	0.555	0.191	0.000	0.002	0.001	0.718	0.004
3	Hourly - 99.9th (max)	0.002	0.011	0.000	0.000	0.005	0.003	0.027	1.600	1.050	0.201	0.000	0.002	0.001	1.332	0.007
4	Hourly - 99.9th (max)	0.002	0.010	0.000	0.000	0.004	0.002	0.022	1.387	0.925	0.163	0.000	0.002	0.001	1.194	0.005
5	Hourly - 99.9th (max)	0.002	0.010	0.000	0.000	0.004	0.002	0.024	1.522	0.972	0.175	0.000	0.002	0.001	1.258	0.004
6	Hourly - 99.9th (max)	0.003	0.010	0.000	0.000	0.004	0.004	0.038	2.469	1.003	0.325	0.001	0.003	0.001	1.241	0.005
7	Hourly - 99.9th (max)	0.002	0.010	0.000	0.000	0.004	0.002	0.023	0.979	0.907	0.170	0.000	0.002	0.001	1.166	0.005

8	Hourly - 99.9th (max)	0.006	0.022	0.000	0.000	0.009	0.010	0.087	2.683	2.103	0.705	0.001	0.007	0.002	2.446	0.013
9	Hourly - 99.9th (max)	0.002	0.007	0.000	0.000	0.003	0.003	0.030	1.028	0.717	0.256	0.000	0.003	0.001	0.888	0.004
10	Hourly - 99.9th (max)	0.001	0.003	0.000	0.000	0.001	0.002	0.021	0.698	0.379	0.178	0.000	0.002	0.000	0.449	0.002
11	Hourly - 99.9th (max)	0.001	0.005	0.000	0.000	0.002	0.002	0.017	1.038	0.509	0.124	0.000	0.001	0.001	0.670	0.002
12	Hourly - 99.9th (max)	0.001	0.004	0.000	0.000	0.002	0.001	0.010	0.762	0.377	0.079	0.000	0.001	0.000	0.486	0.001
13	Hourly - 99.9th (max)	0.001	0.003	0.000	0.000	0.001	0.001	0.009	0.709	0.333	0.066	0.000	0.001	0.000	0.431	0.001
14	Hourly - 99.9th (max)	0.001	0.002	0.000	0.000	0.001	0.001	0.012	0.513	0.262	0.102	0.000	0.001	0.000	0.321	0.001
15	Hourly - 99.9th (max)	0.000	0.001	0.000	0.000	0.000	0.001	0.006	0.342	0.135	0.053	0.000	0.001	0.000	0.177	0.001
16	Hourly - 99.9th (max)	0.000	0.001	0.000	0.000	0.000	0.001	0.007	0.421	0.154	0.059	0.000	0.001	0.000	0.206	0.001
17	Hourly - 99.9th (max)	0.001	0.002	0.000	0.000	0.001	0.001	0.010	0.485	0.196	0.086	0.000	0.001	0.000	0.235	0.001
18	Hourly - 99.9th (max)	0.001	0.002	0.000	0.000	0.001	0.001	0.010	0.763	0.288	0.064	0.000	0.001	0.000	0.384	0.001
19	Hourly - 99.9th (max)	0.000	0.001	0.000	0.000	0.000	0.001	0.006	0.347	0.127	0.046	0.000	0.000	0.000	0.168	0.001
20	Hourly - 99.9th (max)	0.000	0.001	0.000	0.000	0.000	0.001	0.005	0.348	0.132	0.047	0.000	0.000	0.000	0.178	0.001
21	Hourly - 99.9th (max)	0.004	0.007	0.000	0.000	0.002	0.006	0.054	1.614	0.913	0.478	0.001	0.005	0.001	0.517	0.005
22	Hourly - 99.9th (max)	0.003	0.005	0.000	0.000	0.002	0.005	0.041	1.302	0.684	0.357	0.001	0.004	0.001	0.496	0.004
23	Hourly - 99.9th (max)	0.002	0.003	0.000	0.000	0.001	0.003	0.025	0.958	0.481	0.213	0.000	0.002	0.000	0.460	0.002
24	Hourly - 99.9th (max)	0.002	0.003	0.000	0.000	0.001	0.003	0.024	0.868	0.426	0.213	0.000	0.002	0.000	0.379	0.002
25	Hourly - 99.9th (max)	0.002	0.003	0.000	0.000	0.001	0.003	0.028	0.832	0.484	0.243	0.000	0.002	0.000	0.372	0.003
26	Hourly - 99.9th (max)	0.002	0.003	0.000	0.000	0.001	0.003	0.024	0.863	0.413	0.215	0.000	0.002	0.000	0.347	0.002
27	Hourly - 99.9th (max)	0.003	0.004	0.000	0.000	0.001	0.005	0.039	1.245	0.665	0.349	0.001	0.003	0.001	0.441	0.003
28	Hourly - 99.9th (max)	0.003	0.005	0.000	0.000	0.001	0.006	0.047	1.462	0.796	0.418	0.001	0.004	0.001	0.506	0.006
29	Hourly - 99.9th (max)	0.002	0.003	0.000	0.000	0.001	0.004	0.031	1.020	0.530	0.278	0.000	0.003	0.000	0.403	0.003
30	Hourly - 99.9th (max)	0.002	0.003	0.000	0.000	0.001	0.003	0.024	0.890	0.405	0.210	0.000	0.002	0.000	0.385	0.002
31	Hourly - 99.9th (max)	0.001	0.002	0.000	0.000	0.001	0.002	0.019	0.832	0.334	0.168	0.000	0.002	0.000	0.359	0.002
32	Hourly - 99.9th (max)	0.001	0.002	0.000	0.000	0.001	0.002	0.017	0.784	0.310	0.150	0.000	0.001	0.000	0.334	0.001
33	Hourly - 99.9th (max)	0.002	0.003	0.000	0.000	0.001	0.003	0.023	0.836	0.387	0.203	0.000	0.002	0.000	0.334	0.002
34	Hourly - 99.9th (max)	0.002	0.004	0.000	0.000	0.001	0.004	0.030	0.962	0.509	0.263	0.000	0.003	0.000	0.452	0.003
35	Hourly - 99.9th (max)	0.002	0.003	0.000	0.000	0.001	0.003	0.027	0.938	0.470	0.236	0.000	0.002	0.000	0.406	0.002
36	Hourly - 99.9th (max)	0.001	0.003	0.000	0.000	0.001	0.003	0.021	0.908	0.385	0.189	0.000	0.002	0.000	0.412	0.002
37	Hourly - 99.9th (max)	0.001	0.002	0.000	0.000	0.001	0.002	0.018	0.886	0.335	0.159	0.000	0.002	0.000	0.398	0.002
38	Hourly - 99.9th (max)	0.002	0.009	0.000	0.000	0.004	0.002	0.021	1.006	0.811	0.152	0.000	0.001	0.001	1.044	0.004
39	Hourly - 99.9th (max)	0.002	0.008	0.000	0.000	0.003	0.002	0.019	0.980	0.752	0.138	0.000	0.001	0.001	0.969	0.004
40	Hourly - 99.9th (max)	0.002	0.005	0.000	0.000	0.002	0.003	0.029	0.889	0.560	0.247	0.000	0.002	0.001	0.637	0.003
41	Hourly - 99.9th (max)	0.002	0.004	0.000	0.000	0.002	0.004	0.031	0.966	0.580	0.272	0.000	0.003	0.001	0.504	0.003
42	Hourly - 99.9th (max)	0.002	0.004	0.000	0.000	0.001	0.004	0.030	0.967	0.519	0.266	0.000	0.003	0.001	0.500	0.003
1	Hourly - 95th (max)	0.001	0.001	0.000	0.000	0.000	0.001	0.009	0.328	0.159	0.071	0.000	0.001	0.000	0.093	0.001
2	Hourly - 95th (max)	0.000	0.001	0.000	0.000	0.000	0.001	0.007	0.285	0.139	0.052	0.000	0.001	0.000	0.096	0.001
3	Hourly - 95th (max)	0.001	0.001	0.000	0.000	0.000	0.001	0.009	0.397	0.187	0.063	0.000	0.001	0.000	0.154	0.001
4	Hourly - 95th (max)	0.000	0.001	0.000	0.000	0.000	0.001	0.007	0.293	0.143	0.045	0.000	0.000	0.000	0.124	0.001
5	Hourly - 95th (max)	0.000	0.001	0.000	0.000	0.000	0.000	0.005	0.275	0.121	0.028	0.000	0.000	0.000	0.115	0.001
6	Hourly - 95th (max)	0.000	0.001	0.000	0.000	0.000	0.000	0.007	0.397	0.174	0.027	0.000	0.000	0.000	0.173	0.001
7	Hourly - 95th (max)	0.000	0.001	0.000	0.000	0.000	0.000	0.004	0.188	0.114	0.022	0.000	0.000	0.000	0.110	0.001
8	Hourly - 95th (max)	0.002	0.005	0.000	0.000	0.002	0.003	0.027	0.956	0.624	0.202	0.000	0.002	0.001	0.490	0.005
9	Hourly - 95th (max)	0.001	0.002	0.000	0.000	0.001	0.001	0.011	0.401	0.225	0.085	0.000	0.001	0.000	0.166	0.002
10	Hourly - 95th (max)	0.000	0.001	0.000	0.000	0.000	0.001	0.007	0.243	0.128	0.054	0.000	0.001	0.000	0.084	0.001
11	Hourly - 95th (max)	0.000	0.001	0.000	0.000	0.000	0.000	0.003	0.177	0.083	0.017	0.000	0.000	0.000	0.074	0.001
12	Hourly - 95th (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.125	0.061	0.017	0.000	0.000	0.000	0.047	0.000
13	Hourly - 95th (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.106	0.051	0.014	0.000	0.000	0.000	0.039	0.000
14	Hourly - 95th (max)	0.000	0.001	0.000	0.000	0.000	0.000	0.004	0.149	0.076	0.030	0.000	0.000	0.000	0.052	0.001
15	Hourly - 95th (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.060	0.031	0.012	0.000	0.000	0.000	0.020	0.000
16	Hourly - 95th (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.061	0.031	0.013	0.000	0.000	0.000	0.018	0.000
17	Hourly - 95th (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.124	0.065	0.027	0.000	0.000	0.000	0.040	0.000
18	Hourly - 95th (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.074	0.037	0.004	0.000	0.000	0.000	0.034	0.000
19	Hourly - 95th (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.042	0.022	0.009	0.000	0.000	0.000	0.013	0.000
20	Hourly - 95th (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.050	0.027	0.011	0.000	0.000	0.000	0.016	0.000
21	Hourly - 95th (max)	0.001	0.001	0.000	0.000	0.000	0.001	0.009	0.371	0.167	0.075	0.000	0.001	0.000	0.101	0.001

22	Hourly - 95th (max)	0.001	0.001	0.000	0.000	0.000	0.001	0.008	0.323	0.140	0.065	0.000	0.001	0.000	0.089	0.001
23	Hourly - 95th (max)	0.000	0.001	0.000	0.000	0.000	0.001	0.007	0.290	0.127	0.061	0.000	0.001	0.000	0.076	0.001
24	Hourly - 95th (max)	0.001	0.001	0.000	0.000	0.000	0.001	0.008	0.315	0.137	0.064	0.000	0.001	0.000	0.083	0.001
25	Hourly - 95th (max)	0.000	0.001	0.000	0.000	0.000	0.001	0.005	0.210	0.096	0.043	0.000	0.000	0.000	0.057	0.001
26	Hourly - 95th (max)	0.001	0.001	0.000	0.000	0.000	0.001	0.008	0.309	0.148	0.071	0.000	0.001	0.000	0.083	0.001
27	Hourly - 95th (max)	0.001	0.001	0.000	0.000	0.000	0.002	0.013	0.427	0.225	0.112	0.000	0.001	0.000	0.108	0.001
28	Hourly - 95th (max)	0.001	0.001	0.000	0.000	0.000	0.001	0.010	0.348	0.181	0.087	0.000	0.001	0.000	0.089	0.001
29	Hourly - 95th (max)	0.001	0.001	0.000	0.000	0.000	0.001	0.011	0.368	0.191	0.093	0.000	0.001	0.000	0.092	0.001
30	Hourly - 95th (max)	0.001	0.001	0.000	0.000	0.000	0.001	0.008	0.286	0.146	0.068	0.000	0.001	0.000	0.074	0.001
31	Hourly - 95th (max)	0.000	0.001	0.000	0.000	0.000	0.001	0.007	0.220	0.117	0.055	0.000	0.001	0.000	0.059	0.001
32	Hourly - 95th (max)	0.000	0.001	0.000	0.000	0.000	0.001	0.005	0.188	0.097	0.044	0.000	0.000	0.000	0.051	0.001
33	Hourly - 95th (max)	0.000	0.001	0.000	0.000	0.000	0.001	0.007	0.267	0.128	0.061	0.000	0.001	0.000	0.068	0.001
34	Hourly - 95th (max)	0.001	0.001	0.000	0.000	0.000	0.001	0.010	0.384	0.189	0.085	0.000	0.001	0.000	0.108	0.001
35	Hourly - 95th (max)	0.001	0.001	0.000	0.000	0.000	0.001	0.009	0.314	0.157	0.071	0.000	0.001	0.000	0.087	0.001
36	Hourly - 95th (max)	0.000	0.001	0.000	0.000	0.000	0.001	0.007	0.253	0.128	0.058	0.000	0.001	0.000	0.073	0.001
37	Hourly - 95th (max)	0.000	0.001	0.000	0.000	0.000	0.001	0.006	0.224	0.115	0.054	0.000	0.001	0.000	0.060	0.001
38	Hourly - 95th (max)	0.000	0.001	0.000	0.000	0.000	0.000	0.002	0.126	0.065	0.009	0.000	0.000	0.000	0.067	0.001
39	Hourly - 95th (max)	0.000	0.001	0.000	0.000	0.000	0.000	0.003	0.148	0.081	0.011	0.000	0.000	0.000	0.077	0.001
40	Hourly - 95th (max)	0.001	0.001	0.000	0.000	0.000	0.001	0.010	0.396	0.209	0.087	0.000	0.001	0.000	0.134	0.001
41	Hourly - 95th (max)	0.001	0.001	0.000	0.000	0.000	0.001	0.010	0.374	0.188	0.082	0.000	0.001	0.000	0.120	0.001
42	Hourly - 95th (max)	0.001	0.001	0.000	0.000	0.000	0.001	0.011	0.401	0.199	0.091	0.000	0.001	0.000	0.114	0.001
1	Annual average (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.061	0.028	0.011	0.000	0.000	0.000	0.018	0.000
2	Annual average (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.061	0.027	0.008	0.000	0.000	0.000	0.022	0.000
3	Annual average (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.092	0.040	0.009	0.000	0.000	0.000	0.037	0.000
4	Annual average (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.066	0.031	0.007	0.000	0.000	0.000	0.029	0.000
5	Annual average (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.055	0.025	0.005	0.000	0.000	0.000	0.025	0.000
6	Annual average (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.078	0.036	0.007	0.000	0.000	0.000	0.036	0.000
7	Annual average (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.038	0.023	0.005	0.000	0.000	0.000	0.022	0.000
8	Annual average (max)	0.000	0.001	0.000	0.000	0.000	0.000	0.005	0.186	0.123	0.032	0.000	0.000	0.000	0.105	0.001
9	Annual average (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.082	0.046	0.013	0.000	0.000	0.000	0.038	0.000
10	Annual average (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.049	0.024	0.008	0.000	0.000	0.000	0.018	0.000
11	Annual average (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.034	0.016	0.003	0.000	0.000	0.000	0.015	0.000
12	Annual average (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.024	0.011	0.003	0.000	0.000	0.000	0.010	0.000
13	Annual average (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.020	0.009	0.002	0.000	0.000	0.000	0.008	0.000
14	Annual average (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.028	0.014	0.004	0.000	0.000	0.000	0.011	0.000
15	Annual average (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.010	0.005	0.002	0.000	0.000	0.000	0.004	0.000
16	Annual average (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.011	0.005	0.002	0.000	0.000	0.000	0.004	0.000
17	Annual average (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.022	0.011	0.004	0.000	0.000	0.000	0.008	0.000
18	Annual average (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.014	0.007	0.001	0.000	0.000	0.000	0.007	0.000
19	Annual average (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.007	0.004	0.001	0.000	0.000	0.000	0.003	0.000
20	Annual average (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.009	0.004	0.001	0.000	0.000	0.000	0.003	0.000
21	Annual average (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.071	0.033	0.014	0.000	0.000	0.000	0.020	0.000
22	Annual average (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.064	0.028	0.012	0.000	0.000	0.000	0.018	0.000
23	Annual average (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.056	0.023	0.009	0.000	0.000	0.000	0.016	0.000
24	Annual average (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.060	0.024	0.009	0.000	0.000	0.000	0.016	0.000
25	Annual average (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.040	0.018	0.007	0.000	0.000	0.000	0.012	0.000
26	Annual average (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.058	0.025	0.010	0.000	0.000	0.000	0.016	0.000
27	Annual average (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.081	0.037	0.016	0.000	0.000	0.000	0.021	0.000
28	Annual average (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.071	0.032	0.014	0.000	0.000	0.000	0.019	0.000
29	Annual average (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.066	0.031	0.014	0.000	0.000	0.000	0.018	0.000
30	Annual average (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.052	0.023	0.010	0.000	0.000	0.000	0.015	0.000
31	Annual average (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.040	0.019	0.008	0.000	0.000	0.000	0.012	0.000
32	Annual average (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.034	0.016	0.006	0.000	0.000	0.000	0.010	0.000
33	Annual average (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.043	0.020	0.008	0.000	0.000	0.000	0.012	0.000
34	Annual average (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.068	0.032	0.013	0.000	0.000	0.000	0.021	0.000
35	Annual average (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.059	0.028	0.011	0.000	0.000	0.000	0.018	0.000

36	Annual average (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.049	0.023	0.009	0.000	0.000	0.000	0.016	0.000
37	Annual average (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.044	0.020	0.008	0.000	0.000	0.000	0.013	0.000
38	Annual average (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.026	0.014	0.003	0.000	0.000	0.000	0.015	0.000
39	Annual average (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.029	0.017	0.003	0.000	0.000	0.000	0.017	0.000
40	Annual average (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.078	0.039	0.012	0.000	0.000	0.000	0.029	0.000
41	Annual average (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.078	0.037	0.013	0.000	0.000	0.000	0.027	0.000
42	Annual average (max)	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.078	0.036	0.013	0.000	0.000	0.000	0.025	0.000
	Highest Hourly (across receptors)	0.033	0.057	0.000	0.000	0.023	0.057	0.470	14.156	7.980	4.194	0.007	0.041	0.007	6.273	0.025
	Highest Annual (across receptors)	0.000	0.001	0.000	0.000	0.000	0.000	0.005	0.186	0.123	0.032	0.000	0.000	0.000	0.105	0.001

14) Worksheet entitled '(I) Dust Deposition' provided by ENVIRON Pty Ltd

Predicted Annual Average Dust Deposition Data (g/m ² /month)							Projected Dust Deposition as a Fraction of the DECCW Criteria		
Receptor	Statistics	Measured Dust Deposition Data (min)	Measured Dust Deposition (max)	Project-Related Increment	Cumulative based on Minimum Measured Dust Deposition	Cumulative based on Maximum Measured Dust Deposition	Project-related Increment over DECCW Incremental Criterion of 2 g/m ² /month	Predicted Cumulative (using Minimum Annual Measured Deposition) over DECCW Cumulative Criterion of 4 g/m ² /month	Predicted Cumulative (using Maximum Annual Measured Deposition) over DECCW Cumulative Criterion of 4 g/m ² /month
1	Total Annual (max) (g/m ² /month)	3.34	7.18	0.21	3.55	7.39	0.11	0.89	1.85
2	Total Annual (max) (g/m ² /month)	3.34	7.18	0.29	3.63	7.47	0.15	0.91	1.87
3	Total Annual (max) (g/m ² /month)	3.34	7.18	0.55	3.89	7.74	0.28	0.97	1.93
4	Total Annual (max) (g/m ² /month)	3.34	7.18	0.30	3.64	7.49	0.15	0.91	1.87
5	Total Annual (max) (g/m ² /month)	3.34	7.18	0.22	3.56	7.40	0.11	0.89	1.85
6	Total Annual (max) (g/m ² /month)	3.34	7.18	0.25	3.59	7.43	0.13	0.90	1.86
7	Total Annual (max) (g/m ² /month)	3.34	7.18	0.16	3.50	7.34	0.08	0.87	1.84
8	Total Annual (max) (g/m ² /month)	3.34	7.18	0.94	4.28	8.12	0.47	1.07	2.03
9	Total Annual (max) (g/m ² /month)	3.34	7.18	0.37	3.71	7.56	0.19	0.93	1.89
10	Total Annual (max) (g/m ² /month)	3.34	7.18	0.18	3.51	7.36	0.09	0.88	1.84
11	Total Annual (max) (g/m ² /month)	3.34	7.18	0.14	3.48	7.32	0.07	0.87	1.83
12	Total Annual (max) (g/m ² /month)	3.34	7.18	0.09	3.43	7.28	0.05	0.86	1.82
13	Total Annual (max) (g/m ² /month)	3.34	7.18	0.07	3.41	7.26	0.04	0.85	1.81
14	Total Annual (max) (g/m ² /month)	3.34	7.18	0.10	3.44	7.28	0.05	0.86	1.82
15	Total Annual (max) (g/m ² /month)	3.34	7.18	0.02	3.36	7.21	0.01	0.84	1.80
16	Total Annual (max) (g/m ² /month)	3.34	7.18	0.02	3.35	7.20	0.01	0.84	1.80
17	Total Annual (max) (g/m ² /month)	3.34	7.18	0.06	3.40	7.24	0.03	0.85	1.81
18	Total Annual (max) (g/m ² /month)	3.34	7.18	0.05	3.39	7.23	0.02	0.85	1.81
19	Total Annual (max) (g/m ² /month)	3.34	7.18	0.01	3.35	7.19	0.01	0.84	1.80
20	Total Annual (max) (g/m ² /month)	3.34	7.18	0.02	3.36	7.20	0.01	0.84	1.80
21	Total Annual (max) (g/m ² /month)	3.34	7.18	0.28	3.61	7.46	0.14	0.90	1.86
22	Total Annual (max) (g/m ² /month)	3.34	7.18	0.30	3.64	7.48	0.15	0.91	1.87
23	Total Annual (max) (g/m ² /month)	3.34	7.18	0.22	3.56	7.40	0.11	0.89	1.85
24	Total Annual (max) (g/m ² /month)	3.34	7.18	0.14	3.48	7.33	0.07	0.87	1.83
25	Total Annual (max) (g/m ² /month)	3.34	7.18	0.14	3.48	7.32	0.07	0.87	1.83
26	Total Annual (max) (g/m ² /month)	3.34	7.18	0.11	3.44	7.29	0.05	0.86	1.82
27	Total Annual (max) (g/m ² /month)	3.34	7.18	0.09	3.43	7.27	0.05	0.86	1.82
28	Total Annual (max) (g/m ² /month)	3.34	7.18	0.08	3.42	7.26	0.04	0.86	1.82
29	Total Annual (max) (g/m ² /month)	3.34	7.18	0.08	3.42	7.26	0.04	0.85	1.82
30	Total Annual (max) (g/m ² /month)	3.34	7.18	0.07	3.41	7.25	0.03	0.85	1.81
31	Total Annual (max) (g/m ² /month)	3.34	7.18	0.06	3.40	7.24	0.03	0.85	1.81
32	Total Annual (max) (g/m ² /month)	3.34	7.18	0.05	3.39	7.23	0.03	0.85	1.81
33	Total Annual (max) (g/m ² /month)	3.34	7.18	0.04	3.38	7.22	0.02	0.84	1.81
34	Total Annual (max) (g/m ² /month)	3.34	7.18	0.17	3.51	7.35	0.08	0.88	1.84
35	Total Annual (max) (g/m ² /month)	3.34	7.18	0.13	3.47	7.32	0.07	0.87	1.83
36	Total Annual (max) (g/m ² /month)	3.34	7.18	0.11	3.45	7.29	0.06	0.86	1.82
37	Total Annual (max) (g/m ² /month)	3.34	7.18	0.09	3.43	7.27	0.04	0.86	1.82
38	Total Annual (max) (g/m ² /month)	3.34	7.18	0.10	3.44	7.28	0.05	0.86	1.82
39	Total Annual (max) (g/m ² /month)	3.34	7.18	0.12	3.45	7.30	0.06	0.86	1.82
40	Total Annual (max) (g/m ² /month)	3.34	7.18	0.30	3.64	7.48	0.15	0.91	1.87
41	Total Annual (max) (g/m ² /month)	3.34	7.18	0.28	3.62	7.46	0.14	0.90	1.87
42	Total Annual (max) (g/m ² /month)	3.34	7.18	0.24	3.58	7.42	0.12	0.89	1.86
Maximum across receptor sites				0.9	4.3	8.1	0.5	1.1	2.0

15) Worksheet entitled '(m) Base Metal Dep by Receptor' provided by ENVIRON Pty Ltd

"Future Baseline" Annual Metal Deposition (g/m²/annum) - based on modelling of existing free areas (80% controls)

Receptor s	Statistics	Antimo ny	Arsenic	Barium	Berylliu m	Cadmiu m	Chromi um	Copper	Iron	Lead	Mangan ese	Mercury	Nickel	Silver	Zinc
1	Total Annual (max) (g/m ² /annum)	0.001	0.002			0.001	0.002	0.017	0.490	0.281	0.149	0.000	0.001	0.000	0.115
2	Total Annual (max) (g/m ² /annum)	0.001	0.001			0.000	0.001	0.010	0.298	0.171	0.090	0.000	0.001	0.000	0.070
3	Total Annual (max) (g/m ² /annum)	0.001	0.001			0.000	0.002	0.013	0.396	0.227	0.120	0.000	0.001	0.000	0.093
4	Total Annual (max) (g/m ² /annum)	0.001	0.001			0.000	0.001	0.008	0.224	0.128	0.068	0.000	0.001	0.000	0.053
5	Total Annual (max) (g/m ² /annum)	0.000	0.001			0.000	0.001	0.006	0.169	0.097	0.051	0.000	0.001	0.000	0.040
6	Total Annual (max) (g/m ² /annum)	0.001	0.001			0.000	0.001	0.007	0.219	0.125	0.066	0.000	0.001	0.000	0.051
7	Total Annual (max) (g/m ² /annum)	0.000	0.000			0.000	0.000	0.004	0.118	0.067	0.036	0.000	0.000	0.000	0.028
8	Total Annual (max) (g/m ² /annum)	0.003	0.004			0.001	0.005	0.039	1.150	0.658	0.349	0.001	0.003	0.001	0.270
9	Total Annual (max) (g/m ² /annum)	0.001	0.002			0.000	0.002	0.014	0.427	0.245	0.130	0.000	0.001	0.000	0.100
10	Total Annual (max) (g/m ² /annum)	0.001	0.001			0.000	0.001	0.010	0.287	0.164	0.087	0.000	0.001	0.000	0.067
11	Total Annual (max) (g/m ² /annum)	0.000	0.000			0.000	0.000	0.004	0.118	0.067	0.036	0.000	0.000	0.000	0.028
12	Total Annual (max) (g/m ² /annum)	0.000	0.000			0.000	0.000	0.001	0.027	0.016	0.008	0.000	0.000	0.000	0.006
13	Total Annual (max) (g/m ² /annum)	0.000	0.000			0.000	0.000	0.000	0.008	0.004	0.002	0.000	0.000	0.000	0.002
14	Total Annual (max) (g/m ² /annum)	0.000	0.000			0.000	0.000	0.002	0.062	0.036	0.019	0.000	0.000	0.000	0.015
15	Total Annual (max) (g/m ² /annum)	0.000	0.000			0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
16	Total Annual (max) (g/m ² /annum)	0.000	0.000			0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
17	Total Annual (max) (g/m ² /annum)	0.000	0.000			0.000	0.000	0.000	0.014	0.008	0.004	0.000	0.000	0.000	0.003
18	Total Annual (max) (g/m ² /annum)	0.000	0.000			0.000	0.000	0.000	0.013	0.008	0.004	0.000	0.000	0.000	0.003
19	Total Annual (max) (g/m ² /annum)	0.000	0.000			0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
20	Total Annual (max) (g/m ² /annum)	0.000	0.000			0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
21	Total Annual (max) (g/m ² /annum)	0.002	0.002			0.001	0.003	0.022	0.642	0.367	0.194	0.000	0.002	0.000	0.150
22	Total Annual (max) (g/m ² /annum)	0.001	0.002			0.001	0.002	0.019	0.574	0.328	0.174	0.000	0.002	0.000	0.134
23	Total Annual (max) (g/m ² /annum)	0.001	0.002			0.000	0.002	0.014	0.420	0.240	0.127	0.000	0.001	0.000	0.098
24	Total Annual (max) (g/m ² /annum)	0.001	0.002			0.000	0.002	0.014	0.421	0.241	0.128	0.000	0.001	0.000	0.099
25	Total Annual (max) (g/m ² /annum)	0.001	0.001			0.000	0.001	0.009	0.269	0.154	0.081	0.000	0.001	0.000	0.063
26	Total Annual (max) (g/m ² /annum)	0.001	0.002			0.000	0.002	0.015	0.437	0.250	0.132	0.000	0.001	0.000	0.102
27	Total Annual (max) (g/m ² /annum)	0.001	0.002			0.001	0.002	0.020	0.600	0.343	0.182	0.000	0.002	0.000	0.140
28	Total Annual (max) (g/m ² /annum)	0.001	0.001			0.000	0.002	0.013	0.377	0.216	0.114	0.000	0.001	0.000	0.088
29	Total Annual (max) (g/m ² /annum)	0.001	0.002			0.001	0.002	0.016	0.489	0.280	0.148	0.000	0.001	0.000	0.115
30	Total Annual (max) (g/m ² /annum)	0.001	0.001			0.000	0.001	0.012	0.341	0.195	0.103	0.000	0.001	0.000	0.080
31	Total Annual (max) (g/m ² /annum)	0.001	0.001			0.000	0.001	0.011	0.331	0.189	0.100	0.000	0.001	0.000	0.077
32	Total Annual (max) (g/m ² /annum)	0.001	0.001			0.000	0.001	0.008	0.242	0.138	0.073	0.000	0.001	0.000	0.057
33	Total Annual (max) (g/m ² /annum)	0.001	0.001			0.000	0.001	0.011	0.329	0.188	0.100	0.000	0.001	0.000	0.077
34	Total Annual (max) (g/m ² /annum)	0.001	0.002			0.000	0.002	0.014	0.424	0.242	0.128	0.000	0.001	0.000	0.099
35	Total Annual (max) (g/m ² /annum)	0.001	0.001			0.000	0.002	0.013	0.375	0.214	0.114	0.000	0.001	0.000	0.088
36	Total Annual (max) (g/m ² /annum)	0.001	0.001			0.000	0.001	0.011	0.324	0.185	0.098	0.000	0.001	0.000	0.076
37	Total Annual (max) (g/m ² /annum)	0.001	0.001			0.000	0.001	0.010	0.297	0.170	0.090	0.000	0.001	0.000	0.070
38	Total Annual (max) (g/m ² /annum)	0.000	0.000			0.000	0.000	0.002	0.058	0.033	0.017	0.000	0.000	0.000	0.013
39	Total Annual (max) (g/m ² /annum)	0.000	0.000			0.000	0.000	0.003	0.081	0.046	0.025	0.000	0.000	0.000	0.019
40	Total Annual (max) (g/m ² /annum)	0.001	0.001			0.000	0.002	0.013	0.396	0.227	0.120	0.000	0.001	0.000	0.093
41	Total Annual (max) (g/m ² /annum)	0.001	0.002			0.000	0.002	0.014	0.427	0.245	0.129	0.000	0.001	0.000	0.100
42	Total Annual (max) (g/m ² /annum)	0.001	0.002			0.001	0.002	0.017	0.501	0.287	0.152	0.000	0.001	0.000	0.117

16) Worksheet entitled '(n) Proj Metal Dep by Receptor' provided by ENVIRON Pty Ltd

Predicted Project-related (Incremental) Annual Metal Deposition (g/m²/annum) - excluding existing free areas

Receptor s	Statistics	Antimo ny	Arsenic	Barium	Berylliu m	Cadmiu m	Chromi um	Copper	Iron	Lead	Mangan ese	Mercury	Nickel	Silver	Zinc
1	Total Annual (max) (g/m ² /annum)	0.0001	0.0004	0.0000	0.0000	0.0001	0.0001	0.0018	0.1352	0.0503	0.0028	0.0000	0.0000	0.0001	0.0620
2	Total Annual (max) (g/m ² /annum)	0.0002	0.0010	0.0000	0.0000	0.0004	0.0000	0.0032	0.2104	0.1097	0.0030	0.0000	0.0000	0.0001	0.1383
3	Total Annual (max) (g/m ² /annum)	0.0004	0.0020	0.0000	0.0000	0.0008	0.0001	0.0061	0.3872	0.2234	0.0065	0.0000	0.0001	0.0002	0.2800
4	Total Annual (max) (g/m ² /annum)	0.0002	0.0011	0.0000	0.0000	0.0004	0.0001	0.0034	0.1984	0.1196	0.0056	0.0000	0.0001	0.0001	0.1457
5	Total Annual (max) (g/m ² /annum)	0.0002	0.0008	0.0000	0.0000	0.0003	0.0001	0.0025	0.1413	0.0893	0.0049	0.0000	0.0000	0.0001	0.1077
6	Total Annual (max) (g/m ² /annum)	0.0002	0.0009	0.0000	0.0000	0.0004	0.0001	0.0028	0.1474	0.0987	0.0086	0.0000	0.0001	0.0001	0.1149
7	Total Annual (max) (g/m ² /annum)	0.0001	0.0007	0.0000	0.0000	0.0003	0.0000	0.0017	0.0993	0.0689	0.0013	0.0000	0.0000	0.0001	0.0868
8	Total Annual (max) (g/m ² /annum)	0.0008	0.0047	0.0000	0.0000	0.0019	0.0000	0.0098	0.5302	0.4465	0.0032	0.0000	0.0000	0.0005	0.5685
9	Total Annual (max) (g/m ² /annum)	0.0003	0.0014	0.0000	0.0000	0.0006	0.0000	0.0040	0.2530	0.1527	0.0023	0.0000	0.0000	0.0002	0.1937
10	Total Annual (max) (g/m ² /annum)	0.0001	0.0005	0.0000	0.0000	0.0002	0.0000	0.0019	0.1389	0.0604	0.0017	0.0000	0.0000	0.0001	0.0762
11	Total Annual (max) (g/m ² /annum)	0.0001	0.0005	0.0000	0.0000	0.0002	0.0000	0.0015	0.0887	0.0559	0.0021	0.0000	0.0000	0.0001	0.0690
12	Total Annual (max) (g/m ² /annum)	0.0001	0.0003	0.0000	0.0000	0.0001	0.0000	0.0010	0.0645	0.0365	0.0012	0.0000	0.0000	0.0000	0.0455
13	Total Annual (max) (g/m ² /annum)	0.0000	0.0003	0.0000	0.0000	0.0001	0.0000	0.0008	0.0516	0.0287	0.0008	0.0000	0.0000	0.0000	0.0359
14	Total Annual (max) (g/m ² /annum)	0.0001	0.0003	0.0000	0.0000	0.0001	0.0000	0.0011	0.0767	0.0360	0.0008	0.0000	0.0000	0.0000	0.0457
15	Total Annual (max) (g/m ² /annum)	0.0000	0.0001	0.0000	0.0000	0.0000	0.0000	0.0002	0.0182	0.0085	0.0000	0.0000	0.0000	0.0000	0.0111
16	Total Annual (max) (g/m ² /annum)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0002	0.0114	0.0052	0.0000	0.0000	0.0000	0.0000	0.0068
17	Total Annual (max) (g/m ² /annum)	0.0000	0.0002	0.0000	0.0000	0.0001	0.0000	0.0006	0.0470	0.0210	0.0004	0.0000	0.0000	0.0000	0.0269
18	Total Annual (max) (g/m ² /annum)	0.0000	0.0002	0.0000	0.0000	0.0001	0.0000	0.0005	0.0328	0.0180	0.0006	0.0000	0.0000	0.0000	0.0224
19	Total Annual (max) (g/m ² /annum)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001	0.0082	0.0038	0.0000	0.0000	0.0000	0.0000	0.0049
20	Total Annual (max) (g/m ² /annum)	0.0000	0.0001	0.0000	0.0000	0.0000	0.0000	0.0002	0.0130	0.0060	0.0000	0.0000	0.0000	0.0000	0.0078
21	Total Annual (max) (g/m ² /annum)	0.0001	0.0004	0.0000	0.0000	0.0001	0.0001	0.0018	0.1348	0.0428	0.0038	0.0000	0.0000	0.0001	0.0513
22	Total Annual (max) (g/m ² /annum)	0.0001	0.0003	0.0000	0.0000	0.0001	0.0001	0.0017	0.1295	0.0383	0.0041	0.0000	0.0001	0.0001	0.0451
23	Total Annual (max) (g/m ² /annum)	0.0001	0.0003	0.0000	0.0000	0.0001	0.0001	0.0013	0.0930	0.0297	0.0047	0.0000	0.0001	0.0000	0.0323
24	Total Annual (max) (g/m ² /annum)	0.0001	0.0002	0.0000	0.0000	0.0001	0.0001	0.0012	0.0667	0.0264	0.0058	0.0000	0.0001	0.0000	0.0252
25	Total Annual (max) (g/m ² /annum)	0.0000	0.0002	0.0000	0.0000	0.0001	0.0001	0.0010	0.0720	0.0259	0.0024	0.0000	0.0000	0.0000	0.0307
26	Total Annual (max) (g/m ² /annum)	0.0001	0.0002	0.0000	0.0000	0.0001	0.0001	0.0010	0.0514	0.0224	0.0055	0.0000	0.0001	0.0000	0.0203
27	Total Annual (max) (g/m ² /annum)	0.0001	0.0002	0.0000	0.0000	0.0001	0.0001	0.0010	0.0458	0.0216	0.0054	0.0000	0.0001	0.0000	0.0192
28	Total Annual (max) (g/m ² /annum)	0.0001	0.0001	0.0000	0.0000	0.0001	0.0001	0.0009	0.0414	0.0197	0.0050	0.0000	0.0001	0.0000	0.0174
29	Total Annual (max) (g/m ² /annum)	0.0000	0.0001	0.0000	0.0000	0.0001	0.0001	0.0008	0.0428	0.0194	0.0038	0.0000	0.0000	0.0000	0.0190
30	Total Annual (max) (g/m ² /annum)	0.0000	0.0001	0.0000	0.0000	0.0000	0.0001	0.0007	0.0358	0.0167	0.0036	0.0000	0.0000	0.0000	0.0159
31	Total Annual (max) (g/m ² /annum)	0.0000	0.0001	0.0000	0.0000	0.0000	0.0000	0.0006	0.0363	0.0157	0.0020	0.0000	0.0000	0.0000	0.0173
32	Total Annual (max) (g/m ² /annum)	0.0000	0.0001	0.0000	0.0000	0.0000	0.0000	0.0005	0.0303	0.0134	0.0019	0.0000	0.0000	0.0000	0.0145
33	Total Annual (max) (g/m ² /annum)	0.0000	0.0001	0.0000	0.0000	0.0000	0.0000	0.0005	0.0210	0.0105	0.0027	0.0000	0.0000	0.0000	0.0091
34	Total Annual (max) (g/m ² /annum)	0.0001	0.0004	0.0000	0.0000	0.0001	0.0000	0.0018	0.1322	0.0510	0.0029	0.0000	0.0000	0.0001	0.0622
35	Total Annual (max) (g/m ² /annum)	0.0001	0.0003	0.0000	0.0000	0.0001	0.0000	0.0014	0.0997	0.0397	0.0027	0.0000	0.0000	0.0000	0.0478
36	Total Annual (max) (g/m ² /annum)	0.0001	0.0002	0.0000	0.0000	0.0001	0.0000	0.0011	0.0765	0.0310	0.0026	0.0000	0.0000	0.0000	0.0365
37	Total Annual (max) (g/m ² /annum)	0.0000	0.0002	0.0000	0.0000	0.0001	0.0000	0.0009	0.0583	0.0240	0.0023	0.0000	0.0000	0.0000	0.0277
38	Total Annual (max) (g/m ² /annum)	0.0001	0.0004	0.0000	0.0000	0.0001	0.0000	0.0011	0.0671	0.0400	0.0010	0.0000	0.0000	0.0000	0.0502
39	Total Annual (max) (g/m ² /annum)	0.0001	0.0004	0.0000	0.0000	0.0002	0.0000	0.0013	0.0771	0.0472	0.0011	0.0000	0.0000	0.0001	0.0593
40	Total Annual (max) (g/m ² /annum)	0.0002	0.0008	0.0000	0.0000	0.0003	0.0000	0.0033	0.2348	0.1058	0.0023	0.0000	0.0000	0.0001	0.1342
41	Total Annual (max) (g/m ² /annum)	0.0001	0.0006	0.0000	0.0000	0.0003	0.0000	0.0031	0.2278	0.0908	0.0027	0.0000	0.0000	0.0001	0.1145
42	Total Annual (max) (g/m ² /annum)	0.0001	0.0005	0.0000	0.0000	0.0002	0.0000	0.0027	0.1974	0.0738	0.0030	0.0000	0.0000	0.0001	0.0920

17) Worksheet entitled '(o) Cumul Metal Dep by Receptor' provided by ENVIRON Pty Ltd

Predicted Cumulative Annual Metal Deposition (g/m²/annum) - includes Project Incremental AND "Future Baseline" (comprising Existing Free Areas with 80%CE)

Receptor s	Statistics	Antimo ny	Arsenic	Barium	Berylliu m	Cadmiu m	Chromi um	Copper	Iron	Lead	Mangan ese	Mercury	Nickel	Silver	Zinc
1	Total Annual (max) (g/m ² /annum)	0.0012	0.0022	0.0000	0.0000	0.0007	0.0021	0.0184	0.6255	0.3310	0.1514	0.0002	0.0015	0.0003	0.1770
2	Total Annual (max) (g/m ² /annum)	0.0009	0.0021	0.0000	0.0000	0.0007	0.0013	0.0132	0.5085	0.2803	0.0933	0.0001	0.0009	0.0003	0.2081
3	Total Annual (max) (g/m ² /annum)	0.0013	0.0035	0.0000	0.0000	0.0012	0.0017	0.0195	0.7829	0.4499	0.1264	0.0002	0.0012	0.0005	0.3728
4	Total Annual (max) (g/m ² /annum)	0.0007	0.0019	0.0000	0.0000	0.0007	0.0010	0.0109	0.4226	0.2480	0.0736	0.0001	0.0007	0.0003	0.1983
5	Total Annual (max) (g/m ² /annum)	0.0006	0.0014	0.0000	0.0000	0.0005	0.0008	0.0082	0.3100	0.1859	0.0560	0.0001	0.0006	0.0002	0.1473
6	Total Annual (max) (g/m ² /annum)	0.0007	0.0017	0.0000	0.0000	0.0006	0.0010	0.0102	0.3661	0.2239	0.0740	0.0001	0.0007	0.0002	0.1661
7	Total Annual (max) (g/m ² /annum)	0.0004	0.0011	0.0000	0.0000	0.0004	0.0005	0.0057	0.2172	0.1364	0.0370	0.0001	0.0004	0.0001	0.1144
8	Total Annual (max) (g/m ² /annum)	0.0035	0.0090	0.0000	0.0000	0.0031	0.0048	0.0486	1.6804	1.1049	0.3516	0.0006	0.0035	0.0011	0.8380
9	Total Annual (max) (g/m ² /annum)	0.0013	0.0030	0.0000	0.0000	0.0010	0.0018	0.0184	0.6805	0.3973	0.1318	0.0002	0.0013	0.0004	0.2939
10	Total Annual (max) (g/m ² /annum)	0.0008	0.0015	0.0000	0.0000	0.0005	0.0012	0.0116	0.4259	0.2247	0.0886	0.0001	0.0009	0.0002	0.1435
11	Total Annual (max) (g/m ² /annum)	0.0004	0.0010	0.0000	0.0000	0.0003	0.0005	0.0055	0.2063	0.1232	0.0377	0.0001	0.0004	0.0001	0.0965
12	Total Annual (max) (g/m ² /annum)	0.0001	0.0004	0.0000	0.0000	0.0002	0.0001	0.0019	0.0919	0.0522	0.0095	0.0000	0.0001	0.0001	0.0519
13	Total Annual (max) (g/m ² /annum)	0.0001	0.0003	0.0000	0.0000	0.0001	0.0000	0.0011	0.0593	0.0331	0.0032	0.0000	0.0000	0.0000	0.0377
14	Total Annual (max) (g/m ² /annum)	0.0002	0.0005	0.0000	0.0000	0.0002	0.0003	0.0032	0.1387	0.0715	0.0196	0.0000	0.0002	0.0001	0.0602
15	Total Annual (max) (g/m ² /annum)	0.0000	0.0001	0.0000	0.0000	0.0000	0.0000	0.0002	0.0182	0.0085	0.0000	0.0000	0.0000	0.0000	0.0111
16	Total Annual (max) (g/m ² /annum)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0002	0.0114	0.0052	0.0000	0.0000	0.0000	0.0000	0.0068
17	Total Annual (max) (g/m ² /annum)	0.0001	0.0002	0.0000	0.0000	0.0001	0.0001	0.0011	0.0613	0.0292	0.0047	0.0000	0.0000	0.0000	0.0302
18	Total Annual (max) (g/m ² /annum)	0.0001	0.0002	0.0000	0.0000	0.0001	0.0001	0.0010	0.0461	0.0256	0.0046	0.0000	0.0000	0.0000	0.0255
19	Total Annual (max) (g/m ² /annum)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001	0.0082	0.0038	0.0000	0.0000	0.0000	0.0000	0.0049
20	Total Annual (max) (g/m ² /annum)	0.0000	0.0001	0.0000	0.0000	0.0000	0.0000	0.0002	0.0130	0.0060	0.0000	0.0000	0.0000	0.0000	0.0078
21	Total Annual (max) (g/m ² /annum)	0.0016	0.0027	0.0000	0.0000	0.0008	0.0027	0.0234	0.7767	0.4102	0.1983	0.0003	0.0020	0.0004	0.2017
22	Total Annual (max) (g/m ² /annum)	0.0014	0.0025	0.0000	0.0000	0.0007	0.0025	0.0210	0.7033	0.3667	0.1780	0.0003	0.0018	0.0004	0.1796
23	Total Annual (max) (g/m ² /annum)	0.0011	0.0018	0.0000	0.0000	0.0005	0.0018	0.0155	0.5128	0.2700	0.1319	0.0002	0.0013	0.0003	0.1307
24	Total Annual (max) (g/m ² /annum)	0.0011	0.0018	0.0000	0.0000	0.0005	0.0018	0.0154	0.4878	0.2674	0.1334	0.0002	0.0013	0.0003	0.1239
25	Total Annual (max) (g/m ² /annum)	0.0007	0.0012	0.0000	0.0000	0.0004	0.0012	0.0101	0.3406	0.1797	0.0837	0.0001	0.0008	0.0002	0.0936
26	Total Annual (max) (g/m ² /annum)	0.0011	0.0018	0.0000	0.0000	0.0005	0.0019	0.0158	0.4885	0.2726	0.1379	0.0002	0.0014	0.0003	0.1227
27	Total Annual (max) (g/m ² /annum)	0.0015	0.0024	0.0000	0.0000	0.0007	0.0025	0.0212	0.6453	0.3648	0.1871	0.0003	0.0018	0.0003	0.1597
28	Total Annual (max) (g/m ² /annum)	0.0009	0.0016	0.0000	0.0000	0.0004	0.0016	0.0136	0.4186	0.2356	0.1193	0.0002	0.0012	0.0002	0.1058
29	Total Annual (max) (g/m ² /annum)	0.0012	0.0020	0.0000	0.0000	0.0006	0.0021	0.0173	0.5317	0.2992	0.1520	0.0002	0.0015	0.0003	0.1336
30	Total Annual (max) (g/m ² /annum)	0.0008	0.0014	0.0000	0.0000	0.0004	0.0015	0.0122	0.3771	0.2121	0.1070	0.0002	0.0011	0.0002	0.0959
31	Total Annual (max) (g/m ² /annum)	0.0008	0.0014	0.0000	0.0000	0.0004	0.0014	0.0118	0.3670	0.2050	0.1022	0.0002	0.0010	0.0002	0.0948
32	Total Annual (max) (g/m ² /annum)	0.0006	0.0010	0.0000	0.0000	0.0003	0.0010	0.0087	0.2722	0.1519	0.0752	0.0001	0.0007	0.0001	0.0712
33	Total Annual (max) (g/m ² /annum)	0.0008	0.0013	0.0000	0.0000	0.0004	0.0014	0.0116	0.3497	0.1986	0.1023	0.0002	0.0010	0.0002	0.0861
34	Total Annual (max) (g/m ² /annum)	0.0011	0.0019	0.0000	0.0000	0.0006	0.0018	0.0161	0.5558	0.2928	0.1312	0.0002	0.0013	0.0003	0.1607
35	Total Annual (max) (g/m ² /annum)	0.0009	0.0017	0.0000	0.0000	0.0005	0.0016	0.0140	0.4707	0.2513	0.1162	0.0002	0.0011	0.0002	0.1318
36	Total Annual (max) (g/m ² /annum)	0.0008	0.0014	0.0000	0.0000	0.0004	0.0014	0.0119	0.3903	0.2115	0.1006	0.0002	0.0010	0.0002	0.1100
37	Total Annual (max) (g/m ² /annum)	0.0007	0.0013	0.0000	0.0000	0.0004	0.0013	0.0109	0.3557	0.1943	0.0925	0.0001	0.0009	0.0002	0.0974
38	Total Annual (max) (g/m ² /annum)	0.0002	0.0006	0.0000	0.0000	0.0002	0.0002	0.0029	0.1175	0.0693	0.0184	0.0000	0.0002	0.0001	0.0593
39	Total Annual (max) (g/m ² /annum)	0.0003	0.0007	0.0000	0.0000	0.0003	0.0003	0.0039	0.1520	0.0919	0.0256	0.0000	0.0003	0.0001	0.0761
40	Total Annual (max) (g/m ² /annum)	0.0011	0.0023	0.0000	0.0000	0.0007	0.0017	0.0167	0.6310	0.3326	0.1224	0.0002	0.0012	0.0003	0.2271
41	Total Annual (max) (g/m ² /annum)	0.0011	0.0022	0.0000	0.0000	0.0007	0.0018	0.0175	0.6552	0.3354	0.1322	0.0002	0.0013	0.0003	0.2147
42	Total Annual (max) (g/m ² /annum)	0.0013	0.0023	0.0000	0.0000	0.0007	0.0021	0.0196	0.6984	0.3606	0.1549	0.0002	0.0015	0.0004	0.2094

18) Worksheet entitled '(p) Pb TSP Conc Source Profile' provided by ENVIRON Pty Ltd

Apportionment of Annual Lead (TSP) Concentrations by "Free Area" and "Ore" Source Profiles											
Emission Scenario PROFILE		Project Increment Scenario				Cumulative Scenario (Project Increment + "Future Baseline")					
		"Future Baseline" "free areas" (µg/m³)	% "free areas"	"free areas" (µg/m³)	"ore" (µg/m³)	Total (µg/m³)	% "free areas"	"free areas" (µg/m³)	"ore" (µg/m³)	Total (µg/m³)	% "free areas"
1	Annual (max)	0.041	100	0.010	0.005	0.015	66	0.051	0.005	0.056	90.6
2	Annual (max)	0.026	100	0.015	0.011	0.026	57	0.041	0.011	0.053	78.6
3	Annual (max)	0.028	100	0.028	0.022	0.050	56	0.056	0.022	0.078	71.8
4	Annual (max)	0.018	100	0.020	0.018	0.038	53	0.039	0.018	0.056	68.4
5	Annual (max)	0.014	100	0.016	0.015	0.030	51	0.030	0.015	0.045	66.7
6	Annual (max)	0.023	100	0.023	0.022	0.044	52	0.046	0.022	0.067	67.9
7	Annual (max)	0.017	100	0.007	0.017	0.024	31	0.024	0.017	0.041	59.2
8	Annual (max)	0.119	100	0.023	0.089	0.112	21	0.143	0.089	0.232	61.5
9	Annual (max)	0.046	100	0.015	0.026	0.041	36	0.061	0.026	0.087	70.1
10	Annual (max)	0.028	100	0.010	0.008	0.018	55	0.038	0.008	0.046	82.3
11	Annual (max)	0.010	100	0.008	0.010	0.018	46	0.018	0.010	0.028	65.6
12	Annual (max)	0.008	100	0.006	0.006	0.011	49	0.014	0.006	0.020	70.3
13	Annual (max)	0.007	100	0.005	0.005	0.009	48	0.011	0.005	0.016	70.5
14	Annual (max)	0.015	100	0.006	0.005	0.011	51	0.020	0.005	0.026	79.3
15	Annual (max)	0.006	100	0.002	0.002	0.004	57	0.008	0.002	0.009	83.1
16	Annual (max)	0.006	100	0.002	0.001	0.003	63	0.008	0.001	0.009	88.4
17	Annual (max)	0.012	100	0.004	0.003	0.007	56	0.016	0.003	0.020	83.7
18	Annual (max)	0.004	100	0.003	0.004	0.007	43	0.007	0.004	0.011	62.5
19	Annual (max)	0.004	100	0.001	0.001	0.002	61	0.005	0.001	0.006	87.2
20	Annual (max)	0.005	100	0.002	0.001	0.003	62	0.007	0.001	0.008	85.3
21	Annual (max)	0.050	100	0.010	0.005	0.015	68	0.060	0.005	0.065	92.4
22	Annual (max)	0.042	100	0.010	0.004	0.014	69	0.052	0.004	0.056	92.0
23	Annual (max)	0.031	100	0.011	0.003	0.014	76	0.042	0.003	0.045	92.3
24	Annual (max)	0.030	100	0.014	0.003	0.017	84	0.044	0.003	0.047	94.1
25	Annual (max)	0.025	100	0.007	0.003	0.010	68	0.032	0.003	0.035	90.9
26	Annual (max)	0.031	100	0.015	0.002	0.018	87	0.046	0.002	0.048	95.3
27	Annual (max)	0.056	100	0.013	0.002	0.016	85	0.070	0.002	0.072	96.8
28	Annual (max)	0.042	100	0.012	0.002	0.014	85	0.054	0.002	0.056	96.1
29	Annual (max)	0.047	100	0.011	0.002	0.014	82	0.058	0.002	0.060	96.0
30	Annual (max)	0.033	100	0.009	0.002	0.011	81	0.042	0.002	0.044	95.2
31	Annual (max)	0.026	100	0.006	0.002	0.008	73	0.033	0.002	0.035	93.4
32	Annual (max)	0.021	100	0.006	0.002	0.008	74	0.027	0.002	0.029	93.0
33	Annual (max)	0.027	100	0.012	0.001	0.013	90	0.039	0.001	0.040	96.7
34	Annual (max)	0.044	100	0.013	0.006	0.019	67	0.057	0.006	0.063	90.1
35	Annual (max)	0.037	100	0.011	0.005	0.016	70	0.049	0.005	0.054	90.8
36	Annual (max)	0.030	100	0.010	0.004	0.014	72	0.040	0.004	0.044	91.0
37	Annual (max)	0.027	100	0.008	0.003	0.011	72	0.035	0.003	0.038	91.5
38	Annual (max)	0.010	100	0.006	0.011	0.016	34	0.015	0.011	0.026	58.4
39	Annual (max)	0.017	100	0.006	0.013	0.020	33	0.023	0.013	0.036	63.5
40	Annual (max)	0.044	100	0.016	0.014	0.030	52	0.060	0.014	0.074	80.9
41	Annual (max)	0.045	100	0.017	0.011	0.028	61	0.062	0.011	0.073	85.0
42	Annual (max)	0.048	100	0.016	0.009	0.024	65	0.063	0.009	0.072	88.1

19) Worksheet entitled '(q) Pb PM10 Conc Source Profile' provided by ENVIRON Pty Ltd

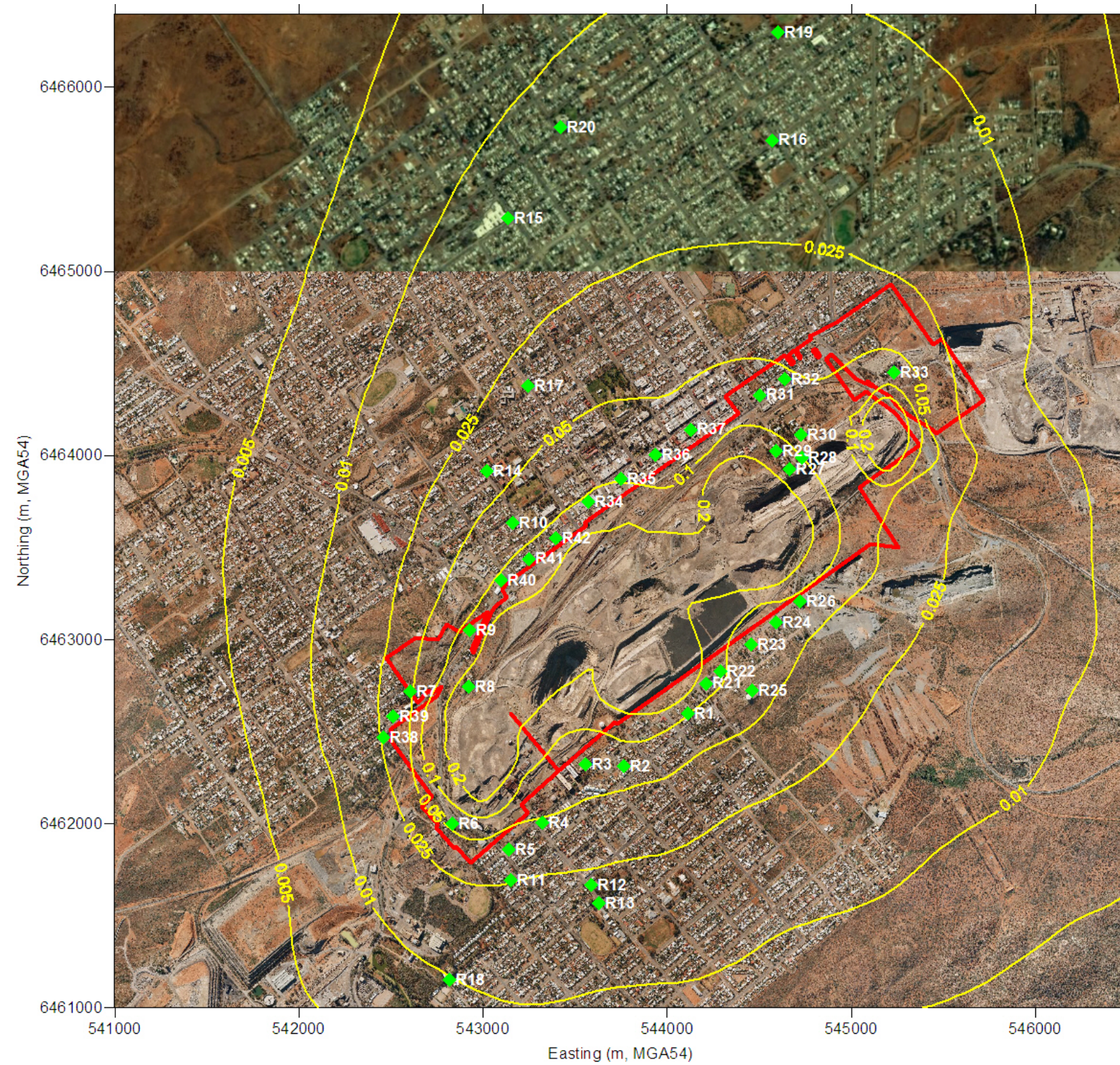
Apportionment of Annual Lead (PM10 Concentrations by "Free Area" and "Ore" Source Profiles											
Emission Scenario PROFILE		"Future Baseline"		Project Increment Scenario				Cumulative Scenario (Project Increment + "Future Baseline")			
		"free areas" (µg/m³)	% "free areas"	"free areas" (µg/m³)	"ore" (µg/m³)	Total (µg/m³)	% "free areas"	"free areas" (µg/m³)	"ore" (µg/m³)	Total (µg/m³)	% "free areas"
1	Annual (max)	0.041	100	0.005	0.003	0.008	66	0.025	0.003	0.028	88.5
2	Annual (max)	0.026	100	0.007	0.007	0.014	57	0.020	0.007	0.027	74.7
3	Annual (max)	0.028	100	0.013	0.015	0.028	56	0.027	0.015	0.042	64.7
4	Annual (max)	0.018	100	0.010	0.012	0.022	53	0.019	0.012	0.031	61.8
5	Annual (max)	0.014	100	0.008	0.010	0.018	51	0.015	0.010	0.025	59.6
6	Annual (max)	0.023	100	0.012	0.016	0.027	52	0.023	0.016	0.039	59.6
7	Annual (max)	0.017	100	0.004	0.012	0.016	31	0.012	0.012	0.024	50.1
8	Annual (max)	0.119	100	0.010	0.055	0.065	21	0.069	0.055	0.124	55.5
9	Annual (max)	0.046	100	0.007	0.017	0.023	36	0.030	0.017	0.046	63.9
10	Annual (max)	0.028	100	0.004	0.005	0.010	55	0.018	0.005	0.024	77.1
11	Annual (max)	0.010	100	0.004	0.007	0.011	46	0.009	0.007	0.016	59.1
12	Annual (max)	0.008	100	0.003	0.004	0.007	49	0.007	0.004	0.011	65.3
13	Annual (max)	0.007	100	0.002	0.003	0.006	48	0.006	0.003	0.009	65.7
14	Annual (max)	0.015	100	0.003	0.004	0.006	51	0.010	0.004	0.014	73.3
15	Annual (max)	0.006	100	0.001	0.001	0.002	57	0.004	0.001	0.005	75.5
16	Annual (max)	0.006	100	0.001	0.001	0.002	63	0.004	0.001	0.005	82.0
17	Annual (max)	0.012	100	0.002	0.002	0.004	56	0.008	0.002	0.011	77.9
18	Annual (max)	0.004	100	0.002	0.003	0.005	43	0.004	0.003	0.007	54.6
19	Annual (max)	0.004	100	0.001	0.001	0.001	61	0.003	0.001	0.004	78.7
20	Annual (max)	0.005	100	0.001	0.001	0.002	62	0.003	0.001	0.004	76.6
21	Annual (max)	0.050	100	0.005	0.003	0.009	68	0.030	0.003	0.033	90.2
22	Annual (max)	0.042	100	0.005	0.003	0.008	69	0.026	0.003	0.029	89.8
23	Annual (max)	0.031	100	0.006	0.002	0.008	76	0.021	0.002	0.023	90.5
24	Annual (max)	0.030	100	0.008	0.002	0.010	84	0.023	0.002	0.024	92.6
25	Annual (max)	0.025	100	0.004	0.002	0.006	68	0.016	0.002	0.018	88.7
26	Annual (max)	0.031	100	0.008	0.002	0.010	87	0.023	0.002	0.025	93.6
27	Annual (max)	0.056	100	0.007	0.002	0.009	85	0.035	0.002	0.037	95.4
28	Annual (max)	0.042	100	0.007	0.002	0.009	85	0.031	0.002	0.032	95.0
29	Annual (max)	0.047	100	0.006	0.002	0.008	82	0.029	0.002	0.031	93.9
30	Annual (max)	0.033	100	0.005	0.002	0.007	81	0.022	0.002	0.023	92.9
31	Annual (max)	0.026	100	0.003	0.002	0.005	73	0.017	0.002	0.019	90.3
32	Annual (max)	0.021	100	0.003	0.002	0.005	74	0.014	0.002	0.016	89.6
33	Annual (max)	0.027	100	0.005	0.002	0.006	90	0.018	0.002	0.020	92.0
34	Annual (max)	0.044	100	0.006	0.004	0.010	67	0.028	0.004	0.033	86.5
35	Annual (max)	0.037	100	0.005	0.004	0.009	70	0.024	0.004	0.028	85.7
36	Annual (max)	0.030	100	0.005	0.004	0.009	72	0.020	0.004	0.024	82.8
37	Annual (max)	0.027	100	0.004	0.003	0.007	72	0.018	0.003	0.021	84.8
38	Annual (max)	0.010	100	0.003	0.009	0.011	34	0.008	0.009	0.016	47.1
39	Annual (max)	0.017	100	0.003	0.009	0.012	33	0.009	0.009	0.018	49.8
40	Annual (max)	0.044	100	0.007	0.010	0.016	52	0.029	0.010	0.039	75.3
41	Annual (max)	0.045	100	0.007	0.007	0.015	61	0.030	0.007	0.037	80.1
42	Annual (max)	0.048	100	0.007	0.006	0.013	65	0.031	0.006	0.037	84.1

20) Worksheet entitled '(r) Pb Dep by Source Profile' provided by ENVIRON Pty Ltd

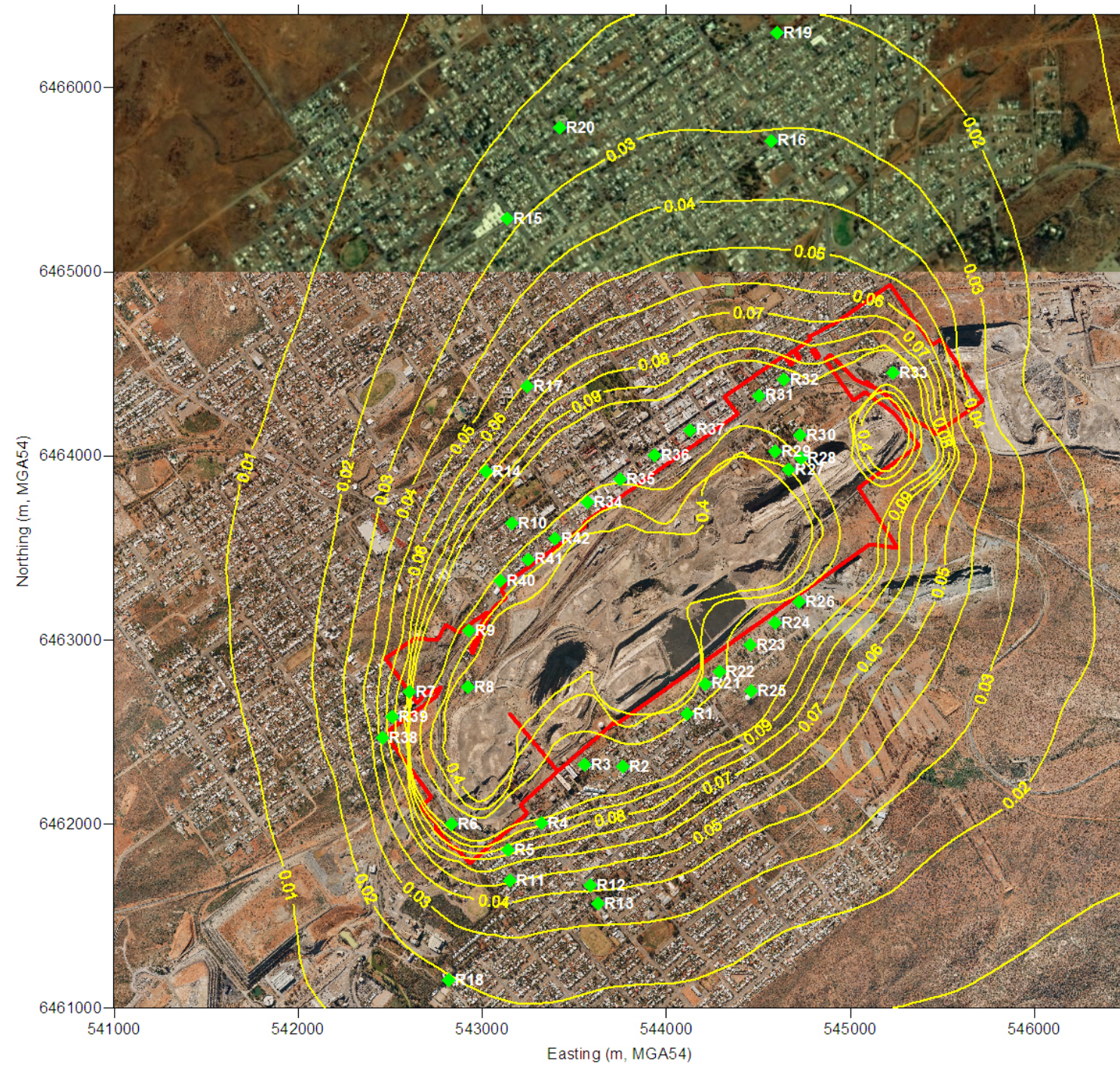
Apportionment of Annual Lead Deposition by "Free Area" and "Ore"											
Source Profiles											
Emission Scenario PROFILE		"Future Baseline"		Project Increment Scenario				Cumulative Scenario (Project Increment + "Future Baseline")			
		"free areas" (g/m ² /annum)	% "free areas"	"free areas" (g/m ² /annum)	"ore" (g/m ² /annum)	Total (g/m ² /annum)	% "free areas"	"free areas" (g/m ² /annum)	"ore" (g/m ² /annum)	Total (g/m ² /annum)	% "free areas"
1	Annual (max)	0.281	100	0.022	0.028	0.050	44	0.303	0.028	0.331	91
2	Annual (max)	0.171	100	0.032	0.078	0.110	29	0.203	0.078	0.280	72
3	Annual (max)	0.227	100	0.057	0.166	0.223	26	0.284	0.166	0.450	63
4	Annual (max)	0.128	100	0.032	0.087	0.120	27	0.161	0.087	0.248	65
5	Annual (max)	0.097	100	0.024	0.066	0.089	26	0.120	0.066	0.186	65
6	Annual (max)	0.125	100	0.029	0.074	0.103	28	0.154	0.074	0.229	67
7	Annual (max)	0.067	100	0.014	0.057	0.071	20	0.081	0.057	0.138	59
8	Annual (max)	0.658	100	0.051	0.399	0.450	11	0.709	0.399	1.108	64
9	Annual (max)	0.245	100	0.035	0.119	0.154	22	0.279	0.119	0.399	70
10	Annual (max)	0.164	100	0.023	0.037	0.060	39	0.188	0.037	0.225	83
11	Annual (max)	0.067	100	0.013	0.043	0.056	24	0.081	0.043	0.123	65
12	Annual (max)	0.016	100	0.010	0.027	0.037	27	0.025	0.027	0.052	49
13	Annual (max)	0.004	100	0.008	0.021	0.029	27	0.012	0.021	0.033	36
14	Annual (max)	0.036	100	0.012	0.024	0.036	34	0.048	0.024	0.071	67
15	Annual (max)	0.000	100	0.003	0.006	0.009	30	0.003	0.006	0.009	30
16	Annual (max)	0.000	100	0.002	0.004	0.005	29	0.002	0.004	0.005	29
17	Annual (max)	0.008	100	0.007	0.014	0.021	35	0.016	0.014	0.029	53
18	Annual (max)	0.008	100	0.005	0.013	0.018	29	0.013	0.013	0.026	50
19	Annual (max)	0.000	100	0.001	0.003	0.004	29	0.001	0.003	0.004	29
20	Annual (max)	0.000	100	0.002	0.004	0.006	30	0.002	0.004	0.006	30
21	Annual (max)	0.367	100	0.019	0.023	0.043	45	0.387	0.023	0.410	94
22	Annual (max)	0.328	100	0.017	0.021	0.038	44	0.345	0.021	0.367	94
23	Annual (max)	0.240	100	0.015	0.016	0.030	48	0.255	0.016	0.271	94
24	Annual (max)	0.241	100	0.016	0.011	0.027	58	0.257	0.011	0.268	96
25	Annual (max)	0.154	100	0.011	0.015	0.026	44	0.165	0.015	0.180	92
26	Annual (max)	0.250	100	0.014	0.009	0.023	62	0.264	0.009	0.273	97
27	Annual (max)	0.343	100	0.014	0.008	0.022	63	0.357	0.008	0.365	98
28	Annual (max)	0.216	100	0.012	0.007	0.020	63	0.228	0.007	0.236	97
29	Annual (max)	0.280	100	0.011	0.008	0.019	57	0.291	0.008	0.299	97
30	Annual (max)	0.195	100	0.010	0.007	0.017	58	0.205	0.007	0.212	97
31	Annual (max)	0.189	100	0.008	0.008	0.016	49	0.197	0.008	0.205	96
32	Annual (max)	0.138	100	0.007	0.007	0.013	50	0.145	0.007	0.152	96
33	Annual (max)	0.188	100	0.007	0.004	0.010	63	0.195	0.004	0.199	98
34	Annual (max)	0.242	100	0.025	0.028	0.053	47	0.267	0.028	0.295	91
35	Annual (max)	0.214	100	0.019	0.021	0.040	47	0.233	0.021	0.254	92
36	Annual (max)	0.185	100	0.015	0.016	0.031	47	0.200	0.016	0.216	92
37	Annual (max)	0.170	100	0.011	0.013	0.024	47	0.182	0.013	0.194	93
38	Annual (max)	0.033	100	0.010	0.032	0.042	23	0.043	0.032	0.075	57
39	Annual (max)	0.046	100	0.011	0.040	0.051	22	0.057	0.040	0.097	59
40	Annual (max)	0.227	100	0.038	0.067	0.106	36	0.265	0.067	0.333	80
41	Annual (max)	0.245	100	0.040	0.053	0.093	43	0.284	0.053	0.337	84
42	Annual (max)	0.287	100	0.036	0.041	0.077	47	0.323	0.041	0.363	89

21) Lead contour plots provided by ENVIRON Pty Ltd

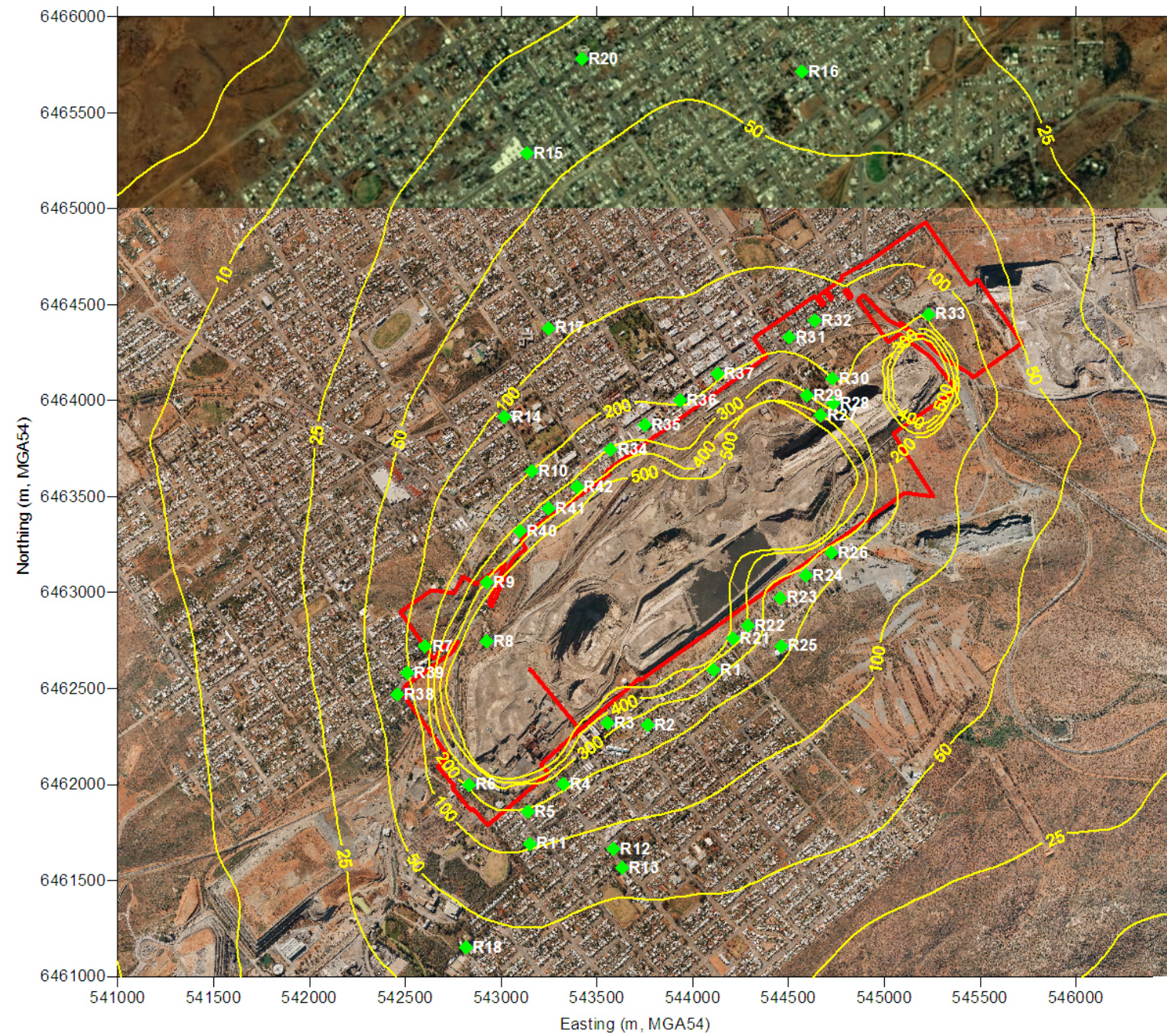
'Baseline(free areas0%)_Pb_PM10_Annual'



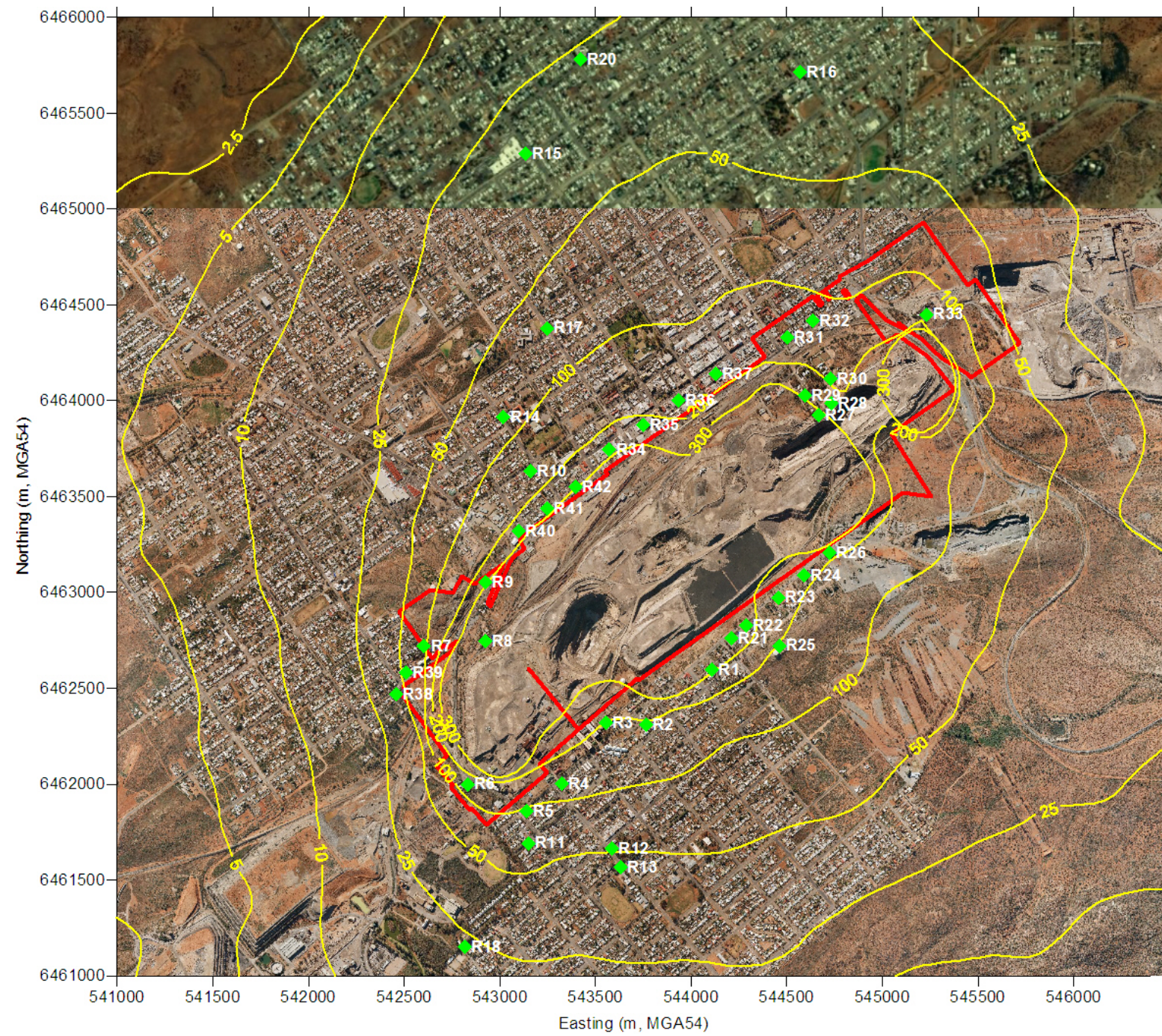
'Baseline(free areas0%)_Pb_TSP_Annual'



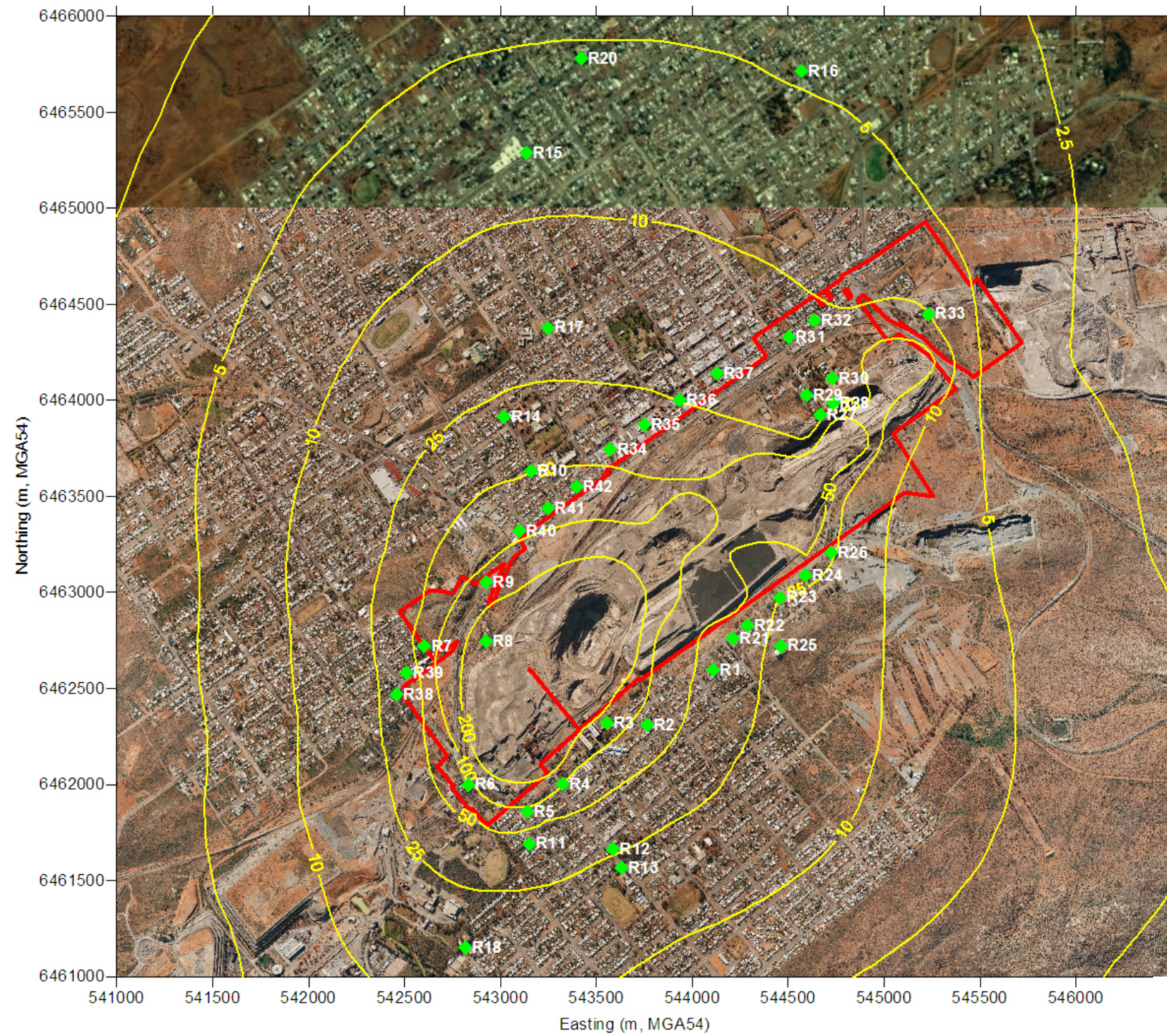
'Pb_DD_Cumulative_mg-m2-year'



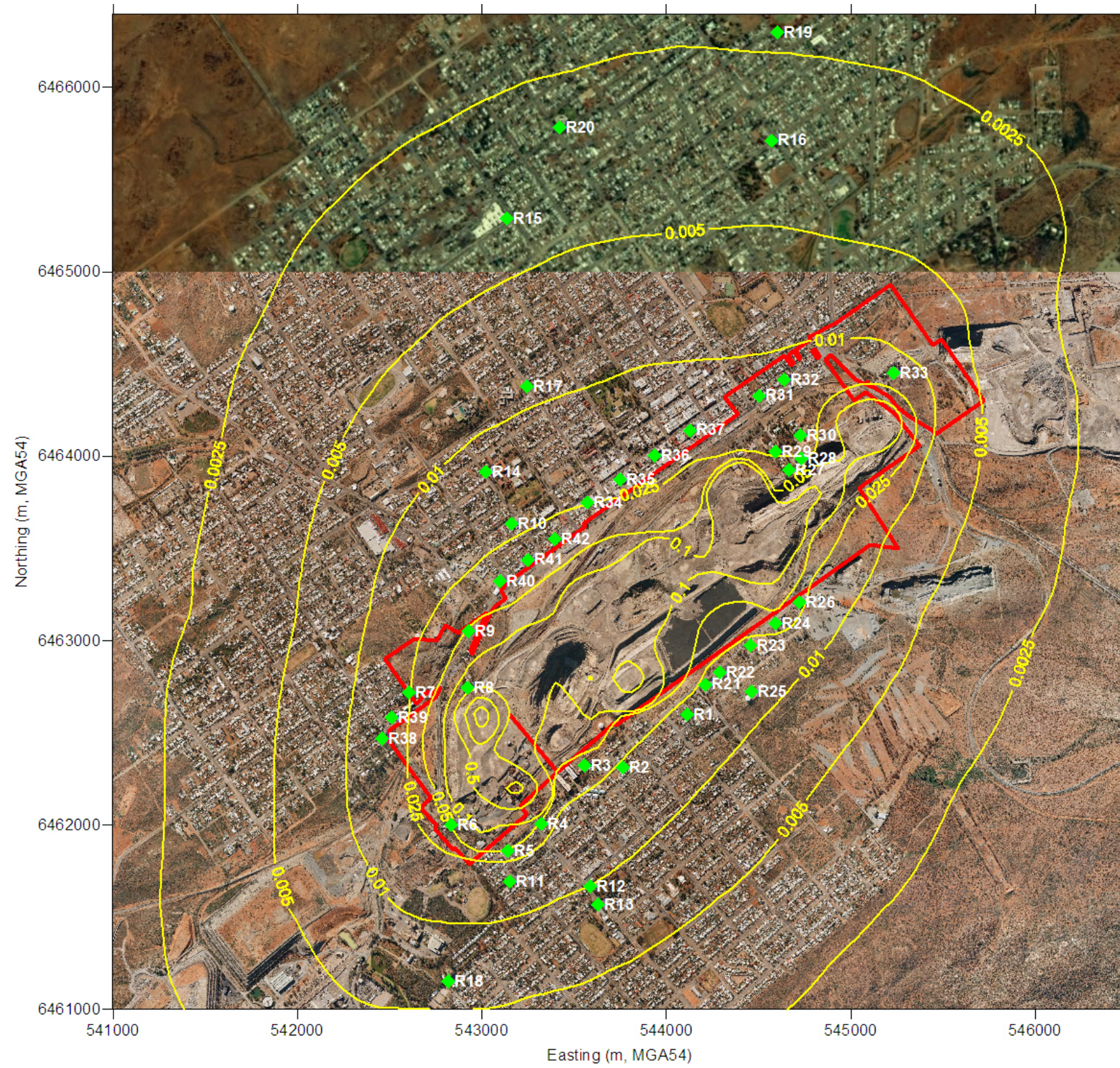
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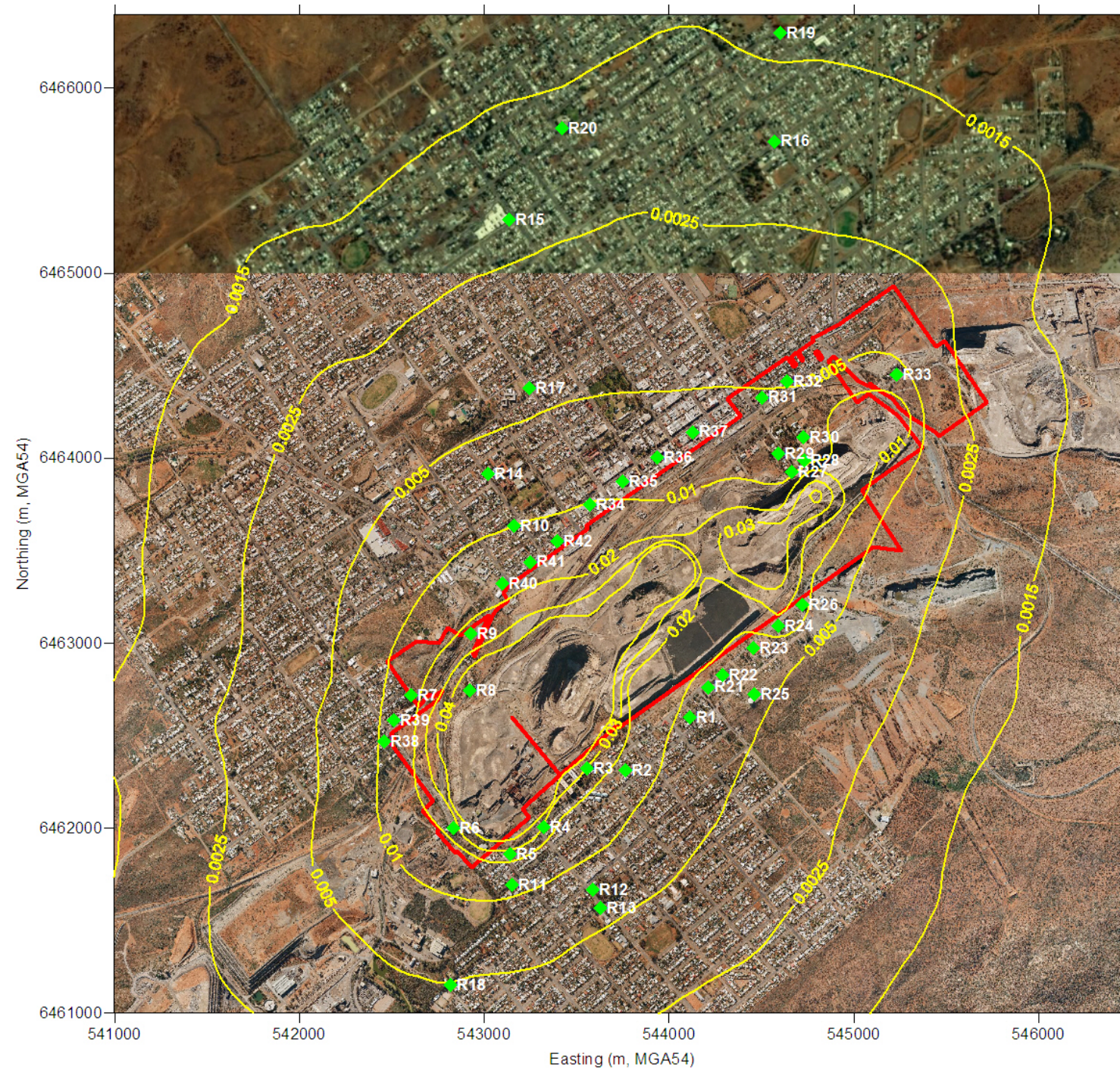
'Pb_DD_Project_Increment_mg-m2-year'



