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PRIMARY DOCUMENT

Remedial Investigation Report for Waste Area Grouping 6 at Paducah Gaseous Diffusion Plant Paducah, Kentucky

Volume 3b. Risk Assessment
Appendix C–Transport Modeling Results
Appendix D–SAS Programs
Appendix E–Complete Toxicity Profiles for COCs
Appendix F–HI and ELCR Summary
Appendix G–Results of IEUBK Lead Modeling
Appendix H–Central Tendency Exposure Parameters

Date Issued—May 1999

Prepared by
Toxicology and Risk Analysis Section
Life Sciences Division
Oak Ridge National Laboratory

for the
U.S. Department of Energy
Office of Environmental Management

Environmental Management Activities at the
PADUCAH GASEOUS DIFFUSION PLANT
Paducah, Kentucky 42002
managed by
BECHTEL JACOBS COMPANY LLC
for the
U.S. DEPARTMENT OF ENERGY
under contract DE-AC05-98OR22700

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APPENDIX C

TRANSPORT MODELING RESULTS

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MEMORANDUM

DATE: April 30, 1998 **JE/PAD/98-0281**

TO: Bryan J. Clayton, Bechtel Jacobs Company LLC

FROM: Bruce E. Phillips

SUBJECT: Task 118 — Multimedia Environmental Pollutant Assessment System Model Results for Waste Area Group 6

The attached document provides the transport model results for the Waste Area Group (WAG) 6 Remedial Investigation Report. Tables in the document list modeled contaminant levels at the facility security fence and Department of Energy property boundary from each WAG 6 sector.

Please contact Sarah Maudlin of my staff if you have any questions regarding this information.

Attachments

cc: Rich Bonczek, ORER
Bruce Ford
Sara Maudlin
Gary Reside
Bob Robinson, CH2M Hill
Document Control (2)

KD:cth/g:prod:lts/T118/980281/msw6

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MULTIMEDIA ENVIRONMENTAL POLLUTANT ASSESSMENT SYSTEM MODEL RESULTS FOR WASTE AREA GROUP 6

April 1998

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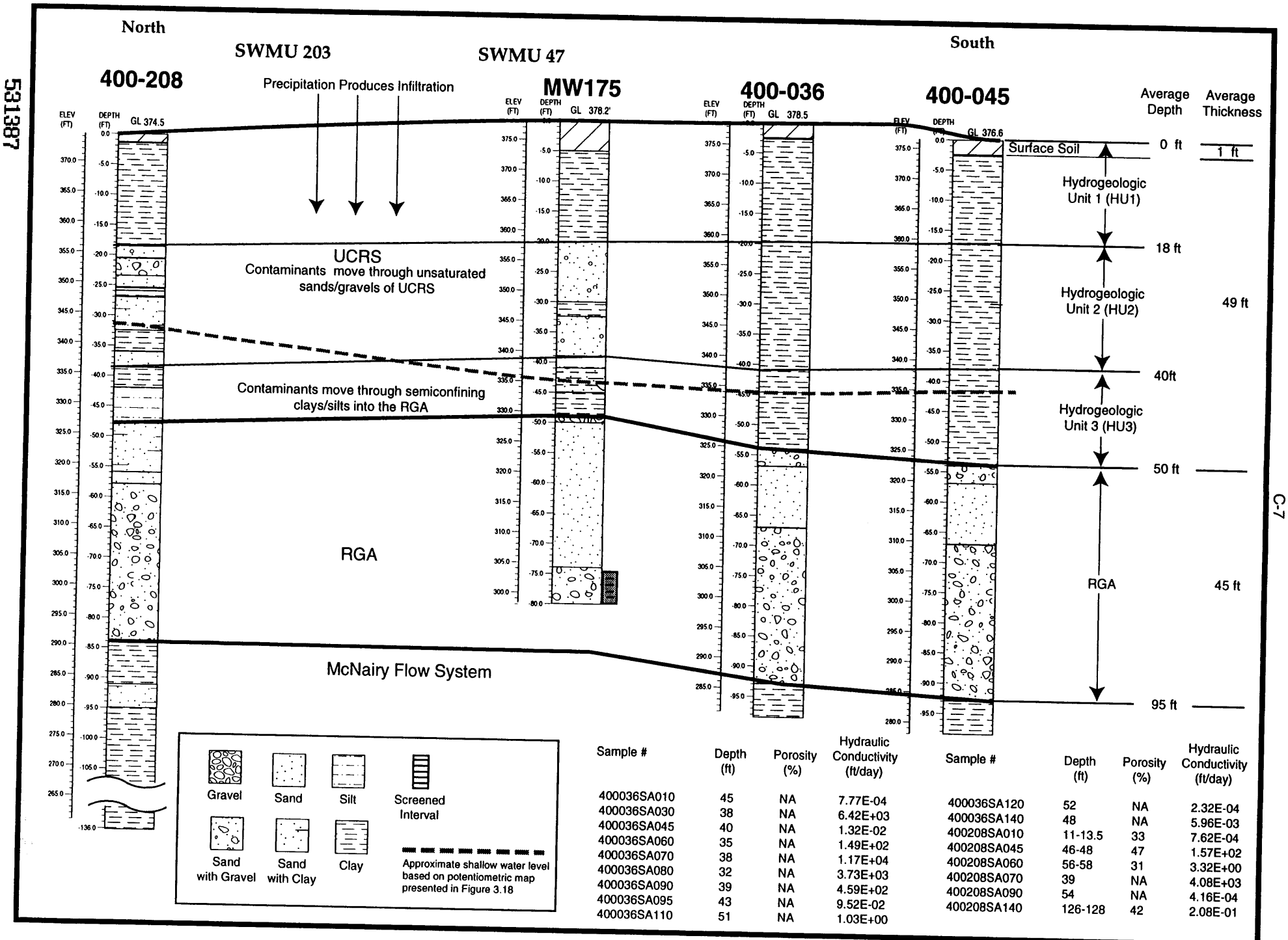
INTRODUCTION TO MODELING RESULTS

The attached are tables containing the results of screening and MEPAS runs for the Waste Area Group (WAG) 6 Remedial Investigation (RI) data at the Paducah Gaseous Diffusion Plant. The WAG 6 area was divided into eight sectors, by regions, and source terms were derived for those sectors from the soil data. The attached flow chart documents how screening of the data was conducted. The final set of data was used to derive the source terms for each of the sectors; these terms were then input into MEPAS to derive maximum concentrations for these contaminants within the primary aquifer, Regional Gravel Aquifer (RGA), at two exposure points: the plant fence (assumed to be 3,300.00 feet from the source); and the property boundary (assumed to be 5,500.00 feet from the source). The MEPAS computer model was run only to derive ground-water concentrations within the main aquifer, RGA, and did not take into account any other pathways or risk calculations.

MEPAS MODELING PACKAGE

MEPAS Source Term Development
Conceptual Model of Site Conditions
Flowchart
Table: Contaminants Detected Above Screening Levels
Table: MEPAS Transport Parameters

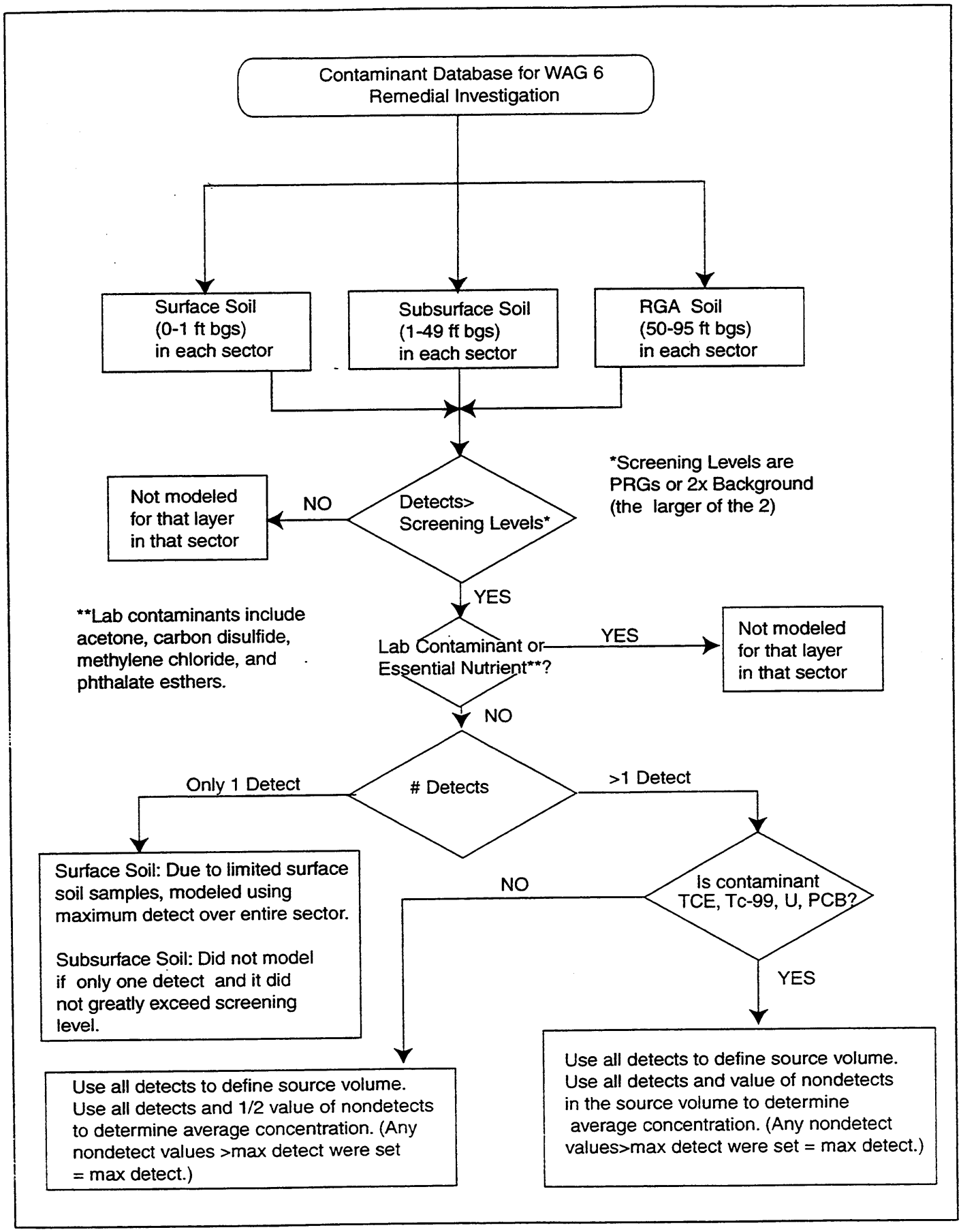
MEPAS Results by Sector
Source Term Tables for Sectors and RGA
Inventory Calculation Tables for Sectors and RGA
MEPAS Summary Tables



Sample #	Depth (ft)	Porosity (%)	Hydraulic Conductivity (ft/day)
400036SA010	45	NA	7.77E-04
400036SA030	38	NA	6.42E+03
400036SA045	40	NA	1.32E-02
400036SA060	35	NA	1.49E+02
400036SA070	38	NA	1.17E+04
400036SA080	32	NA	3.73E+03
400036SA090	39	NA	4.59E+02
400036SA095	43	NA	9.52E-02
400036SA110	51	NA	1.03E+00

Sample #	Depth (ft)	Porosity (%)	Hydraulic Conductivity (ft/day)
400036SA120	52	NA	2.32E-04
400036SA140	48	NA	5.96E-03
400208SA010	11-13.5	33	7.62E-04
400208SA045	46-48	47	1.57E+02
400208SA060	56-58	31	3.32E+00
400208SA070	39	NA	4.08E+03
400208SA090	54	NA	4.16E-04
400208SA140	126-128	42	2.08E-01

Conceptual model of site conditions at Waste Area Group 6.



Contaminant Screening and Development of Source Terms

Jacobs EM Team, 1998

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CONTAMINANTS DETECTED ABOVE SCREENING LEVELS IN EACH SECTOR			
CONTAMINANT	SURFACE SOIL	SUBSURFACE SOIL	RGA SOIL
1,1-Dichloroethene		Southeast	
1,1,1-Trichloroethane		Southeast	
1,1,2-Trichloroethane		Southeast	
2-Methyl-naphthalene	West		
2,4-Dinitrotoluene		Far North	
2,6-Dinitrotoluene		Northeast	
Acenaphthylene	Southwest		
Americium-241	West	Far North Northwest Southwest West	
Antimony		Northwest	
Arochlor-1260	East		
Benz(a)anthracene	Southwest		
Benz(a)pyrene	Southwest		
Benzo(ghi)perylenene	All Sectors	East Far North Southeast Southwest	
Benz(b)fluoranthene	Southwest		
Benz(k)fluoranthene	Southwest		
Carbon Tetrachloride		Southeast	
Copper		Far North	
Cesium-137	Southwest West	Central Southeast Southwest	
Chromium	Northwest Southwest	Northeast Southeast	Ground Water Integrator Unit (NE)
Cis-1,2-Dichloroethene		Southeast Southwest	
Cobalt			Ground Water Integrator Unit (NE)
Dibenz(a,h)anthracene	West Sector		
Dibenzofuran	Southwest West	Northeast	
Iodomethane		Southwest	
Iron			Ground Water Integrator Unit (NE)
Manganese			Ground Water Integrator Unit (NE)
Mercury		Northwest	
N-Nitroso-di-n-propylamine		Northeast	
Neptunium-237	East Far North Southwest West	Central East Far North Northwest Southeast West	Ground Water Integrator Unit (SW)

CONTAMINANTS DETECTED ABOVE SCREENING LEVELS IN EACH SECTOR (continued)			
CONTAMINANT	SURFACE SOIL	SUBSURFACE SOIL	RGA SOIL
Polychlorinated Biphenyl (general)	East Southeast		
Phenanthrene	East Far North Northeast Southeast Southwest	East Far North Northeast Southeast	
Plutonium-239	Far North Southwest	Southeast	
Technetium-99	Far North Southeast Southwest West	Northwest West	
Tetrachloroethene		Southeast	
Thallium	East Southwest	Northeast Southwest	
Thorium-230	East Southeast Southwest West	Far North Northwest Southwest	
Trans-1,2-Dichloroethene		Southeast Southwest West	
Trichloroethene		East Northwest Southeast Southwest West	
Trichlorofluromethane		Southeast	
Uranium-234	East Southeast Southwest West	Far North Northeast Northwest West	
Uranium-235	East Southwest West	Northeast Northwest Southwest West	
Uranium-238	East Far North Northeast Northwest Southeast Southwest West	Far North Northeast Northwest West	
Vinyl Chloride		Southeast Southwest	

The following contaminants could not be modeled as they were absent from the MEPAS database: Benzo(ghi)perylene; Dibenzofuran;2,6-Dinitrotoluene; Iodomethane;cis-1,2-Dichloroethene;trans-1,2-Dichloroethene; 1,1,1-Trichloroethane;1,1,2-Trichloroethane, Trichlorofluromethane.

MEPAS Transport Parameters

TOP SOIL PARAMETERS (WT)/PARTIALLY SATURATED ZONE (WP)/ SATURATED ZONE (WZ)

Textural classification	WT-CLASS	(WT) silt (McCracken Co. Soil Survey)
	WP-CLASS	(WP) silt loam (WAG 6 geotechnical data)
	WZ-CLASS	(WZ) sandy loam (WAG 6 geotechnical data)
Sand (%)	WT-SAND	(WT) 15 (conservative estimate - highest sand % reported in McCracken Co. Soil Survey)
	WP-SAND	(WP) 38 (WAG 6 geotechnical data)
	WZ-SAND	(WZ) 74 (WAG 6 geotechnical data)
Silt (%)	WT-SILT	(WT) 80 (maximum % silt for soil type)
	WP-SILT	(WP) 41 (WAG 6 geotechnical data, 1-50ft)
	WZ-SILT	(WZ) 17 (WAG 6 geotechnical data, 50-95 ft)
Clay (%)	WT-CLAY	(WT) 5 (100 % less 15 % sand and 80 % silt)
	WP-CLAY	(WP) 21 (WAG 6 geotechnical data)
	WZ-CLAY	(WZ) 9 (WAG 6 geotechnical data)
Organic matter (%)	WT-OMC	(WT) 0.05 (from Phase II, Table 5-1)
	WP-OMC	(WP) 0.05 (WAG 6 geotechnical data)
	WZ-OMC	(WZ) 0.02 (WAG 6 geotechnical data)
Iron and aluminum (%)	WT-IRON	(WT) 4 (DOE 1995b)
	WP-IRON	(WP) 4 (DOE 1995b)
	WZ-IRON	(WZ) 3 (average of WAG 6, 62 - 78 ft samples)
pH	WT-PH	(WT) 5.0 (Henry silt loam - McCracken Co. Soil Survey)
	WP-PH	(WP) 6.0 (DOE 1995b)
	WZ-PH	(WZ) 6.5
Vegetative cover of the site (%)	WT-VEGCOV	0 – WAG 6 area 95 - SWMU 26
Topsoil water capacity (inches)	WT-AVAILW	0 - WAG 6 (0% vegetative cover) 2.44-SWMU 26:(0.21 inches/inch water capacity x 12.2 inches root zone depth x 0.95 vegetative cover)
SCS curve number	WT-SCSN	86 – WAG 6 (AMC = II/normal moisture: silt loam; Group C hydro soil group; soil and condition = bare soil, hard surface) 71 - SWMU 26 (AMC = II/normal moisture: silt loam; Group C hydro soil group; soil and condition = well-vegetated surface)

PROPERTIES OF PARTIALLY SATURATED ZONE (WP)

Thickness (ft)	WP-THICK	49 ft (1 -49 ft bgs)
Bulk density (g/cm^3)	WP-BULKD	1.86 (2.65 g/cm^3 x 0.7)
Total porosity (%)	WP-TOTPOR	30 (WAG 6 geotechnical data)
Field capacity (%)	WP-FIELDC	14 (MEPAS guidance, based on soil texture)
Longitudinal dispersivity (ft)	WP-LDISP	0.4 [D_L = 0.01 (Th), D_L = 0.01 (40)] - C-400 0.1 [D_L = 0.01 (Th), D_L = 0.01 (14)] - SWMU 26
Saturated hydraulic conductivity (ft/day)	WP-CONDUC	0.3 (1.07x10^{-4} cm/sec): use of a vertical K is appropriate because groundwater flow is vertical in the UCRS

PROPERTIES OF SATURATED ZONE (WZ)

Total porosity (%)	WZ-TOTPOR	37 (WAG 6 geotechnical data)
Effective porosity (%)	WZ-EFFPOR	30 (conservative estimate)
Darcy velocity (ft/day)	WZ-PVELOC	0.6: conservative estimate, assumes conductivity of 1,500 ft/d and gradient of 0.0004
Thickness (ft)	WZ-THICK	45 (50 - 95 ft bgs)
Bulk density (g/cm^3)	WZ-BULKD	1.67 (2.65 g/cm^3 x 0.63)
Travel distance (ft)	WZ-DIST	3,300 to PGDP security fence 5,500 to DOE property boundary
Longitudinal dispersivity (ft)	WZ-LDISP	50.0 (EPA 1996)
Transverse dispersivity (ft)	WZ-TDISP	5.0 (EPA 1996)
Vertical dispersivity (ft)	WZ-VDISP	0.1 - near zero
Percent of total flux to aquifer (%)	WZ-FRACT	100
Perpendicular distance from groundwater flow to receptor (ft)	WZ-YDIST	0 (plume centerline concentrations)
Vertical distance below ground-water table (ft)	WZ-AQDEPTH	0 (most conservative result)

MEPAS Transport Parameters (continued)

ADSORPTION COEFFICIENTS (K_ds) FOR MODELED CONTAMINANTS

	K_d for Surface Soils (WA-SURFKD)	K_d for Subsurface Soils (WA-SUBKD)	
		Partially Saturated Zone (PSZ)	Saturated Zone (SZ)
Americium-241	82	200	200
Antimony	2.0	6.0	6.0
Arsenic	5.86	19.4	19.4
Cesium-137	10	249	249
Chromium	1	56.5	56.5
Cobalt	0.2	8.81	8.81
Copper	4.19	92.2	92.2
Iron	10	15	15
Manganese	1.5	25.3	25.3
Neptunium-237	3	3	3
Nickel	1.2	58.6	58.6
PCBs	2740	3750	1610
Phenanthrene	62.9	86.1	36.9
Plutonium-239	4	100	100
Silver	0.4	4.0	4.0
Technetium-99	3	20	20
Thallium	0	0.2	0.2
Thorium-230	40	500	500
Trichloroethene	0.567	0.775	0.332
Uranium-234	0	50	50
Uranium-235	0	50	50
Uranium-238	0	50	50
Zinc	3	939	939

Notes:

Surface Soil = Top Soil
Subsurface Soil = Partially Saturated Zone
RGA = Saturated Zone

CENTRAL SECTOR

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CENTRAL SECTOR SOURCE TERMS

Contaminant	Level	X-Axis (feet)	Y-Axis (feet)	Z-Axis (feet)	Notes
SUBSURFACE SOIL					
Cesium-137	0.32 pCi/g	235	498	39	Average of 4 detections
Neptunium-237	0.3 pCi/g	Modeled as distributed across sector. Z-axis assumes building backfill extends to 10 ft depth.			Maximum detection

No source modeled for the following:

TCE: detections believed to be due to Southeast Sector source. Southeast Sector source dimensions includes contaminated volume beneath Central Sector.

X-axis is east-west; Y-axis is north-south.

CENTRAL SECTOR CONTAMINANT INVENTORIES

Central Sector	Site Contaminant	Contaminant Concentration/Activity mg/kg	g/g	pCi/g	x N-S ft	y E-W ft	z Thickness ft	Volume ft^3	Volume cm^3	Bulk Density g/cm^3	Inventory g	Inventory Ci
Subsurface	Cesium-137			0.32	498	235	39	4.56E+06	1.292E+11	1.86		7.69E-02
	Neptunium-237			0.3	498	235	39	4.56E+06	1.292E+11	1.86		7.21E-02

MEPAS uses "x" to denote ground-water flow direction and "y" to denote direction perpendicular to ground-water flow.

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SECTOR **CENTRAL**
SOURCE **SUBSURFACE**

CONSTITUENT	PLANT FENCE MAX CONC [MG/L][PCI/L]	PLANT FENCE TIME [YR]	PROPERTY BOUNDARY MAX CONC [MG/L][PCI/L]	PROPERTY BOUNDARY TIME [YR]
NP237	3.77E-06	416	2.44E-06	478
PA233	3.77E-06	416	2.44E-06	478
U233	7.11E-09	435	5.16E-09	497
TH229	1.50E-10	455	1.19E-10	497
RA225	1.50E-10	455	1.19E-10	497
AC225	1.50E-10	455	1.19E-10	497
CS137	0.00E+00		0.00E+00	

Notes:

Bold type denote constituents which were run from screening.

Italic type denote daughter product concentrations resulting from constituents listed in bold.

EAST SECTOR

EAST SECTOR SOURCE TERMS

Contaminant	Level	X-Axis (feet)	Y-Axis (feet)	Z-Axis (feet)	Notes
SURFACE SOIL					
Arochlor-1260	3300 ug/kg	122	234	1	Maximum detected values. Only two surface soil sampling locations in East Sector, so modeled as distributed across entire sector
Neptunium-237	0.4 pCi/g				
Polychlorinated Biphenyl	10,000 ug/kg				
Phenanthrene	1,200 ug/kg				
Thallium	1.2 mg/kg				
Thorium-230	4.2 pCi/g				
Uranium-234	7.1 pCi/g				
Uranium-235	0.4 pCi/g				
Uranium-238	9.1 pCi/g				
SUBSURFACE SOIL					
Phenanthrene	706.3 ug/kg	70	135	4	Average of 3 detects.
Trichloroethene	1,502 ug/kg	152	234	49	Average of 23 detects. Area includes entire sector plus a small portion of central sector beneath eastern side of C-400 Bldg.
Neptunium-237	0.3 pCi/g	70	234	49	Average of 8 detects. The area is centered around the 2 borings (011-001 and 011-002) with the 8 detects.

No sources were modeled for the following subsurface contaminants because they were only detected in one sample:

- Dibenzofuran (max detect = 50 ug/kg), 1 detect, 43 nondetects.
- N-Nitroso-di-n-propylamine (max detect=331 ug/kg), 1 detect, 43 nondetects.
- Thallium (maximum detect=0.8 mg/kg), 1 detect, 29 nondetects. The one detect value was only slightly above the PRG.
- Americium-241 (maximum detect=0.2 pCi/g), 1 detect, 35 nondetects.

In addition, Uranium-238 was not modeled in a subsurface source because it was only detected once above the 2 x background value in 35 detects. This maximum detect value (2.5 pCi/g) only slightly exceeded 2x background (2.4 pCi/g).

X-axis is east-west; Y-axis is north-south.

EAST SECTOR CONTAMINANT INVENTORIES

East Sector	Site Contaminant	Contaminant Concentration/Activity mg/kg	g/g	pCi/g	x N-S ft	y E-W ft	z Thickness ft	Volume ft^3	Volume cm^3	Bulk Density g/cm^3	Inventory g	Inventory Ci
Surface	PCB (General)	10	1.00E-05		234	122	1	2.86E+04	8.E+08	1.6	1.29E+04	
	Aroclor-1260	3.3	3.30E-06		234	122	1	2.86E+04	8.E+08	1.6	4.27E+03	
	Phenanthrene	1.2	1.20E-06		234	122	1	2.86E+04	8.E+08	1.6	1.55E+03	
	Thallium	1.2	1.20E-06		234	122	1	2.86E+04	8.E+08	1.6	1.55E+03	
	Neptunium-237			0.4	234	122	1	2.86E+04	8.E+08	1.6		5.18E-04
	Thorium-230			4.2	234	122	1	2.86E+04	8.E+08	1.6		5.44E-03
	Uranium-234			7.1	234	122	1	2.86E+04	8.E+08	1.6		9.19E-03
	Uranium-235			0.4	234	122	1	2.86E+04	8.E+08	1.6		5.18E-04
	Uranium-238			9.1	234	122	1	2.86E+04	8.E+08	1.6		1.18E-02
Subsurface	Phenanthrene	0.7	7.00E-07		135	70	4	3.78E+04	1.E+09	1.86	1.39E+03	
	Trichloroethene	1.5	1.50E-06		234	152	49	1.74E+06	5.E+10	1.86	1.38E+05	
	Neptunium-237			0.3	234	70	49	8.03E+05	2.E+10	1.86		1.27E-02
					210	230	1	4.83E+04				

MEPAS uses "x" to denote ground-water flow direction and "y" to denote direction perpendicular to ground-water flow.

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SECTOR **EAST**
SOURCE **SURFACE**

CONSTITUENT	PLANT FENCE MAX CONC [MG/L][PCI/L]	PLANT FENCE TIME [YR]	PROPERTY BOUNDARY MAX CONC [MG/L][PCI/L]	PROPERTY BOUNDARY TIME [YR]
PCB	0.00E+00		0.00E+00	
AROCLOR	0.00E+00		0.00E+00	
PHENANT	7.73E-06	7560	4.66E-06	7980
URANIUM	4.06E-09	5160	2.39E-09	5950
TH231	4.06E-09	5160	2.39E-09	5950
PA231	4.19E-10	5160	2.82E-10	5950
AC227	4.16E-10	5160	2.80E-10	5950
TH227	4.16E-10	5160	2.80E-10	5950
RA223	4.16E-10	5160	2.80E-10	5950
URANIUM	9.25E-08	5160	5.43E-08	5950
TH234	9.25E-08	5160	5.43E-08	5950
U234	1.35E-09	5160	9.10E-10	5950
TH230	3.09E-11	5160	2.41E-11	5950
RA226	1.44E-11	5160	1.21E-11	5950
RN222	1.44E-11	5160	1.21E-11	5950
PB210	1.42E-11	5160	1.20E-11	5950
BL210	1.42E-11	5160	1.20E-11	5950
PO210	1.41E-11	5160	1.20E-11	5950
THALLIUM	2.09E-03	30.6	1.17E-03	37.2
THORIUM	3.29E-53	10000	0.00E+00	
RA226	3.31E-50	10000	0.00E+00	
U234	7.10E-08	5160	4.16E-08	5950
TH230	3.25E-09	5160	2.19E-09	5950
RA226	1.97E-09	5160	1.42E-09	5950

Notes:

Bold type denote constituents which were run from screening.

Italic type denote daughter product concentrations resulting from constituents listed in bold.

SECTOR **EAST**
SOURCE **SUBSURFACE**

CONSTITUENT	PLANT FENCE MAX CONC [MG/L][PCI/L]	PLANT FENCE TIME [YR]	PROPERTY BOUNDARY MAX CONC [MG/L][PCI/L]	PROPERTY BOUNDARY TIME [YR]
PHEANTHRENE	7.02E-06	7560	4.21E-06	8220
NP237	5.77E-07	455	3.64E-07	497
PA233	5.77E-07	455	3.64E-07	497
U233	1.21E-09	493	8.41E-10	537
TH229	2.79E-11	512	2.15E-11	537
RA225	2.79E-11	512	2.15E-11	557
AC225	2.79E-11	512	2.15E-11	557
TCE	2.91E-02	105	1.85E-02	112

Notes:

Bold type denote constituents which were run from screening.

Italic type denote daughter product concentrations resulting from constituents listed in bold.

FAR NORTH SECTOR

FAR NORTH SECTOR SOURCE TERMS

Contaminant	Level	X-Axis (feet)	Y-Axis (feet)	Z-Axis (feet)	Notes
SURFACE SOIL					
Neptunium-237	0.6 pCi/g	700	150	1	Maximum Detects. Contaminated area is Associated with C-400 Pipeline near soil borings 400-43 and 400-34
Phenanthrene	700 ug/kg				
Plutonium-239	0.4 pCi/g				
Technetium-99	17.0 pCi/g				
Uranium-238	4.6 pCi/g				
SUBSURFACE SOIL					
Americium-241	0.6 pCi/g	375	300	49	Maximum detects. Eastern part of Pipeline
Copper	146 mg/kg				
Phenanthrene	110 ug/kg				
Thorium-230	1.8 pCi/g	1125	175	49	Maximum detects. Majority of pipeline area
Neptunium-237	0.2 pCi/g				
2,4-Dinitrotoluene	457 ug/kg				
Uranium-234	7.0 pCi/g	300	100	49	Maximum Detects. Western end of pipeline.
Uranium-238	53.2 pCi/g				

X-axis is east-west; Y-axis is north-south.

FAR NORTH SECTOR CONTAMINANT INVENTORIES

Far North Sector	Site Contaminant	Contaminant Concentration/Activity mg/kg	g/g	pCi/g	x N-S ft	y E-W ft	z Thickness ft	Volume ft^3	Volume cm^3	Bulk Density g/cm^3	Inventory g	Inventory Ci
Surface	Neptunium-237			0.6	150	700	1	1.05E+05	2.973E+09	1.6		2.85E-03
	Phenanthrene	0.7	7.00E-07		150	700	1	1.05E+05	2.973E+09	1.6	3.33E+03	
	Plutonium-239			0.4	150	700	1	1.05E+05	2.973E+09	1.6		1.90E-03
	Technetium-99			17	150	700	1	1.05E+05	2.973E+09	1.6		8.09E-02
	Uranium-238			4.6	150	700	1	1.05E+05	2.973E+09	1.6		2.19E-02
Subsurface	2,4-Dinitrotoluene	0.457	4.57E-07		175	1125	49	9.65E+06	2.732E+11	1.86	2.32E+05	
	Americium-241			0.6	300	375	49	5.51E+06	1.561E+11	1.86		1.74E-01
	Copper	146	1.46E-04		300	375	49	5.51E+06	1.561E+11	1.86	4.24E+07	
	Neptunium-237			0.2	175	1125	49	9.65E+06	2.732E+11	1.86		1.02E-01
	Phenanthrene	0.11	1.10E-07		300	375	49	5.51E+06	1.561E+11	1.86	3.19E+04	
	Thorium-230			1.8	175	1125	49	9.65E+06	2.732E+11	1.86		9.15E-01
	Uranium-234			7	100	300	49	1.47E+06	4.163E+10	1.86		5.42E-01
	Uranium-238			53.2	100	300	49	1.47E+06	4.163E+10	1.86		4.12E+00

MEPAS uses "x" to denote ground-water flow direction and "y" to denote direction perpendicular to ground-water flow.

531408

SECTOR **FN**
SOURCE **SURFACE**

CONSTITUENT	PLANT FENCE MAX CONC [MG/L][PCI/L]	PLANT FENCE TIME [YR]	PROPERTY BOUNDARY MAX CONC [MG/L][PCI/L]	PROPERTY BOUNDARY TIME [YR]
U238	1.03E-07	5160	7.37E-08	5950
TH234	1.03E-07	5160	7.37E-08	5950
U234	1.50E-09	5160	1.24E-09	5950
TH230	3.44E-11	5160	3.26E-11	5950
RA226	1.60E-11	5160	1.65E-11	5950
RN222	1.60E-11	5160	1.65E-11	5950
PB210	1.57E-11	5160	1.63E-11	6180
BL210	1.57E-11	5160	1.63E-11	6180
PO210	1.57E-11	5160	1.63E-11	6180
Phenanthrene	9.92E-06	7560	7.29E-06	7980
TC99	9.24E-07	2090	6.61E-07	2340
PU239	3.40E-09	10200	2.30E-09	11800
NP237	2.16E-07	320	1.50E-07	359
PA233	7.99E-09	416	1.50E-07	359
U233	3.00E-10	320	2.44E-10	379
TH299	4.49E-12	320	4.31E-12	379
RA225	4.49E-12	320	4.31E-12	379
AC225	4.49E-12	320	4.31E-12	379

BOLD type denotes constituents remaining after screening and run with MEPAS
Italic type denotes daughter products resulting from constituents listed in bold

SECTOR **FN**
SOURCE **SUBSURFACE**

CONSTITUENT	PLANT FENCE MAX CONC [MG/L][PCI/L]	PLANT FENCE TIME [YR]	PROPERTY BOUNDARY MAX CONC [MG/L][PCI/L]	PROPERTY BOUNDARY TIME [YR]
Am241	2.97E-21	13500	3.21E-24	14900
Copper	1.50E-01	9510	4.73E-02	12400
Phenanthrene	5.40E-05	10500	3.63E-05	10800
Th230	0.00E+00	0	0.00E+00	0
Np237	4.30E-06	435	1.51E-06	497
PA233	4.30E-06	435	1.51E-06	497
U233	9.00E-09	493	3.48E-09	537
TH229	2.06E-10	493	8.87E-11	557
RA225	2.06E-10	493	8.87E-11	557
AC225	2.06E-10	493	8.87E-11	557
2,4-DNT	1.07E-01	47	3.73E-02	50
U234	1.34E-06	7130	8.82E-07	8050
TH230	9.17E-11	7870	6.62E-08	8750
RA226	6.68E-08	8110	4.96E-08	8750
U238	1.04E-05	7130	6.86E-06	8050
TH234	1.04E-05	7130	6.86E-06	8050
U234	2.28E-07	7870	1.65E-07	8750
TH230	8.14E-09	8110	6.44E-09	8980
RA226	4.81E-09	8110	3.98E-09	8980
RN222	4.81E-09	8110	3.98E-09	8980
PB210	4.76E-09	8110	3.95E-09	8980
BI210	4.76E-12	8110	3.95E-09	8980
PO210	4.76E-09	8110	3.95E-09	8980

BOLD type denotes constituents remaining after screening and run with MEPAS
Italic type denotes daughter products resulting from constituents listed in bold

NORTHEAST SECTOR

NORTHEAST SECTOR SOURCE TERMS

Contaminant	Level	X-Axis (feet)	Y-Axis (feet)	Z-Axis (feet)	Notes
SURFACE SOIL					
Phenanthrene	470 ug/kg	230	210	1	Modeled over entire sector
Uranium-238	4.6 pCi/g				
SUBSURFACE SOIL					
2-6 Dinitrotoluene	432 ug/kg	182	180	49	Maximum detect of 5 detects (in soil borings 400-003, 400-005, 400-006, and 400-008). This contaminant could not be modeled because it was absent from the MEPAS database.
Chromium	54.3 mg/kg	101	41	49	Maximum detect. Area around boring 400-008.
Dibenzofuran	576 ug/kg	51	76	2	From 0-2 ft. This contaminant could not be modeled because it was absent from the MEPAS database.
N-Nitroso-di-n-propylamine	634 ug/kg	80	170	46	Maximum detect of 3 detects (in soil borings 040-003 and 400-008).
Phenanthrene	487 ug/kg	101	117	6	Average of 2 detects +1/2 of 62 nondetects. Detected in borings in southwestern portion of sector (400-005 and 400-008) in soil samples from 1-7 ft bgs.
Thallium	2.3 mg/kg	58	53	2	Maximum Detect (boring 400-003). Detected in 0-2 ft sample.
Uranium-234	20.1 pCi/g	53	129	38	Maximum Detects. Detected in SWMU 40 area (borings 40-005, 40-007, 40-008) and in southwestern portion of sector (borings 400-058 and 400-061)
Uranium-235	0.7 pCi/g				
Uranium-238	20.2 pCi/g	210	230	49	Maximum Detect.
		Modeled over entire sector			

The following detects were excluded from consideration in the subsurface in the Northeast Sector because they just exceeded the background levels:

- Chromium - detected concentration of 39 mg/kg in boring 040-002 at 11-15 ft bgs just exceeds background of 38 mg/kg
- Thallium - detected concentration of 0.9 mg/kg in boring 400-007 at 1-2 ft bgs just exceeds background of 0.7 mg/kg
- Thallium - detected concentration of 0.8 mg/kg in boring 400-008at 32-42 ft bgs just exceeds background of 0.7 mg/kg
- Thallium - detected concentration of 0.8 mg/kg in boring 400-059 at 10-14 ft bgs just exceeds background of 0.7 mg/kg

In addition, Neptunium-237 was excluded from consideration because it had only one detect in 11 samples (0.3 pCi/g in boring 040-005 at 7-11 ft bgs). There was a non-detect at 0.1 pCi/g in the same boring.

X-axis is east-west; Y-axis is north-south.

NORTHEAST SECTOR CONTAMINANT INVENTORIES

Northeast Sector	Site Contaminant	Contaminant Concentration/Activity mg/kg	g/g	pCi/g	x N-S ft	y E-W ft	z Thickness ft	Volume ft³	Volume cm³	Bulk Density g/cm³	Inventory g	Inventory Ci
Surface	Phenanthrene	0.47	4.70E-07		210	230	1	4.83E+04	1.368E+09	1.6	1.03E+03	
	Uranium-238			4.6	210	230	1	4.83E+04	1.368E+09	1.6		1.01E-02
Subsurface	2-6 Dinitrotoluene	0.432	4.32E-07		180	182	49	1.61E+06	4.546E+10	1.86	3.65E+04	
	Chromium	54.3	5.43E-05		41	101	49	2.03E+05	5.746E+09	1.86	5.80E+05	
	Dibenzofuran	576	5.76E-04		76	51	2	7.75E+03	219512221	1.86	2.35E+05	
	N-Nitroso-di-n-propylamine	0.634	6.34E-07		170	80	46	6.26E+05	1.772E+10	1.86	2.09E+04	
	Phenanthrene	0.487	4.87E-07		117	101	6	7.09E+04	2.008E+09	1.86	1.82E+03	
	Uranium-234			20.1	53	129	38	2.60E+05	7.357E+09	1.86		2.75E-01
	Uranium-235			0.7	53	129	38	2.60E+05	7.357E+09	1.86		9.58E-03
	Uranium-238			20.2	210	230	49	2.37E+06	6.702E+10	1.86		2.52E+00
	Thallium	2.3	2.30E-06		53	58	2	6.15E+03	174091994	1.6	6.41E+02	

MEPAS uses "x" to denote ground-water flow direction and "y" to denote direction perpendicular to ground-water flow.

5314414

SECTOR **NE**
SOURCE **SURFACE**

CONSTITUENT	PLANT FENCE MAX CONC [MG/L][PCI/L]	PLANT FENCE TIME [YR]	PROPERTY BOUNDARY MAX CONC [MG/L][PCI/L]	PROPERTY BOUNDARY TIME [YR]
U238	7.22E-08	5160	4.51E-08	5950
TH234	7.22E-08	5160	4.51E-08	5950
U234	1.05E-09	5160	7.55E-10	5950
TH230	2.41E-11	5160	2.00E-11	5950
RA226	1.12E-11	5160	1.01E-11	5950
RN222	1.12E-11	5160	1.01E-11	5950
PB210	1.12E-11	5160	9.93E-12	6180
BL210	1.12E-11	5160	9.93E-12	6180
PO210	1.12E-11	5160	9.92E-12	6180
Phenanthrene	4.68E-06	7560	3.00E-06	7980

BOLD type denotes constituents remaining after screening and run with MEPAS
Italic type denotes daughter products resulting from constituents listed in bold

SECTOR **NE**
SOURCE **SUBSURFACE**

CONSTITUENT	PLANT FENCE MAX CONC [MG/L][PCI/L]	PLANT FENCE TIME [YR]	PROPERTY BOUNDARY MAX CONC [MG/L][PCI/L]	PROPERTY BOUNDARY TIME [YR]
Chromium	2.56E-53	10000	0.00E+00	0
N-Nitroso-di-propylamine	2.17E-02	24	1.37E-02	27
Phenanthrene	8.62E-06	7810	5.41E-06	8450
Thallium	8.45E-04	31	4.94E-04	37
U238	6.62E-06	7380	4.28E-06	8050
TH234	6.62E-06	7380	4.28E-06	8050
U234	1.45E-07	7870	1.03E-07	8750
TH230	5.17E-09	8110	4.02E-09	8980
RA226	3.05E-09	8110	2.49E-09	8980
RN222	3.05E-09	8110	2.49E-09	8980
PB210	3.02E-09	8110	2.47E-09	8980
BI210	3.02E-09	8110	2.47E-09	8980
PO210	3.02E-09	8110	2.47E-09	8980
U234	9.61E-07	6460	6.08E-07	7580
TH230	5.93E-08	7130	4.15E-08	7820
RA226	4.13E-08	7130	3.02E-08	8050
U235	3.41E-08	6640	2.16E-08	7580
TH231	3.41E-08	6640	2.16E-08	7580
PA231	4.67E-09	7130	3.26E-09	7810
AC227	4.65E-09	7130	3.25E-09	7810
TH227	4.65E-09	7130	3.25E-09	7810
RA223	4.65E-09	7130	3.25E-09	7810

BOLD type denotes constituents remaining after screening and run with MEPAS
Italic type denotes daughter products resulting from constituents listed in bold

SECTOR **NE**
SOURCE **RGA**

CONSTITUENT	PLANT FENCE MAX CONC [MG/L][PCI/L]	PLANT FENCE TIME [YR]	PROPERTY BOUNDARY MAX CONC [MG/L][PCI/L]	PROPERTY BOUNDARY TIME [YR]
CHROMIUM	6.91E-05	10000	1.71E-13	10000
COBALT	2.74E-02	224	1.33E-02	374
IRON	8.18E+01	377	3.96E+01	631
MANGANESE	5.71E-01	633	2.77E-01	1060

BOLD type denotes constituents remaining after screening and run with MEPAS
Italic type denotes daughter products resulting from constituents listed in bold

NORTHWEST SECTOR

NORTHWEST SECTOR SOURCE TERMS

Contaminant	Level	X-Axis (feet)	Y-Axis (feet)	Z-Axis (feet)	Notes
SURFACE SOIL					
Chromium	66 mg/kg	290	195	1	Detected in both surface soil samples.
Uranium-238	3.2 pCi/g	Modeled as distributed over surface of entire sector.			Detected in one surface soil sample.
SUBSURFACE SOIL					
Americium-241	0.4 pCi/g	200	70	21	Maximum detect. Detected in 3 borings in northern portion of sector.
Neptunium-237	0.8 pCi/g	90	110	34	Maximum detect.
Antimony	0.85 mg/kg	200	195	49	Average of 9 Detects +_ of 21 nondetects (Higher value than average of detects)
		Modeled as distributed over entire sector.			
Mercury	0.29 mg/kg	290	195	34	Average of 17 detects + _ of 13 nondetects (Higher value than average of detects).
Technetium-99	3.16 pCi/g	290	195	34	Average of 17 detects. Modeled over entire sector. Not detected in samples below 32 ft.
Thorium-230	1.2 pCi/g	290	195	49	Average of 18 detects. Modeled over entire sector and entire thickness of UCRS.
Trichloroethene	562 ug/kg	130	160	21	Average of 4 detects + 44 nondetects. Area includes portion of central sector under the NW corner of C-400 bldg. TCE source area centered around boring 203-003.
Uranium-234	1.1 pCi/g	290	195	34	Average of 18 detects. Modeled over entire sector. Not detected in samples below 32 ft.
Uranium-235	0.4 pCi/g	150	70	2	Maximum detect. Area defined by two detects in northern portion of sector in shallow soil.
Uranium-238	1.6 pCi/g	290	195	34	Average of 18 detects. Modeled over entire sector. Not detected in samples below 32 ft.

Sources were not modeled for the following contaminants because they were only detected once in the subsurface soils:

- N-Nitroso-di-n-propylamine
- Phenanthrene
- Plutonium-239

X-axis is east-west; Y-axis is north-south.

NORTHWEST SECTOR CONTAMINANT INVENTORIES

Northwest Sector	Site Contaminant	Contaminant Concentration/Activity mg/kg	g/g	pCi/g	x N-S ft	y E-W ft	z Thickness ft	Volume ft^3	Volume cm^3	Bulk Density g/cm^3	Inventory g	Inventory Ci
Surface	Chromium	66	6.60E-05		195	290	1	5.66E+04	1.601E+09	1.6	1.69E+05	
	Uranium-238			3.2	195	290	1	5.66E+04	1.601E+09	1.6		8.20E-03
Subsurface	Americium-241			0.4	70	200	21	2.94E+05	8.325E+09	1.86		6.19E-03
	Neptunium-237			0.8	110	90	32	3.17E+05	8.971E+09	1.86		1.33E-02
	Trichloroethene	0.562	5.62E-07		160	130	21	4.37E+05	1.237E+10	1.86	1.29E+04	
	Antimony	0.85	8.50E-07		195	290	49	2.77E+06	7.846E+10	1.86	1.24E+05	
	Mercury	0.29	2.90E-07		195	290	34	1.92E+06	5.444E+10	1.86	2.94E+04	
	Thorium-230			1.2	195	290	49	2.77E+06	7.846E+10	1.86		1.75E-01
	Technetium-99			3.16	195	290	34	1.92E+06	5.444E+10	1.86		3.20E-01
	Uranium-234			1.1	195	290	34	1.92E+06	5.444E+10	1.86		1.11E-01
	Uranium-235			0.4	70	150	2	2.10E+04	594653850	1.86		4.42E-04
	Uranium-238			1.6	195	290	34	1.92E+06	5.444E+10	1.86		1.62E-01

MEPAS uses "x" to denote ground-water flow direction and "y" to denote direction perpendicular to ground-water flow.

SECTOR **NW**
SOURCE **SURFACE**

CONSTITUENT	PLANT FENCE MAX CONC [MG/L][PCI/L]	PLANT FENCE TIME [YR]	PROPERTY BOUNDARY MAX CONC [MG/L][PCI/L]	PROPERTY BOUNDARY TIME [YR]
U238	5.65E-08	5160	3.57E-08	5950
TH234	5.65E-08	5160	3.57E-08	5950
U234	8.22E-10	5160	5.99E-10	5950
TH230	1.89E-11	5160	1.58E-11	5950
RA226	8.77E-12	5160	7.98E-12	5950
RN222	8.77E-12	5160	7.98E-12	5950
PB210	8.63E-12	5160	7.87E-12	5950
BL210	8.63E-12	5160	7.87E-12	5950
PO210	8.63E-12	5160	7.87E-12	5950
CHROMIUM	0.00E+00	0	0.00E+00	0

BOLD type denotes constituents remaining after screening and run with MEPAS
Italic type denotes daughter products resulting from constituents listed in bold

SECTOR **NW**
SOURCE **SUBSURFACE**

CONSTITUENT	PLANT FENCE MAX CONC [MG/L][PCI/L]	PLANT FENCE TIME [YR]	PROPERTY BOUNDARY MAX CONC [MG/L][PCI/L]	PROPERTY BOUNDARY TIME [YR]
MERCURY	0.00E+00	0	0.00E+00	0
TC99	5.35E-06	2090	3.37E-06	2460
U234	3.91E-07	6640	2.55E-07	7350
U238	5.80E-07	6640	3.79E-07	7350
TH234	5.80E-07	6640	3.79E-07	7350
U234	1.10E-08	6880	8.02E-09	7580
TH230	3.37E-10	7130	2.75E-10	7810
RA266	1.87E-10	7130	1.60E-10	7810
RN222	1.87E-10	7130	1.60E-10	7810
PB210	1.85E-10	7130	1.58E-10	7810
BI210	1.85E-10	7130	1.58E-10	7810
PO210	1.85E-10	7130	1.58E-10	7810
Antimony	5.73E-03	707	3.58E-03	824
TH230	0.00E+00	0	0.00E+00	0
AM241	2.85E-22	13500	2.91E-25	14900
NP237	9.07E-07	397	5.69E-07	458
PA233	9.07E-07	397	1.13E-09	458
U233	1.61E-09	416	2.49E-11	478
TH229	3.13E-11	416	2.49E-11	478
RA225	3.12E-11	416	2.49E-11	478
AC225	3.12E-11	416	2.49E-11	478
TCE	4.92E-03	89	3.07E-03	96
U235	3.33E-09	5160	2.01E-09	5950
TH231	3.33E-09	5160	2.01E-09	5950
PA231	3.44E-10	5160	2.37E-10	5950
AC227	3.42E-10	5160	2.36E-10	5950
TH227	3.42E-10	5160	2.36E-10	5950
RA223	3.42E-10	5160	2.36E-10	5950

BOLD type denotes constituents remaining after screening and run with MEPAS
Italic type denotes daughter products resulting from constituents listed in bold

RGA

RGA SOURCE TERMS

Contaminant	Level	X-Axis (feet)	Y-Axis (feet)	Z-Axis (feet)	Notes
NORTHEAST					
Chromium	56 mg/kg	40	40	45	Maximum Detects in the RGA soil samples (50-95 ft)
Cobalt	71 mg/kg				
Iron	358,000 mg/kg				
Manganese	4,200 mg/kg				
SOUTHWEST					
Neptunium-237	0.2 pCi/g	100	300	45	Maximum detect in the RGA soil samples.

The MEPAS results for these RGA Source Terms are listed in their respective sector summary tables.

X-axis is east-west; Y-axis is north-south.

531428

RGA CONTAMINANT INVENTORIES

RGA Sources	Site Contaminant	Contaminant Concentration/Activity mg/kg	g/g	pCi/g	x N-S ft	y E-W ft	z Thickness ft	Volume ft^3	Volume cm^3	Bulk Density g/cm^3	Inventory g	Inventory Ci
Northeast	Chromium	56	0.000056		40	40	45	72000	2.039E+09	1.67	1.91E+05	
	Cobalt	71	0.000071		40	40	45	72000	2.039E+09	1.67	2.42E+05	
	Iron	358000	0.358		40	40	45	72000	2.039E+09	1.67	1.22E+09	
	Manganese	4200	0.0042		40	40	45	72000	2.039E+09	1.67	1.43E+07	
Southwest	Neptunium-237			0.2	300	100	45	1350000	3.823E+10	1.67		1.28E-02

MEPAS uses "x" to denote ground-water flow direction and "y" to denote direction perpendicular to ground-water flow.
The MEPAS results for these RGA source terms are listed in the appropriate sector summary tables.

SOUTHEAST SECTOR

SOUTHEAST SECTOR SOURCE TERMS

Contaminant	Level	X-Axis (feet)	Y-Axis (feet)	Z-Axis (feet)	Notes
SURFACE SOIL					
Polychlorinated biphenyl-1262	38 ug/kg	196	316	1	Only one surface soil analysis available. Modeled as distributed across sector less area covered by concrete apron.
Phenanthrene	70 ug/kg				
Technetium-99	2 pCi/g				
Thorium-230	0.9 pCi/g				
Uranium-234	1 pCi/g				
Uranium-238	1.1 pCi/g				
SUBSURFACE SOIL					
1,1,1-Trichloroethane	2,400 ug/kg	65	65	9	Detected in Boring 400-200 only. Only at 5-9'
Trichloro-fluoromethane	1.7 ug/kg				
1,1,2-Trichloroethane	530 ug/kg	65	65	49	Detected in Boring 400-200 only.
1,1-Dichloroethene	950 ug/kg				
Carbon Tetrachloride	710 ug/kg				
Chromium	51.6 g mg/k				
Phenanthrene	250 ug/kg				
Tetra-chloroethene	690 ug/kg				
Cesium-137	0.31 pCi/g	196	316	49	Modeled as distributed across sector less area covered by concrete apron.
Neptunium-237	0.29 pCi/g				
cis-1,2-Dichloroethene	2,400 ug/kg	130	63	49	1'-35': 115' X 34' 36'-50': 147' X 120'
Trichloroethene	11,000,000 ug/kg				
trans-1,2-Dichloroethene	34,000 ug/kg				
Vinyl Chloride	130 ug/kg				
Plutonium-239	0.2 pCi/g				

No source modeled for the following:

- Chloromethane (max detect = 270 ug/kg) and Iodomethane (max detect = 430 ug/kg): Boring 400-014. Only detected @ 45'-49' interval.
- Chromium detections in boring 400-103 (@9'-13' interval): detection = 38.3 mg/kg, PRG = 38 mg/kg.
- Cobalt detections in borings 400-068 (@ 13'-17' interval) (14.2 mg/kg)and 400-016 (@16'-20' interval) (16.1 mg/kg): these detections are only slightly above background (13 mg/kg) and unrelated geographically.
- Cobalt (@ 126 mg/kg) and lead (@ 82.5 mg/kg) detections in boring 011-006 (@36'-40' interval): only low levels of detections of cobalt and lead above and below interval - no local source known.
- Lead in boring 400-138 (@4'-8' interval) (24.5 mg/kg): isolated detection only slightly above background (23 mg/kg).
- N-Nitroso-di-n-propylamine (447 ug/kg): singular detection in boring 400-069 (@13'-17' interval).
- Thallium detections in borings 400-066 (@13'17' interval) (0.9 mg/kg) and 400-139 (@4'-8' interval) (1.1 mg/kg): detections only slightly above PRG (0.7 mg/kg) and geographically unrelated.
- Uranium-238: detected above background levels in only 3 of 139 analyses.
- Vinyl chloride in boring 400-201 (@4'-8' interval): detection of 3,000 ug/kg is one order of magnitude above all other detections (10).

No water sources were modeled. All water contaminants (TCE and trans-1,2-DCE) are subsurface soil contaminants. X-axis is east-west; y-axis is north-south.

SOUTHEAST SECTOR CONTAMINANT INVENTORIES

Southeast Sector	Site Contaminant	Contaminant Concentration/Activity mg/kg	g/g	pCi/g	x N-S ft	y E-W ft	z Thickness ft	Volume ft^3	Volume cm^3	Bulk Density g/cm^3	Inventory g	Inventory Ci
Surface	Polychlorinated Biphenyl	0.038	3.80E-08		316	196	1	6.E+04	2.E+09	1.6	1.07E+02	
	Phenanthrene	0.07	7.00E-08		316	196	1	6.E+04	2.E+09	1.6	1.96E+02	
	Technetium-99			2	316	196	1	6.E+04	2.E+09	1.6		5.61E-03
	Thorium-230			0.9	316	196	1	6.E+04	2.E+09	1.6		2.53E-03
	Uranium-234			1	316	196	1	6.E+04	2.E+09	1.6		2.81E-03
	Uranium-238			1.1	316	196	1	6.E+04	2.E+09	1.6		3.09E-03
Subsurface	1,1,1-Trichloroethane	2.4	2.40E-06		65	65	9	4.E+04	1.E+09	1.86	4.81E+03	
	Trichlorofluoromethane	0.0017	1.70E-09		65	65	9	4.E+04	1.E+09	1.86	3.40E+00	
	1,1,2-Trichloroethane	0.53	5.30E-07		65	65	49	2.E+05	6.E+09	1.86	5.78E+03	
	1,1-Dichloroethene	0.95	9.50E-07		65	65	49	2.E+05	6.E+09	1.86	1.04E+04	
	Carbon Tetrachloride	0.71	7.10E-07		65	65	49	2.E+05	6.E+09	1.86	7.74E+03	
	Chromium	51.6	5.16E-05		65	65	49	2.E+05	6.E+09	1.86	5.63E+05	
	Phenanthrene	0.25	2.50E-07		65	65	49	2.E+05	6.E+09	1.86	2.73E+03	
	Tetrachloroethene	0.69	6.90E-07		65	65	49	2.E+05	6.E+09	1.86	7.52E+03	
	Cesium-137			0.31	316	196	49	3.E+06	9.E+10	1.86		4.96E-02
	Neptunium-237			0.29	316	196	49	3.E+06	9.E+10	1.86		4.64E-02
	Cis-1,2-Dichloroethene	2.4	2.40E-06		63	130	49	4.E+05	1.E+10	1.86	5.07E+04	
	Trichloroethene	11000	1.10E-02		63	130	49	4.E+05	1.E+10	1.86	2.33E+08	
	Trans-1,2-Dichloroethene	34	3.40E-05		63	130	49	4.E+05	1.E+10	1.86	7.19E+05	
	Vinyl Chloride	0.13	1.30E-07		63	130	49	4.E+05	1.E+10	1.86	2.75E+03	
	Plutonium-239			0.2	63	130	49	4.E+05	1.E+10	1.86		4.23E-03

MEPAS uses "x" to denote ground-water flow direction and "y" to denote direction perpendicular to ground-water flow.

5314432

SECTOR **SOUTHEAST**
SOURCE **SURFACE**

CONSTITUENT	PLANT FENCE MAX CONC [MG/L][PCI/L]	PLANT FENCE TIME [YR]	PROPERTY BOUNDARY MAX CONC [MG/L][PCI/L]	PROPERTY BOUNDARY TIME [YR]
PCB	0.00E+00		0.00E+00	
PHENANT	9.02E-07	7560	5.74E-07	7979
TCE	9.85E-08	2090	6.13E-08	2335
U-238	2.23E-08	5160	1.39E-08	5951
TH234	2.23E-08	5160	1.39E-08	5951
U234	3.25E-10	5160	2.32E-10	5951
TH230	7.47E-12	5160	6.14E-12	5951
RA226	3.47E-12	5160	3.10E-12	5951
RN222	3.47E-12	5160	3.10E-12	5951
PB210	3.42E-12	5160	3.05E-12	5951
BI210	3.42E-12	5160	3.05E-12	5951
PO210	3.41E-12	5160	3.05E-12	5951
THORIUM 230[1]	2.23E-23	10000	0.00E+00	
RA226[1]	2.24E-23	10000	0.00E+00	
RN2221	2.24E-23	10000	0.00E+00	
PB210[1]	2.24E-23	10000	0.00E+00	
BI210[1]	2.24E-23	10000	0.00E+00	
PO210[1]	2.24E-26	10000	0.00E+00	
URANIUM-234	7.66E-09	5900	1.24E-08	5950

Notes:

Bold type denote constituents which were run from screening.

