Feb 95

EPA

Uptake of Lead and Arsenic by Garden Vegetables

Study Report
for the

Kennecott Site

Salt Lake County, Utah

EPA Contract No. 68-W9-0032
Work Assignment No. 20-8BT8

Sverdrup

UPTAKE OF LEAD AND ARSENIC BY GARDEN VEGETABLES

STUDY REPORT

Kennecott Sites

Oquirrh Mountains, Utah

February 3, 1995

EPA Contract No. 68-W9-0032

Work Assignment No. 20-8BT8

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0.0 EXECUTIVE SUMMARY

Sverdrup Corporation is submitting this study report, "Uptake of Lead and Arsenic by Garden Vegetables", as a task relating to the Baseline Risk Assessment (BRA) for the Kennecott Sites in response to the U.S. Environmental Protection Agency (EPA). Sverdrup has been contracted by the EPA to conduct a preliminary (screening level, semi-quantitative design) vegetative uptake study in residential gardens located within the Kennecott site study areas of Bingham Creek, Bingham Creek Removal Area and the town of Magna.

It has been proposed that two different sources have led to arsenic and lead contamination of these residential soils. Residential properties in the cities of South Jordan and West Jordan, Utah, have been primarily affected by the migration of mine tailings conveyed down Bingham Creek resulting in their deposition outside the creek channel during periods of flooding. The soils in the town of Magna have been affected by two main sources: the wind-blown mine tailings originating from the Magna Tailings Pond and the fall-out of historic stack emissions from the nearby smelter operations.

The Phase I Survey included soil sampling from residential properties; lead and arsenic soil analysis; and selection of gardens to be sampled in the Phase II Survey. The Phase II Survey included soil and vegetable sampling from selected residential properties; lead and arsenic soil and vegetable analysis; evaluation of metal uptake in plants and a preliminary risk characterization.

0.1 Data Evaluation

Bioconcentration factors (BCFs) calculated in this study were compared to literature based calculated BCFs from Baes *et. al.* (1984). Baes values are commonly used in risk assessments when site specific data are not available. The lead and arsenic BCF for

carrots compare well between BCFs. The Phase II lead BCF for tomato is 10 times less than the Baes BCF. The Phase II lead BCF for zucchini is 100 times less than the Baes BCF. Phase II arsenic and lead BCF for beets are less than the Baes' BCF for beets.

A comparison of Bingham Creek, Magna and Removal Area data of arsenic in tomatoes would indicate little to no arsenic is taken up into tomatoes growing in soils of either study area.

The BCF for leafy-type vegetables reported by Baes was ten times the Phase II calculated BCF. This would indicate that less lead is taken up into the leafy structure of the beet greens in plants growing in Bingham Creek study area soils as compared to that reported in the literature. Beet greens may be impacted not only from metal uptake through soil, but also from aerial deposition.

0.2 Preliminary Risk Characterization

The potential of the garden vegetable pathway to contribute risk to residents of the study area was then preliminarily characterized by using the collected site-specific data for garden soil and vegetable concentrations of arsenic and lead. This information was combined with household survey data that described the number, ages and weights of household members (including extended family) that consumed home-grown produce, the types and quantities of garden vegetables that were planted, and an estimate of how much of the garden harvest was actually consumed by household members. Garden yields were estimated from the survey information and various reference information concerning yields of specific vegetable plants. Combining vegetable concentration data with the derived age-specific vegetable consumption values permitted estimation of individual-specific intakes of arsenic and lead. These intake values were then used with appropriate toxicity values to estimate arsenic risk (cancer, chronic and subchronic noncancer)

attributable to garden vegetable consumption. For lead, only noncancer risk could be characterized, and this was accomplished using the latest version of the Integrated Exposure Uptake/Biokinetic (IEUBK) Model for children.

The results of this study suggest that, on average, no substantial degree of either cancer or noncancer risk due to arsenic is incurred by individuals living in the study area and consuming reported quantities of home-grown vegetables. This appears particularly true for households in Magna and the Bingham Creek Removal Area. The possibility remains, however, that high vegetable consumption in certain household locations could contribute extra risk at a level of some concern, especially when added to risks that may be occurring from exposure through other pathways. With respect to lead, there are a number of households (primarily in Bingham Creek) in which the significant consumption of garden vegetables could be of concern to young children. In at least some cases, much of the risk seems associated with high consumption of root-type vegetables.

1.0 INTRODUCTION

Sverdrup Corporation is submitting this study report, "Uptake of Lead and Arsenic by Garden Vegetables", as a task relating to the Baseline Risk Assessment (BRA) for the Kennecott Sites in response to the U.S. Environmental Protection Agency (EPA) Work Assignment Number 20-8BT8, as issued under EPA Contract Number 68-W9-0032. Sverdrup has been contracted by the EPA to conduct a preliminary (screening level, semi-quantitative design) vegetative uptake study in residential gardens located within the Kennecott site study areas of Bingham Creek, Bingham Creek Removal Area and the town of Magna.

The purpose of this work was to provide preliminary data for use in determing whether more extensive plant uptake data was needed for the BRA, based upon soil and plant correlations for lead (Pb) and arsenic (As); also, preliminary estimates of risks from home grown vegetable consumption in contaminated areas could be calculated.

It has been proposed that two different sources have led to arsenic and lead contamination of these residential soils. Residential properties in the cities of South Jordan and West Jordan, Utah, have been primarily affected by the migration of mine tailings conveyed down Bingham Creek resulting in their deposition outside the creek channel during periods of flooding. The soils in the town of Magna have been affected by two main sources: the wind-blown mine tailings originating from the Magna Tailings Pond and the fall-out of historic stack emissions from the nearby smelter operations.

This document represents a summary of the field activities, the analytical work performed, and an evaluation of the resulting laboratory data. Preliminary estimates of

risks posed to potentially exposed residents through the homegrown vegetable consumption pathway are calculated by use of site-specific data collected during the study.

Section 2.0 presents the study objectives. Section 3.0 discusses the Phase I field investigation and data evaluation; and Phase II field investigation. Section 3.0 discusses the Phase II data evaluation. Section 4.0 discusses the preliminary risk characterization.

2.0 STUDY OBJECTIVES

2.1 Rationale

Humans may be exposed to excessive levels of metal contaminants via the ingestion of garden vegetables grown on metals contaminated soils. Presently, default assumptions are used in the calculation of estimated risk for this pathway in the development of a BRA. The default assumptions include both the amounts of metals taken up into vegetables given a soil metal concentration (bioconcentration factors) and the quantity of homegrown vegetables consumed.

2.2 Objective

The objective of this vegetative uptake study is the initial characterization of site-specific bioconcentration factors and consumption data to allow for the calculation of estimated risk for this pathway in a more certain and site-specific manner.

2.3 Approach

The vegetative uptake study was implemented in two phases. The overall purpose of Phase I was to collect and analyze composite soil samples for the determination of the range of arsenic and lead levels in residential garden soils. From these data, gardens were selected to provide a desired range of concentrations of soil lead. Recommendations of specific gardens to be included in the vegetative uptake study were presented in the Phase I Data Summary Report (Sverdrup, 1993a). The Phase I findings are discussed in Section 3.0 of this report. The selection of garden sites did not constitute an entirely representative depiction of risk areas of concern, but it did provide gardens in areas of potential concern for preliminary evaluations.

2.3 Goals

Phase II was conducted to collect vegetables and their associated soil samples from the selected gardens along with a survey of gardening practices and garden vegetable consumption. This information was intended to compare how well default assumptions on Pb and As uptake in plants and garden vegetable consumption agreed with the survey data. Arsenic and lead were measured in the vegetative plant tissue and in the soil with the following overall goals:

1) determine the relative significance of the vegetative pathway for input into the strategy to be used for the development of a BRA,
2) present preliminary estimates of risks potentially posed to consumers of vegetables grown in the study areas,
3) verify the appropriateness of default verses site-specific bioconcentration factors which describe the relationship between the metals in soil and the metals taken up by homegrown vegetables, and
4) compare the uptake of metals in the three different study areas (Bingham Creek, Magna, and Removal Area at Bingham Creek) in order to evaluate whether different contaminant sources have an impact on uptake.

3.0 FIELD INVESTIGATION SUMMARY

3.1 Phase I Purpose and Objectives

The vegetative uptake study was implemented in two phases. The overall objective of Phase I was to collect and analyze composite soil samples for the determination of arsenic and lead levels in garden soils. From these data, gardens with soil lead concentration ranging from lower levels, approximately 100 ppm to higher levels, approximately 2,000 ppm would be selected for Phase II vegetable and soil sampling. The goal of Phase I was to select gardens that exhibit a range of lead and arsenic soil concentrations.

3.1.1 Phase I Field Investigation

Exact sampling locations were unknown prior to departure. The field team located gardens from which to sample by driving along Bingham Creek and approaching residences and interviewing the occupants.

A similar strategy was utilized in the Magna area, with the goal of sampling gardens in the northern and western ares of town first. These areas have potentially been exposed to more fall-out from smelter emissions and wind-blown materials from the tailings pond. Addresses of known gardens in Magna was provided by a Magna town council member.

Field sampling for the Phase I investigation began on August 2, 1993, and continued until August 12, 1993. A total of 35 residential gardens were sampled in the Bingham Creek area and 37 residential gardens were sampled in the town of Magna. The Bingham Creek Removal Area was not sampled during Phase I because the Removal Area

was not added to the scope of work until Phase II. The Bingham Creek Removal Area will be discussed in Section 3.2.

Soil samples were collected as composites for each gardens sampled. This was to provide "average" soil metals concentrations for each garden to select gardens for Phase II investigations. At each garden location, a site access agreement was signed by the resident and a survey was taken to identify individual gardening practices.

The Phase I soil sampling was conducted in the following manner:

- Locate residential gardens in the two sampling areas.
- Collect representative surface (0-6in) soil samples from the gardens to obtain average metal concentrations. Soil samples were composited in a clean stainless steel bowl. The samples were analyzed by x-ray fluorescence as a Level II screening protocol.
- Collect survey information from the residents regarding their gardening practices, such as vegetables grown, irrigation sources and fertilizer amendments. Gardens were also measured for size.

Soil analysis was conducted by the EPA Region VIII Environmental Services Division (ESD) laboratory. Lead, arsenic, chromium, manganese, iron, copper, and zinc were reported, however, only lead and arsenic will be discussed in this report.

3.1.2 Phase I Data Evaluation

A wide range of lead concentrations were demonstrated in the two areas. Soil lead was measured by laboratory X-ray Fluorescence (XRF) techniques for all metals during Phase I. The lead concentrations measured in soil collected in the Bingham Creek

area were found to range between 65.9 and 2,290 mg/kg. Five gardens exhibited average lead concentrations above 500 mg/kg and the remaining samples were 373 mg/kg and below. Lead was found to range between 20.3 and 775 mg/kg in soil samples collected from gardens in the Magna area. Only two samples were found above 500 mg/kg, and in two other gardens, the soil lead concentrations detected were 490 mg/kg. The remaining lead concentrations detected were 289 mg/kg and below.

Arsenic in soil was also measured by XRF techniques during Phase I. However, XRF is not the most sensitive technique available for arsenic. Arsenic was not detected above the XRF instrument detection limit (IDL) of 20 mg/kg in any samples collected in the Bingham Creek. Three samples collected from the Magna area demonstrated concentrations of arsenic above the XRF instrument detection limit (23, 27, and 31 mg/kg).

The composite soil samples during Phase I provided reasonably representative soil metals concentrations for each given area. The number of sub-samples collected from which to obtain the composite sample was increased for the larger garden areas. However, as can be seen from an inspection of the Phase II data (see Section 4.0, Data Evaluation), compositing would have obscured small hot spots. Taking this into account, a soil/vegetable sampling approach was designed (see Section 3.2, Phase II) to obtain a soil sample associated directly with the vegetable plant sampled in order to better estimate metal bioconcentration in plants.

In order to determine which garden locations to return to for vegetable sampling, the focus was on the higher lead analyses results as the major criteria for decision making, along with the types of vegetables being grown. Arsenic was studied further during the Phase II investigation utilizing a more sensitive analytical technique with an

IDL of .12 parts per million (ppm). The detailed data summary tables from the Summary Report for Phase I of the Vegetative Uptake Study, Kennecott Sites (Sverdrup, 1993a) are presented in Tables 3-1 and 3-2.

As a result of garden surveys conducted during Phase I gardens and vegetables were recommended for Phase II. The recommended gardens are presented on Tables 3-3 and 3-4. Tomatoes, carrots, and beet greens were scheduled for sampling in the Bingham Creek area, to allow for representation of a fruit vegetable, a root vegetable, and a leafy vegetable. Beet greens were not the first choice of leafy vegetable for collection (a lettuce variety would have been preferred), however, due to the lateness of the growing season, beet greens were the only vegetable growing that could act as a leafy-surrogate being produced in the area. There is supporting information in the scientific literature describing metals concentrations in beet greens. In the Magna area, tomatoes, carrots, and zucchini were selected for sampling. A leafy-surrogate was not available in the Magna area.

3.2 Phase II Purpose and Objectives

Co-located edible garden vegetables and root-zone soils were collected to preliminarily determine the extent of uptake of Pb and As into plants that residents consume. The overall objectives of conducting the vegetative uptake study included:

- Evaluate the relationship between metals (primarily Pb and As) concentrations measured in garden plants growing in soils of varying metals concentrations in the Kennecott Sites area, specifically, in residential areas along and near the Bingham Creek, the Removal Area, and in areas of Magna potentially affected by smelter and/or tailings operations.

- Determine if more appropriate bioconcentration factors can be calculated which would be useful in the BRA strategy currently being considered for the Kennecott Sites.

TABLE 3-1

KENNECOTT VEGETATIVE UPTAKE STUDY
PHASE I SAMPLE INFORMATION – BINGHAM CREEK
Samples sorted in descending lead concentrations.

DATE SAMPLED	SAMPLE ID	TAG NO.	GARDEN SIZE	VEGETABLES	SOIL ADDITIVES	CHEMICALS	IRRIGATION/SOURCE	XRF DATA (mg/kg) Cr	Mn	Fe	Cu	Pb	Zn	As
8/4/93	BC-7	8-93569	30'x44'	winter squash summer squash corn tomato peppers zucchini pumpkins watermelons cantaloupe carrots	sawdust horse manure	none	yes/tap	<50	695	34500	1082	259	587	< 20
8/4/93	BC-13	8-93705	27'x17'	tomato potato	complete fertilizer	Malathion	yes/tap	<50	669	32100	1213	248	442	< 20
8/4/93	BC-11 BC-12 dup	8-93703 8-93704	21'x16'	green beans carrots broccoli lettuce squash tomato onion parsley cucumber	none	none	yes/tap	<50 63	630 619	32500 32000	1018 999	240 237	470 480	< 20 < 20
8/3/93	BC-2	8-93564	13'x10'	tomato	none	none	yes/tap	<50	676	36200	1250	237	524	< 20
8/7/93	BC-30	8-93723	35'x19'	tomato zucchini lettuce corn	nitrogen	no	yes/tap	<50	373	24000	815	232	357	< 20
8/7/93	BC-36	8-93729	10.5'x12.5'	tomato zucchini peas beans radishes carrots onions	none	none	yes/tap	<50	607	26700	467	227	231	< 20
8/3/93	BC-3	8-93565	18.5'x10.5' 36'x10.5' 27'x25'	tomato potato carrot corn beets green peppers zucchini	none	none	yes/canal	<50	606	27200	659	211	403	< 20
8/4/93	BC-18	8-93708	28'x17'	tomato corn zucchini	none	none	yes/tap	58	742	31700	982	191	347	< 20
8/3/93	BC-5	8-93567	44'x11'	tomato acorn squash cucumber	nitrogen phosphorus	none	yes/canal	<50	380	18400	300	187	203	< 20
8/6/93	BC-27	8-93720	20'x10'	tomato zucchini	NH4-SO4	diazinon	yes/tap	60	716	28700	328	174	242	< 20
8/5/93	BC-20	8-93712	83'x18'	tomato cucumber zucchini butternut squash peppers carrots onions rhubarb potato	16-16-8	none	yes/Provo canal	<50	407	18800	167	169	177	< 20

TABLE 3-1

KENNECOTT VEGETATIVE UPTAKE STUDY
PHASE I SAMPLE INFORMATION – BINGHAM CREEK
Samples sorted in descending lead concentrations.

DATE SAMPLED	SAMPLE ID	TAG NO.	GARDEN SIZE	VEGETABLES	SOIL ADDITIVES	CHEMICALS	IRRIGATION/SOURCE	XRF DATA (mg/kg)						
								Cr	Mn	Fe	Cu	Pb	Zn	As
8/10/93	BC-39	8-93759	8'x14'	tomato zucchini	top soil turkey manure	Diazinon	yes/tap	<50	447	22100	1710	2290	1270	< 20
8/4/93	BC-14	8-93708	3, 8'x12' plots	tomato onion	none	none	yes/tap	66	1148	31400	258	2082	2082	< 20
8/9/93	BC-37	8-93745	208'x66'	tomato corn carrot beets potato cucumber	none	none	yes/canal	74	582	30500	958	1611	858	< 20
8/6/93	BC-24	8-93717	22'x6.5'	tomato crook neck squash cucumbers beets peas carrots cantaloupe broccoli	peat moss sawdust	none	yes/tap Irrigated from Bingham Creek for years	102	512	24300	619	797	470	< 20
8/7/93	BC-31	8-93724	7.5'x12' 10.5'x10.5'	tomato	cow manure	Roundup	yes/irrigation canal	68	549	23100	319	533	424	< 20
8/7/93	BC-34	8-93727	34'x17'	tomato onion corn gourds butternut squash cucumber	fertilizer	Bevin	yes/tap	<50	590	26600	764	372	293	< 20
8/6/93	BC-23	8-93716	20'x5'	tomato zucchini peas	none	none	yes/tap	<50	573	27800	603	323	349	< 20
8/10/93	BC-38	8-93758	10'x6'	tomato cucumber corn broccoli	Miracle Grow	none	yes/tap	67	323	18900	216	289	219	lt 20
8/6/93	BC-21 BC-22 dup	8-93713 8-93714	9x2'	tomato	miracle grow	none	yes/tap	60 50	389 354	18400 18400	203 202	281 284	392 387	< 20 < 20
8/7/93	BC-35	8-93728	8.5'x8'	tomato zucchini broccoli	none	none	yes/tap	<50	388	17900	147	278	273	< 20
8/3/93	BC-4	8-93586	47'x60'	tomato green beans radishes carrot cabbage brussel sprouts onions beets peppers swiss chard potato	nitrogen phosphorus potassium iron	none	yes/tap	81	583	34500	1045	277	508	< 20
8/6/93	BC-26	8-93719	25'x2.5'	tomato bell pepper	manure	ortho	yes/tap	51	530	20400	235	274	308	< 20

TABLE 3-1

KENNECOTT VEGETATIVE UPTAKE STUDY
PHASE I SAMPLE INFORMATION – BINGHAM CREEK
Samples sorted in descending lead concentrations.

DATE SAMPLED	SAMPLE ID	TAG NO.	GARDEN SIZE	VEGETABLES	SOIL ADDITIVES	CHEMICALS	IRRIGATION/SOURCE	XRF DATA (mg/kg) Cr	Mn	Fe	Cu	Pb	Zn	As
8/6/93	BC-29	8-93722		tomato zucchini	none	dust	yes/tap	88	495	23700	343	187	217	< 20
8/6/93	BC-25	8-93718	8'x20'	tomato zucchini	nitrogen	no	yes/tap	<50	519	22200	209	152	190	< 20
8/3/93	BC-8	8-93568	12'x9'	tomato lettuce carrot peppers	nitrogen	none	yes/tap	<50	348	18800	248	130	189	< 20
8/5/93	BC-19	8-93711	96'x66'	tomato corn potato carrot broccoli zucchini	manure	none	yes/Utah Lake canal	<50	301	13800	122	129	132	< 20
8/5/93	BC-18	8-93710	48'x38'	tomato corn peas zucchini	none	none	yes/well water	<50	341	16000	98.7	128	120	< 20
8/5/93	BC-28	8-93721	16'x8' 8'x7'	tomato corn zucchini beans carrots peas lettuce	miracle grow dog manure	none	yes/tap	70	431	18400	95.1	116	190	< 20
8/4/93	BC-6	8-93570	14'x10' 3'x12'	tomato onion zucchini squash	Compost	none	yes/tap	88	436	20200	132	92.7	129	< 20
8/7/93	BC-32 BC-33 dup	8-93725 8-93726	46'x4' 28'x8'	tomato zucchini cucumber corn carrot peas beans	none	roundup	yes/tap	<50 <50	342 275	14100 14300	188 165	91.8 96.7	89.1 80.1	< 20 < 20
8/4/93	BC-15	8-93707	15'x5.5'	tomato butternut squash cherry tomato	steer manure	none	yes/tap	<50	388	21300	239	83	124	< 20
8/4/93	BC-9 BC-10: extra sample taken on request	8-93701 8-93702	32'x22'	tomato corn potato cucumber green beans	compost manure grass clippings	none	yes/tap	88 <50	354 448	18700 20800	236 403	81.9 134	182 237	< 20 < 20
8/3/93	BC-1	8-93583	5, 3'x6' plots	tomato			yes/tap	<50	377	17400	87.5	88.6	90	< 20
8/4/93	BC-17	8-93709	20'x17'	tomato broccoli green beans squash	none	none	yes/tap	<50	403	17400	92.4	85.9	114	< 20

TABLE 3-2

KENNECOTT VEGETATIVE UPTAKE STUDY
PHASE I SAMPLE INFORMATION – MAGNA
Sample data sorted by descending lead concentrations.

DATE SAMPLED	SAMPLE ID	TAG NO.	GARDEN SIZE	VEGETABLES	SOIL ADDITIVES	CHEMICALS	IRRIGATION/SOURCE	XRF DATA (mg/kg) Cr	Mn	Fe	Cu	Pb	Zn	As
8/10/93	M-14	8-93748	12'x21'	tomato jalapeno pepper	ammonium sulfate	none	yes/canal	82	373	21300	448	775	895	< 20
8/12/93	M-41	8-93778	38'x18'	tomato carrot butternut squash spaghetti squash crook neck squash	manure compost top soil	none	yes/tap	60	455	18500	112	628	181	< 20
8/6/93	M-4	8-93733	31'x63'	tomato corn cucumber green beans zucchini	nitrogen	none	yes/well water	< 50	526	20500	102	494	203	< 20
8/10/93	M-15	8-93747	70'x18'	tomato green beans dill cantaloupe peppers zucchini mint cucumber	horse manure sawdust	none	yes/canal	< 50	422	18500	337	491	434	< 20
8/10/93	M-18	8-93750	20'x10' 28.5'x15'	tomato hot peppers zucchini cucumber	none	none	yes/canal	< 50	286	18300	389	311	333	< 20
8/12/93	M-34	8-93769	28'x18'	tomato swiss chard carrots bell peppers eggplant cauliflower lettuce watermelon pumpkin garlic zucchini	Miracle grow manure	none	yes/tap	< 50	140	12800	481	244	352	< 20
8/9/93	M-12	8-93743	18'x2.5'	zucchini cucumber	none	none	yes/tap	< 50	502	23000	260	220	532	< 20
8/7/93	M-1	8-93730	36'x1'	tomato cucumber zucchini roly poly squash eggplant	mulch	ortho dust	yes/tap	54	548	23800	304	228	383	< 20
8/9/93	M-3	8-93732	52'x15'	tomato cucumber green beans carrot bell peppers zucchini beets	16-16-16	Isotox	yes/canal	< 50	487	20400	142	210	245	< 20
8/11/93	M-29 M-30 dup	8-93764 8-93765	25'x41'	tomato green beans zucchini carrots potato cantaloupe cabbage	manure (a lot) grass clippings leaves	Diazinon	yes/canal	< 50 < 50	373 430	14400 14200	341 325	170 170	187 197	< 20 < 20
8/9/93	M-7	8-93736	23'x8'	tomato corn cucumber onions peppers dill	none	none	yes/canal	61	509	22000	234	164	190	< 20
8/11/93	M-27	8-93761		tomato	23-19-17	Diazinon	yes/tap	< 50	607	23000	213	153	341	< 20

TABLE 3-2

KENNECOTT VEGETATIVE UPTAKE STUDY
PHASE I SAMPLE INFORMATION – MAGNA
Sample data sorted by descending lead concentrations.

DATE SAMPLED	SAMPLE ID	TAG NO.	GARDEN SIZE	VEGETABLES	SOIL ADDITIVES	CHEMICALS	IRRIGATION/SOURCE	XRF DATA (mg/kg)						
								Cr	Mn	Fe	Cu	Pb	Zn	As
8/10/93	M-13	8-93744	13'x17' 14'x11' 8'x2'	tomato radishes lettuce corn banana squash turnips pumpkin	steer manure 21-0-0 1-0-0 w/4.5% Fe	none	yes/tap	68	355	19400	274	148	173	< 20
8/10/93	M-21	8-93753	53'x16'	tomato cucumber swiss chard eggplant zucchini	horse manure	something for earwigs	yes/tap	99	554	23200	349	123	240	< 20
8/10/93	M-17	8-93749	17.5'x2.5'	tomato	none	none	yes/tap	72	388	18300	180	119	187	< 20
8/10/93	M-16	8-93748	38'x25'	tomato zucchini corn cantaloupe yellow squash	manure ammonium nitrate	none	yes/canal	< 50	354	12800	255	109	182	< 20
8/12/93	M-38 M-39 dup	8-93773 8-93774	27'x16' 6'x26'	tomato carrots zucchini butternut squash beets cucumber	manure nitrogen	Diazinon	yes/tap	58 64	324 359	17000 17400	124 137	99.5 107	257 258	< 20 < 20
8/11/93	M-26	8-93760	32'x12'	crook neck squash pumpkin	none	weak killer (?)	yes/canal	57	391	17100	280	96.5	149	< 20
8/11/93	M-28	8-93762	135'x36'	tomato corn swiss chard green beans cucumbers beets	none	none	yes/canal	90	632	28300	134	92.5	184	27
8/11/93	M-31	8-93768	103'x30' 101'x15'	broccoli corn green beans cabbage potato cucumbers carots lettuce zucchini	manure	Diazinon	yes/canal	< 50	527	22800	114	87	118	< 20
8/6/93	M-5	8-93734	60'x60'	tomato potato onion squash cabbage cantaloupe dill broccoli zucchini cucumber	16-16-8 chicken manure horse manure	none	yes/well water	62	561	28200	103	84.5	161	< 20
8/7/93	M-2	8-93731	52'x17'	tomato zucchini cucumber green beans swiss chard cantaloupe	fertilizer	none	yes/canal	< 50	548	29100	166	81.5	148	< 20

TABLE 3-2

KENNECOTT VEGETATIVE UPTAKE STUDY
PHASE I SAMPLE INFORMATION – MAGNA
Sample data sorted by descending lead concentrations.

DATE SAMPLED	SAMPLE ID	TAG NO.	GARDEN SIZE	VEGETABLES	SOIL ADDITIVES	CHEMICALS	IRRIGATION/SOURCE	XRF DATA (mg/kg)						
								Cr	Mn	Fe	Cu	Pb	Zn	As
8/10/93	M-19 M-20 dup	8-93751 8-93752	22'x35'	tomato lettuce green beans cucumber bell peppers hot peppers swiss chard egg plant beets zucchini	horse manure ammonium nitrate top soil (30 yrs ago)	slug bait Sevin	yes/tap	85 58	502 500	18700 22100	113 105	80.5 80.8	179 183	< 20 < 20
8/9/93	M-10	8-93741	47'x50'	tomato corn peppers onion potato zucchini	nitrogen	none	yes/canal	54	813	25700	138	77.4	128	< 20
8/10/93	M-25	8-93757	14'x 8' 39'x18'	tomato broccoli corn bell peppers cucumber carrots squash zucchini potato pumpkin	Miracle grow	Malathion	yes/tap	64	827	24600	110	67.6	89.2	< 20
8/11/93	M-32	8-93767	55'x118'	tomato corn potato onion carrots broccoli bell peppers hot peppers zucchini cucumbers red cabbage green cabbage cantaloupe banana squash beets garlic cauliflower	cow manure (2 yrs ago)	Imidan	yes/canal	< 50	531	21300	87.3	64.1	107	< 20
8/12/93	M-37	8-93772	27'x18'	tomato corn beets	top soil & manure yrs ago	none	yes/tap	< 50	403	21800	110	54.2	98.1	< 20
8/12/93	M-35	8-93770	15.5'x28'	tomato cucumbers beets cabbage green beans hot peppers	complete fertilizer	Diazinon	yes/tap	< 50	438	20900	75.9	46.4	99	< 20
8/9/93	M-8	8-93735	58'x65'	tomato potato carrot onion broccoli zucchini corn peppers pumpkin cantaloupe swiss chard	18-20-7	Diazinon	yes/Canal	59	453	17200	59.2	45.1	81.9	< 20

TABLE 3-2

KENNECOTT VEGETATIVE UPTAKE STUDY
PHASE I SAMPLE INFORMATION -- MAGNA
Sample data sorted by descending lead concentrations.

DATE SAMPLED	SAMPLE ID	TAG NO.	GARDEN SIZE	VEGETABLES	SOIL ADDITIVES	CHEMICALS	IRRIGATION/SOURCE	XRF DATA (mg/kg) Cr	Mn	Fe	Cu	Pb	Zn	As
8/11/93	M-33	8-93768	8.5'x11'	tomato zucchini eggplant cauliflower	Miracle grow	none	yes/tap	80	580	23400	78.4	43.7	82.1	23
8/12/93	M-40	8-93775	31'x32'	tomato zucchini squash cucumbers bell peppers canteloupe	Miracle grow manure (2 yrs ago) compost	Diazinon	yes/tap	< 50	448	20600	52.2	38.9	94.9	< 20
8/9/93	M-8	8-93738	8'x7.5'	tomato peppers pumpkin	top soil/garden mix	none	yes/tap	88	478	20800	85.8	38.4	113	< 20
	M-9 dup	8-93740						< 50	508	19200	49.2	36.1	94.3	< 20
8/10/93	M-22	8-93754	10.5'x18.5'	tomato zucchini beets	16-16-16	Malathion	yes/tap	< 50	382	13200	56.9	32.6	82.2	< 20
8/12/93	M-38	8-93771	19'x2' 17'x9.5'	tomato onion dill potato pumpkin	leaves grass clipping	none	yes/tap	88	470	22900	87.8	32.1	185	31
8/9/93	M-11	8-93742	51'x25'	tomato corn carrot broccoli cauliflower green beans parsley dill thyme basil swiss chard radishes onions oregano sage zucchini pumpkin	manure some fertilizers	Bevin	yes/tap	51	475	21600	48.4	29.1	88	< 20
8/10/93	M-23	8-93755	26'x33'	tomato corn carrots potato beets cucumber	16-16-8 manure (2 yrs ago)	Bevin	yes/tap	74	385	15000	32.8	25.7	78.6	< 20
8/10/93	M-24	8-93756	12'x58'	tomato onion zucchini cucumber carrots turnips spinach horseradish asparagus egg plant bell peppers jalapeno pepper rhubarb crook neck squash butternut squash	horse manure complete fertilizer	Diazinon	yes/tap	< 50	307	13800	38.4	20.3	64.3	< 20

TABLE 3-3

Recommended Sample Schedule - Bingham Creek Area

Garden Number	Vegetable to be Sampled	Phase I Soil Lead Concentration (mg/kg)
BC-39	Tomato	2290
BC-14	Tomato	2062
BC-37	Tomato Carrot Beet Greens[1]	1611
BC-24	Tomato Carrot Beet Greens[1]	797
BC-31	Tomato	533
BC-34	Tomato	372
BC-23	Tomato	323
BC-4	Tomato Carrot Beet Greens	277
BC-7	Carrot	259
BC-11	Carrot	240
BC-36	Tomato Carrot	227
BC-3	Carrot Beet Greens	211
BC-20	Carrot	169
BC-6	Carrot	130
BC-19	Carrot	129
BC-17	Tomato	65.9

[1]Extra samples may be taken at these locations in order to increase sample number.

TABLE 3-4

Recommended Sample Schedule - Magna Area

Garden Location	Vegetable to be Sampled	Phase I Soil Lead Concentration (mg/kg)
M-14	Tomato	775
M-41	Tomato Carrot	628
M-4	Tomato Zucchini	494
M-15	Tomato Zucchini	491
M-18	Tomato Zucchini	311
M-34	Tomato Carrot Zucchini	244
M-1	Tomato Zucchini	228
M-3	Tomato Carrot Zucchini	210
M-29	Tomato Carrot Zucchini	170
M-21	Zucchini	123
M-38	Carrot	99.5
M-31	Carrot Zucchini	87
M-25	Carrot	67.6
M-6	Carrot	45.1
M-24	Tomato Carrot Zucchini	20.3

3.2.2 Phase II Field Investigation

The Phase II field investigation objectives were:

- Collect vegetable samples from the selected gardens for the analysis of total metals.
- Collect soil samples for further laboratory analysis. These samples were collected immediately adjacent to the plant from which the vegetative sample was collected. Total metal and pH were analyzed for soil samples.
- Perform metals speciation analyses on selected soil samples for evaluation of metals uptake by plants.
- Collect information from residents regarding the quantities of vegetables consumed from their gardens. A survey was constructed that residents were asked to complete. The survey is attached in Appendix I. Information collected provided reasonable vegetable consumption data used for risk assessment purposes.

Vegetable and soil samples were collected in three areas 1) residential properties along Bingham Creek; 2) the Bingham Creek Removal Area; and 3) the city of Magna. Bingham Creek residential properties which have not been involved with any prior soil removal actions; and Bingham Creek Removal Area (RA), were residential properties which were involved in a previous removal action. The removal action involved the removal of the upper 18 in. of soil and soil replacement with clean (uncontaminated) soil. The objective of collecting samples in the Removal Area was to provide confirmational data as to the effectiveness of the soil removal activities.

For every vegetable sample collected, an associated soil sample was also collected at the plant root area. Collection of soil and vegetable samples was conducted in the following protocol:

- New latex gloves were worn for the collection of all samples.
- All sampling equipment used was thoroughly decontaminated between each sample by brushing off loose soil, washing with water and alconox, rinsing with water and air drying of the equipment.
- Carrots were sampled by pulling them out of the ground by hand. If the carrots were small, two or three carrots were collected if they were growing in close proximity to each other to ensure that the laboratory would have adequate sample material for analysis. The tops of the carrots were removed (by hand) close to the base of the carrot and discarded. The associated soil samples were collected by placing the tip of a stainless steel hand auger directly into the hole from which the carrot was removed. The soil was thoroughly mixed before placing it into the sample bag.
- Tomatoes were sampled by hand also. At a minimum, two tomatoes were removed from each plant sampled. If the tomatoes were relatively small, three or more tomatoes were collected. The associated soil sample was collected by placing the hand auger tip as close as possible to the main stem of the plant. Two soil samples were taken from near each plant, one on either side. The soil was thoroughly mixed and placed into a sample bag.

- Beet greens were also sampled by hand by first pulling the beet from the ground. Even though the entire plant was harvested, only the green tops were collected for analysis, the beet tuber was discarded. If the beets were generally small and growing in clusters, two or three beets were pulled and the greens collected. The associated soil sample was collected in the same manner as described for the carrot soil samples.
- Zucchini samples were collected by hand. If the zucchinis were small, at least two were collected from one plant and the entire portion collected was sent to the laboratory for analysis. If, however, the zucchinis were large, one or two were collected from each plant, the center most section of each was cut with a plastic knife, and this portion was sent to the laboratory for analysis (a cross-sectional cut was made to remove both ends of the fruit, the skin was left intact). The associated soil sample was collected in the same manner as previously described for the tomato soil sample.
- After collecting the vegetables, they were washed by using a pressurized spray of deionized water to remove all soil particles adhering to the outer surfaces. All vegetables were then allowed to air-dry by gently placing them onto clean paper towels.
- The vegetables and soil samples were placed into separate ziploc-type bags, labelled, and then placed into secure coolers. Vegetables were kept cool until and during their shipment to the laboratory. All samples were kept under appropriate chain-of-custody.
- Following collection, washing, and drying, all vegetable samples were weighed on a top loader type balance to determine the fresh weight of the sample.

Throughout the field investigations, quality control samples were collected to evaluate the effectiveness of site sampling procedures and equipment decontamination procedures. The following is a description of the quality control samples collected:

- Field replicate samples (for both vegetative and soil samples) were collected at the rate of approximately one per every ten samples (10%).
- Field blank quality control samples (of deionized water) were collected for every new lot number of deionized water.
- Field equipment rinsate samples were collected for the field equipment that was decontaminated. This was performed once for every 20 samples collected (5%).

Sample collection for Phase II began on September 20, 1993 and continued until September 28, 1993. The total number and type of vegetable and soil samples collected in the Bingham Creek area, the Bingham Creek removal area and the Magna sites are presented in Table 3-5.

All soil samples collected during the Phase II field investigation were analyzed for total metals by Contract Laboratory Program (CLP) methods as described in the CLP Statement of Work (SOW) (EPA, 1987). Total lead and total arsenic were measured by graphite furnace atomic absorption spectrophotometer because of the lower detection levels achievable.

Table 3-5 Total number of gardens and vegetable/soil samples collected in each area

Sample Area	Gardens	Tomatoes	Carrots	Beet Greens	Zucchini	Totals
Bingham Creek	17	20	21	10	0	68
Removal Area	8	19	14	9	0	47
Magna	14	14	6	0	14	48
Totals	39	3	41	16	14	163

A method for sample preparation of vegetative material is not included in the CLP SOW. Therefore, a method was employed that has been used successfully for investigations on other sites in Region VIII. Upon arrival at the laboratory, the samples were weighed and dried prior to grinding. The entire sample mass was prepared, then at the extraction step, a homogenous aliquot of the ground sample was extracted and analyzed. Plant tissue samples were dried in a convection oven to constant weight at 60 degrees centigrade. Dry tissue was ground to -40 mesh, blended and stored in a sealed container until analysis. The method of sample preparation and analysis is included in the Phase II SAP (Sverdrup, 1993b).

There was one deviation in this protocol, specifically in the plant tissue preparation. The method calls for a grinding step to be accomplished by a Wiley Mill. This apparatus was not available at the EPA Region VIII ESD laboratory, so instead, a coffee bean grinder was successfully used in its place. The bean grander was decontaminated thoroughly before and after each vegetable tissue grinding.

The findings of the Phase II vegetable and soil investigation is discussed in Section 4.0.

4.0 DATA ANALYSIS

To describe the relationship of metals in soil to the uptake of metals into vegetables, a least squares linear regression line was fit to the data resulting from each vegetable sample and in each of the two study areas. The correlation coefficient, r, of each line was evaluated and squared to illustrate how well the data fit a straight line. An r square value close to 1.0 indicated a better fit of the data points to a straight line. An r square value close to 0.0 indicated scattered data points.

During the development of a BRA for typical Superfund sites, the estimated risks associated with the garden vegetables pathway are calculated by relying on default bioconcentration factors, generally taken from "A Review and Analysis of parameters for assessing transport of Environmentally Released Radionuclides through Agriculture" by Baes *et. al.* (1984) (Baes article). The Baes article presented an evaluation of terrestrial transport parameters designed to address many limitations, such as incomplete knowledge of transport processes or incomplete data parameters. Element-specific defaults for soil-to-plant concentration factors were presented in the Baes article. Section 4.0 Data Analysis, uses Baes defaults for lead and arsenic in soil-to-plant concentration factors to compare results from the vegetable and soil sampling at Bingham Creek, Bingham Creek Removal Area, and Magna. Default values for vegetables were divided into two groups; B_v soil-to-plant elemental transfer coefficient for vegetative portions of food crops and feed plants; and B_r soil-to-plant elemental transfer coefficient for nonvegetative (reproductive) portions of food crops and feed plants.

It is not a typical practice to collect samples of vegetables growing on Superfund sites to determine their metals contents. In a BRA report, the concentration of

metals in garden vegetables grown in contaminated soil is thus estimated from the concentration in soil as follows:

$$C_V = C_S \times BCF \quad (1)$$

where: C_V = concentration of metal in vegetable (mg/kg)
C_S = concentration of metal in soil (mg/kg)
BCF = bioconcentration factor for vegetables (unitless)

The study areas (gardens) identified included Bingham Creek (BC), Bingham Creek Removal Area (RA), and Magna (M). Each garden was assigned a unique number. Soil and vegetable sample metal concentrations are presented by garden as individual samples and garden mean average. Average soil and vegetable metal concentration are presented on corresponding graphs. The garden observed data, linear regression line (r^2 and slope), and the upper and lower 95% confidence intervals are also presented on the graphs.

For the data presented in the following subsections, the BCF for each vegetable has been calculated (where applicable) as the slope of the linear regression line for each vegetable.

4.1 Lead Evaluation

The soil lead concentrations observed during the Phase II investigation in the Bingham Creek Area ranged from 39.7 mg/kg to 4,110 mg/kg with a mean concentration of 728 mg/kg. (Table A-1, Appendix A) The soil lead concentrations in the Magna Area ranged from 15.1 mg/kg and 1,420 mg/kg with a mean concentration of 183 mg/kg (Table A-2, Appendix A). The soil lead concentrations measured for soils sampled in the Removal

Area of Bingham Creek ranged from 14.2 mg/kg to 67.8 mg/kg, with a mean concentration of 29.4 mg/kg (Table A-3, Appendix A). The uptake of metals into each vegetable type collected from each study area is discussed in the following subsections.

4.1.1 Carrots

The lead concentrations measured in carrots is presented in Tables 4-1, 4-2, and 4.3 for the study areas of Bingham Creek, Magna, and Removal Area, respectively. The soil lead concentrations in Bingham Creek ranged from 51.5 mg/kg to 2,540 mg/kg with; lead concentrations in the associated carrot samples ranging from 0.29 and 10.9 mg/kg on a dry weight basis. The resulting linear regression line for this data is illustrated on Figure 4-1. As indicated on the figure, the r square value associated with this line is 0.96 with a slope (BCF) of 4.3E-03. The BCF for root crops reported by Baes *et. al.* (1984) of 9E-03 compares well with that observed for the Bingham Creek data.

The soil lead concentrations measured in the Magna area ranged from 18.3 mg/kg to 143 mg/kg. The lead concentrations detected in carrots grown in Magna ranged from 0.13 mg/kg to 0.86 mg/kg on a dry weight basis. A plot of this data and the resulting linear regression line is illustrated on Figure 4-2. The r square value determined for this data set is 0.90, which is similar to that demonstrated for Bingham Creek. The slope of the linear regression line is 4.6E-03, similar to the default value cited in Baes *et.al.* (1984) of 9E-03 and the slope determined for lead uptake into carrots in the Bingham Creek area. The similar slope values between the two areas implies that lead uptake into carrots is not markedly different given the two different waste sources of the two areas (smelter emission fallout versus migration of mine-tailings).

Table 4-1. Bingham Creek - Carrots Lead Data				
Sample ID	Soil Lead (mg/kg)	Average Soil Lead per Garden (mg/kg)	Carrot Lead (mg/kg dry wt.	Average Carrot Lead per Garden (mg/kg dry wt.)
BC-03-C1	176	181.5	0.47	0.46
BC-03-C2	187		0.45	
BC-04-C1	206	129.8	0.58	0.65
BC-04-C2	257		0.71	
BC-06-C1	169	162	1.1	1.05
BC-06-C2	155		1	
BC-07-C1	182	189	0.8	0.8
BC-07-C2	196		0.79	
BC-11-C1	207	190.5	0.29	0.41
BC-11-C2	174		0.53	
BC-19-C1	97.3	217.3	0.58	0.53
BC-19-C2	120		0.48	
BC-20-C1	132	133	0.72	0.79
BC-20-C2	134		0.86	
BC-24-C1	744	744	4.4	4.4
BC-32-C1	51.5	54.5	0.5	0.45
BC-32-C2	57.6		0.4	
BC-37-C1	1660	1840	10.9	
BC-37-C2	1600		4	10.84
BC-37-C3	1560		6.2	
BC-37-C4	2540		9.5	

Figure 4-1. Bingham Creek. Lead uptake into carrots versus soil lead levels. (Average concentrations plotted.)

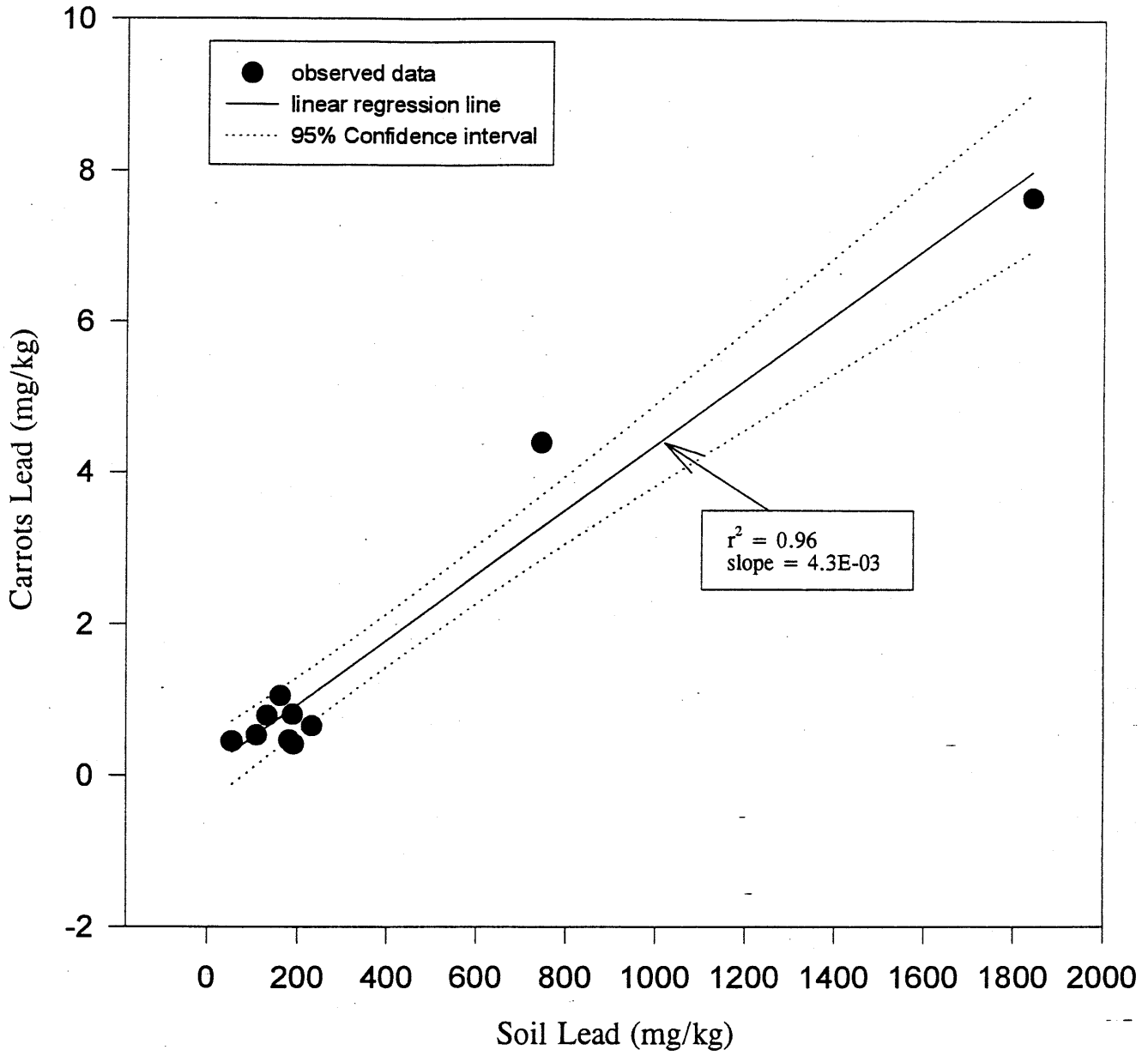
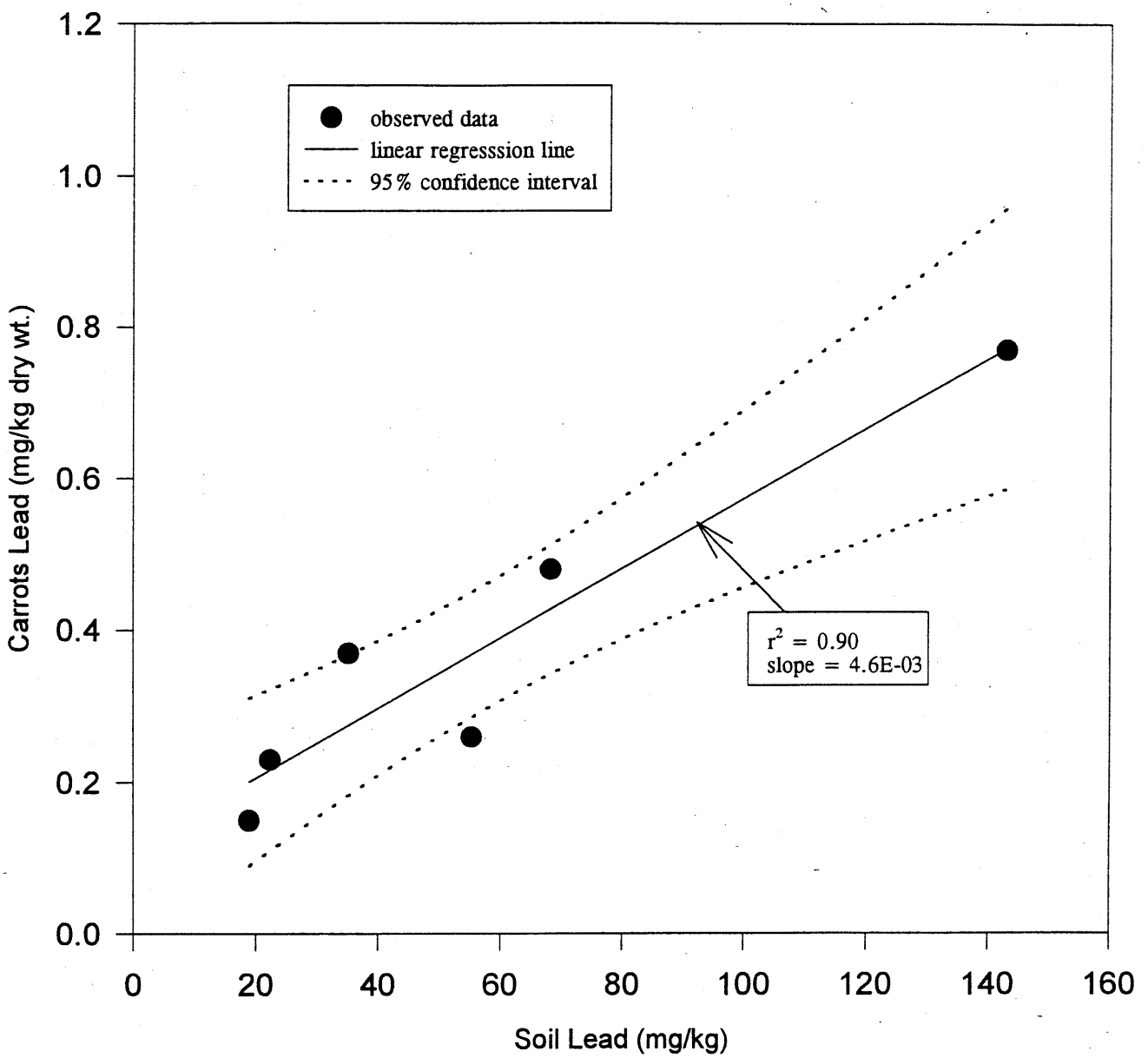


Table 4-2. Magna - Carrots Lead Data				
Sample ID	Soil Lead (mg/kg)	Average Soil Lead per Garden (mg/kg)	Vegetable Lead (mg/kg dry wt.	Average Carrot Lead per Garden (mg/kg dry wt.)
M-06-C1	33.2	35.1	0.36	0.37
M-06-C2	36.9		0.38	
M-24-C1	18.3	18.9	0.16	0.15
M-24-C2	19.6		0.13	
M-25-C1	54.2	55.3	0.28	0.26
M-25-C2	56.3		0.24	
M-29-C1	143	143	0.86	0.77
M-29-C2	143		0.68	
M-31-C1	18.3	22.3	0.26	0.23
M-31-C2	26.3		0.2	
M-41-C1	63.1	68.3	0.45	0.48
M-41-C2	65.2		0.62	
M-41-C3	70.2		0.38	
M-41-C4	74.8		0.48	

Figure 4-2. Magna. Lead uptake into carrots versus soil lead levels. (Average concentrations plotted.)



The soil lead concentrations measured in the Removal Area of Bingham Creek ranged from 21.4 to 67.8 mg/kg and the corresponding lead concentrations measured in carrots ranged from 0.18 to 0.77 mg/kg dry wt (Table 4-3). The r square value of 0.16, resulting from the linear regression line fit to this data, indicates a very poor correlation (Figure 4-3). The resulting slope of this linear regression line was found to be 5.7E-03 comparing well with the BCF of 9E-03 Baes *et. al.* (1984); and Bingham Creek and Magna BCFs.

4.1.2 Tomatoes

The lead concentrations measured in tomatoes are presented in Tables 4-4 , 4-5 and 4-6 for the study areas of Bingham Creek, Magna, and Removal Area, respectively. The soils associated with the tomato samples were found to range from 39.7 to 4,110 mg/kg in Bingham Creek, with the lead concentrations in tomato samples ranging from 0.12 to 52 mg/kg on a dry weight basis. The resulting linear regression line for this data is illustrated on Figure 4-4. As indicated on the figure, the r square value associated with this line is 0.37 with a slope (BCF) of 1.7E-04. The low r square value indicates a poor fit of the data points to the linear regression line. The BCF for fruit-type vegetables reported by Baes *et. al.* (1984) of 9E-03 does not compare well with that observed in Bingham Creek. This indicates that little lead is taken up into the tomato plants growing in Bingham Creek study area.

The soil lead concentrations of samples associated with tomato samples measured between 15.1 mg/kg and 630 mg/kg in the Magna area (Table 4-5). The lead concentrations measured in tomatoes ranged from less than the instrument detection level of 0.12 mg/kg to 0.7 mg/kg on a dry weight basis. Statistical information was calculated by using the value of 0.12 for those samples which did not measure lead above the instrument detection level. This is a somewhat conservative approach, since the true

Table 4-3. Removal Area - Carrots Lead Data				
Sample ID	Soil Lead (mg/kg)	Average Soil Lead per Garden (mg/kg	Carrot Lead (mg/kg dry wt.	Average Carrot Lead er Garden (mg/kg dry wt.)
RA-03-C1	67.8	45.3	0.28	0.275
RA-03-C2	22.7		0.27	
RA-07-C1	23.2	22.3	0.18	0.185
RA-07-C2	21.4		0.19	
RA-08-C1	43.4	36.5	0.77	0.5
RA-08-C2	29.6		0.23	

Figure 4-3. Removal Area. Lead uptake into carrots versus soil lead levels. (Average concentrations plotted.)

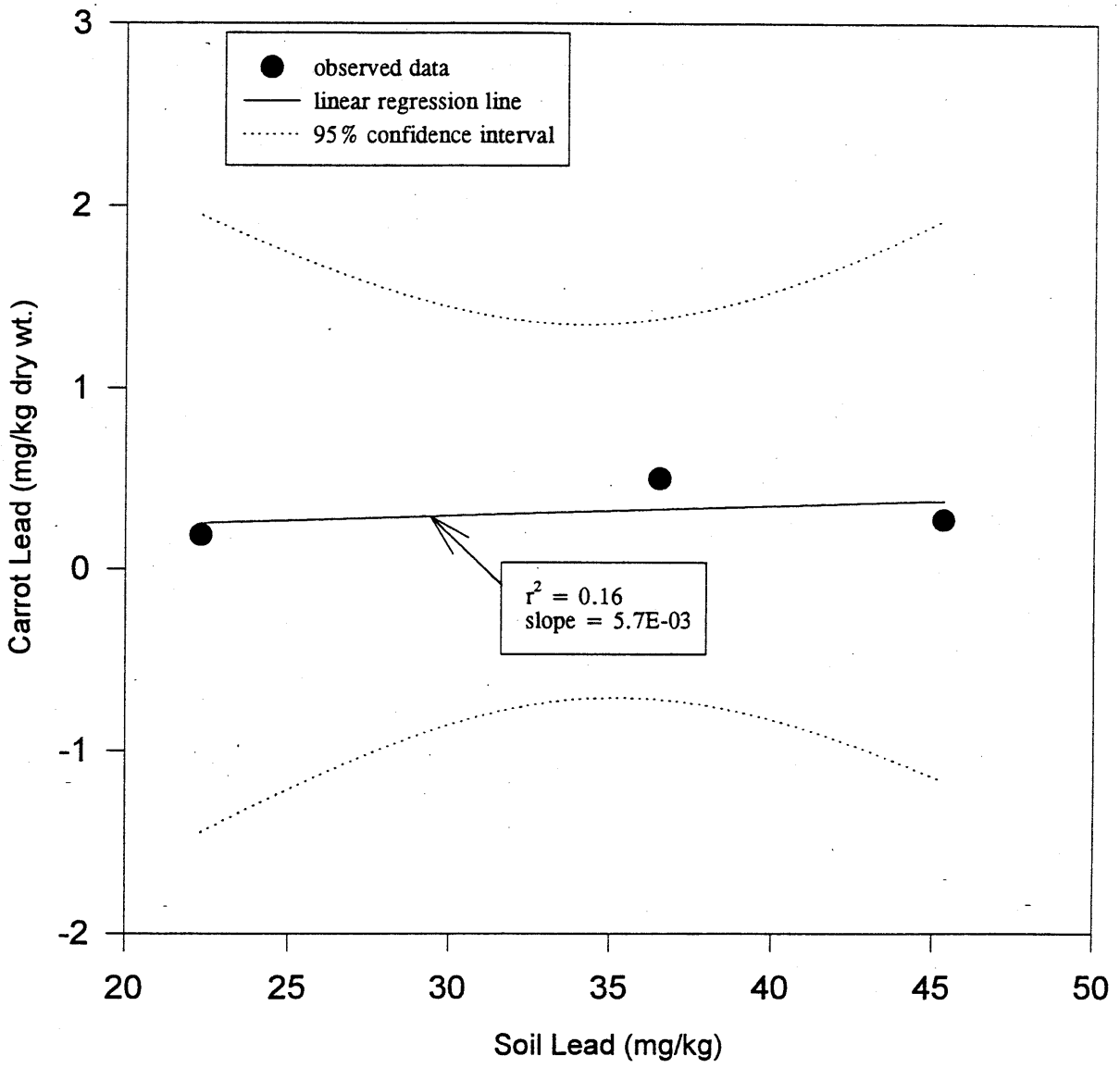


Table 4-4. Bingham Creek - Tomato Lead Data				
Sample ID	Soil Lead (mg/kg)	Average Soil Lead per Garden (mg/kg)	Tomato Lead (mg/kg dry wt.	Average Tomato Lead per Garden (mg/kg dry wt.)
BC-04-T1	217	216	0.42	0.39
BC-04-T2	215		0.37	
BC-14-T1	1350	1310	0.12	0.25
BC-14-T2	1270		0.37	
BC-17-T1	39.7	53.8	0.16	0.14
BC-17-T2	68		0.12	
BC-23-T1	215	235.5	0.17	0.18
BC-23-T2	256		0.18	
BC-24-T1	916	968	0.23	0.29
BC-24-T2	1020		0.35	
BC-31-T1	455	474	0.43	0.44
BC-31-T2	493		0.44	
BC-34-T1	378	325	0.2	0.21
BC-34-T2	272		0.21	
BC-36-T1	188	188	0.18	
BC-36-T2	188		0.34	0.26
BC-37-T1	2150	3130	0.52	0.45
BC-37-T2	4110		0.38	
BC-39-T1	2070	1540	0.12	0.14
BC-39-T2	1010		0.16	

Figure 4-4. Bingham Creek. Lead uptake into tomatoes versus soil lead levels. (Average concentrations plotted.)

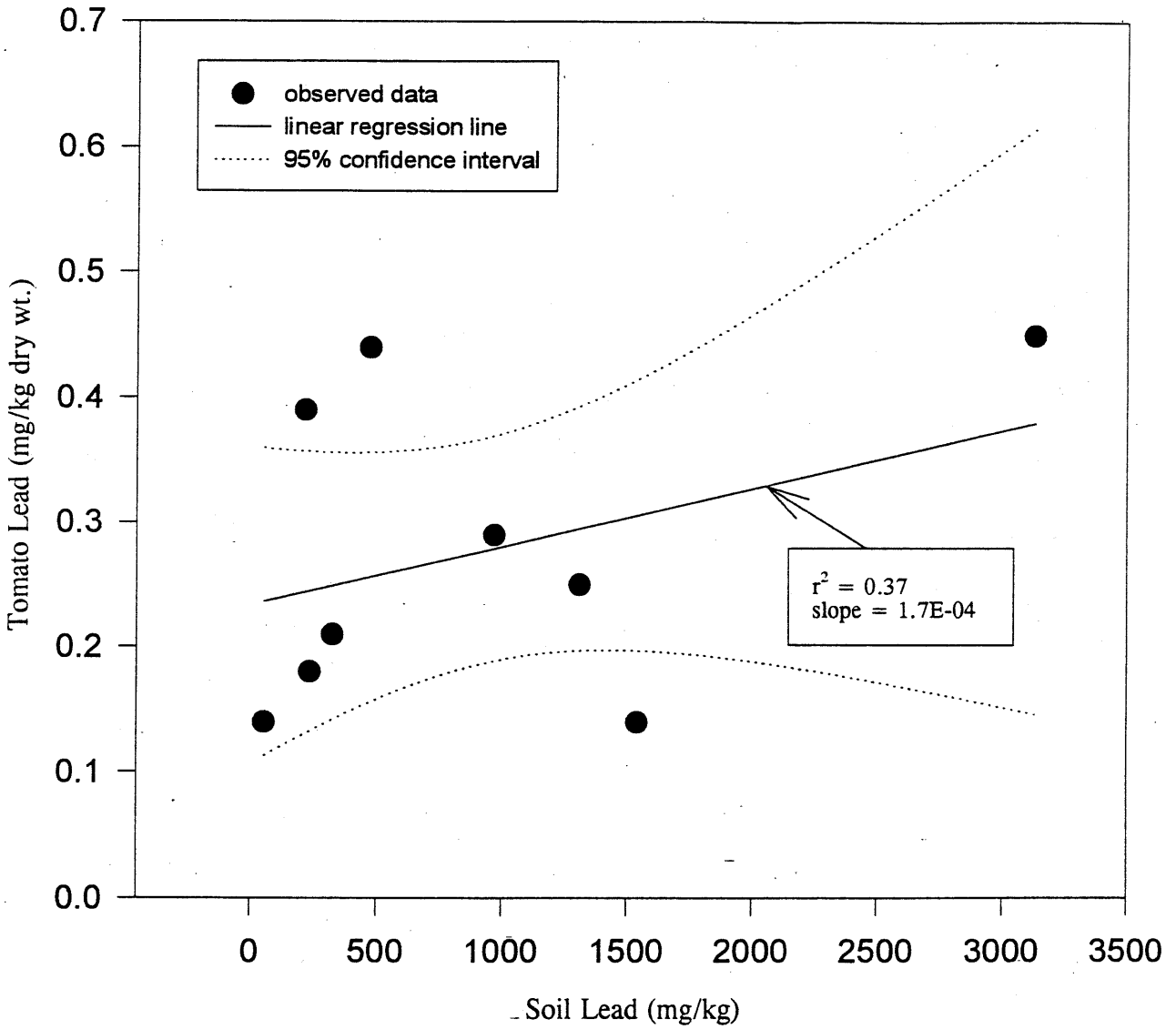
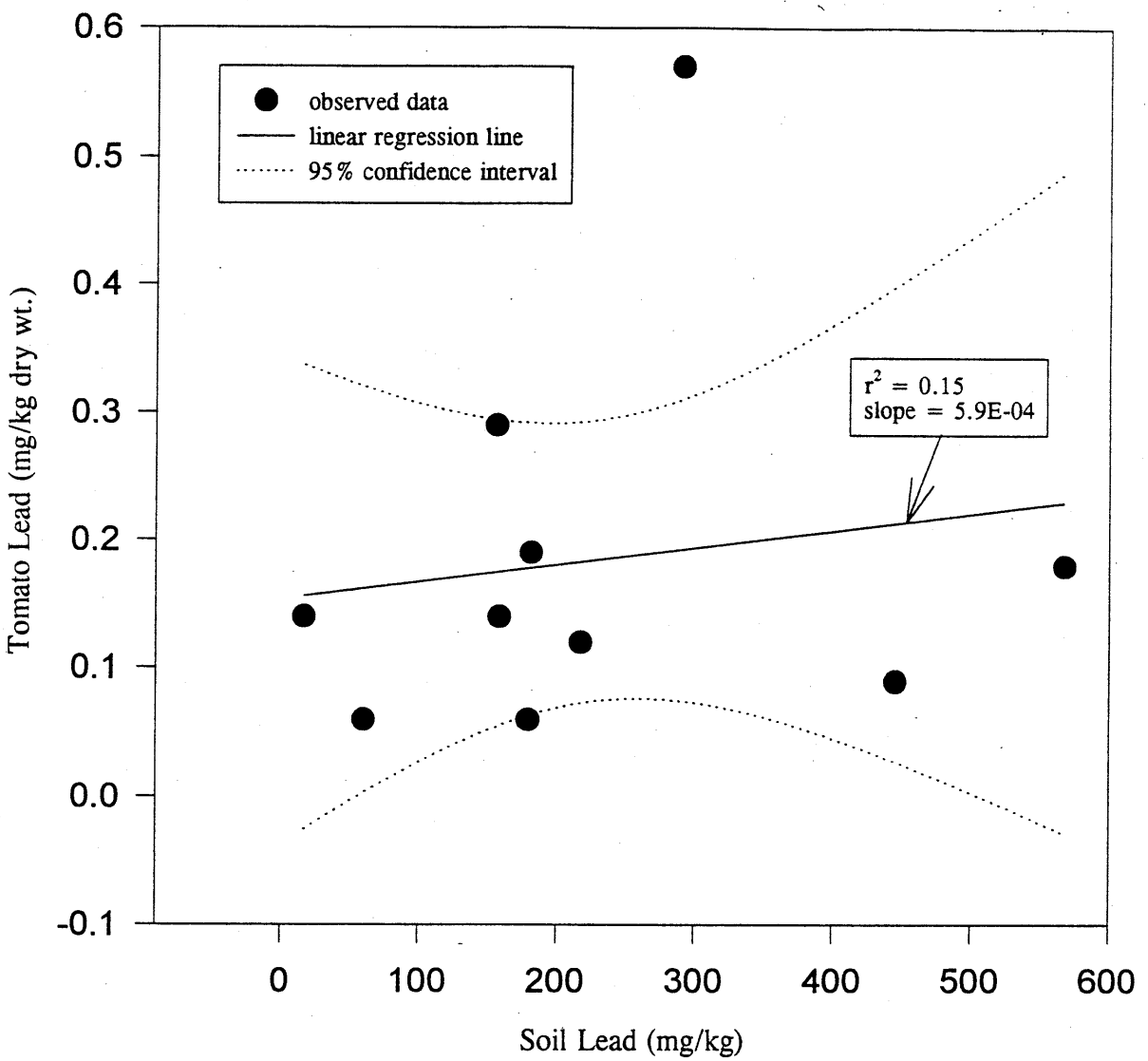


Table 4-5. Magna - Tomatoes Lead Data				
Sample ID	Soil Lead (mg/kg)	Average Soil Lead (mg/kg)	Tomato Lead (mg/kg dry wt.	Average Tomato Lead (mg/kg dry wt.)*
M-01-T1	135	158	<0.12	0.14
M-01-T2	181		0.21	
M-03-T1	143	179	<0.12	0.06
M-03-T2	215		<0.12	
M-04-T1	152	156	0.46	0.29
M-04-T2	159		0.12	
M-14-T1	504	567.5	0.16	0.18
M-14-T2	631		0.2	
M-15-T1	630	445	<0.12	0.09
M-15-T2	260		0.12	
M-18-T1	396	289.5	0.7	0.57
M-18-T2	183		0.44	
M-24-T1	15.1	16.5	<0.12	0.14
M-24-T2	17.9		0.22	
M-29-T1	172	181	<0.12	0.19
M-29-T2	190		0.13	
M-34-T1	217	217	0.12	0.12
M-41-T1	61.3	60.2	<0.12	0.06
M-41-T2	59.1		<0.12	

*Average concentrations calculated with one-half the detection limit when original sample result reported at a value less than the detection limit.