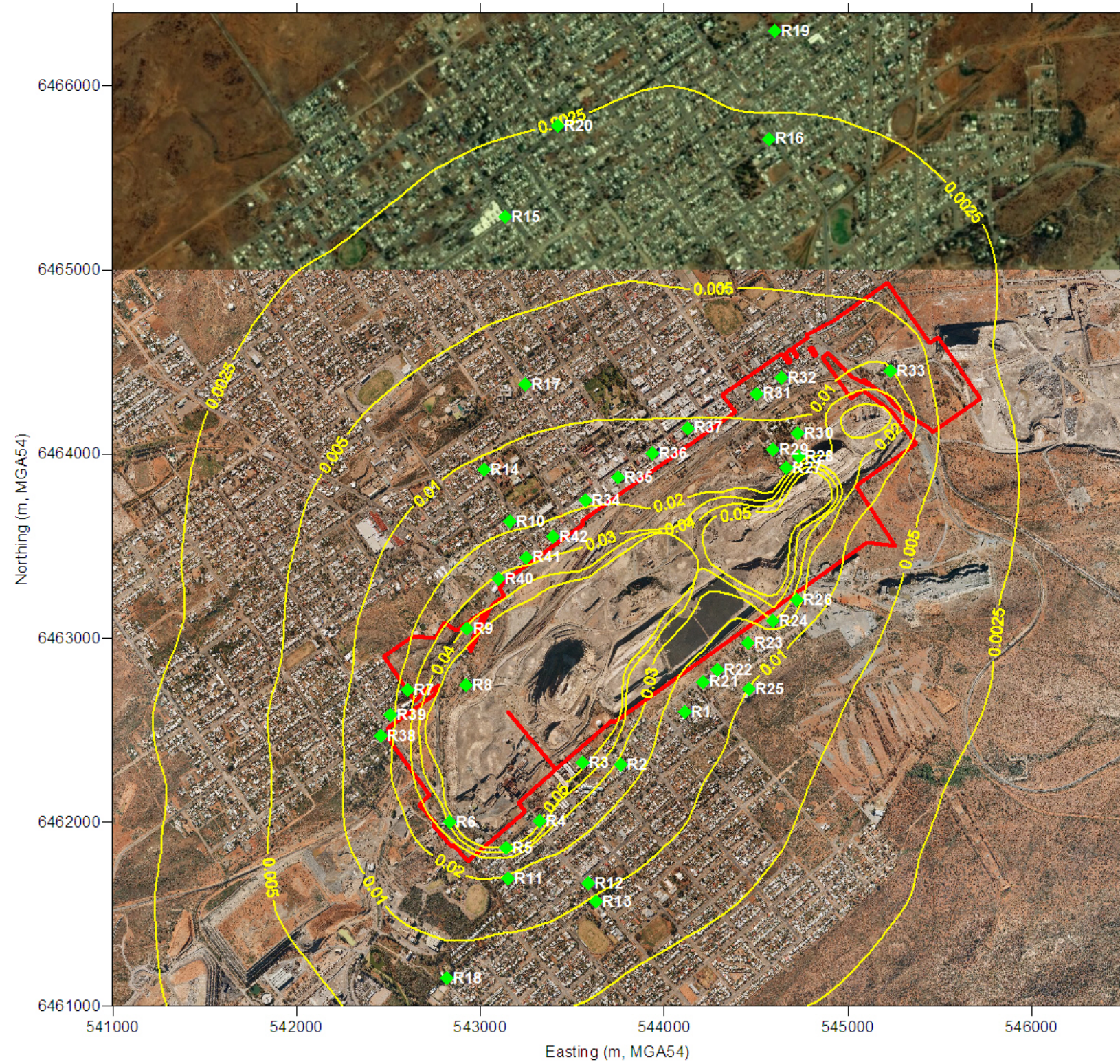
'Project_Increment_Pb_Dep_2008'



'Project_Increment_Pb_PM10_Annual'



'Project_Increment_Pb_TSP_Annual'



A2.2 EnTox (2009): FINAL REPORT (PBET test results 041209) and Repeat FINAL REPORT (rec'd 221209)

1) Worksheet entitled: 'Table 1' provided by EnTox

		Table 1 Total concentration of elements in the RASP mine samples (corrected by minus blank)																													
		47 Ti	48 Ti	51 V	52 Cr	53 Cr	55 Mn	57 Fe	59 Co	60 Ni	61 Ni	63 Cu	65 Cu	66 Zn	67 Zn	75 As	82 Se	88 Sr	95 Mo	111 Cd	114 Cd	121 Sb	202 Hg	204 Hg	205 Tl	206 Pb	207 Pb	208 Pb	238 U	107 Ag	109 Ag
sample detail name	sample	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g
INHOUSE STANDARD 1#	SD1	57372.69	60099.2	8335.5	8231	8374.7	540190.6	33356893	19362.15	3165.1	5460.2	309601	316489.8	8705117	7677410	131826.2	507.53	5625	1924.61	205665.9	202663.4	119085.6	1302.942	975054.1	12657.5	8601583	9913542	9242564	1374.95	27679.7	27994.6
Surface Broomed Samples AREA #1	1#A	135290.0485	135172.219	8644.650943	6682.33962	6642.36	1243187	6525195	5455.358	7788.855	5363.502	142625.5	145538.9	2200947	1967278	75435.63	707.8375	12465.58	816.0251	28403.64	24976.61	15344.09	2048.602	1103728	774.7642	9754300	11395768	10612772	3479.271	3338.191	3411.581
Surface Broomed Samples AREA #1	1#B	115010.7292	113124.494	9851.088235	6906.62745	6854.347	1351751	6888069	5725.483	7521.041	5438.141	156955.9	159787.8	2293215	2056253	82396.79	776.0025	13162.59	1295.786	27728.65	28157.52	27573.84	1836.079	1050935	492.0098	9184877	10676012	9940741	2940.499	6135.582	6243.62
	AVERAGE1#	125150.3889	124148.356	9247.869589	6794.48354	6748.354	1297469	6706632	5590.42	7654.948	5400.822	149790.7	152663.3	2247081	2011766	78916.21	741.92	12814.09	1055.906	28066.14	26567.06	21458.96	1942.341	1077331	633.387	9469588	11035890	10276756	3209.885	4736.886	4827.6
Surface Broomed Samples AREA #2	2#A	151643.4592	150562.277	6141.076923	5976.46154	5789.585	629886.8	6040162	4411.381	6863.292	4921.738	101239.5	102670.6	1089463	973410	40781.97	898.5723	9374.692	697.7831	17231.28	17488.4	7041.369	383.0382	318992.6	795.4808	2844775	3261080	3073603	5152.565	3107.585	3170.562
Surface Broomed Samples AREA #2	2#B	125667.407	124323.162	8547.481132	6022.90566	5846.134	621960.4	6164818	4315.735	6796.402	4936.143	98851.94	100727.5	1051891	936523.2	33379.03	783.3092	9220.302	808.1949	17460.24	17636.98	4122.392	329.1684	294576.8	754.2925	2599583	2962749	2793904	4742.478	1917.436	1975.732
	AVERAGE2#	138655.4331	137442.72	7344.279028	5999.6836	5817.859	625923.6	6102490	4363.558	6829.847	4928.941	100045.7	101699.1	1070677	954966.6	37080.5	840.9408	9297.497	752.989	17345.76	17562.69	5581.881	356.1033	306784.7	774.8866	2722179	3111915	2933753	4947.522	2512.51	2573.147
RASP MINE AREA #3	3#A	237150.7852	239317.71	9354.785714	6634.19048	6734.795	707504.9	5769274	4322.15	6954.29	4961.867	51301	53089.8	996212.2	900124.3	56516.68	723.8205	10425.33	727.3719	19599.23	19844.35	26442.74	174.942	221287.5	451.5952	1970059	2300494	2141469	2773.188	3890.652	3962.695
RASP MINE AREA #3	3#B	147363.6704	145967.631	7832.460784	6736.03922	6666.112	714104.3	5945913	4428.425	7319.08	5188.141	54730.41	56807.45	1053999	948410	47249.73	689.1398	10613.57	392.4531	19689.43	19951.64	5944.424	219.0204	268875.7	649.951	2416249	2776993	2605447	3283.636	1992.445	2044.6
	AVERAGE3#	192257.2278	192642.701	8593.623249	6685.11485	6700.454	710804.6	5857593	4375.287	7136.685	5075.004	53015.71	54948.62	1025106	924267.1	51883.2	706.4801	10519.45	559.9125	19644.33	19897.99	16193.58	196.9812	245081.6	550.7731	2193154	2538743	2373458	3028.412	2941.549	3003.648
BROOMED SURFACE SAMPLES AREA#4	4#A	102534.0492	102801.821	7028.072816	7673.92233	7668.739	1115325	6131844	4747.975	8719.071	6331.317	47642.75	49000.48	1001030	898604.2	34799.99	517.0086	14041.51	229.2702	12613.47	12708.06	3438.998	305.5634	442381.3	954.9757	3904437	4535464	4251991	5605.329	2296.69	2355.28
BROOMED SURFACE SAMPLES AREA#4	4#B	118328.5316	118404.051	1045.475743	8076.61386	7995.116	1166127	6405804	4829.279	8794.338	6521.339	49611.89	51491.78	1010988	919103.1	34045.01	533.9864	14622.69	484.61	13549.07	13724.79	6668.768	233.041	382132.4	776.3119	3369880	3910433	3659960	4625.871	5016.829	5111.927
	AVERAGE4#	110431.2904	110602.936	8741.415121	7875.2681	7831.927	1140726	6268824	4788.627	8756.704	6426.328	48627.32	50246.13	1006009	908853.6	34422.5	525.4975	14332.1	356.9401	13081.27	13216.42	5053.883	269.3022	412256.8	865.6438	3637158	4222949	3955976	5115.6	3656.76	3733.603
RASP MINE SURFACE BROOMED SAMPLES AREA #5	5#A	81608.76843	80800.9647	7761.872549	5022.31373	4787.68	1770379	5054736	4581.366	6353.394	3475.396	121661.8	125082	1263803	1142528	125612.5	1169.826	12613.57	2352.649	50277.66	44245.75	73289.52	427.0596	619169.8	410.8333	5450563	6276012	5882898	3839.519	12396.37	12646.56
RASP MINE SURFACE BROOMED SAMPLES AREA #5	5#B	96873.08604	96503.0614	5619.113861	4953.84158	4646.601	1714642	4933527	4568.883	6780.476	3504.507	129602	132957.1	1367424	1229103	119530.2	1182.105	12771.21	1876.392	48875.8	43071.32	30203.42	577.4965	692231.4	510.3713	6104533	7050037	6634218	4246.663	2120.789	2153.511
	AVERAGE5#	89240.92724	88652.013	6690.493205	4988.07765	4717.141	1742510	4994131	4575.124	6566.935	3489.952	125631.9	129019.5	1315614	1185815	122571.3	1175.966	12692.39	2114.521	49576.73	43658.54	51746.47	502.2781	655700.6	460.6023	5777548	6663025	6258558	4043.091	7258.578	7400.036
INHOUSE STANDARD 2#	SD2	40332.69	48319.2	8119.5	10078	8723.7	541090.6	35986893	20982.15	3183.1	5912.2	322301	334689.8	9621117	8588410	143726.2	579.93	7164	1772.61	222365.9	219963.4	38655.6	1346.942	1058954	15097.5	9432583	10849542	10199564	1449.95	11399.7	11654.6
WMDD 4063	total 6a	309226.4155	299300.965	6286.382353	2797.80392	3228.857	681457.3	42487089	75804.9	2238.688	5259.71	311269.6	307925.1	82919686	71429783	148357.6	9025.708	1492.98	1682.061	835552.2	832706.5	109887.6	1053.726	257307.1	508.3824	2270171	2595620	2432898	3410.107	1046789	1045823
WMDD 4063	total 6b	306447.3435	295631.7	6253.767	2937.009	3367.393	714444.1	44254319	80655.02	2471.565	5594.606	329602	328303.7	87265444	75275638	167847	9201.907	1727.644	1544.709	843034.2	839764.4	90361.84	1178.091	207280.9	497.995	1822355	2104492	1956000	4013.99	757749.5	770041.6

2) Worksheet entitled: 'Table 3b' provided by EnTox

Table 3b Bioaccessibility (BAC %) of the samples in different stomach state																														
			47 Ti	48 Ti	51 V	52 Cr	53 Cr	55 Mn	57 Fe	59 Co	60 Ni	61 Ni	63 Cu	65 Cu	66 Zn	67 Zn	75 As	82 Se	88 Sr	95 Mo	111 Cd	114 Cd	121 Sb	202 Hg	204 Hg	205 TI	206 Pb	207 Pb	208 Pb	238 U
		Ion Name	47 Ti	48 Ti	51 V	52 Cr	53 Cr	55 Mn	57 Fe	59 Co	60 Ni	61 Ni	63 Cu	65 Cu	66 Zn	67 Zn	75 As	82 Se	88 Sr	95 Mo	111 Cd	114 Cd	121 Sb	202 Hg	204 Hg	205 TI	206 Pb	207 Pb	208 Pb	238 U
Sample detail	sample Name	Labels	(T1,# 47)C once ntrati on Mean	(T1,# 48)C once ntrati on Mean	(T1,# 51)C once ntrati on Mean	(T1,# 52)C once ntrati on Mean	(T1,# 53)C once ntrati on Mean	(T1,# 55)C once ntrati on Mean	(T1,# 57)C once ntrati on Mean	(T1,# 59)C once ntrati on Mean	(T1,#6 0)Con centr ation Mean	(T1,# 61)C once ntrati on Mean	(T1,# 63)C once ntrati on Mean	(T1,# 65)C once ntrati on Mean	(T1,#6 6)Con centra tion Mean	(T1,#67)Conce ntratio n Mean	(T1, #75) Con cent rati on Mea n	(T1,#8 2)Con centra tion Mean	(T1,# 88)C once ntrati on Mean	(T1,# 95)C once ntrati on Mean	(T1,# 111) Conc entra tion Mean	(T1,# 114) Conc entra tion Mean	(T1,# 121) Conc entra tion Mean	(T1,# 202) Conc entra tion Mean	(T1,# 204) Conc entra tion Mean	(T1,# 205) Conc entra tion Mean	(T1,# 206) Conc entra tion Mean	(T1,#20 7)Conc entrati on Mean	(T1,# 208) Conc entra tion Mean	(T1,# 238) Conc entra tion Mean
Surface Broomed Samples AREA #1	1A	cAver1.3	0.21	3.76	-0.20	0.34	-1.83	180.34	39.41	1.32	1.41	1.29	76.40	65.86	778.29	757.96	4.05	-0.18	4.06	-0.08	11.61	11.58	0.27	0.00	372.81	-0.02	2887.45	3318.94	3165.17	0.25
Surface Broomed Samples AREA #1		cAver2.5	0.25	3.80	-0.34	0.16	-1.47	54.83	46.27	0.70	0.46	0.31	42.19	36.55	586.58	516.29	0.92	0.09	3.06	0.02	10.20	10.14	0.22	0.00	189.14	0.00	1362.05	1586.39	1513.55	0.16
		cAver4.0	-0.05	4.11	-0.45	0.08	-1.84	58.06	41.88	0.68	-0.53	-0.34	33.73	29.14	544.53	480.96	0.74	-0.49	4.15	-0.04	8.78	8.74	0.20	-0.02	117.92	-0.01	865.99	1007.06	954.50	0.19
		caverp1	0.15	3.87	-0.32	0.20	-1.70	101.35	42.58	0.92	0.53	0.49	52.32	45.19	644.83	594.53	2.01	-0.17	3.72	-0.03	10.33	10.28	0.23	-0.01	236.51	-0.01	1781.45	2058.41	1961.67	0.20
		caverp2	2.28	2.52	0.11	7.47	0.39	97.41	23.19	1.32	0.26	0.25	67.32	57.98	399.38	351.32	3.36	-0.83	2.72	0.02	3.48	3.49	0.47	0.13	183.76	0.00	1319.84	1526.79	1451.27	0.33
		BAC%Fast	0.17	3.03	-2.11	4.96	-27.11	13.90	0.59	23.62	18.35	23.92	51.01	43.14	34.64	37.68	5.13	-24.40	31.71	-7.14	41.38	43.58	1.25	-0.22	34.61	-3.53	30.49	30.07	30.80	7.74
		BAC%+Food	0.20	3.06	-3.69	2.38	-21.72	4.23	0.69	12.45	5.98	5.80	28.17	23.94	26.10	25.66	1.16	12.01	23.87	1.52	36.34	38.17	1.04	-0.12	17.56	-0.71	14.38	14.37	14.73	5.05
		BAC%FullFed	-0.04	3.31	-4.91	1.21	-27.29	4.47	0.62	12.20	-6.87	-6.36	22.52	19.09	24.23	23.91	0.93	-66.40	32.41	-3.89	31.29	32.90	0.91	-1.14	10.95	-0.79	9.14	9.13	9.29	5.92
		BAC%P1	0.12	3.12	-3.45	3.00	-25.20	7.81	0.63	16.44	6.98	9.07	34.93	29.60	28.70	29.55	2.54	-22.61	29.05	-3.11	36.80	38.70	1.08	-0.43	21.95	-1.76	18.81	18.65	19.09	6.27
		BAC%PII	1.82	2.03	1.18	109.92	5.81	7.51	0.35	23.69	3.43	4.62	44.94	37.98	17.77	17.46	4.26	-112.10	21.24	1.66	12.41	13.14	2.18	6.92	17.06	0.07	13.94	13.83	14.12	10.31
Surface Broomed Samples AREA #1	1B	cAver1.3	-0.27	3.26	-0.61	0.29	-2.87	168.88	32.61	1.11	0.78	0.67	68.22	58.59	596.83	632.19	3.30	-1.08	3.19	-0.12	6.08	5.95	0.22	-0.03	278.45	-0.03	2352.45	2738.94	2602.17	0.19
Surface Broomed Samples AREA #1		cAver2.5	-0.58	0.11	-0.96	-0.08	-3.11	37.79	14.51	0.23	-0.26	-0.56	19.55	16.74	293.24	257.06	0.33	-1.30	1.68	-0.08	3.24	3.13	0.10	-0.04	73.78	-0.02	532.58	620.22	585.99	0.07
		cAver4.0	-0.56	1.35	-0.89	-0.07	-2.83	91.78	48.27	0.64	-3.08	-3.16	23.45	20.09	321.03	309.10	0.53	-1.39	2.21	-0.08	3.07	3.06	0.23	-0.04	82.16	-0.01	591.79	689.13	652.70	0.13
		caverp1	-0.46	1.59	-0.82	0.06	-2.95	100.18	30.30	0.66	-0.65	-0.83	38.31	32.87	411.22	407.66	1.46	-1.25	2.38	-0.09	4.23	4.14	0.18	-0.04	150.49	-0.02	1210.50	1409.46	1337.34	0.13
		caverp2	1.92	1.52	-0.23	6.83	-0.51	82.96	13.09	0.94	-0.65	-0.79	50.58	43.53	267.58	258.39	2.83	-1.47	2.15	-0.06	1.68	1.63	0.32	0.09	121.90	0.00	984.54	1133.29	1074.84	0.25
		BAC%Fast	-0.22	2.62	-6.63	4.33	-42.58	13.02	0.49	19.81	10.14	12.34	45.55	38.38	26.56	31.42	4.18	-145.77	24.88	-10.91	21.66	22.41	1.04	-1.63	25.85	-4.56	24.84	24.82	25.32	5.93
		BAC%+Food	-0.46	0.08	-10.41	-1.20	-46.13	2.91	0.22	4.09	-3.43	-10.41	13.05	10.97	13.05	12.78	0.41	-175.33	13.13	-7.18	11.53	11.79	0.49	-2.14	6.85	-2.83	5.62	5.62	5.70	2.28
		BAC%FullFed	-0.45	1.09	-9.66	-0.98	-41.91	7.07	0.72	11.52	-40.28	-58.59	15.65	13.16	14.29	15.36	0.68	-188.02	17.28	-7.77	10.94	11.50	1.07	-2.04	7.63	-2.13	6.25	6.24	6.35	3.96
		BAC%P1	-0.37	1.28	-8.83	0.87	-43.69	7.72	0.45	11.83	-8.55	-15.28	25.58	21.53	18.30	20.26	1.85	-168.04	18.54	-8.70	15.05	15.57	0.85	-1.93	13.97	-3.27	12.78	12.77	13.01	4.07
		BAC%PII	1.53	1.22	-2.44	100.50	-7.60	6.39	0.20	16.73	-8.54	-14.69	33.77	28.52	11.91	12.84	3.59	-197.89	16.82	-5.85	5.99	6.12	1.47	4.42	11.32	-0.47	10.40	10.27	10.46	7.83

Surface Broomed Samples AREA #2	2A	cAver1.3	-0.48	1.80	-0.86	0.07	-3.05	202.9 ₁	7.46	2.86	1.63	1.63	41.99	36.18	548.49	579.06	0.82	-1.43	1.77	-0.13	2.82	2.80	-0.01	-0.05	21.70	-0.03	166.6 ₅	192.74	180.2 ₄	1.02
		cAver2.5	-0.63	-0.57	-0.90	-0.08	-2.67	141.1 ₉	3.63	2.27	0.73	0.45	22.29	19.09	432.91	453.66	0.14	-1.26	0.90	-0.09	1.58	1.51	0.00	-0.05	6.44	-0.02	57.75	66.68	57.47	0.75
Surface Broomed Samples AREA #2		cAver4.0	-0.65	0.66	-0.87	-0.13	-2.69	139.3 ₂	12.71	2.38	-1.59	-1.46	23.11	19.77	400.70	426.66	0.18	-1.43	1.30	-0.10	0.51	0.48	0.01	-0.05	6.35	-0.01	56.90	65.77	57.08	0.88
		caverp1	-0.58	0.63	-0.88	-0.04	-2.81	163.1 ₂	7.50	2.51	0.42	0.36	29.67	25.49	466.16	491.89	0.40	-1.37	1.32	-0.11	1.74	1.70	0.00	-0.05	11.96	-0.02	97.12	112.27	102.0 ₁	0.88
		caverp2	0.43	0.73	-0.43	3.17	-1.24	140.8 ₈	5.32	2.59	0.17	-0.08	35.40	30.51	342.38	322.12	0.85	-1.66	1.37	-0.16	0.98	0.97	0.05	-0.04	11.08	0.00	90.13	103.90	96.18	1.32
		BAC%Fast	-0.35	1.31	-	1.19	-	32.42	0.12	65.49	23.81	33.00	41.97	35.58	51.23	60.64	2.20	-	19.03	-	16.28	15.94	-0.15	-	7.07	-3.79	6.12	6.19	6.14	20.54
		BAC%+Food	-0.46	-0.41	-	-1.32	-	22.56	0.06	52.00	10.63	9.08	22.27	18.77	40.43	47.50	0.37	-	9.63	-	9.08	8.62	-0.02	-	2.10	-2.27	2.12	2.14	1.96	15.17
		BAC%FullFed	-0.47	0.48	-	-2.16	-	22.26	0.21	54.58	-23.35	-	23.10	19.44	37.42	44.68	0.48	-	13.97	-	2.95	2.74	0.10	-	2.07	-1.79	2.09	2.11	1.95	17.78
		BAC%P1	-0.42	0.46	-	-0.64	-	26.06	0.12	57.61	6.16	7.20	29.66	25.07	43.54	51.51	1.07	-	14.23	-	10.03	9.68	-0.03	-	3.90	-2.69	3.57	3.61	3.48	17.83
		BAC%PII	0.31	0.53	-5.80	52.91	-	22.51	0.09	59.40	2.44	-1.56	35.38	30.00	31.98	33.73	2.28	-	14.72	-	5.62	5.52	0.98	-9.94	3.61	-0.40	3.31	3.34	3.28	26.75
Surface Broomed Samples AREA #2	2B	cAver1.3	-0.39	2.01	-0.79	0.10	-2.77	221.9 ₄	11.34	3.19	2.15	2.17	45.08	38.76	579.16	610.09	0.82	-1.39	1.85	-0.13	3.05	3.02	-0.02	-0.05	22.29	-0.03	172.0 ₈	199.38	187.4 ₇	1.14
		cAver2.5	-0.58	-0.70	-0.93	-0.11	-2.80	137.6 ₉	6.41	2.23	0.79	0.71	21.88	18.79	420.78	443.62	0.12	-1.35	0.90	-0.09	1.92	1.91	-0.01	-0.06	6.82	-0.02	61.24	70.97	61.42	0.77
Surface Broomed Samples AREA #2		cAver4.0	-0.67	0.35	-0.91	-0.14	-2.75	125.6 ₈	7.22	2.14	-2.23	-2.18	19.75	16.90	361.53	371.23	0.09	-1.36	0.90	-0.10	-0.16	-0.11	-0.01	-0.05	5.15	-0.01	46.01	53.08	48.81	0.81
		caverp1	-0.54	0.57	-0.87	-0.04	-2.77	165.0 ₅	8.42	2.56	0.46	0.45	29.74	25.54	462.21	484.41	0.36	-1.36	1.24	-0.11	1.76	1.76	-0.01	-0.05	11.99	-0.02	97.39	112.78	103.8 ₂	0.92
		caverp2	1.18	0.90	-0.53	5.71	-1.29	150.5 ₅	7.47	2.80	0.38	0.38	38.88	33.80	359.68	351.75	0.94	-1.65	1.52	-0.14	1.14	1.18	0.05	-0.04	12.25	0.00	98.12	113.83	103.6 ₉	1.61
		BAC%Fast	-0.28	1.46	-	1.70	-	35.46	0.19	73.21	31.51	44.10	45.06	38.12	54.09	63.89	2.21	-	19.92	-	17.59	17.19	-0.27	-	7.26	-3.74	6.32	6.41	6.39	23.08
		BAC%+Food	-0.42	-0.51	-	-1.87	-	22.00	0.11	51.15	11.50	14.33	21.87	18.47	39.30	46.45	0.32	-	9.63	-	11.06	10.85	-0.20	-	2.22	-2.31	2.25	2.28	2.09	15.55
		BAC%FullFed	-0.49	0.25	-	-2.37	-	20.08	0.12	49.14	-32.59	-	19.74	16.62	33.77	38.87	0.23	-	9.64	-	-0.90	-0.64	-0.22	-	1.68	-1.82	1.69	1.71	1.66	16.47
		BAC%P1	-0.39	0.42	-	-0.71	-	26.37	0.14	58.63	6.75	9.19	29.72	25.11	43.17	50.73	0.98	-	13.37	-	10.17	10.02	-0.23	-	3.91	-2.70	3.58	3.62	3.54	18.54
		BAC%PII	0.85	0.66	-7.19	95.09	-	24.05	0.12	64.22	5.56	7.68	38.86	33.24	33.59	36.83	2.53	-	16.31	-	6.55	6.73	0.92	-	3.99	-0.27	3.60	3.66	3.53	32.49
RASP MINE AREA #3	3A	cAver1.3	0.06	5.60	0.03	0.44	-1.19	156.2 ₄	38.28	2.16	2.22	2.40	22.36	19.09	677.26	725.06	1.95	-0.57	6.95	-0.10	9.61	9.53	0.02	-0.05	54.69	-0.01	415.2 ₅	473.68	444.2 ₀	0.20
RASP MINE AREA #3		cAver2.5	-0.31	1.53	-0.40	0.05	-1.55	27.56	19.97	0.24	1.30	1.27	5.08	4.31	279.94	247.49	0.38	-0.62	3.82	-0.02	3.26	3.22	-0.01	-0.05	8.09	-0.02	73.50	84.74	77.70	0.08
		cAver4.0	-0.09	3.51	-0.14	0.14	-0.85	38.12	43.48	0.53	-1.09	-1.20	7.43	6.28	356.73	314.83	0.60	-0.51	4.77	-0.06	4.84	4.73	0.02	-0.04	8.93	-0.01	80.61	93.16	87.68	0.14
		caverp1	-0.11	3.55	-0.17	0.22	-1.23	77.23	33.04	1.02	0.98	1.01	12.01	10.22	445.36	439.52	1.01	-0.57	5.22	-0.06	6.00	5.93	0.01	-0.04	25.26	-0.02	199.7 ₁	228.47	213.7 ₀	0.14
		caverp2	1.27	4.26	0.63	2.66	0.92	92.28	34.33	1.84	1.22	0.89	22.34	19.26	379.28	333.35	1.82	-0.46	5.47	-0.01	4.87	4.67	0.11	-0.02	25.97	0.00	206.3 ₇	239.89	218.3 ₄	0.38
		BAC%Fast	0.03	2.90	0.39	6.53	-	21.98	0.65	49.35	31.13	47.29	42.18	34.74	66.07	78.45	3.75	-81.32	66.08	-	48.94	47.89	0.12	-	22.31	-2.70	18.93	18.66	18.72	6.65
		BAC%+Food	-0.16	0.79	-4.67	0.79	-	3.88	0.34	5.48	18.16	24.97	9.59	7.84	27.31	26.78	0.73	-88.13	36.35	-3.21	16.58	16.21	-0.06	-	3.30	-3.66	3.35	3.34	3.27	2.76
		BAC%FullFed	-0.05	1.82	-1.66	2.07	-	5.36	0.74	12.17	-15.21	-	14.02	11.43	34.80	34.06	1.15	-72.40	45.35	-9.83	24.62	23.75	0.12	-	3.65	-2.06	3.68	3.67	3.69	4.46
		BAC%P1	-0.06	1.84	-2.01	3.22	-	10.87	0.56	23.25	13.78	19.85	22.65	18.60	43.45	47.55	1.94	-81.36	49.62	-	30.54	29.79	0.06	-	10.31	-2.87	9.11	9.00	9.00	4.64
		BAC%PII	0.66	2.21	7.30	39.77	13.74	12.98	0.59	42.10	17.10	17.57	42.13	35.06	37.00	36.07	3.50	-65.42	51.97	-1.76	24.77	23.46	0.66	-9.42	10.60	-0.25	9.41	9.45	9.20	12.49

RASP MINE AREA #3	3B	cAver1.3	0.29	6.21	0.73	0.02	0.66	162.69	34.11	2.32	2.47	2.68	23.81	20.50	655.59	694.70	1.77	-0.28	7.10	-0.02	11.02	10.97	0.05	0.00	48.05	0.00	356.11	414.26	386.56	0.19
RASP MINE AREA #3		cAver2.5	0.27	4.67	0.49	0.01	0.86	39.12	34.96	0.56	-0.85	-0.76	7.98	6.93	402.67	353.22	0.60	0.20	6.04	0.00	7.85	7.73	0.04	0.00	10.91	0.00	97.56	112.04	99.03	0.13
		cAver4.0	0.13	3.85	0.29	0.02	0.40	45.67	48.81	0.64	1.17	1.20	8.80	7.60	398.30	351.65	0.59	-0.20	5.38	-0.01	7.08	6.82	0.06	0.00	9.25	0.00	82.41	94.78	90.49	0.16
		caverp1	0.24	5.01	0.52	0.01	0.66	85.84	38.43	1.22	0.91	1.03	13.96	12.04	493.45	476.97	1.02	-0.08	6.24	-0.01	8.79	8.66	0.05	0.00	23.96	0.00	187.45	217.23	201.26	0.16
		caverp2	0.16	4.65	0.50	-0.09	0.37	97.43	37.36	1.57	1.08	1.23	17.69	15.25	278.56	246.11	1.32	-0.01	5.88	0.01	5.98	5.83	0.10	0.01	17.15	0.00	137.33	158.54	147.58	0.28
		BAC%Fast	0.15	3.22	8.44	0.24	9.84	22.89	0.58	53.03	34.61	52.85	44.92	37.30	63.95	75.16	3.41	-40.22	67.47	-4.43	56.09	55.14	0.33	-2.02	19.60	-0.77	16.24	16.32	16.29	6.20
		BAC%+Food	0.14	2.43	5.65	0.09	12.89	5.50	0.60	12.86	-11.91	-	15.01	12.60	39.28	38.22	1.17	28.40	57.40	0.26	39.94	38.85	0.22	2.23	4.45	-0.11	4.45	4.41	4.17	4.17
		BAC%FullFed	0.07	2.00	3.43	0.25	5.99	6.43	0.83	14.71	16.43	23.71	16.59	13.83	38.85	38.05	1.14	-27.74	51.16	-2.24	36.03	34.28	0.34	2.07	3.77	-0.15	3.76	3.73	3.81	5.15
		BAC%P1	0.12	2.60	6.06	0.19	9.90	12.08	0.66	27.97	12.73	20.23	26.34	21.92	48.14	51.60	1.98	-11.86	59.36	-2.13	44.75	43.53	0.29	0.64	9.78	-0.36	8.55	8.56	8.48	5.18
		BAC%PII	0.08	2.41	5.86	-1.36	5.51	13.71	0.64	35.97	15.18	24.16	33.36	27.75	27.17	26.63	2.54	-0.90	55.86	1.67	30.43	29.30	0.65	4.96	7.00	0.51	6.26	6.24	6.22	9.09
BROOMED SURFACE SAMPLES AREA#4	4A	cAver1.3	0.41	7.02	0.79	0.04	1.07	193.19	38.26	1.66	2.40	2.38	24.68	21.30	616.62	551.70	2.89	0.20	9.79	-0.01	5.79	5.79	0.14	0.00	55.22	0.00	413.91	474.39	447.86	0.35
BROOMED SURFACE SAMPLES AREA#4		cAver2.5	0.23	4.63	0.51	0.00	1.11	46.78	26.54	0.56	-1.22	-1.15	7.88	6.78	279.00	245.52	0.72	0.38	6.95	0.01	3.90	3.75	0.07	0.01	15.27	0.00	136.68	157.91	138.56	0.19
		cAver4.0	0.09	4.31	0.35	0.07	0.72	59.19	39.55	0.75	-0.60	-0.55	9.04	7.77	330.97	292.15	0.86	0.05	7.55	-0.01	3.53	3.45	0.11	0.00	15.08	0.00	134.68	155.16	136.09	0.28
		caverp1	0.26	5.41	0.57	0.03	0.99	103.40	34.35	1.01	0.26	0.30	14.31	12.33	415.94	369.58	1.55	0.22	8.15	0.00	4.49	4.41	0.11	0.00	29.75	0.00	236.95	272.24	250.36	0.27
		caverp2	-0.25	5.12	0.36	-0.74	0.24	124.68	27.19	1.42	0.51	0.51	19.35	16.63	210.39	185.17	1.91	-0.06	7.71	0.00	2.65	2.69	0.18	0.00	18.03	0.00	160.11	184.15	162.04	0.47
		BAC%Fast	0.37	6.35	9.06	0.51	13.69	16.94	0.61	34.74	27.38	37.01	50.75	42.38	61.29	60.70	8.41	38.48	68.28	-2.89	44.28	43.82	2.83	0.32	13.40	-0.49	11.38	11.23	11.32	6.89
		BAC%+Food	0.21	4.19	5.82	0.03	14.17	4.10	0.42	11.74	-13.97	-	16.21	13.50	27.73	27.01	2.10	71.87	48.49	1.65	29.78	28.36	1.42	2.08	3.70	-0.44	3.76	3.74	3.50	3.70
		BAC%FullFed	0.08	3.90	3.96	0.90	9.20	5.19	0.63	15.66	-6.86	-8.49	18.58	15.47	32.90	32.14	2.51	9.81	52.71	-3.25	27.00	26.09	2.24	-1.43	3.66	-0.42	3.70	3.67	3.44	5.43
		BAC%P1	0.23	4.89	6.49	0.44	12.64	9.06	0.55	21.18	3.01	4.61	29.42	24.54	41.35	40.66	4.51	42.80	56.84	-1.34	34.29	33.36	2.16	0.48	7.22	-0.45	6.51	6.45	6.33	5.33
		BAC%PII	-0.23	4.63	4.17	-9.35	3.09	10.93	0.43	29.58	5.80	7.95	39.79	33.10	20.91	20.37	5.54	-11.10	53.78	-1.17	20.26	20.34	3.57	1.20	4.37	-0.25	4.40	4.36	4.10	9.23
BROOMED SURFACE SAMPLES AREA#4	4B	cAver1.3	0.38	7.17	0.77	0.04	1.08	213.96	40.61	2.10	2.48	2.48	25.32	21.84	610.62	538.93	3.01	0.02	9.05	-0.02	5.81	5.68	0.14	-0.01	55.18	-0.01	413.58	480.49	453.59	0.36
BROOMED SURFACE SAMPLES AREA#4		cAver2.5	0.30	5.07	0.53	0.02	1.16	51.35	31.25	0.61	-1.21	-1.15	8.24	7.10	308.47	271.39	0.79	0.41	7.68	0.00	4.04	3.93	0.07	0.00	16.51	0.00	147.32	170.11	149.73	0.20
		cAver4.0	0.09	4.65	0.37	0.01	0.68	62.68	40.70	0.79	-0.70	-0.69	9.48	8.21	343.57	302.52	0.92	0.10	7.78	-0.02	3.72	3.69	0.11	-0.01	16.17	0.00	144.18	166.49	145.36	0.29
		caverp1	0.27	5.72	0.57	0.03	1.00	113.57	37.23	1.20	0.27	0.29	14.79	12.76	427.91	377.17	1.63	0.19	8.21	-0.01	4.60	4.50	0.11	0.00	30.48	0.00	243.28	281.99	259.03	0.28
		caverp2	0.32	4.73	0.21	2.01	0.05	128.87	25.24	1.62	0.50	0.36	20.19	17.41	221.16	195.01	2.21	-0.34	7.42	-0.03	2.35	2.31	0.19	0.02	18.71	0.00	161.94	191.68	166.47	0.52
		BAC%Fast	0.35	6.49	8.83	0.54	13.81	18.76	0.65	43.86	28.36	38.56	52.07	43.46	60.70	59.30	8.74	4.61	63.17	-4.82	44.38	42.96	2.73	-1.99	13.38	-0.66	11.37	11.38	11.47	7.00
		BAC%+Food	0.27	4.58	6.04	0.24	14.78	4.50	0.50	12.79	-13.77	-	16.95	14.13	30.66	29.86	2.31	78.91	53.59	-1.40	30.87	29.77	1.44	0.62	4.00	-0.52	4.05	4.03	3.78	3.93
		BAC%FullFed	0.08	4.20	4.24	0.17	8.74	5.49	0.65	16.40	-8.04	-	19.50	16.34	34.15	33.29	2.68	18.18	54.27	-5.81	28.47	27.94	2.17	-2.45	3.92	-0.53	3.96	3.94	3.67	5.76
		BAC%P1	0.25	5.17	6.56	0.33	12.78	9.96	0.59	25.07	3.11	4.55	30.42	25.40	42.54	41.50	4.75	35.33	57.26	-3.85	35.13	34.07	2.11	-1.17	7.39	-0.57	6.69	6.68	6.55	5.55
		BAC%PII	0.29	4.28	2.46	25.55	0.58	11.30	0.40	33.87	5.72	5.61	41.52	34.65	21.98	21.46	6.43	-64.02	51.81	-8.98	17.98	17.51	3.85	6.11	4.54	-0.27	4.45	4.54	4.21	10.10

RASP MINE SURFACE BROOMED SAMPLES AREA #5	5A	cAver1.3	0.34	5.75	0.62	0.02	0.57	476.16	33.77	4.22	3.98	4.13	58.35	50.04	1188.39	1240.30	4.24	-0.18	5.02	-0.03	48.69	48.09	0.20	0.00	59.24	0.00	444.08	514.09	482.99	0.52
RASP MINE SURFACE BROOMED SAMPLES AREA #5		cAver2.5	0.21	3.66	0.32	0.00	0.64	182.04	20.19	2.30	-0.13	-0.26	18.18	15.70	742.50	767.76	1.08	0.39	3.95	-0.01	36.82	36.21	0.10	0.01	15.96	0.00	142.15	163.04	143.49	0.25
		cAver4.0	-0.13	2.27	-0.15	-0.11	-0.68	239.24	28.89	2.87	0.57	0.60	24.93	21.52	707.20	740.28	1.27	-0.59	3.54	-0.04	31.45	30.87	0.20	-0.01	17.61	0.00	156.91	180.96	158.46	0.37
		caverp1	0.16	4.04	0.30	-0.02	0.26	304.59	27.50	3.15	1.56	1.57	34.63	29.77	895.01	932.10	2.28	-0.08	4.23	-0.02	39.67	39.08	0.16	0.00	32.15	0.00	255.97	295.58	271.03	0.38
		caverp2	1.02	0.68	-0.79	7.94	-1.67	192.30	0.50	1.88	-0.11	-0.17	30.40	26.32	265.49	253.27	2.03	-1.64	2.05	-0.13	10.72	10.63	0.16	0.00	12.49	0.00	104.25	119.88	108.85	0.39
		BAC%Fast	0.38	6.49	9.31	0.47	12.15	27.33	0.68	92.17	60.63	118.44	46.45	38.79	90.33	104.59	3.46	-15.01	39.56	-1.19	98.22	110.15	0.38	0.50	9.03	-0.38	7.69	7.72	7.72	12.81
		BAC%+Food	0.23	4.13	4.83	0.03	13.64	10.45	0.40	50.17	-1.94	-7.34	14.47	12.17	56.44	64.75	0.88	32.88	31.13	-0.40	74.28	82.95	0.19	1.36	2.43	-0.27	2.46	2.45	2.29	6.15
		BAC%FullFed	-0.15	2.56	-2.20	-2.29	-14.44	13.73	0.58	62.75	8.62	17.12	19.84	16.68	53.75	62.43	1.04	-49.99	27.91	-1.73	63.44	70.72	0.40	-2.76	2.69	0.14	2.72	2.72	2.53	9.17
		BAC%P1	0.18	4.56	4.54	-0.44	5.44	17.48	0.55	68.87	23.69	45.07	27.56	23.08	68.03	78.60	1.86	-7.14	33.32	-1.05	80.03	89.51	0.32	-0.08	4.90	-0.20	4.43	4.44	4.33	9.39
		BAC%PII	1.14	0.77	-11.81	159.15	-35.46	11.04	0.01	41.01	-1.73	-4.81	24.20	20.40	20.18	21.36	1.66	-139.71	16.12	-6.01	21.63	24.35	0.30	0.19	1.90	-0.61	1.80	1.80	1.74	9.62
RASP MINE SURFACE BROOMED SAMPLES AREA #5	5B	cAver1.3	0.28	3.65	-0.31	-0.16	-1.35	433.96	22.66	3.17	2.71	2.87	38.07	34.64	883.09	917.16	2.77	-1.21	4.22	-0.05	34.83	34.82	0.05	0.01	47.12	0.01	354.01	412.53	384.63	0.47
RASP MINE SURFACE BROOMED SAMPLES AREA #5		cAver2.5	0.10	0.98	-0.55	-0.28	-1.30	143.41	8.42	1.58	-0.99	-1.21	12.77	11.19	587.03	564.06	0.60	-0.54	3.02	-0.04	26.67	26.54	-0.02	0.03	12.92	0.01	115.84	133.94	117.44	0.22
		cAver4.0	-0.01	1.35	-0.73	-0.28	-1.79	199.50	21.91	2.23	-0.08	-0.25	16.00	14.15	618.54	600.18	0.91	-0.73	3.35	-0.06	26.69	26.52	0.08	0.01	14.23	0.02	127.63	146.82	128.27	0.37
		caverp1	0.14	2.05	-0.51	-0.24	-1.45	264.36	17.28	2.34	0.60	0.54	22.85	20.52	703.28	702.31	1.47	-0.84	3.54	-0.05	29.64	29.54	0.03	0.02	25.71	0.01	205.66	238.76	217.55	0.35
		caverp2	1.95	3.26	-1.49	5.60	-2.80	315.60	19.67	3.58	1.43	1.16	36.96	35.24	483.89	423.47	3.23	-0.11	5.88	-0.01	23.89	23.95	0.09	0.11	27.20	0.04	229.34	271.82	237.20	1.14
		BAC%Fast	0.32	4.12	-4.68	-3.25	-28.71	24.90	0.45	69.38	41.31	82.18	30.31	26.85	67.12	77.34	2.26	-103.27	33.23	-2.44	70.25	79.75	0.09	2.81	7.19	1.51	6.13	6.19	6.15	11.67
		BAC%+Food	0.11	1.11	-8.21	-5.60	-27.54	8.23	0.17	34.58	-15.06	-34.56	10.16	8.67	44.62	47.57	0.49	-46.32	23.80	-1.86	53.79	60.79	-0.03	5.47	1.97	1.61	2.00	2.01	1.88	5.52
		BAC%FullFed	-0.01	1.52	-10.87	-5.66	-37.85	11.45	0.44	48.68	-1.25	-7.16	12.74	10.97	47.02	50.61	0.74	-61.73	26.36	-2.80	53.84	60.74	0.15	2.97	2.17	3.89	2.21	2.20	2.05	9.16
		BAC%P1	0.15	2.32	-7.65	-4.76	-30.78	15.17	0.35	51.08	9.21	15.36	18.19	15.91	53.46	59.23	1.20	-71.23	27.93	-2.33	59.79	67.67	0.06	3.83	3.92	2.19	3.56	3.58	3.48	8.75
		BAC%PII	2.18	3.68	-22.33	112.34	-59.44	18.11	0.39	78.29	21.76	33.11	29.42	27.31	36.78	35.71	2.63	-9.17	46.30	-0.24	48.19	54.86	0.17	22.29	4.15	9.67	3.97	4.08	3.79	28.08
		cAver1.3	3.88	8.03	-0.07	0.17	-0.37	21.98	193.37	0.03	-26.70	-29.00	-3.23	-3.27	-748.87	-746.57	-1.48	0.10	1.92	-0.15	-3.68	-3.65	0.35	-0.26	232.31	-0.43	1729.20	2005.36	1854.52	0.03
WMDD 4063	6A	cAver2.5	-0.03	1.58	-0.13	0.08	-0.31	2.16	-199.27	0.27	3.25	3.18	-3.99	-3.97	-578.13	-557.73	-1.19	-0.04	0.58	-0.05	-2.52	-2.71	0.79	-0.12	82.66	-0.15	623.42	721.07	660.36	0.00
WMDD 4063		cAver4.0	-0.31	0.12	-0.15	-0.01	-0.30	-2.00	-209.91	-0.05	-1.05	-1.38	-3.49	-3.52	-510.53	-490.63	-0.92	0.32	0.23	-0.03	-2.13	-2.23	0.19	-0.11	26.05	-0.10	211.11	261.28	222.92	-0.01
		caverp1	1.18	3.24	-0.12	0.08	-0.33	7.38	-71.94	0.09	-8.17	-9.07	-3.57	-3.58	-612.51	-598.31	-1.20	0.13	0.91	-0.08	-2.78	-2.87	0.44	-0.16	113.67	-0.23	854.58	995.90	912.60	0.01
		caverp2	0.36	1.78	0.03	-0.05	0.10	8.01	48.03	0.42	-5.07	-5.51	0.42	0.45	-214.77	-183.17	0.01	0.19	0.82	0.00	-0.84	-0.85	5.39	-0.03	59.88	-0.02	468.98	542.17	492.27	0.03

		BAC%Fast	1.26	2.70	-1.18	5.83	-11.30	3.15	0.45	0.04	-1133.78	-534.36	-1.01	-1.03	-0.88	-1.02	-0.94	1.14	119.21	-9.01	-0.44	-0.44	0.35	-22.85	100.01	-85.56	84.51	85.33	84.51	0.89
		BAC%+Food	-0.01	0.53	-2.15	2.67	-9.36	0.31	-0.46	0.35	138.15	58.68	-1.24	-1.25	-0.68	-0.76	-0.75	-0.45	36.22	-3.09	-0.30	-0.32	0.78	-10.83	35.59	-29.62	30.47	30.68	30.09	-0.07
		BAC%FullFed	-0.10	0.04	-2.41	-0.28	-9.22	-0.29	-0.48	-0.06	-44.46	-25.46	-1.09	-1.11	-0.60	-0.67	-0.58	3.54	14.16	-1.98	-0.25	-0.27	0.19	-10.09	11.21	-20.08	10.32	11.12	10.16	-0.14
		BAC%P1	0.38	1.09	-1.91	2.74	-9.96	1.06	-0.17	0.11	-346.70	-167.05	-1.11	-1.13	-0.72	-0.82	-0.76	1.41	56.53	-4.69	-0.33	-0.34	0.44	-14.59	48.93	-45.09	41.76	42.38	41.59	0.23
		BAC%PII	0.12	0.60	0.47	-1.78	3.00	1.15	0.11	0.54	-215.32	-101.50	0.13	0.14	-0.25	-0.25	0.00	2.13	51.15	-0.05	-0.10	-0.10	5.38	-2.90	25.78	-4.75	22.92	23.07	22.43	0.67
		cAver1.3	2.24	6.03	-0.12	0.22	-0.31	15.94	2.40	0.01	-27.50	-29.81	-5.11	-5.04	-1003.03	-965.67	-2.02	-0.07	1.71	-0.17	-4.74	-4.73	0.02	-0.30	204.14	-0.45	1508.20	1753.36	1632.86	0.02
WMDD 4063	6B	cAver2.5	-0.17	1.81	-0.13	0.06	-0.28	1.48	-236.80	0.20	-0.75	-0.99	-4.70	-4.75	-714.23	-674.40	-1.38	-0.02	0.68	-0.05	-3.09	-3.29	0.64	-0.15	82.59	-0.16	617.62	713.50	656.69	-0.01
WMDD 4063		cAver4.0	-0.31	0.70	-0.11	0.00	-0.16	-0.92	-221.57	0.18	-3.51	-4.15	-3.47	-3.47	-583.53	-552.07	-1.01	-0.09	0.48	-0.04	-2.51	-2.61	0.59	-0.12	53.35	-0.11	405.85	467.21	428.85	0.00
		caverp1	0.59	2.85	-0.12	0.09	-0.25	5.50	-151.99	0.13	-10.59	-11.65	-4.43	-4.42	-766.93	-730.71	-1.47	-0.06	0.95	-0.09	-3.45	-3.55	0.42	-0.19	113.36	-0.24	843.89	978.02	906.13	0.00
		caverp2	1.12	3.07	0.15	0.94	0.55	9.58	147.99	0.62	-7.67	-7.91	0.07	-0.18	-248.10	-211.60	0.15	0.00	0.93	-0.01	-1.10	-1.09	6.74	-0.09	70.65	-0.03	538.75	631.57	572.94	0.02
		BAC%Fast	0.73	2.03	-1.94	7.82	-9.47	2.28	0.01	0.01	-1167.78	-549.32	-1.60	-1.59	-1.18	-1.32	-1.28	-0.77	105.98	-10.44	-0.56	-0.57	0.02	-26.74	87.88	-90.20	73.71	74.61	74.41	0.50
		BAC%+Food	-0.05	0.61	-2.15	2.12	-8.60	0.21	-0.55	0.25	-31.92	-18.21	-1.47	-1.49	-0.84	-0.92	-0.87	-0.24	42.08	-3.33	-0.37	-0.39	0.64	-13.19	35.55	-32.51	30.18	30.36	29.93	-0.17
		BAC%FullFed	-0.10	0.23	-1.78	-0.10	-4.90	-0.13	-0.51	0.23	-149.22	-76.38	-1.08	-1.09	-0.69	-0.75	-0.64	-0.99	29.75	-2.23	-0.30	-0.31	0.59	-10.37	22.97	-22.01	19.83	19.88	19.54	-0.13
		BAC%P1	0.19	0.96	-1.96	3.28	-7.66	0.79	-0.35	0.16	-449.64	-214.64	-1.38	-1.39	-0.90	-1.00	-0.93	-0.67	59.27	-5.33	-0.41	-0.42	0.42	-16.77	48.80	-48.24	41.24	41.62	41.29	0.07
		BAC%PII	0.36	1.03	2.43	32.89	16.60	1.37	0.34	0.79	-325.79	-145.68	0.02	-0.06	-0.29	-0.29	0.10	-0.03	58.00	-0.60	-0.13	-0.13	6.73	-7.96	30.42	-6.11	26.33	26.87	26.11	0.66
		cAver1.3	-0.24	3.50	-0.15	0.24	-0.20	47.99	357.33	1.36	-24.75	-26.72	-8.72	-8.69	-906.07	-882.40	-2.07	-0.16	1.24	-0.16	-4.56	-4.49	-0.01	-0.33	173.01	-0.47	1277.87	1463.36	1366.52	0.18
WMDD 4075	7A	cAver2.5	-0.52	1.09	-0.11	0.14	-0.12	20.49	-160.80	1.42	1.03	0.90	-6.66	-6.68	-707.40	-669.47	-1.43	-0.08	0.75	-0.06	-3.16	-3.29	1.47	-0.17	80.31	-0.17	599.79	687.74	637.33	0.02
WMDD 4075		cAver4.0	-0.42	0.17	-0.09	0.07	-0.09	14.03	-159.07	1.22	-1.57	-2.12	-5.77	-5.74	-582.73	-552.27	-1.12	0.03	0.53	-0.04	-2.64	-2.72	1.36	-0.16	45.98	-0.12	345.98	398.41	366.82	0.01
		caverp1	-0.39	1.58	-0.12	0.15	-0.13	27.51	12.49	1.33	-8.43	-9.31	-7.05	-7.03	-732.07	-701.38	-1.54	-0.07	0.84	-0.09	-3.45	-3.50	0.94	-0.22	99.77	-0.25	741.21	849.83	790.22	0.07
		caverp2	-0.29	1.19	0.10	-0.11	0.49	29.16	314.30	1.35	-5.31	-6.11	-2.19	-2.34	-216.43	-184.37	-0.28	0.42	0.78	0.01	-1.12	-1.10	6.56	-0.10	87.09	-0.04	660.12	753.43	699.17	0.12
		BAC%Fast	-0.78	9.42	-18.00	22.03	-11.05	1.60	0.71	2.21	-1383.84	-494.48	-2.22	-2.23	-1.33	-1.50	-7.07	-0.90	97.08	-5.93	-0.87	-0.86	-0.01	-51.96	75.06	-334.61	62.78	61.99	62.50	6.86
		BAC%+Food	-1.73	2.94	-13.18	12.44	-6.50	0.68	-0.32	2.30	57.40	16.72	-1.69	-1.71	-1.04	-1.14	-4.89	-0.42	59.02	-2.06	-0.61	-0.63	2.07	-27.72	34.84	-122.41	29.47	29.13	29.15	0.85
		BAC%FullFed	-1.39	0.45	-11.10	5.89	-4.68	0.47	-0.32	1.97	-87.93	-39.24	-1.47	-1.47	-0.85	-0.94	-3.82	0.15	41.37	-1.50	-0.51	-0.52	1.92	-25.17	19.95	-83.82	17.00	16.88	16.78	0.36
		BAC%P1	-1.30	4.27	-14.09	13.45	-7.41	0.92	0.02	2.16	-471.46	-172.33	-1.79	-1.80	-1.07	-1.19	-5.26	-0.39	65.82	-3.16	-0.66	-0.67	1.33	-34.95	43.28	-180.28	36.41	36.00	36.14	2.69
		BAC%PII	-0.98	3.19	12.31	-9.86	26.72	0.97	0.63	2.19	-296.79	-113.00	-0.56	-0.60	-0.32	-0.31	-0.97	2.32	61.19	0.26	-0.22	-0.21	9.26	-15.09	37.78	-28.26	32.43	31.92	31.98	4.75
		cAver1.3	-0.22	3.43	-0.12	0.23	-0.31	52.74	415.77	1.23	-26.31	-28.68	-8.34	-8.42	-950.40	-918.93	-1.76	-0.06	1.33	-0.16	-4.60	-4.62	0.05	-0.32	189.64	-0.47	1409.54	1626.69	1518.19	0.20
WMDD 4075	7B	cAver2.5	-0.54	1.05	-0.14	0.13	-0.26	19.96	-163.5	1.40	0.20	-0.16	-6.93	-7.00	-724.00	-683.50	-1.53	0.11	0.81	-0.07	-3.27	-3.39	1.19	-0.18	65.25	-0.17	483.86	564.20	516.96	0.02

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WMDD 4075		cAver4.0	-0.48	0.23	-0.11	0.06	-0.13	13.31	-169.83	1.12	-3.67	-4.53	-5.82	-5.86	-593.57	-560.43	-1.14	-0.07	0.55	-0.04	-2.67	-2.74	1.41	-0.15	45.15	-0.12	347.58	397.34	366.08	0.01
		caverp1	-0.41	1.57	-0.12	0.14	-0.23	28.67	27.48	1.25	-9.93	-11.12	-7.03	-7.09	-755.99	-720.96	-1.48	-0.01	0.90	-0.09	-3.51	-3.59	0.88	-0.21	100.02	-0.25	746.99	862.75	800.41	0.07
		caverp2	-0.40	1.02	0.20	-0.36	0.69	27.67	251.40	1.15	-6.53	-7.47	-2.13	-2.35	-244.39	-208.36	-0.24	0.47	0.72	0.00	-1.14	-1.18	7.96	-0.10	64.40	-0.04	503.58	577.50	526.91	0.13
		BAC%Fast	-0.75	9.25	-14.59	20.68	-17.01	1.76	0.83	1.99	-1471.08	-530.77	-2.12	-2.16	-1.39	-1.56	-6.03	-0.33	104.23	-5.94	-0.88	-0.88	0.07	-50.63	82.27	-337.05	69.24	68.91	69.43	7.67
		BAC%+Food	-1.80	2.83	-16.67	11.70	-14.04	0.66	-0.33	2.28	11.18	-3.00	-1.76	-1.79	-1.06	-1.16	-5.24	0.59	63.38	-2.49	-0.63	-0.65	1.68	-28.01	28.31	-123.85	23.77	23.90	23.64	0.66
		BAC%FullFed	-1.58	0.63	-12.35	5.26	-7.28	0.44	-0.34	1.81	-205.26	-83.85	-1.48	-1.50	-0.87	-0.95	-3.90	-0.39	43.02	-1.59	-0.51	-0.52	1.98	-23.58	19.59	-84.63	17.08	16.83	16.74	0.37
		BAC%P1	-1.37	4.24	-14.53	12.55	-12.78	0.95	0.05	2.03	-555.05	-205.87	-1.79	-1.82	-1.11	-1.22	-5.06	-0.04	70.21	-3.34	-0.67	-0.69	1.24	-34.07	43.39	-181.84	36.70	36.55	36.61	2.90
		BAC%PII	-1.32	2.75	23.01	-32.37	37.94	0.92	0.50	1.86	-365.35	-138.18	-0.54	-0.60	-0.36	-0.35	-0.81	2.64	56.36	0.00	-0.22	-0.22	11.23	-16.30	27.94	-29.02	24.74	24.46	24.10	5.04
		cAver1.3	0.56	11.28	0.00	0.16	0.09	91.02	1311.60	0.08	0.10	0.36	-0.59	-0.61	188.80	160.70	0.44	0.02	0.96	0.01	0.57	0.59	1.48	0.01	167.55	0.00	1268.53	1463.62	1356.45	0.25
WMDD 4079	8A	cAver2.5	-0.02	0.79	-0.03	0.01	-0.10	19.78	168.10	0.29	0.28	0.08	-1.49	-1.47	45.00	37.50	0.00	-0.02	-0.05	-0.04	-0.01	0.03	1.26	0.01	23.04	0.00	184.19	212.56	192.43	0.08
WMDD 4079		cAver4.0	0.13	2.84	0.00	0.08	-0.01	19.17	146.29	0.63	1.78	1.93	-1.26	-1.26	77.00	64.63	0.05	0.09	0.53	-0.01	0.00	0.03	2.00	0.00	28.87	0.00	224.63	259.57	239.47	0.08
		caverp1	0.22	4.97	-0.01	0.08	-0.01	43.32	542.00	0.33	0.72	0.79	-1.11	-1.11	103.60	87.61	0.16	0.03	0.48	-0.01	0.18	0.22	1.58	0.01	73.15	0.00	559.11	645.25	596.12	0.14
		caverp2	-0.26	5.64	0.04	-0.63	0.30	39.25	602.37	0.54	1.62	1.38	-0.56	-0.52	84.81	72.16	0.17	-0.17	0.66	0.02	0.15	0.18	5.48	0.06	34.71	0.00	291.07	335.76	298.46	0.22
		BAC%Fast	1.70	28.16	-0.16	6.68	2.81	9.57	2.76	0.09	5.29	6.52	-0.17	-0.17	0.18	0.18	4.08	0.08	164.85	5.44	0.06	0.06	0.62	0.47	96.51	-2.46	83.20	82.97	82.98	25.58
		BAC%+Food	-0.07	1.96	-1.96	0.30	-3.07	2.08	0.35	0.33	14.56	1.44	-0.42	-0.42	0.04	0.04	0.02	-0.07	-8.01	-14.74	0.00	0.00	0.53	0.30	13.27	-1.96	12.08	12.05	11.77	7.66
		BAC%FullFed	0.40	7.08	-0.32	3.26	-0.37	2.02	0.31	0.72	93.34	35.53	-0.35	-0.36	0.07	0.07	0.43	0.38	90.63	-3.00	0.00	0.00	0.84	0.19	16.63	0.08	14.73	14.72	14.65	8.22
		BAC%P1	0.67	12.40	-0.81	3.41	-0.21	4.56	1.14	0.38	37.73	14.50	-0.31	-0.31	0.10	0.10	1.51	0.13	82.49	-4.10	0.02	0.02	0.67	0.32	42.14	-1.45	36.67	36.58	36.47	13.82
		BAC%PII	-0.80	14.08	2.54	-25.55	9.31	4.13	1.27	0.62	85.03	25.29	-0.16	-0.15	0.08	0.08	1.62	-0.72	113.43	9.56	0.02	0.02	2.31	3.22	19.99	0.99	19.09	19.03	18.26	21.70
		cAver1.3	0.27	12.72	0.03	0.22	0.23	93.58	1342.60	0.55	0.07	0.47	-1.09	-1.11	193.50	165.30	0.56	0.17	1.01	0.01	0.53	0.53	1.46	0.01	181.15	0.00	1386.53	1580.62	1472.78	0.26
WMDD 4079	8B	cAver2.5	0.06	3.96	0.00	0.07	0.02	30.00	233.09	0.64	-3.22	-3.42	-1.55	-1.52	71.18	60.11	0.07	0.04	0.37	-0.03	-0.01	0.10	1.73	0.00	33.30	0.00	257.95	296.82	273.80	0.10
WMDD 4079		cAver4.0	0.14	2.85	0.00	0.06	0.04	19.15	143.83	0.63	1.68	1.95	-1.19	-1.21	76.16	63.17	0.05	0.19	0.71	0.00	0.00	0.03	1.91	0.00	29.35	0.00	232.16	263.64	242.90	0.08
		caverp1	0.16	6.51	0.01	0.12	0.10	47.58	573.17	0.61	-0.49	-0.33	-1.27	-1.28	113.62	96.19	0.23	0.13	0.70	-0.01	0.18	0.22	1.70	0.00	81.27	0.00	625.55	713.69	663.16	0.15
		caverp2	-0.41	6.35	0.03	-1.68	0.21	42.19	631.13	0.75	0.29	0.16	-0.87	-0.86	88.28	74.57	0.24	-0.02	0.71	0.04	0.08	0.14	5.00	0.08	38.79	0.00	311.57	360.63	326.12	0.22
		BAC%Fast	0.83	31.75	2.39	9.16	7.20	9.84	2.83	0.64	3.75	8.63	-0.30	-0.31	0.19	0.18	5.17	0.72	171.97	4.14	0.06	0.06	0.61	0.31	104.35	-2.22	90.94	89.61	90.10	25.96
		BAC%+Food	0.20	9.88	-0.04	2.72	0.63	3.16	0.49	0.73	-168.92	-62.82	-0.43	-0.43	0.07	0.07	0.62	0.18	63.10	-12.54	0.00	0.01	0.73	-0.11	19.18	-0.92	16.92	16.83	16.75	10.43
		BAC%FullFed	0.43	7.11	-0.24	2.47	1.09	2.01	0.30	0.72	87.87	35.80	-0.34	-0.34	0.07	0.07	0.46	0.82	121.47	1.43	0.00	0.00	0.81	-0.18	16.91	-0.63	15.23	14.95	14.86	8.05
		BAC%P1	0.49	16.25	0.70	4.78	2.97	5.00	1.21	0.70	-25.76	-6.13	-0.36	-0.36	0.11	0.11	2.08	0.58	118.85	-2.32	0.02	0.02	0.72	0.01	46.81	-1.26	41.03	40.46	40.57	14.81
		BAC%PII	-1.23	15.85	1.85	-68.65	6.50	4.44	1.33	0.86	15.24	3.02	-0.24	-0.24	0.08	0.08	2.26	-0.07	120.78	15.04	0.01	0.01	2.10	3.95	22.34	0.58	20.44	20.44	19.95	22.47
		cAver1.3	0.99	3.92	0.07	0.06	0.07	23.98	481.53	0.69	-0.29	-0.35	1.16	1.13	128.80	109.97	0.69	0.61	2.09	0.00	0.30	0.38	1.47	-0.02	342.62	0.00	2500.86	2900.29	2706.12	0.09

WMDD 4080	9A	cAver2.5	0.09	1.04	0.02	0.05	0.06	7.52	108.36	0.78	-3.10	-3.55	-1.45	-1.41	82.08	69.75	0.05	0.73	0.45	-0.03	0.12	0.14	2.22	0.00	148.33	0.00	1117.02	1277.39	1186.10	0.02
WMDD 4080		cAver4.0	0.13	0.72	-0.03	0.01	0.09	4.32	57.15	0.48	0.52	0.60	-1.16	-1.12	60.66	49.00	0.05	0.91	0.32	-0.01	0.08	0.10	1.86	0.00	77.36	0.00	588.86	680.40	624.93	0.01
		caverp1	0.40	1.89	0.02	0.04	0.07	11.94	215.68	0.65	-0.96	-1.10	-0.48	-0.47	90.52	76.24	0.26	0.75	0.95	-0.01	0.17	0.20	1.85	-0.01	189.43	0.00	1402.25	1619.36	1505.72	0.04
		caverp2	0.00	2.27	0.14	-2.22	0.33	11.07	216.27	0.55	-0.38	-0.52	-0.16	0.24	67.49	58.54	0.32	0.92	1.07	0.03	0.06	0.09	5.80	0.01	122.99	0.00	934.27	1081.50	993.69	0.07
		BAC%Fast	1.33	5.36	2.00	3.21	2.82	3.48	1.24	0.98	-14.79	-7.40	0.37	0.36	0.14	0.14	2.82	6.45	114.17	0.50	0.04	0.05	0.66	-1.60	174.33	-1.25	144.64	145.02	145.88	2.28
		BAC%+Food	0.12	1.42	0.49	2.52	2.48	1.09	0.28	1.10	-160.83	-74.32	-0.47	-0.46	0.09	0.09	0.19	7.76	24.56	-3.13	0.02	0.02	1.01	-0.38	75.47	-0.18	64.60	63.87	63.94	0.60
		BAC%FullFed	0.18	0.99	-1.01	0.75	3.38	0.63	0.15	0.68	26.95	12.51	-0.37	-0.36	0.06	0.06	0.19	9.58	17.39	-1.32	0.01	0.01	0.84	-0.05	39.36	0.25	34.06	34.02	33.69	0.36
		BAC%P1	0.54	2.59	0.50	2.16	2.89	1.73	0.56	0.92	-49.56	-23.07	-0.16	-0.15	0.10	0.09	1.07	7.93	52.04	-1.32	0.02	0.03	0.84	-0.67	96.39	-0.39	81.10	80.97	81.17	1.08
		BAC%PII	0.01	3.11	4.16	-117.50	12.82	1.60	0.56	0.79	-19.73	-10.99	-0.05	0.08	0.07	0.07	1.31	9.76	58.38	2.72	0.01	0.01	2.63	0.62	62.58	0.60	54.03	54.08	53.57	1.83
		cAver1.3	0.87	3.77	0.14	0.03	0.29	23.81	420.57	0.67	-0.22	-0.43	0.73	0.46	116.03	97.87	0.60	1.29	1.94	0.03	0.23	0.27	1.38	-0.02	369.29	0.00	2791.19	3214.95	2981.78	0.08
WMDD 4080	9B	cAver2.5	0.12	1.35	0.10	0.05	0.21	7.15	109.19	0.70	-1.27	-1.82	-0.77	-1.19	83.78	71.56	0.07	1.39	0.45	0.00	0.11	0.15	2.31	-0.01	141.60	0.00	1059.69	1222.06	1136.43	0.02
WMDD 4080		cAver4.0	0.17	1.78	0.04	0.05	0.24	5.05	66.49	0.56	0.39	0.29	-0.57	-1.07	77.26	64.17	0.04	1.22	0.43	0.03	0.07	0.09	2.21	-0.01	86.08	0.00	652.50	754.60	693.37	0.02
		caverp1	0.39	2.30	0.10	0.04	0.24	12.01	198.75	0.64	-0.37	-0.65	-0.21	-0.60	92.36	77.86	0.23	1.30	0.94	0.02	0.13	0.17	1.96	-0.02	198.99	0.00	1501.13	1730.54	1603.86	0.04
		caverp2	0.86	3.18	0.16	0.93	0.73	13.36	229.47	0.73	0.32	-0.03	3.75	0.60	67.39	57.34	0.37	1.29	1.15	0.10	0.09	0.09	6.26	-0.01	107.99	0.00	818.00	940.90	872.09	0.07
		BAC%Fast	1.17	5.16	4.34	1.66	11.30	3.45	1.08	0.95	-11.26	-8.92	0.23	0.15	0.12	0.12	2.44	13.65	106.11	3.13	0.03	0.03	0.63	-1.94	187.90	-1.41	161.43	160.75	160.74	2.06
		BAC%+Food	0.16	1.84	3.03	2.85	8.09	1.04	0.28	0.99	-65.97	-38.10	-0.25	-0.38	0.09	0.09	0.27	14.69	24.50	-0.40	0.01	0.02	1.05	-1.04	72.05	0.25	61.29	61.11	61.26	0.55
		BAC%FullFed	0.23	2.44	1.31	2.44	9.16	0.73	0.17	0.80	20.00	6.02	-0.18	-0.34	0.08	0.08	0.15	12.89	23.38	2.59	0.01	0.01	1.00	-0.98	43.80	1.62	37.74	37.73	37.38	0.43
		BAC%P1	0.52	3.15	2.89	2.31	9.51	1.74	0.51	0.91	-19.08	-13.66	-0.07	-0.19	0.10	0.10	0.95	13.74	51.33	1.77	0.02	0.02	0.89	-1.32	101.25	0.15	86.82	86.53	86.46	1.01
		BAC%PII	1.16	4.36	4.99	48.96	28.60	1.94	0.59	1.04	16.75	-0.55	1.21	0.19	0.07	0.07	1.51	13.61	63.00	10.06	0.01	0.01	2.84	-0.88	54.95	0.62	47.31	47.05	47.01	1.86
		cAver1.3	0.77	16.23	0.47	1.83	1.92	139.38	866.23	10.02	0.52	0.40	230.68	253.74	11651.73	10338.37	5.15	1.42	5.81	0.02	249.42	248.23	0.49	-0.02	1005.99	10.30	8727.86	10030.29	9354.12	0.28
	SD6	cAver2.5	0.32	3.43	0.08	0.33	0.54	19.11	111.03	1.82	-3.41	-3.96	63.08	59.19	4140.48	4127.43	2.66	0.95	1.50	-0.01	83.66	83.29	0.18	0.01	227.93	7.67	1744.35	2010.72	1867.10	0.06
		cAver4.0	0.45	2.88	0.07	0.18	0.39	10.55	58.93	0.95	0.53	0.41	36.66	33.19	2853.43	2826.50	2.23	0.97	1.29	0.02	48.73	48.62	0.18	0.00	147.10	7.06	1122.63	1285.70	1200.37	0.04
		caverp1	0.51	7.51	0.21	0.78	0.95	56.35	345.40	4.26	-0.79	-1.05	110.14	115.37	6215.22	5764.10	3.35	1.11	2.87	0.01	127.27	126.71	0.28	0.00	460.34	8.34	3864.95	4442.24	4140.53	0.12
		caverp2	-0.01	6.62	0.21	0.21	0.92	44.89	169.05	3.65	0.98	0.52	123.77	127.44	2813.92	2788.18	2.27	0.62	2.37	0.08	53.73	53.47	0.33	0.03	109.47	7.60	846.07	977.20	898.69	0.21
		BAC%Fast	1.90	33.59	5.80	18.15	22.01	25.76	2.41	47.76	16.36	6.70	71.57	75.81	121.11	120.38	3.58	244.66	81.13	1.12	112.17	112.85	1.28	-1.27	95.00	68.21	92.53	92.45	91.71	19.20
		BAC%+Food	0.79	7.10	0.96	3.26	6.15	3.53	0.31	8.66	-107.22	-66.98	19.57	17.68	43.04	48.06	1.85	163.03	20.89	-0.48	37.62	37.86	0.46	0.51	21.52	50.79	18.49	18.53	18.31	3.89
		BAC%FullFed	1.11	5.97	0.84	1.80	4.52	1.95	0.16	4.54	16.74	6.99	11.38	9.92	29.66	32.91	1.55	168.01	17.96	0.91	21.91	22.10	0.47	-0.09	13.89	46.73	11.90	11.85	11.77	2.70
		BAC%P1	1.27	15.55	2.53	7.73	10.89	10.41	0.96	20.32	-24.71	-17.76	34.17	34.47	64.60	67.11	2.33	191.90	39.99	0.51	57.23	57.61	0.74	-0.28	43.47	55.24	40.97	40.94	40.60	8.59
		BAC%PII	-0.03	13.70	2.55	2.06	10.59	8.30	0.47	17.40	30.74	8.76	38.40	38.08	29.25	32.46	1.58	107.41	33.12	4.78	24.16	24.31	0.85	2.32	10.34	50.34	8.97	9.01	8.81	14.37
	STD1	cAver1.3	-0.26	5.82	-0.20	0.68	-0.07	61.18	281.01	3.95	0.52	0.29	99.49	97.19	4825.13	4412.36	1.24	-0.47	2.21	-0.09	113.10	111.60	0.12	-0.02	412.55	5.54	3581.78	4129.61	3936.17	0.09
		cAver2.5	-0.24	0.71	0.07	0.13	0.21	11.88	55.89	1.04	-0.31	-0.79	37.84	32.59	2254.14	2409.56	1.58	-0.14	0.72	-0.05	45.68	45.07	0.08	-0.02	124.84	5.18	918.05	1059.29	1006.82	0.03
		cAver4.0	-0.19	2.04	0.13	0.13	0.56	11.09	51.85	1.16	-1.45	-1.67	40.45	34.77	2803.43	3040.66	1.86	-0.33	1.38	-0.04	47.02	46.39	0.09	-0.02	142.72	6.44	1055.25	1212.56	1155.40	0.04
		caverp1	-0.23	2.93	-0.02	0.33	0.20	29.59	136.65	2.13	-0.32	-0.64	60.97	56.67	3338.85	3309.97	1.53	-0.31	1.44	-0.06	70.56	69.62	0.10	-0.02	234.34	5.65	1924.10	2217.57	2112.56	0.05
		caverp2	1.74	3.74	-0.01	5.99	0.62	22.37	48.97	1.86	-0.47	-0.56	74.27	70.54	1315.81	1386.22	2.17	-0.38	1.27	-0.01	33.39	32.76	0.20	0.00	190.28	5.79	1403.61	1612.82	1535.04	0.09

		BAC%Fast	-0.64	12.05	-2.49	6.76	-0.83	11.31	0.78	18.81	16.48	4.84	30.87	29.04	50.15	51.38	0.87	-80.84	30.80	-4.84	50.86	50.73	0.32	-1.85	38.96	36.71	37.97	38.06	38.59	6.07
		BAC%+Food	-0.60	1.46	0.80	1.24	2.37	2.20	0.16	4.96	-9.75	-13.30	11.74	9.74	23.43	28.06	1.10	-23.91	10.10	-2.58	20.54	20.49	0.20	-1.80	11.79	34.30	9.73	9.76	9.87	1.73
		BAC%FullFed	-0.47	4.22	1.56	1.26	6.42	2.05	0.14	5.53	-45.52	-28.21	12.55	10.39	29.14	35.40	1.29	-57.73	19.21	-2.52	21.15	21.09	0.24	-1.58	13.48	42.66	11.19	11.18	11.33	2.78
		BAC%P1	-0.58	6.07	-0.19	3.26	2.31	5.47	0.38	10.15	-9.97	-10.77	18.92	16.93	34.70	38.54	1.07	-53.83	20.11	-3.38	31.73	31.65	0.25	-1.76	22.13	37.46	20.40	20.44	20.71	3.60
		BAC%PII	4.31	7.74	-0.16	59.44	7.16	4.13	0.14	8.84	-14.84	-9.39	23.04	21.08	13.68	16.14	1.51	-65.05	17.66	-0.75	15.01	14.89	0.51	0.04	17.97	38.35	14.88	14.87	15.05	6.44
	STD2	cAver1.3	1.19	9.14	-1.67	0.43	-2.49	84.60	345.62	6.93	1.64	1.53	131.99	133.36	6829.72	6274.96	2.26	-0.88	4.69	-0.11	180.73	180.95	-0.03	0.05	765.79	9.88	6582.64	7573.03	7118.66	0.22
		cAver2.5	1.05	1.63	-1.64	-0.25	-2.74	14.69	65.59	1.33	-1.43	-1.91	38.69	36.98	2604.43	2735.62	1.68	-0.41	1.80	-0.10	57.73	57.80	-0.15	0.06	172.05	7.10	1274.52	1474.47	1380.36	0.06
		cAver4.0	0.83	2.32	-1.75	-0.42	-3.19	8.98	32.47	0.60	-2.03	-2.82	26.25	24.47	2101.04	2213.58	1.42	-0.73	1.70	-0.12	39.09	39.17	-0.17	0.05	128.89	7.15	960.11	1102.52	1031.39	0.06
		caverp1	1.04	4.55	-1.68	-0.05	-2.77	38.55	158.39	3.17	-0.48	-0.91	69.22	68.62	4003.61	3880.28	1.82	-0.67	2.82	-0.11	97.38	97.50	-0.11	0.05	376.18	8.12	3119.00	3590.69	3371.84	0.12
		caverp2	1.38	5.34	-1.85	4.40	-2.79	33.85	51.96	2.84	-0.63	-1.30	70.45	68.98	1769.76	1844.04	1.53	-0.71	2.60	-0.05	42.09	42.18	-0.07	0.06	159.70	8.37	1188.28	1365.38	1282.47	0.17
		BAC%Fast	2.96	18.92	-	4.31	-	15.63	0.96	33.01	51.49	25.93	40.95	39.85	70.99	73.06	1.57	-	65.46	-6.12	81.28	82.26	-0.07	4.01	72.32	65.43	69.79	69.80	69.79	15.06
		BAC%+Food	2.60	3.38	-	-2.44	-	2.71	0.18	6.36	-45.01	-	12.00	11.05	27.07	31.85	1.17	-	25.13	-5.74	25.96	26.28	-0.38	4.13	16.25	47.01	13.51	13.59	13.53	4.44
		BAC%FullFed	2.05	4.79	-	-4.20	-	1.66	0.09	2.84	-63.82	-	8.14	7.31	21.84	25.77	0.99	-	23.74	-6.60	17.58	17.81	-0.45	3.46	12.17	47.35	10.18	10.16	10.11	4.11
		BAC%P1	2.58	9.42	-	-0.47	-	7.13	0.44	15.09	-15.05	-	21.48	20.50	41.61	45.18	1.27	-	39.41	-6.11	43.79	44.33	-0.29	3.90	35.52	53.80	33.07	33.10	33.06	8.21
		BAC%PII	3.41	11.06	-	43.68	-	6.26	0.14	13.55	-19.76	-	21.86	20.61	18.39	21.47	1.06	-	36.26	-3.01	18.93	19.18	-0.19	4.56	15.08	55.42	12.60	12.58	12.57	12.06
	BLANK3	Aver1.3	1.18	11.10	0.56	0.56	1.70	12.57	571.80	6.34	30.54	32.48	11.62	11.71	1336.17	1248.77	2.55	-0.38	2.05	0.16	8.62	8.61	1.65	0.27	6.83	0.25	60.80	69.98	63.14	-0.21
	b3	Aver2.5	0.75	7.55	0.50	0.44	1.50	8.73	378.70	1.46	2.20	1.70	7.45	7.62	849.27	790.03	1.55	-0.38	1.39	0.05	6.78	6.93	1.06	0.13	3.98	-0.05	36.54	41.86	38.64	-0.22
		Aver4.0	0.73	7.65	0.49	0.49	1.45	7.26	291.27	0.86	8.02	7.84	6.31	6.44	776.20	716.60	1.15	-0.39	1.54	0.04	6.18	6.25	0.82	0.10	3.22	-0.11	29.45	33.79	31.52	-0.22
		averp1	0.89	8.77	0.52	0.50	1.55	9.52	413.92	2.89	13.59	14.01	8.46	8.59	987.21	918.47	1.75	-0.38	1.66	0.08	7.19	7.26	1.17	0.17	4.68	0.03	42.26	48.54	44.43	-0.21
		averp2	3.14	8.00	0.64	4.49	1.93	5.01	143.67	2.52	10.46	9.84	4.77	4.60	422.30	360.50	0.66	0.12	1.59	0.24	4.53	4.49	0.42	0.06	1.89	-0.18	17.15	19.57	18.29	-0.21
		cAver1.3	0.09	15.88	0.25	1.91	1.45	139.63	462.93	10.54	-21.97	-	248.65	279.49	11520.50	10144.57	2.90	0.68	5.87	-0.18	249.18	249.16	-0.95	-0.32	1027.84	10.57	8907.20	10213.36	9553.52	0.28
	sd5	cAver2.5	-0.23	4.25	-0.13	0.34	0.13	12.73	-	1.58	2.30	1.77	54.82	53.93	3336.40	3397.63	1.00	0.32	1.90	-0.05	78.59	78.47	-0.88	-0.20	238.32	8.00	1797.46	2064.80	1925.36	0.05
		cAver4.0	-0.33	1.74	-0.08	0.03	0.13	3.78	-	0.49	-7.22	-8.07	26.22	25.84	2022.47	2039.40	0.79	0.03	1.23	-0.05	40.63	40.56	-0.69	-0.17	141.38	7.11	1068.55	1234.54	1143.15	0.03
		caverp1	-0.16	7.29	0.01	0.76	0.57	52.05	-7.94	4.20	-8.96	-	109.90	119.75	5626.46	5193.87	1.56	0.34	3.00	-0.09	122.80	122.73	-0.84	-0.23	469.18	8.56	3924.40	4504.23	4207.34	0.12
		caverp2	0.23	4.42	0.19	1.99	1.02	26.30	-	2.11	-6.35	-7.17	133.84	142.50	991.03	968.17	1.87	0.75	1.60	0.04	28.11	27.96	-0.02	-0.08	158.24	7.49	1204.38	1390.00	1288.67	0.20
		BAC%Fast	0.22	32.86	3.02	18.91	16.62	25.81	1.29	50.23	-	-	77.15	83.51	119.74	118.12	2.02	116.70	81.95	-	112.06	113.27	-2.47	-	97.06	70.04	94.43	94.14	93.67	19.34
		BAC%+Food	-0.57	8.79	-1.61	3.35	1.48	2.35	-0.71	7.52	72.12	29.97	17.01	16.11	34.68	39.56	0.70	55.43	26.59	-2.69	35.34	35.68	-2.28	-	22.51	53.01	19.06	19.03	18.88	3.11
		BAC%FullFed	-0.82	3.60	-0.96	0.32	1.44	0.70	-0.64	2.33	-	-	8.14	7.72	21.02	23.75	0.55	5.27	17.16	-2.97	18.27	18.44	-1.80	-	13.35	47.11	11.33	11.38	11.21	1.93
		BAC%P1	-0.39	15.08	0.15	7.52	6.51	9.62	-0.02	20.03	-	-	34.10	35.78	58.48	60.48	1.09	59.13	41.90	-5.35	55.22	55.79	-2.18	-	44.31	56.72	41.60	41.52	41.25	8.13
		BAC%PII	0.56	9.16	2.39	19.74	11.70	4.86	-0.20	10.05	-	-	41.53	42.58	10.30	11.27	1.30	129.37	22.33	2.03	12.64	12.71	-0.05	-6.02	14.94	49.60	12.77	12.81	12.63	13.62
	BLANK4	Aver1.3	0.30	11.19	0.45	0.63	1.55	2.92	28.07	6.01	4.35	3.54	2.82	2.89	181.60	154.97	-	-0.43	2.02	-0.02	2.41	2.37	0.08	-0.09	1.31	-0.22	11.81	13.38	12.55	-0.23
	B4	Aver2.5	0.14	8.57	0.44	0.48	1.50	2.27	15.57	1.20	4.98	4.39	1.99	2.07	35.85	30.57	-	-0.28	1.76	0.00	2.40	2.34	-0.01	-0.09	0.54	-0.23	4.98	5.61	5.24	-0.23
		Aver4.0	0.09	7.38	0.47	0.45	1.56	1.79	15.11	0.57	0.71	-0.41	1.63	1.73	101.24	87.17	-	-0.38	1.47	-0.02	2.37	2.31	0.00	-0.09	0.50	-0.23	4.70	5.30	4.97	-0.23