Italic type denote daughter product concentrations resulting from constituents listed in bold.

[1]Did not reach maximum during model runs.

SECTOR **SOUTHEAST**
SOURCE **SUBSURFACE**

CONSTITUENT	PLANT FENCE MAX CONC [MG/L][PCI/L]	PLANT FENCE TIME [YR]	PROPERTY BOUNDARY MAX CONC [MG/L][PCI/L]	PROPERTY BOUNDARY TIME [YR]
CHROMIUM[1]	2.69E-53	0	0.00E+00	0
PHENANTH	6.36E-06	10280	3.89E-06	10830
TETRACHLORIDE	6.44E-04	284.6	3.89E-04	297.6
CARBON TETRACH	4.87E-04	386.4	2.94E-04	405.5
1,1 DCE	4.14E-03	62.27	2.50E-03	67.4
CE137	0.00E+00	0	0.00E+00	0
TCE	5.00E+01	104.9	3.17E+01	112.1
VC	1.14E-03	53.72	7.27E-04	61.09
PU-239	1.22E-08	10200	7.00E-09	11960
NP-237	2.09E-06	435	1.29E-06	478
PA-233	2.09E-06	435	1.29E-06	478
U-233	4.38E-09	493	2.98E-09	537
TH-229	1.01E-10	512	7.57E-11	557
RA-225	1.01E-10	512	7.57E-11	557
AC-225	1.01E-10	512	7.57E-11	557

Notes:

Bold type denote constituents which were run from screening.

Italic type denote daughter product concentrations resulting from constituents listed in bold.

[1]Did not reach maximum during model runs.

SOUTHWEST SECTOR

SOUTHWEST SECTOR SOURCE TERMS

Contaminant	Level		X-Axis (feet)	Y-Axis (feet)	Z-Axis (feet)	Notes
SURFACE SOIL						
Acenaphthylene	2,924	ug/kg	Modeled as distributed across sector less area covered by concrete apron			Average of 1 detect and 1/2 of 4 non-detects
Benz(a)anthracene	7,600	ug/kg				Average of 3 detects - no non-detects
Benz(a)pyrene	13,000	ug/kg				1 analysis
Benz(b)fluoranthene	9,800	ug/kg				Average of 2 detects - no non-detects
Benz(k)fluoranthene	8,751	ug/kg				1 analysis
Chromium	48	mg/kg				1 anlaysis
Cesium-137	0.10	pCi/g	350	300	1	Average of 1 detect and 2 non-detects
Dibenzofuran	429	ug/kg				Average of 3 detects and 2 non-detects (used max detect level)
Neptunium-237	0.13	pCi/g				Average of 1 detect and 2 non-detects
Phenanthrene	5,197	ug/kg				Average of 5 detects
Plutonium-239	0.10	pCi/g				Average of 1 detect and 2 non-detects
Thallium	1.2	mg/kg				Average of 2 detects - no non-detects
Thorium-230	1.4	pCi/g				Average of 3 detects
Uranium-235	0.27	pCi/g				Average of 1 detect and 2 non-detects
SUBSURFACE SOIL						
cis-1,2-Dichloroethene	1,000	ug/kg	250	85	49	Modeled as discrete source along storm sewer
trans-1,2-Dichloroethene	15,300	ug/kg				
Vinyl Chloride	35	ug/kg				
Iodomethane	700	ug/kg	55	45	18	Detected in Boring 400-015 only. Only @ 8-12'. 3 non-detects beginning at 19' depth.
Americium-241	1	pCi/g	350	336	49	Single analysis
Cesium-137	0.31	pCi/g	Modeled as distributed across entire sector			Average of 29 detects
Thallium	1.6	mg/kg				Maximum of 2 analyses
Thorium-230	0.95	pCi/g				Average of 68 detects
Uranium-235	0.4	pCi/g				Maximum of 2 analyses
Trichloroethene	168,200	ug/kg	59	45	49	Maximum detection
			Modeled as discrete source centered on Boring 400-015			

No source modeled for the following:

- N-Nitroso-di-n-propylamine (582 ug/kg): singular analysis for boirng 400-088 (@6'-10' interval).
- Tc-99: 2 of 56 detections above background (2.8 pCi/g). 3.1 pCi/g in 400-192 @ 16'-20' only slightly above background. 7.3 pCi/g in 400-141 @ 0'-4' attributed to surface soils.
- U-234: 1 detection (2.7 pCi/g in 400-141 @ 0'-4') of 69 analyses only slightly above background (2.4 pCi/g). Higher activity attributed to surface soils.
- U-238: 2 of 69 detections above background (1.2 pCi/g). 1.4 pCi/g in 400-145 @ 4'-8' only slightly above background. 4.6 pCi/g in 400-141 @ 0'-4' attributed to surface soils.

No water sources were modeled. Unfiltered water samples yielded detections of the following at levels above the higher of background or PRG reference levels:

Boring 400-017 (@ 33' - 43'):
- metals: none
- organics: TCE
- radionuclides: none

Boring 400-018 (@ 38' - 40'):
- metals: Al, As, Ba, Be, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn,Hg, Ni, K, Na, V, Zn
- organics: TCE
- radionuclides: Pb-212, K-40, Th-228, Th-230, Th-232, U-233/234, U-238

X-axis is east-west; Y-axis is north-south.

SOUTHWEST SECTOR CONTAMINANT INVENTORIES

Southwest Sector	Site Contaminant	Contaminant Concentration/Activity mg/kg	g/g	pCi/g	x N-S ft	y E-W ft	z Thickness ft	Volume ft^3	Volume cm^3	Bulk Density g/cm^3	Inventory g	Inventory Ci
Surface	Acenaphythylene	2.924	2.92E-06		300	350	1	1.05E+05	2.973E+09	1.6	1.39E+04	
	Benz(a)anthracene	7.6	7.60E-06		300	350	1	1.05E+05	2.973E+09	1.6	3.62E+04	
	Benz(a)pyrene	13	1.30E-05		300	350	1	1.05E+05	2.973E+09	1.6	6.18E+04	
	Benz(b)fluoranthene	9.8	9.80E-06		300	350	1	1.05E+05	2.973E+09	1.6	4.66E+04	
	Benz(k)fluoranthene	8.751	8.75E-06		300	350	1	1.05E+05	2.973E+09	1.6	4.16E+04	
	Chromium	48	4.80E-05		300	350	1	1.05E+05	2.973E+09	1.6	2.28E+05	
	Cesium-137			1.00E-01	300	350	1	1.05E+05	2.973E+09	1.6		4.76E-04
	Dibenzofuran	0.429	4.29E-07		300	350	1	1.05E+05	2.973E+09	1.6	2.04E+03	
	Neptunium-237			1.30E-01	300	350	1	1.05E+05	2.973E+09	1.6		6.18E-04
	Phenanthrene	5.197	5.20E-06		300	350	1	1.05E+05	2.973E+09	1.6	2.47E+04	
	Plutonium-239			1.00E-01	300	350	1	1.05E+05	2.973E+09	1.6		4.76E-04
	Technetium-99			1.18E+01	300	350	1	1.05E+05	2.973E+09	1.6		5.61E-02
	Thallium	1.2	1.20E-06		300	350	1	1.05E+05	2.973E+09	1.6	5.71E+03	
	Thorium-230			1.40E+00	300	350	1	1.05E+05	2.973E+09	1.6		6.66E-03
	Uranium-234			4.90E+00	300	350	1	1.05E+05	2.973E+09	1.6		2.33E-02
	Uranium-235			2.70E-01	300	350	1	1.05E+05	2.973E+09	1.6		1.28E-03
	Uranium-238			7.00E+00	300	350	1	1.05E+05	2.973E+09	1.6		3.33E-02
Subsurface	Cis-1,2-Dichloroethene	1	1.00E-06		85	250	49	1.04E+06	2.948E+10	1.86	5.48E+04	
	Trans-1,2-Dichloroethene	15.3	1.53E-05		85	250	49	1.04E+06	2.948E+10	1.86	8.39E+05	
	Vinyl Chloride	0.035	3.50E-08		85	250	49	1.04E+06	2.948E+10	1.86	1.92E+03	
	Iodomethane	0.7	7.00E-07		45	55	18	4.46E+04	1.262E+09	1.86	1.64E+03	
	Americium-241			1.00E+00	336	350	49	5.76E+06	1.632E+11	1.86		3.04E-01
	Cesium-137			3.10E-01	336	350	49	5.76E+06	1.632E+11	1.86		9.41E-02
	Thallium	1.6	1.60E-06		336	350	49	5.76E+06	1.632E+11	1.86	4.86E+05	
	Thorium-230			9.50E-01	336	350	49	5.76E+06	1.632E+11	1.86		2.88E-01
	Uranium-235			4.00E-01	336	350	49	5.76E+06	1.632E+11	1.86		1.21E-01
	Trichloroethene	168.2	1.68E-04		45	59	49	1.30E+05	3.684E+09	1.86	1.15E+06	

MEPAS uses "x" to denote ground-water flow direction and "y" to denote direction perpendicular to ground-water flow.

531438

SECTOR **SOUTHWEST**
SOURCE **SURFACE**

CONSTITUENT	PLANT FENCE MAX CONC [MG/L][PCI/L]	PLANT FENCE TIME [YR]	PROPERTY BOUNDARY MAX CONC [MG/L][PCI/L]	PROPERTY BOUNDARY TIME [YR]
ACENAPHTHYLENE	3.18E-04	1336	2.04E-04	1420
BENZ (A)	0.00E+00		0.00E+00	
BENZ(B)	0.00E+00		0.00E+00	
BENZ(K)	0.00E+00		0.00E+00	
CHROMIUM	3.86E-54	9799	0.00E+00	
CS-137	0.00E+00		0.00E+00	
NP-237	6.49E-08	319.7	4.07E-08	359
PA-233	6.49E-08	319.7	4.07E-08	359
U-233	9.04E-11	319.7	6.58E-11	379
TH-229	1.35E-12	319.7	1.16E-12	379
RA-225	1.35E-12	320	1.16E-12	379
AC-225	1.35E-12	320	1.16E-12	379
PHENANTH	1.02E-04	7310	6.77E-05	7980
PU-239	1.19E-09	1020	7.21E-10	11800
TC-99	8.88E-07	2090	5.74E-07	2340
THALLIUM	6.38E-03	30.6	3.93E-03	37.2
U-235	1.50E-07	5160	9.89E-09	4790
TH-230	6.85E-09	5160	5.07E-09	5950
RA-226	4.15E-09	5160	3.28E-09	5950
TH-230	1.87E-50	10000	0.00E+00	
RA226	1.88E-50	10000	0.00E+00	
U-233	8.34E-09	5163	5.37E-09	5951
TH-231	8.34E-09	5163	5.37E-09	5951
PA-231	8.60E-10	5163	6.33E-10	5951
AC-227	8.55E-10	5163	6.30E-10	5951
TH-227	8.55E-10	5163	6.30E-10	5951
RA-223	8.55E-10	5163	6.30E-10	5951
U-238	2.17E-07	5160	2.17E-07	5160

TH234	2.17E-07	5160	2.17E-07	5160
U234	3.16E-09	5160	3.16E-09	5160
TH230	7.26E-11	5160	7.26E-11	5160
RA226	3.37E-11	5160	3.37E-11	5160
RN227	3.37E-11	5160	3.37E-11	5160
PB210	3.37E-11	5160	3.37E-11	5160
BI210	3.37E-11	5160	3.37E-11	5160
PO210	3.37E-11	5160	3.37E-11	5160

Bold type denote constituents which were run from screening.

Italic type denote daughter product concentrations resulting from constituents listed in bold.

SECTOR **SOUTHWEST**
SOURCE **SUBSURFACE**

CONSTITUENT	PLANT FENCE MAX CONC [MG/L][PCI/L]	PLANT FENCE TIME [YR]	PROPERTY BOUNDARY MAX CONC [MG/L][PCI/L]	PROPERTY BOUNDARY TIME [YR]
VINYL CHLORIDE	8.04E-04	5.37E+01	5.09E-04	61.1
AM-241	1.38E-21	1.00E+04	5.82E-24	14900
CS-137	0.00E+00		0.00E+00	
THALLIUM	4.74E-01	3.43E+01	2.99E-01	39.2
TH-230	1.94E-50	1.00E+04	0.00E+00	
RA-226	1.95E-50	1.00E+04	0.00E+00	
U-235	7.95E-07	5.16E+03	5.10E-07	5950
TH-231	7.95E-07	5.16E+03	5.10E-07	5950
PA231	8.20E-08	5.16E+03	6.01E-08	5950
AC227	8.15E-08	5.16E+03	5.98E-08	5950
TH227	8.15E-08	5.16E+03	5.98E-08	5950
RA223	8.15E-08	5.16E+03	5.98E-08	5950
TCE	2.53E-01	1.05E+02	1.59E-01	112

Bold type denote constituents which were run from screening.
Italic type denote daughter product concentrations resulting from constituents listed in bold.

SECTOR **SOUTHWEST**
SOURCE **RGA**

CONSTITUENT	FENCE BOUNDARY MAX CONC [MG/L][PCI/L]	FENCE BOUNDARY TIME [YR]	PLANT BOUNDARY MAX CONC [MG/L][PCI/L]	PLANT BOUNDARY TIME [YR]
NP-237	6.17E-07	435	4.06E-07	478
PA-233	6.17E-07	435	4.06E-07	478
U-233	1.20E-09	455	8.75E-10	517
TH-229	2.60E-11	474	2.10E-11	517
RA-225	2.60E-11	474	2.10E-11	517
AC-225	2.60E-11	474	2.10E-11	517

Bold type denote constituents which were run from screening.
Italic type denote daughter product concentrations resulting from constituents listed in bold.

WEST SECTOR

WEST SECTOR SOURCE TERMS

Contaminant	Level	X-Axis (feet)	Y-Axis (feet)	Z-Axis (feet)	Notes
SURFACE SOIL					
2-Methylnaphthalene	44 ug/kg	225	200	1	Detected in boring 400-044 only.
Dibenz(a,h)anthracene	3,200 ug/kg				Detected in boring 047-002 only.
Dibenzofuran	942 ug/kg				Average of detect in boring 047-002 and 1/2 non-detect in boring 400-044.
Americium-241	0.2 pCi/g	20	20	1	Detections in Boring 047-002
Cesium-137	1.5 pCi/g	Modeled as 20′ X 20′ bermed area. Non-detects and below background in 400-044.			
Neptunium-237	1 pCi/g				
Technetium-99	53 pCi/g				
Thorium-230	6.4 pCi/g				
Uranium-234	31.1 pCi/g				
Uranium-235	1.9 pCi/g				
Uranium-238	39.5 pCi/g	20	20	1	Activity in boring 047-002. Also detected at 3 pCi/g in 400-044.
SUBSURFACE SOIL					
Americium-241	0.2 pCi/g	225	200	49	Average of 1 detect and 2 non-detects.
Neptunium-237	0.2 pCi/g	20	20	25	Boring 047-002. Non-detect at 26′.
Technetium-99	8.1 pCi/g	20	20	7	Boring 047-002. Non-detects and background levels @ 8′.
Uranium-234	41.7 pCi/g				
Uranium-235	2.2 pCi/g				
Uranium-238	42.8 pCi/g				
trans-1,2-Dichloroethene	2,500 ug/kg	50	200	49	Maximum detect.
Trichloroethene	1,700 ug/kg	X-axis determined by < 5 detects in boring 400-041 of SW sector.			Maximum detect.

No source modeled for:

- Chromium (49.3 mg/kg): single analysis in boring 400-076 @ 14′-18′ interval.
- Benz(a)anthracene (18,000 ug/kg), Benz(a)pyrene (16,000 ug/kg), Benz(b)fluoranthene (17,000 ug/kg), Benz(k)fluoranthene (11,000 ug/kg): single analysis for each contaminant (surface soil sample) in boring 047-002, not expected to be a site contaminant.

X-axis is east-west; Y-axis is north-south.

WEST SECTOR CONTAMINANT INVENTORIES

West Sector	Site Contaminant	Contaminant Concentration/Activity mg/kg	g/g	pCi/g	x N-S ft	y E-W ft	z Thickness ft	Volume ft^3	Volume cm^3	Bulk Density g/cm^3	Inventory g	Inventory Ci
Surface	2-Methylnaphthalene	0.044	4.40E-08		200	225	1	4.50E+04	1.27E+09	1.6	8.97E+01	
	Dibenz(a,h)anthracene	3.2	3.20E-06		200	225	1	4.50E+04	1.27E+09	1.6	6.52E+03	
	Dibenzofuran	0.942	9.42E-07		200	225	1	4.50E+04	1.27E+09	1.6	1.92E+03	
	Americium-241			0.2	20	20	1	4.00E+02	1.13E+07	1.6		3.62E-06
	Cesium-137			1.5	20	20	1	4.00E+02	1.13E+07	1.6		2.72E-05
	Neptunium-237			1	20	20	1	4.00E+02	1.13E+07	1.6		1.81E-05
	Technetium-99			53	20	20	1	4.00E+02	1.13E+07	1.6		9.61E-04
	Thorium-230			6.4	20	20	1	4.00E+02	1.13E+07	1.6		1.16E-04
	Uranium-234			31.1	20	20	1	4.00E+02	1.13E+07	1.6		5.64E-04
	Uranium-235			1.9	20	20	1	4.00E+02	1.13E+07	1.6		3.44E-05
	Uranium-238			39.5	20	20	1	4.00E+02	1.13E+07	1.6		7.16E-04
Subsurface	Americium-241			0.2	200	225	49	2.21E+06	6.24E+10	1.86		2.32E-02
	Neptunium-237			0.2	20	20	25	1.00E+04	2.83E+08	1.86		1.05E-04
	Technetium-99			8.1	20	20	7	2.80E+03	7.93E+07	1.86		1.19E-03
	Uranium-234			41.7	20	20	7	2.80E+03	7.93E+07	1.86		6.15E-03
	Uranium-235			2.2	20	20	7	2.80E+03	7.93E+07	1.86		3.24E-04
	Uranium-238			42.8	20	20	7	2.80E+03	7.93E+07	1.86		6.31E-03
	Trans-1,2-Dichloroethene	2.5	2.50E-06		200	50	49	4.90E+05	1.39E+10	1.86	6.45E+04	
	Trichloroethene	1.7	1.70E-06		200	50	49	4.90E+05	1.39E+10	1.86	4.39E+04	

MEPAS uses "x" to denote ground-water flow direction and "y" to denote direction perpendicular to ground-water flow.

531446

SECTOR SOURCE	WEST SURFACE			
	PLANT FENCE		PROPERTY BOUNDARY	
CONSTITUENT	MAX CONC [MG/L][PCI/L]	TIME [YR]	MAX CONC [MG/L][PCI/L]	TIME [YR]
2-Methnaphthalene	1.27E-06	2390	7.90E-07	2530
AM241	1.54E-24	13500	1.80E-27	14900
CS137	0.00E+00	0	0.00E+00	0
Dibenzo(a,h)anthracene	0.00E+00	0	0.00E+00	0
NP237	2.26E-09	320	1.34E-09	359
PA233	2.26E-09	320	1.34E-09	359
U233	3.15E-12	320	2.16E-12	379
TH299	4.71E-14	320	3.81E-14	379
RA225	4.71E-14	320	3.81E-14	379
AC225	4.70E-14	320	3.81E-14	379
TC99	1.81E-08	2090	1.10E-08	2340
TH230	0.00E+00	0	0.00E+00	0
U234	4.32E-09	5160	2.61E-09	5950
TH230	1.97E-10	5160	1.38E-10	5950
RA226	1.19E-10	5160	8.90E-11	5950
U235	2.67E-10	5160	1.63E-10	5950
TH231	2.67E-10	5160	1.63E-10	5950
PA231	2.75E-11	5160	1.92E-11	5950
AC227	2.74E-11	5160	1.91E-11	5950
TH227	2.74E-11	5160	1.91E-11	5950
RA223	2.74E-11	5160	1.91E-11	5950
U238	5.54E-09	5160	3.37E-09	5950
TH234	5.54E-09	5160	3.37E-09	5950
U234	8.07E-11	5160	5.64E-11	5950
TH230	1.85E-12	5160	1.49E-12	5950
RA226	8.61E-13	5160	7.52E-13	5950
RN222	8.61E-13	5160	7.52E-13	5950
PB210	8.48E-13	5160	7.42E-13	5950
BL210	8.48E-13	5160	7.42E-13	5950
PO210	8.47E-13	5160	7.41E-10	5950

BOLD type denotes constituents remaining after screening and run with MEPAS
Italic type denotes daughter products resulting from constituents listed in bold

SECTOR **WEST**
SOURCE **SUBSURFACE**

CONSTITUENT	PLANT FENCE MAX CONC [MG/L][PCI/L]	PLANT FENCE TIME [YR]	PROPERTY BOUNDARY MAX CONC [MG/L][PCI/L]	PROPERTY BOUNDARY TIME [YR]
AM-241	4.51E-22	13500	4.65E-25	14900
1,2-DCE	7.64E-02	20.7	4.78E-02	23.4
TCE	9.58E-03	105	6.03E-03	112
NP237	8.79E-09	378	5.41E-09	438
PA233	8.79E-09	378	5.41E-09	438
U233	1.45E-11	397	1.03E-11	438
TH299	2.68E-13	397	2.11E-13	438
RA225	2.68E-13	397	2.11E-13	438
AC225	2.68E-13	397	2.11E-13	438
TC99	2.24E-11	2090	1.36E-08	2340
U234	4.55E-08	5410	2.74E-08	6190
TH230	2.18E-09	5410	1.50E-09	6190
RA226	1.35E-09	5410	9.87E-10	6190
U235	2.43E-09	5410	1.47E-09	6190
TH231	2.43E-09	5410	1.47E-09	6190
PA231	2.62E-10	5410	1.80E-10	6190
AC227	2.61E-10	5410	1.79E-10	6190
TH227	2.61E-10	5410	1.79E-10	6190
RA223	2.61E-10	5410	1.79E-10	6190
U238	5.54E-09	5160	3.37E-09	5950
TH234	5.54E-09	5160	3.37E-09	5950
U234	8.07E-11	5160	5.64E-11	5950
TH230	1.85E-12	5160	1.49E-12	5950
RA226	8.61E-13	5160	7.52E-13	5950
RN222	8.61E-13	5160	7.52E-13	5950
PB210	8.48E-13	5160	7.42E-13	5950
BI210	8.48E-13	5160	7.42E-13	5950
PO210	8.47E-13	5160	7.41E-13	5950

BOLD type denotes constituents remaining after screening and run with MEPAS
Italic type denotes daughter products resulting from constituents listed in bold

Far North Sector Conta. ant Inventories

Far North Sector	Site Contaminant	Contaminant Concentration/Activity mg/kg	g/g	pCi/g	x N-S ft	y E-W ft	z Thickness ft	Volume ft^3	Volume cm^3	Bulk Density g/cm^3	Inventory g	Inventory Ci
Surface	Neptunium-237			0.6	150	700	1	1.05E+05	2.973E+09	1.6		2.85E-03
	Phenanthrene	0.7	7.00E-07		150	700	1	1.05E+05	2.973E+09	1.6	3.33E+03	
	Plutonium-239			0.4	150	700	1	1.05E+05	2.973E+09	1.6		1.90E-03
	Technetium-99			17	150	700	1	1.05E+05	2.973E+09	1.6		8.09E-02
	Uranium-238			4.6	150	700	1	1.05E+05	2.973E+09	1.6		2.19E-02
Subsurface	2,4-Dinitrotoluene	0.457	4.57E-07		175	1125	49	9.65E+06	2.732E+11	1.86	2.32E+05	
	Americium-241			0.6	300	375	49	5.51E+06	1.561E+11	1.86		1.74E-01
	Copper	146	1.46E-04		300	375	49	5.51E+06	1.561E+11	1.86	4.24E+07	
	Neptunium-237			0.2	175	1125	49	9.65E+06	2.732E+11	1.86		1.02E-01
	Phenanthrene	0.11	1.10E-07		300	375	49	5.51E+06	1.561E+11	1.86	3.19E+04	
	Thorium-230			1.8	175	1125	49	9.65E+06	2.732E+11	1.86		9.15E-01
	Uranium-234			7	100	300	49	1.47E+06	4.163E+10	1.86		5.42E-01
	Uranium-238			53.2	100	300	49	1.47E+06	4.163E+10	1.86		4.12E+00

MEPAS uses "x" to denote ground-water flow direction and "y" to denote direction perpendicular to ground-water flow.

RGA Soils

CONTAMINANT	SURFACE SOIL	SUBSURFACE SOIL	~~WATER~~
1,1-DCE		Southeast Sector	
1,1,1-TCA		Southeast Sector	
1,1,2-TCA		Southeast Sector	
2-Methyl-naphthalene	West Sector		
2,4-DNT		Far North Sector	
2,6-DNT		Northeast Sector	
Acenaphthylene	Southwest Sector		
Am-241	West Sector	Far North Sector Northwest Sector Southwest Sector West	
Antimony		Northwest Sector	
Arochlor-1260	East Sector		
Benz(a) anthracene	Southwest Sector		
Benz(a)pyrene	Southwest Sector		
Benz(b) fluoranthene	Southwest Sector		
Benz(k) fluoranthene	Southwest Sector		
Carbon Tetrachloride		Southeast Sector	
Copper		Far North Sector	
Cs-137	Southwest Sector West Sector	Central Sector Southeast Sector Southwest Sector	
Chromium	Northwest Sector Southwest Sector	Northeast Sector Southeast Sector	Ground Water Integrator Unit (NE Sector)
cis-1,2-DCE		Southeast Sector Southwest Sector	
Cobalt			Ground Water Integrator Unit (NE Sector)
Dibenz(a,h) anthracene	West Sector		
Dibenzofuran	Southwest Sector West Sector	Northeast Sector	
Iodomethane		Southwest Sector	
Iron			Ground Water Integrator Unit (NE Sector)
Manganese			Ground Water Integrator Unit (NE Sector)
Mercury		Northwest Sector	
N-Nitroso-di-n-propylamine		Northeast Sector	

CONTAMINANT	SURFACE SOIL	SUBSURFACE SOIL	WATER
Np-237	East Sector Far North Sector Southwest Sector West Sector	Central Sector East Sector Far North Sector Northwest Sector Southeast Sector West Sector	Ground Water Integrator Unit (SW Sector)
PCBs (general)	East Sector Southeast Sector		
Phenanthrene	East Sector Far North Sector Northeast Sector Southeast Sector Southwest Sector	East Sector Far North Sector Northeast Sector Southeast Sector	
Pu-239	Far North Sector Southwest Sector	Southeast Sector	
Tc-99	Far North Sector Southeast Sector Southwest Sector West Sector	Northwest Sector West Sector	
Tetrachloro-ethene		Southeast Sector	
Thallium	East Sector Southwest Sector	Northeast Sector Southwest Sector	
Th-230	East Sector Southeast Sector Southwest Sector West Sector	Far North Sector Northwest Sector Southwest Sector	
trans-1,2-DCE		Southeast Sector Southwest Sector West Sector	
TCE		East Sector Northwest Sector Southeast Sector Southwest Sector West Sector	
U-234	East Sector Southeast Sector Southwest Sector West Sector	Far North Sector Northeast Sector Northwest Sector West Sector	
U-235	East Sector Southwest Sector West Sector	Northeast Sector Northwest Sector Southwest Sector West Sector	
U-238	East Sector Far North Sector Northeast Sector Northwest Sector Southeast Sector Southwest Sector West Sector	Far North Sector Northeast Sector Northwest Sector West Sector	
VC		Southeast Sector Southwest Sector	

JEG Paducah Site Office

FACSIMILE TRANSMITTAL COVER SHEET

From: Ken Davis
Jacobs Engineering Group Inc.
Paducah Site Office
Fax: (502) 462-2551
Telephone: (502) 462-2550

DATE: April 27, 1998

TO:

NAME: Rich Bonczek

COMPANY:

LOCATION:

FAX:

TELEPHONE

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ACTION:

FYI ☑ PLEASE REVIEW ☐ PLEASE HANDLE AS WE DISCUSSED ☐

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COMMENTS:

These are the contaminants for which we have developed source terms for MEPAS modelling.

Ken

YEAR MAXIMUM CONTAMINANT LEVELS REACHED AT FENCE BOUNDARY (greater of contribution from surface soils or subsurface soils)

Contaminant	SECTORS Central	Northeast	East	Southeast	Southwest	West	Northwest	Far North	RGA Integrator Unit
1,1-DCE				62					
1,1-DCA									
1,1,2-TCA									
1,2-DCE						21			
2-Methylnaphthalene						2390			
2,4-DNT								47	
2,6-DNT									
Acenaphthylene					1336				
Am-241					10000	13500	13500	13500	
Antimony							707		
Arochlor-1260			Not Reported						
Benz(a)anthracene									
Benz(a)pyrene					Not Reported				
Benzo(ghi)perylene									
Benz(b)fluoranthene					Not Reported				
Benz(k)fluoranthene					Not Reported				
Carbon Tetrachloride				386					
Copper								9510	
Cs-137	Not Reported			Not Reported	Not Reported	Not Reported			
Chromium		10000		Not Reported	9799		Not Reported		10000
cis-1,2-DCE									
Cobalt									224
Dibenz(a,h)anthracene						Not Reported			
Dibenzofuran									
Iodomethane									
Iron									377
Manganese									633
Mercury							Not Reported		
N-Niroso-di-n-propylamine		24							
Np-237	416		455	435	320	378	397	435	435
PCBs (general)			Not Reported	Not Reported					
Phenanthrene		7810	7560	7560	7310			7560	
Pu-239				10200	1020			10200	
Tc-99					2090	2090	2090	2090	
Tetrachloroethene				285					
Thallium		31	31		31				
Th-230				10000	10000	Not Reported	Not Reported	Not Reported	
trans-1,2-DCE									
TCE			105	105	105	105	89		
trichlorofluoromethane									
U-234		6460	5160	5900		5410	6640	7130	
U-235		6640	5160		5160	5410	5160		
U-238		7380	5160	5160	5160	5160	6640	7130	
Vinyl Chloride				54	54				
Contaminants that could not be modeled									

531453

CONTAMINANT LEVELS (mg/L OR pCi/L) AT FENCE BOUNDARY (greater of contribution from surface soils or subsurface soils)

	SECTORS								RGA
Contaminant	Central	Northeast	East	Southeast	Southwest	West	Northwest	Far North	**Integrator Unit**
1,1-DCE				4.14E-03					
1,1,1-TCA									
1,1,2-TCA									
1,2-DCE						7.64E-02			
2-Methylnaphthalene						1.27E-06			
2,4-DNT								1.07E-01	
2,6-DNT									
Acenaphthylene					3.18E-04				
Am-241					1.38E-21	4.51E-22	2.85E-22	2.97E-21	
Antimony							5.73E-03		
Arochlor-1260			0.00E+00						
Benz(a)anthracene									
Benz(a)pyrene					0.00E+00				
Benzo(ghi)perylene									
Benz(b)fluoranthene					0.00E+00				
Benz(k)fluoranthene					0.00E+00				
Carbon Tetrachloride				4.87E-04					
Copper								1.50E-01	
Cs-137	0.00E+00			0.00E+00	0.00E+00	0.00E+00			
Chromium		2.56E-53		2.69E-53	3.86E-54		0.00E+00		6.91E-05
cis-1,2-DCE									
Cobalt									2.74E-02
Dibenz(a,h)anthracene						0.00E+00			
Dibenzofuran									
Iodomethane									
Iron									8.18E+01
Manganese									5.71E-01
Mercury							0.00E+00		
N-Niroso-di-n-propylamine		2.17E-02							
Np-237	716→ 3.77E-06		5.77E-07	2.09E-06	6.49E-08	8.79E-09	9.07E-07	4.30E-06	6.17E-07
PCBs (general)			0.00E+00	0.00E+00					
Phenanthrene		8.62E-06	7.73E-06	6.36E-06	1.02E-04			5.40E-05	
Pu-239			7560	1.22E-08	1.19E-09			3.40E-09	
Tc-99					8.88E-07	1.81E-08	5.35E-06	9.24E-07	
Tetrachloroethene				6.44E-04					
Thallium		8.45E-04	2.09E-03		4.74E-01				
Th-230			3.29E-53	2.23E-23	1.94E-50	0.00E+00	0.00E+00	0.00E+00	
trans-1,2-DCE						7.64E-02			
TCE			2.91E-02	5.00E+01	2.53E-01	9.58E-03	4.92E-03		
Trichlorofluromethane									
U-234		9.61E-07	7.10E-08	7.66E-09		4.55E-08	3.91E-07	1.34E-06	
U-235		3.41E-08	4.06E-09		7.95E-07	2.43E-09	3.33E-09		
U-238		6.62E-06	9.25E-08	2.23E-08	2.17E-07	5.54E-09	5.80E-07	1.04E-05	
Vinyl Chloride				1.14E-03	8.04E-04				
Contaminants that could not be modeled									

531454

APPENDIX D

SAS PROGRAMS

APPENDIX D

Section 1	Data consolidation program
Section 2	Summary statistics preparation programs
Section 3	PRG screen program
Section 4	Background and RDA screen program
Section 5	Toxicity value database preparation programs
Section 6	Output production program
Section 7	CDI and risk calculation programs
Section 8	RGO calculation program

Section 1

Data consolidation program

531458

```
libname in '/data4/pgdp/wag6' ;
libname cas '/data/casnum' ;
options ps=49 ;

data wag6_new ;
set in.wag6_new(rename=(chemical=analysis proj_sam=smp_id) drop=units) ;
format _char_ _numeric_ ;
informat _char_ _numeric_ ;

if analysis="2,2'-oxybis(1-chloropropane)" or
  analysis='Bis(2-chloroisopropyl) ether'
  then analysis='Bis(2-chloroisopropyl)ether' ;

proc sort ; by sta_name ;

data sectors ; set in.sectors(rename=(station=sta_name)) ;
proc sort ; by sta_name ;

data wag6 ; merge wag6_new(in=a) sectors(in=b) ; by sta_name ;
if a=1 and b=1 ;

proc sort ; by analysis ;

data casnum ; set cas.casnum ;
proc sort ; by analysis ;

data casjoin ; merge wag6(in=a) casnum(in=b) ; by analysis ; if a=1 ;

data casjoin ; set casjoin ;

if ana_type='RADS' and oldunits ne 'ug/L' then anatype='Radionuclides' ;
else if ana_type='ANION' or ana_type=:'METAL' or analysis='Nitrite' or
 (analysis = 'Uranium' and oldunits = 'ug/L') then anatype='Inorganics' ;
else if ana_type='SVOA' or ana_type='VOA' or ana_type='PPCB' then
  anatype='Organics' ;
else anatype='Other' ;

if med_type='WW' then med_type='WG' ;

if med_type in ('AG','WQ') or smp_type in ('FB','RI','TB') or
  (enddepth>16 and med_type='SO') or index(ana_meth,'dis')>0 or
  oldunits in ('%','NA','Std Unit','deg C','meq/L','umho/cm','gU235/L') or
  analysis in ('Alkalinity','Dissolved Oxygen','Total Organic Carbon (TOC)')
  then delete ;

if analysis='Uranium' and oldunits=:'pCi' then delete ; *use isotopic results ;

if oldunits='ug/L' then do ;
  units='mg/L ' ; results=oldrslts/1000 ; det_lim=olddetlm/1000 ;
end ;
else if oldunits='ug/kg' then do ;
  units='mg/kg' ; results=oldrslts/1000 ; det_lim=olddetlm/1000 ;
```

```
end ;
else do ;
  units=oldunits ; results=oldrslts ; det_lim=olddetlm ; unc=olderror ;
end ;

if casnum=. then do ;
  if indexc(paramtr,'N')=0 then casnum=input(substr(paramtr,1,8),best12.) ;
end ;

prefix=compress(trim(rslt_pre)||trim(validati)||trim(rsltqual),' ') ;

if index(prefix,'R')>0 then delete ;
else if indexc(prefix,'U<')>0 or (anatype=:'Rad' and (indexc(prefix,'AU')>0 or
  results<=unc)) then det_cntr=0 ;
else det_cntr=1 ;

if analysis='Uranium' and units='mg/L' then casnum=238 ;
if analysis='Methyl 9H-Fluorene' then casnum=1730376 ;
if analysis=:'Nitrate' then casnum=14797558 ;
if analysis='PCB-1262' then casnum=1336363 ;

sampid=substr(smp_id,1,7)||substr(smp_id,9,3) ;
drop ana_meth cat_rslt data_rel lab_code paramtr sta_type c_fld_sm c_lab_me
  c_sample lab_meth non_comp lab_samp sdg_num smp_meth enddate strtdate ;

data uranium ; set casjoin ;
if analysis=:'Uranium' and med_type='SO' and det_cntr=1 ;
if analysis='Uranium-234' then do ;
  results=oldrslts/6.21e6*1000 ; units='mg/kg' ;
end ;
if analysis='Uranium-235' then do ;
  results=oldrslts/2.15e3*1000 ; units='mg/kg' ;
end ;
if analysis='Uranium-238' then do ;
  results=oldrslts/3.35e2*1000 ; units='mg/kg' ;
end ;
proc sort ; by smp_id sta_name st_depth enddepth ;

proc means noprint ; by smp_id sta_name st_depth enddepth ;
var results ; id ana_type med_type smp_type rslt_pre validati dataqual rsltqual detect
  oldunits oldrslts olderror sampdate olddetlm sector sec_num units prefix
  det_cntr sampid ;
output out=uresults sum=results ;

data uresults ; set uresults ;
drop _type_ _freq_ ;
analysis='Uranium' ;
casnum=238 ;
anatype='Inorganics' ;

data allwag6 ; set casjoin uresults ;
proc sort ; by sector sec_num sta_name sampid med_type units st_depth enddepth
```

```
  anatype analysis ;

proc means noprint ;
by sector sec_num sta_name sampid med_type units st_depth enddepth anatype analysis ;
var det_cntr ;
output out=sumdet sum=det_sum n=det_n ;

data two ; merge allwag6 sumdet ;
by sector sec_num sta_name sampid med_type units st_depth enddepth anatype analysis ;
drop _type_ _freq_ ;
if det_n>=2 and det_sum>=1 then do ;
  if det_cntr=0 then delete ;
end ;
proc sort ; by sector sec_num sta_name sampid med_type units st_depth enddepth
  anatype analysis ;

proc means noprint ;
by sector sec_num sta_name sampid med_type units st_depth enddepth anatype analysis ;
var results ; id ana_type matrix smp_id rslt_pre validati rsltqual detect oldunits
  oldrslts olderror olddetlm casnum det_lim unc prefix det_cntr ;
output out=wag6dups max=results ;

data wag6dups ; set wag6dups ;
drop _type_ _freq_ ;
if med_type='WG' then do ;
  if 50<=st_depth<=95 and 50<=enddepth<=95 then do ;
    sector='RGA    ' ;  sec_num=10 ;
  end ;
  else if st_depth>95 and enddepth>95 then do ;
    sector='McNairy' ;  sec_num=11 ;
  end ;
  else delete ;
  media='Ground water   ' ;
end ;

data sursoil ; set wag6dups ;
if enddepth<=1 and med_type='SO' ;
media='Surface soil   ' ;

data subsoil ; set wag6dups ;
if enddepth<=16 and med_type='SO' ;
media='Subsurface soil' ;

data all ; set wag6dups sursoil subsoil ;
if media=' ' then delete ;
if casnum in (79016,156605,156592,75014,14133767,238,7782414) or analysis=:'PCB' or
analysis=:'Uranium' then sitendet=1;
else sitendet=0 ;

data in.wag6 ; set all ;

run ;
```

Section 2

Summary statistics preparation programs

531462

```
libname in '/data4/pgdp/wag6' ;
options nodate nonumber ls=120 ps=60 ;

filename sumstats '/data4/pgdp/wag6/sumstats_general.sas' ;

%let data_loc=/data4/pgdp/wag6 ;
%let ds_name1=wag6 ;
%let media1=soil gw ;
%let area1=WAG 6 ;
%let project=PGDP WAG 6 ;
%let value=results ;
%let keep1=sector sec_num med_type media analysis anatype units results casnum
  det_cntr sitendet ;
%let sortby1=sector sec_num med_type media anatype analysis units ;
%let ds_name2=wag6stat ;

%include sumstats ;
run ;
```

```
*********************************************************************;
* sumstats_general.sas -> calculating summary statistics for Risk    ;
*       Assessment data in general.  Calculates summary statistics ;
*       for analytes from a "cleaned-up" data set.              ;
*                                                               ;
* NOTE: For calculations of MEAN, for nonrads with nondetected conc- ;
*     entrations, non-site-related reported nondetected concs. were ;
*     cut in half. Site-related nondetects are reported at full    ;
*     value.                                                      ;
*     Also, any definitions of rad nondetects (e.g., UNC > VALUE)  ;
*     should have been set up this way prior to the execution of   ;
*     this program.                                               ;
*                                                               ;
* APPROACH: Obtain mins/maxes, frequency of detects for all analytes. ;
*       Then determine best-fit distribution (normal/lognormal)  ;
*       and calculate MEAN and UCL95 accordingly.  Rads with     ;
*       non-positive concentrations are considered to be normally ;
*       distributed.  Data with mixture of detects and nondetects ;
*       that were determined to be lognormal were run thru the   ;
*       SAS lifereg procedure to obtain MEAN and UCL95.          ;
*                                                               ;
* SPECIAL NOTES: To use this program, one must specify the values for ;
* ------------- the following macros (define with a %LET statement): ;
*                                                               ;
*           MACRO NAME    MEANING                               ;
*           ----------    ------------------------------------ ;
*           DATA_LOC      directory name where RA data reside  ;
*           DS_NAME1      name of the data set (< 9 characters) ;
*           MEDIA1        medium analyzed (used in title only) ;
*           AREA1         area (OU) being analyzed (title only) ;
*           PROJECT       project name (title only)            ;
*           KEEP1         list of variables to keep/evaluate   ;
*                         from raw data set (should include    ;
*                         ANALYSIS ANATYPE UNITS VALUE CASNUM  ;
*                         DET_CNTR as a minimum)               ;
*           SORTBY1       list of variables to sort by ... also ;
*                         is the grouping for summary stats    ;
*                         (must be a subset of variables listed ;
*                         in KEEP1)                            ;
*           SORTBY2       list of variables for the final      ;
*                         sorted data set (see optional        ;
*                         section below)                       ;
*           DS_NAME2      data set name for final permanent SAS ;
*                         data set (that stores summary stats) ;
*                                                               ;
* To run this program: 1) use filename to link to this program  ;
*                      2) define all macro variables with %LET  ;
*                         statements                            ;
*                      3) use %inc to call this program         ;
*                                                               ;
* NOTE: final data set created in same subdirectory as raw data set. ;
*********************************************************************;
```

```
libname screen  "&DATA_LOC" ;
options nonumber nodate ls=78 ps=60 ;

************************************************;
* Remove any temporary data sets before starting ;
************************************************;
proc datasets library=work memtype=data kill ;
quit ;
run ;

*******************************************************************;
* First: Read in all data in order to calculate summary statistics ;
*******************************************************************;
data &DS_NAME1 ;
 set screen.&DS_NAME1 ;
 keep &KEEP1 ;
run ;

proc sort data=&DS_NAME1 ;
 by &SORTBY1 ;
run ;

*******************************************************************;
* Next: Take care of nonrad nondetects                            ;
*                                                                 ;
* NOTE: For nonrads, will use 1/2 DL for nondetects when calc.    ;
*       mean conc.                                                ;
*                                                                 ;
* NOTE: Will create 2nd VALUE variable (VALUE2) in order to       ;
*       calculate MEAN concentration ... to use VALUE when        ;
*       calculating minimum and maximum concentrations for        ;
*       detects and nondetects.                                   ;
*******************************************************************;
data &DS_NAME1 ; set &DS_NAME1 ;
 *********************************************************;
 * NONRADS: Change value for nondetects to 1/2 det limit ;
 * only if non-site-related                              ;
 *********************************************************;
 if (sitendet=1 or sitendet=.) and anatype ne 'Radionuclides'
  then value2=&VALUE ;

 if sitendet=0 and anatype ne 'Radionuclides' then
  value2=&VALUE/2 ;
  label value2='Conc. used in exposure conc. estimation' ;

 ****************************;
 * Create VALUE2 for Rads: ;
 ****************************;
 if anatype='Radionuclides' then value2=&VALUE ;
run ;
```

```
*********************************************;
* Obtain frequency of detects & mean concs.  ;
*                                            ;
* NOTE: use VALUE2 instead of VALUE here.  ;
*********************************************;
proc means data=&DS_NAME1 noprint n sum mean ;
  by &SORTBY1 ;
  id casnum ;
  var det_cntr value2 ;
  output out=freqdet n=n n2  sum=det sum2  mean=mean1 mean ;
data freqdet ; set freqdet ;
  length x1 $3 x2 $3 freq_det $7 test $3  ;
  label n=      '# Samples Analyzed'
        det     ='# Samples Detected'
        freq_det='Freq. of Detection'
        test    ='Perform Dist. Test?' ;
  x1=put(det,$3.) ;
  x2=put(n,$3.) ;
  freq_det=compress(x1)||'/'||compress(x2) ;
  ******************************************************************;
  * Based on freq. of detect., decide which analytes tested for dist. ;
  ******************************************************************;
  length censored $3 ;
  if det=0 then do ;
    test='NO'     ;   * All Nondetects -> No Dist. Test ;
    censored='YES' ;   * All Nondetects -> Censored data ;
  end ;
  if n = 1 then do ;
    test='NO'  ;       * Only 1 value   -> No Dist. Test ;
    if det=1 then
      censored='NO' ;  * It is a detect -> Censored data ;
  end ;
  if n > 1 and det ne . and det > 0 and det < n then do ;
    test='YES' ;       * At least 1 detect -> Do Dist. Test ;
    censored='YES' ;   * Some Nondetects   -> Censored data ;
    mean=. ;           * Will re-calculate later          ;
  end ;
  if n > 1 and det ne . and det > 0 and det = n then do ;
    test='YES' ;       * At least 1 detect -> Do Dist. Test   ;
    censored='NO' ;    * No Nondetects     -> Uncensored data ;
    mean=. ;           * Will re-calculate later          ;
  end ;
  label censored='Censored Data? (YES/NO)' ;
  *******************************************;
  * Only keep MEAN for data with test='NO'   ;
  *     (re-calculate for other data later) ;
  *******************************************;
  keep &SORTBY1 casnum n det mean freq_det test censored ;
run ;

*******************************************************;
* Next: obtain MAX and MIN for detects and nondetects ;
```

```
*                                        ;
* NOTE: use VALUE instead of VALUE2 here.        ;
*****************************************************;
proc means noprint min max data=&DS_NAME1 ;
  where det_cntr=0 ;
  by &SORTBY1 ;
  var &VALUE ;
  output out=nondets min=min_nond max=max_nond ;
run ;

proc means noprint min max data=&DS_NAME1 ;
  where det_cntr=1 ;
  by &SORTBY1 ;
  var &VALUE ;
  output out=dets min=min_det max=max_det ;
run ;


*****************************************************************;
* Next: Run tests for normality and lognormality              ;
*     (Approach for lognormal test: transform -> normal test)   ;
*     (Transform rads and test for normality if all concs. > 0) ;
*****************************************************************;
data &DS_NAME1 ;
  merge &DS_NAME1 freqdet dets nondets ;
  by &SORTBY1 ;
  if value2 ne . and value2 <= 0 then lnvalue=.          ;
  if value2 ne . and value2 >  0 then lnvalue=log(value2) ;
  if value2 =  .                then lnvalue=.          ;
  drop n det mean _freq_ _type_ ;
run ;

**********************;
* Test for Normality: ;
**********************;
proc univariate noprint data=&DS_NAME1 normal ;
  by &SORTBY1 ;
  where test='YES' ;
  id test censored min_det max_det min_nond max_nond ;
  var value2 ;
  output out=norstat normal=norstat probn=probn mean=meann  var=varn
         std=stdn n=nn ; * meann -> mean from normal distribution ;
data norstat ; set norstat ;
  if nn ne . and nn > 1 then t=tinv(0.95,nn-1) ;
  ucl95n = meann + t*stdn/sqrt(nn) ;
  label norstat='Test Statistic for Normality'
      probn  ='p-value for Normal Test'
      ucl95n ='Upper 95% CL on Mean for Normal'
      varn   ='Variance(VALUE2) assuming Normal Dist.' ;
  keep &SORTBY1 test    norstat probn    meann    ucl95n nn
     censored min_det max_det min_nond max_nond varn ;
run ;
```

```
*************************;
* Test for Lognormality: ;
*************************;
proc univariate noprint data=&DS_NAME1 normal ;
 by &SORTBY1 ;
 where (test='YES' and anatype ne 'Radionuclides') or
      (test='YES' and anatype =  'Radionuclides' and
       min_det  ne 0 and min_det  > 0  and
       min_nond ne 0 and (min_nond > 0 or min_nond = .)) ;
 id test censored min_det max_det min_nond max_nond ;
 var lnvalue ;
 output out=logstat normal=logstat probn=probl n=nt mean=meant
              var=vart ;
      * meant -> Transformed mean, vart -> Transformed Var., etc.  ;
run ;

*******************************************************;
* Next: Calculate mean based on lognormal distribution ;
*******************************************************;
data logstat ; set logstat ;
 label logstat='Test Statistic for Lognormality'
      probl  ='p-value for Lognormal Test'
      ucl95l ='Upper 95% CL on Mean for Lognormal' ;
 factor1=meant + vart/2 ;
 meanl =exp(factor1) ;        * meanl -> mean of lognormal dist. ;
 factor2=(vart/nt) + ((vart*vart)/(2*(nt+1))) ;
 ucl95l=exp(factor1 + 1.645*sqrt(factor2)) ;  * ucl95 for lognorm.;
 keep &SORTBY1 test   logstat probl   meanl   ucl95l
     censored min_det max_det min_nond max_nond ;
run ;

*****************************************************************;
* Assign distribution & mean for those tested (where test=YES): ;
*****************************************************************;
data testyes ;
 merge norstat logstat ;
 by &SORTBY1 ;
 length dist $2 ;
 ********************************************************************;
 * Case 1: Six or less data points -> assign as normally distributed ;
 ********************************************************************;
 if test='YES' and nn <= 6 then do ;
   dist='N'    ;
   mean=meann  ;
   ucl95=ucl95n ;
 end ;
 ********************************************************************;
 * Case 2: Enough data to test for normal, but not enough for logn.  ;
 ********************************************************************;
 if test='YES' and nn > 6 and probl=. and probn ne . then do ;
   dist='N'    ;
   mean=meann  ;
```

```
  ucl95=ucl95n ;
end ;
*********************************************************************;
* Case 3: Both tests run, with normal test giving larger p-value:  ;
*********************************************************************;
if test='YES' and nn > 6 and probn ne . and probl ne . and
  (probn >= probl) then do ;
  dist='N'    ;
  mean=meann   ;
  ucl95=ucl95n ;
end ;
*********************************************************************;
* case 4: both tests run, with lognormal test giving larger p-value:;
*       (Uncensored data only)                          ;
*********************************************************************;
if test='YES' and nn > 6 and probn ne . and probl ne . and
  (probn <  probl) and censored='NO' then do ;
  dist='L'    ;
  mean=meanl   ;
  ucl95=ucl95l ;
end ;
*********************************************************************;
* case 5: both tests run, with lognormal test giving larger p-value:;
*       (Censored data only)                            ;
*********************************************************************;
if test='YES' and nn > 6 and probn ne . and probl ne . and
  (probn <  probl) and censored='YES' then do ;
  dist='L'    ;
  ***************************************************************;
  * Case 5a: No variation in detected values for lognormal ...  ;
  *        -> calculate as if all values are detected values. ;
  ***************************************************************;
  if min_det ne . and max_det ne . and min_det=max_det then do ;
    mean =meanl  ;
    ucl95=ucl95l ;
  end ;
  ***************************************************************;
  * Case 5b: Variation in detected values for lognormal ...     ;
  *        -> calculate again using PROC LIFEREG (utilizing   ;
  *           censored values).                          ;
  ***************************************************************;
  if min_det ne . and max_det ne . and min_det ne max_det then do ;
    mean =. ;       * Recalculate with PROC LIFEREG      ;
    ucl95=. ;
  end ;
end ;
*********************************************************************;
* case 6: No variation for any of the data ... includes detects and ;
*       nondetects (-> all same value) --> assume normal          ;
*       (Situational problem: no p-value calculated)              ;
*********************************************************************;
if test='YES' and varn=0 then do ;
```

```
    dist ='N' ;
    mean =meann ;
    ucl95=ucl95n ;
  end ;
  label dist ='Distribution Used'
      mean ='Mean Concentration'
      ucl95='Upper 95% Confidence Limit on Mean' ;
  drop meann meanl ucl95n ucl95l min_det max_det min_nond max_nond nn ;
run ;


*********************************************;
* Determine if PROC LIFEREG needed          ;
* - set up LIFEREG statements within macro  ;
* - count situations to see if macro needed ;
* - use IF-THEN statement to determine if   ;
*   LIFEREG statements (macro) needed       ;
*********************************************;

****************************************;
* Define MACRO called DOLIFE ... should ;
* execute only if PROC LIFEREG needed   ;
****************************************;
%macro dolife ;
  dummy=1 ;
  drop dummy ;
 run ;
 * This ends the chcklog2 data set ;

*****************************************************************;
* Set up censored data for estimation of mean value (lognormal) ;
*    (Must have variable DIST on raw data set first)          ;
*****************************************************************;
 data logcens ; set testyes ;  * data set for lognormal/censored data ;
                               * (with variation in detected values)  ;
  if test='YES' and censored='YES' and dist='L' and mean=. ;
  keep &SORTBY1 dist ;
 run ;

 data setup ; merge &DS_NAME1(in=a) logcens(in=b) ;
  by &SORTBY1 ;
  if b=1 ;
  if det_cntr=0 then do ;  * for Nondetects => right-censored data: ;
    upper = &VALUE ;
    lower = .      ;
  end ;
  if det_cntr=1 then do ;  * for Detects    => uncensored data:    ;
    upper = &VALUE ;
    lower = &VALUE ;
  end ;
  keep &SORTBY1 upper lower freq_det dist ;
 run ;
```

```
*******************************************************;
* Next: calculate MEAN for uncensored lognormal data:  ;
*******************************************************;
proc lifereg data=setup noprint outest=outest covout ;
  by &SORTBY1 ;
  model (lower,upper)= /distribution=lnormal ;
data params ; set outest ;
  if _name_='LOWER' and _type_='PARMS' ;
  muhat=intercep ;
  varhat=_scale_ ;
  keep &SORTBY1 muhat varhat ;
data var_mu ; set outest ;
  if _name_='INTERCPT' and _type_='COV' ;
  v11=intercep ;
  v12=_scale_  ;
  keep &SORTBY1 v11 v12 ;
data var_var ; set outest ;
  if _name_='SCALE'   and _type_='COV' ;
  v22=_scale_  ;
  keep &SORTBY1 v22 ;
run ;

data censored ; merge params var_mu var_var ;
  by &SORTBY1 ;
  meanc    = exp(muhat + varhat/2) ;
  var_mean = v11 + 0.25*v22 + v12 ;
  ucl95c   = exp(muhat + varhat/2 + 1.645*sqrt(var_mean)) ;
  label meanc ='Mean of Censored Lognormal Data'
       ucl95c='UCL95 for Censored Lognormal Data' ;
  keep &SORTBY1 meanc ucl95c ;
run ;

****************************;
* Merge back with testyes: ;
****************************;
data testyes ; merge censored(in=a) testyes(in=b) ;
  by &SORTBY1 ;
  if a=1 and meanc ne . then do ;
    mean =meanc  ;
    ucl95=ucl95c ;
  end ;
  drop meanc ucl95c ;
  ************************************************;
  * Define dummy so that macro can be completed  ;
  *      (will be dropped following this macro) ;
  ************************************************;
  dummy=1 ;
%mend  dolife ;          * End of macro definition ;

*****************************************;
* Start the check to see if LIFEREG needed ;
*****************************************;
```

```
data checklog ; set testyes ;
  if test='YES' and censored='YES' and dist='L' and mean=.
    then counter=1 ;
    else counter=0 ;
  keep &SORTBY1 counter ;
run ;
*************************************************;
* Count number of situations where LIFEREG needed ;
*************************************************;
proc means noprint data=checklog sum ;
  var counter ;
  output out=chcklog2 sum=totalx ;
run ;
data chcklog2 ; set chcklog2 ;
  if totalx ne . and totalx > 0 then answer='YES' ; else
  if totalx ne . and totalx = 0 then answer='NO'  ;
  dummy=2 ;
  keep totalx answer dummy ;
run ;
*********************************************;
* Put values of count into a macro variable ;
*********************************************;
data _null_ ; set chcklog2 ;
  call symput('answer',answer) ;
run ;

*************************************************************;
* Execute macro to perform LIFEREG if data meet criteria: ;
*      (i.e., if totalx > 0 ... or answer='YES')       ;
*************************************************************;
%MACRO LIFEORNO ;
 data chcklog2 ; set chcklog2 ;
   %IF &ANSWER=YES %THEN %DO ;
      %DOLIFE ;
   %END ;
   drop dummy ;
 run ;
%MEND  LIFEORNO ;

******************************;
* Execute the LIFEORNO macro ;
******************************;
%LIFEORNO
run ;
*********************************************************************;
* Next: Put summary data sets together and assign appropriate      ;
*      statistic as representative concentration:                  ;
* Four situations:                                                 ;
*      1) All nondetects   -> Use max_nond as rep. conc.           ;
*      2) n=1 (one obs.)   -> Use max_det or max_nond              ;
*      3) Normal & n > 1   -> Use min(UCL95,MAX_DET) as rep. conc.;
*      4) Lognormal & n > 1 -> Use min(UCL95,MAX_DET) as rep. conc.;
```

```
*****************************************************************;
data summary ;
 merge freqdet testyes nondets dets ;
 by &SORTBY1 ;
 drop _freq_ _type_ ;
 ********************;
 * First situation:  ;
 ********************;
 if det=0 then do ;
   c    =max_nond ;
   ucl95=.       ;
 end ;
 ********************;
 * Second situation: ;
 ********************;
 if n=1 and det=1 then do ;
   c    =max_det ;
   ucl95=.       ;
 end ;
 ******************************;
 * Third and fourth situations: ;
 ******************************;
 if (n > 1) and (det > 0) and (ucl95 ne . and ucl95 <= max_det)
   then c=ucl95   ;
 if (n > 1) and (det > 0) and (ucl95 ne . and ucl95 >  max_det)
   then c=max_det ;
 ****************************************************;
 * Assign those not tested for distribution as "NT": ;
 ****************************************************;
 if test='NO' then dist='NT' ;
 ***********************************************************;
 * Assign formats to numerical values & labels to others: ;
 ***********************************************************;
 format mean min_nond min_det max_nond max_det ucl95 c e9. ;
 label c      ='Rep. Conc. (used in HHRA)'
      min_det ='Min. Detected Conc.'
      max_det ='Max. Detected Conc.'
      min_nond='Min. Nondetected Conc.'
      max_nond='Max. Nondetected Conc.' ;
 ****************************************************************;
 * Create dummy variable to aid with output ordering (see below) ;
 ****************************************************************;
 *   dummy1=1 ;   * Add this statement if section below executed ;
run ;
*************************;
* Make data set permanent ;
*************************;
libname screen  "&DATA_LOC" ;
data screen.&DS_NAME2 ;
 set summary ;
run ;
```