Figure 4-5. Magna. Lead uptake into tomatoes versus soil lead levels. (Average concentrations plotted.)



concentrations may be less than the instrument detection level. A plot of this data and the resulting linear regression line is illustrated on Figure 4-5. The r square value of 0.15 determined for this data set is 0.15, which is similar to that demonstrated for Bingham Creek and represents very poor correlation. The slope of the linear regression line of 5.9E-04 is not similar to the default value cited in Baes *et.al.* (1984) of 9E-03. The similar slope values between Bingham Creek and Magna, however, may imply that lead uptake into tomatoes is not markedly different, given the two different waste sources of the two areas (smelter emission fallout versus migration of mine-tailings).

The soil lead concentrations measured in the Removal Area of Bingham Creek for the tomato sampling ranged from 17.0 to 45.6 mg/kg, and the corresponding lead concentrations in tomato measured from less than the instrument detection limit of 0.12 to 0.28 mg/kg dry wt. (Table 4-6). The linear regression line fit to this data set produced an r square value of 6.9E-03 (Figure 4-6), indicating a very poor correlation. Due to the negative value of The slope of the linear regression line of -8.7E-04 the BCF of the Removal Area was not used to draw conclusions.

4.1.3 Beet Greens

The lead concentrations measured in beet greens are presented in Table 4-7 for the Bingham Creek Study Area and Table 4-8, for the Removal Area. Beet greens were not available for collection in the town of Magna. The soil concentrations were found to range from 182 to 1,840 mg/kg, with the lead concentrations in the associated beet green samples ranging from 0.8 to 16.9 mg/kg on a dry weight basis. The resulting linear regression line for this data is illustrated on Figure 4-7. As indicated on the figure, the r square value associated with this line is 0.67 with a slope (BCF) of 6.8E-03. The BCF for leafy-type vegetables reported by Baes *et. al.* (1984) is 4.5E-02. The Baes BCF is a ten-fold increase from that observed in the Bingham Creek garden data, indicating that not as much lead is

Table 4-6. Removal Area - Tomatoes Lead Data				
Sample ID	Soil Lead (mg/kg)	Average Soil Lead per Garden (mg/kg)	Tomato Lead (mg/kg)	Average Tomato Lead per Garden (mg/kg dry wt.)*
RA-02-T1	22.6	23.4	0.28	0.22
RA-02-T2	24.2		0.15	
RA-03-T1	36.5	26.7	0.25	0.2
RA-03-T2	17		0.14	
RA-04-T1	22.6	22.8	0.4	0.3
RA-04-T2	23		0.19	
RA-05-T1	45.6	37.1	0.21	0.18
RA-05-T2	28.5		0.14	
RA-06-T1	32.3	32.1	0.21	0.24
RA-06-T2	32		0.27	
RA-07-T1	28.4	28.8	<0.12	0.13
RA-07-T2	29.1		0.2	
RA-08-T1	21.7	20.7	0.19	0.13
RA-08-T2	19.7		<0.12	

*Average concentrations calculated with one-half the detection limit when original sample result reported at a value less than the detection limit.

Figure 4-6. Removal Area. Lead uptake into tomatoes versus soil lead levels. (Average concentrations plotted.)

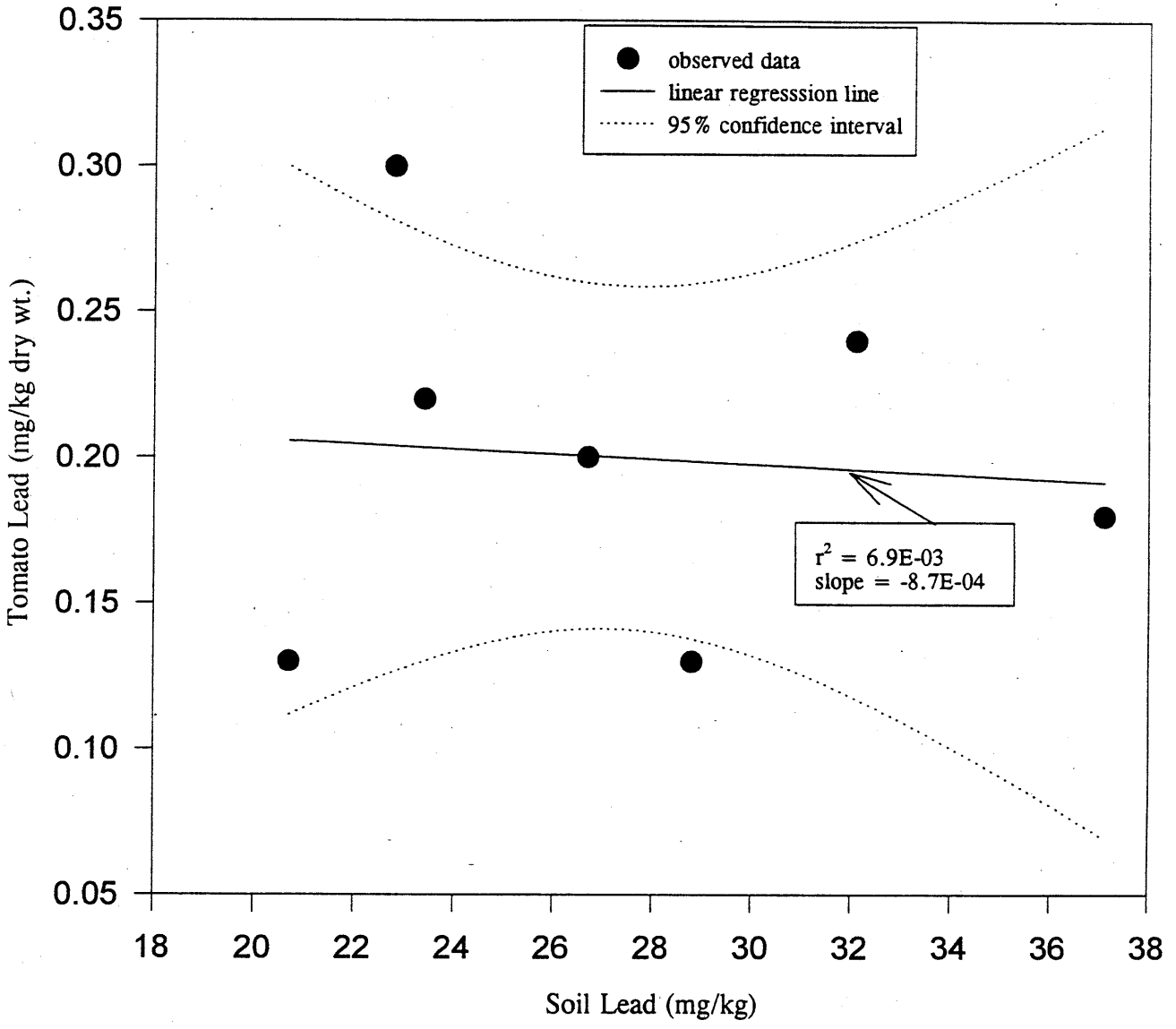


Table 4-7. Bingham Creek - Beet Greens Lead Data				
Sample ID	Soil Lead (mg/kg)	Average Soil Lead per Garden (mg/kg)	Beet Green Lead (mg/kg dry wt.)	Average Beet Green Lead er Garden (mg/kg dry wt.)
BC-03-B1	182	183	1.7	1.3
BC-03-B2	184		0.9	
BC-04-B1	283	237	0.8	1.4
BC-04-B2	191		2	
BC-24-B1	951	939	16.3	12.9
BC-24-B2	927		9.6	
BC-37-B1	1750	1730	16.9	10.6
BC-37-B2	1840		10	
BC-37-B3	1720		7.5	
BC-37-B4	1610		7.9	

Figure 4-7. Bingham Creek. Lead uptake into beet greens versus soil lead levels. (Average concentrations plotted.)

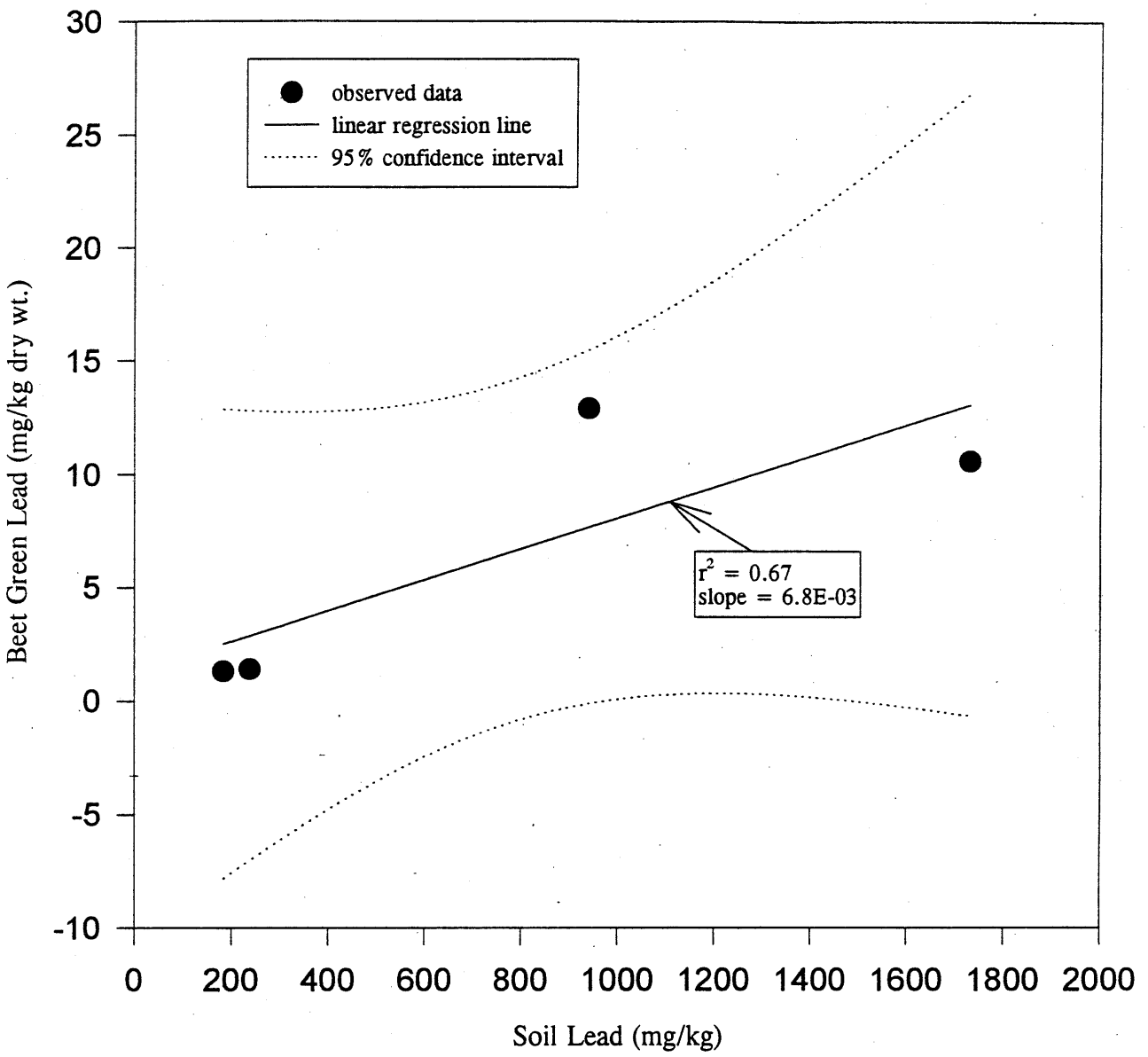


Table 4-8. Removal Area - Beet Greens Lead Data				
Sample ID	Soil Lead (mg/kg)	Average Soil Lead per Garden (mg/kg)	Beet Green Lead (mg/kg dry wt.)	Average Beet Green Lead er Garden (mg/kg dry wt.)
RA-03-B1	28	45.9	0.42	1.61
RA-03-B2	63.8		2.8	
RA-07-B1	23	25	0.25	0.22
RA-07-B2	26.9		0.18	
RA-08-B1	17.9	16.1	0.63	1.57
RA-08-B2	14.2		2.5	

taken up into the leafy structure of the beet greens in plants growing in Bingham Creek study area soils as compared to that reported in the literature (and used as default values in the risk assessment).

Beet greens were available for collection in the Removal Area. Lead concentrations in soil samples ranged from 14.2 mg/kg to 63.8 mg/kg, with the lead concentrations in the associated vegetable samples ranging from 0.18 mg/kg to 2.8 mg/kg dry weight (Table 4-8). The r square value of the linear regression fit of the data was 0.06 and the slope of the resulting linear regression line 1.3E-02 (Figure 4-8).

4.1.4 Zucchini

The lead concentrations measured in zucchini growing in the town of Magna are presented in Table 4-9. The soil concentrations were ranged between 17.1 and 1,420 mg/kg and the associated zucchini samples contained lead concentrations ranging from less than the instrument detection limit of 0.12 to 0.32 mg/kg on a dry weight basis. The resulting linear regression line for this data is illustrated on Figure 4-9. As indicated on the figure, the r square value associated with this line is 0.14 with a slope (BCF) of 8.9E-05. The low r square value indicates a poor fit of the linear regression line to the data. The BCF for fruit-type vegetables reported by Baes *et. al.* (1984) of 9E-03 does not compare well with that observed in the Magna zucchini data. The low slope indicates that little lead is taken up into the fruiting structure of the zucchini from plants growing in Magna study area soils as compared to the Baes data.

Figure 4-8. Removal Area. Lead uptake into beet greens versus soil lead levels. (Average concentrations plotted.)

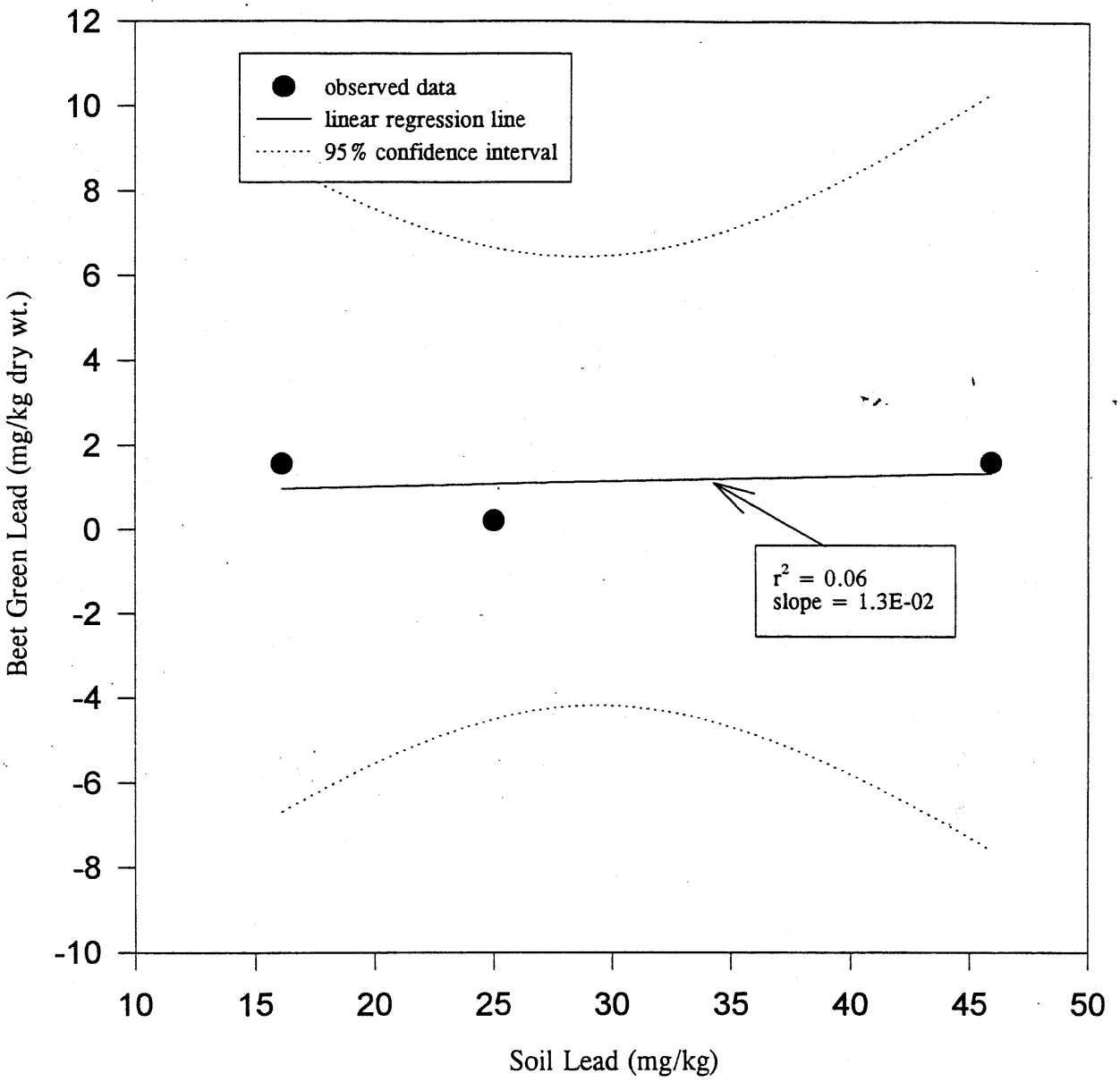
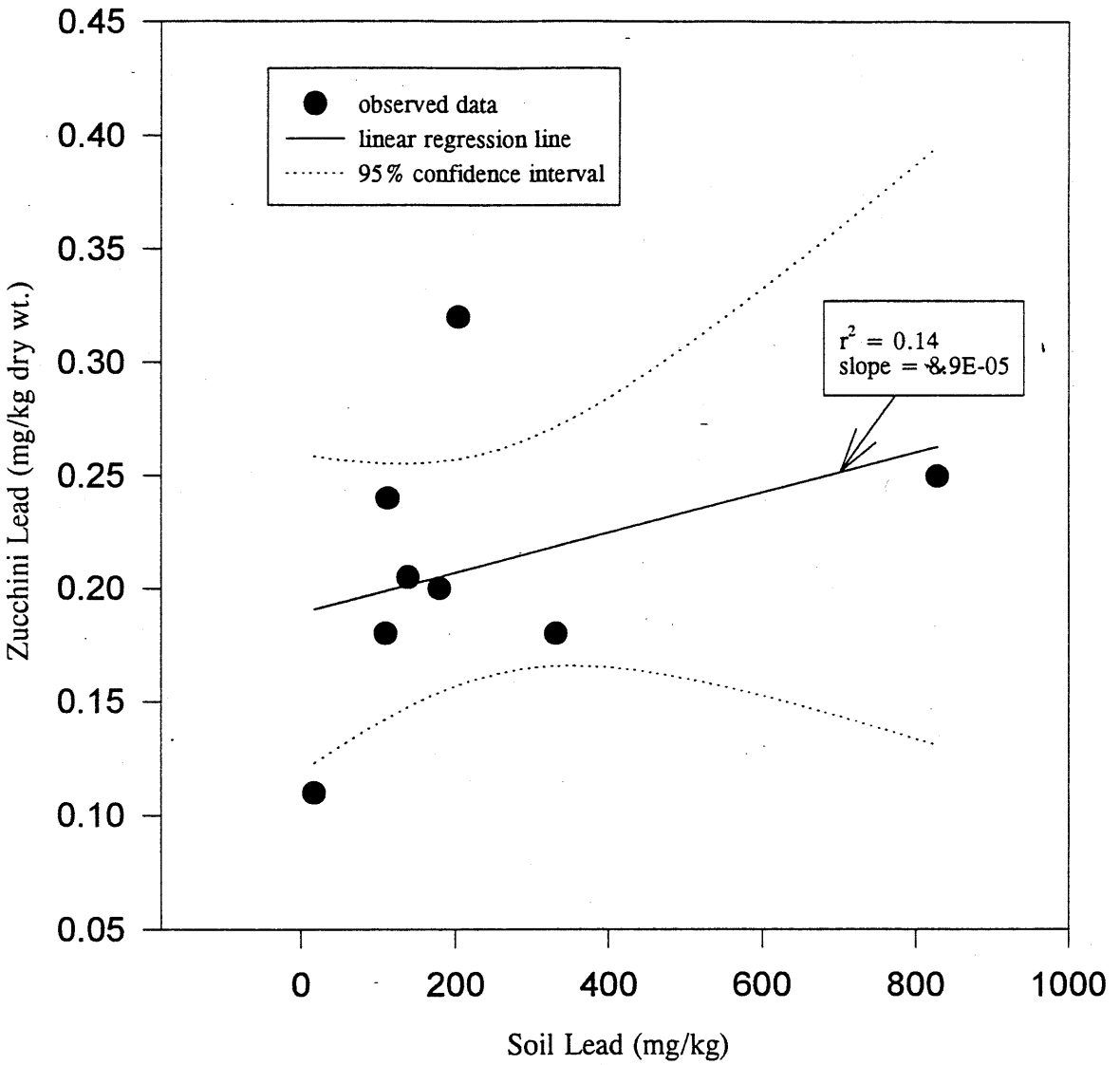


Table 4-9. Magna - Zucchini Lead Data				
Sample ID	Soil Lead (mg/kg)	Average Soil Lead (per Garden (mg/kg)	Zucchini Lead (mg/kg dry wt.	Average Zucchini Lead per Garden (mg/kg dry wt.)*
M-01-Z2	179	179	0.2	0.2
M-03-Z1	331	331	0.18	0.18
M-04-Z1	109	109	0.18	0.18
M-18-Z1	1420	828.5	0.28	0.25
M-18-Z2	237		0.22	
M-21-Z1	121	112	0.22	0.24
M-21-Z2	103		0.26	
M-24-Z1	17.1	17.5	<0.12	0.11
M-24-Z2	17.9		0.15	
M-29-Z1	142	138.5	0.23	0.205
M-29-Z2	135		0.18	
M-31-Z1	62.1	61.9	0.2	0.185
M-31-Z2	61.6		0.17	
M-34-Z1	204	204	0.32	0.32

*Average concentrations calculated with one-half the detection limit when original sample result reported at a value less than the detection limit.

Figure 4-9. Magna. Lead uptake into zucchinin versus soil lead levels. (Average concentrations plotted.)



4.2 Arsenic Evaluation

The soil arsenic concentrations measured in the Bingham Creek Area during the Phase II investigation ranged from 59.1 to 66.5 mg/kg with a mean concentration of 26.8 mg/kg (Table A-4, Appendix A). The soil arsenic concentrations measured in the Magna area during the Phase II investigation ranged between 4.6 and 23.2 mg/kg, with a mean concentration of 12.2 mg/kg (Table A-5, Appendix A). In the Removal Area of Bingham Creek, the soil arsenic concentrations ranged from 4.9 to 14.4 mg/kg, with a mean concentration of 7.5 mg/kg (Table A-6, Appendix A). The uptake of metals into each vegetable type is discussed in the following subsections.

4.2.1 Carrots

The arsenic concentrations measured in carrots are presented in Table 4-10 for the Bingham Creek Area and Table 4-11 for the Magna Area. The arsenic concentrations in soil samples were found to range from 7.4 to 64.5 mg/kg in Bingham Creek, with the associated arsenic levels in carrot samples ranging from less than the instrument detection limit of 0.12 to 0.58 mg/kg on a dry weight basis. The resulting linear regression line for this data is illustrated on Figure 4-10. As indicated on the figure, the r square value associated with this line is 0.39 with a slope (BCF) of 3.7E-03. The BCF for root crops reported by Baes *et. al.* (1984) of 6E-03 compares well with that observed for the Bingham Creek data.

The soil arsenic concentrations measured in the Magna area ranged from less than the instrument detection limit of 0.12 to 0.22 mg/kg (Table 4-11). Only two carrot samples exhibited arsenic concentrations above the instrument detection limit, therefore, neither the linear regression line r square values nor the BCF values can be evaluated. In that little arsenic was taken up into the carrots grown on Magna soils as compared to the Bingham Creek soils, there may be potential differences in the speciation (and bioavailability) of arsenic between the two study areas.

Table 4-10. Bingham Creek - Carrots Arsenic Data				
Sample ID	Soil Arsenic (mg/kg)	Average Soil Arsenic (per Garden (mg/kg)	Carrot Arsenic (mg/kg dry wt.	Average Carrot Arsenic per Garden (mg/kg dry wt.)*
BC-03-C1	12.8	14.4	<0.12	0.06
BC-03-C2	15.9		<0.12	
BC-04-C1	15.9	15.6	0.09	0.13
BC-04-C2	15.3		0.17	
BC-06-C1	12.3	12.5	0.16	0.17
BC-06-C2	12.7		0.17	
BC-07-C1	16.8	16.9	<0.12	0.06
BC-07-C2	17		<0.12	
BC-11-C1	16.4	16.1	<0.12	0.06
BC-11-C2	15.7		<0.12	
BC-19-C1	7.5	7.5	<0.12	0.11
BC-19-C2	7.4		0.15	
BC-20-C1	8.7	9.3	<0.12	0.06
BC-20-C2	9.8		<0.12	
BC-24-C1	31.6	31.6	<0.12	0.06
BC-32-C1	11.2	11.8	0.18	0.15
BC-32-C2	12.4		0.12	
BC-37-C1	47.3	51.4	0.2	0.3
BC-37-C2	45.3		0.15	
BC-37-C3	48.3		0.27	
BC-37-C4	64.5		0.58	

*Average concentrations calculated with one-half the detection limit when original sample result reported at a value less than the detection limit.

Figure 4-10. Bingham Creek. Arsenic uptake into carrots versus soil arsenic levels. (Average concentrations plotted.)

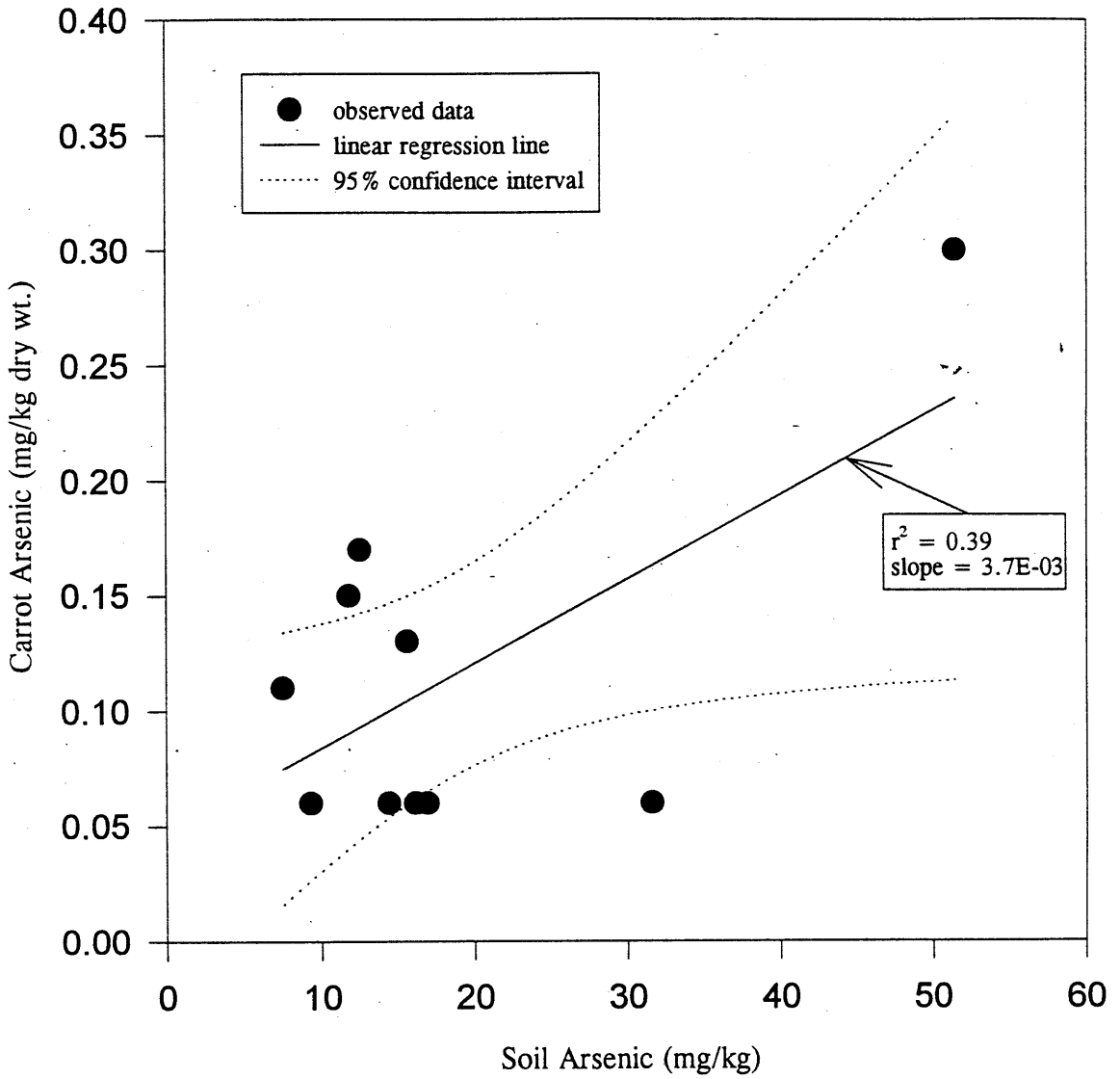
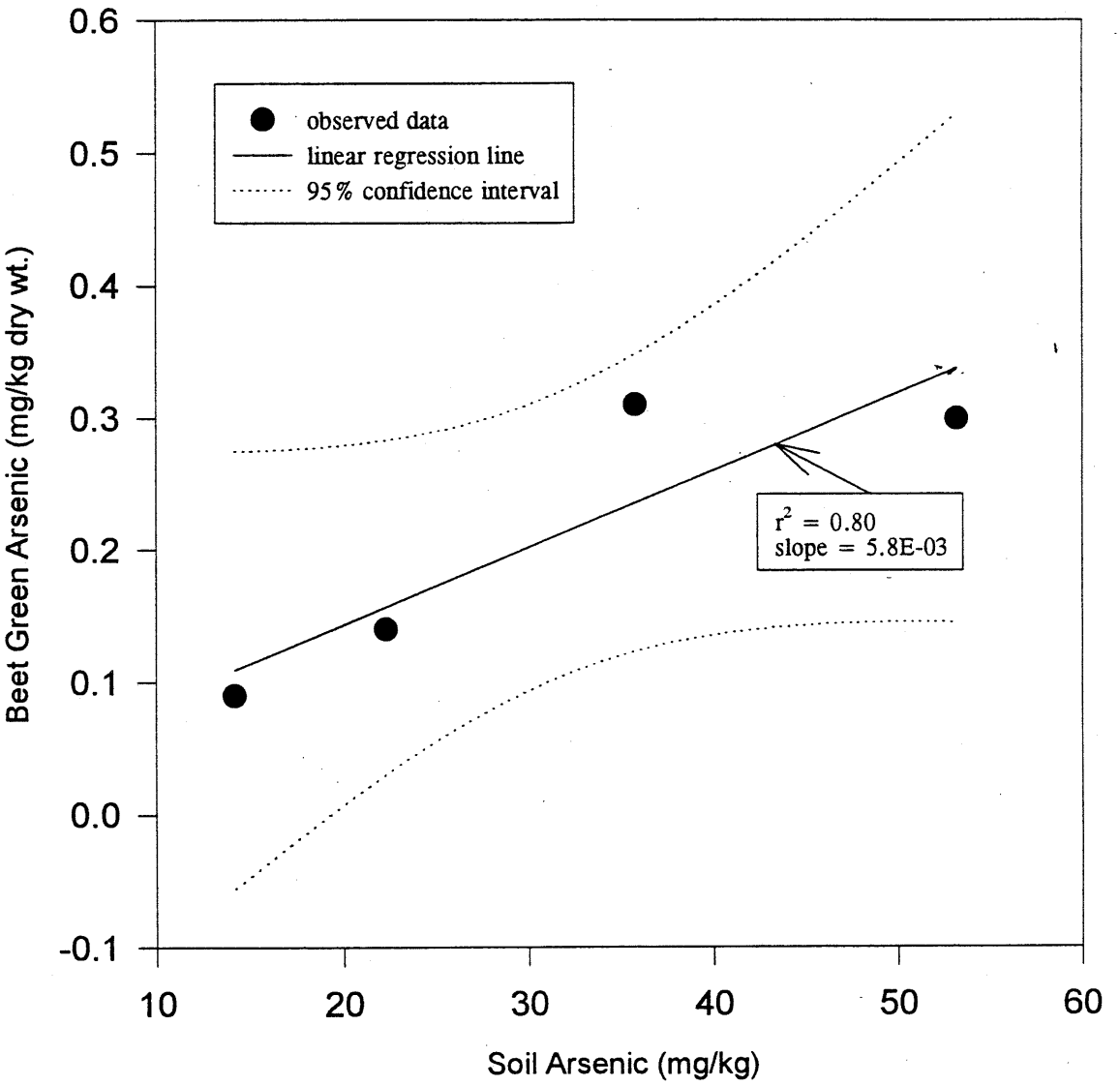


Table 4-11. Magna - Carrots Arsenic Data		
Sample ID	Soil Arsenic (mg/kg)	Carrot Arsenic (mg/kg dry wt.)
M-06-C1	8.3	0.22
M-06-C2	8.4	<0.12
M-24-C1	4.7	<0.12
M-24-C2	4.7	<0.12
M-25-C1	11.6	<0.12
M-25-C2	12.2	<0.12
M-29-C1	14.5	<0.12
M-29-C2	14.2	<0.12
M-31-C1	6.8	0.17
M-31-C2	4.8	<0.12
M-41-C1	7.6	<0.12
M-41-C2	9.8	<0.12
M-41-C3	9.3	<0.12
M-41-C4	10.9	<0.12

Table 4-12. Removal Area - Carrots Arsenic		
Sample ID	Soil Arsenic (mg/kg)	Carrot Arsenic (mg/kg dry wt.)
RA-03-C1	9.1	0.14
RA-03-C2	5.2	0.18
RA-07-C1	8.4	<0.12
RA-07-C2	8.3	0.14
RA-08-C1	7.8	<0.12
RA-08-C2	7.5	<0.12

Figure 4-12. Bingham Creek. Arsenic uptake into beet greens versus soil arsenic levels. Outlier removed. (Average concentrations plotted.)



The resulting linear regression line for this data is illustrated on Figure 4-12. As indicated on the figure, the r square value associated with this line is 0.80 with a slope (BCF) of 5.8E-03. The BCF for root crops reported by Baes *et. al.* (1984) of 6E-03 compares well with that observed for the Removal Area.

The soil arsenic concentrations measured in the Removal Area of Bingham Creek ranged from 5.2 mg/kg to 9.1 mg/kg and the associated carrot samples contained concentrations of arsenic from less than the instrument detection limit of 0.12 mg/kg to 0.18 mg/kg (Table 4-12).

4.2.2 Tomatoes

The arsenic concentrations measured in tomatoes and their associated soils is presented in Tables 4-13, 4-14, and 4-15, for the study areas of Bingham Creek, Magna and Removal Area, respectively. The arsenic concentrations in soil samples ranged from 7.5 mg/kg to 66.5 mg/kg. None of the associated tomato samples contained arsenic concentrations above the instrument detection limit of 0.12 mg/kg. The r square value of the linear regression line and the subsequent slope value (BCF) could not be evaluated.

The soil arsenic concentrations measured in the Magna area ranged between 5.0 to 23.2 mg/kg. The arsenic concentrations measured in tomatoes grown in Magna were also reported below the instrument detection limit of 0.12 with only one sample above that value at 0.5 mg/kg on a dry weight basis (Table 14). As in the Bingham Creek data set, the r square value of the linear regression line and the subsequent slope value (BCF) cannot be evaluated.

A comparison of the Bingham Creek and Magna data (of arsenic in tomatoes) would indicate little to no arsenic is taken up into tomatoes growing in soils of either study area.

Tomatoes and associated soils were collected in the Removal Area. The soil arsenic concentrations were found to measure from 5.9 to 14.4 mg/kg, and only two of the associated vegetable samples detected arsenic at levels above the instrument detection limit at 0.14 and 0.16 mg/kg dry wt. (Table 4-15).

Table 4-13. Bingham Creek - Tomato Arsenic		
Sample ID	Soil Arsenic (mg/kg)	Tomato Arsenic (mg/kg dry wt.)
BC-04-T1	22	<0.06
BC-04-T2	19	<0.06
BC-14-T1	40.5	<0.12
BC-14-T2	35.4	<0.12
BC-17-T1	7.5	<0.12
BC-17-T2	8.2	<0.12
BC-23-T1	20.5	<0.12
BC-23-T2	21	<0.12
BC-24-T1	32	<0.12
BC-24-T2	39.3	<0.12
BC-31-T1	17.4	<0.12
BC-31-T2	17.6	<0.12
BC-34-T1	28.9	<0.12
BC-34-T2	24.5	<0.12
BC-36-T1	22.5	<0.12
BC-36-T2	23.6	<0.12
BC-37-T1	66.5	0.06
BC-37-T2	48	0.07
BC-39-T1	54.4	<0.12
BC-39-T2	29.1	<0.12

Figure 4-13. Removal Area. Arsenic uptake into beet greens versus soil arsenic levels. (Average concentrations plotted.)

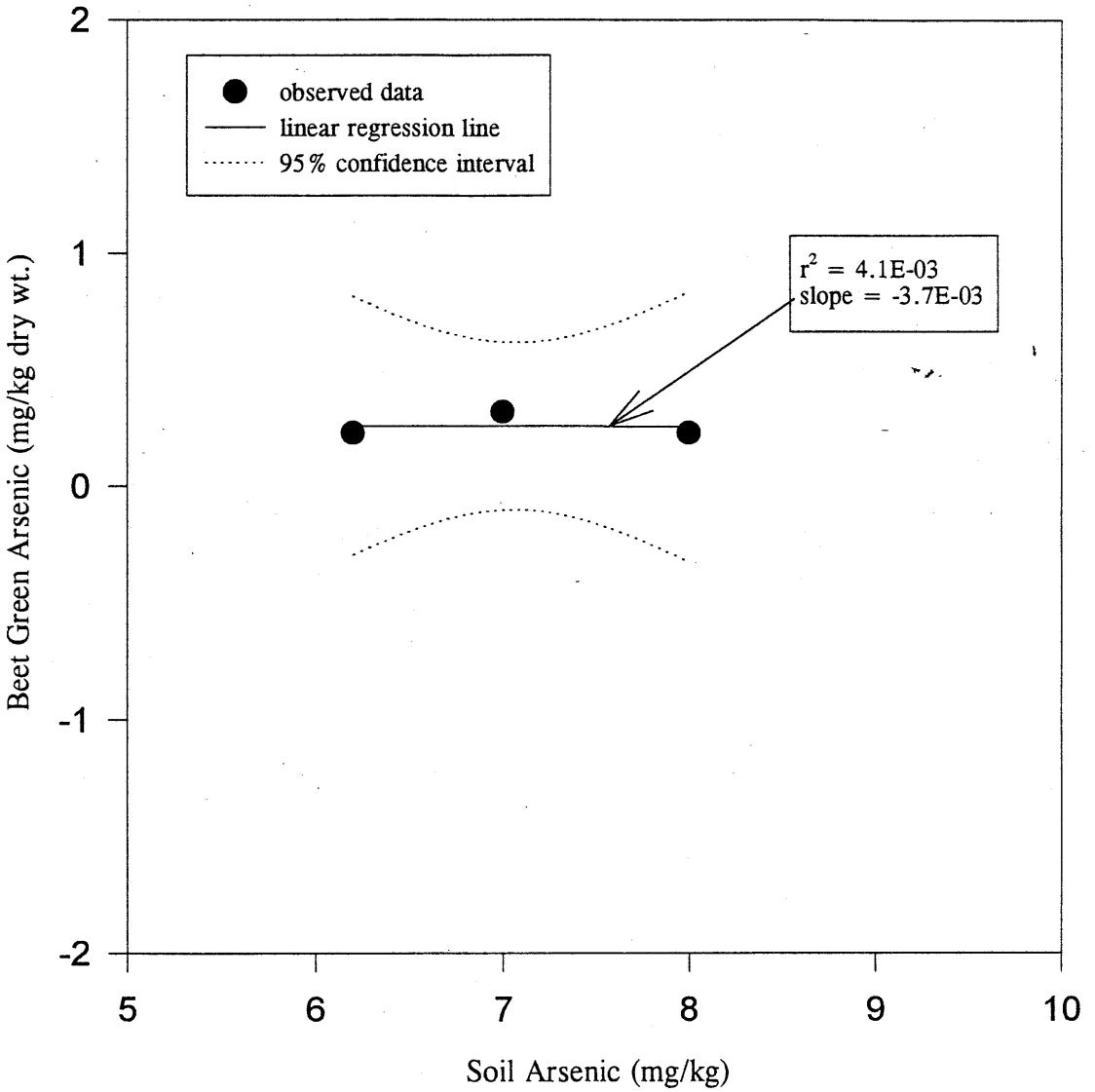


Table 4-14. Magna - Tomatoes Arsenic		
Sample ID	Soil Arsenic (mg/kg)	Tomato Arsenic (mg/kg dry wt.)
M-01-T1	16.6	<0.12
M-01-T2	16.8	<0.12
M-03-T1	22.4	<0.12
M-03-T2	16.5	<0.12
M-04-T1	9.7	<0.12
M-04-T2	10.4	<0.12
M-14-T1	13.7	<0.12
M-14-T2	14.9	<0.12
M-15-T1	16.7	<0.12
M-15-T2	12.1	<0.12
M-18-T1	23.2	<0.12
M-18-T2	15.6	<0.12
M-24-T1	5	0.5
M-24-T2	4.8	<0.12
M-29-T1	15.6	<0.12
M-29-T2	14.6	<0.12
M-34-T1	17.5	<0.12
M-41-T1	8.7	<0.12
M-41-T2	7.5	<0.12

Table 4-15. Removal Area - Tomatoes Arsenic		
Sample ID	Soil Arsenic (mg/kg)	Tomato Arsenic (mg/kg dry wt.)
RA-02-T1	6.3	<0.12
RA-02-T2	6.6	0.14
RA-03-T1	6.3	<0.12
RA-03-T2	5.3	<0.12
RA-04-T1	7.7	<0.12
RA-04-T2	14.4	<0.12
RA-05-T1	6.1	<0.12
RA-05-T2	6.9	<0.12
RA-06-T1	8	<0.12
RA-06-T2	5.9	<0.12
RA-07-T1	8.9	0.16
RA-07-T2	8.4	<0.12
RA-08-T1	9	<0.12
RA-08-T2	6.3	<0.12

4.2.3 Beet Greens

The arsenic concentrations measured in beet greens collected and their associated soils are presented on Table 4-16 and 4-18 for the study areas of Bingham Creek and Removal Area, respectively. There were no beet greens available for collection in the town of Magna. The soil concentrations ranged from 12.4 to 59.9 mg/kg with the associated beet green samples ranging from less than the instrument detection limit of 0.12 to 0.48 mg/kg on a dry weight basis. The resulting linear regression line for this data is illustrated on Figure 4-11 and, as indicated on the figure, the r square value associated with this line is 2.4 E-3x with a slope (BCF) of -6.7 E-04. Closer inspection of the beet green data set finds a potential outlier of the vegetable arsenic concentration of 1.2 mg/kg which corresponds to the soil arsenic concentration of 16.7 mg/kg. If this data point is removed (Table 4-17), the resulting linear regression line presents an r square value of 0.80 (Figure 4-12) and a slope (BCF) of 5.8 E-03. The resulting slope value of the linear regression line is ten times less than that reported by Baes *et. al.* (1984) of 4E-02. This indicates that less arsenic is taken up into the leafy structure of the beet greens in plants growing in Bingham Creek study area soils as compared to that reported in the literature (and used as default values in risk assessment).

Beet greens were collected in the Removal Area of Bingham Creek. The soil arsenic concentrations ranged from 4.9 to 8.5 mg/kg; the associated vegetable samples ranged from 0.20 to 0.36 mg/kg dry wt. (Table 4-18). The calculated r square of the linear regression fit of this data was very poor, 4.1 E-03, and the resulting slope of the linear regression line was -3.7 E-03 (Figure 4-13).

Table 4-16. Bingham Creek - Beet Greens Arsenic Data				
Sample ID	Soil Arsenic (mg/kg)	Average Soil Arsenic per Garden (mg/kg)	Beet Green Arsenic (mg/kg dry wt.)	Average Beet Green Arsenic per Garden (mg/kg dry wt.)*
BC-03-B1	15.9	14.2	0.12	0.09
BC-03-B2	12.4		<0.12	
BC-04-B1	22.3	19.5	0.14	0.67
BC-04-B2	16.7		1.2	
BC-24-B1	33	35.8	0.34	0.31
BC-24-B2	38.5		0.28	
BC-37-B1	52.9	53.2	0.48	0.3
BC-37-B2	59.9		0.19	
BC-37-B3	51.6		0.24	
BC-37-B4	48.3		0.26	

*Average concentrations calculated with one-half the detection limit when original sample result reported at a value less than the detection limit.

Table 4-17. Bingham Creek - Beet Greens Arsenic Data				
Sample ID	Soil Arsenic (mg/kg)	Ave. Soil Arsenic per Garden (mg/kg)	Beet Green Arsenic (mg/kg dry wt)	Ave. Beet Green Arsenic per Garden (mg/kg dry wt.)*
BC-03-B1	15.9	14.2	0.12	0.09
BC-03-B2	12.4		<0.12	
BC-04-B1	22.3	22.3	0.14	0.14
BC-24-B1	33	35.8	0.34	0.31
BC-24-B2	38.5		0.28	
BC-37-B1	52.9	53.2	0.48	0.3
BC-37-B2	59.9		0.19	
BC-37-B3	51.6		0.24	
BC-37-B4	48.3		0.26	

*Average concentrations calculated with one-half the detection limit when original sample result reported at a value less than the detection limit.

Figure 4-12. Bingham Creek. Arsenic uptake into beet greens versus soil arsenic levels. Outlier removed. (Average concentrations plotted.)

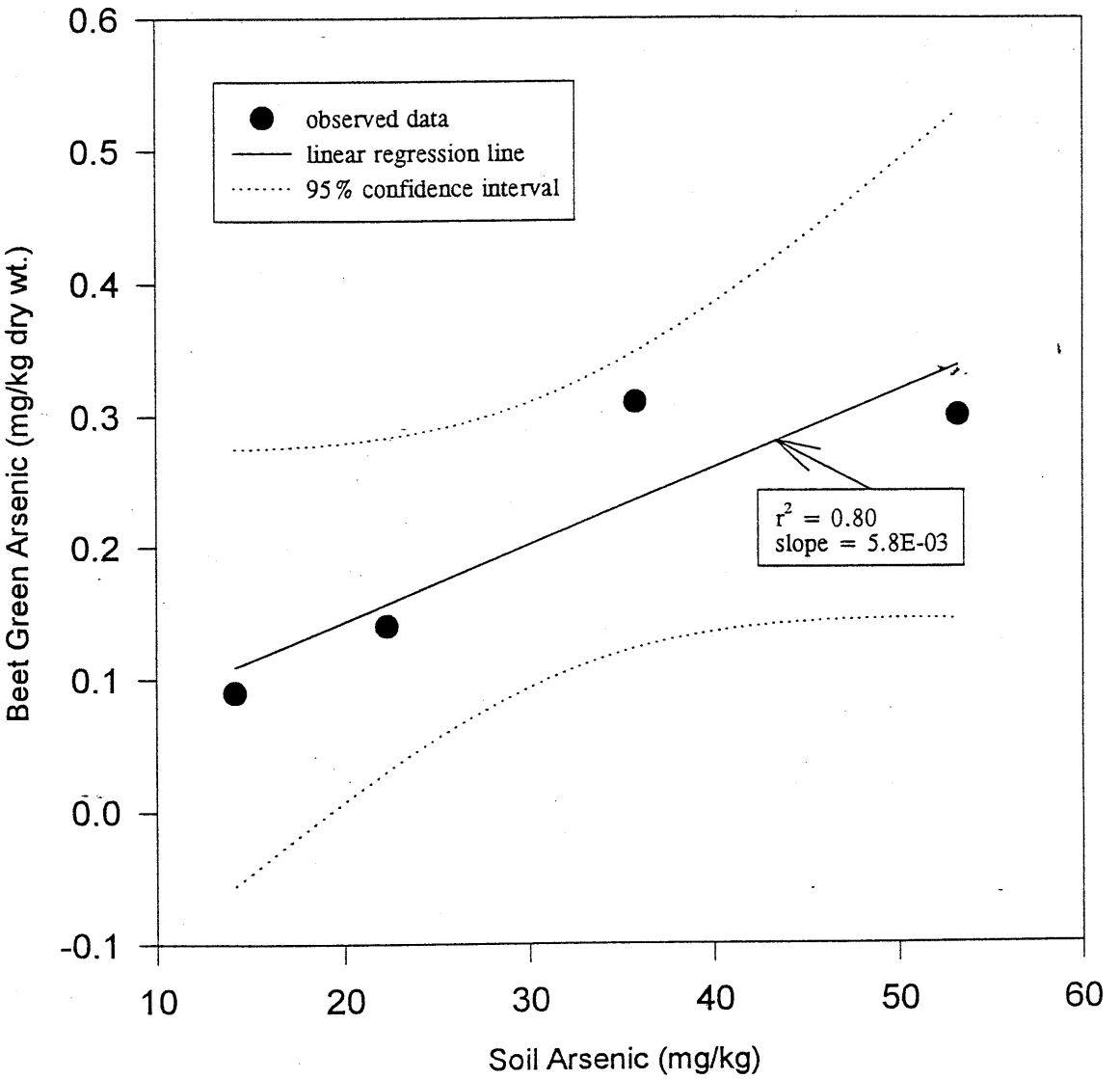
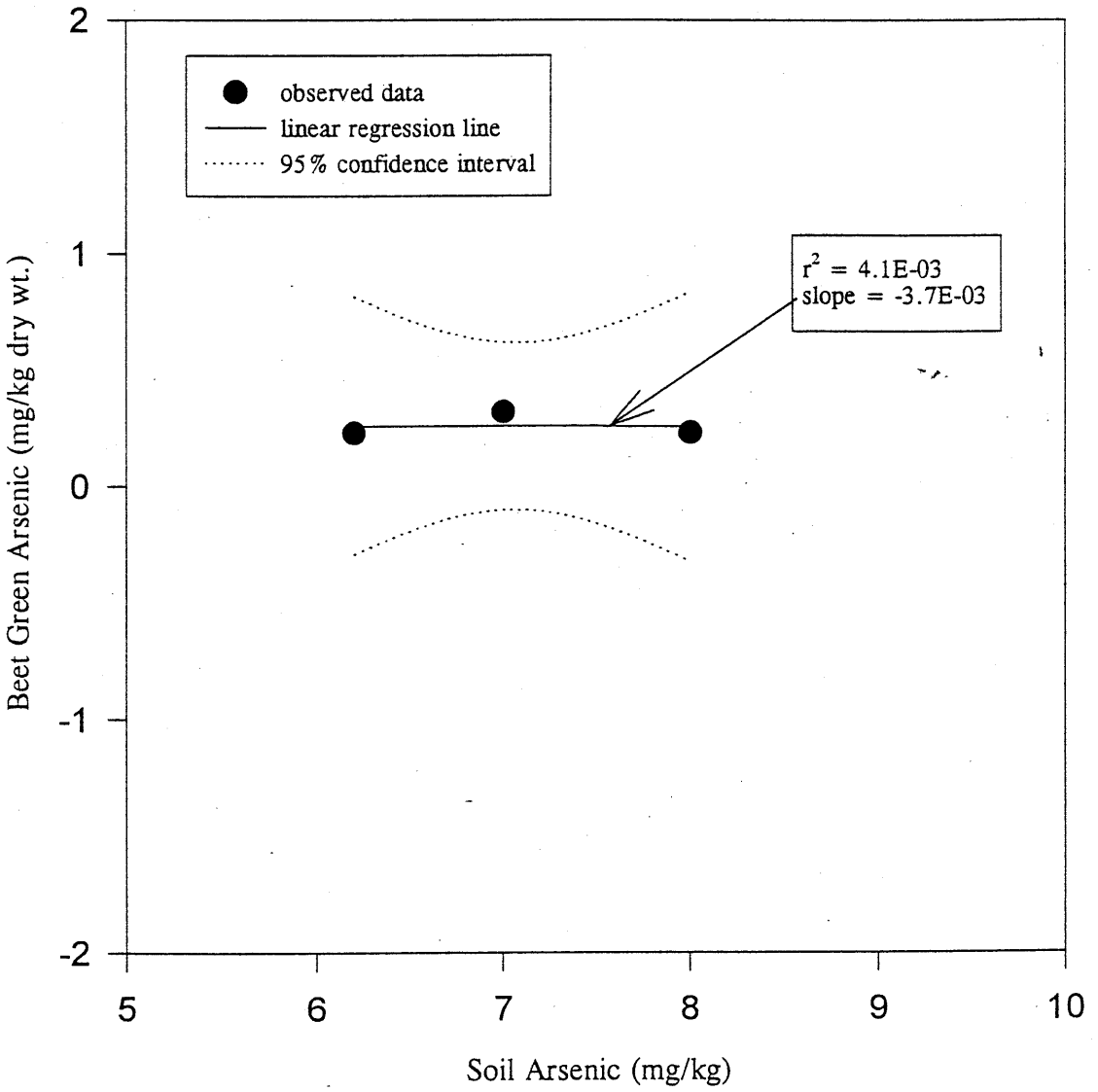


Table 4-18. Removal Area - Beet Greens Arsenic Data				
Sample ID	Soil Arsenic (mg/kg)	Ave. Soil Arsenic per Garden (mg/kg)	Beet Green Arsenic (mg/kg dry wt.)	Ave. Beet Green Arsenic er Garden (mg/kg dry wt.)
A-03-B1	7.1	7	0.28	0.32
A-03-B2	6.9		0.36	
A-07-B1	7.4	8	0.22	0.23
A-07-B2	8.5		0.23	
A-08-B1	7.5	6.2	0.24	0.23
A-08-B2	4.9		0.2	

Figure 4-13. Removal Area. Arsenic uptake into beet greens versus soil arsenic levels. (Average concentrations plotted.)



4.2.4 Zucchini

The arsenic concentrations measured in zucchini growing in the town of Magna are presented in Table 4-19. Zucchini was not sampled in the Bingham Creek area or the Removal Area. The soil concentrations at Magna were found to range between 4.6 and 21.6 mg/kg and none of the associated zucchini samples had arsenic concentrations reported above the instrument detection limit of 0.12 mg/kg on a dry weight basis. The r square value of the linear regression line and the subsequent slope value (BCF) cannot be evaluated. As in the other fruit-type vegetable collected, the tomato, no arsenic was taken up into the zucchini plants growing in soils of the Magna study area.

4.3 Quality Assurance/Quality Control Sample Evaluation

The overall purpose of establishing quality assurance objectives for measurement data is to ensure that data of known and acceptable quality are provided. The data developed during this investigation has been evaluated in terms of meeting the chosen objectives for accuracy, precision, completeness, Representativeness, and comparability, as well as the overall goals and objectives of the study.

4.3.1 Accuracy

Accuracy is the degree to which a measurement agrees with the actual value, i.e., the amount of measurement bias. Accuracy is expressed as a percent recovery of a known concentration of reference material. The accuracy of an analytical procedure is determined by the addition of a known amount of material (matrix spike) to a field sample matrix or a standard matrix. After analysis for the spike is completed, the accuracy of the procedure is expressed as a percent recovery.

Table 4-19. Magna - Zucchini Arsenic Data		
Sample ID	Soil Arsenic (mg/kg)	Zucchini Arsenic (mg/kg dry wt.)
M-01-Z2	19.4	<0.12
M-03-Z1	13.4	<0.12
M-04-Z1	10	<0.12
M-18-Z1	21.6	<0.12
M-18-Z2	14.5	<0.12
M-21-Z1	15.3	<0.12
M-21-Z2	12.1	<0.12
M-24-Z1	4.7	<0.12
M-24-Z2	4.6	<0.12
M-29-Z1	15.5	<0.12
M-29-Z2	12.2	<0.12
M-31-Z1	9.1	<0.12
M-31-Z2	9.7	<0.12
M-34-Z1	17.6	<0.12

Table 4-20. Duplicate Soil Data				
Sample * Number	Lead		Arsenic	
	(mg/kg)	%RPD	(mg/kg)	%RPD
BC-37-T1	2150	6.73	66.5	5.09
BC-37-T1D	2010		63.2	
BC-23-T1	215	27.65	20.5	8.86
BC-23-T1D	284		22.4	
BC-11-C1	207	7	16.4	10.26
BC-11-C1D	193		14.8	
BC-32-C1	51.5	1.73	11.2	2.64
BC-32-C1D	52.4		11.5	
M-14-T1	504	0	13.7	5.24
M-14-T1D	504		13	
M-31-C1	18.3	8.55	6.8	45.05
M-31-C1D	16.8		4.3	
M-03-T1	143	15.04	22.4	23.62
M-03-T1D	123		28.4	
M-24-T1	15.1	10.66	5	16.51
M-24-T1D	16.8		5.9	
RA-03-B2	63.8	71.49	6.9	9.09
RA-03-B2D	30.2		6.3	

* D represents duplicate sample.

Table 4-21. Duplicate Vegetable Data				
Sample * Number	Lead		Arsenic	
	(mg/kg)	%RPD	(mg/kg)	%RPD
Tomatoes				
BC-04-T2	0.37	84.62	< 0.12	0
BC-04-T2D	0.15		< 0.12	
M-4-T1	0.46	48.65	< 0.12	0
M-4-T1D	0.28		< 0.12	
M-41-T1	< 0.12	0	< 0.12	0
M-41-T1D	< 0.12		< 0.12	
RA-05-T2	0.14	15.38	< 0.12	0
RA-05-T2D	0.12		< 0.12	
Carrots				
BC-11-C1	0.29	21.54	< 0.12	0
BC-11-C1D	0.36		< 0.12	
M-25-C2	0.24	13.33	< 0.12	0
M-25-C2D	0.21		< 0.12	
Beet Greens				
BC-03-B2	0.94	6.19	< 0.12	22.22
BC-03-B2D	1		0.15	
Zucchini				
M-03-Z1	0.18		< 0.12	0
M-03-Z1D	0.21	15.38	< 0.12	

* D represents duplicate sample.

Optimum control conditions for accuracy are that spike recoveries range between 75 to 125%. The EPA ESD laboratory maintains conditions within the stated percent spike recoveries control limit. Should a spiked sample fall outside these limits, corrections are made as appropriate to the analytical conditions, and the spiked sample is re-evaluated. Unknown samples are analyzed once the spiked sample falls within the control limits for percent recovery. All spiked samples analyzed during Phase II of the vegetative uptake study maintained spike recoveries between 75 and 125%.

4.3.2 Precision

Precision is a measure of the degree of reproducibility of an analytical value and is used as a check on the quality of the sampling and analytical procedures. Precision is determined by analyzing replicate (duplicate) samples. Precision is determined by calculation of a relative percent difference (RPD) between duplicate analytical recoveries of a sample component, relative to the average of those recoveries. The goal set for this project was to obtain replicate data (both field and lab replicates) that demonstrate 35% RPD (or less) for soil samples and vegetative samples.

Table 4-20 presents duplicate soil sample data. Nine duplicate soil samples were analyzed for lead. All samples except one resulted in RPDs of less than 35%; the exception was a sample collected in the Removal Area which demonstrated an RPD of 71.49%. Of the nine duplicate soil samples analyzed for arsenic, only one sample resulted in an RPD greater than 35% (a duplicate sample collected in Magna resulted in an RPD of 45.05%).

Table 4-21 presents duplicate vegetable data. Where possible, the duplicate sample was collected by splitting it into two separate samples. For example, beet green duplicates were collected by dividing the leaves into two separate portions. However, for

tomatoes, additional tomato fruits were collected from the same plant. Duplicate carrots and zucchini were collected by slicing the original samples in half. Two carrot duplicates, one beet green duplicate, and one zucchini duplicate were collected during the study, and all reported RPDs under 35%. Four tomato duplicates were collected and demonstrated RPDs ranging from 0 to 84.62, however, all original sample data was reported at very low concentrations (below 0.46 mg/kg dry wt.). In that separate tomato fruits were analyzed as duplicates, this may be a cause of the higher RPDs.

Of the duplicate vegetable samples analyzed for arsenic, only one sample reported a concentration above the instrument detection level of 0.12 mg/kg dry wt. (a beet green duplicate measuring 0.15 mg/kg dry wt.) (Table 4-21).

4.3.3 Completeness

Field completeness is assessed by comparing the number of samples collected to the number of samples planned. Analytical completeness has been assessed by comparing the total number of samples with valid analytical results to the number of samples collected.

Important to this study is that for every vegetable sample collected, an associated soil sample be collected. The objective of evaluating the uptake metals is dependent upon having both sets of data (soil and vegetable). For every vegetable collected and analyzed, the associated soil sample was collected and analyzed. Additionally, all samples collected arrived at the laboratory intact and resulted in a valid analytical result.