3) Worksheet entitled: 'Table 3' provided by EnTox

Table 3 Overall bioaccessibility (BAC %) of the samples																													
	Ion	47 Ti	48 Ti	51 V	52 Cr	53 Cr	55 Mn	57 Fe	59 Co	60 Ni	61 Ni	63 Cu	65 Cu	66 Zn	67 Zn	75 As	82 Se	88 Sr	95 Mo	111 Cd	114 Cd	121 Sb	202 Hg	204 Hg	205 Tl	206 Pb	207 Pb	208 Pb	238 U
Sample Name	Name/BAC%	(T1,# 47)C once ntrati on Mean	(T1,# 48)C once ntrati on Mean	(T1,# 51)C once ntrati on Mean	(T1,# 52)C once ntrati on Mean	(T1,# 53)C once ntrati on Mean	(T1,# 55)C once ntrati on Mean	(T1,# 57)C once ntrati on Mean	(T1,# 59)C once ntrati on Mean	(T1,# 60)C once ntrati on Mean	(T1,# 61)C once ntrati on Mean	(T1,# 63)C once ntrati on Mean	(T1,# 65)C once ntrati on Mean	(T1,# 66)C once ntrati on Mean	(T1,# 67)C once ntrati on Mean	(T1,# 75)C once ntrati on Mean	(T1,# 82)C once ntrati on Mean	(T1,# 88)C once ntrati on Mean	(T1,# 95)C once ntrati on Mean	(T1,# 111) Conc entrat ion Mean	(T1,# 114) Conc entrat ion Mean	(T1,# 121) Conc entrat ion Mean	(T1,# 202) Conc entrat ion Mean	(T1,# 204) Conc entrat ion Mean	(T1,# 205) Conc entrat ion Mean	(T1,# 206) Conc entrat ion Mean	(T1,# 207) Conc entrat ion Mean	(T1,# 208) Conc entrat ion Mean	(T1,# 238) Conc entrat ion Mean
	B1OVERALL	1.31	6.06	1.72	2.29	4.29	2.38	15.02	1.01	2.96	2.86	0.84	2.70	52.25	46.53	0.54	1.04	1.19	0.89	7.70	7.72	0.95	0.01	0.48	0.17	4.87	5.26	4.73	0.21
Surface Broomed Samples AREA #1	1AOVERALL	1.85	9.70	1.47	3.85	2.98	100.29	53.92	1.99	3.38	3.25	54.82	49.28	644.79	588.37	2.72	0.73	4.75	0.87	16.65	16.63	1.23	0.03	219.69	0.17	1642.55	1898.28	1807.75	0.43
Surface Broomed Samples AREA #1	BAC%1A	1.48	7.81	15.93	56.66	44.10	7.73	0.80	35.61	44.12	60.15	36.60	32.28	28.69	29.25	3.45	98.45	37.05	82.07	59.31	62.60	5.72	1.41	20.39	26.17	17.35	17.20	17.59	13.44
	1B OVERALL	1.29	7.63	1.01	3.61	1.81	98.81	43.21	1.72	2.15	1.89	40.53	36.77	430.90	420.04	2.20	-0.25	3.51	0.80	11.37	11.32	1.16	0.00	141.34	0.16	1134.33	1317.91	1250.06	0.36
	BAC%1B	1.03	6.14	10.92	53.16	26.80	7.62	0.64	30.80	28.14	35.00	27.06	24.09	19.18	20.88	2.79	-34.31	27.39	76.22	40.53	42.61	5.42	-0.24	13.12	24.85	11.98	11.94	12.16	11.20
Surface Broomed Samples AREA #2	2AOVERALL	0.91	6.71	0.93	2.85	1.78	159.85	22.43	3.53	3.21	3.02	31.18	28.77	491.11	502.52	1.01	-0.38	2.52	0.78	9.22	9.21	0.96	-0.04	11.93	0.16	98.16	113.05	102.84	1.17
	BAC%2A	0.66	4.88	12.61	47.50	30.66	25.54	0.37	80.91	46.96	61.19	31.17	28.29	45.87	52.62	2.72	-45.53	27.06	102.97	53.15	52.42	17.26	-10.90	3.89	20.29	3.61	3.63	3.51	23.67
Surface Broomed Samples AREA #2	2B OVERALL	1.09	6.68	0.91	3.32	1.80	162.25	23.19	3.59	3.24	3.13	31.67	29.24	488.94	499.00	1.00	-0.38	2.46	0.78	9.23	9.26	0.95	-0.04	12.09	0.16	99.18	114.51	105.08	1.25
	BAC%2B	0.79	4.86	12.37	55.34	30.91	25.92	0.38	82.23	47.41	63.51	31.66	28.76	45.67	52.25	2.69	-44.69	26.45	103.29	53.19	52.70	17.08	-11.16	3.94	20.31	3.64	3.68	3.58	25.20
	3AOVERALL	1.46	9.74	1.70	2.96	3.49	79.99	48.95	2.15	3.86	3.70	14.50	14.37	479.68	458.35	1.68	0.49	6.42	0.84	13.41	13.34	0.98	-0.03	24.86	0.16	198.38	227.41	211.42	0.39
RASP MINE AREA #3	BAC%3A	0.76	5.06	19.78	44.28	52.14	11.25	0.84	49.18	54.07	72.98	27.36	26.15	46.79	49.59	3.23	69.82	61.06	150.40	68.28	67.02	6.07	-14.50	10.14	29.32	9.05	8.96	8.91	12.92
RASP MINE AREA #3	3B OVERALL	1.27	11.18	2.08	1.77	4.39	88.02	54.18	2.30	3.75	3.39	14.74	14.55	507.38	479.15	1.67	1.11	7.42	0.84	14.08	13.95	1.00	-0.02	22.28	0.16	176.54	204.09	189.21	0.37
	BAC%3B	0.66	5.80	24.17	26.42	65.48	12.38	0.92	52.53	52.58	66.72	27.81	26.48	49.50	51.84	3.23	157.33	70.57	150.59	71.69	70.09	6.17	-10.81	9.09	29.12	8.05	8.04	7.97	12.35
	std1	1.45	9.09	1.71	3.67	4.60	29.47	129.93	3.03	2.54	2.17	63.03	60.60	2978.32	2978.97	2.22	0.72	2.59	0.84	69.82	68.98	1.07	-0.01	220.83	5.90	1777.07	2046.63	1949.18	0.27
	BAC%STD1	2.53	15.13	20.57	44.57	54.89	5.45	0.39	15.64	80.35	39.74	20.36	19.15	34.21	38.80	1.68	141.31	46.04	43.65	33.95	34.04	0.90	-0.70	22.65	46.64	20.66	20.64	21.09	19.32
	B2OVERALL	1.05	6.32	1.57	1.77	3.80	2.52	15.30	1.05	2.79	2.31	0.41	2.18	60.17	53.30	0.62	1.19	1.30	0.85	5.93	5.93	0.94	-0.02	0.51	0.16	5.05	5.51	4.95	0.20
BROOMED SURFACE SAMPLES AREA#4	4AOVERALL	1.20	11.60	2.09	1.67	4.63	107.15	48.63	2.12	3.05	2.60	15.33	15.03	432.26	383.46	2.20	1.35	9.33	0.85	10.01	9.96	1.06	-0.02	27.14	0.16	221.20	253.92	231.60	0.51
BROOMED SURFACE SAMPLES AREA#4	BAC%4A	1.09	10.49	23.90	21.14	59.10	9.39	0.78	44.24	34.82	40.38	31.52	29.92	42.97	42.19	6.38	256.66	65.09	237.02	76.51	75.35	21.04	-8.53	6.58	18.24	6.08	6.01	5.85	9.88
	4B OVERALL	1.32	11.78	2.07	2.17	4.60	115.78	50.50	2.30	3.05	2.56	15.88	15.53	444.05	391.65	2.32	1.27	9.33	0.83	10.05	9.97	1.06	-0.02	27.89	0.16	226.89	263.35	239.52	0.52
	BAC%4B	1.20	10.65	23.65	27.56	58.70	10.15	0.81	48.01	34.81	39.76	32.65	30.91	44.14	43.09	6.74	241.66	65.13	233.52	76.81	75.46	21.05	-8.92	6.76	18.13	6.24	6.24	6.05	10.23
RASP MINE SURFACE BROOMED SAMPLES AREA #5	5AOVERALL	1.35	9.61	1.64	3.24	3.63	281.97	37.82	3.94	3.98	3.50	33.64	30.79	825.41	846.13	2.79	0.78	5.08	0.81	39.66	39.16	1.11	-0.03	28.06	0.16	226.38	260.99	238.53	0.58
RASP MINE SURFACE BROOMED SAMPLES AREA #5	BAC%5A	1.52	10.85	24.57	64.90	77.00	16.18	0.76	86.12	60.53	100.19	26.77	23.87	62.74	71.35	2.28	66.33	40.01	38.23	80.00	89.70	2.14	-5.04	4.28	34.79	3.92	3.92	3.81	14.25
	5B OVERALL	1.52	8.55	0.86	2.63	2.07	272.44	33.31	3.61	3.51	2.91	25.47	25.07	717.02	696.95	2.39	0.49	5.27	0.81	34.31	34.24	0.99	0.01	25.79	0.18	210.28	244.73	220.60	0.70
	BAC%5B	1.70	9.64	12.92	52.68	43.87	15.63	0.67	78.88	53.45	83.51	20.28	19.43	54.50	58.77	1.95	42.00	41.53	38.28	69.20	78.42	1.90	2.39	3.93	38.75	3.64	3.67	3.52	17.23

	STD2	2.14	10.87	-0.14	2.54	0.99	38.35	145.86	3.99	2.19	1.21	67.17	68.11	3526.02	3447.62	2.36	0.51	4.01	0.75	89.29	89.42	0.83	0.03	320.65	8.27	2627.11	3023.45	2838.75	0.32
	BAC%STD2	0.53	2.25	-0.17	2.52	1.14	0.71	0.04	1.90	6.88	2.05	2.08	2.03	3.66	4.01	0.16	8.74	5.60	4.25	4.02	4.07	0.22	0.22	3.03	5.48	2.79	2.79	2.78	2.21
	B3ALLAVER	1.45	8.58	0.55	1.50	1.64	8.39	346.36	2.79	12.81	12.97	7.54	7.59	845.98	778.98	1.48	-0.26	1.64	0.12	6.53	6.57	0.99	0.14	3.98	-0.02	35.99	41.30	37.90	-0.21
WMDD 4063	6AALLAVER	2.43	11.45	0.47	1.54	1.42	15.93	304.41	2.96	5.41	4.79	4.97	5.02	332.91	284.45	0.58	-0.11	2.53	0.06	4.23	4.21	2.66	0.01	104.20	-0.20	794.17	923.77	845.42	-0.20
WMDD 4063	BAC%6A	0.79	3.85	7.42	53.80	43.14	2.28	0.70	3.79	229.86	88.28	1.55	1.58	0.39	0.39	0.37	-1.23	157.15	3.88	0.50	0.50	2.66	0.94	44.86	-39.61	38.81	39.31	38.53	-5.39
	6BALLAVER	2.17	11.48	0.49	1.80	1.59	14.91	269.36	3.04	2.94	2.25	4.23	4.23	208.76	178.04	0.41	-0.30	2.59	0.05	3.66	3.64	2.99	-0.02	106.66	-0.21	803.59	932.71	860.73	-0.20
	BAC%6B	0.70	3.86	7.88	62.87	48.26	2.14	0.62	3.89	125.04	41.54	1.32	1.33	0.25	0.24	0.26	-3.32	160.92	3.26	0.44	0.43	2.98	-1.95	45.92	-42.31	39.27	39.69	39.22	-5.52
WMDD 4075	7AALLAVER	0.81	10.71	0.45	1.13	1.56	38.98	479.60	4.45	5.21	4.66	1.61	1.68	263.12	224.01	0.26	-0.33	2.59	0.03	3.72	3.74	2.77	-0.05	109.47	-0.22	822.03	941.84	875.59	-0.12
WMDD 4075	BAC%7A	2.70	28.86	52.73	101.48	85.81	1.30	0.96	7.22	291.02	86.23	0.41	0.43	0.39	0.38	0.89	-1.81	202.58	0.98	0.71	0.72	3.91	-7.82	47.49	-158.41	40.38	39.90	40.04	-4.75
	7BALLAVER	1.04	10.01	0.50	1.51	1.64	36.81	429.82	4.02	3.73	2.76	1.73	1.68	217.90	186.17	0.31	-0.14	2.49	0.05	3.61	3.59	3.64	-0.05	95.09	-0.22	722.13	832.73	769.93	-0.12
	BAC%7B	3.45	26.97	59.23	135.89	90.41	1.23	0.86	6.52	208.31	51.02	0.44	0.43	0.32	0.32	1.06	-0.80	195.33	1.86	0.69	0.69	5.13	-7.30	41.25	-160.27	35.48	35.28	35.21	-4.87
	b4ALLAVER	0.91	8.79	0.55	1.88	1.79	2.43	21.32	2.54	3.26	2.33	2.41	2.28	104.28	89.05	-0.01	-0.16	1.73	0.04	2.35	2.30	0.03	-0.09	0.75	-0.23	6.88	7.76	7.27	-0.23
	8AALLAVER	1.01	13.93	0.55	1.79	1.86	44.73	578.41	2.92	4.20	3.27	1.44	1.31	203.18	172.80	0.16	-0.17	2.25	0.04	2.53	2.51	2.59	-0.07	64.29	-0.23	498.98	575.64	528.98	-0.07
WMDD 4079	BAC%8A	3.07	34.76	39.56	72.83	57.27	4.70	1.22	3.36	220.23	60.00	0.40	0.37	0.20	0.19	1.44	-0.75	385.55	15.96	0.27	0.26	1.09	-3.48	37.03	-178.69	32.73	32.63	32.36	-7.01
WMDD 4079	8BALLAVER	0.93	15.26	0.57	1.55	1.91	48.66	608.98	3.18	2.96	2.12	1.24	1.11	211.56	179.83	0.22	-0.06	2.42	0.05	2.50	2.50	2.56	-0.07	71.40	-0.23	553.93	633.19	586.18	-0.06
	BAC%8B	2.82	38.08	40.52	63.08	58.96	5.12	1.28	3.65	155.16	38.96	0.35	0.31	0.20	0.20	2.03	-0.25	414.65	18.66	0.26	0.26	1.08	-3.53	41.13	-178.65	36.33	35.90	35.86	-6.07
WMDD 4080	9AALLAVER	1.21	10.78	0.60	1.35	1.93	14.15	237.15	3.16	2.45	1.37	2.01	1.99	189.03	160.86	0.26	0.64	2.71	0.04	2.49	2.47	2.87	-0.09	173.58	-0.23	1292.13	1492.66	1384.98	-0.18
WMDD 4080	BAC%9A	1.64	14.75	18.15	71.54	75.08	2.05	0.61	4.48	126.97	28.79	0.65	0.64	0.20	0.20	1.08	6.74	147.88	3.93	0.32	0.31	1.30	-8.02	88.32	-119.79	74.73	74.64	74.66	-4.75
	9BALLAVER	1.42	11.31	0.66	2.14	2.15	14.77	227.75	3.20	3.06	1.83	3.20	1.98	190.39	161.78	0.26	1.14	2.72	0.08	2.48	2.45	3.07	-0.10	176.99	-0.23	1337.23	1540.89	1428.19	-0.18
	BAC%9B	1.91	15.48	20.15	113.27	83.99	2.14	0.59	4.54	158.95	38.46	1.03	0.64	0.20	0.20	1.05	12.06	148.50	8.08	0.31	0.31	1.39	-8.88	90.06	-119.37	77.34	77.05	76.99	-4.80
*****ALLAVER=OVERALL AVERAGE																													

W M D D 4 0 7 5	c a v e r p 1	1. 5 8 4 5 5 6	- 0.11 992	0.14 961 1	27.5 052 2	12.4 888 9	1.33 346 7	- 8.43 244	- 7.03 49	- 732. 067	- 1.53 785	- 0.07 011	0.84 054 4	- 0.08 669	- 3.45 433	0.94 131 1	- 0.22 023	99.7 68	- 0.25 095	741. 213 3	849. 8344	790. 2222	0.06 8926										
7 A	c a v e r p 2	1. 1 8 5	0.10 473 3	- 0.10 967	29.1 626 7	314. 3	1.34 936 7	- 5.30 833	- 2.34 233	- 216. 433	- 0.28 307	0.41 722 7	0.78 133 3	0.00 723 3	- 1.12 367	6.56 13	- 0.09 507	87.0 86	- 0.03 933	660. 116 7	753. 4333	699. 1733	0.12 1663										
	p 1 %	5 7. 2 1 3 3 5	789. 539 1	374. 548	48.5 375 8	3.82 169 9	49.7 036 7	61.3 680 3	75.0 210 6	77.1 815 1	84.4 547 4	- 20.1 986	51.8 253 9	109. 103 4	75.4 550 7	12.5 464 5	69.8 487 1	53.3 935 6	86.4 499 6	52.8 935 6	53.0 0639	53.0 5657	36.1 6459										
	p 2 %	4 2. 7 8 6 6 5	- 689. 539	- 274. 548	51.4 624 2	96.1 783	50.2 963 3	38.6 319 7	24.9 789 4	22.8 184 9	15.5 452 6	120. 198 6	48.1 746 1	- 9.10 339	24.5 449 3	87.4 535 5	30.1 512 9	46.6 064 4	13.5 500 4	47.1 064 4	46.9 9361	46.9 4343	63.8 3541										
W M D D 4 0 7 5	c a v e r p 1	1. 5 7 2 5 5 6	- 0.12 368	0.13 953 3	28.6 685 6	27.4 777 8	1.24 957 8	- 9.92 767	- 7.09 258	- 755. 989	- 1.47 82	- 0.00 788	0.89 654 4	- 0.09 158	- 3.50 922	0.88 164 4	- 0.21 471	100. 015 8	- 0.25 313	746. 991 1	862. 7456	800. 4111	0.07 4291										
7 B	c a v e r p 2	1. 0 2 1 3 3 3	0.19 58	- 0.36	27.6 693 3	251. 4	1.14 77	- 6.53 467	- 2.35 467	- 244. 387	- 0.23 66	0.47 406	0.71 966 7	0 1.13 667	- 7.95 53	- 0.10 269	64.4 026 7	- 0.04 04	503. 583 3	577. 5	526. 9067	0.12 9157											
	p 1 %	6 0. 6 2 5 4	- 171. 484	- 63.2 9	50.8 868 1	9.85 298 2	52.1 248 6	60.3 053 4	75.0 756 2	75.5 705 1	86.2 024 7	- 1.68 961	55.4 719 9	100	75.5 339 2	9.97 680 2	67.6 462 5	60.8 300 2	86.2 363 4	59.7 318 4	59.9 0267	60.3 029	36.5 1596										

	p 2 %	3 9. 3 7 4 6	271. 483 6	163. 29	49.1 131 9	90.1 470 2	47.8 751 4	39.6 946 6	24.9 243 8	24.4 294 9	13.7 975 3	101. 689 6	44.5 280 1	0	24.4 660 8	90.0 232	32.3 537 5	39.1 699 8	13.7 636 6	40.2 681 6	40.0 9733	39.6 971	63.4 8404											
W M D D 4 0 7 9	c a v e r p 1	4. 9 6 8 2 2 2	- 0.01 133	0.08 363 3	43.3 215 6	541. 997 8	0.33 116 7	0.72 027 8	- 1.11 332	103. 597 8	0.16 325 4	0.03 041 9	0.48 238 9	- 0.01 037	0.18 477 8	1.58 026 5	0.00 628 3	73.1 524 4	- 0.00 184	559. 113 9	645. 2486	596. 1167	0.13 7262											
W M D D 4 0 7 9	c a v e r p 2	5. 6 4 1	0.03 536 7	- 0.62 633	39.2 516 7	602. 366 7	0.54 163 3	1.62 316 7	- 0.52 167	84.8 1	0.17 499	- 0.16 759	0.66 333 3	0.02 416 7	0.14 866 7	5.48 405 7	0.06 306 9	34.7 061 7	0.00 126 7	291. 065 3	335. 7617	298. 4563	0.21 5517											
8 A	p 1 %	4 6. 8 2 9 2 8	- 47.1 567	- 15.4 106	52.4 644 1	47.3 623 4	37.9 430 2	30.7 358 6	68.0 935 7	54.9 859 3	48.2 651 9	- 22.1 764	42.1 034 8	- 75.1 081	55.4 148 6	22.3 696 6	9.06 001 7	67.8 225 4	319. 230 8	65.7 642 4	65.7 7389	66.6 3701	38.9 0885											
	p 2 %	5 3. 1 7 0 7 2	147. 156 7	115. 410 6	47.5 355 9	52.6 376 6	62.0 569 8	69.2 641 4	31.9 064 3	45.0 140 7	51.7 348 1	122. 176 4	57.8 965 2	175. 108 1	44.5 851 4	77.6 303 4	90.9 399 8	32.1 774 6	- 219. 231	34.2 357 6	34.2 2611	33.3 6299	61.0 9115											
W M D D 4 0 7 9	c a v e r p 1	6. 5 0 9 3 3	0.00 982 2	0.11 728 9	47.5 782 2	573. 173 3	0.60 613 3	- 0.49 183	- 1.27 877	113. 615 6	0.22 532 5	0.13 426 2	0.69 5	- 0.00 587	0.17 5	1.70 004 3	0.00 013 4	81.2 691 1	- 0.00 16	625. 547 2	713. 693	663. 1611	0.14 7134											
W M D D 4	c a v e r	6. 3 5 2	0.02 586 7	- 1.68 3	42.1 883 3	631. 133 3	0.74 696 7	0.29 083 3	- 0.86 067	88.2 8	0.24 475 7	- 0.01 6	0.70 633 3	0.03 803 3	0.07 933 3	4.99 872 4	0.07 736 7	38.7 861 7	0.00 073 3	311. 565 3	360. 6283	326. 123	0.22 3143											

		v e r p 2	7	6	7	875		7		1			1	4	925	759	1	5			335	384		245						739	406 8	
		A L L A V E R	0.67 999 3	3.20 81	9.30 666 7	9.64 119 8	8.89 166 7	1.35 692 1	#DIV /0! 4	2.69 542	#DIV /0! 4	#DIV /0! 4	0.48 678 1	0.49 193 6	0.12 284 4	0.10 496 3	0.40 452 7	- 0.31 919	#DIV /0! 4	#DIV /0! 4	0.41 8637	0.41 6222	#DIV /0! 4	0.06 5634	651. 276	#DIV /0! 4	1.30 6195	1.51 9353	1.39 0488	#DIV /0! 4	1.98 8081	1.7 862 94
	c A v e r 1. 3	c A v e r 1. 3	2.23 996 7	6.03 333 3	- 0.12 157	0.22 436 7	- 0.31 233	15.9 406 7	2.4	0.00 6	- 27.5 027	- 29.8 123	- 5.11 3	- 5.04 433	- 100 3.03	- 965. 667	- 2.02 04	- 0.07 029	1.70 666 7	- 0.16 837	- 4.74	- 4.73 433	0.02 2267	- 0.29 837	204. 1407	- 0.45 387	1508 .203	1753 .357	1632 .857	0.01 8667	- 26.3 084	- 26. 315 6
6 B	c A v e r 2. 5	c A v e r 2. 5	- 0.16 787	1.81 233 3	- 0.13 487	0.06 076 7	- 0.28 367	1.47 6	- 236. 8	0.19 733 3	- 0.75 167	- 0.98 85	- 4.70 367	- 4.74 733	- 714. 233	- 674. 4	- 1.38 04	- 0.02 193	0.67 763 3	- 0.05 375	- 3.09 267	- 3.29 433	0.64 3367	- 0.14 72	82.5 8933	- 0.16 36	617. 6233	713. 5033	656. 6933	- 0.00 613	- 7.11 837	- 7.3 483 7
	c A v e r 4. 0	c A v e r 4. 0	- 0.30 753	0.69 6	- 0.11 16	- 0.00 3	- 0.16 167	- 0.91 6	- 221. 567	0.18 3	- 3.51 433	- 4.14 5	- 3.47 1	- 3.46 933	- 583. 533	- 552. 067	- 1.00 99	- 0.09 008	0.47 9	- 0.03 604	- 2.51 3	- 2.60 967	0.59 43	- 0.11 568	53.3 5067	- 0.11 077	405. 8467	467. 21	428. 85	- 0.00 473	- 4.73 59	- 4.8 563
	c a v e r p 1	c a v e r p 1	0.58 818 9	2.84 722 2	- 0.12 268	0.09 404 4	- 0.25 256	5.50 022 2	- 151. 989	0.12 877 8	- 10.5 896	- 11.6 486	- 4.42 922	- 4.42 033	- 766. 933	- 730. 711	- 1.47 023	- 0.06 077	0.95 443 3	- 0.08 605	- 3.44 856	- 3.54 611	0.41 9978	- 0.18 708	113. 3602	- 0.24 275	843. 8911	978. 0233	906. 1333	0.00 26	- 12.7 209	- 12. 840 1
	c a v e r p 2	c a v e r p 2	1.11 666 7	3.06 6	0.15 256 7	0.94 3	0.54 733 3	9.58 133 3	147. 986 7	0.61 57	- 7.67 267	- 7.90 637	0.06 633 3	- 0.18 5	- 248. 1	- 211. 6	0.15 453 3	- 0.00 254	0.93 4	- 0.00 96	- 1.09 833	- 1.08 967	6.73 9967	- 0.08 881	70.6 5267	- 0.03 077	538. 75	631. 5667	572. 94	0.02 4333	- 1.14 807	- 1.2 287
	A L L	A L L	2.17 019 2	11.4 770 8	0.49 397 5	1.80 267 5	1.59 166 7	14.9 134 2	269. 363 3	3.04 481 7	2.94 483 3	2.25 434 2	4.23 258 3	4.23 108 3	208. 758 3	178. 041 7	0.41 276 7	- 0.30 271	2.59 133 3	0.05 263 9	3.66 475	3.63 675	2.98 6417	- 0.02 179	106. 6625	- 0.21 291	803. 5917	932. 7083	860. 7333	- 0.20 483	0.56 7558	0.4 119 25

	1.3	1.3																														
7A	cAv er 2.5	cAv er 2.5	-0.52043	1.09	-0.11213	0.13833	-0.118	20.4893	-160.8	1.42033	1.026667	0.903767	-6.6645	-6.6769	-707.4	-669.467	-1.42994	-0.0754	0.753633	-0.05645	-3.16267	-3.294	1.4697	-0.17465	80.31267	-0.1704	599.79	687.7367	637.3267	0.0219	-7.34477	-7.55355
	cAv er 4.0	cAv er 4.0	-0.41923	0.167	-0.09443	0.06553	-0.085	14.0323	-159.067	1.2154	-1.57267	-2.12033	-5.76793	-5.73847	-582.733	-552.267	-1.11752	-0.026723	0.52833	-0.04102	-2.64233	-2.724	1.360633	-0.1586	45.984	-0.11667	345.98	398.41	366.8167	0.009233	-4.7589	-4.9816
	cav er p1	cav er p1	-0.39191	1.584556	-0.11992	0.149611	-0.13456	27.5052	12.48889	1.333467	-8.43244	-9.31219	-7.05214	-7.0349	-732.067	-701.378	-1.53785	-0.07011	0.840544	-0.08669	-3.45433	-3.50278	0.941311	-0.22023	99.768	-0.25095	741.2133	849.8344	790.2222	0.068926	-12.8623	-12.9945
	cav er p2	cav er p2	-0.29433	1.185	0.104733	-0.10967	0.48533	29.16267	314.3	1.349367	-5.30833	-6.106	-2.18533	-2.34233	-216.433	-184.367	-0.28307	0.417227	0.781333	0.007233	-1.12367	-1.10367	6.5613	-0.09507	87.086	-0.03933	660.1167	753.4333	699.1733	0.121663	-1.0937	-1.14067
	ALLA VER	ALLA VER	0.81434	10.7111	0.4487	1.12842	1.559	38.982	479.6	4.453	5.2051	4.6595	1.60997	1.67719	263.12	224.01	0.259522	-0.32565	2.587	0.026853	3.7187	3.7373	2.7697	-0.04928	109.469	-0.2205	822.03	941.84	875.59	-0.12181	0.38503	0.218081
	BAC%	cAv er 1.3	-0.81402	12.05747	#DIV/0!	2.22697	-1.82424	1.091021	#DIV/0!	1.819556	-412.522	-445.333	-0.59347	-0.59111	-0.34755	-0.33847	#DIV/0!	-0.20208	#DIV/0!	#DIV/0!	-0.59566	-0.58682	#DIV/0!	-2.04652	1081.296	#DIV/0!	2.119187	2.426794	2.266208	#DIV/0!	-16.2474	-16.226
		cAv er 2.5	-1.7946	3.758621	#DIV/0!	1.257576	-1.07273	0.465773	#DIV/0!	1.893778	17.1111	15.06278	-0.45337	-0.45421	-0.27135	-0.2568	#DIV/0!	-0.09425	#DIV/0!	#DIV/0!	-0.41331	-0.43048	#DIV/0!	-1.09158	501.9542	#DIV/0!	0.994677	1.140525	1.056926	#DIV/0!	-4.50599	-4.63408
		c	-0.57	0.57	#DIV	0.59	-0.31	#DIV	1.62	-	-	-	-	-	-	-	#DIV	0.03	#DIV	#DIV	-	-	#DIV	-	287.	#DIV	0.57	0.66	0.60	#DIV	-	-

		A v e r 4. 0	1.44 563	586 2	/0!	575 8	0.77 273	898 9	/0!	053 3	26.2 111	35.3 389	0.39 238	0.39 037	0.22 353	0.21 184	/0!	340 4	/0!	/0!	0.34 531	0.35 599	/0!	0.99 125	4	/0!	3765	0713	832	/0!	2.91 957	3.0 562	
		c a v e r p 1	- 1.35 142	5.46 398 5	#DIV /0!	1.36 010 1	- 1.22 323	0.62 526 1	#DIV /0!	1.77 795 6	- 140. 541	- 155. 203	- 0.47 974	- 0.47 856	- 0.28 081	- 0.26 904	#DIV /0!	- 0.08 764	#DIV /0!	#DIV /0!	- 0.45 143	- 0.45 776	#DIV /0!	- 1.37 645	623. 55	#DIV /0!	1.22 921	1.40 9344	1.31 0485	#DIV /0!	- 7.89 097	- 7.9 720 9	
		c a v e r p 2	- 1.01 494	4.08 620 7	#DIV /0!	- 0.99 697	4.41 212 1	0.66 293 9	#DIV /0!	1.79 915 6	- 88.4 722	- 101. 767	- 0.14 866	- 0.15 934	- 0.08 302	- 0.07 072	#DIV /0!	0.52 153 3	#DIV /0!	#DIV /0!	- 0.14 685	- 0.14 423	#DIV /0!	- 0.59 417	544. 2875	#DIV /0!	1.09 4721	1.24 9475	1.15 9491	#DIV /0!	- 0.67 098	- 0.6 998	
		A L L A V E R	2.80 806 9	36.9 348 3	#DIV /0!	10.2 583 6	14.1 727 3	0.88 615 6	#DIV /0!	5.93 733 3	86.7 516 7	77.6 583 3	0.10 952 2	0.11 409 5	0.10 092 8	0.08 592 6	#DIV /0!	- 0.40 706	#DIV /0!	#DIV /0!	0.48 5978	0.48 8408	#DIV /0!	- 0.30 798	684. 1813	#DIV /0!	1.36 3234	1.56 1924	1.45 2056	#DIV /0!	0.23 6215	0.1 337 92	
		c A v e r 1. 3	- 0.22 483	3.43 333 3	- 0.12 413	0.22 996 7	- 0.30 9	52.7 44	415. 766 7	1.22 666 7	- 26.3 117	- 28.6 813	- 8.33 767	- 8.42	- 950. 4	- 918. 933	- 1.76 223	- 0.05 973	1.33 1	- 0.16 276	- 4.59 5	- 4.62	0.04 6267	- 0.31 906	189. 6407	- 0.46 917	1409 .537	1626 .69	1518 .19	0.19 6572	- 26.6 031	- 26. 617 4	
7 B		c A v e r 2. 5	- 0.54 177	1.05 166 7	- 0.14 183	0.13 01	- 0.25 5	19.9 56	- 163. 5	1.40 366 7	0.2 0.16 19	- 6.93 323	- 7.00 217	-724	- 683. 5	- 1.53 174	0.10 670 7	0.80 93	- 0.06 833	- 3.26 733	- 3.39 167	1.19 2367	- 0.17 648	65.2 5267	- 0.17 24	483. 8567	564. 2033	516. 96	0.01 68	- 7.36 797	- 7.5 803 9		
		c A v e r 4. 0	- 0.47 507	0.23 266 7	- 0.10 507	0.05 853 3	- 0.13 233	13.3 056 7	- 169. 833	1.11 84	- 3.67 133	- 4.53 1	- 5.82 483	- 5.85 557	- 593. 567	- 560. 433	- 1.14 063	- 0.07 061	0.54 933 3	- 0.04 367	- 2.66 533	- 2.74 333	1.40 63	- 0.14 861	45.1 54	- 0.11 781	347. 58	397. 3433	366. 0833	0.00 95	- 4.87 523	- 5.0 355 4	
		c a v	- 0.41 389	1.57 255 6	- 0.12 368	0.13 953 3	- 0.23 211	28.6 685 6	27.4 777 8	1.24 957 8	- 9.92 767	- 11.1 247	- 7.03 191	- 7.09 258	- 755. 989	- 720. 956	- 1.47 82	- 0.00 788	0.89 654 4	- 0.09 158	- 3.50 922	- 3.58 5	0.88 1644	- 0.21 471	100. 0158	- 0.25 313	746. 9911	862. 7456	800. 4111	0.07 4291	- 12.9 488	- 13. 077	

	e r p 1	e r p 1																													8		
	c a v e r p 2	c a v e r p 2	- 0.39 767	1.02 133 3	0.19 58	- 0.36	0.68 933 3	27.6 693 3	251. 4	1.14 77	- 6.53 467	- 7.46 7	- 2.13 1	- 2.35 467	- 244. 387	- 208. 36	- 0.23 66	0.47 406	0.71 966 7	0	- 1.13 667	- 1.17 5	7.95 53	- 0.10 269	64.4 0267	- 0.04 04	503. 5833	577. 5	526. 9067	0.12 9157	- 1.22 93	- 1.2 454 7	
	A L L A V E R	A L L A V E R	1.04 005	10.0 099 2	0.50 403 3	1.51 104 2	1.64 25	36.8 116 7	429. 816 7	4.01 841 7	3.72 575	2.75 708 3	1.73 123 3	1.68 448 3	217. 895	186. 168 3	0.30 900 9	- 0.14 389	2.49 433 3	0.05 089 1	3.60 9667	3.58 625	3.63 65	- 0.04 599	95.0 9167	- 0.22 31	722. 125	832. 7333	769. 9333	- 0.12 485	0.37 6342	0.2 294 58	
	B A C %	c A v e r 1. 3	- 0.74 944	11.4 444 4	#DIV /0!	1.64 261 9	- 2.20 714	1.17 104 8	#DIV /0!	1.49 593 5	- 263 1.17	- 286 8.13	- 0.53 447	- 0.53 974	- 0.35 864	- 0.34 677	#DIV /0!	- 0.09 791	#DIV /0!	#DIV /0!	- 0.58 782	- 0.59 102	#DIV /0!	- 1.67 925	998. 1088	#DIV /0!	2.21 2773	2.55 3673	2.38 3344	#DIV /0!	- 17.3 877	- 17. 397	
		c A v e r 2. 5	- 1.80 589	3.50 555 6	#DIV /0!	0.92 928 6	- 1.82 143	0.44 307 3	#DIV /0!	1.71 178 9	20 16.1 9	- 0.44 444	- 0.44 886	- 0.27 321	- 0.25 792	#DIV /0!	0.17 492 9	#DIV /0!	#DIV /0!	- 0.41 798	- 0.43 388	#DIV /0!	- 0.92 882	343. 4351	#DIV /0!	0.75 9587	0.88 572	0.81 1554	#DIV /0!	- 4.81 566	- 4.9 545 1		
		c A v e r 4. 0	- 1.58 356	0.77 555 6	#DIV /0!	0.41 809 5	- 0.94 524	0.29 541 9	#DIV /0!	1.36 390 2	- 367. 133	- 453. 1	- 0.37 339	- 0.37 536	- 0.22 399	- 0.21 148	#DIV /0!	- 0.11 575	#DIV /0!	#DIV /0!	- 0.34 097	- 0.35 094	#DIV /0!	- 0.78 216	237. 6526	#DIV /0!	0.54 5651	0.62 3773	0.57 4699	#DIV /0!	- 3.18 643	- 3.2 912	
		c a v e r p 1	- 1.37 963	5.24 185 2	#DIV /0!	0.99 666 7	- 1.65 794	0.63 651 3	#DIV /0!	1.52 387 5	- 992. 767	- 111 2.47	- 0.45 076	- 0.45 465	- 0.28 528	- 0.27 206	#DIV /0!	- 0.01 291	#DIV /0!	#DIV /0!	- 0.44 892	- 0.45 862	#DIV /0!	- 1.13 008	526. 3988	#DIV /0!	1.17 2671	1.35 4389	1.25 6532	#DIV /0!	- 8.46 325	- 8.5 475 7	
		c a v e r p	- 1.32 556	3.40 444 4	#DIV /0!	- 2.57 143	4.92 381	0.61 432 8	#DIV /0!	1.39 963 4	- 653. 467	- 746. 7	- 0.13 66	- 0.15 094	- 0.09 222	- 0.07 863	#DIV /0!	0.77 714 8	#DIV /0!	#DIV /0!	- 0.14 541	- 0.15 031	#DIV /0!	- 0.54 049	338. 9614	#DIV /0!	0.79 0555	0.90 6593	0.82 7169	#DIV /0!	- 0.80 346	- 0.8 140 3	

		2																														
		A L L A V E R	3.46 683 3	33.3 663 9	#DIV /0!	10.7 931 5	11.7 321 4	0.81 731 1	#DIV /0!	4.90 050 8	372. 575	275. 708 3	0.11 097 6	0.10 798	0.08 222 5	0.07 025 2	#DIV /0!	- 0.23 589	#DIV /0!	#DIV /0!	0.46 1771	0.45 8776	#DIV /0!	- 0.24 204	500. 4825	#DIV /0!	1.13 3634	1.30 7274	1.20 8687	#DIV /0!	0.24 5975	0.1 499 72
	c A v e r 1. 3	c A v e r 1. 3	0.55 87	11.2 816 7	- 0.00 227	0.16 383 3	0.09 1	91.0 203 3	131 1.6	0.07 9	0.10 1	0.35 5	- 0.59 067	- 0.60 867	188. 8	160. 7	0.44 071 9	0.01 773 3	0.96 4	0.01 376	0.56 9333	0.59 1333	1.47 9297	0.00 9207	167. 553	- 0.00 313	1268 .525	1463 .62	1356 .451	0.25 4087	0.23 9777	0.2 658 03
	c A v e r 2. 5	c A v e r 2. 5	- 0.02 243	0.78 5	- 0.02 733	0.00 726 7	- 0.09 967	19.7 763 3	168. 1	0.28 743 3	0.27 8	0.07 833 3	- 1.48 817	- 1.47 27	44.9 966 7	37.5	0.00 215 3	- 0.01 517	- 0.04 683	- 0.03 727	- 0.01 3	0.02 6	1.25 901	0.00 592	23.0 3563	- 0.00 25	184. 1853	212. 5563	192. 4317	0.07 6067	0.02 02	- 0.0 056
8 A	c A v e r 4. 0	c A v e r 4. 0	0.13 109 4	2.83 8	- 0.00 44	0.07 98	- 0.01 2	19.1 68	146. 293 3	0.62 706 7	1.78 183 3	1.93 436 7	- 1.26 063	- 1.25 86	76.9 966 7	64.6 333 3	0.04 689	0.08 869	0.53	- 0.00 759	- 0.00 2	0.02 9667	2.00 2488	0.00 3723	28.8 687	1E- 04	224. 631	259. 5697	239. 4673	0.08 1633	0.08 474	0.1 183 4
	c a v e r p 1	c a v e r p 1	0.22 245 5	4.96 822 2	- 0.01 133	0.08 363 3	- 0.00 689	43.3 215 6	541. 997 8	0.33 116 7	0.72 027 8	0.78 923 3	- 1.11 316	- 1.11 332	103. 597 8	87.6 111 1	0.16 325 4	0.03 041 9	0.48 238 9	- 0.01 037	0.18 4778	0.21 5667	1.58 0265	0.00 6283	73.1 5244	- 0.00 184	559. 1139	645. 2486	596. 1167	0.13 7262	0.11 4906	0.1 261 82
	c a v e r p 2	c a v e r p 2	- 0.26 233	5.64 1	0.03 536 7	- 0.62 633	0.30 2	39.2 516 7	602. 366 7	0.54 163 3	1.62 316 7	1.37 691 7	- 0.56	- 0.52 167	84.8 1	72.1 566 7	0.17 499	- 0.16 759	0.66 333 3	0.02 416 7	0.14 8667	0.18 4333	5.48 4057	0.06 3069	34.7 0617	0.00 1267	291. 0653	335. 7617	298. 4563	0.21 5517	0.48 106	0.3 920 1
	A L L A V E R	A L L A V E R	1.01 271 8	13.9 256 7	0.55 158 3	1.78 529 2	1.85 791 7	44.7 325	578. 41	2.92 260 8	4.20 408 3	3.26 625	1.43 938 3	1.31 475 8	203. 175 8	172. 795 8	0.15 523 5	- 0.17 472	2.25 462 5	0.04 035 1	2.52 8833	2.50 6167	2.58 65	- 0.06 821	64.2 9417	- 0.22 774	498. 9833	575. 6417	528. 975	- 0.06 959	0.26 8588	0.1 418 59
	B	c	1.16	23.5	-	1.82	1.01	6.68	#DIV	0.06	2.52	8.87	-	-	0.05	0.04	#DIV	0.01	#DIV	#DIV	0.04	0.04	0.61	0.15	2792	#DIV	2.02	2.33	2.16	#DIV	0.16	0.1

	A	A	395	034	0.11	037	111	775	/0!	171	5	5	0.04	0.04	010	264	/0!	174	/0!	/0!	1557	3163	128	3444	.55	/0!	3166	4322	3399	/0!	3113	808	
	C	v	8	7	333			4		9			651	793	6	9		4														19	
		c	-	1.63	-	0.08	-	1.45	#DIV	0.22	6.95	1.95	-	-	0.01	0.00	#DIV	-	#DIV	#DIV	-	0.00	0.52	0.09	383.	#DIV	0.29	0.33	0.30	#DIV	0.01	-	
		A	0.04	541	1.36	074	1.10	307	/0!	455		833	0.11	0.11	194	995	/0!	0.01	/0!	/0!	0.00	1898	0252	8667	9272	/0!	3757	9005	6909	/0!	3742	0.0	
		v	673	7	667	1	741	4		7		3	718	596	2	2		004			095										038	1	
		c	0.27	5.91	-	0.88	-	1.40	#DIV	0.48	44.5	48.3	-	-	0.02	0.01	#DIV	0.05	#DIV	#DIV	-	0.00	0.82	0.06	481.	#DIV	0.35	0.41	0.38	#DIV	0.05	0.0	
		A	311	25	0.22	666	0.13	837	/0!	989	458	591	0.09	0.09	043	715	/0!	873	/0!	/0!	0.00	2165	7475	2056	145	/0!	8263	3987	1926	/0!	7646	805	
		v	3			7	333	6		6	3	7	926	91	4	3		5			015										03		
		c	0.46	10.3	-	0.92	-	3.18	#DIV	0.25	18.0	19.7	-	-	0.02	0.02	#DIV	0.02	#DIV	#DIV	0.01	0.01	0.65	0.10	1219	#DIV	0.89	1.02	0.95	#DIV	0.07	0.0	
		A	344	504	0.56	925	0.07	306	/0!	872	069	308	0.08	0.08	749	325	/0!	014	/0!	/0!	3487	5742	3002	4722	.207	/0!	1729	9105	0744	/0!	8167	858	
		v	7	6	667	9	654	8		4	4	3	765	766	4	1		5													38		
		c	-	11.7	1.76	-	3.35	2.88	#DIV	0.42	40.5	34.4	-	-	0.02	0.01	#DIV	-	#DIV	#DIV	0.01	0.01	2.26	1.05	578.	#DIV	0.46	0.53	0.47	#DIV	0.32	0.2	
		A	0.54	520	833	6.95	555	403	/0!	315	791	229	0.04	0.04	250	915	/0!	0.11	/0!	/0!	0852	3455	6139	115	4361	/0!	4219	5505	6007	/0!	7252	666	
		v	653	8	3	926	6	1		1	7	2	409	108	8			098													73		
		A	2.10	29.0	27.5	19.8	20.6	3.28	#DIV	2.28	105.	81.6	0.11	0.10	0.05	0.04	#DIV	-	#DIV	#DIV	0.18	0.18	1.06	-	1071	#DIV	0.79	0.91	0.84	#DIV	0.18	0.0	
		L	982	118	791	365	435	673	/0!	328	102	562	333	352	392	585	/0!	0.11	/0!	/0!	4586	2932	8802	1.13	.569	/0!	5827	8089	366	/0!	2713	965	
		L	8	1	7	7	2	8		8	1	5	7	4	1	9		571						684								03	
		A	2.10	29.0	27.5	19.8	20.6	3.28	#DIV	2.28	105.	81.6	0.11	0.10	0.05	0.04	#DIV	-	#DIV	#DIV	0.18	0.18	1.06	-	1071	#DIV	0.79	0.91	0.84	#DIV	0.18	0.0	
		V	982	118	791	365	435	673	/0!	328	102	562	333	352	392	585	/0!	0.11	/0!	/0!	4586	2932	8802	1.13	.569	/0!	5827	8089	366	/0!	2713	965	
		A	8	1	7	7	2	8		8	1	5	7	4	1	9		571						684								03	
		V	982	118	791	365	435	673	/0!	328	102	562	333	352	392	585	/0!	0.11	/0!	/0!	4586	2932	8802	1.13	.569	/0!	5827	8089	366	/0!	2713	965	
		A	8	1	7	7	2	8		8	1	5	7	4	1	9		571						684								03	
		V	982	118	791	365	435	673	/0!	328	102	562	333	352	392	585	/0!	0.11	/0!	/0!	4586	2932	8802	1.13	.569	/0!	5827	8089	366	/0!	2713	965	
		A	8	1	7	7	2	8		8	1	5	7	4	1	9		571						684								03	
		V	982	118	791	365	435	673	/0!	328	102	562	333	352	392	585	/0!	0.11	/0!	/0!	4586	2932	8802	1.13	.569	/0!	5827	8089	366	/0!	2713	965	
		A	8	1	7	7	2	8		8	1	5	7	4	1	9		571						684								03	
		V	982	118	791	365	435	673	/0!	328	102	562	333	352	392	585	/0!	0.11	/0!	/0!	4586	2932	8802	1.13	.569	/0!	5827	8089	366	/0!	2713	965	
		A	8	1	7	7	2	8		8	1	5	7	4	1	9		571						684								03	
		V	982	118	791	365	435	673	/0!	328	102	562	333	352	392	585	/0!	0.11	/0!	/0!	4586	2932	8802	1.13	.569	/0!	5827	8089	366	/0!	2713	965	
		A	8	1	7	7	2	8		8	1	5	7	4	1	9		571						684								03	
		V	982	118	791	365	435	673	/0!	328	102	562	333	352	392	585	/0!	0.11	/0!	/0!	4586	2932	8802	1.13	.569	/0!	5827	8089	366	/0!	2713	965	
		A	8	1	7	7	2	8		8	1	5	7	4	1	9		571						684								03	
		V	982	118	791	365	435	673	/0!	328	102	562	333	352	392	585	/0!	0.11	/0!	/0!	4586	2932	8802	1.13	.569	/0!	5827	8089	366	/0!	2713	965	
		A	8	1	7	7	2	8		8	1	5	7	4	1	9		571						684								03	
		V	982	118	791	365	435	673	/0!	328	102	562	333	352	392	585	/0!	0.11	/0!	/0!	4586	2932	8802	1.13	.569	/0!	5827	8089	366	/0!	2713	965	
		A	8	1	7	7	2	8		8	1	5	7	4	1	9		571						684								03	
		V	982	118	791	365	435	673	/0!	328	102	562	333	352	392	585	/0!	0.11	/0!	/0!	4586	2932	8802	1.13	.569	/0!	5827	8089	366	/0!	2713	965	
		A	8	1	7	7	2	8		8	1	5	7	4	1	9		571						684								03	
		V	982	118	791	365	435	673	/0!	328	102	562	333	352	392	585	/0!	0.11	/0!	/0!	4586	2932	8802	1.13	.569	/0!	5827	8089	366	/0!	2713	965	
		A	8	1	7	7	2	8		8	1	5	7	4	1	9		571						684								03	
		V	982	118	791	365	435	673	/0!	328	102	562	333	352	392	585	/0!	0.11	/0!	/0!	4586	2932	8802	1.13	.569	/0!	5827	8089	366	/0!	2713	965	
		A	8	1	7	7	2	8		8	1	5	7	4	1	9		571						684								03	
		V	982	118	791	365	435	673	/0!	328	102	562	333	352	392	585	/0!	0.11	/0!	/0!	4586	2932	8802	1.13	.569	/0!	5827	8089	366	/0!	2713	965	
		A	8	1	7	7	2	8		8	1	5	7	4	1	9		571						684								03	
		V	982	118	791	365	435	673	/0!	328	102	562	333	352	392	585	/0!	0.11	/0!	/0!	4586	2932	8802	1.13	.569	/0!	5827	8089	366	/0!	2713	965	
		A	8	1	7	7	2	8		8	1	5	7	4	1	9		571						684								03	
		V	982	118	791	365	435	673	/0!	328	102	562	333	352	392	585	/0!	0.11	/0!	/0!	4586	2932	8802	1.13	.569	/0!	5827	8089	366	/0!	2713	965	
		A	8	1	7	7	2	8		8	1	5	7	4	1	9		571						684								03	
		V	982	118	791	365	435	673	/0!	328	102	562	333	352	392	585	/0!	0.11	/0!	/0!	4586	2932	8802	1.13	.569	/0!	5827	8089	366	/0!	2713	965	
		A	8	1	7	7	2	8		8	1	5	7	4	1	9		571						684								03	
		V	982	118	791	365	435	673	/0!	328	102	562	333	352	392	585	/0!	0.11	/0!	/0!	4586	2932	8802	1.13	.569	/0!	5827	8089	366	/0!	2713	965	
		A	8	1	7	7	2	8		8	1	5	7	4	1	9		571						684								03	
		V	982	118	791	365	435	673	/0!	328	102	562	333	352	392	585	/0!	0.11	/0!	/0!	4586	2932	8802	1.13	.569	/0!	5827	8089	366	/0!	2713	965	
		A	8	1	7	7	2	8		8	1	5	7	4	1	9		571						684								03	
		V	982	118	791	365	435	673	/0!	328	102	562	333	352	392	585	/0!	0.11	/0!	/0!	4586	2932	8802	1.13	.569	/0!	5827	8089					

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		A C4 .0 ful ly fe d %	461 6	276 4	545 5	582 3	977 3	514	566 4	801 3	191 6	28.4 057	0.19 722	0.19 768	479 6	364 1	0.08 863	156 3	363 3	9.25 592	0.02 483	0.01 571	6911	2205	844	3638	9047	6931	9667	1831	0778	2348
		B A C Ph as el %	0.37 358 1	3.64 812 3	- 0.25 804	15.8 492	- 1.31 232	1.60 155 1	0.55 578 2	1.03 621 8	- 25.4 586	- 92.6 639	- 0.08 035	- 0.07 892	0.04 586 7	0.04 508 7	0.35 124 2	0.03 998 9	21.6 101 9	- 9.84 149	- 0.00 934	0.00 1144	0.71 2809	2.16 7312	2.61 5002	37.6 8947	2.31 3634	2.31 2986	2.31 31	4.92 4422	0.01 2898	0.01 2985
		B A C Ph as ell %	0.98 628 7	2.65 725 2	- 5.17 498	53.5 673 4	- 10.6 311	1.33 930 9	0.52 513 2	0.67 564 1	- 7.07 66	- 15.0 48	0.05 496 1	0.03 147 5	0.03 903 7	0.03 911 2	0.64 262 8	- 0.22 404	24.7 390 3	0.72 746 5	- 0.01 986	- 0.00 798	2.32 5994	4.16 3815	1.78 9939	37.3 4187	1.48 4821	1.48 2453	1.47 9991	6.37 5045	0.04 196	0.04 2319
		Table 2 Percentage of Phasel and PhaselI for 9#																														
			47 Ti	48 Ti	51 V	52 Cr	53 Cr	55 Mn	57 Fe	59 Co	60 Ni	61 Ni	63 Cu	65 Cu	66 Zn	67 Zn	75 As	82 Se	88 Sr	95 Mo	111 Cd	114 Cd	121 Sb	202 Hg	204 Hg	205 Tl	206 Pb	207 Pb	208 Pb	238 U	107 Ag	109 Ag
WM DD4 080			(T1, #47) Con cent ratio n Mea n	(T1, #48) Con cent ratio n Mea n	(T1, #51) Con cent ratio n Mea n	(T1, #52) Con cent ratio n Mea n	(T1, #53) Con cent ratio n Mea n	(T1, #55) Con cent ratio n Mea n	(T1, #57) Con cent ratio n Mea n	(T1, #59) Con cent ratio n Mea n	(T1, #60) Con cent ratio n Mea n	(T1, #61) Con cent ratio n Mea n	(T1, #63) Con cent ratio n Mea n	(T1, #65) Con cent ratio n Mea n	(T1, #66) Con cent ratio n Mea n	(T1, #67) Con cent ratio n Mea n	(T1, #75) Con cent ratio n Mea n	(T1, #82) Con cent ratio n Mea n	(T1, #88) Con cent ratio n Mea n	(T1, #95) Con cent ratio n Mea n	(T1,# 111) Conc entr atio n Mea n	(T1,# 114) Conc entr atio n Mea n	(T1,# 121) Conc entr atio n Mea n	(T1,# 202) Conc entr atio n Mea n	(T1,# 204) Conc entr atio n Mea n	(T1,# 205) Conc entr atio n Mea n	(T1,# 206) Conc entr atio n Mea n	(T1,# 207) Conc entr atio n Mea n	(T1,# 208) Conc entr atio n Mea n	(T1,# 238) Conc entr atio n Mea n	(T1,# 107) Conc entr atio n Mea n	(T1,# 109) Conc entr atio n Mea n
(9 #)		cP 1 %	27.4 718 7	57.8 573 6	4.74 955 4	22.8 320 2	10.9 878 4	54.4 585 9	51.4 178 2	60.5 317 5	78.2 493 7	86.0 294 2	316. 467 8	166. 345 2	54.0 219 6	53.5 484 8	35.3 408 4	- 21.7 273	46.6 247 1	107. 981 8	31.9 9446	- 16.7 339	23.4 5691	34.2 3263	59.3 652	50.2 3163	60.9 0987	60.9 412	60.9 8192	43.5 8101	23.5 1148	23.4 7882
		cP 2 %	72.5 281 3	42.1 426 4	95.2 504 5	77.1 679 8	89.0 121 6	45.5 414 1	48.5 821 8	39.4 682 5	21.7 506 3	13.9 705 8	- 216. 468	- 66.3 452	45.9 780 4	46.4 515 2	64.6 591 6	121. 727 3	53.3 752 9	- 7.98 182	68.0 0554	116. 7339	76.5 4309	65.7 6737	40.6 348	49.7 6837	39.0 9013	39.0 588	39.0 1808	56.4 1899	76.4 8852	76.5 2118

Appendix 3. Incremental soil concentrations by receptor

A3.1 Pb

A3.1a Scenario 1a incremental soil Pb concentrations⁴ with incorporation of different loss factors

A3.1a.1: Zero % Loss and 2 cm mixing depth

Year	Soil Concentration (µg/g) at each receptor																			
	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15	R16	R17	R18	R19	R20
1	47	28	38	21	16	21	11	110	41	27	11	3	1	6	0	0	1	1	0	0
2	94	57	76	43	32	42	22	219	82	55	22	5	1	12	0	0	3	3	0	0
3	140	85	113	64	48	63	34	329	122	82	34	8	2	18	0	0	4	4	0	0
4	187	114	151	86	64	83	45	439	163	110	45	10	3	24	0	0	5	5	0	0
5	234	142	189	107	80	104	56	549	204	137	56	13	4	30	0	0	7	6	0	0
6	281	171	227	128	97	125	67	658	245	164	67	16	4	36	0	0	8	8	0	0
7	327	199	264	150	113	146	79	768	285	192	79	18	5	41	0	0	10	9	0	0
8	374	227	302	171	129	167	90	878	326	219	90	21	6	47	0	0	11	10	0	0
9	421	256	340	193	145	188	101	988	367	246	101	23	7	53	0	0	12	11	0	0
10	468	284	378	214	161	209	112	1097	408	274	112	26	7	59	0	0	14	13	0	0
11	515	313	415	235	177	229	124	1207	449	301	123	29	8	65	0	0	15	14	0	0
12	561	341	453	257	193	250	135	1317	489	329	135	31	9	71	0	0	16	15	0	0
13	608	370	491	278	209	271	146	1426	530	356	146	34	9	77	0	0	18	16	0	0
14	655	398	529	299	225	292	157	1536	571	383	157	37	10	83	0	0	19	18	0	0
15	702	427	566	321	241	313	169	1646	612	411	168	39	11	89	0	0	20	19	0	0

Year	Soil Concentration (µg/g) at each receptor																	
	R21	R22	R23	R24	R25	R26	R27	R28	R29	R30	R31	R32	R33	R34	R35	R36	R37	R38
1	61	55	40	40	26	42	57	36	47	33	32	23	31	40	36	31	28	5
2	122	109	80	80	51	83	114	72	93	65	63	46	63	81	71	62	57	11
3	184	164	120	121	77	125	172	108	140	98	95	69	94	121	107	93	85	16
4	245	219	160	161	102	167	229	144	187	130	126	92	125	162	143	123	114	22
5	306	274	200	201	128	208	286	180	233	163	158	115	157	202	179	154	142	27
6	367	328	240	241	154	250	343	216	280	195	189	138	188	242	214	185	170	33
7	429	383	280	281	179	292	400	252	326	228	221	162	219	283	250	216	199	38
8	490	438	320	321	205	334	458	288	373	260	252	185	251	323	286	247	227	44
9	551	493	360	362	231	375	515	324	420	293	284	208	282	364	322	278	255	49
10	612	547	401	402	256	417	572	360	466	326	315	231	314	404	357	309	284	55
11	674	602	441	442	282	459	629	396	513	358	347	254	345	444	393	340	312	60
12	735	657	481	482	307	500	686	432	560	391	379	277	376	485	429	370	341	66
13	796	712	521	522	333	542	743	468	606	423	410	300	408	525	465	401	369	71
14	857	766	561	562	359	584	801	504	653	456	442	323	439	566	500	432	397	77
15	918	821	601	603	384	625	858	540	700	488	473	346	470	606	536	463	426	82

⁴ Dust deposition from free areas (80% controlled, i.e. 20% uncontrolled) for Scenario S1b (worksheet 20 entitled "(r) Pb Dep by Source Profile", 'future baseline') was multiplied by 5 for the 100% uncontrolled dust from free areas (S1a). This was done on advice from ENVIRON Pty Ltd (E-mail correspondence with Damon A. Roddis, ENVIRON Pty Ltd, 16th March, 2010). Annual Pb deposition from S1a was then used to calculate the soil concentrations in these tables using Equation 2.1.

Year	Soil Concentration (µg/g) at each receptor			
	R39	R40	R41	R42
1	8	38	41	48
2	15	76	82	96
3	23	113	122	143
4	31	151	163	191
5	39	189	204	239
6	46	227	245	287
7	54	265	285	335
8	62	302	326	382
9	70	340	367	430
10	77	378	408	478
11	85	416	448	526
12	93	454	489	574
13	100	491	530	621
14	108	529	571	669
15	116	567	612	717

A3.1a.2: 10 % Loss and 2 cm mixing depth

Year	Soil Concentration (µg/g) at each receptor																			
	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15	R16	R17	R18	R19	R20
1	47	28	38	21	16	21	11	110	41	27	11	3	1	6	0	0	1	1	0	0
2	89	54	72	41	31	40	21	208	77	52	21	5	1	11	0	0	3	2	0	0
3	127	77	102	58	44	57	30	297	111	74	30	7	2	16	0	0	4	3	0	0
4	161	98	130	74	55	72	39	377	140	94	39	9	3	20	0	0	5	4	0	0
5	192	116	155	88	66	85	46	449	167	112	46	11	3	24	0	0	6	5	0	0
6	219	133	177	100	75	98	53	514	191	128	53	12	3	28	0	0	6	6	0	0
7	244	148	197	112	84	109	59	572	213	143	59	14	4	31	0	0	7	7	0	0
8	266	162	215	122	92	119	64	625	232	156	64	15	4	34	0	0	8	7	0	0
9	287	174	231	131	99	128	69	672	250	168	69	16	4	36	0	0	8	8	0	0
10	305	185	246	139	105	136	73	715	266	178	73	17	5	39	0	0	9	8	0	0
11	321	195	259	147	110	143	77	753	280	188	77	18	5	41	0	0	9	9	0	0
12	336	204	271	154	115	150	81	787	293	196	80	19	5	42	0	0	10	9	0	0
13	349	212	282	160	120	156	84	818	304	204	84	19	5	44	0	0	10	9	0	0
14	361	219	291	165	124	161	87	846	314	211	87	20	6	46	0	0	11	10	0	0
15	371	226	300	170	128	166	89	871	324	217	89	21	6	47	0	0	11	10	0	0

Year	Soil Concentration (µg/g) at each receptor																	
	R21	R22	R23	R24	R25	R26	R27	R28	R29	R30	R31	R32	R33	R34	R35	R36	R37	R38
1	61	55	40	40	26	42	57	36	47	33	32	23	31	40	36	31	28	5
2	116	104	76	76	49	79	109	68	89	62	60	44	60	77	68	59	54	10
3	166	148	109	109	69	113	155	98	126	88	85	63	85	110	97	84	77	15
4	211	188	138	138	88	143	197	124	160	112	108	79	108	139	123	106	98	19
5	251	224	164	165	105	171	234	147	191	133	129	95	128	165	146	126	116	22
6	287	257	188	188	120	195	268	169	219	153	148	108	147	189	167	145	133	26
7	319	286	209	210	134	218	298	188	243	170	165	120	164	211	186	161	148	29
8	349	312	228	229	146	237	326	205	266	185	180	131	179	230	204	176	162	31
9	375	335	245	246	157	255	350	220	286	199	193	141	192	248	219	189	174	34
10	399	357	261	262	167	272	373	234	304	212	205	150	204	263	233	201	185	36
11	420	376	275	276	176	286	392	247	320	223	216	158	215	277	245	212	195	38
12	439	393	287	288	184	299	410	258	335	234	226	166	225	290	256	221	204	39
13	457	408	299	300	191	311	427	268	348	243	235	172	234	301	267	230	212	41
14	472	422	309	310	198	322	441	278	360	251	243	178	242	312	276	238	219	42
15	486	435	318	319	203	331	454	286	370	259	251	183	249	321	284	245	225	44

Year	Soil Concentration (µg/g) at each receptor			
	R39	R40	R41	R42
1	8	38	41	48
2	15	72	77	91
3	21	102	110	130
4	27	130	140	164
5	32	155	167	196
6	36	177	191	224
7	40	197	213	249
8	44	215	232	272
9	47	232	250	293
10	50	246	266	311
11	53	259	280	328
12	55	271	293	343
13	58	282	304	356
14	60	292	314	369
15	61	300	324	380

A3.1a.3: 25 % loss and 2 cm mixing depth

Year	Soil Concentration (µg/g) at each receptor																			
	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15	R16	R17	R18	R19	R20
1	47	28	38	21	16	21	11	110	41	27	11	3	1	6	0	0	1	1	0	0
2	82	50	66	37	28	37	20	192	71	48	20	5	1	10	0	0	2	2	0	0
3	108	66	87	49	37	48	26	254	94	63	26	6	2	14	0	0	3	3	0	0
4	128	78	103	58	44	57	31	300	112	75	31	7	2	16	0	0	4	3	0	0
5	143	87	115	65	49	64	34	335	124	84	34	8	2	18	0	0	4	4	0	0
6	154	93	124	70	53	69	37	361	134	90	37	9	2	19	0	0	4	4	0	0
7	162	99	131	74	56	72	39	380	141	95	39	9	3	21	0	0	5	4	0	0
8	168	102	136	77	58	75	40	395	147	99	40	9	3	21	0	0	5	5	0	0
9	173	105	140	79	60	77	42	406	151	101	42	10	3	22	0	0	5	5	0	0
10	177	107	143	81	61	79	42	414	154	103	42	10	3	22	0	0	5	5	0	0
11	179	109	145	82	62	80	43	420	156	105	43	10	3	23	0	0	5	5	0	0
12	181	110	146	83	62	81	44	425	158	106	43	10	3	23	0	0	5	5	0	0
13	183	111	147	84	63	81	44	428	159	107	44	10	3	23	0	0	5	5	0	0
14	184	112	148	84	63	82	44	431	160	108	44	10	3	23	0	0	5	5	0	0
15	185	112	149	84	64	82	44	433	161	108	44	10	3	23	0	0	5	5	0	0

Year	Soil Concentration (µg/g) at each receptor																	
	R21	R22	R23	R24	R25	R26	R27	R28	R29	R30	R31	R32	R33	R34	R35	R36	R37	R38
1	61	55	40	40	26	42	57	36	47	33	32	23	31	40	36	31	28	5
2	107	96	70	70	45	73	100	63	82	57	55	40	55	71	63	54	50	10
3	142	127	93	93	59	96	132	83	108	75	73	53	73	93	83	71	66	13
4	167	150	110	110	70	114	156	98	128	89	86	63	86	110	98	84	78	15
5	187	167	122	123	78	127	174	110	142	99	96	70	96	123	109	94	87	17
6	201	180	132	132	84	137	188	118	153	107	104	76	103	133	118	101	93	18
7	212	190	139	139	89	145	198	125	162	113	109	80	109	140	124	107	98	19
8	220	197	144	145	92	150	206	130	168	117	114	83	113	145	129	111	102	20
9	227	203	148	149	95	154	212	133	173	120	117	85	116	149	132	114	105	20
10	231	207	151	152	97	157	216	136	176	123	119	87	118	153	135	117	107	21
11	235	210	153	154	98	160	219	138	179	125	121	88	120	155	137	118	109	21
12	237	212	155	156	99	162	222	139	181	126	122	89	121	157	138	120	110	21
13	239	214	156	157	100	163	223	141	182	127	123	90	122	158	140	121	111	21
14	241	215	157	158	101	164	225	141	183	128	124	91	123	159	140	121	111	22
15	242	216	158	159	101	165	226	142	184	129	124	91	124	159	141	122	112	22

Year	Soil Concentration (µg/g) at each receptor			
	R39	R40	R41	R42
1	8	38	41	48
2	14	66	71	84
3	18	87	94	111
4	21	103	111	131
5	24	115	124	146
6	25	124	134	157
7	27	131	141	166
8	28	136	147	172
9	29	140	151	177
10	29	143	154	180
11	30	145	156	183
12	30	146	158	185
13	30	148	159	187
14	30	148	160	188
15	30	149	161	189

A3.1a.4: 35 % loss and 2 cm mixing depth

Year	Soil Concentration (µg/g) at each receptor																			
	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15	R16	R17	R18	R19	R20
1	47	28	38	21	16	21	11	110	41	27	11	3	1	6	0	0	1	1	0	0
2	77	47	62	35	27	34	19	181	67	45	19	4	1	10	0	0	2	2	0	0
3	97	59	78	44	33	43	23	227	85	57	23	5	2	12	0	0	3	3	0	0
4	110	67	89	50	38	49	26	258	96	64	26	6	2	14	0	0	3	3	0	0
5	118	72	95	54	41	53	28	277	103	69	28	7	2	15	0	0	3	3	0	0
6	124	75	100	57	43	55	30	290	108	72	30	7	2	16	0	0	4	3	0	0
7	127	77	103	58	44	57	31	298	111	74	30	7	2	16	0	0	4	3	0	0
8	129	79	104	59	45	58	31	304	113	76	31	7	2	16	0	0	4	3	0	0
9	131	80	106	60	45	58	31	307	114	77	31	7	2	17	0	0	4	4	0	0
10	132	80	106	60	45	59	32	309	115	77	32	7	2	17	0	0	4	4	0	0
11	132	81	107	61	46	59	32	311	115	78	32	7	2	17	0	0	4	4	0	0
12	133	81	107	61	46	59	32	312	116	78	32	7	2	17	0	0	4	4	0	0
13	133	81	107	61	46	59	32	312	116	78	32	7	2	17	0	0	4	4	0	0
14	133	81	108	61	46	59	32	313	116	78	32	7	2	17	0	0	4	4	0	0
15	133	81	108	61	46	60	32	313	116	78	32	7	2	17	0	0	4	4	0	0

Year	Soil Concentration (µg/g) at each receptor																	
	R21	R22	R23	R24	R25	R26	R27	R28	R29	R30	R31	R32	R33	R34	R35	R36	R37	R38
1	61	55	40	40	26	42	57	36	47	33	32	23	31	40	36	31	28	5
2	101	90	66	66	42	69	94	59	77	54	52	38	52	67	59	51	47	9
3	127	113	83	83	53	86	119	75	97	67	65	48	65	84	74	64	59	11
4	144	128	94	94	60	98	134	84	109	76	74	54	74	95	84	72	67	13
5	155	138	101	101	65	105	144	91	118	82	80	58	79	102	90	78	72	14
6	162	145	106	106	68	110	151	95	123	86	83	61	83	107	94	82	75	15
7	166	149	109	109	70	113	155	98	127	88	86	63	85	110	97	84	77	15
8	169	151	111	111	71	115	158	100	129	90	87	64	87	112	99	85	78	15
9	171	153	112	112	72	117	160	101	130	91	88	65	88	113	100	86	79	15
10	173	154	113	113	72	118	161	101	131	92	89	65	88	114	101	87	80	15
11	173	155	113	114	73	118	162	102	132	92	89	65	89	114	101	87	80	16
12	174	156	114	114	73	118	162	102	132	93	90	66	89	115	102	88	81	16
13	174	156	114	114	73	119	163	102	133	93	90	66	89	115	102	88	81	16
14	175	156	114	114	73	119	163	103	133	93	90	66	89	115	102	88	81	16
15	175	156	114	115	73	119	163	103	133	93	90	66	89	115	102	88	81	16

Year	Soil Concentration (µg/g) at each receptor			
	R39	R40	R41	R42
1	8	38	41	48
2	13	62	67	79
3	16	78	84	99
4	18	89	96	112
5	20	95	103	121
6	20	100	108	126
7	21	103	111	130
8	21	105	113	132
9	22	106	114	134
10	22	107	115	135
11	22	107	115	135
12	22	107	116	136
13	22	108	116	136
14	22	108	116	136
15	22	108	116	136

A3.1b Scenario 1b incremental soil Pb concentrations with incorporation of different loss factors

A3.1b.1: Zero % Loss and 2 cm mixing depth

Year	Soil Concentration (µg/g) at each receptor																			
	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15	R16	R17	R18	R19	R20
1	9	6	8	4	3	4	2	22	8	5	2	1	0	1	0	0	0	0	0	0
2	19	11	15	9	6	8	4	44	16	11	4	1	0	2	0	0	1	1	0	0
3	28	17	23	13	10	13	7	66	24	16	7	2	0	4	0	0	1	1	0	0
4	37	23	30	17	13	17	9	88	33	22	9	2	1	5	0	0	1	1	0	0
5	47	28	38	21	16	21	11	110	41	27	11	3	1	6	0	0	1	1	0	0
6	56	34	45	26	19	25	13	132	49	33	13	3	1	7	0	0	2	2	0	0
7	65	40	53	30	23	29	16	154	57	38	16	4	1	8	0	0	2	2	0	0
8	75	45	60	34	26	33	18	176	65	44	18	4	1	9	0	0	2	2	0	0
9	84	51	68	39	29	38	20	198	73	49	20	5	1	11	0	0	2	2	0	0
10	94	57	76	43	32	42	22	219	82	55	22	5	1	12	0	0	3	3	0	0
11	103	63	83	47	35	46	25	241	90	60	25	6	2	13	0	0	3	3	0	0
12	112	68	91	51	39	50	27	263	98	66	27	6	2	14	0	0	3	3	0	0
13	122	74	98	56	42	54	29	285	106	71	29	7	2	15	0	0	4	3	0	0
14	131	80	106	60	45	58	31	307	114	77	31	7	2	17	0	0	4	4	0	0
15	140	85	113	64	48	63	34	329	122	82	34	8	2	18	0	0	4	4	0	0

Year	Soil Concentration (µg/g) at each receptor																	
	R21	R22	R23	R24	R25	R26	R27	R28	R29	R30	R31	R32	R33	R34	R35	R36	R37	R38
1	12	11	8	8	5	8	11	7	9	7	6	5	6	8	7	6	6	1
2	24	22	16	16	10	17	23	14	19	13	13	9	13	16	14	12	11	2
3	37	33	24	24	15	25	34	22	28	20	19	14	19	24	21	19	17	3
4	49	44	32	32	20	33	46	29	37	26	25	18	25	32	29	25	23	4
5	61	55	40	40	26	42	57	36	47	33	32	23	31	40	36	31	28	5
6	73	66	48	48	31	50	69	43	56	39	38	28	38	48	43	37	34	7
7	86	77	56	56	36	58	80	50	65	46	44	32	44	57	50	43	40	8
8	98	88	64	64	41	67	92	58	75	52	50	37	50	65	57	49	45	9
9	110	99	72	72	46	75	103	65	84	59	57	42	56	73	64	56	51	10
10	122	109	80	80	51	83	114	72	93	65	63	46	63	81	71	62	57	11
11	135	120	88	88	56	92	126	79	103	72	69	51	69	89	79	68	62	12
12	147	131	96	96	61	100	137	86	112	78	76	55	75	97	86	74	68	13
13	159	142	104	104	67	108	149	94	121	85	82	60	82	105	93	80	74	14
14	171	153	112	112	72	117	160	101	131	91	88	65	88	113	100	86	79	15
15	184	164	120	121	77	125	172	108	140	98	95	69	94	121	107	93	85	16

Year	Soil Concentration (µg/g) at each receptor			
	R39	R40	R41	R42
1	2	8	8	10
2	3	15	16	19
3	5	23	24	29
4	6	30	33	38
5	8	38	41	48
6	9	45	49	57
7	11	53	57	67
8	12	60	65	76
9	14	68	73	86
10	15	76	82	96
11	17	83	90	105
12	19	91	98	115
13	20	98	106	124
14	22	106	114	134
15	23	113	122	143

A3.1b.2: 10 % Loss and 2 cm mixing depth

Year	Soil Concentration (µg/g) at each receptor																			
	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15	R16	R17	R18	R19	R20
1	9	6	8	4	3	4	2	22	8	5	2	1	0	1	0	0	0	0	0	0
2	18	11	14	8	6	8	4	42	15	10	4	1	0	2	0	0	1	0	0	0
3	25	15	20	12	9	11	6	59	22	15	6	1	0	3	0	0	1	1	0	0
4	32	20	26	15	11	14	8	75	28	19	8	2	1	4	0	0	1	1	0	0
5	38	23	31	18	13	17	9	90	33	22	9	2	1	5	0	0	1	1	0	0
6	44	27	35	20	15	20	11	103	38	26	11	2	1	6	0	0	1	1	0	0
7	49	30	39	22	17	22	12	114	43	29	12	3	1	6	0	0	1	1	0	0
8	53	32	43	24	18	24	13	125	46	31	13	3	1	7	0	0	2	1	0	0
9	57	35	46	26	20	26	14	134	50	34	14	3	1	7	0	0	2	2	0	0
10	61	37	49	28	21	27	15	143	53	36	15	3	1	8	0	0	2	2	0	0
11	64	39	52	29	22	29	15	151	56	38	15	4	1	8	0	0	2	2	0	0
12	67	41	54	31	23	30	16	157	59	39	16	4	1	8	0	0	2	2	0	0
13	70	42	56	32	24	31	17	164	61	41	17	4	1	9	0	0	2	2	0	0
14	72	44	58	33	25	32	17	169	63	42	17	4	1	9	0	0	2	2	0	0
15	74	45	60	34	26	33	18	174	65	43	18	4	1	9	0	0	2	2	0	0

Year	Soil Concentration (µg/g) at each receptor																	
	R21	R22	R23	R24	R25	R26	R27	R28	R29	R30	R31	R32	R33	R34	R35	R36	R37	R38
1	12	11	8	8	5	8	11	7	9	7	6	5	6	8	7	6	6	1
2	23	21	15	15	10	16	22	14	18	12	12	9	12	15	14	12	11	2
3	33	30	22	22	14	23	31	20	25	18	17	13	17	22	19	17	15	3
4	42	38	28	28	18	29	39	25	32	22	22	16	22	28	25	21	20	4
5	50	45	33	33	21	34	47	29	38	27	26	19	26	33	29	25	23	4
6	57	51	38	38	24	39	54	34	44	31	30	22	29	38	33	29	27	5
7	64	57	42	42	27	44	60	38	49	34	33	24	33	42	37	32	30	6
8	70	62	46	46	29	47	65	41	53	37	36	26	36	46	41	35	32	6
9	75	67	49	49	31	51	70	44	57	40	39	28	38	50	44	38	35	7
10	80	71	52	52	33	54	75	47	61	42	41	30	41	53	47	40	37	7
11	84	75	55	55	35	57	78	49	64	45	43	32	43	55	49	42	39	8
12	88	79	57	58	37	60	82	52	67	47	45	33	45	58	51	44	41	8
13	91	82	60	60	38	62	85	54	70	49	47	34	47	60	53	46	42	8
14	94	84	62	62	40	64	88	56	72	50	49	36	48	62	55	48	44	8
15	97	87	64	64	41	66	91	57	74	52	50	37	50	64	57	49	45	9

Year	Soil Concentration (µg/g) at each receptor			
	R39	R40	R41	R42
1	2	8	8	10
2	3	14	15	18
3	4	20	22	26
4	5	26	28	33
5	6	31	33	39
6	7	35	38	45
7	8	39	43	50
8	9	43	46	54
9	9	46	50	59
10	10	49	53	62
11	11	52	56	66
12	11	54	59	69
13	12	56	61	71
14	12	58	63	74
15	12	60	65	76

A3.1b.3: 25 % loss and 2 cm mixing depth

Year	Soil Concentration (µg/g) at each receptor																			
	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15	R16	R17	R18	R19	R20
1	9	6	8	4	3	4	2	22	8	5	2	1	0	1	0	0	0	0	0	0
2	16	10	13	7	6	7	4	38	14	10	4	1	0	2	0	0	0	0	0	0
3	22	13	17	10	7	10	5	51	19	13	5	1	0	3	0	0	1	1	0	0
4	26	16	21	12	9	11	6	60	22	15	6	1	0	3	0	0	1	1	0	0
5	29	17	23	13	10	13	7	67	25	17	7	2	0	4	0	0	1	1	0	0
6	31	19	25	14	11	14	7	72	27	18	7	2	0	4	0	0	1	1	0	0
7	32	20	26	15	11	14	8	76	28	19	8	2	1	4	0	0	1	1	0	0
8	34	20	27	15	12	15	8	79	29	20	8	2	1	4	0	0	1	1	0	0
9	35	21	28	16	12	15	8	81	30	20	8	2	1	4	0	0	1	1	0	0
10	35	21	29	16	12	16	8	83	31	21	8	2	1	4	0	0	1	1	0	0
11	36	22	29	16	12	16	9	84	31	21	9	2	1	5	0	0	1	1	0	0
12	36	22	29	17	12	16	9	85	32	21	9	2	1	5	0	0	1	1	0	0
13	37	22	29	17	13	16	9	86	32	21	9	2	1	5	0	0	1	1	0	0
14	37	22	30	17	13	16	9	86	32	22	9	2	1	5	0	0	1	1	0	0
15	37	22	30	17	13	16	9	87	32	22	9	2	1	5	0	0	1	1	0	0

Year	Soil Concentration (µg/g) at each receptor																	
	R21	R22	R23	R24	R25	R26	R27	R28	R29	R30	R31	R32	R33	R34	R35	R36	R37	R38
1	12	11	8	8	5	8	11	7	9	7	6	5	6	8	7	6	6	1
2	21	19	14	14	9	15	20	13	16	11	11	8	11	14	13	11	10	2
3	28	25	19	19	12	19	26	17	22	15	15	11	15	19	17	14	13	3
4	33	30	22	22	14	23	31	20	26	18	17	13	17	22	20	17	16	3
5	37	33	24	25	16	25	35	22	28	20	19	14	19	25	22	19	17	3
6	40	36	26	26	17	27	38	24	31	21	21	15	21	27	24	20	19	4
7	42	38	28	28	18	29	40	25	32	23	22	16	22	28	25	21	20	4
8	44	39	29	29	18	30	41	26	34	23	23	17	23	29	26	22	20	4
9	45	41	30	30	19	31	42	27	35	24	23	17	23	30	26	23	21	4
10	46	41	30	30	19	31	43	27	35	25	24	17	24	31	27	23	21	4
11	47	42	31	31	20	32	44	28	36	25	24	18	24	31	27	24	22	4
12	47	42	31	31	20	32	44	28	36	25	24	18	24	31	28	24	22	4
13	48	43	31	31	20	33	45	28	36	25	25	18	24	32	28	24	22	4
14	48	43	31	32	20	33	45	28	37	26	25	18	25	32	28	24	22	4
15	48	43	32	32	20	33	45	28	37	26	25	18	25	32	28	24	22	4

Year	Soil Concentration (µg/g) at each receptor			
	R39	R40	R41	R42
1	2	8	8	10
2	3	13	14	17
3	4	17	19	22
4	4	21	22	26
5	5	23	25	29
6	5	25	27	31
7	5	26	28	33
8	6	27	29	34
9	6	28	30	35
10	6	29	31	36
11	6	29	31	37
12	6	29	32	37
13	6	30	32	37
14	6	30	32	38
15	6	30	32	38

A3.1b.4: 35 % loss and 2 cm mixing depth

Year	Soil Concentration (µg/g) at each receptor																			
	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15	R16	R17	R18	R19	R20
1	9	6	8	4	3	4	2	22	8	5	2	1	0	1	0	0	0	0	0	0
2	15	9	12	7	5	7	4	36	13	9	4	1	0	2	0	0	0	0	0	0
3	19	12	16	9	7	9	5	45	17	11	5	1	0	2	0	0	1	1	0	0
4	22	13	18	10	8	10	5	52	19	13	5	1	0	3	0	0	1	1	0	0
5	24	14	19	11	8	11	6	55	21	14	6	1	0	3	0	0	1	1	0	0
6	25	15	20	11	9	11	6	58	22	14	6	1	0	3	0	0	1	1	0	0
7	25	15	21	12	9	11	6	60	22	15	6	1	0	3	0	0	1	1	0	0
8	26	16	21	12	9	12	6	61	23	15	6	1	0	3	0	0	1	1	0	0
9	26	16	21	12	9	12	6	61	23	15	6	1	0	3	0	0	1	1	0	0
10	26	16	21	12	9	12	6	62	23	15	6	1	0	3	0	0	1	1	0	0
11	26	16	21	12	9	12	6	62	23	16	6	1	0	3	0	0	1	1	0	0
12	27	16	21	12	9	12	6	62	23	16	6	1	0	3	0	0	1	1	0	0
13	27	16	21	12	9	12	6	62	23	16	6	1	0	3	0	0	1	1	0	0
14	27	16	22	12	9	12	6	63	23	16	6	1	0	3	0	0	1	1	0	0
15	27	16	22	12	9	12	6	63	23	16	6	1	0	3	0	0	1	1	0	0

Year	Soil Concentration (µg/g) at each receptor																	
	R21	R22	R23	R24	R25	R26	R27	R28	R29	R30	R31	R32	R33	R34	R35	R36	R37	R38
1	12	11	8	8	5	8	11	7	9	7	6	5	6	8	7	6	6	1
2	20	18	13	13	8	14	19	12	15	11	10	8	10	13	12	10	9	2
3	25	23	17	17	11	17	24	15	19	13	13	10	13	17	15	13	12	2
4	29	26	19	19	12	20	27	17	22	15	15	11	15	19	17	14	13	3
5	31	28	20	20	13	21	29	18	24	16	16	12	16	20	18	16	14	3
6	32	29	21	21	14	22	30	19	25	17	17	12	17	21	19	16	15	3
7	33	30	22	22	14	23	31	20	25	18	17	13	17	22	19	17	15	3
8	34	30	22	22	14	23	32	20	26	18	17	13	17	22	20	17	16	3
9	34	31	22	22	14	23	32	20	26	18	18	13	18	23	20	17	16	3
10	35	31	23	23	14	24	32	20	26	18	18	13	18	23	20	17	16	3
11	35	31	23	23	15	24	32	20	26	18	18	13	18	23	20	17	16	3
12	35	31	23	23	15	24	32	20	26	19	18	13	18	23	20	18	16	3
13	35	31	23	23	15	24	33	20	27	19	18	13	18	23	20	18	16	3
14	35	31	23	23	15	24	33	21	27	19	18	13	18	23	20	18	16	3
15	35	31	23	23	15	24	33	21	27	19	18	13	18	23	20	18	16	3

Year	Soil Concentration (µg/g) at each receptor			
	R39	R40	R41	R42
1	2	8	8	10
2	3	12	13	16
3	3	16	17	20
4	4	18	19	22
5	4	19	21	24
6	4	20	22	25
7	4	21	22	26
8	4	21	23	26
9	4	21	23	27
10	4	21	23	27
11	4	21	23	27
12	4	21	23	27
13	4	22	23	27
14	4	22	23	27
15	4	22	23	27

A3.1c Scenario 2 incremental soil Pb concentrations with incorporation of different loss factors

A3.1c.1: 0 % loss and 2 cm mixing depth

Year	Soil Concentration (µg/g) at each receptor																			
	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15	R16	R17	R18	R19	R20
1	2	4	7	4	3	3	2	15	5	2	2	1	1	1	0	0	1	1	0	0
2	3	7	15	8	6	7	5	30	10	4	4	2	2	2	1	0	1	1	0	0
3	5	11	22	12	9	10	7	45	15	6	6	4	3	4	1	1	2	2	0	1
4	7	15	30	16	12	13	9	60	20	8	7	5	4	5	1	1	3	2	1	1
5	8	18	37	20	15	16	11	74	25	10	9	6	5	6	1	1	3	3	1	1
6	10	22	45	24	18	20	14	89	31	12	11	7	6	7	2	1	4	4	1	1
7	12	26	52	28	21	23	16	104	36	14	13	9	7	8	2	1	5	4	1	1
8	13	29	60	32	24	26	18	119	41	16	15	10	8	10	2	1	6	5	1	2
9	15	33	67	36	27	30	21	134	46	18	17	11	9	11	3	2	6	5	1	2
10	17	37	74	40	30	33	23	149	51	20	19	12	10	12	3	2	7	6	1	2
11	18	40	82	44	33	36	25	164	56	22	20	13	11	13	3	2	8	7	1	2
12	20	44	89	48	36	39	28	179	61	24	22	15	11	14	3	2	8	7	2	2
13	22	48	97	52	39	43	30	193	66	26	24	16	12	16	4	2	9	8	2	3
14	23	51	104	56	42	46	32	208	71	28	26	17	13	17	4	2	10	8	2	3
15	25	55	112	60	45	49	34	223	76	30	28	18	14	18	4	3	10	9	2	3

Year	Soil Concentration (µg/g) at each receptor																	
	R21	R22	R23	R24	R25	R26	R27	R28	R29	R30	R31	R32	R33	R34	R35	R36	R37	R38
1	1	1	1	1	1	1	1	1	1	1	1	0	0	2	1	1	1	1
2	3	3	2	2	2	1	1	1	1	1	1	1	1	3	3	2	2	3
3	4	4	3	3	3	2	2	2	2	2	2	1	1	5	4	3	2	4
4	6	5	4	4	3	3	3	3	3	2	2	2	1	7	5	4	3	5
5	7	6	5	4	4	4	4	3	3	3	3	2	2	8	7	5	4	7
6	9	8	6	5	5	4	4	4	4	3	3	3	2	10	8	6	5	8
7	10	9	7	6	6	5	5	5	5	4	4	3	2	12	9	7	6	9
8	11	10	8	7	7	6	6	5	5	4	4	4	3	14	11	8	6	11
9	13	11	9	8	8	7	6	6	6	5	5	4	3	15	12	9	7	12
10	14	13	10	9	9	7	7	7	6	6	5	4	3	17	13	10	8	13
11	16	14	11	10	10	8	8	7	7	6	6	5	4	19	15	11	9	15
12	17	15	12	11	10	9	9	8	8	7	6	5	4	20	16	12	10	16
13	19	17	13	11	11	10	9	9	8	7	7	6	5	22	17	13	10	17
14	20	18	14	12	12	10	10	9	9	8	7	6	5	24	19	14	11	19
15	21	19	15	13	13	11	11	10	10	8	8	7	5	25	20	15	12	20

Year	Soil Concentration (µg/g) at each receptor			
	R39	R40	R41	R42
1	2	4	3	2
2	3	7	6	5
3	5	11	9	7
4	6	14	12	10
5	8	18	15	12
6	9	21	18	15
7	11	25	21	17
8	13	28	24	20
9	14	32	27	22
10	16	35	30	25
11	17	39	33	27
12	19	42	36	30
13	20	46	39	32
14	22	49	42	34
15	24	53	45	37

A3.1c.2: 10 % loss and 2 cm mixing depth

Year	Soil Concentration (µg/g) at each receptor																			
	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15	R16	R17	R18	R19	R20
1	2	4	7	4	3	3	2	15	5	2	2	1	1	1	0	0	1	1	0	0
2	3	7	14	8	6	6	4	28	10	4	4	2	2	2	1	0	1	1	0	0
3	5	10	20	11	8	9	6	40	14	5	5	3	3	3	1	0	2	2	0	1
4	6	13	26	14	10	11	8	51	18	7	6	4	3	4	1	1	2	2	0	1
5	7	15	30	16	12	13	9	61	21	8	8	5	4	5	1	1	3	2	1	1
6	8	17	35	19	14	15	11	70	24	9	9	6	4	6	1	1	3	3	1	1
7	9	19	39	21	16	17	12	78	27	10	10	6	5	6	1	1	4	3	1	1
8	10	21	42	23	17	19	13	85	29	11	11	7	5	7	2	1	4	3	1	1
9	10	22	46	24	18	20	14	91	31	12	11	7	6	7	2	1	4	4	1	1
10	11	24	49	26	19	21	15	97	33	13	12	8	6	8	2	1	5	4	1	1
11	12	25	51	27	20	23	16	102	35	14	13	8	7	8	2	1	5	4	1	1
12	12	26	53	29	21	24	16	107	37	14	13	9	7	9	2	1	5	4	1	1
13	13	27	56	30	22	25	17	111	38	15	14	9	7	9	2	1	5	4	1	1
14	13	28	57	31	23	25	18	115	39	16	14	9	7	9	2	1	5	5	1	2
15	13	29	59	32	24	26	18	118	40	16	15	10	8	10	2	1	6	5	1	2

Year	Soil Concentration (µg/g) at each receptor																	
	R21	R22	R23	R24	R25	R26	R27	R28	R29	R30	R31	R32	R33	R34	R35	R36	R37	R38
1	1	1	1	1	1	1	1	1	1	1	1	0	0	2	1	1	1	1
2	3	2	2	2	2	1	1	1	1	1	1	1	1	3	3	2	2	3
3	4	3	3	2	2	2	2	2	2	2	1	1	1	5	4	3	2	4
4	5	4	3	3	3	3	2	2	2	2	2	2	1	6	5	4	3	5
5	6	5	4	4	4	3	3	3	3	2	2	2	1	7	5	4	3	5
6	7	6	5	4	4	3	3	3	3	3	2	2	2	8	6	5	4	6
7	7	7	5	5	5	4	4	3	3	3	3	2	2	9	7	5	4	7
8	8	7	6	5	5	4	4	4	4	3	3	3	2	10	8	6	5	8
9	9	8	6	5	5	5	4	4	4	3	3	3	2	10	8	6	5	8
10	9	8	6	6	6	5	5	4	4	4	3	3	2	11	9	7	5	9
11	10	9	7	6	6	5	5	5	4	4	4	3	2	12	9	7	5	9
12	10	9	7	6	6	5	5	5	5	4	4	3	3	12	9	7	6	10
13	11	10	7	7	6	6	5	5	5	4	4	3	3	13	10	8	6	10
14	11	10	8	7	7	6	6	5	5	4	4	3	3	13	10	8	6	10
15	11	10	8	7	7	6	6	5	5	4	4	4	3	13	11	8	6	11

Year	Soil Concentration (µg/g) at each receptor			
	R39	R40	R41	R42
1	2	4	3	2
2	3	7	6	5
3	4	10	8	7
4	5	12	10	8
5	6	14	12	10
6	7	17	14	12
7	8	18	16	13
8	9	20	17	14
9	10	22	19	15
10	10	23	20	16
11	11	24	21	17
12	11	25	22	18
13	12	26	23	18
14	12	27	23	19
15	12	28	24	20

A3.1c.3: 25 % loss and 2 cm mixing depth

Year	Soil Concentration (µg/g) at each receptor																			
	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15	R16	R17	R18	R19	R20
1	2	4	7	4	3	3	2	15	5	2	2	1	1	1	0	0	1	1	0	0
2	3	6	13	7	5	6	4	26	9	4	3	2	2	2	0	0	1	1	0	0
3	4	8	17	9	7	8	5	34	12	5	4	3	2	3	1	0	2	1	0	0
4	5	10	20	11	8	9	6	41	14	6	5	3	3	3	1	0	2	2	0	1
5	5	11	23	12	9	10	7	45	16	6	6	4	3	4	1	1	2	2	0	1
6	6	12	24	13	10	11	8	49	17	7	6	4	3	4	1	1	2	2	0	1
7	6	13	26	14	10	11	8	52	18	7	6	4	3	4	1	1	2	2	0	1
8	6	13	27	14	11	12	8	54	18	7	7	4	3	4	1	1	3	2	0	1
9	6	14	28	15	11	12	9	55	19	7	7	5	4	4	1	1	3	2	0	1
10	6	14	28	15	11	12	9	56	19	8	7	5	4	5	1	1	3	2	0	1
11	6	14	29	15	11	13	9	57	19	8	7	5	4	5	1	1	3	2	0	1
12	7	14	29	15	12	13	9	58	20	8	7	5	4	5	1	1	3	2	0	1
13	7	14	29	16	12	13	9	58	20	8	7	5	4	5	1	1	3	2	0	1
14	7	14	29	16	12	13	9	58	20	8	7	5	4	5	1	1	3	2	0	1
15	7	14	29	16	12	13	9	59	20	8	7	5	4	5	1	1	3	2	0	1