Section 3

PRG screen program

531474

```
libname in '/data4/pgdp/wag6' ;
libname prg  '/data4/pgdp/tox' ;
options nodate nonumber ls=120 ps=60 ;

*****************************************************************;
* PRG screen                                                    ;
*****************************************************************;
* Let Chromium=Chromium VI for PRG screening purposes ;

data in ; set in.wag6stat ;
if analysis='Chromium' or casnum=7440473 then casnum=18540299 ;
proc sort ; by casnum units ;

data prgso ; set prg.ress9804 ;
if fishbtf>100 then bioaccum='Yes' ;
if casnum=. or raduse='No' or (prgn=. and prgc=.) or analysis='Thorium'
  or analysis='Mercury (elemental)' then delete ;
if anatype='Radionuclides' then units='pCi/g' ;
else units='mg/kg' ;
reshi=prgn ;
resecr=prgc ;
format reshi resecr e8. ;
keep units casnum reshi resecr bioaccum ;
proc sort ; by casnum ;

data prggw ; set prg.resg9804 ;
if fishbtf>100 then bioaccum='Yes' ;
if casnum=. or raduse='No' or (prgn=. and prgc=.) or analysis='Thorium'
  or analysis='Mercury (elemental)' then delete ;
if anatype='Radionuclides' then units='pCi/L' ;
else units='mg/L' ;
reshi=prgn ;
resecr=prgc ;
format reshi resecr e8. ;
keep units casnum reshi resecr bioaccum ;
proc sort ; by casnum ;

data prg ; set prgso prggw ; by casnum units ;

data compare ; merge in(in=a) prg(in=b) ;
by casnum units ; if a=1 ;
if det>0 then do ;
  if reshi ne . and max_det>=reshi then do ;
    maxreshi='Yes' ;
  end ;
  else if reshi ne . and max_det<reshi then do ;
    maxreshi='No' ;
  end ;
  if resecr ne . and max_det>=resecr then do ;
    maxrescr='Yes' ;
  end ;
  else if resecr ne . and max_det<resecr then do ;
    maxrescr='No' ;
  end ;
```

```
if maxreshi='Yes' or maxrescr='Yes' then pflag='P' ;
end ;
if reshi ne . or resecr ne . then do ;
  if maxreshi ne 'Yes' and maxrescr ne 'Yes' and bioaccum ne 'Yes' then
  prgdelet='Yes' ;
  else prgdelet='No' ;
end ;
proc sort ; by sector med_type media anatype analysis ;

data in.compare ; set compare ;
run ;
```

Section 4

Background and RDA screen program

531477

```
libname in '/data4/pgdp/wag6' ;
libname back '/data4/pgdp/background' ;

options nodate nonumber missing=' ' ;

*****************************************************************;
* Background screen for soil only                               ;
*****************************************************************;
data sursoil ; set in.compare ;
if freq_det=:'0/' then delete ;
if med_type='SO' and media=:'Surface' and prgdelet ne 'Yes' ;
if analysis='Chromium' then casnum=7440473 ;
keep sector med_type media analysis casnum max_det det units ;
proc sort ; by casnum ;

data subsoil ; set in.compare ;
if freq_det=:'0/' then delete ;
if med_type='SO' and media=:'Sub' and prgdelet ne 'Yes' ;
if analysis='Chromium' then casnum=7440473 ;
keep sector med_type media analysis casnum max_det det units ;
proc sort ; by casnum ;

data backsur ; set back.soilback ;
bg=bg_value ;
if bg=. or depth=:'sub' then delete ;
keep casnum bg ;
proc sort ; by casnum ;

data backsub ; set back.soilback ;
bg=bg_value ;
if bg=. or depth=:'sur' then delete ;
keep casnum bg ;
proc sort ; by casnum ;

data surface ; merge sursoil(in=a) backsur(in=b) ;
by casnum ; if a=1 ;
if det>0 then do ;
  if bg ne . and max_det>=bg then bflag='B' ;
end ;

data subface ; merge subsoil(in=a) backsub(in=b) ;
by casnum ; if a=1 ;
if det>0 then do ;
  if bg ne . and max_det>=bg then bflag='B' ;
end ;

data allback ; set surface subface ;
if bg ne . then do ;
  if bflag=' ' then bckdelet='Yes' ;
  else bckdelet='No' ;
end ;
drop casnum ;
```

```
proc sort ; by sector med_type media analysis units ;

proc sort data=in.compare out=compare ;
by sector med_type media analysis units ;

data newstats ; merge compare allback ;
by sector med_type media analysis units ;
format da rda e9. ;

* Now let's screen essential nutrients out - RDAs in mg/day ;

if det>0 and bckdelet ne 'Yes' and prgdelet ne 'Yes' then do ;

 if casnum=7440702 and units='mg/kg' then do ;
  rda=800/5 ; da=max_det*2e-4 ;
  if da>=rda then eflag='E' ;
 end ;
 if casnum=16887006 and units='mg/kg' then do ;
  rda=600/5 ; da=max_det*2e-4 ;
  if da>=rda then eflag='E' ;
 end ;
 if casnum=7439896 and units='mg/kg' then do ;
  rda=10/5 ; da=max_det*2e-4 ;
  if da>=rda then eflag='E' ;
 end ;
 if casnum=7440508 and units='mg/kg' then do ;
  rda=1.0/5 ; da=max_det*2e-4 ;
  if da>=rda then eflag='E' ;
 end ;
 if casnum=7782414 and units='mg/kg' then do ;
  rda=1.5/5 ; da=max_det*2e-4 ;
  if da>=rda then eflag='E' ;
 end ;
 if casnum=7553562 and units='mg/kg' then do ;
  rda=0.12/5 ; da=max_det*2e-4 ;
  if da>=rda then eflag='E' ;
 end ;
 if casnum=7439954 and units='mg/kg' then do ;
  rda=150/5 ; da=max_det*2e-4 ;
  if da>=rda then eflag='E' ;
 end ;
 if casnum=7439987 and units='mg/kg' then do ;
  rda=0.05/5 ; da=max_det*2e-4 ;
  if da>=rda then eflag='E' ;
 end ;
 if casnum=7723140 and units='mg/kg' then do ;
  rda=800/5 ; da=max_det*2e-4 ;
  if da>=rda then eflag='E' ;
 end ;
 if casnum=7440097 and units='mg/kg' then do ;
  rda=1600/5 ; da=max_det*2e-4 ;
  if da>=rda then eflag='E' ;
```

```
    end ;
    if casnum=7782492 and units='mg/kg' then do ;
      rda=0.03/5 ; da=max_det*2e-4 ;
      if da>=rda then eflag='E' ;
    end ;
    if casnum=7440702 and units='mg/L' then do ;
      rda=800/5 ; da=max_det ;
      if da>=rda then eflag='E' ;
    end ;
    if casnum=16887006 and units='mg/L' then do ;
      rda=600/5 ; da=max_det ;
      if da>=rda then eflag='E' ;
    end ;
    if casnum=7439896 and units='mg/L' then do ;
      rda=10/5 ; da=max_det ;
      if da>=rda then eflag='E' ;
    end ;
    if casnum=7440508 and units='mg/L' then do ;
      rda=1.0/5 ; da=max_det ;
      if da>=rda then eflag='E' ;
    end ;
    if casnum=7782414 and units='mg/L' then do ;
      rda=1.5/5 ; da=max_det ;
      if da>=rda then eflag='E' ;
    end ;
    if casnum=7553562 and units='mg/L' then do ;
      rda=0.12/5 ; da=max_det ;
      if da>=rda then eflag='E' ;
    end ;
    if casnum=7439954 and units='mg/L' then do ;
      rda=170/5 ; da=max_det ;
      if da>=rda then eflag='E' ;
    end ;
    if casnum=7439987 and units='mg/L' then do ;
      rda=0.05/5 ; da=max_det ;
      if da>=rda then eflag='E' ;
    end ;
    if casnum=7723140 and units='mg/L' then do ;
      rda=800/5 ; da=max_det ;
      if da>=rda then eflag='E' ;
    end ;
    if casnum=7440097 and units='mg/L' then do ;
      rda=1600/5 ; da=max_det ;
      if da>=rda then eflag='E' ;
    end ;
    if casnum=7782492 and units='mg/L' then do ;
      rda=0.03/5 ; da=max_det ;
      if da>=rda then eflag='E' ;
    end ;
  end ;
  if rda ne . then do ;
    if eflag=' ' then rdadelet='Yes' ;
```

```
  else rdadelet='No' ;
end ;

data in.newstats ; set newstats ; * dataset for ras - only ra data ;

run ;
```

Section 5

Toxicity value database preparation program

```
libname in '/data4/pgdp/wag6' ;
libname tox '/data4/pgdp/tox' ;

data copc ; set in.newstats(rename=(media=med_name)) ;

if freq_det=:'0/' or index(analysis,'Alkalinity')>0 or
  analysis='Organic Carbon' or analysis=:'Gross' or
  analysis='Calcium' or analysis='Chloride' or analysis='Iodine' or
  analysis='Magnesium' or analysis='Potassium' or analysis='Sodium'
  or analysis='Phosphorus' then delete ;
if (prgdelet ne 'Yes' and bckdelet ne 'Yes' and rdadelet ne 'Yes') or
 (reshi=. and resecr=. and bg=. and rda=.) ;

if sector='Central'          then size=2.69 ;
if sector='East'             then size=0.66 ;
if sector='Southeast'        then size=1.81 ;
if sector='Southwest'        then size=2.71 ;
if sector='West'             then size=1.04 ;
if sector='Far North/Northwest' then size=5.75 ;
if sector='Far East/Northeast'  then size=5.75 ;
if sector='Northeast'        then size=1.11 ;
if sector='Northwest'        then size=1.30 ;


data gw ; set copc ;
if med_type='WG' ;
media='Water' ;
proc sort ; by casnum ;

data soil ; set copc ;
if med_type='SO' ;
media='Soil ' ;
proc sort ; by casnum ;

data food ; set copc ;
if med_name=:'Subsurface' then delete ;
media='Food ' ;
proc sort ; by casnum ;

data gwtox ; set tox.pgdp9804(rename=(pefu95=pef vfu95=vf)) ;
if wateruse='Yes' ;
if casnum=. or raduse='No' or analysis='Thorium' or
  analysis='Mercury (elemental)' then delete ;
drop analysis anatype ;
proc sort ; by casnum ;

data soiltox ; set tox.pgdp9804(rename=(pefu95=pef vfu95=vf)) ;
if soiluse='Yes' ;
if casnum=. or raduse='No' or analysis='Thorium' or
  analysis='Mercury (elemental)' then delete ;
drop analysis anatype ;
proc sort ; by casnum ;

data foodtox ; set tox.pgdp9804(rename=(pefu95=pef vfu95=vf)) ;
```

```
if fooduse='Yes' ;
if casnum=. or raduse='No' or analysis='Thorium' or
  analysis='Mercury (elemental)' then delete ;
drop analysis anatype ;
proc sort ; by casnum ;

data copcgw ; merge gw(in=a) gwtox(in=b) ; by casnum ;
if a=1 ;

data copcso ; merge soil(in=a) soiltox(in=b) ; by casnum ;
if a=1 ;

data copcfo ; merge food(in=a) foodtox(in=b) ; by casnum ;
if a=1 ;

data cind ; set copcso ;
if med_name=:'Surface' ;
use='cind' ;

data find ; set copcso copcgw ;
if med_name=:'Subsurface' then delete ;
use='find' ;

data exc ; set copcso ;
if med_name=:'Subsurface' ;
use='exc' ;

data rec ; set copcfo ;
if med_name=:'Surface' ;
use='rec' ;

data res ; set copcso copcgw copcfo ;
if med_name=:'Subsurface' then delete ;
use='res' ;

data in.quandets ; set cind find exc rec res ;

run ;
libname pgdp '/data2/pgdp/swmu7_30' ;
options nodate nonumber missing=' ' ls=132 ;

data tox ; set pgdp.quandets ;
keep anatype analysis rfdoc rfdocsrc rfdic rfcicsrc sfo sfosrc sfi
  sfisrc adrfdoc adsfo fooduse soiluse wateruse ;
proc sort nodups ; by anatype analysis rfdoc rfdocsrc rfdic rfcicsrc sfo
  sfosrc sfi sfisrc adrfdoc adsfo fooduse soiluse wateruse ;

%excelout(work,tox,toxicity_values_table.xls) ;
run ;
```

Section 6

Output production program

531485

```
libname pgdp '/data4/pgdp/wag6' ;
options nodate nonumber missing=' ' ls=150 ps=60 ;

data table13 ; set pgdp.wag6stat ;
keep sector media anatype analysis freq_det max_det min_det
  max_nond min_nond dist mean units ;

data table13 ; set table13 ;
mind=put(min_det,e9.) ;
maxd=put(max_det,e9.) ;
if mind ne ' ' and maxd ne ' ' then detrange=trim(mind)||' -'||trim(maxd) ;
minn=put(min_nond,e9.) ;
maxn=put(max_nond,e9.) ;
if minn ne ' ' and maxn ne ' ' then nonrange=trim(minn)||' -'||trim(maxn) ;
analyte=trim(analysis) ;
label analyte ='Analyte'
    freq_det='Frequency*of*Detection'
    detrange='Detected*Range'
    nonrange='Nondetected*Range'
    dist   ='Distribution'
    mean   ='Arithmetic*Mean'
    units  ='Units' ;
drop analysis max_det min_det max_nond min_nond mind maxd minn maxn ;
proc sort ; by sector media anatype analyte  ;

title1 ' ' ;
title2 ' ' ;
title3 ' ' ;
title4 ' ' ;
title5 ' ' ;
title6 ' ' ;
title7 ' ' ;
title8 ' ' ;
title9 'Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium' ;
footnote1 ' ' ;
footnote2 ' ' ;

filename tab13 "wag6_table13.out"  ;
proc printto print=tab13 new ;

proc print noobs uniform label split='*' ; by sector media ;
var analyte freq_det detrange nonrange dist mean units ;
run ;


data table14 ; set table13 ;
if freq_det=:'0/' then delete ;

title1 ' ' ;
title2 ' ' ;
title3 ' ' ;
title4 ' ' ;
```

```
title5 '' ;
title6 '' ;
title7 '' ;
title8 '' ;
title9 'Table 1.14. PGDP WAG 6 data summary for detected analytes by sector and medium' ;
footnote1 '' ;
footnote2 '' ;

filename tab14 "wag6_table14.out"  ;
proc printto print=tab14 new ;

proc print noobs uniform label split='*' ; by sector media ;
var analyte freq_det detrange nonrange dist mean units ;
run ;

data table15 ;
set pgdp.compare ;
if freq_det=:'0/' or index(analysis,'Alkalinity')>0 or
  analysis='Organic Carbon' or analysis=:'Gross' then delete ;
keep sector med_type media anatype analysis freq_det max_det reshi resecr
  maxreshi maxrescr units ;

data table15 ; set table15 ;
analyte=trim(analysis) ;
freq=trim(freq_det) ;
unit=trim(units) ;
label analyte ='Analyte'
     freq    ='Frequency*of*Detection'
     max_det ='Maximum*detected*concentration'
     reshi   ='HI'
     resecr  ='ELCR'
     maxreshi='Exceed HI?'
     maxrescr='Exceed ELCR?'
     unit    ='Units' ;
drop analysis units freq_det ;
proc sort ; by sector med_type media anatype analyte  ;

title1 '' ;
title2 '' ;
title3 '' ;
title4 '' ;
title5 '' ;
title6 '' ;
title7 '' ;
title8 '' ;
title9 'Table 1.15. PGDP WAG 6 comparison of maximum detected concentrations and activities to human
health risk-based' ;
title10 ' screening criteria by sector and medium' ;
footnote1 '' ;
footnote2 '' ;

filename tab15 "wag6_table15.out"  ;
```

```
proc printto print=tab15 new ;

proc print noobs uniform label split='*' ; by sector media ;
var analyte freq max_det reshi resecr maxreshi maxrescr unit ;
run ;

data table16 ;
set pgdp.newstats ;
if freq_det=:'0/' or index(analysis,'Alkalinity')>0 or
  analysis='Organic Carbpm' or analysis=:'Gross' then delete ;
if det>0 and bg ne . then do ;
  if bflag='B' then exceedbg='Yes' ;
  else exceedbg='No ' ;
end ;
keep sector med_type media anatype analysis freq_det max_det bg exceedbg units ;

data table16 ; set table16 ;
analyte=trim(analysis) ;
freq=trim(freq_det) ;
unit=trim(units) ;
label analyte ='Analyte'
     freq    ='Frequency*of*Detection'
     max_det ='Maximum*detected*concentration'
     bg      ='Background*concentration'
     exceedbg='Exceed*Background?'
     unit    ='Units' ;
drop analysis units freq_det ;
proc sort ; by sector med_type media anatype analyte  ;
options nodate nonumber missing=' ' ls=125 ps=80 ;
title1 '' ;
title2 '' ;
title3 '' ;
title4 '' ;
title5 '' ;
title6 '' ;
title7 '' ;
title8 '' ;
title9 'Table 1.16. PGDP WAG 6 comparison of maximum detected concentrations and activities' ;
title10 ' to background concentrations by sector and medium' ;
footnote1 '' ;
footnote2 '' ;

filename tab16 "wag6_table16.out"  ;
proc printto print=tab16 new ;

proc print noobs uniform label split='*' ; by sector media ;
var analyte freq max_det bg exceedbg unit ;

data table18 ;
set pgdp.newstats ;
if freq_det=:'0/' or index(analysis,'Alkalinity')>0 or
  analysis='Organic Carbon' or analysis=:'Gross' then delete ;
```

```
if rda ne . and max_det ne . then do ;
  if eflag='E' then excedrda='Yes' ;
  else excedrda='No ' ;
end ;
keep sector med_type media anatype analysis freq_det rda max_det excedrda units ;

data table18 ; set table18 ;
format rda5 daydose e9. ;
analyte=trim(analysis) ;
freq=trim(freq_det) ;
unit=trim(units) ;
rda5=5*rda ;
if units='mg/L' then daydose=max_det ;
if units='mg/kg' then daydose=max_det*2e-4 ;
label analyte ='Analyte'
     daydose ='Daily dose*for child'
     freq    ='Frequency*of*Detection'
     max_det ='Maximum*detected*concentration'
     rda     ='1/5 RDA'
     rda5    ='RDA*for*child'
     excedrda='Exceed*RDA?'
     unit    ='Units' ;
drop analysis freq_det units ;
proc sort ; by sector med_type media anatype analyte  ;
options nodate nonumber missing=' ' ls=150 ps=60 ;
title1 ' ' ;
title2 ' ' ;
title3 ' ' ;
title4 ' ' ;
title5 ' ' ;
title6 ' ' ;
title7 ' ' ;
title8 ' ' ;
title9 'Table 1.18. PGDP WAG 6 comparison of maximum detected concentrations of essential nutrients to'
;
title10 ' recommended dietary allowances for children' ;
footnote1 ' ' ;
footnote2 ' ' ;

filename tab18 "wag6_table18.out"  ;
proc printto print=tab18 new ;

proc print noobs uniform label split='*' ; by sector media ;
var analyte freq max_det unit daydose rda5 rda excedrda ;

data table19 ;
set pgdp.quandets ;
if sfo=. and sfi=. and sfx=. and rfdoc=. and rfdic=. and adsfo=. and
  adrfdoc=. then name=trim(analysis)||'*' ;
else name=trim(analysis) ;
keep sector med_type med_name anatype name freq_det ;
proc sort nodups ; by sector med_type med_name anatype name freq_det ;
```

```
data table19 ; set table19 ;
freq=trim(freq_det) ;
analyte=trim(name) ;
label analyte ='Analyte'
    freq   ='Frequency*of*Detection' ;
drop name freq_det ;
proc sort ; by sector med_type med_name anatype analyte  ;
options nodate nonumber missing=' ' ls=120  ps=80 ;
title1 ' ' ;
title2 ' ' ;
title3 ' ' ;
title4 ' ' ;
title5 ' ' ;
title6 ' ' ;
title7 ' ' ;
title8 ' ' ;
title9 'Table 1.19. PGDP WAG 6 contaminants of potential concern' ;
footnote1 ' ' ;
footnote2 ' ' ;

filename tab19 "wag6_table19.out"  ;
proc printto print=tab19 new ;

proc print noobs uniform label split='*' ; by sector med_name ;
var analyte freq ;

data table20 ;
set pgdp.newstats ;
if freq_det=:'0/' then delete ;
keep sector med_type media anatype analysis freq_det max_det min_det mean bg
 reshi resecr rda bflag pflag eflag min_nond max_nond units prgdelet
 bckdelet rdadelet ;

data table20 ; set table20 ;
length reason $8 ;
analyte=trim(analysis) ;
freq=trim(freq_det) ;
unit=trim(units) ;
mind=put(min_det,e9.) ;
maxd=put(max_det,e9.) ;
if mind ne ' ' and maxd ne ' ' then drange=trim(mind)||' -'||trim(maxd) ;
minn=put(min_nond,e9.) ;
maxn=put(max_nond,e9.) ;
if minn ne ' ' and maxn ne ' ' then nrange=trim(minn)||' -'||trim(maxn) ;
detrange=trim(drange) ;
nonrange=trim(nrange) ;
if prgdelet='Yes' or bckdelet='Yes' or rdadelet='Yes' then copc='No ' ;
else copc='Yes' ;
if copc='Yes' and pflag=' ' and bflag=' ' and eflag=' ' then keep='Qual' ;
else keep=compress(trim(pflag)||trim(bflag)||trim(eflag)) ;
if copc='No' then reason=copc ;
else reason=trim(copc)||'/'||trim(keep) ;
```

```
 if analyte=:'Sector' then reason=' ' ;
 label analyte ='Analyte'
     freq    ='Frequency of Detection'
     detrange='Detected*Range'
     nonrange='Nondetected*Range'
     bg      ='Background value'
     reshi   ='HI'
     resecr  ='ELCR'
     mean    ='Arithmetic Mean'
     rda     ='1/5*RDA'
     reason  ='COPC/*Basis'
     unit    ='Units' ;
 drop analysis freq_det pflag bflag eflag mind maxd min_det max_det copc
  keep minn maxn min_nond max_nond units drange nrange prgdelet bckdelet
  rdadelet ;
 proc sort ; by sector med_type media anatype analyte  ;
 options nodate nonumber missing=' ' ls=150 ps=60 ;
 title1 ' ' ;
 title2 ' ' ;
 title3 ' ' ;
 title4 ' ' ;
 title5 ' ' ;
 title6 ' ' ;
 title7 ' ' ;
 title8 ' ' ;
 title9 'Table 1.20. PGDP WAG 6 summary of data evaluation' ;
 footnote1 ' ' ;
 footnote2 ' ' ;

 filename tab20 "wag6_table20.out"  ;
 proc printto print=tab20 new ;

 proc print noobs uniform label split='*' ; by sector media ;
 var analyte freq nonrange detrange mean bg reshi resecr rda unit reason ;

 data table45 ; set pgdp.newstats ;

 if freq_det=:'0/' or index(analysis,'Alkalinity')>0 or
  analysis='Organic Carbon' or analysis=:'Gross' or
  analysis='Calcium' or analysis='Chloride' or analysis='Iodine' or
  analysis='Magnesium' or analysis='Potassium' or analysis='Sodium'
  or analysis='Phosphorus' then delete ;

 if prgdelet='Yes' or bckdelet='Yes' or rdadelet='Yes' then delete ;
 keep sector media anatype analysis c ;
 proc sort nodups ; by sector anatype analysis media c ;

 proc transpose let out=conc ; by sector anatype analysis ;
 var c ; id media ;

 data table45 ; set conc ;
 analyte=trim(analysis) ;
```

```
label analyte ='Analyte'
    ground_w='Groundwater*(mg/L or pCi/L)'
    subsurfa='Subsurface soil*(mg/kg or pCi/g)'
    surface ='Surface soil*(mg/kg or pCi/g)' ;
drop _name_ _label_ analysis ;
proc sort ; by sector anatype analyte ;
options nodate nonumber missing=' ' ls=130  ps=80 ;
title1 '' ;
title2 '' ;
title3 '' ;
title4 '' ;
title5 '' ;
title6 '' ;
title7 '' ;
title8 '' ;
title9 'Table 1.45. PGDP WAG 6 representative concentrations of COPCs in soil and ground water' ;
footnote1 '' ;
footnote2 '' ;

filename tab45 "wag6_table45.out"  ;
proc printto print=tab45 new ;

proc print noobs uniform label split='*' ; by sector ;
var analyte ground_w subsurfa surface  ;

data table50 ; set pgdp.quandets ;
format halflife vf pef kp bvwet bvdry beefbtf wormbtf quailbtf e9. ;
analyte=trim(analysis) ;
label analyte ='Analyte'
    halflife='Halflife (days)'
    vf     ='Volatilization factor (m^3/kg)'
    kp     ='Permeability constant (cm/hr)'
    pef    ='Particulate emission factor (m^3/kg)'
    bvwet  ='Soil to wet plant uptake factor (kg/kg)'
    bvdry  ='Soil to dry plant uptake factor (kg/kg)'
    quailbtf='Uptake factor (quail) (day/kg)'
    wormbtf ='Uptake factor (invertebrates) (day/kg)'
    beefbtf ='Uptake factor (deer & rabbit) (day/kg)' ;
keep anatype analyte halflife vf pef bvwet bvdry wormbtf beefbtf quailbtf
 kp ;
proc sort nodups ; by anatype analyte ;
options nodate nonumber missing=' ' ls=150 ps=60 ;
title1 '' ;
title2 '' ;
title3 '' ;
title4 '' ;
title5 '' ;
title6 '' ;
title7 '' ;
title8 '' ;
title9 'Table 1.50. PGDP WAG 6 miscellaneous factors used to calculate chronic daily intakes of COPCs' ;
footnote1 '' ;
```

```
footnote2 ' ' ;

filename tab50 "wag6_table50.out"  ;
proc printto print=tab50 new ;

proc print noobs uniform label split='*' ;
var analyte halflife kp vf pef bvwet bvdry wormbtf beefbtf quailbtf ;

data veg ; set pgdp.calcall ;
if cv=. then delete ;
keep sector med_type med_name analysis anatype cv ;
proc sort ; by sector anatype analysis ;

proc transpose let out=vegconc ;
by sector anatype analysis ;
var cv ; id med_type ;

data vegconc ; set vegconc ;
vegsoil=so ;
veggw=wg ;
drop so wg _name_ ;

data rabbit ; set pgdp.calcall ;
if cr=. then delete ;
keep sector med_type med_name analysis anatype cr ;
proc sort ; by sector anatype analysis ;

proc transpose let out=rabconc ;
by sector anatype analysis ;
var cr ; id med_type ;

data rabconc ; set rabconc ;
rabsoil=so ;
drop so _name_ ;

data quail ; set pgdp.calcall ;
if cq=. then delete ;
keep sector med_type med_name analysis anatype cq ;
proc sort ; by sector anatype analysis ;

proc transpose let out=quaconc ;
by sector anatype analysis ;
var cq ; id med_type ;

data quaconc ; set quaconc ;
quasoil=so ;
drop so _name_ ;

data deer ; set pgdp.calcall ;
if cd=. then delete ;
keep sector med_type med_name analysis anatype cd ;
proc sort ; by sector anatype analysis ;
```

```
proc transpose let out=deerconc ;
by sector anatype analysis ;
var cd ; id med_type ;

data deerconc ; set deerconc ;
deersoil=so ;
drop _name_ so ;

data food ; merge vegconc rabconc quaconc deerconc ;
by sector anatype analysis ;

data table51 ; set food ;
format vegsoil veggw rabsoil quasoil deersoil e9. ;
analyte=trim(analysis) ;
label analyte ='Analyte'
    vegsoil ='Soil vegetable conc.*(mg/kg or pCi/g)'
    veggw   ='Ground water veg. conc.*(mg/L or pCi/L)'
    rabsoil ='Soil rabbit conc.*(mg/kg or pCi/g)'
    quasoil ='Soil quail conc.*(mg/kg or pCi/g)'
    deersoil='Soil deer conc.*(mg/kg or pCi/g)' ;
drop analysis ;
proc sort ; by sector anatype analyte ;

title1 '' ;
title2 '' ;
title3 '' ;
title4 '' ;
title5 '' ;
title6 '' ;
title7 '' ;
title8 '' ;
title9 'Table 1.51. PGDP WAG 6 representative concentrations and activities of COPCs in vegetables, deer,
rabbit, and quail' ;
footnote1 '' ;
footnote2 '' ;

filename tab51 "wag6_table51.out" ;
proc printto print=tab51 new ;

proc print noobs uniform label split='*' ; by sector ;
var analyte vegsoil veggw rabsoil quasoil deersoil ;

run ;
```