With respect to a comparison of samples scheduled for collection and the samples actually collected, all samples scheduled in the Bingham Creek study area for

collection were collected, except for carrots at one location. There were not many carrots growing in the resident's garden and they asked that only one sample be harvested. For beet greens however, two additional samples were collected than originally scheduled. Therefore, the overall objective of meeting completeness in the Bingham Creek study area has been met.

Some of the samples originally scheduled for sampling in the Magna study area were not available during the Phase II field investigation. One tomato sample, two carrot samples, and six zucchini were unavailable for collection. This equates to a completeness of 84%, lower than the desired completeness of 90%.

In that this study was not designed to evaluate the nature and extent of contamination of a specific area, rather to evaluate the uptake of metals into garden vegetables and the estimated risk associated with this site specific information, the lower completeness percentage at Magna is not necessarily detrimental to the completeness objective. However, when performing an evaluation of data statistically, it is always desirable to obtain more data points in order to generate conclusions. One consideration upon which the sample schedule was dependent however, was cost and availability of the analytical services. Increasing the sample size affects the labor and funding needs of the laboratory.

4.3.4 Representativeness

Representativeness is a qualitative determination and expresses the degree to which sample data accurately and precisely represent actual site conditions. This is accomplished by determining if the following are as presented in the study work plan:

- the actual sampling procedures and chain of custody forms and

- sample holding times and condition of samples upon arrival at the laboratory.

An evaluation of all items listed above has found all conditions for Representativeness have met the chosen objectives.

4.3.5 Comparability

Comparability is a qualitative measure of the confidence with which one data set can be compared to another and has been evaluated by generating data using standard test methods and making use of as much previously generated data as possible. The comparability objective has been met in that the results obtained for this study are similar in some respects to other similar studies at other sites.

4.3.6 Equipment Rinsates and Field Blank

In order to evaluate the effectiveness of site sampling procedures and equipment decontamination procedures, equipment rinsates and a field blank were collected. Data presented in Table 4-22 demonstrates that no arsenic was detected above the instrument detection limit and only trace amounts of lead (0.0015 to 0.0052 mg/l) were detected in four of five rinsate samples. At this trace level, there is no reason to consider any of the soil or vegetable sample data as suspect based upon possible cross contamination as a result of improper decontamination.

Table 4-22. Equipment Rinsates and Field Blank		
Sample ID	Lead (mg/l)	Arsenic (mg/l)
Field Blank - 1	<0.0014	<0.0020
Equipment Rinsate - 1	0.0052	<0.0020
Equipment Rinsate - 2	0.0052	<0.0020
Equipment Rinsate - 3	<0.0014	<0.0020
Equipment Rinsate - 4	0.0015	<0.0020
Equipment Rinsate - 5	0.0023	<0.0020

5.0 PRELIMINARY SITE SPECIFIC HUMAN HEALTH RISK CHARACTERIZATION

In general, risk characterization integrates the results of exposure and toxicity assessments into a quantitative estimate of cancer and noncancer health risks. In other words, risk is a function both of the amount of a substance to which an individual is exposed and of the inherent toxicity per unit amount of that substance. The methods used in this risk characterization are based on guidance provided in USEPA (1989).

The collected data on soil and garden vegetable concentrations of arsenic (As) and lead (Pb) were used to calculate a variety of preliminary human health risk estimates. For arsenic, these are the noncancer subchronic and chronic hazard quotients (HQ_{sc} and HQ_c; 1- and 30-year exposure durations, respectively), as well as lifetime excess cancer risks (also based on a 30-year exposure duration). For households that provided sufficiently quantitative garden and personal survey data, subchronic hazard quotients were calculated for each identified individual. Chronic hazard quotients and excess cancer risks were also derived for these households, as well as for those that at least provided quantitative garden data. Rather than being individualized, these calculations were based on a standardized 30-year adult exposure. For lead, noncancer risks were calculated using the IEUBK model (version .99D) for the population considered most at risk -- young children (0 to 6 years of age). Individual average, low and high hazard/risk calculation summaries for both arsenic and lead are provided in this section for each of the three study areas: Bingham Creek (BC, comprised of South and West Jordan), the Bingham Creek "removal area" (RA) and Magna (M). These approximate general, area-specific health hazards/risks via the garden vegetable pathway, although it must be recognized that such characterizations are difficult to apply to specific non-analyzed households because household to household variation is large. This is due to large variation in garden composition and yield, household and

individual consumption patterns, vegetable and soil metal concentrations, as well as in the number, age and body weight of household individuals. The detailed hazard and risk information on a household-by-household basis may be found in Appendix D.

5.1 Methodology

In addition to exploring site-specific relationships between the soil and vegetable concentrations of As and Pb, a principal objective of this study was to generate individual-specific estimates of garden vegetable pathway risks for those households that both participated in the gardening survey and where their garden soil and vegetables were sampled. Estimation of individual subchronic hazards from garden vegetable arsenic exposure was considered feasible when survey information adequately indicated: (1) types of vegetables grown, (2) quantities grown of each vegetable type, (3) fraction of total garden yield consumed by the household and (4) the ages and weights of all household members who consumed produce from the garden. An example survey form is presented in Appendix C. A total of 21 households were thus included in this risk characterization.

Each reported garden vegetable was assigned to one of three broad vegetable categories for purposes of determining As and Pb concentrations: "leafy," "root" or "garden fruit" vegetable. Because measuring metal concentrations in each of the many vegetables grown in each of the gardens was not feasible, an indicator species was selected for each vegetable category based on occurrence and availability considerations: beet greens (leafy), carrots (root) and tomatoes or zucchinis (garden fruit). Where possible, As and Pb were measured in each indicator species for each surveyed garden, and then these concentration values were assigned on a category basis to all the vegetables actually grown in each garden.

In addition to metal concentration values for garden vegetables, determination of daily As and Pb intake via this pathway required estimates of actual garden vegetable consumption. Using the survey information and the vegetable categorization described above, vegetable consumption was calculated on a category basis. However, because of available information on age-specific consumption of different vegetable types for the general population, potatoes were considered separately from the "root" category, as were corn and beans/peas from the "garden fruit" category. Vegetable concentrations of As and Pb were combined with these vegetable consumption estimates in order to approximate daily As and Pb intake on a household, individual-specific basis. In turn, these metal intake values were used in conjunction with quantitative descriptors or models of toxicity to arrive at preliminary evaluations of the cancer risk resulting from consumption of garden vegetable As, and of the noncancer hazards associated with the consumption of both garden vegetable As and Pb. Details of this assessment approach are further detailed below.

5.1.1 Development of Concentration Values

Garden-specific vegetable concentrations of As and Pb (Appendix B) were determined by calculating a garden-specific arithmetic mean of all Phase II vegetable measurements and then determining the 95 percent upper confidence limit of that arithmetic mean (UCL_{95}), assuming that the data were log normally distributed. For As, this UCL_{95} was used in subsequent calculations; for Pb the arithmetic mean (without a confidence limit) was used since this is the appropriate measurement for input into the IEUBK model (See Section 5.1.4). In some cases, the maximum measured value was used if the calculated UCL_{95} exceeded the maximum detected level (USEPA 1992). The same procedure was used to derive soil As and Pb concentrations for each sampled garden (Appendix B).

The rationale for this approach is based on the premise that when exposure to all parts of an area are equally likely, the most appropriate descriptor of the average or central-tendency concentration to which individuals may be exposed is the arithmetic mean. Furthermore, as a conservative approach designed to make it unlikely that the measured arithmetic mean (derived from a limited number of samples that are hoped to be representative of the area) is actually less than the "true" arithmetic mean (theoretically based on complete sampling of the entire area), the UCL_{95} of the measured arithmetic mean is utilized. This means that there is only a 5 percent chance that the true arithmetic mean exceeds the measured arithmetic mean. Calculation of a UCL_{95} requires an assumption about the distribution of the underlying data. The preponderance of available data tends to suggest that contaminant concentrations in the soils of a site are approximately lognormally distributed, an assumption adopted in this study. Because vegetable concentrations are generally thought to be substantially dependent upon soil concentrations, they were also assumed to be lognormally distributed in the absence of adequate data to the contrary.

In the instances where metal concentration data were unavailable for a particular vegetable category, surrogate values were calculated from the appropriate linear regression equations relating soil and vegetable concentrations (see Section 4.0 and Appendix B). In some site areas, for some vegetable-metal categories, usable algorithms were not available: in Magna, there were no beet greens data for As or Pb, and the carrot As data were not regressed because 12 of 14 values were non-detects; similarly, in the Bingham Creek Removal Area, usable regression algorithms could not be developed for beet green As, tomato/zucchini As and Pb, or carrot As (in the cases of beet green As and tomato/zucchini Pb, the calculated slopes were negative and were rejected for use). In each of these cases, regression algorithms developed from BC data were substituted and used to generate soil-derived vegetable concentration values. Again, these soil-derived

vegetable concentrations were used only in the absence of measured values for purposes of risk calculation. Both calculations are presented in Appendix B (Tables B-9 and B-10).

For garden fruits from Magna, almost all tomato and zucchini measurements for As were reported as less than the detection limit (0.12 mg/kg dry weight (kg_{dw}) initially or 0.06 mg/kg_{dw} for selected reanalyses), regardless of corresponding soil concentrations. Therefore, garden fruit concentrations from Magna were assigned a value of one-half the detection limit (0.06 or 0.03 mg/kg_{dw}). As a reasonable approximation, all samples reported as having nondetectable As or Pb concentrations were set equal to this one-half detection limit value. This approach is consistent with USEPA risk assessment guidance for Superfund handling of nondetects (USEPA 1989) and with the methodology used in the regression analyses discussed earlier. It is not known whether the true concentration values are closer to zero or to the detection limit.

5.1.2 Development of Human Intake Factors

One element necessary for the quantification of exposure is determination of the amount of contact with contaminated media -- in this case, the quantity of garden vegetables actually consumed by household residents. Survey forms were completed by 26 households that participated in the study (an example survey form can be found in Appendix C). Survey-reported garden contents in terms of number of plants or linear or square footage planted for each vegetable were converted to approximate yields based on professional judgment, produce market data and data/information from a variety of sources (Bartholomew 1981, Dole 1994, Johnny's 1994, Newcomb and Newcomb 1989, USDA 1994, Utah State Agriculture Extension Services 1994, Van Patten 1991). Where available, Utah-specific yield data were given preference. The household yields are summarized in Table C-1.

Based on ages reported in the household surveys and on age-specific food consumption data (Table 2-16, USEPA 1991c), individual consumptions were calculated for the total garden yield (Appendix C) of three general vegetable categories (leafy vegetables (lv), root vegetables (rv) and "garden fruit" (gf: tomatoes, corn, berries, squash, cucumbers, etc.)) and three specific vegetable groups (corn, potatoes, and beans/peas), taking into account the fraction of total yield that was consumed by the household and the individual's weight and age-specific relative consumption of each vegetable category or group (Appendix D). A garden's annual yield was assumed to be uniformly consumed over the course of a year, which was also taken to be the duration of this particular subchronic exposure period.

These data then were combined with other pathway- and individual/population-specific exposure information into Human Intake Factors (HIFs), which subsequently were used to derive daily chemical (As in this case) intake from garden vegetables. The following equation was used for calculating HIF values:

$$HIF_x = (DY_x/BW)*HCF*ICF_x*((EF*ED)/AT) \quad (2)$$

where:

HIF_x = Human intake factor for vegetable or vegetable category "x," wet wt. (mg_{ww} "x"/kg BW-day)

DY_x = "Daily" garden yield of "x", wet wt. (mg_{ww} "x"/day), which is equal to the annual yield of "x" divided by 350 days (the number of days over which the garden's annual yield is effectively consumed)

BW = Individual body weight (kg)

HCF = Household consumption factor (fraction of total garden yield consumed by the entire household)

ICF_x = Individual consumption factor of "x" (fraction of household consumption attributed to individual household member; based on total number of members, their ages, and age-specific relative intake factors for "x" derived from Table 2-16, USEPA 1991c)

EF = Exposure frequency (350 days/365 days, USEPA's standard residential exposure that allows for 2 weeks away from home)

ED = Exposure duration (days; here, 365 days)

AT = Averaging time, the period of concern over which the exposure is averaged (days; here, 365 days)

Three households did not supply the ages and weights of individual consumers. In these instances (M-21, M-29 and RA-7), arsenic subchronic hazard quotients were approximated for only two standardized age groups: young children (0 to 6 years of age, assumed BW = 15 kg) and adolescents-adults (assumed BW = 70 kg). Based on a standardized household of two adults and two children, each standardized individual was assumed to consume an equal (one divided by the number of household members) share of the total household garden consumption, times a correction factor (in this case) of 0.6 for young children, or 1.4 for adolescents-adults. These correction factors recognize that young children generally consume smaller quantities of vegetables than do adolescents and adults. Furthermore, data indicated that children consume an estimated 33 to 50-60 percent of the garden vegetable quantities consumed by adults. The actual correction factor values could vary somewhat according to the relative number of young children and adults in each household.

5.1.3 Daily Intake Values and Health Risk Calculations

Garden vegetable pathway subchronic hazard quotients for As noncancer adverse health effects were calculated (Appendix D, Tables D-8 through D-14, far right-hand columns) according to the following general equation:

$$HQ_{sc} = DI_v / RfD_{sc} \quad (3)$$

where:

HQ_{sc} = Subchronic hazard quotient

DI_v = Daily As intake via the garden vegetable pathway (mg As/kg BW-day, BW = body weight)

RfD_{sc} = Subchronic reference dose (mg As/kg BW-day) equal to 3.0E-04 mg As/kg BW-day (HEAST Table 1, USEPA 1993); RfDs are USEPA-derived, route- and duration-specific estimates of the average daily intake that may occur without appreciable risk of any adverse noncancer health effect

Daily As intake via the garden vegetable pathway was in turn calculated (Appendix D, Tables D-8 through D-14, second-from-right columns) by adding the products of vegetable consumption (HIF values) and vegetable As concentration (C values) for each of the vegetable categories and groups as follows:

$$DI_v = 0.05(C_{lv}*HIF_{lv}) + 0.12(C_{rv}*(HIF_{rv}+HIF_p)) + 0.06(C_{gf}*(HIF_{gf}+HIF_c+HIF_{bp})) \quad (4)$$

where:

DI_v = Daily As intake via the garden vegetable pathway (mg As/kg BW-day)

C_{lv} = As concentration in leafy vegetables, dry weight (mg As/mg_{dw} lv)

C_{rv} = As concentration in root vegetables (including potatoes), dry weight (mg As/mg_{dw} rv or p)

C_{gf} = As concentration in garden fruit (including corn, beans and peas), dry weight (mg As/mg_{dw} gf, c, or bp)

HIF_{lv} = Human intake factor for lv, wet wt. (mg_{ww} lv/kg BW-day)

HIF_{rv} = Human intake factor for rv, wet wt. (mg_{ww} rv/kg BW-day)

HIF_p = Human intake factor for potatoes, wet wt. (mg_{ww} p/kg BW-day)

HIF_{gf} = Human intake factor for garden fruit, wet wt. (mg_{ww} gf/kg BW-day)

HIF_c = Human intake factor for corn, wet wt. (mg_{ww} c/kg BW-day)

HIF_{bp} = Human intake factor for beans/peas, wet wt. (mg_{ww} bp/kg BW-day)

The 0.05, 0.12 and 0.06 factors in Equation (4) are dry weight/wet weight (dw/ww) conversion factors for leafy, root and garden fruit vegetable categories, respectively (Baes et al. 1984). These conversions are presented in Appendix B for As (Table B-11) and Pb (Table B-12), with dw concentrations on the left side and the corresponding ww concentrations on the right side of the tables. This adjustment is necessary because the sampling data are reported as dry weights, but vegetables are consumed on a wet weight basis.

For root indicator (carrots) and garden fruit indicator (tomatoes and zucchini) vegetables, these estimates agree reasonably well with the values derived from actual site-specific dw/ww data. The measured dry weights for beet greens, however, were more variable and tended to be 2 to 2.5 times higher than the assumed value of 0.05. This could be the result of at least two factors: beet greens may not be representative of the leafy

vegetable category used to develop the conversion factor, and/or the samples may have been somewhat desiccated due to sampling relatively late in the growing season.

Equation (3), slightly modified, also serves as the basis for calculating As chronic hazard quotients:

$$HQ_c = DI_v / RfD_c \quad (5)$$

where:

HQ_c = Chronic hazard quotient

DI_v = Daily As intake via the garden vegetable pathway (mg As/kg BW-day)

RfD_c = Chronic reference dose (mg As/kg BW-day) equal to 3.0E-04 mg As/kg BW-day (IRIS Database, USEPA 1994a)

Specific HQ_c values were calculated for every sampled household that supplied quantitative garden data (Appendix D, Tables D-15 through D-21, far right-hand columns). Quantitative individual data (age and weight) were not required, as HQ_c values were derived only for a standardized adult exposure scenario (ED = 30 years, AT = 30 years (10,950 days), BW = 70 kg, simplified ICF_x = equal share (1/no. of household members)). All other values in Equations (2) and (4) for determining DI_v were the same.

The same standardized adult also served as the basis for the determination of As excess cancer risks. All Equation (2) and (4) values were as described above for the calculation of HQ_c, except that AT equaled 70 years (25,550 days). The actual calculation of As excess cancer risks (Appendix D, Tables D-1 through D-7, far right-hand columns) were accomplished according to the following equation:

$$Risk = DI_v * SF \quad (6)$$

where:

Risk = Lifetime (70 year) excess cancer risk

DI_v = Daily As intake via the garden vegetable pathway (mg As/kg BW-day)

SF = Cancer slope factor for As ((mg As/kg BW-day)$^{-1}$); SFs are USEPA-derived numeric descriptors of a chemical's carcinogenic potency that reflect route-specific estimates of the cancer dose-response curve at low doses

= 1.8E+00 (IRIS Database, USEPA 1994a)

5.1.4 Calculations for Lead

Noncancer lead risks were evaluated using the Integrated Exposure Uptake Biokinetic (IEUBK) Model for children (version .99D). This model was selected for use because there are no EPA-approved RfD values with which to calculate HQ values, and because it is the most versatile and validated of the available models. The IEUBK Model focuses on young children because they are recognized to be the most susceptible to the adverse neurological effects of lead exposure. This susceptibility results from (1) generally higher exposures to lead (especially via soil ingestion), (2) higher gastrointestinal absorption rates of lead than for older individuals, and (3) relatively rapid growth and development of the nervous system. Concentration of lead in the blood (PbB) is the parameter that has been most correlated with adverse health effects, and the IEUBK Model calculates the PbB for young children that results from a fairly continuous, long-term exposure to all sources (i.e., food, water, air, soil/dust, etc.) (USEPA 1994b).

For the calculations performed as part of this risk characterization, standard default values were used for most model parameters (Pb concentrations in indoor and outdoor air, drinking water, maternal blood, paint and other sources (none)), and the model's nonlinear "active/passive" default for gastrointestinal absorption was also used. Soil Pb input was household-specific (the simple arithmetic mean of all measured samples taken from anywhere in the garden), and indoor dust Pb was calculated according to the "multisource" option of the model using standard default parameter values.

Garden vegetable Pb "individual daily intake" (IDI) values representative of daily garden vegetable Pb consumption on a per person (not per kilogram) basis were calculated by multiplying the Pb HIF values by the associated individual body weights, for each vegetable category and group, and for total garden vegetables (Appendix D, Tables D-22 through D-28, far right-hand columns). Child IDIs were derived not only for the real children that lived in certain of the households, but also for a standardized child (described above) in each household garden setting for purposes of comparison and generalization. The garden vegetable IDIs were incorporated into the model by adding them to the average daily total dietary intake values for each age group (0-1, 1-2, etc.) addressed by the model. To simplify assessing the risks posed to young children from the consumption of garden vegetable Pb, the IEUBK Model output is presented in Appendix D for each household using only the standardized child exposed for the entire first six years of his/her life to garden vegetable Pb as characterized by the current, analyzed year's garden parameters. Typically, IDIs and the resulting risks calculated for real children were similar to those for the same household's standardized child. To further assess the significance of the garden vegetable pathway, PbB calculations for each child were performed both with and without the garden vegetable intake addition to the general dietary pathway (all other parameters were kept the same).

5.2 Toxicity Assessment

Longer-term oral exposures to lower levels of arsenic have been associated with a variety of noncancer adverse health effects (e.g., vague weakness, nausea, impaired nerve function, kidney and liver damage, vascular and characteristic skin lesions), as well as with skin and certain internal organ cancers. Arsenic results are thus presented for both noncancer and cancer effects. As discussed below, noncancer hazards are presented both for subchronic one-year exposures (for each resident), and for projected chronic 30-year exposures (for standardized adults at each household). Similar types of exposures to lead have been demonstrated to cause a number of noncancer effects, primarily to the nervous, hematopoietic and cardiovascular systems. As noted earlier, neurotoxic effects in fetuses, infants and young children are of particular concern. While limited evidence has resulted in the USEPA classifying lead as a "probable human carcinogen" (Group B2), cancer slope factors have not been developed, and the noncancer nervous system and hematopoietic effects are generally considered the most important and sensitive endpoints of lead toxicity (USEPA 1986). Therefore, only the noncancer risks of lead exposure in young children were quantitatively evaluated.

5.3 Risk Characterization

5.3.1 Evaluation of Cancer Risks due to Garden Vegetable Arsenic

Excess lifetime cancer risks attributable to ingestion of garden vegetable arsenic were calculated as previously described using Equations (2), (4) and (6). While garden-specific data were used to the extent possible for each household, excess cancer risks were calculated only for a standardized 70-kg adult having a 30-year exposure duration. The standardized individual intake was assumed to be a simply an equal share of the total household consumption, as calculated using the reported survey data. Long-term changes in the size and age-category distributions of households were assumed to be counter-

balanced by using this simple pro-rata share over the entire duration of exposure, as well as by assuming that adjustments would be made to garden size and/or percent of yield retained for household consumption. Summary results are presented in Table 4-1 and are discussed briefly below. Results are reported to only one significant figure due to the inherent uncertainties involved in these calculations. More detailed, household-specific data can be found in Appendix D, Tables D-1 to D-21.

Excess cancer risks greater than one in a million (1E-06) to one in ten thousand (1E-04) typically are considered indicative of contaminant levels of concern. The excess cancer risks summarized in Table 5-1 suggest that the average resident in the combined study area does not incur substantial excess cancer risk as a result of consuming home grown vegetables (average risk across the study area = 1E-05). Although household sampling was limited, this seems especially true for the Magna area and the Bingham Creek Removal Area (where remediation has occurred - compare soil concentrations with the "nonremoval" areas of Bingham Creek.) Only three households had total garden vegetable excess cancer risks above 2E-05. The highest risk (9E-05) household is in Bingham Creek, with most of the total risk (84%) coming from consumption of root vegetables, 13% from garden fruit (including corn and beans/peas), and only 3% from leafy vegetables. The second and third highest risks (5E-05 and 3E-05) households, located in Bingham Creek and Magna, respectively, represent situations in which the garden fruit component (roughly 10-20% of the total risk) comes from vegetables in which no arsenic was detected. As a result of analytical limitations and conservative risk assessment assumptions, some level of excess cancer risk will be calculated solely on the basis of high garden vegetable consumption rate -- even when no As is detectable in the vegetables. Such calculated numbers may or may not approximate true risk, since it is not known whether the vegetables contain no arsenic at all or arsenic levels just below what the laboratory can measure reliably.

TABLE 5-1 SUMMARY OF EXCESS INDIVIDUAL CANCER RISKS FOR THE GARDEN VEGETABLE PATHWAY AT SAMPLED HOUSEHOLDS

Vegetable	Area[a]	Individual Cancer Risks		
		High	AVG[b]	Low
All	BC	9E-05	2E-05	3E-06
	Magna	3E-05	7E-06	2E-07
	BC-RA	1E-05	8E-06	4E-06
	All	9E-05	1E-05	2E-07
Leafy	BC	3E-06	7E-07	4E-08
	Magna	3E-06	5E-07	3E-08
	BC-RA	2E-06	5E-07	9E-08
	All	3E-06	6E-07	3E-08
Root	BC	3E-05	9E-06	5E-07
	Magna	2E-05	3E-06	5E-08
	BC-RA	4E-06	2E-06	1E-06
	All	3E-05	5E-06	5E-08
Garden Fruit	BC	1E-05	4E-06	1E-06
	Magna	5E-06	2E-06	1E-07
	BC-RA	9E-06	5E-06	7E-07
	All	1E-05	4E-06	1E-07
Corn	BC	1E-06	3E-07	1E-07
	Magna	5E-07	1E-07	9E-08
	BC-RA	2E-06	6E-07	9E-08
	All	2E-06	3E-07	9E-08
Potatoes	BC	4E-05	6E-06	7E-07
	Magna	8E-06	1E-06	7E-07
	BC-RA	2E-06	5E-07	2E-07
	All	4E-05	3E-06	2E-07
Beans/Peas	BC	6E-07	2E-07	1E-07
	Magna	8E-07	2E-07	9E-09
	BC-RA	1E-07	6E-08	1E-07
	All	8E-07	2E-07	9E-09

(a) Bingham Creek (BC) and the Bingham Creek Removal Area (BC-RA).
(b) The average (AVG) individual risk values include individual 0E+00 risks resulting from nonconsumption of the indicated vegetable.

With these considerations in mind, average and high individual excess cancer risks for Bingham Creek (2E-05 and 9E-05) were several fold high than those for Magna (7E-06 and 3E-05) and the Bingham Creek Removal Area (8E-06 and 1E-05). Excess cancer risks were most variable in Magna, least so in the Bingham Creek Removal Area. This could reflect differences in the number of households sampled, as well as variability in soil/vegetable As concentrations and household consumption patterns of garden vegetables. Generally speaking, while As concentrations appeared noticeably higher in beet greens and carrots than in tomatoes or zucchinis, the vegetable-category composition of most gardens resulted in the excess cancer risk attributable to root and garden fruit vegetables being about an order of magnitude greater than that attributable to leafy vegetables.

5.3.2 Evaluation of Noncancer Risks due to Garden Vegetable Arsenic

Calculated individual noncancer risks for 1-year exposures (subchronic HQs) are summarized in Table 5-2. For a given chemical and pathway of exposure, HQs greater than 1E+00 (i.e., the daily exposure exceeds the appropriate RfD) typically indicate that chemical levels of concern have been reached in the medium. No household was found to have a subchronic HQ above 1E+00. The highest HQ_{sc} (4E-01) was calculated for a 55-year-old. While several of the very highest HQ_{sc} values could indicate a level of concern when considered in light of exposure by other pathways, in general these values do not suggest concern regarding arsenic in vegetables. Furthermore, the same issue discussed above for excess cancer risk (i.e., the role of As nondetects in vegetable samples) is applicable here, and would tend to overestimate risk. When comparing areas, it is important to remember that any differences reflect both individual vegetable consumption patterns and variation in vegetable concentrations of arsenic.

TABLE 5-2 SUMMARY OF INDIVIDUAL NONCANCER SUBCHRONIC HAZARD QUOTIENTS FOR THE GARDEN VEGETABLE PATHWAY AT SAMPLED HOUSEHOLDS

Vegetable	Area[a]	Individual Subchronic HQs		
		High	AVG[b]	Low
All	All	4E-01	7E-02	8E-04
	BC	4E-01	8E-02	1E-02
	Magna	3E-01	5E-02	8E-04
	BC-RA	2E-01	1E-01	2E-02
Leafy	All	3E-02	5E-03	1E-04
	BC	1E-02	3E-03	1E-04
	Magna	2E-02	4E-03	2E-04
	BC-RA	3E-02	1E-02	5E-04
Root	All	3E-02	3E-02	3E-04
	BC	1E-02	3E-02	2E-03
	Magna	2E-02	2E-02	3E-04
	BC-RA	3E-02	3E-02	6E-03
Garden Fruit	All	1E-01	2E-02	5E-04
	BC	5E-02	2E-02	5E-03
	Magna	6E-02	2E-02	5E-04
	BC-RA	1E-01	6E-02	4E-03
Corn	All	1E-02	1E-03	3E-04
	BC	7E-03	1E-03	3E-04
	Magna	1E-02	1E-03	3E-04
	BC-RA	9E-03	2E-03	4E-04
Potatoes	All	2E-01	1E-02	8E-04
	BC	2E-01	2E-02	2E-03
	Magna	1E-01	1E-02	3E-03
	BC-RA	2E-02	3E-03	8E-04
Beans/Peas	All	1E-02	1E-03	5E-05
	BC	3E-03	8E-04	5E-04
	Magna	1E-02	2E-03	5E-05
	BC-RA	3E-03	1E-03	7E-04

(a) Bingham Creek (BC) and the Bingham Creek Removal Area (BC-RA).
(b) The average (AVG) individual risk values include individual 0E+00 risks resulting from nonconsumption of the indicated vegetable.

TABLE 5-3 SUMMARY OF INDIVIDUAL NONCANCER CHRONIC HAZARD QUOTIENTS FOR THE GARDEN VEGETABLE PATHWAY AT SAMPLED HOUSEHOLDS

Vegetable	Area[a]	Individual Chronic HQs		
		High	AVG[b]	Low
All	All	4E-01	6E-02	7E-04
	BC	4E-01	9E-02	1E-02
	Magna	1E-01	3E-02	7E-04
	BC-RA	5E-02	3E-02	2E-02
Leafy	All	1E-02	3E-03	1E-04
	BC	1E-02	3E-03	2E-04
	Magna	1E-02	2E-03	1E-04
	BC-RA	8E-03	2E-03	4E-04
Root	All	1E-01	2E-02	2E-04
	BC	1E-01	4E-02	2E-03
	Magna	7E-02	1E-02	2E-04
	BC-RA	2E-02	7E-03	5E-03
Garden Fruit	All	4E-02	2E-02	4E-04
	BC	4E-02	2E-02	6E-03
	Magna	2E-02	1E-02	4E-04
	BC-RA	4E-02	2E-02	3E-03
Corn	All	1E-03	1E-02	4E-04
	BC	1E-03	5E-03	5E-04
	Magna	4E-04	2E-03	4E-04
	BC-RA	3E-03	1E-02	4E-04
Potatoes	All	2E-01	1E-02	8E-04
	BC	2E-01	3E-02	3E-03
	Magna	4E-02	5E-03	3E-03
	BC-RA	7E-03	2E-03	8E-04
Beans/Peas	All	3E-03	7E-04	4E-05
	BC	2E-03	7E-04	4E-04
	Magna	3E-03	8E-04	4E-05
	BC-RA	6E-04	3E-04	5E-04

(a) Bingham Creek (BC) and the Bingham Creek Removal Area (BC-RA).
(b) The average (AVG) individual risk values include individual 0E+00 risks resulting from nonconsumption of the indicated vegetable.

A summary of the results is presented in Table 5-4. Model output data are shown for each subarea and for the site as a whole, both with and without exposure to garden vegetable Pb. They include average geometric mean PbBs (µg/dL), as well as the percent probabilities of PbBs being greater than 10 µg/dL (minimum, maximum and average household values). "Average Household" values represent the simple arithmetic means of the individual household model outputs (i.e., area mean soil and vegetable Pb concentrations were not used in a separate model run to calculate these average values).

The fraction of area or site households demonstrating elevated risk (defined as having calculated PbB distributions such that greater than five percent of children having the Pb intake associated with that household would have PbBs greater than 10 µg/dL) is also presented. Finally, to give a measure of the relative importance of garden vegetable Pb to overall Pb risk, the ratio of risk calculated with the vegetable component to that without it is presented for the households in each area displaying the smallest and largest such ratios. Averages (arithmetic means) of all the individual household ratios for each area are also shown. Table D-30 (Appendix D) provides the household-specific model input data, as well as the geometric mean PbB and percent population PbBs greater than 10 µg/dL output for each particular household analyzed.

Although there is no universally agreed upon value of PbB that may be identified as "safe" with respect to the effects of Pb on children, the U.S. Department of Health and Human Services has issued a statement concluding that some adverse health effects have been observed at a level of 10 ug/dL, and identifying as a goal the reduction of children's PbB levels to below 10 ug/dL (CDC 1991). Similarly, the USEPA considers values above 10 ug/dL to be of concern, and recommends that in a population of exposed children, no more than 5% of the population should exceed this value (USEPA 1991a).

TABLE 5-4 SUMMARY OF NONCANCER RISKS TO YOUNG CHILDREN[a] FROM EXPOSURE TO LEAD VIA GARDEN VEGETABLES

	AREA[b]							
	BC		M		BC-RA		ALL	
Parameter	-Veg	+Veg	-Veg	+Veg	-Veg	+Veg	-Veg	+Veg
Average[c] Household PbB (ug/dL)	6.0	7.1	2.8	3.2	1.9	2.1	4.0	4.7
Average[c] Household Probability (%) of PbBs >10 ug/dL	16.53	20.85	0.54	1.77	0.01	0.05	7.29	9.62
Minimum Household Probability (%) of PbBs >10 ug/dL	0.39	0.77	0.03	0.07	0.01	0.02	0.01	0.02
Maximum Household Probability (%) of PbBs >10 ug/dL	83.75	92.60	1.99	8.79	0.02	0.09	83.75	92.60
Fraction of Area Households with elevated risk[d]	4/9	5/9	0/8	1/8	0/4	0/4	4/21	6/21

Fold Increase in Risk (+Veg Risk/-Veg Risk)

Minimum[e]	1.11	1.00	2.00	1.00
Maximum[e]	7.30	17.94	5.00	17.94
Average[c]	2.12	3.55	3.63	2.95

(a) Childhood exposure was assumed to be from 0 to 6 years of age.
(b) Bingham Creek (BC), Magna (M), Bingham Creek Removal Area (BC-RA) and combined areas (ALL).
(c) Average values were derived by taking the arithmetic means of all the individual household output values within the area of concern.
(d) Here elevated risk is defined as one having a calculated PbB distribution from the household exposure such that more than 5% of a child population so exposed would have PbBs greater than 10 ug/dL.
(e) Individual households with the smallest or largest relative increase in risk due to consumption of garden vegetables; a measure of the relative importance of the garden vegetable pathway to that of all other pathways.

The data in Table 5-4 indicate that in the absence of the garden vegetable pathway, four of nine sampled households in Bingham Creek and no others (i.e., 4 of 21 households across the entire site) had geometric mean PbB levels of concern, such that >5% of their population PbB distributions were above 10 ug/dL. When the garden vegetable pathway is added to the total household exposure, two additional households (one in Bingham Creek and one in Magna, for a total of 6 of 21 site-wide households) display risk levels of concern. As explained previously, these calculations are based on exposure of a "standard" child to each modeled household's Pb environment (whether or not any real children were currently living there). Thus, it is really potential risk to young children under the current household environments that is being estimated here. Addition of the garden vegetable pathway increased the area average percent of PbBs expected to be above 10 µg/dL by a factor of 1.26 for BC households, 3.28 for M households and 5.00 for BC-RA households, or 1.32 for all households across the site. The larger M and BC-RA values reflect the low Pb risks associated with non-vegetable pathway Pb intake, rather than increases to risk levels of concern (except for a single M household whose risk rose almost 18-fold to 8.79 percent). Individual household risk increases due to the garden vegetable pathway averaged 2.12-fold (BC), 3.55-fold (M) and 3.63-fold (BC-RA), or 2.95-fold for all households across the site (ALL). Individual household increases ranged from 1.00 to 17.94 fold. Again, the higher-fold increases are largely attributable to very low risk levels in the absence of garden vegetable Pb intake. It should be noted that in two or three households, some calculated vegetable pathway risks were a result of vegetable samples in which no Pb was detected, but which were assigned one-half detection limit Pb concentrations.

5.4 Assessment of Uncertainties

There are a variety of factors that contribute to uncertainty in any characterization of human health risks associated with chemical exposure. The most important of these factors for this assessment are identified and briefly discussed below.

5.4.1 Uncertainties from Chemicals Not Considered

A number of metals beside arsenic and lead are typically associated with mining/smelter waste sites (e.g., cadmium, copper and zinc), and they could contribute some additional risk to the garden vegetable pathway beyond what has been attributed to arsenic and lead. Provided that their concentrations are reasonably low relative to arsenic and lead, the magnitude of any such additional risks would be small relative to those quantified for arsenic and lead.

5.4.2 Uncertainties in Environmental Concentration Values

Calculation of reliable exposure and risk estimates requires reliable data on the level of contaminants in environmental media. At this site a significant number of actual vegetable concentrations were measured, thus providing a better characterization (than when using only soil-derived values) of pathway concentration levels for individual sampled households. Some uncertainty remains due to relatively few samples per household, extrapolation from measured "representative" vegetables to other vegetables in the respective categories, absence of sampling data for certain vegetable categories at some households, and in some cases the notably weak correlations between soil and vegetable concentration data used to derive metal concentrations in unsampled vegetable categories. Uncertainty, especially in the case of arsenic, also resulted from the significant number of vegetable concentrations that were reported as nondetects. Using one half the detection limit (i.e., 0.06 or 0.03 mg metal/kg vegetable) in calculating vegetable concentrations is an acceptable and often used approach, but in this case may have resulted in overly conservative (i.e., unrealistically high) estimates of vegetable concentrations, and thus daily human intakes, of As.

For the prediction of PbB levels utilizing the IEUBK Model, uncertainty also derives from the use of only garden soil Pb concentrations to represent the general soil Pb

concentrations to which young children would be exposed. In the IEUBK Model analysis, site-specific soil concentrations of Pb were used as input, but no indoor dust data were available. The model's "multi-source" option with default values was utilized as the most reasonable way to approximate this important component of total Pb exposure. Uncertainty resulting from this approximation (and from the use of standard default values for other media input) should be significantly diminished by looking at the incremental risk attributable to garden vegetable consumption (i.e., the difference in PbB parameters when the model is run with and without daily Pb intake from garden vegetable consumption -- all other pathways remaining constant). By simply adding garden vegetable Pb to the total daily dietary intake of Pb (without making any concomitant adjustment for the presumed resulting decrease in consumption of nongarden vegetable Pb), the dietary contribution to PbB is slightly inflated. Again, however, the difference in resulting PbB values should reasonably reflect the garden vegetable pathway's contribution.

5.4.3 Uncertainties in Human Intake Factors

Even if the concentrations of a chemical in a medium were known precisely, there is often considerable uncertainty in the terms used to estimate human contact with the medium. In this case, such uncertainty was partially overcome by survey data that provided varying degrees of information on garden content, consumption of garden yield, and individual ages and body weights of household members. Even for households that provided all the requested data, some uncertainty remains attached to assessor's estimates of actual garden yields and resident estimates of percent household consumption of garden yields. Individual shares of total estimated household consumption were based on national survey data (USEPA 1991c) not specifically related to this study, and may or may not adequately reflect the situation in a given household. Where provided, reported ages and weights are assumed to be relatively accurate. Some households provided garden-

specific data and the number of household members, but not individual ages or weights. Accordingly, additional uncertainty is associated with the risk evaluations for these households, as they were calculated only for a standardized adult and child, adjusted from equal consumption shares by the approximate relative intake factors of 1.4 and 0.6, respectively.

5.4.4 Uncertainties in Toxicity Values

The accuracy of human health risk predictions for any specific estimated intake level depends upon the accuracy of the RfD or SF for the chemical. In many cases, these values are derived from a limited data base, and this can result in substantial uncertainty, both quantitatively and qualitatively. In order to account for these uncertainties and for others associated with the evaluation of toxicity data, both RfDs and SFs are typically derived in a way that is intentionally conservative; that is, risk estimates based on these RfDs and SFs are more likely to be high than low.

In the case of arsenic, despite extensive data on both cancer and noncancer effects that includes information from a number of human studies, there remains ongoing debate concerning both the oral RfD and the oral SF. This debate reflects an important source of uncertainty for risk estimates involving arsenic. For example, in the apparent absence of sufficient short-term exposure data, the current subchronic RfD was conservatively taken to be simply equal to the adequately established chronic RfD. It now appears possible that based upon a reevaluation of the currently available data for short-term effects, USEPA may adjust the RfD_{sc} significantly upward (perhaps by a factor of as much as 10-20). Consequently, it must be recognized that the subchronic As risks presented in this assessment are likely to be significantly overestimated. Similarly, greater than typical uncertainty is associated with the As oral slope factor. Toxicokinetic studies in humans and animals generally support the concept that low doses of As may be at least partially detoxified through methylation. If so, the cancer dose-response curve could well be nonlinear at low doses, making the current SF too high and thus leading to an overestimate of oral pathway cancer risk. On the other hand, the current oral SF for As is based only on skin cancer induction, and relatively recent studies suggest that the risk of internal organ cancers from As ingestion may be higher than that of skin cancer. On this basis, the current oral SF for As could be too low, thus leading to an underestimate of oral

pathway cancer risk. Finally, it is currently uncertain as to whether arsenic in food is as bioavailable for gastrointestinal absorption as arsenic in water. To the degree that it could be less bioavailable, arsenic risks are overestimated by the use of toxicity values based on exposure to arsenic in water, as was done in this assessment.

In summary, at the present time there is particular uncertainty involved in the determination of both cancer and noncancer risks associated with the ingestion of arsenic. Subchronic risks are likely to be overestimated, while cancer risks could be either over- or underestimated.

5.4.5 Uncertainty due to Lack of Toxicity Values

In cases where RfD or SF values have not been derived for a chemical, it is not possible to derive quantitative estimates of risk. This situation applies to lead, where no oral SF has been derived. However, this is unlikely to be of major significance, as any cancer risk due to lead would be small relative to that associated with arsenic. Furthermore, the principal risk resulting from exposure to lead is adverse neurological effects in infants and young children, and this is thought to be adequately assessed through the use of the IEUBK Model.

5.4.6 Summary of Uncertainties

The primary sources of uncertainty in this risk assessment and their probable effects are summarized in Table 5-5.

TABLE 5-5 SUMMARY OF PRIMARY SOURCES OF UNCERTAINTY IN THIS GARDEN PATHWAY RISK ASSESSMENT

Likely to Underestimate Risk

- Exclusion of some chemicals.
- Lack of SF for lead.
- SF for arsenic based only on skin cancer.

Likely to Overestimate Risk

- Generally conservative derivation of toxicity values.
- Setting the arsenic subchronic RfD equal to the chronic RfD.
- SF for arsenic may not account for metabolic detoxification at low doses.
- Lack of adjustment for possible reduced bioavailability of arsenic in vegetables relative to that in water.

May Underestimate or Overestimate Risk

- Use of one half the detection limit as the arsenic concentration in "nondetect" vegetable samples (although this may contribute more to overestimation than to underestimation of risk).
- Application of default (age-specific or pro-rata) individual intake factors for the calculation of individual risks.
- Extrapolation of metal concentrations in representative vegetable species to all members of their respective vegetable categories.
- Generation of metal concentrations for unsampled vegetable categories using soil concentration data and weakly correlated soil-vegetable relationships.
- Estimation of garden yields using literature and other nongarden-specific values.
- Potential survey data inaccuracy.
- Use of garden soil metal concentrations in the IEUBK Model to represent yard and other play area soil concentrations typical of average exposure.

6.0 CONCLUSION

The study report, "Uptake of Lead and Arsenic by Garden Vegetables", as a task relating to the Baseline Risk Assessment (BRA) for the Kennecott Sites in response to the U.S. Environmental Protection Agency (EPA). A preliminary (screening level, semi-quantitative design) vegetative uptake study in residential gardens located within the Kennecott site study areas of Bingham Creek, Bingham Creek Removal Area and the town of Magna was conducted.

It has been proposed that two different sources have led to arsenic and lead contamination of these residential soils. Residential properties in the cities of South Jordan and West Jordan, Utah, have been primarily affected by the migration of mine tailings conveyed down Bingham Creek resulting in their deposition outside the creek channel during periods of flooding. The soils in the town of Magna have been affected by two main sources: the wind-blown mine tailings originating from the Magna Tailings Pond and the fall-out of historic stack emissions from the nearby smelter operations.

The Phase I Survey included soil sampling from residential properties; lead and arsenic soil analysis; and selection of gardens to be sampled in the Phase II Survey. The Phase II Survey included soil and vegetable sampling from selected residential properties; lead and arsenic soil and vegetable analysis; evaluation of metal uptake in plants and a preliminary risk characterization. The following sections discuss the conclusions of the Phase II Survey.

6.1 Data Analysis

Bioconcentration factors (BCFs) calculated in this study were compared to literature based calculated BCFs from Baes *et. al.* (1984). Baes values are commonly used in risk assessments when site specific data are not available.

The Phase II calculated BCF and the Baes BCF is summarized by lead and arsenic; vegetable and study area in Table 6-1. Areas where vegetables were not collected are also listed on Table 6-1. A comparison of the Phase II and Baes BCF are presented in Table 6-2. The lead and arsenic BCF for carrots compare well between BCFs. The Phase II lead BCF for tomato is 10 times less than the Baes BCF. The Phase II lead BCF for zucchini is 100 times less than the Baes BCF. Phase II arsenic and lead BCF for beets are less than the Baes' BCF for beets.

A comparison of Bingham Creek, Magna and Removal Area data of arsenic in tomatoes would indicate little to no arsenic is taken up into tomatoes growing in soils of either study area.

The BCF for leafy-type vegetables reported by Baes was ten times the Phase II calculated BCF. This would indicate that less lead is taken up into the leafy structure of the beet greens in plants growing in Bingham Creek study area soils as compared to that reported in the literature. Beet greens may be impacted not only from metal uptake through soil, but also from aerial deposition.

Table 6-1
Vegetable Sample Summary

Figure	Description	$r^{2(1)}$	b_o(2)	BCF(3) Phase II	BCF Baes
4-1	BC(4)-Carrots-Lead	0.96	0.066	4.3E-03	9E-03
4-2	M(5)-Carrots-Lead	0.90	0.114	4.6E-03	9E-03
4-3	RA(6)-Carrots-Lead	0.16	0.124	5.75-03	9E-03
4-4	BC-Tomato-Lead	0.37	0.234	1.75-04	9E-03
4-5	M-Tomato-Lead	0.15	0.154	5.9E-04	9E-03
4-6	RA-Tomato-Lead	-0.01	0.224	-8.7E-04	9E-03
4-7	BC-Beets-Lead	0.67	1.273	6.8E-03	4.5E-02
M-Beets-Lead Not Available for Collection					
4-8	RA-Beets-Lead	0.06	0.757	1.3E-02	4.5E-02
BC-Zucchini-Lead Not Sampled					
4-9	M-Zucchini-Lead	0.14	0.189	8.9E-05	9E-03
RA-Zucchini-LeadNot Sampled					
4-10	BC-Carrots-Arsenic	0.39	0.047	3.7E-03	6E-03
	M-Carrots-Arsenic(7)				
	RA-Carrots-Arsenic(7)				
	BC-Tomato-Arsenic(7)				
	N-Tomato-Arsenic(7)				
	RA-Tomato-Arsenic(7)				
4-11	BC-Beets-Arsenic	2.4E-03	0.363	-6.7E-04	4E-02
4-12	BC-Beets-Arsenic (outlier removed)	0.80	0.027	5.8E-03	4E-02
	M-Beets-Arsenic(7)				
4-13	RA-Beets-Arsenic	4.1E-03	0.286	-3.7E-03	4E-02
BC-Beets-Arsenic - Not Sampled					
	M-Zucchini-Arsenic(7)				
RA-Zucchini-Arsenic - Not Sampled					

(1) correlation coefficient of linear regression line
(2) intercept
(3) bioconcentration factor
(4) Bingham Creek area samples
(5) Magna area samples
(6) Removal area samples
(7) Vegetable metal concentration not graphed or BCF calculated due to high number of non-detect samples.

Table 6-2
Vegetable Study BCF Comparation to Baes BCF

	LEAD		ARSENIC	
Vegetable	BCF Fit (Good/Poor)	r^2 Fit (Good>.50/Poor <.50)	BCF Fit (Good/Poor	r^2 Fit (Good >.50 or poor <.50)
Carrots	good (3 out of 3 points)	good (2 out of 3 points	good	poor
Tomato (negative on 1 point - not used)	poor Phase II BCF 10 X <BaesBCF (2 out of 2 points)	poor (2 out of 2 points)		
Beets (Negative on 2 points - not used)	50-50 fit (1 point 10 x <Baes BCF 1 point good fit out of 2 points) Note High intercept	50-50 fit	poor (2 out of 3 points negative) Phase II BCF 10 x < Baes BCF (1 out of 1 point)	poor
Zucchini	poor Phase II BCF 100 x < Baes BCF (1 out of 1 point)	poor		

The soil arsenic concentration versus the soil lead concentration is presented on Figures 6-1, 6-2, and 6-3. Figure 6-4 shows all three study areas together

6.2 Summary Conclusions

The data indicate that, on average, no substantial degree of either cancer or noncancer risk due to arsenic is expected to result from the consumption of garden vegetables as typified by these sampled households. However, it is possible that a few individual households with particularly high garden vegetable consumption rates may incur some significant additional risk via this pathway. This could be of some concern, especially in the context of risk that may be resulting from other pathways and/or chemicals. It is noteworthy that arsenic contamination of vegetables in the Birtgham Creek Removal Area does not appear to be of any concern.

The situation with noncancer risk from Pb in garden vegetables appears slightly different. While the Pb consumed in garden vegetables would probably not constitute a problem if this were the only pathway of exposure, there are a number of households in which the Pb contributed by garden vegetable consumption is enough to create a risk level of concern when combined with that from other pathways. In other cases, it simply increases the level of concern. With respect to the different areas, the problem seems substantially confined to Bingham Creek (excluding the Removal Area).

Figure 6-1

Bingham Creek

Soil Arsenic Concentration Versus Soil Lead Concentration

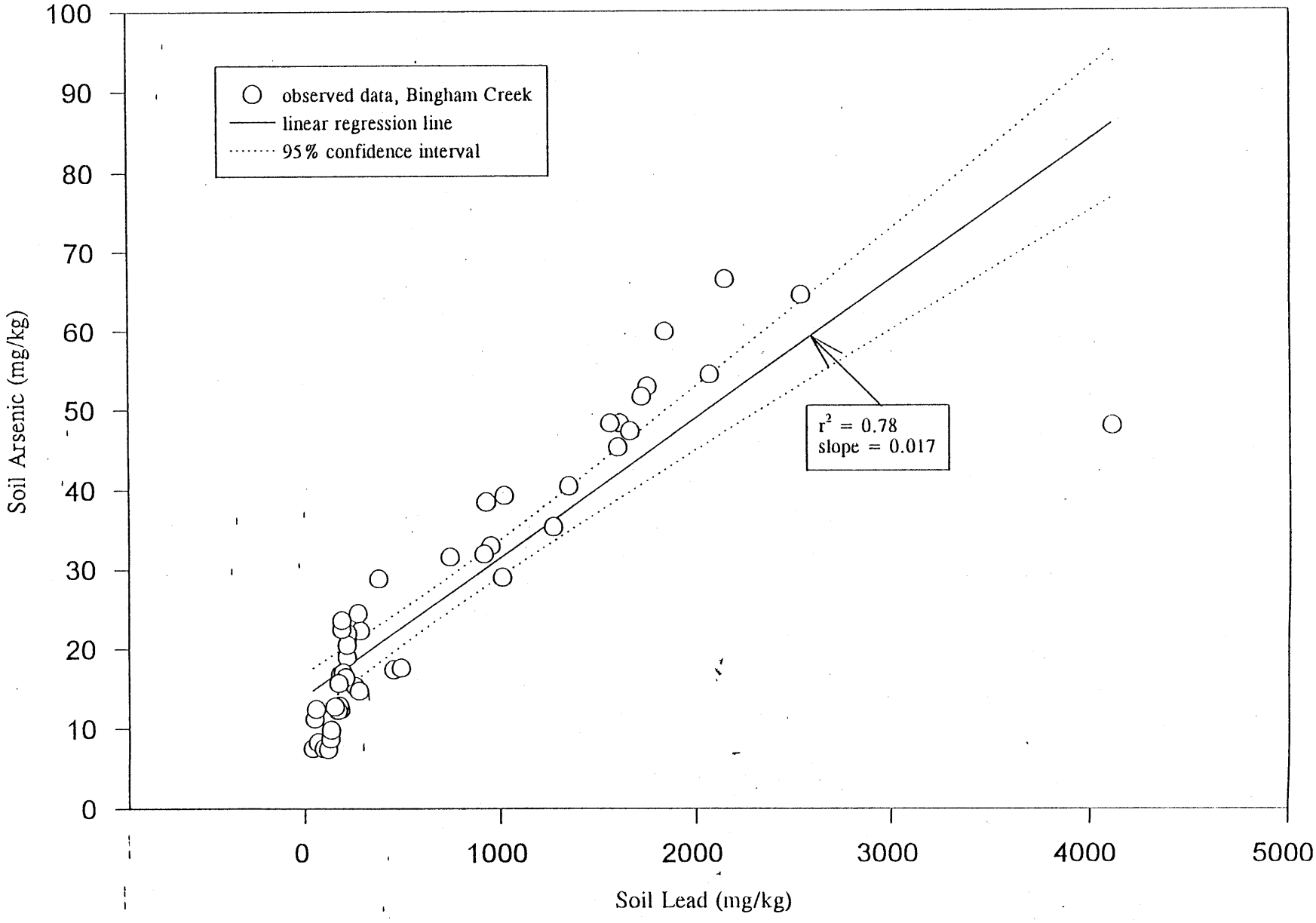


Figure 6-2

Magna Area

Soil Arsenic Concentration Versus Soil Lead Concentration

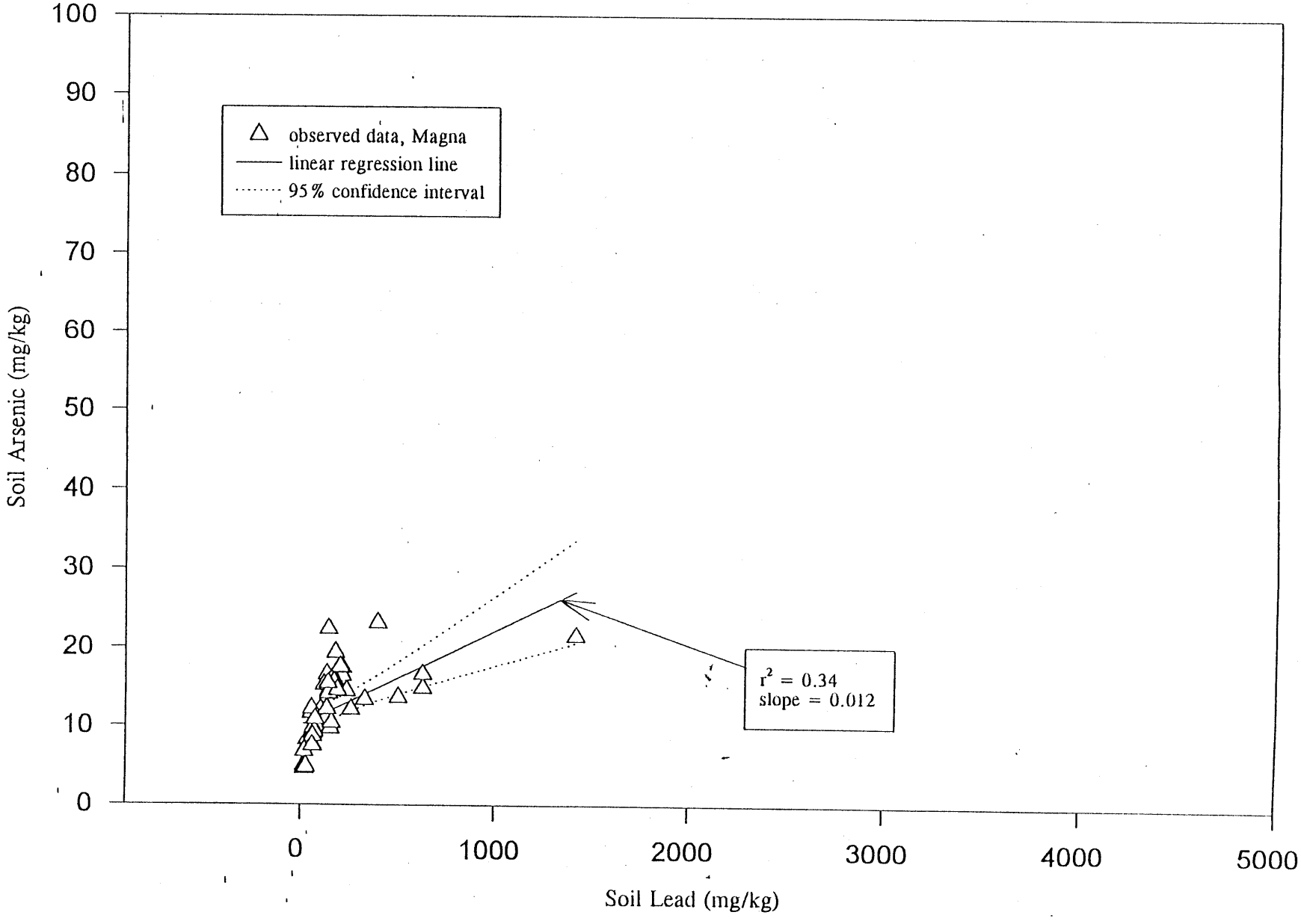


Figure 6-3

Removal Area

Soil Arsenic Concentration Versus Soil Lead Concentration

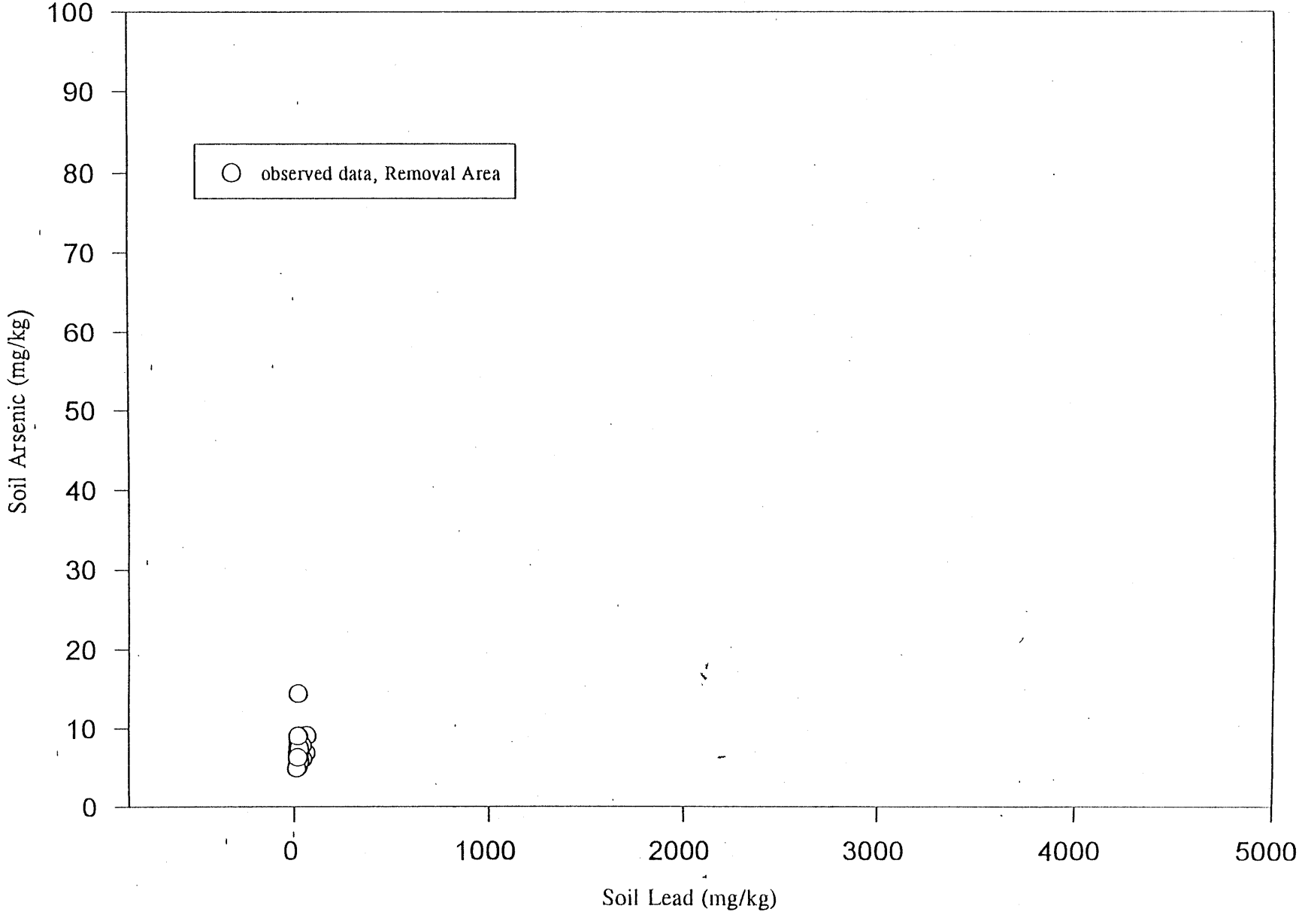
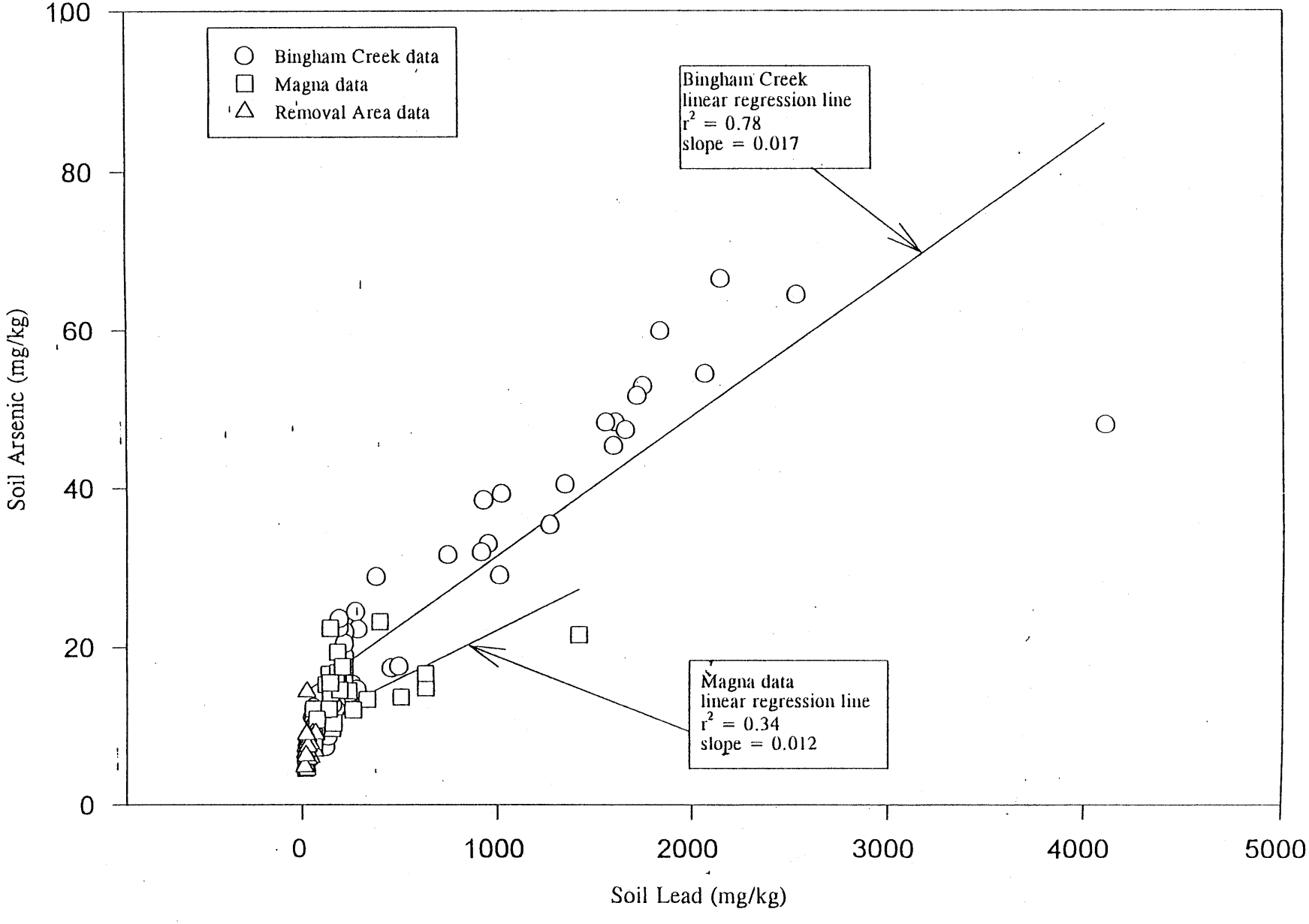