Year	Soil Concentration (µg/g) at each receptor																	
	R21	R22	R23	R24	R25	R26	R27	R28	R29	R30	R31	R32	R33	R34	R35	R36	R37	R38
1	1	1	1	1	1	1	1	1	1	1	1	0	0	2	1	1	1	1
2	2	2	2	2	2	1	1	1	1	1	1	1	1	3	2	2	1	2
3	3	3	2	2	2	2	2	2	1	1	1	1	1	4	3	2	2	3
4	4	3	3	2	2	2	2	2	2	2	1	1	1	5	4	3	2	4
5	4	4	3	3	3	2	2	2	2	2	2	1	1	5	4	3	2	4
6	5	4	3	3	3	2	2	2	2	2	2	1	1	6	4	3	3	4
7	5	4	3	3	3	3	2	2	2	2	2	2	1	6	5	4	3	5
8	5	5	4	3	3	3	3	2	2	2	2	2	1	6	5	4	3	5
9	5	5	4	3	3	3	3	2	2	2	2	2	1	6	5	4	3	5
10	5	5	4	3	3	3	3	2	2	2	2	2	1	6	5	4	3	5
11	5	5	4	3	3	3	3	3	2	2	2	2	1	7	5	4	3	5
12	6	5	4	3	3	3	3	3	3	2	2	2	1	7	5	4	3	5
13	6	5	4	3	3	3	3	3	3	2	2	2	1	7	5	4	3	5
14	6	5	4	3	3	3	3	3	3	2	2	2	1	7	5	4	3	5
15	6	5	4	3	3	3	3	3	3	2	2	2	1	7	5	4	3	5

Year	Soil Concentration (µg/g) at each receptor			
	R39	R40	R41	R42
1	2	4	3	2
2	3	6	5	4
3	4	8	7	6
4	4	10	8	7
5	5	11	9	8
6	5	12	10	8
7	5	12	10	9
8	6	13	11	9
9	6	13	11	9
10	6	13	11	9
11	6	14	12	9
12	6	14	12	10
13	6	14	12	10
14	6	14	12	10
15	6	14	12	10

A3.1c.4: 35 % loss and 2 cm mixing depth

Year	Soil Concentration (µg/g) at each receptor																			
	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15	R16	R17	R18	R19	R20
1	2	4	7	4	3	3	2	15	5	2	2	1	1	1	0	0	1	1	0	0
2	3	6	12	7	5	5	4	25	8	3	3	2	2	2	0	0	1	1	0	0
3	3	8	15	8	6	7	5	31	11	4	4	3	2	2	1	0	1	1	0	0
4	4	9	17	9	7	8	5	35	12	5	4	3	2	3	1	0	2	1	0	0
5	4	9	19	10	8	8	6	38	13	5	5	3	2	3	1	0	2	2	0	1
6	4	10	20	11	8	9	6	39	13	5	5	3	3	3	1	0	2	2	0	1
7	5	10	20	11	8	9	6	40	14	5	5	3	3	3	1	0	2	2	0	1
8	5	10	21	11	8	9	6	41	14	6	5	3	3	3	1	0	2	2	0	1
9	5	10	21	11	8	9	6	42	14	6	5	3	3	3	1	0	2	2	0	1
10	5	10	21	11	8	9	6	42	14	6	5	3	3	3	1	0	2	2	0	1
11	5	10	21	11	8	9	7	42	14	6	5	3	3	3	1	0	2	2	0	1
12	5	10	21	11	8	9	7	42	14	6	5	3	3	3	1	0	2	2	0	1
13	5	10	21	11	8	9	7	42	14	6	5	3	3	3	1	0	2	2	0	1
14	5	10	21	11	8	9	7	42	15	6	5	3	3	3	1	0	2	2	0	1
15	5	10	21	11	8	9	7	42	15	6	5	3	3	3	1	0	2	2	0	1

Year	Soil Concentration (µg/g) at each receptor																	
	R21	R22	R23	R24	R25	R26	R27	R28	R29	R30	R31	R32	R33	R34	R35	R36	R37	R38
1	1	1	1	1	1	1	1	1	1	1	1	0	0	2	1	1	1	1
2	2	2	2	1	1	1	1	1	1	1	1	1	1	3	2	2	1	2
3	3	3	2	2	2	2	1	1	1	1	1	1	1	4	3	2	2	3
4	3	3	2	2	2	2	2	2	2	1	1	1	1	4	3	2	2	3
5	4	3	2	2	2	2	2	2	2	1	1	1	1	4	3	3	2	3
6	4	3	3	2	2	2	2	2	2	1	1	1	1	4	3	3	2	4
7	4	3	3	2	2	2	2	2	2	2	1	1	1	5	4	3	2	4
8	4	4	3	2	2	2	2	2	2	2	1	1	1	5	4	3	2	4
9	4	4	3	2	2	2	2	2	2	2	1	1	1	5	4	3	2	4
10	4	4	3	2	2	2	2	2	2	2	1	1	1	5	4	3	2	4
11	4	4	3	2	2	2	2	2	2	2	1	1	1	5	4	3	2	4
12	4	4	3	2	2	2	2	2	2	2	1	1	1	5	4	3	2	4
13	4	4	3	3	2	2	2	2	2	2	1	1	1	5	4	3	2	4
14	4	4	3	3	2	2	2	2	2	2	1	1	1	5	4	3	2	4
15	4	4	3	3	2	2	2	2	2	2	1	1	1	5	4	3	2	4

Year	Soil Concentration (µg/g) at each receptor			
	R39	R40	R41	R42
1	2	4	3	2
2	3	6	5	4
3	3	7	6	5
4	4	8	7	6
5	4	9	8	6
6	4	9	8	7
7	4	10	8	7
8	4	10	8	7
9	4	10	8	7
10	4	10	9	7
11	4	10	9	7
12	4	10	9	7
13	4	10	9	7
14	4	10	9	7
15	4	10	9	7

A3.1d Scenario 3 incremental soil Pb concentrations with incorporation of different loss factors

A3.1d.1: 0 % loss and 2 cm mixing depth

Year	Soil Concentration (µg/g) at each receptor																			
	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15	R16	R17	R18	R19	R20
1	11	9	15	8	6	7	5	37	13	7	4	2	1	2	0	0	1	1	0	0
2	22	19	30	17	12	15	9	74	26	15	8	3	2	5	1	0	2	2	0	0
3	33	28	45	25	19	22	14	110	40	22	12	5	3	7	1	1	3	3	0	1
4	44	37	60	33	25	30	18	147	53	30	16	7	4	10	1	1	4	3	1	1
5	55	47	75	41	31	37	23	184	66	37	21	9	6	12	1	1	5	4	1	1
6	66	56	90	50	37	45	27	221	79	45	25	10	7	14	2	1	6	5	1	1
7	77	65	105	58	43	52	32	258	93	52	29	12	8	17	2	1	7	6	1	1
8	88	75	120	66	50	60	36	295	106	60	33	14	9	19	2	1	8	7	1	2
9	99	84	135	74	56	67	41	331	119	67	37	16	10	21	3	2	9	8	1	2
10	110	93	150	83	62	75	45	368	132	75	41	17	11	24	3	2	10	9	1	2
11	121	103	165	91	68	82	50	405	146	82	45	19	12	26	3	2	11	9	1	2
12	132	112	180	99	74	90	55	442	159	90	49	21	13	29	3	2	12	10	2	2
13	143	121	195	107	81	97	59	479	172	97	53	23	14	31	4	2	13	11	2	3
14	154	131	210	116	87	104	64	516	185	105	57	24	15	33	4	2	14	12	2	3
15	166	140	225	124	93	112	68	552	199	112	62	26	17	36	4	3	15	13	2	3

Year	Soil Concentration (µg/g) at each receptor																	
	R21	R22	R23	R24	R25	R26	R27	R28	R29	R30	R31	R32	R33	R34	R35	R36	R37	R38
1	14	12	9	9	6	9	12	8	10	7	7	5	7	10	8	7	6	2
2	27	24	18	18	12	18	24	16	20	14	14	10	13	20	17	14	13	5
3	41	37	27	27	18	27	36	24	30	21	20	15	20	29	25	21	19	7
4	55	49	36	36	24	36	49	31	40	28	27	20	26	39	34	28	26	9
5	68	61	45	45	30	45	61	39	50	35	34	25	33	49	42	35	32	12
6	82	73	54	53	36	55	73	47	60	42	41	30	40	59	50	42	39	14
7	96	86	63	62	42	64	85	55	70	49	48	35	46	68	59	49	45	16
8	109	98	72	71	48	73	97	63	80	57	55	41	53	78	67	56	52	18
9	123	110	81	80	54	82	109	71	90	64	61	46	60	88	75	63	58	21
10	137	122	90	89	60	91	122	79	100	71	68	51	66	98	84	70	65	23
11	150	134	99	98	66	100	134	86	110	78	75	56	73	107	92	78	71	25
12	164	147	108	107	72	109	146	94	120	85	82	61	79	117	101	85	78	28
13	178	159	117	116	78	118	158	102	130	92	89	66	86	127	109	92	84	30
14	191	171	126	125	84	127	170	110	140	99	96	71	93	137	117	99	91	32
15	205	183	135	134	90	136	182	118	150	106	102	76	99	146	126	106	97	35

Year	Soil Concentration (µg/g) at each receptor			
	R39	R40	R41	R42
1	3	11	11	12
2	6	22	22	24
3	9	33	34	36
4	12	44	45	48
5	15	55	56	60
6	18	67	67	72
7	21	78	78	84
8	25	89	89	96
9	28	100	101	108
10	31	111	112	120
11	34	122	123	132
12	37	133	134	144
13	40	144	145	156
14	43	155	157	168
15	46	166	168	180

A3.1d.2: 10 % loss and 2 cm mixing depth

Year	Soil Concentration (µg/g) at each receptor																			
	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15	R16	R17	R18	R19	R20
1	11	9	15	8	6	7	5	37	13	7	4	2	1	2	0	0	1	1	0	0
2	21	18	28	16	12	14	9	70	25	14	8	3	2	5	1	0	2	2	0	0
3	30	25	41	22	17	20	12	100	36	20	11	5	3	6	1	0	3	2	0	1
4	38	32	52	28	21	26	16	127	46	26	14	6	4	8	1	1	3	3	0	1
5	45	38	61	34	25	31	19	151	54	31	17	7	5	10	1	1	4	3	1	1
6	52	44	70	39	29	35	21	173	62	35	19	8	5	11	1	1	5	4	1	1
7	58	49	78	43	32	39	24	192	69	39	21	9	6	12	1	1	5	4	1	1
8	63	53	85	47	35	43	26	210	75	43	23	10	6	14	2	1	6	5	1	1
9	68	57	92	51	38	46	28	226	81	46	25	11	7	15	2	1	6	5	1	1
10	72	61	98	54	40	49	30	240	86	49	27	11	7	16	2	1	6	6	1	1
11	76	64	103	57	43	51	31	253	91	51	28	12	8	16	2	1	7	6	1	1
12	79	67	108	59	44	54	33	264	95	54	29	12	8	17	2	1	7	6	1	1
13	82	70	112	62	46	56	34	275	99	56	31	13	8	18	2	1	7	6	1	1
14	85	72	116	64	48	58	35	284	102	58	32	13	9	18	2	1	8	7	1	2
15	88	74	119	66	49	59	36	292	105	59	33	14	9	19	2	1	8	7	1	2

Year	Soil Concentration (µg/g) at each receptor																	
	R21	R22	R23	R24	R25	R26	R27	R28	R29	R30	R31	R32	R33	R34	R35	R36	R37	R38
1	14	12	9	9	6	9	12	8	10	7	7	5	7	10	8	7	6	2
2	26	23	17	17	11	17	23	15	19	13	13	10	13	19	16	13	12	4
3	37	33	24	24	16	25	33	21	27	19	19	14	18	26	23	19	18	6
4	47	42	31	31	21	31	42	27	34	24	23	17	23	34	29	24	22	8
5	56	50	37	37	25	37	50	32	41	29	28	21	27	40	34	29	27	9
6	64	57	42	42	28	43	57	37	47	33	32	24	31	46	39	33	30	11
7	71	64	47	47	31	47	63	41	52	37	36	26	35	51	44	37	34	12
8	78	70	51	51	34	52	69	45	57	40	39	29	38	56	48	40	37	13
9	84	75	55	55	37	56	74	48	61	43	42	31	41	60	51	43	40	14
10	89	80	59	58	39	59	79	51	65	46	45	33	43	64	55	46	42	15
11	94	84	62	61	41	62	83	54	68	49	47	35	45	67	57	48	44	16
12	98	88	65	64	43	65	87	56	72	51	49	36	48	70	60	51	46	17
13	102	91	67	66	45	68	91	59	74	53	51	38	49	73	62	53	48	17
14	105	94	69	69	46	70	94	61	77	55	53	39	51	75	65	54	50	18
15	109	97	71	71	48	72	97	62	79	56	54	40	53	77	67	56	51	18

Year	Soil Concentration (µg/g) at each receptor			
	R39	R40	R41	R42
1	3	11	11	12
2	6	21	21	23
3	8	30	30	33
4	11	38	38	41
5	13	45	46	49
6	14	52	52	56
7	16	58	58	63
8	17	63	64	68
9	19	68	68	74
10	20	72	73	78
11	21	76	77	82
12	22	80	80	86
13	23	83	83	90
14	24	86	86	93
15	24	88	89	95

A3.1d.3: 25 % loss and 2 cm mixing depth

Year	Soil Concentration (µg/g) at each receptor																			
	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15	R16	R17	R18	R19	R20
1	11	9	15	8	6	7	5	37	13	7	4	2	1	2	0	0	1	1	0	0
2	19	16	26	14	11	13	8	64	23	13	7	3	2	4	0	0	2	1	0	0
3	26	22	35	19	14	17	11	85	31	17	9	4	3	6	1	0	2	2	0	0
4	30	26	41	23	17	20	12	101	36	20	11	5	3	7	1	0	3	2	0	1
5	34	29	46	25	19	23	14	112	40	23	13	5	3	7	1	1	3	3	0	1
6	36	31	49	27	20	25	15	121	44	25	13	6	4	8	1	1	3	3	0	1
7	38	32	52	29	21	26	16	128	46	26	14	6	4	8	1	1	3	3	0	1
8	40	34	54	30	22	27	16	133	48	27	15	6	4	9	1	1	4	3	0	1
9	41	35	55	31	23	28	17	136	49	28	15	6	4	9	1	1	4	3	0	1
10	42	35	57	31	23	28	17	139	50	28	15	7	4	9	1	1	4	3	0	1
11	42	36	57	32	24	29	17	141	51	29	16	7	4	9	1	1	4	3	0	1
12	43	36	58	32	24	29	18	143	51	29	16	7	4	9	1	1	4	3	0	1
13	43	36	59	32	24	29	18	144	52	29	16	7	4	9	1	1	4	3	0	1
14	43	37	59	32	24	29	18	145	52	29	16	7	4	9	1	1	4	3	0	1
15	44	37	59	33	24	29	18	145	52	30	16	7	4	9	1	1	4	3	0	1

Year	Soil Concentration (µg/g) at each receptor																	
	R21	R22	R23	R24	R25	R26	R27	R28	R29	R30	R31	R32	R33	R34	R35	R36	R37	R38
1	14	12	9	9	6	9	12	8	10	7	7	5	7	10	8	7	6	2
2	24	21	16	16	10	16	21	14	17	12	12	9	12	17	15	12	11	4
3	32	28	21	21	14	21	28	18	23	16	16	12	15	23	19	16	15	5
4	37	33	25	24	16	25	33	21	27	19	19	14	18	27	23	19	18	6
5	42	37	27	27	18	28	37	24	30	22	21	15	20	30	26	22	20	7
6	45	40	30	29	20	30	40	26	33	23	22	17	22	32	28	23	21	8
7	47	42	31	31	21	31	42	27	35	25	24	18	23	34	29	24	22	8
8	49	44	32	32	22	33	44	28	36	25	25	18	24	35	30	25	23	8
9	51	45	33	33	22	34	45	29	37	26	25	19	24	36	31	26	24	9
10	52	46	34	34	23	34	46	30	38	27	26	19	25	37	32	27	24	9
11	52	47	34	34	23	35	47	30	38	27	26	19	25	37	32	27	25	9
12	53	47	35	35	23	35	47	30	39	27	26	20	26	38	32	27	25	9
13	53	48	35	35	23	35	47	31	39	28	27	20	26	38	33	28	25	9
14	54	48	35	35	24	36	48	31	39	28	27	20	26	38	33	28	25	9
15	54	48	36	35	24	36	48	31	39	28	27	20	26	39	33	28	26	9

Year	Soil Concentration (µg/g) at each receptor			
	R39	R40	R41	R42
1	3	11	11	12
2	5	19	20	21
3	7	26	26	28
4	8	30	31	33
5	9	34	34	37
6	10	36	37	40
7	11	38	39	42
8	11	40	40	43
9	11	41	41	44
10	12	42	42	45
11	12	42	43	46
12	12	43	43	47
13	12	43	44	47
14	12	44	44	47
15	12	44	44	47

A3.1d.4: 35 % loss and 2 cm mixing depth

Year	Soil Concentration (µg/g) at each receptor																			
	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15	R16	R17	R18	R19	R20
1	11	9	15	8	6	7	5	37	13	7	4	2	1	2	0	0	1	1	0	0
2	18	15	25	14	10	12	8	61	22	12	7	3	2	4	0	0	2	1	0	0
3	23	19	31	17	13	15	9	76	27	16	9	4	2	5	1	0	2	2	0	0
4	26	22	35	19	15	18	11	86	31	18	10	4	3	6	1	0	2	2	0	0
5	28	24	38	21	16	19	11	93	33	19	10	4	3	6	1	0	2	2	0	1
6	29	25	40	22	16	20	12	97	35	20	11	5	3	6	1	0	3	2	0	1
7	30	25	41	22	17	20	12	100	36	20	11	5	3	6	1	0	3	2	0	1
8	31	26	41	23	17	21	13	102	37	21	11	5	3	7	1	0	3	2	0	1
9	31	26	42	23	17	21	13	103	37	21	11	5	3	7	1	0	3	2	0	1
10	31	26	42	23	17	21	13	104	37	21	12	5	3	7	1	0	3	2	0	1
11	31	26	42	23	18	21	13	104	38	21	12	5	3	7	1	0	3	2	0	1
12	31	27	43	23	18	21	13	105	38	21	12	5	3	7	1	0	3	2	0	1
13	31	27	43	24	18	21	13	105	38	21	12	5	3	7	1	0	3	2	0	1
14	31	27	43	24	18	21	13	105	38	21	12	5	3	7	1	0	3	2	0	1
15	31	27	43	24	18	21	13	105	38	21	12	5	3	7	1	0	3	2	0	1

Year	Soil Concentration (µg/g) at each receptor																	
	R21	R22	R23	R24	R25	R26	R27	R28	R29	R30	R31	R32	R33	R34	R35	R36	R37	R38
1	14	12	9	9	6	9	12	8	10	7	7	5	7	10	8	7	6	2
2	23	20	15	15	10	15	20	13	16	12	11	8	11	16	14	12	11	4
3	28	25	19	18	12	19	25	16	21	15	14	10	14	20	17	15	13	5
4	32	29	21	21	14	21	29	18	23	17	16	12	16	23	20	17	15	5
5	35	31	23	23	15	23	31	20	25	18	17	13	17	25	21	18	16	6
6	36	32	24	24	16	24	32	21	26	19	18	13	17	26	22	19	17	6
7	37	33	24	24	16	25	33	21	27	19	19	14	18	27	23	19	18	6
8	38	34	25	25	17	25	34	22	28	20	19	14	18	27	23	19	18	6
9	38	34	25	25	17	25	34	22	28	20	19	14	19	27	23	20	18	6
10	39	34	25	25	17	26	34	22	28	20	19	14	19	28	24	20	18	7
11	39	35	25	25	17	26	34	22	28	20	19	14	19	28	24	20	18	7
12	39	35	26	25	17	26	35	22	28	20	19	14	19	28	24	20	18	7
13	39	35	26	25	17	26	35	22	28	20	19	14	19	28	24	20	18	7
14	39	35	26	25	17	26	35	22	28	20	19	14	19	28	24	20	18	7
15	39	35	26	25	17	26	35	22	28	20	19	14	19	28	24	20	18	7

Year	Soil Concentration (µg/g) at each receptor			
	R39	R40	R41	R42
1	3	11	11	12
2	5	18	18	20
3	6	23	23	25
4	7	26	26	28
5	8	28	28	30
6	8	29	30	32
7	8	30	30	33
8	8	31	31	33
9	9	31	31	34
10	9	31	32	34
11	9	31	32	34
12	9	31	32	34
13	9	32	32	34
14	9	32	32	34
15	9	32	32	34

A3.2 Incremental soil concentrations of other metals after 15 years for each Scenario (S1b, S2, and S3), assuming no loss of metal from soil

A3.2.1 Ag

Scenario	Soil Ag concentrations (ug/g) at 15 years by receptor																			
	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15	R16	R17	R18	R19	R20
Scenario 1b	0.1	0.08	0.1	0.06	0.05	0.06	0.03	0.3	0.1	0.08	0.03	0.01	0.002	0.02	0	0	0.004	0.004	0	0
Scenario 2	0.03	0.06	0.1	0.07	0.05	0.05	0.04	0.2	0.09	0.04	0.03	0.02	0.02	0.02	0.005	0.003	0.01	0.01	0.002	0.003
Scenario 3	0.2	0.1	0.2	0.1	0.09	0.1	0.07	0.5	0.2	0.1	0.06	0.03	0.02	0.04	0.005	0.003	0.02	0.01	0.002	0.003

Scenario	Soil Ag concentrations (ug/g) at 15 years by receptor																	
	R21	R22	R23	R24	R25	R26	R27	R28	R29	R30	R31	R32	R33	R34	R35	R36	R37	R38
Scenario 1b	0.2	0.2	0.1	0.1	0.07	0.1	0.2	0.1	0.1	0.09	0.09	0.06	0.09	0.1	0.1	0.09	0.08	0.02
Scenario 2	0.03	0.03	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.009	0.009	0.008	0.006	0.03	0.02	0.02	0.01	0.02
Scenario 3	0.2	0.2	0.1	0.1	0.09	0.1	0.2	0.1	0.1	0.1	0.1	0.07	0.09	0.1	0.1	0.1	0.09	0.04

Scenario	Soil Ag concentrations (ug/g) at 15 years by receptor			
	R39	R40	R41	R42
Scenario 1b	0.02	0.1	0.1	0.1
Scenario 2	0.03	0.06	0.05	0.04
Scenario 3	0.05	0.2	0.2	0.2

A3.2.2 As

Scenario	Soil As concentrations (ug/g) at 15 years by receptor																			
	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15	R16	R17	R18	R19	R20
Scenario 1b	0.5	0.3	0.4	0.2	0.2	0.2	0.1	1	0.4	0.3	0.1	0.03	0.008	0.06	0	0	0.01	0.01	0	0
Scenario 2	0.2	0.5	1	0.5	0.4	0.5	0.3	2	0.7	0.2	0.3	0.2	0.1	0.1	0.04	0.02	0.08	0.08	0.02	0.03
Scenario 3	1	1	2	1	0.7	0.9	0.6	5	2	0.8	0.5	0.2	0.1	0.3	0.04	0.02	0.1	0.1	0.02	0.03

Scenario	Soil As concentrations (ug/g) at 15 years by receptor																
	R21	R22	R23	R24	R25	R26	R27	R28	R29	R30	R31	R32	R33	R34	R35	R36	R37
Scenario 1b	0.6	0.6	0.4	0.4	0.3	0.4	0.6	0.4	0.5	0.3	0.3	0.2	0.3	0.4	0.4	0.3	0.3
Scenario 2	0.2	0.2	0.1	0.1	0.1	0.09	0.08	0.07	0.07	0.06	0.06	0.05	0.04	0.2	0.1	0.1	0.09
Scenario 3	1	1	0.9	0.9	0.6	0.9	1	0.8	1	0.7	0.7	0.5	0.7	1	0.8	0.7	0.6

Scenario	Soil As concentrations (ug/g) at 15 years by receptor				
	R38	R39	R40	R41	R42
Scenario 1b	0.06	0.08	0.4	0.4	0.5
Scenario 2	0.2	0.2	0.4	0.3	0.2
Scenario 3	0.3	0.4	1	1	1

A3.2.3 Ba

Scenario	Soil Ba concentrations (ug/g) at 15 years by receptor																			
	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15	R16	R17	R18	R19	R20
Scenario 1b	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scenario 2	0.008	0.001	0.0008	0.0004	0.0002	0.0001	0.0001	0.0002	0.0002	0.0004	0.0002	0.0004	0.0004	0.0003	0.0002	0.0004	0.0004	0.0001	0.0003	0.0003
Scenario 3	0.008	0.001	0.0008	0.0004	0.0002	0.0001	0.0001	0.0002	0.0002	0.0004	0.0002	0.0004	0.0004	0.0003	0.0002	0.0004	0.0004	0.0001	0.0003	0.0003

Scenario	Soil Ba concentrations (ug/g) at 15 years by receptor																	
	R21	R22	R23	R24	R25	R26	R27	R28	R29	R30	R31	R32	R33	R34	R35	R36	R37	R38
Scenario 1b	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scenario 2	0.02	0.02	0.02	0.007	0.008	0.004	0.002	0.002	0.002	0.001	0.001	0.001	0.0006	0.001	0.002	0.003	0.002	0.00009
Scenario 3	0.02	0.02	0.02	0.007	0.008	0.004	0.002	0.002	0.002	0.001	0.001	0.001	0.0006	0.001	0.002	0.003	0.002	0.00009

Scenario	Soil Ba concentrations (ug/g) at 15 years by receptor			
	R39	R40	R41	R42
Scenario 1b	0	0	0	0
Scenario 2	0.0001	0.0004	0.0005	0.0008
Scenario 3	0.0001	0.0004	0.0005	0.0008

A3.2.4 Be

Scenario	Soil Be concentrations (ug/g) at 15 years by receptor														
	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
Scenario 1b	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scenario 2	0.0002	0.00003	0.00002	0.000009	0.000006	0.000003	0.000003	0.000005	0.000005	0.00001	0.000005	0.00001	0.000009	0.000007	0.000006
Scenario 3	0.0002	0.00003	0.00002	0.000009	0.000006	0.000003	0.000003	0.000005	0.000005	0.00001	0.000005	0.00001	0.000009	0.000007	0.000006

Scenario	Soil Be concentrations (ug/g) at 15 years by receptor														
	R16	R17	R18	R19	R20	R21	R22	R23	R24	R25	R26	R27	R28	R29	R30
Scenario 1b	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scenario 2	0.000009	0.000009	0.000003	0.000007	0.000006	0.0005	0.0006	0.0004	0.0002	0.0002	0.00009	0.00005	0.00004	0.00005	0.00004
Scenario 3	0.000009	0.000009	0.000003	0.000007	0.000006	0.0005	0.0006	0.0004	0.0002	0.0002	0.00009	0.00005	0.00004	0.00005	0.00004

Scenario	Soil Be concentrations (ug/g) at 15 years by receptor											
	R31	R32	R33	R34	R35	R36	R37	R38	R39	R40	R41	R42
Scenario 1b	0	0	0	0	0	0	0	0	0	0	0	0
Scenario 2	0.00004	0.00003	0.00002	0.00003	0.00005	0.00006	0.00006	0.000002	0.000002	0.000009	0.00001	0.00002
Scenario 3	0.00004	0.00003	0.00002	0.00003	0.00005	0.00006	0.00006	0.000002	0.000002	0.000009	0.00001	0.00002

A3.2.5 Cd

Scenario	Soil Cd concentrations (ug/g) at 15 years by receptor																			
	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15	R16	R17	R18	R19	R20
Scenario 1b	0.3	0.2	0.2	0.1	0.09	0.1	0.06	0.6	0.2	0.1	0.06	0.01	0.004	0.03	0	0	0.007	0.007	0	0
Scenario 2	0.07	0.2	0.4	0.2	0.2	0.2	0.1	1	0.3	0.09	0.1	0.07	0.05	0.06	0.01	0.009	0.03	0.03	0.006	0.01
Scenario 3	0.3	0.3	0.6	0.3	0.3	0.3	0.2	2	0.5	0.2	0.2	0.08	0.06	0.09	0.01	0.009	0.04	0.04	0.006	0.01

Scenario	Soil Cd concentrations (ug/g) at 15 years by receptor																	
	R21	R22	R23	R24	R25	R26	R27	R28	R29	R30	R31	R32	R33	R34	R35	R36	R37	R38
Scenario 1b	0.3	0.3	0.2	0.2	0.1	0.2	0.3	0.2	0.3	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.03
Scenario 2	0.06	0.06	0.04	0.04	0.04	0.03	0.03	0.03	0.03	0.02	0.02	0.02	0.01	0.07	0.05	0.04	0.03	0.07
Scenario 3	0.4	0.4	0.3	0.3	0.2	0.3	0.3	0.2	0.3	0.2	0.2	0.1	0.2	0.3	0.2	0.2	0.2	0.1

Scenario	Soil Cd concentrations (ug/g) at 15 years by receptor			
	R39	R40	R41	R42
Scenario 1b	0.04	0.2	0.2	0.3
Scenario 2	0.09	0.2	0.1	0.1
Scenario 3	0.1	0.4	0.4	0.4

A3.2.6 Cr

Scenario	Soil Cr concentrations (ug/g) at 15 years by receptor																			
	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15	R16	R17	R18	R19	R20
Scenario 1b	1	0.6	0.8	0.5	0.3	0.4	0.2	2	0.9	0.6	0.2	0.06	0.02	0.1	0	0	0.03	0.03	0	0
Scenario 2	0.03	0.02	0.04	0.04	0.03	0.06	0.009	0.02	0.02	0.01	0.01	0.009	0.006	0.006	0.0004	0.0008	0.003	0.004	0.0005	0.0005
Scenario 3	1	0.6	0.9	0.5	0.4	0.5	0.3	2	0.9	0.6	0.3	0.06	0.02	0.1	0.0004	0.0008	0.03	0.03	0.0005	0.0005

Scenario	Soil Cr concentrations (ug/g) at 15 years by receptor																	
	R21	R22	R23	R24	R25	R26	R27	R28	R29	R30	R31	R32	R33	R34	R35	R36	R37	R38
Scenario 1b	1	1	0.9	0.9	0.6	0.9	1	0.8	1	0.7	0.7	0.5	0.7	0.9	0.8	0.7	0.6	0.1
Scenario 2	0.05	0.06	0.06	0.05	0.03	0.04	0.04	0.04	0.03	0.03	0.02	0.01	0.02	0.02	0.02	0.02	0.02	0.007
Scenario 3	1	1	0.9	0.9	0.6	0.9	1	0.8	1	0.7	0.7	0.5	0.7	0.9	0.8	0.7	0.6	0.1

Scenario	Soil Cr concentrations (ug/g) at 15 years by receptor			
	R39	R40	R41	R42
Scenario 1b	0.2	0.8	0.9	1
Scenario 2	0.008	0.02	0.02	0.02
Scenario 3	0.2	0.8	0.9	1

A3.2.7 Cu

Scenario	Soil Cu concentrations (ug/g) at 15 years by receptor																			
	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15	R16	R17	R18	R19	R20
Scenario 1b	8	5	7	4	3	4	2	19	7	5	2	0.5	0.1	1	0	0	0.2	0.2	0	0
Scenario 2	0.9	2	3	2	1	1	0.9	5	2	1	0.8	0.5	0.4	0.5	0.1	0.08	0.3	0.3	0.06	0.09
Scenario 3	9	7	10	5	4	5	3	24	9	6	3	1	0.5	2	0.1	0.08	0.6	0.5	0.06	0.09

Scenario	Soil Cu concentrations (ug/g) at 15 years by receptor																	
	R21	R22	R23	R24	R25	R26	R27	R28	R29	R30	R31	R32	R33	R34	R35	R36	R37	R38
Scenario 1b	11	10	7	7	5	7	10	6	8	6	6	4	6	7	6	5	5	1
Scenario 2	0.9	0.8	0.7	0.6	0.5	0.5	0.5	0.4	0.4	0.4	0.3	0.3	0.2	0.9	0.7	0.6	0.4	0.5
Scenario 3	12	11	8	8	5	8	11	7	9	6	6	4	6	8	7	6	5	1

Scenario	Soil Cu concentrations (ug/g) at 15 years by receptor			
	R39	R40	R41	R42
Scenario 1b	1	7	7	8
Scenario 2	0.6	2	2	1
Scenario 3	2	8	9	10

A3.2.8 Fe

Scenario	Soil Fe concentrations (ug/g) at 15 years by receptor																			
	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15	R16	R17	R18	R19	R20
Scenario 1b	245	149	198	112	84	109	59	575	214	144	59	14	4	31	0	0	7	7	0	0
Scenario 2	68	105	194	99	71	74	50	265	127	69	44	32	26	38	9	6	24	16	4	6
Scenario 3	313	254	391	211	155	183	109	840	340	213	103	46	30	69	9	6	31	23	4	6

Scenario	Soil Fe concentrations (ug/g) at 15 years by receptor																	
	R21	R22	R23	R24	R25	R26	R27	R28	R29	R30	R31	R32	R33	R34	R35	R36	R37	R38
Scenario 1b	321	287	210	211	134	219	300	189	244	171	165	121	164	212	187	162	149	29
Scenario 2	67	65	46	33	36	26	23	21	21	18	18	15	11	66	50	38	29	34
Scenario 3	388	352	256	244	170	244	323	209	266	189	183	136	175	278	235	195	178	59

Scenario	Soil Fe concentrations (ug/g) at 15 years by receptor			
	R39	R40	R41	R42
Scenario 1b	40	198	214	251
Scenario 2	39	117	114	99
Scenario 3	76	316	328	349

A3.2.9 Hg

Scenario	Soil Hg concentrations (ug/g) at 15 years by receptor																			
	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15	R16	R17	R18	R19	R20
Scenario 1b	0.1	0.07	0.1	0.05	0.04	0.05	0.03	0.3	0.1	0.07	0.03	0.007	0.002	0.01	0	0	0.003	0.003	0	0
Scenario 2	0.002	0.002	0.005	0.004	0.004	0.007	0.001	0.003	0.002	0.001	0.002	0.0009	0.0007	0.0006	0.000002	0.000009	0.0003	0.0005	0.000003	0.000003
Scenario 3	0.1	0.07	0.1	0.06	0.04	0.06	0.03	0.3	0.1	0.07	0.03	0.008	0.003	0.02	0.000002	0.000009	0.004	0.004	0.000003	0.000003

Scenario	Soil Hg concentrations (ug/g) at 15 years by receptor																	
	R21	R22	R23	R24	R25	R26	R27	R28	R29	R30	R31	R32	R33	R34	R35	R36	R37	R38
Scenario 1b	0.2	0.1	0.1	0.1	0.06	0.1	0.1	0.09	0.1	0.08	0.08	0.06	0.08	0.1	0.09	0.08	0.07	0.01
Scenario 2	0.002	0.003	0.003	0.004	0.002	0.004	0.004	0.004	0.003	0.003	0.002	0.001	0.002	0.002	0.002	0.002	0.002	0.0008
Scenario 3	0.2	0.1	0.1	0.1	0.07	0.1	0.1	0.09	0.1	0.08	0.08	0.06	0.08	0.1	0.09	0.08	0.07	0.01

Scenario	Soil Hg concentrations (ug/g) at 15 years by receptor			
	R39	R40	R41	R42
Scenario 1b	0.02	0.1	0.1	0.1
Scenario 2	0.0009	0.002	0.002	0.002
Scenario 3	0.02	0.1	0.1	0.1

A3.2.10 Mn

Scenario	Soil Mn concentrations (ug/g) at 15 years by receptor																			
	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15	R16	R17	R18	R19	R20
Scenario 1b	74	45	60	34	26	33	18	174	65	43	18	4	1	9	0	0	2	2	0	0
Scenario 2	1	2	3	3	2	4	0.7	2	1	0.8	1	0.6	0.4	0.4	0.006	0.01	0.2	0.3	0.007	0.007
Scenario 3	76	47	63	37	28	37	18	176	66	44	19	5	2	10	0.006	0.01	2	2	0.007	0.007

Scenario	Soil Mn concentrations (ug/g) at 15 years by receptor																	
	R21	R22	R23	R24	R25	R26	R27	R28	R29	R30	R31	R32	R33	R34	R35	R36	R37	R38
Scenario 1b	97	87	64	64	41	66	91	57	74	52	50	37	50	64	57	49	45	9
Scenario 2	2	2	2	3	1	3	3	3	2	2	1	0.9	1	1	1	1	1	0.5
Scenario 3	99	89	66	67	42	69	94	60	76	53	51	38	51	66	58	50	46	9

Scenario	Soil Mn concentrations (ug/g) at 15 years by receptor			
	R39	R40	R41	R42
Scenario 1b	12	60	65	76
Scenario 2	0.6	1	1	2
Scenario 3	13	61	66	77

A3.2.11 Ni

Scenario	Soil Ni concentrations (ug/g) at 15 years by receptor																			
	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15	R16	R17	R18	R19	R20
Scenario 1b	0.7	0.4	0.6	0.3	0.3	0.3	0.2	1.7	0.6	0.4	0.2	0.04	0.01	0.09	0	0	0.02	0.02	0	0
Scenario 2	0.02	0.02	0.03	0.03	0.02	0.04	0.007	0.02	0.01	0.008	0.01	0.006	0.004	0.004	0.0001	0.0002	0.002	0.003	0.0001	0.0001
Scenario 3	0.7	0.5	0.6	0.4	0.3	0.4	0.2	2	0.6	0.4	0.2	0.05	0.02	0.1	0.0001	0.0002	0.02	0.02	0.0001	0.0001

Scenario	Soil Ni concentrations (ug/g) at 15 years by receptor																	
	R21	R22	R23	R24	R25	R26	R27	R28	R29	R30	R31	R32	R33	R34	R35	R36	R37	R38
Scenario 1b	1	0.9	0.6	0.6	0.4	0.7	0.9	0.6	0.7	0.5	0.5	0.4	0.5	0.6	0.6	0.5	0.4	0.09
Scenario 2	0.02	0.03	0.03	0.03	0.01	0.03	0.03	0.03	0.02	0.02	0.01	0.009	0.01	0.01	0.01	0.01	0.01	0.005
Scenario 3	1	0.9	0.7	0.7	0.4	0.7	0.9	0.6	0.7	0.5	0.5	0.4	0.5	0.6	0.6	0.5	0.5	0.09

Scenario	Soil Ni concentrations (ug/g) at 15 years by receptor			
	R39	R40	R41	R42
Scenario 1b	0.1	0.6	0.6	0.7
Scenario 2	0.006	0.01	0.01	0.02
Scenario 3	0.1	0.6	0.7	0.8

A3.2.12 Sb

Scenario	Soil Sb concentrations (ug/g) at 15 years by receptor																			
	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15	R16	R17	R18	R19	R20
Scenario 1b	0.6	0.4	0.5	0.3	0.2	0.3	0.1	1	0.5	0.3	0.1	0.03	0.009	0.07	0	0	0.02	0.02	0	0
Scenario 2	0.04	0.09	0.2	0.1	0.08	0.1	0.06	0.4	0.1	0.04	0.05	0.03	0.02	0.03	0.006	0.004	0.02	0.02	0.003	0.004
Scenario 3	0.6	0.4	0.7	0.4	0.3	0.4	0.2	2	0.6	0.4	0.2	0.06	0.03	0.1	0.006	0.004	0.03	0.03	0.003	0.004

Scenario	Soil Sb concentrations (ug/g) at 15 years by receptor																	
	R21	R22	R23	R24	R25	R26	R27	R28	R29	R30	R31	R32	R33	R34	R35	R36	R37	R38
Scenario 1b	0.8	0.7	0.5	0.5	0.3	0.5	0.7	0.4	0.6	0.4	0.4	0.3	0.4	0.5	0.4	0.4	0.3	0.07
Scenario 2	0.04	0.04	0.03	0.03	0.02	0.03	0.03	0.03	0.02	0.02	0.02	0.01	0.01	0.04	0.03	0.03	0.02	0.03
Scenario 3	0.8	0.7	0.5	0.5	0.3	0.5	0.7	0.5	0.6	0.4	0.4	0.3	0.4	0.5	0.5	0.4	0.4	0.1

Scenario	Soil Sb concentrations (ug/g) at 15 years by receptor			
	R39	R40	R41	R42
Scenario 1b	0.1	0.5	0.5	0.6
Scenario 2	0.04	0.08	0.06	0.05
Scenario 3	0.1	0.5	0.6	0.6

A3.2.13 Zn

Scenario	Soil Zn concentrations (ug/g) at 15 years by receptor																			
	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15	R16	R17	R18	R19	R20
Scenario 1b	57	35	46	26	20	26	14	135	50	34	14	3	1	7	0	0	2	2	0	0
Scenario 2	31	69	140	73	54	57	43	284	97	38	34	23	18	23	6	3	13	11	2	4
Scenario 3	88	104	186	99	74	83	57	419	147	72	48	26	19	30	6	3	15	13	2	4

Scenario	Soil Zn concentrations (ug/g) at 15 years by receptor																	
	R21	R22	R23	R24	R25	R26	R27	R28	R29	R30	R31	R32	R33	R34	R35	R36	R37	R38
Scenario 1b	75	67	49	49	31	51	70	44	57	40	39	28	39	50	44	38	35	7
Scenario 2	26	23	16	13	15	10	10	9	10	8	9	7	5	31	24	18	14	25
Scenario 3	101	90	65	62	47	61	80	53	67	48	47	36	43	80	66	55	49	30

Scenario	Soil Zn concentrations (ug/g) at 15 years by receptor			
	R39	R40	R41	R42
Scenario 1b	9	46	50	59
Scenario 2	30	67	57	46
Scenario 3	38	114	107	105

Appendix 4. TDI Analysis Excel Spreadsheets (Pb only)

A4.1 Exposure Parameters

Intake of metal ingestion from soil (I_{oral})	=	$\frac{C_s \text{ (ug/g)} \times S_{oral} \text{ (mg/day)} \times 10^{-3} \times ET \text{ (hr/day)} \times 1/24 \text{ (day/hr)} \times EF \text{ (day/yr)} \times ED_x \text{ (yr)} \times BAC_{soil} \times BA_{oral}}{BW_{as} \text{ (kg)} \times AT \text{ (days)}}$

Parameter	Abbreviation	Unit	Value			
			Life Stage			
			0.5-3 years	3-13 years	13-18 years	18-70 years
Intake of metal from soil via ingestion	I_{oral}	$\mu\text{g/kg bw/day}$	Calculated			
Soil concentration	C_s	$\mu\text{g/g}$	Varies with receptor and metal. Refer to soil concentration worksheets.			
Soil ingestion	S_{oral}	mg/day	100	100	50	50
Conversion Factor	10^{-3}	g/mg	0.001	0.001	0.001	0.001
Exposure Time	ET	hrs/day	24	24	24	24
Conversion Factor	1/24	days/hr	0.04166667	0.04166667	0.041666667	0.041666667
Exposure Frequency	EF	days/yr	365	365	365	365
Exposure Duration	ED_x	yr	2.5	10	5	52
Body weight	BW_{as}	kg	15	35	55.5	75
Age-specific averaging time	AT_x	days	912.5	3650	1825	18980
Averaging for lifetime intake	$AT_{lifetime}$	days	25550	25550	25550	25550
Bioaccessibility compound in soil	BAC_{soil}	%	Varies with receptor and metal. Refer to bioavailability worksheets.			
Absolute bioavailability of ingested metal	BA_{oral}	Unitless	Varies with metal, based on TDI			

Intake of metal via dermal uptake from soil (I_{derm_s})	=	$\frac{C_s (\mu\text{g/g}) \times SA_d (\text{mg/cm}^2) \times Sa_{\text{skin}} (\text{cm}^2) \times 10^{-3} \times ET (\text{hr/day}) \times 1/24 (\text{day/hr}) \times EF (\text{day/yr}) \times Ed_x (\text{yr}) \times BAC_{\text{soil}} \times ABA_{\text{derm}}}{BW_{\text{as}} (\text{kg}) \times AT (\text{days})}$

Parameter	Abbreviation	Unit	Value			
			Life Stage			
			0.5-3 years	3-13 years	13-18 years	18-70 years
Intake of metal from soil via dermal uptake	I_{derm_s}	$\mu\text{g/kg bw/day}$	Calculated			
Soil concentration	C_s	$\mu\text{g/g}$	Varies with receptor and metal. Refer to soil concentration worksheets.			
Soil adherence	Sa_d	mg/cm^2	0.5	0.5	0.5	0.5
Surface area of skin	SA_{skin}	cm^2	2318	3650	5374	6760
Conversion Factor	10^{-3}	g/mg	0.001	0.001	0.001	0.001
Exposure Time	ET	hrs/day	24	24	24	24
Conversion Factor	1/24	days/hr	0.0416666 7	0.0416666 7	0.0416666 7	0.0416666 7
Exposure Frequency	EF	days/yr	365	365	365	365
Exposure Duration	ED_x	yr	2.5	10	5	52
Body weight	BW_{as}	kg	15	35	55.5	75
Age-specific averaging time	AT_x	days	912.5	3650	1825	18980
Averaging for lifetime intake	AT_{lifetime}	days	25550	25550	25550	25550
Bioaccessibility compound in soil	BAC_{soil}	%	Varies with receptor and metal. Refer to bioavailability worksheets.			
Absolute bioavailability of metal via dermal absorption	ABA_{dermal}	Unitless	0.0001	0.0001	0.0001	0.0001

Intake of metal via inhalation of site dust (I_{inhal})	=	$\frac{C_A (\mu\text{g}/\text{m}^3) \times IR_{as} (\text{m}^3/\text{day}) \times ET (\text{hr}/\text{day}) \times 1/24 (\text{day}/\text{hr}) \times EF (\text{day}/\text{yr}) \times Ed_x(\text{yr}) \times BAC_{air} \times ABA_{inhal}}{BW_{as} (\text{kg}) \times AT (\text{days})}$

Parameter	Abbreviation	Unit	Value			
			Life Stage			
			0.5-3 years	3-13 years	13-18 years	18-70 years
Intake of metal via inhalation of site dust	I_{inhal}	$\mu\text{g}/\text{kg}/\text{day}$	Calculated			
Concentration of compound in air	C_A	$\mu\text{g}/\text{m}^3$	Varies with receptor and metal. Refer to soil concentration worksheets.			
Inhalation Rate	IR_{as}	m^3/day	9.5	12.4	15.1	16
Exposure Time	ET	hrs/day	24	24	24	24
Conversion Factor	1/24	days/hr	0.0416666 7	0.0416666 7	0.0416666 7	0.0416666 7
Exposure Frequency	EF	days/yr	365	365	365	365
Exposure Duration	ED_x	yr	2.5	10	5	52
Body weight	BW_{as}	kg	15	35	55.5	75
Age-specific averaging time	AT_x	days	912.5	3650	1825	18980
Averaging for lifetime intake	$AT_{lifetime}$	days	25550	25550	25550	25550
Bioaccessibility compound in air	BAC_{air}	%	Varies with receptor and metal. Refer to bioavailability worksheets.			
Absolute bioavailability of metal via inhalation	ABA_{inhal}	Unitless	1	1	1	1

Total Intake (I_{total_as})	=	$I_{oral} + I_{derm\_s} + I_{inhal} + Bckgnd_{diet} + Bckgnd_{inhal}$
Average lifetime daily exposure for 70 year life span	=	$(I_{total(0.5-3)} \times At_x) + (I_{total(3-13)} \times At_x) + (I_{total(13-18)} \times At_x) + (I_{total(18-70)} \times At_x) / AT_{lifetime}$
HQ	=	$I_{lifetime}/TDI$

A4.2 Pb Analysis

A4.2.1 Scenario 1a⁵

Chemical-specific inputs (Scenario 1a)																
Parameter	Abbreviation	Unit	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14
Incremental soil Pb concentration for 15 years of mine life (assuming no loss)	C _s	µg/g	701.6	426.5	566.3	320.9	241.4	312.9	168.6	1645.9	611.7	410.7	168.3	39.2	10.9	88.8
Background soil Pb concentration in 'Risk Zone 1'	C _{s_bkgdRZ1}	µg/g	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Background soil Pb concentration in 'Risk Zone 2+3'	C _{s_bkgdRZ2+3}	µg/g	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Background soil Pb concentration in 'Risk Zone 4+5'	C _{s_bkgdRZ4+5}	µg/g	500	500	500	500	500	500	500	500	500	500	500	500	500	500
Incremental concentration of Pb in PM ₁₀	C _A	µg/m ³	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.6	0.2	0.1	0.1	0.0	0.0	0.1
Background concentration of Pb in PM ₁₀	C _{A_bkgd}	µg/m ³	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Tolerable daily intake	TDI	ug/kg/day	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Bioaccessibility of incremental Pb in soil	BAC _{soil}	Unitless	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073
Bioaccessibility of incremental Pb in PM ₁₀	BAC _{air}	Unitless	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073
Bioaccessibility of Pb in background soil and PM ₁₀	BAC _{soil} , BAC _{air}	Unitless	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073
Absolute bioavailability of ingested metal	ABA _{oral}	Unitless	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Absolute bioavailability of metal via dermal absorption	ABA _{dermal}	Unitless	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Absolute bioavailability of metal via inhalation	ABA _{inhal}	Unitless	1	1	1	1	1	1	1	1	1	1	1	1	1	1

⁵ Dust deposition from free areas (80% controlled, i.e. 20% uncontrolled) for Scenario S1b (worksheet 20 entitled "(r) Pb Dep by Source Profile", 'future baseline') was multiplied by 5 for the 100% uncontrolled dust from free areas (S1a). Annual Pb deposition from S1a was then used to calculate the incremental soil concentrations after 15 years of mine life in these tables using Equation 2.1. The same adjustment was made to calculate incremental Pb concentrations in PM₁₀ for Scenario 1a. The adjustments done to provide 100% uncontrolled data (i.e. S1a) were done on advice provided by ENVIRON (E-mail correspondence with Damon A. Roddis, ENVIRON Pty Ltd, 16th March, 2010).

Chemical-specific inputs (Scenario 1a)																			
Parameter	Abbreviation	Unit	R15	R16	R17	R18	R19	R20	R21	R22	R23	R24	R25	R26	R27	R28	R29	R30	R31
Incremental soil Pb concentration for 15 years of mine life (assuming no loss)	C _s	µg/g	0.0	0.0	20.5	18.9	0.0	0.0	918.5	821.1	600.8	602.6	384.3	625.5	857.9	539.8	699.6	488.4	473.2
Background soil Pb concentration in 'Risk Zone 1'	C _{s_bkgdRZ1}	µg/g	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Background soil Pb concentration in 'Risk Zone 2+3'	C _{s_bkgdRZ2+3}	µg/g	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Background soil Pb concentration in 'Risk Zone 4+5'	C _{s_bkgdRZ4+5}	µg/g	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500
Incremental concentration of Pb in PM ₁₀	C _A	µg/m ³	0.0	0.0	0.1	0.0	0.0	0.0	0.2	0.2	0.2	0.1	0.1	0.2	0.3	0.2	0.2	0.2	0.1
Background concentration of Pb in PM ₁₀	C _{A_bkgd}	µg/m ³	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Tolerable daily intake	TDI	ug/kg/day	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Bioaccessibility of incremental Pb in soil	BAC _{soil}	Unitless	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073
Bioaccessibility of incremental Pb in PM ₁₀	BAC _{air}	Unitless	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073
Bioaccessibility of Pb in background soil and PM ₁₀	BAC _{soil} , BAC _{air}	Unitless	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073
Absolute bioavailability of ingested metal	ABA _{oral}	Unitless	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Absolute bioavailability of metal via dermal absorption	ABA _{dermal}	Unitless	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Absolute bioavailability of metal via inhalation	ABA _{inhal}	Unitless	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Chemical-specific inputs (Scenario 1a)													
Parameter	Abbreviation	Unit	R32	R33	R34	R35	R36	R37	R38	R39	R40	R41	R42
Incremental soil Pb concentration for 15 years of mine life (assuming no loss)	C _s	µg/g	346.2	470.3	606.1	536.1	463.0	425.7	82.4	115.9	567.0	611.6	716.9
Background soil Pb concentration in 'Risk Zone 1'	C _{s_bkgdRZ1}	µg/g	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Background soil Pb concentration in 'Risk Zone 2+3'	C _{s_bkgdRZ2+3}	µg/g	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Background soil Pb concentration in 'Risk Zone 4+5'	C _{s_bkgdRZ4+5}	µg/g	500	500	500	500	500	500	500	500	500	500	500
Incremental concentration of Pb in PM ₁₀	C _A	µg/m ³	0.1	0.1	0.2	0.2	0.1	0.1	0.0	0.1	0.2	0.2	0.2
Background concentration of Pb in PM ₁₀	C _{A_bkgd}	µg/m ³	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Tolerable daily intake	TDI	ug/kg/day	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Bioaccessibility of incremental Pb deposited in soil	BAC _{soil}	Unitless	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073
Bioaccessibility of incremental Pb in PM ₁₀	BAC _{air}	Unitless	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073
Bioaccessibility of Pb in background soil and PM ₁₀	BAC _{soil} , BAC _{air}	Unitless	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073
Absolute bioavailability of ingested metal	ABA _{oral}	Unitless	1	1	1	1	1	1	1	1	1	1	1
Absolute bioavailability of metal via dermal absorption	ABA _{dermal}	Unitless	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Absolute bioavailability of metal via inhalation	ABA _{inhal}	Unitless	1	1	1	1	1	1	1	1	1	1	1

Life Stage: Infant (0.5-3 yrs) Scenario 1a																	
		R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15	R16
Incremental Pb Intake from ingestion ($\mu\text{g Pb/kg bw/d}$) (I_{oral})		0.3	0.2	0.3	0.2	0.1	0.2	0.08	0.8	0.3	0.2	0.08	0.02	0.005	0.04	0	0
Incremental Dermal Pb Intake ($\mu\text{g Pb/kg bw/d}$) (I_{derm_s})		0.0004	0.0002	0.0003	0.0002	0.0001	0.0002	0.0001	0.0009	0.0003	0.0002	0.00009	0.00002	0.000006	0.00005	0	0
Incremental Pb Intake from Inhalation ($\mu\text{g Pb/kg bw/d}$) (I_{inhal})		0.009	0.006	0.006	0.004	0.003	0.005	0.004	0.028	0.01	0.006	0.002	0.002	0.002	0.003	0.001	0.001
Sum of Incremental Intakes ($\mu\text{g Pb/kg bw/d}$)		0.35	0.21	0.28	0.16	0.12	0.16	0.09	0.83	0.31	0.21	0.08	0.02	0.01	0.05	0.00	0.00
Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ1)		0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ2+3)		0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49
Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ4+5)		0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24
Background Pb intake from water ($\mu\text{g Pb/kg bw/d}$)		0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Backgnd Pb intake from diet ($\mu\text{g Pb/kg bw/d}$)		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Bckgnd Inhalation Pb Intake (Pb in PM_{10}) ($\mu\text{g Pb/kg bw/d}$)		0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009
Sum of bkgd intakes (RZ1) ($\mu\text{g Pb/kg bw/d}$)		2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01
% bkgd Pb intake from soil		48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
% bkgd Pb intake from diet		50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
Sum of bkgd intakes (RZ2+3) ($\mu\text{g Pb/kg bw/d}$)		1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
% bkgd Pb intake from soil		32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32
% bkgd Pb intake from diet		66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66

Sum of bkgd intakes (RZ4+5) (µg Pb/kg bw/d)	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
% bkgd Pb intake from soil	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19
% bkgd Pb intake from diet	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78
Total Intake (incremental + bkgd) (RZ1) (µg Pb/kg bw/d)	2.4	2.2	2.3	2.2	2.1	2.2	2.1	2.8	2.3	2.2	2.1	2.0	2.0	2.1	2.0	2.0
Total Intake (incremental + bkgd) (RZ2+3) (µg Pb/kg bw/d)	1.9	1.7	1.8	1.7	1.6	1.7	1.6	2.4	1.8	1.7	1.6	1.5	1.5	1.6	1.5	1.5
Total Intake (incremental + bkgd) (RZ4+5) (µg Pb/kg bw/d)	1.6	1.5	1.6	1.4	1.4	1.4	1.4	2.1	1.6	1.5	1.4	1.3	1.3	1.3	1.3	1.3
Hazard Quotient (RZ1)	0.68	0.64	0.66	0.62	0.61	0.62	0.60	0.81	0.66	0.63	0.60	0.58	0.58	0.59	0.58	0.58
Hazard Quotient (RZ2+3)	0.54	0.50	0.52	0.48	0.47	0.48	0.46	0.67	0.52	0.49	0.46	0.44	0.44	0.45	0.44	0.44
Hazard Quotient (RZ4+5)	0.47	0.43	0.45	0.41	0.40	0.41	0.39	0.60	0.45	0.43	0.39	0.37	0.37	0.38	0.37	0.37

Life Stage: Infant (0.5-3 yrs) Scenario 1a																			
		R17	R18	R19	R20	R21	R22	R23	R24	R25	R26	R27	R28	R29	R30	R31	R32	R33	R34
	Incremental Pb Intake from ingestion (µg Pb/kg bw/d) (I _{oral})	0.01	0.009	0	0	0.4	0.4	0.3	0.3	0.2	0.3	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.3
	Incremental Dermal Pb Intake (µg Pb/kg bw/d)(I _{derm_s})	0.00001	0.00001	0	0	0.0005	0.0005	0.0003	0.0003	0.0002	0.0004	0.0005	0.0003	0.0004	0.0003	0.0003	0.0002	0.0003	0.0003
	Incremental Pb Intake from Inhalation (µg Pb/kg bw/d) (I _{inhal})	0.003	0.0009	0.001	0.001	0.01	0.01	0.007	0.007	0.006	0.007	0.01	0.01	0.01	0.008	0.006	0.005	0.006	0.01
	Sum of Incremental Intakes (µg Pb/kg bw/d)	0.01	0.01	0.00	0.00	0.46	0.41	0.30	0.30	0.19	0.31	0.43	0.27	0.35	0.25	0.24	0.17	0.24	0.31
	Bkgd Pb intake from soil (µg Pb/kg bw/d) (RZ1)	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
	Bkgd Pb intake from soil (µg Pb/kg bw/d) (RZ2+3)	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49
	Bkgd Pb intake from soil (µg Pb/kg bw/d) (RZ4+5)	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24
	Background Pb intake from water (µg Pb/kg bw/d)	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
	Backgnd Pb intake from diet (µg Pb/kg bw/d)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Bckgnd Inhalation Pb Intake (Pb in PM ₁₀) (µg Pb/kg bw/d)	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009
	Sum of bkgd intakes (RZ1) (µg Pb/kg bw/d)	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01
	% bkgd Pb intake from soil	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
	% bkgd Pb intake from diet	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
	Sum of bkgd intakes (RZ2+3) (µg Pb/kg bw/d)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
	% bkgd Pb intake from soil	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32

% bkgd Pb intake from diet	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66
Sum of bkgd intakes (RZ4+5) (µg Pb/kg bw/d)	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
% bkgd Pb intake from soil	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19
% bkgd Pb intake from diet	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78
Total Intake (incremental + bkgd) (RZ1) (µg Pb/kg bw/d)	2.0	2.0	2.0	2.0	2.5	2.4	2.3	2.3	2.2	2.3	2.4	2.3	2.4	2.3	2.2	2.2	2.2	2.3
Total Intake (incremental + bkgd) (RZ2+3) (µg Pb/kg bw/d)	1.5	1.5	1.5	1.5	2.0	1.9	1.8	1.8	1.7	1.8	2.0	1.8	1.9	1.8	1.8	1.7	1.8	1.8
Total Intake (incremental + bkgd) (RZ4+5) (µg Pb/kg bw/d)	1.3	1.3	1.3	1.3	1.7	1.7	1.6	1.6	1.5	1.6	1.7	1.6	1.6	1.5	1.5	1.5	1.5	1.6
Hazard Quotient (RZ1)	0.58	0.58	0.58	0.58	0.71	0.69	0.66	0.66	0.63	0.66	0.70	0.65	0.68	0.65	0.64	0.62	0.64	0.66
Hazard Quotient (RZ2+3)	0.44	0.44	0.44	0.44	0.57	0.55	0.52	0.52	0.49	0.53	0.56	0.51	0.54	0.51	0.50	0.49	0.50	0.52
Hazard Quotient (RZ4+5)	0.37	0.37	0.37	0.37	0.50	0.48	0.45	0.45	0.42	0.46	0.49	0.44	0.47	0.44	0.43	0.42	0.43	0.45

Life Stage: Infant (0.5-3 yrs) Scenario 1a									
		R35	R36	R37	R38	R39	R40	R41	R42
Incremental Pb Intake from ingestion ($\mu\text{g Pb/kg bw/d}$) (I_{oral})		0.3	0.2	0.2	0.04	0.06	0.3	0.3	0.3
Incremental Dermal Pb Intake ($\mu\text{g Pb/kg bw/d}$) (I_{derm_s})		0.0003	0.0003	0.0002	0.00005	0.00007	0.0003	0.0003	0.0004
Incremental Pb Intake from Inhalation ($\mu\text{g Pb/kg bw/d}$) (I_{inhal})		0.009	0.007	0.006	0.002	0.004	0.01	0.01	0.01
Sum of Incremental Intakes ($\mu\text{g Pb/kg bw/d}$)		0.27	0.23	0.21	0.04	0.06	0.29	0.31	0.36
Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ1)		0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ2+3)		0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49
Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ4+5)		0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24
Background Pb intake from water ($\mu\text{g Pb/kg bw/d}$)		0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Backgnd Pb intake from diet ($\mu\text{g Pb/kg bw/d}$)		1	1	1	1	1	1	1	1
Bckgnd Inhalation Pb Intake (Pb in PM_{10}) ($\mu\text{g Pb/kg bw/d}$)		0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009
Sum of bkgd intakes (RZ1) ($\mu\text{g Pb/kg bw/d}$)		2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01
% bkgd Pb intake from soil		48	48	48	48	48	48	48	48
% bkgd Pb intake from diet		50	50	50	50	50	50	50	50
Sum of bkgd intakes (RZ2+3) ($\mu\text{g Pb/kg bw/d}$)		1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
% bkgd Pb intake from soil		32	32	32	32	32	32	32	32

% bkgd Pb intake from diet	66	66	66	66	66	66	66	66
Sum of bkgd intakes (RZ4+5) (µg Pb/kg bw/d)	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
% bkgd Pb intake from soil	19	19	19	19	19	19	19	19
% bkgd Pb intake from diet	78	78	78	78	78	78	78	78
Total Intake (incremental + bkgd) (RZ1) (µg Pb/kg bw/d)	2.3	2.2	2.2	2.1	2.1	2.3	2.3	2.4
Total Intake (incremental + bkgd) (RZ2+3) (µg Pb/kg bw/d)	1.8	1.8	1.7	1.6	1.6	1.8	1.8	1.9
Total Intake (incremental + bkgd) (RZ4+5) (µg Pb/kg bw/d)	1.6	1.5	1.5	1.3	1.3	1.6	1.6	1.6
Hazard Quotient (RZ1)	0.65	0.64	0.64	0.59	0.59	0.66	0.66	0.68
Hazard Quotient (RZ2+3)	0.51	0.50	0.50	0.45	0.45	0.52	0.52	0.54
Hazard Quotient (RZ4+5)	0.44	0.43	0.43	0.38	0.38	0.45	0.45	0.47

Life Stage: Child (3-13 yrs) Scenario 1a																	
		R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15	R16
Incremental Pb Intake from ingestion ($\mu\text{g Pb/kg bw/d}$) (I_{oral})		0.1	0.09	0.1	0.07	0.05	0.07	0.04	0.3	0.1	0.09	0.04	0.008	0.002	0.02	0	0
Incremental Dermal Pb Intake ($\mu\text{g Pb/kg bw/d}$) (I_{derm_s})		0.0003	0.0002	0.0002	0.0001	0.00009	0.0001	0.00006	0.0006	0.0002	0.0002	0.00006	0.00001	0.000004	0.00003	0	0
Incremental Pb Intake from Inhalation ($\mu\text{g Pb/kg bw/d}$) (I_{inhal})		0.005	0.003	0.004	0.002	0.002	0.003	0.002	0.02	0.006	0.004	0.001	0.001	0.0009	0.002	0.0007	0.0008
Sum of Incremental Intakes ($\mu\text{g Pb/kg bw/d}$)		0.2	0.09	0.1	0.07	0.05	0.07	0.04	0.36	0.1	0.09	0.04	0.009	0.003	0.02	0.0007	0.0008
Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ1)		0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42
Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ2+3)		0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21
Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ4+5)		0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Background Pb intake from water ($\mu\text{g Pb/kg bw/d}$)		0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Backgnd Pb intake from diet ($\mu\text{g Pb/kg bw/d}$)		0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Bckgnd Inhalation Pb Intake (Pb in PM_{10}) ($\mu\text{g Pb/kg bw/d}$)		0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Sum of bkgd intakes (RZ1) ($\mu\text{g Pb/kg bw/d}$)		1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
% bkgd Pb intake from soil		31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
% bkgd Pb intake from diet		67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67
Sum of bkgd intakes (RZ2+3) ($\mu\text{g Pb/kg bw/d}$)		1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1

% bkgd Pb intake from soil	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18
% bkgd Pb intake from diet	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79
Sum of bkgd intakes (RZ4+5) (µg Pb/kg bw/d)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
% bkgd Pb intake from soil	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
% bkgd Pb intake from diet	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87
Total Intake (incremental + bkgd) (RZ1) (µg Pb/kg bw/d)	1.5	1.4	1.5	1.4	1.4	1.4	1.4	1.7	1.5	1.4	1.4	1.4	1.3	1.4	1.3	1.3	1.3
Total Intake (incremental + bkgd) (RZ2+3) (µg Pb/kg bw/d)	1.3	1.2	1.3	1.2	1.2	1.2	1.2	1.5	1.3	1.2	1.2	1.1	1.1	1.2	1.1	1.1	1.1
Total Intake (incremental + bkgd) (RZ4+5) (µg Pb/kg bw/d)	1.2	1.1	1.2	1.1	1.1	1.1	1.1	1.4	1.2	1.1	1.1	1.0	1.0	1.0	1.0	1.0	1.0
Hazard Quotient (RZ1)	0.43	0.41	0.42	0.40	0.40	0.40	0.39	0.49	0.42	0.41	0.39	0.39	0.38	0.39	0.38	0.38	0.38
Hazard Quotient (RZ2+3)	0.37	0.35	0.36	0.34	0.34	0.34	0.33	0.43	0.36	0.35	0.33	0.33	0.32	0.33	0.32	0.32	0.32
Hazard Quotient (RZ4+5)	0.34	0.32	0.33	0.31	0.31	0.31	0.30	0.40	0.33	0.32	0.30	0.30	0.30	0.30	0.29	0.29	0.29

Life Stage: Child (3-13 yrs) Scenario 1a																			
		R17	R18	R19	R20	R21	R22	R23	R24	R25	R26	R27	R28	R29	R30	R31	R32	R33	R34
	Incremental Pb Intake from ingestion (µg Pb/kg bw/d) (I _{oral})	0.004	0.004	0	0	0.2	0.2	0.1	0.1	0.08	0.1	0.2	0.1	0.1	0.1	0.1	0.07	0.1	0.1
	Incremental Dermal Pb Intake (µg Pb/kg bw/d)(I _{derm_s})	0.000008	0.000007	0	0	0.0003	0.0003	0.0002	0.0002	0.0001	0.0002	0.0003	0.0002	0.0003	0.0002	0.0002	0.0001	0.0002	0.0002
	Incremental Pb Intake from Inhalation (µg Pb/kg bw/d) (I _{inhal})	0.002	0.0005	0.0006	0.0006	0.006	0.005	0.004	0.004	0.003	0.004	0.007	0.005	0.006	0.004	0.003	0.003	0.004	0.006
	Sum of Incremental Intakes (µg Pb/kg bw/d)	0.006	0.004	0.0006	0.0006	0.2	0.2	0.1	0.1	0.08	0.1	0.2	0.1	0.2	0.1	0.1	0.08	0.1	0.1
	Bkgd Pb intake from soil (µg Pb/kg bw/d) (RZ1)	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42
	Bkgd Pb intake from soil (µg Pb/kg bw/d) (RZ2+3)	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21
	Bkgd Pb intake from soil (µg Pb/kg bw/d) (RZ4+5)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	Background Pb intake from water (µg Pb/kg bw/d)	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
	Backgnd Pb intake from diet (µg Pb/kg bw/d)	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
	Bckgnd Inhalation Pb Intake (Pb in PM ₁₀) (µg Pb/kg bw/d)	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
	Sum of bkgd intakes (RZ1) (µg Pb/kg bw/d)	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
	% bkgd Pb intake from soil	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
	% bkgd Pb intake from diet	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67
	Sum of bkgd intakes (RZ2+3) (µg Pb/kg bw/d)	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1

% bkgd Pb intake from soil	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18
% bkgd Pb intake from diet	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79
Sum of bkgd intakes (RZ4+5) (µg Pb/kg bw/d)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
% bkgd Pb intake from soil	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
% bkgd Pb intake from diet	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87
Total Intake (incremental + bkgd) (RZ1) (µg Pb/kg bw/d)	1.3	1.3	1.3	1.3	1.5	1.5	1.5	1.5	1.4	1.5	1.5	1.5	1.5	1.5	1.4	1.4	1.4	1.5
Total Intake (incremental + bkgd) (RZ2+3) (µg Pb/kg bw/d)	1.1	1.1	1.1	1.1	1.3	1.3	1.3	1.3	1.2	1.3	1.3	1.3	1.3	1.3	1.2	1.2	1.2	1.3
Total Intake (incremental + bkgd) (RZ4+5) (µg Pb/kg bw/d)	1.0	1.0	1.0	1.0	1.2	1.2	1.2	1.2	1.1	1.2	1.2	1.1	1.2	1.1	1.1	1.1	1.1	1.2
Hazard Quotient (RZ1)	0.39	0.38	0.38	0.38	0.44	0.43	0.42	0.42	0.41	0.42	0.44	0.42	0.43	0.41	0.41	0.40	0.41	0.42
Hazard Quotient (RZ2+3)	0.33	0.33	0.32	0.32	0.38	0.37	0.36	0.36	0.35	0.36	0.38	0.36	0.37	0.35	0.35	0.35	0.35	0.36
Hazard Quotient (RZ4+5)	0.30	0.30	0.29	0.29	0.35	0.34	0.33	0.33	0.32	0.33	0.35	0.33	0.34	0.32	0.32	0.32	0.32	0.33

Life Stage: Child (3-13 yrs) Scenario 1a									
		R35	R36	R37	R38	R39	R40	R41	R42
	Incremental Pb Intake from ingestion ($\mu\text{g Pb/kg bw/d}$) (I_{oral})	0.1	0.1	0.09	0.02	0.02	0.1	0.1	0.1
	Incremental Dermal Pb Intake ($\mu\text{g Pb/kg bw/d}$) (I_{derm_s})	0.0002	0.0002	0.0002	0.00003	0.00004	0.0002	0.0002	0.0003
	Incremental Pb Intake from Inhalation ($\mu\text{g Pb/kg bw/d}$) (I_{inhal})	0.005	0.004	0.003	0.001	0.002	0.006	0.006	0.006
	Sum of Incremental Intakes ($\mu\text{g Pb/kg bw/d}$)	0.1	0.1	0.09	0.02	0.03	0.1	0.1	0.2
	Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ1)	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42
	Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ2+3)	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21
	Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ4+5)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	Background Pb intake from water ($\mu\text{g Pb/kg bw/d}$)	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
	Backgnd Pb intake from diet ($\mu\text{g Pb/kg bw/d}$)	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
	Bckgnd Inhalation Pb Intake (Pb in PM_{10}) ($\mu\text{g Pb/kg bw/d}$)	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
	Sum of bkgd intakes (RZ1) ($\mu\text{g Pb/kg bw/d}$)	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
	% bkgd Pb intake from soil	31	31	31	31	31	31	31	31
	% bkgd Pb intake from diet	67	67	67	67	67	67	67	67
	Sum of bkgd intakes (RZ2+3) ($\mu\text{g Pb/kg bw/d}$)	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1

	% bkgd Pb intake from soil	18	18	18	18	18	18	18	18
	% bkgd Pb intake from diet	79	79	79	79	79	79	79	79
	Sum of bkgd intakes (RZ4+5) (µg Pb/kg bw/d)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	% bkgd Pb intake from soil	10	10	10	10	10	10	10	10
	% bkgd Pb intake from diet	87	87	87	87	87	87	87	87
	Total Intake (incremental + bkgd) (RZ1) (µg Pb/kg bw/d)	1.5	1.4	1.4	1.4	1.4	1.5	1.5	1.5
	Total Intake (incremental + bkgd) (RZ2+3) (µg Pb/kg bw/d)	1.3	1.2	1.2	1.2	1.2	1.3	1.3	1.3
	Total Intake (incremental + bkgd) (RZ4+5) (µg Pb/kg bw/d)	1.1	1.1	1.1	1.0	1.1	1.2	1.2	1.2
	Hazard Quotient (RZ1)	0.42	0.41	0.41	0.39	0.39	0.42	0.42	0.43
	Hazard Quotient (RZ2+3)	0.36	0.35	0.35	0.33	0.33	0.36	0.36	0.37
	Hazard Quotient (RZ4+5)	0.33	0.32	0.32	0.30	0.30	0.33	0.33	0.34

Life Stage: Adolescent/ adult (13-18 yrs) Scenario 1a																	
		R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15	R16
Incremental Pb Intake from ingestion ($\mu\text{g Pb/kg bw/d}$) (I_{oral})		0.05	0.03	0.04	0.02	0.02	0.02	0.01	0.1	0.04	0.03	0.01	0.003	0.0007	0.006	0	0
Incremental Dermal Pb Intake ($\mu\text{g Pb/kg bw/d}$) (I_{derm_s})		0.0002	0.0002	0.0002	0.0001	0.00009	0.0001	0.00006	0.0006	0.0002	0.0001	0.00006	0.00001	0.000004	0.00003	0	0
Incremental Pb Intake from Inhalation ($\mu\text{g Pb/kg bw/d}$) (I_{inhal})		0.004	0.003	0.003	0.002	0.001	0.002	0.002	0.01	0.005	0.003	0.001	0.0008	0.0007	0.001	0.0005	0.0006
Sum of Incremental Intakes ($\mu\text{g Pb/kg bw/d}$)		0.05	0.03	0.04	0.02	0.02	0.02	0.01	0.1	0.05	0.03	0.01	0.003	0.001	0.007	0.0005	0.0006
Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ1)		0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ2+3)		0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ4+5)		0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Background Pb intake from water ($\mu\text{g Pb/kg bw/d}$)		0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Backgnd Pb intake from diet ($\mu\text{g Pb/kg bw/d}$)		0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Bckgnd Inhalation Pb Intake (Pb in PM_{10}) ($\mu\text{g Pb/kg bw/d}$)		0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
Sum of bkgd intakes (RZ1) ($\mu\text{g Pb/kg bw/d}$)		0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56
% bkgd Pb intake from soil		24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24
% bkgd Pb intake from diet		72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72

Sum of bkgd intakes (RZ2+3) (µg Pb/kg bw/d)	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49
% bkgd Pb intake from soil	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13
% bkgd Pb intake from diet	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82
Sum of bkgd intakes (RZ4+5) (µg Pb/kg bw/d)	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46
% bkgd Pb intake from soil	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
% bkgd Pb intake from diet	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88
Total Intake (incremental + bkgd) (RZ1) (µg Pb/kg bw/d)	0.61	0.59	0.60	0.58	0.57	0.58	0.57	0.68	0.60	0.59	0.57	0.56	0.56	0.56	0.56	0.56
Total Intake (incremental + bkgd) (RZ2+3) (µg Pb/kg bw/d)	0.54	0.52	0.53	0.51	0.51	0.51	0.50	0.61	0.53	0.52	0.50	0.49	0.49	0.50	0.49	0.49
Total Intake (incremental + bkgd) (RZ4+5) (µg Pb/kg bw/d)	0.51	0.49	0.50	0.48	0.47	0.48	0.47	0.58	0.50	0.49	0.47	0.46	0.46	0.46	0.46	0.46
Hazard Quotient (RZ1)	0.17	0.17	0.17	0.17	0.16	0.17	0.16	0.19	0.17	0.17	0.16	0.16	0.16	0.16	0.16	0.16
Hazard Quotient (RZ2+3)	0.15	0.15	0.15	0.15	0.14	0.15	0.14	0.17	0.15	0.15	0.14	0.14	0.14	0.14	0.14	0.14
Hazard Quotient (RZ4+5)	0.14	0.14	0.14	0.14	0.14	0.14	0.13	0.17	0.14	0.14	0.13	0.13	0.13	0.13	0.13	0.13

Life Stage: Adolescent/ adult (13-18 yrs) Scenario 1a																			
		R17	R18	R19	R20	R21	R22	R23	R24	R25	R26	R27	R28	R29	R30	R31	R32	R33	R34
	Incremental Pb Intake from ingestion (µg Pb/kg bw/d) (I _{oral})	0.001	0.001	0	0	0.06	0.05	0.04	0.04	0.03	0.04	0.06	0.04	0.05	0.03	0.03	0.02	0.03	0.04
	Incremental Dermal Pb Intake (µg Pb/kg bw/d)(I _{derm_s})	0.000007	0.000007	0	0	0.0003	0.0003	0.0002	0.0002	0.0001	0.0002	0.0003	0.0002	0.0002	0.0002	0.0002	0.0001	0.0002	0.0002
	Incremental Pb Intake from Inhalation (µg Pb/kg bw/d) (I _{inhal})	0.001	0.0004	0.0004	0.0005	0.005	0.004	0.003	0.003	0.003	0.003	0.006	0.004	0.005	0.003	0.003	0.002	0.003	0.004
	Sum of Incremental Intakes (µg Pb/kg bw/d)	0.003	0.002	0.0004	0.0005	0.07	0.06	0.04	0.04	0.03	0.04	0.06	0.04	0.05	0.04	0.03	0.03	0.03	0.04
	Bkgd Pb intake from soil (µg Pb/kg bw/d) (RZ1)	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
	Bkgd Pb intake from soil (µg Pb/kg bw/d) (RZ2+3)	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
	Bkgd Pb intake from soil (µg Pb/kg bw/d) (RZ4+5)	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
	Background Pb intake from water (µg Pb/kg bw/d)	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
	Backgnd Pb intake from diet (µg Pb/kg bw/d)	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
	Bckgnd Inhalation Pb Intake (Pb in PM ₁₀) (µg Pb/kg bw/d)	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
	Sum of bkgd intakes (RZ1) (µg Pb/kg bw/d)	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56
	% bkgd Pb intake from soil	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24
	% bkgd Pb intake from diet	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72
	Sum of bkgd intakes (RZ2+3) (µg Pb/kg bw/d)	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49

% bkgd Pb intake from soil	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13
% bkgd Pb intake from diet	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82
Sum of bkgd intakes (RZ4+5) (µg Pb/kg bw/d)	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46
% bkgd Pb intake from soil	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
% bkgd Pb intake from diet	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88
Total Intake (incremental + bkgd) (RZ1) (µg Pb/kg bw/d)	0.56	0.56	0.56	0.56	0.62	0.61	0.60	0.60	0.58	0.60	0.62	0.60	0.61	0.59	0.59	0.58	0.59	0.60
Total Intake (incremental + bkgd) (RZ2+3) (µg Pb/kg bw/d)	0.49	0.49	0.49	0.49	0.56	0.55	0.53	0.53	0.52	0.53	0.55	0.53	0.54	0.53	0.52	0.51	0.52	0.53
Total Intake (incremental + bkgd) (RZ4+5) (µg Pb/kg bw/d)	0.46	0.46	0.46	0.46	0.52	0.52	0.50	0.50	0.48	0.50	0.52	0.50	0.51	0.49	0.49	0.48	0.49	0.50
Hazard Quotient (RZ1)	0.16	0.16	0.16	0.16	0.18	0.18	0.17	0.17	0.17	0.17	0.18	0.17	0.17	0.17	0.17	0.17	0.17	0.17
Hazard Quotient (RZ2+3)	0.14	0.14	0.14	0.14	0.16	0.16	0.15	0.15	0.15	0.15	0.16	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Hazard Quotient (RZ4+5)	0.13	0.13	0.13	0.13	0.15	0.15	0.14	0.14	0.14	0.14	0.15	0.14	0.15	0.14	0.14	0.14	0.14	0.14

Life Stage: Adolescent/ adult (13-18 yrs) Scenario 1a									
		R35	R36	R37	R38	R39	R40	R41	R42
Incremental Pb Intake from ingestion ($\mu\text{g Pb/kg bw/d}$) (I_{oral})		0.04	0.03	0.03	0.005	0.008	0.04	0.04	0.05
Incremental Dermal Pb Intake ($\mu\text{g Pb/kg bw/d}$) (I_{derm_s})		0.0002	0.0002	0.0002	0.00003	0.00004	0.0002	0.0002	0.0003
Incremental Pb Intake from Inhalation ($\mu\text{g Pb/kg bw/d}$) (I_{inhal})		0.004	0.003	0.003	0.001	0.002	0.004	0.004	0.005
Sum of Incremental Intakes ($\mu\text{g Pb/kg bw/d}$)		0.04	0.03	0.03	0.006	0.009	0.04	0.04	0.05
Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ1)		0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ2+3)		0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ4+5)		0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Background Pb intake from water ($\mu\text{g Pb/kg bw/d}$)		0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Backgnd Pb intake from diet ($\mu\text{g Pb/kg bw/d}$)		0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Bckgnd Inhalation Pb Intake (Pb in PM_{10}) ($\mu\text{g Pb/kg bw/d}$)		0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
Sum of bkgd intakes (RZ1) ($\mu\text{g Pb/kg bw/d}$)		0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56
% bkgd Pb intake from soil		24	24	24	24	24	24	24	24
% bkgd Pb intake from diet		72	72	72	72	72	72	72	72
Sum of bkgd intakes (RZ2+3) ($\mu\text{g Pb/kg bw/d}$)		0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49

	% bkgd Pb intake from soil	13	13	13	13	13	13	13	13
	% bkgd Pb intake from diet	82	82	82	82	82	82	82	82
	Sum of bkgd intakes (RZ4+5) (µg Pb/kg bw/d)	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46
	% bkgd Pb intake from soil	7	7	7	7	7	7	7	7
	% bkgd Pb intake from diet	88	88	88	88	88	88	88	88
	Total Intake (incremental + bkgd) (RZ1) (µg Pb/kg bw/d)	0.59	0.59	0.59	0.56	0.56	0.60	0.60	0.61
	Total Intake (incremental + bkgd) (RZ2+3) (µg Pb/kg bw/d)	0.53	0.52	0.52	0.50	0.50	0.53	0.53	0.54
	Total Intake (incremental + bkgd) (RZ4+5) (µg Pb/kg bw/d)	0.50	0.49	0.49	0.46	0.47	0.50	0.50	0.51
	Hazard Quotient (RZ1)	0.17	0.17	0.17	0.16	0.16	0.17	0.17	0.17
	Hazard Quotient (RZ2+3)	0.15	0.15	0.15	0.14	0.14	0.15	0.15	0.15
	Hazard Quotient (RZ4+5)	0.14	0.14	0.14	0.13	0.13	0.14	0.14	0.15

Life Stage: Adult (18-70 yrs) Scenario 1a																	
		R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15	R16
Incremental Pb Intake from ingestion ($\mu\text{g Pb/kg bw/d}$) (I_{oral})		0.03	0.02	0.03	0.02	0.01	0.02	0.008	0.08	0.03	0.02	0.008	0.002	0.0005	0.004	0	0
Incremental Dermal Pb Intake ($\mu\text{g Pb/kg bw/d}$) (I_{derm_s})		0.0002	0.0001	0.0002	0.0001	0.00008	0.0001	0.00006	0.0005	0.0002	0.0001	0.00006	0.00001	0.000004	0.00003	0	0
Incremental Pb Intake from Inhalation ($\mu\text{g Pb/kg bw/d}$) (I_{inhal})		0.003	0.002	0.002	0.001	0.001	0.002	0.001	0.009	0.004	0.002	0.0008	0.0006	0.0005	0.001	0.0004	0.0005
Sum of Incremental Intakes ($\mu\text{g Pb/kg bw/d}$)		0.04	0.02	0.03	0.02	0.01	0.02	0.01	0.09	0.03	0.02	0.009	0.003	0.001	0.005	0.0004	0.0005
Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ1)		0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ2+3)		0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ4+5)		0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Background Pb intake from water ($\mu\text{g Pb/kg bw/d}$)		0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Backgnd Pb intake from diet ($\mu\text{g Pb/kg bw/d}$)		0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Bckgnd Inhalation Pb Intake (Pb in PM_{10}) ($\mu\text{g Pb/kg bw/d}$)		0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003
Sum of bkgd intakes (RZ1) ($\mu\text{g Pb/kg bw/d}$)		0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51
% bkgd Pb intake from soil		19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19
% bkgd Pb intake from diet		78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78
Sum of bkgd intakes (RZ2+3) ($\mu\text{g Pb/kg bw/d}$)		0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46

% bkgd Pb intake from soil	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
% bkgd Pb intake from diet	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87
Sum of bkgd intakes (RZ4+5) (µg Pb/kg bw/d)	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44
% bkgd Pb intake from soil	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
% bkgd Pb intake from diet	91	91	91	91	91	91	91	91	91	91	91	91	91	91	91	91
Total Intake (incremental + bkgd) (RZ1) (µg Pb/kg bw/d)	0.55	0.53	0.54	0.53	0.52	0.53	0.52	0.60	0.54	0.53	0.52	0.51	0.51	0.52	0.51	0.51
Total Intake (incremental + bkgd) (RZ2+3) (µg Pb/kg bw/d)	0.50	0.48	0.49	0.48	0.47	0.48	0.47	0.55	0.50	0.48	0.47	0.46	0.46	0.47	0.46	0.46
Total Intake (incremental + bkgd) (RZ4+5) (µg Pb/kg bw/d)	0.47	0.46	0.47	0.45	0.45	0.45	0.45	0.53	0.47	0.46	0.45	0.44	0.44	0.44	0.44	0.44
Hazard Quotient (RZ1)	0.16	0.15	0.15	0.15	0.15	0.15	0.15	0.17	0.16	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Hazard Quotient (RZ2+3)	0.14	0.14	0.14	0.14	0.14	0.14	0.13	0.16	0.14	0.14	0.13	0.13	0.13	0.13	0.13	0.13
Hazard Quotient (RZ4+5)	0.14	0.13	0.13	0.13	0.13	0.13	0.13	0.15	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13

Life Stage: Adult (18-70 yrs) Scenario 1a																			
		R17	R18	R19	R20	R21	R22	R23	R24	R25	R26	R27	R28	R29	R30	R31	R32	R33	R34
	Incremental Pb Intake from ingestion (µg Pb/kg bw/d) (I _{oral})	0.001	0.0009	0	0	0.04	0.04	0.03	0.03	0.02	0.03	0.04	0.03	0.03	0.02	0.02	0.02	0.02	0.03
	Incremental Dermal Pb Intake (µg Pb/kg bw/d)(I _{derm_s})	0.000007	0.000006	0	0	0.0003	0.0003	0.0002	0.0002	0.0001	0.0002	0.0003	0.0002	0.0002	0.0002	0.0002	0.0001	0.0002	0.0002
	Incremental Pb Intake from Inhalation (µg Pb/kg bw/d) (I _{inhal})	0.001	0.0003	0	0	0.004	0.003	0.002	0.002	0.002	0.002	0.004	0.003	0.004	0.003	0.002	0.002	0.002	0.003
	Sum of Incremental Intakes (µg Pb/kg bw/d)	0.002	0.001	0.0003	0.0004	0.05	0.04	0.03	0.03	0.02	0.03	0.05	0.03	0.04	0.03	0.03	0.02	0.03	0.03
	Bkgd Pb intake from soil (µg Pb/kg bw/d) (RZ1)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	Bkgd Pb intake from soil (µg Pb/kg bw/d) (RZ2+3)	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
	Bkgd Pb intake from soil (µg Pb/kg bw/d) (RZ4+5)	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
	Background Pb intake from water (µg Pb/kg bw/d)	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	Backgnd Pb intake from diet (µg Pb/kg bw/d)	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
	Bckgnd Inhalation Pb Intake (Pb in PM ₁₀) (µg Pb/kg bw/d)	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003
	Sum of bkgd intakes (RZ1) (µg Pb/kg bw/d)	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51
	% bkgd Pb intake from soil	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19
	% bkgd Pb intake from diet	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78
	Sum of bkgd intakes (RZ2+3) (µg Pb/kg bw/d)	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46

% bkgd Pb intake from soil	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
% bkgd Pb intake from diet	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87
Sum of bkgd intakes (RZ4+5) (µg Pb/kg bw/d)	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44
% bkgd Pb intake from soil	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
% bkgd Pb intake from diet	91	91	91	91	91	91	91	91	91	91	91	91	91	91	91	91	91	91
Total Intake (incremental + bkgd) (RZ1) (µg Pb/kg bw/d)	0.51	0.51	0.51	0.51	0.56	0.55	0.54	0.54	0.53	0.54	0.56	0.54	0.55	0.54	0.54	0.53	0.54	0.54
Total Intake (incremental + bkgd) (RZ2+3) (µg Pb/kg bw/d)	0.46	0.46	0.46	0.46	0.51	0.51	0.49	0.49	0.48	0.49	0.51	0.49	0.50	0.49	0.49	0.48	0.49	0.49
Total Intake (incremental + bkgd) (RZ4+5) (µg Pb/kg bw/d)	0.44	0.44	0.44	0.44	0.49	0.48	0.47	0.47	0.46	0.47	0.48	0.47	0.48	0.46	0.46	0.46	0.46	0.47
Hazard Quotient (RZ1)	0.15	0.15	0.15	0.15	0.16	0.16	0.15	0.15	0.15	0.16	0.16	0.15	0.16	0.15	0.15	0.15	0.15	0.16
Hazard Quotient (RZ2+3)	0.13	0.13	0.13	0.13	0.15	0.14	0.14	0.14	0.14	0.14	0.15	0.14	0.14	0.14	0.14	0.14	0.14	0.14
Hazard Quotient (RZ4+5)	0.13	0.13	0.13	0.13	0.14	0.14	0.13	0.13	0.13	0.13	0.14	0.13	0.14	0.13	0.13	0.13	0.13	0.13