Section 7

CDI and risk calculation program

531495

```
libname in '/data4/pgdp/wag6' ;
libname tox '/data4/pgdp/tox' ;

data cind ; set in.quandets ;
if use='cind' ;
drop media ;
proc sort ; by sector med_type med_name anatype analysis units ;

data findgw ; set in.quandets ;
if use='find' and media='Water' ;
drop media ;
proc sort ; by sector med_type med_name anatype analysis units ;

data findso ; set in.quandets ;
if use='find' and media='Soil' ;
drop media ;
proc sort ; by sector med_type med_name anatype analysis units ;

data exc ; set in.quandets ;
if use='exc' ;
drop media ;
proc sort ; by sector med_type med_name anatype analysis units ;

data rec ; set in.quandets ;
if use='rec' ;
drop media ;
proc sort ; by sector med_type med_name anatype analysis units ;

data resgw ; set in.quandets ;
if use='res' and media='Water' ;
drop media ;
proc sort ; by sector med_type med_name anatype analysis units ;

data resso ; set in.quandets ;
if use='res' and media='Soil' ;
drop media ;
proc sort ; by sector med_type med_name anatype analysis units ;

data resvegso ; set in.quandets ;
if use='res' and media='Food' and med_type='SO' ;
drop media ;
proc sort ; by sector med_type med_name anatype analysis units ;

data resveggw ; set in.quandets ;
if use='res' and media='Food' and med_type='WG' ;
drop media ;
proc sort ; by sector med_type med_name anatype analysis units ;

filename ingsoil '/data4/pgdp/equations/ingestion_soil.sas' ;
filename ingvsol '/data4/pgdp/equations/ingestion_veg_soil.sas' ;
filename ingdeer '/data4/pgdp/equations/ingestion_deer_soil.sas' ;
filename ingrabt '/data4/pgdp/equations/ingestion_rabbit_soil.sas' ;
```

```
filename ingqual '/data4/pgdp/equations/ingestion_quail_soil.sas' ;
filename inhsoil '/data4/pgdp/equations/inhalation_soil_sed.sas' ;
filename dersoil '/data4/pgdp/equations/dermal_soil_sed.sas' ;
filename extsoil '/data4/pgdp/equations/external_soil.sas' ;
filename inggw   '/data4/pgdp/equations/ingestion_gw_sw.sas' ;
filename inhhgw  '/data4/pgdp/equations/inhalation_hhuse_gw_sw.sas' ;
filename inhsgw  '/data4/pgdp/equations/inhalation_shower_gw_sw.sas' ;
filename dergw   '/data4/pgdp/equations/dermal_gw_sw.sas' ;
filename ingvgw  '/data4/pgdp/equations/ingestion_veg_gw_sw.sas' ;

* Residential Child ;

%LET ds_name1=ressingc ;
%LET ds_name2=resso ;
%LET landuse=Residential ;
%LET gccdi=gccdic ;
%LET gncdi=gncdic ;
%LET grisk=griskc ;
%LET ghq=ghqc ;
%LET ir=200 ;
%LET ed=6   ;
%LET ef=350 ;
%LET bw=14.5 ;
%LET area=0.25 ;

%include ingsoil ;

%LET ds_name1=ressderc ;
%LET ds_name2=resso ;
%LET landuse=Residential ;
%LET dccdi=dccdic ;
%LET dncdi=dncdic ;
%LET drisk=driskc ;
%LET dhq=dhqc ;
%LET sa=0.373 ;
%LET ed=6   ;
%LET ef=350 ;
%LET bw=14.5 ;

%include dersoil ;

%LET ds_name1=ressigvc ;
%LET ds_name2=resvegso ;
%LET landuse=Residential ;
%LET gvccdi=gvccdic ;
%LET gvncdi=gvncdic ;
%LET gvrisk=gvriskc ;
%LET gvhq=gvhqc ;
%LET ir=0.13 ;
%LET fi= 0.4 ;
%LET ed=6   ;
%LET ef=350 ;
```

```
%LET bw=14.5 ;
%LET area=0.25 ;

%include ingvsol ;

%LET ds_name1=ressextc ;
%LET ds_name2=resso ;
%LET landuse=Residential ;
%LET xccdi=xccdic ;
%LET xrisk=xriskc ;
%LET ed=6  ;
%LET se= 0.2 ;
%LET te= 1 ;
%LET efx=350/365 ;
%LET area=0.25 ;

%include extsoil ;

%LET ds_name1=ressinhc ;
%LET ds_name2=resso ;
%LET landuse=Residential ;
%LET iccdi=iccdic ;
%LET incdi=incdic ;
%LET irisk=iriskc ;
%LET ihq=ihqc ;
%LET ir=0.833 ;
%LET et=24  ;
%LET ed=6  ;
%LET ef=350 ;
%LET bw=14.5 ;

%include inhsoil ;

%LET ds_name1=resgingc ;
%LET ds_name2=resgw ;
%LET landuse=Residential ;
%LET gccdi=gccdic ;
%LET gncdi=gncdic ;
%LET grisk=griskc ;
%LET ghq=ghqc ;
%LET ir=1 ;
%LET ed=6  ;
%LET ef=350 ;
%LET bw=14.5 ;

%include inggw ;

%LET ds_name1=resgderc ;
%LET ds_name2=resgw ;
%LET landuse=Residential ;
%LET dccdi=dccdic ;
%LET dncdi=dncdic ;
```

```
%LET drisk=driskc ;
%LET dhq=dhqc ;
%LET sa=0.720 ;
%LET ed=6   ;
%LET ef=350 ;
%LET bw=14.5 ;
%LET et=0.2 ;

%include dergw ;

%LET ds_name1=resgigvc ;
%LET ds_name2=resveggw ;
%LET landuse=Residential ;
%LET gvccdi=gvccdic ;
%LET gvncdi=gvncdic ;
%LET gvrisk=gvriskc ;
%LET gvhq=gvhqc ;
%LET ir=0.13 ;
%LET fi= 0.4 ;
%LET ed=6   ;
%LET ef=350 ;
%LET bw=14.5 ;

%include ingvgw ;

%LET ds_name1=resgihhc ;
%LET ds_name2=resgw ;
%LET landuse=Residential ;
%LET iccdih=iccdihc ;
%LET incdih=incdihc ;
%LET iriskh=iriskhc ;
%LET ihqh=ihqhc ;
%LET ir=0.833 ;
%LET et=24  ;
%LET ed=6   ;
%LET ef=350 ;
%LET bw=14.5 ;

%include inhhgw ;

%LET ds_name1=resgihsc ;
%LET ds_name2=resgw ;
%LET landuse=Residential ;
%LET iccdis=iccdisc ;
%LET incdis=incdisc ;
%LET irisks=irisksc ;
%LET ihqs=ihqsc ;
%LET ir=0.600 ;
%LET et=0.2 ;
%LET ed=6   ;
%LET ef=350 ;
%LET bw=14.5 ;
```

```
%include inhsgw ;

* Residential Adult ;

%LET ds_name1=ressinga ;
%LET ds_name2=resso ;
%LET landuse=Residential ;
%LET gccdi=gccdia ;
%LET gncdi=gncdia ;
%LET grisk=griska ;
%LET ghq=ghqa ;
%LET ir=100 ;
%LET ed=34  ;
%LET ef=350 ;
%LET bw=70 ;
%LET area=0.25 ;

%include ingsoil ;

%LET ds_name1=ressdera ;
%LET ds_name2=resso ;
%LET landuse=Residential ;
%LET dccdi=dccdia ;
%LET dncdi=dncdia ;
%LET drisk=driska ;
%LET dhq=dhqa ;
%LET sa=0.350 ;
%LET ed=34  ;
%LET ef=350 ;
%LET bw=70 ;

%include dersoil ;

%LET ds_name1=ressigva ;
%LET ds_name2=resvegso ;
%LET landuse=Residential ;
%LET gvccdi=gvccdia ;
%LET gvncdi=gvncdia ;
%LET gvrisk=gvriska ;
%LET gvhq=gvhqa ;
%LET ir=0.199 ;
%LET fi= 0.4 ;
%LET ed=34 ;
%LET ef=350 ;
%LET bw=70 ;
%LET area=0.25 ;

%include ingvsol ;

%LET ds_name1=ressexta ;
%LET ds_name2=resso ;
%LET landuse=Residential ;
```

```
%LET xccdi=xccdia ;
%LET xrisk=xriska ;
%LET ed=34 ;
%LET se= 0.2 ;
%LET te= 1 ;
%LET efx=350/365 ;
%LET area=0.25 ;

%include extsoil ;

%LET ds_name1=ressinha ;
%LET ds_name2=resso ;
%LET landuse=Residential ;
%LET iccdi=iccdia ;
%LET incdi=incdia ;
%LET irisk=iriska ;
%LET ihq=ihqa ;
%LET ir=0.833 ;
%LET et=24  ;
%LET ed=34 ;
%LET ef=350 ;
%LET bw=70 ;

%include inhsoil ;

%LET ds_name1=resginga ;
%LET ds_name2=resgw ;
%LET landuse=Residential ;
%LET gccdi=gccdia ;
%LET gncdi=gncdia ;
%LET grisk=griska ;
%LET ghq=ghqa ;
%LET ir=2 ;
%LET ed=34  ;
%LET ef=350 ;
%LET bw=70 ;

%include inggw ;

%LET ds_name1=resgdera ;
%LET ds_name2=resgw ;
%LET landuse=Residential ;
%LET dccdi=dccdia ;
%LET dncdi=dncdia ;
%LET drisk=driska ;
%LET dhq=dhqa ;
%LET sa=1.815 ;
%LET ed=34  ;
%LET ef=350 ;
%LET bw=70 ;
%LET et=0.2 ;
```

```
%include dergw ;

%LET ds_name1=resgigva ;
%LET ds_name2=resveggw ;
%LET landuse=Residential ;
%LET gvccdi=gvccdia ;
%LET gvncdi=gvncdia ;
%LET gvrisk=gvriska ;
%LET gvhq=gvhqa ;
%LET ir=0.1995 ;
%LET fi= 0.4 ;
%LET ed=34  ;
%LET ef=350 ;
%LET bw=70 ;

%include ingvgw ;

%LET ds_name1=resgihha ;
%LET ds_name2=resgw ;
%LET landuse=Residential ;
%LET iccdih=iccdiha ;
%LET incdih=incdiha ;
%LET iriskh=iriskha ;
%LET ihqh=ihqha ;
%LET ir=0.833 ;
%LET et=24  ;
%LET ed=34  ;
%LET ef=350 ;
%LET bw=70 ;

%include inhhgw ;

%LET ds_name1=resgihsa ;
%LET ds_name2=resgw ;
%LET landuse=Residential ;
%LET iccdis=iccdisa ;
%LET incdis=incdisa ;
%LET irisks=irisksa ;
%LET ihqs=ihqsa ;
%LET ir=0.600 ;
%LET et=0.2 ;
%LET ed=34  ;
%LET ef=350 ;
%LET bw=70 ;

%include inhsgw ;

data resident ; merge ressingc ressinhc ressderc ressigvc ressextc
  resgingc resgderc resgigvc resgihhc resgihsc
  ressinga ressinha ressdera ressigva ressexta
  resginga resgdera resgigva resgihha resgihsa ;
by sector med_type med_name anatype analysis ;
```

```
run ;

* Recreational Child ;

%LET ds_name1=recsigdc ;
%LET ds_name2=rec ;
%LET landuse=Recreational ;
%LET gdccdi=gdccdic ;
%LET gdncdi=gdncdic ;
%LET gdrisk=gdriskc ;
%LET gdhq=gdhqc ;
%LET ir=0.007 ;
%LET ed=6   ;
%LET ef=350 ;
%LET bw=14.5 ;
%LET area=494 ;

%include ingdeer ;

%LET ds_name1=recsigrc ;
%LET ds_name2=rec ;
%LET landuse=Recreational ;
%LET grccdi=grccdic ;
%LET grncdi=grncdic ;
%LET grrisk=grriskc ;
%LET grhq=grhqc ;
%LET ir=0.0033 ;
%LET ed=6   ;
%LET ef=350 ;
%LET bw=14.5 ;
%LET area=3.6 ;

%include ingrabt ;

%LET ds_name1=recsigqc ;
%LET ds_name2=rec ;
%LET landuse=Recreational ;
%LET gqccdi=gqccdic ;
%LET gqncdi=gqncdic ;
%LET gqrisk=gqriskc ;
%LET gqhq=gqhqc ;
%LET ir=0.00094 ;
%LET ed=6   ;
%LET ef=350 ;
%LET bw=14.5 ;
%LET area=15.4 ;

%include ingqual ;

* Recreational Adult ;

%LET ds_name1=recsigda ;
```

```
%LET ds_name2=rec ;
%LET landuse=Recreational ;
%LET gdccdi=gdccdia ;
%LET gdncdi=gdncdia ;
%LET gdrisk=gdriska ;
%LET gdhq=gdhqa ;
%LET ir=0.032 ;
%LET ed=22  ;
%LET ef=350 ;
%LET bw=70 ;
%LET area=494 ;

%include ingdeer ;

%LET ds_name1=recsigra ;
%LET ds_name2=rec ;
%LET landuse=Recreational ;
%LET grccdi=grccdia ;
%LET grncdi=grncdia ;
%LET grrisk=grriska ;
%LET grhq=grhqa ;
%LET ir=0.0165 ;
%LET ed=22  ;
%LET ef=350 ;
%LET bw=70 ;
%LET area=3.6 ;

%include ingrabt ;

%LET ds_name1=recsigqa ;
%LET ds_name2=rec ;
%LET landuse=Recreational ;
%LET gqccdi=gqccdia ;
%LET gqncdi=gqncdia ;
%LET gqrisk=gqriska ;
%LET gqhq=gqhqa ;
%LET ir=0.0047 ;
%LET ed=22  ;
%LET ef=350 ;
%LET bw=70 ;
%LET area=15.4 ;

%include ingqual ;

* Recreational Teen ;

%LET ds_name1=recsigdt ;
%LET ds_name2=rec ;
%LET landuse=Recreational ;
%LET gdccdi=gdccdit ;
%LET gdncdi=gdncdit ;
%LET gdrisk=gdriskt ;
```

```
%LET gdhq=gdhqt ;
%LET ir=0.032 ;
%LET ed=12  ;
%LET ef=350 ;
%LET bw=43 ;
%LET area=494 ;

%include ingdeer ;

%LET ds_name1=recsigrt ;
%LET ds_name2=rec ;
%LET landuse=Recreational ;
%LET grccdi=grccdit ;
%LET grncdi=grncdit ;
%LET grrisk=grriskt ;
%LET grhq=grhqt ;
%LET ir=0.0082 ;
%LET ed=12  ;
%LET ef=350 ;
%LET bw=43 ;
%LET area=3.6 ;

%include ingrabt ;

%LET ds_name1=recsigqt ;
%LET ds_name2=rec ;
%LET landuse=Recreational ;
%LET gqccdi=gqccdit ;
%LET gqncdi=gqncdit ;
%LET gqrisk=gqriskt ;
%LET gqhq=gqhqt ;
%LET ir=0.0024 ;
%LET ed=12  ;
%LET ef=350 ;
%LET bw=43 ;
%LET area=15.4 ;

%include ingqual ;

data recreate ; merge recsigdc recsigrc recsigqc recsigda recsigra
 recsigqa recsigdt recsigrt recsigqt ;
by sector med_type med_name anatype analysis ;


* Current Industrial worker ;

%LET ds_name1=indsing ;
%LET ds_name2=cind ;
%LET landuse=Current Industrial ;
%LET gccdi=gccdi ;
%LET gncdi=gncdi ;
%LET grisk=grisk ;
```

```
%LET ghq=ghq ;
%LET ir=50 ;
%LET ed=25   ;
%LET ef=250 ;
%LET bw=70 ;
%LET area=0.5 ;

%include ingsoil ;

%LET ds_name1=indsder ;
%LET ds_name2=cind ;
%LET landuse=Current Industrial ;
%LET dccdi=dccdi ;
%LET dncdi=dncdi ;
%LET drisk=drisk ;
%LET dhq=dhq ;
%LET ed=25   ;
%LET ef=250 ;
%LET bw=70 ;
%LET sa=0.43 ;

%include dersoil ;

%LET ds_name1=indsinh ;
%LET ds_name2=cind ;
%LET landuse=Current Industrial ;
%LET iccdi=iccdi ;
%LET incdi=incdi ;
%LET irisk=irisk ;
%LET ihq=ihq ;
%LET ir=2.5 ;
%LET et=8 ;
%LET ed=25   ;
%LET ef=250 ;
%LET bw=70 ;

%include inhsoil ;

%LET ds_name1=indsext ;
%LET ds_name2=cind ;
%LET landuse=Current Industrial ;
%LET xccdi=xccdi ;
%LET xrisk=xrisk ;
%LET se=0.2 ;
%LET te=8/24 ;
%LET ed=25   ;
%LET efx=250/365 ;
%LET area=0.5 ;

%include extsoil ;

data cindust ; merge indsing indsder indsinh indsext ;
```

```
by sector med_type med_name anatype analysis ;

* Future Industrial worker ;

%LET ds_name1=indsing ;
%LET ds_name2=findso ;
%LET landuse=Future Industrial ;
%LET gccdi=gccdi ;
%LET gncdi=gncdi ;
%LET grisk=grisk ;
%LET ghq=ghq ;
%LET ir=50 ;
%LET ed=25  ;
%LET ef=250 ;
%LET bw=70 ;
%LET area=0.5 ;

%include ingsoil ;

%LET ds_name1=indsder ;
%LET ds_name2=findso ;
%LET landuse=Future Industrial ;
%LET dccdi=dccdi ;
%LET dncdi=dncdi ;
%LET drisk=drisk ;
%LET dhq=dhq ;
%LET ed=25  ;
%LET ef=250 ;
%LET bw=70 ;
%LET sa=0.43 ;

%include dersoil ;

%LET ds_name1=indsinh ;
%LET ds_name2=findso ;
%LET landuse=Future Industrial ;
%LET iccdi=iccdi ;
%LET incdi=incdi ;
%LET irisk=irisk ;
%LET ihq=ihq ;
%LET ir=2.5 ;
%LET et=8 ;
%LET ed=25  ;
%LET ef=250 ;
%LET bw=70 ;

%include inhsoil ;

%LET ds_name1=indsext ;
%LET ds_name2=findso ;
%LET landuse=Future Industrial ;
%LET xccdi=xccdi ;
```

```
%LET xrisk=xrisk ;
%LET se=0.2 ;
%LET te=8/24 ;
%LET ed=25  ;
%LET efx=250/365 ;
%LET area=0.5 ;

%include extsoil ;

%LET ds_name1=indging ;
%LET ds_name2=findgw ;
%LET landuse=Future Industrial ;
%LET gccdi=gccdi ;
%LET gncdi=gncdi ;
%LET grisk=grisk ;
%LET ghq=ghq ;
%LET ir=1 ;
%LET ed=25  ;
%LET ef=250 ;
%LET bw=70 ;

%include inggw ;

%LET ds_name1=indgder ;
%LET ds_name2=findgw ;
%LET landuse=Future Industrial ;
%LET dccdi=dccdi ;
%LET dncdi=dncdi ;
%LET drisk=drisk ;
%LET dhq=dhq ;
%LET sa=1.815 ;
%LET ed=25  ;
%LET ef=250 ;
%LET bw=70 ;
%LET et=0.2 ;

%include dergw ;

%LET ds_name1=indgihs ;
%LET ds_name2=findgw ;
%LET landuse=Future Industrial ;
%LET iccdis=iccdis ;
%LET incdis=incdis ;
%LET irisks=irisks ;
%LET ihqs=ihqs ;
%LET ir=0.600 ;
%LET et=0.2 ;
%LET ed=25  ;
%LET ef=250 ;
%LET bw=70 ;

%include inhsgw ;
```

```
data findust ; merge indsing indsder indsinh indsext indging indgder
  indgihs ;
by sector med_type med_name anatype analysis ;
run ;

* Excavation worker ;

%LET ds_name1=excsing ;
%LET ds_name2=exc ;
%LET landuse=Excavation ;
%LET gccdi=gccdi ;
%LET gncdi=gncdi ;
%LET grisk=grisk ;
%LET ghq=ghq ;
%LET ir=480 ;
%LET ed=25 ;
%LET ef=185 ;
%LET bw=70 ;
%LET area=size ;  * Set ac term to 1 ;

%include ingsoil ;

%LET ds_name1=excsder ;
%LET ds_name2=exc ;
%LET landuse=Excavation ;
%LET dccdi=dccdi ;
%LET dncdi=dncdi ;
%LET drisk=drisk ;
%LET dhq=dhq ;
%LET sa=0.43 ;
%LET ed=25 ;
%LET ef=185 ;
%LET bw=70 ;

%include dersoil ;

%LET ds_name1=excsinh ;
%LET ds_name2=exc ;
%LET landuse=Excavation ;
%LET ir=50 ;
%LET iccdi=iccdi ;
%LET incdi=incdi ;
%LET irisk=irisk ;
%LET ihq=ihq ;
%LET ir=2.5 ;
%LET et=8 ;
%LET ed=25 ;
%LET ef=185 ;
%LET bw=70 ;

%include inhsoil ;
```

```
%LET ds_name1=excsext ;
%LET ds_name2=exc ;
%LET landuse=Excavation ;
%LET xccdi=xccdi ;
%LET xrisk=xrisk ;
%LET se=0.2 ;
%LET te=8/24 ;
%LET ed=25 ;
%LET efx=185/365 ;
%LET area=size ;   * Set ac term to 1 ;

%include extsoil ;

data excavate ; merge excsing excsder excsinh excsext ;
by sector med_type med_name anatype analysis ;

data calcall ; set cindust findust resident recreate excavate ;
format totrisk totriskh griskah gvriskah hi hia hic hit e9. ;
totrisk=sum(grisk,drisk,irisk,xrisk,irisks,irisksa,irisksc,griskc,griska,
driskc,driska,iriskc,iriska,gvriskc,gvriska,xriskc,xriska,iriskhc,iriskha,
gdriskc,gdriska,gdriskt,grriskc,grriska,grriskt,gqriskc,gqriska,gqriskt) ;

if totrisk>1e-2 then totriskh=1-(exp(-totrisk)) ;
else totriskh=totrisk ;

if griska>1e-2 then griskah=1-(exp(-griska)) ;
else griskah=griska ;

if gvriska>1e-2 then gvriskah=1-(exp(-gvriska)) ;
else gvriskah=gvriska ;

if gvriskc>1e-2 then gvriskch=1-(exp(-gvriskc)) ;
else gvriskch=gvriskc ;

hi=sum(ghq,dhq,ihq,ihqs) ;
hia=sum(ihqsa,ghqa,ihqa,dhqa,gvhqa,ihqha,gdhqa,grhqa,gqhqa) ;
hic=sum(ihqsc,ghqc,ihqc,dhqc,gvhqc,ihqhc,gdhqc,grhqc,gqhqc) ;
hit=sum(gdhqt,grhqt,gqhqt) ;

proc sort ; by landuse sector med_type med_name anatype analysis ;

data in.calcall ; set calcall ;
run ;
```

```
libname pgdp '/data4/pgdp/wag6' ;
options nodate nonumber missing=' ' ls=115 ps=80 ;

data indncdi ; set pgdp.calcall(rename=(med_name=media)) ;
if landuse='Current Industrial' and sector not in ('RGA','McNairy') ;
analyte=trim(analysis) ;
label analyte ='Analyte'
    dncdi='Dermal contact'
    gncdi='Direct ingestion'
    incdi='Inhalation of volatiles and particulates' ;
keep sector media anatype analyte dncdi gncdi incdi ;
proc sort ; by sector media anatype analyte ;

title1 '' ;
title2 '' ;
title3 '' ;
title4 '' ;
title5 '' ;
title6 '' ;
title7 '' ;
title8 '' ;
title9 'Table 1.52. Noncarcinogenic chronic daily intakes for current industrial worker' ;
footnote1 '' ;
footnote2 '' ;

filename tab52 "wag6_table52.out"  ;
proc printto print=tab52 new ;

proc print noobs uniform label split='*' ; by sector media ;
var analyte gncdi dncdi incdi ;
run ;

data indccdi ; set pgdp.calcall(rename=(med_name=media)) ;
if landuse='Current Industrial' and sector not in ('RGA','McNairy') ;
analyte=trim(analysis) ;
label analyte ='Analyte'
    dccdi='Dermal contact'
    gccdi='Direct ingestion'
    iccdi='Inhalation of volatiles and particulates'
    xccdi='External exposure' ;
keep sector media anatype analyte dccdi gccdi iccdi xccdi ;
proc sort ; by sector media anatype analyte ;

title1 '' ;
title2 '' ;
title3 '' ;
title4 '' ;
title5 '' ;
title6 '' ;
title7 '' ;
title8 '' ;
title9 'Table 1.53. Carcinogenic chronic daily intakes for current industrial worker' ;
```

```
footnote1 '' ;
footnote2 '' ;

filename tab53 "wag6_table53.out"  ;
proc printto print=tab53 new ;

proc print noobs uniform label split='*' ; by sector media ;
var analyte gccdi dccdi iccdi xccdi ;
run ;

data indncdi ; set pgdp.calcall(rename=(med_name=media)) ;
if landuse='Future Industrial' ;
analyte=trim(analysis) ;
label analyte ='Analyte'
    dncdi='Dermal contact'
    gncdi='Direct ingestion'
    incdi='Inhalation of volatiles and particulates'
    incdis='Inhalation while showering' ;
keep sector media anatype analyte dncdi gncdi incdi incdis ;
proc sort ; by sector media anatype analyte ;

title1 '' ;
title2 '' ;
title3 '' ;
title4 '' ;
title5 '' ;
title6 '' ;
title7 '' ;
title8 '' ;
title9 'Table 1.54. Noncarcinogenic chronic daily intakes for future industrial worker' ;
footnote1 '' ;
footnote2 '' ;

filename tab54 "wag6_table54.out"  ;
proc printto print=tab54 new ;

proc print noobs uniform label split='*' ; by sector media ;
var analyte gncdi dncdi incdi incdis ;
run ;

data resancdi ; set pgdp.calcall(rename=(med_name=media)) ;
if landuse='Residential' ;
analyte=trim(analysis) ;
label analyte ='Analyte'
    gncdia='Direct ingestion'
    dncdia='Dermal contact'
    incdia='Inhalation of volatiles and particulates'
    gvncdia='Ingestion of vegetables'
    incdisa='Inhalation while showering'
    incdiha='Inhalation from household use' ;
keep sector media anatype analyte dncdia gncdia incdia gvncdia incdisa
 incdiha ;
```

```
proc sort ; by sector media anatype analyte ;

title1 '' ;
title2 '' ;
title3 '' ;
title4 '' ;
title5 '' ;
title6 '' ;
title7 '' ;
title8 '' ;
title9 'Table 1.55a. Noncarcinogenic chronic daily intakes for the adult residential user' ;
footnote1 '' ;
footnote2 '' ;

filename tab55a "wag6_table55a.out"  ;
proc printto print=tab55a new ;

proc print noobs uniform label split='*' ; by sector media ;
var analyte gncdia dncdia incdia gvncdia incdisa incdiha ;
run ;

data rescncdi ; set pgdp.calcall(rename=(med_name=media)) ;
if landuse='Residential' ;
analyte=trim(analysis) ;
label analyte ='Analyte'
    gncdic='Direct ingestion'
    dncdic='Dermal contact'
    incdic='Inhalation of volatiles and particulates'
    gvncdic='Ingestion of vegetables'
    incdisc='Inhalation while showering'
    incdihc='Inhalation from household use' ;
keep sector media anatype analyte dncdic gncdic incdic gvncdic incdisc
 incdihc ;
proc sort ; by sector media anatype analyte ;

title1 '' ;
title2 '' ;
title3 '' ;
title4 '' ;
title5 '' ;
title6 '' ;
title7 '' ;
title8 '' ;
title9 'Table 1.55b. Noncarcinogenic chronic daily intakes for the child residential user' ;
footnote1 '' ;
footnote2 '' ;

filename tab55b "wag6_table55b.out"  ;
proc printto print=tab55b new ;

proc print noobs uniform label split='*' ; by sector media ;
var analyte gncdic dncdic incdic gvncdic incdisc incdihc ;
```

```
run ;

data recancdi ; set pgdp.calcall(rename=(med_name=media)) ;
if landuse='Recreational' ;
analyte=trim(analysis) ;
label analyte ='Analyte'
    gdncdia='Ingestion of deer'
    grncdia='Ingestion of rabbit'
    gqncdia='Ingestion of quail' ;
keep sector media anatype analyte gdncdia grncdia gqncdia ;
proc sort ; by sector media anatype analyte ;

title1 '' ;
title2 '' ;
title3 '' ;
title4 '' ;
title5 '' ;
title6 '' ;
title7 '' ;
title8 '' ;
title9 'Table 1.56a. Noncarcinogenic chronic daily intakes for the adult recreational user' ;
footnote1 '' ;
footnote2 '' ;

filename tab56a "wag6_table56a.out"  ;
proc printto print=tab56a new ;

proc print noobs uniform label split='*' ; by sector media ;
var analyte gdncdia grncdia gqncdia ;
run ;

data reccncdi ; set pgdp.calcall(rename=(med_name=media)) ;
if landuse='Recreational' ;
analyte=trim(analysis) ;
label analyte ='Analyte'
    gdncdic='Ingestion of deer'
    grncdic='Ingestion of rabbit'
    gqncdic='Ingestion of quail' ;
keep sector media anatype analyte gdncdic grncdic gqncdic ;
proc sort ; by sector media anatype analyte ;

title1 '' ;
title2 '' ;
title3 '' ;
title4 '' ;
title5 '' ;
title6 '' ;
title7 '' ;
title8 '' ;
title9 'Table 1.56b. Noncarcinogenic chronic daily intakes for the child recreational user' ;
footnote1 '' ;
footnote2 '' ;
```

```
filename tab56b "wag6_table56b.out"  ;
proc printto print=tab56b new ;

proc print noobs uniform label split='*' ; by sector media ;
var analyte gdncdic grncdic gqncdic ;
run ;

data rectncdi ; set pgdp.calcall(rename=(med_name=media)) ;
if landuse='Recreational' ;
analyte=trim(analysis) ;
label analyte ='Analyte'
    gdncdit='Ingestion of deer'
    grncdit='Ingestion of rabbit'
    gqncdit='Ingestion of quail' ;
keep sector media anatype analyte gdncdit grncdit gqncdit ;
proc sort ; by sector media anatype analyte ;

title1 '' ;
title2 '' ;
title3 '' ;
title4 '' ;
title5 '' ;
title6 '' ;
title7 '' ;
title8 '' ;
title9 'Table 1.56c. Noncarcinogenic chronic daily intakes for the teen recreational user' ;
footnote1 '' ;
footnote2 '' ;

filename tab56c "wag6_table56c.out"  ;
proc printto print=tab56c new ;

proc print noobs uniform label split='*' ; by sector media ;
var analyte gdncdit grncdit gqncdit ;
run ;

data excncdi ; set pgdp.calcall(rename=(med_name=media)) ;
if landuse='Excavation' ;
analyte=trim(analysis) ;
label analyte ='Analyte'
    dncdi='Dermal contact with soil'
    gncdi='Ingestion of soil'
    incdi='Inhalation of volatiles from soil' ;
keep sector media anatype analyte dncdi gncdi incdi ;
proc sort ; by sector media anatype analyte ;

title1 '' ;
title2 '' ;
title3 '' ;
title4 '' ;
title5 '' ;
title6 '' ;
```

```
title7 '' ;
title8 '' ;
title9 'Table 1.57. Noncarcinogenic chronic daily intakes for excavation worker' ;
footnote1 '' ;
footnote2 '' ;

filename tab57 "wag6_table57.out"  ;
proc printto print=tab57 new ;

proc print noobs uniform label split='*' ; by sector media ;
var analyte gncdi dncdi incdi ;
run ;

data indccdi ; set pgdp.calcall(rename=(med_name=media)) ;
if landuse='Future Industrial' ;
analyte=trim(analysis) ;
label analyte ='Analyte'
    dccdi='Dermal contact'
    gccdi='Direct ingestion'
    iccdis='Inhalation while showering'
    iccdi='Inhalation of volatiles and particulates'
    xccdi='External exposure' ;
keep sector media anatype analyte dccdi gccdi iccdi xccdi iccdis ;
proc sort ; by sector media anatype analyte ;

title1 '' ;
title2 '' ;
title3 '' ;
title4 '' ;
title5 '' ;
title6 '' ;
title7 '' ;
title8 '' ;
title9 'Table 1.58. Carcinogenic chronic daily intakes for future industrial worker' ;
footnote1 '' ;
footnote2 '' ;

filename tab58 "wag6_table58.out"  ;
proc printto print=tab58 new ;

proc print noobs uniform label split='*' ; by sector media ;
var analyte gccdi dccdi iccdi iccdis xccdi ;
run ;

data resaccdi ; set pgdp.calcall(rename=(med_name=media)) ;
if landuse='Residential' ;
analyte=trim(analysis) ;
label analyte ='Analyte'
    gccdia='Direct ingestion'
    dccdia='Dermal contact'
    iccdia='Inhalation of volatiles and particulates'
    xccdia='External exposure'
```

```
    gvccdia='Ingestion of vegetables'
    iccdisa='Inhalation while showering'
    iccdiha='Inhalation from household use' ;
keep sector media anatype analyte dccdia gccdia iccdia gvccdia iccdisa
 iccdiha xccdia ;
proc sort ; by sector media anatype analyte ;

title1 '' ;
title2 '' ;
title3 '' ;
title4 '' ;
title5 '' ;
title6 '' ;
title7 '' ;
title8 '' ;
title9 'Table 1.59a. Carcinogenic chronic daily intakes for the adult residential user' ;
footnote1 '' ;
footnote2 '' ;

filename tab59a "wag6_table59a.out"  ;
proc printto print=tab59a new ;

proc print noobs uniform label split='*' ; by sector media ;
var analyte gccdia dccdia iccdia iccdisa iccdiha gvccdia xccdia ;
run ;

data rescccdi ; set pgdp.calcall(rename=(med_name=media)) ;
if landuse='Residential' ;
analyte=trim(analysis) ;
label analyte ='Analyte'
    gccdic='Direct ingestion'
    dccdic='Dermal contact'
    iccdic='Inhalation of volatiles and particulates'
    xccdic='External exposure'
    gvccdic='Ingestion of vegetables'
    iccdisc='Inhalation while showering'
    iccdihc='Inhalation from household use' ;
keep sector media anatype analyte dccdic gccdic iccdic gvccdic iccdisc
 iccdihc xccdic ;
proc sort ; by sector media anatype analyte ;

title1 '' ;
title2 '' ;
title3 '' ;
title4 '' ;
title5 '' ;
title6 '' ;
title7 '' ;
title8 '' ;
title9 'Table 1.59b. Carcinogenic chronic daily intakes for the child residential user' ;
footnote1 '' ;
footnote2 '' ;
```

```
filename tab59b "wag6_table59b.out"  ;
proc printto print=tab59b new ;

proc print noobs uniform label split='*' ; by sector media ;
var analyte gccdic dccdic iccdic iccdisc iccdihc gvccdic xccdic ;
run ;

data recaccdi ; set pgdp.calcall(rename=(med_name=media)) ;
if landuse='Recreational' ;
analyte=trim(analysis) ;
label analyte ='Analyte'
    grccdia='Ingestion of rabbit'
    gqccdia='Ingestion of quail'
    gdccdia='Ingestion of deer' ;
keep sector media anatype analyte gdccdia gqccdia grccdia ;
proc sort ; by sector media anatype analyte ;

title1 '' ;
title2 '' ;
title3 '' ;
title4 '' ;
title5 '' ;
title6 '' ;
title7 '' ;
title8 '' ;
title9 'Table 1.60a. Carcinogenic chronic daily intakes for the adult recreational user' ;
footnote1 '' ;
footnote2 '' ;

filename tab60a "wag6_table60a.out"  ;
proc printto print=tab60a new ;

proc print noobs uniform label split='*' ; by sector media ;
var analyte gdccdia grccdia gqccdia ;
run ;

data recccdi ; set pgdp.calcall(rename=(med_name=media)) ;
if landuse='Recreational' ;
analyte=trim(analysis) ;
label analyte ='Analyte'
    grccdic='Ingestion of rabbit'
    gqccdic='Ingestion of quail'
    gdccdic='Ingestion of deer' ;
keep sector media anatype analyte gdccdic gqccdic grccdic ;
proc sort ; by sector media anatype analyte ;

title1 '' ;
title2 '' ;
title3 '' ;
title4 '' ;
title5 '' ;
title6 '' ;
```

```
title7 '' ;
title8 '' ;
title9 'Table 1.60b. Carcinogenic chronic daily intakes for the child recreational user' ;
footnote1 '' ;
footnote2 '' ;

filename tab60b "wag6_table60b.out"  ;
proc printto print=tab60b new ;

proc print noobs uniform label split='*' ; by sector media ;
var analyte gdccdic grccdic gqccdic ;
run ;

data rectccdi ; set pgdp.calcall(rename=(med_name=media)) ;
if landuse='Recreational' ;
analyte=trim(analysis) ;
label analyte ='Analyte'
    grccdit='Ingestion of rabbit'
    gqccdit='Ingestion of quail'
    gdccdit='Ingestion of deer' ;
keep sector media anatype analyte gdccdit gqccdit grccdit ;
proc sort ; by sector media anatype analyte ;

title1 '' ;
title2 '' ;
title3 '' ;
title4 '' ;
title5 '' ;
title6 '' ;
title7 '' ;
title8 '' ;
title9 'Table 1.60c. Carcinogenic chronic daily intakes for the teen recreational user' ;
footnote1 '' ;
footnote2 '' ;

filename tab60c "wag6_table60c.out"  ;
proc printto print=tab60c new ;

proc print noobs uniform label split='*' ; by sector media ;
var analyte gdccdit grccdit gqccdit ;
run ;

data excccdi ; set pgdp.calcall(rename=(med_name=media)) ;
if landuse='Excavation' ;
analyte=trim(analysis) ;
label analyte ='Analyte'
    dccdi='Dermal contact'
    gccdi='Direct ingestion'
    iccdi='Inhalation of volatiles and particulates'
    xccdi='External exposure' ;
keep sector media anatype analyte dccdi gccdi iccdi xccdi ;
proc sort ; by sector media anatype analyte ;
```

```
title1 '' ;
title2 '' ;
title3 '' ;
title4 '' ;
title5 '' ;
title6 '' ;
title7 '' ;
title8 '' ;
title9 'Table 1.61. Carcinogenic chronic daily intakes for excavation worker' ;
footnote1 '' ;
footnote2 '' ;

filename tab61 "wag6_table61.out"  ;
proc printto print=tab61 new ;

proc print noobs uniform label split='*' ; by sector media ;
var analyte gccdi dccdi iccdi xccdi ;
run ;
```

```
libname pgdp '/data4/pgdp/wag6' ;
options nodate nonumber missing=' ' ls=115 ps=80 ;

data indhq ; set pgdp.calcall(rename=(med_name=media)) ;
if landuse='Current Industrial' and sector not in ('RGA','McNairy') ;
analyte=trim(analysis) ;
label analyte ='Analyte'
    hi ='Chemical Total'
    dhq='Dermal contact'
    ghq='Direct ingestion'
    ihq='Inhalation of volatiles and particulates' ;
keep sector media anatype analyte dhq ghq ihq hi ;
proc sort ; by sector media ;

proc means noprint ; by sector media ;
var dhq ghq ihq hi ;
output out=summary sum=dhq ghq ihq hi ;

data sum1 ; set summary ;
drop _type_ _freq_ ;
analyte='Pathway Total' ;
anatype='ZZ' ;

data sum2 ; set summary ;
drop _type_ _freq_ ;
analyte='Fraction of Total' ;
anatype='ZZZ' ;
dhq=dhq/hi ;
ghq=ghq/hi ;
ihq=ihq/hi ;

data sectotal ; set summary ;
hitot=hi ;
keep sector media hitot ;

data indhq ; merge indhq sectotal ; by sector media ;

data indhq ; set indhq sum1 sum2 ;
format pct_tot 5.2 ;
if analyte not in ('Pathway Total','Fraction of Total') then pct_tot=hi/hitot*100 ;
if analyte='Fraction of Total' then hi=. ;
label pct_tot='% of Total' ;
proc sort ; by sector media anatype analyte ;

title1 '' ;
title2 '' ;
title3 '' ;
title4 '' ;
title5 '' ;
title6 '' ;
title7 '' ;
title8 '' ;
```

```
title9 'Table 1.66. Systemic toxicity for the current industrial worker' ;
footnote1 ' ' ;
footnote2 ' ' ;

filename tab66 "wag6_table66.out"  ;
proc printto print=tab66 new ;

proc print noobs uniform label split='*' ; by sector media ;
var analyte ghq dhq ihq hi pct_tot ;
run ;

data indrisk ; set pgdp.calcall(rename=(med_name=media)) ;
if landuse='Current Industrial' and sector not in ('RGA','McNairy') ;
analyte=trim(analysis) ;
keep sector media anatype analyte drisk grisk irisk xrisk totrisk ;
proc sort ; by sector media ;

proc means noprint ; by sector media ;
var drisk grisk irisk xrisk totrisk ;
output out=summary sum= drisk grisk irisk xrisk totrisk ;

data sum1 ; set summary ;
drop _type_ _freq_ ;
analyte='Pathway Total' ;
anatype='ZZ' ;

data sum2 ; set summary ;
drop _type_ _freq_ ;
analyte='Fraction of Total' ;
anatype='ZZZ' ;
drisk=drisk/totrisk ;
grisk=grisk/totrisk ;
irisk=irisk/totrisk ;
xrisk=xrisk/totrisk ;

data sectotal ; set summary ;
gtotrisk=totrisk ;
keep sector media gtotrisk ;

data indrisk ; merge indrisk sectotal ; by sector media ;

data indrisk ; set indrisk sum1 sum2 ;
format totriskh griskh driskh iriskh xriskh e8. ;
format pct_tot 5.2 ;
if analyte not in ('Pathway Total','Fraction of Total') then
  pct_tot=totrisk/gtotrisk*100 ;

if analyte ne 'Fraction of Total' then do ;
if totrisk>1e-2 then totriskh=1-(exp(-totrisk)) ;
  else totriskh=totrisk ;
if drisk>1e-2 then driskh=1-(exp(-drisk)) ;
  else driskh=drisk ;
```

```
if grisk>1e-2 then griskh=1-(exp(-grisk)) ;
  else griskh=grisk ;
if irisk>1e-2 then iriskh=1-(exp(-irisk)) ;
  else iriskh=irisk ;
if xrisk>1e-2 then xriskh=1-(exp(-xrisk)) ;
  else xriskh=xrisk ;
end ;

if analyte = 'Fraction of Total' then do ;
driskh=drisk ;
griskh=grisk ;
iriskh=irisk ;
xriskh=xrisk ;
end ;

label analyte ='Analyte'
    pct_tot='% of Total'
    totriskh ='Chemical Total'
    driskh='Dermal contact'
    griskh='Direct ingestion'
    iriskh='Inhalation of volatiles and particulates'
    xriskh='External exposure' ;

proc sort ; by sector media anatype analyte ;


title1 '' ;
title2 '' ;
title3 '' ;
title4 '' ;
title5 '' ;
title6 '' ;
title7 '' ;
title8 '' ;
title9 'Table 1.67. Excess lifetime cancer risks for the current industrial worker' ;
footnote1 '' ;
footnote2 '' ;

filename tab67 "wag6_table67.out"  ;
proc printto print=tab67 new ;

proc print noobs uniform label split='*' ; by sector media ;
var analyte griskh driskh iriskh xriskh totriskh pct_tot ;
run ;

data indhq ; set pgdp.calcall(rename=(med_name=media)) ;
if landuse='Future Industrial' ;
analyte=trim(analysis) ;
label analyte ='Analyte'
    hi ='Chemical Total'
    dhq='Dermal contact'
    ghq='Direct ingestion'
```

```
    ihq='Inhalation of volatiles and particulates'
    ihqs='Inhalation while showering' ;
keep sector media anatype analyte dhq ghq ihq ihqs hi ;
proc sort ; by sector media ;

proc means noprint ; by sector media ;
var dhq ghq ihq ihqs hi ;
output out=summary sum=dhq ghq ihq ihqs hi ;

data sum1 ; set summary ;
drop _type_ _freq_ ;
analyte='Pathway Total' ;
anatype='ZZ' ;

data sum2 ; set summary ;
drop _type_ _freq_ ;
analyte='Fraction of Total' ;
anatype='ZZZ' ;
dhq=dhq/hi ;
ghq=ghq/hi ;
ihq=ihq/hi ;
ihqs=ihqs/hi ;

data sectotal ; set summary ;
hitot=hi ;
keep sector media hitot ;

data indhq ; merge indhq sectotal ; by sector media ;

data indhq ; set indhq sum1 sum2 ;
format pct_tot 5.2 ;
if analyte not in ('Pathway Total','Fraction of Total') then pct_tot=hi/hitot*100 ;
if analyte='Fraction of Total' then hi=. ;
label pct_tot='% of Total' ;
proc sort ; by sector media anatype analyte ;

title1 '' ;
title2 '' ;
title3 '' ;
title4 '' ;
title5 '' ;
title6 '' ;
title7 '' ;
title8 '' ;
title9 'Table 1.68. Systemic toxicity for the future industrial worker' ;
footnote1 '' ;
footnote2 '' ;

filename tab68 "wag6_table68.out"  ;
proc printto print=tab68 new ;

proc print noobs uniform label split='*' ; by sector media ;
```

```
var analyte ghq dhq ihq ihqs hi pct_tot ;
run ;

data resahq ; set pgdp.calcall(rename=(med_name=media)) ;
if landuse='Residential' ;
analyte=trim(analysis) ;
label analyte ='Analyte'
    hia='Chemical Total'
    ghqa='Direct ingestion'
    dhqa='Dermal contact'
    ihqa='Inhalation of volatiles and particulates'
    gvhqa='Ingestion of vegetables'
    ihqsa='Inhalation while showering'
    ihqha='Inhalation from household use' ;
keep sector media anatype analyte dhqa ghqa ihqa gvhqa ihqsa hia ihqha ;
proc sort ; by sector media ;

proc means noprint ; by sector media ;
var dhqa ghqa ihqa hia gvhqa ihqsa ihqha ;
output out=summary sum=dhqa ghqa ihqa hia gvhqa ihqsa ihqha ;

data sum1 ; set summary ;
drop _type_ _freq_ ;
analyte='Pathway Total' ;
anatype='ZZ' ;

data sum2 ; set summary ;
drop _type_ _freq_ ;
analyte='Fraction of Total' ;
anatype='ZZZ' ;
dhqa=dhqa/hia ;
ghqa=ghqa/hia ;
ihqa=ihqa/hia ;
gvhqa=gvhqa/hia ;
ihqsa=ihqsa/hia ;
ihqha=ihqha/hia ;

data sectotal ; set summary ;
hitot=hia ;
keep sector media hitot ;

data resahq ; merge resahq sectotal ; by sector media ;

data resahq ; set resahq sum1 sum2 ;
format pct_tot 5.2 ;
if analyte not in ('Pathway Total','Fraction of Total') then pct_tot=hia/hitot*100 ;
if analyte='Fraction of Total' then hia=. ;
label pct_tot='% of Total' ;
proc sort ; by sector media anatype analyte ;

title1 ' ' ;
title2 ' ' ;
```

```
title3 '' ;
title4 '' ;
title5 '' ;
title6 '' ;
title7 '' ;
title8 '' ;
title9 'Table 1.69a. Systemic toxicity for the future adult residential user' ;
footnote1 '' ;
footnote2 '' ;

filename tab69a "wag6_table69a.out"  ;
proc printto print=tab69a new ;

proc print noobs uniform label split='*' ; by sector media ;
var analyte ghqa dhqa ihqa gvhqa ihqsa ihqha hia pct_tot ;
run ;

data reschq ; set pgdp.calcall(rename=(med_name=media)) ;
if landuse='Residential' ;
analyte=trim(analysis) ;
label analyte ='Analyte'
    hic='Chemical Total'
    ghqc='Direct ingestion'
    dhqc='Dermal contact'
    ihqc='Inhalation of volatiles and particulates'
    gvhqc='Ingestion of vegetables'
    ihqsc='Inhalation while showering'
    ihqhc='Inhalation from household use' ;
keep sector media anatype analyte dhqc ghqc ihqc gvhqc ihqsc hic ihqhc ;
proc sort ; by sector media ;

proc means noprint ; by sector media ;
var dhqc ghqc ihqc hic gvhqc ihqsc ihqhc ;
output out=summary sum=dhqc ghqc ihqc hic gvhqc ihqsc ihqhc ;

data sum1 ; set summary ;
drop _type_ _freq_ ;
analyte='Pathway Total' ;
anatype='ZZ' ;

data sum2 ; set summary ;
drop _type_ _freq_ ;
analyte='Fraction of Total' ;
anatype='ZZZ' ;
dhqc=dhqc/hic ;
ghqc=ghqc/hic ;
ihqc=ihqc/hic ;
gvhqc=gvhqc/hic ;
ihqsc=ihqsc/hic ;
ihqhc=ihqhc/hic ;

data sectotal ; set summary ;
```

```
hitot=hic ;
keep sector media hitot ;

data reschq ; merge reschq sectotal ; by sector media ;

data reschq ; set reschq sum1 sum2 ;
format pct_tot 5.2 ;
if analyte not in ('Pathway Total','Fraction of Total') then pct_tot=hic/hitot*100 ;
if analyte='Fraction of Total' then hic=. ;
label pct_tot='% of Total' ;
proc sort ; by sector media anatype analyte ;

title1 '' ;
title2 '' ;
title3 '' ;
title4 '' ;
title5 '' ;
title6 '' ;
title7 '' ;
title8 '' ;
title9 'Table 1.69b. Systemic toxicity for the future child residential user' ;
footnote1 '' ;
footnote2 '' ;

filename tab69b "wag6_table69b.out"  ;
proc printto print=tab69b new ;

proc print noobs uniform label split='*' ; by sector media ;
var analyte ghqc dhqc ihqc gvhqc ihqsc ihqhc hic pct_tot ;
run ;

data recahq ; set pgdp.calcall(rename=(med_name=media)) ;
if landuse='Recreational' ;
analyte=trim(analysis) ;
label analyte ='Analyte'
    hia ='Chemical Total'
    gdhqa='Ingestion of deer'
    grhqa='Ingestion of rabbit'
    gqhqa='Ingestion of quail' ;
keep sector media anatype analyte gdhqa grhqa gqhqa hia ;

proc sort ; by sector media ;

proc means noprint ; by sector media ;
var gdhqa grhqa gqhqa hia ;
output out=summary sum=gdhqa grhqa gqhqa hia ;

data sum1 ; set summary ;
drop _type_ _freq_ ;
analyte='Pathway Total' ;
anatype='ZZ' ;
```

```
data sum2 ; set summary ;
drop _type_ _freq_ ;
analyte='Fraction of Total' ;
anatype='ZZZ' ;
gdhqa=gdhqa/hia ;
grhqa=grhqa/hia ;
gqhqa=gqhqa/hia ;

data sectotal ; set summary ;
hitot=hia ;
keep sector media hitot ;

data recahq ; merge recahq sectotal ; by sector media ;

data recahq ; set recahq sum1 sum2 ;
format pct_tot 5.2 ;
if analyte not in ('Pathway Total','Fraction of Total') then pct_tot=hia/hitot*100 ;
if analyte='Fraction of Total' then hia=. ;
label pct_tot='% of Total' ;
proc sort ; by sector media anatype analyte ;

title1 '' ;
title2 '' ;
title3 '' ;
title4 '' ;
title5 '' ;
title6 '' ;
title7 '' ;
title8 '' ;
title9 'Table 1.70a. Systemic toxicity for the future adult recreational user' ;
footnote1 '' ;
footnote2 '' ;

filename tab70a "wag6_table70a.out"  ;
proc printto print=tab70a new ;

proc print noobs uniform label split='*' ; by sector media ;
var analyte gdhqa grhqa gqhqa hia pct_tot ;
run ;

data recchq ; set pgdp.calcall(rename=(med_name=media)) ;
if landuse='Recreational' ;
analyte=trim(analysis) ;
label analyte ='Analyte'
    hic ='Chemical Total'
    gdhqc='Ingestion of deer'
    grhqc='Ingestion of rabbit'
    gqhqc='Ingestion of quail' ;
keep sector media anatype analyte gdhqc grhqc gqhqc hic ;

proc sort ; by sector media ;
```

```
proc means noprint ; by sector media ;
var gdhqc grhqc gqhqc hic ;
output out=summary sum=gdhqc grhqc gqhqc hic ;

data sum1 ; set summary ;
drop _type_ _freq_ ;
analyte='Pathway Total' ;
anatype='ZZ' ;

data sum2 ; set summary ;
drop _type_ _freq_ ;
analyte='Fraction of Total' ;
anatype='ZZZ' ;
gdhqc=gdhqc/hic ;
grhqc=grhqc/hic ;
gqhqc=gqhqc/hic ;

data sectotal ; set summary ;
hitot=hic ;
keep sector media hitot ;

data recchq ; merge recchq sectotal ; by sector media ;

data recchq ; set recchq sum1 sum2 ;
format pct_tot 5.2 ;
if analyte not in ('Pathway Total','Fraction of Total') then pct_tot=hic/hitot*100 ;
if analyte='Fraction of Total' then hic=. ;
label pct_tot='% of Total' ;
proc sort ; by sector media anatype analyte ;

title1 '' ;
title2 '' ;
title3 '' ;
title4 '' ;
title5 '' ;
title6 '' ;
title7 '' ;
title8 '' ;
title9 'Table 1.70b. Systemic toxicity for the future child recreational user' ;
footnote1 '' ;
footnote2 '' ;

filename tab70b "wag6_table70b.out"  ;
proc printto print=tab70b new ;

proc print noobs uniform label split='*' ; by sector media ;
var analyte gdhqc grhqc gqhqc hic pct_tot ;
run ;

data recthq ; set pgdp.calcall(rename=(med_name=media)) ;
if landuse='Recreational' ;
analyte=trim(analysis) ;
```

```
label analyte ='Analyte'
    hit ='Chemical Total'
    gdhqt='Ingestion of deer'
    grhqt='Ingestion of rabbit'
    gqhqt='Ingestion of quail' ;
keep sector media anatype analyte gdhqt grhqt gqhqt hit ;

proc sort ; by sector media ;

proc means noprint ; by sector media ;
var gdhqt grhqt gqhqt hit ;
output out=summary sum=gdhqt grhqt gqhqt hit ;

data sum1 ; set summary ;
drop _type_ _freq_ ;
analyte='Pathway Total' ;
anatype='ZZ' ;

data sum2 ; set summary ;
drop _type_ _freq_ ;
analyte='Fraction of Total' ;
anatype='ZZZ' ;
gdhqt=gdhqt/hit ;
grhqt=grhqt/hit ;
gqhqt=gqhqt/hit ;

data sectotal ; set summary ;
hitot=hit ;
keep sector media hitot ;

data recthq ; merge recthq sectotal ; by sector media ;

data recthq ; set recthq sum1 sum2 ;
format pct_tot 5.2 ;
if analyte not in ('Pathway Total','Fraction of Total') then pct_tot=hit/hitot*100 ;
if analyte='Fraction of Total' then hit=. ;
label pct_tot='% of Total' ;
proc sort ; by sector media anatype analyte ;

title1 '' ;
title2 '' ;
title3 '' ;
title4 '' ;
title5 '' ;
title6 '' ;
title7 '' ;
title8 '' ;
title9 'Table 1.70c. Systemic toxicity for the future teen recreational user' ;
footnote1 '' ;
footnote2 '' ;

filename tab70c "wag6_table70c.out"  ;
```

```
proc printto print=tab70c new ;

proc print noobs uniform label split='*' ; by sector media ;
var analyte gdhqt grhqt gqhqt hit pct_tot ;
run ;

data exchq ; set pgdp.calcall(rename=(med_name=media)) ;
if landuse='Excavation' ;
analyte=trim(analysis) ;
label analyte ='Analyte'
    hi ='Chemical Total'
    dhq='Dermal contact with soil'
    ghq='Ingestion of soil'
    ihq='Inhalation of volatiles from soil' ;
keep sector media anatype analyte dhq ghq ihq hi ;

proc sort ; by sector media ;

proc means noprint ; by sector media ;
var dhq ghq ihq hi ;
output out=summary sum=dhq ghq ihq hi ;

data sum1 ; set summary ;
drop _type_ _freq_ ;
analyte='Pathway Total' ;
anatype='ZZ' ;

data sum2 ; set summary ;
drop _type_ _freq_ ;
analyte='Fraction of Total' ;
anatype='ZZZ' ;
dhq=dhq/hi ;
ghq=ghq/hi ;
ihq=ihq/hi ;

data sectotal ; set summary ;
hitot=hi ;
keep sector media hitot ;

data exchq ; merge exchq sectotal ; by sector media ;

data exchq ; set exchq sum1 sum2 ;
format pct_tot 5.2 ;
if analyte not in ('Pathway Total','Fraction of Total') then pct_tot=hi/hitot*100 ;
if analyte='Fraction of Total' then hi=. ;
label pct_tot='% of Total' ;
proc sort ; by sector media anatype analyte ;

title1 ' ' ;
title2 ' ' ;
title3 ' ' ;
title4 ' ' ;
```

```
title5 '' ;
title6 '' ;
title7 '' ;
title8 '' ;
title9 'Table 1.71. Systemic toxicity for the future excavation worker' ;
footnote1 '' ;
footnote2 '' ;

filename tab71 "wag6_table71.out"  ;
proc printto print=tab71 new ;

proc print noobs uniform label split='*' ; by sector media ;
var analyte ghq dhq ihq hi pct_tot ;
run ;

data indrisk ; set pgdp.calcall(rename=(med_name=media)) ;
if landuse='Future Industrial' ;
analyte=trim(analysis) ;
keep sector media anatype analyte drisk grisk irisk xrisk irisks totrisk ;
proc sort ; by sector media ;

proc means noprint ; by sector media ;
var drisk grisk irisk xrisk irisks totrisk ;
output out=summary sum= drisk grisk irisk xrisk irisks totrisk ;

data sum1 ; set summary ;
drop _type_ _freq_ ;
analyte='Pathway Total' ;
anatype='ZZ' ;

data sum2 ; set summary ;
drop _type_ _freq_ ;
analyte='Fraction of Total' ;
anatype='ZZZ' ;
drisk=drisk/totrisk ;
grisk=grisk/totrisk ;
irisk=irisk/totrisk ;
irisks=irisks/totrisk ;
xrisk=xrisk/totrisk ;

data sectotal ; set summary ;
gtotrisk=totrisk ;
keep sector media gtotrisk ;

data indrisk ; merge indrisk sectotal ; by sector media ;

data indrisk ; set indrisk sum1 sum2 ;
format totriskh griskh driskh iriskh irisksh xriskh e8. ;
format pct_tot 5.2 ;
if analyte not in ('Pathway Total','Fraction of Total') then
  pct_tot=totrisk/gtotrisk*100 ;
```

```
if analyte ne 'Fraction of Total' then do ;
if totrisk>1e-2 then totriskh=1-(exp(-totrisk)) ;
  else totriskh=totrisk ;
if drisk>1e-2 then driskh=1-(exp(-drisk)) ;
  else driskh=drisk ;
if grisk>1e-2 then griskh=1-(exp(-grisk)) ;
  else griskh=grisk ;
if irisk>1e-2 then iriskh=1-(exp(-irisk)) ;
  else iriskh=irisk ;
if irisks>1e-2 then irisksh=1-(exp(-irisks)) ;
  else irisksh=irisks ;
if xrisk>1e-2 then xriskh=1-(exp(-xrisk)) ;
  else xriskh=xrisk ;
end ;

if analyte = 'Fraction of Total' then do ;
driskh=drisk ;
griskh=grisk ;
iriskh=irisk ;
irisksh=irisks ;
xriskh=xrisk ;
end ;

label analyte ='Analyte'
    pct_tot='% of Total'
    totriskh ='Chemical Total'
    driskh='Dermal contact'
    griskh='Direct ingestion'
    iriskh='Inhalation of volatiles and particulates'
    irisksh='Inhalation while showering'
    xriskh='External exposure' ;

proc sort ; by sector media anatype analyte ;


title1 '' ;
title2 '' ;
title3 '' ;
title4 '' ;
title5 '' ;
title6 '' ;
title7 '' ;
title8 '' ;
title9 'Table 1.72. Excess lifetime cancer risks for the future industrial worker' ;
footnote1 '' ;
footnote2 '' ;

filename tab72 "wag6_table72.out"  ;
proc printto print=tab72 new ;

proc print noobs uniform label split='*' ; by sector media ;
var analyte griskh driskh iriskh irisksh xriskh totriskh pct_tot ;
```

```
run ;

data resrisk ; set pgdp.calcall(rename=(med_name=media)) ;
if landuse='Residential' ;
analyte=trim(analysis) ;
drisk=sum(driska,driskc) ;
grisk=sum(griska,griskc) ;
gvrisk=sum(gvriska,gvriskc) ;
irisk=sum(iriska,iriskc) ;
irisks=sum(irisksa,irisksc) ;
iriskh=sum(iriskha,iriskhc) ;
xrisk=sum(xriska,xriskc) ;

keep sector media anatype analyte drisk grisk irisk gvrisk irisks iriskh xrisk
  totrisk ;
proc sort ; by sector media ;

proc means noprint ; by sector media ;
var drisk grisk irisk gvrisk irisks iriskh xrisk totrisk ;
output out=summary sum=drisk grisk irisk gvrisk irisks iriskh xrisk totrisk ;

data sum1 ; set summary ;
drop _type_ _freq_ ;
analyte='Pathway Total' ;
anatype='ZZ' ;

data sum2 ; set summary ;
drop _type_ _freq_ ;
analyte='Fraction of Total' ;
anatype='ZZZ' ;
drisk=drisk/totrisk ;
grisk=grisk/totrisk ;
gvrisk=gvrisk/totrisk ;
irisk=irisk/totrisk ;
irisks=irisks/totrisk ;
iriskh=iriskh/totrisk ;
xrisk=xrisk/totrisk ;

data sectotal ; set summary ;
gtotrisk=totrisk ;
keep sector media gtotrisk ;

data resrisk ; merge resrisk sectotal ; by sector media ;

data resrisk ; set resrisk sum1 sum2 ;
format totriskh griskh driskh iriskh xriskh gvriskh irisksh iriskhh e8. ;
format pct_tot 5.2 ;
if analyte not in ('Pathway Total','Fraction of Total') then
 pct_tot=totrisk/gtotrisk*100 ;

if analyte ne 'Fraction of Total' then do ;
if totrisk>1e-2 then totriskh=1-(exp(-totrisk)) ;
```

```
  else totriskh=totrisk ;
 if drisk>1e-2 then driskh=1-(exp(-drisk)) ;
  else driskh=drisk ;
 if grisk>1e-2 then griskh=1-(exp(-grisk)) ;
  else griskh=grisk ;
 if gvrisk>1e-2 then gvriskh=1-(exp(-gvrisk)) ;
  else gvriskh=gvrisk ;
 if irisk>1e-2 then iriskh=1-(exp(-irisk)) ;
  else iriskh=irisk ;
 if irisks>1e-2 then irisksh=1-(exp(-irisks)) ;
  else irisksh=irisks ;
 if iriskh>1e-2 then iriskhh=1-(exp(-iriskh)) ;
  else iriskhh=iriskh ;
 if xrisk>1e-2 then xriskh=1-(exp(-xrisk)) ;
  else xriskh=xrisk ;
 end ;

 if analyte = 'Fraction of Total' then do ;
 driskh=drisk ;
 griskh=grisk ;
 gvriskh=gvrisk ;
 iriskh=irisk ;
 irisksh=irisks ;
 iriskhh=iriskh ;
 xriskh=xrisk ;
 end ;

 label analyte ='Analyte'
     pct_tot='% of Total'
     totriskh ='Chemical Total'
     griskh='Direct ingestion'
     driskh='Dermal contact'
     iriskh='Inhalation of volatiles and particulates'
     xriskh='External exposure'
     gvriskh='Ingestion of vegetables'
     irisksh='Inhalation while showering'
     iriskhh='Inhalation from household use' ;

 proc sort ; by sector media anatype analyte ;

 title1 '' ;
 title2 '' ;
 title3 '' ;
 title4 '' ;
 title5 '' ;
 title6 '' ;
 title7 '' ;
 title8 '' ;
 title9 'Table 1.73. Excess lifetime cancer risks for the future residential user' ;
 footnote1 '' ;
 footnote2 '' ;
```

```
filename tab73 "wag6_table73.out"  ;
proc printto print=tab73 new ;

proc print noobs uniform label split='*' ; by sector media ;
var analyte griskh driskh iriskh irisksh iriskhh gvriskh xriskh totriskh pct_tot;
run ;

data recrisk ; set pgdp.calcall(rename=(med_name=media)) ;
if landuse='Recreational' ;
analyte=trim(analysis) ;
grrisk=sum(grriska,grriskc,grriskt) ;
gdrisk=sum(gdriska,gdriskc,gdriskt) ;
gqrisk=sum(gqriska,gqriskc,gqriskt) ;
keep sector media anatype analyte gdrisk gqrisk grrisk totrisk ;
proc sort ; by sector media ;

proc means noprint ; by sector media ;
var gdrisk grrisk gqrisk totrisk ;
output out=summary sum=gdrisk grrisk gqrisk totrisk ;

data sum1 ; set summary ;
drop _type_ _freq_ ;
analyte='Pathway Total' ;
anatype='ZZ' ;

data sum2 ; set summary ;
drop _type_ _freq_ ;
analyte='Fraction of Total' ;
anatype='ZZZ' ;
gdrisk=gdrisk/totrisk ;
grrisk=grrisk/totrisk ;
gqrisk=gqrisk/totrisk ;

data sectotal ; set summary ;
gtotrisk=totrisk ;
keep sector media gtotrisk ;

data recrisk ; merge recrisk sectotal ; by sector media ;

data recrisk ; set recrisk sum1 sum2 ;
format totriskh grriskh gdriskh gqriskh e8. ;
format pct_tot 5.2 ;
if analyte not in ('Pathway Total','Fraction of Total') then
  pct_tot=totrisk/gtotrisk*100 ;

if analyte ne 'Fraction of Total' then do ;
if totrisk>1e-2 then totriskh=1-(exp(-totrisk)) ;
  else totriskh=totrisk ;
if gdrisk>1e-2 then gdriskh=1-(exp(-gdrisk)) ;
  else gdriskh=gdrisk ;
if grrisk>1e-2 then grriskh=1-(exp(-grrisk)) ;
  else grriskh=grrisk ;
```

```
if gqrisk>1e-2 then gqriskh=1-(exp(-gqrisk)) ;
  else gqriskh=gqrisk ;
end ;

if analyte = 'Fraction of Total' then do ;
gdriskh=gdrisk ;
grriskh=grrisk ;
gqriskh=gqrisk ;
end ;

label analyte ='Analyte'
     pct_tot='% of Total'
     totriskh ='Chemical Total'
     grriskh='Ingestion of rabbit'
     gqriskh='Ingestion of quail'
     gdriskh='Ingestion of deer' ;

proc sort ; by sector media anatype analyte ;

title1 '' ;
title2 '' ;
title3 '' ;
title4 '' ;
title5 '' ;
title6 '' ;
title7 '' ;
title8 '' ;
title9 'Table 1.74. Excess lifetime cancer risks for the future recreational user' ;
footnote1 '' ;
footnote2 '' ;

filename tab74 "wag6_table74.out"  ;
proc printto print=tab74 new ;

proc print noobs uniform label split='*' ; by sector media ;
var analyte gdriskh grriskh gqriskh totriskh pct_tot;
run ;

data excrisk ; set pgdp.calcall(rename=(med_name=media)) ;
if landuse='Excavation' ;
analyte=trim(analysis) ;
keep sector media anatype analyte drisk grisk irisk xrisk totrisk ;
proc sort ; by sector media ;

proc means noprint ; by sector media ;
var drisk grisk irisk xrisk totrisk ;
output out=summary sum= drisk grisk irisk xrisk totrisk ;

data sum1 ; set summary ;
drop _type_ _freq_ ;
analyte='Pathway Total' ;
anatype='ZZ' ;
```

```
data sum2 ; set summary ;
drop _type_ _freq_ ;
analyte='Fraction of Total' ;
anatype='ZZZ' ;
drisk=drisk/totrisk ;
grisk=grisk/totrisk ;
irisk=irisk/totrisk ;
xrisk=xrisk/totrisk ;

data sectotal ; set summary ;
gtotrisk=totrisk ;
keep sector media gtotrisk ;

data excrisk ; merge excrisk sectotal ; by sector media ;

data excrisk ; set excrisk sum1 sum2 ;
format totriskh griskh driskh iriskh xriskh e8. ;
format pct_tot 5.2 ;
if analyte not in ('Pathway Total','Fraction of Total') then
  pct_tot=totrisk/gtotrisk*100 ;

if analyte ne 'Fraction of Total' then do ;
if totrisk>1e-2 then totriskh=1-(exp(-totrisk)) ;
  else totriskh=totrisk ;
if drisk>1e-2 then driskh=1-(exp(-drisk)) ;
  else driskh=drisk ;
if grisk>1e-2 then griskh=1-(exp(-grisk)) ;
  else griskh=grisk ;
if irisk>1e-2 then iriskh=1-(exp(-irisk)) ;
  else iriskh=irisk ;
if xrisk>1e-2 then xriskh=1-(exp(-xrisk)) ;
  else xriskh=xrisk ;
end ;

if analyte = 'Fraction of Total' then do ;
driskh=drisk ;
griskh=grisk ;
iriskh=irisk ;
xriskh=xrisk ;
end ;

label analyte ='Analyte'
     pct_tot='% of Total'
     totriskh ='Chemical Total'
     driskh='Dermal contact'
     griskh='Direct ingestion'
     iriskh='Inhalation of volatiles and particulates'
     xriskh='External exposure' ;

proc sort ; by sector media anatype analyte ;
```

```
title1 '' ;
title2 '' ;
title3 '' ;
title4 '' ;
title5 '' ;
title6 '' ;
title7 '' ;
title8 '' ;
title9 'Table 1.75. Excess lifetime cancer risks for the future excavation worker' ;
footnote1 '' ;
footnote2 '' ;

filename tab75 "wag6_table75.out"  ;
proc printto print=tab75 new ;

proc print noobs uniform label split='*' ; by sector media ;
var analyte griskh driskh iriskh xriskh totriskh pct_tot ;
run ;
```

Section 8

RGO calculation program

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```
libname pgdp '/data4/pgdp/wag6' ;
libname mcl '/web/devel/cgi-bin/guide' ;
options nodate nonumber missing=' ' ls=150 ps=60 ;

data calcall ; set pgdp.calcall(rename=(med_name=media)) ;
if hi=. and hic ne . then hi=hic ;
proc sort ; by casnum units ;

data mcl ; set mcl.ky_arar(rename=(casnum=casno)) ;
format mcl e8. ;
if ky1_1='TT' then ky1_1=' ' ;
if ky1_1='2 (3)' then ky1_1='2' ;
if ky1_1 ne ' ' then mcl=input(ky1_1,best8.)/1000 ;
else if ky1_2 ne ' ' then mcl=input(ky1_2,best8.)/1000 ;
units='mg/L' ;
casnum=input(casno,best12.) ;
if casnum=. or mcl=. then delete ;
keep casnum mcl units ;
proc sort ; by casnum units ;

data join ; merge calcall(in=a) mcl(in=b) ; by casnum units ;
proc sort ; by landuse sector med_type media ;

proc means noprint ; by landuse sector med_type media ;
var totrisk hi ;
output out=totals (drop=_type_ _freq_) sum=gtotrisk hi_tot ;

data coc_test ; merge join totals ; by landuse sector med_type media ;
format gtotrisk hi_tot rgo4 rgo5 rgo6 rgopt1 rgo1 rgo3 e8. ;

analyte=trim(analysis) ;

if gtotrisk>1e-6 and totrisk>1e-6 then riskcoc='Yes' ;
else riskcoc='No' ;

if hi_tot>1 and hi>0.1 then hqcoc='Yes' ;
else hqcoc='No' ;

if riskcoc='Yes' then do ;
   rgo4=c*1e-4/totrisk ;
   rgo5=c*1e-5/totrisk ;
   rgo6=c*1e-6/totrisk ;
end ;

if hqcoc='Yes' and hi ne . then do ;
   rgopt1=c*0.1/hi ;
   rgo1  =c*1/hi ;
   rgo3  =c*3/hi ;
end ;

if riskcoc='No' and hqcoc='No' then delete ;
```

```
label analyte ='Analyte'
    mcl    ='Groundwater MCLs'
    c      ='Representative concentration'
    totrisk ='Risk at medium'
    hi     ='Hazard Index at medium'
    rgopt1  ='RGO at HI=0.1'
    rgo1    ='RGO at HI=1'
    rgo3    ='RGO at HI=3'
    rgo6    ='RGO at ELCR=1E-06'
    rgo5    ='RGO at ELCR=1E-05'
    rgo4    ='RGO at ELCR=1E-04'
    units   ='Units' ;
proc sort ; by sector landuse media anatype analyte ;

data gw ; set coc_test ;
if media='Ground water' ;
title1 '' ;
title2 '' ;
title3 '' ;
title4 '' ;
title5 '' ;
title6 '' ;
title7 '' ;
title8 '' ;
title9 'Table 1.92 Remedial goal options for WAG 6' ;
footnote1 '' ;
footnote2 '' ;

filename tab92 'wag6_table92.out' ;
proc printto print=tab92 new ;

proc print noobs uniform label ; by sector landuse media ;
var analyte mcl c totrisk hi rgopt1 rgo1 rgo3 rgo6 rgo5 rgo4 units ;

data sursoil ; set coc_test ;
if media='Surface soil' ;
title1 '' ;
title2 '' ;
title3 '' ;
title4 '' ;
title5 '' ;
title6 '' ;
title7 '' ;
title8 '' ;
title9 'Table 1.92 Remedial goal options for WAG 6' ;
footnote1 '' ;
footnote2 '' ;

proc printto print=tab92 ;

proc print noobs uniform label ; by sector landuse media ;
var analyte c totrisk hi rgopt1 rgo1 rgo3 rgo6 rgo5 rgo4 units ;
```

```
data subsoil ; set coc_test ;
if media='Subsurface soil' ;
title1 '' ;
title2 '' ;
title3 '' ;
title4 '' ;
title5 '' ;
title6 '' ;
title7 '' ;
title8 '' ;
title9 'Table 1.92 Remedial goal options for WAG 6' ;
footnote1 '' ;
footnote2 '' ;

proc printto print=tab92 ;

proc print noobs uniform label ; by sector landuse media ;
var analyte c totrisk hi rgopt1 rgo1 rgo3 rgo6 rgo5 rgo4 units ;