Figure 6-4

Bingham Creek, Magna, and Removal Area

Soil Arsenic Concentration Versus Soil Lead Concentration



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Appendix A

Statistical Summary Information

Table A-1. Soil Lead Concentrations Bingham Creek			
Sample ID	Soil Lead (mg/kg)	Sample ID	Soil Lead (mg/kg)
BC-03-S-B1	182	BC-24-S-B2	927
BC-03-S-B2	184	BC-24-S-C1	744
BC-03-S-C1	176	BC-24-S-T1	916
BC-03-S-C2	187	BC-24-S-T2	1020
BC-04-S-B1	283	BC-31-S-T1	455
BC-04-S-B2	191	BC-31-S-T2	493
BC-04-S-C1	206	BC-32-S-C1	51.5
BC-04-S-C2	257	BC-32-S-C2	57.6
BC-04-S-T1	217	BC-34-S-T1	378
BC-04-S-T2	215	BC-34-S-T2	272
BC-06-S-C1	169	BC-36-S-T1	188
BC-06-S-C2	155	BC-36-S-T2	188
BC-07-S-C1	182	BC-37-S-B1	1750
BC-07-S-C2	196	BC-37-S-B2	1840
BC-11-S-C1	207	BC-37-S-B3	1720
BC-11-S-C2	174	BC-37-S-B4	1610
BC-14-S-T1	1350	BC-37-S-C1	1660
BC-14-S-T2	1270	BC-37-S-C2	1600
BC-17-S-T1	39.7	BC-37-S-C3	1560
BC-17-S-T2	68	BC-37-S-C4	2540
BC-19-S-C1	97.3	BC-37-S-T1	2150
BC-19-S-C2	120	BC-37-S-T2	4110
BC-20-S-C1	132	BC-39-S-S1	278
BC-20-S-C2	134	BC-39-S-T1	2070
BC-23-S-T1	215	BC-39-S-T2	1010
BC-24-S-B1	951		

Descriptive Statistics	
Mean	728.354902
Standard Error	117.4511653
Median	257
Mode	182
Standard Deviation	838.7690906
Variance	703533.5873
Kurtosis	4.015615135
Skewness	1.809082521
Range	4070.3
Minimum	39.7
Maximum	4110
Sum	37146.1
Count	51

Table A-2. Soil Lead Concentrations Magna			
Sample ID	Soil Lead (mg/kg)	Sample ID	Soil Lead (mg/kg)
M-01-S-T1	135	M-24-S-T2	17.9
M-01-S-T2	181	M-24-S-Z1	17.1
M-01-S-Z2	179	M-24-S-Z2	17.9
M-03-S-T1	143	M-25-S-C1	54.2
M-03-S-T2	215	M-25-S-C2	56.3
M-03-S-Z1	331	M-29-S-C1	143
M-04-S-T1	152	M-29-S-C2	143
M-04-S-T2	159	M-29-S-T1	172
M-06-S-C1	33.2	M-29-S-T2	190
M-06-S-C2	36.9	M-29-S-Z1	142
M-14-S-T1	504	M-29-S-Z2	135
M-14-S-T2	631	M-31-S-C1	18.3
M-15-S-T1	630	M-31-S-C3	26.3
M-15-S-T2	260	M-31-S-Z1	62.1
M-18-S-T1	396	M-34-S-T1	217
M-18-S-T2	183	M-34-S-Z1	204
M-18-S-Z1	1420	M-41-S-C1	63.1
M-18-S-Z2	237	M-41-S-C2	65.2
M-21-S-Z1	121	M-41-S-C3	70.2
M-21-S-Z2	103	M-41-S-C4	74.8
M-24-S-C1	18.3	M-41-S-T1	61.3
M-24-S-C2	19.6	M-41-S-T2	59.1
M-24-S-T1	15.1		

Descriptive Statistics	
Mean	183.0409091
Standard Error	36.42157585
Median	138.5
Mode	143
Standard Deviation	241.5934027
Variance	58367.37224
Kurtosis	15.95436232
Skewness	3.561599281
Range	1404.9
Minimum	15.1
Maximum	1420
Sum	8053.8
Count	44

Table A-3. Soil Lead Concentrations Removal Area	
Sample ID	Soil Lead (mg/kg)
RA-02-T1	22.6
RA-02-T2	24.2
RA-03-T1	36.5
RA-03-T2	17
RA-04-T1	22.6
RA-04-T2	23
RA-05-T1	45.6
RA-05-T2	28.5
RA-06-T1	32.3
RA-06-T2	32
RA-07-T1	28.4
RA-07-T2	29.1
RA-08-T1	21.7
RA-08-T2	19.7
RA-03-B1	28
RA-03-B2	63.8
RA-07-B1	23
RA-07-B2	26.9
RA-08-B1	17.9
RA-08-B2	14.2
RA-03-C1	67.8
RA-03-C2	22.7
RA-07-C1	23.2
RA-07-C2	21.4
RA-08-C1	43.4
RA-08-C2	29.6
Descriptive Statistics	
Mean	29.42692308
Standard Error	2.545364158
Median	25.55
Mode	22.6
Standard Deviation	12.97886151
Variance	168.4508462
Kurtosis	3.410890696
Skewness	1.857418146
Range	53.6
Minimum	14.2
Maximum	67.8
Sum	765.1
Count	26

Table A-4. Soil Arsenic Concentrations Bingham Creek			
Sample ID	Soil Arsenic (mg/kg)	Sample ID	Soil Arsenic (mg/kg)
BC-03-S-B1	15.9	BC-24-S-B2	38.5
BC-03-S-B2	12.4	BC-24-S-C1	31.6
BC-03-S-C1	12.8	BC-24-S-T1	32
BC-03-S-C2	15.9	BC-24-S-T2	39.3
BC-04-S-B1	22.3	BC-31-S-T1	17.4
BC-04-S-B2	16.7	BC-31-S-T2	17.6
BC-04-S-C1	15.9	BC-32-S-C1	11.2
BC-04-S-C2	15.3	BC-32-S-C2	12.4
BC-04-S-T1	22	BC-34-S-T1	28.9
BC-04-S-T2	19	BC-34-S-T2	24.5
BC-06-S-C1	12.3	BC-36-S-T1	22.5
BC-06-S-C2	12.7	BC-36-S-T2	23.6
BC-07-S-C1	16.8	BC-37-S-B1	52.9
BC-07-S-C2	17	BC-37-S-B2	59.9
BC-11-S-C1	16.4	BC-37-S-B3	51.6
BC-11-S-C2	15.7	BC-37-S-B4	48.3
BC-14-S-T1	40.5	BC-37-S-C1	47.3
BC-14-S-T2	35.4	BC-37-S-C2	45.3
BC-17-S-T1	7.5	BC-37-S-C3	48.3
BC-17-S-T2	8.2	BC-37-S-C4	64.5
BC-19-S-C1	7.5	BC-37-S-T1	66.5
BC-19-S-C2	7.4	BC-37-S-T2	48
BC-20-S-C1	8.7	BC-39-S-S1	14.7
BC-20-S-C2	9.8	BC-39-S-T1	54.4
BC-23-S-T1	20.5	BC-39-S-T2	29.1
BC-24-S-B1	33		

Descriptive Statistics	
Mean	26.82156863
Standard Error	2.326558198
Median	20.5
Mode	15.9
Standard Deviation	16.61494886
Variance	276.0565255
Kurtosis	-0.443449313
Skewness	0.837724248
Range	59.1
Minimum	7.4
Maximum	66.5
Sum	1367.9
Count	51

Table A-5. Soil Arsenic Concentrations Magna			
Sample ID	Soil Arsenic (mg/kg)	Sample ID	Soil Arsenic (mg/kg)
M-01-S-T1	16.6	M-24-S-T2	4.8
M-01-S-T2	16.8	M-24-S-Z1	4.7
M-01-S-Z2	19.4	M-24-S-Z2	4.6
M-03-S-T1.	22.4	M-25-S-C1	11.6
M-03-S-T2	16.5	M-25-S-C2	12.2
M-03-S-Z1	13.4	M-29-S-C1	14.5
M-04-S-T1	9.7	M-29-S-C2	14.2
M-04-S-T2	10.4	M-29-S-T1	15.6
M-06-S-C1	8.3	M-29-S-T2	14.6
M-06-S-C2	8.4	M-29-S-Z1	15.5
M-14-S-T1	13.7	M-29-S-Z2	12.2
M-14-S-T2	14.9	M-31-S-C1	6.8
M-15-S-T1	16.7	M-31-S-C3	4.8
M-15-S-T2	12.1	M-31-S-Z1	9.1
M-18-S-T1	23.2	M-34-S-T1	17.5
M-18-S-T2	15.6	M-34-S-Z1	17.6
M-18-S-Z1	21.6	M-41-S-C1	7.6
M-18-S-Z2	14.5	M-41-S-C2	9.8
M-21-S-Z1	15.3	M-41-S-C3	9.3
M-21-S-Z2	12.1	M-41-S-C4	10.9
M-24-S-C1	4.7	M-41-S-T1	8.7
M-24-S-C2	4.7	M-41-S-T2	7.5
M-24-S-T1	5		

Descriptive Statistics	
Mean	12.22444444
Standard Error	0.750145814
Median	12.2
Mode	4.7
Standard Deviation	5.032131103
Variance	25.32234343
Kurtosis	-0.621471089
Skewness	0.166726811
Range	18.6
Minimum	4.6
Maximum	23.2
Sum	550.1
Count	45

Table A-6. Soil Arsenic Concentrations Removal Area	
Sample ID	Soil Arsenic (mg/kg)
RA-02-T1	6.3
RA-02-T2	6.6
RA-03-T1	6.3
RA-03-T2	5.3
RA-04-T1	7.7
RA-04-T2	14.4
RA-05-T1	6.1
RA-05-T2	6.9
RA-06-T1	8
RA-06-T2	5.9
RA-07-T1	8.9
RA-07-T2	8.4
RA-08-T1	9
RA-08-T2	6.3
RA-03-B1	7.1
RA-03-B2	6.9
RA-07-B1	7.4
RA-07-B2	8.5
RA-08-B1	7.5
RA-08-B2	4.9
RA-03-C1	9.1
RA-03-C2	5.2
RA-07-C1	8.4
RA-07-C2	8.3
RA-08-C1	7.8
RA-08-C2	7.5
Descriptive Statistics	
Mean	7.488461538
Standard Error	0.362568908
Median	7.45
Mode	6.3
Standard Deviation	1.848745937
Variance	3.417861538
Kurtosis	7.110924143
Skewness	1.996816823
Range	9.5
Minimum	4.9
Maximum	14.4
Sum	194.7
Count	26

Appendix B

Metals Concentrations in Soils and Vegetables

APPENDIX B

METAL CONCENTRATIONS IN SOILS AND VEGETABLES

DATA STATISTICS

DATE: 07/13/94

EXPOSURE POINT: Kennecott Gardens - Arsenic
FILENAME: AS-BG3.WQ1
MEDIUM: Beet Greens
UNITS: mg/kg dry wt.
U MULTIPLIER: 0.5

	CHEMICAL	EPC HITS	EPC TOTAL	MAX VALUE	MAX HIT	MIN VALUE	GEOM MEAN	ARITH MEAN	UCL95 NORM	UCL95 LOGNORM	EPC (LOGNORM)
1	BC-02	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
2	BC-03	1	2	1.2E-01	1.2E-01	6.0E-02	8.5E-02	9.0E-02	2.8E-01	2.3E+00	1.2E-01
3	BC-04	1	1	1.4E-01	1.4E-01	1.4E-01	1.4E-01	1.4E-01	ERR	ERR	1.4E-01
4	BC-06	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
5	BC-07	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
6	BC-11	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
7	BC-14	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
8	BC-17	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
9	BC-19	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
10	BC-20	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
11	BC-23	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
12	BC-24	2	2	3.4E-01	3.4E-01	2.8E-01	3.1E-01	3.1E-01	5.0E-01	4.5E-01	3.4E-01
13	BC-31	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
14	BC-32	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
15	BC-34	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
16	BC-36	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
17	BC-37	4	4	4.8E-01	4.8E-01	1.9E-01	2.7E-01	2.9E-01	4.4E-01	5.4E-01	4.8E-01
18	BC-39	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
19	M-01	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
20	M-03	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
21	M-04	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
22	M-06	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
23	M-14	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
24	M-15	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
25	M-18	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
26	M-21	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
27	M-24	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
28	M-25	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
29	M-29	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
30	M-31	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
31	M-34	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
32	M-41	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
33	RA-02	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
34	RA-03	2	2	3.6E-01	3.6E-01	2.8E-01	3.2E-01	3.2E-01	5.7E-01	5.8E-01	3.6E-01
35	RA-04	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
36	RA-05	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
37	RA-06	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
38	RA-07	2	2	2.3E-01	2.3E-01	2.2E-01	2.2E-01	2.3E-01	2.6E-01	2.5E-01	2.3E-01
39	RA-08	2	2	2.4E-01	2.4E-01	2.0E-01	2.2E-01	2.2E-01	3.5E-01	3.1E-01	2.4E-01

DATA STATISTICS

DATE: 07/13/94

EXPOSURE POINT: Kennecott Gardens - Arsenic
FILENAME: AS-TZ3.WQ1
MEDIUM: Tomato and Zucchini
UNITS: mg/kg dry wt.
U MULTIPLIER: 0.5

	CHEMICAL	EPC HITS	EPC TOTAL	MAX VALUE	MAX HIT	MIN VALUE	GEOM MEAN	ARITH MEAN	UCL95 NORM	UCL95 LOGNORM	EPC (LOGNORM)
1	BC-02	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
2	BC-03	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
3	BC-04	0	2	3.0E-02	ERR	3.0E-02	3.0E-02	3.0E-02	3.0E-02	3.0E-02	0.0E+00
4	BC-06	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
5	BC-07	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
6	BC-11	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
7	BC-14	0	2	6.0E-02	ERR	6.0E-02	6.0E-02	6.0E-02	6.0E-02	6.0E-02	0.0E+00
8	BC-17	0	2	6.0E-02	ERR	6.0E-02	6.0E-02	6.0E-02	6.0E-02	6.0E-02	0.0E+00
9	BC-19	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
10	BC-20	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
11	BC-23	0	2	6.0E-02	ERR	6.0E-02	6.0E-02	6.0E-02	6.0E-02	6.0E-02	0.0E+00
12	BC-24	0	2	6.0E-02	ERR	6.0E-02	6.0E-02	6.0E-02	6.0E-02	6.0E-02	0.0E+00
13	BC-31	0	2	6.0E-02	ERR	6.0E-02	6.0E-02	6.0E-02	6.0E-02	6.0E-02	0.0E+00
14	BC-32	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
15	BC-34	0	2	6.0E-02	ERR	6.0E-02	6.0E-02	6.0E-02	6.0E-02	6.0E-02	0.0E+00
16	BC-36	0	2	6.0E-02	ERR	6.0E-02	6.0E-02	6.0E-02	6.0E-02	6.0E-02	0.0E+00
17	BC-37	1	2	6.5E-02	6.5E-02	3.0E-02	4.4E-02	4.8E-02	1.6E-01	1.8E+00	6.5E-02
18	BC-39	0	2	6.0E-02	ERR	6.0E-02	6.0E-02	6.0E-02	6.0E-02	6.0E-02	0.0E+00
19	M-01	0	3	6.0E-02	ERR	6.0E-02	6.0E-02	6.0E-02	6.0E-02	6.0E-02	0.0E+00
20	M-03	0	3	6.0E-02	ERR	6.0E-02	6.0E-02	6.0E-02	6.0E-02	6.0E-02	0.0E+00
21	M-04	0	3	3.0E-02	ERR	3.0E-02	3.0E-02	3.0E-02	3.0E-02	3.0E-02	0.0E+00
22	M-06	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
23	M-14	0	2	6.0E-02	ERR	6.0E-02	6.0E-02	6.0E-02	6.0E-02	6.0E-02	0.0E+00
24	M-15	0	2	6.0E-02	ERR	6.0E-02	6.0E-02	6.0E-02	6.0E-02	6.0E-02	0.0E+00
25	M-18	0	4	6.0E-02	ERR	6.0E-02	6.0E-02	6.0E-02	6.0E-02	6.0E-02	0.0E+00
26	M-21	0	2	6.0E-02	ERR	6.0E-02	6.0E-02	6.0E-02	6.0E-02	6.0E-02	0.0E+00
27	M-24	1	4	5.0E-01	5.0E-01	6.0E-02	1.0E-01	1.7E-01	4.3E-01	3.6E+00	5.0E-01
28	M-25	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
29	M-29	0	4	6.0E-02	ERR	6.0E-02	6.0E-02	6.0E-02	6.0E-02	6.0E-02	0.0E+00
30	M-31	0	2	6.0E-02	ERR	6.0E-02	6.0E-02	6.0E-02	6.0E-02	6.0E-02	0.0E+00
31	M-34	0	2	6.0E-02	ERR	6.0E-02	6.0E-02	6.0E-02	6.0E-02	6.0E-02	0.0E+00
32	M-41	0	2	6.0E-02	ERR	6.0E-02	6.0E-02	6.0E-02	6.0E-02	6.0E-02	0.0E+00
33	RA-02	1	2	1.4E-01	1.4E-01	6.0E-02	9.2E-02	1.0E-01	3.5E-01	1.2E+01	1.4E-01
34	RA-03	0	2	6.0E-02	ERR	6.0E-02	6.0E-02	6.0E-02	6.0E-02	6.0E-02	0.0E+00
35	RA-04	0	2	6.0E-02	ERR	6.0E-02	6.0E-02	6.0E-02	6.0E-02	6.0E-02	0.0E+00
36	RA-05	0	2	6.0E-02	ERR	6.0E-02	6.0E-02	6.0E-02	6.0E-02	6.0E-02	0.0E+00
37	RA-06	0	2	6.0E-02	ERR	6.0E-02	6.0E-02	6.0E-02	6.0E-02	6.0E-02	0.0E+00
38	RA-07	0	2	6.0E-02	ERR	6.0E-02	6.0E-02	6.0E-02	6.0E-02	6.0E-02	0.0E+00
39	RA-08	0	2	6.0E-02	ERR	6.0E-02	6.0E-02	6.0E-02	6.0E-02	6.0E-02	0.0E+00

DATA STATISTICS

DATE: 07/13/94

EXPOSURE POINT: Kennecott Gardens - Arsenic
FILENAME: AS-C3.WQ1
MEDIUM: Carrots
UNITS: mg/kg dry wt.
U MULTIPLIER: 0.5

	CHEMICAL	EPC HITS	EPC TOTAL	MAX VALUE	MAX HIT	MIN VALUE	GEOM MEAN	ARITH MEAN	UCL95 NORM	UCL95 LOGNORM	EPC (LOGNORM)
1	BC-02	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
2	BC-03	0	2	6.0E-02	ERR	6.0E-02	6.0E-02	6.0E-02	6.0E-02	6.0E-02	0.0E+00
3	BC-04	2	2	1.7E-01	1.7E-01	9.0E-02	1.2E-01	1.3E-01	3.8E-01	1.4E+00	1.7E-01
4	BC-06	2	2	1.7E-01	1.7E-01	1.6E-01	1.6E-01	1.7E-01	2.0E-01	1.9E-01	1.7E-01
5	BC-07	0	2	6.0E-02	ERR	6.0E-02	6.0E-02	6.0E-02	6.0E-02	6.0E-02	0.0E+00
6	BC-11	0	2	6.0E-02	ERR	6.0E-02	6.0E-02	6.0E-02	6.0E-02	6.0E-02	0.0E+00
7	BC-14	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
8	BC-17	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
9	BC-19	1	2	1.5E-01	1.5E-01	6.0E-02	9.5E-02	1.1E-01	3.9E-01	1.8E+01	1.5E-01
10	BC-20	0	2	6.0E-02	ERR	6.0E-02	6.0E-02	6.0E-02	6.0E-02	6.0E-02	0.0E+00
11	BC-23	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
12	BC-24	0	1	6.0E-02	ERR	6.0E-02	6.0E-02	6.0E-02	ERR	ERR	0.0E+00
13	BC-31	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
14	BC-32	2	2	1.8E-01	1.8E-01	1.2E-01	1.5E-01	1.5E-01	3.4E-01	5.0E-01	1.8E-01
15	BC-34	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
16	BC-36	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
17	BC-37	4	4	5.8E-01	5.8E-01	1.5E-01	2.6E-01	3.0E-01	5.3E-01	9.4E-01	5.8E-01
18	BC-39	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
19	M-01	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
20	M-03	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
21	M-04	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
22	M-06	1	2	2.2E-01	2.2E-01	6.0E-02	1.1E-01	1.4E-01	6.4E-01	8.5E+03	2.2E-01
23	M-14	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
24	M-15	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
25	M-18	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
26	M-21	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
27	M-24	0	2	6.0E-02	ERR	6.0E-02	6.0E-02	6.0E-02	6.0E-02	6.0E-02	0.0E+00
28	M-25	0	2	6.0E-02	ERR	6.0E-02	6.0E-02	6.0E-02	6.0E-02	6.0E-02	0.0E+00
29	M-29	0	2	6.0E-02	ERR	6.0E-02	6.0E-02	6.0E-02	6.0E-02	6.0E-02	0.0E+00
30	M-31	1	2	1.7E-01	1.7E-01	6.0E-02	1.0E-01	1.2E-01	4.6E-01	1.1E+02	1.7E-01
31	M-34	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
32	M-41	0	4	6.0E-02	ERR	6.0E-02	6.0E-02	6.0E-02	6.0E-02	6.0E-02	0.0E+00
33	RA-02	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
34	RA-03	2	2	1.8E-01	1.8E-01	1.4E-01	1.6E-01	1.6E-01	2.9E-01	2.9E-01	1.8E-01
35	RA-04	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
36	RA-05	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
37	RA-06	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
38	RA-07	1	2	1.4E-01	1.4E-01	6.0E-02	9.2E-02	1.0E-01	3.5E-01	1.2E+01	1.4E-01
39	RA-08	0	2	6.0E-02	ERR	6.0E-02	6.0E-02	6.0E-02	6.0E-02	6.0E-02	0.0E+00

DATA STATISTICS

DATE: 04/25/94
FILENAME: AS-SO2.WQ1

EXPOSURE POINT: Kennecott Gardens - Arsenic
MEDIUM: Soil
UNITS: mg/kg
U MULTIPLIER: 0.5

	HOUSEHOLD	EPC HITS	EPC TOTAL	MAX VALUE	MAX HIT	MIN VALUE	GEOM MEAN	ARITH MEAN	UCL95 NORM	UCL95 LOGNORM	EPC (LOGNORM)
1	BC-03	4	4	1.6E+01	1.6E+01	1.2E+01	1.4E+01	1.4E+01	1.6E+01	1.7E+01	1.6E+01
2	BC-04	5	5	2.2E+01	2.2E+01	1.5E+01	1.9E+01	1.9E+01	2.2E+01	2.3E+01	2.2E+01
3	BC-06	2	2	1.3E+01	1.3E+01	1.2E+01	1.2E+01	1.3E+01	1.4E+01	1.3E+01	1.3E+01
4	BC-07	2	2	1.7E+01	1.7E+01	1.7E+01	1.7E+01	1.7E+01	1.8E+01	1.7E+01	1.7E+01
5	BC-11	2	2	1.6E+01	1.6E+01	1.6E+01	1.6E+01	1.6E+01	1.8E+01	1.7E+01	1.6E+01
6	BC-14	2	2	4.1E+01	4.1E+01	3.5E+01	3.8E+01	3.8E+01	5.4E+01	4.9E+01	4.1E+01
7	BC-17	2	2	8.2E+00	8.2E+00	7.5E+00	7.8E+00	7.9E+00	1.0E+01	9.3E+00	8.2E+00
8	BC-19	2	2	7.5E+00	7.5E+00	7.4E+00	7.4E+00	7.5E+00	7.8E+00	7.6E+00	7.5E+00
9	BC-20	2	2	9.8E+00	9.8E+00	8.7E+00	9.2E+00	9.3E+00	1.3E+01	1.2E+01	9.8E+00
10	BC-23	2	2	2.1E+01	2.1E+01	2.1E+01	2.1E+01	2.1E+01	2.2E+01	2.2E+01	2.1E+01
11	BC-24	5	5	3.9E+01	3.9E+01	3.2E+01	3.5E+01	3.5E+01	3.8E+01	3.9E+01	3.9E+01
12	BC-31	2	2	1.8E+01	1.8E+01	1.7E+01	1.7E+01	1.8E+01	1.8E+01	1.8E+01	1.8E+01
13	BC-32	2	2	1.2E+01	1.2E+01	1.1E+01	1.2E+01	1.2E+01	1.6E+01	1.4E+01	1.2E+01
14	BC-34	2	2	2.9E+01	2.9E+01	2.5E+01	2.7E+01	2.7E+01	4.1E+01	3.7E+01	2.9E+01
15	BC-36	2	2	2.4E+01	2.4E+01	2.3E+01	2.3E+01	2.3E+01	2.7E+01	2.5E+01	2.4E+01
16	BC-37	10	10	6.7E+01	6.7E+01	4.5E+01	5.3E+01	5.3E+01	5.8E+01	5.8E+01	5.8E+01
17	BC-39	2	2	5.4E+01	5.4E+01	2.9E+01	4.0E+01	4.2E+01	1.2E+02	4.4E+02	5.4E+01
18	M-01	3	3	1.9E+01	1.9E+01	1.7E+01	1.8E+01	1.8E+01	2.0E+01	2.1E+01	1.9E+01
19	M-03	3	3	2.2E+01	2.2E+01	1.3E+01	1.7E+01	1.7E+01	2.5E+01	3.7E+01	2.2E+01
20	M-04	3	3	1.0E+01	1.0E+01	9.7E+00	1.0E+01	1.0E+01	1.1E+01	1.1E+01	1.0E+01
21	M-06	2	2	8.4E+00	8.4E+00	8.3E+00	8.3E+00	8.4E+00	8.7E+00	8.5E+00	8.4E+00
22	M-14	2	2	1.5E+01	1.5E+01	1.4E+01	1.4E+01	1.4E+01	1.8E+01	1.7E+01	1.5E+01
23	M-15	2	2	1.7E+01	1.7E+01	1.2E+01	1.4E+01	1.4E+01	2.9E+01	3.1E+01	1.7E+01
24	M-18	4	4	2.3E+01	2.3E+01	1.5E+01	1.8E+01	1.9E+01	2.4E+01	2.5E+01	2.3E+01
25	M-21	2	2	1.5E+01	1.5E+01	1.2E+01	1.4E+01	1.4E+01	2.4E+01	2.4E+01	1.5E+01
26	M-24	6	6	5.0E+00	5.0E+00	4.6E+00	4.7E+00	4.8E+00	4.9E+00	4.9E+00	4.9E+00
27	M-25	2	2	1.2E+01	1.2E+01	1.2E+01	1.2E+01	1.2E+01	1.4E+01	1.3E+01	1.2E+01
28	M-29	6	6	1.6E+01	1.6E+01	1.2E+01	1.4E+01	1.4E+01	1.5E+01	1.6E+01	1.6E+01
29	M-31	4	4	9.7E+00	9.7E+00	4.8E+00	7.3E+00	7.6E+00	1.0E+01	1.2E+01	9.7E+00
30	M-34	2	2	1.8E+01	1.8E+01	1.8E+01	1.8E+01	1.8E+01	1.8E+01	1.8E+01	1.8E+01
31	M-41	6	6	1.1E+01	1.1E+01	7.5E+00	8.9E+00	9.0E+00	1.0E+01	1.0E+01	1.0E+01
32	RA-02	2	2	6.6E+00	6.6E+00	6.3E+00	6.4E+00	6.5E+00	7.4E+00	7.1E+00	6.6E+00
33	RA-03	6	6	9.1E+00	9.1E+00	5.2E+00	6.5E+00	6.7E+00	7.8E+00	8.0E+00	8.0E+00
34	RA-04	2	2	1.4E+01	1.4E+01	7.7E+00	1.1E+01	1.1E+01	3.2E+01	1.2E+02	1.4E+01
35	RA-05	2	2	6.9E+00	6.9E+00	6.1E+00	6.5E+00	6.5E+00	9.0E+00	8.3E+00	6.9E+00
36	RA-06	2	2	8.0E+00	8.0E+00	5.9E+00	6.9E+00	7.0E+00	1.4E+01	1.4E+01	8.0E+00
37	RA-07	6	6	8.9E+00	8.9E+00	7.4E+00	8.3E+00	8.3E+00	8.7E+00	8.8E+00	8.8E+00
38	RA-08	6	6	9.0E+00	9.0E+00	4.9E+00	7.0E+00	7.2E+00	8.3E+00	8.7E+00	8.7E+00

DATA STATISTICS

DATE: 04/25/94
FILENAME: PB-BG2.WQ1

EXPOSURE POINT: Kennecott Gardens - Lead
MEDIUM: Beet Greens
UNITS: mg/kg dry wt.
U MULTIPLIER: 0.5

	HOUSEHOLD	EPC HITS	EPC TOTAL	MAX VALUE	MAX HIT	MIN VALUE	GEOM MEAN	ARITH MEAN	UCL95 NORM	UCL95 LOGNORM	EPC (LOGNORM)
1	BC-02	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
2	BC-03	2	2	1.7E+00	1.7E+00	9.0E-01	1.2E+00	1.3E+00	3.8E+00	1.4E+01	1.7E+00
3	BC-04	2	2	2.0E+00	2.0E+00	8.0E-01	1.3E+00	1.4E+00	5.2E+00	2.5E+02	2.0E+00
4	BC-06	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
5	BC-07	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
6	BC-11	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
7	BC-14	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
8	BC-17	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
9	BC-19	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
10	BC-20	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
11	BC-23	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
12	BC-24	2	2	1.6E+01	1.6E+01	9.6E+00	1.3E+01	1.3E+01	3.4E+01	9.5E+01	1.6E+01
13	BC-31	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
14	BC-32	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
15	BC-34	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
16	BC-36	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
17	BC-37	4	4	1.7E+01	1.7E+01	7.5E+00	1.0E+01	1.1E+01	1.6E+01	1.9E+01	1.7E+01
18	BC-39	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
19	M-01	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
20	M-03	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
21	M-04	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
22	M-06	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
23	M-14	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
24	M-15	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
25	M-18	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
26	M-21	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
27	M-24	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
28	M-25	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
29	M-29	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
30	M-31	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
31	M-34	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
32	M-41	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
33	RA-02	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
34	RA-03	2	2	2.8E+00	2.8E+00	4.2E-01	1.1E+00	1.6E+00	9.1E+00	8.7E+09	2.8E+00
35	RA-04	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
36	RA-05	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
37	RA-06	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
38	RA-07	2	2	2.5E-01	2.5E-01	1.8E-01	2.1E-01	2.2E-01	4.4E-01	4.7E-01	2.5E-01
39	RA-08	2	2	2.5E+00	2.5E+00	6.3E-01	1.3E+00	1.6E+00	7.5E+00	6.7E+05	2.5E+00

DATA STATISTICS

DATE: 04/25/94

EXPOSURE POINT: Kennecott Gardens - Lead
MEDIUM: Tomato and Zucchini
UNITS: mg/kg dry wt.
U MULTIPLIER: 0.5

FILENAME: PB-TZ2.WQ1

	HOUSEHOLD	EPC HITS	EPC TOTAL	MAX VALUE	MAX HIT	MIN VALUE	GEOM MEAN	ARITH MEAN	UCL95 NORM	UCL95 LOGNORM	EPC (LOGNORM)
1	BC-02	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
2	BC-03	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
3	BC-04	2	2	4.2E-01	4.2E-01	3.7E-01	3.9E-01	4.0E-01	5.5E-01	5.1E-01	4.2E-01
4	BC-06	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
5	BC-07	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
6	BC-11	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
7	BC-14	2	2	3.7E-01	3.7E-01	1.2E-01	2.1E-01	2.5E-01	1.0E+00	1.2E+03	3.7E-01
8	BC-17	2	2	1.6E-01	1.6E-01	1.2E-01	1.4E-01	1.4E-01	2.7E-01	2.8E-01	1.6E-01
9	BC-19	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
10	BC-20	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
11	BC-23	2	2	1.8E-01	1.8E-01	1.7E-01	1.7E-01	1.8E-01	2.1E-01	2.0E-01	1.8E-01
12	BC-24	2	2	3.5E-01	3.5E-01	2.3E-01	2.8E-01	2.9E-01	6.7E-01	1.0E+00	3.5E-01
13	BC-31	2	2	4.4E-01	4.4E-01	4.3E-01	4.3E-01	4.4E-01	4.7E-01	4.5E-01	4.4E-01
14	BC-32	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
15	BC-34	2	2	2.1E-01	2.1E-01	2.0E-01	2.0E-01	2.1E-01	2.4E-01	2.3E-01	2.1E-01
16	BC-36	2	2	3.4E-01	3.4E-01	1.8E-01	2.5E-01	2.6E-01	7.6E-01	2.9E+00	3.4E-01
17	BC-37	2	2	5.2E-01	5.2E-01	3.8E-01	4.4E-01	4.5E-01	8.9E-01	9.5E-01	5.2E-01
18	BC-39	2	2	1.6E-01	1.6E-01	1.2E-01	1.4E-01	1.4E-01	2.7E-01	2.8E-01	1.6E-01
19	M-01	2	3	2.1E-01	2.1E-01	6.0E-02	1.4E-01	1.6E-01	3.0E-01	1.7E+01	2.1E-01
20	M-03	1	3	1.8E-01	1.8E-01	6.0E-02	8.7E-02	1.0E-01	2.2E-01	3.5E+00	1.8E-01
21	M-04	3	3	4.6E-01	4.6E-01	1.2E-01	2.1E-01	2.5E-01	5.6E-01	2.3E+01	4.6E-01
22	M-06	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
23	M-14	2	2	2.0E-01	2.0E-01	1.6E-01	1.8E-01	1.8E-01	3.1E-01	3.0E-01	2.0E-01
24	M-15	1	2	1.2E-01	1.2E-01	6.0E-02	8.5E-02	9.0E-02	2.8E-01	2.3E+00	1.2E-01
25	M-18	4	4	7.0E-01	7.0E-01	2.2E-01	3.7E-01	4.1E-01	6.6E-01	1.0E+00	7.0E-01
26	M-21	2	2	2.6E-01	2.6E-01	2.2E-01	2.4E-01	2.4E-01	3.7E-01	3.3E-01	2.6E-01
27	M-24	2	4	2.2E-01	2.2E-01	6.0E-02	1.0E-01	1.2E-01	2.1E-01	5.2E-01	2.2E-01
28	M-25	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
29	M-29	3	4	2.3E-01	2.3E-01	6.0E-02	1.3E-01	1.5E-01	2.4E-01	4.8E-01	2.3E-01
30	M-31	2	2	2.0E-01	2.0E-01	1.7E-01	1.8E-01	1.9E-01	2.8E-01	2.5E-01	2.0E-01
31	M-34	2	2	3.2E-01	3.2E-01	1.2E-01	2.0E-01	2.2E-01	8.5E-01	1.4E+02	3.2E-01
32	M-41	0	2	6.0E-02	ERR	6.0E-02	6.0E-02	6.0E-02	6.0E-02	6.0E-02	0.0E+00
33	RA-02	2	2	2.8E-01	2.8E-01	1.5E-01	2.0E-01	2.2E-01	6.3E-01	2.3E+00	2.8E-01
34	RA-03	2	2	2.5E-01	2.5E-01	1.4E-01	1.9E-01	2.0E-01	5.4E-01	1.7E+00	2.5E-01
35	RA-04	2	2	4.0E-01	4.0E-01	1.9E-01	2.8E-01	3.0E-01	9.6E-01	9.7E+00	4.0E-01
36	RA-05	2	2	2.1E-01	2.1E-01	1.4E-01	1.7E-01	1.8E-01	4.0E-01	5.8E-01	2.1E-01
37	RA-06	2	2	2.7E-01	2.7E-01	2.1E-01	2.4E-01	2.4E-01	4.3E-01	4.3E-01	2.7E-01
38	RA-07	1	2	2.0E-01	2.0E-01	6.0E-02	1.1E-01	1.3E-01	5.7E-01	3.4E+03	2.0E-01
39	RA-08	1	2	1.9E-01	1.9E-01	6.0E-02	1.1E-01	1.3E-01	5.4E-01	7.3E+02	1.9E-01

DATA STATISTICS

DATE: 04/25/94

EXPOSURE POINT: Kennecott Gardens - Lead
MEDIUM: Carrots
UNITS: mg/kg dry wt.
U MULTIPLIER: 0.5
FILENAME: PB-C2.WQ1

	HOUSEHOLD	EPC HITS	EPC TOTAL	MAX VALUE	MAX HIT	MIN VALUE	GEOM MEAN	ARITH MEAN	UCL95 NORM	UCL95 LOGNORM	EPC (LOGNORM)
1	BC-02	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
2	BC-03	2	2	4.7E-01	4.7E-01	4.5E-01	4.6E-01	4.6E-01	5.2E-01	5.0E-01	4.7E-01
3	BC-04	2	2	7.1E-01	7.1E-01	5.8E-01	6.4E-01	6.5E-01	1.1E+00	9.6E-01	7.1E-01
4	BC-06	2	2	1.1E+00	1.1E+00	1.0E+00	1.0E+00	1.1E+00	1.4E+00	1.3E+00	1.1E+00
5	BC-07	2	2	8.0E-01	8.0E-01	7.9E-01	7.9E-01	8.0E-01	8.3E-01	8.1E-01	8.0E-01
6	BC-11	2	2	5.3E-01	5.3E-01	2.9E-01	3.9E-01	4.1E-01	1.2E+00	4.0E+00	5.3E-01
7	BC-14	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
8	BC-17	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
9	BC-19	2	2	5.8E-01	5.8E-01	4.8E-01	5.3E-01	5.3E-01	8.5E-01	7.7E-01	5.8E-01
10	BC-20	2	2	8.6E-01	8.6E-01	7.2E-01	7.9E-01	7.9E-01	1.2E+00	1.1E+00	8.6E-01
11	BC-23	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
12	BC-24	1	1	4.4E+00	4.4E+00	4.4E+00	4.4E+00	4.4E+00	ERR	ERR	4.4E+00
13	BC-31	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
14	BC-32	2	2	5.0E-01	5.0E-01	4.0E-01	4.5E-01	4.5E-01	7.7E-01	7.6E-01	5.0E-01
15	BC-34	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
16	BC-36	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
17	BC-37	4	4	1.1E+01	1.1E+01	4.0E+00	7.1E+00	7.7E+00	1.1E+01	1.7E+01	1.1E+01
18	BC-39	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
19	M-01	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
20	M-03	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
21	M-04	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
22	M-06	2	2	3.8E-01	3.8E-01	3.6E-01	3.7E-01	3.7E-01	4.3E-01	4.1E-01	3.8E-01
23	M-14	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
24	M-15	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
25	M-18	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
26	M-21	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
27	M-24	2	2	1.6E-01	1.6E-01	1.3E-01	1.4E-01	1.5E-01	2.4E-01	2.2E-01	1.6E-01
28	M-25	2	2	2.8E-01	2.8E-01	2.4E-01	2.6E-01	2.6E-01	3.9E-01	3.5E-01	2.8E-01
29	M-29	2	2	8.6E-01	8.6E-01	6.8E-01	7.6E-01	7.7E-01	1.3E+00	1.3E+00	8.6E-01
30	M-31	2	2	2.6E-01	2.6E-01	2.0E-01	2.3E-01	2.3E-01	4.2E-01	4.3E-01	2.6E-01
31	M-34	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
32	M-41	4	4	6.2E-01	6.2E-01	3.8E-01	4.7E-01	4.8E-01	6.0E-01	6.3E-01	6.2E-01
33	RA-02	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
34	RA-03	2	2	2.8E-01	2.8E-01	2.7E-01	2.7E-01	2.8E-01	3.1E-01	3.0E-01	2.8E-01
35	RA-04	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
36	RA-05	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
37	RA-06	0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.0E+00
38	RA-07	2	2	1.9E-01	1.9E-01	1.8E-01	1.8E-01	1.9E-01	2.2E-01	2.1E-01	1.9E-01
39	RA-08	2	2	7.7E-01	7.7E-01	2.3E-01	4.2E-01	5.0E-01	2.2E+00	1.4E+04	7.7E-01

DATA STATISTICS

DATE: 04/25/94

EXPOSURE POINT: Kennecott Gardens - Lead
MEDIUM: Soil
UNITS: mg/kg
U MULTIPLIER: 0.5

FILENAME: PB-SO2.WQ1

	HOUSEHOLD	EPC HITS	EPC TOTAL	MAX VALUE	MAX HIT	MIN VALUE	GEOM MEAN	ARITH MEAN	UCL95 NORM	UCL95 LOGNORM	EPC (LOGNORM)
1	BC-03	4	4	1.9E+02	1.9E+02	1.8E+02	1.8E+02	1.8E+02	1.9E+02	1.9E+02	1.9E+02
2	BC-04	6	6	2.8E+02	2.8E+02	1.9E+02	2.3E+02	2.3E+02	2.6E+02	2.6E+02	2.6E+02
3	BC-06	2	2	1.7E+02	1.7E+02	1.6E+02	1.6E+02	1.6E+02	2.1E+02	1.9E+02	1.7E+02
4	BC-07	2	2	2.0E+02	2.0E+02	1.8E+02	1.9E+02	1.9E+02	2.3E+02	2.2E+02	2.0E+02
5	BC-11	2	2	2.1E+02	2.1E+02	1.7E+02	1.9E+02	1.9E+02	2.9E+02	2.7E+02	2.1E+02
6	BC-14	2	2	1.4E+03	1.4E+03	1.3E+03	1.3E+03	1.3E+03	1.6E+03	1.5E+03	1.4E+03
7	BC-17	2	2	6.8E+01	6.8E+01	4.0E+01	5.2E+01	5.4E+01	1.4E+02	4.1E+02	6.8E+01
8	BC-19	2	2	1.2E+02	1.2E+02	9.7E+01	1.1E+02	1.1E+02	1.8E+02	1.6E+02	1.2E+02
9	BC-20	2	2	1.3E+02	1.3E+02	1.3E+02	1.3E+02	1.3E+02	1.4E+02	1.4E+02	1.3E+02
10	BC-23	2	2	2.6E+02	2.6E+02	2.2E+02	2.3E+02	2.4E+02	3.6E+02	3.3E+02	2.6E+02
11	BC-24	5	5	1.0E+03	1.0E+03	7.4E+02	9.1E+02	9.1E+02	1.0E+03	1.0E+03	1.0E+03
12	BC-31	2	2	4.9E+02	4.9E+02	4.6E+02	4.7E+02	4.7E+02	5.9E+02	5.5E+02	4.9E+02
13	BC-32	2	2	5.8E+01	5.8E+01	5.2E+01	5.4E+01	5.5E+01	7.4E+01	6.8E+01	5.8E+01
14	BC-34	2	2	3.8E+02	3.8E+02	2.7E+02	3.2E+02	3.3E+02	6.6E+02	7.1E+02	3.8E+02
15	BC-36	2	2	1.9E+02	1.9E+02	1.9E+02	1.9E+02	1.9E+02	1.9E+02	1.9E+02	1.9E+02
16	BC-37	10	10	4.1E+03	4.1E+03	1.6E+03	2.0E+03	2.1E+03	2.5E+03	2.5E+03	2.5E+03
17	BC-39	2	2	2.1E+03	2.1E+03	1.0E+03	1.4E+03	1.5E+03	4.9E+03	4.4E+04	2.1E+03
18	M-01	3	3	1.8E+02	1.8E+02	1.4E+02	1.6E+02	1.7E+02	2.1E+02	2.4E+02	1.8E+02
19	M-03	3	3	3.3E+02	3.3E+02	1.4E+02	2.2E+02	2.3E+02	3.9E+02	1.1E+03	3.3E+02
20	M-04	3	3	1.6E+02	1.6E+02	1.1E+02	1.4E+02	1.4E+02	1.9E+02	2.3E+02	1.6E+02
21	M-06	2	2	3.7E+01	3.7E+01	3.3E+01	3.5E+01	3.5E+01	4.7E+01	4.3E+01	3.7E+01
22	M-14	2	2	6.3E+02	6.3E+02	5.0E+02	5.6E+02	5.7E+02	9.7E+02	9.6E+02	6.3E+02
23	M-15	2	2	6.3E+02	6.3E+02	2.6E+02	4.0E+02	4.5E+02	1.6E+03	6.5E+04	6.3E+02
24	M-18	4	4	1.4E+03	1.4E+03	1.8E+02	4.0E+02	5.6E+02	1.2E+03	6.3E+03	1.4E+03
25	M-21	2	2	1.2E+02	1.2E+02	1.0E+02	1.1E+02	1.1E+02	1.7E+02	1.5E+02	1.2E+02
26	M-24	6	6	2.0E+01	2.0E+01	1.5E+01	1.8E+01	1.8E+01	1.9E+01	1.9E+01	1.9E+01
27	M-25	2	2	5.6E+01	5.6E+01	5.4E+01	5.5E+01	5.5E+01	6.2E+01	5.9E+01	5.6E+01
28	M-29	6	6	1.9E+02	1.9E+02	1.4E+02	1.5E+02	1.5E+02	1.7E+02	1.7E+02	1.7E+02
29	M-31	4	4	6.2E+01	6.2E+01	1.8E+01	3.7E+01	4.2E+01	6.9E+01	1.4E+02	6.2E+01
30	M-34	2	2	2.2E+02	2.2E+02	2.0E+02	2.1E+02	2.1E+02	2.5E+02	2.4E+02	2.2E+02
31	M-41	6	6	7.5E+01	7.5E+01	5.9E+01	6.5E+01	6.6E+01	7.0E+01	7.1E+01	7.1E+01
32	RA-02	2	2	2.4E+01	2.4E+01	2.3E+01	2.3E+01	2.3E+01	2.8E+01	2.7E+01	2.4E+01
33	RA-03	6	6	6.8E+01	6.8E+01	1.7E+01	3.5E+01	3.9E+01	5.7E+01	7.9E+01	6.8E+01
34	RA-04	2	2	2.3E+01	2.3E+01	2.3E+01	2.3E+01	2.3E+01	2.4E+01	2.4E+01	2.3E+01
35	RA-05	2	2	4.6E+01	4.6E+01	2.9E+01	3.6E+01	3.7E+01	9.1E+01	1.5E+02	4.6E+01
36	RA-06	2	2	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.3E+01	3.3E+01	3.2E+01
37	RA-07	6	6	2.9E+01	2.9E+01	2.1E+01	2.5E+01	2.5E+01	2.8E+01	2.8E+01	2.8E+01
38	RA-08	6	6	4.3E+01	4.3E+01	1.4E+01	2.3E+01	2.4E+01	3.3E+01	3.7E+01	3.7E+01

TABLE B-9 CALCULATION OF ARSENIC CONCENTRATIONS IN GARDEN VEGETABLES

ARSENIC CONCENTRATION DATA

	Beet Greens	Tomato/Zucchini	Carrots
BC Slope	5.80E-03	0.00E+00	3.70E-03
BC Intercept	2.70E-02	6.00E-02	4.70E-02
M Slope	5.80E-03	0.00E+00	3.70E-03
M Intercept	2.70E-02	6.00E-02	4.70E-02
RA Slope	5.80E-03	0.00E+00	3.70E-03
RA Intercept	2.70E-02	6.00E-02	4.70E-02

Household	From Garden Vegetable Data			From Garden Soil Data			
	Beet Greens Conc., mg/kg dry wt.	Tomato/Zucchini Conc., mg/kg dry wt.	Carrots Conc., mg/kg dry wt.	Soil Conc., mg/kg	Beet Greens Conc., mg/kg dry wt.	Tomato/Zucchini Conc., mg/kg dry wt.	Carrots Conc., mg/kg dry wt.
BC-02							
BC-03	1.20E-01		6.00E-02	1.59E+01	1.19E-01	6.00E-02	1.06E-01
BC-04	1.40E-01	3.00E-02	1.70E-01	2.23E+01	1.56E-01	6.00E-02	1.30E-01
BC-06			1.70E-01	1.27E+01	1.01E-01	6.00E-02	9.40E-02
BC-07			6.00E-02	1.70E+01	1.26E-01	6.00E-02	1.10E-01
BC-11			6.00E-02	1.64E+01	1.22E-01	6.00E-02	1.08E-01
BC-14		6.00E-02		4.05E+01	2.62E-01	6.00E-02	1.97E-01
BC-17		6.00E-02		8.20E+00	7.46E-02	6.00E-02	7.73E-02
BC-19			1.50E-01	7.50E+00	7.05E-02	6.00E-02	7.48E-02
BC-20			6.00E-02	9.80E+00	8.38E-02	6.00E-02	8.33E-02
BC-23		6.00E-02		2.10E+01	1.49E-01	6.00E-02	1.25E-01
BC-24	3.40E-01	6.00E-02	6.00E-02	3.89E+01	2.52E-01	6.00E-02	1.91E-01
BC-31		6.00E-02		1.76E+01	1.29E-01	6.00E-02	1.12E-01
BC-32			1.80E-01	1.24E+01	9.89E-02	6.00E-02	9.29E-02
BC-34		6.00E-02		2.89E+01	1.95E-01	6.00E-02	1.54E-01
BC-36		6.00E-02		2.36E+01	1.64E-01	6.00E-02	1.34E-01
BC-37	4.80E-01	6.50E-02	5.80E-01	5.79E+01	3.63E-01	6.00E-02	2.61E-01
BC-39		6.00E-02		5.44E+01	3.43E-01	6.00E-02	2.48E-01
M-01		6.00E-02		1.94E+01	1.40E-01	6.00E-02	1.19E-01
M-03		6.00E-02		2.24E+01	1.57E-01	6.00E-02	1.30E-01
M-04		3.00E-02		1.04E+01	8.73E-02	6.00E-02	8.55E-02
M-06			2.20E-01	8.40E+00	7.57E-02	6.00E-02	7.81E-02
M-14		6.00E-02		1.49E+01	1.13E-01	6.00E-02	1.02E-01
M-15		6.00E-02		1.67E+01	1.24E-01	6.00E-02	1.09E-01
M-18		6.00E-02		2.32E+01	1.62E-01	6.00E-02	1.33E-01
M-21		6.00E-02		1.53E+01	1.16E-01	6.00E-02	1.04E-01
M-24		5.00E-01	6.00E-02	4.87E+00	5.52E-02	6.00E-02	6.50E-02
M-25			6.00E-02	1.22E+01	9.78E-02	6.00E-02	9.21E-02
M-29		6.00E-02	6.00E-02	1.56E+01	1.17E-01	6.00E-02	1.05E-01
M-31		6.00E-02	1.70E-01	9.70E+00	8.33E-02	6.00E-02	8.29E-02
M-34		6.00E-02		1.76E+01	1.29E-01	6.00E-02	1.12E-01
M-41		6.00E-02	6.00E-02	1.02E+01	8.59E-02	6.00E-02	8.46E-02
RA-02		1.40E-01		6.60E+00	6.53E-02	6.00E-02	7.14E-02
RA-03	3.60E-01	6.00E-02	1.80E-01	8.03E+00	7.36E-02	6.00E-02	7.67E-02
RA-04		6.00E-02		1.44E+01	1.11E-01	6.00E-02	1.00E-01
RA-05		6.00E-02		6.90E+00	6.70E-02	6.00E-02	7.25E-02
RA-06		6.00E-02		8.00E+00	7.34E-02	6.00E-02	7.66E-02
RA-07	2.30E-01	6.00E-02	1.40E-01	8.76E+00	7.78E-02	6.00E-02	7.94E-02
RA-08	2.40E-01	6.00E-02	6.00E-02	8.69E+00	7.74E-02	6.00E-02	7.91E-02

TABLE B-10 CALCULATION OF LEAD CONCENTRATIONS IN GARDEN VEGETABLES

LEAD CONCENTRATION DATA

	Beet Greens	Tomato/Zucchini	Carrots
BC Slope	6.80E-03	1.70E-04	4.30E-03
BC Intercept	1.27E+00	2.34E-01	6.60E-02
M Slope	6.80E-03	3.40E-04	4.60E-03
M Intercept	1.27E+00	1.72E-01	1.14E-01
RA Slope	1.30E-02	1.70E-04	5.70E-03
RA Intercept	7.57E-01	2.34E-01	1.24E-01

Household	From Garden Vegetable Data			Soil	From Garden Soil Data		
	Beet Greens Conc., mg/kg dry wt.	Tomato/Zucchini Conc., mg/kg dry wt.	Carrots Conc., mg/kg dry wt.	Conc., mg/kg	Beet Greens Conc., mg/kg dry wt.	Tomato/Zucchini Conc., mg/kg dry wt.	Carrots Conc., mg/kg dry wt.
BC-02							
BC-03	1.30E+00		4.60E-01	1.82E+02	2.51E+00	2.65E-01	8.50E-01
BC-04	1.40E+00	3.95E-01	6.45E-01	2.28E+02	2.82E+00	2.73E-01	1.05E+00
BC-06			1.05E+00	1.62E+02	2.37E+00	2.62E-01	7.63E-01
BC-07			7.95E-01	1.89E+02	2.56E+00	2.66E-01	8.79E-01
BC-11			4.10E-01	1.91E+02	2.57E+00	2.66E-01	8.85E-01
BC-14		2.45E-01		1.31E+03	1.02E+01	4.57E-01	5.70E+00
BC-17		1.40E-01		5.39E+01	1.64E+00	2.43E-01	2.98E-01
BC-19			5.30E-01	1.09E+02	2.01E+00	2.52E-01	5.33E-01
BC-20			7.90E-01	1.33E+02	2.18E+00	2.57E-01	6.38E-01
BC-23		1.75E-01		2.36E+02	2.87E+00	2.74E-01	1.08E+00
BC-24	1.30E+01	2.90E-01	4.40E+00	9.12E+02	7.47E+00	3.89E-01	3.99E+00
BC-31		4.35E-01		4.74E+02	4.50E+00	3.15E-01	2.10E+00
BC-32			4.50E-01	5.46E+01	1.64E+00	2.43E-01	3.01E-01
BC-34		2.05E-01		3.25E+02	3.48E+00	2.89E-01	1.46E+00
BC-36		2.60E-01		1.88E+02	2.55E+00	2.66E-01	8.74E-01
BC-37	1.06E+01	4.50E-01	7.65E+00	2.05E+03	1.52E+01	5.83E-01	8.90E+00
BC-39		1.40E-01		1.54E+03	1.17E+01	4.96E-01	6.69E+00
M-01		1.57E-01		1.65E+02	2.40E+00	2.28E-01	8.73E-01
M-03		1.00E-01		2.30E+02	2.83E+00	2.50E-01	1.17E+00
M-04		2.53E-01		1.40E+02	2.23E+00	2.20E-01	7.58E-01
M-06			3.70E-01	3.51E+01	1.51E+00	1.84E-01	2.75E-01
M-14		1.80E-01		5.68E+02	5.13E+00	3.65E-01	2.72E+00
M-15		9.00E-02		4.45E+02	4.30E+00	3.23E-01	2.16E+00
M-18		4.10E-01		5.59E+02	5.07E+00	3.62E-01	2.69E+00
M-21		2.40E-01		1.12E+02	2.03E+00	2.10E-01	6.29E-01
M-24		1.23E-01	1.45E-01	1.77E+01	1.39E+00	1.78E-01	1.95E-01
M-25			2.60E-01	5.53E+01	1.65E+00	1.91E-01	3.68E-01
M-29		1.50E-01	7.70E-01	1.54E+02	2.32E+00	2.24E-01	8.23E-01
M-31		1.85E-01	2.30E-01	4.21E+01	1.56E+00	1.86E-01	3.08E-01
M-34		2.20E-01		2.11E+02	2.70E+00	2.44E-01	1.08E+00
M-41		6.00E-02	4.83E-01	6.56E+01	1.72E+00	1.94E-01	4.16E-01
RA-02		2.15E-01		2.34E+01	1.06E+00	2.38E-01	2.57E-01
RA-03	1.61E+00	1.95E-01	2.75E-01	3.93E+01	1.27E+00	2.41E-01	3.48E-01
RA-04		2.95E-01		2.28E+01	1.05E+00	2.38E-01	2.54E-01
RA-05		1.75E-01		3.71E+01	1.24E+00	2.40E-01	3.35E-01
RA-06		2.40E-01		3.22E+01	1.17E+00	2.39E-01	3.07E-01
RA-07	2.15E-01	1.30E-01	1.85E-01	2.53E+01	1.09E+00	2.38E-01	2.68E-01
RA-08	1.57E+00	1.25E-01	5.00E-01	2.44E+01	1.07E+00	2.38E-01	2.63E-01

TABLE B-11 WET WEIGHT TO DRY WEIGHT CONVERSION OF ARSENIC CONCENTRATIONS IN GARDEN VEGETABLES

ARSENIC CONCENTRATION DATA

Dry wt. -> Wet wt. Conversion Factors

Leafy Vegetables =	0.05
Root Vegetables =	0.12
Garden Fruits =	0.06

Household	Garden Vegetable Concentrations						Garden Vegetable Concentrations					
	Beet Greens Conc., mg/kg dry wt.		Tomato/Zucchini Conc., mg/kg dry wt.		Carrots Conc., mg/kg dry wt.		Beet Greens Conc., mg/kg wet wt.		Tomato/Zucchini Conc., mg/kg wet wt.		Carrots Conc., mg/kg wet wt.	
BC-03	1.20E-01	V	6.00E-02		6.00E-02	V	6.00E-03	V	3.60E-03		7.20E-03	V
BC-04	1.40E-01	V	3.00E-02	V	1.70E-01	V	7.00E-03	V	1.80E-03	V	2.04E-02	V
BC-06	1.01E-01		6.00E-02		1.70E-01	V	5.03E-03		3.60E-03		2.04E-02	V
BC-07	1.26E-01		6.00E-02		6.00E-02	V	6.28E-03		3.60E-03		7.20E-03	V
BC-11	1.22E-01		6.00E-02		6.00E-02	V	6.11E-03		3.60E-03		7.20E-03	V
BC-14	2.62E-01		6.00E-02	V	1.97E-01		1.31E-02		3.60E-03	V	2.36E-02	
BC-17	7.46E-02		6.00E-02	V	7.73E-02		3.73E-03		3.60E-03	V	9.28E-03	
BC-19	7.05E-02		6.00E-02		1.50E-01	V	3.53E-03		3.60E-03		1.80E-02	V
BC-20	8.38E-02		6.00E-02		6.00E-02	V	4.19E-03		3.60E-03		7.20E-03	V
BC-23	1.49E-01		6.00E-02	V	1.25E-01		7.44E-03		3.60E-03	V	1.50E-02	
BC-24	3.40E-01	V	6.00E-02	V	6.00E-02	V	1.70E-02	V	3.60E-03	V	7.20E-03	V
BC-31	1.29E-01		6.00E-02	V	1.12E-01		6.45E-03		3.60E-03	V	1.35E-02	
BC-32	9.89E-02		6.00E-02		1.80E-01	V	4.95E-03		3.60E-03		2.16E-02	V
BC-34	1.95E-01		6.00E-02	V	1.54E-01		9.73E-03		3.60E-03	V	1.85E-02	
BC-36	1.64E-01		6.00E-02	V	1.34E-01		8.19E-03		3.60E-03	V	1.61E-02	
BC-37	4.80E-01	V	6.50E-02	V	5.80E-01	V	2.40E-02	V	3.90E-03	V	6.96E-02	V
BC-39	3.43E-01		6.00E-02	V	2.48E-01		1.71E-02		3.60E-03	V	2.98E-02	
M-01	1.40E-01		6.00E-02	V	1.19E-01		6.98E-03		3.60E-03	V	1.43E-02	
M-03	1.57E-01		6.00E-02	V	1.30E-01		7.85E-03		3.60E-03	V	1.56E-02	
M-04	8.73E-02		3.00E-02	V	8.55E-02		4.37E-03		1.80E-03	V	1.03E-02	
M-06	7.57E-02		6.00E-02		2.20E-01	V	3.79E-03		3.60E-03		2.64E-02	V
M-14	1.13E-01		6.00E-02	V	1.02E-01		5.67E-03		3.60E-03	V	1.23E-02	
M-15	1.24E-01		6.00E-02	V	1.09E-01		6.19E-03		3.60E-03	V	1.31E-02	
M-18	1.62E-01		6.00E-02	V	1.33E-01		8.08E-03		3.60E-03	V	1.59E-02	
M-21	1.16E-01		6.00E-02	V	1.04E-01		5.79E-03		3.60E-03	V	1.24E-02	
M-24	5.52E-02		5.00E-01	V	6.00E-02	V	2.76E-03		3.00E-02	V	7.20E-03	V
M-25	9.78E-02		6.00E-02		6.00E-02	V	4.89E-03		3.60E-03		7.20E-03	V
M-29	1.17E-01		6.00E-02	V	6.00E-02	V	5.87E-03		3.60E-03	V	7.20E-03	V
M-31	8.33E-02		6.00E-02	V	1.70E-01	V	4.16E-03		3.60E-03	V	2.04E-02	V
M-34	1.29E-01		6.00E-02	V	1.12E-01		6.45E-03		3.60E-03	V	1.35E-02	
M-41	8.59E-02		6.00E-02	V	6.00E-02	V	4.30E-03		3.60E-03	V	7.20E-03	V
RA-02	6.53E-02		1.40E-01	V	7.14E-02		3.26E-03		8.40E-03	V	8.57E-03	
RA-03	3.60E-01	V	6.00E-02	V	1.80E-01	V	1.80E-02	V	3.60E-03	V	2.16E-02	V
RA-04	1.11E-01		6.00E-02	V	1.00E-01		5.53E-03		3.60E-03	V	1.20E-02	
RA-05	6.70E-02		6.00E-02	V	7.25E-02		3.35E-03		3.60E-03	V	8.70E-03	
RA-06	7.34E-02		6.00E-02	V	7.66E-02		3.67E-03		3.60E-03	V	9.19E-03	
RA-07	2.30E-01	V	6.00E-02	V	1.40E-01	V	1.15E-02	V	3.60E-03	V	1.68E-02	V
RA-08	2.40E-01	V	6.00E-02	V	6.00E-02	V	1.20E-02	V	3.60E-03	V	7.20E-03	V

TABLE B-12 WET WEIGHT TO DRY WEIGHT CONVERSION OF LEAD CONCENTRATIONS IN GARDEN VEGETABLES

LEAD CONCENTRATION DATA

Dry wt. -> Wet wt. Conversion Factors

Leafy Vegetables	=	0.05
Root Vegetables	=	0.12
Garden Fruits	=	0.06

Household	Garden Vegetable Concentrations						Garden Vegetable Concentrations					
	Beet Greens Conc., mg/kg dry wt.		Tomato/Zucchini Conc., mg/kg dry wt.		Carrots Conc., mg/kg dry wt.		Beet Greens Conc., mg/kg wet wt.		Tomato/Zucchini Conc., mg/kg wet wt.		Carrots Conc., mg/kg wet wt.	
BC-03	1.30E+00	V	2.65E-01		4.60E-01	V	6.50E-02	V	1.59E-02		5.52E-02	V
BC-04	1.40E+00	V	3.95E-01	V	6.45E-01	V	7.00E-02	V	2.37E-02	V	7.74E-02	V
BC-06	2.37E+00		2.62E-01		1.05E+00	V	1.19E-01		1.57E-02		1.26E-01	V
BC-07	2.56E+00		2.66E-01		7.95E-01	V	1.28E-01		1.60E-02		9.54E-02	V
BC-11	2.57E+00		2.66E-01		4.10E-01	V	1.28E-01		1.60E-02		4.92E-02	V
BC-14	1.02E+01		2.45E-01	V	5.70E+00		5.09E-01		1.47E-02	V	6.84E-01	
BC-17	1.64E+00		1.40E-01	V	2.98E-01		8.20E-02		8.40E-03	V	3.57E-02	
BC-19	2.01E+00		2.52E-01		5.30E-01	V	1.01E-01		1.51E-02		6.36E-02	V
BC-20	2.18E+00		2.57E-01		7.90E-01	V	1.09E-01		1.54E-02		9.48E-02	V
BC-23	2.87E+00		1.75E-01	V	1.08E+00		1.44E-01		1.05E-02	V	1.29E-01	
BC-24	1.30E+01	V	2.90E-01	V	4.40E+00	V	6.48E-01	V	1.74E-02	V	5.28E-01	V
BC-31	4.50E+00		4.35E-01	V	2.10E+00		2.25E-01		2.61E-02	V	2.53E-01	
BC-32	1.64E+00		2.43E-01		4.50E-01	V	8.22E-02		1.46E-02		5.40E-02	V
BC-34	3.48E+00		2.05E-01	V	1.46E+00		1.74E-01		1.23E-02	V	1.76E-01	
BC-36	2.55E+00		2.60E-01	V	8.74E-01		1.28E-01		1.56E-02	V	1.05E-01	
BC-37	1.06E+01	V	4.50E-01	V	7.65E+00	V	5.29E-01	V	2.70E-02	V	9.18E-01	V
BC-39	1.17E+01		1.40E-01	V	6.69E+00		5.87E-01		8.40E-03	V	8.03E-01	
M-01	2.40E+00		1.57E-01	V	8.73E-01		1.20E-01		9.40E-03	V	1.05E-01	
M-03	2.83E+00		1.00E-01	V	1.17E+00		1.42E-01		6.00E-03	V	1.40E-01	
M-04	2.23E+00		2.53E-01	V	7.58E-01		1.11E-01		1.52E-02	V	9.10E-02	
M-06	1.51E+00		1.84E-01		3.70E-01	V	7.56E-02		1.10E-02		4.44E-02	V
M-14	5.13E+00		1.80E-01	V	2.72E+00		2.57E-01		1.08E-02	V	3.27E-01	
M-15	4.30E+00		9.00E-02	V	2.16E+00		2.15E-01		5.40E-03	V	2.59E-01	
M-18	5.07E+00		4.10E-01	V	2.69E+00		2.54E-01		2.46E-02	V	3.22E-01	
M-21	2.03E+00		2.40E-01	V	6.29E-01		1.02E-01		1.44E-02	V	7.55E-02	
M-24	1.39E+00		1.23E-01	V	1.45E-01	V	6.97E-02		7.35E-03	V	1.74E-02	V
M-25	1.65E+00		1.91E-01		2.60E-01	V	8.24E-02		1.14E-02		3.12E-02	V
M-29	2.32E+00		1.50E-01	V	7.70E-01	V	1.16E-01		9.00E-03	V	9.24E-02	V
M-31	1.56E+00		1.85E-01	V	2.30E-01	V	7.80E-02		1.11E-02	V	2.76E-02	V
M-34	2.70E+00		2.20E-01	V	1.08E+00		1.35E-01		1.32E-02	V	1.30E-01	
M-41	1.72E+00		6.00E-02	V	4.83E-01	V	8.60E-02		3.60E-03	V	5.79E-02	V
RA-02	1.06E+00		2.15E-01	V	2.57E-01		5.31E-02		1.29E-02	V	3.09E-02	
RA-03	1.61E+00	V	1.95E-01	V	2.75E-01	V	8.05E-02	V	1.17E-02	V	3.30E-02	V
RA-04	1.05E+00		2.95E-01	V	2.54E-01		5.27E-02		1.77E-02	V	3.05E-02	
RA-05	1.24E+00		1.75E-01	V	3.35E-01		6.19E-02		1.05E-02	V	4.02E-02	
RA-06	1.17E+00		2.40E-01	V	3.07E-01		5.87E-02		1.44E-02	V	3.69E-02	
RA-07	2.15E-01	V	1.30E-01	V	1.85E-01	V	1.08E-02	V	7.80E-03	V	2.22E-02	V
RA-08	1.57E+00	V	1.25E-01	V	5.00E-01	V	7.83E-02	V	7.50E-03	V	6.00E-02	V

Appendix C

Garden Yields

APPENDIX C

GARDEN YIELDS

APPENDIX C

GARDEN YIELDS

HOMEGROWN PRODUCE INFORMATION

Name: _____

Address: _____

_____

Please tell us about your garden:

1. How long have you had the garden? _____

2. Can you sketch out the rows or beds and include what kind of vegetables you usually grow? You can use the back of this paper, or attach another piece of paper.