Life Stage: Adult (18-70 yrs) Scenario 1a									
		R35	R36	R37	R38	R39	R40	R41	R42
	Incremental Pb Intake from ingestion ($\mu\text{g Pb/kg bw/d}$) (I_{oral})	0.03	0.02	0.02	0.004	0.006	0.03	0.03	0.03
	Incremental Dermal Pb Intake ($\mu\text{g Pb/kg bw/d}$) (I_{derm_s})	0.0002	0.0002	0.0001	0.00003	0.00004	0.0002	0.0002	0.0002
	Incremental Pb Intake from Inhalation ($\mu\text{g Pb/kg bw/d}$) (I_{inhal})	0.003	0.002	0.002	0.0007	0.001	0.003	0.004	0.004
	Sum of Incremental Intakes ($\mu\text{g Pb/kg bw/d}$)	0.03	0.03	0.02	0.00	0.01	0.03	0.03	0.04
	Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ1)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ2+3)	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
	Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ4+5)	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
	Background Pb intake from water ($\mu\text{g Pb/kg bw/d}$)	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	Backgnd Pb intake from diet ($\mu\text{g Pb/kg bw/d}$)	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
	Bckgnd Inhalation Pb Intake (Pb in PM_{10}) ($\mu\text{g Pb/kg bw/d}$)	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003
	Sum of bkgd intakes (RZ1) ($\mu\text{g Pb/kg bw/d}$)	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51
	% bkgd Pb intake from soil	19	19	19	19	19	19	19	19
	% bkgd Pb intake from diet	78	78	78	78	78	78	78	78
	Sum of bkgd intakes (RZ2+3) ($\mu\text{g Pb/kg bw/d}$)	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46

	% bkgd Pb intake from soil	11	11	11	11	11	11	11	11
	% bkgd Pb intake from diet	87	87	87	87	87	87	87	87
	Sum of bkgd intakes (RZ4+5) (µg Pb/kg bw/d)	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44
	% bkgd Pb intake from soil	6	6	6	6	6	6	6	6
	% bkgd Pb intake from diet	91	91	91	91	91	91	91	91
	Total Intake (incremental + bkgd) (RZ1) (µg Pb/kg bw/d)	0.54	0.54	0.53	0.52	0.52	0.54	0.54	0.55
	Total Intake (incremental + bkgd) (RZ2+3) (µg Pb/kg bw/d)	0.49	0.49	0.48	0.47	0.47	0.49	0.50	0.50
	Total Intake (incremental + bkgd) (RZ4+5) (µg Pb/kg bw/d)	0.47	0.46	0.46	0.44	0.44	0.47	0.47	0.48
	Hazard Quotient (RZ1)	0.15	0.15	0.15	0.15	0.15	0.15	0.16	0.16
	Hazard Quotient (RZ2+3)	0.14	0.14	0.14	0.13	0.13	0.14	0.14	0.14
	Hazard Quotient (RZ4+5)	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.14

Scenario 1a	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15	R16	R17	R18	R19	R20	R21
Lifetime TWA intake ($I_{lifetime}$) RZ1	0.75	0.72	0.74	0.71	0.71	0.71	0.70	0.84	0.74	0.72	0.70	0.69	0.68	0.69	0.68	0.68	0.69	0.68	0.68	0.68	0.77
Lifetime TWA intake ($I_{lifetime}$) RZ2+3	0.66	0.63	0.65	0.62	0.62	0.62	0.61	0.75	0.65	0.63	0.61	0.60	0.60	0.60	0.59	0.60	0.60	0.60	0.59	0.59	0.68
Lifetime TWA intake ($I_{lifetime}$) RZ4+5	0.62	0.59	0.60	0.58	0.57	0.58	0.57	0.71	0.61	0.59	0.57	0.55	0.55	0.56	0.55	0.55	0.55	0.55	0.55	0.55	0.64
HQ RZ1	0.21	0.21	0.21	0.20	0.20	0.20	0.20	0.24	0.21	0.21	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.22
HQ RZ2+3	0.19	0.18	0.18	0.18	0.18	0.18	0.17	0.21	0.19	0.18	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.19
HQ RZ4+5	0.18	0.17	0.17	0.17	0.16	0.17	0.16	0.20	0.17	0.17	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.18

Scenario 1a	R22	R23	R24	R25	R26	R27	R28	R29	R30	R31	R32	R33	R34	R35	R36	R37	R38	R39	R40	R41	R42
Lifetime TWA intake ($I_{lifetime}$) RZ1	0.76	0.74	0.74	0.72	0.74	0.76	0.73	0.75	0.73	0.73	0.72	0.73	0.74	0.73	0.73	0.72	0.69	0.69	0.74	0.74	0.75
Lifetime TWA intake ($I_{lifetime}$) RZ2+3	0.67	0.65	0.65	0.63	0.65	0.68	0.65	0.66	0.64	0.64	0.63	0.64	0.65	0.65	0.64	0.63	0.60	0.61	0.65	0.65	0.66
Lifetime TWA intake ($I_{lifetime}$) RZ4+5	0.63	0.61	0.61	0.59	0.61	0.63	0.60	0.62	0.60	0.59	0.58	0.59	0.61	0.60	0.59	0.59	0.56	0.56	0.60	0.61	0.62
HQ RZ1	0.22	0.21	0.21	0.21	0.21	0.22	0.21	0.21	0.21	0.21	0.20	0.21	0.21	0.21	0.21	0.21	0.20	0.20	0.21	0.21	0.21
HQ RZ2+3	0.19	0.19	0.19	0.18	0.19	0.19	0.18	0.19	0.18	0.18	0.18	0.18	0.19	0.18	0.18	0.18	0.17	0.17	0.19	0.19	0.19
HQ RZ4+5	0.18	0.17	0.17	0.17	0.17	0.18	0.17	0.18	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.16	0.16	0.17	0.17	0.18

A4.2.2 Scenario 1b

Chemical-specific inputs (Scenario 1b)																
Parameter	Abbreviation	Unit	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14
Incremental soil Pb concentration for 15 years of mine life (assuming no loss)	C _s	µg/g	140.33	85.30	113.26	64.18	48.28	62.59	33.72	329.19	122.33	82.14	33.65	7.83	2.19	17.76
Background soil Pb concentration in 'Risk Zone 1'	C _{s_bkgdRZ1}	µg/g	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Background soil Pb concentration in 'Risk Zone 2+3'	C _{s_bkgdRZ2+3}	µg/g	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Background soil Pb concentration in 'Risk Zone 4+5'	C _{s_bkgdRZ4+5}	µg/g	500	500	500	500	500	500	500	500	500	500	500	500	500	500
Incremental concentration of Pb in PM ₁₀	C _A	µg/m ³	0.04	0.03	0.03	0.02	0.01	0.02	0.02	0.1	0.05	0.03	0.01	0.008	0.007	0.01
Background concentration of Pb in PM ₁₀	C _{A_bkgd}	µg/m ³	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Tolerable daily intake	TDI	ug/kg/day	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Bioaccessibility of incremental Pb deposited in soil	BAC _{soil}	Unitless	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073
Bioaccessibility of incremental Pb in PM ₁₀	BAC _{air}	Unitless	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073
Bioaccessibility of Pb in background soil and PM ₁₀	BAC _{soil} , BAC _{air}	Unitless	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073
Absolute bioavailability of ingested metal	ABA _{oral}	Unitless	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Absolute bioavailability of metal via dermal absorption	ABA _{dermal}	Unitless	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Absolute bioavailability of metal via inhalation	ABA _{inhal}	Unitless	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Chemical-specific inputs (Scenario 1b)																			
Parameter	Abbreviation	Unit	R15	R16	R17	R18	R19	R20	R21	R22	R23	R24	R25	R26	R27	R28	R29	R30	R31
Incremental soil Pb concentration for 15 years of mine life (assuming no loss)	C _s	µg/g	0.00	0.00	4.10	3.78	0.00	0.00	183.69	164.23	120.15	120.51	76.87	125.10	171.58	107.97	139.91	97.68	94.64
Background soil Pb concentration in 'Risk Zone 1'	C _{s_bkgdRZ1}	µg/g	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Background soil Pb concentration in 'Risk Zone 2+3'	C _{s_bkgdRZ2+3}	µg/g	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Background soil Pb concentration in 'Risk Zone 4+5'	C _{s_bkgdRZ4+5}	µg/g	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500
Incremental concentration of Pb in PM ₁₀	C _A	µg/m ³	0.006	0.006	0.01	0.004	0.004	0.005	0.05	0.04	0.03	0.03	0.03	0.03	0.06	0.04	0.05	0.03	0.03
Background concentration of Pb in PM ₁₀	C _{A_bkgd}	µg/m ³	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Tolerable daily intake	TDI	ug/kg/day	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Bioaccessibility of incremental Pb deposited in soil	BAC _{soil}	Unitless	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073
Bioaccessibility of incremental Pb in PM ₁₀	BAC _{air}	Unitless	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073
Bioaccessibility of Pb in background soil and PM ₁₀	BAC _{soil} , BAC _{air}	Unitless	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073
Absolute bioavailability of ingested metal	ABA _{oral}	Unitless	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Absolute bioavailability of metal via dermal absorption	ABA _{dermal}	Unitless	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Absolute bioavailability of metal via inhalation	ABA _{inhal}	Unitless	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Chemical-specific inputs (Scenario 1b)													
Parameter	Abbreviation	Unit	R32	R33	R34	R35	R36	R37	R38	R39	R40	R41	R42
Incremental soil Pb concentration for 15 years of mine life (assuming no loss)	C _s	µg/g	69.24	94.07	121.23	107.23	92.59	85.13	16.48	23.18	113.39	122.31	143.39
Background soil Pb concentration in 'Risk Zone 1'	C _{s_bkgdRZ1}	µg/g	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Background soil Pb concentration in 'Risk Zone 2+3'	C _{s_bkgdRZ2+3}	µg/g	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Background soil Pb concentration in 'Risk Zone 4+5'	C _{s_bkgdRZ4+5}	µg/g	500	500	500	500	500	500	500	500	500	500	500
Incremental concentration of Pb in PM ₁₀	C _A	µg/m ³	0.02	0.03	0.04	0.04	0.03	0.03	0.01	0.02	0.04	0.05	0.05
Background concentration of Pb in PM ₁₀	C _{A_bkgd}	µg/m ³	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Tolerable daily intake	TDI	ug/kg/day	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Bioaccessibility of incremental Pb deposited in soil	BAC _{soil}	Unitless	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073
Bioaccessibility of incremental Pb in PM ₁₀	BAC _{air}	Unitless	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073
Bioaccessibility of Pb in background soil and PM ₁₀	BAC _{soil} , BAC _{air}	Unitless	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073
Absolute bioavailability of ingested metal	ABA _{oral}	Unitless	1	1	1	1	1	1	1	1	1	1	1
Absolute bioavailability of metal via dermal absorption	ABA _{dermal}	Unitless	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Absolute bioavailability of metal via inhalation	ABA _{inhal}	Unitless	1	1	1	1	1	1	1	1	1	1	1

Life Stage: Infant (0.5-3 yrs) Scenario 1b																	
		R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15	R16
Incremental Pb Intake from ingestion ($\mu\text{g Pb/kg bw/d}$) (I_{oral})		0.07	0.04	0.06	0.03	0.02	0.03	0.02	0.2	0.06	0.04	0.02	0.004	0.001	0.009	0	0
Incremental Dermal Pb Intake ($\mu\text{g Pb/kg bw/d}$) (I_{derm_s})		0.00008	0.00005	0.00006	0.00004	0.00003	0.00004	0.00002	0.0002	0.00007	0.00005	0.00002	0.000004	0.000001	0.00001	0	0
Incremental Pb Intake from Inhalation ($\mu\text{g Pb/kg bw/d}$) (I_{inhal})		0.002	0.001	0.001	0.0008	0.0007	0.001	0.0008	0.006	0.002	0.001	0.0005	0.0004	0.0003	0.0007	0.0003	0.0003
Sum of Incremental Intakes ($\mu\text{g Pb/kg bw/d}$)		0.07	0.04	0.06	0.03	0.02	0.03	0.02	0.2	0.06	0.04	0.02	0.004	0.001	0.009	0.0003	0.0003
Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ1)		0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ2+3)		0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49
Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ4+5)		0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24
Background Pb intake from water ($\mu\text{g Pb/kg bw/d}$)		0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Backgnd Pb intake from diet ($\mu\text{g Pb/kg bw/d}$)		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Bckgnd Inhalation Pb Intake (Pb in PM_{10}) ($\mu\text{g Pb/kg bw/d}$)		0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009
Sum of bkgd intakes (RZ1) ($\mu\text{g Pb/kg bw/d}$)		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
% bkgd Pb intake from soil		48.4	48.4	48.4	48.4	48.4	48.4	48.4	48.4	48.4	48.4	48.4	48.4	48.4	48.4	48.4	48.4
% bkgd Pb intake from diet		49.7	49.7	49.7	49.7	49.7	49.7	49.7	49.7	49.7	49.7	49.7	49.7	49.7	49.7	49.7	49.7
Sum of bkgd intakes (RZ2+3) ($\mu\text{g Pb/kg bw/d}$)		1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
% bkgd Pb intake from soil		31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9
% bkgd Pb intake from diet		65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5

	Sum of bkgd intakes (RZ4+5) (µg Pb/kg bw/d)	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
	% bkgd Pb intake from soil	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0
	% bkgd Pb intake from diet	78.0	78.0	78.0	78.0	78.0	78.0	78.0	78.0	78.0	78.0	78.0	78.0	78.0	78.0	78.0	78.0
	Total Intake (incremental + bkgd) (RZ1) (µg Pb/kg bw/d)	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.2	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0
	Total Intake (incremental + bkgd) (RZ2+3) (µg Pb/kg bw/d)	1.6	1.6	1.6	1.6	1.6	1.6	1.5	1.7	1.6	1.6	1.5	1.5	1.5	1.5	1.5	1.5
	Total Intake (incremental + bkgd) (RZ4+5) (µg Pb/kg bw/d)	1.4	1.3	1.3	1.3	1.3	1.3	1.3	1.4	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
	Hazard Quotient (RZ1)	0.60	0.59	0.59	0.58	0.58	0.58	0.58	0.62	0.59	0.59	0.58	0.58	0.58	0.58	0.58	0.58
	Hazard Quotient (RZ2+3)	0.46	0.45	0.45	0.45	0.44	0.44	0.44	0.48	0.45	0.45	0.44	0.44	0.44	0.44	0.44	0.44
	Hazard Quotient (RZ4+5)	0.39	0.38	0.38	0.38	0.37	0.38	0.37	0.41	0.38	0.38	0.37	0.37	0.37	0.37	0.37	0.37

Life Stage: Infant (0.5-3 yrs) Scenario 1b																			
		R17	R18	R19	R20	R21	R22	R23	R24	R25	R26	R27	R28	R29	R30	R31	R32	R33	R34
	Incremental Pb Intake from ingestion (µg Pb/kg bw/d) (I _{oral})	0.002	0.002	0	0	0.09	0.08	0.06	0.06	0.04	0.06	0.08	0.05	0.07	0.05	0.05	0.03	0.05	0.06
	Incremental Dermal Pb Intake (µg Pb/kg bw/d)(I _{derm_s})	0.000002	0.000002	0	0	0.0001	0.00009	0.00007	0.00007	0.00004	0.00007	0.0001	0.00006	0.00008	0.00006	0.00005	0.00004	0.00005	0.00007
	Incremental Pb Intake from Inhalation (µg Pb/kg bw/d) (I _{inhal})	0.0006	0.0002	0.0002	0.0002	0.002	0.002	0.001	0.001	0.001	0.001	0.003	0.002	0.002	0.002	0.001	0.001	0.001	0.002
	Sum of Incremental Intakes (µg Pb/kg bw/d)	0.003	0.002	0.0002	0.0002	0.09	0.08	0.06	0.06	0.04	0.06	0.09	0.05	0.07	0.05	0.05	0.03	0.05	0.06
	Bkgd Pb intake from soil (µg Pb/kg bw/d) (RZ1)	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
	Bkgd Pb intake from soil (µg Pb/kg bw/d) (RZ2+3)	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49
	Bkgd Pb intake from soil (µg Pb/kg bw/d) (RZ4+5)	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24
	Background Pb intake from water (µg Pb/kg bw/d)	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
	Backgnd Pb intake from diet (µg Pb/kg bw/d)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Bckgnd Inhalation Pb Intake (Pb in PM ₁₀) (µg Pb/kg bw/d)	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009
	Sum of bkgd intakes (RZ1) (µg Pb/kg bw/d)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
	% bkgd Pb intake from soil	48.4	48.4	48.4	48.4	48.4	48.4	48.4	48.4	48.4	48.4	48.4	48.4	48.4	48.4	48.4	48.4	48.4	48.4
	% bkgd Pb intake from diet	49.7	49.7	49.7	49.7	49.7	49.7	49.7	49.7	49.7	49.7	49.7	49.7	49.7	49.7	49.7	49.7	49.7	49.7
	Sum of bkgd intakes (RZ2+3) (µg Pb/kg bw/d)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
	% bkgd Pb intake from soil	31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9

% bkgd Pb intake from diet	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5
Sum of bkgd intakes (RZ4+5) (µg Pb/kg bw/d)	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
% bkgd Pb intake from soil	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0
% bkgd Pb intake from diet	78.0	78.0	78.0	78.0	78.0	78.0	78.0	78.0	78.0	78.0	78.0	78.0	78.0	78.0	78.0	78.0	78.0	78.0
Total Intake (incremental + bkgd) (RZ1) (µg Pb/kg bw/d)	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.1	2.1
Total Intake (incremental + bkgd) (RZ2+3) (µg Pb/kg bw/d)	1.5	1.5	1.5	1.5	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
Total Intake (incremental + bkgd) (RZ4+5) (µg Pb/kg bw/d)	1.3	1.3	1.3	1.3	1.4	1.4	1.3	1.3	1.3	1.3	1.4	1.3	1.4	1.3	1.3	1.3	1.3	1.3
Hazard Quotient (RZ1)	0.58	0.58	0.58	0.58	0.60	0.60	0.59	0.59	0.59	0.59	0.60	0.59	0.60	0.59	0.59	0.58	0.59	0.59
Hazard Quotient (RZ2+3)	0.44	0.44	0.44	0.44	0.46	0.46	0.45	0.45	0.45	0.45	0.46	0.45	0.46	0.45	0.45	0.45	0.45	0.45
Hazard Quotient (RZ4+5)	0.37	0.37	0.37	0.37	0.39	0.39	0.38	0.38	0.38	0.38	0.39	0.38	0.39	0.38	0.38	0.38	0.38	0.38

Life Stage: Infant (0.5-3 yrs) Scenario 1b									
		R35	R36	R37	R38	R39	R40	R41	R42
Incremental Pb Intake from ingestion ($\mu\text{g Pb/kg bw/d}$) (I_{oral})		0.05	0.05	0.04	0.008	0.01	0.06	0.06	0.07
Incremental Dermal Pb Intake ($\mu\text{g Pb/kg bw/d}$) (I_{derm_s})		0.00006	0.00005	0.00005	0.00001	0.00001	0.00006	0.00007	0.00008
Incremental Pb Intake from Inhalation ($\mu\text{g Pb/kg bw/d}$) (I_{inhal})		0.002	0.001	0.001	0.0004	0.0008	0.002	0.002	0.002
Sum of Incremental Intakes ($\mu\text{g Pb/kg bw/d}$)		0.05	0.05	0.04	0.008	0.01	0.06	0.06	0.07
Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ1)		0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ2+3)		0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49
Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ4+5)		0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24
Background Pb intake from water ($\mu\text{g Pb/kg bw/d}$)		0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Backgnd Pb intake from diet ($\mu\text{g Pb/kg bw/d}$)		1	1	1	1	1	1	1	1
Bckgnd Inhalation Pb Intake (Pb in PM_{10}) ($\mu\text{g Pb/kg bw/d}$)		0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009
Sum of bkgd intakes (RZ1) ($\mu\text{g Pb/kg bw/d}$)		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
% bkgd Pb intake from soil		48.4	48.4	48.4	48.4	48.4	48.4	48.4	48.4
% bkgd Pb intake from diet		49.7	49.7	49.7	49.7	49.7	49.7	49.7	49.7
Sum of bkgd intakes (RZ2+3) ($\mu\text{g Pb/kg bw/d}$)		1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
% bkgd Pb intake from soil		31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9

	% bkgd Pb intake from diet	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5
	Sum of bkgd intakes (RZ4+5) (µg Pb/kg bw/d)	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
	% bkgd Pb intake from soil	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0
	% bkgd Pb intake from diet	78.0	78.0	78.0	78.0	78.0	78.0	78.0	78.0
	Total Intake (incremental + bkgd) (RZ1) (µg Pb/kg bw/d)	2.1	2.1	2.1	2.0	2.0	2.1	2.1	2.1
	Total Intake (incremental + bkgd) (RZ2+3) (µg Pb/kg bw/d)	1.6	1.6	1.6	1.5	1.5	1.6	1.6	1.6
	Total Intake (incremental + bkgd) (RZ4+5) (µg Pb/kg bw/d)	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.4
	Hazard Quotient (RZ1)	0.59	0.59	0.59	0.58	0.58	0.59	0.59	0.60
	Hazard Quotient (RZ2+3)	0.45	0.45	0.45	0.44	0.44	0.45	0.45	0.46
	Hazard Quotient (RZ4+5)	0.38	0.38	0.38	0.37	0.37	0.38	0.38	0.39

Life Stage: Child (3-13 yrs) Scenario 1b																	
		R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15	R16
Incremental Pb Intake from ingestion ($\mu\text{g Pb/kg bw/d}$) (I_{oral})		0.03	0.02	0.02	0.01	0.01	0.01	0.007	0.07	0.03	0.02	0.007	0.002	0.0005	0.004	0	0
Incremental Dermal Pb Intake ($\mu\text{g Pb/kg bw/d}$) (I_{derm_s})		0.00005	0.00003	0.00004	0.00002	0.00002	0.00002	0.00001	0.0001	0.00005	0.00003	0.00001	0.000003	0.0000008	0.000007	0	0
Incremental Pb Intake from Inhalation ($\mu\text{g Pb/kg bw/d}$) (I_{inhal})		0.001	0.0007	0.0007	0.0005	0.0004	0.0006	0.0004	0.003	0.001	0.0007	0.0003	0.0002	0.0002	0.0004	0.0001	0.0002
Sum of Incremental Intakes ($\mu\text{g Pb/kg bw/d}$)		0.03	0.02	0.02	0.01	0.01	0.01	0.007	0.07	0.03	0.02	0.007	0.002	0.0006	0.004	0.0001	0.0002
Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ1)		0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42
Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ2+3)		0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21
Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ4+5)		0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Background Pb intake from water ($\mu\text{g Pb/kg bw/d}$)		0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Backgnd Pb intake from diet ($\mu\text{g Pb/kg bw/d}$)		0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Bckgnd Inhalation Pb Intake (Pb in PM_{10}) ($\mu\text{g Pb/kg bw/d}$)		0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Sum of bkgd intakes (RZ1) ($\mu\text{g Pb/kg bw/d}$)		1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
% bkgd Pb intake from soil		31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1
% bkgd Pb intake from diet		67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0
Sum of bkgd intakes (RZ2+3) ($\mu\text{g Pb/kg bw/d}$)		1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1

% bkgd Pb intake from soil	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4
% bkgd Pb intake from diet	79.4	79.4	79.4	79.4	79.4	79.4	79.4	79.4	79.4	79.4	79.4	79.4	79.4	79.4	79.4	79.4
Sum of bkgd intakes (RZ4+5) (µg Pb/kg bw/d)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
% bkgd Pb intake from soil	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1
% bkgd Pb intake from diet	87.4	87.4	87.4	87.4	87.4	87.4	87.4	87.4	87.4	87.4	87.4	87.4	87.4	87.4	87.4	87.4
Total Intake (incremental + bkgd) (RZ1) (µg Pb/kg bw/d)	1.4	1.4	1.4	1.4	1.4	1.4	1.3	1.4	1.4	1.4	1.3	1.3	1.3	1.3	1.3	1.3
Total Intake (incremental + bkgd) (RZ2+3) (µg Pb/kg bw/d)	1.2	1.2	1.2	1.1	1.1	1.1	1.1	1.2	1.2	1.2	1.1	1.1	1.1	1.1	1.1	1.1
Total Intake (incremental + bkgd) (RZ4+5) (µg Pb/kg bw/d)	1.1	1.0	1.1	1.0	1.0	1.0	1.0	1.1	1.1	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Hazard Quotient (RZ1)	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.40	0.39	0.39	0.39	0.38	0.38	0.38	0.38	0.38
Hazard Quotient (RZ2+3)	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.34	0.33	0.33	0.33	0.32	0.32	0.33	0.32	0.32
Hazard Quotient (RZ4+5)	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.31	0.30	0.30	0.30	0.29	0.29	0.30	0.29	0.29

Life Stage: Child (3-13 yrs) Scenario 1b																			
		R17	R18	R19	R20	R21	R22	R23	R24	R25	R26	R27	R28	R29	R30	R31	R32	R33	R34
	Incremental Pb Intake from ingestion (µg Pb/kg bw/d) (I _{oral})	0.0009	0.0008	0	0	0.04	0.03	0.03	0.03	0.02	0.03	0.04	0.02	0.03	0.02	0.02	0.01	0.02	0.03
	Incremental Dermal Pb Intake (µg Pb/kg bw/d)(I _{derm_s})	0.000002	0.000001	0	0	0.00007	0.00006	0.00005	0.00005	0.00003	0.00005	0.00007	0.00004	0.00005	0.00004	0.00004	0.00003	0.00004	0.00005
	Incremental Pb Intake from Inhalation (µg Pb/kg bw/d) (I _{inhal})	0.0003	0.0001	0.0001	0.0001	0.001	0.001	0.0008	0.0008	0.0007	0.0008	0.001	0.001	0.001	0.0008	0.0007	0.0006	0.0007	0.001
	Sum of Incremental Intakes (µg Pb/kg bw/d)	0.001	0.0009	0.0001	0.0001	0.04	0.04	0.03	0.03	0.02	0.03	0.04	0.02	0.03	0.02	0.02	0.02	0.02	0.03
	Bkgd Pb intake from soil (µg Pb/kg bw/d) (RZ1)	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42
	Bkgd Pb intake from soil (µg Pb/kg bw/d) (RZ2+3)	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21
	Bkgd Pb intake from soil (µg Pb/kg bw/d) (RZ4+5)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	Background Pb intake from water (µg Pb/kg bw/d)	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
	Backgnd Pb intake from diet (µg Pb/kg bw/d)	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
	Bckgnd Inhalation Pb Intake (Pb in PM ₁₀) (µg Pb/kg bw/d)	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
	Sum of bkgd intakes (RZ1) (µg Pb/kg bw/d)	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
	% bkgd Pb intake from soil	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1
	% bkgd Pb intake from diet	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0
	Sum of bkgd intakes (RZ2+3) (µg Pb/kg bw/d)	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1

% bkgd Pb intake from soil	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4
% bkgd Pb intake from diet	79.4	79.4	79.4	79.4	79.4	79.4	79.4	79.4	79.4	79.4	79.4	79.4	79.4	79.4	79.4	79.4	79.4	79.4
Sum of bkgd intakes (RZ4+5) (µg Pb/kg bw/d)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
% bkgd Pb intake from soil	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1
% bkgd Pb intake from diet	87.4	87.4	87.4	87.4	87.4	87.4	87.4	87.4	87.4	87.4	87.4	87.4	87.4	87.4	87.4	87.4	87.4	87.4
Total Intake (incremental + bkgd) (RZ1) (µg Pb/kg bw/d)	1.3	1.3	1.3	1.3	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
Total Intake (incremental + bkgd) (RZ2+3) (µg Pb/kg bw/d)	1.1	1.1	1.1	1.1	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.1	1.2
Total Intake (incremental + bkgd) (RZ4+5) (µg Pb/kg bw/d)	1.0	1.0	1.0	1.0	1.1	1.1	1.1	1.1	1.0	1.1	1.1	1.1	1.1	1.1	1.1	1.0	1.0	1.1
Hazard Quotient (RZ1)	0.38	0.38	0.38	0.38	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39
Hazard Quotient (RZ2+3)	0.32	0.32	0.32	0.32	0.34	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33
Hazard Quotient (RZ4+5)	0.29	0.29	0.29	0.29	0.31	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30

Life Stage: Child (3-13 yrs) Scenario 1b									
		R35	R36	R37	R38	R39	R40	R41	R42
	Incremental Pb Intake from ingestion ($\mu\text{g Pb/kg bw/d}$) (I_{oral})	0.02	0.02	0.02	0.003	0.005	0.02	0.03	0.03
	Incremental Dermal Pb Intake ($\mu\text{g Pb/kg bw/d}$) (I_{derm_s})	0.00004	0.00004	0.00003	0.000006	0.000009	0.00004	0.00005	0.00005
	Incremental Pb Intake from Inhalation ($\mu\text{g Pb/kg bw/d}$) (I_{inhal})	0.001	0.0008	0.0007	0.0002	0.0004	0.001	0.001	0.001
	Sum of Incremental Intakes ($\mu\text{g Pb/kg bw/d}$)	0.02	0.02	0.02	0.004	0.005	0.02	0.03	0.03
	Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ1)	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42
	Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ2+3)	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21
	Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ4+5)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	Background Pb intake from water ($\mu\text{g Pb/kg bw/d}$)	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
	Backgnd Pb intake from diet ($\mu\text{g Pb/kg bw/d}$)	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
	Bckgnd Inhalation Pb Intake (Pb in PM_{10}) ($\mu\text{g Pb/kg bw/d}$)	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
	Sum of bkgd intakes (RZ1) ($\mu\text{g Pb/kg bw/d}$)	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
	% bkgd Pb intake from soil	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1
	% bkgd Pb intake from diet	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0
	Sum of bkgd intakes (RZ2+3) ($\mu\text{g Pb/kg bw/d}$)	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1

	% bkgd Pb intake from soil	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4
	% bkgd Pb intake from diet	79.4	79.4	79.4	79.4	79.4	79.4	79.4	79.4
	Sum of bkgd intakes (RZ4+5) (µg Pb/kg bw/d)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	% bkgd Pb intake from soil	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1
	% bkgd Pb intake from diet	87.4	87.4	87.4	87.4	87.4	87.4	87.4	87.4
	Total Intake (incremental + bkgd) (RZ1) (µg Pb/kg bw/d)	1.4	1.4	1.4	1.3	1.3	1.4	1.4	1.4
	Total Intake (incremental + bkgd) (RZ2+3) (µg Pb/kg bw/d)	1.2	1.2	1.2	1.1	1.1	1.2	1.2	1.2
	Total Intake (incremental + bkgd) (RZ4+5) (µg Pb/kg bw/d)	1.1	1.0	1.0	1.0	1.0	1.1	1.1	1.1
	Hazard Quotient (RZ1)	0.39	0.39	0.39	0.38	0.39	0.39	0.39	0.39
	Hazard Quotient (RZ2+3)	0.33	0.33	0.33	0.32	0.33	0.33	0.33	0.33
	Hazard Quotient (RZ4+5)	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30

Life Stage: Adolescent/ adult (13-18 yrs) Scenario 1b																	
		R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15	R16
Incremental Pb Intake from ingestion ($\mu\text{g Pb/kg bw/d}$) (I_{oral})		0.009	0.006	0.007	0.004	0.003	0.004	0.002	0.02	0.008	0.005	0.002	0.0005	0.0001	0.001	0	0
Incremental Dermal Pb Intake ($\mu\text{g Pb/kg bw/d}$) (I_{derm_s})		0.00005	0.00003	0.00004	0.00002	0.00002	0.00002	0.00001	0.0001	0.00004	0.00003	0.00001	0.000003	0.0000008	0.000006	0	0
Incremental Pb Intake from Inhalation ($\mu\text{g Pb/kg bw/d}$) (I_{inhal})		0.0008	0.0005	0.0006	0.0004	0.0003	0.0005	0.0003	0.002	0.0009	0.0005	0.0002	0.0002	0.0001	0.0003	0.0001	0.0001
Sum of Incremental Intakes ($\mu\text{g Pb/kg bw/d}$)		0.01	0.006	0.008	0.005	0.003	0.005	0.003	0.02	0.009	0.006	0.002	0.0007	0.0003	0.001	0.0001	0.0001
Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ1)		0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ2+3)		0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ4+5)		0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Background Pb intake from water ($\mu\text{g Pb/kg bw/d}$)		0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Backgnd Pb intake from diet ($\mu\text{g Pb/kg bw/d}$)		0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Bckgnd Inhalation Pb Intake (Pb in PM_{10}) ($\mu\text{g Pb/kg bw/d}$)		0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004

Sum of bkgd intakes (RZ1) (µg Pb/kg bw/d)	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
% bkgd Pb intake from soil	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7
% bkgd Pb intake from diet	72.0	72.0	72.0	72.0	72.0	72.0	72.0	72.0	72.0	72.0	72.0	72.0	72.0	72.0	72.0	72.0
Sum of bkgd intakes (RZ2+3) (µg Pb/kg bw/d)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
% bkgd Pb intake from soil	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4
% bkgd Pb intake from diet	81.7	81.7	81.7	81.7	81.7	81.7	81.7	81.7	81.7	81.7	81.7	81.7	81.7	81.7	81.7	81.7
Sum of bkgd intakes (RZ4+5) (µg Pb/kg bw/d)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
% bkgd Pb intake from soil	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2
% bkgd Pb intake from diet	87.6	87.6	87.6	87.6	87.6	87.6	87.6	87.6	87.6	87.6	87.6	87.6	87.6	87.6	87.6	87.6
Total Intake (incremental + bkgd) (RZ1) (µg Pb/kg bw/d)	0.57	0.56	0.56	0.56	0.56	0.56	0.56	0.58	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56
Total Intake (incremental + bkgd) (RZ2+3) (µg Pb/kg bw/d)	0.50	0.50	0.50	0.49	0.49	0.49	0.49	0.51	0.50	0.50	0.49	0.49	0.49	0.49	0.49	0.49
Total Intake (incremental + bkgd) (RZ4+5) (µg Pb/kg bw/d)	0.47	0.46	0.46	0.46	0.46	0.46	0.46	0.48	0.47	0.46	0.46	0.46	0.46	0.46	0.46	0.46
Hazard Quotient (RZ1)	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.17	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16
Hazard Quotient (RZ2+3)	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.15	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14
Hazard Quotient (RZ4+5)	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.14	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13

Life Stage: Adolescent/ adult (13-18 yrs) Scenario 1b																			
		R17	R18	R19	R20	R21	R22	R23	R24	R25	R26	R27	R28	R29	R30	R31	R32	R33	R34
	Incremental Pb Intake from ingestion (µg Pb/kg bw/d) (I _{oral})	0.0003	0.0002	0	0	0.01	0.01	0.008	0.008	0.005	0.008	0.01	0.007	0.009	0.006	0.006	0.005	0.006	0.008
	Incremental Dermal Pb Intake (µg Pb/kg bw/d)(I _{derm_s})	0.000001	0.000001	0	0	0.00006	0.00006	0.00004	0.00004	0.00003	0.00004	0.00006	0.00004	0.00005	0.00003	0.00003	0.00002	0.00003	0.00004
	Incremental Pb Intake from Inhalation (µg Pb/kg bw/d) (I _{inhal})	0.0002	0.00008	0.00008	0.0001	0.001	0.0008	0.0006	0.0006	0.0005	0.0006	0.001	0.0008	0.0009	0.0006	0.0005	0.0004	0.0005	0.0009
	Sum of Incremental Intakes (µg Pb/kg bw/d)	0.0005	0.0003	0.00008	0.0001	0.01	0.01	0.009	0.009	0.006	0.009	0.01	0.008	0.01	0.007	0.007	0.005	0.007	0.009
	Bkgd Pb intake from soil (µg Pb/kg bw/d) (RZ1)	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
	Bkgd Pb intake from soil (µg Pb/kg bw/d) (RZ2+3)	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
	Bkgd Pb intake from soil (µg Pb/kg bw/d) (RZ4+5)	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
	Background Pb intake from water (µg Pb/kg bw/d)	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
	Backgnd Pb intake from diet (µg Pb/kg bw/d)	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
	Bckgnd Inhalation Pb Intake (Pb in PM ₁₀) (µg Pb/kg bw/d)	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
	Sum of bkgd intakes (RZ1) (µg Pb/kg bw/d)	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
	% bkgd Pb intake from soil	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7
	% bkgd Pb intake from diet	72.0	72.0	72.0	72.0	72.0	72.0	72.0	72.0	72.0	72.0	72.0	72.0	72.0	72.0	72.0	72.0	72.0	72.0
	Sum of bkgd intakes (RZ2+3) (µg Pb/kg bw/d)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5

% bkgd Pb intake from soil	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4
% bkgd Pb intake from diet	81.7	81.7	81.7	81.7	81.7	81.7	81.7	81.7	81.7	81.7	81.7	81.7	81.7	81.7	81.7	81.7	81.7	81.7
Sum of bkgd intakes (RZ4+5) (µg Pb/kg bw/d)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
% bkgd Pb intake from soil	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2
% bkgd Pb intake from diet	87.6	87.6	87.6	87.6	87.6	87.6	87.6	87.6	87.6	87.6	87.6	87.6	87.6	87.6	87.6	87.6	87.6	87.6
Total Intake (incremental + bkgd) (RZ1) (µg Pb/kg bw/d)	0.56	0.56	0.56	0.56	0.57	0.57	0.56	0.56	0.56	0.56	0.57	0.56	0.57	0.56	0.56	0.56	0.56	0.56
Total Intake (incremental + bkgd) (RZ2+3) (µg Pb/kg bw/d)	0.49	0.49	0.49	0.49	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.49	0.50	0.50
Total Intake (incremental + bkgd) (RZ4+5) (µg Pb/kg bw/d)	0.46	0.46	0.46	0.46	0.47	0.47	0.47	0.47	0.46	0.47	0.47	0.46	0.47	0.46	0.46	0.46	0.46	0.47
Hazard Quotient (RZ1)	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16
Hazard Quotient (RZ2+3)	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14
Hazard Quotient (RZ4+5)	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13

Life Stage: Adolescent/ adult (13-18 yrs) Scenario 1b									
		R35	R36	R37	R38	R39	R40	R41	R42
Incremental Pb Intake from ingestion ($\mu\text{g Pb/kg bw/d}$) (I_{oral})		0.007	0.006	0.0056	0.0011	0.0015	0.0075	0.0080	0.0094
Incremental Dermal Pb Intake ($\mu\text{g Pb/kg bw/d}$) (I_{derm_s})		0.00004	0.00003	0.00003	0.000006	0.000008	0.00004	0.00004	0.00005
Incremental Pb Intake from Inhalation ($\mu\text{g Pb/kg bw/d}$) (I_{inhal})		0.0007	0.0006	0.0005	0.0002	0.0003	0.0009	0.0009	0.0009
Sum of Incremental Intakes ($\mu\text{g Pb/kg bw/d}$)		0.008	0.007	0.006	0.001	0.002	0.008	0.009	0.01
Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ1)		0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ2+3)		0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ4+5)		0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Background Pb intake from water ($\mu\text{g Pb/kg bw/d}$)		0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Backgnd Pb intake from diet ($\mu\text{g Pb/kg bw/d}$)		0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Bckgnd Inhalation Pb Intake (Pb in PM_{10}) ($\mu\text{g Pb/kg bw/d}$)		0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
Sum of bkgd intakes (RZ1) ($\mu\text{g Pb/kg bw/d}$)		0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
% bkgd Pb intake from soil		23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7
% bkgd Pb intake from diet		72.0	72.0	72.0	72.0	72.0	72.0	72.0	72.0
Sum of bkgd intakes (RZ2+3) ($\mu\text{g Pb/kg bw/d}$)		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5

	% bkgd Pb intake from soil	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4
	% bkgd Pb intake from diet	81.7	81.7	81.7	81.7	81.7	81.7	81.7	81.7
	Sum of bkgd intakes (RZ4+5) (µg Pb/kg bw/d)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
	% bkgd Pb intake from soil	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2
	% bkgd Pb intake from diet	87.6	87.6	87.6	87.6	87.6	87.6	87.6	87.6
	Total Intake (incremental + bkgd) (RZ1) (µg Pb/kg bw/d)	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.57
	Total Intake (incremental + bkgd) (RZ2+3) (µg Pb/kg bw/d)	0.50	0.50	0.50	0.49	0.49	0.50	0.50	0.50
	Total Intake (incremental + bkgd) (RZ4+5) (µg Pb/kg bw/d)	0.46	0.46	0.46	0.46	0.46	0.47	0.47	0.47
	Hazard Quotient (RZ1)	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16
	Hazard Quotient (RZ2+3)	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14
	Hazard Quotient (RZ4+5)	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13

Life Stage: Adult (18-70 yrs) Scenario 1b																	
		R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15	R16
	Incremental Pb Intake from ingestion ($\mu\text{g Pb/kg bw/d}$) (I_{oral})	0.007	0.004	0.006	0.003	0.002	0.003	0.002	0.02	0.006	0.004	0.002	0.0004	0.0001	0.0009	0	0
	Incremental Dermal Pb Intake ($\mu\text{g Pb/kg bw/d}$) (I_{derm_s})	0.00005	0.00003	0.00004	0.00002	0.00002	0.00002	0.00001	0.0001	0.00004	0.00003	0.00001	0.000003	0.0000007	0.000006	0	0
	Incremental Pb Intake from Inhalation ($\mu\text{g Pb/kg bw/d}$) (I_{inhal})	0.0006	0.0004	0.0004	0.0003	0.0002	0.0004	0.0003	0.002	0.0007	0.0004	0.0002	0.0001	0.0001	0.0002	0.00009	0.0001
	Sum of Incremental Intakes ($\mu\text{g Pb/kg bw/d}$)	0.008	0.005	0.006	0.003	0.003	0.003	0.002	0.02	0.007	0.004	0.002	0.0005	0.0002	0.001	0.00009	0.0001
	Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ1)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ2+3)	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
	Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ4+5)	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
	Background Pb intake from water ($\mu\text{g Pb/kg bw/d}$)	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	Backgnd Pb intake from diet ($\mu\text{g Pb/kg bw/d}$)	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
	Bckgnd Inhalation Pb Intake (Pb in PM_{10}) ($\mu\text{g Pb/kg bw/d}$)	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003
	Sum of bkgd intakes (RZ1) ($\mu\text{g Pb/kg bw/d}$)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
	% bkgd Pb intake from soil	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1
	% bkgd Pb intake from diet	78.4	78.4	78.4	78.4	78.4	78.4	78.4	78.4	78.4	78.4	78.4	78.4	78.4	78.4	78.4	78.4
	Sum of bkgd intakes (RZ2+3) ($\mu\text{g Pb/kg bw/d}$)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5

% bkgd Pb intake from soil	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5
% bkgd Pb intake from diet	86.6	86.6	86.6	86.6	86.6	86.6	86.6	86.6	86.6	86.6	86.6	86.6	86.6	86.6	86.6	86.6	86.6
Sum of bkgd intakes (RZ4+5) (µg Pb/kg bw/d)	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
% bkgd Pb intake from soil	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
% bkgd Pb intake from diet	91.4	91.4	91.4	91.4	91.4	91.4	91.4	91.4	91.4	91.4	91.4	91.4	91.4	91.4	91.4	91.4	91.4
Total Intake (incremental + bkgd) (RZ1) (µg Pb/kg bw/d)	0.52	0.52	0.52	0.51	0.51	0.51	0.51	0.53	0.52	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51
Total Intake (incremental + bkgd) (RZ2+3) (µg Pb/kg bw/d)	0.47	0.47	0.47	0.47	0.46	0.47	0.46	0.48	0.47	0.47	0.46	0.46	0.46	0.46	0.46	0.46	0.46
Total Intake (incremental + bkgd) (RZ4+5) (µg Pb/kg bw/d)	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.46	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44
Hazard Quotient (RZ1)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Hazard Quotient (RZ2+3)	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.14	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
Hazard Quotient (RZ4+5)	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13

Life Stage: Adult (18-70 yrs) Scenario 1b																			
		R17	R18	R19	R20	R21	R22	R23	R24	R25	R26	R27	R28	R29	R30	R31	R32	R33	R34
	Incremental Pb Intake from ingestion (µg Pb/kg bw/d) (I _{oral})	0.0002	0.0002	0	0	0.009	0.008	0.006	0.006	0.004	0.006	0.008	0.005	0.007	0.005	0.005	0.003	0.005	0.006
	Incremental Dermal Pb Intake (µg Pb/kg bw/d)(I _{derm_s})	0.000001	0.000001	0	0	0.00006	0.00005	0.00004	0.00004	0.00003	0.00004	0.00006	0.00004	0.00005	0.00003	0.00003	0.00002	0.00003	0.00004
	Incremental Pb Intake from Inhalation (µg Pb/kg bw/d) (I _{inhal})	0.0002	0.00006	0.00007	0.00007	0.0008	0.0006	0.0005	0.0005	0.0004	0.0005	0.0009	0.0006	0.0007	0.0005	0.0004	0.0003	0.0004	0.0007
	Sum of Incremental Intakes (µg Pb/kg bw/d)	0.0004	0.0002	0.00007	0.00007	0.01	0.009	0.006	0.006	0.004	0.007	0.009	0.006	0.008	0.005	0.005	0.004	0.005	0.007
	Bkgd Pb intake from soil (µg Pb/kg bw/d) (RZ1)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	Bkgd Pb intake from soil (µg Pb/kg bw/d) (RZ2+3)	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
	Bkgd Pb intake from soil (µg Pb/kg bw/d) (RZ4+5)	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
	Background Pb intake from water (µg Pb/kg bw/d)	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	Backgnd Pb intake from diet (µg Pb/kg bw/d)	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
	Bckgnd Inhalation Pb Intake (Pb in PM ₁₀) (µg Pb/kg bw/d)	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003
	Sum of bkgd intakes (RZ1) (µg Pb/kg bw/d)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
	% bkgd Pb intake from soil	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1
	% bkgd Pb intake from diet	78.4	78.4	78.4	78.4	78.4	78.4	78.4	78.4	78.4	78.4	78.4	78.4	78.4	78.4	78.4	78.4	78.4	78.4
	Sum of bkgd intakes (RZ2+3) (µg Pb/kg bw/d)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5

% bkgd Pb intake from soil	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5
% bkgd Pb intake from diet	86.6	86.6	86.6	86.6	86.6	86.6	86.6	86.6	86.6	86.6	86.6	86.6	86.6	86.6	86.6	86.6	86.6	86.6
Sum of bkgd intakes (RZ4+5) (µg Pb/kg bw/d)	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
% bkgd Pb intake from soil	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
% bkgd Pb intake from diet	91.4	91.4	91.4	91.4	91.4	91.4	91.4	91.4	91.4	91.4	91.4	91.4	91.4	91.4	91.4	91.4	91.4	91.4
Total Intake (incremental + bkgd) (RZ1) (µg Pb/kg bw/d)	0.51	0.51	0.51	0.51	0.52	0.52	0.52	0.52	0.51	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.51	0.52
Total Intake (incremental + bkgd) (RZ2+3) (µg Pb/kg bw/d)	0.46	0.46	0.46	0.46	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47
Total Intake (incremental + bkgd) (RZ4+5) (µg Pb/kg bw/d)	0.44	0.44	0.44	0.44	0.45	0.45	0.44	0.44	0.44	0.44	0.45	0.44	0.45	0.44	0.44	0.44	0.44	0.44
Hazard Quotient (RZ1)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Hazard Quotient (RZ2+3)	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
Hazard Quotient (RZ4+5)	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13

Life Stage: Adult (18-70 yrs) Scenario 1b									
		R35	R36	R37	R38	R39	R40	R41	R42
	Incremental Pb Intake from ingestion ($\mu\text{g Pb/kg bw/d}$) (I_{oral})	0.005	0.005	0.004	0.0008	0.001	0.006	0.006	0.007
	Incremental Dermal Pb Intake ($\mu\text{g Pb/kg bw/d}$) (I_{derm_s})	0.00004	0.00003	0.00003	0.000005	0.000008	0.00004	0.00004	0.00005
	Incremental Pb Intake from Inhalation ($\mu\text{g Pb/kg bw/d}$) (I_{inhal})	0.0006	0.0005	0.0004	0.0001	0.0003	0.0007	0.0007	0.0007
	Sum of Incremental Intakes ($\mu\text{g Pb/kg bw/d}$)	0.006	0.005	0.005	0.001	0.001	0.006	0.007	0.008
	Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ1)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ2+3)	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
	Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ4+5)	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
	Background Pb intake from water ($\mu\text{g Pb/kg bw/d}$)	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	Backgnd Pb intake from diet ($\mu\text{g Pb/kg bw/d}$)	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
	Bckgnd Inhalation Pb Intake (Pb in PM_{10}) ($\mu\text{g Pb/kg bw/d}$)	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003
	Sum of bkgd intakes (RZ1) ($\mu\text{g Pb/kg bw/d}$)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
	% bkgd Pb intake from soil	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1
	% bkgd Pb intake from diet	78.4	78.4	78.4	78.4	78.4	78.4	78.4	78.4
	Sum of bkgd intakes (RZ2+3) ($\mu\text{g Pb/kg bw/d}$)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5

	% bkgd Pb intake from soil	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5
	% bkgd Pb intake from diet	86.6	86.6	86.6	86.6	86.6	86.6	86.6	86.6
	Sum of bkgd intakes (RZ4+5) (µg Pb/kg bw/d)	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
	% bkgd Pb intake from soil	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
	% bkgd Pb intake from diet	91.4	91.4	91.4	91.4	91.4	91.4	91.4	91.4
	Total Intake (incremental + bkgd) (RZ1) (µg Pb/kg bw/d)	0.52	0.52	0.52	0.51	0.51	0.52	0.52	0.52
	Total Intake (incremental + bkgd) (RZ2+3) (µg Pb/kg bw/d)	0.47	0.47	0.47	0.46	0.46	0.47	0.47	0.47
	Total Intake (incremental + bkgd) (RZ4+5) (µg Pb/kg bw/d)	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.45
	Hazard Quotient (RZ1)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
	Hazard Quotient (RZ2+3)	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
	Hazard Quotient (RZ4+5)	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13

Scenario 1b	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15	R16	R17	R18	R19	R20	R21
Lifetime TWA intake ($I_{lifetime}$) RZ1	0.70	0.69	0.69	0.69	0.69	0.69	0.69	0.71	0.69	0.69	0.69	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.70
Lifetime TWA intake ($I_{lifetime}$) RZ2+3	0.61	0.60	0.60	0.60	0.60	0.60	0.60	0.63	0.61	0.60	0.60	0.60	0.59	0.60	0.59	0.59	0.60	0.59	0.59	0.59	0.61
Lifetime TWA intake ($I_{lifetime}$) RZ4+5	0.56	0.56	0.56	0.56	0.55	0.56	0.55	0.58	0.56	0.56	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.57
HQ RZ1	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
HQ RZ2+3	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.18	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
HQ RZ4+5	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.17	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16

Scenario 1b	R22	R23	R24	R25	R26	R27	R28	R29	R30	R31	R32	R33	R34	R35	R36	R37	R38	R39	R40	R41	R42
Lifetime TWA intake ($I_{lifetime}$) RZ1	0.70	0.69	0.69	0.69	0.69	0.70	0.69	0.70	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.68	0.68	0.69	0.69	0.70
Lifetime TWA intake ($I_{lifetime}$) RZ2+3	0.61	0.61	0.61	0.60	0.61	0.61	0.60	0.61	0.60	0.60	0.60	0.60	0.61	0.60	0.60	0.60	0.60	0.60	0.61	0.61	0.61
Lifetime TWA intake ($I_{lifetime}$) RZ4+5	0.57	0.56	0.56	0.56	0.56	0.57	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.55	0.55	0.56	0.56	0.56
HQ RZ1	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
HQ RZ2+3	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
HQ RZ4+5	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16

A4.2.3 Scenario 2

Chemical-specific inputs (Scenario 2)																
Parameter	Abbreviation	Unit	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14
Incremental soil Pb concentration for 15 years of mine life (assuming no loss)	C _s	µg/g	25.2	54.9	111.7	59.8	44.7	49.4	34.5	223.3	76.3	30.2	27.9	18.3	14.4	18.0
Background soil Pb concentration in 'Risk Zone 1'	C _{s_bkgdRZ1}	µg/g	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Background soil Pb concentration in 'Risk Zone 2+3'	C _{s_bkgdRZ2+3}	µg/g	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Background soil Pb concentration in 'Risk Zone 4+5'	C _{s_bkgdRZ4+5}	µg/g	500	500	500	500	500	500	500	500	500	500	500	500	500	500
Incremental concentration of Pb in PM ₁₀	C _A	µg/m ³	0.008	0.01	0.03	0.02	0.02	0.03	0.02	0.07	0.02	0.01	0.01	0.007	0.006	0.006
Background concentration of Pb in PM ₁₀	C _{A_bkgd}	µg/m ³	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Tolerable daily intake	TDI	ug/kg/day	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Bioaccessibility of incremental Pb deposited in soil	BAC _{soil}	Unitless	0.04	0.03	0.03	0.03	0.03	0.03	0.03	0.02	0.03	0.04	0.03	0.03	0.03	0.03
Bioaccessibility of incremental Pb in PM ₁₀	BAC _{air}	Unitless	0.05	0.04	0.04	0.04	0.04	0.04	0.03	0.02	0.03	0.04	0.04	0.04	0.04	0.04
Bioaccessibility of Pb in background soil and PM ₁₀	BAC _{soil} , BAC _{air}	Unitless	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073
Absolute bioavailability of ingested metal	ABA _{oral}	Unitless	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Absolute bioavailability of metal via dermal absorption	ABA _{dermal}	Unitless	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Absolute bioavailability of metal via inhalation	ABA _{inhal}	Unitless	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Chemical-specific inputs (Scenario 2)																			
Parameter	Abbreviation	Unit	R15	R16	R17	R18	R19	R20	R21	R22	R23	R24	R25	R26	R27	R28	R29	R30	R31
Incremental soil Pb concentration for 15 years of mine life (assuming no loss)	C _s	µg/g	4.3	2.6	10.5	9.0	1.9	3.0	21.4	19.1	14.8	13.2	13.0	11.2	10.8	9.8	9.7	8.4	7.9
Background soil Pb concentration in 'Risk Zone 1'	C _{s_bkgdRZ1}	µg/g	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Background soil Pb concentration in 'Risk Zone 2+3'	C _{s_bkgdRZ2+3}	µg/g	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Background soil Pb concentration in 'Risk Zone 4+5'	C _{s_bkgdRZ4+5}	µg/g	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500
Incremental concentration of Pb in PM ₁₀	C _A	µg/m ³	0.002	0.002	0.004	0.005	0.001	0.002	0.009	0.008	0.008	0.01	0.006	0.01	0.009	0.009	0.008	0.007	0.005
Background concentration of Pb in PM ₁₀	C _{A_bkgd}	µg/m ³	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Tolerable daily intake	TDI	ug/kg/day	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Bioaccessibility of incremental Pb deposited in soil	BAC _{soil}	Unitless	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.05	0.04	0.05	0.05	0.05	0.05	0.05	0.04
Bioaccessibility of incremental Pb in PM ₁₀	BAC _{air}	Unitless	0.04	0.04	0.04	0.04	0.04	0.04	0.05	0.05	0.06	0.06	0.05	0.06	0.06	0.06	0.06	0.06	0.05
Bioaccessibility of Pb in background soil and PM ₁₀	BAC _{soil} , BAC _{air}	Unitless	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073
Absolute bioavailability of ingested metal	ABA _{oral}	Unitless	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Absolute bioavailability of metal via dermal absorption	ABA _{dermal}	Unitless	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Absolute bioavailability of metal via inhalation	ABA _{inhal}	Unitless	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Chemical-specific inputs (Scenario 2)													
Parameter	Abbreviation	Unit	R32	R33	R34	R35	R36	R37	R38	R39	R40	R41	R42
Incremental soil Pb concentration for 15 years of mine life (assuming no loss)	C _s	µg/g	6.7	5.2	25.5	19.8	15.5	12.0	20.0	23.6	52.9	45.4	36.9
Background soil Pb concentration in 'Risk Zone 1'	C _{s_bkgdRZ1}	µg/g	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Background soil Pb concentration in 'Risk Zone 2+3'	C _{s_bkgdRZ2+3}	µg/g	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Background soil Pb concentration in 'Risk Zone 4+5'	C _{s_bkgdRZ4+5}	µg/g	500	500	500	500	500	500	500	500	500	500	500
Incremental concentration of Pb in PM ₁₀	C _A	µg/m ³	0.005	0.006	0.01	0.009	0.009	0.007	0.01	0.01	0.02	0.01	0.01
Background concentration of Pb in PM ₁₀	C _{A_bkgd}	µg/m ³	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Tolerable daily intake	TDI	ug/kg/day	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Bioaccessibility of incremental Pb deposited in soil	BAC _{soil}	Unitless	0.04	0.05	0.04	0.04	0.04	0.04	0.03	0.03	0.04	0.04	0.04
Bioaccessibility of incremental Pb in PM ₁₀	BAC _{air}	Unitless	0.05	0.06	0.05	0.05	0.05	0.05	0.03	0.03	0.04	0.04	0.05
Bioaccessibility of Pb in background soil and PM ₁₀	BAC _{soil} , BAC _{air}	Unitless	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073
Absolute bioavailability of ingested metal	ABA _{oral}	Unitless	1	1	1	1	1	1	1	1	1	1	1
Absolute bioavailability of metal via dermal absorption	ABA _{dermal}	Unitless	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Absolute bioavailability of metal via inhalation	ABA _{inhal}	Unitless	1	1	1	1	1	1	1	1	1	1	1

Life Stage: Infant/Toddler (0.5-3 yrs) Scenario 2																	
		R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15	R16
Incremental Pb Intake from ingestion (µg Pb/kg bw/d) (I _{oral})		0.007	0.01	0.02	0.01	0.009	0.01	0.006	0.03	0.01	0.007	0.005	0.004	0.003	0.004	0.001	0.001
Incremental Dermal Pb Intake (µg Pb/kg bw/d)(I _{derm_s})		0.000008	0.00001	0.00003	0.00001	0.00001	0.00001	0.000007	0.00004	0.00002	0.000009	0.000006	0.000004	0.000003	0.000005	0.000001	0.000001
Incremental Pb Intake from Inhalation (µg Pb/kg bw/d) (I _{inhal})		0.001	0.0007	0.0007	0.0005	0.0004	0.0006	0.0003	0.002	0.0009	0.0007	0.0002	0.0002	0.0002	0.0004	0.0001	0.0002
Sum of Incremental Intakes (µg Pb/kg bw/d)		0.008	0.01	0.02	0.01	0.009	0.01	0.006	0.03	0.01	0.008	0.005	0.004	0.003	0.004	0.001	0.0007
Bkgd Pb intake from soil (µg Pb/kg bw/d) (RZ1)		0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Bkgd Pb intake from soil (µg Pb/kg bw/d) (RZ2+3)		0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49
Bkgd Pb intake from soil (µg Pb/kg bw/d) (RZ4+5)		0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24
Background Pb intake from water (µg Pb/kg bw/d)		0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Backgnd Pb intake from diet (µg Pb/kg bw/d)		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Bckgnd Inhalation Pb Intake (Pb in PM ₁₀) (µg Pb/kg bw/d)		0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009
Sum of bkgd intakes (RZ1) (µg Pb/kg bw/d)		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
% bkgd Pb intake from soil		48.4	48.4	48.4	48.4	48.4	48.4	48.4	48.4	48.4	48.4	48.4	48.4	48.4	48.4	48.4	48.4
% bkgd Pb intake from diet		49.7	49.7	49.7	49.7	49.7	49.7	49.7	49.7	49.7	49.7	49.7	49.7	49.7	49.7	49.7	49.7
Sum of bkgd intakes (RZ2+3) (µg Pb/kg bw/d)		1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
% bkgd Pb intake from soil		31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9

% bkgd Pb intake from diet	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5
Sum of bkgd intakes (RZ4+5) (µg Pb/kg bw/d)	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
% bkgd Pb intake from soil	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0
% bkgd Pb intake from diet	78.0	78.0	78.0	78.0	78.0	78.0	78.0	78.0	78.0	78.0	78.0	78.0	78.0	78.0	78.0	78.0	78.0
Total Intake (incremental + bkgd) (RZ1) (µg Pb/kg bw/d)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Total Intake (incremental + bkgd) (RZ2+3) (µg Pb/kg bw/d)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.6	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Total Intake (incremental + bkgd) (RZ4+5) (µg Pb/kg bw/d)	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
Hazard Quotient (RZ1)	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58
Hazard Quotient (RZ2+3)	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.45	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44
Hazard Quotient (RZ4+5)	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.38	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37

Life Stage: Infant/Toddler (0.5-3 yrs) Scenario 2																			
		R17	R18	R19	R20	R21	R22	R23	R24	R25	R26	R27	R28	R29	R30	R31	R32	R33	R34
	Incremental Pb Intake from ingestion ($\mu\text{g Pb/kg bw/d}$) (I_{oral})	0.002	0.002	0.000	0.001	0.006	0.005	0.004	0.004	0.003	0.004	0.004	0.003	0.003	0.003	0.002	0.002	0.002	0.007
	Incremental Dermal Pb Intake ($\mu\text{g Pb/kg bw/d}$) (I_{derm_s})	0.000003	0.000002	0.000000	0.000001	0.000007	0.000006	0.000005	0.000005	0.000004	0.000004	0.000004	0.000004	0.000004	0.000003	0.000003	0.000002	0.000002	0.000008
	Incremental Pb Intake from Inhalation ($\mu\text{g Pb/kg bw/d}$) (I_{inhal})	0.0003	0.00009	0.0001	0.0001	0.002	0.001	0.001	0.001	0.0008	0.001	0.002	0.002	0.002	0.001	0.0009	0.0007	0.001	0.001
	Sum of Incremental Intakes ($\mu\text{g Pb/kg bw/d}$)	0.003	0.002	0.0005	0.0007	0.007	0.006	0.005	0.005	0.004	0.005	0.006	0.005	0.005	0.004	0.003	0.003	0.003	0.008
	Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ1)	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
	Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ2+3)	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49
	Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ4+5)	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24
	Background Pb intake from water ($\mu\text{g Pb/kg bw/d}$)	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
	Backgnd Pb intake from diet ($\mu\text{g Pb/kg bw/d}$)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Bckgnd Inhalation Pb Intake (Pb in PM_{10}) ($\mu\text{g Pb/kg bw/d}$)	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009

Sum of bkgd intakes (RZ1) (µg Pb/kg bw/d)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
% bkgd Pb intake from soil	48.4	48.4	48.4	48.4	48.4	48.4	48.4	48.4	48.4	48.4	48.4	48.4	48.4	48.4	48.4	48.4	48.4	48.4
% bkgd Pb intake from diet	49.7	49.7	49.7	49.7	49.7	49.7	49.7	49.7	49.7	49.7	49.7	49.7	49.7	49.7	49.7	49.7	49.7	49.7
Sum of bkgd intakes (RZ2+3) (µg Pb/kg bw/d)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
% bkgd Pb intake from soil	31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9
% bkgd Pb intake from diet	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5
Sum of bkgd intakes (RZ4+5) (µg Pb/kg bw/d)	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
% bkgd Pb intake from soil	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0
% bkgd Pb intake from diet	78.0	78.0	78.0	78.0	78.0	78.0	78.0	78.0	78.0	78.0	78.0	78.0	78.0	78.0	78.0	78.0	78.0	78.0
Total Intake (incremental + bkgd) (RZ1) (µg Pb/kg bw/d)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Total Intake (incremental + bkgd) (RZ2+3) (µg Pb/kg bw/d)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Total Intake (incremental + bkgd) (RZ4+5) (µg Pb/kg bw/d)	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
Hazard Quotient (RZ1)	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58
Hazard Quotient (RZ2+3)	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44
Hazard Quotient (RZ4+5)	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37

Life Stage: Infant/Toddler (0.5-3 yrs) Scenario 2									
		R35	R36	R37	R38	R39	R40	R41	R42
Incremental Pb Intake from ingestion ($\mu\text{g Pb/kg bw/d}$) (I_{oral})		0.006	0.004	0.003	0.004	0.004	0.01	0.01	0.01
Incremental Dermal Pb Intake ($\mu\text{g Pb/kg bw/d}$) (I_{derm_s})		0.000006	0.000005	0.000004	0.000004	0.000005	0.00001	0.00001	0.00001
Incremental Pb Intake from Inhalation ($\mu\text{g Pb/kg bw/d}$) (I_{inhal})		0.001	0.0009	0.0008	0.0002	0.0003	0.001	0.001	0.001
Sum of Incremental Intakes ($\mu\text{g Pb/kg bw/d}$)		0.007	0.005	0.004	0.004	0.005	0.01	0.01	0.01
Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ1)		0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ2+3)		0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49
Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ4+5)		0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24
Background Pb intake from water ($\mu\text{g Pb/kg bw/d}$)		0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Backgnd Pb intake from diet ($\mu\text{g Pb/kg bw/d}$)		1	1	1	1	1	1	1	1
Bckgnd Inhalation Pb Intake (Pb in PM_{10}) ($\mu\text{g Pb/kg bw/d}$)		0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009
Sum of bkgd intakes (RZ1) ($\mu\text{g Pb/kg bw/d}$)		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
% bkgd Pb intake from soil		48.4	48.4	48.4	48.4	48.4	48.4	48.4	48.4
% bkgd Pb intake from diet		49.7	49.7	49.7	49.7	49.7	49.7	49.7	49.7
Sum of bkgd intakes (RZ2+3) ($\mu\text{g Pb/kg bw/d}$)		1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
% bkgd Pb intake from soil		31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9

	% bkgd Pb intake from diet	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5
	Sum of bkgd intakes (RZ4+5) (µg Pb/kg bw/d)	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
	% bkgd Pb intake from soil	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0
	% bkgd Pb intake from diet	78.0	78.0	78.0	78.0	78.0	78.0	78.0	78.0
	Total Intake (incremental + bkgd) (RZ1) (µg Pb/kg bw/d)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
	Total Intake (incremental + bkgd) (RZ2+3) (µg Pb/kg bw/d)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
	Total Intake (incremental + bkgd) (RZ4+5) (µg Pb/kg bw/d)	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
	Hazard Quotient (RZ1)	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58
	Hazard Quotient (RZ2+3)	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44
	Hazard Quotient (RZ4+5)	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37

Life Stage: Child (3-13 yrs) Scenario 2																	
		R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15	R16
Incremental Pb Intake from ingestion ($\mu\text{g Pb/kg bw/d}$) (I_{oral})		0.003	0.005	0.009	0.005	0.004	0.004	0.003	0.0132	0.006	0.003	0.002	0.002	0.001	0.002	0.000	0.0002
Incremental Dermal Pb Intake ($\mu\text{g Pb/kg bw/d}$) (I_{derm_s})		0.000005	0.000009	0.00002	0.000009	0.000007	0.000008	0.000005	0.00002	0.00001	0.000006	0.000004	0.000003	0.000002	0.000003	0.000001	0.000000
Incremental Pb Intake from Inhalation ($\mu\text{g Pb/kg bw/d}$) (I_{inhal})		0.0007	0.0004	0.0004	0.0003	0.0002	0.0003	0.0002	0.001	0.0005	0.0004	0.0001	0.0001	0.0001	0.0002	0.00008	0.0001
Sum of Incremental Intakes ($\mu\text{g Pb/kg bw/d}$)		0.004	0.005	0.01	0.005	0.004	0.005	0.003	0.01	0.006	0.004	0.002	0.002	0.001	0.002	0.0005	0.0003
Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ1)		0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42
Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ2+3)		0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21
Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ4+5)		0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Background Pb intake from water ($\mu\text{g Pb/kg bw/d}$)		0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Backgnd Pb intake from diet ($\mu\text{g Pb/kg bw/d}$)		0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Bckgnd Inhalation Pb Intake (Pb in PM_{10}) ($\mu\text{g Pb/kg bw/d}$)		0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Sum of bkgd intakes (RZ1) ($\mu\text{g Pb/kg bw/d}$)		1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
% bkgd Pb intake from soil		31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1
% bkgd Pb intake from diet		67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0
Sum of bkgd intakes (RZ2+3) ($\mu\text{g Pb/kg bw/d}$)		1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1

% bkgd Pb intake from soil	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4
% bkgd Pb intake from diet	79.4	79.4	79.4	79.4	79.4	79.4	79.4	79.4	79.4	79.4	79.4	79.4	79.4	79.4	79.4	79.4	79.4
Sum of bkgd intakes (RZ4+5) (µg Pb/kg bw/d)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
% bkgd Pb intake from soil	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1
% bkgd Pb intake from diet	87.4	87.4	87.4	87.4	87.4	87.4	87.4	87.4	87.4	87.4	87.4	87.4	87.4	87.4	87.4	87.4	87.4
Total Intake (incremental + bkgd) (RZ1) (µg Pb/kg bw/d)	1.3	1.3	1.4	1.3	1.3	1.3	1.3	1.4	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
Total Intake (incremental + bkgd) (RZ2+3) (µg Pb/kg bw/d)	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
Total Intake (incremental + bkgd) (RZ4+5) (µg Pb/kg bw/d)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Hazard Quotient (RZ1)	0.38	0.39	0.39	0.39	0.38	0.38	0.38	0.39	0.39	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38
Hazard Quotient (RZ2+3)	0.32	0.33	0.33	0.33	0.33	0.33	0.32	0.33	0.33	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32
Hazard Quotient (RZ4+5)	0.30	0.30	0.30	0.30	0.30	0.30	0.29	0.30	0.30	0.30	0.29	0.29	0.29	0.29	0.29	0.29	0.29

Life Stage: Child (3-13 yrs)																			
Scenario 2																			
		R17	R18	R19	R20	R21	R22	R23	R24	R25	R26	R27	R28	R29	R30	R31	R32	R33	R34
	Incremental Pb Intake from ingestion ($\mu\text{g Pb/kg bw/d}$) (I_{oral})	0.001	0.0008	0.0002	0.0003	0.002	0.002	0.002	0.002	0.001	0.002	0.002	0.001	0.001	0.001	0.001	0.0008	0.0008	0.003
	Incremental Dermal Pb Intake ($\mu\text{g Pb/kg bw/d}$) (I_{derm_s})	0.000002	0.000001	0.0000003	0.000000	0.000005	0.000004	0.000003	0.000003	0.000003	0.000003	0.000003	0.000003	0.000002	0.000002	0.000002	0.000002	0.000001	0.000006
	Incremental Pb Intake from Inhalation ($\mu\text{g Pb/kg bw/d}$) (I_{inhal})	0.0002	0.00005	0.00006	0.00007	0.0009	0.0008	0.0006	0.0007	0.0005	0.0007	0.001	0.0009	0.001	0.0007	0.0005	0.0004	0.0006	0.0007
	Sum of Incremental Intakes ($\mu\text{g Pb/kg bw/d}$)	0.001	0.0008	0.0002	0.0003	0.003	0.003	0.002	0.002	0.002	0.002	0.003	0.002	0.002	0.002	0.001	0.001	0.001	0.004
	Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ1)	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42
	Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ2+3)	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21
	Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ4+5)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	Background Pb intake from water ($\mu\text{g Pb/kg bw/d}$)	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
	Backgnd Pb intake from diet ($\mu\text{g Pb/kg bw/d}$)	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
	Bckgnd Inhalation Pb Intake (Pb in PM_{10}) ($\mu\text{g Pb/kg bw/d}$)	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005

Sum of bkgd intakes (RZ1) (µg Pb/kg bw/d)	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
% bkgd Pb intake from soil	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1
% bkgd Pb intake from diet	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0
Sum of bkgd intakes (RZ2+3) (µg Pb/kg bw/d)	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
% bkgd Pb intake from soil	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4
% bkgd Pb intake from diet	79.4	79.4	79.4	79.4	79.4	79.4	79.4	79.4	79.4	79.4	79.4	79.4	79.4	79.4	79.4	79.4	79.4	79.4
Sum of bkgd intakes (RZ4+5) (µg Pb/kg bw/d)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
% bkgd Pb intake from soil	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1
% bkgd Pb intake from diet	87.4	87.4	87.4	87.4	87.4	87.4	87.4	87.4	87.4	87.4	87.4	87.4	87.4	87.4	87.4	87.4	87.4	87.4
Total Intake (incremental + bkgd) (RZ1) (µg Pb/kg bw/d)	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
Total Intake (incremental + bkgd) (RZ2+3) (µg Pb/kg bw/d)	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
Total Intake (incremental + bkgd) (RZ4+5) (µg Pb/kg bw/d)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Hazard Quotient (RZ1)	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38
Hazard Quotient (RZ2+3)	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.33
Hazard Quotient (RZ4+5)	0.29	0.29	0.29	0.29	0.30	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.30

Life Stage: Child (3-13 yrs) Scenario 2									
		R35	R36	R37	R38	R39	R40	R41	R42
Incremental Pb Intake from ingestion ($\mu\text{g Pb/kg bw/d}$) (I_{oral})		0.002	0.002	0.001	0.002	0.002	0.005	0.005	0.004
Incremental Dermal Pb Intake ($\mu\text{g Pb/kg bw/d}$) (I_{derm_s})		0.000004	0.000003	0.000003	0.000003	0.000003	0.00001	0.000009	0.000008
Incremental Pb Intake from Inhalation ($\mu\text{g Pb/kg bw/d}$) (I_{inhal})		0.0006	0.0005	0.0005	0.0001	0.0002	0.0006	0.0007	0.0008
Sum of Incremental Intakes ($\mu\text{g Pb/kg bw/d}$)		0.003	0.002	0.002	0.002	0.002	0.006	0.006	0.005
Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ1)		0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42
Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ2+3)		0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21
Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ4+5)		0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Background Pb intake from water ($\mu\text{g Pb/kg bw/d}$)		0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Backgnd Pb intake from diet ($\mu\text{g Pb/kg bw/d}$)		0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Bckgnd Inhalation Pb Intake (Pb in PM_{10}) ($\mu\text{g Pb/kg bw/d}$)		0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Sum of bkgd intakes (RZ1) ($\mu\text{g Pb/kg bw/d}$)		1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
% bkgd Pb intake from soil		31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1
% bkgd Pb intake from diet		67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0
Sum of bkgd intakes (RZ2+3) ($\mu\text{g Pb/kg bw/d}$)		1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1

	% bkgd Pb intake from soil	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4
	% bkgd Pb intake from diet	79.4	79.4	79.4	79.4	79.4	79.4	79.4	79.4
	Sum of bkgd intakes (RZ4+5) (µg Pb/kg bw/d)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	% bkgd Pb intake from soil	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1
	% bkgd Pb intake from diet	87.4	87.4	87.4	87.4	87.4	87.4	87.4	87.4
	Total Intake (incremental + bkgd) (RZ1) (µg Pb/kg bw/d)	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
	Total Intake (incremental + bkgd) (RZ2+3) (µg Pb/kg bw/d)	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
	Total Intake (incremental + bkgd) (RZ4+5) (µg Pb/kg bw/d)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	Hazard Quotient (RZ1)	0.38	0.38	0.38	0.38	0.38	0.39	0.39	0.39
	Hazard Quotient (RZ2+3)	0.32	0.32	0.32	0.32	0.32	0.33	0.33	0.33
	Hazard Quotient (RZ4+5)	0.29	0.29	0.29	0.29	0.29	0.30	0.30	0.30

Life Stage: Adolescent/ adult (13-18 yrs) Scenario 2																	
		R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15	R16
Incremental Pb Intake from ingestion ($\mu\text{g Pb/kg bw/d}$) (I_{oral})		0.0009	0.002	0.003	0.002	0.001	0.001	0.0008	0.004	0.002	0.001	0.0007	0.0005	0.0004	0.0005	0.0001	0.0001
Incremental Dermal Pb Intake ($\mu\text{g Pb/kg bw/d}$) (I_{derm_s})		0.000005	0.000008	0.00002	0.000009	0.000006	0.000007	0.000004	0.00002	0.00001	0.000005	0.000004	0.000003	0.000002	0.000003	0.000001	0.000000
Incremental Pb Intake from Inhalation ($\mu\text{g Pb/kg bw/d}$) (I_{inhal})		0.0006	0.0003	0.0003	0.0002	0.0002	0.0002	0.0001	0.0007	0.0004	0.0003	0.0001	0.00009	0.00008	0.0002	0.00006	0.00008
Sum of Incremental Intakes ($\mu\text{g Pb/kg bw/d}$)		0.001	0.002	0.003	0.002	0.001	0.002	0.0009	0.005	0.002	0.001	0.0008	0.0006	0.0005	0.0007	0.0002	0.0001
Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ1)		0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ2+3)		0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ4+5)		0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Background Pb intake from water ($\mu\text{g Pb/kg bw/d}$)		0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Backgnd Pb intake from diet ($\mu\text{g Pb/kg bw/d}$)		0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Bckgnd Inhalation Pb Intake (Pb in PM_{10}) ($\mu\text{g Pb/kg bw/d}$)		0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
Sum of bkgd intakes (RZ1) ($\mu\text{g Pb/kg bw/d}$)		0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
% bkgd Pb intake from soil		23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7
% bkgd Pb intake from diet		72.0	72.0	72.0	72.0	72.0	72.0	72.0	72.0	72.0	72.0	72.0	72.0	72.0	72.0	72.0	72.0
Sum of bkgd intakes (RZ2+3) ($\mu\text{g Pb/kg bw/d}$)		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5

% bkgd Pb intake from soil	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4
% bkgd Pb intake from diet	81.7	81.7	81.7	81.7	81.7	81.7	81.7	81.7	81.7	81.7	81.7	81.7	81.7	81.7	81.7	81.7
Sum of bkgd intakes (RZ4+5) (µg Pb/kg bw/d)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
% bkgd Pb intake from soil	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2
% bkgd Pb intake from diet	87.6	87.6	87.6	87.6	87.6	87.6	87.6	87.6	87.6	87.6	87.6	87.6	87.6	87.6	87.6	87.6
Total Intake (incremental + bkgd) (RZ1) (µg Pb/kg bw/d)	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56
Total Intake (incremental + bkgd) (RZ2+3) (µg Pb/kg bw/d)	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49
Total Intake (incremental + bkgd) (RZ4+5) (µg Pb/kg bw/d)	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46
Hazard Quotient (RZ1)	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16
Hazard Quotient (RZ2+3)	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14
Hazard Quotient (RZ4+5)	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13

Life Stage: Adolescent/ adult (13-18 yrs)																			
Scenario 2																			
		R17	R18	R19	R20	R21	R22	R23	R24	R25	R26	R27	R28	R29	R30	R31	R32	R33	R34
	Incremental Pb Intake from ingestion (µg Pb/kg bw/d) (I _{oral})	0.0003	0.0003	0.0001	0.0001	0.0008	0.0007	0.0006	0.0006	0.0005	0.0005	0.0005	0.0005	0.0004	0.0004	0.0003	0.0003	0.0002	0.001
	Incremental Dermal Pb Intake (µg Pb/kg bw/d)(I _{derm_s})	0.000002	0.000001	0.0000003	0.000000	0.000004	0.000004	0.000003	0.000003	0.000003	0.000003	0.000003	0.000002	0.000002	0.000002	0.000002	0.000001	0.000001	0.000005
	Incremental Pb Intake from Inhalation (µg Pb/kg bw/d) (I _{inhal})	0.0001	0.00004	0.00005	0.00005	0.0007	0.0006	0.0005	0.0005	0.0004	0.0005	0.0009	0.0007	0.0007	0.0005	0.0004	0.0003	0.0004	0.0006
	Sum of Incremental Intakes (µg Pb/kg bw/d)	0.0005	0.0003	0.0001	0.0001	0.001	0.001	0.001	0.001	0.0008	0.001	0.001	0.001	0.001	0.0009	0.0007	0.0006	0.0007	0.002
	Bkgd Pb intake from soil (µg Pb/kg bw/d) (RZ1)	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
	Bkgd Pb intake from soil (µg Pb/kg bw/d) (RZ2+3)	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
	Bkgd Pb intake from soil (µg Pb/kg bw/d) (RZ4+5)	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
	Background Pb intake from water (µg Pb/kg bw/d)	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
	Backgnd Pb intake from diet (µg Pb/kg bw/d)	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
	Bckgnd Inhalation Pb Intake (Pb in PM ₁₀) (µg Pb/kg bw/d)	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004

Sum of bkgd intakes (RZ1) (µg Pb/kg bw/d)	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
% bkgd Pb intake from soil	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7
% bkgd Pb intake from diet	72.0	72.0	72.0	72.0	72.0	72.0	72.0	72.0	72.0	72.0	72.0	72.0	72.0	72.0	72.0	72.0	72.0	72.0
Sum of bkgd intakes (RZ2+3) (µg Pb/kg bw/d)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
% bkgd Pb intake from soil	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4
% bkgd Pb intake from diet	81.7	81.7	81.7	81.7	81.7	81.7	81.7	81.7	81.7	81.7	81.7	81.7	81.7	81.7	81.7	81.7	81.7	81.7
Sum of bkgd intakes (RZ4+5) (µg Pb/kg bw/d)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
% bkgd Pb intake from soil	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2
% bkgd Pb intake from diet	87.6	87.6	87.6	87.6	87.6	87.6	87.6	87.6	87.6	87.6	87.6	87.6	87.6	87.6	87.6	87.6	87.6	87.6
Total Intake (incremental + bkgd) (RZ1) (µg Pb/kg bw/d)	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56
Total Intake (incremental + bkgd) (RZ2+3) (µg Pb/kg bw/d)	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49
Total Intake (incremental + bkgd) (RZ4+5) (µg Pb/kg bw/d)	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46
Hazard Quotient (RZ1)	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16
Hazard Quotient (RZ2+3)	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14
Hazard Quotient (RZ4+5)	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13

Life Stage: Adolescent/ adult (13-18 yrs) Scenario 2									
		R35	R36	R37	R38	R39	R40	R41	R42
Incremental Pb Intake from ingestion ($\mu\text{g Pb/kg bw/d}$) (I_{oral})		0.0007	0.0006	0.0005	0.0005	0.0006	0.002	0.002	0.001
Incremental Dermal Pb Intake ($\mu\text{g Pb/kg bw/d}$) (I_{derm_s})		0.000004	0.000003	0.000002	0.000003	0.000003	0.000009	0.000009	0.000007
Incremental Pb Intake from Inhalation ($\mu\text{g Pb/kg bw/d}$) (I_{inhal})		0.0005	0.0004	0.0003	0.00007	0.0001	0.0005	0.0005	0.0006
Sum of Incremental Intakes ($\mu\text{g Pb/kg bw/d}$)		0.001	0.001	0.0008	0.0006	0.0007	0.002	0.002	0.002
Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ1)		0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ2+3)		0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ4+5)		0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Background Pb intake from water ($\mu\text{g Pb/kg bw/d}$)		0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Backgnd Pb intake from diet ($\mu\text{g Pb/kg bw/d}$)		0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Bckgnd Inhalation Pb Intake (Pb in PM_{10}) ($\mu\text{g Pb/kg bw/d}$)		0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
Sum of bkgd intakes (RZ1) ($\mu\text{g Pb/kg bw/d}$)		0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
% bkgd Pb intake from soil		23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7
% bkgd Pb intake from diet		72.0	72.0	72.0	72.0	72.0	72.0	72.0	72.0
Sum of bkgd intakes (RZ2+3) ($\mu\text{g Pb/kg bw/d}$)		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5

	% bkgd Pb intake from soil	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4
	% bkgd Pb intake from diet	81.7	81.7	81.7	81.7	81.7	81.7	81.7	81.7
	Sum of bkgd intakes (RZ4+5) (µg Pb/kg bw/d)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
	% bkgd Pb intake from soil	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2
	% bkgd Pb intake from diet	87.6	87.6	87.6	87.6	87.6	87.6	87.6	87.6
	Total Intake (incremental + bkgd) (RZ1) (µg Pb/kg bw/d)	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56
	Total Intake (incremental + bkgd) (RZ2+3) (µg Pb/kg bw/d)	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49
	Total Intake (incremental + bkgd) (RZ4+5) (µg Pb/kg bw/d)	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46
	Hazard Quotient (RZ1)	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16
	Hazard Quotient (RZ2+3)	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14
	Hazard Quotient (RZ4+5)	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13

Life Stage: Adult (18-70 yrs) Scenario 2																	
		R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15	R16
Incremental Pb Intake from ingestion ($\mu\text{g Pb/kg bw/d}$) (I_{oral})		0.0007	0.001	0.002	0.001	0.0009	0.001	0.0006	0.003	0.001	0.0007	0.0005	0.0004	0.0003	0.0004	0.0001	0.0001
Incremental Dermal Pb Intake ($\mu\text{g Pb/kg bw/d}$) (I_{derm_s})		0.000005	0.000008	0.00001	0.000008	0.000006	0.000007	0.000004	0.00002	0.000009	0.000005	0.000004	0.000002	0.000002	0.000003	0.000001	0.000000
Incremental Pb Intake from Inhalation ($\mu\text{g Pb/kg bw/d}$) (I_{inhal})		0.0004	0.0002	0.0002	0.0002	0.0001	0.0002	0.0001	0.0006	0.0003	0.0002	0.00008	0.00007	0.00006	0.0001	0.00005	0.00006
Sum of Incremental Intakes ($\mu\text{g Pb/kg bw/d}$)		0.001	0.001	0.002	0.001	0.001	0.001	0.0007	0.004	0.002	0.001	0.0006	0.0004	0.0003	0.0005	0.0001	0.0001
Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ1)		0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ2+3)		0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ4+5)		0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Background Pb intake from water ($\mu\text{g Pb/kg bw/d}$)		0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Backgnd Pb intake from diet ($\mu\text{g Pb/kg bw/d}$)		0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Bckgnd Inhalation Pb Intake (Pb in PM_{10}) ($\mu\text{g Pb/kg bw/d}$)		0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003
Sum of bkgd intakes (RZ1) ($\mu\text{g Pb/kg bw/d}$)		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
% bkgd Pb intake from soil		19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1
% bkgd Pb intake from diet		78.4	78.4	78.4	78.4	78.4	78.4	78.4	78.4	78.4	78.4	78.4	78.4	78.4	78.4	78.4	78.4
Sum of bkgd intakes (RZ2+3) ($\mu\text{g Pb/kg bw/d}$)		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5

% bkgd Pb intake from soil	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5
% bkgd Pb intake from diet	86.6	86.6	86.6	86.6	86.6	86.6	86.6	86.6	86.6	86.6	86.6	86.6	86.6	86.6	86.6	86.6	86.6
Sum of bkgd intakes (RZ4+5) (µg Pb/kg bw/d)	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
% bkgd Pb intake from soil	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
% bkgd Pb intake from diet	91.4	91.4	91.4	91.4	91.4	91.4	91.4	91.4	91.4	91.4	91.4	91.4	91.4	91.4	91.4	91.4	91.4
Total Intake (incremental + bkgd) (RZ1) (µg Pb/kg bw/d)	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51
Total Intake (incremental + bkgd) (RZ2+3) (µg Pb/kg bw/d)	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.47	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46
Total Intake (incremental + bkgd) (RZ4+5) (µg Pb/kg bw/d)	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44
Hazard Quotient (RZ1)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Hazard Quotient (RZ2+3)	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
Hazard Quotient (RZ4+5)	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13

Life Stage: Adult (18-70 yrs)																			
Scenario 2																			
		R17	R18	R19	R20	R21	R22	R23	R24	R25	R26	R27	R28	R29	R30	R31	R32	R33	R34
	Incremental Pb Intake from ingestion (µg Pb/kg bw/d) (I _{oral})	0.0002	0.0002	0.0000	0.0001	0.0006	0.0005	0.0004	0.0004	0.0003	0.0004	0.0004	0.0003	0.0003	0.0003	0.0002	0.0002	0.0002	0.0007
	Incremental Dermal Pb Intake (µg Pb/kg bw/d)(I _{derm_s})	0.000002	0.000001	0.0000003	0.000000	0.000004	0.000003	0.000003	0.000003	0.000002	0.000003	0.000002	0.000002	0.000002	0.000002	0.000002	0.000001	0.000001	0.000005
	Incremental Pb Intake from Inhalation (µg Pb/kg bw/d) (I _{inhal})	0.0001	0.00003	0.00004	0.00004	0.0005	0.0005	0.0004	0.0004	0.0003	0.0004	0.0007	0.0006	0.0006	0.0004	0.0003	0.0002	0.0003	0.0005
	Sum of Incremental Intakes (µg Pb/kg bw/d)	0.0004	0.0002	0.00008	0.0001	0.001	0.001	0.0008	0.0008	0.0006	0.0008	0.001	0.0009	0.0009	0.0007	0.0005	0.0004	0.0005	0.001
	Bkgd Pb intake from soil (µg Pb/kg bw/d) (RZ1)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	Bkgd Pb intake from soil (µg Pb/kg bw/d) (RZ2+3)	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
	Bkgd Pb intake from soil (µg Pb/kg bw/d) (RZ4+5)	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
	Background Pb intake from water (µg Pb/kg bw/d)	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	Backgnd Pb intake from diet (µg Pb/kg bw/d)	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
	Bckgnd Inhalation Pb Intake (Pb in PM ₁₀) (µg Pb/kg bw/d)	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003

Sum of bkgd intakes (RZ1) (µg Pb/kg bw/d)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
% bkgd Pb intake from soil	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1
% bkgd Pb intake from diet	78.4	78.4	78.4	78.4	78.4	78.4	78.4	78.4	78.4	78.4	78.4	78.4	78.4	78.4	78.4	78.4	78.4	78.4
Sum of bkgd intakes (RZ2+3) (µg Pb/kg bw/d)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
% bkgd Pb intake from soil	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5
% bkgd Pb intake from diet	86.6	86.6	86.6	86.6	86.6	86.6	86.6	86.6	86.6	86.6	86.6	86.6	86.6	86.6	86.6	86.6	86.6	86.6
Sum of bkgd intakes (RZ4+5) (µg Pb/kg bw/d)	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
% bkgd Pb intake from soil	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
% bkgd Pb intake from diet	91.4	91.4	91.4	91.4	91.4	91.4	91.4	91.4	91.4	91.4	91.4	91.4	91.4	91.4	91.4	91.4	91.4	91.4
Total Intake (incremental + bkgd) (RZ1) (µg Pb/kg bw/d)	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51
Total Intake (incremental + bkgd) (RZ2+3) (µg Pb/kg bw/d)	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46
Total Intake (incremental + bkgd) (RZ4+5) (µg Pb/kg bw/d)	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44
Hazard Quotient (RZ1)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Hazard Quotient (RZ2+3)	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
Hazard Quotient (RZ4+5)	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13