run ;
```

APPENDIX E

COMPLETE TOXICITY PROFILES FOR COCs

The COCs that contribute ≥ 10% of the total risk for a land use are:

iron,
lead,
chromium,
antimony,
arsenic,
PCBs (Aroclor-1260 and polychlorinated biphenyls),
aluminum,
PAHs [benzo(a)pyrene and dibenz(a,h)anthracene],
beryllium,
uranium-235,
uranium-238,
uranium (metal),
vanadium,
vinyl chloride,
lead-210,
trichloroethene,
technetium-99, and
N-nitroso-di-n-propylamine.

This appendix includes toxicity profiles for:

PAHs [benzo(a)pyrene and dibenz(a,h)anthracene],
vinyl chloride, and
trichloroethene.

Toxicity profiles for other COCs are available on the world wide web at the Risk Assessment Information System (http://risk.lsd.ornl.gov/rap_hp.htm) and IRIS (http://www.epa.gov/ngispgm3/iris/subst-fl.htm).

TOXICITY SUMMARY FOR BENZO[*a*]PYRENE

December 1994

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*Managed by Martin Marietta Energy Systems, Inc., for the U.S. Department of Energy under Contract No. DE-AC05-84OR21400

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EXECUTIVE SUMMARY

Benzo[*a*]pyrene is a polycyclic aromatic hydrocarbon (PAH) that can be derived from coal tar. Benzo[*a*]pyrene occurs ubiquitously in products of incomplete combustion of fossil fuels and has been identified in ambient air, surface water, drinking water, waste water, and char-broiled foods (IARC, 1983). Benzo[*a*]pyrene is primarily released to the air and removed from the atmosphere by photochemical oxidation and dry deposition to land or water. Biodegradation is the most important transformation process in soil or sediment (ATSDR, 1990).

Benzo[*a*]pyrene is readily absorbed following inhalation, oral, and dermal routes of administration (ATSDR, 1990). Following inhalation exposure, benzo[*a*]pyrene is rapidly distributed to several tissues in rats (Sun et al., 1982; Weyand and Bevan, 1986). The metabolism of benzo[*a*]pyrene is complex and includes the formation of a proposed ultimate carcinogen, benzo[*a*]pyrene 7,8 diol-9,10-epoxide (IARC, 1983). The major route of excretion is hepatobiliary followed by elimination in the feces (EPA, 1991).

No data are available on the systemic (non-carcinogenic) effects of benzo[*a*]pyrene in humans. In mice, genetic differences appear to influence the toxicity of benzo[*a*]pyrene. Subchronic dietary administration of 120 mg/kg benzo[*a*]pyrene for up to 180 days resulted in decreased survival due to hematopoietic effects (bone narrow depression) in a "nonresponsive" strain of mice (i.e., a strain whose cytochrome P-450 mediated enzyme activity is not induced as a consequence of PAH exposure). No adverse effects were noted in "responsive" mice (i.e., a strain capable of inducing increased cytochrome P-450 mediated enzyme activity as a consequence of PAH exposure) (Robinson et al., 1975). Immunosuppression has been reported in mice administered daily intraperitoneal injections of 40 or 160 mg/kg of benzo[*a*]pyrene for 2 weeks, with more pronounced effects apparent in "nonresponsive" mice (Blanton et al., 1986; White et al., 1985). In utero exposure to benzo[*a*]pyrene has produced adverse developmental/reproductive effects in mice. Dietary administration of doses as low as 10 mg/kg during gestation caused reduced fertility and reproductive capacity in offspring (Mackenzie and Angevine, 1981), and treatment by gavage with 120 mg/kg/day during gestation caused stillbirths, resorptions, and malformations (Legraverend et al., 1984). Similar effects have been reported in intraperitoneal injection studies (ATSDR, 1990). Neither a reference dose (RfD) nor a reference concentration (RfC) has been derived for benzo[*a*]pyrene.

Numerous epidemiologic studies have shown a clear association between exposure to various mixtures of PAHs containing benzo[*a*]pyrene (e.g., coke oven emissions, roofing tar emissions, and cigarette smoke) and increased risk of lung cancer and other tumors. However, each of the mixtures also contained other potentially carcinogenic PAHs; therefore, it is not possible to evaluate the contribution of benzo[*a*]pyrene to the carcinogenicity of these mixtures (IARC, 1983; EPA, 1991). An extensive data base is

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available for the carcinogenicity of benzo[*a*]pyrene in experimental animals. Dietary administration of benzo[*a*]pyrene has produced papillomas and carcinomas of the forestomach in mice (Neal and Rigdon, 1967), and treatment by gavage has produced mammary tumors in rats (McCormick et al., 1981) and pulmonary adenomas in mice (Wattenberg and Leong, 1970). Exposure by inhalation and intratracheal instillation has resulted in benign and malignant tumors of the respiratory and upper digestive tracts of hamsters (Ketkar et al., 1978; Tstudies have shown that benzo[*a*]pyrene induces skin tumors in several species, although mice appear to be the most sensitive species. Benzo[*a*]pyrene is a complete carcinogen and also an initiator of skin tumors (IARC, 1973; EPA, 1991). Benzo[*a*]pyrene has also been reported to induce tumors in animals when administered by other routes, such as intravenous, intraperitoneal, subcutaneous, intrapulmonary, and transplacental.

Based on United States Environmental Protection Agency (EPA) guidelines, benzo[*a*]pyrene was assigned to weight-of-evidence group B2, probable human carcinogen. For oral exposure, the slope factor and unit risk are 7.3E+0 $(mg/kg/day)^{-1}$ and 2.1E-4 $(\mu g/L)^{-1}$, respectively (EPA, 1994).

1. INTRODUCTION

Benzo[*a*]pyrene (CAS Reg. No. 50-32-8), also known as 1,4-benzo[*a*]pyrene (BaP), is a polycyclic aromatic hydrocarbon (PAH) with a chemical formula of $C_{20}H_{12}$ and a molecular weight of 252.3. It exists as yellowish plates and needles, has a boiling point of 310-312 °C at 10 mm Hg (Budavari et al., 1989), a melting point of 178 °C, and a density of 1.35 (EPA, 1991). Benzo[*a*]pyrene is practically insoluble in water but is soluble in benzene, toluene, xylene and sparingly soluble in alcohol and methanol (Budavari et al., 1989). It has a vapor pressure of 5.0 x 1^{-1} torr and a log octanol/water coefficient of 6.04 (EPA, 1991).

No current commercial production or use of benzo[*a*]pyrene is known. It occurs ubiquitously in products of incomplete combustion and in fossil fuels. It has been identified in surface water, tap water, rain water, groundwater, waste water, and sewage sludge (EPA, 1991). Benzo[*a*]pyrene is primarily released to the air and removed from the atmosphere by photochemical oxidation and dry deposition to land or water. Biodegradation is the primary transformation process in soil or sediment (ATSDR, 1990). The estimated half-lives for benzo[*a*]pyrene are less than 1-6 days in the atmosphere, less than 1-8 hours in water, 5-10 years in sediment, and greater than 14-16 months in soil (for complete degradation) (EPA, 1984). Benzo[*a*]pyrene is one of a number of PAHs on EPA's priority pollutant list (ATSDR, 1990).

2. METABOLISM AND DISPOSITION

2.1 ABSORPTION

Benzo[*a*]pyrene is readily absorbed by the oral, inhalation, and dermal routes of exposure (ATSDR, 1990). Rats given benzo[*a*]pyrene in starch solution by gavage (100 mg) or in the diet (250 mg) absorbed 40% or 60%, respectively, of the administered compound (Chang, 1943). The absorption of benzo[a]pyrene from the gastrointestinal tract of mice and cats is enhanced when it is solubilized in vehicles possessing both lipophilic and hydrophilic properties (Ekwall et al., 1951). Once benzo[a]pyrene has entered the small intestine, it is solubilized by bile salts and absorbed (Ermala et al., 1951).

In rats exposed by inhalation to 1 μg/L radiolabeled benzo[*a*]pyrene for 30 minutes, monitoring of excretion over a 2-week period showed nearly complete recovery of radioactivity (predominantly in feces), indicating nearly complete absorption (Sun et al., 1982).

Under in vitro conditions, 3% of an applied dose of benzo[*a*]pyrene permeated human skin after 24 hours. When tested in several animal species, the permeation was highest in the mouse (10%) and lowest in the guinea pig (0.1%) (Kao et al., 1985). Following topical application of radiolabeled benzo[*a*]pyrene to the skin of mice, Heidelberger and Weiss (1951) recovered most of the radioactivity in the feces within 16 days, indicating significant absorption of benzo[*a*]pyrene through the skin.

2.2 DISTRIBUTION

According to Rees et al. (1971), 10-20% of an intragastric dose of benzo[*a*]pyrene (10 mg) entered the thoracic lymph duct in rats (levels in other tissues were not determined). Other data concerning the tissue distribution of benzo[*a*]pyrene following oral exposure were not available.

In rats exposed by inhalation, distribution of absorbed benzo[*a*]pyrene is rapid, with highest levels found in the liver, esophagus, small intestine, and blood 30 minutes after exposure (Sun et al., 1982). Five minutes after intratracheal instillation of benzo[*a*]pyrene to rats, the percentages of the administered dose in tissues were lungs (59.5%), carcass (14.4%), liver (12.5%), blood (3.9%), and intestines (1.9%). At 60 minutes, the percentages were lungs (15.4%), carcass (27.1%), liver (15.8%), blood (1.6%), and intestines (9.9%) (Weyand and Bevan, 1986).

Topical administration of ^{14}C-benzo[*a*]pyrene in benzene to the shaved backs of mice was followed by a biphasic disappearance of radioactivity from the application site, with half-lives of 40 and 104 hours (Heidelberger and Weiss, 1951).

Benzo[*a*]pyrene can readily cross the placenta following oral, intravenous, or subcutaneous administration. This observation is consistent with the observed toxicity in the fetuses and offspring of maternally exposed rodents (IARC, 1983; ATSDR, 1990).

2.3. METABOLISM

The metabolism of benzo[*a*]pyrene has been extensively studied in the literature and only the most important pathways will be presented in this summary. As outlined in IARC (1983), benzo[*a*]pyrene is metabolized initially by the microsomal cytochrome P-450 monooxygenase system to several arene oxides, which may rearrange spontaneously to phenols, undergo hydration to the corresponding trans-dihydrodiols, or react covalently with glutathione, either spontaneously or in a reaction catalyzed by glutathione-S-transferases. One of the phenolic metabolites, 6-hydroxybenzo[*a*]pyrene, is further oxidized to the 1,6-, 3,6-, or 6,12-quinones. The phenols, quinones, and dihydrodiols can be detoxified by conjugation to glucuronides and sulfate esters, and the quinones can also form glutathione

conjugates. In addition to conjugation, the dihydrodiols undergo further oxidative metabolism. Benzo[*a*]pyrene 7,8-dihydrodiol is in part oxidized to 7,8-diol-9,10-epoxide, a compound considered to be the ultimate carcinogenic metabolite of benzo[*a*]pyrene.

2.4 EXCRETION

Hepatobiliary excretion and elimination in the feces is the primary route for benzo[*a*]pyrene metabolic excretions (EPA, 1991). Two weeks following inhalation exposure to radiolabeled benzo[*a*]pyrene for 30 minutes, most of the radioactivity was recovered in the feces of rats (Sun et al., 1982). Similarly, essentially all of the radioactivity was recovered in the feces of mice that had been treated topically with radiolabeled benzo[*a*]pyrene (Heidelberger and Weiss, 1951). Kotin et al. (1959) reported that approximately 75% of a subcutaneously injected dose of benzo[*a*]pyrene was recovered in the feces of mice within 6 days of injection, while only 12% was eliminated in the urine. In rats, 39% of an intravenous dose was found in the bile at 3 hours and as much as 96% by 14 hours. Less than 1% of recovered benzo[*a*]pyrene in the bile was unmetabolized. In rats with bile duct cannulation, 3-4% of the dose was recovered in the urine, while intact rats had a urinary excretion of 7-14%, suggesting enterohepatic circulation of metabolites. No evidence suggested that benzo[*a*]pyrene is eliminated via expired air.

3. NONCARCINOGENIC HEALTH EFFECTS

3.1 ORAL EXPOSURES

3.1.1 Acute Toxicity

Information on the acute oral toxicity of benzo[*a*]pyrene in humans or animals is not available.

3.1.2 Subchronic Toxicity

3.1.2.1 Human

Information on the subchronic oral toxicity of benzo[*a*]pyrene in humans is not available.

3.1.2.2 Animal

Genetic differences appear to influence the oral toxicity of benzo[*a*]pyrene in mice. Robinson et al. (1975) investigated the effects of oral administration of benzo[*a*]pyrene in several strains of mice, classified as "responsive" (those capable of producing increased levels of cytochrome P-450 mediated enzymes as a consequence of PAH exposure) or "nonresponsive" (those not highly responsive to producing increased levels of cytochrome P-450 mediated enzymes as a consequence of PAH exposure). Following dietary administration of 120 mg/kg of benzo[*a*]pyrene for up to 180 days, survival of all "nonresponsive" mice was shortened. Death appeared to be due to bone marrow depression (aplastic anemia, pancytopenia). The "responsive" mice remained healthy for at least 6 months. The authors concluded that decreased survival in "nonresponsive" mice was associated with a single gene difference in PAH responsiveness.

3.1.3 Chronic Toxicity

Information on the chronic oral toxicity of benzo[*a*]pyrene in humans or animals was not available.

3.1.4 Developmental and Reproductive Toxicity

3.1.4.1 Human

Information on the developmental and reproductive toxicity of benzo[*a*]pyrene in humans following oral exposure is not available.

3.1.4.2 Animal

No reproductive or developmental toxicity was observed in male or female White Swiss mice fed diets containing 0, 250, 500, or 1000 mg/kg benzo[*a*]pyrene over various time periods during mating, gestation, and lactation (Rigdon and Neal, 1965). However, Mackenzie and Angevine (1981) reported that administration of 10 mg/kg to CD-1 mice by gavage during gestation produced decreased gonadal weights and reduced fertility and reproductive capacity in the offspring. Higher doses (40 mg/kg) caused almost complete sterility in both sexes of offspring.

Legraverend et al. (1984) investigated the effect of genetic differences in benzo[*a*]pyrene metabolism on the reproductive or developmental toxicity in "responsive" and "nonresponsive" mice (benzo[*a*]pyrene metabolism occurs more readily in the "responsive" genotypes). Pregnant mice were fed 120 mg/kg/day on days 2-10 of gestation. Treatment with benzo[*a*]pyrene resulted in stillbirths, resorptions, and malformations in both genotypes of mice; however, the incidence of these effects was higher among "nonresponsive" embryos than among "responsive" embryos. The study suggests that it is benzo[a]pyrene and not a metabolite which is responsible for the noted adverse effects.

3.1.5 Reference Dose

An oral reference dose (RfD) for benzo[*a*]pyrene has not been derived.

3.2 INHALATION EXPOSURES

3.2.1 Acute Toxicity

Information on the acute toxicity of benzo[*a*]pyrene in humans or animals following inhalation exposure is not available.

3.2.2 Subchronic Toxicity

Information on the subchronic toxicity of benzo[*a*]pyrene in humans or animals following inhalation exposure is not available.

3.2.3 Chronic Toxicity

Information on the chronic toxicity of benzo[*a*]pyrene in humans or animals following inhalation exposure is not available.

3.2.4 Developmental and Reproductive Toxicity

Information on the developmental and reproductive toxicity of benzo[*a*]pyrene in humans or animals following inhalation exposure is not available.

3.2.5 Reference Concentration

An inhalation reference concentration (RfC) for benzo[*a*]pyrene has not been derived.

3.3 OTHER ROUTES OF EXPOSURE

3.3.1 Acute Toxicity

3.3.1.1 Human

Information on the acute toxicity of benzo[*a*]pyrene in humans by other routes of exposure was not available.

3.3.1.2 Animal

The intraperitoneal (i.p.) LD_{50} for the mouse is 232 mg/kg (Salamone, 1981), and the subcutaneous (s.c.) LD_{50} for the rat is 50 mg/kg (RTECS, 1994). Reduced survival was reported in "responsive" mice administered a single i.p. injection of 500 mg/kg benzo[*a*]pyrene (Robinson et al., 1975). Subcutaneous injections of benzo[*a*]pyrene (5, 20, or 40 mg/kg) caused a dose-related suppression of both T-cell independent and T-cell dependent antigens in mice (White and Holsapple, 1984). Wojdani et al. (1984) injected two strains of mice with tumor target cells; this treatment was followed by i.p. injections of 0, 0.5, 5, or 50 mg/kg of benzo[*a*]pyrene. At the two higher doses, significant decreases were reported in lymphocytes binding to target cells or killing target cells. The investigators indicated that lymphocyte-mediated immunity may be inhibited by benzo[*a*]pyrene and that this immunosuppresive effect may contribute to its carcinogenicity.

3.3.2 Subchronic Toxicity

3.3.2.1 Human

Information on the subchronic toxicity of benzo[*a*]pyrene by other routes of exposure in humans is not available.

3.3.2.2 Animal

Immunotoxic effects as a consequence of benzo[*a*]pyrene have been studied by a number of investigators. For example, a 60% suppression of antibody response was reported in $B6C3F_1$ mice (a highly "responsive" strain) administered 14 daily s.c. injections of 160 μmol/kg benzo[*a*]pyrene. In DBA/2 mice (a strain not highly "responsive") subjected to the same dosing protocol, immunosuppression was more pronounced (White et al., 1985). Daily s.c. injections of 40 mg/kg benzo[*a*]pyrene for 14 days resulted in a 98% depression of the T-cell-dependent antibody response in $B6C3F_1$ mice. Polyclonal antibody responses were reduced 50 to 66% following benzo[*a*]pyrene (Blanton et al., 1986).

3.3.3 Chronic Toxicity

Information on the chronic toxicity of benzo[*a*]pyrene by other routes of exposure in humans or animals is not available.

3.3.4 Developmental and Reproductive Toxicity

3.3.4.1 Human

Information on the developmental or reproductive toxicity of benzo[*a*]pyrene by other routes of exposure in humans was not available.

3.3.4.2 Animal

Adverse developmental/reproductive effects were observed in several injection studies with benzo[*a*]pyrene. These studies are reviewed in an ATSDR report (1990), but experimental details were not provided. Intraperitoneal administration of benzo[*a*]pyrene to mice has resulted in stillbirths, resorptions, and malformations; decreases in follicular growth and corpora lutea; and testicular changes. Subcutaneous injections of benzo[*a*]pyrene produced increased resorptions in rats and direct embryonal injection led to decreased fetal survival in mice.

3.4 TARGET ORGANS/CRITICAL EFFECTS

3.4.1 Oral Exposures

3.4.1.1 Primary target organs

1. Hematopoietic system: Subchronic oral exposure produced bone marrow depression (aplastic anemia and pancytopenia) and ultimately death in "nonresponsive" mice.

2. Reproduction/development: Exposure during gestation of mice produced decreased gonadal weights, reduced fertility, and sterility in offspring. Stillbirths, resorptions, and malformations were seen in "responsive" and "nonresponsive" mice; however, the incidence of these effects was higher in "nonresponsive" mice.

3.4.1.2 Other target organs

Other target organs for oral exposure have not been identified.

3.4.2 Inhalation Exposures

Target organs for inhalation exposure to benzo[*a*]pyrene have not been identified.

3.4.3 Other Routes of Exposure

3.4.3.1 Primary target organs

1. Immune system: Subcutaneous injections of benzo[*a*]pyrene administered over a 2-week period caused depressed antibody responses in mice.

2. Reproduction/development: Intraperitoneal injections of benzo[*a*]pyrene have resulted in stillbirths, resorptions, malformations, decreased follicular growth and corpora lutes, and testicular changes in mice. Subcutaneous injections produced increased resorptions in rats.

3.4.3.2 Other target organs

Other target organs for other routes of exposure have not been identified.

4. CARCINOGENICITY

4.1 ORAL EXPOSURES

4.1.1 Human

Information on the carcinogenicity of benzo[*a*]pyrene in humans following oral exposure is not available.

4.1.2 Animal

In a study by Brune et al. (1981), male and female Sprague-Dawley rats were fed 0.15 mg/kg every 9th day or 5 times/week for life. The incidence of tumors of the forestomach, esophagus, and larynx (combined) was 5% for controls and for rats fed benzo[*a*]pyrene every 9th day and 16% for rats fed benzo[*a*]pyrene 5 times/week. Administration of a single 50-mg dose of benzo[*a*]pyrene or of 8 weekly doses of 6.25 mg by gavage induced mammary tumors in LEW/Mai rats (McCormick et al., 1981). The incidence of mammary carcinomas after 90 weeks was 77% for the single exposure and 67% for the multiple exposures. Mammary tumors were observed in 30% of controls. Huggins and Yang (1962) reported that a single oral dose of 100 mg benzo[*a*]pyrene administered by gavage induced mammary tumors in 8/9 female Sprague-Dawley rats.

Neal and Rigdon (1967) fed male and female CFW-Swiss mice a diet containing 1 to 250 ppm benzo[*a*]pyrene for up to 197 days. No tumors were found in the control group and in groups treated with 1, 10, or 30 ppm. However, forestomach papillomas and carcinomas developed at dietary concentrations of greater than or equal to 40 ppm. The authors indicated that the tumor incidence was related to both the concentration and the number of doses administered. Female mice administered 200 or 300 ppm benzo[*a*]pyrene in the diet for a relatively short time (12 weeks) developed tumors of the forestomach (Triolo et al., 1977). Pulmonary adenomas developed in A/HeJ mice treated by gavage with two daily doses of 3 mg benzo[*a*]pyrene at 2-week intervals (Wattenberg and Leong, 1970). The pulmonary tumor count increased from 0.3 tumors/mouse in controls to 16.6 tumors/mouse in the treated group at 30 weeks of age.

4.2 INHALATION EXPOSURES

4.2.1 Human

Numerous epidemiologic studies have shown a clear association between inhalation exposure to various mixtures containing PAHs (e.g., coke oven emissions, roofing tar emissions, and cigarette smoke) and increased risk of lung cancer and other cancers. Each of these mixtures contained benzo[*a*]pyrene as well as other carcinogenic PAHs and other potentially carcinogenic chemicals; therefore, it is not possible to evaluate the contribution of benzo[*a*]pyrene to the carcinogenicity of these mixtures (IARC, 1983; EPA, 1991).

4.2.2 Animal

Thyssen et al. (1981) exposed Syrian hamsters to benzo[*a*]pyrene at concentrations of 0, 2.2, 9.5, or 46.5 mg/m^3, 4.5 hours/day for 10 days and then 3 hours/day for up to 675 days. No treatment-related tumors were observed in hamsters exposed to 2.2 mg/m^3 or in controls. Hamsters exposed to 9.5 mg/m^3 developed papillomas and squamous cell carcinomas located primarily in the nasal cavity, larynx, trachea, and pharynx. In addition to respiratory tract tumors, hamsters exposed to the highest concentration also developed tumors of the upper digestive tract.

Intratracheal administration of benzo[*a*]pyrene also induced neoplasms of the respiratory tract in male and female Syrian hamsters. Weekly intratracheal administration of benzo[*a*]pyrene (total doses 18.2 or 36.4 mg/animal) for 52 weeks produced a dose-related increase of tracheal papillomas/carcinomas and lung adenomas. Similar effects were reported following weekly intratracheal administration of doses ranging from 0.1 to 1 mg up to 40 weeks, but the response was not clearly dose-related (Ketkar et al., 1978).

4.3 OTHER ROUTES OF EXPOSURE

4.3.1 Human

Human tumorigenicity has been reported in a number of studies as a result of dermal exposure to complex mixtures of PAHs containing benzo[*a*]pyrene. An early report (Pott, 1775) described scrotal cancer in chimney sweeps. More recently, skin cancer has occurred in workers exposed to shale oil (Purde and Etlin, 1980) and creosote (Lenson, 1956). However, the contribution of benzo[*a*]pyrene to the carcinogenicity of these PAH mixtures is uncertain.

In an experimental study, epidermal changes (erythema, pigmentation, and desquamation) were reported following daily applications of a 1% solution of benzo[*a*]pyrene to the skin of humans over a 4-month period. Although reversible and benign, these changes were thought to represent early stages of neoplastic proliferation

(Cottini and Mazzone, 1939). It should be noted that benzo[*a*]pyrene was applied as a solution in benzene, and no benzene control was evaluated. Similar epithelial changes were reported in humans accidentally exposed to benzo[*a*]pyrene (EPA, 1984).

4.3.2 Animal

Benzo[*a*]pyrene is among the most potent and best documented skin carcinogens and is commonly used as a positive control in skin application assays of other chemicals. Benzo[*a*]pyrene has been shown to cause skin tumors in mice, rats, rabbits, and guinea pigs, although mice appear to be the most sensitive species. It is both an initiator and complete carcinogen in mouse skin (IARC, 1973; EPA, 1991).

Wynder and Hoffmann (1959) applied 0.001, 0.005, or 0.01% benzo[*a*]pyrene in acetone to the backs of female Swiss mice three times weekly for life. For the three dose groups, the incidence of skin papillomas was 95, 100, or 85%, respectively, and the incidence of skin carcinomas was 4, 86, or 95%, respectively. Data for a solvent control group were not provided. In initiation/promotion experiments, Hoffmann and Wynder (1966) applied 10 doses of benzo[*a*]pyrene in dioxane (total dose 0.25 mg) every 2 days to the skin of mice. This treatment was followed by application of 2.5% croton oil in acetone. Skin papillomas developed in 80% of treated animals and in 7% of controls (receiving croton oil alone).

The modifying effects of solvents on the carcinogenicity of benzo[*a*]pyrene have been demonstrated in several studies. For example, Bingham and Falk (1969) treated C3H/He mice topically with different concentrations of benzo[*a*]pyrene in either *n*-dodecane or a *n*-dodecane/decalin mixture three times weekly for 50 weeks. When *n*-dodecane/decalin was used as a solvent, malignant skin tumors appeared in 5/24 mice treated with 0.00002% benzo[*a*]pyrene, and the tumor incidence increased at higher concentrations. With decalin alone as a solvent, malignant skin tumors developed in 5/12 mice treated with 0.02%, but none were seen at lower concentrations. Other topical application studies with mice demonstrated synergistic effects of cigarette smoke condensates on skin tumor induction (IARC, 1973).

Benzo[*a*]pyrene has been shown to produce tumors at various sites by other modes of administration. A 94% incidence of lung adenomas was reported in newborn mice injected i.p. with 280 μg/mouse of benzo[*a*]pyrene (Busby et al., 1984). Newborn rats treated with a single i.p. injection of 0.59 μmol benzo[*a*]pyrene/kg and observed for life developed hepatic tumors. The tumor incidence was 37% for males and 57% for females (Peraino et al., 1984). Several studies reported injection site tumors in mice, rats, guinea pigs, hamsters, and some primates administered s.c. injections of benzo[*a*]pyrene (EPA, 1994). In addition to injection site sarcomas, newborn mice administered benzo[*a*]pyrene by s.c. injection developed hepatomas or lung adenomas (EPA, 1991; IARC, 1973). Benzo[*a*]pyrene has also been reported to induce tumors when administered by the intravenous and transplacental

route; by implantation in the stomach wall, renal parenchyma, and brain; by injection in the renal pelvis; and by vaginal painting (EPA, 1994).

4.4 EPA WEIGHT-OF-EVIDENCE

Classification: B2, probable human carcinogen (EPA, 1994).

Basis: Human data specifically linking benzo[*a*]pyrene to a carcinogenic effect are lacking. However, multiple animal studies in many species demonstrating benzo[*a*]pyrene to be carcinogenic by numerous routes exist (EPA, 1994).

Note: The carcinogenicity risk assessment for benzo[*a*]pyrene may change in the future pending further review by EPA.

4.5 CARCINOGENICITY SLOPE FACTORS

4.5.1 Oral

SLOPE FACTOR: 7.3E+0 $(mg/kg/day)^{-1}$ (EPA, 1994)
UNIT RISK: 2.1E-4 $(\mu g/L)^{-1}$
PRINCIPAL STUDIES: Brune et al., 1981; Neal and Rigdon, 1967; Rabstein et al., 1973 (historical control data)

COMMENT: The slope factor, the geometric mean of four calculated slope factors [range 4.5E+0 to 11.7E+0 $(mg/kg/day)^{-1}$], was derived using multiple data sets from different studies employing more than one sex, strain, and species. EPA considered the data less than optimal but acceptable.

4.5.2 Inhalation

An inhalation slope factor has not been calculated.

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TOXICITY SUMMARY FOR BENZ[*a*]ANTHRACENE

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EXECUTIVE SUMMARY

Benz[*a*]anthracene, along with a number of other polycyclic aromatic hydrocarbons, are natural products produced by the incomplete combustion of organic material. The arrangement of the aromatic rings in the benz[*a*]anthracene molecule gives it a "bay region" often correlated with carcinogenic properties. In general, the bay-region polycyclic aromatic hydrocarbons and some of their metabolites are known to react with cellular macromolecules, including DNA, which may account for both their toxicity and carcinogenicity. The inducible mixed-function oxidase enzymes oxidize benz[*a*]anthracene to form metabolites with increased water solubility that can be efficiently excreted in the urine. A minor product of this oxidation, a bay-region diol epoxide, reacts readily with DNA and has been shown to be highly carcinogenic (U.S. EPA, 1980; 1984; Jerina, et al., 1977).

The toxic effects of benz[*a*]anthracene and similar polycyclic aromatic hydrocarbons are primarily directed toward tissues that contain proliferating cells. Animal studies indicate that exposure to bay-region polycyclic aromatic hydrocarbons can damage the hematopoietic system leading to progressive anemia as well as agranulocytosis (Robinson, et al., 1975; Cawein and Sydnor, 1968). The lymphoid system can also be affected resulting in lymphopenia. Toxic effects have been observed in the rapidly dividing cells of the intestinal epithelium, spermatogonia and resting spermatocytes in the testis and primary oocytes of the ovary (Philips et al., 1973; Mackinzie and Angevine, 1981; Kraup, 1970; Ford and Huggins, 1963; Mattison and Thorgeirsson, 1977; U.S. EPA, 1980; 1984). Most of these effects have occurred following both oral and parenteral exposure. Epithelial proliferation and cell hyperplasia in the respiratory tract have been reported following subchronic inhalation exposure (Reznik-Schuller and Mohr, 1974; Saffiotti et al., 1968). However, because of the lack of quantitative data, neither a reference dose nor a reference concentration have been derived (U.S. EPA, 1991).

The primary concern with benz[*a*]anthracene exposure is its potential carcinogenicity. There is no unequivocal, direct evidence of the carcinogenicity of the compound to humans, however, benz[*a*]anthracene and other known carcinogenic polycyclic aromatic hydrocarbons are components of coal tar, soot, coke oven emissions and tobacco smoke. There is adequate evidence of its carcinogenic properties in animals. Oral exposures of mice to benz[*a*]anthracene have resulted in hepatomas, pulmonary adenomas and forestomach papillomas (Klein, 1963; Bock and King, 1959; U.S. EPA, 1991). The EPA weight-of-evidence classification is: B2, probable human carcinogen, for both oral and inhalation exposure based on adequate animal evidence and no human evidence (U.S. EPA, 1991). A slope factor has not been derived specifically for benz[*a*]anthracene by the EPA (U.S. EPA, 1991). However, an oral slope factor of 7.3 $(mg/kg/day)^{-1}$ has been calculated for benzo[*a*]pyrene based on the incidence of stomach tumors in mice treated with benzo[*a*]pyrene (Neal and Rigdon, 1967; U.S. EPA, 1980; 1984; 1992a). A drinking water unit risk of 2.1E-4 $(\mu g/L)^{-1}$ has also been calculated for benzo[*a*]pyrene (U.S. EPA, 1992a). An inhalation slope factor of 6.1 $(mg/kg/day)^{-1}$ (U.S. EPA, 1992b) was calculated for benzo[*a*]pyrene based on the incidence of respiratory tumors in golden hamsters treated with benzo[*a*]pyrene (Thyssen et al., 1981; U.S. EPA, 1980; 1984). An inhalation unit risk of 1.7E-3 $(\mu g/m^3)^{-1}$ has also been calculated for benzo[*a*]pyrene (U.S. EPA, 1992b).

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1. INTRODUCTION

Benz[*a*]anthracene (CAS registry number 56-55-3) is a polycyclic aromatic hydrocarbon containing four aromatic rings two of which share carbons with only one other ring. It is soluble in alcohol, ether and benzene but practically insoluble in water (9.4 µg/kg @ 25°C) (U.S. EPA, 1984; Weast, 1987). There is no commercial application for benz[*a*]anthracene, however, it is a ubiquitous contaminant formed during the incomplete combustion of organic material. Benz[*a*]anthracene is found in various kinds of smoke and flue gases, tobacco smoke, tobacco smoke condensate, automobile exhaust, roasted coffee and in charcoal broiled, barbecued or smoked meats. It is also found in creosote, coal tar, petroleum asphalt, and a variety of foods, including vegetable oils and baker's yeast. It is an atmospheric contaminant near power plants and busy highways, and tends to bind to particulate matter in the atmosphere. The primary removal mechanism from the atmosphere is thought to be ozonolysis reactions, where the expected half-life is less than 1 day to several weeks dependent on the nature of the particulate matter to which it is adsorbed. Benz[*a*]anthracene is also adsorbed to soil particulates where it undergoes degradation by microorganisms. It can persist in the soil from days to years depending on the adsorbent and the microorganisms present. The water insolubility of benz[*a*]anthracene limits its movement through the soil (Sittig, 1985; Sax, 1981; U.S. EPA, 1984).

2. METABOLISM AND DISPOSITION

2.1. ABSORPTION

Animal studies have shown that polycyclic aromatic hydrocarbons in general and benz[*a*]anthracene in particular are absorbed from the gastrointestinal tract (Rees et al., 1971). Specific inhalation studies on benz[*a*]anthracene were not available, but polyaromatic hydrocarbons as a class are considered capable of crossing epithelial membranes. Studies with benzo[*a*]pyrene and pyrene have shown rapid pulmonary absorption by rats (Kotin et al., 1969; Vainio et al., 1976; Mitchell and Tu, 1979). Quantitative data on benz[*a*]anthracene absorption are not available for either the oral or inhalation routes.

2.2. DISTRIBUTION

Specific studies on the distribution of benz[*a*]anthracene in humans were not available. However, animal studies using related polycyclic aromatic hydrocarbons, chiefly benzo[*a*]pyrene, indicate that these compounds are distributed in a wide variety of body tissues, eventually becoming localized primarily in fatty tissues. Approximately 80 to 90% of the administered benzo[*a*]pyrene disappeared from the blood within 6 minutes following a single intravenous 10 µg injection. A rapid equilibrium was reached between the blood and liver. The half time for benzo[*a*]pyrene removal from the liver was about 10 minutes; however, the disappearance was biphasic with a rapid initial phase followed by a slower phase lasting 6 hours or longer. Removal from the brain was slower than from the liver with benzo[*a*]pyrene concentration increasing in fat tissues for over 6 hours (Schlede, et al., 1970a). The disappearance of benzo[*a*]pyrene from all tissues is accelerated by pretreatment with benzo[*a*]pyrene. This pretreatment induces microsomal enzyme activities that are involved in

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the oxidation and detoxification of polycyclic aromatic hydrocarbons (Schlede, et al., 1970b; U.S. EPA, 1980).

2.3. METABOLISM

The arrangement of the aromatic rings in the molecule creates what has been termed a "bay region" imparting certain properties to the polycyclic aromatic hydrocarbons. Benz[*a*]anthracene and other bay-region polycyclic aromatic hydrocarbons undergo oxidation by microsomal enzymes (cytochrome P-450 mixed-function oxidase system) to excretable metabolites. Unfortunately, some intermediary metabolites, chiefly the bay-region diol epoxides, can readily react with DNA and greatly increase carcinogenic activity. The benz[*a*]anthracene 3,4-diol-epoxide is a very minor metabolite of benz[*a*]anthracene oxidation, which may account for its weak tumorigenic properties when compared to some other bay region polycyclic aromatic hydrocarbons (Levin, et al., 1984; Jerina, et al., 1977).

2.4. EXCRETION

The oxidized products produced by the cytochrome P-450 mixed-function oxidase system exhibit increased reactivity and will undergo conjugation with intracellular molecules such as glutathione resulting in compounds that have increased solubility in water and can be excreted efficiently in the urine. Less soluble metabolites and the parent compound can be excreted through the hepatobiliary system in the feces. Prior exposure to a polycyclic aromatic hydrocarbon results in the induction of the mixed-function oxidase enzymes and greatly increases the rate of excretion by increasing the formation of water soluble metabolites (U.S. EPA, 1980).

3. NONCARCINOGENIC HEALTH EFFECTS

3.1. ORAL EXPOSURES

3.1.1. Acute Toxicity

3.1.1.1. Human

Direct evidence of acute toxicity resulting from oral exposure of humans to benz[*a*]anthracene is unavailable.

3.1.1.2. Animal

Specific studies on the acute oral toxicity of benz[*a*]anthracene in animals were not available, however, several effects are common to the polycyclic aromatic hydrocarbon class of compounds. Generally these compounds and their metabolites are most toxic to targets that contain rapidly proliferating cells. They are known to bind to proteins and nucleic acids and may interfere with the processes involved in cell growth and division (U.S. EPA, 1980). The hematopoietic and lymphoid systems are common targets, as well as the intestinal epithelium and the testis.

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Single feedings of 112 or 133 mg dimethyl benz[*a*]anthracene/kg body weight of female rats resulted in severe depression of hematopoietic and lymphoid precursors. Since only the more rapidly proliferating cells were affected by benz[*a*]anthracene, the authors suggested inhibition of DNA replication was involved in the toxicologic response (Cawein and Sydnor, 1968; U.S. EPA, 1980). In another experiment, female rats given 300 mg dimethyl benz[*a*]anthracene/kg by gavage displayed injury to the intestinal epithelium and developed a progressive anemia. Mortality of rats was about 65% at this dose (Philips et al., 1973).

3.1.2. Subchronic Toxicity

3.1.2.1. Human

No relevant reports of human subchronic oral exposure to benz[*a*]anthracene were available.

3.1.2.2. Animal

Specific data on the toxic effects of subchronic exposure of animals to benz[*a*]anthracene were not available. Experiments with other polycyclic aromatic hydrocarbons indicate that subchronic and acute exposures result in similar effects. Oral exposure of mice to 120 mg benzo[*a*]pyrene/kg body weigh-function oxidase enzymes was shown to influence survival. Poorly inducible mice (AKR/N mice, Ah^d/Ah^d type) died within 4 weeks, whereas the inducible mice survived for the 6 month period. This experiment demonstrates the detoxification of a polycyclic aromatic hydrocarbon by the mixed-function oxidase system (Robinson et al., 1975; U.S. EPA, 1984).

3.1.3. Chronic Toxicity

3.1.3.1. Human

No relevant reports of human chronic oral exposure to benz[*a*]anthracene were available.

3.1.3.2. Animal

Chronic experiments designed to demonstrate the carcinogenic nature of polycyclic aromatic hydrocarbons were inadequate to determine non-carcinogenic effects (U.S. EPA, 1984).

3.1.4. Developmental and Reproductive Toxicity

3.1.4.1. Human

Studies describing developmental and reproductive effects in humans following oral exposure to benz[*a*]anthracene were not available.

3.1.4.2. Animal

Specific data on developmental and reproductive toxicity resulting from exposure of animals to benz[*a*]anthracene were unavailable. However, studies using similar polycyclic aromatic hydrocarbons indicate that exposure to these compounds may result in reproductive effects. Rigdon

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and Rennels (1964) fed female rats 50 mg benzo[*a*]pyrene/kg/day for 3.5, months including the gestation period. Increased fetal mortality was seen in all 7 treated females. The treated dams did not show gross signs of toxicity, although failure to lactate resulted in the death of the only surviving offspring within 3 days of birth.

Decreased fertility and gonadal weights in both sexes were seen in the offspring of mice treated orally with 10 mg/kg/day benzo[*a*]pyrene during gestation. A dose of 40 mg/kg/day resulted in almost complete sterility. No effect on fetal body weight or survival of the pups was reported (Mackenzie and Angevine, 1981).

Kraup (1970) reported the destruction of small oocytes and the reduction of the numbers of growing and large oocytes following oral administration of dimethyl benz[*a*]anthracene to mice (U.S. EPA, 1980).

3.1.5. Reference Dose

A reference dose for chronic or subchronic oral exposure to benz[*a*]anthracene is not available.

3.2. INHALATION EXPOSURES

3.2.1. Acute Toxicity

3.2.1.1. Human

Information on the acute toxicity resulting from the inhalation exposure of humans to benz[*a*]anthracene was unavailable.

3.2.1.2. Animal

Information on the acute toxicity resulting from the inhalation exposure of animals to benzas unavailable.

3.2.2.2. Animal

Information on the toxicity resulting from the subchronic inhalation exposure of animals to benz[*a*]anthracene was unavailable. However, subchronic inhalation exposures of golden hamsters to other polycyclic aromatic hydrocarbons, including dimethyl benz[*a*]anthracene, benzo[*a*]pyrene, and dibenzo[*a,i*)]pyrene, caused epithelial proliferation and cell hyperplasia in the respiratory tract (total weekly dose of benzo[*a*]pyrene was 0.63 mg). These effects are usually seen without marked inflammation or necrosis by the 11th week of exposure, and precede the development of respiratory tract tumors (Reznik-Schuller and Mohr, 1974; Saffiotti, et al., 1968; U.S. EPA 1980).

3.2.3. Chronic Toxicity

3.2.3.1. Human

Information on the toxicity resulting from the chronic inhalation exposure of humans to benz[*a*]anthracene was unavailable.

3.2.3.2. Animal

Information on the toxicity resulting from the chronic inhalation exposure of animals to benz[*a*]anthracene was unavailable. Experiments utilizing the chronic exposure of animals to other polycyclic aromatic hydrocarbons were designed to study carcinogenesis and are not suitable for describing toxicity effects.

3.2.4. Developmental and Reproductive Toxicity

3.2.4.1. Human

No reports were available on developmental and reproductive effects in humans following inhalation exposure to benz[*a*]anthracene.

3.2.4.2. Animal

No reports were available on developmental and reproductive effects in animals following inhalation exposure to benz[*a*]anthracene.

3.2.5. Reference Concentration

A reference concentration for chronic or subchronic inhalation exposure to benz[*a*]anthracene is not available.

3.3. OTHER ROUTES OF EXPOSURE

3.3.1. Acute Toxicity

3.3.1.1. Human

Direct evidence of acute toxicity resulting from exposure of humans to benz[*a*]anthracene by other routes is unavailable.

3.3.1.2. Animal

Single injections of polycyclic aromatic hydrocarbons have demonstrated the toxic effects of these compounds on rapidly proliferating cells. An intraperitoneal injection of 3-methylcholanthrene (0.3 to 1.0 mg) in 12 hour to 9 day-old mice resulted in severe degeneration of the thymus, reduction in weight of the spleen and mesenteric lymph nodes, degeneration of bone marrow cells, and retardation of thyroid gland development. Increased mortality was observed with newborn mice after treatment (Yasuhira, 1964).

Philips et al. (1973) gave male rats a single intravenous injection of 50 mg/kg of 7,12-dimethylbenz[*a*]anthracene. The targets that were affected included damage to the intestinal

epithelium, atrophy of the hematopoietic elements, decreased weight of lymphoid organs, agranulocytosis, lymphopenia, and progressive anemia. A similar experiment demonstrated a decreased [^{14}C]-labeled thymidine incorporation into the DNA in the cells of small and large intestine, spleen, bone marrow, cervical lymph nodes, thymus, and testis. This inhibition, which was as high as 90%, was seen 6 hours after treatment and indicated a reduction in DNA synthesis in these organs, which normally contain rapidly dividing cells.

3.3.2. Subchronic Toxicity

3.3.2.1. Human

Subchronic or chronic dermal exposure of workers to materials such as coal tar, mineral oil, and petroleum waxes containing benz[*a*]anthracene and other polycyclic aromatic hydrocarbons resulted in the development of dermatitis and hyperkeratoses (Hueper, 1963; NAS, 1972).

3.3.2.2. Animal

Topical application of benz[*a*]anthracene and other polycyclic aromatic hydrocarbons to mouse skin results in the destruction of sebaceous glands, hyperplasia, hyperkeratosis, and ulceration of the skin. The sebaceous glands are the most sensitive structures to polycyclic hydrocarbons. A correlation exists between the carcinogenic activity of benz[*a*]anthracene and its toxicity toward the sebaceous glands (Bock, 1964).

Weekly subcutaneous injections of dibenz[*a,h*]anthracene, benz[*a*]anthracene and anthracene in mice resulted in dilated lymph sinuses and a decrease of lymphoid cells within 40 weeks. The lymph glands contained increased numbers of reticulum (stem) cells and an accumulation of iron. Decreased spleen weight was observed in the mice receiving dibenz[*a,h*]anthracene (Hoch-Ligeti, 1941).

Lasnitzki and Woodhouse (1944) studied the effects of subcutaneous injections of dibenz[*a,h*)anthracene, benzo[*a*]pyrene, 3-methylcholanthrene, and anthracene on lymph nodes in rats. Injections were given 5 times weekly for several weeks and, with the exception of anthracene, resulted in extravascular red blood cells in the lymph spaces and the presence of large pigmented cells.

3.3.3. Chronic Toxicity

3.3.3.1. Human

Subchronic or chronic exposure of the skin to polycyclic aromatic hydrocarbon-containing materials can cause dermatitis in humans (see section 3.3.2.1.).

3.3.3.2. Animal

Chronic exposure experiments using various routes were designed to examine cancer end points and are not generally useful as toxicity studies. The qualitative results, however, generally reflect

those observed for the effects from single or subchronic exposures to polycyclic aromatic hydrocarbons (U.S. EPA, 1980).

3.3.4. Developmental and Reproductive Toxicity

3.3.4.1. Human

Information on the developmental and reproductive toxicity of benz[*a*]anthracene in humans by other routes of exposure was unavailable.

3.3.4.2. Animal

Single intravenous injections of 0.5 to 2.0 mg dimethyl benz[*a*]anthracene in 25-day old rats or injections of 5.0 mg in 60-day old rats resulted in degenerative changes in the testis 38 to 40 days after treatment. These lesions included the destruction of spermatogonia and resting spermatocytes (Ford and Huggins, 1963). In a similar experiment, the destruction of primary oocytes in mice was also seen after injection of 3-methylcholanthrene. The effect in this experiment was correlated with the ability of the mice to induce the microsomal mixed-function oxidase enzymes following treatment (Mattison and Thorgeirsson, 1977).

3.4. TARGET ORGANS/CRITICAL EFFECTS

3.4.1. Oral Exposures

3.4.1.1. Primary Target(s)

1. Hematopoietic system: Animal studies have shown atrophy of the hematopoietic elements leading to progressive anemia and agranulocytosis after exposure to polycyclic aromatic hydrocarbons.

2. Lymphoid system: Shrinkage of lymphoid organs and lymphopenia have been noted in animals exposed to polycyclic aromatic hydrocarbons.

3. Intestinal epithelium: Damage to the rapidly growing epithelial cells of animals has been observed following exposure to polycyclic aromatic hydrocarbons.

4. Testis or ovary: Destruction of the spermatogonia and resting spermatocytes in males and the primary oocytes in females following exposure to polycyclic aromatic hydrocarbons.

3.4.1.2. Other Target(s)

1. Fetus: Increased fetal mortality has been observed in animal experiments with benzo[*a*]-pyrene exposure during gestation.

3.4.2. Inhalation Exposures

3.4.2.1. Primary Targets

1. Respiratory tract: Animal experiments have shown epithelial proliferation and cell hyperplasia following subchronic exposure to polycyclic aromatic hydrocarbons. This effect may be a preneoplastic lesion.

4. CARCINOGENICITY

4.1. ORAL EXPOSURES

4.1.1. Human

Data relating human oral exposure to benz[*a*]anthracene and subsequent cancer development was not available. Benz[*a*]anthracene is a component of mixtures that have been associated with human cancers such as coal tar, soots, coke oven emissions, automobile exhaust, and cigarette smoke (U.S.EPA, 1980; 1984).

4.1.2. Animal

Klein (1963) treated male mice with 3% benz[*a*]anthracene in Methocel-aerosol O.T. by gavage 3 times/week for 5 weeks. Tumors were evaluated on days 437-444 and 547 after the initiation of treatment. An increased incidence of pulmonary adenomas and hepatomas was noted at all observation times when compared with controls. The incidence of pulmonary adenomas reached 95% and the incidence of hepatoma reached 100% after 547 days. Bock and King (1959) administered 8 or 16 gavage treatments of benz[*a*]anthracene to mice at 3-7 day intervals over a 16-month period. They found forestomach papillomas in the treated groups (2/27) and none in the control group (0/16).

Treatment of Swiss mice with benzo[*a*]pyrene, a related polycyclic aromatic hydrocarbon, also resulted in stomach tumors. Mice were fed doses ranging between 1 and 250 ppm in the diet for 110 days. The appearance of squamous cell papillomas and carcinomas was roughly dose dependent. The cancer incidences observed were 0/289 for the control, 1/23 for 2.6 mg/kg/day, 1/40 for 5.2 mg/kg/day, 4/40 for 5.85 mg/kg/day, and 19/23 for 13.0 mg/kg/day (Neal and Rigdon, 1967).

4.2. INHALATION EXPOSURES

4.2.1. Human

Data on human inhalation exposure to benz[*a*]anthracene and subsequent cancer development was not available. Benz[*a*]anthracene is a component of mixtures containing other polycyclic aromatic hydrocarbons that have been associated with human cancers such as coal tar, soots, coke oven emissions, automobile exhaust, and cigarette smoke (U.S. EPA, 1980; 1984).

4.2.2. Animal

Data on inhalation exposure of animals to benz[*a*]anthracene and subsequent cancer development were not available. There are studies, however, that show tumor development

following inhalation of related polycyclic aromatic hydrocarbons. Golden hamsters exposed by inhalation to 9.5 mg/m^3 benzo[*a*]pyrene for 4.5 hours/day for 10 weeks, followed by 3 hours/day for up to 675 days, developed tumors of the nasal cavity, larynx, trachea and pharynx. The high dose also caused tumors of the upper digestive tract (Thyssen et al., 1981).

4.3. OTHER ROUTES OF EXPOSURE

4.3.1. Human

Data relating other routes of exposure to benz[*a*]anthracene and subsequent cancer development were not available. Benz[*a*]anthracene is a component of mixtures that have been associated with human cancers such as coal tar, soots, coke oven emissions, automobile exhaust, and cigarette smoke d 15 of age (total dose of 638 µg/mouse) resulted in liver adenomas and carcinomas in male mice (31/39 total tumors treated, 25/39 adenomas, 2/28 total controls) and pulmonary adenomas in female mice (6/32 treated, 0/32 controls) 1 year after exposure (Wislocki et al., 1986).