Kind of vegetables grown	Amount (for example, 20 tomato plants or a 20 ft row of beans)

Use the back of this paper if you need more space.

3. Do you or your family eat everything that you grow? _____

   If not, can you tell us how much you and your family do eat? _____

   _____

4. In your opinion, of all the vegetables you and your family eat, how much comes from your garden? _____ %

4. How many people are there in your family (who would eat the produce from your garden)?

   _____

   What are their ages? _____

   How much do each of you weigh? _____

   _____

- over please -

5. Is there anything else about your garden you think we should know about? _____

_____

_____

6. Would it be alright if we called you to talk about your garden? _____

Phone: _____

Thank you very much for taking the time to answer these questions.

Summary of Total Garden Yields

Household	Total Yearly Household Yield, kg wet wt.					
	GF	LV	RV	BP	C	P
BC-02	1.72E+02		1.89E+01	4.05E+00	3.18E+00	
BC-04	2.93E+02	3.27E+01	1.33E+02	3.07E+01	6.95E+01	8.18E+01
BC-06	5.11E+01		4.55E+00			
BC-11	1.84E+02	1.36E+01	1.14E+01	1.36E+01		
BC-20	1.65E+02	4.55E+00	9.55E+01		1.55E+01	4.55E+01
BC-23	5.00E+01		2.45E+01	5.45E+00		
BC-24	1.00E+02		3.41E+01			
BC-31	7.27E+01			9.09E-01		
BC-34	9.27E+01		4.91E+01		1.48E+01	
BC-37	2.32E+02	1.18E+01	4.29E+01	9.09E+00	8.50E+00	5.00E+01
M-01	3.41E+01					
M-03	8.77E+01	1.18E+01	4.32E+01	9.09E+00		
M-04	6.52E+02	1.81E+02	3.44E+02	1.02E+02	6.95E+01	
M-21	1.34E+02	1.82E+01	8.73E+00			
M-25	2.85E+02		1.45E+01	3.64E+00	4.95E+00	2.27E+01
M-29	2.82E+02	2.73E+00	9.09E+00	9.09E+00		5.45E+01
M-31	2.27E+02	5.45E+00	5.91E+00	2.73E+01	1.24E+01	1.09E+02
M-41	4.77E+01		1.27E+01	4.55E+00		
RA-03	4.63E+02	2.86E+01	4.43E+01	1.02E+01	9.27E+00	2.27E+00
RA-04	4.70E+01				4.17E+01	
RA-07	4.30E+02	1.64E+01	1.59E+02	6.82E+01	5.41E+01	2.05E+02
RA-08	2.57E+02		1.89E+01			

Household	Total Daily Household Yield, kg wet wt.					
	GF	LV	RV	BP	C	P
BC-02	4.91E-01	0.00E+00	5.41E-02	1.16E-02	9.09E-03	0.00E+00
BC-04	8.38E-01	9.35E-02	3.81E-01	8.77E-02	1.99E-01	2.34E-01
BC-06	1.46E-01	0.00E+00	1.30E-02	0.00E+00	0.00E+00	0.00E+00
BC-11	5.26E-01	3.90E-02	3.25E-02	3.90E-02	0.00E+00	0.00E+00
BC-20	4.71E-01	1.30E-02	2.73E-01	0.00E+00	4.42E-02	1.30E-01
BC-23	1.43E-01	0.00E+00	7.01E-02	1.56E-02	0.00E+00	0.00E+00
BC-24	2.86E-01	0.00E+00	9.74E-02	0.00E+00	0.00E+00	0.00E+00
BC-31	2.08E-01	0.00E+00	0.00E+00	2.60E-03	0.00E+00	0.00E+00
BC-34	2.65E-01	0.00E+00	1.40E-01	0.00E+00	4.24E-02	0.00E+00
BC-37	6.62E-01	3.38E-02	1.22E-01	2.60E-02	2.43E-02	1.43E-01
M-01	9.74E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
M-03	2.51E-01	3.38E-02	1.23E-01	2.60E-02	0.00E+00	0.00E+00
M-04	1.86E+00	5.16E-01	9.84E-01	2.92E-01	1.99E-01	0.00E+00
M-21	3.83E-01	5.19E-02	2.49E-02	0.00E+00	0.00E+00	0.00E+00
M-25	8.13E-01	0.00E+00	4.16E-02	1.04E-02	1.41E-02	6.49E-02
M-29	8.05E-01	7.79E-03	2.60E-02	2.60E-02	0.00E+00	1.56E-01
M-31	6.48E-01	1.56E-02	1.69E-02	7.79E-02	3.53E-02	3.12E-01
M-41	1.36E-01	0.00E+00	3.64E-02	1.30E-02	0.00E+00	0.00E+00
RA-03	1.32E+00	8.18E-02	1.27E-01	2.92E-02	2.65E-02	6.49E-03
RA-04	1.34E-01	0.00E+00	0.00E+00	0.00E+00	1.19E-01	0.00E+00
RA-07	1.23E+00	4.68E-02	4.55E-01	1.95E-01	1.55E-01	5.84E-01
RA-08	7.35E-01	0.00E+00	5.39E-02	0.00E+00	0.00E+00	0.00E+00

Appendix D

Detailed Calculations of Human Exposure and Risk

APPENDIX D

DETAILED CALCULATIONS OF HUMAN EXPOSURE AND RISK

TABLE D-1 CALCULATION FOR INDIVIDUAL LIFETIME CANCER RISK FROM ARSENIC IN GARDEN VEGETABLES

Risk = DI*SF
DI = HIF*C
HIF = [(DY*HCF*ICF)*(EF*ED)]/(BW*AT)
ICF = 1/# HSHLD MEMBERS

SF = 1.80E+00
EF = 350 days/yr
ED = 30 years
AT = 25550 days (= 70 years)

	# HSHLD	AGE	BW			Leafy Vegetables				
HSHLD	MEMBERS	(yrs)	(kg)	HCF	ICF	Daily Yld, kg	HIF	C	DI	RISK
BC-02	6	Adult	70	0.9	0.167	0.00E+00	0.00E+00	NA	NA	NA
BC-04	3	Adult	70	1	0.333	9.35E-02	1.83E-04	7.00E-03	1.28E-06	2.31E-06
BC-06	3	Adult	70	1	0.333	0.00E+00	0.00E+00	5.03E-03	0.00E+00	0.00E+00
BC-11	5	Adult	70	1	0.200	3.90E-02	4.57E-05	6.11E-03	2.79E-07	5.03E-07
BC-20	7	Adult	70	0.5	0.143	1.30E-02	5.45E-06	4.19E-03	2.28E-08	4.11E-08
BC-23	3	Adult	70	0.9	0.333	0.00E+00	0.00E+00	7.44E-03	0.00E+00	0.00E+00
BC-24	3	Adult	70	0.5	0.333	0.00E+00	0.00E+00	1.70E-02	0.00E+00	0.00E+00
BC-31	1	Adult	70	1	1.000	0.00E+00	0.00E+00	6.45E-03	0.00E+00	0.00E+00
BC-34	2	Adult	70	0.9	0.500	0.00E+00	0.00E+00	9.73E-03	0.00E+00	0.00E+00
BC-37	2	Adult	70	0.75	0.500	3.38E-02	7.43E-05	2.40E-02	1.78E-06	3.21E-06
M-01	6	Adult	70	0.9	0.167	0.00E+00	0.00E+00	6.98E-03	0.00E+00	0.00E+00
M-03	5	Adult	70	0.9	0.200	3.38E-02	3.57E-05	7.85E-03	2.80E-07	5.04E-07
M-04	7	Adult	70	1	0.143	5.16E-01	4.33E-04	4.37E-03	1.89E-06	3.40E-06
M-21	13	Adult	70	0.33	0.077	5.19E-02	7.74E-06	5.79E-03	4.48E-08	8.06E-08
M-25	5	Adult	70	0.8	0.200	0.00E+00	0.00E+00	4.89E-03	0.00E+00	0.00E+00
M-29	12	Adult	70	0.7	0.083	7.79E-03	2.67E-06	5.87E-03	1.57E-08	2.82E-08
M-31	8	Adult	70	1	0.125	1.56E-02	1.14E-05	4.16E-03	4.76E-08	8.57E-08
M-41	8	Adult	70	0.15	0.125	0.00E+00	0.00E+00	4.30E-03	0.00E+00	0.00E+00
RA-03	8	Adult	70	1	0.125	8.18E-02	6.00E-05	1.80E-02	1.08E-06	1.95E-06
RA-04	2	Adult	70	1	0.500	0.00E+00	0.00E+00	5.53E-03	0.00E+00	0.00E+00
RA-07	58	Adult	70	0.9	0.017	4.68E-02	4.26E-06	1.15E-02	4.90E-08	8.82E-08
RA-08	3	Adult	70	1	0.333	0.00E+00	0.00E+00	1.20E-02	0.00E+00	0.00E+00

TABLE D-2 CALCULATION FOR INDIVIDUAL LIFETIME CANCER RISK FROM ARSENIC IN GARDEN VEGETABLES

Risk = DI*SF
DI = HIF*C
HIF = [(DY*HCF*ICF)*(EF*ED)]/(BW*AT)
ICF = 1/# HSHLD MEMBERS

SF = 1.80E+00
EF = 350 days/yr
ED = 30 years
AT = 25550 days (= 70 years)

	# HSHLD	AGE	BW			Root Vegetables				
HSHLD	MEMBERS	(yrs)	(kg)	HCF	ICF	Daily Yld, kg	HIF	C	DI	RISK
BC-02	6	Adult	70	0.9	0.167	5.41E-02	4.77E-05	NA	NA	NA
BC-04	3	Adult	70	1	0.333	3.81E-01	7.45E-04	2.04E-02	1.52E-05	2.74E-05
BC-06	3	Adult	70	1	0.333	1.30E-02	2.54E-05	2.04E-02	5.18E-07	9.33E-07
BC-11	5	Adult	70	1	0.200	3.25E-02	3.81E-05	7.20E-03	2.74E-07	4.94E-07
BC-20	7	Adult	70	0.5	0.143	2.73E-01	1.14E-04	7.20E-03	8.23E-07	1.48E-06
BC-23	3	Adult	70	0.9	0.333	7.01E-02	1.24E-04	1.50E-02	1.85E-06	3.33E-06
BC-24	3	Adult	70	0.5	0.333	9.74E-02	9.53E-05	7.20E-03	6.86E-07	1.24E-06
BC-31	1	Adult	70	1	1.000	0.00E+00	0.00E+00	1.35E-02	0.00E+00	0.00E+00
BC-34	2	Adult	70	0.9	0.500	1.40E-01	3.71E-04	1.85E-02	6.84E-06	1.23E-05
BC-37	2	Adult	70	0.75	0.500	1.22E-01	2.70E-04	6.96E-02	1.88E-05	3.38E-05
M-01	6	Adult	70	0.9	0.167	0.00E+00	0.00E+00	1.43E-02	0.00E+00	0.00E+00
M-03	5	Adult	70	0.9	0.200	1.23E-01	1.30E-04	1.56E-02	2.03E-06	3.66E-06
M-04	7	Adult	70	1	0.143	9.84E-01	8.25E-04	1.03E-02	8.46E-06	1.52E-05
M-21	13	Adult	70	0.33	0.077	2.49E-02	3.72E-06	1.24E-02	4.62E-08	8.32E-08
M-25	5	Adult	70	0.8	0.200	4.16E-02	3.90E-05	7.20E-03	2.81E-07	5.06E-07
M-29	12	Adult	70	0.7	0.083	2.60E-02	8.90E-06	7.20E-03	6.40E-08	1.15E-07
M-31	8	Adult	70	1	0.125	1.69E-02	1.24E-05	2.04E-02	2.53E-07	4.55E-07
M-41	8	Adult	70	0.15	0.125	3.64E-02	4.00E-06	7.20E-03	2.88E-08	5.19E-08
RA-03	8	Adult	70	1	0.125	1.27E-01	9.29E-05	2.16E-02	2.01E-06	3.61E-06
RA-04	2	Adult	70	1	0.500	0.00E+00	0.00E+00	1.20E-02	0.00E+00	0.00E+00
RA-07	58	Adult	70	0.9	0.017	4.55E-01	4.14E-05	1.68E-02	6.96E-07	1.25E-06
RA-08	3	Adult	70	1	0.333	5.39E-02	1.05E-04	7.20E-03	7.59E-07	1.37E-06

TABLE D-3 CALCULATION FOR INDIVIDUAL LIFETIME CANCER RISK FROM ARSENIC IN GARDEN VEGETABLES

Risk = DI*SF
DI = HIF*C
HIF = [(DY*HCF*ICF)*(EF*ED)]/(BW*AT)
ICF = 1/# HSHLD MEMBERS

SF = 1.80E+00
EF = 350 days/yr
ED = 30 years
AT = 25550 days (= 70 years)

	# HSHLD	AGE	BW			Garden Fruit				
HSHLD	MEMBERS	(yrs)	(kg)	HCF	ICF	Daily Yld, kg	HIF	C	DI	RISK
BC-02	6	Adult	70	0.9	0.167	4.91E-01	4.32E-04	NA	NA	NA
BC-04	3	Adult	70	1	0.333	8.38E-01	1.64E-03	1.80E-03	2.95E-06	5.31E-06
BC-06	3	Adult	70	1	0.333	1.46E-01	2.86E-04	3.60E-03	1.03E-06	1.85E-06
BC-11	5	Adult	70	1	0.200	5.26E-01	6.18E-04	3.60E-03	2.22E-06	4.00E-06
BC-20	7	Adult	70	0.5	0.143	4.71E-01	1.98E-04	3.60E-03	7.12E-07	1.28E-06
BC-23	3	Adult	70	0.9	0.333	1.43E-01	2.52E-04	3.60E-03	9.06E-07	1.63E-06
BC-24	3	Adult	70	0.5	0.333	2.86E-01	2.80E-04	3.60E-03	1.01E-06	1.82E-06
BC-31	1	Adult	70	1	1.000	2.08E-01	1.22E-03	3.60E-03	4.39E-06	7.91E-06
BC-34	2	Adult	70	0.9	0.500	2.65E-01	7.00E-04	3.60E-03	2.52E-06	4.54E-06
BC-37	2	Adult	70	0.75	0.500	6.62E-01	1.46E-03	3.90E-03	5.68E-06	1.02E-05
M-01	6	Adult	70	0.9	0.167	9.74E-02	8.58E-05	3.60E-03	3.09E-07	5.56E-07
M-03	5	Adult	70	0.9	0.200	2.51E-01	2.65E-04	3.60E-03	9.54E-07	1.72E-06
M-04	7	Adult	70	1	0.143	1.86E+00	1.56E-03	1.80E-03	2.81E-06	5.06E-06
M-21	13	Adult	70	0.33	0.077	3.83E-01	5.71E-05	3.60E-03	2.06E-07	3.70E-07
M-25	5	Adult	70	0.8	0.200	8.13E-01	7.64E-04	3.60E-03	2.75E-06	4.95E-06
M-29	12	Adult	70	0.7	0.083	8.05E-01	2.76E-04	3.60E-03	9.93E-07	1.79E-06
M-31	8	Adult	70	1	0.125	6.48E-01	4.76E-04	3.60E-03	1.71E-06	3.08E-06
M-41	8	Adult	70	0.15	0.125	1.36E-01	1.50E-05	3.60E-03	5.40E-08	9.73E-08
RA-03	8	Adult	70	1	0.125	1.32E+00	9.72E-04	3.60E-03	3.50E-06	6.30E-06
RA-04	2	Adult	70	1	0.500	1.34E-01	3.94E-04	3.60E-03	1.42E-06	2.55E-06
RA-07	58	Adult	70	0.9	0.017	1.23E+00	1.12E-04	3.60E-03	4.03E-07	7.26E-07
RA-08	3	Adult	70	1	0.333	7.35E-01	1.44E-03	3.60E-03	5.18E-06	9.32E-06

TABLE D-4 CALCULATION FOR INDIVIDUAL LIFETIME CANCER RISK FROM ARSENIC IN GARDEN VEGETABLES

Risk = DI*SF
DI = HIF*C
HIF = [(DY*HCF*ICF)*(EF*ED)]/(BW*AT)
ICF = 1/# HSHLD MEMBERS

SF = 1.80E+00
EF = 350 days/yr
ED = 30 years
AT = 25550 days (= 70 years)

	# HSHLD	AGE	BW			Beans/Peas				
HSHLD	MEMBERS	(yrs)	(kg)	HCF	ICF	Daily Yld, kg	HIF	C	DI	RISK
BC-02	6	Adult	70	0.9	0.167	1.16E-02	1.02E-05	NA	NA	NA
BC-04	3	Adult	70	1	0.333	8.77E-02	1.72E-04	1.80E-03	3.09E-07	5.56E-07
BC-06	3	Adult	70	1	0.333	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
BC-11	5	Adult	70	1	0.200	3.90E-02	4.57E-05	3.60E-03	1.65E-07	2.96E-07
BC-20	7	Adult	70	0.5	0.143	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
BC-23	3	Adult	70	0.9	0.333	1.56E-02	2.74E-05	3.60E-03	9.88E-08	1.78E-07
BC-24	3	Adult	70	0.5	0.333	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
BC-31	1	Adult	70	1	1.000	2.60E-03	1.52E-05	3.60E-03	5.49E-08	9.88E-08
BC-34	2	Adult	70	0.9	0.500	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
BC-37	2	Adult	70	0.75	0.500	2.60E-02	5.72E-05	3.90E-03	2.23E-07	4.01E-07
M-01	6	Adult	70	0.9	0.167	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
M-03	5	Adult	70	0.9	0.200	2.60E-02	2.74E-05	3.60E-03	9.88E-08	1.78E-07
M-04	7	Adult	70	1	0.143	2.92E-01	2.45E-04	1.80E-03	4.41E-07	7.94E-07
M-21	13	Adult	70	0.33	0.077	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
M-25	5	Adult	70	0.8	0.200	1.04E-02	9.76E-06	3.60E-03	3.51E-08	6.32E-08
M-29	12	Adult	70	0.7	0.083	2.60E-02	8.90E-06	3.60E-03	3.20E-08	5.76E-08
M-31	8	Adult	70	1	0.125	7.79E-02	5.72E-05	3.60E-03	2.06E-07	3.71E-07
M-41	8	Adult	70	0.15	0.125	1.30E-02	1.43E-06	3.60E-03	5.15E-09	9.26E-09
RA-03	8	Adult	70	1	0.125	2.92E-02	2.14E-05	3.60E-03	7.72E-08	1.39E-07
RA-04	2	Adult	70	1	0.500	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
RA-07	58	Adult	70	0.9	0.017	1.95E-01	1.77E-05	3.60E-03	6.39E-08	1.15E-07
RA-08	3	Adult	70	1	0.333	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00

TABLE D-5 CALCULATION FOR INDIVIDUAL LIFETIME CANCER RISK FROM ARSENIC IN GARDEN VEGETABLES

Risk = DI*SF
DI = HIF*C
HIF = [(DY*HCF*ICF)*(EF*ED)]/(BW*AT)
ICF = 1/# HSHLD MEMBERS

SF = 1.80E+00
EF = 350 days/yr
ED = 30 years
AT = 25550 days (= 70 years)

HSHLD	# HSHLD MEMBERS	AGE (yrs)	BW (kg)	HCF	ICF	Corn Daily Yld, kg	HIF	C	DI	RISK
BC-02	6	Adult	70	0.9	0.167	9.09E-03	8.01E-06	NA	NA	NA
BC-04	3	Adult	70	1	0.333	1.99E-01	3.89E-04	1.80E-03	7.00E-07	1.26E-06
BC-06	3	Adult	70	1	0.333	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
BC-11	5	Adult	70	1	0.200	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
BC-20	7	Adult	70	0.5	0.143	4.42E-02	1.85E-05	3.60E-03	6.67E-08	1.20E-07
BC-23	3	Adult	70	0.9	0.333	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
BC-24	3	Adult	70	0.5	0.333	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
BC-31	1	Adult	70	1	1.000	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
BC-34	2	Adult	70	0.9	0.500	4.24E-02	1.12E-04	3.60E-03	4.03E-07	7.26E-07
BC-37	2	Adult	70	0.75	0.500	2.43E-02	5.35E-05	3.90E-03	2.09E-07	3.75E-07
M-01	6	Adult	70	0.9	0.167	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
M-03	5	Adult	70	0.9	0.200	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
M-04	7	Adult	70	1	0.143	1.99E-01	1.67E-04	1.80E-03	3.00E-07	5.40E-07
M-21	13	Adult	70	0.33	0.077	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
M-25	5	Adult	70	0.8	0.200	1.41E-02	1.33E-05	3.60E-03	4.78E-08	8.60E-08
M-29	12	Adult	70	0.7	0.083	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
M-31	8	Adult	70	1	0.125	3.53E-02	2.59E-05	3.60E-03	9.33E-08	1.68E-07
M-41	8	Adult	70	0.15	0.125	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
RA-03	8	Adult	70	1	0.125	2.65E-02	1.94E-05	3.60E-03	7.00E-08	1.26E-07
RA-04	2	Adult	70	1	0.500	1.19E-01	3.50E-04	3.60E-03	1.26E-06	2.27E-06
RA-07	58	Adult	70	0.9	0.017	1.55E-01	1.41E-05	3.60E-03	5.07E-08	9.12E-08
RA-08	3	Adult	70	1	0.333	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00

TABLE D-6 CALCULATION FOR INDIVIDUAL LIFETIME CANCER RISK FROM ARSENIC IN GARDEN VEGETABLES

Risk = DI*SF
DI = HIF*C
HIF = [(DY*HCF*ICF)*(EF*ED)]/(BW*AT)
ICF = 1/# HSHLD MEMBERS

SF = 1.80E+00
EF = 350 days/yr
ED = 30 years
AT = 25550 days (= 70 years)

	# HSHLD	AGE	BW			Potatoes				
HSHLD	MEMBERS	(yrs)	(kg)	HCF	ICF	Daily Yld, kg	HIF	C	DI	RISK
BC-02	6	Adult	70	0.9	0.167	0.00E+00	0.00E+00	NA	NA	NA
BC-04	3	Adult	70	1	0.333	2.34E-01	4.57E-04	2.04E-02	9.33E-06	1.68E-05
BC-06	3	Adult	70	1	0.333	0.00E+00	0.00E+00	2.04E-02	0.00E+00	0.00E+00
BC-11	5	Adult	70	1	0.200	0.00E+00	0.00E+00	7.20E-03	0.00E+00	0.00E+00
BC-20	7	Adult	70	0.5	0.143	1.30E-01	5.45E-05	7.20E-03	3.92E-07	7.06E-07
BC-23	3	Adult	70	0.9	0.333	0.00E+00	0.00E+00	1.50E-02	0.00E+00	0.00E+00
BC-24	3	Adult	70	0.5	0.333	0.00E+00	0.00E+00	7.20E-03	0.00E+00	0.00E+00
BC-31	1	Adult	70	1	1.000	0.00E+00	0.00E+00	1.35E-02	0.00E+00	0.00E+00
BC-34	2	Adult	70	0.9	0.500	0.00E+00	0.00E+00	1.85E-02	0.00E+00	0.00E+00
BC-37	2	Adult	70	0.75	0.500	1.43E-01	3.15E-04	6.96E-02	2.19E-05	3.94E-05
M-01	6	Adult	70	0.9	0.167	0.00E+00	0.00E+00	1.43E-02	0.00E+00	0.00E+00
M-03	5	Adult	70	0.9	0.200	0.00E+00	0.00E+00	1.56E-02	0.00E+00	0.00E+00
M-04	7	Adult	70	1	0.143	0.00E+00	0.00E+00	1.03E-02	0.00E+00	0.00E+00
M-21	13	Adult	70	0.33	0.077	0.00E+00	0.00E+00	1.24E-02	0.00E+00	0.00E+00
M-25	5	Adult	70	0.8	0.200	6.49E-02	6.10E-05	7.20E-03	4.39E-07	7.91E-07
M-29	12	Adult	70	0.7	0.083	1.56E-01	5.34E-05	7.20E-03	3.84E-07	6.92E-07
M-31	8	Adult	70	1	0.125	3.12E-01	2.29E-04	2.04E-02	4.67E-06	8.40E-06
M-41	8	Adult	70	0.15	0.125	0.00E+00	0.00E+00	7.20E-03	0.00E+00	0.00E+00
RA-03	8	Adult	70	1	0.125	6.49E-03	4.77E-06	2.16E-02	1.03E-07	1.85E-07
RA-04	2	Adult	70	1	0.500	0.00E+00	0.00E+00	1.20E-02	0.00E+00	0.00E+00
RA-07	58	Adult	70	0.9	0.017	5.84E-01	5.32E-05	1.68E-02	8.94E-07	1.61E-06
RA-08	3	Adult	70	1	0.333	0.00E+00	0.00E+00	7.20E-03	0.00E+00	0.00E+00

TABLE D-7 CALCULATION FOR INDIVIDUAL LIFETIME CANCER RISK FROM ARSENIC IN GARDEN VEGETABLES

Risk = DI*SF
DI = HIF*C
HIF = [(DY*HCF*ICF)*(EF*ED)]/(BW*AT)
ICF = 1/# HSHLD MEMBERS

SF = 1.80E+00
EF = 350 days/yr
ED = 30 years
AT = 25550 days (= 70 years)

HSHLD	# HSHLD MEMBERS	AGE (yrs)	BW (kg)	HCF	ICF	Garden Total RISK
BC-02	6	Adult	70	0.9	0.167	NA
BC-04	3	Adult	70	1	0.333	5.36E-05
BC-06	3	Adult	70	1	0.333	2.79E-06
BC-11	5	Adult	70	1	0.200	5.30E-06
BC-20	7	Adult	70	0.5	0.143	3.63E-06
BC-23	3	Adult	70	0.9	0.333	5.14E-06
BC-24	3	Adult	70	0.5	0.333	3.05E-06
BC-31	1	Adult	70	1	1.000	8.00E-06
BC-34	2	Adult	70	0.9	0.500	1.76E-05
BC-37	2	Adult	70	0.75	0.500	8.74E-05
M-01	6	Adult	70	0.9	0.167	5.56E-07
M-03	5	Adult	70	0.9	0.200	6.06E-06
M-04	7	Adult	70	1	0.143	2.50E-05
M-21	13	Adult	70	0.33	0.077	5.34E-07
M-25	5	Adult	70	0.8	0.200	6.40E-06
M-29	12	Adult	70	0.7	0.083	2.68E-06
M-31	8	Adult	70	1	0.125	1.26E-05
M-41	8	Adult	70	0.15	0.125	1.58E-07
RA-03	8	Adult	70	1	0.125	1.23E-05
RA-04	2	Adult	70	1	0.500	4.82E-06
RA-07	58	Adult	70	0.9	0.017	3.88E-06
RA-08	3	Adult	70	1	0.333	1.07E-05

AVG RISK - BC	2.07E-05
AVG RISK - M	6.75E-06
AVG RISK - RA	7.92E-06
AVG RISK - ALL AREAS	1.30E-05

TABLE D-8 CALCULATION FOR INDIVIDUAL SUBCHRONIC HAZARD QUOTIENT FROM ARSENIC IN GARDEN VEGETABLES

HQ(s) = DI/RfD(s)
DI = HIF*C
HIF = [(DY*HCF*ICF)*(EF*ED)]/(BW*AT)
ICF = RI(i)/RI(t)

RfD(s) = 3.00E-04
EF = 350 days/yr
ED = 1 year
AT = 365 days

					Leafy Vegetables							
HSHLD	INDIV.	AGE (yrs)	BW (kg)	HCF	RI(i)	RI(t)	ICF	Daily Yld, kg	HIF	C	DI	HQ
BC-02	BC-02-A	40	68	0.9	4.4	16.5	0.267	0.00E+00	0.00E+00	NA	NA	NA
BC-02	BC-02-B	43	61	0.9	4.4	16.5	0.267	0.00E+00	0.00E+00	NA	NA	NA
BC-02	BC-02-C	16	45	0.9	2.5	16.5	0.152	0.00E+00	0.00E+00	NA	NA	NA
BC-02	BC-02-D	14	34	0.9	2.5	16.5	0.152	0.00E+00	0.00E+00	NA	NA	NA
BC-02	BC-02-E	9	28	0.9	1.7	16.5	0.103	0.00E+00	0.00E+00	NA	NA	NA
BC-02	BC-02-F	5	16	0.9	1.0	16.5	0.061	0.00E+00	0.00E+00	NA	NA	NA
BC-04	BC-04-A	89	55	1	5.4	16.2	0.333	9.35E-02	5.48E-04	7.00E-03	3.84E-06	1.28E-02
BC-04	BC-04-B	62	57	1	5.4	16.2	0.333	9.35E-02	5.26E-04	7.00E-03	3.68E-06	1.23E-02
BC-04	BC-04-C	57	84	1	5.4	16.2	0.333	9.35E-02	3.55E-04	7.00E-03	2.49E-06	8.29E-03
BC-06	BC-06-A	64	70	1	5.4	15.2	0.355	0.00E+00	0.00E+00	5.03E-03	0.00E+00	0.00E+00
BC-06	BC-06-B	65	77	1	5.4	15.2	0.355	0.00E+00	0.00E+00	5.03E-03	0.00E+00	0.00E+00
BC-06	BC-06-C	28	77	1	4.4	15.2	0.289	0.00E+00	0.00E+00	5.03E-03	0.00E+00	0.00E+00
BC-11	BC-11-A	47	59	1	5.4	16.5	0.327	3.90E-02	2.07E-04	6.11E-03	1.26E-06	4.21E-03
BC-11	BC-11-B	44	68	1	4.4	16.5	0.267	3.90E-02	1.46E-04	6.11E-03	8.92E-07	2.97E-03
BC-11	BC-11-C	19	68	1	2.5	16.5	0.152	3.90E-02	8.30E-05	6.11E-03	5.07E-07	1.69E-03
BC-11	BC-11-D	15	45	1	2.5	16.5	0.152	3.90E-02	1.25E-04	6.11E-03	7.60E-07	2.53E-03
BC-11	BC-11-E	11	23	1	1.7	16.5	0.103	3.90E-02	1.69E-04	6.11E-03	1.03E-06	3.45E-03
BC-20	BC-20-A	62	105	0.5	5.4	23.6	0.229	1.30E-02	1.36E-05	4.19E-03	5.71E-08	1.90E-04
BC-20	BC-20-B	60	68	0.5	5.4	23.6	0.229	1.30E-02	2.09E-05	4.19E-03	8.76E-08	2.92E-04
BC-20	BC-20-C	35	64	0.5	4.4	23.6	0.186	1.30E-02	1.82E-05	4.19E-03	7.65E-08	2.55E-04
BC-20	BC-20-D	16	73	0.5	2.5	23.6	0.106	1.30E-02	9.07E-06	4.19E-03	3.80E-08	1.27E-04
BC-20	BC-20-E	14	64	0.5	2.5	23.6	0.106	1.30E-02	1.04E-05	4.19E-03	4.35E-08	1.45E-04
BC-20	BC-20-F	11	23	0.5	1.7	23.6	0.072	1.30E-02	1.97E-05	4.19E-03	8.27E-08	2.76E-04
BC-20	BC-20-G	9	23	0.5	1.7	23.6	0.072	1.30E-02	1.97E-05	4.19E-03	8.27E-08	2.76E-04
BC-23	BC-23-A	73	71	0.9	5.4	16.2	0.333	0.00E+00	0.00E+00	7.44E-03	0.00E+00	0.00E+00
BC-23	BC-23-B	69	71	0.9	5.4	16.2	0.333	0.00E+00	0.00E+00	7.44E-03	0.00E+00	0.00E+00
BC-23	BC-23-C	45	75	0.9	5.4	16.2	0.333	0.00E+00	0.00E+00	7.44E-03	0.00E+00	0.00E+00
BC-24	BC-24-A	32	73	0.5	4.4	9.8	0.449	0.00E+00	0.00E+00	1.70E-02	0.00E+00	0.00E+00
BC-24	BC-24-B	28	105	0.5	4.4	9.8	0.449	0.00E+00	0.00E+00	1.70E-02	0.00E+00	0.00E+00
BC-24	BC-24-C	3	18	0.5	1.0	9.8	0.102	0.00E+00	0.00E+00	1.70E-02	0.00E+00	0.00E+00
BC-31	BC-31-A	60	55	1	5.4	5.4	1.000	0.00E+00	0.00E+00	6.45E-03	0.00E+00	0.00E+00
BC-34	BC-34-A	64	105	0.9	5.4	10.8	0.500	0.00E+00	0.00E+00	9.73E-03	0.00E+00	0.00E+00
BC-34	BC-34-B	65	59	0.9	5.4	10.8	0.500	0.00E+00	0.00E+00	9.73E-03	0.00E+00	0.00E+00
BC-37	BC-37-A	55	70	0.75	5.4	10.8	0.500	3.38E-02	1.72E-04	2.40E-02	4.14E-06	1.38E-02
BC-37	BC-37-B	55	68	0.75	5.4	10.8	0.500	3.38E-02	1.78E-04	2.40E-02	4.27E-06	1.42E-02
M-01	M-01-A	70	75	0.9	5.4	25.7	0.210	0.00E+00	0.00E+00	6.98E-03	0.00E+00	0.00E+00
M-01	M-01-B	70	66	0.9	5.4	25.7	0.210	0.00E+00	0.00E+00	6.98E-03	0.00E+00	0.00E+00
M-01	M-01-C	28	77	0.9	4.4	25.7	0.171	0.00E+00	0.00E+00	6.98E-03	0.00E+00	0.00E+00
M-01	M-01-D	24	50	0.9	4.4	25.7	0.171	0.00E+00	0.00E+00	6.98E-03	0.00E+00	0.00E+00
M-01	M-01-E	21	52	0.9	4.4	25.7	0.171	0.00E+00	0.00E+00	6.98E-03	0.00E+00	0.00E+00
M-01	M-01-F	6	16	0.9	1.7	25.7	0.066	0.00E+00	0.00E+00	6.98E-03	0.00E+00	0.00E+00
M-03	M-03-A	74	71	0.9	5.4	24.0	0.225	3.38E-02	9.27E-05	7.85E-03	7.28E-07	2.43E-03
M-03	M-03-B	69	71	0.9	5.4	24.0	0.225	3.38E-02	9.27E-05	7.85E-03	7.28E-07	2.43E-03
M-03	M-03-C	40	74	0.9	4.4	24.0	0.183	3.38E-02	7.22E-05	7.85E-03	5.66E-07	1.89E-03
M-03	M-03-D	37	74	0.9	4.4	24.0	0.183	3.38E-02	7.22E-05	7.85E-03	5.66E-07	1.89E-03
M-03	M-03-E	33	72	0.9	4.4	24.0	0.183	3.38E-02	7.47E-05	7.85E-03	5.86E-07	1.95E-03
M-04	M-04-A	57	78	1	5.4	26.0	0.208	5.16E-01	1.32E-03	4.37E-03	5.78E-06	1.93E-02
M-04	M-04-B	54	75	1	5.4	26.0	0.208	5.16E-01	1.37E-03	4.37E-03	5.99E-06	2.00E-02
M-04	M-04-C	27	68	1	4.4	26.0	0.169	5.16E-01	1.23E-03	4.37E-03	5.36E-06	1.79E-02
M-04	M-04-D	23	66	1	4.4	26.0	0.169	5.16E-01	1.27E-03	4.37E-03	5.55E-06	1.85E-02
M-04	M-04-E	20	64	1	4.4	26.0	0.169	5.16E-01	1.32E-03	4.37E-03	5.75E-06	1.92E-02
M-04	M-04-F	4	16	1	1.0	26.0	0.038	5.16E-01	1.20E-03	4.37E-03	5.23E-06	1.74E-02
M-04	M-04-G	2	11	1	1.0	26.0	0.038	5.16E-01	1.68E-03	4.37E-03	7.32E-06	2.44E-02
M-21	M-21-A	Child	15	0.33			0.046	5.19E-02	5.06E-05	5.79E-03	2.93E-07	9.76E-04
M-21	M-21-B	Adult	70	0.33			0.108	5.19E-02	2.53E-05	5.79E-03	1.46E-07	4.88E-04
M-25	M-25-A	34	100	0.8	4.4	13.2	0.333	0.00E+00	0.00E+00	4.89E-03	0.00E+00	0.00E+00
M-25	M-25-B	33	68	0.8	4.4	13.2	0.333	0.00E+00	0.00E+00	4.89E-03	0.00E+00	0.00E+00
M-25	M-25-C	10	43	0.8	1.7	13.2	0.129	0.00E+00	0.00E+00	4.89E-03	0.00E+00	0.00E+00
M-25	M-25-D	7	34	0.8	1.7	13.2	0.129	0.00E+00	0.00E+00	4.89E-03	0.00E+00	0.00E+00
M-25	M-25-E	3	16	0.8	1.0	13.2	0.076	0.00E+00	0.00E+00	4.89E-03	0.00E+00	0.00E+00

TABLE D-8 CALCULATION FOR INDIVIDUAL SUBCHRONIC HAZARD QUOTIENT FROM ARSENIC IN GARDEN VEGETABLES

HQ(s) = DI/RfD(s)
DI = HIF*C
HIF = [(DY*HCF*ICF)*(EF*ED)]/(BW*AT)
ICF = RI(i)/RI(t)

RfD(s) = 3.00E-04
EF = 350 days/yr
ED = 1 year
AT = 365 days

					Leafy Vegetables							
HSHLD	INDIV.	AGE (yrs)	BW (kg)	HCF	RI(i)	RI(t)	ICF	Daily Yld, kg	HIF	C	DI	HQ
M-29	M-29-A	Child	15	0.7			0.050	7.79E-03	1.74E-05	5.87E-03	1.02E-07	3.41E-04
M-29	M-29-B	Adult	70	0.7			0.117	7.79E-03	8.72E-06	5.87E-03	5.11E-08	1.70E-04
M-31	M-31-A	21	52	1	4.4	24.1	0.183	1.56E-02	5.22E-05	4.16E-03	2.17E-07	7.24E-04
M-31	M-31-B	19	50	1	2.5	24.1	0.104	1.56E-02	3.10E-05	4.16E-03	1.29E-07	4.30E-04
M-31	M-31-C	17	55	1	2.5	24.1	0.104	1.56E-02	2.80E-05	4.16E-03	1.16E-07	3.88E-04
M-31	M-31-D	15	50	1	2.5	24.1	0.104	1.56E-02	3.13E-05	4.16E-03	1.30E-07	4.34E-04
M-31	M-31-E	9	36	1	1.7	24.1	0.071	1.56E-02	2.90E-05	4.16E-03	1.21E-07	4.02E-04
M-31	M-31-F	6	20	1	1.7	24.1	0.071	1.56E-02	5.39E-05	4.16E-03	2.25E-07	7.48E-04
M-31	M-31-G	43	61	1	4.4	24.1	0.183	1.56E-02	4.45E-05	4.16E-03	1.85E-07	6.17E-04
M-31	M-31-H	43	80	1	4.4	24.1	0.183	1.56E-02	3.43E-05	4.16E-03	1.43E-07	4.76E-04
M-41	M-41-A	71	71	0.15	5.4	29.0	0.186	0.00E+00	0.00E+00	4.30E-03	0.00E+00	0.00E+00
M-41	M-41-B	68	71	0.15	5.4	29.0	0.186	0.00E+00	0.00E+00	4.30E-03	0.00E+00	0.00E+00
M-41	M-41-C	47	75	0.15	5.4	29.0	0.186	0.00E+00	0.00E+00	4.30E-03	0.00E+00	0.00E+00
M-41	M-41-D	45	75	0.15	5.4	29.0	0.186	0.00E+00	0.00E+00	4.30E-03	0.00E+00	0.00E+00
M-41	M-41-E	30	72	0.15	4.4	29.0	0.152	0.00E+00	0.00E+00	4.30E-03	0.00E+00	0.00E+00
M-41	M-41-F	3	15	0.15	1.0	29.0	0.034	0.00E+00	0.00E+00	4.30E-03	0.00E+00	0.00E+00
M-41	M-41-G	2	13	0.15	1.0	29.0	0.034	0.00E+00	0.00E+00	4.30E-03	0.00E+00	0.00E+00
M-41	M-41-H	1	11	0.15	1.0	29.0	0.034	0.00E+00	0.00E+00	4.30E-03	0.00E+00	0.00E+00
RA-03	RA-03-A	33	91	1	4.4	16.9	0.260	8.18E-02	2.25E-04	1.80E-02	4.04E-06	1.35E-02
RA-03	RA-03-B	29	50	1	4.4	16.9	0.260	8.18E-02	4.09E-04	1.80E-02	7.35E-06	2.45E-02
RA-03	RA-03-C	11	34	1	1.7	16.9	0.101	8.18E-02	2.31E-04	1.80E-02	4.17E-06	1.39E-02
RA-03	RA-03-D	9	30	1	1.7	16.9	0.101	8.18E-02	2.67E-04	1.80E-02	4.81E-06	1.60E-02
RA-03	RA-03-E	7	20	1	1.7	16.9	0.101	8.18E-02	3.86E-04	1.80E-02	6.94E-06	2.31E-02
RA-03	RA-03-F	4	14	1	1.0	16.9	0.059	8.18E-02	3.40E-04	1.80E-02	6.13E-06	2.04E-02
RA-03	RA-03-G	2	11	1	1.0	16.9	0.059	8.18E-02	4.09E-04	1.80E-02	7.35E-06	2.45E-02
RA-03	RA-03-H	1	9	1	1.0	16.9	0.059	8.18E-02	5.11E-04	1.80E-02	9.19E-06	3.06E-02
RA-04	RA-04-A	51	75	1	5.4	10.8	0.500	0.00E+00	0.00E+00	5.53E-03	0.00E+00	0.00E+00
RA-04	RA-04-B	52	84	1	5.4	10.8	0.500	0.00E+00	0.00E+00	5.53E-03	0.00E+00	0.00E+00
RA-07	RA-07-A	Child	15	0.9			0.010	4.68E-02	2.78E-05	1.15E-02	3.20E-07	1.07E-03
RA-07	RA-07-B	Adult	70	0.9			0.024	4.68E-02	1.39E-05	1.15E-02	1.60E-07	5.33E-04
RA-08	RA-08-A	43	82	1	4.4	9.8	0.449	0.00E+00	0.00E+00	1.20E-02	0.00E+00	0.00E+00
RA-08	RA-08-B	34	64	1	4.4	9.8	0.449	0.00E+00	0.00E+00	1.20E-02	0.00E+00	0.00E+00
RA-08	RA-08-D	4	16	1	1.0	9.8	0.102	0.00E+00	0.00E+00	1.20E-02	0.00E+00	0.00E+00

TABLE D-9 CALCULATION FOR INDIVIDUAL SUBCHRONIC HAZARD QUOTIENT FROM ARSENIC IN GARDEN VEGETABLES

HQ(s) = DI/RfD(s)
DI = HIF*C
HIF = [(DY*HCF*ICF)*(EF*ED)]/(BW*AT)
ICF = RI(i)/RI(t)

RfD(s) = 3.00E-04
EF = 350 days/yr
ED = 1 year
AT = 365 days

					Root Vegetables							
HSHLD	INDIV.	AGE (yrs)	BW (kg)	HCF	RI(i)	RI(t)	ICF	Daily Yld, kg	HIF	C	DI	HQ
BC-02	BC-02-A	40	68	0.9	2.6	13.2	0.197	5.41E-02	1.35E-04	NA	NA	NA
BC-02	BC-02-B	43	61	0.9	2.6	13.2	0.197	5.41E-02	1.50E-04	NA	NA	NA
BC-02	BC-02-C	16	45	0.9	2.6	13.2	0.197	5.41E-02	2.02E-04	NA	NA	NA
BC-02	BC-02-D	14	34	0.9	2.6	13.2	0.197	5.41E-02	2.70E-04	NA	NA	NA
BC-02	BC-02-E	9	28	0.9	1.8	13.2	0.136	5.41E-02	2.26E-04	NA	NA	NA
BC-02	BC-02-F	5	16	0.9	1.0	13.2	0.076	5.41E-02	2.22E-04	NA	NA	NA
BC-04	BC-04-A	89	55	1	2.4	7.2	0.333	3.81E-01	2.23E-03	2.04E-02	4.55E-05	1.52E-01
BC-04	BC-04-B	62	57	1	2.4	7.2	0.333	3.81E-01	2.14E-03	2.04E-02	4.37E-05	1.46E-01
BC-04	BC-04-C	57	84	1	2.4	7.2	0.333	3.81E-01	1.45E-03	2.04E-02	2.95E-05	9.85E-02
BC-06	BC-06-A	64	70	1	2.4	7.4	0.324	1.30E-02	5.73E-05	2.04E-02	1.17E-06	3.90E-03
BC-06	BC-06-B	65	77	1	2.4	7.4	0.324	1.30E-02	5.23E-05	2.04E-02	1.07E-06	3.55E-03
BC-06	BC-06-C	28	77	1	2.6	7.4	0.351	1.30E-02	5.66E-05	2.04E-02	1.16E-06	3.85E-03
BC-11	BC-11-A	47	59	1	2.4	12.0	0.200	3.25E-02	1.05E-04	7.20E-03	7.59E-07	2.53E-03
BC-11	BC-11-B	44	68	1	2.6	12.0	0.217	3.25E-02	9.89E-05	7.20E-03	7.12E-07	2.37E-03
BC-11	BC-11-C	19	68	1	2.6	12.0	0.217	3.25E-02	9.89E-05	7.20E-03	7.12E-07	2.37E-03
BC-11	BC-11-D	15	45	1	2.6	12.0	0.217	3.25E-02	1.48E-04	7.20E-03	1.07E-06	3.56E-03
BC-11	BC-11-E	11	23	1	1.8	12.0	0.150	3.25E-02	2.05E-04	7.20E-03	1.48E-06	4.93E-03
BC-20	BC-20-A	62	105	0.5	2.4	16.2	0.148	2.73E-01	1.85E-04	7.20E-03	1.33E-06	4.45E-03
BC-20	BC-20-B	60	68	0.5	2.4	16.2	0.148	2.73E-01	2.84E-04	7.20E-03	2.05E-06	6.82E-03
BC-20	BC-20-C	35	64	0.5	2.6	16.2	0.160	2.73E-01	3.30E-04	7.20E-03	2.37E-06	7.91E-03
BC-20	BC-20-D	16	73	0.5	2.6	16.2	0.160	2.73E-01	2.89E-04	7.20E-03	2.08E-06	6.93E-03
BC-20	BC-20-E	14	64	0.5	2.6	16.2	0.160	2.73E-01	3.30E-04	7.20E-03	2.37E-06	7.91E-03
BC-20	BC-20-F	11	23	0.5	1.8	16.2	0.111	2.73E-01	6.39E-04	7.20E-03	4.60E-06	1.53E-02
BC-20	BC-20-G	9	23	0.5	1.8	16.2	0.111	2.73E-01	6.39E-04	7.20E-03	4.60E-06	1.53E-02
BC-23	BC-23-A	73	71	0.9	2.4	7.2	0.333	7.01E-02	2.85E-04	1.50E-02	4.27E-06	1.42E-02
BC-23	BC-23-B	69	71	0.9	2.4	7.2	0.333	7.01E-02	2.85E-04	1.50E-02	4.27E-06	1.42E-02
BC-23	BC-23-C	45	75	0.9	2.4	7.2	0.333	7.01E-02	2.71E-04	1.50E-02	4.05E-06	1.35E-02
BC-24	BC-24-A	32	73	0.5	2.6	6.2	0.419	9.74E-02	2.69E-04	7.20E-03	1.94E-06	6.46E-03
BC-24	BC-24-B	28	105	0.5	2.6	6.2	0.419	9.74E-02	1.87E-04	7.20E-03	1.35E-06	4.50E-03
BC-24	BC-24-C	3	18	0.5	1.0	6.2	0.161	9.74E-02	4.25E-04	7.20E-03	3.06E-06	1.02E-02
BC-31	BC-31-A	60	55	1	2.4	2.4	1.000	0.00E+00	0.00E+00	1.35E-02	0.00E+00	0.00E+00
BC-34	BC-34-A	64	105	0.9	2.4	4.8	0.500	1.40E-01	5.79E-04	1.85E-02	1.07E-05	3.56E-02
BC-34	BC-34-B	65	59	0.9	2.4	4.8	0.500	1.40E-01	1.02E-03	1.85E-02	1.89E-05	6.31E-02
BC-37	BC-37-A	55	70	0.75	2.4	4.8	0.500	1.22E-01	6.25E-04	6.96E-02	4.35E-05	1.45E-01
BC-37	BC-37-B	55	68	0.75	2.4	4.8	0.500	1.22E-01	6.46E-04	6.96E-02	4.50E-05	1.50E-01
M-01	M-01-A	70	75	0.9	2.4	14.4	0.167	0.00E+00	0.00E+00	1.43E-02	0.00E+00	0.00E+00
M-01	M-01-B	70	66	0.9	2.4	14.4	0.167	0.00E+00	0.00E+00	1.43E-02	0.00E+00	0.00E+00
M-01	M-01-C	28	77	0.9	2.6	14.4	0.181	0.00E+00	0.00E+00	1.43E-02	0.00E+00	0.00E+00
M-01	M-01-D	24	50	0.9	2.6	14.4	0.181	0.00E+00	0.00E+00	1.43E-02	0.00E+00	0.00E+00
M-01	M-01-E	21	52	0.9	2.6	14.4	0.181	0.00E+00	0.00E+00	1.43E-02	0.00E+00	0.00E+00
M-01	M-01-F	6	16	0.9	1.8	14.4	0.125	0.00E+00	0.00E+00	1.43E-02	0.00E+00	0.00E+00
M-03	M-03-A	74	71	0.9	2.4	12.6	0.190	1.23E-01	2.87E-04	1.56E-02	4.47E-06	1.49E-02
M-03	M-03-B	69	71	0.9	2.4	12.6	0.190	1.23E-01	2.87E-04	1.56E-02	4.47E-06	1.49E-02
M-03	M-03-C	40	74	0.9	2.6	12.6	0.206	1.23E-01	2.97E-04	1.56E-02	4.63E-06	1.54E-02
M-03	M-03-D	37	74	0.9	2.6	12.6	0.206	1.23E-01	2.97E-04	1.56E-02	4.63E-06	1.54E-02
M-03	M-03-E	33	72	0.9	2.6	12.6	0.206	1.23E-01	3.07E-04	1.56E-02	4.79E-06	1.60E-02
M-04	M-04-A	57	78	1	2.4	14.6	0.164	9.84E-01	2.00E-03	1.03E-02	2.05E-05	6.82E-02
M-04	M-04-B	54	75	1	2.4	14.6	0.164	9.84E-01	2.07E-03	1.03E-02	2.12E-05	7.07E-02
M-04	M-04-C	27	68	1	2.6	14.6	0.178	9.84E-01	2.46E-03	1.03E-02	2.53E-05	8.42E-02
M-04	M-04-D	23	66	1	2.6	14.6	0.178	9.84E-01	2.55E-03	1.03E-02	2.61E-05	8.71E-02
M-04	M-04-E	20	64	1	2.6	14.6	0.178	9.84E-01	2.64E-03	1.03E-02	2.71E-05	9.03E-02
M-04	M-04-F	4	16	1	1.0	14.6	0.068	9.84E-01	4.06E-03	1.03E-02	4.17E-05	1.39E-01
M-04	M-04-G	2	11	1	1.0	14.6	0.068	9.84E-01	5.69E-03	1.03E-02	5.83E-05	1.94E-01
M-21	M-21-A	Child	15	0.33			0.046	2.49E-02	2.43E-05	1.24E-02	3.02E-07	1.01E-03
M-21	M-21-B	Adult	70	0.33			0.108	2.49E-02	1.21E-05	1.24E-02	1.51E-07	5.03E-04
M-25	M-25-A	34	100	0.8	2.6	9.8	0.265	4.16E-02	8.46E-05	7.20E-03	6.09E-07	2.03E-03
M-25	M-25-B	33	68	0.8	2.6	9.8	0.265	4.16E-02	1.24E-04	7.20E-03	8.93E-07	2.98E-03
M-25	M-25-C	10	43	0.8	1.8	9.8	0.184	4.16E-02	1.36E-04	7.20E-03	9.76E-07	3.25E-03
M-25	M-25-D	7	34	0.8	1.8	9.8	0.184	4.16E-02	1.72E-04	7.20E-03	1.24E-06	4.12E-03
M-25	M-25-E	3	16	0.8	1.0	9.8	0.102	4.16E-02	2.04E-04	7.20E-03	1.47E-06	4.91E-03

TABLE D-9 CALCULATION FOR INDIVIDUAL SUBCHRONIC HAZARD QUOTIENT FROM ARSENIC IN GARDEN VEGETABLES

HQ(s) = DI/RfD(s)
DI = HIF*C
HIF = [(DY*HCF*ICF)*(EF*ED)]/(BW*AT)
ICF = RI(i)/RI(t)

RfD(s) = 3.00E-04
EF = 350 days/yr
ED = 1 year
AT = 365 days

					Root Vegetables							
HSHLD	INDIV.	AGE (yrs)	BW (kg)	HCF	RI(i)	RI(t)	ICF	Daily Yld, kg	HIF	C	DI	HQ
M-29	M-29-A	Child	15	0.7			0.050	2.60E-02	5.81E-05	7.20E-03	4.18E-07	1.39E-03
M-29	M-29-B	Adult	70	0.7			0.117	2.60E-02	2.91E-05	7.20E-03	2.09E-07	6.97E-04
M-31	M-31-A	21	52	1	2.6	19.2	0.135	1.69E-02	4.19E-05	2.04E-02	8.56E-07	2.85E-03
M-31	M-31-B	19	50	1	2.6	19.2	0.135	1.69E-02	4.38E-05	2.04E-02	8.94E-07	2.98E-03
M-31	M-31-C	17	55	1	2.6	19.2	0.135	1.69E-02	3.95E-05	2.04E-02	8.06E-07	2.69E-03
M-31	M-31-D	15	50	1	2.6	19.2	0.135	1.69E-02	4.42E-05	2.04E-02	9.03E-07	3.01E-03
M-31	M-31-E	9	36	1	1.8	19.2	0.094	1.69E-02	4.17E-05	2.04E-02	8.51E-07	2.84E-03
M-31	M-31-F	6	20	1	1.8	19.2	0.094	1.69E-02	7.77E-05	2.04E-02	1.58E-06	5.28E-03
M-31	M-31-G	43	61	1	2.6	19.2	0.135	1.69E-02	3.57E-05	2.04E-02	7.29E-07	2.43E-03
M-31	M-31-H	43	80	1	2.6	19.2	0.135	1.69E-02	2.76E-05	2.04E-02	5.62E-07	1.87E-03
M-41	M-41-A	71	71	0.15	2.4	15.2	0.158	3.64E-02	1.17E-05	7.20E-03	8.41E-08	2.80E-04
M-41	M-41-B	68	71	0.15	2.4	15.2	0.158	3.64E-02	1.17E-05	7.20E-03	8.41E-08	2.80E-04
M-41	M-41-C	47	75	0.15	2.4	15.2	0.158	3.64E-02	1.11E-05	7.20E-03	7.98E-08	2.66E-04
M-41	M-41-D	45	75	0.15	2.4	15.2	0.158	3.64E-02	1.11E-05	7.20E-03	7.98E-08	2.66E-04
M-41	M-41-E	30	72	0.15	2.6	15.2	0.171	3.64E-02	1.25E-05	7.20E-03	9.01E-08	3.00E-04
M-41	M-41-F	3	15	0.15	1.0	15.2	0.066	3.64E-02	2.25E-05	7.20E-03	1.62E-07	5.40E-04
M-41	M-41-G	2	13	0.15	1.0	15.2	0.066	3.64E-02	2.59E-05	7.20E-03	1.86E-07	6.21E-04
M-41	M-41-H	1	11	0.15	1.0	15.2	0.066	3.64E-02	3.05E-05	7.20E-03	2.19E-07	7.31E-04
RA-03	RA-03-A	33	91	1	2.6	13.6	0.191	1.27E-01	2.55E-04	2.16E-02	5.52E-06	1.84E-02
RA-03	RA-03-B	29	50	1	2.6	13.6	0.191	1.27E-01	4.64E-04	2.16E-02	1.00E-05	3.34E-02
RA-03	RA-03-C	11	34	1	1.8	13.6	0.132	1.27E-01	4.71E-04	2.16E-02	1.02E-05	3.39E-02
RA-03	RA-03-D	9	30	1	1.8	13.6	0.132	1.27E-01	5.44E-04	2.16E-02	1.17E-05	3.92E-02
RA-03	RA-03-E	7	20	1	1.8	13.6	0.132	1.27E-01	7.86E-04	2.16E-02	1.70E-05	5.66E-02
RA-03	RA-03-F	4	14	1	1.0	13.6	0.074	1.27E-01	6.55E-04	2.16E-02	1.41E-05	4.71E-02
RA-03	RA-03-G	2	11	1	1.0	13.6	0.074	1.27E-01	7.86E-04	2.16E-02	1.70E-05	5.66E-02
RA-03	RA-03-H	1	9	1	1.0	13.6	0.074	1.27E-01	9.82E-04	2.16E-02	2.12E-05	7.07E-02
RA-04	RA-04-A	51	75	1	2.4	4.8	0.500	0.00E+00	0.00E+00	1.20E-02	0.00E+00	0.00E+00
RA-04	RA-04-B	52	84	1	2.4	4.8	0.500	0.00E+00	0.00E+00	1.20E-02	0.00E+00	0.00E+00
RA-07	RA-07-A	Child	15	0.9			0.010	4.55E-01	2.71E-04	1.68E-02	4.55E-06	1.52E-02
RA-07	RA-07-B	Adult	70	0.9			0.024	4.55E-01	1.35E-04	1.68E-02	2.27E-06	7.58E-03
RA-08	RA-08-A	43	82	1	2.6	6.2	0.419	5.39E-02	2.65E-04	7.20E-03	1.91E-06	6.36E-03
RA-08	RA-08-B	34	64	1	2.6	6.2	0.419	5.39E-02	3.38E-04	7.20E-03	2.43E-06	8.12E-03
RA-08	RA-08-D	4	16	1	1.0	6.2	0.161	5.39E-02	5.24E-04	7.20E-03	3.77E-06	1.26E-02

TABLE D-10 CALCULATION FOR INDIVIDUAL SUBCHRONIC HAZARD QUOTIENT FROM ARSENIC IN GARDEN VEGETABLES

HQ(s) = DI/RfD(s)
DI = HIF*C
HIF = [(DY*HCF*ICF)*(EF*ED)]/(BW*AT)
ICF = RI(i)/RI(t)