Life Stage: Adult (18-70 yrs)									
		R35	R36	R37	R38	R39	R40	R41	R42
	Incremental Pb Intake from ingestion ($\mu\text{g Pb/kg bw/d}$) (I_{oral})	0.0006	0.0004	0.0003	0.0004	0.0004	0.001	0.001	0.001
	Incremental Dermal Pb Intake ($\mu\text{g Pb/kg bw/d}$) (I_{derm_s})	0.000004	0.000003	0.000002	0.000003	0.000003	0.000008	0.000008	0.000007
	Incremental Pb Intake from Inhalation ($\mu\text{g Pb/kg bw/d}$) (I_{inhal})	0.0004	0.0003	0.0003	0.00006	0.0001	0.0004	0.0004	0.0005
	Sum of Incremental Intakes ($\mu\text{g Pb/kg bw/d}$)	0.0009	0.0007	0.0006	0.0004	0.0005	0.002	0.002	0.002
	Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ1)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ2+3)	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
	Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ4+5)	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
	Background Pb intake from water ($\mu\text{g Pb/kg bw/d}$)	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	Backgnd Pb intake from diet ($\mu\text{g Pb/kg bw/d}$)	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
	Bckgnd Inhalation Pb Intake (Pb in PM_{10}) ($\mu\text{g Pb/kg bw/d}$)	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003
	Sum of bkgd intakes (RZ1) ($\mu\text{g Pb/kg bw/d}$)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
	% bkgd Pb intake from soil	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1
	% bkgd Pb intake from diet	78.4	78.4	78.4	78.4	78.4	78.4	78.4	78.4
	Sum of bkgd intakes (RZ2+3) ($\mu\text{g Pb/kg bw/d}$)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5

	% bkgd Pb intake from soil	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5
	% bkgd Pb intake from diet	86.6	86.6	86.6	86.6	86.6	86.6	86.6	86.6
	Sum of bkgd intakes (RZ4+5) (µg Pb/kg bw/d)	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
	% bkgd Pb intake from soil	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
	% bkgd Pb intake from diet	91.4	91.4	91.4	91.4	91.4	91.4	91.4	91.4
	Total Intake (incremental + bkgd) (RZ1) (µg Pb/kg bw/d)	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51
	Total Intake (incremental + bkgd) (RZ2+3) (µg Pb/kg bw/d)	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46
	Total Intake (incremental + bkgd) (RZ4+5) (µg Pb/kg bw/d)	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44
	Hazard Quotient (RZ1)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
	Hazard Quotient (RZ2+3)	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
	Hazard Quotient (RZ4+5)	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13

Scenario 2	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15	R16	R17	R18	R19	R20	R21
Lifetime TWA intake ($I_{lifetime}$) RZ1	0.68	0.68	0.69	0.68	0.68	0.68	0.68	0.69	0.69	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68
Lifetime TWA intake ($I_{lifetime}$) RZ2+3	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.59	0.59	0.60	0.59	0.59	0.59	0.60
Lifetime TWA intake ($I_{lifetime}$) RZ4+5	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.56	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55
HQ RZ1	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
HQ RZ2+3	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
HQ RZ4+5	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16

Scenario 2	R22	R23	R24	R25	R26	R27	R28	R29	R30	R31	R32	R33	R34	R35	R36	R37	R38	R39	R40	R41	R42
Lifetime TWA intake ($I_{lifetime}$) RZ1	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.69	0.69	0.68
Lifetime TWA intake ($I_{lifetime}$) RZ2+3	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
Lifetime TWA intake ($I_{lifetime}$) RZ4+5	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55
HQ RZ1	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
HQ RZ2+3	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
HQ RZ4+5	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16

A4.2.4 Scenario 3

Chemical-specific inputs (Scenario 3)																
Parameter	Abbreviation	Unit	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14
Incremental soil Pb concentration for 15 years of mine life (assuming no loss)	C _s	µg/g	165.5	140.2	225.0	124.0	92.9	112.0	68.2	552.4	198.7	112.3	61.6	26.1	16.5	35.7
Background soil Pb concentration in 'Risk Zone 1'	C _{s_bkgdRZ1}	µg/g	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Background soil Pb concentration in 'Risk Zone 2+3'	C _{s_bkgdRZ2+3}	µg/g	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Background soil Pb concentration in 'Risk Zone 4+5'	C _{s_bkgdRZ4+5}	µg/g	500	500	500	500	500	500	500	500	500	500	500	500	500	500
Incremental concentration of Pb in PM ₁₀	C _A	µg/m ³	0.03	0.03	0.04	0.03	0.03	0.04	0.02	0.1	0.05	0.02	0.02	0.01	0.009	0.01
Background concentration of Pb in PM ₁₀	C _{A_bkgd}	µg/m ³	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Tolerable daily intake	TDI	ug/kg/day	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Bioaccessibility of incremental Pb deposited in soil	BAC _{soil}	Unitless	0.07	0.06	0.05	0.05	0.05	0.05	0.05	0.05	0.06	0.06	0.05	0.04	0.04	0.05
Bioaccessibility of incremental Pb in PM ₁₀	BAC _{air}	Unitless	0.07	0.06	0.05	0.05	0.05	0.05	0.04	0.05	0.05	0.06	0.05	0.05	0.05	0.06
Bioaccessibility of Pb in background soil and PM ₁₀	BAC _{soil} , BAC _{air}	Unitless	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073
Absolute bioavailability of ingested metal	ABA _{oral}	Unitless	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Absolute bioavailability of metal via dermal absorption	ABA _{dermal}	Unitless	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Absolute bioavailability of metal via inhalation	ABA _{inhal}	Unitless	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Chemical-specific inputs (Scenario 3)																		
Parameter	Abbreviation	Unit	R15	R16	R17	R18	R19	R20	R21	R22	R23	R24	R25	R26	R27	R28	R29	R30
Incremental soil Pb concentration for 15 years of mine life (assuming no loss)	C _s	µg/g	4.3	2.6	14.6	12.8	1.9	3.0	205.1	183.4	135.0	133.7	89.8	136.3	182.4	117.8	149.6	106.0
Background soil Pb concentration in 'Risk Zone 1'	C _{s_bkgdRZ1}	µg/g	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Background soil Pb concentration in 'Risk Zone 2+3'	C _{s_bkgdRZ2+3}	µg/g	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Background soil Pb concentration in 'Risk Zone 4+5'	C _{s_bkgdRZ4+5}	µg/g	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500
Incremental concentration of Pb in PM ₁₀	C _A	µg/m ³	0.005	0.005	0.01	0.007	0.004	0.004	0.03	0.03	0.02	0.02	0.02	0.02	0.04	0.03	0.03	0.02
Background concentration of Pb in PM ₁₀	C _{A_bkgd}	µg/m ³	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Tolerable daily intake	TDI	ug/kg/day	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Bioaccessibility of incremental Pb deposited in soil	BAC _{soil}	Unitless	0.03	0.03	0.05	0.04	0.03	0.03	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
Bioaccessibility of incremental Pb in PM ₁₀	BAC _{air}	Unitless	0.06	0.06	0.06	0.05	0.06	0.06	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
Bioaccessibility of Pb in background soil and PM ₁₀	BAC _{soil} , BAC _{air}	Unitless	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073
Absolute bioavailability of ingested metal	ABA _{oral}	Unitless	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Absolute bioavailability of metal via dermal absorption	ABA _{dermal}	Unitless	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Absolute bioavailability of metal via inhalation	ABA _{inhal}	Unitless	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Chemical-specific inputs (Scenario 3)														
Parameter	Abbreviation	Unit	R31	R32	R33	R34	R35	R36	R37	R38	R39	R40	R41	R42
Incremental soil Pb concentration for 15 years of mine life (assuming no loss)	C _s	µg/g	102.5	75.9	99.3	146.4	125.6	105.7	97.1	34.6	45.9	166.3	167.7	180.3
Background soil Pb concentration in 'Risk Zone 1'	C _{s_bkgdRZ1}	µg/g	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Background soil Pb concentration in 'Risk Zone 2+3'	C _{s_bkgdRZ2+3}	µg/g	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Background soil Pb concentration in 'Risk Zone 4+5'	C _{s_bkgdRZ4+5}	µg/g	500	500	500	500	500	500	500	500	500	500	500	500
Incremental concentration of Pb in PM ₁₀	C _A	µg/m ³	0.02	0.02	0.02	0.03	0.03	0.02	0.02	0.02	0.02	0.04	0.04	0.04
Background concentration of Pb in PM ₁₀	C _{A_bkgd}	µg/m ³	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Tolerable daily intake	TDI	ug/kg/day	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Bioaccessibility of incremental Pb deposited in soil	BAC _{soil}	Unitless	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.05	0.05	0.06	0.06	0.07
Bioaccessibility of incremental Pb in PM ₁₀	BAC _{air}	Unitless	0.07	0.07	0.07	0.07	0.06	0.06	0.06	0.04	0.04	0.06	0.06	0.06
Bioaccessibility of Pb in background soil and PM ₁₀	BAC _{soil} , BAC _{air}	Unitless	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073
Absolute bioavailability of ingested metal	ABA _{oral}	Unitless	1	1	1	1	1	1	1	1	1	1	1	1
Absolute bioavailability of metal via dermal absorption	ABA _{dermal}	Unitless	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Absolute bioavailability of metal via inhalation	ABA _{inhal}	Unitless	1	1	1	1	1	1	1	1	1	1	1	1

Life Stage: Infant/Toddler (0.5-3 yrs) Scenario 3																	
		R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15	R16
Incremental Pb Intake from ingestion (µg Pb/kg bw/d) (I _{oral})		0.07	0.05	0.08	0.04	0.03	0.04	0.02	0.2	0.07	0.05	0.02	0.007	0.004	0.01	0.001	0.001
Incremental Dermal Pb Intake (µg Pb/kg bw/d)(I _{derm_s})		0.00009	0.00006	0.00009	0.00005	0.00004	0.00005	0.00003	0.0002	0.00008	0.00005	0.00003	0.000009	0.000005	0.00001	0.000001	0.000001
Incremental Pb Intake from Inhalation (µg Pb/kg bw/d) (I _{inhal})		0.002	0.001	0.0009	0.0006	0.0004	0.0007	0.0005	0.004	0.002	0.001	0.0003	0.0003	0.0002	0.0005	0.0002	0.0002
Sum of Incremental Intakes (µg Pb/kg bw/d)		0.08	0.05	0.08	0.04	0.03	0.04	0.02	0.2	0.07	0.05	0.02	0.008	0.004	0.01	0.001	0.0008
Bkgd Pb intake from soil (µg Pb/kg bw/d) (RZ1)		0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Bkgd Pb intake from soil (µg Pb/kg bw/d) (RZ2+3)		0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49
Bkgd Pb intake from soil (µg Pb/kg bw/d) (RZ4+5)		0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24
Background Pb intake from water (µg Pb/kg bw/d)		0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Backgnd Pb intake from diet (µg Pb/kg bw/d)		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Bckgnd Inhalation Pb Intake (Pb in PM ₁₀) (µg Pb/kg bw/d)		0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009
Sum of bkgd intakes (RZ1) (µg Pb/kg bw/d)		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
% bkgd Pb intake from soil		48.4	48.4	48.4	48.4	48.4	48.4	48.4	48.4	48.4	48.4	48.4	48.4	48.4	48.4	48.4	48.4
% bkgd Pb intake from diet		49.7	49.7	49.7	49.7	49.7	49.7	49.7	49.7	49.7	49.7	49.7	49.7	49.7	49.7	49.7	49.7
Sum of bkgd intakes (RZ2+3) (µg Pb/kg bw/d)		1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
% bkgd Pb intake from soil		31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9

% bkgd Pb intake from diet	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5
Sum of bkgd intakes (RZ4+5) (µg Pb/kg bw/d)	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
% bkgd Pb intake from soil	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0
% bkgd Pb intake from diet	78.0	78.0	78.0	78.0	78.0	78.0	78.0	78.0	78.0	78.0	78.0	78.0	78.0	78.0	78.0	78.0
Total Intake (incremental + bkgd) (RZ1) (µg Pb/kg bw/d)	2.1	2.1	2.1	2.1	2.0	2.1	2.0	2.2	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0
Total Intake (incremental + bkgd) (RZ2+3) (µg Pb/kg bw/d)	1.6	1.6	1.6	1.6	1.6	1.6	1.5	1.7	1.6	1.6	1.5	1.5	1.5	1.5	1.5	1.5
Total Intake (incremental + bkgd) (RZ4+5) (µg Pb/kg bw/d)	1.4	1.3	1.4	1.3	1.3	1.3	1.3	1.5	1.4	1.3	1.3	1.3	1.3	1.3	1.3	1.3
Hazard Quotient (RZ1)	0.60	0.59	0.60	0.59	0.58	0.59	0.58	0.63	0.60	0.59	0.58	0.58	0.58	0.58	0.58	0.58
Hazard Quotient (RZ2+3)	0.46	0.45	0.46	0.45	0.45	0.45	0.44	0.49	0.46	0.45	0.44	0.44	0.44	0.44	0.44	0.44
Hazard Quotient (RZ4+5)	0.39	0.38	0.39	0.38	0.38	0.38	0.37	0.42	0.39	0.38	0.37	0.37	0.37	0.37	0.37	0.37

Life Stage: Infant/Toddler (0.5-3 yrs) Scenario 3																			
		R17	R18	R19	R20	R21	R22	R23	R24	R25	R26	R27	R28	R29	R30	R31	R32	R33	R34
	Incremental Pb Intake from ingestion (µg Pb/kg bw/d) (I _{oral})	0.004	0.004	0.000	0.001	0.1	0.09	0.06	0.06	0.04	0.06	0.09	0.06	0.07	0.05	0.05	0.04	0.05	0.07
	Incremental Dermal Pb Intake (µg Pb/kg bw/d)(I _{derm_s})	0.000005	0.000004	0.000000	0.000001	0.0001	0.0001	0.00007	0.00007	0.00005	0.00007	0.0001	0.00006	0.00008	0.00006	0.00006	0.00004	0.00006	0.00008
	Incremental Pb Intake from Inhalation (µg Pb/kg bw/d) (I _{inhal})	0.0005	0.0001	0.0002	0.0002	0.002	0.002	0.001	0.001	0.001	0.001	0.003	0.002	0.002	0.001	0.001	0.0009	0.001	0.002
	Sum of Incremental Intakes (µg Pb/kg bw/d)	0.005	0.004	0.0006	0.0008	0.1	0.09	0.06	0.06	0.04	0.07	0.09	0.06	0.07	0.05	0.05	0.04	0.05	0.07
	Bkgd Pb intake from soil (µg Pb/kg bw/d) (RZ1)	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
	Bkgd Pb intake from soil (µg Pb/kg bw/d) (RZ2+3)	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49
	Bkgd Pb intake from soil (µg Pb/kg bw/d) (RZ4+5)	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24
	Background Pb intake from water (µg Pb/kg bw/d)	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
	Backgnd Pb intake from diet (µg Pb/kg bw/d)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Bckgnd Inhalation Pb Intake (Pb in PM ₁₀) (µg Pb/kg bw/d)	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009
	Sum of bkgd intakes (RZ1) (µg Pb/kg bw/d)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
	% bkgd Pb intake from soil	48.4	48.4	48.4	48.4	48.4	48.4	48.4	48.4	48.4	48.4	48.4	48.4	48.4	48.4	48.4	48.4	48.4	48.4
	% bkgd Pb intake from diet	49.7	49.7	49.7	49.7	49.7	49.7	49.7	49.7	49.7	49.7	49.7	49.7	49.7	49.7	49.7	49.7	49.7	49.7
	Sum of bkgd intakes (RZ2+3) (µg Pb/kg bw/d)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
	% bkgd Pb intake from soil	31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9

% bkgd Pb intake from diet	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5
Sum of bkgd intakes (RZ4+5) (µg Pb/kg bw/d)	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
% bkgd Pb intake from soil	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0
% bkgd Pb intake from diet	78.0	78.0	78.0	78.0	78.0	78.0	78.0	78.0	78.0	78.0	78.0	78.0	78.0	78.0	78.0	78.0	78.0	78.0
Total Intake (incremental + bkgd) (RZ1) (µg Pb/kg bw/d)	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.1	2.1
Total Intake (incremental + bkgd) (RZ2+3) (µg Pb/kg bw/d)	1.5	1.5	1.5	1.5	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
Total Intake (incremental + bkgd) (RZ4+5) (µg Pb/kg bw/d)	1.3	1.3	1.3	1.3	1.4	1.4	1.3	1.3	1.3	1.3	1.4	1.3	1.4	1.3	1.3	1.3	1.3	1.4
Hazard Quotient (RZ1)	0.58	0.58	0.58	0.58	0.60	0.60	0.59	0.59	0.59	0.59	0.60	0.59	0.60	0.59	0.59	0.59	0.59	0.59
Hazard Quotient (RZ2+3)	0.44	0.44	0.44	0.44	0.46	0.46	0.45	0.45	0.45	0.45	0.46	0.45	0.46	0.45	0.45	0.45	0.45	0.46
Hazard Quotient (RZ4+5)	0.37	0.37	0.37	0.37	0.39	0.39	0.38	0.38	0.38	0.39	0.39	0.38	0.39	0.38	0.38	0.38	0.38	0.39

Life Stage: Infant/Toddler (0.5-3 yrs) Scenario 3									
		R35	R36	R37	R38	R39	R40	R41	R42
Incremental Pb Intake from ingestion (µg Pb/kg bw/d) (I _{oral})		0.06	0.05	0.04	0.01	0.01	0.07	0.07	0.08
Incremental Dermal Pb Intake (µg Pb/kg bw/d)(I _{derm_s})		0.00007	0.00006	0.00005	0.00001	0.00002	0.00008	0.00008	0.00009
Incremental Pb Intake from Inhalation (µg Pb/kg bw/d) (I _{inhal})		0.002	0.001	0.0011	0.0003	0.0005	0.002	0.002	0.002
Sum of Incremental Intakes (µg Pb/kg bw/d)		0.06	0.05	0.05	0.01	0.02	0.07	0.07	0.08
Bkgd Pb intake from soil (µg Pb/kg bw/d) (RZ1)		0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Bkgd Pb intake from soil (µg Pb/kg bw/d) (RZ2+3)		0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49
Bkgd Pb intake from soil (µg Pb/kg bw/d) (RZ4+5)		0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24
Background Pb intake from water (µg Pb/kg bw/d)		0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Backgnd Pb intake from diet (µg Pb/kg bw/d)		1	1	1	1	1	1	1	1
Bckgnd Inhalation Pb Intake (Pb in PM ₁₀) (µg Pb/kg bw/d)		0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009
Sum of bkgd intakes (RZ1) (µg Pb/kg bw/d)		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
% bkgd Pb intake from soil		48.4	48.4	48.4	48.4	48.4	48.4	48.4	48.4
% bkgd Pb intake from diet		49.7	49.7	49.7	49.7	49.7	49.7	49.7	49.7
Sum of bkgd intakes (RZ2+3) (µg Pb/kg bw/d)		1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
% bkgd Pb intake from soil		31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9

	% bkgd Pb intake from diet	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5
	Sum of bkgd intakes (RZ4+5) (µg Pb/kg bw/d)	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
	% bkgd Pb intake from soil	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0
	% bkgd Pb intake from diet	78.0	78.0	78.0	78.0	78.0	78.0	78.0	78.0
	Total Intake (incremental + bkgd) (RZ1) (µg Pb/kg bw/d)	2.1	2.1	2.1	2.0	2.0	2.1	2.1	2.1
	Total Intake (incremental + bkgd) (RZ2+3) (µg Pb/kg bw/d)	1.6	1.6	1.6	1.5	1.5	1.6	1.6	1.6
	Total Intake (incremental + bkgd) (RZ4+5) (µg Pb/kg bw/d)	1.3	1.3	1.3	1.3	1.3	1.4	1.4	1.4
	Hazard Quotient (RZ1)	0.59	0.59	0.59	0.58	0.58	0.59	0.60	0.60
	Hazard Quotient (RZ2+3)	0.45	0.45	0.45	0.44	0.44	0.46	0.46	0.46
	Hazard Quotient (RZ4+5)	0.38	0.38	0.38	0.37	0.37	0.39	0.39	0.39

Life Stage: Child (3-13 yrs) Scenario 3																	
		R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15	R16
Incremental Pb Intake from ingestion (µg Pb/kg bw/d) (I _{oral})		0.03	0.02	0.03	0.02	0.01	0.02	0.009	0.08	0.03	0.02	0.009	0.003	0.002	0.005	0.000	0.0002
Incremental Dermal Pb Intake (µg Pb/kg bw/d)(I _{derm_s})		0.00006	0.00004	0.00006	0.00003	0.00003	0.00003	0.00002	0.0001	0.00006	0.00004	0.00002	0.000006	0.000003	0.00001	0.000001	0.000000
Incremental Pb Intake from Inhalation (µg Pb/kg bw/d) (I _{inhal})		0.001	0.0005	0.0005	0.0003	0.0002	0.0004	0.0003	0.002	0.0008	0.0006	0.0002	0.0002	0.0001	0.0003	0.0001	0.0001
Sum of Incremental Intakes (µg Pb/kg bw/d)		0.03	0.02	0.03	0.02	0.01	0.02	0.01	0.08	0.03	0.02	0.009	0.003	0.002	0.006	0.0005	0.0004
Bkgd Pb intake from soil (µg Pb/kg bw/d) (RZ1)		0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42
Bkgd Pb intake from soil (µg Pb/kg bw/d) (RZ2+3)		0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21
Bkgd Pb intake from soil (µg Pb/kg bw/d) (RZ4+5)		0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Background Pb intake from water (µg Pb/kg bw/d)		0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Backgnd Pb intake from diet (µg Pb/kg bw/d)		0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Bckgnd Inhalation Pb Intake (Pb in PM ₁₀) (µg Pb/kg bw/d)		0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Sum of bkgd intakes (RZ1) (µg Pb/kg bw/d)		1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
% bkgd Pb intake from soil		31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1
% bkgd Pb intake from diet		67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0
Sum of bkgd intakes (RZ2+3) (µg Pb/kg bw/d)		1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1

% bkgd Pb intake from soil	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4
% bkgd Pb intake from diet	79.4	79.4	79.4	79.4	79.4	79.4	79.4	79.4	79.4	79.4	79.4	79.4	79.4	79.4	79.4	79.4	79.4
Sum of bkgd intakes (RZ4+5) (µg Pb/kg bw/d)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
% bkgd Pb intake from soil	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1
% bkgd Pb intake from diet	87.4	87.4	87.4	87.4	87.4	87.4	87.4	87.4	87.4	87.4	87.4	87.4	87.4	87.4	87.4	87.4	87.4
Total Intake (incremental + bkgd) (RZ1) (µg Pb/kg bw/d)	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.3	1.3	1.3	1.3	1.3
Total Intake (incremental + bkgd) (RZ2+3) (µg Pb/kg bw/d)	1.2	1.2	1.2	1.2	1.1	1.2	1.1	1.2	1.2	1.2	1.2	1.1	1.1	1.1	1.1	1.1	1.1
Total Intake (incremental + bkgd) (RZ4+5) (µg Pb/kg bw/d)	1.1	1.1	1.1	1.0	1.0	1.0	1.0	1.1	1.1	1.1	1.1	1.0	1.0	1.0	1.0	1.0	1.0
Hazard Quotient (RZ1)	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.41	0.39	0.39	0.39	0.39	0.38	0.38	0.39	0.38	0.38
Hazard Quotient (RZ2+3)	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.35	0.33	0.33	0.33	0.33	0.32	0.32	0.33	0.32	0.32
Hazard Quotient (RZ4+5)	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.32	0.30	0.30	0.30	0.30	0.30	0.29	0.30	0.29	0.29

Life Stage: Child (3-13 yrs) Scenario 3																			
		R17	R18	R19	R20	R21	R22	R23	R24	R25	R26	R27	R28	R29	R30	R31	R32	R33	R34
	Incremental Pb Intake from ingestion ($\mu\text{g Pb/kg bw/d}$) (I_{oral})	0.002	0.002	0.0002	0.0003	0.04	0.04	0.03	0.03	0.02	0.03	0.04	0.02	0.03	0.02	0.02	0.02	0.02	0.03
	Incremental Dermal Pb Intake ($\mu\text{g Pb/kg bw/d}$) (I_{derm_s})	0.000003	0.000003	0.0000003	0.000000	0.000007	0.000007	0.000005	0.000005	0.000003	0.000005	0.000007	0.000004	0.000006	0.000004	0.000004	0.000003	0.000004	0.000005
	Incremental Pb Intake from Inhalation ($\mu\text{g Pb/kg bw/d}$) (I_{inhal})	0.0003	0.00006	0.00009	0.0001	0.001	0.001	0.0007	0.0007	0.0006	0.0008	0.001	0.001	0.001	0.0008	0.0006	0.0005	0.0007	0.001
	Sum of Incremental Intakes ($\mu\text{g Pb/kg bw/d}$)	0.002	0.002	0.0003	0.0004	0.04	0.04	0.03	0.03	0.02	0.03	0.04	0.03	0.03	0.02	0.02	0.02	0.02	0.03
	Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ1)	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42
	Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ2+3)	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21
	Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ4+5)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	Background Pb intake from water ($\mu\text{g Pb/kg bw/d}$)	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
	Backgnd Pb intake from diet ($\mu\text{g Pb/kg bw/d}$)	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
	Bckgnd Inhalation Pb Intake (Pb in PM_{10}) ($\mu\text{g Pb/kg bw/d}$)	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
	Sum of bkgd intakes (RZ1) ($\mu\text{g Pb/kg bw/d}$)	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
	% bkgd Pb intake from soil	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1
	% bkgd Pb intake from diet	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0
	Sum of bkgd intakes (RZ2+3) ($\mu\text{g Pb/kg bw/d}$)	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1

% bkgd Pb intake from soil	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4
% bkgd Pb intake from diet	79.4	79.4	79.4	79.4	79.4	79.4	79.4	79.4	79.4	79.4	79.4	79.4	79.4	79.4	79.4	79.4	79.4	79.4
Sum of bkgd intakes (RZ4+5) (µg Pb/kg bw/d)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
% bkgd Pb intake from soil	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1
% bkgd Pb intake from diet	87.4	87.4	87.4	87.4	87.4	87.4	87.4	87.4	87.4	87.4	87.4	87.4	87.4	87.4	87.4	87.4	87.4	87.4
Total Intake (incremental + bkgd) (RZ1) (µg Pb/kg bw/d)	1.3	1.3	1.3	1.3	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
Total Intake (incremental + bkgd) (RZ2+3) (µg Pb/kg bw/d)	1.1	1.1	1.1	1.1	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.1	1.2	1.2
Total Intake (incremental + bkgd) (RZ4+5) (µg Pb/kg bw/d)	1.0	1.0	1.0	1.0	1.1	1.1	1.1	1.1	1.0	1.1	1.1	1.1	1.1	1.1	1.1	1.0	1.1	1.1
Hazard Quotient (RZ1)	0.38	0.38	0.38	0.38	0.40	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39
Hazard Quotient (RZ2+3)	0.32	0.32	0.32	0.32	0.34	0.33	0.33	0.33	0.33	0.33	0.34	0.33	0.33	0.33	0.33	0.33	0.33	0.33
Hazard Quotient (RZ4+5)	0.29	0.29	0.29	0.29	0.31	0.30	0.30	0.30	0.30	0.30	0.31	0.30	0.30	0.30	0.30	0.30	0.30	0.30

Life Stage: Child (3-13 yrs) Scenario 3									
		R35	R36	R37	R38	R39	R40	R41	R42
Incremental Pb Intake from ingestion ($\mu\text{g Pb/kg bw/d}$) (I_{oral})		0.02	0.02	0.02	0.005	0.006	0.03	0.03	0.03
Incremental Dermal Pb Intake ($\mu\text{g Pb/kg bw/d}$) (I_{derm_s})		0.00004	0.00004	0.00004	0.000009	0.00001	0.00005	0.00006	0.00006
Incremental Pb Intake from Inhalation ($\mu\text{g Pb/kg bw/d}$) (I_{inhal})		0.0008	0.0007	0.0006	0.0001	0.0003	0.0009	0.001	0.001
Sum of Incremental Intakes ($\mu\text{g Pb/kg bw/d}$)		0.03	0.02	0.02	0.005	0.007	0.03	0.03	0.04
Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ1)		0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42
Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ2+3)		0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21
Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ4+5)		0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Background Pb intake from water ($\mu\text{g Pb/kg bw/d}$)		0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Backgnd Pb intake from diet ($\mu\text{g Pb/kg bw/d}$)		0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Bckgnd Inhalation Pb Intake (Pb in PM_{10}) ($\mu\text{g Pb/kg bw/d}$)		0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Sum of bkgd intakes (RZ1) ($\mu\text{g Pb/kg bw/d}$)		1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
% bkgd Pb intake from soil		31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1
% bkgd Pb intake from diet		67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0
Sum of bkgd intakes (RZ2+3) ($\mu\text{g Pb/kg bw/d}$)		1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
% bkgd Pb intake from soil		18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4
% bkgd Pb intake from diet		79.4	79.4	79.4	79.4	79.4	79.4	79.4	79.4
Sum of bkgd intakes (RZ4+5) ($\mu\text{g Pb/kg bw/d}$)		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
% bkgd Pb intake from soil		10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1
% bkgd Pb intake from diet		87.4	87.4	87.4	87.4	87.4	87.4	87.4	87.4
Total Intake (incremental + bkgd) (RZ1) ($\mu\text{g Pb/kg bw/d}$)		1.4	1.4	1.4	1.3	1.3	1.4	1.4	1.4

	Total Intake (incremental + bkgd) (RZ2+3) (µg Pb/kg bw/d)	1.2	1.2	1.2	1.1	1.1	1.2	1.2	1.2
	Total Intake (incremental + bkgd) (RZ4+5) (µg Pb/kg bw/d)	1.1	1.1	1.0	1.0	1.0	1.1	1.1	1.1
	Hazard Quotient (RZ1)	0.39	0.39	0.39	0.38	0.39	0.39	0.39	0.39
	Hazard Quotient (RZ2+3)	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33
	Hazard Quotient (RZ4+5)	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30

Life Stage: Adolescent/ adult (13-18 yrs) Scenario 3																	
		R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15	R16
Incremental Pb Intake from ingestion ($\mu\text{g Pb/kg bw/d}$) (I_{oral})		0.01	0.007	0.01	0.006	0.004	0.005	0.003	0.03	0.01	0.006	0.003	0.001	0.0005	0.002	0.0001	0.0001
Incremental Dermal Pb Intake ($\mu\text{g Pb/kg bw/d}$) (I_{derm_s})		0.00005	0.00004	0.00006	0.00003	0.00002	0.00003	0.00002	0.0001	0.00005	0.00003	0.00002	0.000005	0.000003	0.000009	0.000001	0.000000
Incremental Pb Intake from Inhalation ($\mu\text{g Pb/kg bw/d}$) (I_{inhal})		0.0007	0.0004	0.0004	0.0003	0.0002	0.0003	0.0002	0.002	0.0006	0.0004	0.0001	0.0001	0.0001	0.0002	0.00009	0.0001
Sum of Incremental Intakes ($\mu\text{g Pb/kg bw/d}$)		0.01	0.008	0.01	0.006	0.005	0.006	0.003	0.03	0.01	0.007	0.003	0.001	0.0006	0.002	0.0002	0.0002
Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ1)		0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ2+3)		0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ4+5)		0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Background Pb intake from water ($\mu\text{g Pb/kg bw/d}$)		0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Backgnd Pb intake from diet ($\mu\text{g Pb/kg bw/d}$)		0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Bckgnd Inhalation Pb Intake (Pb in PM_{10}) ($\mu\text{g Pb/kg bw/d}$)		0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
Sum of bkgd intakes (RZ1) ($\mu\text{g Pb/kg bw/d}$)		0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
% bkgd Pb intake from soil		23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7
% bkgd Pb intake from diet		72.0	72.0	72.0	72.0	72.0	72.0	72.0	72.0	72.0	72.0	72.0	72.0	72.0	72.0	72.0	72.0
Sum of bkgd intakes (RZ2+3) ($\mu\text{g Pb/kg bw/d}$)		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5

% bkgd Pb intake from soil	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4
% bkgd Pb intake from diet	81.7	81.7	81.7	81.7	81.7	81.7	81.7	81.7	81.7	81.7	81.7	81.7	81.7	81.7	81.7	81.7
Sum of bkgd intakes (RZ4+5) (µg Pb/kg bw/d)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
% bkgd Pb intake from soil	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2
% bkgd Pb intake from diet	87.6	87.6	87.6	87.6	87.6	87.6	87.6	87.6	87.6	87.6	87.6	87.6	87.6	87.6	87.6	87.6
Total Intake (incremental + bkgd) (RZ1) (µg Pb/kg bw/d)	0.57	0.56	0.57	0.56	0.56	0.56	0.56	0.58	0.57	0.56	0.56	0.56	0.56	0.56	0.56	0.56
Total Intake (incremental + bkgd) (RZ2+3) (µg Pb/kg bw/d)	0.50	0.50	0.50	0.50	0.49	0.50	0.49	0.52	0.50	0.50	0.49	0.49	0.49	0.49	0.49	0.49
Total Intake (incremental + bkgd) (RZ4+5) (µg Pb/kg bw/d)	0.47	0.46	0.47	0.46	0.46	0.46	0.46	0.48	0.47	0.46	0.46	0.46	0.46	0.46	0.46	0.46
Hazard Quotient (RZ1)	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.17	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16
Hazard Quotient (RZ2+3)	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.15	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14
Hazard Quotient (RZ4+5)	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.14	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13

Life Stage: Adolescent/ adult (13-18 yrs) Scenario 3																			
		R17	R18	R19	R20	R21	R22	R23	R24	R25	R26	R27	R28	R29	R30	R31	R32	R33	R34
Incremental Pb Intake from ingestion ($\mu\text{g Pb/kg bw/d}$) (I_{oral})		0.0006	0.0005	0.0001	0.0001	0.01	0.01	0.008	0.008	0.006	0.009	0.01	0.008	0.01	0.007	0.007	0.005	0.006	0.009
Incremental Dermal Pb Intake ($\mu\text{g Pb/kg bw/d}$) (I_{derm_s})		0.000003	0.000003	0.0000003	0.000000	0.000007	0.000006	0.000005	0.000005	0.000003	0.000005	0.000006	0.000004	0.000005	0.000004	0.000004	0.000003	0.000003	0.000005
Incremental Pb Intake from Inhalation ($\mu\text{g Pb/kg bw/d}$) (I_{inhal})		0.0002	0.00005	0.00007	0.00008	0.0009	0.0008	0.0006	0.0006	0.0005	0.0006	0.001	0.0008	0.0009	0.0006	0.0005	0.0004	0.0005	0.0008
Sum of Incremental Intakes ($\mu\text{g Pb/kg bw/d}$)		0.0008	0.0006	0.0001	0.0002	0.01	0.01	0.009	0.009	0.006	0.009	0.01	0.008	0.01	0.007	0.007	0.005	0.007	0.01
Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ1)		0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ2+3)		0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ4+5)		0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Background Pb intake from water ($\mu\text{g Pb/kg bw/d}$)		0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Backgnd Pb intake from diet ($\mu\text{g Pb/kg bw/d}$)		0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Bckgnd Inhalation Pb Intake (Pb in PM_{10}) ($\mu\text{g Pb/kg bw/d}$)		0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
Sum of bkgd intakes (RZ1) ($\mu\text{g Pb/kg bw/d}$)		0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
% bkgd Pb intake from soil		23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7
% bkgd Pb intake from diet		72.0	72.0	72.0	72.0	72.0	72.0	72.0	72.0	72.0	72.0	72.0	72.0	72.0	72.0	72.0	72.0	72.0	72.0
Sum of bkgd intakes (RZ2+3) ($\mu\text{g Pb/kg bw/d}$)		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5

% bkgd Pb intake from soil	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4
% bkgd Pb intake from diet	81.7	81.7	81.7	81.7	81.7	81.7	81.7	81.7	81.7	81.7	81.7	81.7	81.7	81.7	81.7	81.7	81.7	81.7
Sum of bkgd intakes (RZ4+5) (µg Pb/kg bw/d)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
% bkgd Pb intake from soil	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2
% bkgd Pb intake from diet	87.6	87.6	87.6	87.6	87.6	87.6	87.6	87.6	87.6	87.6	87.6	87.6	87.6	87.6	87.6	87.6	87.6	87.6
Total Intake (incremental + bkgd) (RZ1) (µg Pb/kg bw/d)	0.56	0.56	0.56	0.56	0.57	0.57	0.56	0.56	0.56	0.56	0.57	0.56	0.57	0.56	0.56	0.56	0.56	0.57
Total Intake (incremental + bkgd) (RZ2+3) (µg Pb/kg bw/d)	0.49	0.49	0.49	0.49	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.49	0.50	0.50
Total Intake (incremental + bkgd) (RZ4+5) (µg Pb/kg bw/d)	0.46	0.46	0.46	0.46	0.47	0.47	0.47	0.47	0.46	0.47	0.47	0.47	0.47	0.46	0.46	0.46	0.46	0.47
Hazard Quotient (RZ1)	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16
Hazard Quotient (RZ2+3)	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14
Hazard Quotient (RZ4+5)	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13

Life Stage: Adolescent/ adult (13-18 yrs) Scenario 3									
		R35	R36	R37	R38	R39	R40	R41	R42
Incremental Pb Intake from ingestion ($\mu\text{g Pb/kg bw/d}$) (I_{oral})		0.008	0.007	0.006	0.001	0.002	0.009	0.01	0.01
Incremental Dermal Pb Intake ($\mu\text{g Pb/kg bw/d}$) (I_{derm_s})		0.00004	0.00004	0.00003	0.000008	0.00001	0.00005	0.00005	0.00006
Incremental Pb Intake from Inhalation ($\mu\text{g Pb/kg bw/d}$) (I_{inhal})		0.0007	0.0005	0.0005	0.0001	0.0002	0.0007	0.0008	0.0008
Sum of Incremental Intakes ($\mu\text{g Pb/kg bw/d}$)		0.008	0.007	0.007	0.002	0.002	0.01	0.01	0.01
Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ1)		0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ2+3)		0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ4+5)		0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Background Pb intake from water ($\mu\text{g Pb/kg bw/d}$)		0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Backgnd Pb intake from diet ($\mu\text{g Pb/kg bw/d}$)		0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Bckgnd Inhalation Pb Intake (Pb in PM_{10}) ($\mu\text{g Pb/kg bw/d}$)		0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
Sum of bkgd intakes (RZ1) ($\mu\text{g Pb/kg bw/d}$)		0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
% bkgd Pb intake from soil		23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7
% bkgd Pb intake from diet		72.0	72.0	72.0	72.0	72.0	72.0	72.0	72.0
Sum of bkgd intakes (RZ2+3) ($\mu\text{g Pb/kg bw/d}$)		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5

	% bkgd Pb intake from soil	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4
	% bkgd Pb intake from diet	81.7	81.7	81.7	81.7	81.7	81.7	81.7	81.7
	Sum of bkgd intakes (RZ4+5) (µg Pb/kg bw/d)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
	% bkgd Pb intake from soil	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2
	% bkgd Pb intake from diet	87.6	87.6	87.6	87.6	87.6	87.6	87.6	87.6
	Total Intake (incremental + bkgd) (RZ1) (µg Pb/kg bw/d)	0.56	0.56	0.56	0.56	0.56	0.57	0.57	0.57
	Total Intake (incremental + bkgd) (RZ2+3) (µg Pb/kg bw/d)	0.50	0.50	0.50	0.49	0.49	0.50	0.50	0.50
	Total Intake (incremental + bkgd) (RZ4+5) (µg Pb/kg bw/d)	0.47	0.46	0.46	0.46	0.46	0.47	0.47	0.47
	Hazard Quotient (RZ1)	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16
	Hazard Quotient (RZ2+3)	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14
	Hazard Quotient (RZ4+5)	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13

Life Stage: Adult (18-70 yrs) Scenario 3																	
		R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15	R16
Incremental Pb Intake from ingestion ($\mu\text{g Pb/kg bw/d}$) (I_{oral})		0.007	0.005	0.008	0.004	0.003	0.004	0.002	0.02	0.007	0.005	0.002	0.0007	0.0004	0.001	0.0001	0.0001
Incremental Dermal Pb Intake ($\mu\text{g Pb/kg bw/d}$) (I_{derm_s})		0.00005	0.00004	0.00005	0.00003	0.00002	0.00003	0.00001	0.0001	0.00005	0.00003	0.00001	0.000005	0.000003	0.000009	0.000001	0.000000
Incremental Pb Intake from Inhalation ($\mu\text{g Pb/kg bw/d}$) (I_{inhal})		0.0006	0.0003	0.0003	0.0002	0.0001	0.0002	0.0002	0.001	0.0005	0.0004	0.0001	0.00009	0.00008	0.0002	0.00007	0.00008
Sum of Incremental Intakes ($\mu\text{g Pb/kg bw/d}$)		0.008	0.006	0.008	0.005	0.003	0.004	0.002	0.02	0.008	0.005	0.002	0.0008	0.0005	0.001	0.0002	0.0001
Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ1)		0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ2+3)		0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ4+5)		0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Background Pb intake from water ($\mu\text{g Pb/kg bw/d}$)		0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Backgnd Pb intake from diet ($\mu\text{g Pb/kg bw/d}$)		0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Bckgnd Inhalation Pb Intake (Pb in PM_{10}) ($\mu\text{g Pb/kg bw/d}$)		0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003
Sum of bkgd intakes (RZ1) ($\mu\text{g Pb/kg bw/d}$)		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
% bkgd Pb intake from soil		19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1
% bkgd Pb intake from diet		78.4	78.4	78.4	78.4	78.4	78.4	78.4	78.4	78.4	78.4	78.4	78.4	78.4	78.4	78.4	78.4
Sum of bkgd intakes (RZ2+3) ($\mu\text{g Pb/kg bw/d}$)		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5

% bkgd Pb intake from soil	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5
% bkgd Pb intake from diet	86.6	86.6	86.6	86.6	86.6	86.6	86.6	86.6	86.6	86.6	86.6	86.6	86.6	86.6	86.6	86.6	86.6
Sum of bkgd intakes (RZ4+5) (µg Pb/kg bw/d)	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
% bkgd Pb intake from soil	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
% bkgd Pb intake from diet	91.4	91.4	91.4	91.4	91.4	91.4	91.4	91.4	91.4	91.4	91.4	91.4	91.4	91.4	91.4	91.4	91.4
Total Intake (incremental + bkgd) (RZ1) (µg Pb/kg bw/d)	0.52	0.52	0.52	0.51	0.51	0.51	0.51	0.53	0.52	0.52	0.51	0.51	0.51	0.51	0.51	0.51	0.51
Total Intake (incremental + bkgd) (RZ2+3) (µg Pb/kg bw/d)	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.46	0.48	0.47	0.47	0.46	0.46	0.46	0.46	0.46	0.46
Total Intake (incremental + bkgd) (RZ4+5) (µg Pb/kg bw/d)	0.45	0.44	0.45	0.44	0.44	0.44	0.44	0.46	0.45	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44
Hazard Quotient (RZ1)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Hazard Quotient (RZ2+3)	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.14	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
Hazard Quotient (RZ4+5)	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13

Life Stage: Adult (18-70 yrs)																			
		R17	R18	R19	R20	R21	R22	R23	R24	R25	R26	R27	R28	R29	R30	R31	R32	R33	R34
	Incremental Pb Intake from ingestion ($\mu\text{g Pb/kg bw/d}$) (I_{oral})	0.0004	0.0004	0.0000	0.0001	0.01	0.009	0.006	0.006	0.004	0.006	0.009	0.006	0.007	0.005	0.005	0.004	0.005	0.007
	Incremental Dermal Pb Intake ($\mu\text{g Pb/kg bw/d}$) (I_{derm_s})	0.000003	0.000002	0.0000003	0.000000	0.000006	0.000006	0.000004	0.000004	0.000003	0.000004	0.000006	0.000004	0.000005	0.000003	0.000003	0.000002	0.000003	0.000004
	Incremental Pb Intake from Inhalation ($\mu\text{g Pb/kg bw/d}$) (I_{inhal})	0.0002	0.00004	0.00005	0.00006	0.0007	0.0006	0.0004	0.0004	0.0004	0.0005	0.0008	0.0006	0.0007	0.0005	0.0004	0.0003	0.0004	0.0006
	Sum of Incremental Intakes ($\mu\text{g Pb/kg bw/d}$)	0.0006	0.0004	0.00009	0.0001	0.01	0.009	0.007	0.007	0.004	0.007	0.01	0.006	0.008	0.006	0.005	0.004	0.005	0.007
	Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ1)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ2+3)	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
	Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ4+5)	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
	Background Pb intake from water ($\mu\text{g Pb/kg bw/d}$)	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	Backgnd Pb intake from diet ($\mu\text{g Pb/kg bw/d}$)	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
	Bckgnd Inhalation Pb Intake (Pb in PM_{10}) ($\mu\text{g Pb/kg bw/d}$)	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003
	Sum of bkgd intakes (RZ1) ($\mu\text{g Pb/kg bw/d}$)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
	% bkgd Pb intake from soil	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1
	% bkgd Pb intake from diet	78.4	78.4	78.4	78.4	78.4	78.4	78.4	78.4	78.4	78.4	78.4	78.4	78.4	78.4	78.4	78.4	78.4	78.4
	Sum of bkgd intakes (RZ2+3) ($\mu\text{g Pb/kg bw/d}$)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5

% bkgd Pb intake from soil	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5
% bkgd Pb intake from diet	86.6	86.6	86.6	86.6	86.6	86.6	86.6	86.6	86.6	86.6	86.6	86.6	86.6	86.6	86.6	86.6	86.6	86.6
Sum of bkgd intakes (RZ4+5) (µg Pb/kg bw/d)	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
% bkgd Pb intake from soil	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
% bkgd Pb intake from diet	91.4	91.4	91.4	91.4	91.4	91.4	91.4	91.4	91.4	91.4	91.4	91.4	91.4	91.4	91.4	91.4	91.4	91.4
Total Intake (incremental + bkgd) (RZ1) (µg Pb/kg bw/d)	0.51	0.51	0.51	0.51	0.52	0.52	0.52	0.52	0.51	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.51	0.52
Total Intake (incremental + bkgd) (RZ2+3) (µg Pb/kg bw/d)	0.46	0.46	0.46	0.46	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47
Total Intake (incremental + bkgd) (RZ4+5) (µg Pb/kg bw/d)	0.44	0.44	0.44	0.44	0.45	0.45	0.44	0.44	0.44	0.44	0.45	0.44	0.45	0.44	0.44	0.44	0.44	0.44
Hazard Quotient (RZ1)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Hazard Quotient (RZ2+3)	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
Hazard Quotient (RZ4+5)	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13

Life Stage: Adult (18-70 yrs) Scenario 3									
		R35	R36	R37	R38	R39	R40	R41	R42
	Incremental Pb Intake from ingestion ($\mu\text{g Pb/kg bw/d}$) (I_{oral})	0.006	0.005	0.004	0.001	0.001	0.007	0.007	0.008
	Incremental Dermal Pb Intake ($\mu\text{g Pb/kg bw/d}$) (I_{derm_s})	0.00004	0.00003	0.00003	0.000007	0.00001	0.00005	0.00005	0.00005
	Incremental Pb Intake from Inhalation ($\mu\text{g Pb/kg bw/d}$) (I_{inhal})	0.0005	0.0004	0.0004	0.00009	0.0002	0.0006	0.0006	0.0006
	Sum of Incremental Intakes ($\mu\text{g Pb/kg bw/d}$)	0.006	0.005	0.005	0.001	0.002	0.007	0.008	0.009
	Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ1)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ2+3)	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
	Bkgd Pb intake from soil ($\mu\text{g Pb/kg bw/d}$) (RZ4+5)	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
	Background Pb intake from water ($\mu\text{g Pb/kg bw/d}$)	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	Backgnd Pb intake from diet ($\mu\text{g Pb/kg bw/d}$)	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
	Bckgnd Inhalation Pb Intake (Pb in PM_{10}) ($\mu\text{g Pb/kg bw/d}$)	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003
	Sum of bkgd intakes (RZ1) ($\mu\text{g Pb/kg bw/d}$)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
	% bkgd Pb intake from soil	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1
	% bkgd Pb intake from diet	78.4	78.4	78.4	78.4	78.4	78.4	78.4	78.4
	Sum of bkgd intakes (RZ2+3) ($\mu\text{g Pb/kg bw/d}$)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5

	% bkgd Pb intake from soil	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5
	% bkgd Pb intake from diet	86.6	86.6	86.6	86.6	86.6	86.6	86.6	86.6
	Sum of bkgd intakes (RZ4+5) (µg Pb/kg bw/d)	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
	% bkgd Pb intake from soil	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
	% bkgd Pb intake from diet	91.4	91.4	91.4	91.4	91.4	91.4	91.4	91.4
	Total Intake (incremental + bkgd) (RZ1) (µg Pb/kg bw/d)	0.52	0.52	0.52	0.51	0.51	0.52	0.52	0.52
	Total Intake (incremental + bkgd) (RZ2+3) (µg Pb/kg bw/d)	0.47	0.47	0.47	0.46	0.46	0.47	0.47	0.47
	Total Intake (incremental + bkgd) (RZ4+5) (µg Pb/kg bw/d)	0.44	0.44	0.44	0.44	0.44	0.44	0.45	0.45
	Hazard Quotient (RZ1)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
	Hazard Quotient (RZ2+3)	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
	Hazard Quotient (RZ4+5)	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13

Scenario 3	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15	R16	R17	R18	R19	R20	R21
Lifetime TWA intake ($I_{lifetime}$) RZ1	0.70	0.69	0.70	0.69	0.69	0.69	0.69	0.72	0.70	0.69	0.69	0.68	0.68	0.69	0.68	0.68	0.68	0.68	0.68	0.68	0.70
Lifetime TWA intake ($I_{lifetime}$) RZ2+3	0.61	0.60	0.61	0.60	0.60	0.60	0.60	0.63	0.61	0.60	0.60	0.60	0.60	0.60	0.59	0.59	0.60	0.60	0.59	0.59	0.61
Lifetime TWA intake ($I_{lifetime}$) RZ4+5	0.56	0.56	0.56	0.56	0.56	0.56	0.55	0.59	0.56	0.56	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.57
HQ RZ1	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.21	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
HQ RZ2+3	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.18	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.18
HQ RZ4+5	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.17	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16

Scenario 3	R22	R23	R24	R25	R26	R27	R28	R29	R30	R31	R32	R33	R34	R35	R36	R37	R38	R39	R40	R41	R42
Lifetime TWA intake ($I_{lifetime}$) RZ1	0.70	0.69	0.69	0.69	0.69	0.70	0.69	0.70	0.69	0.69	0.69	0.69	0.70	0.69	0.69	0.69	0.68	0.69	0.70	0.70	0.70
Lifetime TWA intake ($I_{lifetime}$) RZ2+3	0.61	0.61	0.61	0.60	0.61	0.61	0.61	0.61	0.60	0.60	0.60	0.60	0.61	0.61	0.60	0.60	0.60	0.60	0.61	0.61	0.61
Lifetime TWA intake ($I_{lifetime}$) RZ4+5	0.57	0.56	0.56	0.56	0.56	0.57	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.55	0.55	0.56	0.56	0.57
HQ RZ1	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
HQ RZ2+3	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
HQ RZ4+5	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16

A4.2.5 Incremental Lifetime Hazard Indices (sum of incremental hazard quotients for all metals evaluated) for S1b, S2, and S3 at selected receptors

Scenario	Selected Receptor																
	R1	R2	R3	R4	R5	R8	R9	R10	R11	R12	R14	R17	R18	R23	R32	R36	R38
S1b	0.008	0.005	0.006	0.004	0.003	0.02	0.008	0.005	0.002	0.0008	0.002	0.001	0.0004	0.007	0.004	0.005	0.001
S2	0.006	0.004	0.005	0.003	0.002	0.02	0.006	0.004	0.002	0.0009	0.001	0.001	0.0004	0.005	0.003	0.004	0.001
S3	0.008	0.005	0.007	0.004	0.003	0.02	0.008	0.005	0.002	0.001	0.002	0.001	0.0005	0.007	0.004	0.006	0.001

A4.2.6 Incremental hazard quotients for metals other than Pb

Hazard quotients for individual incremental intakes ($\mu\text{g/kg/d}$) of metals other than lead for a child (3-<13 years) when compared to TDI at Receptor 8.

Metal	Scenario		
	S1b	S2	S3
As	0.002	0.002	0.002
Ag	0.00001	0.000009	0.00001
Ba	0.0002	0.0002	0.0002
Be	0.002	0.002	0.002
Cd	0.003	0.003	0.003
Cr	0.003	0.001	0.003
Cu	0.0004	0.0001	0.0005
Fe	0.002	0.001	0.003
Hg	0.002	0.002	0.002
Mn	0.004	0.00005	0.004
Ni	0.0007	0.0003	0.0007
Sb	0.001	0.0007	0.001
Zn	0.0008	0.002	0.002
Incremental Hazard Index			0.02

Hazard quotients for individual incremental intakes ($\mu\text{g/kg/d}$) of metals other than lead for an adolescent (13-<18 years) when compared to TDI at Receptor 8.

Metal	Scenario		
	S1b	S2	S3
As	0.001	0.001	0.001
Ag	0.000007	0.000006	0.000007
Ba	0.0001	0.0001	0.0001
Be	0.001	0.001	0.001
Cd	0.002	0.002	0.002
Cr	0.001	0.0008	0.002
Cu	0.0001	0.00005	0.0002
Fe	0.0007	0.0003	0.0009
Hg	0.001	0.001	0.001
Mn	0.001	0.00003	0.001
Ni	0.0003	0.0002	0.0003
Sb	0.0006	0.0005	0.0007
Zn	0.0002	0.0005	0.0008
Incremental Hazard Index			0.01

Hazard quotients for individual incremental intakes ($\mu\text{g/kg/d}$) of metals other than lead for an adult (18-<70 years) when compared to TDI at Receptor 8.

Metal	Scenario		
	S1b	S2	S3
As	0.001	0.001	0.001
Ag	0.000005	0.000005	0.000006
Ba	0.00009	0.00009	0.00009
Be	0.0009	0.0009	0.0009
Cd	0.002	0.002	0.002
Cr	0.001	0.0006	0.001
Cu	0.0001	0.00004	0.0001
Fe	0.0005	0.0002	0.0007
Hg	0.001	0.0009	0.001
Mn	0.0008	0.00002	0.0009
Ni	0.0002	0.0002	0.0003
Sb	0.0005	0.0004	0.0005
Zn	0.0002	0.0004	0.0006
Incremental Hazard Index			0.009

Appendix 5. Model parameters and equations

Table A5.1: Summary of exposure equations and parameters used in the IEUBK model (1994b, 2007a, 2009d)

Parameter Symbol ^a	Value ^b	Units	Description/Reference
Air Pb – Figure A5.1			
EXAIR (t) ^c	Calculated	µg/day	Air Pb intake. Calculated by multiplying the average air Pb concentration and ventilation rate (Eq. A1)
indoor%	30	%	Ratio of indoor airborne Pb concentration to corresponding outdoor concentration. Default value based on homes near Pb point sources (US EPA 1989a). (Eq. A1b)
outairconcentration(t)	Concentration varies with receptor (See A6)	µg/m ³	Annual average outdoor air Pb concentration. Derived for all receptors from annual average Pb concentration in PM ₁₀ (ENVIRON 2010). (Eq. A1a-A1b)
IndoorConc(t)	Calculated	µg/m ³	Indoor air Pb concentration. (Eq. A1a-A1b)
timeout(t)	0-1 yr	0.5	Time spent outdoors. Brinkman et al. (1999) conducted a longitudinal behaviour observation study for activity patterns in Port Pirie, South Australia, and estimated time spent indoors, outdoors and away from home for children aged 7-31 months during child's 'waking hours' (14 hours, 7:30 am-9:30pm). (Eq. A1a)
	1-2 yr	1.4	
	2-3 yr	2	
	3-4 yr	2	
	4-5 yr	2	
	5-6 yr	2	
	6-7 yr	2	
ventrate(t)	0-1 yr	5.4 ^d	Ventilation rate. These estimates are the recommended default inhalation rates for children from the US EPA Child Exposure Factors Handbook (US EPA 2008, Table 16-1). (Eq. A1)
	1-2 yr	8	
	2-3 yr	9.5	
	3-4 yr	10.9	
	4-5 yr	10.9	
	5-6 yr	10.9	
	6-7 yr	12.4	
TWA(t)	Calculated	µg/m ³	Time weighted average Pb concentration. This is calculated through a combination of outdoor and indoor air Pb concentrations and the number of hours spent outdoors. (Eq. A1)
0.01	Conversion Factor	Unitless	Conversion factor from percentage. (Eq. A1b)
Dietary Pb – Figure A5.2			

INDIET(t) ^c	Calculated or default	µg/day	Diet Pb intake. Two options: values provided in “diet_intake(t)” parameter or calculated by combining Pb intake from several individual components of the diet. ^e (Eq. D1)	
dietintake(t)	0	µg/day	User-specified diet lead intake. Dietary intake was set to zero, as background dietary intake was not considered in incremental exposure to mine.	
Drinking Water Pb – Figure A5.3				
INWATER(t) ^c	Calculated	µg/day	Water Pb intake at age range. Two options: 1) water intake derived by multiplying water consumed daily and a constant water Pb concentration OR 2) alternate option, where water Pb concentration depends on contribution from several individual sources of water, but is still multiplied by daily water consumption. Due to lack of site-specific data for BH, option 1 was applied. (Eq. W1)	
Waterconsump(t)	0-1 yr	0.47	L/day	Daily amount of water consumed by age range. Values are average consumption values of community water (includes tap water from a community or municipal water supply) by age group sourced from US EPA (2008, Tables 3-14). (Eq. W1).
	1-2 yr	0.31		
	2-3 yr	0.36		
	3-4 yr	0.42		
	4-5 yr	0.42		
	5-6 yr	0.42		
	6-7 yr	0.48		
meanwaterconc	0	µg/L	Mean water Pb concentration in Broken Hill. Background Pb intake from drinking water was set to zero.	
Soil Pb (outdoor) – Figure A5.4				
INSOIL(t) ^c	Calculated	µg/day	Soil Pb intake by age range. This is calculated by multiplying the total amount of soil and dust ingested daily by the fraction of this combined ingestion that is soil alone, and the Pb concentration in soil. (Eq. S1)	
Soilconc(t)	Concentration varies with receptor and scenario. (See A3)	µg/g	Calculated from deposition rate data from ENVIRON (2010), and assuming a soil density of 1.5 g/cm ³ and a soil depth (into which outdoor dust will be deposited) of 2 cm (Section 2.3).	
Soil+dustingested(t)	0-1 yr	0.06	g/day	These are the central tendency combined outdoor soil and indoor dust ingestion by age range. These
	1-2 yr	0.1		

	2-3 yr	0.1		values are the values as recommended for risk assessment by the US EPA (2008, Table 5-1) for non-soil-pica and non-geophagy behaviour. (Eq. S1)
	3-4 yr	0.1		
	4-5 yr	0.1		
	5-6 yr	0.1		
	6-7 yr	0.1		
%soilingestion	45		%	Percentage of total soil and dust ingestion that is soil. This value is derived from the IEUBK guidance manual (US EPA 1994a,b). Within this document, it is said to be based on a best judgement of the properly weighted ratio. This is in line with US EPA exposure factor handbook recommendations for soil and dust ingestion (US EPA 2008, pg. 5-5) by children, where central tendency soil ingestion values for 1 to <21 year old children are 45% (50 mg/day) of total soil and dust ingestion (110 mg/day rounded down to 100 mg/day) (Eq. S1)
Dust Pb (indoor) – Figure A5.5				
INDUST(t) ^c	Calculated		µg/day	Household dust Pb intake by age range. There are two options for the calculation of this parameter: 1) The default option assumes that all dust Pb exposure is from the household OR 2) The alternate option considers dust Pb exposure from several alternative sources as well. Due to the lack of site-specific information, alternate sources of Pb in dust were not considered. (Eq. Du1)
indoordustconc	Concentration varies with receptor.		µg/g	Indoor dust Pb concentration. Because measurement data for indoor dust Pb was not available, the concentration of Pb in indoor dust was calculated using a Broken Hill specific ratio of outdoor soil to indoor dust (1:1.5) (Section 5.3.4).
soil+dustingested(t)	0-1 yr	0.06	g/day	These are the central tendency combined outdoor soil and indoor dust ingestion by age range. These values are the values as recommended for risk assessment by the US EPA (2008, Table 5-1) for
	1-2 yr	0.1		
	2-3 yr	0.1		
	3-4 yr	0.1		

	4-5 yr	0.1		non-soil-pica and non-geophagy behaviour. They have been applied to the modelling in the absence of site-specific data. (Eq. Du1a)
	5-6 yr	0.1		
	6-7 yr	0.1		
%soilingestion	45		%	Percentage of total soil and indoor dust ingestion that is outdoor soil. Studies investigating the percentage of indoor dust originating from outdoor sources report a wide range, 20-98%, however most data appear to tend towards an average of about 50%. (Eq. Du1a)
0.01	Conversion Factor		Unitless	Conversion factor from percentage. (Eq. Du1a)
DustTotal(t)	Calculated		g/day	Daily amount of dust ingested by age range. This is calculated by multiplying the total amount of combined soil and dust ingestion daily by the fraction of this combined ingestion that is dust alone. (Eq. Du1)
soildust_ratio	1.5		g soil/ g dust	Ratio of indoor dust Pb concentration to soil Pb concentration. The value comes from analysis of matching garden soil and house vacuum cleaner dust data for homes in Broken Hill, which indicate the majority of Pb derives from an orebody source reported in Gulson et al. (1995). The ratio of the averages and the average ratios of bulk and fine fraction soil:dust suggest a factor of 1.5 is appropriate (Eq. Du1b)
HouseFraction	Calculated normally but assumed to be 1 for this site.		unitless	Fraction of dust exposure that is from residential dust. This is calculated based on the assumption that the sum of all residential dust fractions cannot exceed 1. Because no site-specific information for alternate contribution of Pb to indoor dust could be located for Broken Hill, the alternate sources (from school, occupation, and secondary home) were set to zero, assuming that all Pb in indoor dust is coming from the home. (Eq. Du1)

^a Time-dependent parameters are followed by "(t)" and may have a different value for each iteration period.

^b Highlighted values are default parameters applied in the model that are modifiable.

^c These bolded parameters are used as inputs for the uptake component of the IEUBK model. They are used in conjunction with bioavailability values to calculate the uptake of Pb from different sources;

results of the uptake component are in turn used in the biokinetic component of the model. Refer to Table B for uptake parameters and Figure 1.6 for uptake equations.

^d This value corresponds to the parameter for children aged 6-<12 months (US EPA 2008).

^e Site-specific data for alternate dietary intake (such as from home grown fruits and vegetables, as well as game meat) were not located hence equation D1 was used to calculate dietary intake of Pb. It is assumed home grown vegetables consumed by Broken Hill residents are a number percentage of the overall amount of vegetables eaten. For example, in the ABS survey of 1994 (ABS 1994), 5.6% of the total vegetables produced in Australia were home-grown. Furthermore, since only a small amount of Pb in soil from the Rasp mine is bioaccessible (1.4-7.3%), it is taken that Pb intake from consumption of vegetable matter in Broken Hill is negligible relative to intake from direct ingestion of soil.

Table A5.2: Summary of uptake equations and parameters used in the IEUBK model (1994b, 2007a, 2009d)

Parameter Symbol ^a	Value ^b	Units	Description/Reference
Uptake Equations – Figure A5.6			
UPTAKE(t) ^b	Calculated	µg/mo	Total Pb uptake by age group. This is calculated by adding up all the media-specific daily uptake rates, and translating these to a monthly rate.
30	Conversion Factor	days/month	Conversion factor to convert the daily uptakes of Pb to a monthly uptake.
UPDIET(t)	Calculated	µg/day	Total dietary Pb uptake by age group. This is calculated by multiplying the dietary Pb intake and its corresponding net absorption coefficient.
ABSF	0.5	Unitless	Total gut absorption of dietary Pb at low saturation. This number is based on measurements, mainly among infants, of Pb in the diet and excreta, which were used to calculate a gut absorption rate for ingested dietary Pb between 42-53% (Alexander et al. 1973; Ziegler et al. 1978, both cited in US EPA 1989a). These numbers refer to children living near one or more Pb point sources and unaffected by Pb paint.
AVF	1	unitless	Refers to the available fraction for food/diet. This variable is added in the equation for later flexibility in describing the absorption process, and has no effect on the currently applied algorithm in the IEUBK model.
PAF	0.2	unitless	Fraction of total absorption as passive absorption at low dose. This value is based on <i>in vitro</i> everted rat intestine data (Aungst and Fung 1981), reanalyses (Marcus 1994) of infant baboon data (Mallon 1983) and an infant duplicate diet study (Sherlock and Quinn 1986).
AVINTAKE	Calculated	µg	Available Pb intake. This is calculated by summing all media-specific intakes, which have each been multiplied by their representative absorption coefficients.

SATINTAKE(t)	Calculated	µg/day	This refers to the half saturation absorbable Pb intake. This is assumed to be proportional to body weight. The coefficient of proportionality is assumed to depend on the estimate of the parameter for a 24 month old child and its corresponding body weight.
SATINTAKE24	100	µg/day	This refers to the intake of half saturation absorbable Pb for a 24-month old. This value was extrapolated from reanalysis of human infant data (Sherlock and Quinn 1986) and infant baboon data (Mallon 1983).
WTBODY(t)	Calculated	kg	This refers to the body weight by age range, which is calculated internally in IEUBK with the use of an equation. The equation comes from the statistical fitting of data from Silve et al. (1987, cited in US EPA 1994b).
WTBODY(24)	12.3	kg	The body weight of a 24-month old child is assumed to be 12.3 kg (Spector 1956, as cited in US EPA 1994b).
UPWATER(t)	Calculated	µg/day	Total drinking water Pb uptake by age group. This is calculated by multiplying the drinking water Pb intake and its corresponding net absorption coefficient.
ABSW	0.5	Unitless	Total gut absorption of drinking water Pb at low saturation. This number is the same as the gut absorption of dietary Pb, as some of the studies the value was based on consisted of a diet of liquid formula. The number refers to children living near one or more Pb point sources and unaffected by Pb paint (US EPA 1989a).
AVW	1	unitless	Refers to the available fraction for water. This variable is added in the equation for later flexibility in describing the absorption process, and has no effect on the currently applied algorithm in the IEUBK model.
UPDUST(t)	Calculated	µg/day	Total dust Pb uptake by age group. This is calculated by multiplying the dust Pb intake and its corresponding net absorption coefficient.

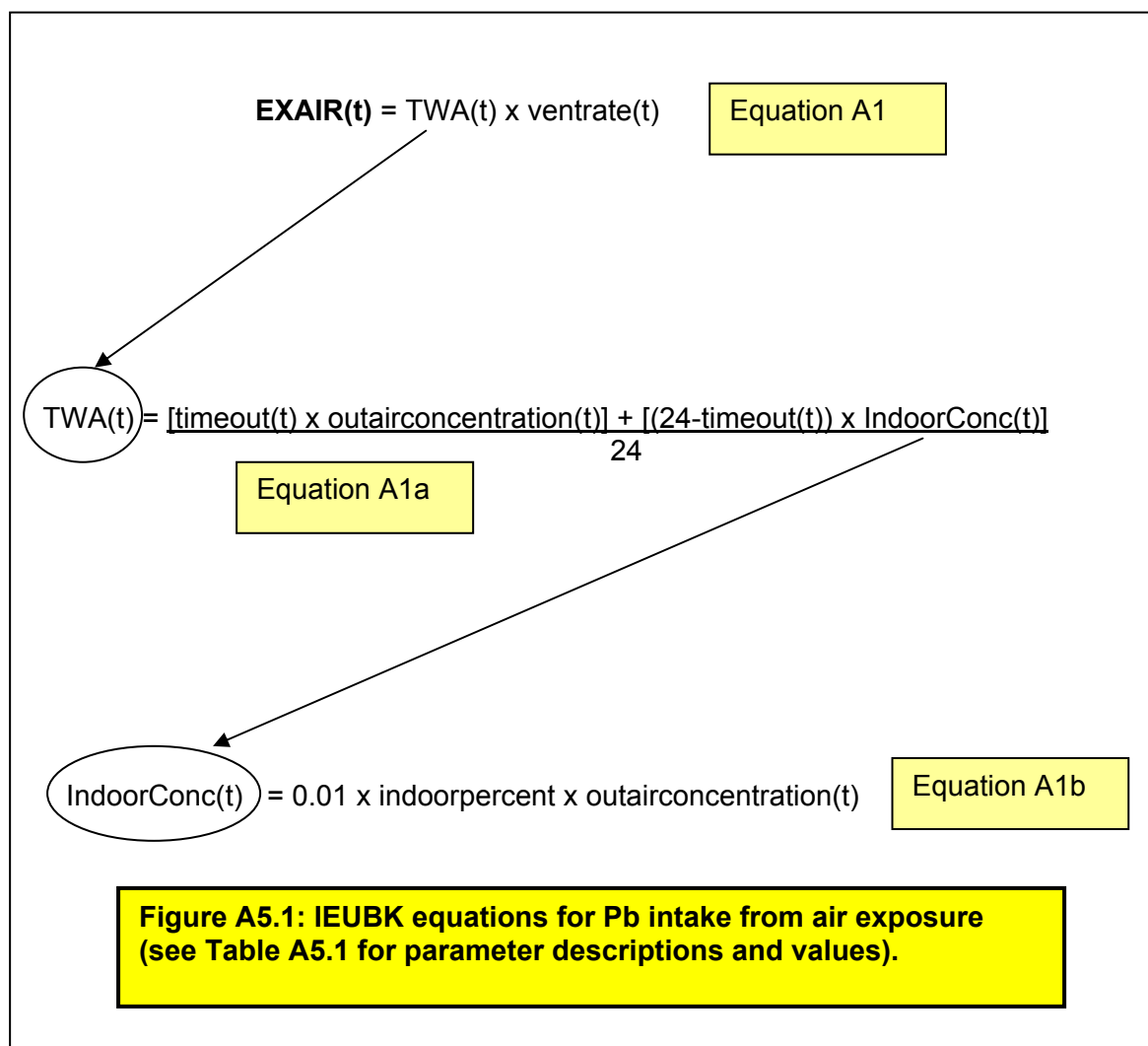
ABSD	Varies with receptor and scenario	Unitless	Total gut absorption of dust Pb at low saturation. Bioaccessibility data from EnTox (2009) for surface samples and core samples shows their bioaccessibility in Broken Hill to be 7.3% and 1.4%, respectively (refer to Section 2.5). Bioaccessibility for soil and dust Pb was converted to bioavailability based on the RBA of soluble Pb from diet and water (0.5) (US EPA 1999) (Section 5.3.5).
AVD	1	unitless	Refers to the available fraction for dust. This variable is added in the equation for later flexibility in describing the absorption process, and has no effect on the currently applied algorithm in the IEUBK model.
UPUSTA(t)	Calculated	µg/day	Total dust Pb uptake from alternate sources by age group. This is calculated by multiplying the dust Pb intake from alternate sources and its corresponding net absorption coefficient. Because site-specific data are unavailable for alternate sources of dust Pb in Broken Hill, this parameter is considered to equal to zero.
UPSOIL(t)	Calculated	µg/day	Total soil Pb uptake by age group. This is calculated by multiplying the soil Pb intake and its corresponding net absorption coefficient.
ABSS	Varies with receptor and scenario	Unitless	Total gut absorption of soil Pb at low saturation. Bioaccessibility data from EnTox (2009) for surface samples and core samples shows their bioaccessibility in Broken Hill to be 7.3% and 1.4%, respectively (refer to Section 2.5). Bioaccessibility for soil and dust Pb was converted to bioavailability based on the RBA of soluble Pb from diet and water (0.5) (US EPA 1999) (Section 5.3.5).
AVS	1	unitless	Refers to the available fraction for soil. This variable is added in the equation for later flexibility in describing the absorption process, and has no effect on the currently applied algorithm in the IEUBK model.

UPAIR(t)	Calculated	µg/day	Total air Pb uptake by age group. This is calculated by multiplying the air Pb intake and its corresponding net absorption coefficient.
ABSA(t)	Varies with receptor and scenario	%	Net percentage absorption of air Pb. This value coincides with the measured bioaccessibilities of Pb from surface and core samples in BH (EnTox 2009), and is receptor-specific based on percentage contribution to total Pb from each process (Section 5.3.6)
0.01	Conversion Factor	Unitless	Conversion factor from percentage.
UPOTHER(t)	Calculated	µg/day	Total Pb uptake from other sources by age group. This is calculated by multiplying the Pb intake from other sources and its corresponding net absorption coefficient. Because site-specific data are unavailable for other sources of ingested Pb in Broken Hill, this parameter is considered to equal to zero.
ABSO	0	unitless	The total absorption for other ingested Pb at low saturation. The default value of zero is based on the condition that there is no other source of Pb ingestion in the household (such as Pb based paint). This remains zero in the model calculations, as there is insufficient site-specific data on other sources of Pb.
AVO	1	unitless	Refers to the available fraction for other sources (e.g. paint). This variable is added in the equation for later flexibility in describing the absorption process, and has no effect on the currently applied algorithm in the IEUBK model.

^a Time-dependent parameters are followed by "(t)" and may have a different value for each iteration period.

^b This bolded parameter is used as an input in a series of differential equations for the biokinetic component of the IEUBK model, which represent the continuous Pb kinetics in a child's body. For details of the biokinetic equations and parameters, refer to US EPA (1994b, 2009d).

Equations



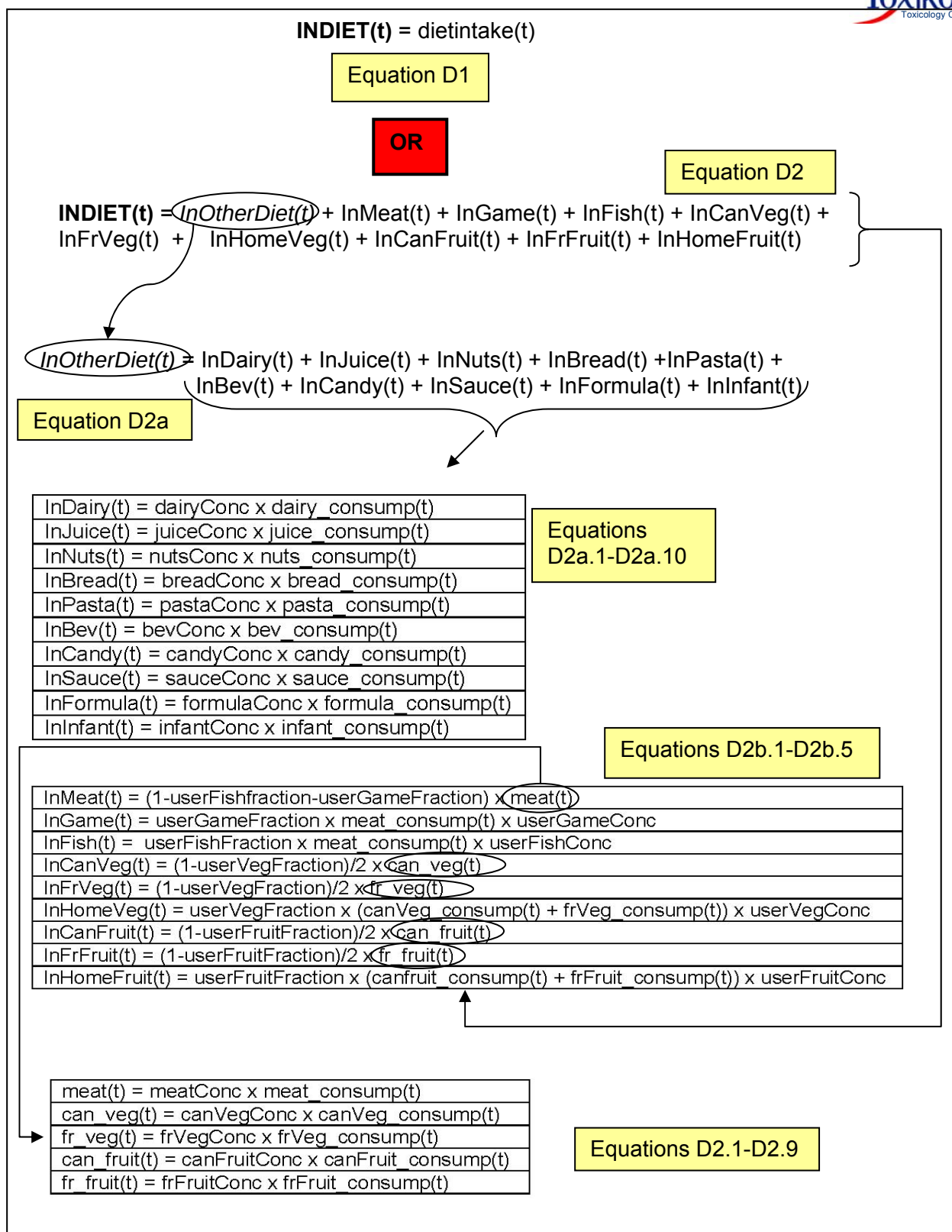


Figure A5.2: IEUBK equations for dietary Pb intake (See Table A5.1 for parameter descriptions and values)

$$\text{INWATER}(t) = \text{waterconsump}(t) \times \text{meanwaterconc}$$

Equation W1

Figure A5.3: IEUBK equation for drinking water Pb intake (see Table A5.1 for parameter descriptions and values).

$$\text{INSOIL}(t) = \text{soilconc}(t) \times \text{soil+dustingested}(t) \times (0.01 \times \% \text{soilingestion})$$

Equation S1

FigureA5.4: IEUBK equation for soil Pb intake (see Table A5.1 for parameter descriptions and values).

$$\text{INDUST}(t) = \text{DustTotal}(t) \times \text{indoordustconc}(t) \times \text{HouseFraction}$$

Equation Du1

$$\text{DustTotal}(t) = \text{soil+dustingested}(t) \times [0.01 \times (100 - \% \text{soilingestion})]$$

Equation Du1a

$$\text{HouseFraction} = 1 - (\text{OccupFraction} + \text{SchoolFraction} + \text{DaycareFraction} + \text{SecHomeFraction} + \text{OtherFraction})$$

Equation Du1c

$$\text{indoordustconc}(t) = [\text{Soilconc}(t) \times \text{soildust\_ratio}]$$

Equation Du1b

Figure A5.5: IEUBK equation for indoor dust intake (see Table A5.1 for parameter descriptions and values).

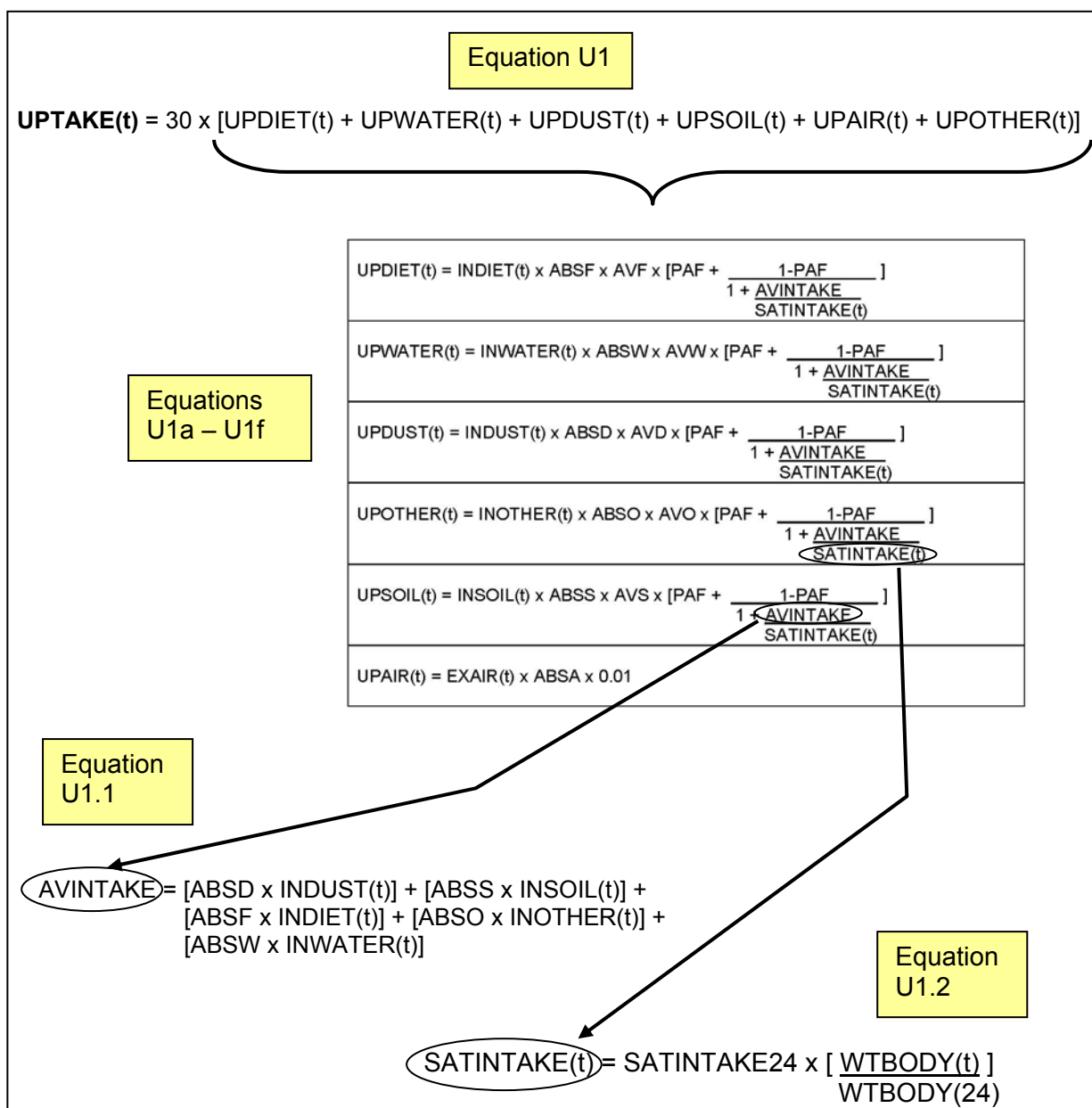


Figure A5.6: IEUBK equations for the uptake component (See Table A5.2 for parameter descriptions and values).

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Appendix 6. IEUBK Model Inputs and Outputs for selected receptors

Two scenarios were considered in the modelling of blood lead levels due to the mine operations.

- Scenario 1 considers exposures from existing 'free areas' only:
 - o Scenario 1a considers the 'existing situation' (with no dust controls in place)
 - o Scenario 1b considers 'free areas' (80% dust controlled)
- Scenario 3 considers exposures from the 'cumulative' impact of the mine and the existing free areas (80% controlled).

A6.1 Inputs

Table A4.1a & b summarise the bioavailabilities for scenario and receptor. Two bioavailabilities were used within the IEUBK model as inputs:

- a bioavailability based on the annual average PM10 concentrations ($\mu\text{g}/\text{m}^3$) used as an input for inhalation of Pb and,
- a bioavailability based on a Pb deposition ($\text{g}/\text{m}^2/\text{yr}$) used as an input in the IEUBK modelling for ingestion of soil and dust

Table A6.1a: Scenario 1a & 1b Input bioavailabilities (unitless) by receptor as used as inputs for the IEUBK model ^a

Scenario 1a & 1b	Receptor																
	R1	R2	R3	R4	R5	R8	R9	R10	R11	R12	R14	R17	R18	R23	R32	R36	R38
Bioavailability (unitless) from PM10 air apportionment	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.073
Bioavailability (unitless) deposited Pb (oral)	0.037	0.037	0.037	0.037	0.037	0.037	0.037	0.037	0.037	0.037	0.037	0.037	0.037	0.037	0.037	0.037	0.037

Table A6.1b: Scenario 3 Input bioavailabilities (unitless) by receptor as used as inputs for the IEUBK model ^a

Scenario 3	Receptor																
	R1	R2	R3	R4	R5	R8	R9	R10	R11	R12	R14	R17	R18	R23	R32	R36	R38
Bioavailability (unitless) from PM10 air apportionment	0.066	0.058	0.052	0.050	0.049	0.047	0.052	0.059	0.049	0.053	0.057	0.060	0.046	0.067	0.067	0.063	0.042

Bioavailability (unitless) deposited Pb (oral)	0.034	0.028	0.026	0.026	0.026	0.026	0.028	0.032	0.026	0.021	0.027	0.023	0.022	0.035	0.035	0.034	0.024

^a The estimation method for bioavailability is described in Section 2.4. Bioavailabilities were estimated from bioaccessibility test results.

A6.1.1 Scenario 1a

Table A6.1.1: Outdoor air Pb concentration ($\mu\text{g}/\text{m}^3$) in PM_{10} by receptor as inserted into the IEUBK model ^a: Scenario 1a

Scenario 1a	Receptor																
	R1	R2	R3	R4	R5	R8	R9	R10	R11	R12	R14	R17	R18	R23	R32	R36	R38
AIR Pb CONCENTRATION ($\mu\text{g}/\text{m}^3$)	0.20	0.13	0.14	0.09	0.07	0.60	0.23	0.14	0.05	0.04	0.07	0.06	0.02	0.15	0.11	0.15	0.05

^a Raw data provided in Appendix 2 (Environ 2010).

Table A6.1.2: Soil Pb concentration ($\mu\text{g}/\text{g}$) by receptor for 15 years mine life as inserted into the IEUBK model ^a: Scenario 1a

Scenario 1a soil Pb concentration	Soil Concentration (µg/g) at each receptor																	
	R1	R2	R3	R4	R5	R8	R9	R10	R11	R12	R13	R14	R17	R18	R23	R32	R36	R38
	701.6	426.5	566.3	320.9	241.4	1645.9	611.7	410.7	168.3	39.2	10.9	88.8	20.5	18.9	600.8	346.2	463.0	82.4

^a Raw data provided in Appendix 2 (Environ 2010). Pb deposition data was used to calculate soil Pb concentration using Equation 2.1, as detailed in Section 2.3.

Screenshots of input screens from IEUBK have been included as an example for Receptor 8 (Scenario 1a) in Figure A6.1.

Figure A6.1: Screenshots of IEUBK input screens for Receptor 8, Scenario 1a

IEUBKwin32 Lead Model Version 1.1 Build9

File Parameter Input Computation Output Graph Start View Help

Open Save Reset Air Diet Water Soil/Dust Maternal Alternate GI/Bio Run Multiple Blood vs. Media Find Batch

GI Values/Bioavailability Information

ABSORPTION FRACTION PERCENT

MEDIA	ABSORPTION FRACTION PERCENT
Soil	3.7
Dust	3.7
Water	50
Diet	50
Alternate	0

Access alternate bioavailability parameters? ☒ No ☐ Yes

FRACTION PASSIVE/TOTAL ACCESSIBLE: 0.2

HALF SATURATION Level (µg/day): 100

OK Cancel Reset Help?

TRW Homepage: <http://www.epa.gov/superfund/health/contaminants/lead/index.htm>

Air Data

Indoor air lead concentration (percentage of outdoor): 30

Outdoor Air Pb Concentration (µg/m³):

☒ Constant Value: 0.6

☐ Variable Values

OK Cancel Reset Help?

Input for different age groups

	AGE (Years)						
	0-1	1-2	2-3	3-4	4-5	5-6	6-7
Outdoor Air Pb Concentration (µg/m³):	0.6	0.6	0.6	0.6	0.6	0.6	0.6
Time Spent Outdoors (hr/day):	0.5	1.4	2	2	2	2	2
Ventilation Rate (m³/day):	5.4	8	9.5	10.9	10.9	10.9	12.4
Lung Absorption (%):	7.3	7.3	7.3	7.3	7.3	7.3	7.3

TRW Homepage: <http://www.epa.gov/superfund/health/contaminants/lead/index.htm>

Site Specific Soil Dust Data

Soil/Dust Ingestion Weighting Factor (percent soil): 45

OK Cancel Reset Help?

Outdoor Soil Lead Concentration (µg/g):

☒ Constant Value: 1645.9

☐ Variable Values

Indoor Dust Lead Concentration (µg/g):

☒ Constant Value: 2468.9

☐ Variable Values

☐ Multiple Source Analysis

Multiple Source Avg: 1212.13

Set

Soil/Indoor Dust Concentration (µg/g)

	AGE (Years)						
	0-1	1-2	2-3	3-4	4-5	5-6	6-7
Outdoor Soil Lead Levels:	1645.9	1645.9	1645.9	1645.9	1645.9	1645.9	1645.9
Indoor Dust Lead Levels:	2468.9	2468.9	2468.9	2468.9	2468.9	2468.9	2468.9

Amount of Soil/Dust Ingested Daily (g/day)

	AGE (Years)						
	0-1	1-2	2-3	3-4	4-5	5-6	6-7
Total Dust + Soil Intake:	0.060	0.100	0.100	0.100	0.100	0.100	0.100

GI Values/Bioavailability

GI / Bio Change Values

TRW Homepage: <http://www.epa.gov/superfund/health/contaminants/lead/index.htm>

A6.1.2 Scenario 1b

Table A6.1.3: Outdoor air Pb concentration ($\mu\text{g}/\text{m}^3$) in PM_{10} by receptor as inserted into the IEUBK model ^a: Scenario 1b

Scenario 1b	Receptor																
	R1	R2	R3	R4	R5	R8	R9	R10	R11	R12	R14	R17	R18	R23	R32	R36	R38
AIR Pb CONCENTRATION (µg/m³)	0.04	0.03	0.03	0.02	0.01	0.12	0.05	0.03	0.01	0.01	0.01	0.01	0.00	0.03	0.02	0.03	0.01

^a Raw data provided in Appendix 2 (Environ 2010).

Table A6.1.4: Soil Pb concentration ($\mu\text{g}/\text{g}$) by receptor and age as inserted into the IEUBK model ^a: Scenario 1b

Scenario 1b soil Pb concentration	Soil Concentration (µg/g) at each receptor																
	R1	R2	R3	R4	R5	R8	R9	R10	R11	R12	R14	R17	R18	R23	R32	R36	R38
	140.3	85.3	113.3	64.2	48.3	329.2	122.3	82.1	33.7	7.8	17.8	4.1	3.8	120.2	69.2	92.6	16.5

^a Raw data provided in Appendix 2 (Environ 2010). Soil concentrations correspond to the soil concentration after 15 years of mine operation.

A6.1.3 Scenario 3

Table A6.1.5: Outdoor air Pb concentration ($\mu\text{g}/\text{m}^3$) in PM_{10} by receptor as inserted into the IEUBK model ^a: Scenario 3

Scenario 3	Receptor																
	R1	R2	R3	R4	R5	R8	R9	R10	R11	R12	R14	R17	R18	R23	R32	R36	R38
AIR Pb CONCENTRATION (µg/m³)	0.028	0.027	0.042	0.031	0.025	0.124	0.046	0.024	0.016	0.011	0.014	0.011	0.007	0.023	0.016	0.024	0.016

^a Raw data provided in Appendix 2 (Environ 2010).