Subcutaneous injection of mice with benz[*a*]anthracene resulted in sarcomas at the site of injection 9 months following treatment. Injection of 5.0 mg produced a sarcoma incidence of 34% with no tumors seen in controls (Steiner and Edgecomb, 1952).

A number of studies have shown benz[*a*]anthracene to have initiating activity and to act as a complete carcinogen in skin painting assays in several strains of mice (IARC, 1973; U.S. EPA, 1991b). Levin et al. (1984) tested the tumor-initiating activity of benz[*a*]anthracene and a number of its metabolic products in a mouse skin painting assay. A single dose of 0.4 or 2.5 µmole of benz[*a*]anthracene followed by 25 weeks of promotion with 12-O-tetradecanoylphorbol-13-acetate resulted in skin tumor incidence of 7% for the controls, 14% for 0.4 µmole, and 36% for 2.5 µmole.

4.4. EPA WEIGHT-OF-EVIDENCE

4.4.1. Oral

CLASSIFICATION: Group B2 -- Probable Human Carcinogen (U.S. EPA, 1991b).

BASIS: Based on no human data and sufficient data from animal experiments. Benz[*a*]anthracene has been shown to produce tumors in mice exposed by gavage; topical application; and intraperitoneal, subcutaneous or intramuscular injection (U.S. EPA 1991).

4.4.2. Inhalation

CLASSIFICATION: Group B2 -- Probable Human Carcinogen (U.S. EPA, 1991b).

BASIS: Based on no human data and sufficient data from animal experiments. Benz[*a*]anthracene has been shown to produce tumors in mice exposed by gavage: topical application; and intraperitoneal, subcutaneous or intramuscular injection (U.S. EPA 1991). A related bay-region polycyclic aromatic hydrocarbon, benzo[*a*]pyrene, has been shown to cause

respiratory tract tumors in golden hamsters when given by inhalation exposure (Thyssen et al., 1981).

4.5. CARCINOGENICITY SLOPE FACTORS

4.5.1. Oral

An oral slope factor has not been calculated specifically for benz[*a*]anthracene (U.S. EPA, 1991).

Benzo[*a*]pyrene:

SLOPE FACTOR:	7.3 $(mg/kg/day)^{-1}$ (U.S. EPA, 1980; 1984; 1992a).
DRINKING WATER UNIT RISK:	2.1E-4 $(\mu g/L)^{-1}$ (U.S. EPA, 1992a)
VERIFICATION DATE:	07/01/92
PRINCIPAL STUDY:	Neal and Rigdon (1967).

COMMENTS: This slope factor was calculated by the EPA, (1984) from data obtained from experiments using benzo[*a*]pyrene and was based on the incidence of stomach tumors in mice. This slope factor was applied to protect humans from the carcinogenic effects of polycyclic aromatic hydrocarbons as a chemical class. It is not currently available on IRIS for specific use with benz[*a*]anthracene.

4.5.2. Inhalation

An inhalation slope factor has not been calculated specifically for benz[*a*]anthracene (U.S. EPA, 1991).

Benzo[*a*]pyrene:

SLOPE FACTOR:	6.1 $(mg/kg/day)^{-1}$ (U.S. EPA, 1992b)
INHALATION UNIT RISK:	1.7E-3 $(\mu g/m^3)^{-1}$ (U.S. EPA 1992b).
VERIFICATION DATE:	Not verified.
PRINCIPAL STUDY:	Thyssen et al. (1981).

COMMENTS: This slope factor was calculated by the EPA, (1984) from data obtained from experiments using benzo[*a*]pyrene and was based on the incidence of respiratory tumors in golden hamsters. This slope factor was applied to protect humans from the carcinogenic effects of polycyclic aromatic hydrocarbons as a chemical class. It is not currently available on IRIS for specific use with benz[*a*]anthracene.

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TOXICITY SUMMARY FOR VINYL CHLORIDE

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531582

EXECUTIVE SUMMARY

Vinyl chloride (CAS Reg. No. 75-01-4), a colorless gas, is a halogenated aliphatic hydrocarbon with the empirical formula of C_2H_3Cl. It is used primarily as an intermediate in the manufacture of polyvinyl chloride (PVC); limited quantities are used as a refrigerant and as an intermediate in the production of chlorinated compounds (ATSDR, 1989).

Vinyl chloride is rapidly absorbed from the gastrointestinal tract and lungs. Metabolism of vinyl chloride occurs primarily in the liver via oxidation by hepatic microsomal enzymes to polar compounds which can be conjugated with glutathione and/or cysteine. These covalently bound metabolites are then excreted in the urine (U.S. EPA, 1980, 1985).

In humans and animals, vinyl chloride is a CNS depressant, inducing narcosis and anesthesia at high concentrations (Torkelson and Rowe, 1981; Patty et al., 1930). Nonneoplastic toxic effects observed in workers exposed by inhalation to vinyl chloride include hepatotoxicity, acroosteolysis and scleroderma, and Raynaud's syndrome, a vascular disorder of the extremities. Also reported were abnormalities of CNS function, high blood pressure, and occasional pulmonary effects (ATSDR, 1989; U.S. EPA, 1985; Lloyd et al., 1984; Langauer-Lewowicka et al., 1983; Waxweiler et al., 1977). The evidence for potential developmental effects in humans (increased fetal loss and birth defects) is equivocal (ATSDR, 1989; Waxweiler et al., 1977; Infante et al., 1976). Occupational exposure to vinyl chloride has been associated with reduced sexual function in both sexes and gynecological effects in women (Makarov, 1984; Makarov et al., 1984).

For the oral route of exposure, the primary target organ of vinyl chloride toxicity in animals is the liver. Chronic oral administration of 1.7-14.1 mg/kg/day of vinyl chloride induced dose-related increases in nonneoplastic lesions of the liver of rats (Feron et al., 1981). In addition to the CNS, target organs for inhalation exposure include the liver, kidneys, lungs, spleen, and testes. Subchronic inhalation studies with rodents documented hepatic effects at concentrations as low as 50 ppm (Sokal et al., 1980) and degenerative changes of the liver and kidneys at ≥500 ppm (Torkelson et al., 1961). Exposure to higher concentrations caused proliferative changes in the lungs of mice (Suzuki, 1980), extensive liver and kidney damage in rats and guinea pigs, cerebral and cerebellar nephrosis in rats, and degeneration of the spleen in guinea pigs (Prodan et al., 1975; Viola, 1971). Subchronic exposure of rats to 100 ppm vinyl chloride produced significantly decreased testes weights and testicular regeneration (Bi et al., 1985). Evidence of developmental toxicity was seen in rats exposed to vinyl chloride during the first trimester of gestation (Ungvary et al., 1978).

Neither an oral reference dose (RfD) nor an inhalation reference concentration (RfC) have been derived for vinyl chloride (U.S. EPA, 1992).

The carcinogenicity of vinyl chloride in humans has been demonstrated in a number of epidemiological studies and case reports, many of which associated occupational exposure to vinyl chloride to the development of angiosarcomas of the liver. In addition to liver cancer, exposure to vinyl chloride also has been linked to an increased risk of lung, brain, hematopoietic, and digestive tract cancers (U.S. EPA, 1985; Heldaas et al., 1984; IARC, 1979; Byren et al., 1976; Waxweiler et al., 1976; Monson et al., 1974). Vinyl chloride has been shown to be carcinogenic in numerous animal studies. Inhalation exposure to vinyl chloride induced an increased incidence of liver angiosarcomas; kidney nephroblastomas; and lung, brain, and forestomach tumors in rodents (Maltoni et al., 1980, 1981; Feron et al., 1981; Hong et al., 1981; Suzuki, 1978; Lee et al., 1977, 1978). Oral administration of vinyl chloride induced liver, lung, and kidney tumors in rodents (Feron et al., 1981; Maltoni, 1977). Angiosarcomas observed in offspring of rats exposed by inhalation during gestation indicates that vinyl chloride has the potential to initiate cancer *in utero* (Radike et al., 1988).

EPA has classified vinyl chloride as a Group A chemical, human carcinogen (U.S. EPA, 1985). A slope factor of 1.9E+0 $(mg/kg/day)^{-1}$ and a drinking water unit risk of 5.4E-5 $(\mu g/L)^{-1}$ was calculated for oral exposure to vinyl chloride (U.S. EPA, 1992). For inhalation exposure, the slope factor and inhalation unit risk are 3.0E-1 $(mg/kg/day)^{-1}$ and 8.4E-5 $(\mu g/m^3)^{-1}$, respectively. The oral slope factor and inhalation unit risk are currently under review and may be subject to change (U.S. EPA, 1992).

1. INTRODUCTION

Vinyl chloride (CAS Reg. No. 75-01-4), also known as chloroethene, is a halogenated aliphatic hydrocarbon with the empirical formula of C_2H_3Cl and a molecular weight of 62.5. It is a colorless gas with a mild sweetish odor, a melting point of -153.71 °C, a boiling point of -13.8 °C, a specific gravity of 0.9121 (20/4 °C), and a vapor pressure of 2580 torr (20 °C). Vinyl chloride is slightly soluble in water and soluble in hydrocarbons, oil, alcohol, chlorinated solvents, and most common organic liquids. It polymerizes in light or in the presence of a catalyst (Budavari et al., 1989; U.S. EPA, 1985; Torkelson and Rowe, 1981). Vinyl chloride is produced by thermal cracking of ethylene chloride and does not occur naturally. It is used primarily as an intermediate in the manufacture of polyvinyl chloride (PVC); limited quantities are used as a refrigerant and as an intermediate in the production of chlorinated compounds (ATSDR, 1989).

Vinyl chloride, an anthropogenic environmental contaminant, has been detected in the ambient air in the vicinity of vinyl chloride and PVC manufacturing plants and hazardous waste sites. It is a biodegradation product of trichloroethylene, tetrachloroethylene, and 1,1,1-trichloroethane. Vinyl chloride may leach into groundwater from spills, landfills, and industrial sources. Released to the atmosphere, reaction with photochemically generated hydroxyl radicals is the primary removal process. Due to its relatively high vapor pressure, volatilization is expected to be the primary removal process following vinyl chloride releases to water or soils (ATSDR, 1989; U.S. EPA, 1985).

2. METABOLISM AND DISPOSITION

2.1. ABSORPTION

Vinyl chloride is rapidly absorbed from the gastrointestinal tract and lungs. Based on fecal recovery, the absorption of vinyl chloride (in PVC powder) from the gastrointestinal tract of rats was 83-92% (Feron et al., 1981). Maximum blood levels in rats were reached within 10-20 minutes of oral administration of vinyl chloride in an aqueous or oily vehicle (Withey, 1976). In humans exposed to 7.5-60 mg/m^3 of vinyl chloride by gas mask for 6 hours, 42% of the inhaled compound was retained by the lungs (Krajewski et al., 1980). Although the retention varied among individuals tested, the percentage retained was independent of the exposure concentration. A study with animals indicates that the dermal absorption of vinyl chloride gas is not significant. Hefner et al. (1975a) estimated that rhesus monkeys dermally absorbed 0.031 or 0.023% of the available compound following exposure to 800 ppm for 2.5 hours or to 7000 ppm for 2 hours, respectively.

2.2. DISTRIBUTION

No data were available concerning the tissue distribution of vinyl chloride in humans. In rats administered single oral doses of radiolabeled vinyl chloride, the highest level of radioactivity occurred in the liver, up to three times that found in other tissues examined (skin, lungs, plasma, fat, carcass, and muscle) (Watanabe et al., 1976a). Radioactivity was detected in the liver, kidney, skin, lungs, muscle, carcass, plasma, and fat 72 hours following inhalation exposure to 10 or 100 ppm of radiolabeled vinyl chloride (Watanabe et al., 1976b). Immediately after a 5-hour inhalation exposure to 50 ppm vinyl chloride, the highest levels occurred in the kidneys and liver of rats, with lower levels in the spleen and brain (Bolt et al., 1976). Ungvary et al. (1978) demonstrated that vinyl chloride crosses the placenta and is found in the amniotic fluid and fetal blood as well as in the maternal blood of rats.

2.3. METABOLISM

Metabolism of vinyl chloride occurs primarily in the liver via oxidation by hepatic microsomal enzymes to polar compounds that can be conjugated to glutathione and/or cysteine. These covalently bound metabolites are then excreted in the urine (U.S. EPA, 1980, 1985). Based on inhalation studies with rats, postulated metabolic pathways involve an alcohol dehydrogenase and a mixed-function oxidase system. At low concentrations, vinyl chloride is sequentially oxidized to 2-chloroethanol, 2-chloroacetaldehyde, and 2-chloroacetic acid in the presence of alcohol dehydrogenase. When this pathway becomes saturated, 2-chloroethanol may be oxidized by catalase in the presence of hydrogen peroxide to a peroxide, which then may undergo dehydration to form 2-chloroacetaldehyde. At higher concentrations, an alternate pathway involves the oxidation by mixed-function oxidases to form a highly reactive epoxide intermediate, 2-chloroethylene oxide, which can rearrange spontaneously to form 2-chloroacetaldehyde (ATSDR, 1989; Hefner et al., 1975b; U.S. EPA, 1980). Chloroacetaldehyde can be oxidized to chloroacetic acid, which may be excreted as such or bound to glutathione to form S-carboxy-methyl glutathione and excreted as thiodiglycolic acid upon further enzymatic degradation (IARC, 1979). In rats, vinyl chloride appears to be metabolized extensively with saturation of metabolic pathways occurring at concentrations exceeding 220-250 ppm (U.S. EPA, 1985).

2.4. EXCRETION

In human volunteers, exhalation of unchanged vinyl chloride following inhalation exposure represented 4-5% of the inhaled concentration and decreased to undetectable levels within 30 min after exposure was terminated (Krajewski et al., 1980).

Following inhalation exposure of rats to 10 ppm of radiolabeled vinyl chloride for 6 hours, urinary and expired radioactivity comprised 68 and 2% of the recovered radioactivity, respectively; after exposure to 1000 ppm, the proportion of radioactivity was lower in the urine but higher in expired air, representing 56 and 12% of the radioactivity, respectively. Approximately 4% of radioactivity was excreted in the feces at either exposure

concentration. Urinary metabolites were identified as N-acetyl(S-2-hydroxyethyl)cysteine, thiodiglycolic acid, and possibly S-(2-hydroxyethyl)cysteine (Watanabe and Gehring, 1976). The elimination of vinyl chloride and its metabolites in rats following oral exposure appears to follow a similar pattern (Watanabe et al., 1976a).

3. NONCARCINOGENIC HEALTH EFFECTS

3.1. ORAL EXPOSURES

3.1.1. Acute Toxicity

3.1.1.1. Human

Information on the acute oral toxicity of vinyl chloride in humans was not available.

3.1.1.2. Animal

Sax (1984) reported an oral LD_{50} of 500 mg/kg for rats.

3.1.2. Subchronic Toxicity

3.1.2.1. Human

Information on the subchronic oral toxicity of vinyl chloride in humans was not available.

3.1.2.1. Animal

Vinyl chloride dissolved in soybean oil was administered to Wistar rats by gavage at doses of 0, 30, 100, or 300 mg/kg, 6 days/week for 13 weeks (Feron et al., 1975). Behavior, food intake, or body weights were not affected at any dose level. A dose-related increase in liver weights was seen in both sexes; only high-dose rats exhibited ultrastructural changes of the liver. A dose-related decrease in adrenal weights occurred in males.

3.1.3. Chronic Toxicity

3.1.3.1. Human

Information on the chronic oral toxicity of vinyl chloride in humans was not available.

3.1.3.2. Animal

Feron et al. (1981) administered PVC powder with a high vinyl chloride content to Wistar rats in the diet or by gavage for life. The estimated dietary doses of vinyl chloride were 0, 1.7, 5.0, or 14.1 mg/kg/day; 300 mg/kg/day by gavage was given 5 days/week. Treatment with 14.1 or 300 mg/kg/day resulted in shortened blood-clotting times, slightly increased α-fetoprotein levels, liver enlargement and increased hematopoietic activity in the spleen. There was a dose-related increase of nonneoplastic liver lesions, characterized as swollen and irregularly shaped mitochondria in hepatocytes. Mortality of rats treated by gavage approached 40% by 18 months; most rats that died had severe lesions of the liver and lungs. In another chronic study, Wistar rats were administered vinyl chloride as dietary powdered PVC fortified with the monomer at doses of 0.0, 0.014, 0.13, or 1.3 mg vinyl chloride/kg/day for 149 weeks (Dow Chemical Company, 1984). General health, behavior, body weight, food intake, and clinical chemistry parameters were not affected at any dose tested. In the high-dose group, mortality was slightly increased among males and hepatotoxic effects, characterized as hepatocellular polymorphism, hepatic cysts, cellular alterations including clear cell foci and basophilic foci, occurred in both sexes.

3.1.4. Developmental and Reproductive Toxicity

Information on the developmental and reproductive toxicity of vinyl chloride in humans or animals following oral exposure was not available.

3.1.5. Reference Dose

An oral reference dose (RfD) for vinyl chloride has not been derived.

3.2. INHALATION EXPOSURES

3.2.1. Acute Toxicity

3.2.1.1. Human

The primary acute effect of vinyl chloride inhalation is central nervous system (CNS) depression, which occurs at concentrations approaching 1% (10,000 ppm); anesthesia requires concentrations greater than 10% (Torkelson and Rowe, 1981). Acute exposure to vinyl chloride gas has resulted in deaths of two workers. Autopsy findings revealed congestion of the liver, spleen, and kidneys (Danziger, 1960).

3.2.1.2. Animal

Reported 2-hour LC_{50} values for vinyl chloride range from 117,000 ppm for mice to 230,800 ppm for rabbits (U.S. EPA, 1985). Exposure to 25,000-50,000 ppm vinyl chloride for 2-5 minutes produced ataxia and narcosis in guinea pigs; exposure to 100,000 ppm caused death within 30 minutes (Patty et al., 1930).

3.2.2. Subchronic Toxicity

3.2.2.1. Human

Information regarding the subchronic inhalation toxicity of vinyl chloride in humans was not available.

3.2.2.2. Animal

Torkelson et al. (1961) conducted an inhalation study by exposing rats, guinea pigs, rabbits, and dogs to vinyl chloride at concentrations ranging from 50-500 ppm for 7 hours/day, 5 days/week. Rats exposed to 500 ppm for 4.5 months showed significantly ($p=0.001$, males) increased liver weights and degenerative changes in the liver and kidneys. Exposure to 200 and 100 ppm for 6 months induced significantly ($p<0.05$) increased liver weights in male and female rats and degenerative liver changes in rabbits, but no such effects were detected in guinea pigs or dogs. All species tolerated 50 ppm for 6 months without adverse effects.

Male rats exposed by inhalation to 50, 500, or 20,000 ppm vinyl chloride, 5 hours/day, 5 days/week for 10 months exhibited morphological lesions of the liver and testes, decreased body weight gain, increased organ weights (not specified), and slight hematological and biochemical changes in the blood (Sokal et al., 1980).

Mice exposed to 2500 or 6000 ppm vinyl chloride 5 hours/day, 5 days/week for 5 or 6 months, respectively, exhibited bronchiolar epithelial proliferation and hyperplasia of the alveolar epithelium (Suzuki, 1980).

Inhalation exposure of rats to 30,000 ppm vinyl chloride for 4 hours/day, 5 days/week for 12 months resulted in hepatic effects, including interstitial inflammation, Kupffer cell hypertrophy, and partial necrosis, and renal effects characterized as tubulonephrosis and interstitial nephritis. Also noted were cerebral and cerebellar nephrosis and an increase of perifollicular cells in the thyroid. Examination of the paws revealed metaplasia of the metatarsal bones, chondroid metaplasia, epidermal keratosis, basal layer vacuolization and degeneration, and general epidermal edema (Viola, 1971).

Slowed growth, decreased spontaneous mobility, increased kidney weights, and extensive hepatocellular lesions (necrosis and proliferation of fibroblasts and Kupffer cells) and glomerular and tubular lesions of the kidneys were observed in guinea pigs exposed by inhalation to 10% (100,000 ppm) vinyl chloride for 2 hours/day for 90 days. Also noted were cellular changes of the spleen (almost complete disappearance of red pulp) and pulmonary fibrosis (Prodan et al., 1975).

3.2.3. Chronic Toxicity

3.2.3.1. Human

A number of chronic toxic effects have been reported in humans occupationally exposed to vinyl chloride (Lilis et al., 1975). In workers exposed to vinyl chloride during the production of PVC, the effects included acroosteolysis (dissolution of bone involving the distal phalanges of fingers and toes) and scleroderma, hepatotoxicity, and some pulmonary effects. Raynaud's syndrome (a vascular disorder characterized by intermittent severe pallor of fingers and toes) occurred in about 10% of workers with >20 years of exposure. Abnormal peripheral circulation was associated with length of exposure to vinyl chloride. Symptoms and signs of liver disease associated with occupational exposure to vinyl chloride include tenderness, hepatomegaly, thrombocytopenia, esophageal varices, fibrosis and cirrhosis, and abnormal liver function tests (ATSDR, 1989; U.S. EPA, 1985). A survey by the National Institute of Occupational Safety and Health (Waxweiler et al., 1977) of vinyl chloride-exposed workers in a PVC and rubber tire production plant found an association between vinyl chloride exposure and the prevalence of hepatomegaly, CNS abnormalities, and high blood pressure. Langauer-Lewowicka et al. (1983) reported a number of neurological symptoms, scleroderma, and Raynaud's syndrome in vinyl chloride production workers. The neurological effects may have been due to the direct toxic effects of vinyl chloride or to vascular deficiency. In a case-control study, Lloyd et al. (1984) found an association between vinyl chloride exposure and impaired lung function. Recent data from the foreign literature reported in ATSDR (1989) suggest that occupational exposure to vinyl chloride may induce mild neurotoxic effects, EEG changes, and psychiatric disorders.

3.2.3.2. Animal

Information regarding the chronic inhalation toxicity of vinyl chloride in animals was not available.

3.2.4. Developmental and Reproductive Toxicity

3.2.4.1. Human

Epidemiological studies conducted in the 1970's suggested an association between paternal occupational exposure to vinyl chloride and fetal loss and between parental residence in the vicinity of a vinyl chloride plant and an increased incidence of birth defects (Infante et al., 1976; Waxweiler et al., 1977). However, evaluations of these studies and additional studies found no solid association between vinyl chloride exposure and the incidence of fetal loss and/or birth defects (ATSDR, 1989). Two Russian studies, that provided few details, reported a decrease in sexual function in occupationally exposed men and women at vinyl chloride concentrations ranging from 12 to 60 ppm. This decline in sexual function was related to concentration and duration of exposure. Ovarian dysfunction, benign uterine growths, and prolapsed genital organs were reported in 77% of exposed women (Makarov, 1984; Makarov et al., 1984).

3.2.4.2. Animal

In a teratogenicity study using three species of animals, pregnant CF_1 mice, Sprague-Dawley rats, and New Zealand white rabbits were exposed 7 hours daily to 500 ppm vinyl chloride during organogenesis (John et al., 1977). Another group of mice were also exposed to 50 ppm and additional groups of rats and rabbits were exposed to 2500 ppm. Vinyl chloride treatment did not induce gross teratogenic abnormalities in offspring of exposed mothers. However, an excess of minor skeletal abnormalities, increased fetal deaths, and maternal toxicity occurred at concentrations of ≥500 ppm. Maternal toxicity was most pronounced in mice.

Ungvary et al. (1978) exposed pregnant rats to 4000 mg/m^3 (1543 ppm) vinyl chloride for 24 hours/day during days 1-9, 8-14, or 14-21 of gestation. Significantly increased mortality and fetotoxic effects were seen in offspring of dams exposed to vinyl chloride during the first trimester of gestation. Similar effects were not seen in offspring of dams exposed in the second or last trimester of gestation.

Pregnant Sprague-Dawley rats were exposed to 600 ppm vinyl chloride, 5 hours/day on gestation days 9-21 (Radike et al., 1988). Angiosarcomas of the liver were found in offspring of dams exposed during gestation. Another treatment group additionally exposed during lactation exhibited a greatly increased incidence of liver tumors.

Exposure of male Wistar rats to 100 or 3000 ppm vinyl chloride, 6 hours/day, 6 days/week for 6 months produced testicular degeneration and a significant reduction of testicular weight (Bi et al., 1985).

3.2.5. Reference Concentration

An inhalation reference concentration (RfC) for vinyl chloride has not been derived.

3.3. OTHER ROUTES OF EXPOSURE

3.3.1. Acute Toxicity

Information regarding the acute toxicity of vinyl chloride by other routes of exposure in humans or animals was not available.

3.3.2. Subchronic Toxicity

Information regarding the subchronic toxicity of vinyl chloride by other routes of exposure in humans or animals was not available.

3.3.3. Chronic Toxicity

Information on the chronic toxicity of vinyl chloride by other routes of exposure in humans or animals was not available.

3.3.4. Developmental and Reproductive Toxicity

Information on the developmental or reproductive toxicity of vinyl chloride in humans by other routes of exposure in humans or animals was not available.

3.4. TARGET ORGANS/CRITICAL EFFECTS

3.4.1. Oral Exposures

3.4.1.1. Primary Target Organs

Liver: Subchronic and chronic oral exposure of rats produced increased liver weights and histopathological changes of the liver.

3.4.1.2. Other Target Organs

Blood: Chronic exposure of rats produced mild hematological changes.

3.4.2. Inhalation Exposures

3.4.2.1. Primary Target Organs

1. Liver: Hepatic effects reported in humans occupationally exposed to vinyl chloride include tenderness, hepatomegaly, thrombocytopenia, esophageal varices, fibrosis and cirrhosis, and abnormal liver function tests. Subchronic and chronic exposure of rats produced degenerative liver changes.

2. Vascular system: Raynaud's syndrome, a circulatory disorder of the extremities, has been associated with occupational exposure to vinyl chloride.

3. Bones: Acroosteolysis has been associated with occupational exposure to vinyl chloride. Subchronic exposure of rats produced metaplasia of the metatarsal bones and chondroid metaplasia of the paws.

4. Connective tissue and skin: Scleroderma has been associated with occupational exposure to vinyl chloride. Subchronic exposure of rats produced degenerative skin changes of the paws.

5. Nervous system: Mild neuropathy, EEG changes, and psychiatric effects have been associated with occupational exposure to vinyl chloride. Degenerative

changes of the cerebrum and cerebellum were reported in a subchronic study with rats. Acute human exposure to high levels of vinyl chloride produced dizziness, euphoria, ataxia, headache, and narcosis. Acute CNS effects have also been reported in animals.

6. Reproduction and development: Epidemiological studies provide equivocal evidence linking occupational exposure to vinyl chloride with increased fetal loss and an increase in malformations. Occupational exposure has also been associated with reduced sexual function in both sexes. Exposure of rodents to vinyl chloride during organogenesis induced fetal mortality and other fetotoxic effects; subchronic exposure produced decreased testicular weights and testicular degeneration.

7. Lungs: Occupational exposure to vinyl chloride has been associated with impaired lung function and other pulmonary effects. Subchronic exposure of guinea pigs produced pulmonary fibrosis.

3.4.2.2. Other Target Organs

1. Kidneys: Renal effects in rodents following subchronic exposure to vinyl chloride include glomerular and tubular lesions and interstitial nephritis.

2. Spleen: Almost complete disappearance of the red pulp of the spleen of guinea pigs was seen following subchronic exposure to vinyl chloride.

3.4.3. Other Routes of Exposure

Target organs following exposure to vinyl chloride by other routes were not identified.

4. CARCINOGENICITY

4.1. ORAL EXPOSURES

4.1.1. Human

Information on the carcinogenicity of vinyl chloride in humans following oral exposure was not available.

4.1.2. Animal

Feron et al. (1981) conducted an oral carcinogenicity study with male and female Wistar rats by exposing them for life to a diet containing PVC powder with a high vinyl chloride content. The estimated doses were 1.8, 5.6, or 17 mg vinyl chloride/kg/day. Compared with controls, treatment with vinyl chloride induced a dose-related increase of neoplastic nodules of the liver, hepatocellular carcinomas, and liver and lung angiosarcomas in rats of both sexes. An increased incidence of liver angiosarcomas and renal nephroblastomas was reported in rats given vinyl chloride by gavage at doses of 16.65 or 50 mg/kg for 136 weeks (Maltoni, 1977).

4.2. INHALATION EXPOSURES

4.2.1. Human

Epidemiological studies and case reports have demonstrated an association between angiosarcomas of the liver and occupational exposure to vinyl chloride. In addition to liver cancer, exposure to vinyl chloride also has been associated with an increased risk of lung, brain, hematopoietic system, and digestive tract cancers (U.S. EPA, 1985; IARC, 1979). Vinyl chloride is classified as a Group 1 Chemical by the International Agency for Research on Cancer (IARC, 1979), designating that there is sufficient evidence that the compound is carcinogenic to humans.

A retrospective study of 161 deaths among vinyl chloride workers conducted by Monson et al. (1974) identified eight cases of hepatic and biliary cancer (all angiosarcomas), five cases of brain cancer, thirteen cases of lung cancer, thirteen cases of digestive tract cancer, and five cases of hematopoietic system cancer. All cancers presented risk ratios greater than expected and resulted in a 50% excess of death due to all types of cancer. Waxweiler et al. (1976) studied the cancer mortality of 1287 workers exposed to vinyl chloride for ≥5 years in four vinyl chloride production plants. When compared with the U.S. white male population, an excess of malignant neoplasms was found in four organ systems: the CNS, respiratory system, hepatic system, and lymphatic and hematopoietic systems. Three of the 136 deaths were due to brain and CNS cancer (0.9 expected); twelve to respiratory tract cancer (7.7 expected); seven to biliary and liver cancer (0.6 expected); and four to lymphatic and hematopoietic system cancer (2.5 expected). The tumors occurred after a 15-year latency period following onset of exposure. Most of the liver cancers were classified as angiosarcomas. Byren et al. (1976) reported a 4- to 5-fold excess of cancer of the liver and pancreas among 750 Swedish workers exposed to vinyl chloride for >10 years. The incidence of cancers of the brain and lung were also increased, but they were not statistically significant. A more recent mortality study of 454 male workers engaged in the production and polymerization of PVC for at least one year during 1950-1969 was conducted by Heldaas et al. (1984). The cohort was followed up from 1953 through 1979. A total of 23 cancer deaths were recorded (20.2 expected), with one case of liver angiosarcoma, five lung cancers (2.8 expected), three colon cancers (1.4 expected), two thyroid cancers (0.26

expected), and four malignant melanomas of the skin (0.8 expected). Two additional cases of malignant melanoma were reported after termination of the study.

Genotoxicity studies showing that vinyl chloride may induce chromosomal aberrations in the peripheral lymphocytes of occupationally exposed workers provide supportive evidence for the carcinogenicity of vinyl chloride in humans (ATSDR, 1989).

4.2.1. Animal

Numerous inhalation experiments with laboratory animals support the carcinogenicity of vinyl chloride. Maltoni and coworkers (Maltoni et al., 1980, 1981) conducted a series of inhalation experiments by exposing Sprague-Dawley rats, Swiss mice, and golden hamsters to vinyl chloride at concentrations of 1-30,000, 50-10,000, or 50-10,000 ppm, respectively, 4 hours/day, 5 days/week for 1 year (rats) or 30 weeks (mice and hamsters). Liver angiosarcomas were seen in rats exposed to ≥10 ppm; kidney nephroblastomas occurred ≥25 ppm. In mice, liver angiosarcomas occurred in all treated groups and lung tumors were more prevalent in animals treated with ≥250 ppm. A dose-related increase of papillomas and acanthomas of the forestomach was seen in hamsters treated with vinyl chloride. Keplinger et al. (1975) exposed rats, mice, and hamsters to 50 or 2500 ppm vinyl chloride for 9 or 12 months. All three species developed liver angiosarcomas at ≥50 ppm, with frequent metastases to the lungs and lymph nodes. Also reported were Zymbal's gland tumors and brain tumors in rats and lung tumors in mice. Lung tumors were the primary carcinogenic response in mice exposed to 2500 or 6000 ppm vinyl chloride for 5-6 months (Suzuki, 1978).

An increased incidence of liver and lung hemangiosarcomas was reported by Lee et al. (1977, 1978) in male and female CD rats exposed to 250 or 1000 ppm vinyl chloride, 6 hours/day, 5 days/week for 12 months. No liver or lung tumors were observed at 50 ppm. Male and female CD-1 mice treated with 50, 250, or 1000 ppm vinyl chloride for the same time period exhibited a dose-related increased incidence of liver hemangiosarcomas and bronchioalveolar adenomas. Rats treated with 250 or 1000 ppm, 6 hours/day, 5 days/week for 6 or 10 months developed hepatocellular carcinomas, bronchioalveolar tumors, and hemangiosarcomas of the liver and lung (Hong et al., 1981). Treatment of mice with 250 or 1000 ppm vinyl chloride for only 1 month induced bronchioalveolar tumors within 12 months.

In a perinatal carcinogenesis study, Radike et al. (1988) exposed pregnant rats by inhalation to 600 ppm vinyl chloride, 4 hours/day on days 9-21 of gestation. Additional animals were also exposed through the lactation period. The development of angiosarcomas of the liver, lung, and muscle in offspring demonstrated the transplacental potential of vinyl chloride to initiate cancer *in utero*. Continued exposure during lactation greatly increased the occurrence of liver tumors.

4.3. OTHER ROUTES OF EXPOSURE

Information on the carcinogenicity of vinyl chloride in humans or animals by other routes of exposure was not available.

4.4. EPA WEIGHT-OF-EVIDENCE

Classification -- Group A - Human carcinogen (U.S. EPA, 1985)

Basis -- High incidence of liver, kidney, lung, and brain tumors in rodents and epidemiological evidence of an increased risk of similar tumors among vinyl chloride-exposed workers (U.S. EPA, 1985).

4.5. CARCINOGENICITY SLOPE FACTORS

4.5.1. Oral

SLOPE FACTOR:	1.9E+0 $(mg/kg/day)^{-1}$ (U.S. EPA, 1992)
UNIT RISK:	5.4E-5 $(\mu g/L)^{-1}$ (U.S. EPA, 1992)
PRINCIPAL STUDY:	Feron et al., 1981

COMMENT: Use of these values on an interim basis was validated 4/05/90. The oral slope factor is under review and may be subject to change. Additional information is now available on increased sensitivity in young animals and data on metabolism/pharmacokinetics (U.S. EPA, 1992).

4.5.2. Inhalation

SLOPE FACTOR:	3.0E-1 $(mg/kg/day)^{-1}$ (U.S. EPA, 1992)
UNIT RISK:	8.4E-5 $(\mu g/m^3)^{-1}$ (U.S. EPA, 1992)
PRINCIPAL STUDY:	Maltoni et al., 1980, 1981

COMMENT: Use of these values on an interim basis was validated 4/05/90. The inhalation unit risk is under review and may be subject to change. Additional information is now available on increased sensitivity in young animals and data on metabolism/pharmacokinetics (U.S. EPA, 1992).

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TOXICITY SUMMARY FOR TRICHLOROETHENE

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EXECUTIVE SUMMARY

Trichloroethene (TCE) is an industrial solvent used primarily in metal degreasing and cleaning operations. TCE can be absorbed through the lungs, mucous membranes, gastrointestinal tract, and the skin. TCE is extensively metabolized in humans to trichloroacetic acid and trichloroethanol, as well as to several minor metabolites, with most of the absorbed dose excreted in urine (ATSDR, 1989; U.S. EPA, 1985).

Human and animal data indicate that exposure to TCE can result in toxic effects on a number of organs and systems, including the liver, kidney, blood, skin, immune system, reproductive system, nervous system, and cardiovascular system. In humans, acute inhalation exposure to TCE causes central nervous system symptoms such as headache, dizziness, nausea, and unconsciousness (U.S. EPA, 1985). Among the reported effects from occupational exposure studies are fatigue, light-headedness, sleepiness, vision distortion, abnormal reflexes, tremors, ataxia, nystagmus, increased respiration, as well as neurobehavioral or psychological changes. Cardiovascular effects include tachycardia, extrasystoles, EKG abnormalities, and precordial pain (Landrigan et al., 1987; Grandjean et al., 1955; Milby, 1968). The use of TCE as an anesthetic has been associated with cardiac arrhythmias (U.S. EPA, 1985).

Cases of severe liver and kidney damage, including necrosis, have been reported in humans following acute exposure to TCE (Defalque, 1961), but these effects generally are not associated with long-term occupational exposures. In animals, TCE has produced liver enlargement with hepatic biochemical and/or histological changes (Nomiyama et al., 1986; Kjellstrand et al., 1981, 1983; Stott et al., 1982; Tucker et al., 1982) and kidney enlargement, renal tubular alterations and/or toxic nephropathy (NTP, 1982, 1986a, 1988). Also observed in animals were hematological effects (Tucker et al., 1982; Mazza and Brancaccio, 1967) and immunosuppression (Sanders et al., 1982). Inhalation studies with rats indicate that TCE is a developmental toxicant causing skeletal ossification anomalies and other effects consistent with delayed maturation (Healy et al., 1982; Dorfmueller et al., 1979). TCE may cause dermatitis and dermographism (U.S. EPA, 1985).

Reference Doses (RfDs) and Reference Concentrations (RfCs) for subchronic and chronic oral and inhalation exposure to TCE are presently under review by EPA (U.S. EPA, 1992a).

Epidemiologic studies have been inadequate to determine if a correlation exists between exposure to TCE and increased cancer risk. Chronic oral exposure to TCE increased the incidences of hepatocellular carcinomas in mice and renal adenocarcinomas and leukemia in rats (NTP, 1988; Maltoni et al., 1986; NTP, 1986a, 1982; NCI, 1976). Chronic inhalation exposure induced lung and liver tumors in mice and testicular Leydig cell

tumors in rats (Maltoni et al., 1986, 1988; Fukuda et al., 1983; Bell et al., 1978). Although U.S. EPA's Science Advisory Board recommended a weight-of-evidence classification of C-B2 continuum (C = possible human carcinogen; B2 = probable human carcinogen), the agency has not adopted a current position on the weight-of-evidence classification (U.S. EPA, 1992b). In an earlier evaluation, TCE was assigned to weight-of-evidence Group B2, probable human carcinogen, based on tumorigenic responses in rats and mice for both oral and inhalation exposure and on inadequate data in humans (U.S. EPA, 1987, 1990). Carcinogen slope factors are 1.1E-2 $(mg/kg/day)^{-1}$ and 6.0E-3 $(mg/kg/day)^{-1}$ for oral and inhalation exposure, respectively. The corresponding unit risks are 3.2E-7 $(\mu g/L)^{-1}$ and 1.7E-6 $(\mu g/m^3)^{-1}$, respectively (U.S. EPA, 1992b).

1. INTRODUCTION

Trichloroethene (trichlorothylene; TCE; CAS No. 79-01-6) is a colorless, highly volatile liquid that is miscible with water and a number of organic solvents (U.S. EPA, 1985). It has a molecular weight of 131.4, a boiling point of 87°C, and a density of 1.4642 at 20/4°C (Weast, 1989). TCE is a man-made chemical and is not known to occur naturally. It is mainly used as a solvent in industrial degreasing and cleaning of metals, but is also used as a solvent for waxes, fats, resins, and oils, and in numerous other applications. Prior to 1977, TCE had been used as an anesthetic, grain fumigant, disinfectant, and extractant of spice oleoresins in food and of caffeine in the production of decaffeinated coffee. Workers in the vapor degreasing industry appear to be exposed to the highest atmospheric levels of TCE. TCE has been detected in both surface and ground waters; however, most (80-95%) TCE used is released to the atmosphere by evaporative losses (ATSDR, 1989).

The evaluation of the toxicity of TCE is complicated by the presence or absence of stabilizers. Industrial grade TCE usually contains stabilizers such as triethylamine, triethanolamine, epichlorohydrin, or stearates, chemicals that can be toxic by themselves. In the absence of stabilizers, TCE readily decomposes to dichloroacetylene, phosgene, carbon monoxide, and hydrogen chloride. These decomposition products are also toxic (O'Donoghue, 1985).

2. METABOLISM AND DISPOSITION

2.1. ABSORPTION

Trichloroethene can be absorbed through the lungs, digestive tract, skin, and mucous membranes. The primary route of human exposure to the chemical is through pulmonary uptake, which is rapid but requires about 8 hours to reach tissue equilibrium. The total dose absorbed is directly proportional to the concentration in inspired air, and for a given concentration, body burden increases with duration and frequency of exposure, and with exercise (U.S. EPA, 1985). After ingestion, 90-95% of a dose of 40-60 mg/kg was recovered in expired air and in urine of rats, suggesting almost complete absorption of the compound (Daniel, 1963). Tsuruta (1978) estimated skin absorption by *in vivo* and *in vitro* techniques and reported rates of 7.82 to 12.1 $\mu g/min/cm^2$ in mice.

2.2. DISTRIBUTION

Following uptake into the body, TCE is rapidly distributed from blood to all tissues, particularly adipose tissue, and appears in sweat and saliva (U.S. EPA, 1985). TCE readily

passes through the placenta and was detected in the blood of babies at birth after the mothers had received TCE anesthesia (Laham, 1970).

2.3. METABOLISM

The principal site of TCE metabolism is the liver, although metabolism may also occur in the lungs, kidneys, spleen, and small intestine (ATSDR, 1989). The initial biotransformation may involve the formation of two intermediates, TCE epoxide and chloral. In man and animals, TCE is extensively metabolized to trichloroacetic acid, trichloroethanol, and trichloroethanol glucuronide. Several minor metabolites have also been identified, including oxalic acid, dichloroacetic acid, N-(hydroxyacetyl)-aminoethanol, and carbon dioxide. Reactive intermediate metabolites, such as the epoxide, covalently bind to cellular macromolecules, principally protein and to a much smaller extent, DNA. It is estimated that humans metabolize between 40 and 75% of the retained dose (U.S. EPA, 1985). At relatively low TCE concentrations, saturation of TCE metabolism has not been demonstrated in humans. However, both oral and inhalation studies have provided evidence for saturation of TCE metabolism in rats (ATSDR, 1989). There are quantitative differences in the rates of metabolism in different species. For example, mice metabolize TCE at a greater rate than rats and as a result produce more tissue-binding metabolites in the liver and kidney when compared to rats (Stott et al., 1982).

2.4. EXCRETION

TCE is eliminated by two major processes, liver metabolism with subsequent elimination of metabolites and pulmonary excretion of the parent compound. In humans, most of retained TCE is excreted as urinary metabolites (58%); 5% or more may be excreted in the feces; and about 11% is eliminated through the lungs (ATSDR, 1989). In contrast, when TCE was given by gavage to rats, 10-20% of the dose was excreted in the urine as trichloroacetic acid and trichloroethanol, 0-0.5% as TCE in the feces, and 72-85% as TCE in the expired air (Daniel, 1963).

3. NONCARCINOGENIC HEALTH EFFECTS

3.1. ORAL EXPOSURES

3.1.1. Acute Toxicity

3.1.1.1. Human

Fatalities have been reported following accidental or intentional ingestion of TCE. The lethal oral dose for adults is approximately 7 g/kg (WHO, 1985). Accidental ingestion

of TCE has resulted in inebriety, vomiting, diarrhea, collapse and coma, followed by either death or recovery with transient neurological sequelae (amnesia, headache, numbness, weakness of extremities, psychosis or hemiparesis). At autopsy, pulmonary edema and liver and kidney necrosis were observed (Defalque, 1961). Hepatorenal failure was reported in one fatal case of accidental ingestion of TCE (Kleinfield and Tabershaw, 1954). There are indications that the hepatotoxic effects of TCE are enhanced by concomitant exposure to ethanol or isopropyl alcohol (IARC, 1979). Case studies suggest that ingestion of 350-500 mL of TCE can produce cardiac arrhythmias (Dhuner et al., 1957).

3.1.1.2. Animal

Oral LD_{50}s for TCE are 2402 and 2443 mg/kg for male and female mice, respectively, 4920 mg/kg for rats, and 5680 mg/kg for dogs (ATSDR, 1989).

3.1.2. Subchronic Toxicity

3.1.2.1. Human

Information on the subchronic oral toxicity of TCE in humans was unavailable.

3.1.2.2. Animal

Male mice given 250-2400 mg/kg TCE by gavage, 5 days/week for 3 weeks exhibited a dose-related hepatocellular hypertrophy (Stott et al., 1982). Significantly increased liver weights were seen in male CD-1 mice given daily gavage doses of 240 mg/kg/day, but not 24 mg/kg/day, for 14 days (Tucker et al., 1982). The same investigators administered TCE in drinking water to CD-1 mice for 6 months at concentrations of 18-660 mg/kg/day (males) and 18-793 mg/kg/day (females). Treatment-related effects included increased relative liver weights and increased urinary ketone and protein concentrations at 393 mg/kg/day (males) and increased liver and kidney weights at the highest doses in both sexes. Also observed at the highest doses were decreased erythrocyte and leukocyte counts and increased fibrinogen levels in males after 4 and 6 months and shortened prothrombin time in females after 6 months (Tucker et al., 1982).

Sanders et al. (1982) evaluated the immune status of male and female CD-1 mice following exposure to TCE in drinking water at doses of 18-666 mg/kg/day (males) and 18-793 mg/kg/day (females) for 4 or 6 months. The TCE-induced immunotoxic effects observed were more pronounced in females and included depressed cell-mediated response to sheep erythrocytes at ≥ 18 mg/kg after 4 months and at 739 mg/kg/day after 6 months; depressed antibody-forming cell response at ≥ 437 mg/kg/day after 4 months but not after 6 months; and inhibited bone marrow stem cell colonization after 4 and 6 months.

3.1.3. Chronic Toxicity

3.1.3.1. Human

Information on the chronic oral toxicity of TCE in humans was unavailable.

3.1.3.2. Animal

Renal effects characterized as cytomegaly were observed in F344 rats treated by gavage with 500 or 1000 mg/kg/day TCE, 5 days/week for 103 weeks and in $B6C3F_1$ mice similarly treated with 1000 mg/kg/day (NTP, 1982; 1986a). Also observed in rats were signs of central nervous system (CNS) toxicity, including ataxia, lethargy, convulsions, and hind limb paralysis. These effects were described as sporadic and transient. Cytomegaly of renal tubular cells and toxic nephropathy was seen in ACI, August, Marshall, and Osborne-Mendel rats treated by gavage with 500 or 1000 mg/kg/day for 103-104 weeks (NTP, 1988).

3.1.4. Developmental and Reproductive Toxicity

3.1.4.1. Human

Information on the developmental and reproductive toxicity of TCE in humans following oral exposure was unavailable.

3.1.4.2. Animal

Rats exposed to TCE by gavage in corn oil at doses of 0, 10, 100, or 1000 mg/kg/day for 2 weeks prior to and throughout mating to day 21 of gestation exhibited increased maternal mortality, decreased maternal weight gain, and decreased neonatal survival in the high-dose group (Manson et al., 1984).

Two-generation fertility studies (NTP, 1985, 1986b) exposed male and female F344 rats and CD-1 mice to diets containing 75, 150, or 300 mg/kg/day TCE. In rats, the two higher doses caused a reduction in the number of live pups/litter and the highest dose caused increased testis and epididymis weights (combined) in the F_0 generation. Mice exposed to the highest dose exhibited increased neonatal mortality, increased testis and epididymis weights (combined) in F_1 mice, and reduced sperm motility in F_0 and F_1 mice.

3.1.5. Reference Dose

The development of a Reference Dose for TCE is under review by EPA (U.S. EPA, 1992a).

3.2. INHALATION EXPOSURES

3.2.1. Acute Toxicity

3.2.1.1. Human

Acute inhalation exposure to TCE causes central nervous system symptoms, such as headache, dizziness, nausea, and in some cases unconsciousness. Lower levels may affect visual and motor performance (U.S. EPA, 1985). Case reports reviewed by Grant (1974) indicate that acute exposure to TCE may produce paralysis of the trigeminal nerve or extraocular muscle as well as vision disturbances. It was suggested that the observed visual effects were produced by decomposition products such as dichloroacetylene rather than by TCE. Although permanent central nervous system damage has been reported after exposure to TCE, respiratory and cardiac failure are the likely causes of death following acute inhalation exposure. The use of TCE as an anesthetic has been associated with cardiac arrhythmias, bradycardia, atrial and ventricular premature contractions, and ventricular extrasystole (U.S. EPA, 1985). In controlled studies of human exposure, impairment of psychophysiological function was seen in volunteers exposed to 110 ppm for two 4-hour periods. Exposure to 200 ppm for 7 hours over 5 days produced fatigue and sleepiness (IARC, 1979).

Cases of severe liver damage, including necrosis, resulting from acute occupational exposure to lethal concentrations of TCE have been reported. A few case reports described renal dysfunction and failure resulting from occupational or intentional exposure (U.S. EPA, 1985).

3.2.1.2. Animal

Reported LC_{50} values for TCE range from 7,480 to 49,000 ppm for mice and from 12,500 to 26,300 ppm for rats (ATSDR, 1989). Rats exposed to 250-4,000 ppm TCE for up to 4 hours exhibited decreased avoidance responses (Kishi et al., 1986). Sensitization of the heart to epinephrine-induced arrhythmia was observed in dogs exposed to 5,000-10,000 ppm for 10 min and in rabbits exposed to 6,000 ppm for 1 hour (U.S. EPA, 1985). Chakrabarti and Tuchweber (1988) reported that rats exposed to 1,000 or 2,000 ppm TCE for 6 hours exhibited significantly increased urinary levels of gamma-glutamyltranspeptidase activity, and glucose and protein concentrations, which are biochemical changes indicative of renal injury.

3.2.2. Subchronic Toxicity

3.2.2.1. Human

Landrigan et al. (1987) reported that seven of nine TCE-exposed workers involved in a metal degreasing operation experienced fatigue, light-headedness, sleepiness, shortness of breath, dyspnea on exertion, palpitations, nausea, and headache. Similar symptoms were not reported in non-exposed controls. The mean duration of employment of exposed workers was 4.4 years. Breathing zone levels of TCE for the five workers who were exposed to the

highest TCE concentrations ranged from 117 to 357 mg/m^3 and averaged 89 mg/m^3. Short-term peak exposures ranged from 413 to 2000 mg/m^3.

Grandjean et al. (1955) evaluated the effects of TCE in 50 workers who had been occupationally exposed for an average of 3.75 years. Signs of severe neurological disturbances (vision distortion, abnormal reflexes, slow tremors, ataxia, or nystagmus) occurred in 28% of the exposed workers. Symptoms of autonomic nervous system involvement (excessive respiration, circulatory symptoms, tremors, gastrointestinal upset, palpitations, tachycardia, extrasystoles, precordial pain, and pronounced modification of dermographism) occurred in 36% of the workers. Slight to moderate psychic disturbances (short-term memory loss, slow understanding, emotional instability, and fewer word associations) occurred in 34% of the workers.

In a case study reported by Milby (1968), vomiting and abdominal cramps, as well as an erratic heart beat, an abnormal EKG, sleepiness, weakness, and loss of appetite occurred in a worker who had been exposed to TCE for 1 month. Breathing zone measurements after the incident ranged from 260 to 280 ppm TCE. James (1963) reported fatty degeneration of the liver in a worker who had become addicted to TCE over a 9-year period.