RfD(s) = 3.00E-04
EF = 350 days/yr
ED = 1 year
AT = 365 days

		AGE	BW		Garden Fruit							
HSHLD	INDIV.	(yrs)	(kg)	HCF	RI(i)	RI(t)	ICF	Daily Yld, kg	HIF	C	DI	HQ
BC-02	BC-02-A	40	68	0.9	2.8	12.3	0.228	4.91E-01	1.41E-03	NA	NA	NA
BC-02	BC-02-B	43	61	0.9	2.8	12.3	0.228	4.91E-01	1.57E-03	NA	NA	NA
BC-02	BC-02-C	16	45	0.9	2.1	12.3	0.171	4.91E-01	1.59E-03	NA	NA	NA
BC-02	BC-02-D	14	34	0.9	2.1	12.3	0.171	4.91E-01	2.12E-03	NA	NA	NA
BC-02	BC-02-E	9	28	0.9	1.5	12.3	0.122	4.91E-01	1.83E-03	NA	NA	NA
BC-02	BC-02-F	5	16	0.9	1.0	12.3	0.081	4.91E-01	2.17E-03	NA	NA	NA
BC-04	BC-04-A	89	55	1	2.9	8.7	0.333	8.38E-01	4.91E-03	1.80E-03	8.84E-06	2.95E-02
BC-04	BC-04-B	62	57	1	2.9	8.7	0.333	8.38E-01	4.71E-03	1.80E-03	8.48E-06	2.83E-02
BC-04	BC-04-C	57	84	1	2.9	8.7	0.333	8.38E-01	3.18E-03	1.80E-03	5.73E-06	1.91E-02
BC-06	BC-06-A	64	70	1	2.9	8.6	0.337	1.46E-01	6.71E-04	3.60E-03	2.41E-06	8.05E-03
BC-06	BC-06-B	65	77	1	2.9	8.6	0.337	1.46E-01	6.11E-04	3.60E-03	2.20E-06	7.34E-03
BC-06	BC-06-C	28	77	1	2.8	8.6	0.326	1.46E-01	5.90E-04	3.60E-03	2.13E-06	7.08E-03
BC-11	BC-11-A	47	59	1	2.9	11.4	0.254	5.26E-01	2.17E-03	3.60E-03	7.82E-06	2.61E-02
BC-11	BC-11-B	44	68	1	2.8	11.4	0.246	5.26E-01	1.82E-03	3.60E-03	6.54E-06	2.18E-02
BC-11	BC-11-C	19	68	1	2.1	11.4	0.184	5.26E-01	1.36E-03	3.60E-03	4.91E-06	1.64E-02
BC-11	BC-11-D	15	45	1	2.1	11.4	0.184	5.26E-01	2.04E-03	3.60E-03	7.36E-06	2.45E-02
BC-11	BC-11-E	11	23	1	1.5	11.4	0.132	5.26E-01	2.92E-03	3.60E-03	1.05E-05	3.50E-02
BC-20	BC-20-A	62	105	0.5	2.9	15.8	0.184	4.71E-01	3.97E-04	3.60E-03	1.43E-06	4.76E-03
BC-20	BC-20-B	60	68	0.5	2.9	15.8	0.184	4.71E-01	6.08E-04	3.60E-03	2.19E-06	7.30E-03
BC-20	BC-20-C	35	64	0.5	2.8	15.8	0.177	4.71E-01	6.29E-04	3.60E-03	2.27E-06	7.55E-03
BC-20	BC-20-D	16	73	0.5	2.1	15.8	0.133	4.71E-01	4.13E-04	3.60E-03	1.49E-06	4.96E-03
BC-20	BC-20-E	14	64	0.5	2.1	15.8	0.133	4.71E-01	4.72E-04	3.60E-03	1.70E-06	5.66E-03
BC-20	BC-20-F	11	23	0.5	1.5	15.8	0.095	4.71E-01	9.44E-04	3.60E-03	3.40E-06	1.13E-02
BC-20	BC-20-G	9	23	0.5	1.5	15.8	0.095	4.71E-01	9.44E-04	3.60E-03	3.40E-06	1.13E-02
BC-23	BC-23-A	73	71	0.9	2.9	8.7	0.333	1.43E-01	5.81E-04	3.60E-03	2.09E-06	6.98E-03
BC-23	BC-23-B	69	71	0.9	2.9	8.7	0.333	1.43E-01	5.81E-04	3.60E-03	2.09E-06	6.98E-03
BC-23	BC-23-C	45	75	0.9	2.9	8.7	0.333	1.43E-01	5.52E-04	3.60E-03	1.99E-06	6.62E-03
BC-24	BC-24-A	32	73	0.5	2.8	6.6	0.424	2.86E-01	8.01E-04	3.60E-03	2.88E-06	9.62E-03
BC-24	BC-24-B	28	105	0.5	2.8	6.6	0.424	2.86E-01	5.57E-04	3.60E-03	2.01E-06	6.69E-03
BC-24	BC-24-C	3	18	0.5	1.0	6.6	0.152	2.86E-01	1.17E-03	3.60E-03	4.23E-06	1.41E-02
BC-31	BC-31-A	60	55	1	2.9	2.9	1.000	2.08E-01	3.59E-03	3.60E-03	1.29E-05	4.31E-02
BC-34	BC-34-A	64	105	0.9	2.9	5.8	0.500	2.65E-01	1.09E-03	3.60E-03	3.94E-06	1.31E-02
BC-34	BC-34-B	65	59	0.9	2.9	5.8	0.500	2.65E-01	1.93E-03	3.60E-03	6.96E-06	2.32E-02
BC-37	BC-37-A	55	70	0.75	2.9	5.8	0.500	6.62E-01	3.38E-03	3.90E-03	1.32E-05	4.39E-02
BC-37	BC-37-B	55	68	0.75	2.9	5.8	0.500	6.62E-01	3.49E-03	3.90E-03	1.36E-05	4.54E-02
M-01	M-01-A	70	75	0.9	2.9	15.7	0.185	9.74E-02	2.07E-04	3.60E-03	7.45E-07	2.48E-03
M-01	M-01-B	70	66	0.9	2.9	15.7	0.185	9.74E-02	2.36E-04	3.60E-03	8.48E-07	2.83E-03
M-01	M-01-C	28	77	0.9	2.8	15.7	0.178	9.74E-02	1.94E-04	3.60E-03	6.98E-07	2.33E-03
M-01	M-01-D	24	50	0.9	2.8	15.7	0.178	9.74E-02	3.00E-04	3.60E-03	1.08E-06	3.60E-03
M-01	M-01-E	21	52	0.9	2.8	15.7	0.178	9.74E-02	2.87E-04	3.60E-03	1.03E-06	3.44E-03
M-01	M-01-F	6	16	0.9	1.5	15.7	0.096	9.74E-02	5.05E-04	3.60E-03	1.82E-06	6.06E-03
M-03	M-03-A	74	71	0.9	2.9	14.2	0.204	2.51E-01	6.25E-04	3.60E-03	2.25E-06	7.50E-03
M-03	M-03-B	69	71	0.9	2.9	14.2	0.204	2.51E-01	6.25E-04	3.60E-03	2.25E-06	7.50E-03
M-03	M-03-C	40	74	0.9	2.8	14.2	0.197	2.51E-01	5.76E-04	3.60E-03	2.08E-06	6.92E-03
M-03	M-03-D	37	74	0.9	2.8	14.2	0.197	2.51E-01	5.76E-04	3.60E-03	2.08E-06	6.92E-03
M-03	M-03-E	33	72	0.9	2.8	14.2	0.197	2.51E-01	5.97E-04	3.60E-03	2.15E-06	7.16E-03
M-04	M-04-A	57	78	1	2.9	16.2	0.179	1.86E+00	4.11E-03	1.80E-03	7.40E-06	2.47E-02
M-04	M-04-B	54	75	1	2.9	16.2	0.179	1.86E+00	4.26E-03	1.80E-03	7.67E-06	2.56E-02
M-04	M-04-C	27	68	1	2.8	16.2	0.173	1.86E+00	4.52E-03	1.80E-03	8.14E-06	2.71E-02
M-04	M-04-D	23	66	1	2.8	16.2	0.173	1.86E+00	4.68E-03	1.80E-03	8.43E-06	2.81E-02
M-04	M-04-E	20	64	1	2.8	16.2	0.173	1.86E+00	4.85E-03	1.80E-03	8.73E-06	2.91E-02
M-04	M-04-F	4	16	1	1.0	16.2	0.062	1.86E+00	6.93E-03	1.80E-03	1.25E-05	4.16E-02
M-04	M-04-G	2	11	1	1.0	16.2	0.062	1.86E+00	9.70E-03	1.80E-03	1.75E-05	5.82E-02
M-21	M-21-A	Child	15	0.33			0.046	3.83E-01	3.73E-04	3.60E-03	1.34E-06	4.48E-03
M-21	M-21-B	Adult	70	0.33			0.108	3.83E-01	1.87E-04	3.60E-03	6.72E-07	2.24E-03
M-25	M-25-A	34	100	0.8	2.8	9.6	0.292	8.13E-01	1.82E-03	3.60E-03	6.55E-06	2.18E-02
M-25	M-25-B	33	68	0.8	2.8	9.6	0.292	8.13E-01	2.67E-03	3.60E-03	9.61E-06	3.20E-02
M-25	M-25-C	10	43	0.8	1.5	9.6	0.156	8.13E-01	2.26E-03	3.60E-03	8.13E-06	2.71E-02
M-25	M-25-D	7	34	0.8	1.5	9.6	0.156	8.13E-01	2.86E-03	3.60E-03	1.03E-05	3.43E-02
M-25	M-25-E	3	16	0.8	1.0	9.6	0.104	8.13E-01	4.08E-03	3.60E-03	1.47E-05	4.90E-02

TABLE D-10 CALCULATION FOR INDIVIDUAL SUBCHRONIC HAZARD QUOTIENT FROM ARSENIC IN GARDEN VEGETABLES

HQ(s) = DI/RfD(s)
DI = HIF*C
HIF = [(DY*HCF*ICF)*(EF*ED)]/(BW*AT)
ICF = RI(i)/RI(t)

RfD(s) = 3.00E-04
EF = 350 days/yr
ED = 1 year
AT = 365 days

		AGE	BW		Garden Fruit							
HSHLD	INDIV.	(yrs)	(kg)	HCF	RI(i)	RI(t)	ICF	Daily Yld, kg	HIF	C	DI	HQ
M-29	M-29-A	Child	15	0.7			0.050	8.05E-01	1.80E-03	3.60E-03	6.49E-06	2.16E-02
M-29	M-29-B	Adult	70	0.7			0.117	8.05E-01	9.01E-04	3.60E-03	3.24E-06	1.08E-02
M-31	M-31-A	21	52	1	2.8	17.7	0.158	6.48E-01	1.88E-03	3.60E-03	6.77E-06	2.26E-02
M-31	M-31-B	19	50	1	2.1	17.7	0.119	6.48E-01	1.48E-03	3.60E-03	5.31E-06	1.77E-02
M-31	M-31-C	17	55	1	2.1	17.7	0.119	6.48E-01	1.33E-03	3.60E-03	4.79E-06	1.60E-02
M-31	M-31-D	15	50	1	2.1	17.7	0.119	6.48E-01	1.49E-03	3.60E-03	5.36E-06	1.79E-02
M-31	M-31-E	9	36	1	1.5	17.7	0.085	6.48E-01	1.45E-03	3.60E-03	5.22E-06	1.74E-02
M-31	M-31-F	6	20	1	1.5	17.7	0.085	6.48E-01	2.70E-03	3.60E-03	9.70E-06	3.23E-02
M-31	M-31-G	43	61	1	2.8	17.7	0.158	6.48E-01	1.60E-03	3.60E-03	5.77E-06	1.92E-02
M-31	M-31-H	43	80	1	2.8	17.7	0.158	6.48E-01	1.24E-03	3.60E-03	4.45E-06	1.48E-02
M-41	M-41-A	71	71	0.15	2.9	17.4	0.167	1.36E-01	4.62E-05	3.60E-03	1.66E-07	5.55E-04
M-41	M-41-B	68	71	0.15	2.9	17.4	0.167	1.36E-01	4.62E-05	3.60E-03	1.66E-07	5.55E-04
M-41	M-41-C	47	75	0.15	2.9	17.4	0.167	1.36E-01	4.39E-05	3.60E-03	1.58E-07	5.27E-04
M-41	M-41-D	45	75	0.15	2.9	17.4	0.167	1.36E-01	4.39E-05	3.60E-03	1.58E-07	5.27E-04
M-41	M-41-E	30	72	0.15	2.8	17.4	0.161	1.36E-01	4.41E-05	3.60E-03	1.59E-07	5.30E-04
M-41	M-41-F	3	15	0.15	1.0	17.4	0.057	1.36E-01	7.37E-05	3.60E-03	2.65E-07	8.84E-04
M-41	M-41-G	2	13	0.15	1.0	17.4	0.057	1.36E-01	8.48E-05	3.60E-03	3.05E-07	1.02E-03
M-41	M-41-H	1	11	0.15	1.0	17.4	0.057	1.36E-01	9.98E-05	3.60E-03	3.59E-07	1.20E-03
RA-03	RA-03-A	33	91	1	2.8	13.1	0.214	1.32E+00	2.99E-03	3.60E-03	1.07E-05	3.58E-02
RA-03	RA-03-B	29	50	1	2.8	13.1	0.214	1.32E+00	5.43E-03	3.60E-03	1.95E-05	6.51E-02
RA-03	RA-03-C	11	34	1	1.5	13.1	0.115	1.32E+00	4.27E-03	3.60E-03	1.54E-05	5.12E-02
RA-03	RA-03-D	9	30	1	1.5	13.1	0.115	1.32E+00	4.92E-03	3.60E-03	1.77E-05	5.91E-02
RA-03	RA-03-E	7	20	1	1.5	13.1	0.115	1.32E+00	7.11E-03	3.60E-03	2.56E-05	8.53E-02
RA-03	RA-03-F	4	14	1	1.0	13.1	0.076	1.32E+00	7.11E-03	3.60E-03	2.56E-05	8.53E-02
RA-03	RA-03-G	2	11	1	1.0	13.1	0.076	1.32E+00	8.53E-03	3.60E-03	3.07E-05	1.02E-01
RA-03	RA-03-H	1	9	1	1.0	13.1	0.076	1.32E+00	1.07E-02	3.60E-03	3.84E-05	1.28E-01
RA-04	RA-04-A	51	75	1	2.9	5.8	0.500	1.34E-01	8.58E-04	3.60E-03	3.09E-06	1.03E-02
RA-04	RA-04-B	52	84	1	2.9	5.8	0.500	1.34E-01	7.65E-04	3.60E-03	2.75E-06	9.18E-03
RA-07	RA-07-A	Child	15	0.9			0.010	1.23E+00	7.32E-04	3.60E-03	2.63E-06	8.78E-03
RA-07	RA-07-B	Adult	70	0.9			0.024	1.23E+00	3.66E-04	3.60E-03	1.32E-06	4.39E-03
RA-08	RA-08-A	43	82	1	2.8	6.6	0.424	7.35E-01	3.65E-03	3.60E-03	1.32E-05	4.39E-02
RA-08	RA-08-B	34	64	1	2.8	6.6	0.424	7.35E-01	4.67E-03	3.60E-03	1.68E-05	5.60E-02
RA-08	RA-08-D	4	16	1	1.0	6.6	0.152	7.35E-01	6.71E-03	3.60E-03	2.42E-05	8.06E-02

TABLE D-11 CALCULATION FOR INDIVIDUAL SUBCHRONIC HAZARD QUOTIENT FROM ARSENIC IN GARDEN VEGETABLES

HQ(s) = DI/RfD(s)
DI = HIF*C
HIF = [(DY*HCF*ICF)*(EF*ED)]/(BW*AT)
ICF = RI(i)/RI(t)

RfD(s) = 3.00E-04
EF = 350 days/yr
ED = 1 year
AT = 365 days

					Beans/Peas							
HSHLD	INDIV.	AGE (yrs)	BW (kg)	HCF	RI(i)	RI(t)	ICF	Daily Yld, kg	HIF	C	DI	HQ
BC-02	BC-02-A	40	68	0.9	2.2	10.6	0.208	1.16E-02	3.04E-05	NA	NA	NA
BC-02	BC-02-B	43	61	0.9	2.2	10.6	0.208	1.16E-02	3.38E-05	NA	NA	NA
BC-02	BC-02-C	16	45	0.9	1.9	10.6	0.179	1.16E-02	3.94E-05	NA	NA	NA
BC-02	BC-02-D	14	34	0.9	1.9	10.6	0.179	1.16E-02	5.25E-05	NA	NA	NA
BC-02	BC-02-E	9	28	0.9	1.4	10.6	0.132	1.16E-02	4.68E-05	NA	NA	NA
BC-02	BC-02-F	5	16	0.9	1.0	10.6	0.094	1.16E-02	5.92E-05	NA	NA	NA
BC-04	BC-04-A	89	55	1	2.1	6.3	0.333	8.77E-02	5.14E-04	1.80E-03	9.25E-07	3.08E-03
BC-04	BC-04-B	62	57	1	2.1	6.3	0.333	8.77E-02	4.93E-04	1.80E-03	8.88E-07	2.96E-03
BC-04	BC-04-C	57	84	1	2.1	6.3	0.333	8.77E-02	3.33E-04	1.80E-03	6.00E-07	2.00E-03
BC-06	BC-06-A	64	70	1	2.1	6.4	0.328	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
BC-06	BC-06-B	65	77	1	2.1	6.4	0.328	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
BC-06	BC-06-C	28	77	1	2.2	6.4	0.344	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
BC-11	BC-11-A	47	59	1	2.1	9.5	0.221	3.90E-02	1.40E-04	3.60E-03	5.03E-07	1.68E-03
BC-11	BC-11-B	44	68	1	2.2	9.5	0.232	3.90E-02	1.27E-04	3.60E-03	4.57E-07	1.52E-03
BC-11	BC-11-C	19	68	1	1.9	9.5	0.200	3.90E-02	1.10E-04	3.60E-03	3.95E-07	1.32E-03
BC-11	BC-11-D	15	45	1	1.9	9.5	0.200	3.90E-02	1.64E-04	3.60E-03	5.92E-07	1.97E-03
BC-11	BC-11-E	11	23	1	1.4	9.5	0.147	3.90E-02	2.42E-04	3.60E-03	8.72E-07	2.91E-03
BC-20	BC-20-A	62	105	0.5	2.1	13.0	0.162	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
BC-20	BC-20-B	60	68	0.5	2.1	13.0	0.162	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
BC-20	BC-20-C	35	64	0.5	2.2	13.0	0.169	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
BC-20	BC-20-D	16	73	0.5	1.9	13.0	0.146	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
BC-20	BC-20-E	14	64	0.5	1.9	13.0	0.146	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
BC-20	BC-20-F	11	23	0.5	1.4	13.0	0.108	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
BC-20	BC-20-G	9	23	0.5	1.4	13.0	0.108	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
BC-23	BC-23-A	73	71	0.9	2.1	6.3	0.333	1.56E-02	6.34E-05	3.60E-03	2.28E-07	7.61E-04
BC-23	BC-23-B	69	71	0.9	2.1	6.3	0.333	1.56E-02	6.34E-05	3.60E-03	2.28E-07	7.61E-04
BC-23	BC-23-C	45	75	0.9	2.1	6.3	0.333	1.56E-02	6.02E-05	3.60E-03	2.17E-07	7.22E-04
BC-24	BC-24-A	32	73	0.5	2.2	5.4	0.407	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
BC-24	BC-24-B	28	105	0.5	2.2	5.4	0.407	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
BC-24	BC-24-C	3	18	0.5	1.0	5.4	0.185	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
BC-31	BC-31-A	60	55	1	2.1	2.1	1.000	2.60E-03	4.49E-05	3.60E-03	1.62E-07	5.39E-04
BC-34	BC-34-A	64	105	0.9	2.1	4.2	0.500	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
BC-34	BC-34-B	65	59	0.9	2.1	4.2	0.500	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
BC-37	BC-37-A	55	70	0.75	2.1	4.2	0.500	2.60E-02	1.33E-04	3.90E-03	5.17E-07	1.72E-03
BC-37	BC-37-B	55	68	0.75	2.1	4.2	0.500	2.60E-02	1.37E-04	3.90E-03	5.34E-07	1.78E-03
M-01	M-01-A	70	75	0.9	2.1	12.2	0.172	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
M-01	M-01-B	70	66	0.9	2.1	12.2	0.172	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
M-01	M-01-C	28	77	0.9	2.2	12.2	0.180	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
M-01	M-01-D	24	50	0.9	2.2	12.2	0.180	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
M-01	M-01-E	21	52	0.9	2.2	12.2	0.180	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
M-01	M-01-F	6	16	0.9	1.4	12.2	0.115	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
M-03	M-03-A	74	71	0.9	2.1	10.8	0.194	2.60E-02	6.17E-05	3.60E-03	2.22E-07	7.40E-04
M-03	M-03-B	69	71	0.9	2.1	10.8	0.194	2.60E-02	6.17E-05	3.60E-03	2.22E-07	7.40E-04
M-03	M-03-C	40	74	0.9	2.2	10.8	0.204	2.60E-02	6.17E-05	3.60E-03	2.22E-07	7.40E-04
M-03	M-03-D	37	74	0.9	2.2	10.8	0.204	2.60E-02	6.17E-05	3.60E-03	2.22E-07	7.40E-04
M-03	M-03-E	33	72	0.9	2.2	10.8	0.204	2.60E-02	6.39E-05	3.60E-03	2.30E-07	7.66E-04
M-04	M-04-A	57	78	1	2.1	12.8	0.164	2.92E-01	5.91E-04	1.80E-03	1.06E-06	3.55E-03
M-04	M-04-B	54	75	1	2.1	12.8	0.164	2.92E-01	6.13E-04	1.80E-03	1.10E-06	3.68E-03
M-04	M-04-C	27	68	1	2.2	12.8	0.172	2.92E-01	7.06E-04	1.80E-03	1.27E-06	4.24E-03
M-04	M-04-D	23	66	1	2.2	12.8	0.172	2.92E-01	7.31E-04	1.80E-03	1.32E-06	4.38E-03
M-04	M-04-E	20	64	1	2.2	12.8	0.172	2.92E-01	7.57E-04	1.80E-03	1.36E-06	4.54E-03
M-04	M-04-F	4	16	1	1.0	12.8	0.078	2.92E-01	1.38E-03	1.80E-03	2.48E-06	8.26E-03
M-04	M-04-G	2	11	1	1.0	12.8	0.078	2.92E-01	1.93E-03	1.80E-03	3.47E-06	1.16E-02
M-21	M-21-A	Child	15	0.33			0.046	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
M-21	M-21-B	Adult	70	0.33			0.108	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
M-25	M-25-A	34	100	0.8	2.2	8.2	0.268	1.04E-02	2.14E-05	3.60E-03	7.70E-08	2.57E-04
M-25	M-25-B	33	68	0.8	2.2	8.2	0.268	1.04E-02	3.14E-05	3.60E-03	1.13E-07	3.76E-04
M-25	M-25-C	10	43	0.8	1.4	8.2	0.171	1.04E-02	3.15E-05	3.60E-03	1.13E-07	3.78E-04
M-25	M-25-D	7	34	0.8	1.4	8.2	0.171	1.04E-02	3.99E-05	3.60E-03	1.44E-07	4.79E-04
M-25	M-25-E	3	16	0.8	1.0	8.2	0.122	1.04E-02	6.11E-05	3.60E-03	2.20E-07	7.33E-04

TABLE D-11 CALCULATION FOR INDIVIDUAL SUBCHRONIC HAZARD QUOTIENT FROM ARSENIC IN GARDEN VEGETABLES

HQ(s) = DI/RfD(s)
DI = HIF*C
HIF = [(DY*HCF*ICF)*(EF*ED)]/(BW*AT)
ICF = RI(i)/RI(t)

RfD(s) = 3.00E-04
EF = 350 days/yr
ED = 1 year
AT = 365 days

					Beans/Peas							
HSHLD	INDIV.	AGE (yrs)	BW (kg)	HCF	RI(i)	RI(t)	ICF	Daily Yld, kg	HIF	C	DI	HQ
M-29	M-29-A	Child	15	0.7			0.050	2.60E-02	5.81E-05	3.60E-03	2.09E-07	6.97E-04
M-29	M-29-B	Adult	70	0.7			0.117	2.60E-02	2.91E-05	3.60E-03	1.05E-07	3.49E-04
M-31	M-31-A	21	52	1	2.2	15.1	0.146	7.79E-02	2.08E-04	3.60E-03	7.50E-07	2.50E-03
M-31	M-31-B	19	50	1	1.9	15.1	0.126	7.79E-02	1.88E-04	3.60E-03	6.77E-07	2.26E-03
M-31	M-31-C	17	55	1	1.9	15.1	0.126	7.79E-02	1.70E-04	3.60E-03	6.10E-07	2.03E-03
M-31	M-31-D	15	50	1	1.9	15.1	0.126	7.79E-02	1.90E-04	3.60E-03	6.83E-07	2.28E-03
M-31	M-31-E	9	36	1	1.4	15.1	0.093	7.79E-02	1.91E-04	3.60E-03	6.86E-07	2.29E-03
M-31	M-31-F	6	20	1	1.4	15.1	0.093	7.79E-02	3.54E-04	3.60E-03	1.28E-06	4.25E-03
M-31	M-31-G	43	61	1	2.2	15.1	0.146	7.79E-02	1.77E-04	3.60E-03	6.39E-07	2.13E-03
M-31	M-31-H	43	80	1	2.2	15.1	0.146	7.79E-02	1.37E-04	3.60E-03	4.93E-07	1.64E-03
M-41	M-41-A	71	71	0.15	2.1	13.6	0.154	1.30E-02	4.08E-06	3.60E-03	1.47E-08	4.90E-05
M-41	M-41-B	68	71	0.15	2.1	13.6	0.154	1.30E-02	4.08E-06	3.60E-03	1.47E-08	4.90E-05
M-41	M-41-C	47	75	0.15	2.1	13.6	0.154	1.30E-02	3.87E-06	3.60E-03	1.39E-08	4.65E-05
M-41	M-41-D	45	75	0.15	2.1	13.6	0.154	1.30E-02	3.87E-06	3.60E-03	1.39E-08	4.65E-05
M-41	M-41-E	30	72	0.15	2.2	13.6	0.162	1.30E-02	4.23E-06	3.60E-03	1.52E-08	5.07E-05
M-41	M-41-F	3	15	0.15	1.0	13.6	0.074	1.30E-02	8.98E-06	3.60E-03	3.23E-08	1.08E-04
M-41	M-41-G	2	13	0.15	1.0	13.6	0.074	1.30E-02	1.03E-05	3.60E-03	3.72E-08	1.24E-04
M-41	M-41-H	1	11	0.15	1.0	13.6	0.074	1.30E-02	1.22E-05	3.60E-03	4.38E-08	1.46E-04
RA-03	RA-03-A	33	91	1	2.2	11.6	0.190	2.92E-02	5.85E-05	3.60E-03	2.10E-07	7.01E-04
RA-03	RA-03-B	29	50	1	2.2	11.6	0.190	2.92E-02	1.06E-04	3.60E-03	3.83E-07	1.28E-03
RA-03	RA-03-C	11	34	1	1.4	11.6	0.121	2.92E-02	9.92E-05	3.60E-03	3.57E-07	1.19E-03
RA-03	RA-03-D	9	30	1	1.4	11.6	0.121	2.92E-02	1.14E-04	3.60E-03	4.12E-07	1.37E-03
RA-03	RA-03-E	7	20	1	1.4	11.6	0.121	2.92E-02	1.65E-04	3.60E-03	5.95E-07	1.98E-03
RA-03	RA-03-F	4	14	1	1.0	11.6	0.086	2.92E-02	1.77E-04	3.60E-03	6.38E-07	2.13E-03
RA-03	RA-03-G	2	11	1	1.0	11.6	0.086	2.92E-02	2.13E-04	3.60E-03	7.65E-07	2.55E-03
RA-03	RA-03-H	1	9	1	1.0	11.6	0.086	2.92E-02	2.66E-04	3.60E-03	9.57E-07	3.19E-03
RA-04	RA-04-A	51	75	1	2.1	4.2	0.500	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
RA-04	RA-04-B	52	84	1	2.1	4.2	0.500	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
RA-07	RA-07-A	Child	15	0.9			0.010	1.95E-01	1.16E-04	3.60E-03	4.17E-07	1.39E-03
RA-07	RA-07-B	Adult	70	0.9			0.024	1.95E-01	5.80E-05	3.60E-03	2.09E-07	6.96E-04
RA-08	RA-08-A	43	82	1	2.2	5.4	0.407	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
RA-08	RA-08-B	34	64	1	2.2	5.4	0.407	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
RA-08	RA-08-D	4	16	1	1.0	5.4	0.185	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00

TABLE D-12 CALCULATION FOR INDIVIDUAL SUBCHRONIC HAZARD QUOTIENT FROM ARSENIC IN GARDEN VEGETABLES

HQ(s) = DI/RfD(s)
DI = HIF*C
HIF = [(DY*HCF*ICF)*(EF*ED)]/(BW*AT)
ICF = RI(i)/RI(t)

RfD(s) = 3.00E-04
EF = 350 days/yr
ED = 1 year
AT = 365 days

					Corn							
HSHLD	INDIV.	AGE (yrs)	BW (kg)	HCF	RI(i)	RI(t)	ICF	Daily Yld, kg	HIF	C	DI	HQ
BC-02	BC-02-A	40	68	0.9	1.2	7.9	0.152	9.09E-03	1.75E-05	NA	NA	NA
BC-02	BC-02-B	43	61	0.9	1.2	7.9	0.152	9.09E-03	1.94E-05	NA	NA	NA
BC-02	BC-02-C	16	45	0.9	1.6	7.9	0.203	9.09E-03	3.50E-05	NA	NA	NA
BC-02	BC-02-D	14	34	0.9	1.6	7.9	0.203	9.09E-03	4.66E-05	NA	NA	NA
BC-02	BC-02-E	9	28	0.9	1.3	7.9	0.165	9.09E-03	4.58E-05	NA	NA	NA
BC-02	BC-02-F	5	16	0.9	1.0	7.9	0.127	9.09E-03	6.24E-05	NA	NA	NA
BC-04	BC-04-A	89	55	1	1.0	3.0	0.333	1.99E-01	1.16E-03	1.80E-03	2.10E-06	6.99E-03
BC-04	BC-04-B	62	57	1	1.0	3.0	0.333	1.99E-01	1.12E-03	1.80E-03	2.01E-06	6.71E-03
BC-04	BC-04-C	57	84	1	1.0	3.0	0.333	1.99E-01	7.55E-04	1.80E-03	1.36E-06	4.53E-03
BC-06	BC-06-A	64	70	1	1.0	3.2	0.313	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
BC-06	BC-06-B	65	77	1	1.0	3.2	0.313	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
BC-06	BC-06-C	28	77	1	1.2	3.2	0.375	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
BC-11	BC-11-A	47	59	1	1.0	6.7	0.149	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
BC-11	BC-11-B	44	68	1	1.2	6.7	0.179	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
BC-11	BC-11-C	19	68	1	1.6	6.7	0.239	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
BC-11	BC-11-D	15	45	1	1.6	6.7	0.239	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
BC-11	BC-11-E	11	23	1	1.3	6.7	0.194	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
BC-20	BC-20-A	62	105	0.5	1.0	9.0	0.111	4.42E-02	2.25E-05	3.60E-03	8.10E-08	2.70E-04
BC-20	BC-20-B	60	68	0.5	1.0	9.0	0.111	4.42E-02	3.45E-05	3.60E-03	1.24E-07	4.14E-04
BC-20	BC-20-C	35	64	0.5	1.2	9.0	0.133	4.42E-02	4.44E-05	3.60E-03	1.60E-07	5.32E-04
BC-20	BC-20-D	16	73	0.5	1.6	9.0	0.178	4.42E-02	5.18E-05	3.60E-03	1.86E-07	6.21E-04
BC-20	BC-20-E	14	64	0.5	1.6	9.0	0.178	4.42E-02	5.91E-05	3.60E-03	2.13E-07	7.10E-04
BC-20	BC-20-F	11	23	0.5	1.3	9.0	0.144	4.42E-02	1.35E-04	3.60E-03	4.84E-07	1.61E-03
BC-20	BC-20-G	9	23	0.5	1.3	9.0	0.144	4.42E-02	1.35E-04	3.60E-03	4.84E-07	1.61E-03
BC-23	BC-23-A	73	71	0.9	1.0	3.0	0.333	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
BC-23	BC-23-B	69	71	0.9	1.0	3.0	0.333	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
BC-23	BC-23-C	45	75	0.9	1.0	3.0	0.333	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
BC-24	BC-24-A	32	73	0.5	1.2	3.4	0.353	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
BC-24	BC-24-B	28	105	0.5	1.2	3.4	0.353	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
BC-24	BC-24-C	3	18	0.5	1.0	3.4	0.294	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
BC-31	BC-31-A	60	55	1	1.0	1.0	1.000	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
BC-34	BC-34-A	64	105	0.9	1.0	2.0	0.500	4.24E-02	1.75E-04	3.60E-03	6.30E-07	2.10E-03
BC-34	BC-34-B	65	59	0.9	1.0	2.0	0.500	4.24E-02	3.10E-04	3.60E-03	1.11E-06	3.71E-03
BC-37	BC-37-A	55	70	0.75	1.0	2.0	0.500	2.43E-02	1.24E-04	3.90E-03	4.83E-07	1.61E-03
BC-37	BC-37-B	55	68	0.75	1.0	2.0	0.500	2.43E-02	1.28E-04	3.90E-03	5.00E-07	1.67E-03
M-01	M-01-A	70	75	0.9	1.0	6.9	0.145	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
M-01	M-01-B	70	66	0.9	1.0	6.9	0.145	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
M-01	M-01-C	28	77	0.9	1.2	6.9	0.174	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
M-01	M-01-D	24	50	0.9	1.2	6.9	0.174	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
M-01	M-01-E	21	52	0.9	1.2	6.9	0.174	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
M-01	M-01-F	6	16	0.9	1.3	6.9	0.188	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
M-03	M-03-A	74	71	0.9	1.0	5.6	0.179	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
M-03	M-03-B	69	71	0.9	1.0	5.6	0.179	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
M-03	M-03-C	40	74	0.9	1.2	5.6	0.214	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
M-03	M-03-D	37	74	0.9	1.2	5.6	0.214	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
M-03	M-03-E	33	72	0.9	1.2	5.6	0.214	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
M-04	M-04-A	57	78	1	1.0	7.6	0.132	1.99E-01	3.23E-04	1.80E-03	5.81E-07	1.94E-03
M-04	M-04-B	54	75	1	1.0	7.6	0.132	1.99E-01	3.34E-04	1.80E-03	6.02E-07	2.01E-03
M-04	M-04-C	27	68	1	1.2	7.6	0.158	1.99E-01	4.41E-04	1.80E-03	7.94E-07	2.65E-03
M-04	M-04-D	23	66	1	1.2	7.6	0.158	1.99E-01	4.56E-04	1.80E-03	8.22E-07	2.74E-03
M-04	M-04-E	20	64	1	1.2	7.6	0.158	1.99E-01	4.73E-04	1.80E-03	8.51E-07	2.84E-03
M-04	M-04-F	4	16	1	1.0	7.6	0.132	1.99E-01	1.58E-03	1.80E-03	2.84E-06	9.46E-03
M-04	M-04-G	2	11	1	1.0	7.6	0.132	1.99E-01	2.21E-03	1.80E-03	3.97E-06	1.32E-02
M-21	M-21-A	Child	15	0.33			0.046	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
M-21	M-21-B	Adult	70	0.33			0.108	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
M-25	M-25-A	34	100	0.8	1.2	6.0	0.200	1.41E-02	2.17E-05	3.60E-03	7.80E-08	2.60E-04
M-25	M-25-B	33	68	0.8	1.2	6.0	0.200	1.41E-02	3.18E-05	3.60E-03	1.14E-07	3.82E-04
M-25	M-25-C	10	43	0.8	1.3	6.0	0.217	1.41E-02	5.44E-05	3.60E-03	1.96E-07	6.53E-04
M-25	M-25-D	7	34	0.8	1.3	6.0	0.217	1.41E-02	6.89E-05	3.60E-03	2.48E-07	8.27E-04
M-25	M-25-E	3	16	0.8	1.0	6.0	0.167	1.41E-02	1.14E-04	3.60E-03	4.09E-07	1.36E-03

TABLE D-12 CALCULATION FOR INDIVIDUAL SUBCHRONIC HAZARD QUOTIENT FROM ARSENIC IN GARDEN VEGETABLES

HQ(s) = DI/RfD(s)
DI = HIF*C
HIF = [(DY*HCF*ICF)*(EF*ED)]/(BW*AT)
ICF = RI(i)/RI(t)

RfD(s) = 3.00E-04
EF = 350 days/yr
ED = 1 year
AT = 365 days

					Corn							
HSHLD	INDIV.	AGE (yrs)	BW (kg)	HCF	RI(i)	RI(t)	ICF	Daily Yld, kg	HIF	C	DI	HQ
M-29	M-29-A	Child	15	0.7			0.050	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
M-29	M-29-B	Adult	70	0.7			0.117	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
M-31	M-31-A	21	52	1	1.2	11.0	0.109	3.53E-02	7.07E-05	3.60E-03	2.54E-07	8.48E-04
M-31	M-31-B	19	50	1	1.6	11.0	0.145	3.53E-02	9.85E-05	3.60E-03	3.55E-07	1.18E-03
M-31	M-31-C	17	55	1	1.6	11.0	0.145	3.53E-02	8.88E-05	3.60E-03	3.20E-07	1.07E-03
M-31	M-31-D	15	50	1	1.6	11.0	0.145	3.53E-02	9.94E-05	3.60E-03	3.58E-07	1.19E-03
M-31	M-31-E	9	36	1	1.3	11.0	0.118	3.53E-02	1.10E-04	3.60E-03	3.96E-07	1.32E-03
M-31	M-31-F	6	20	1	1.3	11.0	0.118	3.53E-02	2.05E-04	3.60E-03	7.37E-07	2.46E-03
M-31	M-31-G	43	61	1	1.2	11.0	0.109	3.53E-02	6.02E-05	3.60E-03	2.17E-07	7.23E-04
M-31	M-31-H	43	80	1	1.2	11.0	0.109	3.53E-02	4.65E-05	3.60E-03	1.67E-07	5.57E-04
M-41	M-41-A	71	71	0.15	1.0	8.2	0.122	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
M-41	M-41-B	68	71	0.15	1.0	8.2	0.122	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
M-41	M-41-C	47	75	0.15	1.0	8.2	0.122	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
M-41	M-41-D	45	75	0.15	1.0	8.2	0.122	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
M-41	M-41-E	30	72	0.15	1.2	8.2	0.146	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
M-41	M-41-F	3	15	0.15	1.0	8.2	0.122	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
M-41	M-41-G	2	13	0.15	1.0	8.2	0.122	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
M-41	M-41-H	1	11	0.15	1.0	8.2	0.122	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
RA-03	RA-03-A	33	91	1	1.2	9.3	0.129	2.65E-02	3.61E-05	3.60E-03	1.30E-07	4.33E-04
RA-03	RA-03-B	29	50	1	1.2	9.3	0.129	2.65E-02	6.56E-05	3.60E-03	2.36E-07	7.87E-04
RA-03	RA-03-C	11	34	1	1.3	9.3	0.140	2.65E-02	1.04E-04	3.60E-03	3.75E-07	1.25E-03
RA-03	RA-03-D	9	30	1	1.3	9.3	0.140	2.65E-02	1.20E-04	3.60E-03	4.33E-07	1.44E-03
RA-03	RA-03-E	7	20	1	1.3	9.3	0.140	2.65E-02	1.74E-04	3.60E-03	6.25E-07	2.08E-03
RA-03	RA-03-F	4	14	1	1.0	9.3	0.108	2.65E-02	2.00E-04	3.60E-03	7.21E-07	2.40E-03
RA-03	RA-03-G	2	11	1	1.0	9.3	0.108	2.65E-02	2.40E-04	3.60E-03	8.65E-07	2.88E-03
RA-03	RA-03-H	1	9	1	1.0	9.3	0.108	2.65E-02	3.00E-04	3.60E-03	1.08E-06	3.61E-03
RA-04	RA-04-A	51	75	1	1.0	2.0	0.500	1.19E-01	7.62E-04	3.60E-03	2.74E-06	9.15E-03
RA-04	RA-04-B	52	84	1	1.0	2.0	0.500	1.19E-01	6.80E-04	3.60E-03	2.45E-06	8.16E-03
RA-07	RA-07-A	Child	15	0.9			0.010	1.55E-01	9.20E-05	3.60E-03	3.31E-07	1.10E-03
RA-07	RA-07-B	Adult	70	0.9			0.024	1.55E-01	4.60E-05	3.60E-03	1.66E-07	5.52E-04
RA-08	RA-08-A	43	82	1	1.2	3.4	0.353	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
RA-08	RA-08-B	34	64	1	1.2	3.4	0.353	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
RA-08	RA-08-D	4	16	1	1.0	3.4	0.294	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00

TABLE D-13 CALCULATION FOR INDIVIDUAL SUBCHRONIC HAZARD QUOTIENT FROM ARSENIC IN GARDEN VEGETABLES

HQ(s) = DI/RfD(s)
DI = HIF*C
HIF = [(DY*HCF*ICF)*(EF*ED)]/(BW*AT)
ICF = RI(i)/RI(t)

RfD(s) = 3.00E-04
EF = 350 days/yr
ED = 1 year
AT = 365 days

		AGE	BW		Potatoes							
HSHLD	INDIV.	(yrs)	(kg)	HCF	RI(i)	RI(t)	ICF	Daily Yld, kg	HIF	C	DI	HQ
BC-02	BC-02-A	40	68	0.9	1.7	9.7	0.175	0.00E+00	0.00E+00	NA	NA	NA
BC-02	BC-02-B	43	61	0.9	1.7	9.7	0.175	0.00E+00	0.00E+00	NA	NA	NA
BC-02	BC-02-C	16	45	0.9	1.9	9.7	0.196	0.00E+00	0.00E+00	NA	NA	NA
BC-02	BC-02-D	14	34	0.9	1.9	9.7	0.196	0.00E+00	0.00E+00	NA	NA	NA
BC-02	BC-02-E	9	28	0.9	1.5	9.7	0.155	0.00E+00	0.00E+00	NA	NA	NA
BC-02	BC-02-F	5	16	0.9	1.0	9.7	0.103	0.00E+00	0.00E+00	NA	NA	NA
BC-04	BC-04-A	89	55	1	1.5	4.5	0.333	2.34E-01	1.37E-03	2.04E-02	2.79E-05	9.32E-02
BC-04	BC-04-B	62	57	1	1.5	4.5	0.333	2.34E-01	1.32E-03	2.04E-02	2.68E-05	8.94E-02
BC-04	BC-04-C	57	84	1	1.5	4.5	0.333	2.34E-01	8.89E-04	2.04E-02	1.81E-05	6.04E-02
BC-06	BC-06-A	64	70	1	1.5	4.7	0.319	0.00E+00	0.00E+00	2.04E-02	0.00E+00	0.00E+00
BC-06	BC-06-B	65	77	1	1.5	4.7	0.319	0.00E+00	0.00E+00	2.04E-02	0.00E+00	0.00E+00
BC-06	BC-06-C	28	77	1	1.7	4.7	0.362	0.00E+00	0.00E+00	2.04E-02	0.00E+00	0.00E+00
BC-11	BC-11-A	47	59	1	1.5	8.5	0.176	0.00E+00	0.00E+00	7.20E-03	0.00E+00	0.00E+00
BC-11	BC-11-B	44	68	1	1.7	8.5	0.200	0.00E+00	0.00E+00	7.20E-03	0.00E+00	0.00E+00
BC-11	BC-11-C	19	68	1	1.9	8.5	0.224	0.00E+00	0.00E+00	7.20E-03	0.00E+00	0.00E+00
BC-11	BC-11-D	15	45	1	1.9	8.5	0.224	0.00E+00	0.00E+00	7.20E-03	0.00E+00	0.00E+00
BC-11	BC-11-E	11	23	1	1.5	8.5	0.176	0.00E+00	0.00E+00	7.20E-03	0.00E+00	0.00E+00
BC-20	BC-20-A	62	105	0.5	1.5	11.5	0.130	1.30E-01	7.77E-05	7.20E-03	5.59E-07	1.86E-03
BC-20	BC-20-B	60	68	0.5	1.5	11.5	0.130	1.30E-01	1.19E-04	7.20E-03	8.58E-07	2.86E-03
BC-20	BC-20-C	35	64	0.5	1.7	11.5	0.148	1.30E-01	1.45E-04	7.20E-03	1.04E-06	3.47E-03
BC-20	BC-20-D	16	73	0.5	1.9	11.5	0.165	1.30E-01	1.41E-04	7.20E-03	1.02E-06	3.39E-03
BC-20	BC-20-E	14	64	0.5	1.9	11.5	0.165	1.30E-01	1.62E-04	7.20E-03	1.16E-06	3.88E-03
BC-20	BC-20-F	11	23	0.5	1.5	11.5	0.130	1.30E-01	3.57E-04	7.20E-03	2.57E-06	8.58E-03
BC-20	BC-20-G	9	23	0.5	1.5	11.5	0.130	1.30E-01	3.57E-04	7.20E-03	2.57E-06	8.58E-03
BC-23	BC-23-A	73	71	0.9	1.5	4.5	0.333	0.00E+00	0.00E+00	1.50E-02	0.00E+00	0.00E+00
BC-23	BC-23-B	69	71	0.9	1.5	4.5	0.333	0.00E+00	0.00E+00	1.50E-02	0.00E+00	0.00E+00
BC-23	BC-23-C	45	75	0.9	1.5	4.5	0.333	0.00E+00	0.00E+00	1.50E-02	0.00E+00	0.00E+00
BC-24	BC-24-A	32	73	0.5	1.7	4.4	0.386	0.00E+00	0.00E+00	7.20E-03	0.00E+00	0.00E+00
BC-24	BC-24-B	28	105	0.5	1.7	4.4	0.386	0.00E+00	0.00E+00	7.20E-03	0.00E+00	0.00E+00
BC-24	BC-24-C	3	18	0.5	1.0	4.4	0.227	0.00E+00	0.00E+00	7.20E-03	0.00E+00	0.00E+00
BC-31	BC-31-A	60	55	1	1.5	1.5	1.000	0.00E+00	0.00E+00	1.35E-02	0.00E+00	0.00E+00
BC-34	BC-34-A	64	105	0.9	1.5	3.0	0.500	0.00E+00	0.00E+00	1.85E-02	0.00E+00	0.00E+00
BC-34	BC-34-B	65	59	0.9	1.5	3.0	0.500	0.00E+00	0.00E+00	1.85E-02	0.00E+00	0.00E+00
BC-37	BC-37-A	55	70	0.75	1.5	3.0	0.500	1.43E-01	7.29E-04	6.96E-02	5.07E-05	1.69E-01
BC-37	BC-37-B	55	68	0.75	1.5	3.0	0.500	1.43E-01	7.53E-04	6.96E-02	5.24E-05	1.75E-01
M-01	M-01-A	70	75	0.9	1.5	9.6	0.156	0.00E+00	0.00E+00	1.43E-02	0.00E+00	0.00E+00
M-01	M-01-B	70	66	0.9	1.5	9.6	0.156	0.00E+00	0.00E+00	1.43E-02	0.00E+00	0.00E+00
M-01	M-01-C	28	77	0.9	1.7	9.6	0.177	0.00E+00	0.00E+00	1.43E-02	0.00E+00	0.00E+00
M-01	M-01-D	24	50	0.9	1.7	9.6	0.177	0.00E+00	0.00E+00	1.43E-02	0.00E+00	0.00E+00
M-01	M-01-E	21	52	0.9	1.7	9.6	0.177	0.00E+00	0.00E+00	1.43E-02	0.00E+00	0.00E+00
M-01	M-01-F	6	16	0.9	1.5	9.6	0.156	0.00E+00	0.00E+00	1.43E-02	0.00E+00	0.00E+00
M-03	M-03-A	74	71	0.9	1.5	8.1	0.185	0.00E+00	0.00E+00	1.56E-02	0.00E+00	0.00E+00
M-03	M-03-B	69	71	0.9	1.5	8.1	0.185	0.00E+00	0.00E+00	1.56E-02	0.00E+00	0.00E+00
M-03	M-03-C	40	74	0.9	1.7	8.1	0.210	0.00E+00	0.00E+00	1.56E-02	0.00E+00	0.00E+00
M-03	M-03-D	37	74	0.9	1.7	8.1	0.210	0.00E+00	0.00E+00	1.56E-02	0.00E+00	0.00E+00
M-03	M-03-E	33	72	0.9	1.7	8.1	0.210	0.00E+00	0.00E+00	1.56E-02	0.00E+00	0.00E+00
M-04	M-04-A	57	78	1	1.5	10.1	0.149	0.00E+00	0.00E+00	1.03E-02	0.00E+00	0.00E+00
M-04	M-04-B	54	75	1	1.5	10.1	0.149	0.00E+00	0.00E+00	1.03E-02	0.00E+00	0.00E+00
M-04	M-04-C	27	68	1	1.7	10.1	0.168	0.00E+00	0.00E+00	1.03E-02	0.00E+00	0.00E+00
M-04	M-04-D	23	66	1	1.7	10.1	0.168	0.00E+00	0.00E+00	1.03E-02	0.00E+00	0.00E+00
M-04	M-04-E	20	64	1	1.7	10.1	0.168	0.00E+00	0.00E+00	1.03E-02	0.00E+00	0.00E+00
M-04	M-04-F	4	16	1	1.0	10.1	0.099	0.00E+00	0.00E+00	1.03E-02	0.00E+00	0.00E+00
M-04	M-04-G	2	11	1	1.0	10.1	0.099	0.00E+00	0.00E+00	1.03E-02	0.00E+00	0.00E+00
M-21	M-21-A	Child	15	0.33			0.046	0.00E+00	0.00E+00	1.24E-02	0.00E+00	0.00E+00
M-21	M-21-B	Adult	70	0.33			0.108	0.00E+00	0.00E+00	1.24E-02	0.00E+00	0.00E+00
M-25	M-25-A	34	100	0.8	1.7	7.4	0.230	6.49E-02	1.14E-04	7.20E-03	8.24E-07	2.75E-03
M-25	M-25-B	33	68	0.8	1.7	7.4	0.230	6.49E-02	1.68E-04	7.20E-03	1.21E-06	4.03E-03
M-25	M-25-C	10	43	0.8	1.5	7.4	0.203	6.49E-02	2.34E-04	7.20E-03	1.68E-06	5.61E-03
M-25	M-25-D	7	34	0.8	1.5	7.4	0.203	6.49E-02	2.96E-04	7.20E-03	2.13E-06	7.11E-03
M-25	M-25-E	3	16	0.8	1.0	7.4	0.135	6.49E-02	4.23E-04	7.20E-03	3.05E-06	1.02E-02

TABLE D-13 CALCULATION FOR INDIVIDUAL SUBCHRONIC HAZARD QUOTIENT FROM ARSENIC IN GARDEN VEGETABLES

HQ(s) = DI/RfD(s)
DI = HIF*C
HIF = [(DY*HCF*ICF)*(EF*ED)]/(BW*AT)
ICF = RI(i)/RI(t)

RfD(s) = 3.00E-04
EF = 350 days/yr
ED = 1 year
AT = 365 days

		AGE	BW		Potatoes							
HSHLD	INDIV.	(yrs)	(kg)	HCF	RI(i)	RI(t)	ICF	Daily Yld, kg	HIF	C	DI	HQ
M-29	M-29-A	Child	15	0.7			0.050	1.56E-01	3.49E-04	7.20E-03	2.51E-06	8.37E-03
M-29	M-29-B	Adult	70	0.7			0.117	1.56E-01	1.74E-04	7.20E-03	1.26E-06	4.18E-03
M-31	M-31-A	21	52	1	1.7	13.8	0.123	3.12E-01	7.04E-04	2.04E-02	1.44E-05	4.79E-02
M-31	M-31-B	19	50	1	1.9	13.8	0.138	3.12E-01	8.23E-04	2.04E-02	1.68E-05	5.60E-02
M-31	M-31-C	17	55	1	1.9	13.8	0.138	3.12E-01	7.42E-04	2.04E-02	1.51E-05	5.05E-02
M-31	M-31-D	15	50	1	1.9	13.8	0.138	3.12E-01	8.31E-04	2.04E-02	1.69E-05	5.65E-02
M-31	M-31-E	9	36	1	1.5	13.8	0.109	3.12E-01	8.93E-04	2.04E-02	1.82E-05	6.08E-02
M-31	M-31-F	6	20	1	1.5	13.8	0.109	3.12E-01	1.66E-03	2.04E-02	3.39E-05	1.13E-01
M-31	M-31-G	43	61	1	1.7	13.8	0.123	3.12E-01	6.00E-04	2.04E-02	1.22E-05	4.08E-02
M-31	M-31-H	43	80	1	1.7	13.8	0.123	3.12E-01	4.63E-04	2.04E-02	9.44E-06	3.15E-02
M-41	M-41-A	71	71	0.15	1.5	10.7	0.140	0.00E+00	0.00E+00	7.20E-03	0.00E+00	0.00E+00
M-41	M-41-B	68	71	0.15	1.5	10.7	0.140	0.00E+00	0.00E+00	7.20E-03	0.00E+00	0.00E+00
M-41	M-41-C	47	75	0.15	1.5	10.7	0.140	0.00E+00	0.00E+00	7.20E-03	0.00E+00	0.00E+00
M-41	M-41-D	45	75	0.15	1.5	10.7	0.140	0.00E+00	0.00E+00	7.20E-03	0.00E+00	0.00E+00
M-41	M-41-E	30	72	0.15	1.7	10.7	0.159	0.00E+00	0.00E+00	7.20E-03	0.00E+00	0.00E+00
M-41	M-41-F	3	15	0.15	1.0	10.7	0.093	0.00E+00	0.00E+00	7.20E-03	0.00E+00	0.00E+00
M-41	M-41-G	2	13	0.15	1.0	10.7	0.093	0.00E+00	0.00E+00	7.20E-03	0.00E+00	0.00E+00
M-41	M-41-H	1	11	0.15	1.0	10.7	0.093	0.00E+00	0.00E+00	7.20E-03	0.00E+00	0.00E+00
RA-03	RA-03-A	33	91	1	1.7	10.9	0.156	6.49E-03	1.07E-05	2.16E-02	2.31E-07	7.69E-04
RA-03	RA-03-B	29	50	1	1.7	10.9	0.156	6.49E-03	1.94E-05	2.16E-02	4.20E-07	1.40E-03
RA-03	RA-03-C	11	34	1	1.5	10.9	0.138	6.49E-03	2.51E-05	2.16E-02	5.43E-07	1.81E-03
RA-03	RA-03-D	9	30	1	1.5	10.9	0.138	6.49E-03	2.90E-05	2.16E-02	6.26E-07	2.09E-03
RA-03	RA-03-E	7	20	1	1.5	10.9	0.138	6.49E-03	4.19E-05	2.16E-02	9.05E-07	3.02E-03
RA-03	RA-03-F	4	14	1	1.0	10.9	0.092	6.49E-03	4.19E-05	2.16E-02	9.05E-07	3.02E-03
RA-03	RA-03-G	2	11	1	1.0	10.9	0.092	6.49E-03	5.03E-05	2.16E-02	1.09E-06	3.62E-03
RA-03	RA-03-H	1	9	1	1.0	10.9	0.092	6.49E-03	6.28E-05	2.16E-02	1.36E-06	4.52E-03
RA-04	RA-04-A	51	75	1	1.5	3.0	0.500	0.00E+00	0.00E+00	1.20E-02	0.00E+00	0.00E+00
RA-04	RA-04-B	52	84	1	1.5	3.0	0.500	0.00E+00	0.00E+00	1.20E-02	0.00E+00	0.00E+00
RA-07	RA-07-A	Child	15	0.9			0.010	5.84E-01	3.48E-04	1.68E-02	5.84E-06	1.95E-02
RA-07	RA-07-B	Adult	70	0.9			0.024	5.84E-01	1.74E-04	1.68E-02	2.92E-06	9.74E-03
RA-08	RA-08-A	43	82	1	1.7	4.4	0.386	0.00E+00	0.00E+00	7.20E-03	0.00E+00	0.00E+00
RA-08	RA-08-B	34	64	1	1.7	4.4	0.386	0.00E+00	0.00E+00	7.20E-03	0.00E+00	0.00E+00
RA-08	RA-08-D	4	16	1	1.0	4.4	0.227	0.00E+00	0.00E+00	7.20E-03	0.00E+00	0.00E+00

TABLE D-14 CALCULATION FOR INDIVIDUAL SUBCHRONIC HAZARD QUOTIENT FROM ARSENIC IN GARDEN VEGETABLES

HQ(s) = DI/RfD(s)
DI = HIF*C
HIF = [(DY*HCF*ICF)*(EF*ED)]/(BW*AT)
ICF = RI(i)/RI(t)

RfD(s) = 3.00E-04
EF = 350 days/yr
ED = 1 year
AT = 365 days

HSHLD	INDIV.	AGE (yrs)	BW (kg)	HCF	Garden Total HQ
BC-02	BC-02-A	40	68	0.9	NA
BC-02	BC-02-B	43	61	0.9	NA
BC-02	BC-02-C	16	45	0.9	NA
BC-02	BC-02-D	14	34	0.9	NA
BC-02	BC-02-E	9	28	0.9	NA
BC-02	BC-02-F	5	16	0.9	NA
BC-04	BC-04-A	89	55	1	2.97E-01
BC-04	BC-04-B	62	57	1	2.85E-01
BC-04	BC-04-C	57	84	1	1.93E-01
BC-06	BC-06-A	64	70	1	1.19E-02
BC-06	BC-06-B	65	77	1	1.09E-02
BC-06	BC-06-C	28	77	1	1.09E-02
BC-11	BC-11-A	47	59	1	3.45E-02
BC-11	BC-11-B	44	68	1	2.87E-02
BC-11	BC-11-C	19	68	1	2.17E-02
BC-11	BC-11-D	15	45	1	3.26E-02
BC-11	BC-11-E	11	23	1	4.63E-02
BC-20	BC-20-A	62	105	0.5	1.15E-02
BC-20	BC-20-B	60	68	0.5	1.77E-02
BC-20	BC-20-C	35	64	0.5	1.97E-02
BC-20	BC-20-D	16	73	0.5	1.60E-02
BC-20	BC-20-E	14	64	0.5	1.83E-02
BC-20	BC-20-F	11	23	0.5	3.71E-02
BC-20	BC-20-G	9	23	0.5	3.71E-02
BC-23	BC-23-A	73	71	0.9	2.20E-02
BC-23	BC-23-B	69	71	0.9	2.20E-02
BC-23	BC-23-C	45	75	0.9	2.08E-02
BC-24	BC-24-A	32	73	0.5	1.61E-02
BC-24	BC-24-B	28	105	0.5	1.12E-02
BC-24	BC-24-C	3	18	0.5	2.43E-02
BC-31	BC-31-A	60	55	1	4.37E-02
BC-34	BC-34-A	64	105	0.9	5.09E-02
BC-34	BC-34-B	65	59	0.9	9.00E-02
BC-37	BC-37-A	55	70	0.75	3.75E-01
BC-37	BC-37-B	55	68	0.75	3.88E-01
M-01	M-01-A	70	75	0.9	2.48E-03
M-01	M-01-B	70	66	0.9	2.83E-03
M-01	M-01-C	28	77	0.9	2.33E-03
M-01	M-01-D	24	50	0.9	3.60E-03
M-01	M-01-E	21	52	0.9	3.44E-03
M-01	M-01-F	6	16	0.9	6.06E-03
M-03	M-03-A	74	71	0.9	2.56E-02
M-03	M-03-B	69	71	0.9	2.56E-02
M-03	M-03-C	40	74	0.9	2.50E-02
M-03	M-03-D	37	74	0.9	2.50E-02
M-03	M-03-E	33	72	0.9	2.58E-02
M-04	M-04-A	57	78	1	1.18E-01
M-04	M-04-B	54	75	1	1.22E-01
M-04	M-04-C	27	68	1	1.36E-01
M-04	M-04-D	23	66	1	1.41E-01
M-04	M-04-E	20	64	1	1.46E-01
M-04	M-04-F	4	16	1	2.16E-01
M-04	M-04-G	2	11	1	3.02E-01
M-21	M-21-A	Child	15	0.33	6.46E-03
M-21	M-21-B	Adult	70	0.33	3.23E-03
M-25	M-25-A	34	100	0.8	2.71E-02
M-25	M-25-B	33	68	0.8	3.98E-02
M-25	M-25-C	10	43	0.8	3.70E-02
M-25	M-25-D	7	34	0.8	4.68E-02
M-25	M-25-E	3	16	0.8	6.62E-02

TABLE D-14 CALCULATION FOR INDIVIDUAL SUBCHRONIC HAZARD QUOTIENT FROM ARSENIC IN GARDEN VEGETABLES

HQ(s) = DI/RfD(s)
DI = HIF*C
HIF = [(DY*HCF*ICF)*(EF*ED)]/(BW*AT)
ICF = RI(i)/RI(t)

RfD(s) = 3.00E-04
EF = 350 days/yr
ED = 1 year
AT = 365 days

HSHLD	INDIV.	AGE (yrs)	BW (kg)	HCF	Garden Total HQ
M-29	M-29-A	Child	15	0.7	3.24E-02
M-29	M-29-B	Adult	70	0.7	1.62E-02
M-31	M-31-A	21	52	1	7.74E-02
M-31	M-31-B	19	50	1	8.05E-02
M-31	M-31-C	17	55	1	7.26E-02
M-31	M-31-D	15	50	1	8.13E-02
M-31	M-31-E	9	36	1	8.50E-02
M-31	M-31-F	6	20	1	1.58E-01
M-31	M-31-G	43	61	1	6.59E-02
M-31	M-31-H	43	80	1	5.09E-02
M-41	M-41-A	71	71	0.15	8.84E-04
M-41	M-41-B	68	71	0.15	8.84E-04
M-41	M-41-C	47	75	0.15	8.39E-04
M-41	M-41-D	45	75	0.15	8.39E-04
M-41	M-41-E	30	72	0.15	8.81E-04
M-41	M-41-F	3	15	0.15	1.53E-03
M-41	M-41-G	2	13	0.15	1.76E-03
M-41	M-41-H	1	11	0.15	2.07E-03
RA-03	RA-03-A	33	91	1	6.96E-02
RA-03	RA-03-B	29	50	1	1.27E-01
RA-03	RA-03-C	11	34	1	1.03E-01
RA-03	RA-03-D	9	30	1	1.19E-01
RA-03	RA-03-E	7	20	1	1.72E-01
RA-03	RA-03-F	4	14	1	1.60E-01
RA-03	RA-03-G	2	11	1	1.92E-01
RA-03	RA-03-H	1	9	1	2.41E-01
RA-04	RA-04-A	51	75	1	1.94E-02
RA-04	RA-04-B	52	84	1	1.73E-02
RA-07	RA-07-A	Child	15	0.9	4.70E-02
RA-07	RA-07-B	Adult	70	0.9	2.35E-02
RA-08	RA-08-A	43	82	1	5.02E-02
RA-08	RA-08-B	34	64	1	6.41E-02
RA-08	RA-08-D	4	16	1	9.31E-02

AVG HQ - BC	7.57E-02
AVG HQ - M	5.31E-02
AVG HQ - RA	9.99E-02
AVG HQ - ALL AREAS	6.87E-02

TABLE D-15 CALCULATION FOR INDIVIDUAL CHRONIC HAZARD QUOTIENT FOR ARSENIC IN GARDEN VEGETABLES

HQ(c) = DI/RfD(c)
DI = HIF*C
HIF = [(DY*HCF*ICF)*(EF*ED)]/(BW*AT)
ICF = 1/# HSHLD MEMBERS

RfD(c) = 3.00E-04
EF = 350 days/yr
ED = 30 years
AT = 10950 days (= 30 years)

HSHLD	# HSHLD MEMBERS	AGE (yrs)	BW (kg)	HCF	ICF	Leafy Vegetables Daily Yld, kg	HIF	C	DI	HQ
BC-02	6	Adult	70	0.9	0.167	0.00E+00	0.00E+00	NA	NA	NA
BC-04	3	Adult	70	1	0.333	9.35E-02	4.27E-04	7.00E-03	2.99E-06	9.96E-03
BC-06	3	Adult	70	1	0.333	0.00E+00	0.00E+00	5.03E-03	0.00E+00	0.00E+00
BC-11	5	Adult	70	1	0.200	3.90E-02	1.07E-04	6.11E-03	6.52E-07	2.17E-03
BC-20	7	Adult	70	0.5	0.143	1.30E-02	1.27E-05	4.19E-03	5.33E-08	1.78E-04
BC-23	3	Adult	70	0.9	0.333	0.00E+00	0.00E+00	7.44E-03	0.00E+00	0.00E+00
BC-24	3	Adult	70	0.5	0.333	0.00E+00	0.00E+00	1.70E-02	0.00E+00	0.00E+00
BC-31	1	Adult	70	1	1.000	0.00E+00	0.00E+00	6.45E-03	0.00E+00	0.00E+00
BC-34	2	Adult	70	0.9	0.500	0.00E+00	0.00E+00	9.73E-03	0.00E+00	0.00E+00
BC-37	2	Adult	70	0.75	0.500	3.38E-02	1.73E-04	2.40E-02	4.16E-06	1.39E-02
M-01	6	Adult	70	0.9	0.167	0.00E+00	0.00E+00	6.98E-03	0.00E+00	0.00E+00
M-03	5	Adult	70	0.9	0.200	3.38E-02	8.33E-05	7.85E-03	6.53E-07	2.18E-03
M-04	7	Adult	70	1	0.143	5.16E-01	1.01E-03	4.37E-03	4.41E-06	1.47E-02
M-21	13	Adult	70	0.33	0.077	5.19E-02	1.81E-05	5.79E-03	1.05E-07	3.48E-04
M-25	5	Adult	70	0.8	0.200	0.00E+00	0.00E+00	4.89E-03	0.00E+00	0.00E+00
M-29	12	Adult	70	0.7	0.083	7.79E-03	6.23E-06	5.87E-03	3.65E-08	1.22E-04
M-31	8	Adult	70	1	0.125	1.56E-02	2.67E-05	4.16E-03	1.11E-07	3.70E-04
M-41	8	Adult	70	0.15	0.125	0.00E+00	0.00E+00	4.30E-03	0.00E+00	0.00E+00
RA-03	8	Adult	70	1	0.125	8.18E-02	1.40E-04	1.80E-02	2.52E-06	8.41E-03
RA-04	2	Adult	70	1	0.500	0.00E+00	0.00E+00	5.53E-03	0.00E+00	0.00E+00
RA-07	58	Adult	70	0.9	0.017	4.68E-02	9.94E-06	1.15E-02	1.14E-07	3.81E-04
RA-08	3	Adult	70	1	0.333	0.00E+00	0.00E+00	1.20E-02	0.00E+00	0.00E+00

TABLE D-16 CALCULATION FOR INDIVIDUAL CHRONIC HAZARD QUOTIENT FOR ARSENIC IN GARDEN VEGETABLES

HQ(c) = DI/RfD(c)
DI = HIF*C
HIF = [(DY*HCF*ICF)*(EF*ED)]/(BW*AT)
ICF = 1/# HSHLD MEMBERS

RfD(c) = 3.00E-04
EF = 350 days/yr
ED = 30 years
AT = 10950 days (= 30 years)