Table A6.1.6: Soil Pb concentration (µg/g) by receptor and age as inserted into the IEUBK model ^a: Scenario 3

Scenario 3 soil Pb concentration	Soil Concentration (µg/g) at each receptor																	
	R1	R2	R3	R4	R7	R8	R9	R10	R11	R12	R13	R14	R17	R18	R23	R32	R36	R38
	165.5	140.2	225.0	124.0	68.2	552.4	198.7	112.3	61.6	26.1	16.5	35.7	14.6	12.8	135.0	75.9	105.7	34.6

^a Raw data provided in Appendix 2 (Environ 2010).

A6.2 Outputs

A6.2.1 Scenario 1a

Table A6.2.1 summarizes blood Pb concentrations for each age group of children at each selected receptor for Scenario 1a.

Table A6.2.1: Blood Pb concentrations (µg/dL) for children by age and receptor exposed to Pb equivalent from free areas (0% dust controls) since birth after 15 years Pb accumulation (Scenario 1a)

Child Age	Receptor																
	R1	R2	R3	R4	R5	R8	R9	R10	R11	R12	R14	R17	R18	R23	R32	R36	R38
0.5-1	1.08	0.66	0.87	0.5	0.38	2.46	0.95	0.64	0.26	0.06	0.14	0.04	0.03	0.93	0.54	0.72	0.13
1-2	1.34	0.82	1.07	0.62	0.47	3.03	1.17	0.79	0.33	0.08	0.18	0.05	0.04	1.15	0.67	0.89	0.16
2-3	1.24	0.76	0.99	0.57	0.43	2.82	1.09	0.74	0.3	0.07	0.16	0.04	0.04	1.06	0.62	0.83	0.15
3-4	1.16	0.72	0.93	0.54	0.41	2.66	1.02	0.69	0.29	0.07	0.16	0.04	0.03	1	0.58	0.78	0.14
4-5	1.1	0.68	0.88	0.51	0.39	2.53	0.97	0.65	0.27	0.07	0.15	0.04	0.03	0.95	0.55	0.74	0.14
5-6	1.03	0.63	0.82	0.48	0.36	2.38	0.91	0.61	0.25	0.06	0.14	0.04	0.03	0.88	0.52	0.69	0.13
6-7	0.95	0.58	0.76	0.44	0.33	2.2	0.84	0.56	0.23	0.06	0.13	0.03	0.03	0.82	0.48	0.63	0.12

Examples of outputs from IEUBK (for Receptor 8 and 14)⁶ are provided in Figures A6.2 to A6.5.

Figure A6.2: IEUBK model text file output for Receptor 8, Scenario 1a.

```

LEAD MODEL FOR WINDOWS Version 1.1

=====
Model Version: 1.1 Build9
User Name:
Date:
Site Name:
Operable Unit:
Run Mode: Research
=====

***** Air *****

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

Age      Time      Ventilation      Lung      Outdoor Air
Outdoors  Rate      Absorption      Pb Conc
(hours)  (m³/day)  (%)             (µg Pb/m³)
-----
.5-1     0.500     5.400           7.300     0.600
1-2      1.400     8.000           7.300     0.600
2-3      2.000     9.500           7.300     0.600
3-4      2.000     10.900          7.300     0.600
4-5      2.000     10.900          7.300     0.600
5-6      2.000     10.900          7.300     0.600
6-7      2.000     12.400          7.300     0.600

***** Diet *****

Age      Diet Intake(µg/day)
-----
.5-1     0.000
1-2      0.000
2-3      0.000
3-4      0.000
4-5      0.000
5-6      0.000
6-7      0.000

***** Drinking Water *****

Water Consumption:
Age      Water (L/day)
-----
.5-1     0.200
1-2      0.500
2-3      0.520
3-4      0.530
4-5      0.550
5-6      0.580
6-7      0.590

Drinking Water Concentration: 0.000 µg Pb/L

***** Soil & Dust *****

Age      Soil (µg Pb/g)      House Dust (µg Pb/g)
-----
.5-1     1645.900            2468.900
1-2      1645.900            2468.900
2-3      1645.900            2468.900
3-4      1645.900            2468.900
4-5      1645.900            2468.900

```

⁶ Receptor 8 is representative of the receptor with the highest concentrations of Pb in air, soil and therefore indoor dust. Receptor 14 represents a receptor with concentrations of Pb closer to the median of all receptors.

5-6	1645.900	2468.900
6-7	1645.900	2468.900

***** Alternate Intake *****

Age Alternate (µg Pb/day)

.5-1	0.000
1-2	0.000
2-3	0.000
3-4	0.000
4-5	0.000
5-6	0.000
6-7	0.000

***** Maternal Contribution: Infant Model *****

Maternal Blood Concentration: 1.780 µg Pb/dL

CALCULATED BLOOD LEAD AND LEAD UPTAKES:

Year	Air (µg/day)	Diet (µg/day)	Alternate (µg/day)	Water (µg/day)
.5-1	0.074	0.000	0.000	0.000
1-2	0.119	0.000	0.000	0.000
2-3	0.149	0.000	0.000	0.000
3-4	0.171	0.000	0.000	0.000
4-5	0.171	0.000	0.000	0.000
5-6	0.171	0.000	0.000	0.000
6-7	0.195	0.000	0.000	0.000

Year	Soil+Dust (µg/day)	Total (µg/day)	Blood (µg/dL)
.5-1	4.430	4.505	2.5
1-2	7.284	7.404	3.0
2-3	7.352	7.501	2.8
3-4	7.408	7.579	2.7
4-5	7.454	7.625	2.5
5-6	7.488	7.659	2.4
6-7	7.510	7.704	2.2

Figure A6.3: IEUBK distribution curve for 1-2 year old children for receptor 8 (Scenario 1a) (selected cutoff value = 10 µg/L)

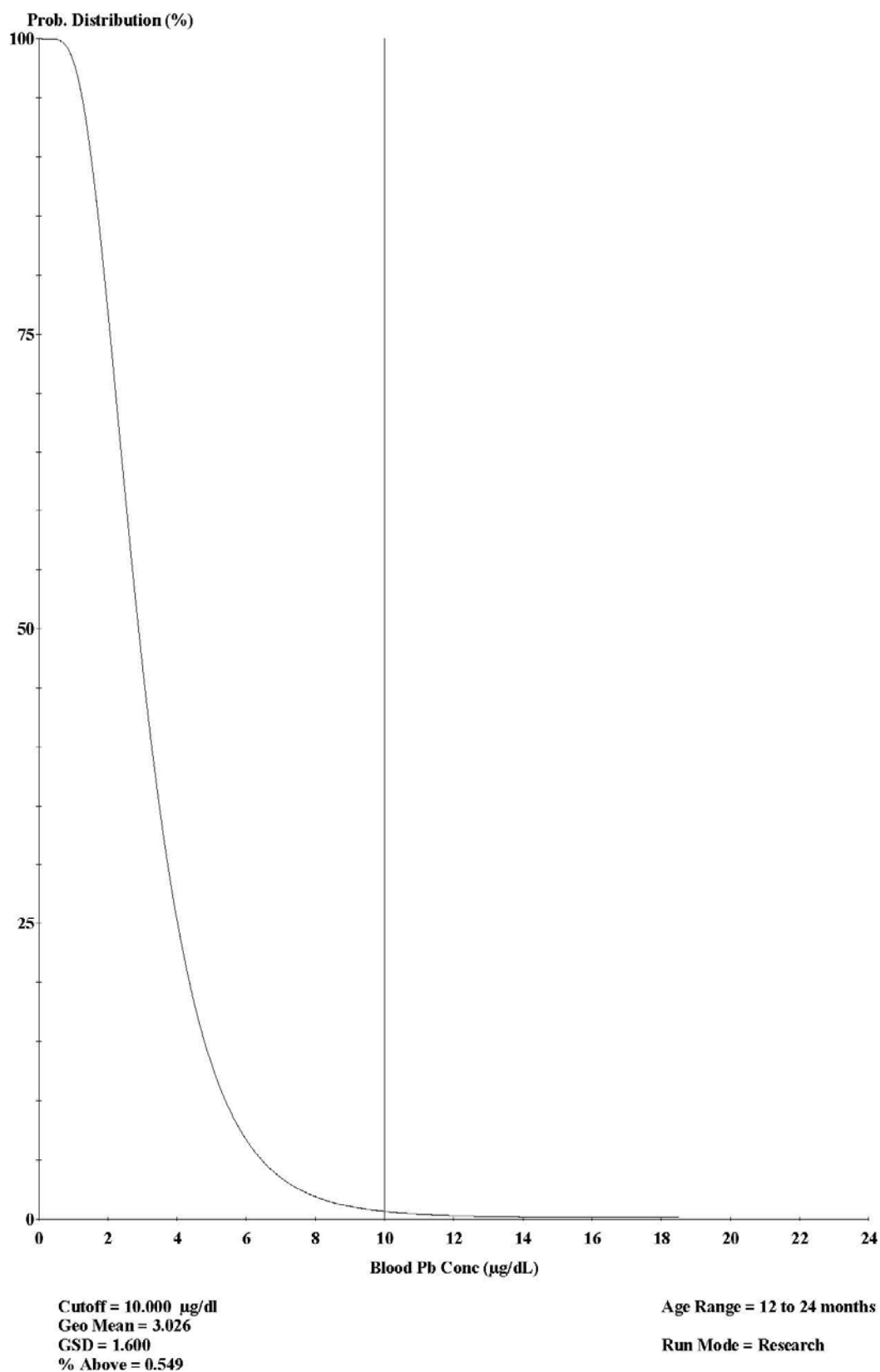


Figure A6.4: IEUBK model text file output for Receptor 14, Scenario 1a.

LEAD MODEL FOR WINDOWS Version 1.1

Model Version: 1.1 Build9

User Name:

Date:

Site Name:

Operable Unit:

Run Mode: Research

***** Air *****

Indoor Air Pb Concentration: 30.000 percent of outdoor.

Other Air Parameters:

Age	Time Outdoors (hours)	Ventilation Rate (m ³ /day)	Lung Absorption (%)	Outdoor Air Pb Conc (µg Pb/m ³)
.5-1	0.500	5.400	7.300	0.070
1-2	1.400	8.000	7.300	0.070
2-3	2.000	9.500	7.300	0.070
3-4	2.000	10.900	7.300	0.070
4-5	2.000	10.900	7.300	0.070
5-6	2.000	10.900	7.300	0.070
6-7	2.000	12.400	7.300	0.070

***** Diet *****

Age Diet Intake(µg/day)

.5-1	0.000
1-2	0.000
2-3	0.000
3-4	0.000
4-5	0.000
5-6	0.000
6-7	0.000

***** Drinking Water *****

Water Consumption:

Age Water (L/day)

.5-1	0.200
1-2	0.500
2-3	0.520
3-4	0.530
4-5	0.550
5-6	0.580
6-7	0.590

Drinking Water Concentration: 0.000 µg Pb/L

***** Soil & Dust *****

Age Soil (µg Pb/g) House Dust (µg Pb/g)

.5-1	88.800	133.200
1-2	88.800	133.200
2-3	88.800	133.200
3-4	88.800	133.200
4-5	88.800	133.200

5-6	88.800	133.200
6-7	88.800	133.200

***** Alternate Intake *****

Age	Alternate (µg Pb/day)

.5-1	0.000
1-2	0.000
2-3	0.000
3-4	0.000
4-5	0.000
5-6	0.000
6-7	0.000

***** Maternal Contribution: Infant Model *****

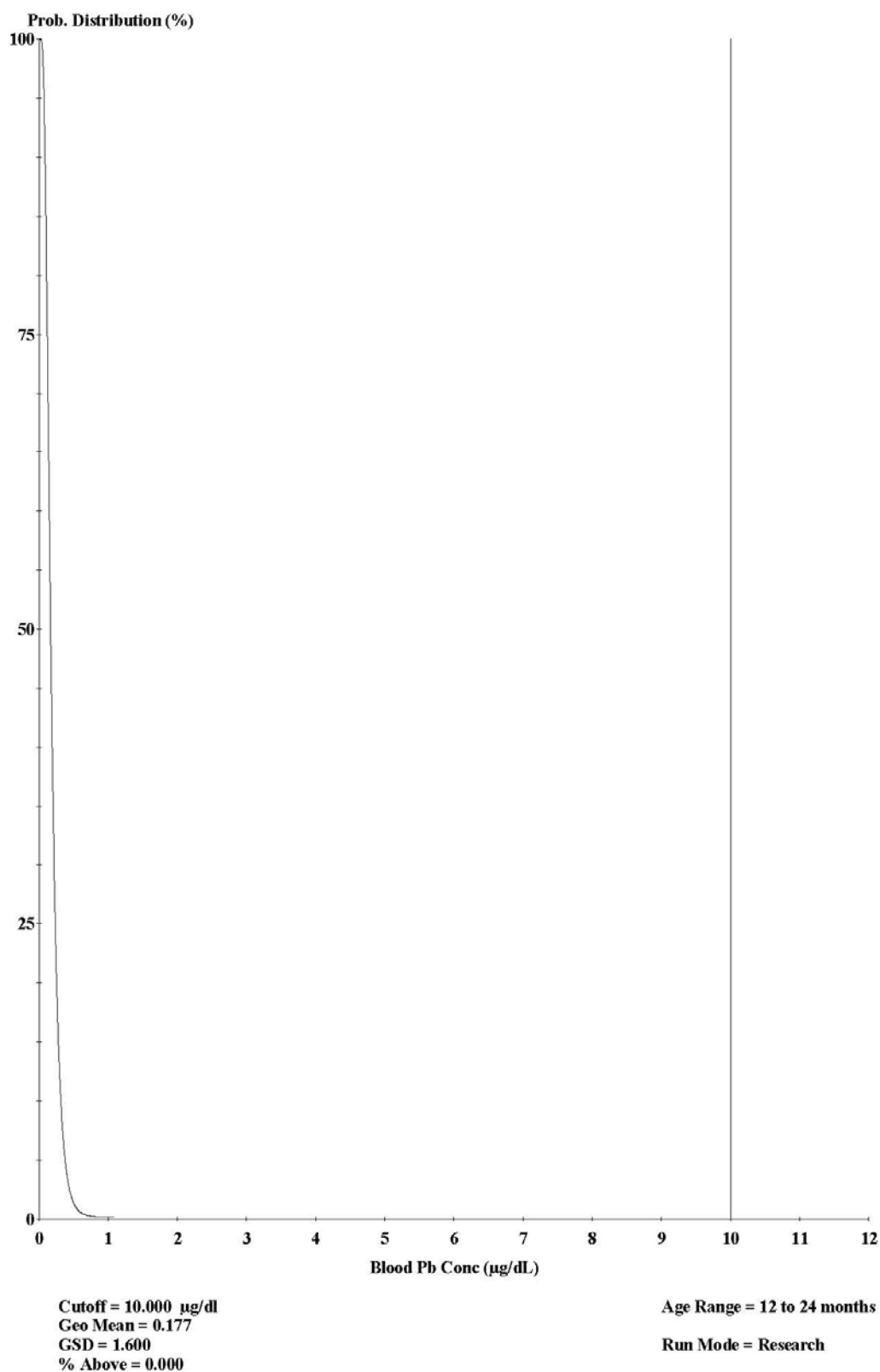
Maternal Blood Concentration: 1.330 µg Pb/dL

CALCULATED BLOOD LEAD AND LEAD UPTAKES:

Year	Air (µg/day)	Diet (µg/day)	Alternate (µg/day)	Water (µg/day)
.5-1	0.009	0.000	0.000	0.000
1-2	0.014	0.000	0.000	0.000
2-3	0.017	0.000	0.000	0.000
3-4	0.020	0.000	0.000	0.000
4-5	0.020	0.000	0.000	0.000
5-6	0.020	0.000	0.000	0.000
6-7	0.023	0.000	0.000	0.000

Year	Soil+Dust (µg/day)	Total (µg/day)	Blood (µg/dL)
.5-1	0.251	0.259	0.2
1-2	0.417	0.431	0.2
2-3	0.418	0.435	0.2
3-4	0.418	0.438	0.2
4-5	0.418	0.438	0.1
5-6	0.418	0.438	0.1
6-7	0.418	0.441	0.1

Figure A6.5: IEUBK distribution curve for 1-2 year old children for receptor 14 (Scenario 1a) (selected cutoff value = 10 µg/L)



A6.2.2 Scenario 1b

Table A6.2.2: Scenario 1b Blood Pb concentrations ($\mu\text{g/dL}$) for children by age and receptor exposed to 'free areas' (80% controlled) (after 15 years of existing Pb deposition).

Child Age	Receptor																
	R1	R2	R3	R4	R5	R8	R9	R10	R11	R12	R14	R17	R18	R23	R32	R36	R38
0.5-1	0.22	0.14	0.18	0.1	0.08	0.52	0.19	0.13	0.05	0.01	0.03	0.007	0.006	0.19	0.11	0.15	0.03
1-2	0.27	0.17	0.22	0.13	0.1	0.64	0.24	0.16	0.07	0.02	0.04	0.009	0.008	0.23	0.14	0.18	0.03
2-3	0.25	0.16	0.2	0.12	0.09	0.59	0.22	0.15	0.06	0.02	0.03	0.008	0.007	0.22	0.13	0.17	0.03
3-4	0.24	0.15	0.19	0.11	0.08	0.55	0.21	0.14	0.06	0.01	0.03	0.008	0.007	0.2	0.12	0.16	0.03
4-5	0.23	0.14	0.18	0.1	0.08	0.52	0.2	0.13	0.05	0.01	0.03	0.007	0.006	0.19	0.11	0.15	0.03
5-6	0.21	0.13	0.17	0.1	0.07	0.49	0.18	0.12	0.05	0.01	0.03	0.007	0.006	0.18	0.1	0.14	0.03
6-7	0.19	0.12	0.16	0.09	0.07	0.45	0.17	0.11	0.05	0.01	0.03	0.006	0.006	0.17	0.1	0.13	0.02

Example outputs from IEUBK (for Receptors 8 and 14)⁷ are provided in Figures A6.6 to A6.9.

Figure A6.6: Scenario 1b IEUBK model text file output for Receptor 8.

```

LEAD MODEL FOR WINDOWS Version 1.1

=====
Model Version: 1.1 Build9
User Name:
Date:
Site Name:
Operable Unit:
Run Mode: Research
=====

***** Air *****

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

Age      Time      Ventilation      Lung      Outdoor Air
Outdoors  Rate      Absorption      Pb Conc
(hours)  (m³/day)  (%)             (µg Pb/m³)
-----
.5-1     0.500     5.400           7.300     0.100
1-2      1.400     8.000           7.300     0.100
2-3      2.000     9.500           7.300     0.100
3-4      2.000     10.900          7.300     0.100
4-5      2.000     10.900          7.300     0.100
5-6      2.000     10.900          7.300     0.100
6-7      2.000     12.400          7.300     0.100

***** Diet *****

Age      Diet Intake(µg/day)
-----
.5-1     0.000
1-2      0.000
2-3      0.000
3-4      0.000
4-5      0.000
5-6      0.000
6-7      0.000

***** Drinking Water *****

Water Consumption:
Age      Water (L/day)
-----
.5-1     0.200
1-2      0.500
2-3      0.520
3-4      0.530
4-5      0.550
5-6      0.580
6-7      0.590

Drinking Water Concentration: 0.000 µg Pb/L

***** Soil & Dust *****

Age      Soil (µg Pb/g)      House Dust (µg Pb/g)
-----
.5-1     329.200             493.800
1-2      329.200             493.800
2-3      329.200             493.800
3-4      329.200             493.800
4-5      329.200             493.800

```

⁷ Receptor 8 is representative of the receptor with the highest concentrations of Pb in air, soil and therefore indoor dust. Receptor 14 represents a receptor with concentrations of Pb closer to the median of all receptors.

5-6	329.200	493.800
6-7	329.200	493.800

***** Alternate Intake *****

Age	Alternate (µg Pb/day)
.5-1	0.000
1-2	0.000
2-3	0.000
3-4	0.000
4-5	0.000
5-6	0.000
6-7	0.000

***** Maternal Contribution: Infant Model *****

Maternal Blood Concentration: 1.400 µg Pb/dL

CALCULATED BLOOD LEAD AND LEAD UPTAKES:

Year	Air (µg/day)	Diet (µg/day)	Alternate (µg/day)	Water (µg/day)
.5-1	0.012	0.000	0.000	0.000
1-2	0.020	0.000	0.000	0.000
2-3	0.025	0.000	0.000	0.000
3-4	0.029	0.000	0.000	0.000
4-5	0.029	0.000	0.000	0.000
5-6	0.029	0.000	0.000	0.000
6-7	0.032	0.000	0.000	0.000

Year	Soil+Dust (µg/day)	Total (µg/day)	Blood (µg/dL)
.5-1	0.922	0.935	0.5
1-2	1.533	1.552	0.6
2-3	1.536	1.560	0.6
3-4	1.538	1.567	0.6
4-5	1.540	1.569	0.5
5-6	1.542	1.570	0.5
6-7	1.542	1.575	0.5

Figure A6.7: IEUBK distribution curve for 1-2 year old children for receptor 8 (Scenario 1b) (selected cutoff value = 10 µg/L)

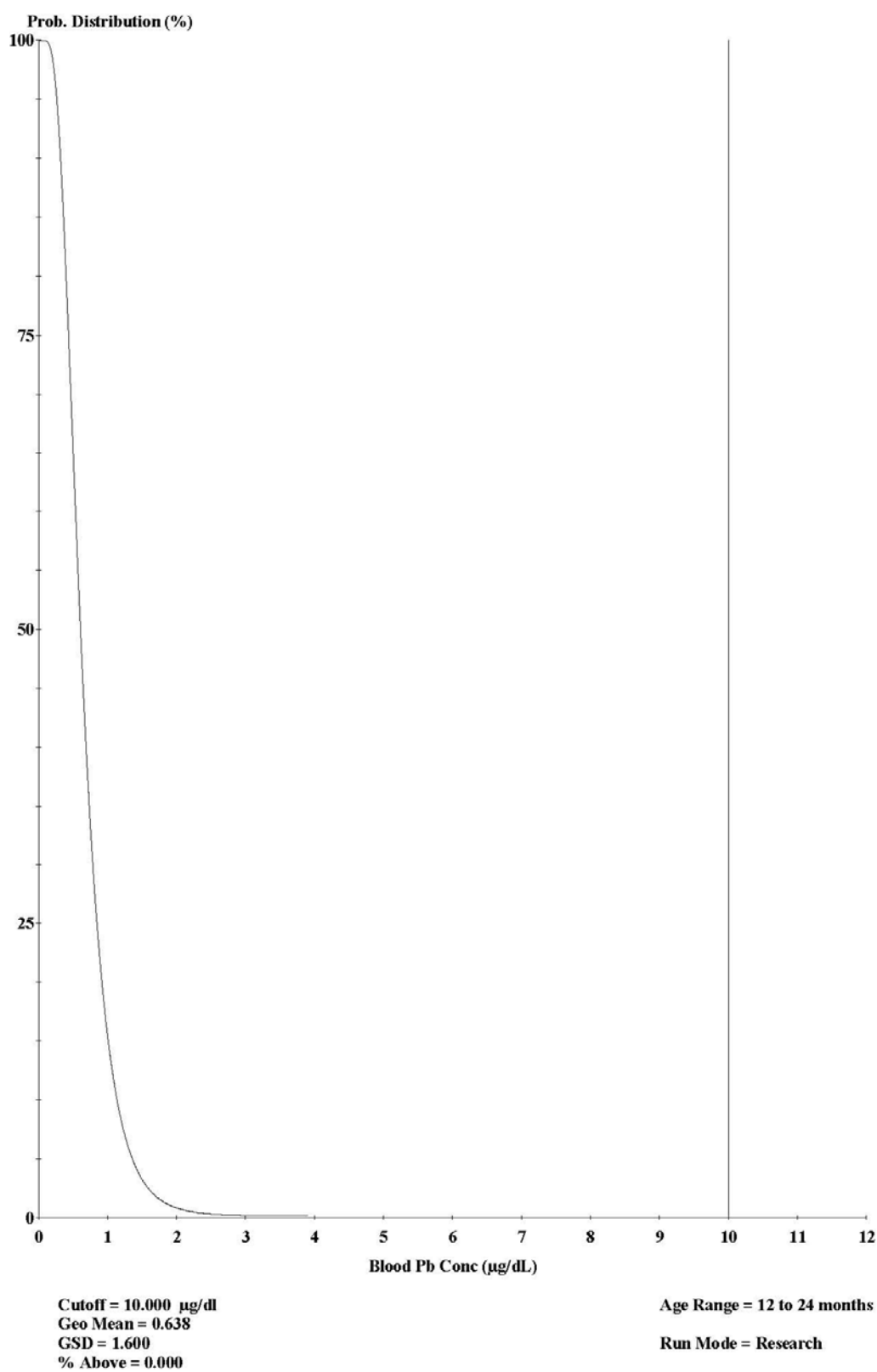


Figure A6.8: IEUBK model text file output for Receptor 14, Scenario 1b.

```

LEAD MODEL FOR WINDOWS Version 1.1

=====
Model Version: 1.1 Build9
User Name:
Date:
Site Name:
Operable Unit:
Run Mode: Research
=====

***** Air *****

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

Age      Time      Ventilation      Lung      Outdoor Air
Outdoors  Rate      Absorption      Pb Conc
(hours)  (m³/day)  (%)             (µg Pb/m³)
-----
.5-1    0.500    5.400          7.300    0.010
1-2     1.400    8.000          7.300    0.010
2-3     2.000    9.500          7.300    0.010
3-4     2.000    10.900         7.300    0.010
4-5     2.000    10.900         7.300    0.010
5-6     2.000    10.900         7.300    0.010
6-7     2.000    12.400         7.300    0.010

***** Diet *****

Age      Diet Intake(µg/day)
-----
.5-1     0.000
1-2      0.000
2-3      0.000
3-4      0.000
4-5      0.000
5-6      0.000
6-7      0.000

***** Drinking Water *****

Water Consumption:
Age      Water (L/day)
-----
.5-1     0.200
1-2      0.500
2-3      0.520
3-4      0.530
4-5      0.550
5-6      0.580
6-7      0.590

Drinking Water Concentration: 0.000 µg Pb/L

***** Soil & Dust *****

Age      Soil (µg Pb/g)      House Dust (µg Pb/g)
-----
.5-1     17.800              26.700
1-2      17.800              26.700
2-3      17.800              26.700
3-4      17.800              26.700
4-5      17.800              26.700

```

5-6	17.800	26.700
6-7	17.800	26.700

***** Alternate Intake *****

Age Alternate (µg Pb/day)

.5-1	0.000
1-2	0.000
2-3	0.000
3-4	0.000
4-5	0.000
5-6	0.000
6-7	0.000

***** Maternal Contribution: Infant Model *****

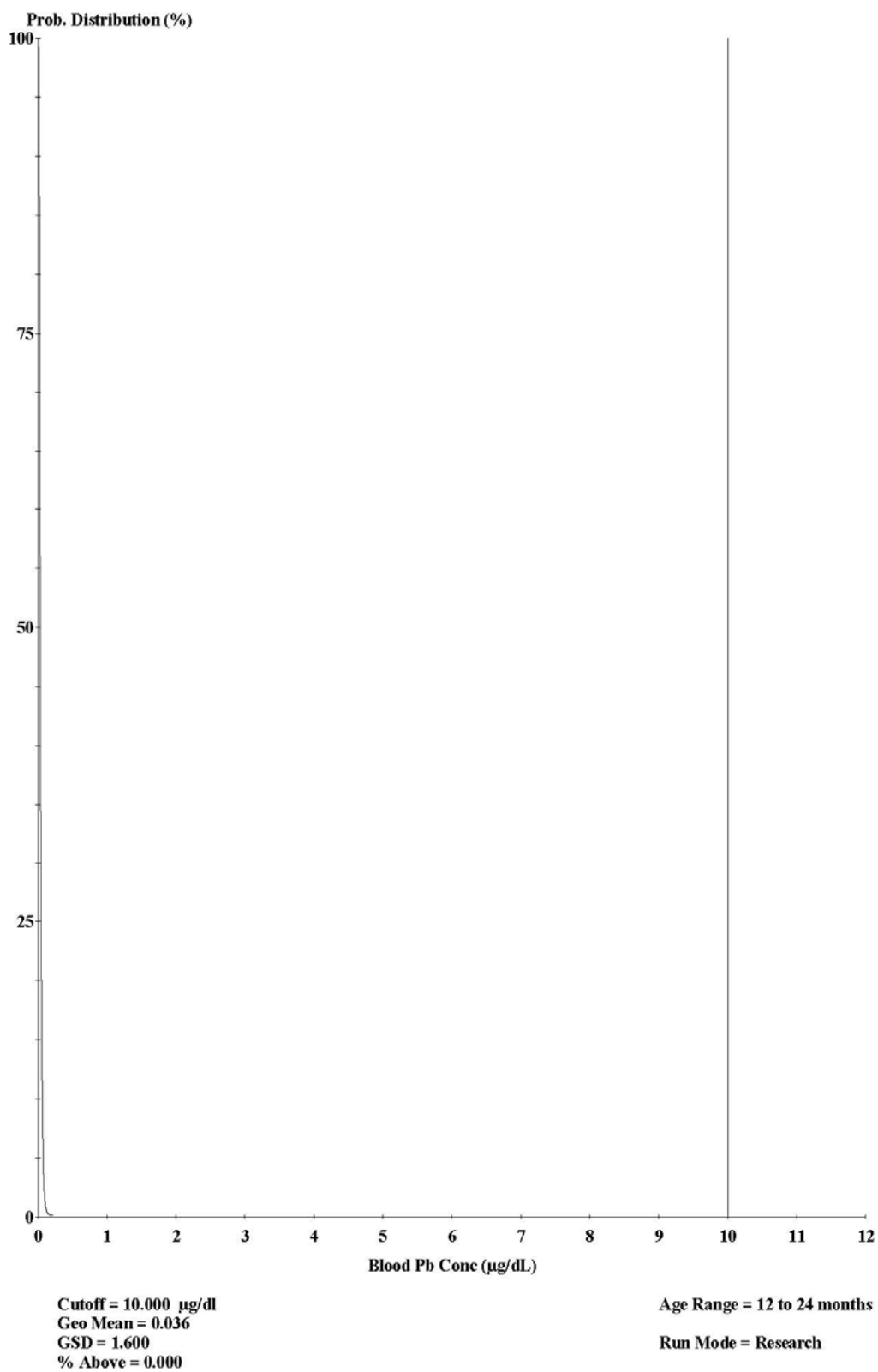
Maternal Blood Concentration: 1.300 µg Pb/dL

CALCULATED BLOOD LEAD AND LEAD UPTAKES:

Year	Air (µg/day)	Diet (µg/day)	Alternate (µg/day)	Water (µg/day)
.5-1	0.001	0.000	0.000	0.000
1-2	0.002	0.000	0.000	0.000
2-3	0.002	0.000	0.000	0.000
3-4	0.003	0.000	0.000	0.000
4-5	0.003	0.000	0.000	0.000
5-6	0.003	0.000	0.000	0.000
6-7	0.003	0.000	0.000	0.000

Year	Soil+Dust (µg/day)	Total (µg/day)	Blood (µg/dL)
.5-1	0.050	0.052	0.0
1-2	0.084	0.086	0.0
2-3	0.084	0.086	0.0
3-4	0.084	0.087	0.0
4-5	0.084	0.087	0.0
5-6	0.084	0.087	0.0
6-7	0.084	0.087	0.0

Figure A6.9: IEUBK distribution curve for 1-2 year old children for receptor 14 (Scenario 1b) (selected cutoff value = 10 µg/L)



A6.2.3 Scenario 3

Table A6.2.3 summarizes blood Pb concentrations for each age group of children at each receptor for Scenario 3.

Table A6.2.3: Scenario 3 Blood Pb concentrations (µg/dL) for children by age and receptor exposed to the ‘cumulative’ mine activity and free areas (80% controlled) after 15 years of operation.

Child Age	Receptor															
	R1	R2	R3	R4	R5	R8	R9	R10	R11	R12	R14	R17	R18	R23	R32	R36
0.5-1	0.24	0.17	0.25	0.14	0.1	0.61	0.24	0.15	0.07	0.02	0.05	0.02	0.01	0.2	0.11	0.15
1-2	0.3	0.21	0.31	0.17	0.13	0.75	0.29	0.19	0.09	0.03	0.05	0.02	0.02	0.25	0.14	0.19
2-3	0.27	0.19	0.28	0.16	0.12	0.69	0.27	0.17	0.08	0.03	0.05	0.02	0.01	0.23	0.13	0.17
3-4	0.26	0.18	0.27	0.15	0.11	0.65	0.25	0.16	0.07	0.03	0.04	0.02	0.01	0.22	0.12	0.16
4-5	0.24	0.17	0.25	0.14	0.11	0.61	0.24	0.16	0.07	0.02	0.04	0.02	0.01	0.2	0.12	0.16
5-6	0.23	0.16	0.24	0.13	0.1	0.57	0.22	0.14	0.07	0.02	0.04	0.01	0.01	0.19	0.11	0.14
6-7	0.21	0.15	0.22	0.12	0.09	0.53	0.21	0.13	0.06	0.02	0.04	0.01	0.01	0.17	0.1	0.13

Example outputs from IEUBK (for Receptors 8 and 14)⁸ are provided in Figures A6.10 to A6.13.

Figure A6.10: IEUBK model text file output for Receptor 8, Scenario 3.

```

LEAD MODEL FOR WINDOWS Version 1.1

=====
Model Version: 1.1 Build9
User Name:
Date:
Site Name:
Operable Unit:
Run Mode: Research
=====

***** Air *****

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

Age      Time      Ventilation      Lung      Outdoor Air
Outdoors  Rate      Absorption      Pb Conc
(hours)  (m³/day)  (%)             (µg Pb/m³)

-----
.5-1    0.500    5.400    4.700    0.120
1-2     1.400    8.000    4.700    0.120
2-3     2.000    9.500    4.700    0.120
3-4     2.000    10.900   4.700    0.120
4-5     2.000    10.900   4.700    0.120
5-6     2.000    10.900   4.700    0.120
6-7     2.000    12.400   4.700    0.120

***** Diet *****

Age      Diet Intake(µg/day)
-----
.5-1     0.000
1-2      0.000
2-3      0.000
3-4      0.000
4-5      0.000
5-6      0.000
6-7      0.000

***** Drinking Water *****

Water Consumption:
Age      Water (L/day)
-----
.5-1     0.200
1-2      0.500
2-3      0.520
3-4      0.530
4-5      0.550
5-6      0.580
6-7      0.590

Drinking Water Concentration: 0.000 µg Pb/L

***** Soil & Dust *****

Age      Soil (µg Pb/g)      House Dust (µg Pb/g)
-----
.5-1     552.400             828.600
1-2      552.400             828.600
2-3      552.400             828.600
3-4      552.400             828.600
4-5      552.400             828.600

```

⁸ Receptor 8 is representative of the receptor with the highest concentrations of Pb in air, soil and therefore indoor dust. Receptor 14 represents a receptor with concentrations of Pb closer to the median of all receptors.

5-6	552.400	828.600
6-7	552.400	828.600

***** Alternate Intake *****

Age	Alternate (µg Pb/day)
.5-1	0.000
1-2	0.000
2-3	0.000
3-4	0.000
4-5	0.000
5-6	0.000
6-7	0.000

***** Maternal Contribution: Infant Model *****

Maternal Blood Concentration: 1.360 µg Pb/dL

CALCULATED BLOOD LEAD AND LEAD UPTAKES:

Year	Air (µg/day)	Diet (µg/day)	Alternate (µg/day)	Water (µg/day)
.5-1	0.010	0.000	0.000	0.000
1-2	0.015	0.000	0.000	0.000
2-3	0.019	0.000	0.000	0.000
3-4	0.022	0.000	0.000	0.000
4-5	0.022	0.000	0.000	0.000
5-6	0.022	0.000	0.000	0.000
6-7	0.025	0.000	0.000	0.000

Year	Soil+Dust (µg/day)	Total (µg/day)	Blood (µg/dL)
.5-1	1.085	1.095	0.6
1-2	1.803	1.818	0.7
2-3	1.807	1.826	0.7
3-4	1.810	1.832	0.6
4-5	1.813	1.835	0.6
5-6	1.815	1.837	0.6
6-7	1.817	1.842	0.5

Figure A6.11: IEUBK distribution curve for 1-2 year old children for receptor 8 (Scenario 3) (selected cutoff value = 10 µg/L)

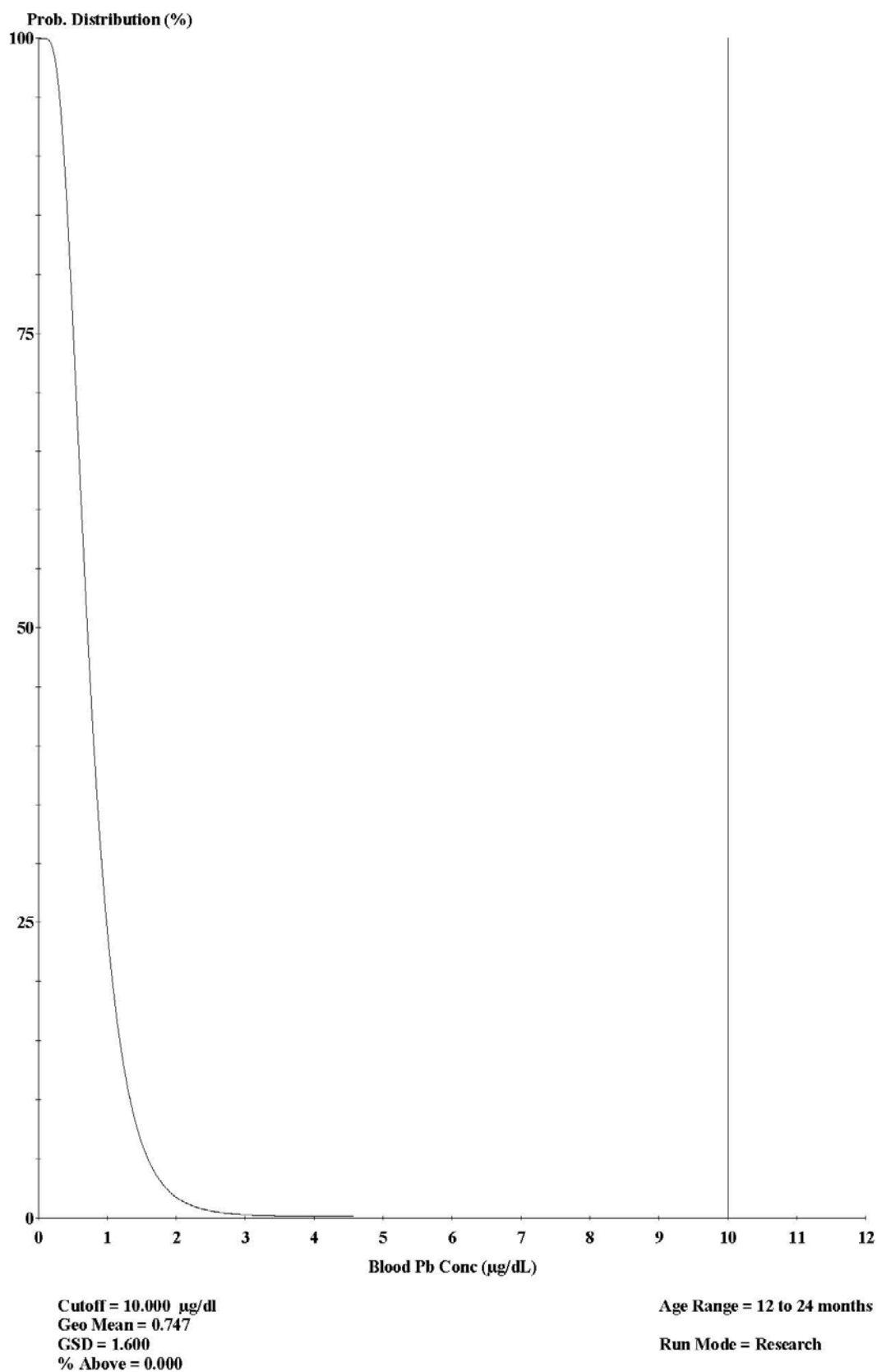


Figure A6.12: IEUBK model text file output for Receptor 14, Scenario 3.

```

LEAD MODEL FOR WINDOWS Version 1.1

=====
Model Version: 1.1 Build9
User Name:
Date:
Site Name:
Operable Unit:
Run Mode: Research
=====

***** Air *****

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

Age      Time      Ventilation      Lung      Outdoor Air
Outdoors  Rate      Absorption      Pb Conc
(hours)  (m³/day)  (%)             (µg Pb/m³)
-----
.5-1     0.500     5.400           5.700     0.010
1-2      1.400     8.000           5.700     0.010
2-3      2.000     9.500           5.700     0.010
3-4      2.000     10.900          5.700     0.010
4-5      2.000     10.900          5.700     0.010
5-6      2.000     10.900          5.700     0.010
6-7      2.000     12.400          5.700     0.010

***** Diet *****

Age      Diet Intake(µg/day)
-----
.5-1     0.000
1-2      0.000
2-3      0.000
3-4      0.000
4-5      0.000
5-6      0.000
6-7      0.000

***** Drinking Water *****

Water Consumption:
Age      Water (L/day)
-----
.5-1     0.200
1-2      0.500
2-3      0.520
3-4      0.530
4-5      0.550
5-6      0.580
6-7      0.590

Drinking Water Concentration: 0.000 µg Pb/L

***** Soil & Dust *****

Age      Soil (µg Pb/g)      House Dust (µg Pb/g)
-----
.5-1     35.700              53.600
1-2      35.700              53.600
2-3      35.700              53.600
3-4      35.700              53.600
4-5      35.700              53.600

```

5-6	35.700	53.600
6-7	35.700	53.600

***** Alternate Intake *****

Age	Alternate (µg Pb/day)

.5-1	0.000
1-2	0.000
2-3	0.000
3-4	0.000
4-5	0.000
5-6	0.000
6-7	0.000

***** Maternal Contribution: Infant Model *****

Maternal Blood Concentration: 1.300 µg Pb/dL

CALCULATED BLOOD LEAD AND LEAD UPTAKES:

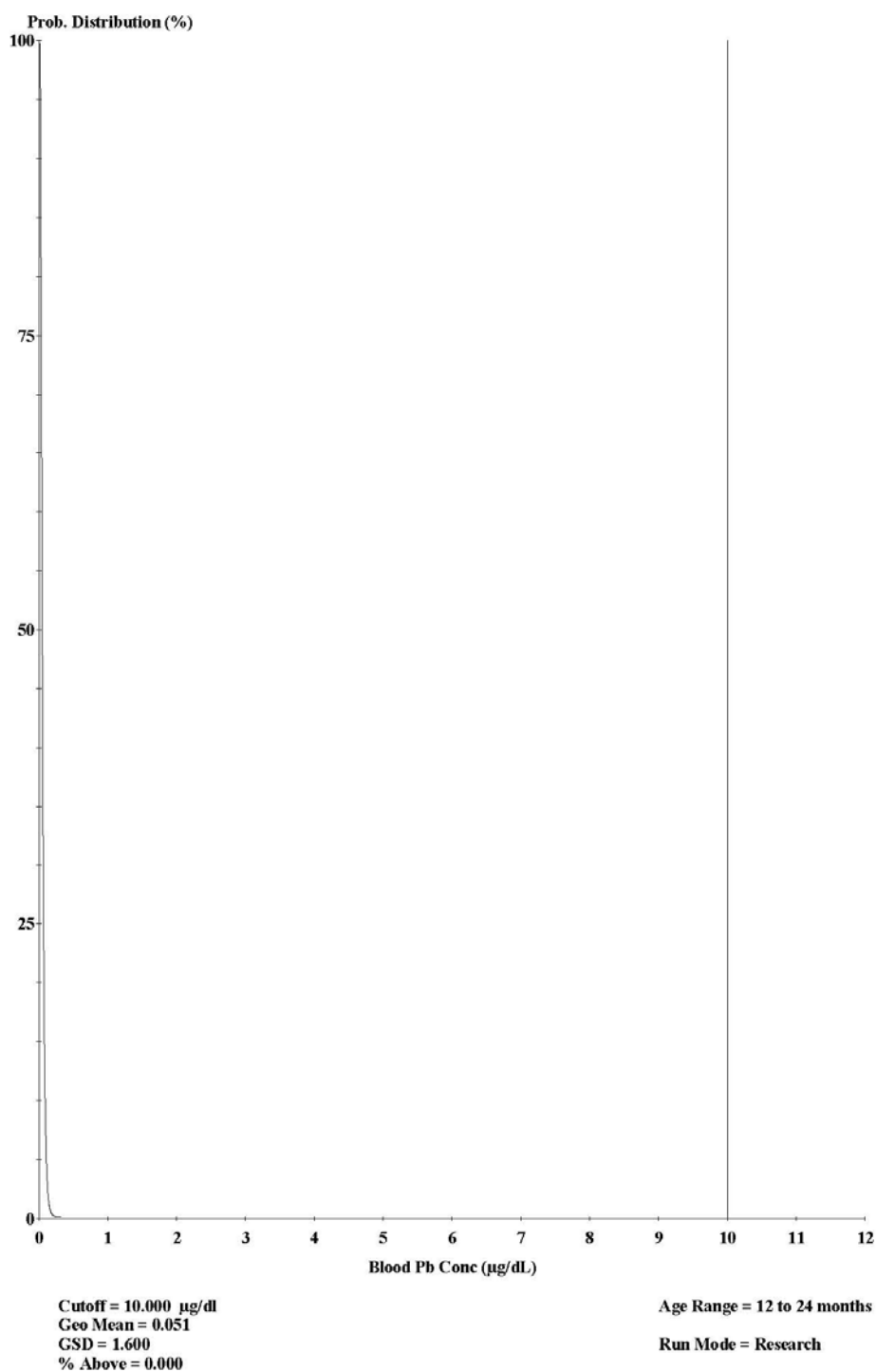
Year	Air (µg/day)	Diet (µg/day)	Alternate (µg/day)	Water (µg/day)

.5-1	0.001	0.000	0.000	0.000
1-2	0.002	0.000	0.000	0.000
2-3	0.002	0.000	0.000	0.000
3-4	0.002	0.000	0.000	0.000
4-5	0.002	0.000	0.000	0.000
5-6	0.002	0.000	0.000	0.000
6-7	0.003	0.000	0.000	0.000

Year	Soil+Dust (µg/day)	Total (µg/day)	Blood (µg/dL)

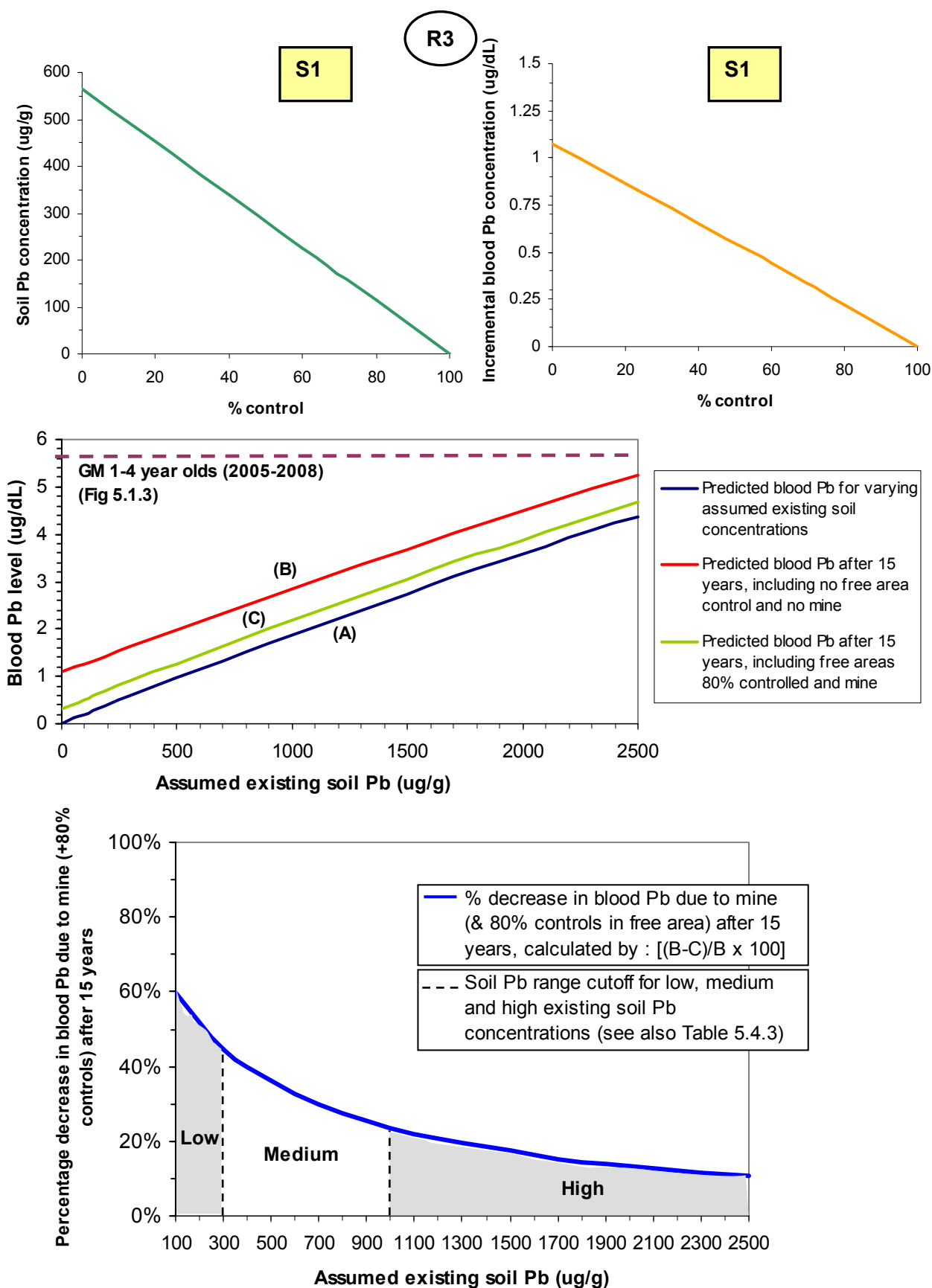
.5-1	0.074	0.075	0.0
1-2	0.123	0.124	0.1
2-3	0.123	0.125	0.0
3-4	0.123	0.125	0.0
4-5	0.123	0.125	0.0
5-6	0.123	0.125	0.0
6-7	0.123	0.125	0.0

**Figure A6.13: IEUBK distribution curve for 1-2 year old children for receptor 14
(Scenario 3) (selected cutoff value = 10 µg/L)**

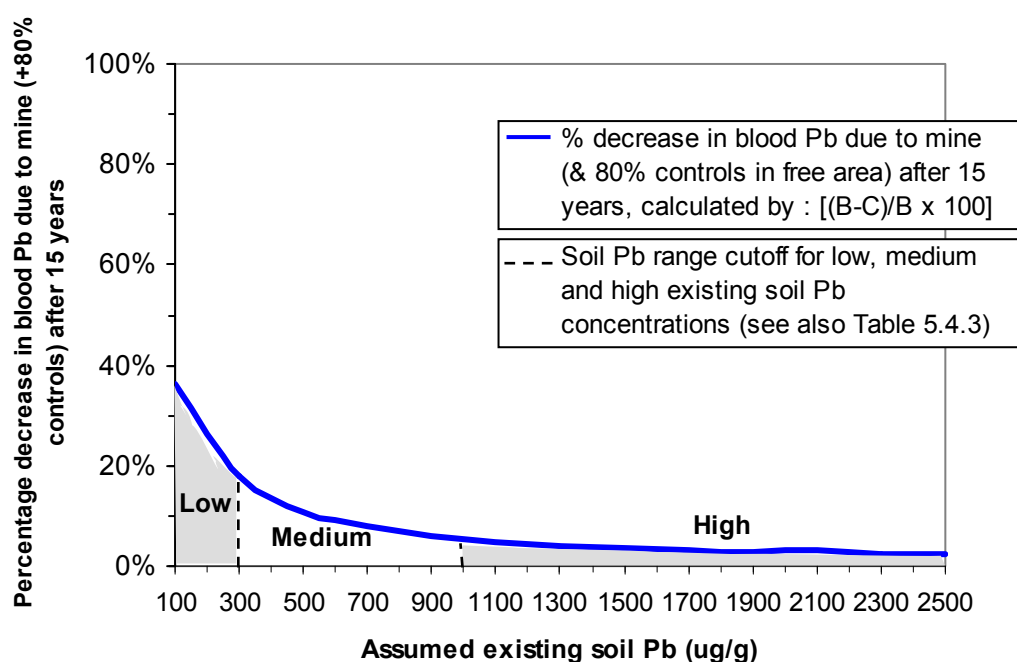
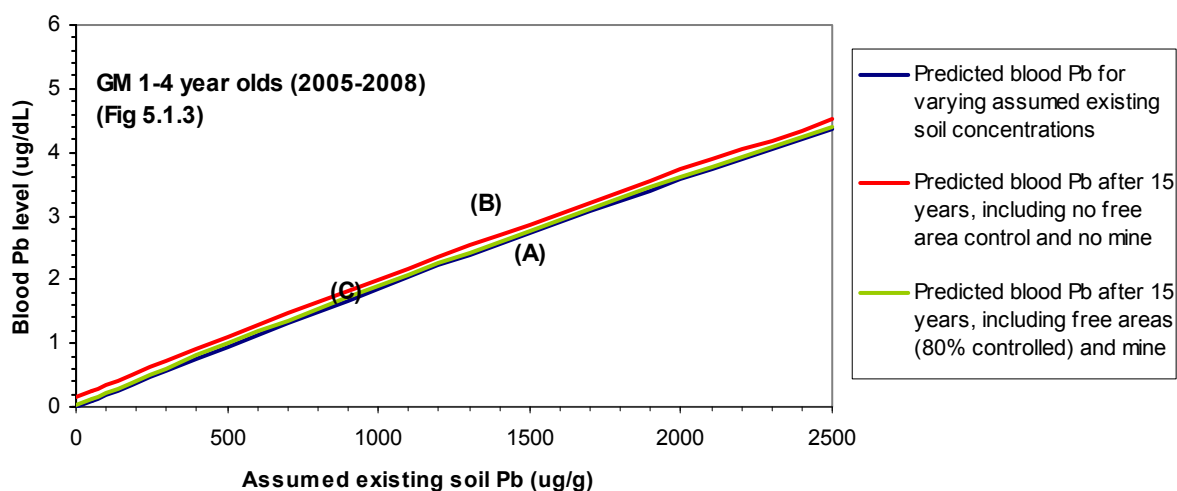
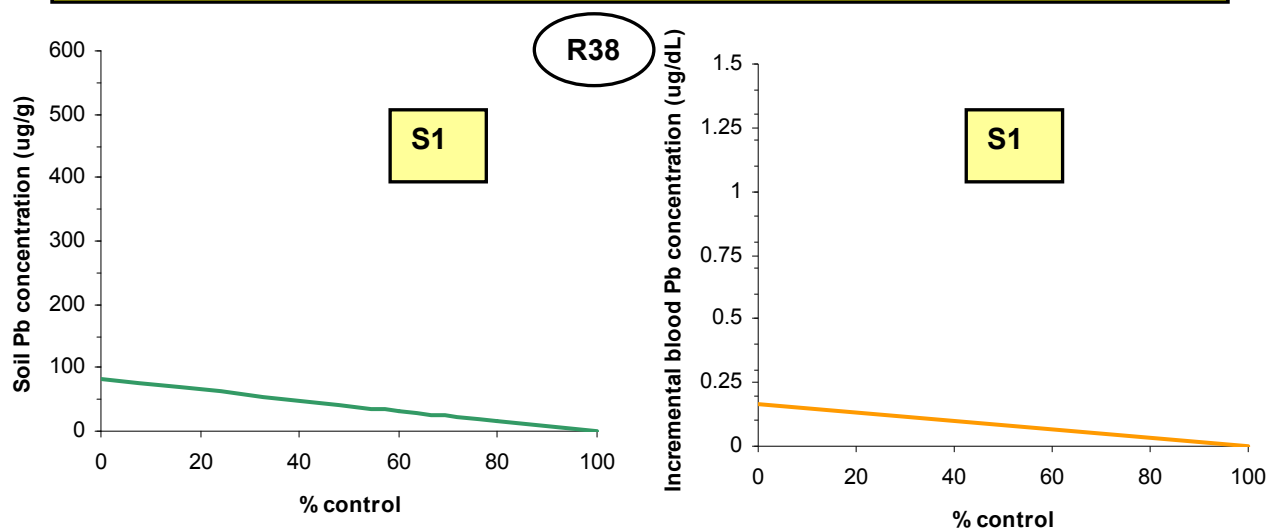


Appendix 7. Effect of dust controls

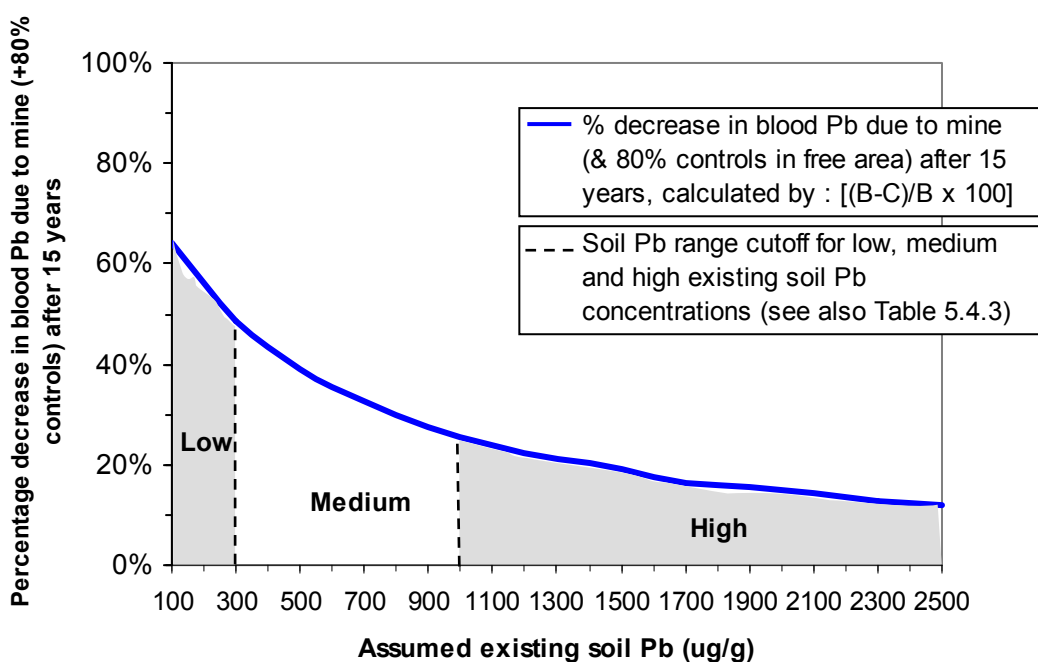
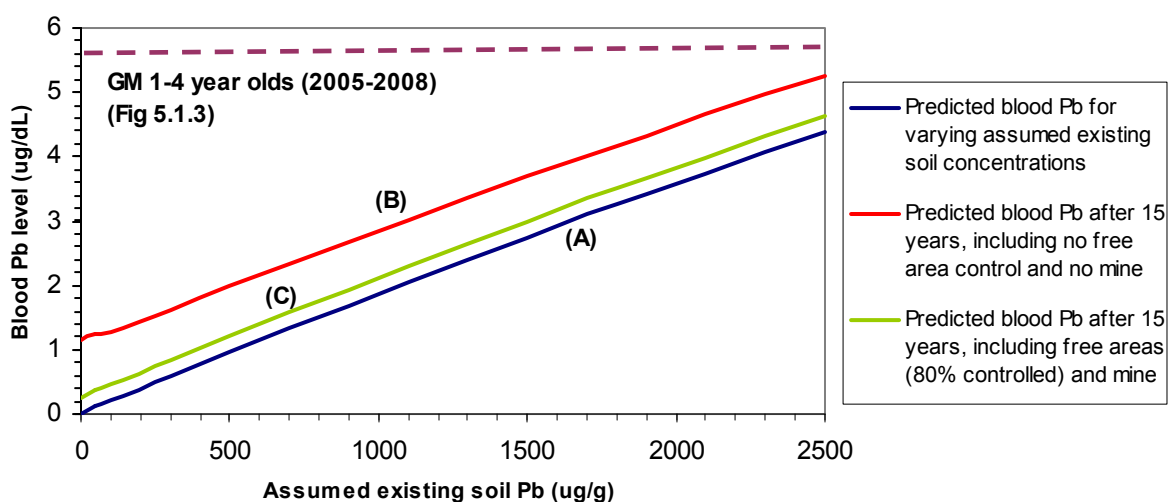
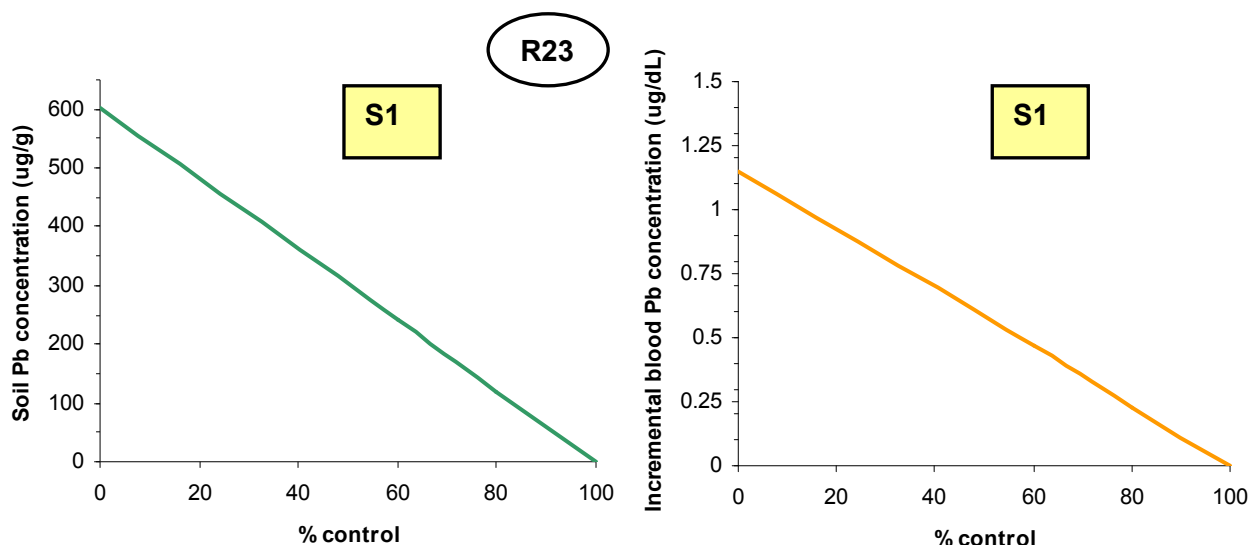
Impact of varying levels of controls on soil Pb concentrations, incremental blood Pb and total blood Pb at assumed existing soil levels for a 1-2 year old child.



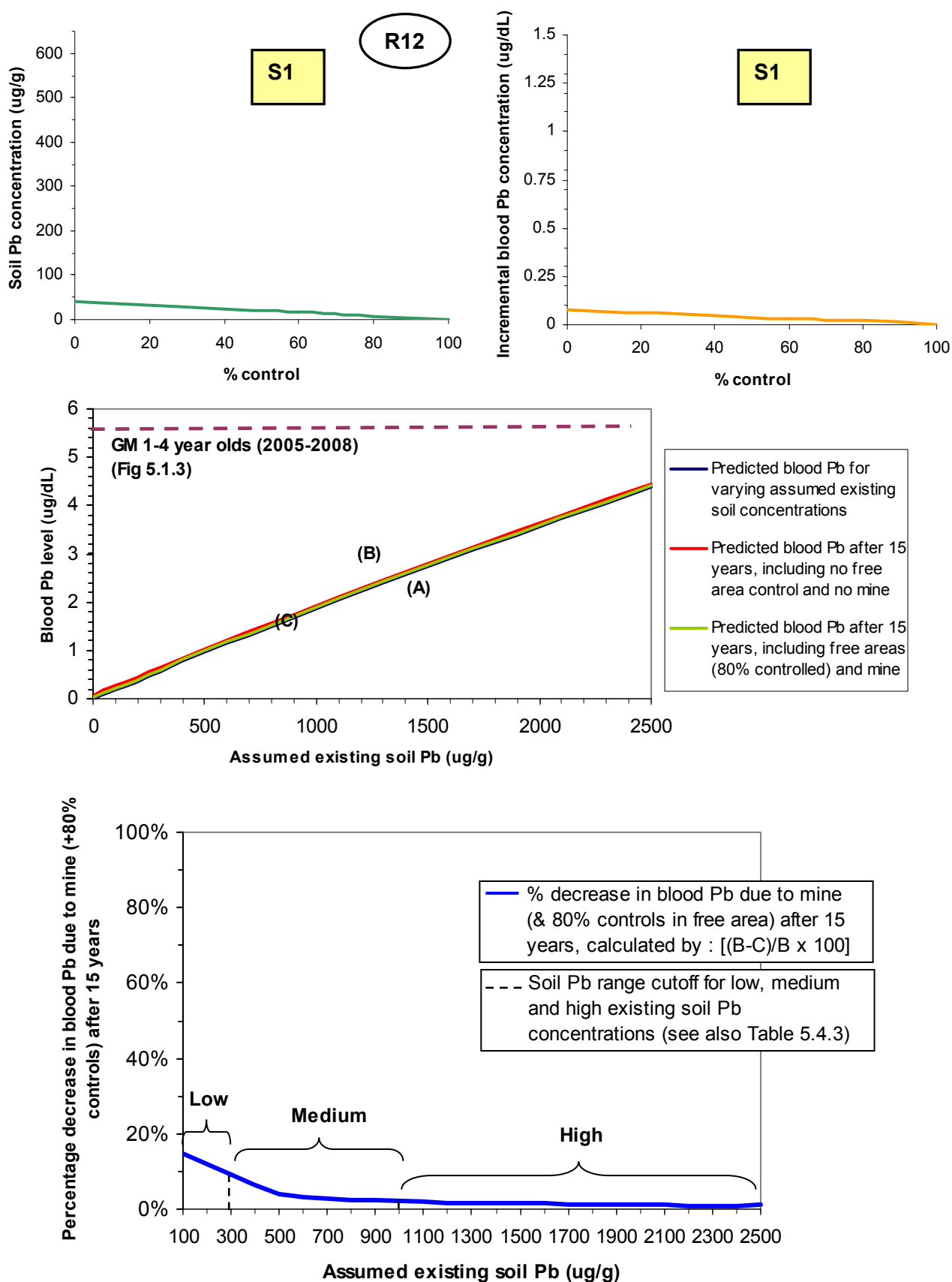
Impact of varying levels of controls on soil Pb concentrations, incremental blood Pb and total blood Pb at assumed existing soil levels for a 1-2 year old child.



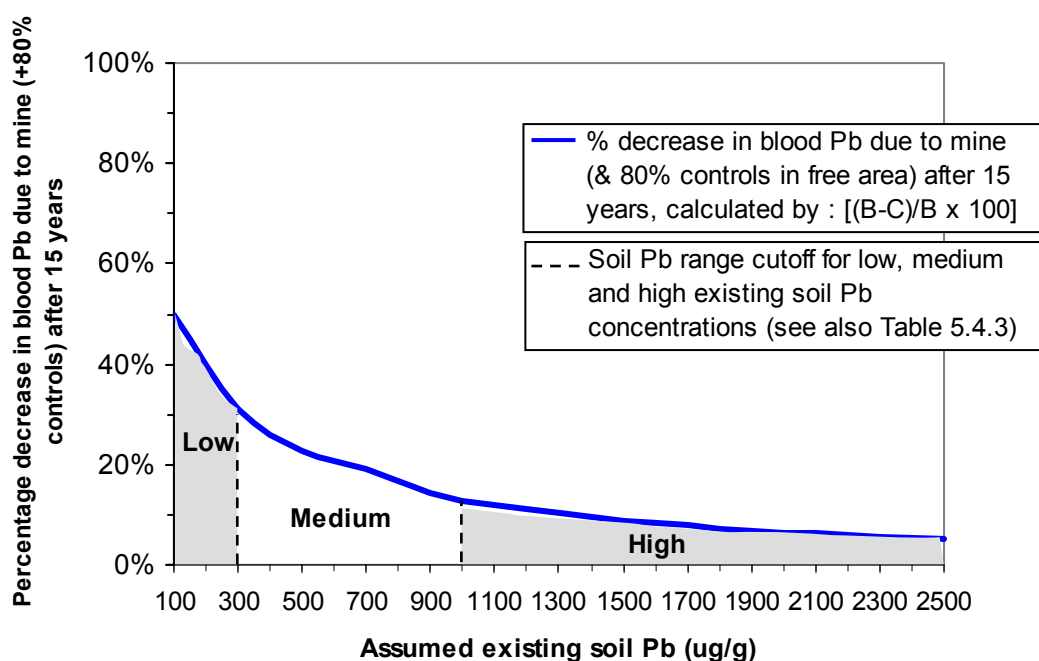
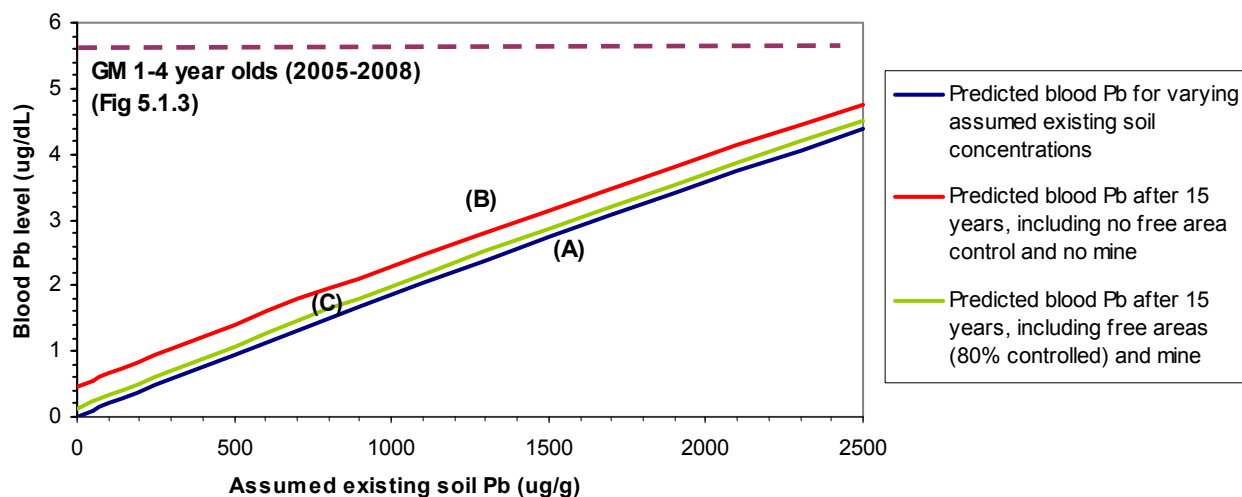
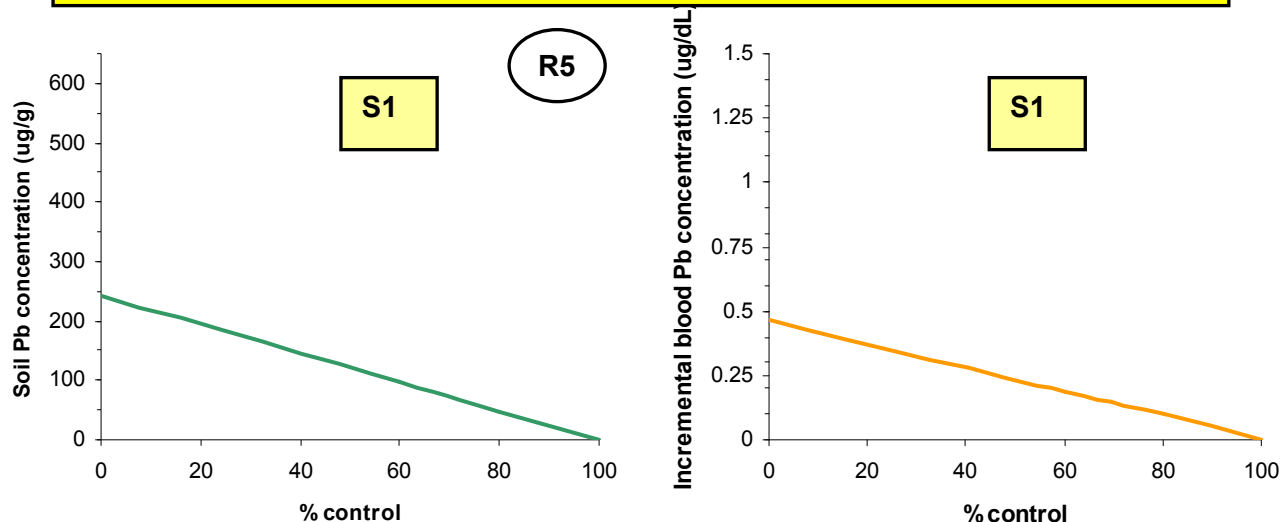
Impact of varying levels of controls on soil Pb concentrations, incremental blood Pb and total blood Pb at assumed existing soil levels for a 1-2 year old child.



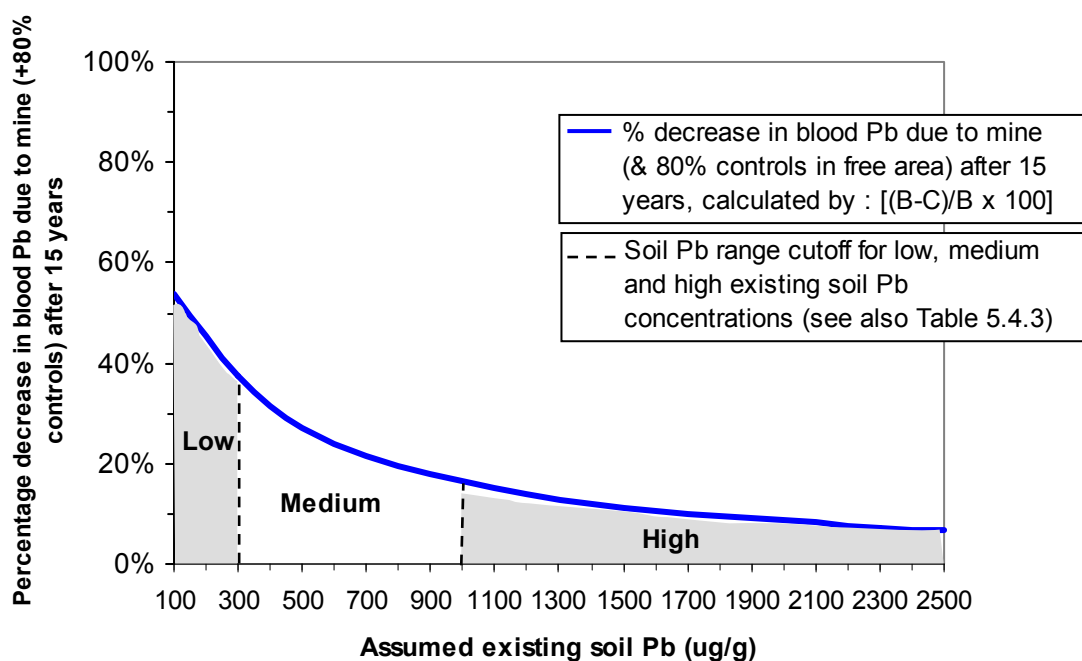
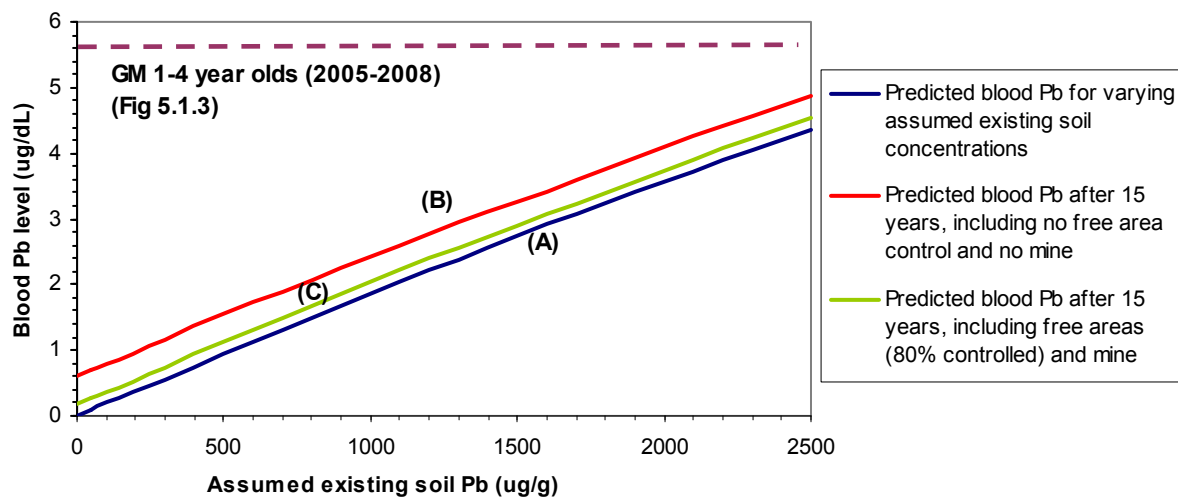
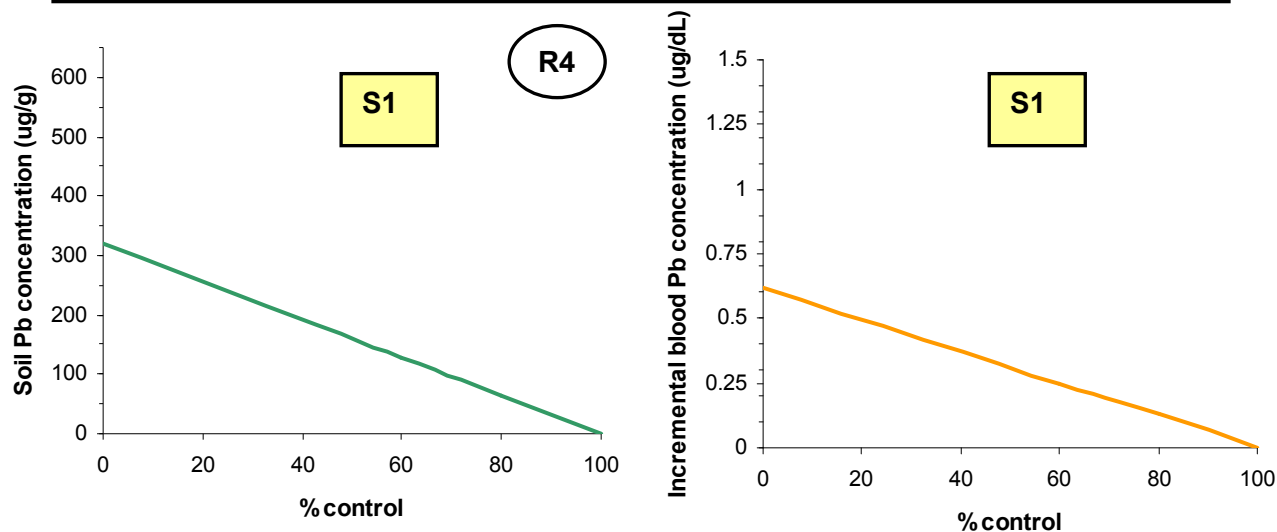
Impact of varying levels of controls on soil Pb concentrations, incremental blood Pb and total blood Pb at assumed existing soil levels for a 1-2 year old child.



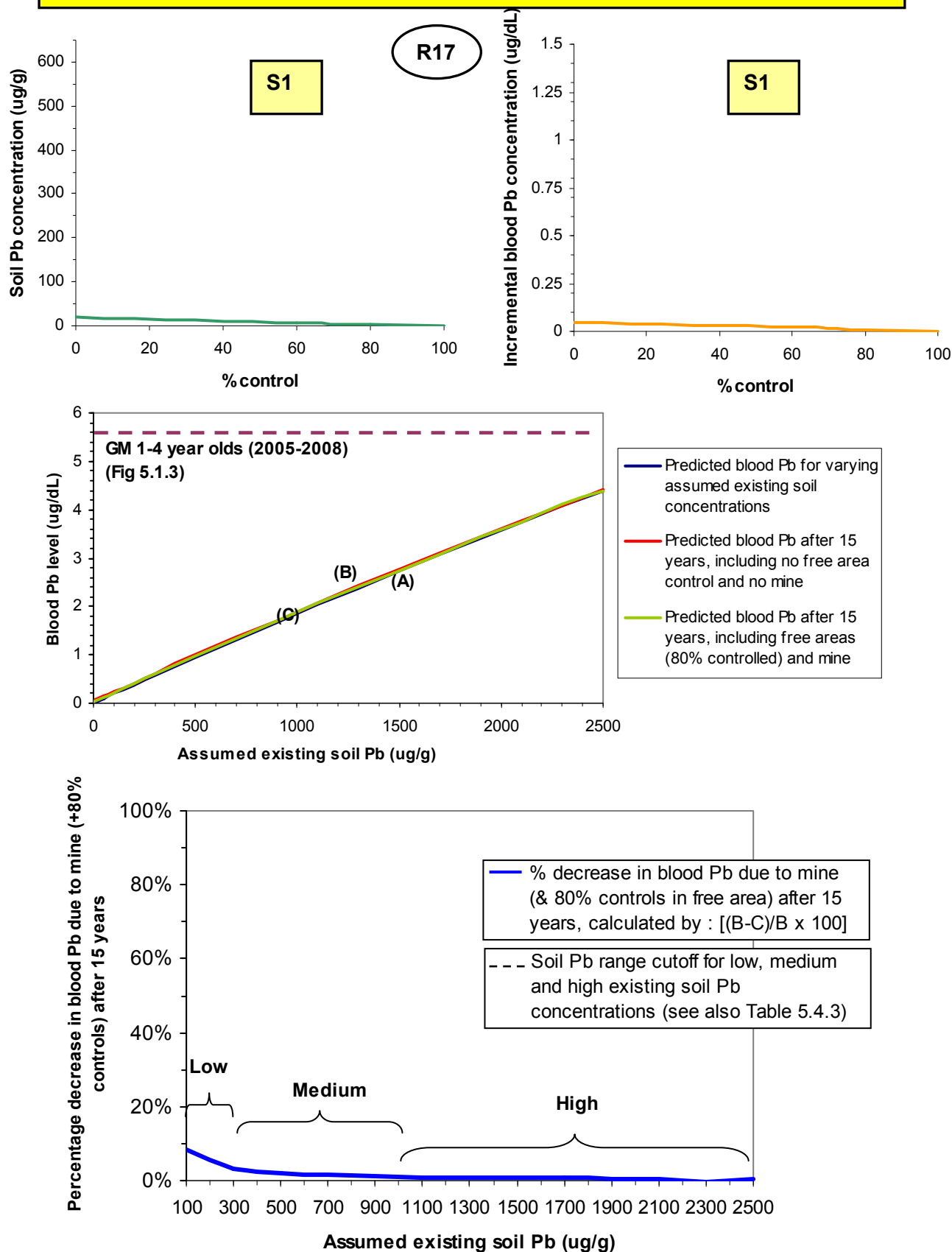
Impact of varying levels of controls on soil Pb concentrations, incremental blood Pb and total blood Pb at assumed existing soil levels for a 1-2 year old child.



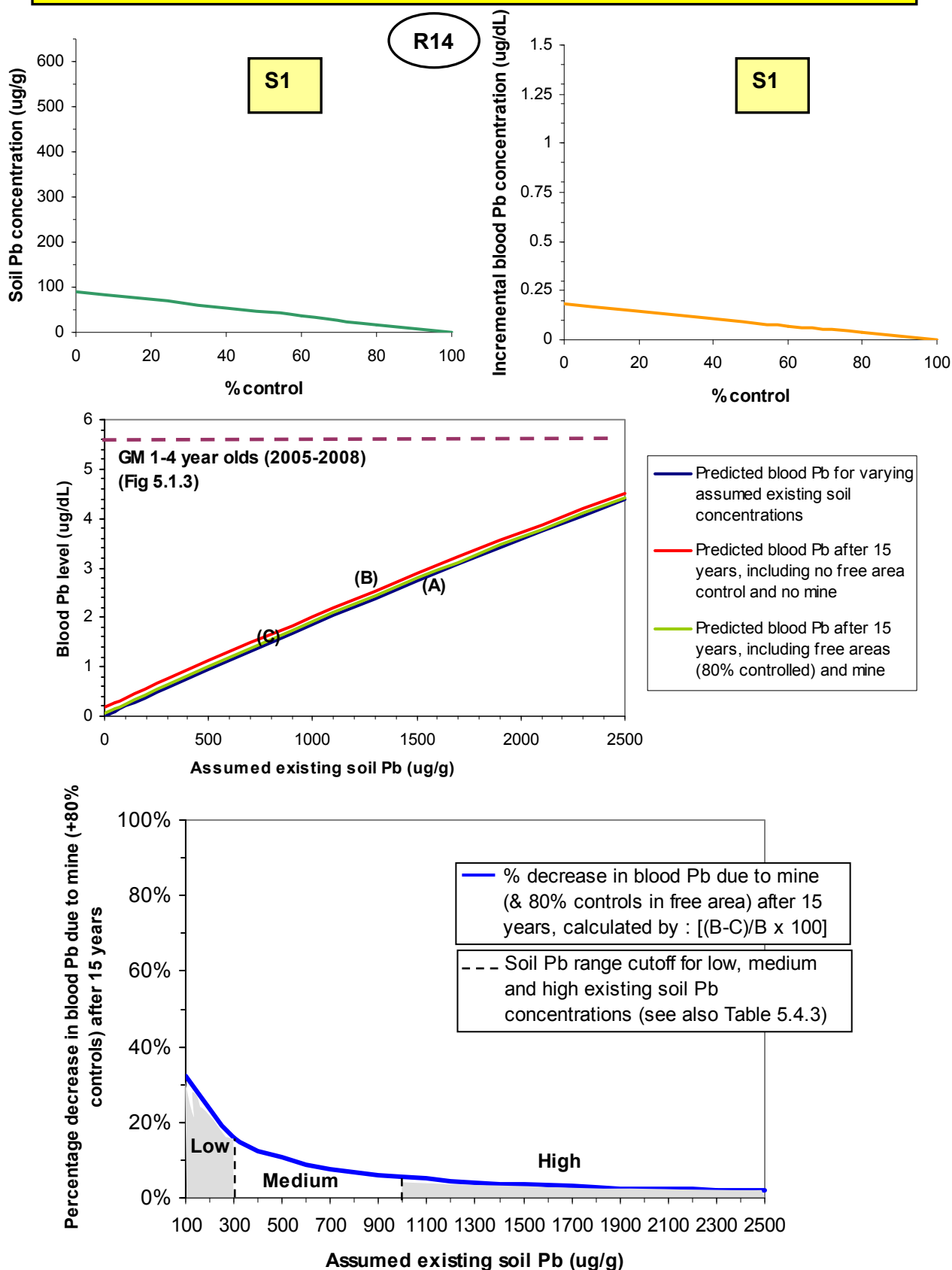
Impact of varying levels of controls on soil Pb concentrations, incremental blood Pb and total blood Pb at assumed existing soil levels for a 1-2 year old child.



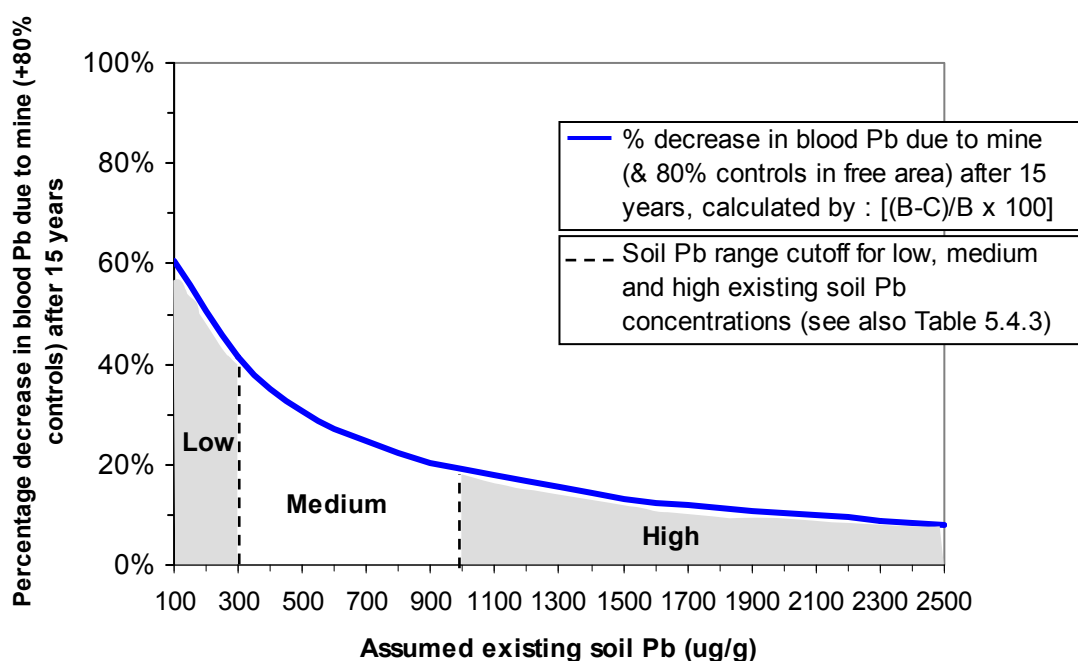
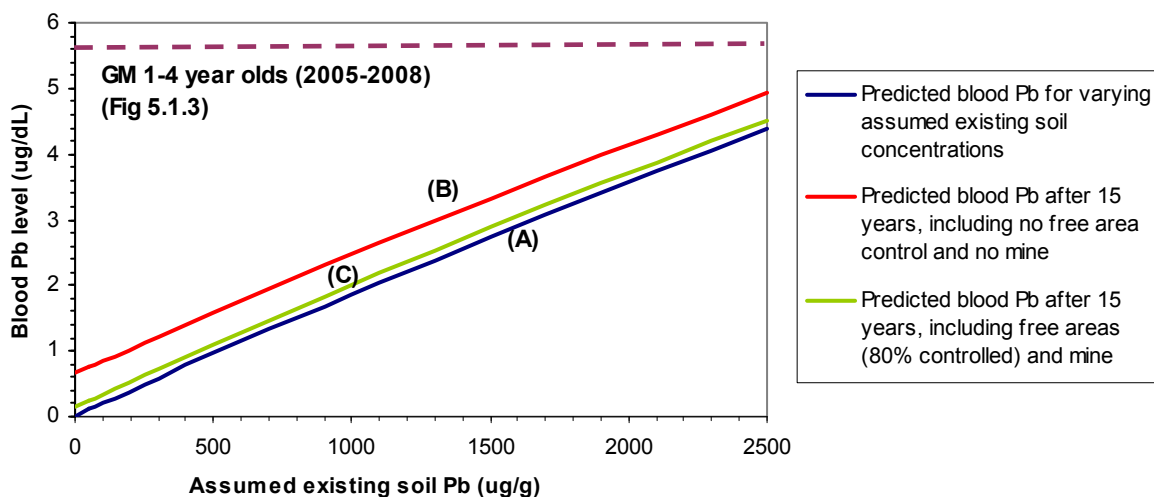
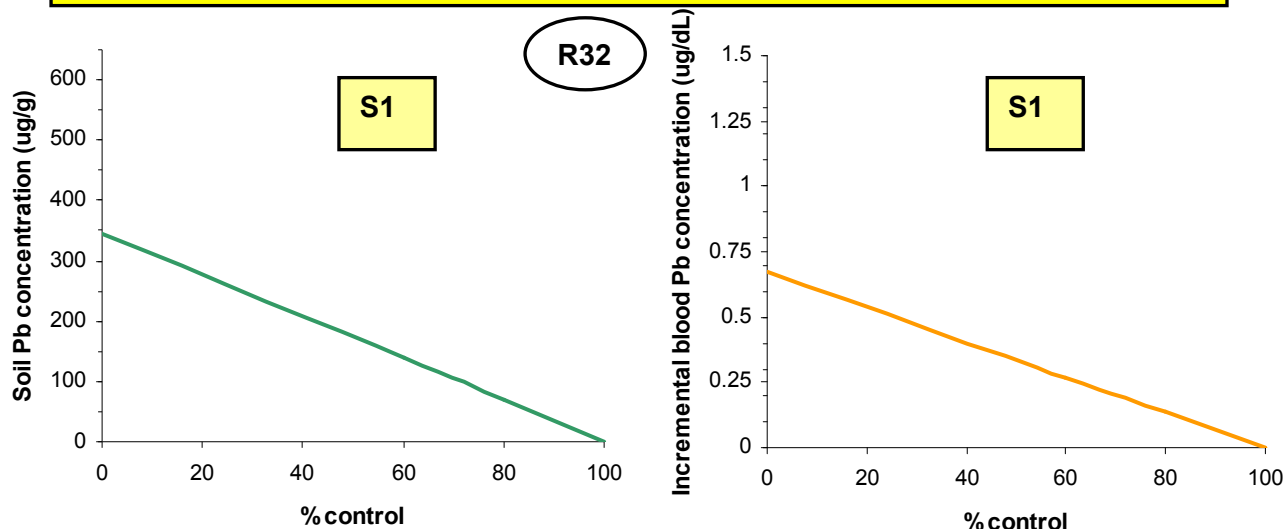
Impact of varying levels of controls on soil Pb concentrations, incremental blood Pb and total blood Pb at assumed existing soil levels for a 1-2 year old child.