3.2.2.2. Animal

Nomiyama et al. (1986) found significant hepatic dysfunction in male Sprague-Dawley rats continuously exposed to 50, 200, or 800 ppm TCE for 12 weeks. Liver weight, total protein, albumin/globulin ratio, plasma glutamic pyruvate transaminase activity, triglyceride, cholesterol ester ratio, and cholinesterase were affected. Renal dysfunction as indicated by glycosuria and alterations in plasma creatine, urine nitrogen, uric acid, and creatine clearance, as well as concentration-related changes in hematocrit, and erythrocyte, reticulocyte, and erythroblast counts were also seen.

Rats exposed to 55 ppm TCE for 14 weeks exhibited enlarged livers but no other adverse hepatic effects (Kimmerle and Eben, 1973). Increased relative liver weight was the only hepatic effect reported in male and female rats, mice, and gerbils exposed to concentrations up to 150 ppm TCE for 30 days, but the effect was more pronounced in mice than in rats or gerbils (Kjellstrand et al., 1981). Histological alterations of the liver characterized by cellular atrophy were associated with liver enlargement in a study with mice exposed to 37 ppm TCE for 30 days (Kjellstrand et al., 1983).

Haglid et al. (1981) reported that continuous exposure to 60 ppm TCE for 3 months resulted in biochemical and histopathological changes in the brain of Mongolian gerbils. These changes are indicative of astroglial hypertrophy and/or proliferation. Behavioral changes (reduced activity) were seen in rats exposed for 12 weeks to TCE at concentrations ranging from 100 to 1000 ppm (Silverman and Williams, 1975).

Exposure to 2790 ppm TCE, 4 hours/day, 6 days/week for 45 days caused myelotoxic anemia in rabbits (Mazza and Brancaccio, 1967). A concentration-related decrease in delta-aminolevulinate dehydratase activity (an enzyme involved in heme regulation) was seen in rats continuously exposed to 50, 400, or 800 ppm for 10 days (Fujita et al., 1984).

3.2.3. Chronic Toxicity

3.2.3.1. Human

Bardodej and Vyskocil (1956) evaluated 75 individuals in dry cleaning and metal degreasing workshops who had been exposed to 5-632 ppm TCE for 1-25 years. Prenarcotic symptoms of chronic exposure included headache, sleepiness, a drunken feeling, nausea, and tinnitus. Other symptoms were intolerance to heat and sunlight, hot flashes, perspiration, exaggerated heart beat, respiratory difficulties, reddening of the skin after mechanical or heat insults, intolerance to alcohol, and dermographism. Cardiovascular effects included vasomotor changes, bradycardia, supraventricular extrasystole, and conduction velocity disturbances. In addition, numerous subjective CNS effects were reported. There was no evidence of liver or kidney damage.

3.2.3.2. Animal

Male Sprague-Dawley rats were exposed to 100, 300, or 600 ppm TCE, 7 hours/day, 5 days/week for 108 weeks. Renal cytokaryomegaly occurred at 300 and 600 ppm, but not at 100 ppm (Maltoni et al., 1988, 1986).

3.2.4. Developmental and Reproductive Toxicity

3.2.4.1. Human

Two studies suggest that medical personnel exposed to various solvents, including TCE, are susceptible to reproductive effects. A survey of operating room personnel in the U.S. showed that women exposed to anesthetic waste gases (containing TCE) were subject to increased risks of spontaneous abortions and congenital abnormalities in their children. Increased risks of congenital abnormalities were also present among non-exposed wives of male operating room personnel (Cohen et al., 1974). Another survey involving 7949 physicians in the United Kingdom revealed a significantly higher frequency of spontaneous abortions in women anesthesiologists compared with non-anesthesiologists. The frequency of minor abnormalities in children of exposed fathers was 3.09% compared with 2.35% for nonexposed fathers (Knill-Jones et al., 1975).

3.2.4.2. Animal

Dorfmueller et al. (1979) exposed female rats to 1800 ppm TCE for two weeks prior to mating and for 20 days during gestation and found no evidence of maternal toxicity, embryotoxicity, severe teratogenicity, or behavioral deficits in the offspring. Offspring of rats exposed during pregnancy alone showed significant increases of skeletal and soft tissue abnormalities. Reduced body weights were seen in offspring of rats with pregestational exposure alone.

Wistar rats exposed to 100 ppm TCE for 4 hours daily on days 8-21 of gestation exhibited increased resorptions, reduced fetal weight gains, and increased frequency of bipartite or absent skeletal ossification centers (Healy et al., 1982). However, Sprague-Dawley rats and Swiss Webster mice exposed to 300 ppm TCE on days 5-15 of gestation exhibited no significant maternal, embryonal, or fetal toxicity and no evidence of teratogenicity (Schwetz et al., 1975).

Sperm abnormalities were reported in mice exposed to 2000 ppm anesthetic-grade TCE vapor, 4 hours/day for 5 days (Land et al., 1979) or to 500 ppm TCE, 7 hours/day for 5 days (Beliles et al., 1980).

3.2.5. Reference Concentration

The development of a Reference Concentration is under review by EPA (U.S. EPA, 1992a).

3.3. OTHER ROUTES OF EXPOSURE

3.3.1. Acute Toxicity

3.3.1.1. Human

Acute dermal exposure to TCE has been associated with reddening and dermatographic skin burns. The vapor may cause general dermatitis (U.S. EPA, 1985). Hypersensitivity to TCE, resulting in severe dermatological abnormalities, such as Steven-Johnson syndrome (erythema multiformis major), was reported in one study (Phoon et al., 1984). A skin condition termed "degreasers' flush" has been reported in workers who had consumed alcohol before or after exposure to TCE (Stewart et al., 1974). Direct contact of TCE vapor or liquid with the eye causes superficial damage to the cornea, but complete recovery occurs within a few days (Grant, 1974).

3.3.1.2. Animals

The dermal LD_{50} for TCE in rabbits is > 20 mL/kg (Smyth et al., 1969).

3.3.2. Subchronic Toxicity

Information on the subchronic toxicity of TCE by other routes of exposure in humans or animals was unavailable.

3.3.3. Chronic Toxicity

Information on the chronic toxicity of TCE by other routes of exposure in humans or animals was unavailable.

3.3.4. Developmental and Reproductive Toxicity

Information on the developmental and reproductive toxicity of TCE by other routes of exposure in humans or animals was unavailable.

3.4. TARGET ORGANS/CRITICAL EFFECTS

3.4.1. Oral Exposures

3.4.1.1. Primary Target Organs

1. Liver: Mice developed increased liver weight and hepatocellular hypertrophy following oral exposure to TCE.

2. Kidney: Rats and mice developed increased kidney weights, cytomegaly of renal tubular cells, and toxic nephropathy following oral exposure to TCE.

3.4.1.2. Other Target Organs

1. Central nervous system: Chronic oral exposure of rats caused transient CNS effects including ataxia, lethargy, convulsions, and hind limb paralysis.

2. Reproduction: Increased neonatal mortality, increased testis and epididymis weights, and reduced sperm motility was seen in a two-generation fertility study with rats.

3. Hematopoietic system: Rats exposed to TCE in drinking water exhibited decreased erythrocyte and leukocyte counts, increased fibrinogen levels, and shortened prothrombin time.

4. Immune system: Mice exposed to TCE in drinking water exhibited immunotoxic effects characterized by delayed hypersensitivity, suppressed antibody forming cell response, and decreased bone marrow stem cell colonization.

3.4.2. Inhalation Exposures

3.4.2.1. Primary Target Organs

1. Nervous system: CNS symptoms in workers exposed to TCE by inhalation included headache, sleepiness, vision distortion, nausea, abnormal reflexes, tremors, ataxia, nystagmus, and increased respiration. TCE exposure may also cause psychic disturbances such as short-term memory loss and fewer word associations. Subchronic exposure of gerbils induced biochemical and histopathological changes in the brain.

2. Liver: Following inhalation exposure to TCE, rodents developed enlarged livers and biochemical changes indicative of liver damage. Liver damage in humans is primarily associated with acute exposure to TCE. The hepatotoxic effects of TCE are enhanced by concomitant exposure to alcohol.

3. Kidney: Rats developed renal cytokaryomegaly following chronic inhalation exposure to TCE.

4. Cardiovascular system: Occupational exposure to TCE has been associated with vasomotor changes, tachycardia, bradycardia, extrasystoles, conduction disturbances, and precordial pain. TCE sensitizes the heart to cardiac arrhythmias.

5. Hematopoietic system: Inhalation of TCE induced myelotoxic anemia in rabbits and produced dose-related changes in several hematological indices in rats.

6. Reproduction: Inhalation studies with rodents indicate that TCE may cause increased resorptions, reduced fetal body weight, and ossification anomalies. Exposure to high concentrations produced sperm abnormalities in mice.

3.4.2.2. Other Target Organs

Skin: Reddening of the skin following mechanical or heat insults and dermographism was seen in workers exposed to TCE by inhalation.

3.4.3. Other Routes of Exposure

Skin: Dermal exposure to TCE may cause general dermatitis and hypersensitivity. "Degreasers' flush" may occur in conjunction with alcohol consumption.

4. CARCINOGENICITY

4.1. ORAL EXPOSURES

4.1.1. Human

Mortality statistics for 1969-1979 in Woburn, Massachusetts revealed a significantly elevated rate of childhood leukemia. Two of the eight municipal wells serving the community were known to be contaminated with TCE and several other chlorinated organic compounds, but the causes of leukemia were not identified in these studies (Kotelchuck and Parker, 1979; Parker and Rosen, 1981).

4.1.2. Animal

Maltoni et al. (1986) treated male and female Sprague-Dawley rats by gavage with TCE (99.9% pure) in olive oil at doses of 50 or 250 mg/kg/day, 4-5 days/week for 52 weeks. There was a dose-related increase in the incidence of leukemia in males, but no increased tumor incidence in females.

Significantly increased incidences of hepatocellular carcinomas occurred in $B6C3F_1$ mice that were administered time-weighted-average doses of 1170 or 1340 mg/kg/day (males) or 870 or 1740 mg/kg/day (females) by gavage, 5 days/week for 78 weeks. No compound-related carcinogenic effects were found in Osborne-Mendel rats similarly treated with 550 or 1100 mg/kg/day, but this finding was inconclusive because of poor survival. The TCE used in the study was ≥99% pure but contained stabilizers, including epichlorohydrin, a known carcinogen (NCI, 1976).

Studies by NTP (1982, 1986a) showed significantly increased incidences of hepatocellular carcinomas in male and female $B6C3F_1$ mice treated by gavage with epichlorohydrin-free TCE at a dose of 1000 mg/kg/day, 5 days/week for 103 weeks. F344 rats treated with 1000 mg/kg/day by the same regimen exhibited renal adenomas and adenocarcinomas; this effect was not seen at 500 mg/kg/day or in females at either dose level. Due to poor survival, the results in rats were considered inadequate. A third NTP study (NTP, 1988) exposed groups of male and female ACI, August, Marshall, and Osborne-Mendel rats by gavage to epichlorohydrin-free TCE in corn oil at doses of 0, 500, or 1000 mg/kg, 5 days/week for 103 weeks. There were significantly increased incidences of renal tubular cell neoplasms in low dose male Osborne-Mendel rats and interstitial cell neoplasms of the testis in high-dose Marshall rats. This study also was considered inadequate for assessment of carcinogenic activity because of toxic nephrosis and low survival.

Henschler et al. (1984) compared the carcinogenicity of TCE stabilized with epichlorohydrin (0.8%) or 1,2-epoxybutane (0.8%) to that of industrial-grade TCE in male and female ICR/Ha Swiss mice. TCE was administered daily by gavage (2.4 g/kg, females; 1.8 g/kg, males) for 18 months, with and without the addition of the epoxides. Animals exposed to epichlorohydrin- or 1,2-epoxybutane-stabilized TCE exhibited an increased incidence of papillomas and carcinomas of the forestomach. This effect was not observed without stabilizers.

4.2. INHALATION EXPOSURES

4.2.1. Human

Epidemiologic studies conducted by Axelson et al. (1978), Malek et al. (1979), and Tola et al. (1980) reported no significant excess cancer risks associated with occupational exposure to TCE, but the studies do not permit definite conclusions because of various study limitations such as inadequate latency periods, small sample size, lack of analysis by tumor site, and multiple chemical exposure (ATSDR, 1989; U.S. EPA, 1985). An update of one of the studies (Axelson, 1986) found a slight increase of bladder cancer and lymphomas in an expanded cohort study; however, details of TCE exposure were not given. A retrospective cohort mortality study of dry-cleaning and/or laundry workers (Blair et al., 1979) found significant increases in the incidence of cancer at several sites (lung/bronchi/trachea, cervix, and skin) among a group of 330 deceased workers. This cancer increase was possibly due to dry-cleaning chemicals (carbon tetrachloride, tetrachloroethylene, and TCE) but could not be related to TCE alone. Paddle (1983) examined tumor registry records in Great Britain and found no association between liver cancer and TCE exposure in workers employed in one TCE production facility.

4.2.2. Animal

Bell et al. (1978) reported no carcinogenic effects in Charles River rats exposed to technical grade TCE at concentrations of 0, 100, 300, or 600 ppm, 6 hours/day, 5 days/week for 24 months. Hepatocellular carcinomas were seen in $B6C3F_1$ mice similarly exposed to TCE, with a greater incidence of tumors occurring in males than in females. The TCE employed contained 0.148% epichlorohydrin and several other additives.

Wistar rats, NMR mice, and Syrian hamsters were exposed to purified TCE at 0, 100, or 500 ppm, 6 hours/day, 5 days/week for 18 months (Henschler et al., 1980). The only statistically significant effect was an increased incidence of malignant lymphomas in female mice. U.S. EPA (1987) suggested that lymphoma susceptibility may have been enhanced by virus and immunosuppression.

Fukuda et al. (1983) exposed female ICR mice and Sprague-Dawley rats to reagent-grade TCE (containing 0.019% epichlorohydrin) at concentrations of 0, 50, 150, or 450 ppm,

7 hours/day, 5 days/week for 104 weeks. Although there were a number of tumors at several sites in rats and mice, only lung adenocarcinomas were significantly increased in mice at the two highest concentrations compared with controls.

Maltoni et al. (1986, 1988) exposed male and female Sprague-Dawley rats, Swiss mice, and $B6C3F_1$ mice to 100, 300, or 600 ppm epoxide-free TCE, 7 hours/day, 5 days/week for 104 weeks (rats) or 78 weeks (mice). Statistically significant increased incidences of tumors included testicular Leydig cell tumors in rats at ≥100 ppm, lung adenomas in male Swiss mice at ≥300 ppm, hepatomas in male Swiss mice at 600 ppm, and lung adenomas in female $B6C3F_1$ mice at 600 ppm.

4.3. OTHER ROUTES OF EXPOSURE

4.3.1. Human

Information on the carcinogenicity of TCE in humans by other routes of exposure was unavailable.

4.3.2. Animal

Three weekly topical applications of 1 mg TCE for 581 days did not induce skin tumors in female Swiss ICR/ha mice. Negative results were also reported in a tumor initiation assay in which mice received a single dermal application of 1 mg TCE, followed by 3 weekly applications of a phorbol ester for 581 days (Van Duuren et al., 1979).

4.4. EPA WEIGHT-OF-EVIDENCE

Classification: C-B2 continuum (C = possible human carcinogen; B2 = probable human carcinogen) (U.S. EPA, 1992b).

Comment: This classification is a recent recommendation by EPA's Science Advisory Board. However, EPA has not adopted a current position on the weight-of-evidence classification (U.S. EPA, 1992b). An earlier evaluation (U.S. EPA, 1990) classified TCE as a weight-of-evidence B2 chemical, based on tumor responses in rats and mice exposed to TCE by the oral and inhalation routes of exposure. The available epidemiological data were inadequate to refute or demonstrate a human carcinogenic potential (U.S. EPA, 1987).

4.5. CARCINOGENICITY SLOPE FACTORS

4.5.1. Oral

SLOPE FACTOR: 1.1E-2 $(mg/kg/day)^{-1}$ (U.S. EPA, 1992b)

UNIT RISK: 3.2E-7 $(\mu g/L)^{-1}$ (U.S. EPA, 1992b)
PRINCIPAL STUDIES: NCI (1976); NTP (1983); U.S. EPA (1985, 1987, 1988)

COMMENT: The slope factor and unit risk values were provided in U.S. EPA (1985). However, the carcinogenicity files for TCE have been withdrawn from IRIS pending resolution of the weight-of-evidence classification.

4.5.2. Inhalation

SLOPE FACTOR: 6.0E-3 $(mg/kg/day)^{-1}$ (U.S. EPA, 1992b)
UNIT RISK: 1.7E-6 $(\mu g/m^3)^{-1}$ (U.S. EPA, 1992b)
PRINCIPAL STUDIES: Maltoni et al. (1986); Fukuda et al. (1983); U.S. EPA (1988)

COMMENT: The slope factor and unit risk values were provided in U.S. EPA (1987). However, the carcinogenicity files for TCE have been withdrawn from IRIS pending resolution of the weight-of-evidence classification.

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APPENDIX F

HI AND ELCR SUMMARY

Current Industrial Excess Lifetime Cancer Risks

---------- SECTOR=WAG 6 PATHWAY=Current Industrial Dermal Contact with Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	1.25E-02	1.00E-01	1.25E-01	
Antimony	2.46E-06	8.00E-06	3.07E-01	
Arsenic	1.12E-05	1.23E-04	9.13E-02	
Beryllium	6.08E-07	5.00E-05	1.22E-02	
Cadmium	1.87E-07	1.00E-05	1.87E-02	
Chromium	2.49E-05	1.00E-04	2.49E-01	
Cobalt	8.53E-06	4.80E-02	1.78E-04	
Iron	2.29E-02	4.50E-02	5.10E-01	
Lead	1.68E-05	1.50E-08	1.12E+03	
Thallium	1.43E-06			
Uranium	5.55E-05	2.55E-03	2.18E-02	
Vanadium	3.00E-05	7.00E-05	4.28E-01	
Zinc	5.40E-05	6.00E-02	8.99E-04	
2-Methylnaphthalene	2.26E-06			
Acenaphthene	5.25E-06	1.86E-02	2.83E-04	
Acenaphthylene	9.26E-07			
Anthracene	1.02E-05	2.28E-01	4.46E-05	
Benz(a)anthracene	1.59E-05			
Benzo(a)pyrene	1.56E-05			
Benzo(b)fluoranthene	1.83E-05			
Benzo(ghi)perylene	8.90E-06			
Benzo(k)fluoranthene	1.49E-05			
Bis(2-ethylhexyl)phthalate	4.21E-07	3.80E-03	1.11E-04	
Chrysene	1.68E-05			
Di-n-butyl phthalate	3.13E-06	1.00E-01	3.13E-05	
Dibenz(a,h)anthracene	4.62E-06			
Fluoranthene	3.19E-05	1.24E-02	2.57E-03	
Fluorene	4.00E-06	2.00E-02	2.00E-04	
Indeno(1,2,3-cd)pyrene	8.43E-06			
Naphthalene	2.71E-06	2.86E-02	9.48E-05	
PCB-1254	4.28E-07	1.80E-05	2.38E-02	
PCB-1260	2.35E-07			
PCB-1262	9.59E-08			
Phenanthrene	2.24E-05			
Polychlorinated biphenyl	7.56E-07			
Pyrene	2.82E-05	9.30E-03	3.03E-03	
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				1.12E+03

---------- SECTOR=WAG 6 PATHWAY=Current Industrial Ingestion of Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	2.90E-03	1.00E+00	2.90E-03	
Antimony	5.71E-07	4.00E-04	1.43E-03	
Arsenic	2.61E-06	3.00E-04	8.71E-03	
Beryllium	1.41E-07	5.00E-03	2.83E-05	
Cadmium	2.17E-07	1.00E-03	2.17E-04	
Chromium	5.80E-06	5.00E-03	1.16E-03	
Cobalt	1.98E-06	6.00E-02	3.30E-05	
Iron	5.34E-03	3.00E-01	1.78E-02	
Lead	3.90E-06	1.00E-07	3.90E+01	

Current Industrial Excess Lifetime Cancer Risks

---------- SECTOR=WAG 6 PATHWAY=Current Industrial Ingestion of Soil ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Thallium	3.34E-07			
Uranium	1.29E-05	3.00E-03	4.31E-03	
Vanadium	6.97E-06	7.00E-03	9.96E-04	
Zinc	1.25E-05	3.00E-01	4.18E-05	
2-Methylnaphthalene	2.62E-07			
Acenaphthene	6.11E-07	6.00E-02	1.02E-05	
Acenaphthylene	1.08E-07			
Anthracene	1.18E-06	3.00E-01	3.95E-06	
Benz(a)anthracene	1.85E-06			
Benzo(a)pyrene	1.81E-06			
Benzo(b)fluoranthene	2.13E-06			
Benzo(ghi)perylene	1.04E-06			
Benzo(k)fluoranthene	1.73E-06			
Bis(2-ethylhexyl)phthalate	4.89E-08	2.00E-02	2.45E-06	
Chrysene	1.96E-06			
Di-n-butyl phthalate	3.65E-07	1.00E-01	3.65E-06	
Dibenz(a,h)anthracene	5.38E-07			
Fluoranthene	3.71E-06	4.00E-02	9.28E-05	
Fluorene	4.66E-07	4.00E-02	1.16E-05	
Indeno(1,2,3-cd)pyrene	9.81E-07			
Naphthalene	3.15E-07	3.57E-02	8.82E-06	
PCB-1254	8.30E-08	2.00E-05	4.15E-03	
PCB-1260	4.56E-08			
PCB-1262	1.86E-08			
Phenanthrene	2.60E-06			
Polychlorinated biphenyl	1.47E-07			
Pyrene	3.28E-06	3.00E-02	1.09E-04	
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				3.91E+01

---------- SECTOR=WAG 6 PATHWAY=Current Industrial Inhalation of Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	2.70E-07			
Antimony	5.34E-11			
Arsenic	2.44E-10			
Beryllium	1.32E-11			
Cadmium	2.03E-11	5.71E-05	3.55E-07	
Chromium	5.41E-10			
Cobalt	1.85E-10			
Iron	4.98E-07			
Lead	3.65E-10	2.86E-04	1.28E-06	
Thallium	3.11E-11			
Uranium	1.21E-09			
Vanadium	6.51E-10			
Zinc	1.17E-09			
2-Methylnaphthalene	2.45E-11			
Acenaphthene	5.70E-11			
Acenaphthylene	1.00E-11			
Anthracene	1.11E-10			

Current Industrial Excess Lifetime Cancer Risks

---------- SECTOR=WAG 6 PATHWAY=Current Industrial Inhalation of Soil ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Benz(a)anthracene	1.73E-10			
Benzo(a)pyrene	1.69E-10			
Benzo(b)fluoranthene	1.99E-10			
Benzo(ghi)perylene	9.67E-11			
Benzo(k)fluoranthene	1.61E-10			
Bis(2-ethylhexyl)phthalate	4.57E-12			
Chrysene	1.83E-10			
Di-n-butyl phthalate	3.40E-11			
Dibenz(a,h)anthracene	5.02E-11			
Fluoranthene	3.47E-10			
Fluorene	4.35E-11			
Indeno(1,2,3-cd)pyrene	9.15E-11			
Naphthalene	2.94E-11			
PCB-1254	7.75E-12			
PCB-1260	4.26E-12			
PCB-1262	1.74E-12			
Phenanthrene	2.43E-10			
Polychlorinated biphenyl	1.37E-11			
Pyrene	3.06E-10			
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				1.63E-06

Current Industrial Excess Lifetime Cancer Risks

---------- SECTOR=WAG 6 PATHWAY=Current Industrial Dermal Contact with Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	4.45E-03			
Antimony	8.78E-07			
Arsenic	4.01E-06	3.66E+00	1.47E-05	
Beryllium	2.17E-07	4.30E+02	9.33E-05	
Cadmium	6.67E-08			
Chromium	8.90E-06			
Cobalt	3.05E-06			
Iron	8.19E-03			
Lead	6.00E-06			
Thallium	5.12E-07			
Uranium	1.98E-05			
Vanadium	1.07E-05			
Zinc	1.93E-05			
2-Methylnaphthalene	8.06E-07			
Acenaphthene	1.88E-06			
Acenaphthylene	3.31E-07			
Anthracene	3.64E-06			
Benz(a)anthracene	5.69E-06	2.35E+00	1.34E-05	
Benzo(a)pyrene	5.57E-06	2.35E+01	1.31E-04	
Benzo(b)fluoranthene	6.55E-06	2.35E+00	1.54E-05	
Benzo(ghi)perylene	3.18E-06			
Benzo(k)fluoranthene	5.31E-06	2.35E-01	1.25E-06	
Bis(2-ethylhexyl)phthalate	1.50E-07	7.37E-02	1.11E-08	
Chrysene	6.01E-06	2.35E-02	1.42E-07	
Di-n-butyl phthalate	1.12E-06			
Dibenz(a,h)anthracene	1.65E-06	2.35E+01	3.89E-05	
Fluoranthene	1.14E-05			
Fluorene	1.43E-06			
Indeno(1,2,3-cd)pyrene	3.01E-06	2.35E+00	7.09E-06	
Naphthalene	9.67E-07			
PCB-1254	1.53E-07	2.22E+00	3.40E-07	
PCB-1260	8.40E-08	2.22E+00	1.87E-07	
PCB-1262	3.43E-08	2.22E+00	7.61E-08	
Phenanthrene	7.98E-06			
Polychlorinated biphenyl	2.70E-07	2.22E+00	6.00E-07	
Pyrene	1.01E-05			
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				3.17E-04

---------- SECTOR=WAG 6 PATHWAY=Current Industrial External Exposure to Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum				
Antimony				
Arsenic				
Beryllium				
Cadmium				
Chromium				
Cobalt				
Iron				
Lead				

Current Industrial Excess Lifetime Cancer Risks

---------- SECTOR=WAG 6 PATHWAY=Current Industrial External Exposure to Soil ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Thallium				
Uranium				
Vanadium				
Zinc				
2-Methylnaphthalene				
Acenaphthene				
Acenaphthylene				
Anthracene				
Benz(a)anthracene				
Benzo(a)pyrene				
Benzo(b)fluoranthene				
Benzo(ghi)perylene				
Benzo(k)fluoranthene				
Bis(2-ethylhexyl)phthalate				
Chrysene				
Di-n-butyl phthalate				
Dibenz(a,h)anthracene				
Fluoranthene				
Fluorene				
Indeno(1,2,3-cd)pyrene				
Naphthalene				
PCB-1254				
PCB-1260				
PCB-1262				
Phenanthrene				
Polychlorinated biphenyl				
Pyrene				
Alpha activity	9.95E+01			
Beta activity	2.19E+02			
Cesium-137	1.71E+00	2.09E-06	3.57E-06	
Neptunium-237	2.90E+00	4.62E-07	1.34E-06	
Uranium-234	3.00E+01	2.14E-11	6.41E-10	
Uranium-235	1.77E+00	2.65E-07	4.69E-07	
Uranium-238	4.01E+01	6.57E-08	2.63E-06	
Pathway Total				8.01E-06

---------- SECTOR=WAG 6 PATHWAY=Current Industrial Ingestion of Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	1.03E-03			
Antimony	2.04E-07			
Arsenic	9.33E-07	1.50E+00	1.40E-06	
Beryllium	5.05E-08	4.30E+00	2.17E-07	
Cadmium	7.75E-08			
Chromium	2.07E-06			
Cobalt	7.08E-07			
Iron	1.91E-03			
Lead	1.39E-06			
Thallium	1.19E-07			
Uranium	4.61E-06			
Vanadium	2.49E-06			
Zinc	4.48E-06			
2-Methylnaphthalene	9.37E-08			
Acenaphthene	2.18E-07			
Acenaphthylene	3.84E-08			
Anthracene	4.23E-07			

Current Industrial Excess Lifetime Cancer Risks

---------- SECTOR=WAG 6 PATHWAY=Current Industrial Ingestion of Soil ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Benz(a)anthracene	6.62E-07	7.30E-01	4.83E-07	
Benzo(a)pyrene	6.48E-07	7.30E+00	4.73E-06	
Benzo(b)fluoranthene	7.61E-07	7.30E-01	5.56E-07	
Benzo(ghi)perylene	3.70E-07			
Benzo(k)fluoranthene	6.17E-07	7.30E-02	4.50E-08	
Bis(2-ethylhexyl)phthalate	1.75E-08	1.40E-02	2.45E-10	
Chrysene	6.99E-07	7.30E-03	5.10E-09	
Di-n-butyl phthalate	1.30E-07			
Dibenz(a,h)anthracene	1.92E-07	7.30E+00	1.40E-06	
Fluoranthene	1.33E-06			
Fluorene	1.66E-07			
Indeno(1,2,3-cd)pyrene	3.50E-07	7.30E-01	2.56E-07	
Naphthalene	1.12E-07			
PCB-1254	2.96E-08	2.00E+00	5.93E-08	
PCB-1260	1.63E-08	2.00E+00	3.26E-08	
PCB-1262	6.64E-09	2.00E+00	1.33E-08	
Phenanthrene	9.28E-07			
Polychlorinated biphenyl	5.23E-08	2.00E+00	1.05E-07	
Pyrene	1.17E-06			
Alpha activity	6.81E+03			
Beta activity	1.50E+04			
Cesium-137	1.17E+02	3.16E-11	3.69E-09	
Neptunium-237	1.99E+02	3.00E-10	5.96E-08	
Uranium-234	2.05E+03	4.44E-11	9.10E-08	
Uranium-235	1.21E+02	4.70E-11	5.70E-09	
Uranium-238	2.74E+03	6.20E-11	1.70E-07	
Pathway Total				9.63E-06

---------- SECTOR=WAG 6 PATHWAY=Current Industrial Inhalation of Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	9.66E-08			
Antimony	1.91E-11			
Arsenic	8.71E-11	5.00E+01	4.36E-09	
Beryllium	4.71E-12	8.40E+00	3.96E-11	
Cadmium	7.24E-12	6.10E+00	4.42E-11	
Chromium	1.93E-10	4.10E+01	7.93E-09	
Cobalt	6.61E-11			
Iron	1.78E-07			
Lead	1.30E-10			
Thallium	1.11E-11			
Uranium	4.31E-10			
Vanadium	2.33E-10			
Zinc	4.18E-10			
2-Methylnaphthalene	8.75E-12			
Acenaphthene	2.04E-11			
Acenaphthylene	3.59E-12			
Anthracene	3.95E-11			
Benz(a)anthracene	6.18E-11	3.10E-01	1.92E-11	
Benzo(a)pyrene	6.05E-11	3.10E+00	1.87E-10	
Benzo(b)fluoranthene	7.11E-11	3.10E-01	2.20E-11	
Benzo(ghi)perylene	3.45E-11			
Benzo(k)fluoranthene	5.76E-11	3.10E-02	1.79E-12	
Bis(2-ethylhexyl)phthalate	1.63E-12			
Chrysene	6.52E-11	3.10E-03	2.02E-13	
Di-n-butyl phthalate	1.22E-11			

Current Industrial Excess Lifetime Cancer Risks

---------- SECTOR=WAG 6 PATHWAY=Current Industrial Inhalation of Soil ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Dibenz(a,h)anthracene	1.79E-11	3.10E+00	5.56E-11	
Fluoranthene	1.24E-10			
Fluorene	1.55E-11			
Indeno(1,2,3-cd)pyrene	3.27E-11	3.10E-01	1.01E-11	
Naphthalene	1.05E-11			
PCB-1254	2.77E-12	2.00E+00	5.53E-12	
PCB-1260	1.52E-12	2.00E+00	3.04E-12	
PCB-1262	6.20E-13	2.00E+00	1.24E-12	
Phenanthrene	8.67E-11			
Polychlorinated biphenyl	4.89E-12	2.00E+00	9.77E-12	
Pyrene	1.09E-10			
Alpha activity				
Beta activity				
Cesium-137	1.09E-02	1.91E-11	2.08E-13	
Neptunium-237	1.86E-02	3.45E-08	6.40E-10	
Uranium-234	1.91E-01	1.40E-08	2.68E-09	
Uranium-235	1.13E-02	1.30E-08	1.47E-10	
Uranium-238	2.56E-01	1.24E-08	3.17E-09	
Pathway Total				1.93E-08

Excavation Excess Lifetime Cancer Risks

---------- SECTOR=WAG 6 PATHWAY=Excavation Dermal Contact with Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	9.24E-03	1.00E-01	9.24E-02	
Antimony	8.52E-07	8.00E-06	1.06E-01	
Arsenic	5.14E-06	1.23E-04	4.18E-02	
Barium	8.40E-05	4.90E-03	1.71E-02	
Beryllium	4.72E-07	5.00E-05	9.44E-03	
Cadmium	2.98E-08	1.00E-05	2.98E-03	
Chromium	1.62E-05	1.00E-04	1.62E-01	
Cobalt	5.47E-06	4.80E-02	1.14E-04	
Copper	1.11E-04	1.20E-02	9.22E-03	
Iron	1.53E-02	4.50E-02	3.39E-01	
Lead	9.09E-06	1.50E-08	6.06E+02	
Manganese	3.30E-04	1.87E-03	1.77E-01	
Mercury	1.08E-07	2.10E-05	5.14E-03	
Nickel	1.97E-04	5.40E-03	3.65E-02	
Silver	4.91E-07	9.00E-04	5.46E-04	
Thallium	5.73E-07			
Uranium	2.61E-05	2.55E-03	1.02E-02	
Vanadium	2.18E-05	7.00E-05	3.12E-01	
Zinc	2.96E-05	6.00E-02	4.93E-04	
1,1,2-Trichloroethane	1.44E-07	3.24E-03	4.45E-05	
1,1-Dichloroethene	2.83E-06	9.00E-03	3.14E-04	
2,4-Dinitrotoluene	1.42E-06	1.70E-03	8.37E-04	
2,6-Dinitrotoluene	1.35E-06	8.50E-04	1.58E-03	
2-Hexanone	3.42E-08			
2-Methylnaphthalene	2.11E-06			
Acenaphthene	1.79E-06	1.86E-02	9.63E-05	
Acenaphthylene	6.85E-07			
Anthracene	3.20E-06	2.28E-01	1.40E-05	
Benz(a)anthracene	2.64E-06			
Benzo(a)pyrene	2.56E-06			
Benzo(b)fluoranthene	3.09E-06			
Benzo(ghi)perylene	1.90E-06			
Benzo(k)fluoranthene	3.50E-06			
Bis(2-ethylhexyl)phthalate	1.86E-06	3.80E-03	4.89E-04	
Butyl benzyl phthalate	1.35E-06	1.22E-01	1.11E-05	
Carbon tetrachloride	1.53E-07	4.55E-04	3.36E-04	
Chrysene	2.74E-06			
Di-n-butyl phthalate	2.22E-06	1.00E-01	2.22E-05	
Di-n-octylphthalate	1.89E-06	1.80E-02	1.05E-04	
Dibenz(a,h)anthracene	1.96E-06			
Fluoranthene	4.69E-06	1.24E-02	3.78E-04	
Fluorene	1.79E-06	2.00E-02	8.94E-05	
Indeno(1,2,3-cd)pyrene	1.87E-06			
Iodomethane				
Methylene chloride	1.23E-07	5.70E-02	2.15E-06	
N-Nitroso-di-n-propylamine	1.97E-06			
N-Nitrosodiphenylamine	2.29E-06			
Naphthalene	1.90E-06	2.86E-02	6.64E-05	
PCB-1254	1.60E-07	1.80E-05	8.87E-03	
PCB-1260	2.56E-07			
PCB-1262	7.10E-08			
Phenanthrene	3.77E-06			
Polychlorinated biphenyl	9.65E-07			
Pyrene	4.56E-06	9.30E-03	4.90E-04	
Tetrachloroethene	1.52E-07	1.00E-02	1.52E-05	
Trichloroethene	1.37E-03	9.00E-04	1.52E+00	
Vinyl chloride	1.01E-05			
trans-1,2-Dichloroethene	1.10E-04	2.00E-02	5.51E-03	
Alpha activity				
Beta activity				
Cesium-137				

Excavation Excess Lifetime Cancer Risks

---------- SECTOR=WAG 6 PATHWAY=Excavation Dermal Contact with Soil ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Neptunium-237				
Plutonium-239				
Technetium-99				
Thorium-230				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				6.09E+02

---------- SECTOR=WAG 6 PATHWAY=Excavation Ingestion of Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	2.06E-02	1.00E+00	2.06E-02	
Antimony	1.90E-06	4.00E-04	4.75E-03	
Arsenic	1.15E-05	3.00E-04	3.82E-02	
Barium	1.87E-04	7.00E-02	2.68E-03	
Beryllium	1.05E-06	5.00E-03	2.11E-04	
Cadmium	3.33E-07	1.00E-03	3.33E-04	
Chromium	3.62E-05	5.00E-03	7.25E-03	
Cobalt	1.22E-05	6.00E-02	2.04E-04	
Copper	2.47E-04	4.00E-02	6.17E-03	
Iron	3.41E-02	3.00E-01	1.14E-01	
Lead	2.03E-05	1.00E-07	2.03E+02	
Manganese	7.37E-04	4.60E-02	1.60E-02	
Mercury	2.41E-07	3.00E-04	8.03E-04	
Nickel	4.40E-04	2.00E-02	2.20E-02	
Silver	1.10E-06	5.00E-03	2.19E-04	
Thallium	1.28E-06			
Uranium	5.83E-05	3.00E-03	1.94E-02	
Vanadium	4.87E-05	7.00E-03	6.96E-03	
Zinc	6.60E-05	3.00E-01	2.20E-04	
1,1,2-Trichloroethane	6.43E-08	4.00E-03	1.61E-05	
1,1-Dichloroethene	1.26E-06	9.00E-03	1.40E-04	
2,4-Dinitrotoluene	1.59E-06	2.00E-03	7.94E-04	
2,6-Dinitrotoluene	1.50E-06	1.00E-03	1.50E-03	
2-Hexanone	1.53E-08			
2-Methylnaphthalene	2.35E-06			
Acenaphthene	2.00E-06	6.00E-02	3.33E-05	
Acenaphthylene	7.65E-07			
Anthracene	3.57E-06	3.00E-01	1.19E-05	
Benz(a)anthracene	2.94E-06			
Benzo(a)pyrene	2.86E-06			
Benzo(b)fluoranthene	3.45E-06			
Benzo(ghi)perylene	2.12E-06			
Benzo(k)fluoranthene	3.91E-06			
Bis(2-ethylhexyl)phthalate	2.08E-06	2.00E-02	1.04E-04	
Butyl benzyl phthalate	1.51E-06	2.00E-01	7.54E-06	
Carbon tetrachloride	6.82E-08	7.00E-04	9.75E-05	
Chrysene	3.06E-06			
Di-n-butyl phthalate	2.48E-06	1.00E-01	2.48E-05	
Di-n-octylphthalate	2.11E-06	2.00E-02	1.05E-04	
Dibenz(a,h)anthracene	2.19E-06			
Fluoranthene	5.24E-06	4.00E-02	1.31E-04	
Fluorene	2.00E-06	4.00E-02	4.99E-05	
Indeno(1,2,3-cd)pyrene	2.09E-06			
Iodomethane	5.54E-08			

Excavation Excess Lifetime Cancer Risks

---------- SECTOR=WAG 6 PATHWAY=Excavation Ingestion of Soil ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Methylene chloride	5.48E-08	6.00E-02	9.13E-07	
N-Nitroso-di-n-propylamine	2.20E-06			
N-Nitrosodiphenylamine	2.56E-06			
Naphthalene	2.12E-06	3.57E-02	5.93E-05	
PCB-1254	2.97E-07	2.00E-05	1.49E-02	
PCB-1260	4.76E-07			
PCB-1262	1.32E-07			
Phenanthrene	4.21E-06			
Polychlorinated biphenyl	1.80E-06			
Pyrene	5.09E-06	3.00E-02	1.70E-04	
Tetrachloroethene	6.79E-08	1.00E-02	6.79E-06	
Trichloroethene	6.13E-04	6.00E-03	1.02E-01	
Vinyl chloride	4.52E-06			
trans-1,2-Dichloroethene	4.92E-05	2.00E-02	2.46E-03	
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Plutonium-239				
Technetium-99				
Thorium-230				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				2.03E+02

---------- SECTOR=WAG 6 PATHWAY=Excavation Inhalation of Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	2.01E-07			
Antimony	1.85E-11			
Arsenic	1.12E-10			
Barium	1.82E-09	1.43E-04	1.28E-05	
Beryllium	1.02E-11			
Cadmium	3.23E-12	5.71E-05	5.67E-08	
Chromium	3.53E-10			
Cobalt	1.19E-10			
Copper	2.40E-09			
Iron	3.32E-07			
Lead	1.97E-10	2.86E-04	6.91E-07	
Manganese	7.17E-09	1.43E-05	5.02E-04	
Mercury	2.34E-12	8.57E-05	2.73E-08	
Nickel	4.28E-09			
Silver	1.07E-11			
Thallium	1.24E-11			
Uranium	5.67E-10			
Vanadium	4.74E-10			
Zinc	6.42E-10			
1,1,2-Trichloroethane	7.62E-08			
1,1-Dichloroethene	8.34E-06			
2,4-Dinitrotoluene	1.54E-11			
2,6-Dinitrotoluene	1.46E-11			
2-Hexanone	1.49E-13			
2-Methylnaphthalene	2.29E-11			
Acenaphthene	1.95E-11			
Acenaphthylene	7.44E-12			

Excavation Excess Lifetime Cancer Risks

---------- SECTOR=WAG 6 PATHWAY=Excavation Inhalation of Soil ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Anthracene	3.47E-11			
Benz(a)anthracene	2.86E-11			
Benzo(a)pyrene	2.78E-11			
Benzo(b)fluoranthene	3.35E-11			
Benzo(ghi)perylene	2.06E-11			
Benzo(k)fluoranthene	3.80E-11			
Bis(2-ethylhexyl)phthalate	2.02E-11			
Butyl benzyl phthalate	1.47E-11			
Carbon tetrachloride	1.50E-07	5.71E-04	2.62E-04	
Chrysene	2.97E-11			
Di-n-butyl phthalate	2.41E-11			
Di-n-octylphthalate	2.05E-11			
Dibenz(a,h)anthracene	2.13E-11			
Fluoranthene	5.09E-11			
Fluorene	1.94E-11			
Indeno(1,2,3-cd)pyrene	2.03E-11			
Iodomethane				
Methylene chloride	2.46E-07	8.57E-01	2.87E-07	
N-Nitroso-di-n-propylamine	2.14E-11			
N-Nitrosodiphenylamine	2.49E-11			
Naphthalene	2.06E-11			
PCB-1254	2.89E-12			
PCB-1260	4.63E-12			
PCB-1262	1.28E-12			
Phenanthrene	4.10E-11			
Polychlorinated biphenyl	1.75E-11			
Pyrene	4.95E-11			
Tetrachloroethene	1.28E-07			
Trichloroethene	1.35E-03			
Vinyl chloride	2.18E-02			
trans-1,2-Dichloroethene	4.78E-10			
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Plutonium-239				
Technetium-99				
Thorium-230				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				7.77E-04

Excavation Excess Lifetime Cancer Risks

---------- SECTOR=WAG 6 PATHWAY=Excavation Dermal Contact with Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	3.30E-03			
Antimony	3.04E-07			
Arsenic	1.84E-06	3.66E+00	6.72E-06	
Barium	3.00E-05			
Beryllium	1.69E-07	4.30E+02	7.25E-05	
Cadmium	1.06E-08			
Chromium	5.80E-06			
Cobalt	1.95E-06			
Copper	3.95E-05			
Iron	5.45E-03			
Lead	3.25E-06			
Manganese	1.18E-04			
Mercury	3.85E-08			
Nickel	7.04E-05			
Silver	1.75E-07			
Thallium	2.05E-07			
Uranium	9.32E-06			
Vanadium	7.79E-06			
Zinc	1.06E-05			
1,1,2-Trichloroethane	5.15E-08	7.04E-02	3.62E-09	
1,1-Dichloroethene	1.01E-06	6.00E-01	6.06E-07	
2,4-Dinitrotoluene	5.08E-07	8.00E-01	4.07E-07	
2,6-Dinitrotoluene	4.80E-07	8.00E-01	3.84E-07	
2-Hexanone	1.22E-08			
2-Methylnaphthalene	7.53E-07			
Acenaphthene	6.40E-07			
Acenaphthylene	2.45E-07			
Anthracene	1.14E-06			
Benz(a)anthracene	9.42E-07	2.35E+00	2.22E-06	
Benzo(a)pyrene	9.15E-07	2.35E+01	2.15E-05	
Benzo(b)fluoranthene	1.10E-06	2.35E+00	2.60E-06	
Benzo(ghi)perylene	6.78E-07			
Benzo(k)fluoranthene	1.25E-06	2.35E-01	2.94E-07	
Bis(2-ethylhexyl)phthalate	6.64E-07	7.37E-02	4.89E-08	
Butyl benzyl phthalate	4.83E-07			
Carbon tetrachloride	5.46E-08	2.00E-01	1.09E-08	
Chrysene	9.78E-07	2.35E-02	2.30E-08	
Di-n-butyl phthalate	7.93E-07			
Di-n-octylphthalate	6.74E-07			
Dibenz(a,h)anthracene	7.01E-07	2.35E+01	1.65E-05	
Fluoranthene	1.68E-06			
Fluorene	6.39E-07			
Indeno(1,2,3-cd)pyrene	6.69E-07	2.35E+00	1.58E-06	
Iodomethane				
Methylene chloride	4.38E-08	7.89E-03	3.46E-10	
N-Nitroso-di-n-propylamine	7.05E-07	2.80E+01	1.97E-05	
N-Nitrosodiphenylamine	8.19E-07	1.96E-02	1.61E-08	
Naphthalene	6.77E-07			
PCB-1254	5.70E-08	2.22E+00	1.27E-07	
PCB-1260	9.14E-08	2.22E+00	2.03E-07	
PCB-1262	2.54E-08	2.22E+00	5.63E-08	
Phenanthrene	1.35E-06			
Polychlorinated biphenyl	3.45E-07	2.22E+00	7.66E-07	
Pyrene	1.63E-06			
Tetrachloroethene	5.43E-08	5.20E-02	2.82E-09	
Trichloroethene	4.90E-04	7.33E-02	3.59E-05	
Vinyl chloride	3.62E-06	1.90E+00	6.88E-06	
trans-1,2-Dichloroethene	3.93E-05			
Alpha activity				
Beta activity				
Cesium-137				

Excavation Excess Lifetime Cancer Risks

---------- SECTOR=WAG 6 PATHWAY=Excavation Dermal Contact with Soil ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Neptunium-237				
Plutonium-239				
Technetium-99				
Thorium-230				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				1.89E-04

---------- SECTOR=WAG 6 PATHWAY=Excavation External Exposure to Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Cadmium				
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Manganese				
Mercury				
Nickel				
Silver				
Thallium				
Uranium				
Vanadium				
Zinc				
1,1,2-Trichloroethane				
1,1-Dichloroethene				
2,4-Dinitrotoluene				
2,6-Dinitrotoluene				
2-Hexanone				
2-Methylnaphthalene				
Acenaphthene				
Acenaphthylene				
Anthracene				
Benz(a)anthracene				
Benzo(a)pyrene				
Benzo(b)fluoranthene				
Benzo(ghi)perylene				
Benzo(k)fluoranthene				
Bis(2-ethylhexyl)phthalate				
Butyl benzyl phthalate				
Carbon tetrachloride				
Chrysene				
Di-n-butyl phthalate				
Di-n-octylphthalate				
Dibenz(a,h)anthracene				
Fluoranthene				
Fluorene				
Indeno(1,2,3-cd)pyrene				
Iodomethane				

Excavation Excess Lifetime Cancer Risks

---------- SECTOR=WAG 6 PATHWAY=Excavation External Exposure to Soil ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Methylene chloride				
N-Nitroso-di-n-propylamine				
N-Nitrosodiphenylamine				
Naphthalene				
PCB-1254				
PCB-1260				
PCB-1262				
Phenanthrene				
Polychlorinated biphenyl				
Pyrene				
Tetrachloroethene				
Trichloroethene				
Vinyl chloride				
trans-1,2-Dichloroethene				
Alpha activity	1.06E+02			
Beta activity	4.26E+02			
Cesium-137	1.36E+00	2.09E-06	2.85E-06	
Neptunium-237	3.96E+00	4.62E-07	1.83E-06	
Plutonium-239	1.09E+00	1.26E-11	1.38E-11	
Technetium-99	3.02E+02	6.19E-13	1.87E-10	
Thorium-230	5.70E+00	4.40E-11	2.51E-10	
Uranium-234	1.39E+01	2.14E-11	2.98E-10	
Uranium-235	8.54E-01	2.65E-07	2.26E-07	
Uranium-238	1.89E+01	6.57E-08	1.24E-06	
Pathway Total				6.15E-06

---------- SECTOR=WAG 6 PATHWAY=Excavation Ingestion of Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	7.37E-03			
Antimony	6.79E-07			
Arsenic	4.10E-06	1.50E+00	6.15E-06	
Barium	6.70E-05			
Beryllium	3.76E-07	4.30E+00	1.62E-06	
Cadmium	1.19E-07			
Chromium	1.29E-05			
Cobalt	4.36E-06			
Copper	8.82E-05			
Iron	1.22E-02			
Lead	7.25E-06			
Manganese	2.63E-04			
Mercury	8.60E-08			
Nickel	1.57E-04			
Silver	3.92E-07			
Thallium	4.57E-07			
Uranium	2.08E-05			
Vanadium	1.74E-05			
Zinc	2.36E-05			
1,1,2-Trichloroethane	2.30E-08	5.70E-02	1.31E-09	
1,1-Dichloroethene	4.51E-07	6.00E-01	2.71E-07	
2,4-Dinitrotoluene	5.67E-07	6.80E-01	3.86E-07	
2,6-Dinitrotoluene	5.36E-07	6.80E-01	3.65E-07	
2-Hexanone	5.46E-09			
2-Methylnaphthalene	8.41E-07			
Acenaphthene	7.14E-07			
Acenaphthylene	2.73E-07			

Excavation Excess Lifetime Cancer Risks

---------- SECTOR=WAG 6 PATHWAY=Excavation Ingestion of Soil ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Anthracene	1.28E-06			
Benz(a)anthracene	1.05E-06	7.30E-01	7.68E-07	
Benzo(a)pyrene	1.02E-06	7.30E+00	7.45E-06	
Benzo(b)fluoranthene	1.23E-06	7.30E-01	8.98E-07	
Benzo(ghi)perylene	7.57E-07			
Benzo(k)fluoranthene	1.40E-06	7.30E-02	1.02E-07	
Bis(2-ethylhexyl)phthalate	7.42E-07	1.40E-02	1.04E-08	
Butyl benzyl phthalate	5.39E-07			
Carbon tetrachloride	2.44E-08	1.30E-01	3.17E-09	
Chrysene	1.09E-06	7.30E-03	7.97E-09	
Di-n-butyl phthalate	8.86E-07			
Di-n-octylphthalate	7.52E-07			
Dibenz(a,h)anthracene	7.83E-07	7.30E+00	5.72E-06	
Fluoranthene	1.87E-06			
Fluorene	7.13E-07			
Indeno(1,2,3-cd)pyrene	7.47E-07	7.30E-01	5.45E-07	
Iodomethane	1.98E-08			
Methylene chloride	1.96E-08	7.50E-03	1.47E-10	
N-Nitroso-di-n-propylamine	7.87E-07	7.00E+00	5.51E-06	
N-Nitrosodiphenylamine	9.15E-07	4.90E-03	4.48E-09	
Naphthalene	7.56E-07			
PCB-1254	1.06E-07	2.00E+00	2.12E-07	
PCB-1260	1.70E-07	2.00E+00	3.40E-07	
PCB-1262	4.72E-08	2.00E+00	9.43E-08	
Phenanthrene	1.50E-06			
Polychlorinated biphenyl	6.41E-07	2.00E+00	1.28E-06	
Pyrene	1.82E-06			
Tetrachloroethene	2.43E-08	5.20E-02	1.26E-09	
Trichloroethene	2.19E-04	1.10E-02	2.41E-06	
Vinyl chloride	1.62E-06	1.90E+00	3.07E-06	
trans-1,2-Dichloroethene	1.76E-05			
Alpha activity	6.93E+04			
Beta activity	2.80E+05			
Cesium-137	8.96E+02	3.16E-11	2.83E-08	
Neptunium-237	2.60E+03	3.00E-10	7.80E-07	
Plutonium-239	7.17E+02	3.16E-10	2.27E-07	
Technetium-99	1.98E+05	1.40E-12	2.77E-07	
Thorium-230	3.75E+03	3.75E-11	1.40E-07	
Uranium-234	9.14E+03	4.44E-11	4.06E-07	
Uranium-235	5.61E+02	4.70E-11	2.64E-08	
Uranium-238	1.24E+04	6.20E-11	7.69E-07	
Pathway Total				3.99E-05

---------- SECTOR=WAG 6 PATHWAY=Excavation Inhalation of Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	7.17E-08			
Antimony	6.60E-12			
Arsenic	3.99E-11	5.00E+01	1.99E-09	
Barium	6.51E-10			
Beryllium	3.66E-12	8.40E+00	3.07E-11	
Cadmium	1.16E-12	6.10E+00	7.05E-12	
Chromium	1.26E-10	4.10E+01	5.16E-09	
Cobalt	4.24E-11			
Copper	8.58E-10			
Iron	1.18E-07			

Excavation Excess Lifetime Cancer Risks

---------- SECTOR=WAG 6 PATHWAY=Excavation Inhalation of Soil ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Lead	7.05E-11			
Manganese	2.56E-09			
Mercury	8.36E-13			
Nickel	1.53E-09			
Silver	3.81E-12			
Thallium	4.45E-12			
Uranium	2.02E-10			
Vanadium	1.69E-10			
Zinc	2.29E-10			
1,1,2-Trichloroethane	2.72E-08	5.70E-02	1.55E-09	
1,1-Dichloroethene	2.98E-06	1.20E+00	3.58E-06	
2,4-Dinitrotoluene	5.52E-12			
2,6-Dinitrotoluene	5.21E-12			
2-Hexanone	5.31E-14			
2-Methylnaphthalene	8.18E-12			
Acenaphthene	6.95E-12			
Acenaphthylene	2.66E-12			
Anthracene	1.24E-11			
Benz(a)anthracene	1.02E-11	3.10E-01	3.17E-12	
Benzo(a)pyrene	9.93E-12	3.10E+00	3.08E-11	
Benzo(b)fluoranthene	1.20E-11	3.10E-01	3.71E-12	
Benzo(ghi)perylene	7.36E-12			
Benzo(k)fluoranthene	1.36E-11	3.10E-02	4.21E-13	
Bis(2-ethylhexyl)phthalate	7.21E-12			
Butyl benzyl phthalate	5.24E-12			
Carbon tetrachloride	5.34E-08	5.30E-02	2.83E-09	
Chrysene	1.06E-11	3.10E-03	3.29E-14	
Di-n-butyl phthalate	8.61E-12			
Di-n-octylphthalate	7.32E-12			
Dibenz(a,h)anthracene	7.61E-12	3.10E+00	2.36E-11	
Fluoranthene	1.82E-11			
Fluorene	6.93E-12			
Indeno(1,2,3-cd)pyrene	7.26E-12	3.10E-01	2.25E-12	
Iodomethane				
Methylene chloride	8.78E-08	1.65E-03	1.44E-10	
N-Nitroso-di-n-propylamine	7.65E-12			
N-Nitrosodiphenylamine	8.90E-12			
Naphthalene	7.35E-12			
PCB-1254	1.03E-12	2.00E+00	2.06E-12	
PCB-1260	1.65E-12	2.00E+00	3.31E-12	
PCB-1262	4.59E-13	2.00E+00	9.17E-13	
Phenanthrene	1.46E-11			
Polychlorinated biphenyl	6.24E-12	2.00E+00	1.25E-11	
Pyrene	1.77E-11			
Tetrachloroethene	4.59E-08	2.00E-03	9.17E-11	
Trichloroethene	4.84E-04	6.00E-03	2.90E-06	
Vinyl chloride	7.80E-03	3.00E-01	2.34E-03	
trans-1,2-Dichloroethene	1.71E-10			
Alpha activity				
Beta activity				
Cesium-137	8.72E-03	1.91E-11	1.66E-13	
Neptunium-237	2.53E-02	3.45E-08	8.72E-10	
Plutonium-239	6.98E-03	2.78E-08	1.94E-10	
Technetium-99	1.93E+00	2.89E-12	5.57E-12	
Thorium-230	3.64E-02	1.72E-08	6.27E-10	
Uranium-234	8.89E-02	1.40E-08	1.24E-09	
Uranium-235	5.46E-03	1.30E-08	7.09E-11	
Uranium-238	1.21E-01	1.24E-08	1.50E-09	
Pathway Total				2.35E-03

Future Industrial Excess Lifetime Cancer Risks

---------- SECTOR=McNairy PATHWAY=Future Industrial Dermal Contact with Groundwater ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	3.19E-03	1.00E-01	3.19E-02	
Arsenic	9.35E-06	1.23E-04	7.60E-02	
Barium	1.25E-05	4.90E-03	2.55E-03	
Beryllium	2.97E-07	5.00E-05	5.94E-03	
Bromide				
Cadmium	6.74E-08	5.00E-06	1.35E-02	
Chromium	8.70E-06	1.00E-04	8.70E-02	
Cobalt	2.51E-06	4.80E-02	5.23E-05	
Iron	7.72E-03	4.50E-02	1.72E-01	
Lead	4.05E-06	1.50E-08	2.70E+02	
Manganese	5.60E-05	1.87E-03	3.00E-02	
Nickel	3.95E-06	5.40E-03	7.32E-04	
Nitrate	1.88E-05	8.00E-01	2.35E-05	
Orthophosphate				
Selenium	1.04E-06	2.20E-03	4.75E-04	
Tetraoxo-sulfate(1-)				
Thallium	2.13E-08			
Vanadium	3.62E-05	7.00E-05	5.17E-01	
Zinc	2.79E-04	6.00E-02	4.66E-03	
1,1-Dichloroethene	2.28E-06	9.00E-03	2.54E-04	
1,2-Dichloroethane	1.88E-07			
Bis(2-ethylhexyl)phthalate	4.33E-06	3.80E-03	1.14E-03	
Bromodichloromethane	1.10E-06	1.96E-02	5.59E-05	
Chloroform	2.13E-06	2.00E-03	1.07E-03	
Di-n-butyl phthalate	4.08E-06	1.00E-01	4.08E-05	
Di-n-octylphthalate	5.34E-03	1.80E-02	2.97E-01	
Dibromochloromethane	5.54E-07	1.20E-02	4.62E-05	
Tetrachloroethene	1.28E-04	1.00E-02	1.28E-02	
Trichloroethene	9.21E-06	9.00E-04	1.02E-02	
Vinyl chloride	3.64E-06			
cis-1,2-Dichloroethene	5.00E-06	1.00E-02	5.00E-04	
Actinium-228				
Alpha activity				
Beta activity				
Cesium-137				
Lead-210				
Lead-212				
Lead-214				
Neptunium-237				
Plutonium-239				
Potassium-40				
Technetium-99				
Thorium-228				
Thorium-230				
Thorium-234				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				2.72E+02

---------- SECTOR=McNairy PATHWAY=Future Industrial Ingestion of Groundwater ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	8.78E-01	1.00E+00	8.78E-01	
Arsenic	2.57E-03	3.00E-04	8.58E+00	
Barium	3.45E-03	7.00E-02	4.92E-02	
Beryllium	8.19E-05	5.00E-03	1.64E-02	

Future Industrial Excess Lifetime Cancer Risks

---------- SECTOR=McNairy PATHWAY=Future Industrial Ingestion of Groundwater ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Bromide	4.40E-04			
Cadmium	1.86E-05	5.00E-04	3.71E-02	
Chromium	2.40E-03	5.00E-03	4.79E-01	
Cobalt	6.92E-04	6.00E-02	1.15E-02	
Iron	2.13E+00	3.00E-01	7.09E+00	
Lead	1.12E-03	1.00E-07	1.12E+04	
Manganese	1.54E-02	4.60E-02	3.35E-01	
Nickel	1.09E-03	2.00E-02	5.44E-02	
Nitrate	5.19E-03	1.60E+00	3.24E-03	
Orthophosphate	9.88E-04			
Selenium	2.88E-04	5.00E-03	5.75E-02	
Tetraoxo-sulfate(1-)	1.68E-01			
Thallium	5.86E-06			
Vanadium	9.96E-03	7.00E-03	1.42E+00	
Zinc	7.69E-02	3.00E-01	2.56E-01	
1,1-Dichloroethene	7.07E-05	9.00E-03	7.86E-03	
1,2-Dichloroethane	9.78E-06			
Bis(2-ethylhexyl)phthalate	5.10E-05	2.00E-02	2.55E-03	
Bromodichloromethane	5.21E-05	2.00E-02	2.60E-03	
Chloroform	6.60E-05	1.00E-02	6.60E-03	
Di-n-butyl phthalate	9.78E-06	1.00E-01	9.78E-05	
Di-n-octylphthalate	5.47E-05	2.00E-02	2.74E-03	
Dibromochloromethane	3.91E-05	2.00E-02	1.96E-03	
Tetrachloroethene	9.53E-05	1.00E-02	9.53E-03	
Trichloroethene	1.59E-04	6.00E-03	2.64E-02	
Vinyl chloride	1.37E-04			
cis-1,2-Dichloroethene	1.38E-04	1.00E-02	1.38E-02	
Actinium-228				
Alpha activity				
Beta activity				
Cesium-137				
Lead-210				
Lead-212				
Lead-214				
Neptunium-237				
Plutonium-239				
Potassium-40				
Technetium-99				
Thorium-228				
Thorium-230				
Thorium-234				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				1.12E+04

---------- SECTOR=McNairy PATHWAY=Future Industrial Inhalation of Groundwater While Showering ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum				
Arsenic				
Barium		1.43E-04		
Beryllium				
Bromide				
Cadmium		5.71E-05		
Chromium				

Future Industrial Excess Lifetime Cancer Risks

---------- SECTOR=McNairy PATHWAY=Future Industrial Inhalation of Groundwater While Showering ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Cobalt				
Iron				
Lead		2.86E-04		
Manganese		1.43E-05		
Nickel				
Nitrate				
Orthophosphate				
Selenium				
Tetraoxo-sulfate(1-)				
Thallium				
Vanadium				
Zinc				
1,1-Dichloroethene	3.86E-05			
1,2-Dichloroethane	5.34E-06	2.86E-03	1.87E-03	
Bis(2-ethylhexyl)phthalate				
Bromodichloromethane	2.84E-05			
Chloroform	3.61E-05			
Di-n-butyl phthalate				
Di-n-octylphthalate				
Dibromochloromethane	2.14E-05			
Tetrachloroethene	5.21E-05			
Trichloroethene	8.66E-05			
Vinyl chloride	7.50E-05			
cis-1,2-Dichloroethene	7.52E-05			
Actinium-228				
Alpha activity				
Beta activity				
Cesium-137				
Lead-210				
Lead-212				
Lead-214				
Neptunium-237				
Plutonium-239				
Potassium-40				
Technetium-99				
Thorium-228				
Thorium-230				
Thorium-234				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				1.87E-03

---------- SECTOR=RGA PATHWAY=Future Industrial Dermal Contact with Groundwater ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	2.16E-03	1.00E-01	2.16E-02	
Antimony	4.94E-07	8.00E-06	6.17E-02	
Arsenic	1.03E-06	1.23E-04	8.41E-03	
Barium	1.49E-05	4.90E-03	3.04E-03	
Beryllium	3.60E-07	5.00E-05	7.19E-03	
Bromide				
Cadmium	5.26E-08	5.00E-06	1.05E-02	
Chromium	4.01E-06	1.00E-04	4.01E-02	
Cobalt	3.51E-06	4.80E-02	7.31E-05	
Copper	7.81E-06	1.20E-02	6.51E-04	

Future Industrial Excess Lifetime Cancer Risks

---------- SECTOR=RGA PATHWAY=Future Industrial Dermal Contact with Groundwater ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Iron	1.38E-02	4.50E-02	3.06E-01	
Lead	1.16E-06	1.50E-08	7.75E+01	
Manganese	1.09E-04	1.87E-03	5.82E-02	
Mercury	5.84E-09	2.10E-05	2.78E-04	
Nickel	6.99E-06	5.40E-03	1.30E-03	
Nitrate	1.68E-03	8.00E-01	2.10E-03	
Orthophosphate				
Silver	4.51E-07	9.00E-04	5.01E-04	
Tetraoxo-sulfate(1-)				
Thallium	2.10E-08			
Uranium	1.30E-07	2.55E-03	5.09E-05	
Vanadium	5.46E-06	7.00E-05	7.80E-02	
Zinc	2.72E-05	6.00E-02	4.53E-04	
1,1-Dichloroethene	2.10E-06	9.00E-03	2.33E-04	
Bis(2-ethylhexyl)phthalate	8.31E-07	3.80E-03	2.19E-04	
Bromodichloromethane	8.24E-07	1.96E-02	4.20E-05	
Carbon tetrachloride	5.52E-05	4.55E-04	1.21E-01	
Chloroform	9.13E-06	2.00E-03	4.57E-03	
Di-n-butyl phthalate	4.08E-06	1.00E-01	4.08E-05	
Di-n-octylphthalate	9.55E-04	1.80E-02	5.31E-02	
N-Nitroso-di-n-propylamine	9.95E-08			
Tetrachloroethene	2.89E-04	1.00E-02	2.89E-02	
Toluene	5.75E-05	1.60E-01	3.60E-04	
Trichloroethene	4.65E-03	9.00E-04	5.17E+00	
Vinyl chloride	3.45E-05			
cis-1,2-Dichloroethene	1.31E-04	1.00E-02	1.31E-02	
trans-1,2-Dichloroethene	4.68E-07	2.00E-02	2.34E-05	
Alpha activity				
Americium-241				
Beta activity				
Cesium-137				
Lead-210				
Lead-214				
Neptunium-237				
Plutonium-239				
Technetium-99				
Thorium-228				
Thorium-230				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				8.35E+01

---------- SECTOR=RGA PATHWAY=Future Industrial Ingestion of Groundwater ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	5.96E-01	1.00E+00	5.96E-01	
Antimony	1.36E-04	4.00E-04	3.40E-01	
Arsenic	2.85E-04	3.00E-04	9.50E-01	
Barium	4.11E-03	7.00E-02	5.87E-02	
Beryllium	9.91E-05	5.00E-03	1.98E-02	
Bromide	4.51E-03			
Cadmium	1.45E-05	5.00E-04	2.90E-02	
Chromium	1.10E-03	5.00E-03	2.21E-01	
Cobalt	9.66E-04	6.00E-02	1.61E-02	
Copper	2.15E-03	4.00E-02	5.38E-02	

Future Industrial Excess Lifetime Cancer Risks

---------- SECTOR=RGA PATHWAY=Future Industrial Ingestion of Groundwater ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Iron	3.79E+00	3.00E-01	1.26E+01	
Lead	3.20E-04	1.00E-07	3.20E+03	
Manganese	2.99E-02	4.60E-02	6.51E-01	
Mercury	1.61E-06	3.00E-04	5.37E-03	
Nickel	1.93E-03	2.00E-02	9.63E-02	
Nitrate	4.64E-01	1.60E+00	2.90E-01	
Orthophosphate	3.52E-04			
Silver	1.24E-04	5.00E-03	2.48E-02	
Tetraoxo-sulfate(1-)	1.29E-01			
Thallium	5.79E-06			
Uranium	3.58E-05	3.00E-03	1.19E-02	
Vanadium	1.50E-03	7.00E-03	2.15E-01	
Zinc	7.48E-03	3.00E-01	2.49E-02	
1,1-Dichloroethene	6.49E-05	9.00E-03	7.21E-03	
Bis(2-ethylhexyl)phthalate	9.78E-06	2.00E-02	4.89E-04	
Bromodichloromethane	3.91E-05	2.00E-02	1.96E-03	
Carbon tetrachloride	6.92E-04	7.00E-04	9.88E-01	
Chloroform	2.83E-04	1.00E-02	2.83E-02	
Di-n-butyl phthalate	9.78E-06	1.00E-01	9.78E-05	
Di-n-octylphthalate	9.78E-06	2.00E-02	4.89E-04	
N-Nitroso-di-n-propylamine	9.78E-06			
Tetrachloroethene	2.15E-04	1.00E-02	2.15E-02	
Toluene	3.52E-04	2.00E-01	1.76E-03	
Trichloroethene	8.01E-02	6.00E-03	1.34E+01	
Vinyl chloride	1.30E-03			
cis-1,2-Dichloroethene	3.62E-03	1.00E-02	3.62E-01	
trans-1,2-Dichloroethene	1.20E-04	2.00E-02	6.02E-03	
Alpha activity				
Americium-241				
Beta activity				
Cesium-137				
Lead-210				
Lead-214				
Neptunium-237				
Plutonium-239				
Technetium-99				