	# HSHLD	AGE	BW			Root Vegetables				
HSHLD	MEMBERS	(yrs)	(kg)	HCF	ICF	Daily Yld, kg	HIF	C	DI	HQ
BC-02	6	Adult	70	0.9	0.167	5.41E-02	1.11E-04	NA	NA	NA
BC-04	3	Adult	70	1	0.333	3.81E-01	1.74E-03	2.04E-02	3.55E-05	1.18E-01
BC-06	3	Adult	70	1	0.333	1.30E-02	5.93E-05	2.04E-02	1.21E-06	4.03E-03
BC-11	5	Adult	70	1	0.200	3.25E-02	8.90E-05	7.20E-03	6.40E-07	2.13E-03
BC-20	7	Adult	70	0.5	0.143	2.73E-01	2.67E-04	7.20E-03	1.92E-06	6.40E-03
BC-23	3	Adult	70	0.9	0.333	7.01E-02	2.88E-04	1.50E-02	4.31E-06	1.44E-02
BC-24	3	Adult	70	0.5	0.333	9.74E-02	2.22E-04	7.20E-03	1.60E-06	5.34E-03
BC-31	1	Adult	70	1	1.000	0.00E+00	0.00E+00	1.35E-02	0.00E+00	0.00E+00
BC-34	2	Adult	70	0.9	0.500	1.40E-01	8.65E-04	1.85E-02	1.60E-05	5.32E-02
BC-37	2	Adult	70	0.75	0.500	1.22E-01	6.29E-04	6.96E-02	4.38E-05	1.46E-01
M-01	6	Adult	70	0.9	0.167	0.00E+00	0.00E+00	1.43E-02	0.00E+00	0.00E+00
M-03	5	Adult	70	0.9	0.200	1.23E-01	3.04E-04	1.56E-02	4.74E-06	1.58E-02
M-04	7	Adult	70	1	0.143	9.84E-01	1.93E-03	1.03E-02	1.97E-05	6.58E-02
M-21	13	Adult	70	0.33	0.077	2.49E-02	8.67E-06	1.24E-02	1.08E-07	3.59E-04
M-25	5	Adult	70	0.8	0.200	4.16E-02	9.11E-05	7.20E-03	6.56E-07	2.19E-03
M-29	12	Adult	70	0.7	0.083	2.60E-02	2.08E-05	7.20E-03	1.49E-07	4.98E-04
M-31	8	Adult	70	1	0.125	1.69E-02	2.89E-05	2.04E-02	5.90E-07	1.97E-03
M-41	8	Adult	70	0.15	0.125	3.64E-02	9.34E-06	7.20E-03	6.72E-08	2.24E-04
RA-03	8	Adult	70	1	0.125	1.27E-01	2.17E-04	2.16E-02	4.68E-06	1.56E-02
RA-04	2	Adult	70	1	0.500	0.00E+00	0.00E+00	1.20E-02	0.00E+00	0.00E+00
RA-07	58	Adult	70	0.9	0.017	4.55E-01	9.66E-05	1.68E-02	1.62E-06	5.41E-03
RA-08	3	Adult	70	1	0.333	5.39E-02	2.46E-04	7.20E-03	1.77E-06	5.91E-03

TABLE D-17 CALCULATION FOR INDIVIDUAL CHRONIC HAZARD QUOTIENT FOR ARSENIC IN GARDEN VEGETABLES

HQ(c) = DI/RfD(c)
DI = HIF*C
HIF = [(DY*HCF*ICF)*(EF*ED)]/(BW*AT)
ICF = 1/# HSHLD MEMBERS

RfD(c) = 3.00E-04
EF = 350 days/yr
ED = 30 years
AT = 10950 days (= 30 years)

	# HSHLD	AGE	BW			Garden Fruit				
HSHLD	MEMBERS	(yrs)	(kg)	HCF	ICF	Daily Yld, kg	HIF	C	DI	HQ
BC-02	6	Adult	70	0.9	0.167	4.91E-01	1.01E-03	NA	NA	NA
BC-04	3	Adult	70	1	0.333	8.38E-01	3.83E-03	1.80E-03	6.89E-06	2.30E-02
BC-06	3	Adult	70	1	0.333	1.46E-01	6.67E-04	3.60E-03	2.40E-06	8.01E-03
BC-11	5	Adult	70	1	0.200	5.26E-01	1.44E-03	3.60E-03	5.19E-06	1.73E-02
BC-20	7	Adult	70	0.5	0.143	4.71E-01	4.61E-04	3.60E-03	1.66E-06	5.54E-03
BC-23	3	Adult	70	0.9	0.333	1.43E-01	5.87E-04	3.60E-03	2.11E-06	7.05E-03
BC-24	3	Adult	70	0.5	0.333	2.86E-01	6.54E-04	3.60E-03	2.35E-06	7.85E-03
BC-31	1	Adult	70	1	1.000	2.08E-01	2.85E-03	3.60E-03	1.02E-05	3.42E-02
BC-34	2	Adult	70	0.9	0.500	2.65E-01	1.63E-03	3.60E-03	5.88E-06	1.96E-02
BC-37	2	Adult	70	0.75	0.500	6.62E-01	3.40E-03	3.90E-03	1.33E-05	4.42E-02
M-01	6	Adult	70	0.9	0.167	9.74E-02	2.00E-04	3.60E-03	7.21E-07	2.40E-03
M-03	5	Adult	70	0.9	0.200	2.51E-01	6.18E-04	3.60E-03	2.22E-06	7.42E-03
M-04	7	Adult	70	1	0.143	1.86E+00	3.64E-03	1.80E-03	6.56E-06	2.19E-02
M-21	13	Adult	70	0.33	0.077	3.83E-01	1.33E-04	3.60E-03	4.80E-07	1.60E-03
M-25	5	Adult	70	0.8	0.200	8.13E-01	1.78E-03	3.60E-03	6.42E-06	2.14E-02
M-29	12	Adult	70	0.7	0.083	8.05E-01	6.43E-04	3.60E-03	2.32E-06	7.72E-03
M-31	8	Adult	70	1	0.125	6.48E-01	1.11E-03	3.60E-03	4.00E-06	1.33E-02
M-41	8	Adult	70	0.15	0.125	1.36E-01	3.50E-05	3.60E-03	1.26E-07	4.20E-04
RA-03	8	Adult	70	1	0.125	1.32E+00	2.27E-03	3.60E-03	8.16E-06	2.72E-02
RA-04	2	Adult	70	1	0.500	1.34E-01	9.19E-04	3.60E-03	3.31E-06	1.10E-02
RA-07	58	Adult	70	0.9	0.017	1.23E+00	2.61E-04	3.60E-03	9.41E-07	3.14E-03
RA-08	3	Adult	70	1	0.333	7.35E-01	3.36E-03	3.60E-03	1.21E-05	4.03E-02

TABLE D-18 CALCULATION FOR INDIVIDUAL CHRONIC HAZARD QUOTIENT FOR ARSENIC IN GARDEN VEGETABLES

HQ(c) = DI/RfD(c)
DI = HIF*C
HIF = [(DY*HCF*ICF)*(EF*ED)]/(BW*AT)
ICF = 1/# HSHLD MEMBERS

RfD(c) = 3.00E-04
EF = 350 days/yr
ED = 30 years
AT = 10950 days (= 30 years)

	# HSHLD	AGE	BW			Beans/Peas				
HSHLD	MEMBERS	(yrs)	(kg)	HCF	ICF	Daily Yld, kg	HIF	C	DI	HQ
BC-02	6	Adult	70	0.9	0.167	1.16E-02	2.38E-05	NA	NA	NA
BC-04	3	Adult	70	1	0.333	8.77E-02	4.00E-04	1.80E-03	7.21E-07	2.40E-03
BC-06	3	Adult	70	1	0.333	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
BC-11	5	Adult	70	1	0.200	3.90E-02	1.07E-04	3.60E-03	3.84E-07	1.28E-03
BC-20	7	Adult	70	0.5	0.143	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
BC-23	3	Adult	70	0.9	0.333	1.56E-02	6.40E-05	3.60E-03	2.31E-07	7.69E-04
BC-24	3	Adult	70	0.5	0.333	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
BC-31	1	Adult	70	1	1.000	2.60E-03	3.56E-05	3.60E-03	1.28E-07	4.27E-04
BC-34	2	Adult	70	0.9	0.500	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
BC-37	2	Adult	70	0.75	0.500	2.60E-02	1.33E-04	3.90E-03	5.20E-07	1.73E-03
M-01	6	Adult	70	0.9	0.167	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
M-03	5	Adult	70	0.9	0.200	2.60E-02	6.40E-05	3.60E-03	2.31E-07	7.69E-04
M-04	7	Adult	70	1	0.143	2.92E-01	5.72E-04	1.80E-03	1.03E-06	3.43E-03
M-21	13	Adult	70	0.33	0.077	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
M-25	5	Adult	70	0.8	0.200	1.04E-02	2.28E-05	3.60E-03	8.20E-08	2.73E-04
M-29	12	Adult	70	0.7	0.083	2.60E-02	2.08E-05	3.60E-03	7.47E-08	2.49E-04
M-31	8	Adult	70	1	0.125	7.79E-02	1.33E-04	3.60E-03	4.80E-07	1.60E-03
M-41	8	Adult	70	0.15	0.125	1.30E-02	3.34E-06	3.60E-03	1.20E-08	4.00E-05
RA-03	8	Adult	70	1	0.125	2.92E-02	5.00E-05	3.60E-03	1.80E-07	6.00E-04
RA-04	2	Adult	70	1	0.500	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
RA-07	58	Adult	70	0.9	0.017	1.95E-01	4.14E-05	3.60E-03	1.49E-07	4.97E-04
RA-08	3	Adult	70	1	0.333	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00

TABLE D-19 CALCULATION FOR INDIVIDUAL CHRONIC HAZARD QUOTIENT FOR ARSENIC IN GARDEN VEGETABLES

HQ(c) = DI/RfD(c)
DI = HIF*C
HIF = [(DY*HCF*ICF)*(EF*ED)]/(BW*AT)
ICF = 1/# HSHLD MEMBERS

RfD(c) = 3.00E-04
EF = 350 days/yr
ED = 30 years
AT = 10950 days (= 30 years)

HSHLD	# HSHLD MEMBERS	AGE (yrs)	BW (kg)	HCF	ICF	Corn Daily Yld, kg	Corn HIF	Corn C	Corn DI	Corn HQ
BC-02	6	Adult	70	0.9	0.167	9.09E-03	1.87E-05	NA	NA	NA
BC-04	3	Adult	70	1	0.333	1.99E-01	9.07E-04	1.80E-03	1.63E-06	5.44E-03
BC-06	3	Adult	70	1	0.333	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
BC-11	5	Adult	70	1	0.200	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
BC-20	7	Adult	70	0.5	0.143	4.42E-02	4.32E-05	3.60E-03	1.56E-07	5.18E-04
BC-23	3	Adult	70	0.9	0.333	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
BC-24	3	Adult	70	0.5	0.333	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
BC-31	1	Adult	70	1	1.000	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
BC-34	2	Adult	70	0.9	0.500	4.24E-02	2.61E-04	3.60E-03	9.41E-07	3.14E-03
BC-37	2	Adult	70	0.75	0.500	2.43E-02	1.25E-04	3.90E-03	4.87E-07	1.62E-03
M-01	6	Adult	70	0.9	0.167	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
M-03	5	Adult	70	0.9	0.200	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
M-04	7	Adult	70	1	0.143	1.99E-01	3.89E-04	1.80E-03	7.00E-07	2.33E-03
M-21	13	Adult	70	0.33	0.077	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
M-25	5	Adult	70	0.8	0.200	1.41E-02	3.10E-05	3.60E-03	1.11E-07	3.72E-04
M-29	12	Adult	70	0.7	0.083	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
M-31	8	Adult	70	1	0.125	3.53E-02	6.05E-05	3.60E-03	2.18E-07	7.26E-04
M-41	8	Adult	70	0.15	0.125	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00
RA-03	8	Adult	70	1	0.125	2.65E-02	4.54E-05	3.60E-03	1.63E-07	5.44E-04
RA-04	2	Adult	70	1	0.500	1.19E-01	8.17E-04	3.60E-03	2.94E-06	9.80E-03
RA-07	58	Adult	70	0.9	0.017	1.55E-01	3.29E-05	3.60E-03	1.18E-07	3.94E-04
RA-08	3	Adult	70	1	0.333	0.00E+00	0.00E+00	3.60E-03	0.00E+00	0.00E+00

TABLE D-20 CALCULATION FOR INDIVIDUAL CHRONIC HAZARD QUOTIENT FOR ARSENIC IN GARDEN VEGETABLES

HQ(c) = DI/RfD(c)
DI = HIF*C
HIF = [(DY*HCF*ICF)*(EF*ED)]/(BW*AT)
ICF = 1/# HSHLD MEMBERS

RfD(c) = 3.00E-04
EF = 350 days/yr
ED = 30 years
AT = 10950 days (= 30 years)

	# HSHLD	AGE	BW			Potatoes				
HSHLD	MEMBERS	(yrs)	(kg)	HCF	ICF	Daily Yld, kg	HIF	C	DI	HQ
BC-02	6	Adult	70	0.9	0.167	0.00E+00	0.00E+00	NA	NA	NA
BC-04	3	Adult	70	1	0.333	2.34E-01	1.07E-03	2.04E-02	2.18E-05	7.26E-02
BC-06	3	Adult	70	1	0.333	0.00E+00	0.00E+00	2.04E-02	0.00E+00	0.00E+00
BC-11	5	Adult	70	1	0.200	0.00E+00	0.00E+00	7.20E-03	0.00E+00	0.00E+00
BC-20	7	Adult	70	0.5	0.143	1.30E-01	1.27E-04	7.20E-03	9.15E-07	3.05E-03
BC-23	3	Adult	70	0.9	0.333	0.00E+00	0.00E+00	1.50E-02	0.00E+00	0.00E+00
BC-24	3	Adult	70	0.5	0.333	0.00E+00	0.00E+00	7.20E-03	0.00E+00	0.00E+00
BC-31	1	Adult	70	1	1.000	0.00E+00	0.00E+00	1.35E-02	0.00E+00	0.00E+00
BC-34	2	Adult	70	0.9	0.500	0.00E+00	0.00E+00	1.85E-02	0.00E+00	0.00E+00
BC-37	2	Adult	70	0.75	0.500	1.43E-01	7.34E-04	6.96E-02	5.11E-05	1.70E-01
M-01	6	Adult	70	0.9	0.167	0.00E+00	0.00E+00	1.43E-02	0.00E+00	0.00E+00
M-03	5	Adult	70	0.9	0.200	0.00E+00	0.00E+00	1.56E-02	0.00E+00	0.00E+00
M-04	7	Adult	70	1	0.143	0.00E+00	0.00E+00	1.03E-02	0.00E+00	0.00E+00
M-21	13	Adult	70	0.33	0.077	0.00E+00	0.00E+00	1.24E-02	0.00E+00	0.00E+00
M-25	5	Adult	70	0.8	0.200	6.49E-02	1.42E-04	7.20E-03	1.02E-06	3.42E-03
M-29	12	Adult	70	0.7	0.083	1.56E-01	1.25E-04	7.20E-03	8.97E-07	2.99E-03
M-31	8	Adult	70	1	0.125	3.12E-01	5.34E-04	2.04E-02	1.09E-05	3.63E-02
M-41	8	Adult	70	0.15	0.125	0.00E+00	0.00E+00	7.20E-03	0.00E+00	0.00E+00
RA-03	8	Adult	70	1	0.125	6.49E-03	1.11E-05	2.16E-02	2.40E-07	8.01E-04
RA-04	2	Adult	70	1	0.500	0.00E+00	0.00E+00	1.20E-02	0.00E+00	0.00E+00
RA-07	58	Adult	70	0.9	0.017	5.84E-01	1.24E-04	1.68E-02	2.09E-06	6.96E-03
RA-08	3	Adult	70	1	0.333	0.00E+00	0.00E+00	7.20E-03	0.00E+00	0.00E+00

TABLE D-21 CALCULATION FOR INDIVIDUAL CHRONIC HAZARD QUOTIENT FOR ARSENIC IN GARDEN VEGETABLES

HQ(c) = DI/RfD(c)
DI = HIF*C
HIF = [(DY*HCF*ICF)*(EF*ED)]/(BW*AT)
ICF = 1/# HSHLD MEMBERS

RfD(c) = 3.00E-04
EF = 350 days/yr
ED = 30 years
AT = 10950 days (= 30 years)

HSHLD	# HSHLD MEMBERS	AGE (yrs)	BW (kg)	HCF	ICF		Garden Total HQ
BC-02	6	Adult	70	0.9	0.167		NA
BC-04	3	Adult	70	1	0.333		2.32E-01
BC-06	3	Adult	70	1	0.333		1.20E-02
BC-11	5	Adult	70	1	0.200		2.29E-02
BC-20	7	Adult	70	0.5	0.143		1.57E-02
BC-23	3	Adult	70	0.9	0.333		2.22E-02
BC-24	3	Adult	70	0.5	0.333		1.32E-02
BC-31	1	Adult	70	1	1.000		3.46E-02
BC-34	2	Adult	70	0.9	0.500		7.60E-02
BC-37	2	Adult	70	0.75	0.500		3.78E-01
M-01	6	Adult	70	0.9	0.167		2.40E-03
M-03	5	Adult	70	0.9	0.200		2.62E-02
M-04	7	Adult	70	1	0.143		1.08E-01
M-21	13	Adult	70	0.33	0.077		2.31E-03
M-25	5	Adult	70	0.8	0.200		2.76E-02
M-29	12	Adult	70	0.7	0.083		1.16E-02
M-31	8	Adult	70	1	0.125		5.43E-02
M-41	8	Adult	70	0.15	0.125		6.84E-04
RA-03	8	Adult	70	1	0.125		5.32E-02
RA-04	2	Adult	70	1	0.500		2.08E-02
RA-07	58	Adult	70	0.9	0.017		1.68E-02
RA-08	3	Adult	70	1	0.333		4.62E-02
						AVG HQ - BC	8.95E-02
						AVG HQ - M	2.91E-02
						AVG HQ - RA	3.42E-02
						AVG HQ - ALL AREAS	5.60E-02

TABLE D-22 CALCULATION FOR INDIVIDUAL DAILY INTAKE FROM LEAD IN GARDEN VEGETABLES

IDI = HIF*C*BW
HIF = [(DY*HCF*ICF)*(EF*ED)]/(BW*AT)
ICF = RI(i)/RI(t)

EF = 350 days/yr
ED = 1 year
AT = 365 days

		AGE	BW		Leafy Vegetables						
HSHLD	INDIV.	(yrs)	(kg)	HCF	RI(i)	RI(t)	ICF	Daily Yld, kg	HIF	C	IDI
BC-02	BC-02-A	40	68	0.9	4.4	16.5	0.267	0.00E+00	0.00E+00	NA	NA
BC-02	BC-02-B	43	61	0.9	4.4	16.5	0.267	0.00E+00	0.00E+00	NA	NA
BC-02	BC-02-C	16	45	0.9	2.5	16.5	0.152	0.00E+00	0.00E+00	NA	NA
BC-02	BC-02-D	14	34	0.9	2.5	16.5	0.152	0.00E+00	0.00E+00	NA	NA
BC-02	BC-02-E	9	28	0.9	1.7	16.5	0.103	0.00E+00	0.00E+00	NA	NA
BC-02	BC-02-F	5	16	0.9	1.0	16.5	0.061	0.00E+00	0.00E+00	NA	NA
BC-02	BC-02	Child	15	0.9			0.100	0.00E+00	0.00E+00	NA	NA
BC-04	BC-04-A	89	55	1	5.4	16.2	0.333	9.35E-02	5.48E-04	7.00E-02	2.09E-03
BC-04	BC-04-B	62	57	1	5.4	16.2	0.333	9.35E-02	5.26E-04	7.00E-02	2.09E-03
BC-04	BC-04-C	57	84	1	5.4	16.2	0.333	9.35E-02	3.55E-04	7.00E-02	2.09E-03
BC-04	BC-04	Child	15	1			0.200	9.35E-02	1.20E-03	7.00E-02	1.26E-03
BC-06	BC-06-A	64	70	1	5.4	15.2	0.355	0.00E+00	0.00E+00	1.19E-01	0.00E+00
BC-06	BC-06-B	65	77	1	5.4	15.2	0.355	0.00E+00	0.00E+00	1.19E-01	0.00E+00
BC-06	BC-06-C	28	77	1	4.4	15.2	0.289	0.00E+00	0.00E+00	1.19E-01	0.00E+00
BC-06	BC-06	Child	15	1			0.200	0.00E+00	0.00E+00	1.19E-01	0.00E+00
BC-11	BC-11-A	47	59	1	5.4	16.5	0.327	3.90E-02	2.07E-04	1.28E-01	1.57E-03
BC-11	BC-11-B	44	68	1	4.4	16.5	0.267	3.90E-02	1.46E-04	1.28E-01	1.28E-03
BC-11	BC-11-C	19	68	1	2.5	16.5	0.152	3.90E-02	8.30E-05	1.28E-01	7.27E-04
BC-11	BC-11-D	15	45	1	2.5	16.5	0.152	3.90E-02	1.25E-04	1.28E-01	7.27E-04
BC-11	BC-11-E	11	23	1	1.7	16.5	0.103	3.90E-02	1.69E-04	1.28E-01	4.94E-04
BC-11	BC-11	Child	15	1			0.120	3.90E-02	2.99E-04	1.28E-01	5.76E-04
BC-20	BC-20-A	62	105	0.5	5.4	23.6	0.229	1.30E-02	1.36E-05	1.09E-01	1.55E-04
BC-20	BC-20-B	60	68	0.5	5.4	23.6	0.229	1.30E-02	2.09E-05	1.09E-01	1.55E-04
BC-20	BC-20-C	35	64	0.5	4.4	23.6	0.186	1.30E-02	1.82E-05	1.09E-01	1.26E-04
BC-20	BC-20-D	16	73	0.5	2.5	23.6	0.106	1.30E-02	9.07E-06	1.09E-01	7.18E-05
BC-20	BC-20-E	14	64	0.5	2.5	23.6	0.106	1.30E-02	1.04E-05	1.09E-01	7.18E-05
BC-20	BC-20-F	11	23	0.5	1.7	23.6	0.072	1.30E-02	1.97E-05	1.09E-01	4.88E-05
BC-20	BC-20-G	9	23	0.5	1.7	23.6	0.072	1.30E-02	1.97E-05	1.09E-01	4.88E-05
BC-20	BC-20	Child	15	0.5			0.086	1.30E-02	3.56E-05	1.09E-01	5.81E-05
BC-23	BC-23-A	73	71	0.9	5.4	16.2	0.333	0.00E+00	0.00E+00	1.44E-01	0.00E+00
BC-23	BC-23-B	69	71	0.9	5.4	16.2	0.333	0.00E+00	0.00E+00	1.44E-01	0.00E+00
BC-23	BC-23-C	45	75	0.9	5.4	16.2	0.333	0.00E+00	0.00E+00	1.44E-01	0.00E+00
BC-23	BC-23	Child	15	0.9			0.200	0.00E+00	0.00E+00	1.44E-01	0.00E+00
BC-24	BC-24-A	32	73	0.5	4.4	9.8	0.449	0.00E+00	0.00E+00	6.48E-01	0.00E+00
BC-24	BC-24-B	28	105	0.5	4.4	9.8	0.449	0.00E+00	0.00E+00	6.48E-01	0.00E+00
BC-24	BC-24-C	3	18	0.5	1.0	9.8	0.102	0.00E+00	0.00E+00	6.48E-01	0.00E+00
BC-24	BC-24	Child	15	0.5			0.200	0.00E+00	0.00E+00	6.48E-01	0.00E+00
BC-31	BC-31-A	60	55	1	5.4	5.4	1.000	0.00E+00	0.00E+00	2.25E-01	0.00E+00
BC-31	BC-31	Child	15	1			0.300	0.00E+00	0.00E+00	2.25E-01	0.00E+00
BC-34	BC-34-A	64	105	0.9	5.4	10.8	0.500	0.00E+00	0.00E+00	1.74E-01	0.00E+00
BC-34	BC-34-B	65	59	0.9	5.4	10.8	0.500	0.00E+00	0.00E+00	1.74E-01	0.00E+00
BC-34	BC-34	Child	15	0.9			0.300	0.00E+00	0.00E+00	1.74E-01	0.00E+00
BC-37	BC-37-A	55	70	0.75	5.4	10.8	0.500	3.38E-02	1.72E-04	5.29E-01	6.42E-03
BC-37	BC-37-B	55	68	0.75	5.4	10.8	0.500	3.38E-02	1.78E-04	5.29E-01	6.42E-03
BC-37	BC-37	Child	15	0.75			0.300	3.38E-02	4.86E-04	5.29E-01	3.85E-03
M-01	M-01-A	70	75	0.9	5.4	25.7	0.210	0.00E+00	0.00E+00	1.20E-01	0.00E+00
M-01	M-01-B	70	66	0.9	5.4	25.7	0.210	0.00E+00	0.00E+00	1.20E-01	0.00E+00
M-01	M-01-C	28	77	0.9	4.4	25.7	0.171	0.00E+00	0.00E+00	1.20E-01	0.00E+00
M-01	M-01-D	24	50	0.9	4.4	25.7	0.171	0.00E+00	0.00E+00	1.20E-01	0.00E+00
M-01	M-01-E	21	52	0.9	4.4	25.7	0.171	0.00E+00	0.00E+00	1.20E-01	0.00E+00
M-01	M-01-F	6	16	0.9	1.7	25.7	0.066	0.00E+00	0.00E+00	1.20E-01	0.00E+00
M-01	M-01	Child	15	0.9			0.100	0.00E+00	0.00E+00	1.20E-01	0.00E+00
M-03	M-03-A	74	71	0.9	5.4	24.0	0.225	3.38E-02	9.27E-05	1.42E-01	9.29E-04
M-03	M-03-B	69	71	0.9	5.4	24.0	0.225	3.38E-02	9.27E-05	1.42E-01	9.29E-04
M-03	M-03-C	40	74	0.9	4.4	24.0	0.183	3.38E-02	7.22E-05	1.42E-01	7.57E-04
M-03	M-03-D	37	74	0.9	4.4	24.0	0.183	3.38E-02	7.22E-05	1.42E-01	7.57E-04
M-03	M-03-E	33	72	0.9	4.4	24.0	0.183	3.38E-02	7.47E-05	1.42E-01	7.57E-04
M-03	M-03	Child	15	0.9			0.120	3.38E-02	2.33E-04	1.42E-01	4.96E-04
M-04	M-04-A	57	78	1	5.4	26.0	0.208	5.16E-01	1.32E-03	1.11E-01	1.14E-02
M-04	M-04-B	54	75	1	5.4	26.0	0.208	5.16E-01	1.37E-03	1.11E-01	1.14E-02
M-04	M-04-C	27	68	1	4.4	26.0	0.169	5.16E-01	1.23E-03	1.11E-01	9.32E-03

TABLE D-22 CALCULATION FOR INDIVIDUAL DAILY INTAKE FROM LEAD IN GARDEN VEGETABLES

IDI = HIF*C*BW
HIF = [(DY*HCF*ICF)*(EF*ED)]/(BW*AT)
ICF = RI(i)/RI(t)

EF = 350 days/yr
ED = 1 year
AT = 365 days

					Leafy Vegetables						
HSHLD	INDIV.	AGE (yrs)	BW (kg)	HCF	RI(i)	RI(t)	ICF	Daily Yld, kg	HIF	C	IDI
M-04	M-04-D	23	66	1	4.4	26.0	0.169	5.16E-01	1.27E-03	1.11E-01	9.32E-03
M-04	M-04-E	20	64	1	4.4	26.0	0.169	5.16E-01	1.32E-03	1.11E-01	9.32E-03
M-04	M-04-F	4	16	1	1.0	26.0	0.038	5.16E-01	1.20E-03	1.11E-01	2.12E-03
M-04	M-04-G	2	11	1	1.0	26.0	0.038	5.16E-01	1.68E-03	1.11E-01	2.12E-03
M-04	M-04	Child	15	1			0.086	5.16E-01	2.83E-03	1.11E-01	4.72E-03
M-21	M-21-A	Child	15	0.33			0.046	5.19E-02	5.06E-05	1.02E-01	7.72E-05
M-21	M-21-B	Adult	70	0.33			0.108	5.19E-02	2.53E-05	1.02E-01	1.80E-04
M-25	M-25-A	34	100	0.8	4.4	13.2	0.333	0.00E+00	0.00E+00	8.24E-02	0.00E+00
M-25	M-25-B	33	68	0.8	4.4	13.2	0.333	0.00E+00	0.00E+00	8.24E-02	0.00E+00
M-25	M-25-C	10	43	0.8	1.7	13.2	0.129	0.00E+00	0.00E+00	8.24E-02	0.00E+00
M-25	M-25-D	7	34	0.8	1.7	13.2	0.129	0.00E+00	0.00E+00	8.24E-02	0.00E+00
M-25	M-25-E	3	16	0.8	1.0	13.2	0.076	0.00E+00	0.00E+00	8.24E-02	0.00E+00
M-25	M-25	Child	15	0.8			0.120	0.00E+00	0.00E+00	8.24E-02	0.00E+00
M-29	M-29-A	Child	15	0.7			0.050	7.79E-03	1.74E-05	1.16E-01	3.04E-05
M-29	M-29-B	Adult	70	0.7			0.117	7.79E-03	8.72E-06	1.16E-01	7.08E-05
M-31	M-31-A	21	52	1	4.4	24.1	0.183	1.56E-02	5.22E-05	7.80E-02	2.13E-04
M-31	M-31-B	19	50	1	2.5	24.1	0.104	1.56E-02	3.10E-05	7.80E-02	1.21E-04
M-31	M-31-C	17	55	1	2.5	24.1	0.104	1.56E-02	2.80E-05	7.80E-02	1.21E-04
M-31	M-31-D	15	50	1	2.5	24.1	0.104	1.56E-02	3.13E-05	7.80E-02	1.21E-04
M-31	M-31-E	9	36	1	1.7	24.1	0.071	1.56E-02	2.90E-05	7.80E-02	8.22E-05
M-31	M-31-F	6	20	1	1.7	24.1	0.071	1.56E-02	5.39E-05	7.80E-02	8.22E-05
M-31	M-31-G	43	61	1	4.4	24.1	0.183	1.56E-02	4.45E-05	7.80E-02	2.13E-04
M-31	M-31-H	43	80	1	4.4	24.1	0.183	1.56E-02	3.43E-05	7.80E-02	2.13E-04
M-31	M-31	Child	15	1			0.075	1.56E-02	7.47E-05	7.80E-02	8.74E-05
M-41	M-41-A	71	71	0.15	5.4	29.0	0.186	0.00E+00	0.00E+00	8.60E-02	0.00E+00
M-41	M-41-B	68	71	0.15	5.4	29.0	0.186	0.00E+00	0.00E+00	8.60E-02	0.00E+00
M-41	M-41-C	47	75	0.15	5.4	29.0	0.186	0.00E+00	0.00E+00	8.60E-02	0.00E+00
M-41	M-41-D	45	75	0.15	5.4	29.0	0.186	0.00E+00	0.00E+00	8.60E-02	0.00E+00
M-41	M-41-E	30	72	0.15	4.4	29.0	0.152	0.00E+00	0.00E+00	8.60E-02	0.00E+00
M-41	M-41-F	3	15	0.15	1.0	29.0	0.034	0.00E+00	0.00E+00	8.60E-02	0.00E+00
M-41	M-41-G	2	13	0.15	1.0	29.0	0.034	0.00E+00	0.00E+00	8.60E-02	0.00E+00
M-41	M-41-H	1	11	0.15	1.0	29.0	0.034	0.00E+00	0.00E+00	8.60E-02	0.00E+00
M-41	M-41	Child	15	0.15			0.075	0.00E+00	0.00E+00	8.60E-02	0.00E+00
RA-03	RA-03-A	33	91	1	4.4	16.9	0.260	8.18E-02	2.25E-04	8.05E-02	1.64E-03
RA-03	RA-03-B	29	50	1	4.4	16.9	0.260	8.18E-02	4.09E-04	8.05E-02	1.64E-03
RA-03	RA-03-C	11	34	1	1.7	16.9	0.101	8.18E-02	2.31E-04	8.05E-02	6.35E-04
RA-03	RA-03-D	9	30	1	1.7	16.9	0.101	8.18E-02	2.67E-04	8.05E-02	6.35E-04
RA-03	RA-03-E	7	20	1	1.7	16.9	0.101	8.18E-02	3.86E-04	8.05E-02	6.35E-04
RA-03	RA-03-F	4	14	1	1.0	16.9	0.059	8.18E-02	3.40E-04	8.05E-02	3.74E-04
RA-03	RA-03-G	2	11	1	1.0	16.9	0.059	8.18E-02	4.09E-04	8.05E-02	3.74E-04
RA-03	RA-03-H	1	9	1	1.0	16.9	0.059	8.18E-02	5.11E-04	8.05E-02	3.74E-04
RA-03	RA-03	Child	15	1			0.075	8.18E-02	3.92E-04	8.05E-02	4.74E-04
RA-04	RA-04-A	51	75	1	5.4	10.8	0.500	0.00E+00	0.00E+00	5.27E-02	0.00E+00
RA-04	RA-04-B	52	84	1	5.4	10.8	0.500	0.00E+00	0.00E+00	5.27E-02	0.00E+00
RA-04	RA-04	Child	15	1			0.300	0.00E+00	0.00E+00	5.27E-02	0.00E+00
RA-07	RA-07-A	Child	15	0.9			0.010	4.68E-02	2.78E-05	1.08E-02	4.49E-06
RA-07	RA-07-B	Adult	70	0.9			0.024	4.68E-02	1.39E-05	1.08E-02	1.05E-05
RA-08	RA-08-A	43	82	1	4.4	9.8	0.449	0.00E+00	0.00E+00	7.83E-02	0.00E+00
RA-08	RA-08-B	34	64	1	4.4	9.8	0.449	0.00E+00	0.00E+00	7.83E-02	0.00E+00
RA-08	RA-08-D	4	16	1	1.0	9.8	0.102	0.00E+00	0.00E+00	7.83E-02	0.00E+00
RA-08	RA-08	Child	15	1			0.200	0.00E+00	0.00E+00	7.83E-02	0.00E+00

TABLE D-23 CALCULATION FOR INDIVIDUAL DAILY INTAKE FROM LEAD IN GARDEN VEGETABLES

IDI = HIF*C*BW
HIF = [(DY*HCF*ICF)*(EF*ED)]/(BW*AT)
ICF = RI(i)/RI(t)

EF = 350 days/yr
ED = 1 year
AT = 365 days

		AGE	BW		Root Vegetables						
HSHLD	INDIV.	(yrs)	(kg)	HCF	RI(i)	RI(t)	ICF	Daily Yld, kg	HIF	C	IDI
BC-02	BC-02-A	40	68	0.9	2.6	13.2	0.197	5.41E-02	1.35E-04	NA	NA
BC-02	BC-02-B	43	61	0.9	2.6	13.2	0.197	5.41E-02	1.50E-04	NA	NA
BC-02	BC-02-C	16	45	0.9	2.6	13.2	0.197	5.41E-02	2.02E-04	NA	NA
BC-02	BC-02-D	14	34	0.9	2.6	13.2	0.197	5.41E-02	2.70E-04	NA	NA
BC-02	BC-02-E	9	28	0.9	1.8	13.2	0.136	5.41E-02	2.26E-04	NA	NA
BC-02	BC-02-F	5	16	0.9	1.0	13.2	0.076	5.41E-02	2.22E-04	NA	NA
BC-02	BC-02	Child	15	0.9			0.100	5.41E-02	3.11E-04	NA	NA
BC-04	BC-04-A	89	55	1	2.4	7.2	0.333	3.81E-01	2.23E-03	7.74E-02	9.42E-03
BC-04	BC-04-B	62	57	1	2.4	7.2	0.333	3.81E-01	2.14E-03	7.74E-02	9.42E-03
BC-04	BC-04-C	57	84	1	2.4	7.2	0.333	3.81E-01	1.45E-03	7.74E-02	9.42E-03
BC-04	BC-04	Child	15	1			0.200	3.81E-01	4.87E-03	7.74E-02	5.65E-03
BC-06	BC-06-A	64	70	1	2.4	7.4	0.324	1.30E-02	5.73E-05	1.26E-01	5.09E-04
BC-06	BC-06-B	65	77	1	2.4	7.4	0.324	1.30E-02	5.23E-05	1.26E-01	5.09E-04
BC-06	BC-06-C	28	77	1	2.6	7.4	0.351	1.30E-02	5.66E-05	1.26E-01	5.51E-04
BC-06	BC-06	Child	15	1			0.200	1.30E-02	1.66E-04	1.26E-01	3.14E-04
BC-11	BC-11-A	47	59	1	2.4	12.0	0.200	3.25E-02	1.05E-04	4.92E-02	3.06E-04
BC-11	BC-11-B	44	68	1	2.6	12.0	0.217	3.25E-02	9.89E-05	4.92E-02	3.32E-04
BC-11	BC-11-C	19	68	1	2.6	12.0	0.217	3.25E-02	9.89E-05	4.92E-02	3.32E-04
BC-11	BC-11-D	15	45	1	2.6	12.0	0.217	3.25E-02	1.48E-04	4.92E-02	3.32E-04
BC-11	BC-11-E	11	23	1	1.8	12.0	0.150	3.25E-02	2.05E-04	4.92E-02	2.30E-04
BC-11	BC-11	Child	15	1			0.120	3.25E-02	2.49E-04	4.92E-02	1.84E-04
BC-20	BC-20-A	62	105	0.5	2.4	16.2	0.148	2.73E-01	1.85E-04	9.48E-02	1.84E-03
BC-20	BC-20-B	60	68	0.5	2.4	16.2	0.148	2.73E-01	2.84E-04	9.48E-02	1.84E-03
BC-20	BC-20-C	35	64	0.5	2.6	16.2	0.160	2.73E-01	3.30E-04	9.48E-02	1.99E-03
BC-20	BC-20-D	16	73	0.5	2.6	16.2	0.160	2.73E-01	2.89E-04	9.48E-02	1.99E-03
BC-20	BC-20-E	14	64	0.5	2.6	16.2	0.160	2.73E-01	3.30E-04	9.48E-02	1.99E-03
BC-20	BC-20-F	11	23	0.5	1.8	16.2	0.111	2.73E-01	6.39E-04	9.48E-02	1.38E-03
BC-20	BC-20-G	9	23	0.5	1.8	16.2	0.111	2.73E-01	6.39E-04	9.48E-02	1.38E-03
BC-20	BC-20	Child	15	0.5			0.086	2.73E-01	7.47E-04	9.48E-02	1.06E-03
BC-23	BC-23-A	73	71	0.9	2.4	7.2	0.333	7.01E-02	2.85E-04	1.29E-01	2.61E-03
BC-23	BC-23-B	69	71	0.9	2.4	7.2	0.333	7.01E-02	2.85E-04	1.29E-01	2.61E-03
BC-23	BC-23-C	45	75	0.9	2.4	7.2	0.333	7.01E-02	2.71E-04	1.29E-01	2.61E-03
BC-23	BC-23	Child	15	0.9			0.200	7.01E-02	8.07E-04	1.29E-01	1.57E-03
BC-24	BC-24-A	32	73	0.5	2.6	6.2	0.419	9.74E-02	2.69E-04	5.28E-01	1.03E-02
BC-24	BC-24-B	28	105	0.5	2.6	6.2	0.419	9.74E-02	1.87E-04	5.28E-01	1.03E-02
BC-24	BC-24-C	3	18	0.5	1.0	6.2	0.161	9.74E-02	4.25E-04	5.28E-01	3.98E-03
BC-24	BC-24	Child	15	0.5			0.200	9.74E-02	6.23E-04	5.28E-01	4.93E-03
BC-31	BC-31-A	60	55	1	2.4	2.4	1.000	0.00E+00	0.00E+00	2.53E-01	0.00E+00
BC-31	BC-31	Child	15	1			0.300	0.00E+00	0.00E+00	2.53E-01	0.00E+00
BC-34	BC-34-A	64	105	0.9	2.4	4.8	0.500	1.40E-01	5.79E-04	1.76E-01	1.06E-02
BC-34	BC-34-B	65	59	0.9	2.4	4.8	0.500	1.40E-01	1.02E-03	1.76E-01	1.06E-02
BC-34	BC-34	Child	15	0.9			0.300	1.40E-01	2.42E-03	1.76E-01	6.38E-03
BC-37	BC-37-A	55	70	0.75	2.4	4.8	0.500	1.22E-01	6.25E-04	9.18E-01	4.04E-02
BC-37	BC-37-B	55	68	0.75	2.4	4.8	0.500	1.22E-01	6.46E-04	9.18E-01	4.04E-02
BC-37	BC-37	Child	15	0.75			0.300	1.22E-01	1.76E-03	9.18E-01	2.43E-02
M-01	M-01-A	70	75	0.9	2.4	14.4	0.167	0.00E+00	0.00E+00	1.05E-01	0.00E+00
M-01	M-01-B	70	66	0.9	2.4	14.4	0.167	0.00E+00	0.00E+00	1.05E-01	0.00E+00
M-01	M-01-C	28	77	0.9	2.6	14.4	0.181	0.00E+00	0.00E+00	1.05E-01	0.00E+00
M-01	M-01-D	24	50	0.9	2.6	14.4	0.181	0.00E+00	0.00E+00	1.05E-01	0.00E+00
M-01	M-01-E	21	52	0.9	2.6	14.4	0.181	0.00E+00	0.00E+00	1.05E-01	0.00E+00
M-01	M-01-F	6	16	0.9	1.8	14.4	0.125	0.00E+00	0.00E+00	1.05E-01	0.00E+00
M-01	M-01	Child	15	0.9			0.100	0.00E+00	0.00E+00	1.05E-01	0.00E+00
M-03	M-03-A	74	71	0.9	2.4	12.6	0.190	1.23E-01	2.87E-04	1.40E-01	2.85E-03
M-03	M-03-B	69	71	0.9	2.4	12.6	0.190	1.23E-01	2.87E-04	1.40E-01	2.85E-03
M-03	M-03-C	40	74	0.9	2.6	12.6	0.206	1.23E-01	2.97E-04	1.40E-01	3.09E-03
M-03	M-03-D	37	74	0.9	2.6	12.6	0.206	1.23E-01	2.97E-04	1.40E-01	3.09E-03
M-03	M-03-E	33	72	0.9	2.6	12.6	0.206	1.23E-01	3.07E-04	1.40E-01	3.09E-03
M-03	M-03	Child	15	0.9			0.120	1.23E-01	8.52E-04	1.40E-01	1.79E-03
M-04	M-04-A	57	78	1	2.4	14.6	0.164	9.84E-01	2.00E-03	9.10E-02	1.41E-02
M-04	M-04-B	54	75	1	2.4	14.6	0.164	9.84E-01	2.07E-03	9.10E-02	1.41E-02
M-04	M-04-C	27	68	1	2.6	14.6	0.178	9.84E-01	2.46E-03	9.10E-02	1.53E-02

TABLE D-23 CALCULATION FOR INDIVIDUAL DAILY INTAKE FROM LEAD IN GARDEN VEGETABLES

IDI = HIF*C*BW
HIF = [(DY*HCF*ICF)*(EF*ED)]/(BW*AT)
ICF = RI(i)/RI(t)

EF = 350 days/yr
ED = 1 year
AT = 365 days

		AGE	BW		Root Vegetables						
HSHLD	INDIV.	(yrs)	(kg)	HCF	RI(i)	RI(t)	ICF	Daily Yld, kg	HIF	C	IDI
M-04	M-04-D	23	66	1	2.6	14.6	0.178	9.84E-01	2.55E-03	9.10E-02	1.53E-02
M-04	M-04-E	20	64	1	2.6	14.6	0.178	9.84E-01	2.64E-03	9.10E-02	1.53E-02
M-04	M-04-F	4	16	1	1.0	14.6	0.068	9.84E-01	4.06E-03	9.10E-02	5.88E-03
M-04	M-04-G	2	11	1	1.0	14.6	0.068	9.84E-01	5.69E-03	9.10E-02	5.88E-03
M-04	M-04	Child	15	1			0.086	9.84E-01	5.39E-03	9.10E-02	7.35E-03
M-21	M-21-A	Child	15	0.33			0.046	2.49E-02	2.43E-05	7.55E-02	2.75E-05
M-21	M-21-B	Adult	70	0.33			0.108	2.49E-02	1.21E-05	7.55E-02	6.42E-05
M-25	M-25-A	34	100	0.8	2.6	9.8	0.265	4.16E-02	8.46E-05	3.12E-02	2.64E-04
M-25	M-25-B	33	68	0.8	2.6	9.8	0.265	4.16E-02	1.24E-04	3.12E-02	2.64E-04
M-25	M-25-C	10	43	0.8	1.8	9.8	0.184	4.16E-02	1.36E-04	3.12E-02	1.83E-04
M-25	M-25-D	7	34	0.8	1.8	9.8	0.184	4.16E-02	1.72E-04	3.12E-02	1.83E-04
M-25	M-25-E	3	16	0.8	1.0	9.8	0.102	4.16E-02	2.04E-04	3.12E-02	1.01E-04
M-25	M-25	Child	15	0.8			0.120	4.16E-02	2.55E-04	3.12E-02	1.19E-04
M-29	M-29-A	Child	15	0.7			0.050	2.60E-02	5.81E-05	9.24E-02	8.05E-05
M-29	M-29-B	Adult	70	0.7			0.117	2.60E-02	2.91E-05	9.24E-02	1.88E-04
M-31	M-31-A	21	52	1	2.6	19.2	0.135	1.69E-02	4.19E-05	2.76E-02	6.05E-05
M-31	M-31-B	19	50	1	2.6	19.2	0.135	1.69E-02	4.38E-05	2.76E-02	6.05E-05
M-31	M-31-C	17	55	1	2.6	19.2	0.135	1.69E-02	3.95E-05	2.76E-02	6.05E-05
M-31	M-31-D	15	50	1	2.6	19.2	0.135	1.69E-02	4.42E-05	2.76E-02	6.05E-05
M-31	M-31-E	9	36	1	1.8	19.2	0.094	1.69E-02	4.17E-05	2.76E-02	4.19E-05
M-31	M-31-F	6	20	1	1.8	19.2	0.094	1.69E-02	7.77E-05	2.76E-02	4.19E-05
M-31	M-31-G	43	61	1	2.6	19.2	0.135	1.69E-02	3.57E-05	2.76E-02	6.05E-05
M-31	M-31-H	43	80	1	2.6	19.2	0.135	1.69E-02	2.76E-05	2.76E-02	6.05E-05
M-31	M-31	Child	15	1			0.075	1.69E-02	8.09E-05	2.76E-02	3.35E-05
M-41	M-41-A	71	71	0.15	2.4	15.2	0.158	3.64E-02	1.17E-05	5.79E-02	4.78E-05
M-41	M-41-B	68	71	0.15	2.4	15.2	0.158	3.64E-02	1.17E-05	5.79E-02	4.78E-05
M-41	M-41-C	47	75	0.15	2.4	15.2	0.158	3.64E-02	1.11E-05	5.79E-02	4.78E-05
M-41	M-41-D	45	75	0.15	2.4	15.2	0.158	3.64E-02	1.11E-05	5.79E-02	4.78E-05
M-41	M-41-E	30	72	0.15	2.6	15.2	0.171	3.64E-02	1.25E-05	5.79E-02	5.18E-05
M-41	M-41-F	3	15	0.15	1.0	15.2	0.066	3.64E-02	2.25E-05	5.79E-02	1.99E-05
M-41	M-41-G	2	13	0.15	1.0	15.2	0.066	3.64E-02	2.59E-05	5.79E-02	1.99E-05
M-41	M-41-H	1	11	0.15	1.0	15.2	0.066	3.64E-02	3.05E-05	5.79E-02	1.99E-05
M-41	M-41	Child	15	0.15			0.075	3.64E-02	2.62E-05	5.79E-02	2.27E-05
RA-03	RA-03-A	33	91	1	2.6	13.6	0.191	1.27E-01	2.55E-04	3.30E-02	7.66E-04
RA-03	RA-03-B	29	50	1	2.6	13.6	0.191	1.27E-01	4.64E-04	3.30E-02	7.66E-04
RA-03	RA-03-C	11	34	1	1.8	13.6	0.132	1.27E-01	4.71E-04	3.30E-02	5.30E-04
RA-03	RA-03-D	9	30	1	1.8	13.6	0.132	1.27E-01	5.44E-04	3.30E-02	5.30E-04
RA-03	RA-03-E	7	20	1	1.8	13.6	0.132	1.27E-01	7.86E-04	3.30E-02	5.30E-04
RA-03	RA-03-F	4	14	1	1.0	13.6	0.074	1.27E-01	6.55E-04	3.30E-02	2.95E-04
RA-03	RA-03-G	2	11	1	1.0	13.6	0.074	1.27E-01	7.86E-04	3.30E-02	2.95E-04
RA-03	RA-03-H	1	9	1	1.0	13.6	0.074	1.27E-01	9.82E-04	3.30E-02	2.95E-04
RA-03	RA-03	Child	15	1			0.075	1.27E-01	6.07E-04	3.30E-02	3.01E-04
RA-04	RA-04-A	51	75	1	2.4	4.8	0.500	0.00E+00	0.00E+00	3.05E-02	0.00E+00
RA-04	RA-04-B	52	84	1	2.4	4.8	0.500	0.00E+00	0.00E+00	3.05E-02	0.00E+00
RA-04	RA-04	Child	15	1			0.300	0.00E+00	0.00E+00	3.05E-02	0.00E+00
RA-07	RA-07-A	Child	15	0.9			0.010	4.55E-01	2.71E-04	2.22E-02	9.01E-05
RA-07	RA-07-B	Adult	70	0.9			0.024	4.55E-01	1.35E-04	2.22E-02	2.10E-04
RA-08	RA-08-A	43	82	1	2.6	6.2	0.419	5.39E-02	2.65E-04	6.00E-02	1.30E-03
RA-08	RA-08-B	34	64	1	2.6	6.2	0.419	5.39E-02	3.38E-04	6.00E-02	1.30E-03
RA-08	RA-08-D	4	16	1	1.0	6.2	0.161	5.39E-02	5.24E-04	6.00E-02	5.00E-04
RA-08	RA-08	Child	15	1			0.200	5.39E-02	6.89E-04	6.00E-02	6.20E-04

TABLE D-24 CALCULATION FOR INDIVIDUAL DAILY INTAKE FROM LEAD IN GARDEN VEGETABLES

IDI = HIF*C*BW
HIF = [(DY*HCF*ICF)*(EF*ED)]/(BW*AT)
ICF = RI(i)/RI(t)

EF = 350 days/yr
ED = 1 year
AT = 365 days

		AGE	BW		Garden Fruit						
HSHLD	INDIV.	(yrs)	(kg)	HCF	RI(i)	RI(t)	ICF	Daily Yld, kg	HIF	C	IDI
BC-02	BC-02-A	40	68	0.9	2.8	12.3	0.228	4.91E-01	1.41E-03	NA	NA
BC-02	BC-02-B	43	61	0.9	2.8	12.3	0.228	4.91E-01	1.57E-03	NA	NA
BC-02	BC-02-C	16	45	0.9	2.1	12.3	0.171	4.91E-01	1.59E-03	NA	NA
BC-02	BC-02-D	14	34	0.9	2.1	12.3	0.171	4.91E-01	2.12E-03	NA	NA
BC-02	BC-02-E	9	28	0.9	1.5	12.3	0.122	4.91E-01	1.83E-03	NA	NA
BC-02	BC-02-F	5	16	0.9	1.0	12.3	0.081	4.91E-01	2.17E-03	NA	NA
BC-02	BC-02	Child	15	0.9			0.100	4.91E-01	2.82E-03	NA	NA
BC-04	BC-04-A	89	55	1	2.9	8.7	0.333	8.38E-01	4.91E-03	2.37E-02	6.35E-03
BC-04	BC-04-B	62	57	1	2.9	8.7	0.333	8.38E-01	4.71E-03	2.37E-02	6.35E-03
BC-04	BC-04-C	57	84	1	2.9	8.7	0.333	8.38E-01	3.18E-03	2.37E-02	6.35E-03
BC-04	BC-04	Child	15	1			0.200	8.38E-01	1.07E-02	2.37E-02	3.81E-03
BC-06	BC-06-A	64	70	1	2.9	8.6	0.337	1.46E-01	6.71E-04	1.57E-02	7.41E-04
BC-06	BC-06-B	65	77	1	2.9	8.6	0.337	1.46E-01	6.11E-04	1.57E-02	7.41E-04
BC-06	BC-06-C	28	77	1	2.8	8.6	0.326	1.46E-01	5.90E-04	1.57E-02	7.16E-04
BC-06	BC-06	Child	15	1			0.200	1.46E-01	1.87E-03	1.57E-02	4.40E-04
BC-11	BC-11-A	47	59	1	2.9	11.4	0.254	5.26E-01	2.17E-03	1.60E-02	2.05E-03
BC-11	BC-11-B	44	68	1	2.8	11.4	0.246	5.26E-01	1.82E-03	1.60E-02	1.98E-03
BC-11	BC-11-C	19	68	1	2.1	11.4	0.184	5.26E-01	1.36E-03	1.60E-02	1.48E-03
BC-11	BC-11-D	15	45	1	2.1	11.4	0.184	5.26E-01	2.04E-03	1.60E-02	1.48E-03
BC-11	BC-11-E	11	23	1	1.5	11.4	0.132	5.26E-01	2.92E-03	1.60E-02	1.06E-03
BC-11	BC-11	Child	15	1			0.120	5.26E-01	4.03E-03	1.60E-02	9.67E-04
BC-20	BC-20-A	62	105	0.5	2.9	15.8	0.184	4.71E-01	3.97E-04	1.54E-02	6.39E-04
BC-20	BC-20-B	60	68	0.5	2.9	15.8	0.184	4.71E-01	6.08E-04	1.54E-02	6.39E-04
BC-20	BC-20-C	35	64	0.5	2.8	15.8	0.177	4.71E-01	6.29E-04	1.54E-02	6.17E-04
BC-20	BC-20-D	16	73	0.5	2.1	15.8	0.133	4.71E-01	4.13E-04	1.54E-02	4.63E-04
BC-20	BC-20-E	14	64	0.5	2.1	15.8	0.133	4.71E-01	4.72E-04	1.54E-02	4.63E-04
BC-20	BC-20-F	11	23	0.5	1.5	15.8	0.095	4.71E-01	9.44E-04	1.54E-02	3.30E-04
BC-20	BC-20-G	9	23	0.5	1.5	15.8	0.095	4.71E-01	9.44E-04	1.54E-02	3.30E-04
BC-20	BC-20	Child	15	0.5			0.086	4.71E-01	1.29E-03	1.54E-02	2.98E-04
BC-23	BC-23-A	73	71	0.9	2.9	8.7	0.333	1.43E-01	5.81E-04	1.05E-02	4.32E-04
BC-23	BC-23-B	69	71	0.9	2.9	8.7	0.333	1.43E-01	5.81E-04	1.05E-02	4.32E-04
BC-23	BC-23-C	45	75	0.9	2.9	8.7	0.333	1.43E-01	5.52E-04	1.05E-02	4.32E-04
BC-23	BC-23	Child	15	0.9			0.200	1.43E-01	1.64E-03	1.05E-02	2.59E-04
BC-24	BC-24-A	32	73	0.5	2.8	6.6	0.424	2.86E-01	8.01E-04	1.74E-02	1.01E-03
BC-24	BC-24-B	28	105	0.5	2.8	6.6	0.424	2.86E-01	5.57E-04	1.74E-02	1.01E-03
BC-24	BC-24-C	3	18	0.5	1.0	6.6	0.152	2.86E-01	1.17E-03	1.74E-02	3.62E-04
BC-24	BC-24	Child	15	0.5			0.200	2.86E-01	1.83E-03	1.74E-02	4.78E-04
BC-31	BC-31-A	60	55	1	2.9	2.9	1.000	2.08E-01	3.59E-03	2.61E-02	5.20E-03
BC-31	BC-31	Child	15	1			0.300	2.08E-01	3.99E-03	2.61E-02	1.56E-03
BC-34	BC-34-A	64	105	0.9	2.9	5.8	0.500	2.65E-01	1.09E-03	1.23E-02	1.41E-03
BC-34	BC-34-B	65	59	0.9	2.9	5.8	0.500	2.65E-01	1.93E-03	1.23E-02	1.41E-03
BC-34	BC-34	Child	15	0.9			0.300	2.65E-01	4.57E-03	1.23E-02	8.44E-04
BC-37	BC-37-A	55	70	0.75	2.9	5.8	0.500	6.62E-01	3.38E-03	2.70E-02	6.43E-03
BC-37	BC-37-B	55	68	0.75	2.9	5.8	0.500	6.62E-01	3.49E-03	2.70E-02	6.43E-03
BC-37	BC-37	Child	15	0.75			0.300	6.62E-01	9.52E-03	2.70E-02	3.86E-03
M-01	M-01-A	70	75	0.9	2.9	15.7	0.185	9.74E-02	2.07E-04	9.40E-03	1.46E-04
M-01	M-01-B	70	66	0.9	2.9	15.7	0.185	9.74E-02	2.36E-04	9.40E-03	1.46E-04
M-01	M-01-C	28	77	0.9	2.8	15.7	0.178	9.74E-02	1.94E-04	9.40E-03	1.41E-04
M-01	M-01-D	24	50	0.9	2.8	15.7	0.178	9.74E-02	3.00E-04	9.40E-03	1.41E-04
M-01	M-01-E	21	52	0.9	2.8	15.7	0.178	9.74E-02	2.87E-04	9.40E-03	1.41E-04
M-01	M-01-F	6	16	0.9	1.5	15.7	0.096	9.74E-02	5.05E-04	9.40E-03	7.55E-05
M-01	M-01	Child	15	0.9			0.100	9.74E-02	5.60E-04	9.40E-03	7.90E-05
M-03	M-03-A	74	71	0.9	2.9	14.2	0.204	2.51E-01	6.25E-04	6.00E-03	2.65E-04
M-03	M-03-B	69	71	0.9	2.9	14.2	0.204	2.51E-01	6.25E-04	6.00E-03	2.65E-04
M-03	M-03-C	40	74	0.9	2.8	14.2	0.197	2.51E-01	5.76E-04	6.00E-03	2.56E-04
M-03	M-03-D	37	74	0.9	2.8	14.2	0.197	2.51E-01	5.76E-04	6.00E-03	2.56E-04
M-03	M-03-E	33	72	0.9	2.8	14.2	0.197	2.51E-01	5.97E-04	6.00E-03	2.56E-04
M-03	M-03	Child	15	0.9			0.120	2.51E-01	1.73E-03	6.00E-03	1.56E-04
M-04	M-04-A	57	78	1	2.9	16.2	0.179	1.86E+00	4.11E-03	1.52E-02	4.86E-03
M-04	M-04-B	54	75	1	2.9	16.2	0.179	1.86E+00	4.26E-03	1.52E-02	4.86E-03
M-04	M-04-C	27	68	1	2.8	16.2	0.173	1.86E+00	4.52E-03	1.52E-02	4.69E-03

TABLE D-24 CALCULATION FOR INDIVIDUAL DAILY INTAKE FROM LEAD IN GARDEN VEGETABLES

IDI = HIF*C*BW
HIF = [(DY*HCF*ICF)*(EF*ED)]/(BW*AT)
ICF = RI(i)/RI(t)

EF = 350 days/yr
ED = 1 year
AT = 365 days

		AGE	BW		Garden Fruit						
HSHLD	INDIV.	(yrs)	(kg)	HCF	RI(i)	RI(t)	ICF	Daily Yld, kg	HIF	C	IDI
M-04	M-04-D	23	66	1	2.8	16.2	0.173	1.86E+00	4.68E-03	1.52E-02	4.69E-03
M-04	M-04-E	20	64	1	2.8	16.2	0.173	1.86E+00	4.85E-03	1.52E-02	4.69E-03
M-04	M-04-F	4	16	1	1.0	16.2	0.062	1.86E+00	6.93E-03	1.52E-02	1.67E-03
M-04	M-04-G	2	11	1	1.0	16.2	0.062	1.86E+00	9.70E-03	1.52E-02	1.67E-03
M-04	M-04	Child	15	1			0.086	1.86E+00	1.02E-02	1.52E-02	2.33E-03
M-21	M-21-A	Child	15	0.33			0.046	3.83E-01	3.73E-04	1.44E-02	8.06E-05
M-21	M-21-B	Adult	70	0.33			0.108	3.83E-01	1.87E-04	1.44E-02	1.88E-04
M-25	M-25-A	34	100	0.8	2.8	9.6	0.292	8.13E-01	1.82E-03	1.14E-02	2.08E-03
M-25	M-25-B	33	68	0.8	2.8	9.6	0.292	8.13E-01	2.67E-03	1.14E-02	2.08E-03
M-25	M-25-C	10	43	0.8	1.5	9.6	0.156	8.13E-01	2.26E-03	1.14E-02	1.12E-03
M-25	M-25-D	7	34	0.8	1.5	9.6	0.156	8.13E-01	2.86E-03	1.14E-02	1.12E-03
M-25	M-25-E	3	16	0.8	1.0	9.6	0.104	8.13E-01	4.08E-03	1.14E-02	7.44E-04
M-25	M-25	Child	15	0.8			0.120	8.13E-01	4.99E-03	1.14E-02	8.57E-04
M-29	M-29-A	Child	15	0.7			0.050	8.05E-01	1.80E-03	9.00E-03	2.43E-04
M-29	M-29-B	Adult	70	0.7			0.117	8.05E-01	9.01E-04	9.00E-03	5.67E-04
M-31	M-31-A	21	52	1	2.8	17.7	0.158	6.48E-01	1.88E-03	1.11E-02	1.09E-03
M-31	M-31-B	19	50	1	2.1	17.7	0.119	6.48E-01	1.48E-03	1.11E-02	8.19E-04
M-31	M-31-C	17	55	1	2.1	17.7	0.119	6.48E-01	1.33E-03	1.11E-02	8.19E-04
M-31	M-31-D	15	50	1	2.1	17.7	0.119	6.48E-01	1.49E-03	1.11E-02	8.19E-04
M-31	M-31-E	9	36	1	1.5	17.7	0.085	6.48E-01	1.45E-03	1.11E-02	5.85E-04
M-31	M-31-F	6	20	1	1.5	17.7	0.085	6.48E-01	2.70E-03	1.11E-02	5.85E-04
M-31	M-31-G	43	61	1	2.8	17.7	0.158	6.48E-01	1.60E-03	1.11E-02	1.09E-03
M-31	M-31-H	43	80	1	2.8	17.7	0.158	6.48E-01	1.24E-03	1.11E-02	1.09E-03
M-31	M-31	Child	15	1			0.075	6.48E-01	3.11E-03	1.11E-02	5.18E-04
M-41	M-41-A	71	71	0.15	2.9	17.4	0.167	1.36E-01	4.62E-05	3.60E-03	1.18E-05
M-41	M-41-B	68	71	0.15	2.9	17.4	0.167	1.36E-01	4.62E-05	3.60E-03	1.18E-05
M-41	M-41-C	47	75	0.15	2.9	17.4	0.167	1.36E-01	4.39E-05	3.60E-03	1.18E-05
M-41	M-41-D	45	75	0.15	2.9	17.4	0.167	1.36E-01	4.39E-05	3.60E-03	1.18E-05
M-41	M-41-E	30	72	0.15	2.8	17.4	0.161	1.36E-01	4.41E-05	3.60E-03	1.14E-05
M-41	M-41-F	3	15	0.15	1.0	17.4	0.057	1.36E-01	7.37E-05	3.60E-03	4.06E-06
M-41	M-41-G	2	13	0.15	1.0	17.4	0.057	1.36E-01	8.48E-05	3.60E-03	4.06E-06
M-41	M-41-H	1	11	0.15	1.0	17.4	0.057	1.36E-01	9.98E-05	3.60E-03	4.06E-06
M-41	M-41	Child	15	0.15			0.075	1.36E-01	9.81E-05	3.60E-03	5.30E-06
RA-03	RA-03-A	33	91	1	2.8	13.1	0.214	1.32E+00	2.99E-03	1.17E-02	3.18E-03
RA-03	RA-03-B	29	50	1	2.8	13.1	0.214	1.32E+00	5.43E-03	1.17E-02	3.18E-03
RA-03	RA-03-C	11	34	1	1.5	13.1	0.115	1.32E+00	4.27E-03	1.17E-02	1.70E-03
RA-03	RA-03-D	9	30	1	1.5	13.1	0.115	1.32E+00	4.92E-03	1.17E-02	1.70E-03
RA-03	RA-03-E	7	20	1	1.5	13.1	0.115	1.32E+00	7.11E-03	1.17E-02	1.70E-03
RA-03	RA-03-F	4	14	1	1.0	13.1	0.076	1.32E+00	7.11E-03	1.17E-02	1.13E-03
RA-03	RA-03-G	2	11	1	1.0	13.1	0.076	1.32E+00	8.53E-03	1.17E-02	1.13E-03
RA-03	RA-03-H	1	9	1	1.0	13.1	0.076	1.32E+00	1.07E-02	1.17E-02	1.13E-03
RA-03	RA-03	Child	15	1			0.075	1.32E+00	6.35E-03	1.17E-02	1.11E-03
RA-04	RA-04-A	51	75	1	2.9	5.8	0.500	1.34E-01	8.58E-04	1.77E-02	1.14E-03
RA-04	RA-04-B	52	84	1	2.9	5.8	0.500	1.34E-01	7.65E-04	1.77E-02	1.14E-03
RA-04	RA-04	Child	15	1			0.300	1.34E-01	2.57E-03	1.77E-02	6.83E-04
RA-07	RA-07-A	Child	15	0.9			0.010	1.23E+00	7.32E-04	7.80E-03	8.56E-05
RA-07	RA-07-B	Adult	70	0.9			0.024	1.23E+00	3.66E-04	7.80E-03	2.00E-04
RA-08	RA-08-A	43	82	1	2.8	6.6	0.424	7.35E-01	3.65E-03	7.50E-03	2.24E-03
RA-08	RA-08-B	34	64	1	2.8	6.6	0.424	7.35E-01	4.67E-03	7.50E-03	2.24E-03
RA-08	RA-08-D	4	16	1	1.0	6.6	0.152	7.35E-01	6.71E-03	7.50E-03	8.01E-04
RA-08	RA-08	Child	15	1			0.200	7.35E-01	9.40E-03	7.50E-03	1.06E-03