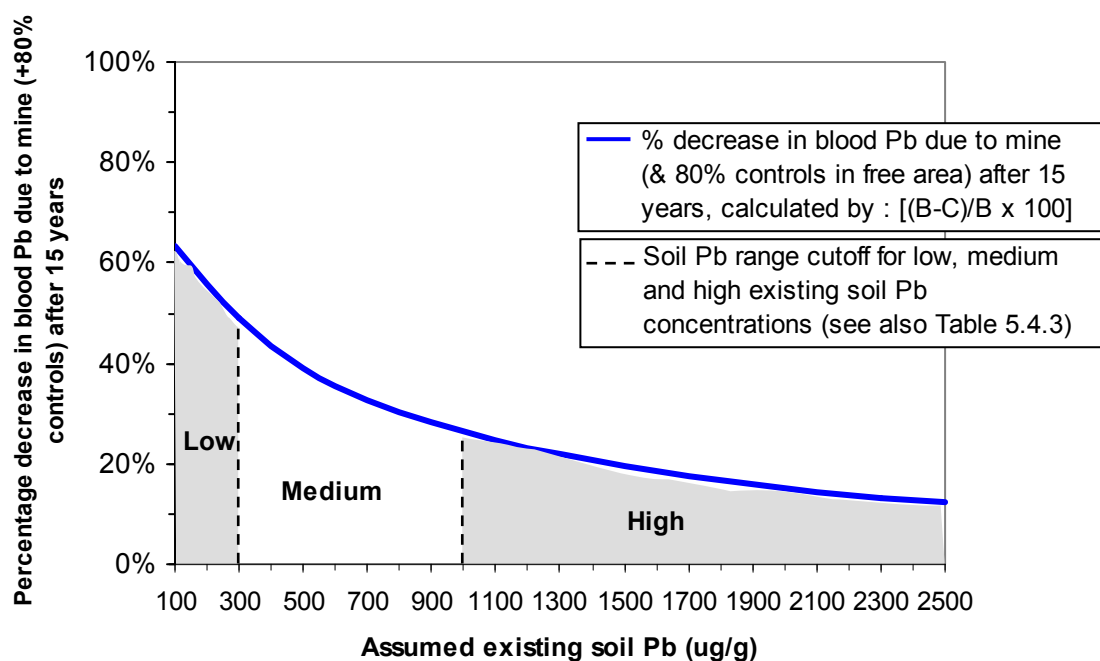
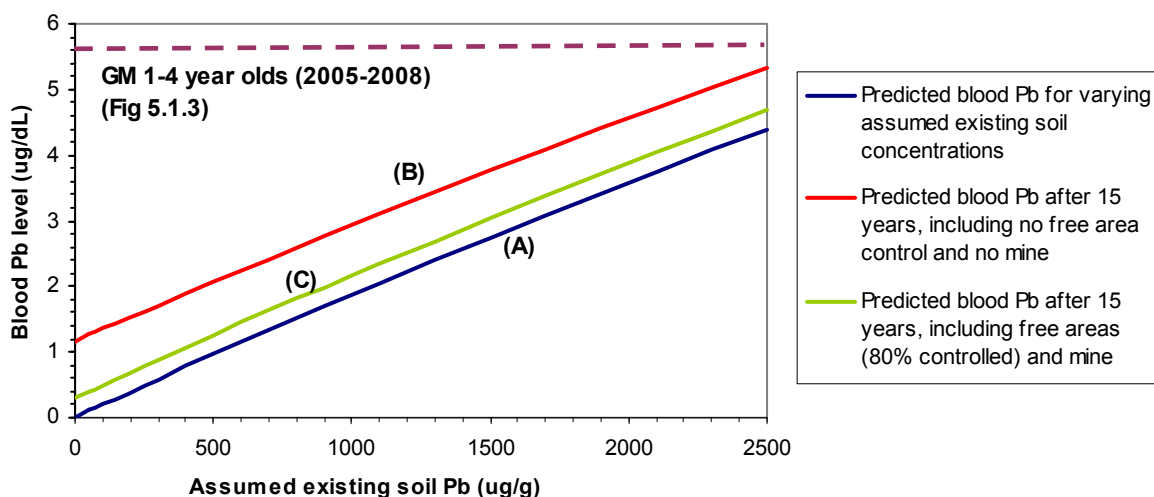
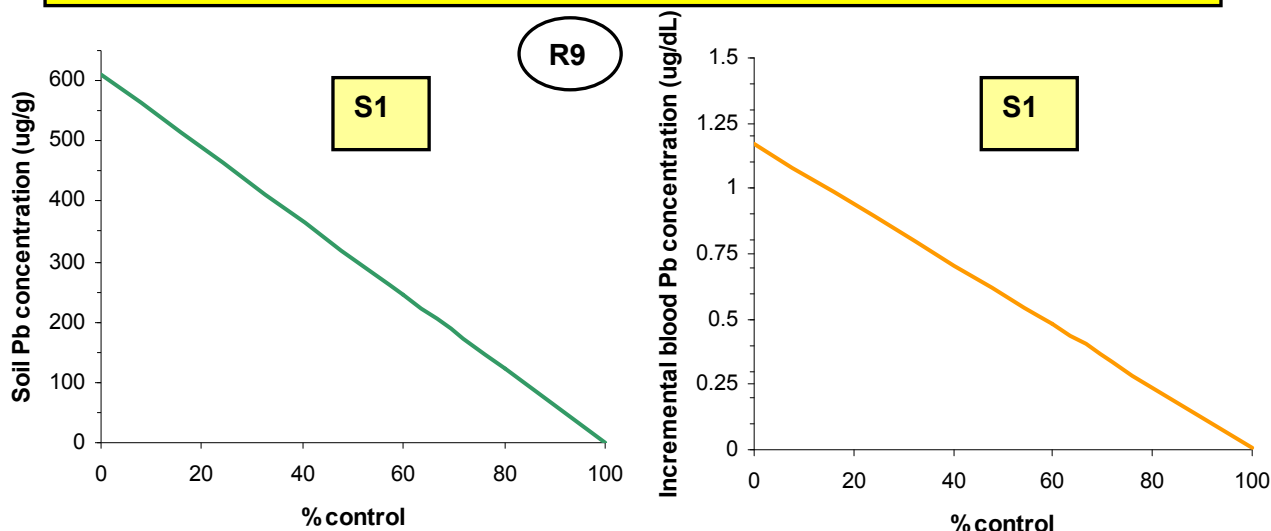
Impact of varying levels of controls on soil Pb concentrations, incremental blood Pb and total blood Pb at assumed existing soil levels for a 1-2 year old child.



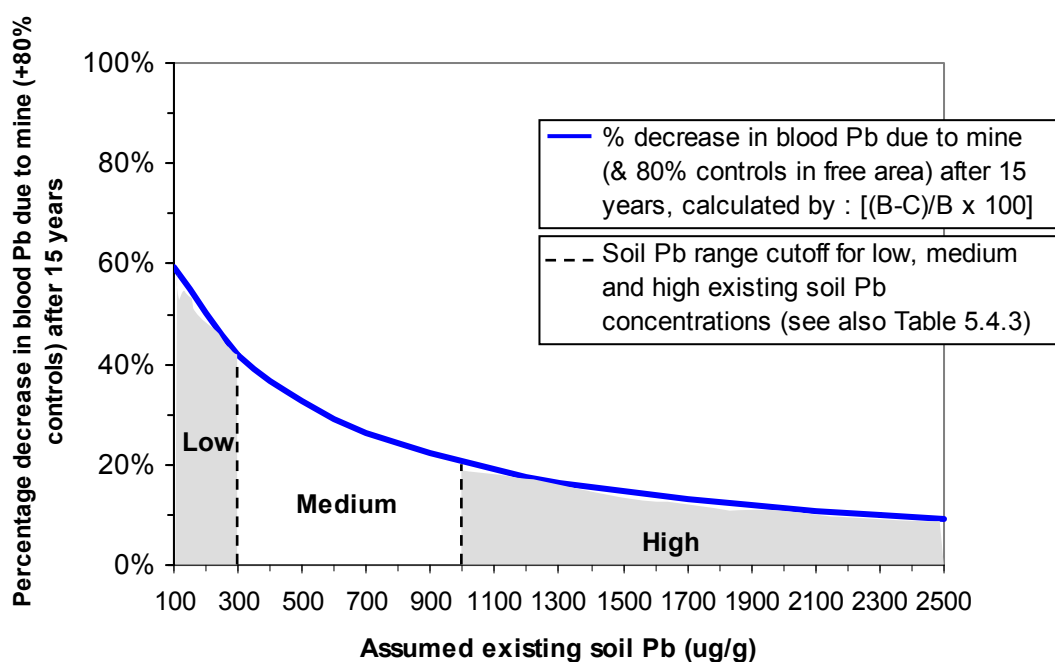
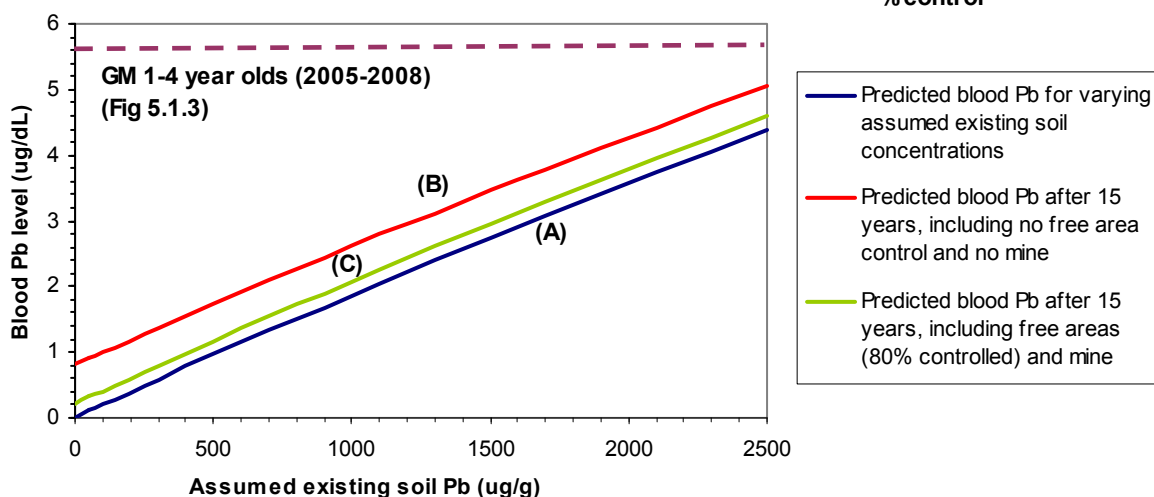
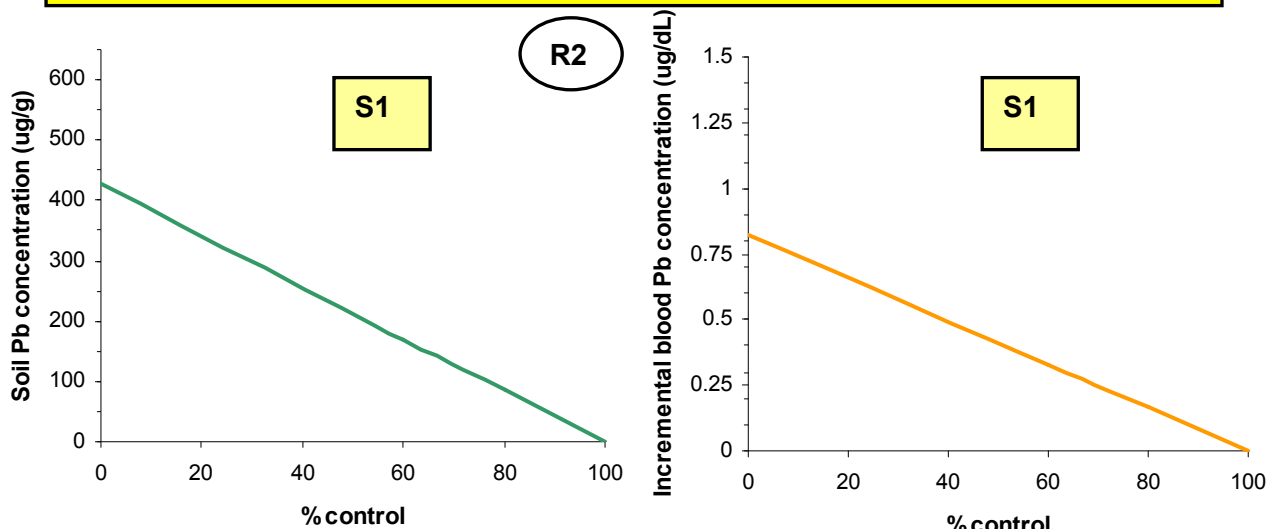
Impact of varying levels of controls on soil Pb concentrations, incremental blood Pb and total blood Pb at assumed existing soil levels for a 1-2 year old child.



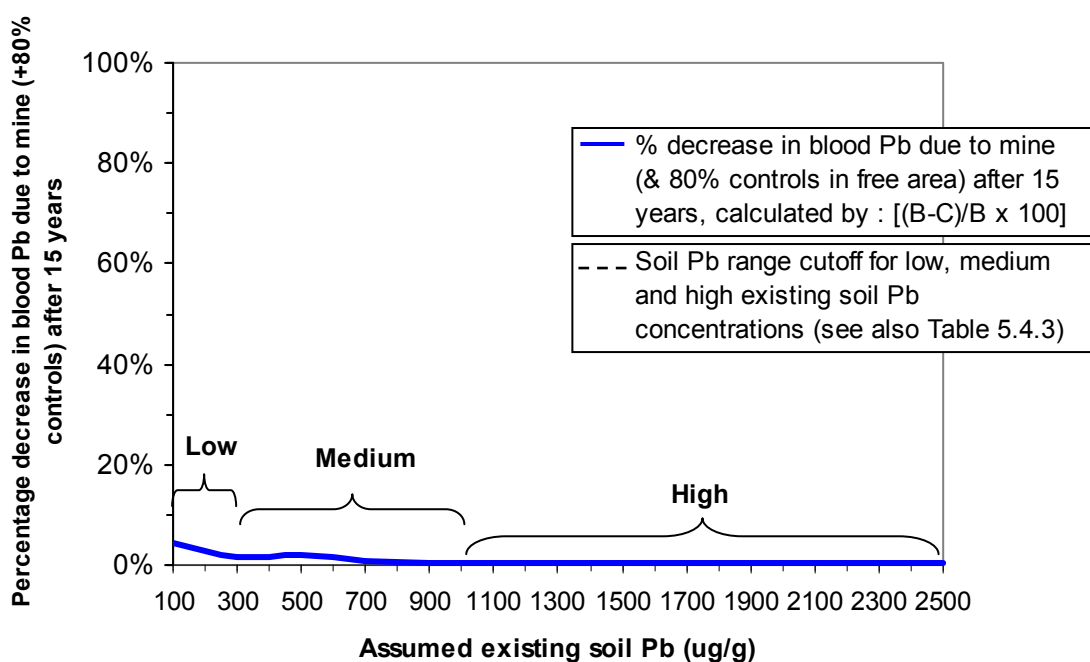
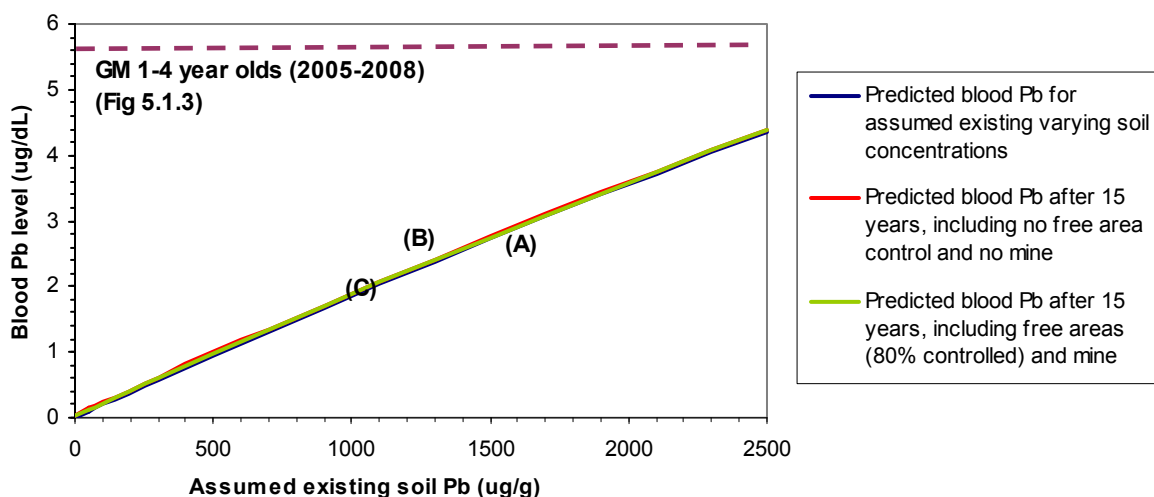
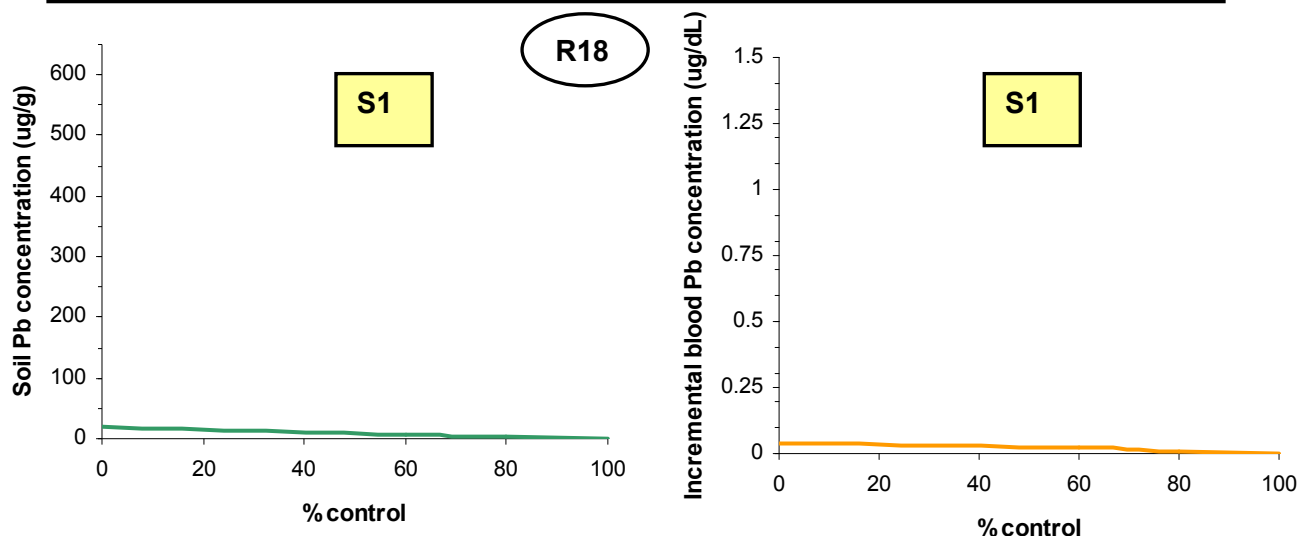
Impact of varying levels of controls on soil Pb concentrations, incremental blood Pb and total blood Pb at assumed existing soil levels for a 1-2 year old child.



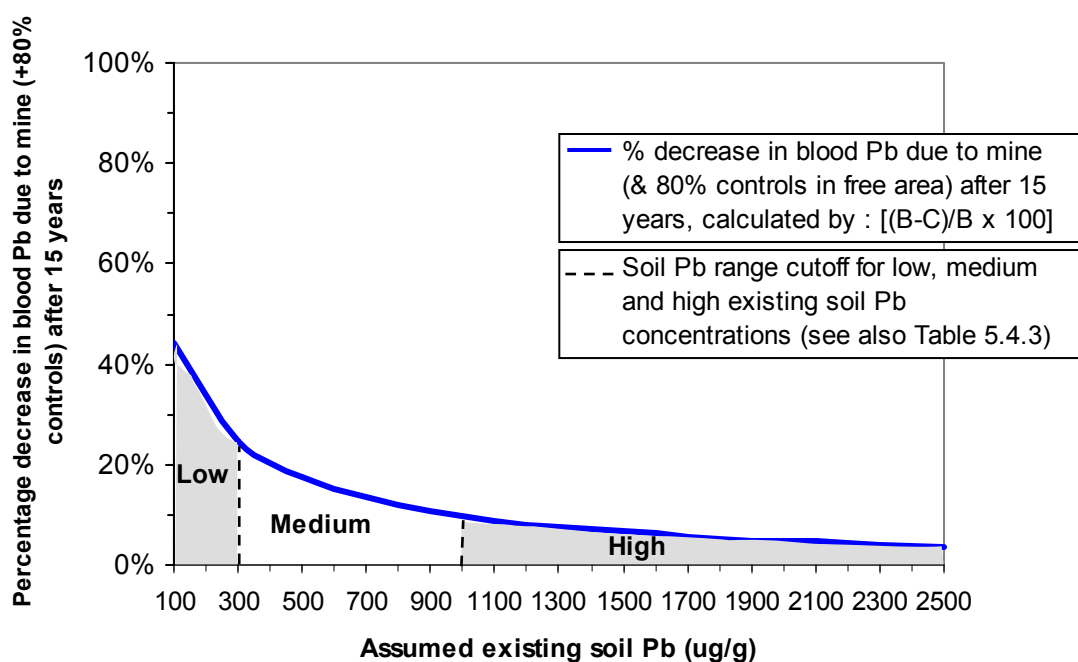
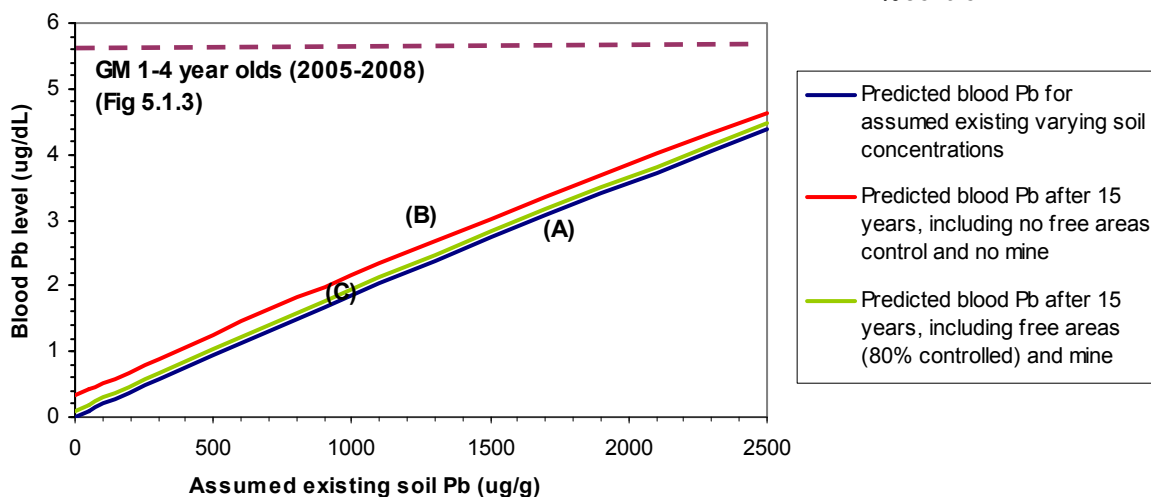
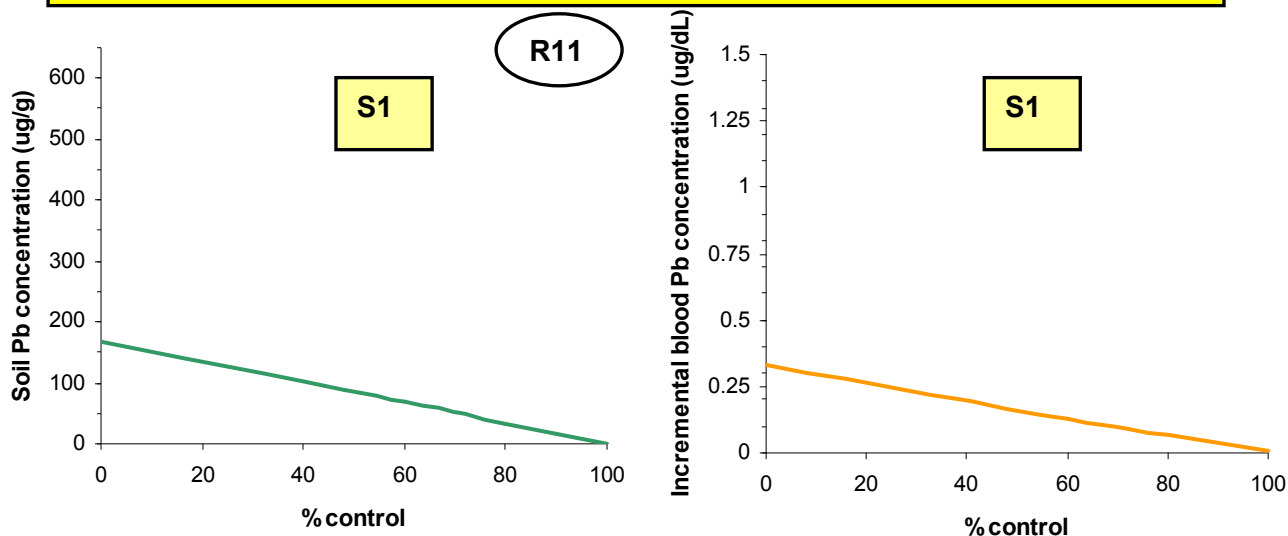
Impact of varying levels of controls on soil Pb concentrations, incremental blood Pb and total blood Pb at assumed existing soil levels for a 1-2 year old child.



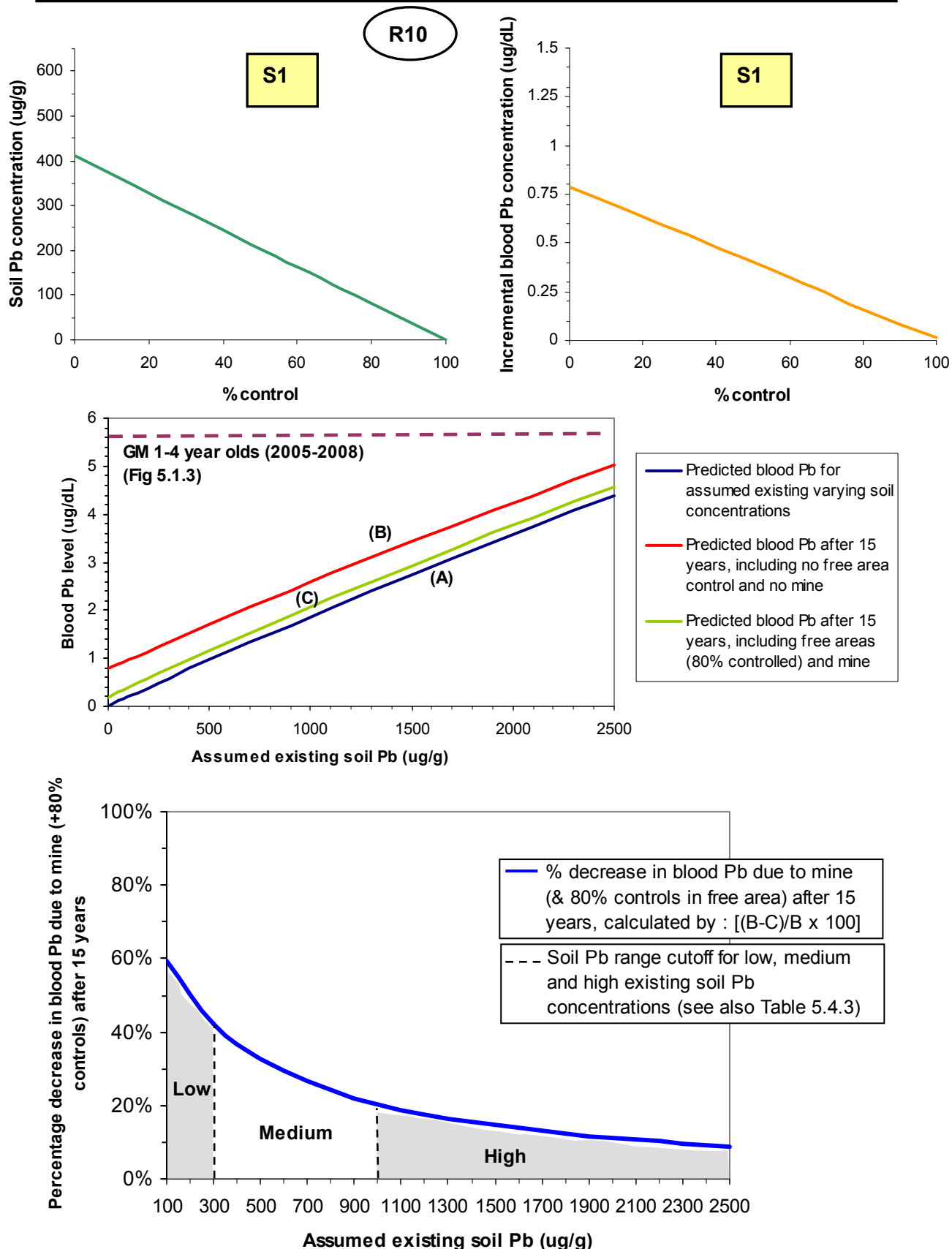
Impact of varying levels of controls on soil Pb concentrations, incremental blood Pb and total blood Pb at assumed existing soil levels for a 1-2 year old child.



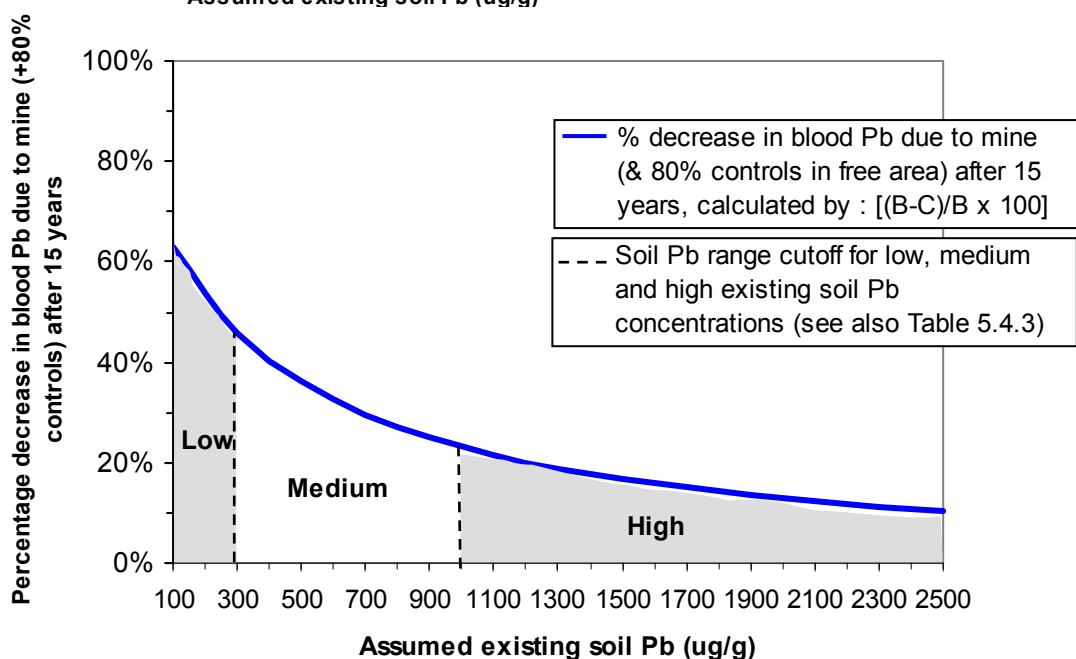
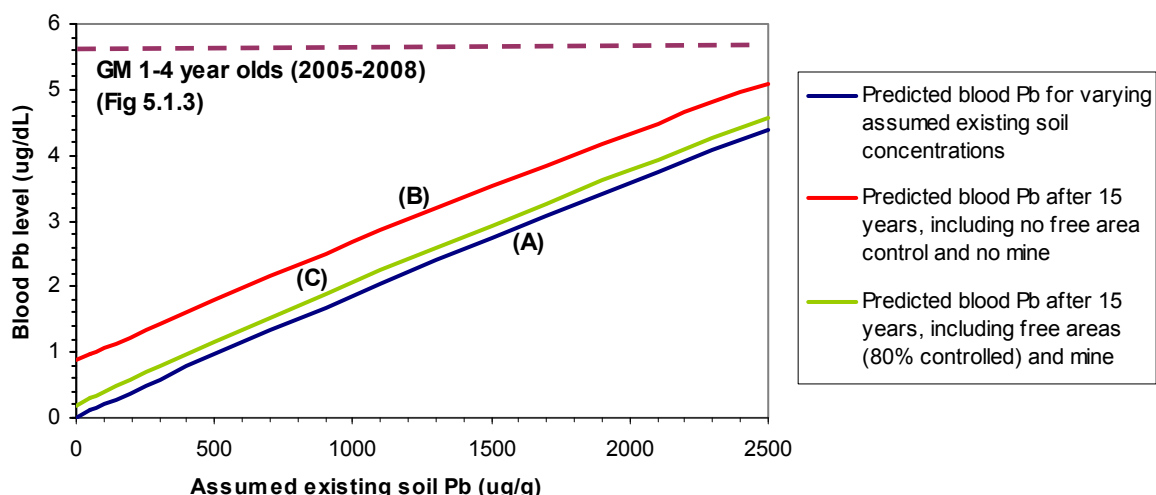
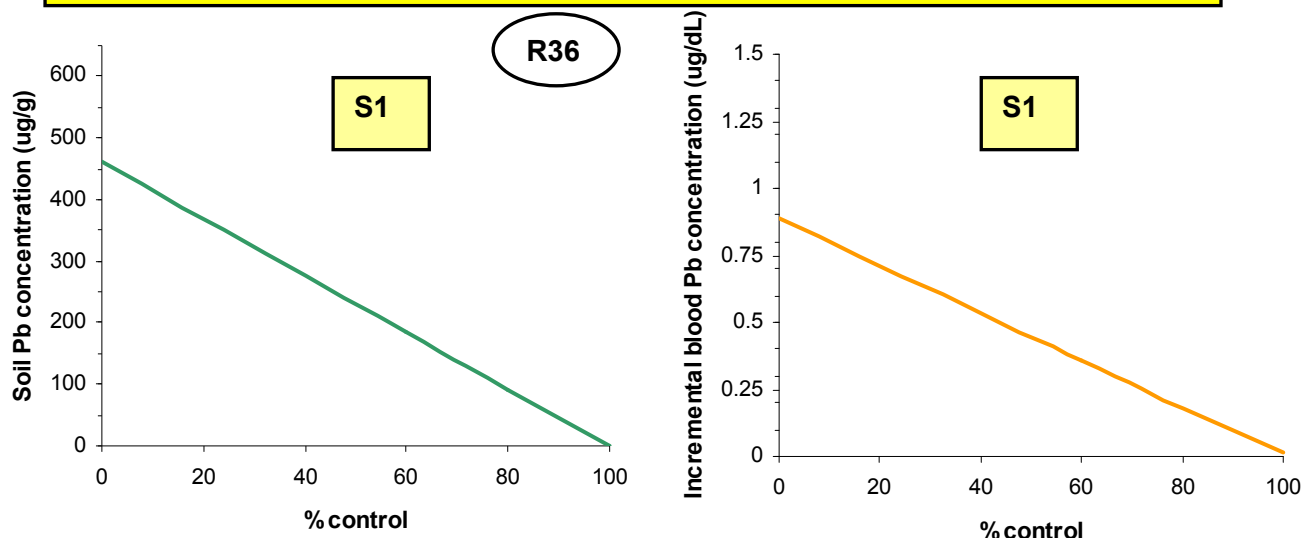
Impact of varying levels of controls on soil Pb concentrations, incremental blood Pb and total blood Pb at assumed existing soil levels for a 1-2 year old child.



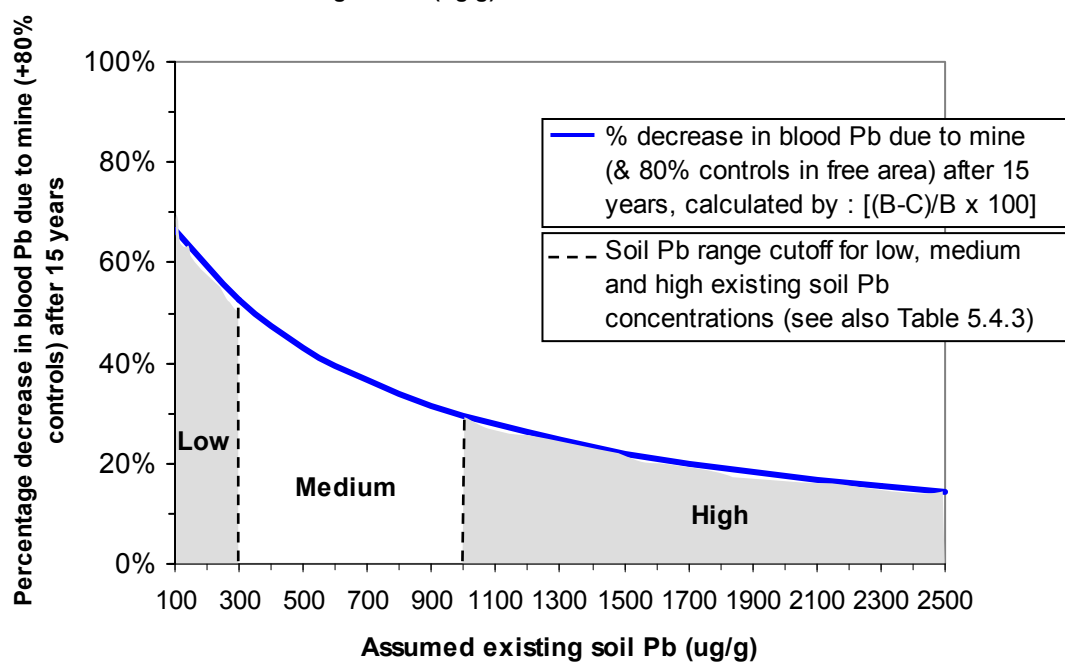
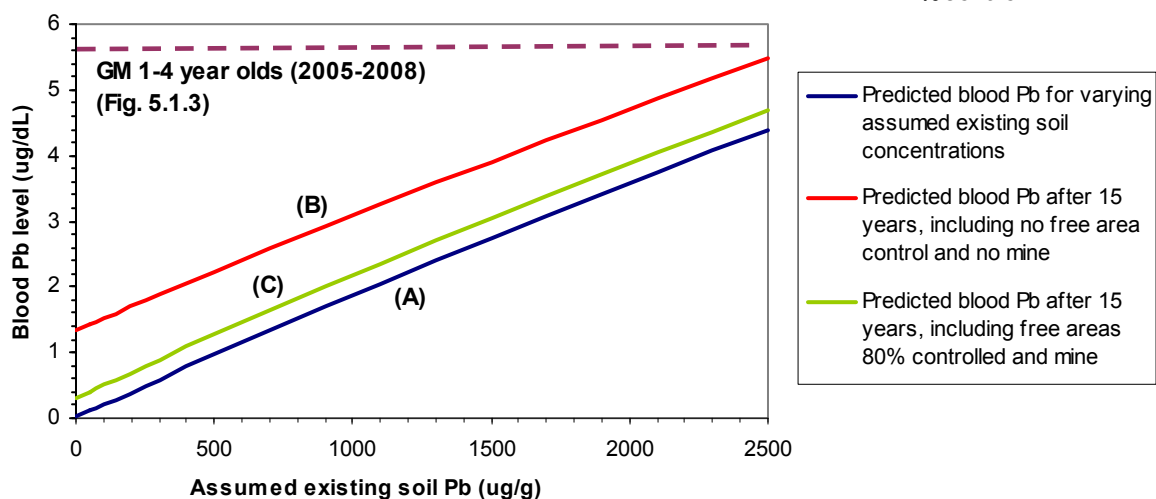
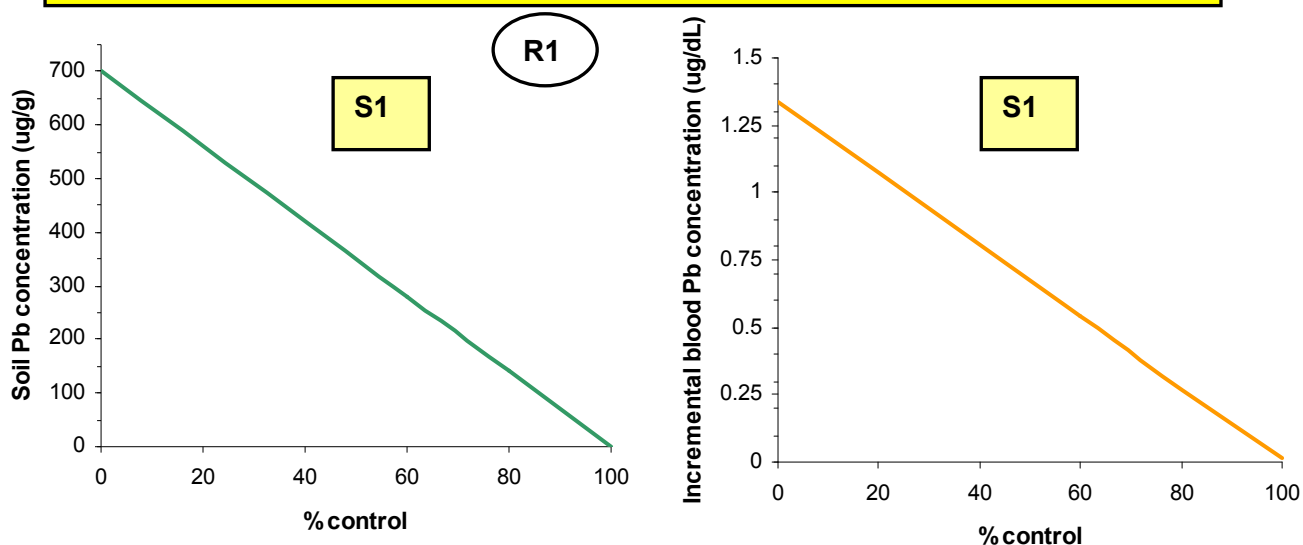
Impact of varying levels of controls on soil Pb concentrations, incremental blood Pb and total blood Pb at assumed existing soil levels for a 1-2 year old child.



Impact of varying levels of controls on soil Pb concentrations, incremental blood Pb and total blood Pb at assumed existing soil levels for a 1-2 year old child.



Impact of varying levels of controls on soil Pb concentrations, incremental blood Pb and total blood Pb at assumed existing soil levels for a 1-2 year old child.



Appendix 8. Cancer Risks

A8.1 Scenario 1a

A8.1.1 Receptor 1

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000005	0.0015	0.000000008
Arsenic (oral) ^a	0.00004	0.0015	0.000000007
Beryllium	0	0.0024	0
Cadmium	0.00004	0.0018	0.000000007
Nickel	0.0001	0.00038	0.000000004
Total Carcinogenic Risk			1.8x10⁻⁷

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.1.2 Receptor 2

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000003	0.0015	0.000000005
Arsenic (oral) ^a	0.00003	0.0015	0.000000004
Beryllium	0	0.0024	0
Cadmium	0.00002	0.0018	0.000000004
Nickel	0.00007	0.00038	0.000000003
Total Carcinogenic Risk			1.1x10⁻⁷

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.1.3 Receptor 3

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000004	0.0015	0.000000005
Arsenic (oral) ^a	0.00004	0.0015	0.000000005
Beryllium	0	0.0024	0
Cadmium	0.00003	0.0018	0.000000005
Nickel	0.00007	0.00038	0.000000003
Total Carcinogenic Risk			1.3x10⁻⁷

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.1.4 Receptor 4

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000002	0.0015	0.000000004
Arsenic (oral) ^a	0.00002	0.0015	0.000000003
Beryllium	0	0.0024	0
Cadmium	0.00002	0.0018	0.000000003
Nickel	0.00005	0.00038	0.000000002
Total Carcinogenic Risk			8.2x10⁻⁸

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.1.5 Receptor 5

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000002	0.0015	0.000000003
Arsenic (oral) ^a	0.00002	0.0015	0.000000002
Beryllium	0	0.0024	0
Cadmium	0.00001	0.0018	0.000000002
Nickel	0.00004	0.00038	0.000000001
Total Carcinogenic Risk			6.3x10⁻⁸

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.1.6 Receptor 6

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000003	0.0015	0.000000004
Arsenic (oral) ^a	0.00002	0.0015	0.000000003
Beryllium	0	0.0024	0
Cadmium	0.00002	0.0018	0.000000004
Nickel	0.00006	0.00038	0.000000002
Total Carcinogenic Risk			9.4x10⁻⁸

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.1.7 Receptor 7

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000002	0.0015	0.000000003
Arsenic (oral) ^a	0.00001	0.0015	0.000000002
Beryllium	0	0.0024	0
Cadmium	0.00002	0.0018	0.000000003
Nickel	0.00004	0.00038	0.000000002
Total Carcinogenic Risk			6.3x10⁻⁸

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.1.8 Receptor 8

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.00002	0.0015	0.000000002
Arsenic (oral) ^a	0.0001	0.0015	0.000000002
Beryllium	0	0.0024	0
Cadmium	0.0001	0.0018	0.000000002
Nickel	0.0003	0.00038	0.000000001
Total Carcinogenic Risk			4.9x10⁻⁷

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.1.9 Receptor 9

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000006	0.0015	0.000000009
Arsenic (oral) ^a	0.00004	0.0015	0.000000006
Beryllium	0	0.0024	0
Cadmium	0.00004	0.0018	0.000000008
Nickel	0.0001	0.00038	0.000000005
Total Carcinogenic Risk			1.9x10⁻⁷

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.1.10 Receptor 10

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000004	0.0015	0.000000005
Arsenic (oral) ^a	0.00003	0.0015	0.000000004
Beryllium	0	0.0024	0
Cadmium	0.00003	0.0018	0.000000005
Nickel	0.00007	0.00038	0.000000003
Total Carcinogenic Risk			1.2x10⁻⁷

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.1.11 Receptor 11

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000001	0.0015	0.000000002
Arsenic (oral) ^a	0.00001	0.0015	0.000000002
Beryllium	0	0.0024	0
Cadmium	0.000009	0.0018	0.000000002
Nickel	0.00003	0.00038	0.000000001
Total Carcinogenic Risk			4.4x10⁻⁸

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor

for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.1.12 Receptor 12

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000001	0.0015	0.000000002
Arsenic (oral) ^a	0.000002	0.0015	0.000000004
Beryllium	0	0.0024	0
Cadmium	0.000008	0.0018	0.00000001
Nickel	0.00002	0.00038	0.000000008
Total Carcinogenic Risk			2.7x10⁻⁸

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.1.13 Receptor 13

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.0000009	0.0015	0.000000001
Arsenic (oral) ^a	0.0000007	0.0015	0.000000001
Beryllium	0	0.0024	0
Cadmium	0.000006	0.0018	0.00000001
Nickel	0.00002	0.00038	0.000000007
Total Carcinogenic Risk			2.1x10⁻⁸

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.1.14 Receptor 14

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000002	0.0015	0.000000003
Arsenic (oral) ^a	0.000006	0.0015	0.000000008
Beryllium	0	0.0024	0
Cadmium	0.00001	0.0018	0.00000002
Nickel	0.00004	0.00038	0.00000001
Total Carcinogenic Risk			5.1x10⁻⁸

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by

comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.1.15 Receptor 15

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.0000007	0.0015	0.000000001
Arsenic (oral) ^a	0	0.0015	0
Beryllium	0	0.0024	0
Cadmium	0.000005	0.0018	0.000000009
Nickel	0.00001	0.00038	0.000000006
Total Carcinogenic Risk			1.6x10⁻⁸

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.1.16 Receptor 16

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.0000008	0.0015	0.000000001
Arsenic (oral) ^a	0	0.0015	0
Beryllium	0	0.0024	0
Cadmium	0.000006	0.0018	0.000000001
Nickel	0.00002	0.00038	0.000000006
Total Carcinogenic Risk			1.8x10⁻⁸

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.1.17 Receptor 17

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000002	0.0015	0.000000002
Arsenic (oral) ^a	0.000001	0.0015	0.000000002
Beryllium	0	0.0024	0
Cadmium	0.00001	0.0018	0.000000002
Nickel	0.00003	0.00038	0.000000001
Total Carcinogenic Risk			3.8x10⁻⁸

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.1.18 Receptor 18

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.0000005	0.0015	0.0000000008
Arsenic (oral) ^a	0.000001	0.0015	0.0000000002
Beryllium	0	0.0024	0
Cadmium	0.000004	0.0018	0.0000000006
Nickel	0.00001	0.00038	0.0000000004
Total Carcinogenic Risk			1.3x10⁻⁸

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.1.19 Receptor 19

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.0000006	0.0015	0.0000000009
Arsenic (oral) ^a	0	0.0015	0
Beryllium	0	0.0024	0
Cadmium	0.000004	0.0018	0.0000000007
Nickel	0.00001	0.00038	0.0000000004
Total Carcinogenic Risk			1.3x10⁻⁸

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.1.20 Receptor 20

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.0000007	0.0015	0.0000000001
Arsenic (oral) ^a	0	0.0015	0
Beryllium	0	0.0024	0
Cadmium	0.000005	0.0018	0.0000000008
Nickel	0.00001	0.00038	0.0000000005
Total Carcinogenic Risk			1.4E-08

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.1.21 Receptor 21

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000006	0.0015	0.00000001
Arsenic (oral) ^a	0.00006	0.0015	0.00000009
Beryllium	0	0.0024	0
Cadmium	0.00004	0.0018	0.00000008
Nickel	0.0001	0.00038	0.00000005
Total Carcinogenic Risk			2.2x10⁻⁷

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.1.22 Receptor 22

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000005	0.0015	0.000000008
Arsenic (oral) ^a	0.00005	0.0015	0.00000008
Beryllium	0	0.0024	0
Cadmium	0.00004	0.0018	0.00000007
Nickel	0.0001	0.00038	0.00000004
Total Carcinogenic Risk			1.9x10⁻⁷

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.1.23 Receptor 23

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000004	0.0015	0.000000006
Arsenic (oral) ^a	0.00004	0.0015	0.00000006
Beryllium	0	0.0024	0
Cadmium	0.00003	0.0018	0.00000005
Nickel	0.00008	0.00038	0.00000003
Total Carcinogenic Risk			1.4x10⁻⁷

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.1.24 Receptor 24

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000004	0.0015	0.000000006
Arsenic (oral) ^a	0.00004	0.0015	0.000000006
Beryllium	0	0.0024	0
Cadmium	0.00003	0.0018	0.000000005
Nickel	0.00008	0.00038	0.000000003
Total Carcinogenic Risk			1.4x10⁻⁷

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.1.25 Receptor 25

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000003	0.0015	0.000000005
Arsenic (oral) ^a	0.00002	0.0015	0.000000004
Beryllium	0	0.0024	0
Cadmium	0.00002	0.0018	0.000000004
Nickel	0.00007	0.00038	0.000000002
Total Carcinogenic Risk			1.1x10⁻⁷

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.1.26 Receptor 26

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000004	0.0015	0.000000006
Arsenic (oral) ^a	0.00004	0.0015	0.000000006
Beryllium	0	0.0024	0
Cadmium	0.00003	0.0018	0.000000005
Nickel	0.00008	0.00038	0.000000003
Total Carcinogenic Risk			1.5x10⁻⁷

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.1.27 Receptor 27

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000007	0.0015	0.00000001
Arsenic (oral) ^a	0.00005	0.0015	0.00000008
Beryllium	0	0.0024	0
Cadmium	0.00005	0.0018	0.00000009
Nickel	0.0001	0.00038	0.00000006
Total Carcinogenic Risk			2.4x10⁻⁷

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.1.28 Receptor 28

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000006	0.0015	0.000000009
Arsenic (oral) ^a	0.00003	0.0015	0.00000005
Beryllium	0	0.0024	0
Cadmium	0.00004	0.0018	0.00000008
Nickel	0.0001	0.00038	0.00000005
Total Carcinogenic Risk			1.8x10⁻⁷

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.1.29 Receptor 29

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000006	0.0015	0.000000009
Arsenic (oral) ^a	0.00004	0.0015	0.00000007
Beryllium	0	0.0024	0
Cadmium	0.00004	0.0018	0.00000008
Nickel	0.0001	0.00038	0.00000005
Total Carcinogenic Risk			2.0x10⁻⁷

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.1.30 Receptor 30

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000004	0.0015	0.000000006
Arsenic (oral) ^a	0.00003	0.0015	0.000000005
Beryllium	0	0.0024	0
Cadmium	0.00003	0.0018	0.000000005
Nickel	0.00009	0.00038	0.000000003
Total Carcinogenic Risk			1.4x10⁻⁷

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.1.31 Receptor 31

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000003	0.0015	0.000000005
Arsenic (oral) ^a	0.00003	0.0015	0.000000004
Beryllium	0	0.0024	0
Cadmium	0.00002	0.0018	0.000000004
Nickel	0.00007	0.00038	0.000000003
Total Carcinogenic Risk			1.2x10⁻⁷

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.1.32 Receptor 32

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000003	0.0015	0.000000004
Arsenic (oral) ^a	0.00002	0.0015	0.000000003
Beryllium	0	0.0024	0.0
Cadmium	0.00002	0.0018	0.000000004
Nickel	0.00006	0.00038	0.000000002
Total Carcinogenic Risk			9.4x10⁻⁸

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.1.33 Receptor 33

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000004	0.0015	0.000000005
Arsenic (oral) ^a	0.00003	0.0015	0.000000004
Beryllium	0	0.0024	0
Cadmium	0.00003	0.0018	0.000000005
Nickel	0.00007	0.00038	0.000000003
Total Carcinogenic Risk			1.2x10⁻⁷

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.1.34 Receptor 34

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000006	0.0015	0.000000009
Arsenic (oral) ^a	0.00004	0.0015	0.000000006
Beryllium	0	0.0024	0.0
Cadmium	0.00004	0.0018	0.000000007
Nickel	0.0001	0.00038	0.000000004
Total Carcinogenic Risk			1.8x10⁻⁷

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.1.35 Receptor 35

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000005	0.0015	0.000000007
Arsenic (oral) ^a	0.00003	0.0015	0.000000005
Beryllium	0	0.0024	0
Cadmium	0.00003	0.0018	0.000000006
Nickel	0.0001	0.00038	0.000000004
Total Carcinogenic Risk			1.6x10⁻⁷

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.1.36 Receptor 36

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000004	0.0015	0.000000006
Arsenic (oral) ^a	0.00003	0.0015	0.000000004
Beryllium	0	0.0024	0
Cadmium	0.00003	0.0018	0.000000005
Nickel	0.00008	0.00038	0.000000003
Total Carcinogenic Risk			1.3x10⁻⁷

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.1.37 Receptor 37

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000004	0.0015	0.000000005
Arsenic (oral) ^a	0.00003	0.0015	0.000000004
Beryllium	0	0.0024	0
Cadmium	0.00002	0.0018	0.000000004
Nickel	0.00007	0.00038	0.000000003
Total Carcinogenic Risk			1.2x10⁻⁷

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.1.38 Receptor 38

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000001	0.0015	0.000000002
Arsenic (oral) ^a	0.000005	0.0015	0.000000008
Beryllium	0	0.0024	0
Cadmium	0.000009	0.0018	0.000000002
Nickel	0.00003	0.00038	0.000000001

Total Carcinogenic Risk	3.5x10⁻⁸

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.1.39 Receptor 39

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000002	0.0015	0.000000002
Arsenic (oral) ^a	0.000007	0.0015	0.000000001
Beryllium	0	0.0024	0
Cadmium	0.00001	0.0018	0.000000002
Nickel	0.00003	0.00038	0.000000001
Total Carcinogenic Risk			4.5x10⁻⁸

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.1.40 Receptor 40

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000006	0.0015	0.000000009
Arsenic (oral) ^a	0.00004	0.0015	0.000000005
Beryllium	0	0.0024	0
Cadmium	0.00004	0.0018	0.000000007
Nickel	0.0001	0.00038	0.000000004
Total Carcinogenic Risk			1.8x10⁻⁷

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.1.41 Receptor 41

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000006	0.0015	0.000000009
Arsenic (oral) ^a	0.00004	0.0015	0.000000006
Beryllium	0	0.0024	0
Cadmium	0.00004	0.0018	0.000000008
Nickel	0.0001	0.00038	0.000000005
Total Carcinogenic Risk			1.9x10⁻⁷

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.1.42 Receptor 42

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000006	0.0015	0.000000009
Arsenic (oral) ^a	0.00005	0.0015	0.000000007
Beryllium	0	0.0024	0
Cadmium	0.00004	0.0018	0.000000008
Nickel	0.0001	0.00038	0.000000005
Total Carcinogenic Risk			2.0x10⁻⁷

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.2 Scenario 2

A8.2.1 Receptor 1

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000002	0.0015	0.000000003
Arsenic (oral) ^a	0.000009	0.0015	0.00000001
Beryllium	0.00000003	0.0024	0.00000000007
Cadmium	0.00002	0.0018	0.00000003
Nickel	0.000007	0.00038	0.000000003
Total Carcinogenic Risk			5.0x10⁻⁸

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.2.2 Receptor 2

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000004	0.0015	0.000000005
Arsenic (oral) ^a	0.00002	0.0015	0.00000003
Beryllium	0.000000006	0.0024	0.00000000001
Cadmium	0.00004	0.0018	0.00000006
Nickel	0.000009	0.00038	0.000000003
Total Carcinogenic Risk			1.1x10⁻⁷

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.2.3 Receptor 3

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000007	0.0015	0.00000001
Arsenic (oral) ^a	0.00005	0.0015	0.00000007
Beryllium	0.000000004	0.0024	0.00000000009
Cadmium	0.00007	0.0018	0.0000001
Nickel	0.00002	0.00038	0.000000007
Total Carcinogenic Risk			2.1x10⁻⁷

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.2.4 Receptor 4

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000006	0.0015	0.000000009
Arsenic (oral) ^a	0.00003	0.0015	0.000000004
Beryllium	0.000000002	0.0024	0.000000000004
Cadmium	0.00006	0.0018	0.00000001
Nickel	0.00002	0.00038	0.000000007
Total Carcinogenic Risk			1.7x10⁻⁷

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.2.5 Receptor 5

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000005	0.0015	0.000000008
Arsenic (oral) ^a	0.00002	0.0015	0.000000003
Beryllium	0.000000001	0.0024	0.000000000003
Cadmium	0.00005	0.0018	0.000000009
Nickel	0.00001	0.00038	0.000000004
Total Carcinogenic Risk			1.4x10⁻⁷

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.2.6 Receptor 6

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000008	0.0015	0.000000001
Arsenic (oral) ^a	0.00002	0.0015	0.000000003
Beryllium	0.0000000008	0.0024	0.000000000002
Cadmium	0.00008	0.0018	0.00000001
Nickel	0.00001	0.00038	0.000000005
Total Carcinogenic Risk			1.9x10⁻⁷

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.2.7 Receptor 7

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000006	0.0015	0.000000008
Arsenic (oral) ^a	0.00002	0.0015	0.000000002
Beryllium	0.0000000006	0.0024	0.000000000001
Cadmium	0.00006	0.0018	0.0000001
Nickel	0.000002	0.00038	0.0000000009
Total Carcinogenic Risk			1.4x10⁻⁷

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.2.8 Receptor 8

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.00003	0.0015	0.00000004
Arsenic (oral) ^a	0.0001	0.0015	0.00000002
Beryllium	0.000000001	0.0024	0.000000000002
Cadmium	0.0003	0.0018	0.0000005
Nickel	0.000007	0.00038	0.000000003
Total Carcinogenic Risk			6.9x10⁻⁷

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.2.9 Receptor 9

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000008	0.0015	0.00000001
Arsenic (oral) ^a	0.00003	0.0015	0.00000005
Beryllium	0.000000001	0.0024	0.000000000003
Cadmium	0.00008	0.0018	0.0000001
Nickel	0.000005	0.00038	0.000000002
Total Carcinogenic Risk			2.1x10⁻⁷

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.2.10 Receptor 10

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000003	0.0015	0.000000004
Arsenic (oral) ^a	0.00001	0.0015	0.000000002
Beryllium	0.000000002	0.0024	0.000000000005
Cadmium	0.00003	0.0018	0.000000005
Nickel	0.000004	0.00038	0.000000002
Total Carcinogenic Risk			7.2x10⁻⁸

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.2.11 Receptor 11

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000003	0.0015	0.000000005
Arsenic (oral) ^a	0.00001	0.0015	0.000000002
Beryllium	0.000000001	0.0024	0.000000000003
Cadmium	0.00003	0.0018	0.000000006
Nickel	0.000005	0.00038	0.000000002
Total Carcinogenic Risk			8.4x10⁻⁸

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.2.12 Receptor 12

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000002	0.0015	0.000000003
Arsenic (oral) ^a	0.000008	0.0015	0.000000001
Beryllium	0.000000002	0.0024	0.000000000004
Cadmium	0.00002	0.0018	0.000000003
Nickel	0.000003	0.00038	0.000000001
Total Carcinogenic Risk			5.0x10⁻⁸

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.2.13 Receptor 13

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000002	0.0015	0.000000002
Arsenic (oral) ^a	0.000006	0.0015	0.000000009
Beryllium	0.000000002	0.0024	0.000000000004
Cadmium	0.00002	0.0018	0.00000003
Nickel	0.000002	0.00038	0.0000000009
Total Carcinogenic Risk			4.1x10⁻⁸

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.2.14 Receptor 14

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000002	0.0015	0.000000003
Arsenic (oral) ^a	0.000007	0.0015	0.00000001
Beryllium	0.000000002	0.0024	0.000000000004
Cadmium	0.00002	0.0018	0.00000003
Nickel	0.000002	0.00038	0.0000000009
Total Carcinogenic Risk			4.8x10⁻⁸

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.2.15 Receptor 15

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.0000006	0.0015	0.0000000009
Arsenic (oral) ^a	0.000002	0.0015	0.000000003
Beryllium	0.000000001	0.0024	0.000000000003
Cadmium	0.000006	0.0018	0.00000001
Nickel	0.000001	0.00038	0.0000000004
Total Carcinogenic Risk			1.5x10⁻⁸

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.2.16 Receptor 16

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.0000005	0.0015	0.0000000008
Arsenic (oral) ^a	0.000001	0.0015	0.0000000002
Beryllium	0.0000000002	0.0024	0.000000000005
Cadmium	0.000005	0.0018	0.0000000009
Nickel	0.000002	0.00038	0.0000000006
Total Carcinogenic Risk			1.2x10⁻⁸

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.2.17 Receptor 17

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000001	0.0015	0.0000000002
Arsenic (oral) ^a	0.000004	0.0015	0.0000000006
Beryllium	0.0000000002	0.0024	0.000000000004
Cadmium	0.00001	0.0018	0.0000000002
Nickel	0.000002	0.00038	0.0000000009
Total Carcinogenic Risk			3.0x10⁻⁸

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.2.18 Receptor 18

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000001	0.0015	0.0000000002
Arsenic (oral) ^a	0.000004	0.0015	0.0000000006
Beryllium	0.0000000006	0.0024	0.000000000001
Cadmium	0.00001	0.0018	0.0000000003
Nickel	0.000001	0.00038	0.0000000004
Total Carcinogenic Risk			3.5x10⁻⁸

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.2.19 Receptor 19

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.0000004	0.0015	0.0000000006
Arsenic (oral) ^a	0.0000008	0.0015	0.0000000001
Beryllium	0.000000001	0.0024	0.000000000003
Cadmium	0.000004	0.0018	0.0000000007
Nickel	0.000001	0.00038	0.0000000004
Total Carcinogenic Risk			9.1x10⁻⁹

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.2.20 Receptor 20

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.0000005	0.0015	0.0000000008
Arsenic (oral) ^a	0.000001	0.0015	0.0000000002
Beryllium	0.000000001	0.0024	0.000000000003
Cadmium	0.000005	0.0018	0.0000000009
Nickel	0.000001	0.00038	0.0000000004
Total Carcinogenic Risk			1.2x10⁻⁸

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.2.21 Receptor 21

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000002	0.0015	0.0000000003
Arsenic (oral) ^a	0.000009	0.0015	0.000000001
Beryllium	0.00000006	0.0024	0.0000000001
Cadmium	0.00002	0.0018	0.000000003
Nickel	0.000008	0.00038	0.0000000003
Total Carcinogenic Risk			4.8x10⁻⁸

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.2.22 Receptor 22

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000002	0.0015	0.000000003
Arsenic (oral) ^a	0.000008	0.0015	0.000000001
Beryllium	0.00000007	0.0024	0.0000000002
Cadmium	0.00002	0.0018	0.000000003
Nickel	0.000009	0.00038	0.000000003
Total Carcinogenic Risk			4.6x10⁻⁸

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.2.23 Receptor 23

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000002	0.0015	0.000000002
Arsenic (oral) ^a	0.000006	0.0015	0.000000001
Beryllium	0.00000005	0.0024	0.0000000001
Cadmium	0.00001	0.0018	0.000000002
Nickel	0.00001	0.00038	0.000000004
Total Carcinogenic Risk			4.0x10⁻⁸

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.2.24 Receptor 24

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000002	0.0015	0.000000002
Arsenic (oral) ^a	0.000005	0.0015	0.000000008
Beryllium	0.00000002	0.0024	0.00000000005
Cadmium	0.00001	0.0018	0.000000002
Nickel	0.00002	0.00038	0.000000006
Total Carcinogenic Risk			4.0x10⁻⁸

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.2.25 Receptor 25

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000001	0.0015	0.000000002
Arsenic (oral) ^a	0.000005	0.0015	0.000000008
Beryllium	0.00000003	0.0024	0.00000000006
Cadmium	0.00001	0.0018	0.00000002
Nickel	0.000006	0.00038	0.000000002
Total Carcinogenic Risk			3.1x10⁻⁸

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.2.26 Receptor 26

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000002	0.0015	0.000000002
Arsenic (oral) ^a	0.000004	0.0015	0.000000006
Beryllium	0.00000001	0.0024	0.00000000003
Cadmium	0.00001	0.0018	0.00000002
Nickel	0.00002	0.00038	0.000000007
Total Carcinogenic Risk			3.9x10⁻⁸

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.2.27 Receptor 27

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000001	0.0015	0.000000002
Arsenic (oral) ^a	0.000004	0.0015	0.000000006
Beryllium	0.000000009	0.0024	0.00000000002
Cadmium	0.00001	0.0018	0.00000002
Nickel	0.00001	0.00038	0.000000005
Total Carcinogenic Risk			3.6x10⁻⁸

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.2.28 Receptor 28

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000002	0.0015	0.000000002
Arsenic (oral) ^a	0.000004	0.0015	0.000000005
Beryllium	0.000000008	0.0024	0.00000000002
Cadmium	0.00001	0.0018	0.000000002
Nickel	0.00002	0.00038	0.000000006
Total Carcinogenic Risk			3.7x10⁻⁸

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.2.29 Receptor 29

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000001	0.0015	0.000000002
Arsenic (oral) ^a	0.000004	0.0015	0.000000005
Beryllium	0.000000001	0.0024	0.00000000002
Cadmium	0.00001	0.0018	0.000000002
Nickel	0.00001	0.00038	0.000000004
Total Carcinogenic Risk			3.4x10⁻⁸

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.2.30 Receptor 30

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000001	0.0015	0.000000002
Arsenic (oral) ^a	0.000003	0.0015	0.000000005
Beryllium	0.000000007	0.0024	0.00000000002
Cadmium	0.00001	0.0018	0.000000002
Nickel	0.000009	0.00038	0.000000004
Total Carcinogenic Risk			3.0x10⁻⁸

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.2.31 Receptor 31

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000001	0.0015	0.000000002
Arsenic (oral) ^a	0.000003	0.0015	0.000000004
Beryllium	0.000000007	0.0024	0.00000000002
Cadmium	0.00001	0.0018	0.000000002
Nickel	0.000006	0.00038	0.000000002
Total Carcinogenic Risk			2.7x10⁻⁸

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.2.32 Receptor 32

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000001	0.0015	0.000000002
Arsenic (oral) ^a	0.000003	0.0015	0.000000004
Beryllium	0.000000006	0.0024	0.00000000001
Cadmium	0.00001	0.0018	0.000000002
Nickel	0.000005	0.00038	0.000000002
Total Carcinogenic Risk			2.5x10⁻⁸

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.2.33 Receptor 33

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000001	0.0015	0.000000002
Arsenic (oral) ^a	0.000002	0.0015	0.000000003
Beryllium	0.000000003	0.0024	0.000000000007
Cadmium	0.00001	0.0018	0.000000002
Nickel	0.00001	0.00038	0.000000004
Total Carcinogenic Risk			2.6x10⁻⁸

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.2.34 Receptor 34

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000002	0.0015	0.000000003
Arsenic (oral) ^a	0.000009	0.0015	0.000000001
Beryllium	0.000000006	0.0024	0.00000000001
Cadmium	0.00002	0.0018	0.000000004
Nickel	0.000008	0.00038	0.000000003
Total Carcinogenic Risk			5.9x10⁻⁸

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.2.35 Receptor 35

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000002	0.0015	0.000000003
Arsenic (oral) ^a	0.000007	0.0015	0.000000001
Beryllium	0.000000009	0.0024	0.00000000002
Cadmium	0.00002	0.0018	0.000000004
Nickel	0.000008	0.00038	0.000000003
Total Carcinogenic Risk			5.3x10⁻⁸

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.2.36 Receptor 36

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000002	0.0015	0.000000003
Arsenic (oral) ^a	0.000006	0.0015	0.000000008
Beryllium	0.000000001	0.0024	0.00000000003
Cadmium	0.00002	0.0018	0.000000004
Nickel	0.000007	0.00038	0.000000003
Total Carcinogenic Risk			5.0x10⁻⁸

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.2.37 Receptor 37

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000002	0.0015	0.000000002
Arsenic (oral) ^a	0.000004	0.0015	0.000000007
Beryllium	0.00000001	0.0024	0.00000000003
Cadmium	0.00002	0.0018	0.00000003
Nickel	0.000006	0.00038	0.000000002
Total Carcinogenic Risk			3.9x10⁻⁸

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.2.38 Receptor 38

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000004	0.0015	0.000000006
Arsenic (oral) ^a	0.000009	0.0015	0.00000001
Beryllium	0.0000000005	0.0024	0.000000000001
Cadmium	0.00004	0.0018	0.00000007
Nickel	0.000002	0.00038	0.0000000007
Total Carcinogenic Risk			9.0x10⁻⁸

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.2.39 Receptor 39

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000004	0.0015	0.000000006
Arsenic (oral) ^a	0.00001	0.0015	0.00000002
Beryllium	0.0000000005	0.0024	0.000000000001
Cadmium	0.00004	0.0018	0.00000008
Nickel	0.000002	0.00038	0.0000000007
Total Carcinogenic Risk			1.0x10⁻⁷

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.2.40 Receptor 40

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000005	0.0015	0.000000007
Arsenic (oral) ^a	0.00002	0.0015	0.000000003
Beryllium	0.000000002	0.0024	0.000000000005
Cadmium	0.00005	0.0018	0.000000009
Nickel	0.000005	0.00038	0.000000002
Total Carcinogenic Risk			1.2x10⁻⁷

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.2.41 Receptor 41

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000004	0.0015	0.000000006
Arsenic (oral) ^a	0.00002	0.0015	0.000000002
Beryllium	0.000000003	0.0024	0.000000000007
Cadmium	0.00004	0.0018	0.000000007
Nickel	0.000006	0.00038	0.000000002
Total Carcinogenic Risk			9.7x10⁻⁸

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.2.42 Receptor 42

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000003	0.0015	0.000000004
Arsenic (oral) ^a	0.00001	0.0015	0.000000002
Beryllium	0.000000004	0.0024	0.000000000009
Cadmium	0.00003	0.0018	0.000000005
Nickel	0.000007	0.00038	0.000000003
Total Carcinogenic Risk			7.8x10⁻⁸

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.3 Scenario 3

A8.3.1 Receptor 1

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000007	0.0015	0.00000001
Arsenic (oral) ^a	0.00005	0.0015	0.00000008
Beryllium	0.00000003	0.0024	0.00000000007
Cadmium	0.00005	0.0018	0.0000001
Nickel	0.0001	0.00038	0.00000004
Total Carcinogenic Risk			2.3x10⁻⁷

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.3.2 Receptor 2

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000007	0.0015	0.00000001
Arsenic (oral) ^a	0.00005	0.0015	0.00000008
Beryllium	0.000000006	0.0024	0.00000000001
Cadmium	0.00006	0.0018	0.0000001
Nickel	0.00008	0.00038	0.00000003
Total Carcinogenic Risk			2.2x10⁻⁷

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.3.3 Receptor 3

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.00001	0.0015	0.00000002
Arsenic (oral) ^a	0.00009	0.0015	0.0000001
Beryllium	0.000000004	0.0024	0.00000000009
Cadmium	0.00009	0.0018	0.0000002
Nickel	0.00009	0.00038	0.00000003
Total Carcinogenic Risk			3.5x10⁻⁷

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.3.4 Receptor 4

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000009	0.0015	0.00000001
Arsenic (oral) ^a	0.00005	0.0015	0.00000007
Beryllium	0.000000002	0.0024	0.000000000004
Cadmium	0.00008	0.0018	0.0000001
Nickel	0.00006	0.00038	0.00000002
Total Carcinogenic Risk			2.5x10⁻⁷

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.3.5 Receptor 5

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000007	0.0015	0.00000001
Arsenic (oral) ^a	0.00004	0.0015	0.00000005
Beryllium	0.000000001	0.0024	0.000000000003
Cadmium	0.00006	0.0018	0.0000001
Nickel	0.00005	0.00038	0.00000002
Total Carcinogenic Risk			2.0x10⁻⁷

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.3.6 Receptor 6

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.00001	0.0015	0.00000002
Arsenic (oral) ^a	0.00004	0.0015	0.00000006
Beryllium	0.0000000008	0.0024	0.000000000002
Cadmium	0.0001	0.0018	0.0000002
Nickel	0.00007	0.00038	0.00000003
Total Carcinogenic Risk			2.8x10⁻⁷

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.3.7 Receptor 7

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000008	0.0015	0.00000001
Arsenic (oral) ^a	0.00003	0.0015	0.00000004
Beryllium	0.0000000006	0.0024	0.000000000001
Cadmium	0.00007	0.0018	0.0000001
Nickel	0.00005	0.00038	0.00000002
Total Carcinogenic Risk			2.0x10⁻⁷

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.3.8 Receptor 8

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.00004	0.0015	0.00000006
Arsenic (oral) ^a	0.0002	0.0015	0.0000003
Beryllium	0.000000001	0.0024	0.000000000002
Cadmium	0.0004	0.0018	0.0000007
Nickel	0.0003	0.00038	0.0000001
Total Carcinogenic Risk			1.2x10⁻⁶

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.3.9 Receptor 9

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.00001	0.0015	0.00000002
Arsenic (oral) ^a	0.00007	0.0015	0.0000001
Beryllium	0.000000001	0.0024	0.000000000003
Cadmium	0.0001	0.0018	0.0000002
Nickel	0.0001	0.00038	0.00000005
Total Carcinogenic Risk			4.0x10⁻⁷

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.3.10 Receptor 10

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000006	0.0015	0.00000001
Arsenic (oral) ^a	0.00004	0.0015	0.00000006
Beryllium	0.000000002	0.0024	0.000000000005
Cadmium	0.00005	0.0018	0.0000001
Nickel	0.00008	0.00038	0.00000003
Total Carcinogenic Risk			1.9x10⁻⁷

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.3.11 Receptor 11

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000005	0.0015	0.000000007
Arsenic (oral) ^a	0.00002	0.0015	0.00000003
Beryllium	0.000000001	0.0024	0.000000000003
Cadmium	0.00004	0.0018	0.00000007
Nickel	0.00003	0.00038	0.00000001
Total Carcinogenic Risk			1.3x10⁻⁷

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.3.12 Receptor 12

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000003	0.0015	0.000000004
Arsenic (oral) ^a	0.00001	0.0015	0.00000002
Beryllium	0.000000002	0.0024	0.000000000004
Cadmium	0.00003	0.0018	0.00000005
Nickel	0.00002	0.00038	0.000000009
Total Carcinogenic Risk			7.7x10⁻⁸

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.3.13 Receptor 13

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000002	0.0015	0.000000004
Arsenic (oral) ^a	0.000007	0.0015	0.000000001
Beryllium	0.000000002	0.0024	0.000000000004
Cadmium	0.00002	0.0018	0.000000004
Nickel	0.00002	0.00038	0.000000008
Total Carcinogenic Risk			6.2x10⁻⁸

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.3.14 Receptor 14

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000004	0.0015	0.000000006
Arsenic (oral) ^a	0.00001	0.0015	0.000000002
Beryllium	0.000000002	0.0024	0.000000000004
Cadmium	0.00003	0.0018	0.000000006
Nickel	0.00004	0.00038	0.000000002
Total Carcinogenic Risk			9.9x10⁻⁸

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.3.15 Receptor 15

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000001	0.0015	0.000000002
Arsenic (oral) ^a	0.000002	0.0015	0.000000003
Beryllium	0.000000001	0.0024	0.000000000003
Cadmium	0.00001	0.0018	0.000000002
Nickel	0.00002	0.00038	0.000000006
Total Carcinogenic Risk			3.1x10⁻⁸

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.3.16 Receptor 16

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000001	0.0015	0.000000002
Arsenic (oral) ^a	0.000001	0.0015	0.000000002
Beryllium	0.000000002	0.0024	0.000000000005
Cadmium	0.00001	0.0018	0.00000002
Nickel	0.00002	0.00038	0.000000007
Total Carcinogenic Risk			3.0x10⁻⁸

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.3.17 Receptor 17

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000003	0.0015	0.000000004
Arsenic (oral) ^a	0.000005	0.0015	0.000000008
Beryllium	0.000000002	0.0024	0.000000000004
Cadmium	0.00002	0.0018	0.00000004
Nickel	0.00004	0.00038	0.00000001
Total Carcinogenic Risk			6.8x10⁻⁸

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.3.18 Receptor 18

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000002	0.0015	0.000000003
Arsenic (oral) ^a	0.000005	0.0015	0.000000008
Beryllium	0.0000000006	0.0024	0.000000000001
Cadmium	0.00002	0.0018	0.00000003
Nickel	0.00001	0.00038	0.000000004
Total Carcinogenic Risk			4.7x10⁻⁸

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.3.19 Receptor 19

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000001	0.0015	0.000000001
Arsenic (oral) ^a	0.0000008	0.0015	0.000000001
Beryllium	0.000000001	0.0024	0.000000000003
Cadmium	0.000008	0.0018	0.00000001
Nickel	0.00001	0.00038	0.000000005
Total Carcinogenic Risk			2.1x10⁻⁸

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.3.20 Receptor 20

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000001	0.0015	0.000000002
Arsenic (oral) ^a	0.000001	0.0015	0.000000002
Beryllium	0.000000001	0.0024	0.000000000003
Cadmium	0.00001	0.0018	0.00000002
Nickel	0.00001	0.00038	0.000000005
Total Carcinogenic Risk			2.6x10⁻⁸

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.3.21 Receptor 21

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000008	0.0015	0.00000001
Arsenic (oral) ^a	0.00007	0.0015	0.0000001
Beryllium	0.000000006	0.0024	0.0000000001
Cadmium	0.00006	0.0018	0.0000001
Nickel	0.0001	0.00038	0.00000005
Total Carcinogenic Risk			2.7x10⁻⁷

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.3.22 Receptor 22

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000007	0.0015	0.00000001
Arsenic (oral) ^a	0.00006	0.0015	0.00000009
Beryllium	0.00000007	0.0024	0.0000000002
Cadmium	0.00005	0.0018	0.00000009
Nickel	0.0001	0.00038	0.00000004
Total Carcinogenic Risk			2.4x10⁻⁷

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.3.23 Receptor 23

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000006	0.0015	0.000000008
Arsenic (oral) ^a	0.00004	0.0015	0.00000007
Beryllium	0.00000005	0.0024	0.0000000001
Cadmium	0.00004	0.0018	0.00000007
Nickel	0.00009	0.00038	0.000000034
Total Carcinogenic Risk			1.8x10⁻⁷

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.3.24 Receptor 24

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000005	0.0015	0.000000008
Arsenic (oral) ^a	0.00004	0.0015	0.00000006
Beryllium	0.00000002	0.0024	0.00000000005
Cadmium	0.00004	0.0018	0.00000007
Nickel	0.00009	0.00038	0.00000004
Total Carcinogenic Risk			1.8x10⁻⁷

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.3.25 Receptor 25

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000004	0.0015	0.000000007
Arsenic (oral) ^a	0.00003	0.0015	0.000000004
Beryllium	0.000000003	0.0024	0.00000000006
Cadmium	0.00003	0.0018	0.000000006
Nickel	0.00007	0.00038	0.000000003
Total Carcinogenic Risk			1.4x10⁻⁷

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.3.26 Receptor 26

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000006	0.0015	0.000000008
Arsenic (oral) ^a	0.00004	0.0015	0.000000007
Beryllium	0.000000001	0.0024	0.00000000003
Cadmium	0.00004	0.0018	0.000000007
Nickel	0.0001	0.00038	0.000000004
Total Carcinogenic Risk			1.8x10⁻⁷

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.3.27 Receptor 27

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000009	0.0015	0.000000001
Arsenic (oral) ^a	0.00006	0.0015	0.000000009
Beryllium	0.000000009	0.0024	0.00000000002
Cadmium	0.00006	0.0018	0.000000001
Nickel	0.0002	0.00038	0.000000006
Total Carcinogenic Risk			2.8x10⁻⁷

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.3.28 Receptor 28

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000008	0.0015	0.00000001
Arsenic (oral) ^a	0.00004	0.0015	0.00000006
Beryllium	0.000000008	0.0024	0.00000000002
Cadmium	0.00006	0.0018	0.0000001
Nickel	0.0001	0.00038	0.00000005
Total Carcinogenic Risk			2.2x10⁻⁷

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.3.29 Receptor 29

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000008	0.0015	0.00000001
Arsenic (oral) ^a	0.00005	0.0015	0.00000007
Beryllium	0.00000001	0.0024	0.00000000002
Cadmium	0.00006	0.0018	0.0000001
Nickel	0.0001	0.00038	0.00000005
Total Carcinogenic Risk			2.3x10⁻⁷

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.3.30 Receptor 30

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000006	0.0015	0.000000008
Arsenic (oral) ^a	0.00003	0.0015	0.00000005
Beryllium	0.000000007	0.0024	0.00000000002
Cadmium	0.00004	0.0018	0.00000007
Nickel	0.0001	0.00038	0.00000004
Total Carcinogenic Risk			1.7x10⁻⁷

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.3.31 Receptor 31

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000005	0.0015	0.000000007
Arsenic (oral) ^a	0.00003	0.0015	0.000000005
Beryllium	0.000000007	0.0024	0.00000000002
Cadmium	0.00004	0.0018	0.000000006
Nickel	0.00008	0.00038	0.000000003
Total Carcinogenic Risk			1.5x10⁻⁷

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.3.32 Receptor 32

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000004	0.0015	0.000000006
Arsenic (oral) ^a	0.00002	0.0015	0.000000004
Beryllium	0.000000006	0.0024	0.00000000001
Cadmium	0.00003	0.0018	0.000000005
Nickel	0.00006	0.00038	0.000000002
Total Carcinogenic Risk			1.2x10⁻⁷

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.3.33 Receptor 33

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000005	0.0015	0.000000007
Arsenic (oral) ^a	0.00003	0.0015	0.000000005
Beryllium	0.000000003	0.0024	0.000000000007
Cadmium	0.00003	0.0018	0.000000006
Nickel	0.00008	0.00038	0.000000003
Total Carcinogenic Risk			1.5x10⁻⁷

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.3.34 Receptor 34

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000008	0.0015	0.00000001
Arsenic (oral) ^a	0.00005	0.0015	0.00000007
Beryllium	0.000000006	0.0024	0.00000000001
Cadmium	0.00006	0.0018	0.0000001
Nickel	0.0001	0.00038	0.00000005
Total Carcinogenic Risk			2.4x10⁻⁷

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.3.35 Receptor 35

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000007	0.0015	0.00000001
Arsenic (oral) ^a	0.00004	0.0015	0.00000006
Beryllium	0.000000009	0.0024	0.00000000002
Cadmium	0.00005	0.0018	0.0000001
Nickel	0.0001	0.00038	0.00000004
Total Carcinogenic Risk			2.1x10⁻⁷

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.3.36 Receptor 36

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000006	0.0015	0.000000009
Arsenic (oral) ^a	0.00003	0.0015	0.00000005
Beryllium	0.00000001	0.0024	0.00000000003
Cadmium	0.00005	0.0018	0.00000009
Nickel	0.00009	0.00038	0.00000003
Total Carcinogenic Risk			1.8x10⁻⁷

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.3.37 Receptor 37

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000005	0.0015	0.000000008
Arsenic (oral) ^a	0.00003	0.0015	0.000000005
Beryllium	0.000000001	0.0024	0.000000000003
Cadmium	0.00004	0.0018	0.000000007
Nickel	0.00008	0.00038	0.000000003
Total Carcinogenic Risk			1.6x10⁻⁷

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.3.38 Receptor 38

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000005	0.0015	0.000000007
Arsenic (oral) ^a	0.00001	0.0015	0.000000002
Beryllium	0.0000000005	0.0024	0.0000000000001
Cadmium	0.00005	0.0018	0.000000008
Nickel	0.00003	0.00038	0.000000001
Total Carcinogenic Risk			1.2x10⁻⁷

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.3.39 Receptor 39

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000006	0.0015	0.000000008
Arsenic (oral) ^a	0.00002	0.0015	0.000000003
Beryllium	0.0000000005	0.0024	0.0000000000001
Cadmium	0.00005	0.0018	0.000000009
Nickel	0.00003	0.00038	0.000000001
Total Carcinogenic Risk			1.4x10⁻⁷

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.3.40 Receptor 40

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.00001	0.0015	0.00000002
Arsenic (oral) ^a	0.00006	0.0015	0.00000008
Beryllium	0.000000002	0.0024	0.000000000005
Cadmium	0.00009	0.0018	0.0000002
Nickel	0.0001	0.00038	0.00000005
Total Carcinogenic Risk			3.0x10⁻⁷

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.3.41 Receptor 41

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.00001	0.0015	0.00000001
Arsenic (oral) ^a	0.00005	0.0015	0.00000008
Beryllium	0.000000003	0.0024	0.000000000007
Cadmium	0.00008	0.0018	0.0000001
Nickel	0.0001	0.00038	0.00000005
Total Carcinogenic Risk			2.8x10⁻⁷

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.

A8.3.42 Receptor 42

Substance	Annual Avg Concentration (ug/m ³)	Unit Risk Factor	Carcinogenic Risk
Arsenic (inhal) ^a	0.000009	0.0015	0.00000001
Arsenic (oral) ^a	0.00006	0.0015	0.00000009
Beryllium	0.000000004	0.0024	0.000000000009
Cadmium	0.00007	0.0018	0.0000001
Nickel	0.0001	0.00038	0.00000005
Total Carcinogenic Risk			2.8x10⁻⁷

^a Carcinogenic risk from arsenic was assessed separately for inhalation exposure (by comparison of an inhalation unit risk factor to the annual average air concentration), and for oral exposure (by comparison of lifetime daily intake from ingestion and dermal exposure to an oral cancer slope factor for As). For As (oral), the lifetime daily average oral and dermal intake (ug/kg/d) is given instead of the annual average air concentration.