TABLE D-25 CALCULATION FOR INDIVIDUAL DAILY INTAKE FROM LEAD IN GARDEN VEGETABLES

IDI = HIF*C*BW
HIF = [(DY*HCF*ICF)*(EF*ED)]/(BW*AT)
ICF = RI(i)/RI(t)

EF = 350 days/yr
ED = 1 year
AT = 365 days

		AGE	BW		Beans/Peas						
HSHLD	INDIV.	(yrs)	(kg)	HCF	RI(i)	RI(t)	ICF	Daily Yld, kg	HIF	C	IDI
BC-02	BC-02-A	40	68	0.9	2.2	10.6	0.208	1.16E-02	3.04E-05	NA	NA
BC-02	BC-02-B	43	61	0.9	2.2	10.6	0.208	1.16E-02	3.38E-05	NA	NA
BC-02	BC-02-C	16	45	0.9	1.9	10.6	0.179	1.16E-02	3.94E-05	NA	NA
BC-02	BC-02-D	14	34	0.9	1.9	10.6	0.179	1.16E-02	5.25E-05	NA	NA
BC-02	BC-02-E	9	28	0.9	1.4	10.6	0.132	1.16E-02	4.68E-05	NA	NA
BC-02	BC-02-F	5	16	0.9	1.0	10.6	0.094	1.16E-02	5.92E-05	NA	NA
BC-02	BC-02	Child	15	0.9			0.100	1.16E-02	6.66E-05	NA	NA
BC-04	BC-04-A	89	55	1	2.1	6.3	0.333	8.77E-02	5.14E-04	2.37E-02	6.64E-04
BC-04	BC-04-B	62	57	1	2.1	6.3	0.333	8.77E-02	4.93E-04	2.37E-02	6.64E-04
BC-04	BC-04-C	57	84	1	2.1	6.3	0.333	8.77E-02	3.33E-04	2.37E-02	6.64E-04
BC-04	BC-04	Child	15	1			0.200	8.77E-02	1.12E-03	2.37E-02	3.98E-04
BC-06	BC-06-A	64	70	1	2.1	6.4	0.328	0.00E+00	0.00E+00	1.57E-02	0.00E+00
BC-06	BC-06-B	65	77	1	2.1	6.4	0.328	0.00E+00	0.00E+00	1.57E-02	0.00E+00
BC-06	BC-06-C	28	77	1	2.2	6.4	0.344	0.00E+00	0.00E+00	1.57E-02	0.00E+00
BC-06	BC-06	Child	15	1			0.200	0.00E+00	0.00E+00	1.57E-02	0.00E+00
BC-11	BC-11-A	47	59	1	2.1	9.5	0.221	3.90E-02	1.40E-04	1.60E-02	1.32E-04
BC-11	BC-11-B	44	68	1	2.2	9.5	0.232	3.90E-02	1.27E-04	1.60E-02	1.38E-04
BC-11	BC-11-C	19	68	1	1.9	9.5	0.200	3.90E-02	1.10E-04	1.60E-02	1.19E-04
BC-11	BC-11-D	15	45	1	1.9	9.5	0.200	3.90E-02	1.64E-04	1.60E-02	1.19E-04
BC-11	BC-11-E	11	23	1	1.4	9.5	0.147	3.90E-02	2.42E-04	1.60E-02	8.80E-05
BC-11	BC-11	Child	15	1			0.120	3.90E-02	2.99E-04	1.60E-02	7.17E-05
BC-20	BC-20-A	62	105	0.5	2.1	13.0	0.162	0.00E+00	0.00E+00	1.54E-02	0.00E+00
BC-20	BC-20-B	60	68	0.5	2.1	13.0	0.162	0.00E+00	0.00E+00	1.54E-02	0.00E+00
BC-20	BC-20-C	35	64	0.5	2.2	13.0	0.169	0.00E+00	0.00E+00	1.54E-02	0.00E+00
BC-20	BC-20-D	16	73	0.5	1.9	13.0	0.146	0.00E+00	0.00E+00	1.54E-02	0.00E+00
BC-20	BC-20-E	14	64	0.5	1.9	13.0	0.146	0.00E+00	0.00E+00	1.54E-02	0.00E+00
BC-20	BC-20-F	11	23	0.5	1.4	13.0	0.108	0.00E+00	0.00E+00	1.54E-02	0.00E+00
BC-20	BC-20-G	9	23	0.5	1.4	13.0	0.108	0.00E+00	0.00E+00	1.54E-02	0.00E+00
BC-20	BC-20	Child	15	0.5			0.086	0.00E+00	0.00E+00	1.54E-02	0.00E+00
BC-23	BC-23-A	73	71	0.9	2.1	6.3	0.333	1.56E-02	6.34E-05	1.05E-02	4.71E-05
BC-23	BC-23-B	69	71	0.9	2.1	6.3	0.333	1.56E-02	6.34E-05	1.05E-02	4.71E-05
BC-23	BC-23-C	45	75	0.9	2.1	6.3	0.333	1.56E-02	6.02E-05	1.05E-02	4.71E-05
BC-23	BC-23	Child	15	0.9			0.200	1.56E-02	1.79E-04	1.05E-02	2.82E-05
BC-24	BC-24-A	32	73	0.5	2.2	5.4	0.407	0.00E+00	0.00E+00	1.74E-02	0.00E+00
BC-24	BC-24-B	28	105	0.5	2.2	5.4	0.407	0.00E+00	0.00E+00	1.74E-02	0.00E+00
BC-24	BC-24-C	3	18	0.5	1.0	5.4	0.185	0.00E+00	0.00E+00	1.74E-02	0.00E+00
BC-24	BC-24	Child	15	0.5			0.200	0.00E+00	0.00E+00	1.74E-02	0.00E+00
BC-31	BC-31-A	60	55	1	2.1	2.1	1.000	2.60E-03	4.49E-05	2.61E-02	6.50E-05
BC-31	BC-31	Child	15	1			0.300	2.60E-03	4.98E-05	2.61E-02	1.95E-05
BC-34	BC-34-A	64	105	0.9	2.1	4.2	0.500	0.00E+00	0.00E+00	1.23E-02	0.00E+00
BC-34	BC-34-B	65	59	0.9	2.1	4.2	0.500	0.00E+00	0.00E+00	1.23E-02	0.00E+00
BC-34	BC-34	Child	15	0.9			0.300	0.00E+00	0.00E+00	1.23E-02	0.00E+00
BC-37	BC-37-A	55	70	0.75	2.1	4.2	0.500	2.60E-02	1.33E-04	2.70E-02	2.52E-04
BC-37	BC-37-B	55	68	0.75	2.1	4.2	0.500	2.60E-02	1.37E-04	2.70E-02	2.52E-04
BC-37	BC-37	Child	15	0.75			0.300	2.60E-02	3.74E-04	2.70E-02	1.51E-04
M-01	M-01-A	70	75	0.9	2.1	12.2	0.172	0.00E+00	0.00E+00	9.40E-03	0.00E+00
M-01	M-01-B	70	66	0.9	2.1	12.2	0.172	0.00E+00	0.00E+00	9.40E-03	0.00E+00
M-01	M-01-C	28	77	0.9	2.2	12.2	0.180	0.00E+00	0.00E+00	9.40E-03	0.00E+00
M-01	M-01-D	24	50	0.9	2.2	12.2	0.180	0.00E+00	0.00E+00	9.40E-03	0.00E+00
M-01	M-01-E	21	52	0.9	2.2	12.2	0.180	0.00E+00	0.00E+00	9.40E-03	0.00E+00
M-01	M-01-F	6	16	0.9	1.4	12.2	0.115	0.00E+00	0.00E+00	9.40E-03	0.00E+00
M-01	M-01	Child	15	0.9			0.100	0.00E+00	0.00E+00	9.40E-03	0.00E+00
M-03	M-03-A	74	71	0.9	2.1	10.8	0.194	2.60E-02	6.17E-05	6.00E-03	2.62E-05
M-03	M-03-B	69	71	0.9	2.1	10.8	0.194	2.60E-02	6.17E-05	6.00E-03	2.62E-05
M-03	M-03-C	40	74	0.9	2.2	10.8	0.204	2.60E-02	6.17E-05	6.00E-03	2.74E-05
M-03	M-03-D	37	74	0.9	2.2	10.8	0.204	2.60E-02	6.17E-05	6.00E-03	2.74E-05
M-03	M-03-E	33	72	0.9	2.2	10.8	0.204	2.60E-02	6.39E-05	6.00E-03	2.74E-05
M-03	M-03	Child	15	0.9			0.120	2.60E-02	1.79E-04	6.00E-03	1.61E-05
M-04	M-04-A	57	78	1	2.1	12.8	0.164	2.92E-01	5.91E-04	1.52E-02	6.99E-04
M-04	M-04-B	54	75	1	2.1	12.8	0.164	2.92E-01	6.13E-04	1.52E-02	6.99E-04
M-04	M-04-C	27	68	1	2.2	12.8	0.172	2.92E-01	7.06E-04	1.52E-02	7.32E-04

TABLE D-25 CALCULATION FOR INDIVIDUAL DAILY INTAKE FROM LEAD IN GARDEN VEGETABLES

IDI = HIF*C*BW
HIF = [(DY*HCF*ICF)*(EF*ED)]/(BW*AT)
ICF = RI(i)/RI(t)

EF = 350 days/yr
ED = 1 year
AT = 365 days

					Beans/Peas						
HSHLD	INDIV.	AGE (yrs)	BW (kg)	HCF	RI(i)	RI(t)	ICF	Daily Yld, kg	HIF	C	IDI
M-04	M-04-D	23	66	1	2.2	12.8	0.172	2.92E-01	7.31E-04	1.52E-02	7.32E-04
M-04	M-04-E	20	64	1	2.2	12.8	0.172	2.92E-01	7.57E-04	1.52E-02	7.32E-04
M-04	M-04-F	4	16	1	1.0	12.8	0.078	2.92E-01	1.38E-03	1.52E-02	3.33E-04
M-04	M-04-G	2	11	1	1.0	12.8	0.078	2.92E-01	1.93E-03	1.52E-02	3.33E-04
M-04	M-04	Child	15	1			0.086	2.92E-01	1.60E-03	1.52E-02	3.65E-04
M-21	M-21-A	Child	15	0.33			0.046	0.00E+00	0.00E+00	1.44E-02	0.00E+00
M-21	M-21-B	Adult	70	0.33			0.108	0.00E+00	0.00E+00	1.44E-02	0.00E+00
M-25	M-25-A	34	100	0.8	2.2	8.2	0.268	1.04E-02	2.14E-05	1.14E-02	2.45E-05
M-25	M-25-B	33	68	0.8	2.2	8.2	0.268	1.04E-02	3.14E-05	1.14E-02	2.45E-05
M-25	M-25-C	10	43	0.8	1.4	8.2	0.171	1.04E-02	3.15E-05	1.14E-02	1.56E-05
M-25	M-25-D	7	34	0.8	1.4	8.2	0.171	1.04E-02	3.99E-05	1.14E-02	1.56E-05
M-25	M-25-E	3	16	0.8	1.0	8.2	0.122	1.04E-02	6.11E-05	1.14E-02	1.11E-05
M-25	M-25	Child	15	0.8			0.120	1.04E-02	6.38E-05	1.14E-02	1.09E-05
M-29	M-29-A	Child	15	0.7			0.050	2.60E-02	5.81E-05	9.00E-03	7.85E-06
M-29	M-29-B	Adult	70	0.7			0.117	2.60E-02	2.91E-05	9.00E-03	1.83E-05
M-31	M-31-A	21	52	1	2.2	15.1	0.146	7.79E-02	2.08E-04	1.11E-02	1.21E-04
M-31	M-31-B	19	50	1	1.9	15.1	0.126	7.79E-02	1.88E-04	1.11E-02	1.04E-04
M-31	M-31-C	17	55	1	1.9	15.1	0.126	7.79E-02	1.70E-04	1.11E-02	1.04E-04
M-31	M-31-D	15	50	1	1.9	15.1	0.126	7.79E-02	1.90E-04	1.11E-02	1.04E-04
M-31	M-31-E	9	36	1	1.4	15.1	0.093	7.79E-02	1.91E-04	1.11E-02	7.69E-05
M-31	M-31-F	6	20	1	1.4	15.1	0.093	7.79E-02	3.54E-04	1.11E-02	7.69E-05
M-31	M-31-G	43	61	1	2.2	15.1	0.146	7.79E-02	1.77E-04	1.11E-02	1.21E-04
M-31	M-31-H	43	80	1	2.2	15.1	0.146	7.79E-02	1.37E-04	1.11E-02	1.21E-04
M-31	M-31	Child	15	1			0.075	7.79E-02	3.74E-04	1.11E-02	6.22E-05
M-41	M-41-A	71	71	0.15	2.1	13.6	0.154	1.30E-02	4.08E-06	3.60E-03	1.04E-06
M-41	M-41-B	68	71	0.15	2.1	13.6	0.154	1.30E-02	4.08E-06	3.60E-03	1.04E-06
M-41	M-41-C	47	75	0.15	2.1	13.6	0.154	1.30E-02	3.87E-06	3.60E-03	1.04E-06
M-41	M-41-D	45	75	0.15	2.1	13.6	0.154	1.30E-02	3.87E-06	3.60E-03	1.04E-06
M-41	M-41-E	30	72	0.15	2.2	13.6	0.162	1.30E-02	4.23E-06	3.60E-03	1.09E-06
M-41	M-41-F	3	15	0.15	1.0	13.6	0.074	1.30E-02	8.98E-06	3.60E-03	4.94E-07
M-41	M-41-G	2	13	0.15	1.0	13.6	0.074	1.30E-02	1.03E-05	3.60E-03	4.94E-07
M-41	M-41-H	1	11	0.15	1.0	13.6	0.074	1.30E-02	1.22E-05	3.60E-03	4.94E-07
M-41	M-41	Child	15	0.15			0.075	1.30E-02	9.34E-06	3.60E-03	5.04E-07
RA-03	RA-03-A	33	91	1	2.2	11.6	0.190	2.92E-02	5.85E-05	1.17E-02	6.22E-05
RA-03	RA-03-B	29	50	1	2.2	11.6	0.190	2.92E-02	1.06E-04	1.17E-02	6.22E-05
RA-03	RA-03-C	11	34	1	1.4	11.6	0.121	2.92E-02	9.92E-05	1.17E-02	3.96E-05
RA-03	RA-03-D	9	30	1	1.4	11.6	0.121	2.92E-02	1.14E-04	1.17E-02	3.96E-05
RA-03	RA-03-E	7	20	1	1.4	11.6	0.121	2.92E-02	1.65E-04	1.17E-02	3.96E-05
RA-03	RA-03-F	4	14	1	1.0	11.6	0.086	2.92E-02	1.77E-04	1.17E-02	2.83E-05
RA-03	RA-03-G	2	11	1	1.0	11.6	0.086	2.92E-02	2.13E-04	1.17E-02	2.83E-05
RA-03	RA-03-H	1	9	1	1.0	11.6	0.086	2.92E-02	2.66E-04	1.17E-02	2.83E-05
RA-03	RA-03	Child	15	1			0.075	2.92E-02	1.40E-04	1.17E-02	2.46E-05
RA-04	RA-04-A	51	75	1	2.1	4.2	0.500	0.00E+00	0.00E+00	1.77E-02	0.00E+00
RA-04	RA-04-B	52	84	1	2.1	4.2	0.500	0.00E+00	0.00E+00	1.77E-02	0.00E+00
RA-04	RA-04	Child	15	1			0.300	0.00E+00	0.00E+00	1.77E-02	0.00E+00
RA-07	RA-07-A	Child	15	0.9			0.010	1.95E-01	1.16E-04	7.80E-03	1.36E-05
RA-07	RA-07-B	Adult	70	0.9			0.024	1.95E-01	5.80E-05	7.80E-03	3.17E-05
RA-08	RA-08-A	43	82	1	2.2	5.4	0.407	0.00E+00	0.00E+00	7.50E-03	0.00E+00
RA-08	RA-08-B	34	64	1	2.2	5.4	0.407	0.00E+00	0.00E+00	7.50E-03	0.00E+00
RA-08	RA-08-D	4	16	1	1.0	5.4	0.185	0.00E+00	0.00E+00	7.50E-03	0.00E+00
RA-08	RA-08	Child	15	1			0.200	0.00E+00	0.00E+00	7.50E-03	0.00E+00

TABLE D-26 CALCULATION FOR INDIVIDUAL DAILY INTAKE FROM LEAD IN GARDEN VEGETABLES

IDI = HIF*C*BW
HIF = [(DY*HCF*ICF)*(EF*ED)]/(BW*AT)
ICF = RI(i)/RI(t)

EF = 350 days/yr
ED = 1 year
AT = 365 days

		AGE	BW		Corn						
HSHLD	INDIV.	(yrs)	(kg)	HCF	RI(i)	RI(t)	ICF	Daily Yld, kg	HIF	C	IDI
BC-02	BC-02-A	40	68	0.9	1.2	7.9	0.152	9.09E-03	1.75E-05	NA	NA
BC-02	BC-02-B	43	61	0.9	1.2	7.9	0.152	9.09E-03	1.94E-05	NA	NA
BC-02	BC-02-C	16	45	0.9	1.6	7.9	0.203	9.09E-03	3.50E-05	NA	NA
BC-02	BC-02-D	14	34	0.9	1.6	7.9	0.203	9.09E-03	4.66E-05	NA	NA
BC-02	BC-02-E	9	28	0.9	1.3	7.9	0.165	9.09E-03	4.58E-05	NA	NA
BC-02	BC-02-F	5	16	0.9	1.0	7.9	0.127	9.09E-03	6.24E-05	NA	NA
BC-02	BC-02	Child	15	0.9			0.100	9.09E-03	5.23E-05	NA	NA
BC-04	BC-04-A	89	55	1	1.0	3.0	0.333	1.99E-01	1.16E-03	2.37E-02	1.51E-03
BC-04	BC-04-B	62	57	1	1.0	3.0	0.333	1.99E-01	1.12E-03	2.37E-02	1.51E-03
BC-04	BC-04-C	57	84	1	1.0	3.0	0.333	1.99E-01	7.55E-04	2.37E-02	1.51E-03
BC-04	BC-04	Child	15	1			0.200	1.99E-01	2.54E-03	2.37E-02	9.03E-04
BC-06	BC-06-A	64	70	1	1.0	3.2	0.313	0.00E+00	0.00E+00	1.57E-02	0.00E+00
BC-06	BC-06-B	65	77	1	1.0	3.2	0.313	0.00E+00	0.00E+00	1.57E-02	0.00E+00
BC-06	BC-06-C	28	77	1	1.2	3.2	0.375	0.00E+00	0.00E+00	1.57E-02	0.00E+00
BC-06	BC-06	Child	15	1			0.200	0.00E+00	0.00E+00	1.57E-02	0.00E+00
BC-11	BC-11-A	47	59	1	1.0	6.7	0.149	0.00E+00	0.00E+00	1.60E-02	0.00E+00
BC-11	BC-11-B	44	68	1	1.2	6.7	0.179	0.00E+00	0.00E+00	1.60E-02	0.00E+00
BC-11	BC-11-C	19	68	1	1.6	6.7	0.239	0.00E+00	0.00E+00	1.60E-02	0.00E+00
BC-11	BC-11-D	15	45	1	1.6	6.7	0.239	0.00E+00	0.00E+00	1.60E-02	0.00E+00
BC-11	BC-11-E	11	23	1	1.3	6.7	0.194	0.00E+00	0.00E+00	1.60E-02	0.00E+00
BC-11	BC-11	Child	15	1			0.120	0.00E+00	0.00E+00	1.60E-02	0.00E+00
BC-20	BC-20-A	62	105	0.5	1.0	9.0	0.111	4.42E-02	2.25E-05	1.54E-02	3.62E-05
BC-20	BC-20-B	60	68	0.5	1.0	9.0	0.111	4.42E-02	3.45E-05	1.54E-02	3.62E-05
BC-20	BC-20-C	35	64	0.5	1.2	9.0	0.133	4.42E-02	4.44E-05	1.54E-02	4.35E-05
BC-20	BC-20-D	16	73	0.5	1.6	9.0	0.178	4.42E-02	5.18E-05	1.54E-02	5.79E-05
BC-20	BC-20-E	14	64	0.5	1.6	9.0	0.178	4.42E-02	5.91E-05	1.54E-02	5.79E-05
BC-20	BC-20-F	11	23	0.5	1.3	9.0	0.144	4.42E-02	1.35E-04	1.54E-02	4.71E-05
BC-20	BC-20-G	9	23	0.5	1.3	9.0	0.144	4.42E-02	1.35E-04	1.54E-02	4.71E-05
BC-20	BC-20	Child	15	0.5			0.086	4.42E-02	1.21E-04	1.54E-02	2.79E-05
BC-23	BC-23-A	73	71	0.9	1.0	3.0	0.333	0.00E+00	0.00E+00	1.05E-02	0.00E+00
BC-23	BC-23-B	69	71	0.9	1.0	3.0	0.333	0.00E+00	0.00E+00	1.05E-02	0.00E+00
BC-23	BC-23-C	45	75	0.9	1.0	3.0	0.333	0.00E+00	0.00E+00	1.05E-02	0.00E+00
BC-23	BC-23	Child	15	0.9			0.200	0.00E+00	0.00E+00	1.05E-02	0.00E+00
BC-24	BC-24-A	32	73	0.5	1.2	3.4	0.353	0.00E+00	0.00E+00	1.74E-02	0.00E+00
BC-24	BC-24-B	28	105	0.5	1.2	3.4	0.353	0.00E+00	0.00E+00	1.74E-02	0.00E+00
BC-24	BC-24-C	3	18	0.5	1.0	3.4	0.294	0.00E+00	0.00E+00	1.74E-02	0.00E+00
BC-24	BC-24	Child	15	0.5			0.200	0.00E+00	0.00E+00	1.74E-02	0.00E+00
BC-31	BC-31-A	60	55	1	1.0	1.0	1.000	0.00E+00	0.00E+00	2.61E-02	0.00E+00
BC-31	BC-31	Child	15	1			0.300	0.00E+00	0.00E+00	2.61E-02	0.00E+00
BC-34	BC-34-A	64	105	0.9	1.0	2.0	0.500	4.24E-02	1.75E-04	1.23E-02	2.25E-04
BC-34	BC-34-B	65	59	0.9	1.0	2.0	0.500	4.24E-02	3.10E-04	1.23E-02	2.25E-04
BC-34	BC-34	Child	15	0.9			0.300	4.24E-02	7.32E-04	1.23E-02	1.35E-04
BC-37	BC-37-A	55	70	0.75	1.0	2.0	0.500	2.43E-02	1.24E-04	2.70E-02	2.36E-04
BC-37	BC-37-B	55	68	0.75	1.0	2.0	0.500	2.43E-02	1.28E-04	2.70E-02	2.36E-04
BC-37	BC-37	Child	15	0.75			0.300	2.43E-02	3.49E-04	2.70E-02	1.41E-04
M-01	M-01-A	70	75	0.9	1.0	6.9	0.145	0.00E+00	0.00E+00	9.40E-03	0.00E+00
M-01	M-01-B	70	66	0.9	1.0	6.9	0.145	0.00E+00	0.00E+00	9.40E-03	0.00E+00
M-01	M-01-C	28	77	0.9	1.2	6.9	0.174	0.00E+00	0.00E+00	9.40E-03	0.00E+00
M-01	M-01-D	24	50	0.9	1.2	6.9	0.174	0.00E+00	0.00E+00	9.40E-03	0.00E+00
M-01	M-01-E	21	52	0.9	1.2	6.9	0.174	0.00E+00	0.00E+00	9.40E-03	0.00E+00
M-01	M-01-F	6	16	0.9	1.3	6.9	0.188	0.00E+00	0.00E+00	9.40E-03	0.00E+00
M-01	M-01	Child	15	0.9			0.100	0.00E+00	0.00E+00	9.40E-03	0.00E+00
M-03	M-03-A	74	71	0.9	1.0	5.6	0.179	0.00E+00	0.00E+00	6.00E-03	0.00E+00
M-03	M-03-B	69	71	0.9	1.0	5.6	0.179	0.00E+00	0.00E+00	6.00E-03	0.00E+00
M-03	M-03-C	40	74	0.9	1.2	5.6	0.214	0.00E+00	0.00E+00	6.00E-03	0.00E+00
M-03	M-03-D	37	74	0.9	1.2	5.6	0.214	0.00E+00	0.00E+00	6.00E-03	0.00E+00
M-03	M-03-E	33	72	0.9	1.2	5.6	0.214	0.00E+00	0.00E+00	6.00E-03	0.00E+00
M-03	M-03	Child	15	0.9			0.120	0.00E+00	0.00E+00	6.00E-03	0.00E+00
M-04	M-04-A	57	78	1	1.0	7.6	0.132	1.99E-01	3.23E-04	1.52E-02	3.81E-04
M-04	M-04-B	54	75	1	1.0	7.6	0.132	1.99E-01	3.34E-04	1.52E-02	3.81E-04
M-04	M-04-C	27	68	1	1.2	7.6	0.158	1.99E-01	4.41E-04	1.52E-02	4.57E-04

TABLE D-26 CALCULATION FOR INDIVIDUAL DAILY INTAKE FROM LEAD IN GARDEN VEGETABLES

IDI = HIF*C*BW
HIF = [(DY*HCF*ICF)*(EF*ED)]/(BW*AT)
ICF = RI(i)/RI(t)

EF = 350 days/yr
ED = 1 year
AT = 365 days

					Corn						
HSHLD	INDIV.	AGE (yrs)	BW (kg)	HCF	RI(i)	RI(t)	ICF	Daily Yld, kg	HIF	C	IDI
M-04	M-04-D	23	66	1	1.2	7.6	0.158	1.99E-01	4.56E-04	1.52E-02	4.57E-04
M-04	M-04-E	20	64	1	1.2	7.6	0.158	1.99E-01	4.73E-04	1.52E-02	4.57E-04
M-04	M-04-F	4	16	1	1.0	7.6	0.132	1.99E-01	1.58E-03	1.52E-02	3.81E-04
M-04	M-04-G	2	11	1	1.0	7.6	0.132	1.99E-01	2.21E-03	1.52E-02	3.81E-04
M-04	M-04	Child	15	1			0.086	1.99E-01	1.09E-03	1.52E-02	2.48E-04
M-21	M-21-A	Child	15	0.33			0.046	0.00E+00	0.00E+00	1.44E-02	0.00E+00
M-21	M-21-B	Adult	70	0.33			0.108	0.00E+00	0.00E+00	1.44E-02	0.00E+00
M-25	M-25-A	34	100	0.8	1.2	6.0	0.200	1.41E-02	2.17E-05	1.14E-02	2.48E-05
M-25	M-25-B	33	68	0.8	1.2	6.0	0.200	1.41E-02	3.18E-05	1.14E-02	2.48E-05
M-25	M-25-C	10	43	0.8	1.3	6.0	0.217	1.41E-02	5.44E-05	1.14E-02	2.69E-05
M-25	M-25-D	7	34	0.8	1.3	6.0	0.217	1.41E-02	6.89E-05	1.14E-02	2.69E-05
M-25	M-25-E	3	16	0.8	1.0	6.0	0.167	1.41E-02	1.14E-04	1.14E-02	2.07E-05
M-25	M-25	Child	15	0.8			0.120	1.41E-02	8.67E-05	1.14E-02	1.49E-05
M-29	M-29-A	Child	15	0.7			0.050	0.00E+00	0.00E+00	9.00E-03	0.00E+00
M-29	M-29-B	Adult	70	0.7			0.117	0.00E+00	0.00E+00	9.00E-03	0.00E+00
M-31	M-31-A	21	52	1	1.2	11.0	0.109	3.53E-02	7.07E-05	1.11E-02	4.10E-05
M-31	M-31-B	19	50	1	1.6	11.0	0.145	3.53E-02	9.85E-05	1.11E-02	5.47E-05
M-31	M-31-C	17	55	1	1.6	11.0	0.145	3.53E-02	8.88E-05	1.11E-02	5.47E-05
M-31	M-31-D	15	50	1	1.6	11.0	0.145	3.53E-02	9.94E-05	1.11E-02	5.47E-05
M-31	M-31-E	9	36	1	1.3	11.0	0.118	3.53E-02	1.10E-04	1.11E-02	4.44E-05
M-31	M-31-F	6	20	1	1.3	11.0	0.118	3.53E-02	2.05E-04	1.11E-02	4.44E-05
M-31	M-31-G	43	61	1	1.2	11.0	0.109	3.53E-02	6.02E-05	1.11E-02	4.10E-05
M-31	M-31-H	43	80	1	1.2	11.0	0.109	3.53E-02	4.65E-05	1.11E-02	4.10E-05
M-31	M-31	Child	15	1			0.075	3.53E-02	1.69E-04	1.11E-02	2.82E-05
M-41	M-41-A	71	71	0.15	1.0	8.2	0.122	0.00E+00	0.00E+00	3.60E-03	0.00E+00
M-41	M-41-B	68	71	0.15	1.0	8.2	0.122	0.00E+00	0.00E+00	3.60E-03	0.00E+00
M-41	M-41-C	47	75	0.15	1.0	8.2	0.122	0.00E+00	0.00E+00	3.60E-03	0.00E+00
M-41	M-41-D	45	75	0.15	1.0	8.2	0.122	0.00E+00	0.00E+00	3.60E-03	0.00E+00
M-41	M-41-E	30	72	0.15	1.2	8.2	0.146	0.00E+00	0.00E+00	3.60E-03	0.00E+00
M-41	M-41-F	3	15	0.15	1.0	8.2	0.122	0.00E+00	0.00E+00	3.60E-03	0.00E+00
M-41	M-41-G	2	13	0.15	1.0	8.2	0.122	0.00E+00	0.00E+00	3.60E-03	0.00E+00
M-41	M-41-H	1	11	0.15	1.0	8.2	0.122	0.00E+00	0.00E+00	3.60E-03	0.00E+00
M-41	M-41	Child	15	0.15			0.075	0.00E+00	0.00E+00	3.60E-03	0.00E+00
RA-03	RA-03-A	33	91	1	1.2	9.3	0.129	2.65E-02	3.61E-05	1.17E-02	3.84E-05
RA-03	RA-03-B	29	50	1	1.2	9.3	0.129	2.65E-02	6.56E-05	1.17E-02	3.84E-05
RA-03	RA-03-C	11	34	1	1.3	9.3	0.140	2.65E-02	1.04E-04	1.17E-02	4.15E-05
RA-03	RA-03-D	9	30	1	1.3	9.3	0.140	2.65E-02	1.20E-04	1.17E-02	4.15E-05
RA-03	RA-03-E	7	20	1	1.3	9.3	0.140	2.65E-02	1.74E-04	1.17E-02	4.15E-05
RA-03	RA-03-F	4	14	1	1.0	9.3	0.108	2.65E-02	2.00E-04	1.17E-02	3.20E-05
RA-03	RA-03-G	2	11	1	1.0	9.3	0.108	2.65E-02	2.40E-04	1.17E-02	3.20E-05
RA-03	RA-03-H	1	9	1	1.0	9.3	0.108	2.65E-02	3.00E-04	1.17E-02	3.20E-05
RA-03	RA-03	Child	15	1			0.075	2.65E-02	1.27E-04	1.17E-02	2.23E-05
RA-04	RA-04-A	51	75	1	1.0	2.0	0.500	1.19E-01	7.62E-04	1.77E-02	1.01E-03
RA-04	RA-04-B	52	84	1	1.0	2.0	0.500	1.19E-01	6.80E-04	1.77E-02	1.01E-03
RA-04	RA-04	Child	15	1			0.300	1.19E-01	2.29E-03	1.77E-02	6.07E-04
RA-07	RA-07-A	Child	15	0.9			0.010	1.55E-01	9.20E-05	7.80E-03	1.08E-05
RA-07	RA-07-B	Adult	70	0.9			0.024	1.55E-01	4.60E-05	7.80E-03	2.51E-05
RA-08	RA-08-A	43	82	1	1.2	3.4	0.353	0.00E+00	0.00E+00	7.50E-03	0.00E+00
RA-08	RA-08-B	34	64	1	1.2	3.4	0.353	0.00E+00	0.00E+00	7.50E-03	0.00E+00
RA-08	RA-08-D	4	16	1	1.0	3.4	0.294	0.00E+00	0.00E+00	7.50E-03	0.00E+00
RA-08	RA-08	Child	15	1			0.200	0.00E+00	0.00E+00	7.50E-03	0.00E+00

TABLE D-27 CALCULATION FOR INDIVIDUAL DAILY INTAKE FROM LEAD IN GARDEN VEGETABLES

IDI = HIF*C*BW
HIF = [(DY*HCF*ICF)*(EF*ED)]/(BW*AT)
ICF = RI(i)/RI(t)

EF = 350 days/yr
ED = 1 year
AT = 365 days

		AGE	BW		Potatoes						
HSHLD	INDIV.	(yrs)	(kg)	HCF	RI(i)	RI(t)	ICF	Daily Yld, kg	HIF	C	IDI
BC-02	BC-02-A	40	68	0.9	1.7	9.7	0.175	0.00E+00	0.00E+00	NA	NA
BC-02	BC-02-B	43	61	0.9	1.7	9.7	0.175	0.00E+00	0.00E+00	NA	NA
BC-02	BC-02-C	16	45	0.9	1.9	9.7	0.196	0.00E+00	0.00E+00	NA	NA
BC-02	BC-02-D	14	34	0.9	1.9	9.7	0.196	0.00E+00	0.00E+00	NA	NA
BC-02	BC-02-E	9	28	0.9	1.5	9.7	0.155	0.00E+00	0.00E+00	NA	NA
BC-02	BC-02-F	5	16	0.9	1.0	9.7	0.103	0.00E+00	0.00E+00	NA	NA
BC-02	BC-02	Child	15	0.9			0.100	0.00E+00	0.00E+00	NA	NA
BC-04	BC-04-A	89	55	1	1.5	4.5	0.333	2.34E-01	1.37E-03	7.74E-02	5.78E-03
BC-04	BC-04-B	62	57	1	1.5	4.5	0.333	2.34E-01	1.32E-03	7.74E-02	5.78E-03
BC-04	BC-04-C	57	84	1	1.5	4.5	0.333	2.34E-01	8.89E-04	7.74E-02	5.78E-03
BC-04	BC-04	Child	15	1			0.200	2.34E-01	2.99E-03	7.74E-02	3.47E-03
BC-06	BC-06-A	64	70	1	1.5	4.7	0.319	0.00E+00	0.00E+00	1.26E-01	0.00E+00
BC-06	BC-06-B	65	77	1	1.5	4.7	0.319	0.00E+00	0.00E+00	1.26E-01	0.00E+00
BC-06	BC-06-C	28	77	1	1.7	4.7	0.362	0.00E+00	0.00E+00	1.26E-01	0.00E+00
BC-06	BC-06	Child	15	1			0.200	0.00E+00	0.00E+00	1.26E-01	0.00E+00
BC-11	BC-11-A	47	59	1	1.5	8.5	0.176	0.00E+00	0.00E+00	4.92E-02	0.00E+00
BC-11	BC-11-B	44	68	1	1.7	8.5	0.200	0.00E+00	0.00E+00	4.92E-02	0.00E+00
BC-11	BC-11-C	19	68	1	1.9	8.5	0.224	0.00E+00	0.00E+00	4.92E-02	0.00E+00
BC-11	BC-11-D	15	45	1	1.9	8.5	0.224	0.00E+00	0.00E+00	4.92E-02	0.00E+00
BC-11	BC-11-E	11	23	1	1.5	8.5	0.176	0.00E+00	0.00E+00	4.92E-02	0.00E+00
BC-11	BC-11	Child	15	1			0.120	0.00E+00	0.00E+00	4.92E-02	0.00E+00
BC-20	BC-20-A	62	105	0.5	1.5	11.5	0.130	1.30E-01	7.77E-05	9.48E-02	7.70E-04
BC-20	BC-20-B	60	68	0.5	1.5	11.5	0.130	1.30E-01	1.19E-04	9.48E-02	7.70E-04
BC-20	BC-20-C	35	64	0.5	1.7	11.5	0.148	1.30E-01	1.45E-04	9.48E-02	8.73E-04
BC-20	BC-20-D	16	73	0.5	1.9	11.5	0.165	1.30E-01	1.41E-04	9.48E-02	9.75E-04
BC-20	BC-20-E	14	64	0.5	1.9	11.5	0.165	1.30E-01	1.62E-04	9.48E-02	9.75E-04
BC-20	BC-20-F	11	23	0.5	1.5	11.5	0.130	1.30E-01	3.57E-04	9.48E-02	7.70E-04
BC-20	BC-20-G	9	23	0.5	1.5	11.5	0.130	1.30E-01	3.57E-04	9.48E-02	7.70E-04
BC-20	BC-20	Child	15	0.5			0.086	1.30E-01	3.56E-04	9.48E-02	5.06E-04
BC-23	BC-23-A	73	71	0.9	1.5	4.5	0.333	0.00E+00	0.00E+00	1.29E-01	0.00E+00
BC-23	BC-23-B	69	71	0.9	1.5	4.5	0.333	0.00E+00	0.00E+00	1.29E-01	0.00E+00
BC-23	BC-23-C	45	75	0.9	1.5	4.5	0.333	0.00E+00	0.00E+00	1.29E-01	0.00E+00
BC-23	BC-23	Child	15	0.9			0.200	0.00E+00	0.00E+00	1.29E-01	0.00E+00
BC-24	BC-24-A	32	73	0.5	1.7	4.4	0.386	0.00E+00	0.00E+00	5.28E-01	0.00E+00
BC-24	BC-24-B	28	105	0.5	1.7	4.4	0.386	0.00E+00	0.00E+00	5.28E-01	0.00E+00
BC-24	BC-24-C	3	18	0.5	1.0	4.4	0.227	0.00E+00	0.00E+00	5.28E-01	0.00E+00
BC-24	BC-24	Child	15	0.5			0.200	0.00E+00	0.00E+00	5.28E-01	0.00E+00
BC-31	BC-31-A	60	55	1	1.5	1.5	1.000	0.00E+00	0.00E+00	2.53E-01	0.00E+00
BC-31	BC-31	Child	15	1			0.300	0.00E+00	0.00E+00	2.53E-01	0.00E+00
BC-34	BC-34-A	64	105	0.9	1.5	3.0	0.500	0.00E+00	0.00E+00	1.76E-01	0.00E+00
BC-34	BC-34-B	65	59	0.9	1.5	3.0	0.500	0.00E+00	0.00E+00	1.76E-01	0.00E+00
BC-34	BC-34	Child	15	0.9			0.300	0.00E+00	0.00E+00	1.76E-01	0.00E+00
BC-37	BC-37-A	55	70	0.75	1.5	3.0	0.500	1.43E-01	7.29E-04	9.18E-01	4.72E-02
BC-37	BC-37-B	55	68	0.75	1.5	3.0	0.500	1.43E-01	7.53E-04	9.18E-01	4.72E-02
BC-37	BC-37	Child	15	0.75			0.300	1.43E-01	2.05E-03	9.18E-01	2.83E-02
M-01	M-01-A	70	75	0.9	1.5	9.6	0.156	0.00E+00	0.00E+00	1.05E-01	0.00E+00
M-01	M-01-B	70	66	0.9	1.5	9.6	0.156	0.00E+00	0.00E+00	1.05E-01	0.00E+00
M-01	M-01-C	28	77	0.9	1.7	9.6	0.177	0.00E+00	0.00E+00	1.05E-01	0.00E+00
M-01	M-01-D	24	50	0.9	1.7	9.6	0.177	0.00E+00	0.00E+00	1.05E-01	0.00E+00
M-01	M-01-E	21	52	0.9	1.7	9.6	0.177	0.00E+00	0.00E+00	1.05E-01	0.00E+00
M-01	M-01-F	6	16	0.9	1.5	9.6	0.156	0.00E+00	0.00E+00	1.05E-01	0.00E+00
M-01	M-01	Child	15	0.9			0.100	0.00E+00	0.00E+00	1.05E-01	0.00E+00
M-03	M-03-A	74	71	0.9	1.5	8.1	0.185	0.00E+00	0.00E+00	1.40E-01	0.00E+00
M-03	M-03-B	69	71	0.9	1.5	8.1	0.185	0.00E+00	0.00E+00	1.40E-01	0.00E+00
M-03	M-03-C	40	74	0.9	1.7	8.1	0.210	0.00E+00	0.00E+00	1.40E-01	0.00E+00
M-03	M-03-D	37	74	0.9	1.7	8.1	0.210	0.00E+00	0.00E+00	1.40E-01	0.00E+00
M-03	M-03-E	33	72	0.9	1.7	8.1	0.210	0.00E+00	0.00E+00	1.40E-01	0.00E+00
M-03	M-03	Child	15	0.9			0.120	0.00E+00	0.00E+00	1.40E-01	0.00E+00
M-04	M-04-A	57	78	1	1.5	10.1	0.149	0.00E+00	0.00E+00	9.10E-02	0.00E+00
M-04	M-04-B	54	75	1	1.5	10.1	0.149	0.00E+00	0.00E+00	9.10E-02	0.00E+00
M-04	M-04-C	27	68	1	1.7	10.1	0.168	0.00E+00	0.00E+00	9.10E-02	0.00E+00

TABLE D-27 CALCULATION FOR INDIVIDUAL DAILY INTAKE FROM LEAD IN GARDEN VEGETABLES

IDI = HIF*C*BW
HIF = [(DY*HCF*ICF)*(EF*ED)]/(BW*AT)
ICF = RI(i)/RI(t)

EF = 350 days/yr
ED = 1 year
AT = 365 days

		AGE	BW		Potatoes						
HSHLD	INDIV.	(yrs)	(kg)	HCF	RI(i)	RI(t)	ICF	Daily Yld, kg	HIF	C	IDI
M-04	M-04-D	23	66	1	1.7	10.1	0.168	0.00E+00	0.00E+00	9.10E-02	0.00E+00
M-04	M-04-E	20	64	1	1.7	10.1	0.168	0.00E+00	0.00E+00	9.10E-02	0.00E+00
M-04	M-04-F	4	16	1	1.0	10.1	0.099	0.00E+00	0.00E+00	9.10E-02	0.00E+00
M-04	M-04-G	2	11	1	1.0	10.1	0.099	0.00E+00	0.00E+00	9.10E-02	0.00E+00
M-04	M-04	Child	15	1			0.086	0.00E+00	0.00E+00	9.10E-02	0.00E+00
M-21	M-21-A	Child	15	0.33			0.046	0.00E+00	0.00E+00	7.55E-02	0.00E+00
M-21	M-21-B	Adult	70	0.33			0.108	0.00E+00	0.00E+00	7.55E-02	0.00E+00
M-25	M-25-A	34	100	0.8	1.7	7.4	0.230	6.49E-02	1.14E-04	3.12E-02	3.57E-04
M-25	M-25-B	33	68	0.8	1.7	7.4	0.230	6.49E-02	1.68E-04	3.12E-02	3.57E-04
M-25	M-25-C	10	43	0.8	1.5	7.4	0.203	6.49E-02	2.34E-04	3.12E-02	3.15E-04
M-25	M-25-D	7	34	0.8	1.5	7.4	0.203	6.49E-02	2.96E-04	3.12E-02	3.15E-04
M-25	M-25-E	3	16	0.8	1.0	7.4	0.135	6.49E-02	4.23E-04	3.12E-02	2.10E-04
M-25	M-25	Child	15	0.8			0.120	6.49E-02	3.99E-04	3.12E-02	1.87E-04
M-29	M-29-A	Child	15	0.7			0.050	1.56E-01	3.49E-04	9.24E-02	4.83E-04
M-29	M-29-B	Adult	70	0.7			0.117	1.56E-01	1.74E-04	9.24E-02	1.13E-03
M-31	M-31-A	21	52	1	1.7	13.8	0.123	3.12E-01	7.04E-04	2.76E-02	1.02E-03
M-31	M-31-B	19	50	1	1.9	13.8	0.138	3.12E-01	8.23E-04	2.76E-02	1.14E-03
M-31	M-31-C	17	55	1	1.9	13.8	0.138	3.12E-01	7.42E-04	2.76E-02	1.14E-03
M-31	M-31-D	15	50	1	1.9	13.8	0.138	3.12E-01	8.31E-04	2.76E-02	1.14E-03
M-31	M-31-E	9	36	1	1.5	13.8	0.109	3.12E-01	8.93E-04	2.76E-02	8.97E-04
M-31	M-31-F	6	20	1	1.5	13.8	0.109	3.12E-01	1.66E-03	2.76E-02	8.97E-04
M-31	M-31-G	43	61	1	1.7	13.8	0.123	3.12E-01	6.00E-04	2.76E-02	1.02E-03
M-31	M-31-H	43	80	1	1.7	13.8	0.123	3.12E-01	4.63E-04	2.76E-02	1.02E-03
M-31	M-31	Child	15	1			0.075	3.12E-01	1.49E-03	2.76E-02	6.19E-04
M-41	M-41-A	71	71	0.15	1.5	10.7	0.140	0.00E+00	0.00E+00	5.79E-02	0.00E+00
M-41	M-41-B	68	71	0.15	1.5	10.7	0.140	0.00E+00	0.00E+00	5.79E-02	0.00E+00
M-41	M-41-C	47	75	0.15	1.5	10.7	0.140	0.00E+00	0.00E+00	5.79E-02	0.00E+00
M-41	M-41-D	45	75	0.15	1.5	10.7	0.140	0.00E+00	0.00E+00	5.79E-02	0.00E+00
M-41	M-41-E	30	72	0.15	1.7	10.7	0.159	0.00E+00	0.00E+00	5.79E-02	0.00E+00
M-41	M-41-F	3	15	0.15	1.0	10.7	0.093	0.00E+00	0.00E+00	5.79E-02	0.00E+00
M-41	M-41-G	2	13	0.15	1.0	10.7	0.093	0.00E+00	0.00E+00	5.79E-02	0.00E+00
M-41	M-41-H	1	11	0.15	1.0	10.7	0.093	0.00E+00	0.00E+00	5.79E-02	0.00E+00
M-41	M-41	Child	15	0.15			0.075	0.00E+00	0.00E+00	5.79E-02	0.00E+00
RA-03	RA-03-A	33	91	1	1.7	10.9	0.156	6.49E-03	1.07E-05	3.30E-02	3.20E-05
RA-03	RA-03-B	29	50	1	1.7	10.9	0.156	6.49E-03	1.94E-05	3.30E-02	3.20E-05
RA-03	RA-03-C	11	34	1	1.5	10.9	0.138	6.49E-03	2.51E-05	3.30E-02	2.83E-05
RA-03	RA-03-D	9	30	1	1.5	10.9	0.138	6.49E-03	2.90E-05	3.30E-02	2.83E-05
RA-03	RA-03-E	7	20	1	1.5	10.9	0.138	6.49E-03	4.19E-05	3.30E-02	2.83E-05
RA-03	RA-03-F	4	14	1	1.0	10.9	0.092	6.49E-03	4.19E-05	3.30E-02	1.89E-05
RA-03	RA-03-G	2	11	1	1.0	10.9	0.092	6.49E-03	5.03E-05	3.30E-02	1.89E-05
RA-03	RA-03-H	1	9	1	1.0	10.9	0.092	6.49E-03	6.28E-05	3.30E-02	1.89E-05
RA-03	RA-03	Child	15	1			0.075	6.49E-03	3.11E-05	3.30E-02	1.54E-05
RA-04	RA-04-A	51	75	1	1.5	3.0	0.500	0.00E+00	0.00E+00	3.05E-02	0.00E+00
RA-04	RA-04-B	52	84	1	1.5	3.0	0.500	0.00E+00	0.00E+00	3.05E-02	0.00E+00
RA-04	RA-04	Child	15	1			0.300	0.00E+00	0.00E+00	3.05E-02	0.00E+00
RA-07	RA-07-A	Child	15	0.9			0.010	5.84E-01	3.48E-04	2.22E-02	1.16E-04
RA-07	RA-07-B	Adult	70	0.9			0.024	5.84E-01	1.74E-04	2.22E-02	2.70E-04
RA-08	RA-08-A	43	82	1	1.7	4.4	0.386	0.00E+00	0.00E+00	6.00E-02	0.00E+00
RA-08	RA-08-B	34	64	1	1.7	4.4	0.386	0.00E+00	0.00E+00	6.00E-02	0.00E+00
RA-08	RA-08-D	4	16	1	1.0	4.4	0.227	0.00E+00	0.00E+00	6.00E-02	0.00E+00
RA-08	RA-08	Child	15	1			0.200	0.00E+00	0.00E+00	6.00E-02	0.00E+00

TABLE D-28 CALCULATION FOR INDIVIDUAL DAILY INTAKE FROM LEAD IN GARDEN VEGETABLES

IDI = HIF*C*BW
HIF = [(DY*HCF*ICF)*(EF*ED)]/(BW*AT)
ICF = RI(i)/RI(t)

EF = 350 days/yr
ED = 1 year
AT = 365 days

HSHLD	INDIV.	AGE (yrs)	BW (kg)	HCF	Garden Total IDI
BC-02	BC-02-A	40	68	0.9	NA
BC-02	BC-02-B	43	61	0.9	NA
BC-02	BC-02-C	16	45	0.9	NA
BC-02	BC-02-D	14	34	0.9	NA
BC-02	BC-02-E	9	28	0.9	NA
BC-02	BC-02-F	5	16	0.9	NA
BC-02	BC-02	Child	15	0.9	NA
BC-04	BC-04-A	89	55	1	2.58E-02
BC-04	BC-04-B	62	57	1	2.58E-02
BC-04	BC-04-C	57	84	1	2.58E-02
BC-04	BC-04	Child	15	1	1.55E-02
BC-06	BC-06-A	64	70	1	1.25E-03
BC-06	BC-06-B	65	77	1	1.25E-03
BC-06	BC-06-C	28	77	1	1.27E-03
BC-06	BC-06	Child	15	1	7.54E-04
BC-11	BC-11-A	47	59	1	4.06E-03
BC-11	BC-11-B	44	68	1	3.73E-03
BC-11	BC-11-C	19	68	1	2.66E-03
BC-11	BC-11-D	15	45	1	2.66E-03
BC-11	BC-11-E	11	23	1	1.87E-03
BC-11	BC-11	Child	15	1	1.80E-03
BC-20	BC-20-A	62	105	0.5	3.44E-03
BC-20	BC-20-B	60	68	0.5	3.44E-03
BC-20	BC-20-C	35	64	0.5	3.65E-03
BC-20	BC-20-D	16	73	0.5	3.56E-03
BC-20	BC-20-E	14	64	0.5	3.56E-03
BC-20	BC-20-F	11	23	0.5	2.57E-03
BC-20	BC-20-G	9	23	0.5	2.57E-03
BC-20	BC-20	Child	15	0.5	1.95E-03
BC-23	BC-23-A	73	71	0.9	3.09E-03
BC-23	BC-23-B	69	71	0.9	3.09E-03
BC-23	BC-23-C	45	75	0.9	3.09E-03
BC-23	BC-23	Child	15	0.9	1.85E-03
BC-24	BC-24-A	32	73	0.5	1.14E-02
BC-24	BC-24-B	28	105	0.5	1.14E-02
BC-24	BC-24-C	3	18	0.5	4.34E-03
BC-24	BC-24	Child	15	0.5	5.41E-03
BC-31	BC-31-A	60	55	1	5.27E-03
BC-31	BC-31	Child	15	1	1.58E-03
BC-34	BC-34-A	64	105	0.9	1.23E-02
BC-34	BC-34-B	65	59	0.9	1.23E-02
BC-34	BC-34	Child	15	0.9	7.36E-03
BC-37	BC-37-A	55	70	0.75	1.01E-01
BC-37	BC-37-B	55	68	0.75	1.01E-01
BC-37	BC-37	Child	15	0.75	6.06E-02
M-01	M-01-A	70	75	0.9	1.46E-04
M-01	M-01-B	70	66	0.9	1.46E-04
M-01	M-01-C	28	77	0.9	1.41E-04
M-01	M-01-D	24	50	0.9	1.41E-04
M-01	M-01-E	21	52	0.9	1.41E-04
M-01	M-01-F	6	16	0.9	7.55E-05
M-01	M-01	Child	15	0.9	7.90E-05
M-03	M-03-A	74	71	0.9	4.07E-03
M-03	M-03-B	69	71	0.9	4.07E-03
M-03	M-03-C	40	74	0.9	4.13E-03
M-03	M-03-D	37	74	0.9	4.13E-03
M-03	M-03-E	33	72	0.9	4.13E-03
M-03	M-03	Child	15	0.9	2.46E-03
M-04	M-04-A	57	78	1	3.15E-02
M-04	M-04-B	54	75	1	3.15E-02
M-04	M-04-C	27	68	1	3.05E-02

TABLE D-28 CALCULATION FOR INDIVIDUAL DAILY INTAKE FROM LEAD IN GARDEN VEGETABLES

IDI = HIF*C*BW
HIF = [(DY*HCF*ICF)*(EF*ED)]/(BW*AT)
ICF = RI(i)/RI(t)

EF = 350 days/yr
ED = 1 year
AT = 365 days

HSHLD	INDIV.	AGE (yrs)	BW (kg)	HCF	Garden Total IDI
M-04	M-04-D	23	66	1	3.05E-02
M-04	M-04-E	20	64	1	3.05E-02
M-04	M-04-F	4	16	1	1.04E-02
M-04	M-04-G	2	11	1	1.04E-02
M-04	M-04	Child	15	1	1.50E-02
M-21	M-21-A	Child	15	0.33	1.85E-04
M-21	M-21-B	Adult	70	0.33	4.32E-04
M-25	M-25-A	34	100	0.8	2.75E-03
M-25	M-25-B	33	68	0.8	2.75E-03
M-25	M-25-C	10	43	0.8	1.66E-03
M-25	M-25-D	7	34	0.8	1.66E-03
M-25	M-25-E	3	16	0.8	1.09E-03
M-25	M-25	Child	15	0.8	1.19E-03
M-29	M-29-A	Child	15	0.7	8.45E-04
M-29	M-29-B	Adult	70	0.7	1.97E-03
M-31	M-31-A	21	52	1	2.54E-03
M-31	M-31-B	19	50	1	2.29E-03
M-31	M-31-C	17	55	1	2.29E-03
M-31	M-31-D	15	50	1	2.29E-03
M-31	M-31-E	9	36	1	1.73E-03
M-31	M-31-F	6	20	1	1.73E-03
M-31	M-31-G	43	61	1	2.54E-03
M-31	M-31-H	43	80	1	2.54E-03
M-31	M-31	Child	15	1	1.35E-03
M-41	M-41-A	71	71	0.15	6.06E-05
M-41	M-41-B	68	71	0.15	6.06E-05
M-41	M-41-C	47	75	0.15	6.06E-05
M-41	M-41-D	45	75	0.15	6.06E-05
M-41	M-41-E	30	72	0.15	6.43E-05
M-41	M-41-F	3	15	0.15	2.45E-05
M-41	M-41-G	2	13	0.15	2.45E-05
M-41	M-41-H	1	11	0.15	2.45E-05
M-41	M-41	Child	15	0.15	2.85E-05
RA-03	RA-03-A	33	91	1	5.72E-03
RA-03	RA-03-B	29	50	1	5.72E-03
RA-03	RA-03-C	11	34	1	2.98E-03
RA-03	RA-03-D	9	30	1	2.98E-03
RA-03	RA-03-E	7	20	1	2.98E-03
RA-03	RA-03-F	4	14	1	1.88E-03
RA-03	RA-03-G	2	11	1	1.88E-03
RA-03	RA-03-H	1	9	1	1.88E-03
RA-03	RA-03	Child	15	1	1.95E-03
RA-04	RA-04-A	51	75	1	2.15E-03
RA-04	RA-04-B	52	84	1	2.15E-03
RA-04	RA-04	Child	15	1	1.29E-03
RA-07	RA-07-A	Child	15	0.9	3.20E-04
RA-07	RA-07-B	Adult	70	0.9	7.47E-04
RA-08	RA-08-A	43	82	1	3.54E-03
RA-08	RA-08-B	34	64	1	3.54E-03
RA-08	RA-08-D	4	16	1	1.30E-03
RA-08	RA-08	Child	15	1	1.68E-03

TABLE D-29 DIETARY INTAKE BY YEAR (0-72 MONTHS) FOR EACH HOUSEHOLD

IEUBK (.99D) DEFAULT DIETARY PB INTAKE VALUES (BY YEAR, 0-72 MONTHS)

0-1	1-2	2-3	3-4	4-5	5-6	6-7
5.53	5.78	6.49	6.24	6.01	6.34	7.00

HSHLD	INDIV.	AGE (yrs)	Garden Total IDI (mg/day)	Garden Total IDI (ug/day)							
BC-02	BC-02	Child	NA	NA	NA	NA	NA	NA	NA	NA	NA
BC-04	BC-04	Child	1.55E-02	1.55E+01	21.02	21.27	21.98	21.73	21.50	21.83	22.49
BC-06	BC-06	Child	7.54E-04	7.54E-01	6.28	6.53	7.24	6.99	6.76	7.09	7.75
BC-11	BC-11	Child	1.80E-03	1.80E+00	7.33	7.58	8.29	8.04	7.81	8.14	8.80
BC-20	BC-20	Child	1.95E-03	1.95E+00	7.48	7.73	8.44	8.19	7.96	8.29	8.95
BC-23	BC-23	Child	1.85E-03	1.85E+00	7.38	7.63	8.34	8.09	7.86	8.19	8.85
BC-24	BC-24-C	3	4.34E-03	4.34E+00	9.87	10.12	10.83	10.58	10.35	10.68	11.34
BC-24	BC-24	Child	5.41E-03	5.41E+00	10.94	11.19	11.90	11.65	11.42	11.75	12.41
BC-31	BC-31	Child	1.58E-03	1.58E+00	7.11	7.36	8.07	7.82	7.59	7.92	8.58
BC-34	BC-34	Child	7.36E-03	7.36E+00	12.89	13.14	13.85	13.60	13.37	13.70	14.36
BC-37	BC-37	Child	6.06E-02	6.06E+01	66.08	66.33	67.04	66.79	66.56	66.89	67.55
M-01	M-01-F	6	7.55E-05	7.55E-02	5.61	5.86	6.57	6.32	6.09	6.42	7.08
M-01	M-01	Child	7.90E-05	7.90E-02	5.61	5.86	6.57	6.32	6.09	6.42	7.08
M-03	M-03	Child	2.46E-03	2.46E+00	7.99	8.24	8.95	8.70	8.47	8.80	9.46
M-04	M-04-F	4	1.04E-02	1.04E+01	15.91	16.16	16.87	16.62	16.39	16.72	17.38
M-04	M-04-G	2	1.04E-02	1.04E+01	15.91	16.16	16.87	16.62	16.39	16.72	17.38
M-04	M-04	Child	1.50E-02	1.50E+01	20.54	20.79	21.50	21.25	21.02	21.35	22.01
M-21	M-21-A	Child	1.85E-04	1.85E-01	5.72	5.97	6.68	6.43	6.20	6.53	7.19
M-25	M-25-E	3	1.09E-03	1.09E+00	6.62	6.87	7.58	7.33	7.10	7.43	8.09
M-25	M-25	Child	1.19E-03	1.19E+00	6.72	6.97	7.68	7.43	7.20	7.53	8.19
M-29	M-29-A	Child	8.45E-04	8.45E-01	6.38	6.63	7.34	7.09	6.86	7.19	7.85
M-31	M-31-F	6	1.73E-03	1.73E+00	7.26	7.51	8.22	7.97	7.74	8.07	8.73
M-31	M-31	Child	1.35E-03	1.35E+00	6.88	7.13	7.84	7.59	7.36	7.69	8.35
M-41	M-41-F	3	2.45E-05	2.45E-02	5.55	5.80	6.51	6.26	6.03	6.36	7.02
M-41	M-41-G	2	2.45E-05	2.45E-02	5.55	5.80	6.51	6.26	6.03	6.36	7.02
M-41	M-41-H	1	2.45E-05	2.45E-02	5.55	5.80	6.51	6.26	6.03	6.36	7.02
M-41	M-41	Child	2.85E-05	2.85E-02	5.56	5.81	6.52	6.27	6.04	6.37	7.03
RA-03	RA-03-F	4	1.88E-03	1.88E+00	7.41	7.66	8.37	8.12	7.89	8.22	8.88
RA-03	RA-03-G	2	1.88E-03	1.88E+00	7.41	7.66	8.37	8.12	7.89	8.22	8.88
RA-03	RA-03-H	1	1.88E-03	1.88E+00	7.41	7.66	8.37	8.12	7.89	8.22	8.88
RA-03	RA-03	Child	1.95E-03	1.95E+00	7.48	7.73	8.44	8.19	7.96	8.29	8.95
RA-04	RA-04	Child	1.29E-03	1.29E+00	6.82	7.07	7.78	7.53	7.30	7.63	8.29
RA-07	RA-07-A	Child	3.20E-04	3.20E-01	5.85	6.10	6.81	6.56	6.33	6.66	7.32
RA-08	RA-08-D	4	1.30E-03	1.30E+00	6.83	7.08	7.79	7.54	7.31	7.64	8.30
RA-08	RA-08	Child	1.68E-03	1.68E+00	7.21	7.46	8.17	7.92	7.69	8.02	8.68

TABLE D-30 RESULTS OF IEUBK (.99D) MODELING

HSHLD	INDIV	AGE, yrs	GARDEN TOTAL IDI, ug/day	SOIL CONC, mg/kg (AM)	DUST CONC, mg/kg (MS)	SOIL + DEFAULT VEG		SOIL + SITE VEG	
						GM PbB, ug/dL	%>10ug/dL	GM PbB, ug/dL	%>10ug/dL
BC-04	BC-04	Child	1.55E+01	230	171	3.8	1.99	6.2	14.52
BC-06	BC-06	Child	7.54E-01	160	122	3.2	0.69	3.3	0.87
BC-11	BC-11	Child	1.80E+00	190	143	3.5	1.16	3.8	1.76
BC-20	BC-20	Child	1.95E+00	130	101	2.9	0.39	3.2	0.77
BC-23	BC-23	Child	1.85E+00	240	178	3.9	2.25	4.2	3.05
BC-24	BC-24	Child	5.41E+00	910	647	9.3	40.37	10.0	47.56
BC-31	BC-31	Child	1.58E+00	470	339	5.9	12.81	6.2	14.52
BC-34	BC-34	Child	7.36E+00	330	241	4.7	5.32	5.8	12.03
BC-37	BC-37	Child	6.06E+01	2100	1480	16.4	83.75	21.3	92.60
M-01	M-01	Child	7.90E-02	170	129	3.3	0.82	3.3	0.87
M-03	M-03	Child	2.46E+00	230	171	3.8	1.99	4.2	3.24
M-04	M-04	Child	1.50E+01	140	108	3.0	0.49	5.4	8.79
M-21	M-21-A	Child	1.85E-01	110	87	2.7	0.25	2.7	0.28
M-25	M-25	Child	1.19E+00	55	48.5	2.2	0.05	2.4	0.10
M-29	M-29-A	Child	8.45E-01	150	115	3.1	0.58	3.2	0.77
M-31	M-31	Child	1.35E+00	42	39.4	2.0	0.03	2.3	0.07
M-41	M-41	Child	2.85E-02	66	56.2	2.3	0.07	2.3	0.07
RA-03	RA-03	Child	1.95E+00	39	37.3	2.0	0.02	2.3	0.09
RA-04	RA-04	Child	1.29E+00	23	26.1	1.8	0.01	2.1	0.03
RA-07	RA-07-A	Child	3.20E-01	25	27.5	1.9	0.01	1.9	0.02
RA-08	RA-08	Child	1.68E+00	24	26.8	1.9	0.01	2.2	0.05