Thorium-228				
Thorium-230				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				3.23E+03

---------- SECTOR=RGA PATHWAY=Future Industrial Inhalation of Groundwater While Showering ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum				
Antimony				
Arsenic				
Barium		1.43E-04		
Beryllium				
Bromide				
Cadmium		5.71E-05		
Chromium				
Cobalt				
Copper				

Future Industrial Excess Lifetime Cancer Risks

---------- SECTOR=RGA PATHWAY=Future Industrial Inhalation of Groundwater While Showering ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Iron				
Lead		2.86E-04		
Manganese		1.43E-05		
Mercury		8.57E-05		
Nickel				
Nitrate				
Orthophosphate				
Silver				
Tetraoxo-sulfate(1-)				
Thallium				
Uranium				
Vanadium				
Zinc				
1,1-Dichloroethene	3.55E-05			
Bis(2-ethylhexyl)phthalate				
Bromodichloromethane	2.14E-05			
Carbon tetrachloride	3.78E-04	5.71E-04	6.62E-01	
Chloroform	1.54E-04			
Di-n-butyl phthalate				
Di-n-octylphthalate				
N-Nitroso-di-n-propylamine				
Tetrachloroethene	1.17E-04			
Toluene	1.92E-04	1.14E-01	1.68E-03	
Trichloroethene	4.38E-02			
Vinyl chloride	7.11E-04			
cis-1,2-Dichloroethene	1.98E-03			
trans-1,2-Dichloroethene	6.57E-05			
Alpha activity				
Americium-241				
Beta activity				
Cesium-137				
Lead-210				
Lead-214				
Neptunium-237				
Plutonium-239				
Technetium-99				
Thorium-228				
Thorium-230				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				6.63E-01

---------- SECTOR=WAG 6 PATHWAY=Future Industrial Dermal Contact with Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	1.25E-02	1.00E-01	1.25E-01	
Antimony	2.46E-06	8.00E-06	3.07E-01	
Arsenic	1.12E-05	1.23E-04	9.13E-02	
Beryllium	6.08E-07	5.00E-05	1.22E-02	
Cadmium	1.87E-07	1.00E-05	1.87E-02	
Chromium	2.49E-05	1.00E-04	2.49E-01	
Cobalt	8.53E-06	4.80E-02	1.78E-04	
Iron	2.29E-02	4.50E-02	5.10E-01	
Lead	1.68E-05	1.50E-08	1.12E+03	
Thallium	1.43E-06			

Future Industrial Excess Lifetime Cancer Risks

---------- SECTOR=WAG 6 PATHWAY=Future Industrial Dermal Contact with Soil ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Uranium	5.55E-05	2.55E-03	2.18E-02	
Vanadium	3.00E-05	7.00E-05	4.28E-01	
Zinc	5.40E-05	6.00E-02	8.99E-04	
2-Methylnaphthalene	2.26E-06			
Acenaphthene	5.25E-06	1.86E-02	2.83E-04	
Acenaphthylene	9.26E-07			
Anthracene	1.02E-05	2.28E-01	4.46E-05	
Benz(a)anthracene	1.59E-05			
Benzo(a)pyrene	1.56E-05			
Benzo(b)fluoranthene	1.83E-05			
Benzo(ghi)perylene	8.90E-06			
Benzo(k)fluoranthene	1.49E-05			
Bis(2-ethylhexyl)phthalate	4.21E-07	3.80E-03	1.11E-04	
Chrysene	1.68E-05			
Di-n-butyl phthalate	3.13E-06	1.00E-01	3.13E-05	
Dibenz(a,h)anthracene	4.62E-06			
Fluoranthene	3.19E-05	1.24E-02	2.57E-03	
Fluorene	4.00E-06	2.00E-02	2.00E-04	
Indeno(1,2,3-cd)pyrene	8.43E-06			
Naphthalene	2.71E-06	2.86E-02	9.48E-05	
PCB-1254	4.28E-07	1.80E-05	2.38E-02	
PCB-1260	2.35E-07			
PCB-1262	9.59E-08			
Phenanthrene	2.24E-05			
Polychlorinated biphenyl	7.56E-07			
Pyrene	2.82E-05	9.30E-03	3.03E-03	
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				1.12E+03

---------- SECTOR=WAG 6 PATHWAY=Future Industrial Ingestion of Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	2.90E-03	1.00E+00	2.90E-03	
Antimony	5.71E-07	4.00E-04	1.43E-03	
Arsenic	2.61E-06	3.00E-04	8.71E-03	
Beryllium	1.41E-07	5.00E-03	2.83E-05	
Cadmium	2.17E-07	1.00E-03	2.17E-04	
Chromium	5.80E-06	5.00E-03	1.16E-03	
Cobalt	1.98E-06	6.00E-02	3.30E-05	
Iron	5.34E-03	3.00E-01	1.78E-02	
Lead	3.90E-06	1.00E-07	3.90E+01	
Thallium	3.34E-07			
Uranium	1.29E-05	3.00E-03	4.31E-03	
Vanadium	6.97E-06	7.00E-03	9.96E-04	
Zinc	1.25E-05	3.00E-01	4.18E-05	
2-Methylnaphthalene	2.62E-07			
Acenaphthene	6.11E-07	6.00E-02	1.02E-05	
Acenaphthylene	1.08E-07			
Anthracene	1.18E-06	3.00E-01	3.95E-06	
Benz(a)anthracene	1.85E-06			

Future Industrial Excess Lifetime Cancer Risks

---------- SECTOR=WAG 6 PATHWAY=Future Industrial Ingestion of Soil ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Benzo(a)pyrene	1.81E-06			
Benzo(b)fluoranthene	2.13E-06			
Benzo(ghi)perylene	1.04E-06			
Benzo(k)fluoranthene	1.73E-06			
Bis(2-ethylhexyl)phthalate	4.89E-08	2.00E-02	2.45E-06	
Chrysene	1.96E-06			
Di-n-butyl phthalate	3.65E-07	1.00E-01	3.65E-06	
Dibenz(a,h)anthracene	5.38E-07			
Fluoranthene	3.71E-06	4.00E-02	9.28E-05	
Fluorene	4.66E-07	4.00E-02	1.16E-05	
Indeno(1,2,3-cd)pyrene	9.81E-07			
Naphthalene	3.15E-07	3.57E-02	8.82E-06	
PCB-1254	8.30E-08	2.00E-05	4.15E-03	
PCB-1260	4.56E-08			
PCB-1262	1.86E-08			
Phenanthrene	2.60E-06			
Polychlorinated biphenyl	1.47E-07			
Pyrene	3.28E-06	3.00E-02	1.09E-04	
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				3.91E+01

---------- SECTOR=WAG 6 PATHWAY=Future Industrial Inhalation of Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	2.70E-07			
Antimony	5.34E-11			
Arsenic	2.44E-10			
Beryllium	1.32E-11			
Cadmium	2.03E-11	5.71E-05	3.55E-07	
Chromium	5.41E-10			
Cobalt	1.85E-10			
Iron	4.98E-07			
Lead	3.65E-10	2.86E-04	1.28E-06	
Thallium	3.11E-11			
Uranium	1.21E-09			
Vanadium	6.51E-10			
Zinc	1.17E-09			
2-Methylnaphthalene	2.45E-11			
Acenaphthene	5.70E-11			
Acenaphthylene	1.00E-11			
Anthracene	1.11E-10			
Benz(a)anthracene	1.73E-10			
Benzo(a)pyrene	1.69E-10			
Benzo(b)fluoranthene	1.99E-10			
Benzo(ghi)perylene	9.67E-11			
Benzo(k)fluoranthene	1.61E-10			
Bis(2-ethylhexyl)phthalate	4.57E-12			
Chrysene	1.83E-10			
Di-n-butyl phthalate	3.40E-11			
Dibenz(a,h)anthracene	5.02E-11			

Future Industrial Excess Lifetime Cancer Risks

---------- SECTOR=WAG 6 PATHWAY=Future Industrial Inhalation of Soil ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Fluoranthene	3.47E-10			
Fluorene	4.35E-11			
Indeno(1,2,3-cd)pyrene	9.15E-11			
Naphthalene	2.94E-11			
PCB-1254	7.75E-12			
PCB-1260	4.26E-12			
PCB-1262	1.74E-12			
Phenanthrene	2.43E-10			
Polychlorinated biphenyl	1.37E-11			
Pyrene	3.06E-10			
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				1.63E-06

Future Industrial Excess Lifetime Cancer Risks

---------- SECTOR=McNairy PATHWAY=Future Industrial Dermal Contact with Groundwater ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	1.14E-03			
Arsenic	3.34E-06	3.66E+00	1.22E-05	
Barium	4.47E-06			
Beryllium	1.06E-07	4.30E+02	4.56E-05	
Bromide				
Cadmium	2.41E-08			
Chromium	3.11E-06			
Cobalt	8.97E-07			
Iron	2.76E-03			
Lead	1.45E-06			
Manganese	2.00E-05			
Nickel	1.41E-06			
Nitrate	6.72E-06			
Orthophosphate				
Selenium	3.73E-07			
Tetraoxo-sulfate(1-)				
Thallium	7.60E-09			
Vanadium	1.29E-05			
Zinc	9.98E-05			
1,1-Dichloroethene	8.16E-07	6.00E-01	4.90E-07	
1,2-Dichloroethane	6.72E-08	9.10E-02	6.12E-09	
Bis(2-ethylhexyl)phthalate	1.55E-06	7.37E-02	1.14E-07	
Bromodichloromethane	3.92E-07	6.33E-02	2.48E-08	
Chloroform	7.62E-07	3.05E-02	2.32E-08	
Di-n-butyl phthalate	1.46E-06			
Di-n-octylphthalate	1.91E-03			
Dibromochloromethane	1.98E-07	1.40E-01	2.77E-08	
Tetrachloroethene	4.57E-05	5.20E-02	2.38E-06	
Trichloroethene	3.29E-06	7.33E-02	2.41E-07	
Vinyl chloride	1.30E-06	1.90E+00	2.47E-06	
cis-1,2-Dichloroethene	1.78E-06			
Actinium-228				
Alpha activity				
Beta activity				
Cesium-137				
Lead-210				
Lead-212				
Lead-214				
Neptunium-237				
Plutonium-239				
Potassium-40				
Technetium-99				
Thorium-228				
Thorium-230				
Thorium-234				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				6.36E-05

---------- SECTOR=McNairy PATHWAY=Future Industrial Ingestion of Groundwater ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	3.14E-01			
Arsenic	9.19E-04	1.50E+00	1.38E-03	
Barium	1.23E-03			
Beryllium	2.92E-05	4.30E+00	1.26E-04	

Future Industrial Excess Lifetime Cancer Risks

---------- SECTOR=McNairy PATHWAY=Future Industrial Ingestion of Groundwater ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Bromide	1.57E-04			
Cadmium	6.63E-06			
Chromium	8.56E-04			
Cobalt	2.47E-04			
Iron	7.60E-01			
Lead	3.99E-04			
Manganese	5.51E-03			
Nickel	3.89E-04			
Nitrate	1.85E-03			
Orthophosphate	3.53E-04			
Selenium	1.03E-04			
Tetraoxo-sulfate(1-)	5.99E-02			
Thallium	2.09E-06			
Vanadium	3.56E-03			
Zinc	2.75E-02			
1,1-Dichloroethene	2.53E-05	6.00E-01	1.52E-05	
1,2-Dichloroethane	3.49E-06	9.10E-02	3.18E-07	
Bis(2-ethylhexyl)phthalate	1.82E-05	1.40E-02	2.55E-07	
Bromodichloromethane	1.86E-05	6.20E-02	1.15E-06	
Chloroform	2.36E-05	6.10E-03	1.44E-07	
Di-n-butyl phthalate	3.49E-06			
Di-n-octylphthalate	1.96E-05			
Dibromochloromethane	1.40E-05	8.40E-02	1.17E-06	
Tetrachloroethene	3.40E-05	5.20E-02	1.77E-06	
Trichloroethene	5.66E-05	1.10E-02	6.23E-07	
Vinyl chloride	4.90E-05	1.90E+00	9.32E-05	
cis-1,2-Dichloroethene	4.92E-05			
Actinium-228	1.70E+05	1.62E-12	2.75E-07	
Alpha activity	1.92E+05			
Beta activity	1.74E+06			
Cesium-137	7.69E+04	3.16E-11	2.43E-06	
Lead-210	2.63E+06	1.01E-09	2.66E-03	
Lead-212	1.41E+05	1.80E-11	2.53E-06	
Lead-214	7.56E+04	2.94E-13	2.22E-08	
Neptunium-237	5.05E+04	3.00E-10	1.51E-05	
Plutonium-239	8.32E+03	3.16E-10	2.63E-06	
Potassium-40	4.25E+05	1.25E-11	5.31E-06	
Technetium-99	1.94E+06	1.40E-12	2.71E-06	
Thorium-228	7.69E+03	2.31E-10	1.78E-06	
Thorium-230	8.52E+03	3.75E-11	3.19E-07	
Thorium-234	4.49E+06	1.93E-11	8.67E-05	
Uranium-234	1.18E+04	4.44E-11	5.23E-07	
Uranium-235	7.23E+04	4.70E-11	3.40E-06	
Uranium-238	7.85E+03	6.20E-11	4.87E-07	
Pathway Total				4.40E-03

---------- SECTOR=McNairy PATHWAY=Future Industrial Inhalation of Groundwater While Showering ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum				
Arsenic		5.00E+01		
Barium				
Beryllium		8.40E+00		
Bromide				
Cadmium		6.10E+00		
Chromium		4.10E+01		

Future Industrial Excess Lifetime Cancer Risks

---------- SECTOR=McNairy PATHWAY=Future Industrial Inhalation of Groundwater While Showering ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Cobalt				
Iron				
Lead				
Manganese				
Nickel				
Nitrate				
Orthophosphate				
Selenium				
Tetraoxo-sulfate(1-)				
Thallium				
Vanadium				
Zinc				
1,1-Dichloroethene	1.38E-05	1.20E+00	1.66E-05	
1,2-Dichloroethane	1.91E-06	9.10E-02	1.74E-07	
Bis(2-ethylhexyl)phthalate				
Bromodichloromethane	1.02E-05			
Chloroform	1.29E-05	8.10E-02	1.04E-06	
Di-n-butyl phthalate				
Di-n-octylphthalate				
Dibromochloromethane	7.63E-06			
Tetrachloroethene	1.86E-05	2.00E-03	3.72E-08	
Trichloroethene	3.09E-05	6.00E-03	1.86E-07	
Vinyl chloride	2.68E-05	3.00E-01	8.03E-06	
cis-1,2-Dichloroethene	2.68E-05			
Actinium-228		3.27E-11		
Alpha activity				
Beta activity				
Cesium-137		1.91E-11		
Lead-210		3.86E-09		
Lead-212		3.85E-11		
Lead-214		6.23E-12		
Neptunium-237		3.45E-08		
Plutonium-239		2.78E-08		
Potassium-40		7.46E-12		
Technetium-99		2.89E-12		
Thorium-228		9.68E-08		
Thorium-230		1.72E-08		
Thorium-234		1.90E-11		
Uranium-234		1.40E-08		
Uranium-235		1.30E-08		
Uranium-238		1.24E-08		
Pathway Total				2.60E-05

---------- SECTOR=RGA PATHWAY=Future Industrial Dermal Contact with Groundwater ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	7.73E-04			
Antimony	1.76E-07			
Arsenic	3.69E-07	3.66E+00	1.35E-06	
Barium	5.33E-06			
Beryllium	1.28E-07	4.30E+02	5.52E-05	
Bromide				
Cadmium	1.88E-08			
Chromium	1.43E-06			
Cobalt	1.25E-06			
Copper	2.79E-06			

Future Industrial Excess Lifetime Cancer Risks

---------- SECTOR=RGA PATHWAY=Future Industrial Dermal Contact with Groundwater ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Iron	4.92E-03			
Lead	4.15E-07			
Manganese	3.88E-05			
Mercury	2.09E-09			
Nickel	2.50E-06			
Nitrate	6.01E-04			
Orthophosphate				
Silver	1.61E-07			
Tetraoxo-sulfate(1-)				
Thallium	7.51E-09			
Uranium	4.64E-08			
Vanadium	1.95E-06			
Zinc	9.70E-06			
1,1-Dichloroethene	7.49E-07	6.00E-01	4.49E-07	
Bis(2-ethylhexyl)phthalate	2.97E-07	7.37E-02	2.19E-08	
Bromodichloromethane	2.94E-07	6.33E-02	1.86E-08	
Carbon tetrachloride	1.97E-05	2.00E-01	3.95E-06	
Chloroform	3.26E-06	3.05E-02	9.95E-08	
Di-n-butyl phthalate	1.46E-06			
Di-n-octylphthalate	3.41E-04			
N-Nitroso-di-n-propylamine	3.55E-08	2.80E+01	9.95E-07	
Tetrachloroethene	1.03E-04	5.20E-02	5.36E-06	
Toluene	2.06E-05			
Trichloroethene	1.66E-03	7.33E-02	1.22E-04	
Vinyl chloride	1.23E-05	1.90E+00	2.34E-05	
cis-1,2-Dichloroethene	4.69E-05			
trans-1,2-Dichloroethene	1.67E-07			
Alpha activity				
Americium-241				
Beta activity				
Cesium-137				
Lead-210				
Lead-214				
Neptunium-237				
Plutonium-239				
Technetium-99				
Thorium-228				
Thorium-230				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				2.13E-04

---------- SECTOR=RGA PATHWAY=Future Industrial Ingestion of Groundwater ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	2.13E-01			
Antimony	4.86E-05			
Arsenic	1.02E-04	1.50E+00	1.53E-04	
Barium	1.47E-03			
Beryllium	3.54E-05	4.30E+00	1.52E-04	
Bromide	1.61E-03			
Cadmium	5.17E-06			
Chromium	3.94E-04			
Cobalt	3.45E-04			
Copper	7.69E-04			

Future Industrial Excess Lifetime Cancer Risks

---------- SECTOR=RGA PATHWAY=Future Industrial Ingestion of Groundwater ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Iron	1.35E+00			
Lead	1.14E-04			
Manganese	1.07E-02			
Mercury	5.75E-07			
Nickel	6.88E-04			
Nitrate	1.66E-01			
Orthophosphate	1.26E-04			
Silver	4.44E-05			
Tetraoxo-sulfate(1-)	4.61E-02			
Thallium	2.07E-06			
Uranium	1.28E-05			
Vanadium	5.37E-04			
Zinc	2.67E-03			
1,1-Dichloroethene	2.32E-05	6.00E-01	1.39E-05	
Bis(2-ethylhexyl)phthalate	3.49E-06	1.40E-02	4.89E-08	
Bromodichloromethane	1.40E-05	6.20E-02	8.67E-07	
Carbon tetrachloride	2.47E-04	1.30E-01	3.21E-05	
Chloroform	1.01E-04	6.10E-03	6.16E-07	
Di-n-butyl phthalate	3.49E-06			
Di-n-octylphthalate	3.49E-06			
N-Nitroso-di-n-propylamine	3.49E-06	7.00E+00	2.45E-05	
Tetrachloroethene	7.67E-05	5.20E-02	3.99E-06	
Toluene	1.26E-04			
Trichloroethene	2.86E-02	1.10E-02	3.15E-04	
Vinyl chloride	4.65E-04	1.90E+00	8.83E-04	
cis-1,2-Dichloroethene	1.29E-03			
trans-1,2-Dichloroethene	4.30E-05			
Alpha activity	1.06E+05			
Americium-241	1.05E+04	3.28E-10	3.44E-06	
Beta activity	2.01E+06			
Cesium-137	6.81E+04	3.16E-11	2.15E-06	
Lead-210	6.25E+05	1.01E-09	6.31E-04	
Lead-214	4.63E+04	2.94E-13	1.36E-08	
Neptunium-237	8.46E+04	3.00E-10	2.54E-05	
Plutonium-239	2.86E+02	3.16E-10	9.03E-08	
Technetium-99	1.67E+07	1.40E-12	2.34E-05	
Thorium-228	4.75E+03	2.31E-10	1.10E-06	
Thorium-230	6.83E+03	3.75E-11	2.56E-07	
Uranium-234	1.04E+04	4.44E-11	4.60E-07	
Uranium-235	7.35E+02	4.70E-11	3.45E-08	
Uranium-238	1.04E+05	6.20E-11	6.43E-06	
Pathway Total				2.27E-03

---------- SECTOR=RGA PATHWAY=Future Industrial Inhalation of Groundwater While Showering ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum				
Antimony				
Arsenic		5.00E+01		
Barium				
Beryllium		8.40E+00		
Bromide				
Cadmium		6.10E+00		
Chromium		4.10E+01		
Cobalt				
Copper				

Future Industrial Excess Lifetime Cancer Risks

---------- SECTOR=RGA PATHWAY=Future Industrial Inhalation of Groundwater While Showering ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Iron				
Lead				
Manganese				
Mercury				
Nickel				
Nitrate				
Orthophosphate				
Silver				
Tetraoxo-sulfate(1-)				
Thallium				
Uranium				
Vanadium				
Zinc				
1,1-Dichloroethene	1.27E-05	1.20E+00	1.52E-05	
Bis(2-ethylhexyl)phthalate				
Bromodichloromethane	7.63E-06			
Carbon tetrachloride	1.35E-04	5.30E-02	7.15E-06	
Chloroform	5.51E-05	8.10E-02	4.47E-06	
Di-n-butyl phthalate				
Di-n-octylphthalate				
N-Nitroso-di-n-propylamine				
Tetrachloroethene	4.19E-05	2.00E-03	8.38E-08	
Toluene	6.87E-05			
Trichloroethene	1.56E-02	6.00E-03	9.38E-05	
Vinyl chloride	2.54E-04	3.00E-01	7.61E-05	
cis-1,2-Dichloroethene	7.06E-04			
trans-1,2-Dichloroethene	2.35E-05			
Alpha activity				
Americium-241		3.85E-08		
Beta activity				
Cesium-137		1.91E-11		
Lead-210		3.86E-09		
Lead-214		6.23E-12		
Neptunium-237		3.45E-08		
Plutonium-239		2.78E-08		
Technetium-99		2.89E-12		
Thorium-228		9.68E-08		
Thorium-230		1.72E-08		
Uranium-234		1.40E-08		
Uranium-235		1.30E-08		
Uranium-238		1.24E-08		
Pathway Total				1.97E-04

---------- SECTOR=WAG 6 PATHWAY=Future Industrial Dermal Contact with Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	4.45E-03			
Antimony	8.78E-07			
Arsenic	4.01E-06	3.66E+00	1.47E-05	
Beryllium	2.17E-07	4.30E+02	9.33E-05	
Cadmium	6.67E-08			
Chromium	8.90E-06			
Cobalt	3.05E-06			
Iron	8.19E-03			
Lead	6.00E-06			
Thallium	5.12E-07			

Future Industrial Excess Lifetime Cancer Risks

---------- SECTOR=WAG 6 PATHWAY=Future Industrial Dermal Contact with Soil ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Uranium	1.98E-05			
Vanadium	1.07E-05			
Zinc	1.93E-05			
2-Methylnaphthalene	8.06E-07			
Acenaphthene	1.88E-06			
Acenaphthylene	3.31E-07			
Anthracene	3.64E-06			
Benz(a)anthracene	5.69E-06	2.35E+00	1.34E-05	
Benzo(a)pyrene	5.57E-06	2.35E+01	1.31E-04	
Benzo(b)fluoranthene	6.55E-06	2.35E+00	1.54E-05	
Benzo(ghi)perylene	3.18E-06			
Benzo(k)fluoranthene	5.31E-06	2.35E-01	1.25E-06	
Bis(2-ethylhexyl)phthalate	1.50E-07	7.37E-02	1.11E-08	
Chrysene	6.01E-06	2.35E-02	1.42E-07	
Di-n-butyl phthalate	1.12E-06			
Dibenz(a,h)anthracene	1.65E-06	2.35E+01	3.89E-05	
Fluoranthene	1.14E-05			
Fluorene	1.43E-06			
Indeno(1,2,3-cd)pyrene	3.01E-06	2.35E+00	7.09E-06	
Naphthalene	9.67E-07			
PCB-1254	1.53E-07	2.22E+00	3.40E-07	
PCB-1260	8.40E-08	2.22E+00	1.87E-07	
PCB-1262	3.43E-08	2.22E+00	7.61E-08	
Phenanthrene	7.98E-06			
Polychlorinated biphenyl	2.70E-07	2.22E+00	6.00E-07	
Pyrene	1.01E-05			
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				3.17E-04

---------- SECTOR=WAG 6 PATHWAY=Future Industrial External Exposure to Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum				
Antimony				
Arsenic				
Beryllium				
Cadmium				
Chromium				
Cobalt				
Iron				
Lead				
Thallium				
Uranium				
Vanadium				
Zinc				
2-Methylnaphthalene				
Acenaphthene				
Acenaphthylene				
Anthracene				
Benz(a)anthracene				

Future Industrial Excess Lifetime Cancer Risks

---------- SECTOR=WAG 6 PATHWAY=Future Industrial External Exposure to Soil ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Benzo(a)pyrene				
Benzo(b)fluoranthene				
Benzo(ghi)perylene				
Benzo(k)fluoranthene				
Bis(2-ethylhexyl)phthalate				
Chrysene				
Di-n-butyl phthalate				
Dibenz(a,h)anthracene				
Fluoranthene				
Fluorene				
Indeno(1,2,3-cd)pyrene				
Naphthalene				
PCB-1254				
PCB-1260				
PCB-1262				
Phenanthrene				
Polychlorinated biphenyl				
Pyrene				
Alpha activity	9.95E+01			
Beta activity	2.19E+02			
Cesium-137	1.71E+00	2.09E-06	3.57E-06	
Neptunium-237	2.90E+00	4.62E-07	1.34E-06	
Uranium-234	3.00E+01	2.14E-11	6.41E-10	
Uranium-235	1.77E+00	2.65E-07	4.69E-07	
Uranium-238	4.01E+01	6.57E-08	2.63E-06	
Pathway Total				8.01E-06

---------- SECTOR=WAG 6 PATHWAY=Future Industrial Ingestion of Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	1.03E-03			
Antimony	2.04E-07			
Arsenic	9.33E-07	1.50E+00	1.40E-06	
Beryllium	5.05E-08	4.30E+00	2.17E-07	
Cadmium	7.75E-08			
Chromium	2.07E-06			
Cobalt	7.08E-07			
Iron	1.91E-03			
Lead	1.39E-06			
Thallium	1.19E-07			
Uranium	4.61E-06			
Vanadium	2.49E-06			
Zinc	4.48E-06			
2-Methylnaphthalene	9.37E-08			
Acenaphthene	2.18E-07			
Acenaphthylene	3.84E-08			
Anthracene	4.23E-07			
Benz(a)anthracene	6.62E-07	7.30E-01	4.83E-07	
Benzo(a)pyrene	6.48E-07	7.30E+00	4.73E-06	
Benzo(b)fluoranthene	7.61E-07	7.30E-01	5.56E-07	
Benzo(ghi)perylene	3.70E-07			
Benzo(k)fluoranthene	6.17E-07	7.30E-02	4.50E-08	
Bis(2-ethylhexyl)phthalate	1.75E-08	1.40E-02	2.45E-10	
Chrysene	6.99E-07	7.30E-03	5.10E-09	
Di-n-butyl phthalate	1.30E-07			
Dibenz(a,h)anthracene	1.92E-07	7.30E+00	1.40E-06	

Future Industrial Excess Lifetime Cancer Risks

---------- SECTOR=WAG 6 PATHWAY=Future Industrial Ingestion of Soil ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Fluoranthene	1.33E-06			
Fluorene	1.66E-07			
Indeno(1,2,3-cd)pyrene	3.50E-07	7.30E-01	2.56E-07	
Naphthalene	1.12E-07			
PCB-1254	2.96E-08	2.00E+00	5.93E-08	
PCB-1260	1.63E-08	2.00E+00	3.26E-08	
PCB-1262	6.64E-09	2.00E+00	1.33E-08	
Phenanthrene	9.28E-07			
Polychlorinated biphenyl	5.23E-08	2.00E+00	1.05E-07	
Pyrene	1.17E-06			
Alpha activity	6.81E+03			
Beta activity	1.50E+04			
Cesium-137	1.17E+02	3.16E-11	3.69E-09	
Neptunium-237	1.99E+02	3.00E-10	5.96E-08	
Uranium-234	2.05E+03	4.44E-11	9.10E-08	
Uranium-235	1.21E+02	4.70E-11	5.70E-09	
Uranium-238	2.74E+03	6.20E-11	1.70E-07	
Pathway Total				9.63E-06

---------- SECTOR=WAG 6 PATHWAY=Future Industrial Inhalation of Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	9.66E-08			
Antimony	1.91E-11			
Arsenic	8.71E-11	5.00E+01	4.36E-09	
Beryllium	4.71E-12	8.40E+00	3.96E-11	
Cadmium	7.24E-12	6.10E+00	4.42E-11	
Chromium	1.93E-10	4.10E+01	7.93E-09	
Cobalt	6.61E-11			
Iron	1.78E-07			
Lead	1.30E-10			
Thallium	1.11E-11			
Uranium	4.31E-10			
Vanadium	2.33E-10			
Zinc	4.18E-10			
2-Methylnaphthalene	8.75E-12			
Acenaphthene	2.04E-11			
Acenaphthylene	3.59E-12			
Anthracene	3.95E-11			
Benz(a)anthracene	6.18E-11	3.10E-01	1.92E-11	
Benzo(a)pyrene	6.05E-11	3.10E+00	1.87E-10	
Benzo(b)fluoranthene	7.11E-11	3.10E-01	2.20E-11	
Benzo(ghi)perylene	3.45E-11			
Benzo(k)fluoranthene	5.76E-11	3.10E-02	1.79E-12	
Bis(2-ethylhexyl)phthalate	1.63E-12			
Chrysene	6.52E-11	3.10E-03	2.02E-13	
Di-n-butyl phthalate	1.22E-11			
Dibenz(a,h)anthracene	1.79E-11	3.10E+00	5.56E-11	
Fluoranthene	1.24E-10			
Fluorene	1.55E-11			
Indeno(1,2,3-cd)pyrene	3.27E-11	3.10E-01	1.01E-11	
Naphthalene	1.05E-11			
PCB-1254	2.77E-12	2.00E+00	5.53E-12	
PCB-1260	1.52E-12	2.00E+00	3.04E-12	
PCB-1262	6.20E-13	2.00E+00	1.24E-12	
Phenanthrene	8.67E-11			

Future Industrial Excess Lifetime Cancer Risks

---------- SECTOR=WAG 6 PATHWAY=Future Industrial Inhalation of Soil ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Polychlorinated biphenyl	4.89E-12	2.00E+00	9.77E-12	
Pyrene	1.09E-10			
Alpha activity				
Beta activity				
Cesium-137	1.09E-02	1.91E-11	2.08E-13	
Neptunium-237	1.86E-02	3.45E-08	6.40E-10	
Uranium-234	1.91E-01	1.40E-08	2.68E-09	
Uranium-235	1.13E-02	1.30E-08	1.47E-10	
Uranium-238	2.56E-01	1.24E-08	3.17E-09	
Pathway Total				1.93E-08

Recreational Excess Lifetime Cancer Risks

---------- SECTOR=WAG 6 PATHWAY=Recreational Adult Ingestion of Quail ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	3.14E-06	1.00E+00	3.14E-06	
Antimony	2.43E-11	4.00E-04	6.08E-08	
Arsenic	4.28E-09	3.00E-04	1.43E-05	
Beryllium	1.25E-10	5.00E-03	2.51E-08	
Cadmium	3.44E-07	1.00E-03	3.44E-04	
Chromium	4.18E-08	5.00E-03	8.36E-06	
Cobalt		6.00E-02		
Iron	3.93E-03	3.00E-01	1.31E-02	
Lead	1.40E-09	1.00E-07	1.40E-02	
Thallium	9.46E-09			
Uranium	9.96E-06	3.00E-03	3.32E-03	
Vanadium	1.27E-08	7.00E-03	1.82E-06	
Zinc		3.00E-01		
2-Methylnaphthalene				
Acenaphthene		6.00E-02		
Acenaphthylene				
Anthracene		3.00E-01		
Benz(a)anthracene				
Benzo(a)pyrene	2.31E-06			
Benzo(b)fluoranthene				
Benzo(ghi)perylene				
Benzo(k)fluoranthene				
Bis(2-ethylhexyl)phthalate		2.00E-02		
Chrysene				
Di-n-butyl phthalate		1.00E-01		
Dibenz(a,h)anthracene				
Fluoranthene		4.00E-02		
Fluorene		4.00E-02		
Indeno(1,2,3-cd)pyrene				
Naphthalene		3.57E-02		
PCB-1254	2.12E-07	2.00E-05	1.06E-02	
PCB-1260	1.14E-07			
PCB-1262				
Phenanthrene	6.04E-07			
Polychlorinated biphenyl				
Pyrene		3.00E-02		
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				4.14E-02

---------- SECTOR=WAG 6 PATHWAY=Recreational Adult Ingestion of Rabbit ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	1.51E-04	1.00E+00	1.51E-04	
Antimony	9.08E-10	4.00E-04	2.27E-06	
Arsenic	2.02E-07	3.00E-04	6.73E-04	
Beryllium	4.99E-09	5.00E-03	9.99E-07	
Cadmium	8.20E-09	1.00E-03	8.20E-06	
Chromium	2.02E-06	5.00E-03	4.03E-04	
Cobalt	7.97E-09	6.00E-02	1.33E-07	
Iron	3.77E-03	3.00E-01	1.26E-02	
Lead	6.89E-08	1.00E-07	6.89E-01	

Recreational Excess Lifetime Cancer Risks

---------- SECTOR=WAG 6 PATHWAY=Recreational Adult Ingestion of Rabbit ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Thallium	4.63E-07			
Uranium	1.42E-07	3.00E-03	4.75E-05	
Vanadium	6.08E-07	7.00E-03	8.68E-05	
Zinc	1.79E-04	3.00E-01	5.97E-04	
2-Methylnaphthalene	2.97E-09			
Acenaphthene	1.45E-08	6.00E-02	2.42E-07	
Acenaphthylene	8.63E-10			
Anthracene	3.41E-08	3.00E-01	1.14E-07	
Benz(a)anthracene	8.43E-07			
Benzo(a)pyrene	2.02E-06			
Benzo(b)fluoranthene	2.38E-06			
Benzo(ghi)perylene	3.59E-06			
Benzo(k)fluoranthene	9.46E-06			
Bis(2-ethylhexyl)phthalate	3.91E-09	2.00E-02	1.95E-07	
Chrysene	8.90E-07			
Di-n-butyl phthalate	2.91E-08	1.00E-01	2.91E-07	
Dibenz(a,h)anthracene	2.94E-06			
Fluoranthene	2.97E-07	4.00E-02	7.42E-06	
Fluorene	1.34E-08	4.00E-02	3.36E-07	
Indeno(1,2,3-cd)pyrene	3.40E-06			
Naphthalene	1.33E-09	3.57E-02	3.74E-08	
PCB-1254	7.39E-08	2.00E-05	3.70E-03	
PCB-1260	4.96E-07			
PCB-1262	1.66E-08			
Phenanthrene	1.12E-07			
Polychlorinated biphenyl	1.31E-07			
Pyrene	2.62E-07	3.00E-02	8.73E-06	
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				7.07E-01

---------- SECTOR=WAG 6 PATHWAY=Recreational Adult Ingestion of Venison ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	3.75E-04	1.00E+00	3.75E-04	
Antimony	2.31E-09	4.00E-04	5.76E-06	
Arsenic	5.10E-07	3.00E-04	1.70E-03	
Beryllium	1.25E-08	5.00E-03	2.49E-06	
Cadmium	2.25E-08	1.00E-03	2.25E-05	
Chromium	5.10E-06	5.00E-03	1.02E-03	
Cobalt	2.02E-08	6.00E-02	3.37E-07	
Iron	9.41E-03	3.00E-01	3.14E-02	
Lead	1.77E-07	1.00E-07	1.77E+00	
Thallium	1.15E-06			
Uranium	3.58E-07	3.00E-03	1.19E-04	
Vanadium	1.51E-06	7.00E-03	2.16E-04	
Zinc	4.99E-04	3.00E-01	1.66E-03	
2-Methylnaphthalene	7.85E-09			
Acenaphthene	3.76E-08	6.00E-02	6.27E-07	
Acenaphthylene	2.30E-09			
Anthracene	8.82E-08	3.00E-01	2.94E-07	

Recreational Excess Lifetime Cancer Risks

---------- SECTOR=WAG 6 PATHWAY=Recreational Adult Ingestion of Venison ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Benz(a)anthracene	2.11E-06			
Benzo(a)pyrene	5.05E-06			
Benzo(b)fluoranthene	5.94E-06			
Benzo(ghi)perylene	8.95E-06			
Benzo(k)fluoranthene	2.35E-05			
Bis(2-ethylhexyl)phthalate	9.94E-09	2.00E-02	4.97E-07	
Chrysene	2.23E-06			
Di-n-butyl phthalate	7.41E-08	1.00E-01	7.41E-07	
Dibenz(a,h)anthracene	7.33E-06			
Fluoranthene	7.54E-07	4.00E-02	1.89E-05	
Fluorene	3.47E-08	4.00E-02	8.68E-07	
Indeno(1,2,3-cd)pyrene	8.48E-06			
Naphthalene	3.63E-09	3.57E-02	1.02E-07	
PCB-1254	1.85E-07	2.00E-05	9.23E-03	
PCB-1260	1.23E-06			
PCB-1262	4.14E-08			
Phenanthrene	2.87E-07			
Polychlorinated biphenyl	3.26E-07			
Pyrene	6.66E-07	3.00E-02	2.22E-05	
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				1.82E+00

---------- SECTOR=WAG 6 PATHWAY=Recreational Child Ingestion of Quail ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	3.03E-06	1.00E+00	3.03E-06	
Antimony	2.35E-11	4.00E-04	5.87E-08	
Arsenic	4.13E-09	3.00E-04	1.38E-05	
Beryllium	1.21E-10	5.00E-03	2.42E-08	
Cadmium	3.32E-07	1.00E-03	3.32E-04	
Chromium	4.03E-08	5.00E-03	8.07E-06	
Cobalt		6.00E-02		
Iron	3.80E-03	3.00E-01	1.27E-02	
Lead	1.35E-09	1.00E-07	1.35E-02	
Thallium	9.14E-09			
Uranium	9.61E-06	3.00E-03	3.20E-03	
Vanadium	1.23E-08	7.00E-03	1.75E-06	
Zinc		3.00E-01		
2-Methylnaphthalene				
Acenaphthene		6.00E-02		
Acenaphthylene				
Anthracene		3.00E-01		
Benz(a)anthracene				
Benzo(a)pyrene	2.23E-06			
Benzo(b)fluoranthene				
Benzo(ghi)perylene				
Benzo(k)fluoranthene				
Bis(2-ethylhexyl)phthalate		2.00E-02		
Chrysene				
Di-n-butyl phthalate		1.00E-01		

Recreational Excess Lifetime Cancer Risks

---------- SECTOR=WAG 6 PATHWAY=Recreational Child Ingestion of Quail ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Dibenz(a,h)anthracene				
Fluoranthene		4.00E-02		
Fluorene		4.00E-02		
Indeno(1,2,3-cd)pyrene				
Naphthalene		3.57E-02		
PCB-1254	2.05E-07	2.00E-05	1.02E-02	
PCB-1260	1.10E-07			
PCB-1262				
Phenanthrene	5.83E-07			
Polychlorinated biphenyl				
Pyrene		3.00E-02		
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				4.00E-02

---------- SECTOR=WAG 6 PATHWAY=Recreational Child Ingestion of Rabbit ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	1.46E-04	1.00E+00	1.46E-04	
Antimony	8.77E-10	4.00E-04	2.19E-06	
Arsenic	1.95E-07	3.00E-04	6.50E-04	
Beryllium	4.82E-09	5.00E-03	9.64E-07	
Cadmium	7.92E-09	1.00E-03	7.92E-06	
Chromium	1.95E-06	5.00E-03	3.89E-04	
Cobalt	7.69E-09	6.00E-02	1.28E-07	
Iron	3.64E-03	3.00E-01	1.21E-02	
Lead	6.65E-08	1.00E-07	6.65E-01	
Thallium	4.47E-07			
Uranium	1.38E-07	3.00E-03	4.59E-05	
Vanadium	5.87E-07	7.00E-03	8.38E-05	
Zinc	1.73E-04	3.00E-01	5.76E-04	
2-Methylnaphthalene	2.87E-09			
Acenaphthene	1.40E-08	6.00E-02	2.33E-07	
Acenaphthylene	8.33E-10			
Anthracene	3.30E-08	3.00E-01	1.10E-07	
Benz(a)anthracene	8.14E-07			
Benzo(a)pyrene	1.95E-06			
Benzo(b)fluoranthene	2.30E-06			
Benzo(ghi)perylene	3.47E-06			
Benzo(k)fluoranthene	9.14E-06			
Bis(2-ethylhexyl)phthalate	3.78E-09	2.00E-02	1.89E-07	
Chrysene	8.60E-07			
Di-n-butyl phthalate	2.81E-08	1.00E-01	2.81E-07	
Dibenz(a,h)anthracene	2.84E-06			
Fluoranthene	2.86E-07	4.00E-02	7.16E-06	
Fluorene	1.30E-08	4.00E-02	3.24E-07	
Indeno(1,2,3-cd)pyrene	3.29E-06			
Naphthalene	1.29E-09	3.57E-02	3.61E-08	
PCB-1254	7.14E-08	2.00E-05	3.57E-03	
PCB-1260	4.79E-07			
PCB-1262	1.60E-08			

Recreational Excess Lifetime Cancer Risks

---------- SECTOR=WAG 6 PATHWAY=Recreational Child Ingestion of Rabbit ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Phenanthrene	1.08E-07			
Polychlorinated biphenyl	1.26E-07			
Pyrene	2.53E-07	3.00E-02	8.43E-06	
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				6.83E-01

---------- SECTOR=WAG 6 PATHWAY=Recreational Child Ingestion of Venison ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	3.96E-04	1.00E+00	3.96E-04	
Antimony	2.43E-09	4.00E-04	6.09E-06	
Arsenic	5.39E-07	3.00E-04	1.80E-03	
Beryllium	1.32E-08	5.00E-03	2.63E-06	
Cadmium	2.37E-08	1.00E-03	2.37E-05	
Chromium	5.38E-06	5.00E-03	1.08E-03	
Cobalt	2.14E-08	6.00E-02	3.56E-07	
Iron	9.94E-03	3.00E-01	3.31E-02	
Lead	1.87E-07	1.00E-07	1.87E+00	
Thallium	1.22E-06			
Uranium	3.78E-07	3.00E-03	1.26E-04	
Vanadium	1.60E-06	7.00E-03	2.28E-04	
Zinc	5.27E-04	3.00E-01	1.76E-03	
2-Methylnaphthalene	8.29E-09			
Acenaphthene	3.98E-08	6.00E-02	6.63E-07	
Acenaphthylene	2.43E-09			
Anthracene	9.32E-08	3.00E-01	3.11E-07	
Benz(a)anthracene	2.23E-06			
Benzo(a)pyrene	5.34E-06			
Benzo(b)fluoranthene	6.27E-06			
Benzo(ghi)perylene	9.45E-06			
Benzo(k)fluoranthene	2.49E-05			
Bis(2-ethylhexyl)phthalate	1.05E-08	2.00E-02	5.25E-07	
Chrysene	2.36E-06			
Di-n-butyl phthalate	7.82E-08	1.00E-01	7.82E-07	
Dibenz(a,h)anthracene	7.74E-06			
Fluoranthene	7.97E-07	4.00E-02	1.99E-05	
Fluorene	3.66E-08	4.00E-02	9.16E-07	
Indeno(1,2,3-cd)pyrene	8.95E-06			
Naphthalene	3.83E-09	3.57E-02	1.07E-07	
PCB-1254	1.95E-07	2.00E-05	9.75E-03	
PCB-1260	1.30E-06			
PCB-1262	4.37E-08			
Phenanthrene	3.03E-07			
Polychlorinated biphenyl	3.44E-07			
Pyrene	7.03E-07	3.00E-02	2.34E-05	
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-234				

Recreational Excess Lifetime Cancer Risks

---------- SECTOR=WAG 6 PATHWAY=Recreational Child Ingestion of Venison ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Uranium-235				
Uranium-238				
Pathway Total				1.92E+00

---------- SECTOR=WAG 6 PATHWAY=Recreational Teen Ingestion of Quail ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	2.61E-06	1.00E+00	2.61E-06	
Antimony	2.02E-11	4.00E-04	5.05E-08	
Arsenic	3.55E-09	3.00E-04	1.18E-05	
Beryllium	1.04E-10	5.00E-03	2.08E-08	
Cadmium	2.86E-07	1.00E-03	2.86E-04	
Chromium	3.47E-08	5.00E-03	6.95E-06	
Cobalt		6.00E-02		
Iron	3.27E-03	3.00E-01	1.09E-02	
Lead	1.17E-09	1.00E-07	1.17E-02	
Thallium	7.87E-09			
Uranium	8.28E-06	3.00E-03	2.76E-03	
Vanadium	1.06E-08	7.00E-03	1.51E-06	
Zinc		3.00E-01		
2-Methylnaphthalene				
Acenaphthene		6.00E-02		
Acenaphthylene				
Anthracene		3.00E-01		
Benz(a)anthracene				
Benzo(a)pyrene	1.92E-06			
Benzo(b)fluoranthene				
Benzo(ghi)perylene				
Benzo(k)fluoranthene				
Bis(2-ethylhexyl)phthalate		2.00E-02		
Chrysene				
Di-n-butyl phthalate		1.00E-01		
Dibenz(a,h)anthracene				
Fluoranthene		4.00E-02		
Fluorene		4.00E-02		
Indeno(1,2,3-cd)pyrene				
Naphthalene		3.57E-02		
PCB-1254	1.76E-07	2.00E-05	8.81E-03	
PCB-1260	9.51E-08			
PCB-1262				
Phenanthrene	5.02E-07			
Polychlorinated biphenyl				
Pyrene		3.00E-02		
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				3.44E-02

Recreational Excess Lifetime Cancer Risks

---------- SECTOR=WAG 6 PATHWAY=Recreational Teen Ingestion of Rabbit ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	1.22E-04	1.00E+00	1.22E-04	
Antimony	7.35E-10	4.00E-04	1.84E-06	
Arsenic	1.63E-07	3.00E-04	5.44E-04	
Beryllium	4.04E-09	5.00E-03	8.08E-07	
Cadmium	6.64E-09	1.00E-03	6.64E-06	
Chromium	1.63E-06	5.00E-03	3.26E-04	
Cobalt	6.44E-09	6.00E-02	1.07E-07	
Iron	3.05E-03	3.00E-01	1.02E-02	
Lead	5.57E-08	1.00E-07	5.57E-01	
Thallium	3.75E-07			
Uranium	1.15E-07	3.00E-03	3.84E-05	
Vanadium	4.92E-07	7.00E-03	7.02E-05	
Zinc	1.45E-04	3.00E-01	4.83E-04	
2-Methylnaphthalene	2.40E-09			
Acenaphthene	1.17E-08	6.00E-02	1.96E-07	
Acenaphthylene	6.98E-10			
Anthracene	2.76E-08	3.00E-01	9.21E-08	
Benz(a)anthracene	6.82E-07			
Benzo(a)pyrene	1.64E-06			
Benzo(b)fluoranthene	1.93E-06			
Benzo(ghi)perylene	2.91E-06			
Benzo(k)fluoranthene	7.66E-06			
Bis(2-ethylhexyl)phthalate	3.16E-09	2.00E-02	1.58E-07	
Chrysene	7.20E-07			
Di-n-butyl phthalate	2.36E-08	1.00E-01	2.36E-07	
Dibenz(a,h)anthracene	2.38E-06			
Fluoranthene	2.40E-07	4.00E-02	6.00E-06	
Fluorene	1.09E-08	4.00E-02	2.72E-07	
Indeno(1,2,3-cd)pyrene	2.75E-06			
Naphthalene	1.08E-09	3.57E-02	3.02E-08	
PCB-1254	5.98E-08	2.00E-05	2.99E-03	
PCB-1260	4.01E-07			
PCB-1262	1.34E-08			
Phenanthrene	9.04E-08			
Polychlorinated biphenyl	1.06E-07			
Pyrene	2.12E-07	3.00E-02	7.06E-06	
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				5.72E-01

---------- SECTOR=WAG 6 PATHWAY=Recreational Teen Ingestion of Venison ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	6.11E-04	1.00E+00	6.11E-04	
Antimony	3.75E-09	4.00E-04	9.38E-06	
Arsenic	8.31E-07	3.00E-04	2.77E-03	
Beryllium	2.03E-08	5.00E-03	4.06E-06	
Cadmium	3.66E-08	1.00E-03	3.66E-05	
Chromium	8.30E-06	5.00E-03	1.66E-03	
Cobalt	3.30E-08	6.00E-02	5.49E-07	
Iron	1.53E-02	3.00E-01	5.11E-02	
Lead	2.88E-07	1.00E-07	2.88E+00	

Recreational Excess Lifetime Cancer Risks

---------- SECTOR=WAG 6 PATHWAY=Recreational Teen Ingestion of Venison ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Thallium	1.88E-06			
Uranium	5.82E-07	3.00E-03	1.94E-04	
Vanadium	2.46E-06	7.00E-03	3.52E-04	
Zinc	8.12E-04	3.00E-01	2.71E-03	
2-Methylnaphthalene	1.28E-08			
Acenaphthene	6.13E-08	6.00E-02	1.02E-06	
Acenaphthylene	3.75E-09			
Anthracene	1.44E-07	3.00E-01	4.79E-07	
Benz(a)anthracene	3.44E-06			
Benzo(a)pyrene	8.23E-06			
Benzo(b)fluoranthene	9.67E-06			
Benzo(ghi)perylene	1.46E-05			
Benzo(k)fluoranthene	3.83E-05			
Bis(2-ethylhexyl)phthalate	1.62E-08	2.00E-02	8.09E-07	
Chrysene	3.63E-06			
Di-n-butyl phthalate	1.21E-07	1.00E-01	1.21E-06	
Dibenz(a,h)anthracene	1.19E-05			
Fluoranthene	1.23E-06	4.00E-02	3.07E-05	
Fluorene	5.65E-08	4.00E-02	1.41E-06	
Indeno(1,2,3-cd)pyrene	1.38E-05			
Naphthalene	5.91E-09	3.57E-02	1.66E-07	
PCB-1254	3.01E-07	2.00E-05	1.50E-02	
PCB-1260	2.01E-06			
PCB-1262	6.74E-08			
Phenanthrene	4.67E-07			
Polychlorinated biphenyl	5.31E-07			
Pyrene	1.08E-06	3.00E-02	3.61E-05	
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				2.96E+00

Recreational Excess Lifetime Cancer Risks

---------- SECTOR=WAG 6 PATHWAY=Recreational Adult Ingestion of Quail ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	9.88E-07			
Antimony	7.64E-12			
Arsenic	1.34E-09	1.50E+00	2.02E-09	
Beryllium	3.94E-11	4.30E+00	1.69E-10	
Cadmium	1.08E-07			
Chromium	1.31E-08			
Cobalt				
Iron	1.24E-03			
Lead	4.41E-10			
Thallium	2.97E-09			
Uranium	3.13E-06			
Vanadium	4.00E-09			
Zinc				
2-Methylnaphthalene				
Acenaphthene				
Acenaphthylene				
Anthracene				
Benz(a)anthracene		7.30E-01		
Benzo(a)pyrene	7.27E-07	7.30E+00	5.31E-06	
Benzo(b)fluoranthene		7.30E-01		
Benzo(ghi)perylene				
Benzo(k)fluoranthene		7.30E-02		
Bis(2-ethylhexyl)phthalate		1.40E-02		
Chrysene		7.30E-03		
Di-n-butyl phthalate				
Dibenz(a,h)anthracene		7.30E+00		
Fluoranthene				
Fluorene				
Indeno(1,2,3-cd)pyrene		7.30E-01		
Naphthalene				
PCB-1254	6.66E-08	2.00E+00	1.33E-07	
PCB-1260	3.59E-08	2.00E+00	7.19E-08	
PCB-1262		2.00E+00		
Phenanthrene	1.90E-07			
Polychlorinated biphenyl		2.00E+00		
Pyrene				
Alpha activity				
Beta activity				
Cesium-137		3.16E-11		
Neptunium-237	1.95E-01	3.00E-10	5.86E-11	
Uranium-234	1.39E+03	4.44E-11	6.18E-08	
Uranium-235	8.45E+01	4.70E-11	3.97E-09	
Uranium-238	1.94E+03	6.20E-11	1.20E-07	
Pathway Total				5.70E-06

---------- SECTOR=WAG 6 PATHWAY=Recreational Adult Ingestion of Rabbit ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	4.74E-05			
Antimony	2.85E-10			
Arsenic	6.34E-08	1.50E+00	9.52E-08	
Beryllium	1.57E-09	4.30E+00	6.75E-09	
Cadmium	2.58E-09			
Chromium	6.34E-07			
Cobalt	2.50E-09			
Iron	1.19E-03			
Lead	2.17E-08			

Recreational Excess Lifetime Cancer Risks

---------- SECTOR=WAG 6 PATHWAY=Recreational Adult Ingestion of Rabbit ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Thallium	1.46E-07			
Uranium	4.48E-08			
Vanadium	1.91E-07			
Zinc	5.63E-05			
2-Methylnaphthalene	9.34E-10			
Acenaphthene	4.56E-09			
Acenaphthylene	2.71E-10			
Anthracene	1.07E-08			
Benz(a)anthracene	2.65E-07	7.30E-01	1.93E-07	
Benzo(a)pyrene	6.36E-07	7.30E+00	4.64E-06	
Benzo(b)fluoranthene	7.48E-07	7.30E-01	5.46E-07	
Benzo(ghi)perylene	1.13E-06			
Benzo(k)fluoranthene	2.97E-06	7.30E-02	2.17E-07	
Bis(2-ethylhexyl)phthalate	1.23E-09	1.40E-02	1.72E-11	
Chrysene	2.80E-07	7.30E-03	2.04E-09	
Di-n-butyl phthalate	9.16E-09			
Dibenz(a,h)anthracene	9.25E-07	7.30E+00	6.76E-06	
Fluoranthene	9.33E-08			
Fluorene	4.22E-09			
Indeno(1,2,3-cd)pyrene	1.07E-06	7.30E-01	7.81E-07	
Naphthalene	4.19E-10			
PCB-1254	2.32E-08	2.00E+00	4.65E-08	
PCB-1260	1.56E-07	2.00E+00	3.12E-07	
PCB-1262	5.21E-09	2.00E+00	1.04E-08	
Phenanthrene	3.51E-08			
Polychlorinated biphenyl	4.10E-08	2.00E+00	8.21E-08	
Pyrene	8.23E-08			
Alpha activity				
Beta activity				
Cesium-137	2.96E+02	3.16E-11	9.34E-09	
Neptunium-237	7.44E+00	3.00E-10	2.23E-09	
Uranium-234	1.99E+01	4.44E-11	8.84E-10	
Uranium-235	1.62E+00	4.70E-11	7.61E-11	
Uranium-238	3.91E+01	6.20E-11	2.42E-09	
Pathway Total				1.37E-05

---------- SECTOR=WAG 6 PATHWAY=Recreational Adult Ingestion of Venison ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	1.18E-04			
Antimony	7.25E-10			
Arsenic	1.60E-07	1.50E+00	2.41E-07	
Beryllium	3.92E-09	4.30E+00	1.68E-08	
Cadmium	7.06E-09			
Chromium	1.60E-06			
Cobalt	6.36E-09			
Iron	2.96E-03			
Lead	5.57E-08			
Thallium	3.62E-07			
Uranium	1.12E-07			
Vanadium	4.76E-07			
Zinc	1.57E-04			
2-Methylnaphthalene	2.47E-09			
Acenaphthene	1.18E-08			
Acenaphthylene	7.24E-10			
Anthracene	2.77E-08			

Recreational Excess Lifetime Cancer Risks

---------- SECTOR=WAG 6 PATHWAY=Recreational Adult Ingestion of Venison ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Benz(a)anthracene	6.64E-07	7.30E-01	4.85E-07	
Benzo(a)pyrene	1.59E-06	7.30E+00	1.16E-05	
Benzo(b)fluoranthene	1.87E-06	7.30E-01	1.36E-06	
Benzo(ghi)perylene	2.81E-06			
Benzo(k)fluoranthene	7.40E-06	7.30E-02	5.40E-07	
Bis(2-ethylhexyl)phthalate	3.12E-09	1.40E-02	4.37E-11	
Chrysene	7.01E-07	7.30E-03	5.12E-09	
Di-n-butyl phthalate	2.33E-08			
Dibenz(a,h)anthracene	2.30E-06	7.30E+00	1.68E-05	
Fluoranthene	2.37E-07			
Fluorene	1.09E-08			
Indeno(1,2,3-cd)pyrene	2.66E-06	7.30E-01	1.94E-06	
Naphthalene	1.14E-09			
PCB-1254	5.80E-08	2.00E+00	1.16E-07	
PCB-1260	3.88E-07	2.00E+00	7.75E-07	
PCB-1262	1.30E-08	2.00E+00	2.60E-08	
Phenanthrene	9.01E-08			
Polychlorinated biphenyl	1.03E-07	2.00E+00	2.05E-07	
Pyrene	2.09E-07			
Alpha activity				
Beta activity				
Cesium-137	7.81E+02	3.16E-11	2.47E-08	
Neptunium-237	1.90E+01	3.00E-10	5.70E-09	
Uranium-234	5.00E+01	4.44E-11	2.22E-09	
Uranium-235	4.09E+00	4.70E-11	1.92E-10	
Uranium-238	9.87E+01	6.20E-11	6.12E-09	
Pathway Total				3.42E-05

---------- SECTOR=WAG 6 PATHWAY=Recreational Child Ingestion of Quail ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	2.60E-07			
Antimony	2.01E-12			
Arsenic	3.54E-10	1.50E+00	5.31E-10	
Beryllium	1.04E-11	4.30E+00	4.46E-11	
Cadmium	2.85E-08			
Chromium	3.46E-09			
Cobalt				
Iron	3.25E-04			
Lead	1.16E-10			
Thallium	7.83E-10			
Uranium	8.24E-07			
Vanadium	1.05E-09			
Zinc				
2-Methylnaphthalene				
Acenaphthene				
Acenaphthylene				
Anthracene				
Benz(a)anthracene		7.30E-01		
Benzo(a)pyrene	1.91E-07	7.30E+00	1.40E-06	
Benzo(b)fluoranthene		7.30E-01		
Benzo(ghi)perylene				
Benzo(k)fluoranthene		7.30E-02		
Bis(2-ethylhexyl)phthalate		1.40E-02		
Chrysene		7.30E-03		
Di-n-butyl phthalate				

Recreational Excess Lifetime Cancer Risks

---------- SECTOR=WAG 6 PATHWAY=Recreational Child Ingestion of Quail ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Dibenz(a,h)anthracene		7.30E+00		
Fluoranthene				
Fluorene				
Indeno(1,2,3-cd)pyrene		7.30E-01		
Naphthalene				
PCB-1254	1.75E-08	2.00E+00	3.51E-08	
PCB-1260	9.47E-09	2.00E+00	1.89E-08	
PCB-1262		2.00E+00		
Phenanthrene	5.00E-08			
Polychlorinated biphenyl		2.00E+00		
Pyrene				
Alpha activity				
Beta activity				
Cesium-137		3.16E-11		
Neptunium-237	1.07E-02	3.00E-10	3.20E-12	
Uranium-234	7.59E+01	4.44E-11	3.37E-09	
Uranium-235	4.61E+00	4.70E-11	2.17E-10	
Uranium-238	1.06E+02	6.20E-11	6.55E-09	
Pathway Total				1.46E-06

---------- SECTOR=WAG 6 PATHWAY=Recreational Child Ingestion of Rabbit ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	1.25E-05			
Antimony	7.52E-11			
Arsenic	1.67E-08	1.50E+00	2.51E-08	
Beryllium	4.13E-10	4.30E+00	1.78E-09	
Cadmium	6.79E-10			
Chromium	1.67E-07			
Cobalt	6.59E-10			
Iron	3.12E-04			
Lead	5.70E-09			
Thallium	3.83E-08			
Uranium	1.18E-08			
Vanadium	5.03E-08			
Zinc	1.48E-05			
2-Methylnaphthalene	2.46E-10			
Acenaphthene	1.20E-09			
Acenaphthylene	7.14E-11			
Anthracene	2.83E-09			
Benz(a)anthracene	6.98E-08	7.30E-01	5.09E-08	
Benzo(a)pyrene	1.68E-07	7.30E+00	1.22E-06	
Benzo(b)fluoranthene	1.97E-07	7.30E-01	1.44E-07	
Benzo(ghi)perylene	2.97E-07			
Benzo(k)fluoranthene	7.83E-07	7.30E-02	5.72E-08	
Bis(2-ethylhexyl)phthalate	3.24E-10	1.40E-02	4.53E-12	
Chrysene	7.37E-08	7.30E-03	5.38E-10	
Di-n-butyl phthalate	2.41E-09			
Dibenz(a,h)anthracene	2.44E-07	7.30E+00	1.78E-06	
Fluoranthene	2.46E-08			
Fluorene	1.11E-09			
Indeno(1,2,3-cd)pyrene	2.82E-07	7.30E-01	2.06E-07	
Naphthalene	1.10E-10			
PCB-1254	6.12E-09	2.00E+00	1.22E-08	
PCB-1260	4.11E-08	2.00E+00	8.21E-08	
PCB-1262	1.37E-09	2.00E+00	2.74E-09	

Recreational Excess Lifetime Cancer Risks

---------- SECTOR=WAG 6 PATHWAY=Recreational Child Ingestion of Rabbit ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Phenanthrene	9.25E-09			
Polychlorinated biphenyl	1.08E-08	2.00E+00	2.16E-08	
Pyrene	2.17E-08			
Alpha activity				
Beta activity				
Cesium-137	1.61E+01	3.16E-11	5.09E-10	
Neptunium-237	4.06E-01	3.00E-10	1.22E-10	
Uranium-234	1.09E+00	4.44E-11	4.82E-11	
Uranium-235	8.84E-02	4.70E-11	4.15E-12	
Uranium-238	2.13E+00	6.20E-11	1.32E-10	
Pathway Total				3.61E-06

---------- SECTOR=WAG 6 PATHWAY=Recreational Child Ingestion of Venison ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	3.39E-05			
Antimony	2.09E-10			
Arsenic	4.62E-08	1.50E+00	6.93E-08	
Beryllium	1.13E-09	4.30E+00	4.85E-09	
Cadmium	2.03E-09			
Chromium	4.61E-07			
Cobalt	1.83E-09			
Iron	8.52E-04			
Lead	1.60E-08			
Thallium	1.04E-07			
Uranium	3.24E-08			
Vanadium	1.37E-07			
Zinc	4.51E-05			
2-Methylnaphthalene	7.11E-10			
Acenaphthene	3.41E-09			
Acenaphthylene	2.08E-10			
Anthracene	7.99E-09			
Benz(a)anthracene	1.91E-07	7.30E-01	1.40E-07	
Benzo(a)pyrene	4.58E-07	7.30E+00	3.34E-06	
Benzo(b)fluoranthene	5.38E-07	7.30E-01	3.93E-07	
Benzo(ghi)perylene	8.10E-07			
Benzo(k)fluoranthene	2.13E-06	7.30E-02	1.56E-07	
Bis(2-ethylhexyl)phthalate	9.00E-10	1.40E-02	1.26E-11	
Chrysene	2.02E-07	7.30E-03	1.47E-09	
Di-n-butyl phthalate	6.70E-09			
Dibenz(a,h)anthracene	6.63E-07	7.30E+00	4.84E-06	
Fluoranthene	6.83E-08			
Fluorene	3.14E-09			
Indeno(1,2,3-cd)pyrene	7.67E-07	7.30E-01	5.60E-07	
Naphthalene	3.29E-10			
PCB-1254	1.67E-08	2.00E+00	3.34E-08	
PCB-1260	1.12E-07	2.00E+00	2.23E-07	
PCB-1262	3.75E-09	2.00E+00	7.49E-09	
Phenanthrene	2.60E-08			
Polychlorinated biphenyl	2.95E-08	2.00E+00	5.91E-08	
Pyrene	6.03E-08			
Alpha activity				
Beta activity				
Cesium-137	4.66E+01	3.16E-11	1.47E-09	
Neptunium-237	1.13E+00	3.00E-10	3.40E-10	
Uranium-234	2.98E+00	4.44E-11	1.32E-10	

Recreational Excess Lifetime Cancer Risks

---------- SECTOR=WAG 6 PATHWAY=Recreational Child Ingestion of Venison ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Uranium-235	2.44E-01	4.70E-11	1.15E-11	
Uranium-238	5.89E+00	6.20E-11	3.65E-10	
Pathway Total				9.83E-06

---------- SECTOR=WAG 6 PATHWAY=Recreational Teen Ingestion of Quail ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	4.48E-07			
Antimony	3.47E-12			
Arsenic	6.09E-10	1.50E+00	9.14E-10	
Beryllium	1.79E-11	4.30E+00	7.68E-11	
Cadmium	4.90E-08			
Chromium	5.95E-09			
Cobalt				
Iron	5.60E-04			
Lead	2.00E-10			
Thallium	1.35E-09			
Uranium	1.42E-06			
Vanadium	1.81E-09			
Zinc				
2-Methylnaphthalene				
Acenaphthene				
Acenaphthylene				
Anthracene				
Benz(a)anthracene		7.30E-01		
Benzo(a)pyrene	3.30E-07	7.30E+00	2.41E-06	
Benzo(b)fluoranthene		7.30E-01		
Benzo(ghi)perylene				
Benzo(k)fluoranthene		7.30E-02		
Bis(2-ethylhexyl)phthalate		1.40E-02		
Chrysene		7.30E-03		
Di-n-butyl phthalate				
Dibenz(a,h)anthracene		7.30E+00		
Fluoranthene				
Fluorene				
Indeno(1,2,3-cd)pyrene		7.30E-01		
Naphthalene				
PCB-1254	3.02E-08	2.00E+00	6.04E-08	
PCB-1260	1.63E-08	2.00E+00	3.26E-08	
PCB-1262		2.00E+00		
Phenanthrene	8.61E-08			
Polychlorinated biphenyl		2.00E+00		
Pyrene				
Alpha activity				
Beta activity				
Cesium-137		3.16E-11		
Neptunium-237	5.44E-02	3.00E-10	1.63E-11	
Uranium-234	3.87E+02	4.44E-11	1.72E-08	
Uranium-235	2.35E+01	4.70E-11	1.11E-09	
Uranium-238	5.39E+02	6.20E-11	3.34E-08	
Pathway Total				2.55E-06

Recreational Excess Lifetime Cancer Risks

---------- SECTOR=WAG 6 PATHWAY=Recreational Teen Ingestion of Rabbit ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	2.09E-05			
Antimony	1.26E-10			
Arsenic	2.80E-08	1.50E+00	4.20E-08	
Beryllium	6.93E-10	4.30E+00	2.98E-09	
Cadmium	1.14E-09			
Chromium	2.80E-07			
Cobalt	1.10E-09			
Iron	5.23E-04			
Lead	9.55E-09			
Thallium	6.42E-08			
Uranium	1.98E-08			
Vanadium	8.43E-08			
Zinc	2.48E-05			
2-Methylnaphthalene	4.12E-10			
Acenaphthene	2.01E-09			
Acenaphthylene	1.20E-10			
Anthracene	4.73E-09			
Benz(a)anthracene	1.17E-07	7.30E-01	8.54E-08	
Benzo(a)pyrene	2.81E-07	7.30E+00	2.05E-06	
Benzo(b)fluoranthene	3.30E-07	7.30E-01	2.41E-07	
Benzo(ghi)perylene	4.98E-07			
Benzo(k)fluoranthene	1.31E-06	7.30E-02	9.58E-08	
Bis(2-ethylhexyl)phthalate	5.42E-10	1.40E-02	7.59E-12	
Chrysene	1.23E-07	7.30E-03	9.01E-10	
Di-n-butyl phthalate	4.04E-09			
Dibenz(a,h)anthracene	4.08E-07	7.30E+00	2.98E-06	
Fluoranthene	4.12E-08			
Fluorene	1.86E-09			
Indeno(1,2,3-cd)pyrene	4.72E-07	7.30E-01	3.45E-07	
Naphthalene	1.85E-10			
PCB-1254	1.03E-08	2.00E+00	2.05E-08	
PCB-1260	6.88E-08	2.00E+00	1.38E-07	
PCB-1262	2.30E-09	2.00E+00	4.59E-09	
Phenanthrene	1.55E-08			
Polychlorinated biphenyl	1.81E-08	2.00E+00	3.62E-08	
Pyrene	3.63E-08			
Alpha activity				
Beta activity				
Cesium-137	8.01E+01	3.16E-11	2.53E-09	
Neptunium-237	2.02E+00	3.00E-10	6.05E-10	
Uranium-234	5.40E+00	4.44E-11	2.40E-10	
Uranium-235	4.39E-01	4.70E-11	2.06E-11	
Uranium-238	1.06E+01	6.20E-11	6.56E-10	
Pathway Total				6.05E-06

---------- SECTOR=WAG 6 PATHWAY=Recreational Teen Ingestion of Venison ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	1.05E-04			
Antimony	6.43E-10			
Arsenic	1.42E-07	1.50E+00	2.14E-07	
Beryllium	3.48E-09	4.30E+00	1.50E-08	
Cadmium	6.27E-09			
Chromium	1.42E-06			
Cobalt	5.65E-09			
Iron	2.63E-03			
Lead	4.95E-08			

Recreational Excess Lifetime Cancer Risks

---------- SECTOR=WAG 6 PATHWAY=Recreational Teen Ingestion of Venison ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Thallium	3.22E-07			
Uranium	9.98E-08			
Vanadium	4.22E-07			
Zinc	1.39E-04			
2-Methylnaphthalene	2.19E-09			
Acenaphthene	1.05E-08			
Acenaphthylene	6.43E-10			
Anthracene	2.46E-08			
Benz(a)anthracene	5.90E-07	7.30E-01	4.31E-07	
Benzo(a)pyrene	1.41E-06	7.30E+00	1.03E-05	
Benzo(b)fluoranthene	1.66E-06	7.30E-01	1.21E-06	
Benzo(ghi)perylene	2.50E-06			
Benzo(k)fluoranthene	6.57E-06	7.30E-02	4.80E-07	
Bis(2-ethylhexyl)phthalate	2.77E-09	1.40E-02	3.88E-11	
Chrysene	6.23E-07	7.30E-03	4.54E-09	
Di-n-butyl phthalate	2.07E-08			
Dibenz(a,h)anthracene	2.05E-06	7.30E+00	1.49E-05	
Fluoranthene	2.11E-07			
Fluorene	9.68E-09			
Indeno(1,2,3-cd)pyrene	2.37E-06	7.30E-01	1.73E-06	
Naphthalene	1.01E-09			
PCB-1254	5.15E-08	2.00E+00	1.03E-07	
PCB-1260	3.44E-07	2.00E+00	6.89E-07	
PCB-1262	1.15E-08	2.00E+00	2.31E-08	
Phenanthrene	8.00E-08			
Polychlorinated biphenyl	9.10E-08	2.00E+00	1.82E-07	
Pyrene	1.86E-07			
Alpha activity				
Beta activity				
Cesium-137	4.26E+02	3.16E-11	1.35E-08	
Neptunium-237	1.04E+01	3.00E-10	3.11E-09	
Uranium-234	2.73E+01	4.44E-11	1.21E-09	
Uranium-235	2.23E+00	4.70E-11	1.05E-10	
Uranium-238	5.38E+01	6.20E-11	3.34E-09	
Pathway Total				3.03E-05

Residential Excess Lifetime Cancer Risks

---------- SECTOR=McNairy PATHWAY=Residential Adult Dermal Contact with Groundwater ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	4.46E-03	1.00E-01	4.46E-02	
Arsenic	1.31E-05	1.23E-04	1.06E-01	
Barium	1.75E-05	4.90E-03	3.58E-03	
Beryllium	4.16E-07	5.00E-05	8.32E-03	
Bromide				
Cadmium	9.43E-08	5.00E-06	1.89E-02	
Chromium	1.22E-05	1.00E-04	1.22E-01	
Cobalt	3.51E-06	4.80E-02	7.32E-05	
Iron	1.08E-02	4.50E-02	2.40E-01	
Lead	5.68E-06	1.50E-08	3.78E+02	
Manganese	7.84E-05	1.87E-03	4.20E-02	
Nickel	5.53E-06	5.40E-03	1.02E-03	
Nitrate	2.64E-05	8.00E-01	3.29E-05	
Orthophosphate				
Selenium	1.46E-06	2.20E-03	6.65E-04	
Tetraoxo-sulfate(1-)				
Thallium	2.98E-08			
Vanadium	5.06E-05	7.00E-05	7.23E-01	
Zinc	3.91E-04	6.00E-02	6.52E-03	
1,1-Dichloroethene	3.20E-06	9.00E-03	3.55E-04	
1,2-Dichloroethane	2.64E-07			
Bis(2-ethylhexyl)phthalate	6.06E-06	3.80E-03	1.60E-03	
Bromodichloromethane	1.53E-06	1.96E-02	7.83E-05	
Chloroform	2.99E-06	2.00E-03	1.49E-03	
Di-n-butyl phthalate	5.72E-06	1.00E-01	5.72E-05	
Di-n-octylphthalate	7.48E-03	1.80E-02	4.16E-01	
Dibromochloromethane	7.76E-07	1.20E-02	6.46E-05	
Tetrachloroethene	1.79E-04	1.00E-02	1.79E-02	
Trichloroethene	1.29E-05	9.00E-04	1.43E-02	
Vinyl chloride	5.09E-06			
cis-1,2-Dichloroethene	7.00E-06	1.00E-02	7.00E-04	
Actinium-228				
Alpha activity				
Beta activity				
Cesium-137				
Lead-210				
Lead-212				
Lead-214				
Neptunium-237				
Plutonium-239				
Potassium-40				
Technetium-99				
Thorium-228				
Thorium-230				
Thorium-234				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				3.80E+02

---------- SECTOR=McNairy PATHWAY=Residential Adult Ingestion of Groundwater ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	2.46E+00	1.00E+00	2.46E+00	
Arsenic	7.21E-03	3.00E-04	2.40E+01	
Barium	9.65E-03	7.00E-02	1.38E-01	
Beryllium	2.29E-04	5.00E-03	4.59E-02	

Residential Excess Lifetime Cancer Risks

---------- SECTOR=McNairy PATHWAY=Residential Adult Ingestion of Groundwater ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Bromide	1.23E-03			
Cadmium	5.20E-05	5.00E-04	1.04E-01	
Chromium	6.71E-03	5.00E-03	1.34E+00	
Cobalt	1.94E-03	6.00E-02	3.23E-02	
Iron	5.96E+00	3.00E-01	1.99E+01	
Lead	3.13E-03	1.00E-07	3.13E+04	
Manganese	4.32E-02	4.60E-02	9.39E-01	
Nickel	3.05E-03	2.00E-02	1.52E-01	
Nitrate	1.45E-02	1.60E+00	9.07E-03	
Orthophosphate	2.77E-03			
Selenium	8.06E-04	5.00E-03	1.61E-01	
Tetraoxo-sulfate(1-)	4.70E-01			
Thallium	1.64E-05			
Vanadium	2.79E-02	7.00E-03	3.98E+00	
Zinc	2.15E-01	3.00E-01	7.18E-01	
1,1-Dichloroethene	1.98E-04	9.00E-03	2.20E-02	
1,2-Dichloroethane	2.74E-05			
Bis(2-ethylhexyl)phthalate	1.43E-04	2.00E-02	7.14E-03	
Bromodichloromethane	1.46E-04	2.00E-02	7.29E-03	
Chloroform	1.85E-04	1.00E-02	1.85E-02	
Di-n-butyl phthalate	2.74E-05	1.00E-01	2.74E-04	
Di-n-octylphthalate	1.53E-04	2.00E-02	7.66E-03	
Dibromochloromethane	1.10E-04	2.00E-02	5.48E-03	
Tetrachloroethene	2.67E-04	1.00E-02	2.67E-02	
Trichloroethene	4.44E-04	6.00E-03	7.40E-02	
Vinyl chloride	3.84E-04			
cis-1,2-Dichloroethene	3.85E-04	1.00E-02	3.85E-02	
Actinium-228				
Alpha activity				
Beta activity				
Cesium-137				
Lead-210				
Lead-212				
Lead-214				
Neptunium-237				
Plutonium-239				
Potassium-40				
Technetium-99				
Thorium-228				
Thorium-230				
Thorium-234				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				3.13E+04

---------- SECTOR=McNairy PATHWAY=Residential Adult Ingestion of Vegetables from Groundwater ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	1.27E+00	1.00E+00	1.27E+00	
Arsenic	3.82E-03	3.00E-04	1.27E+01	
Barium	5.02E-03	7.00E-02	7.18E-02	
Beryllium	1.19E-04	5.00E-03	2.38E-02	
Bromide				
Cadmium	3.70E-05	5.00E-04	3.70E-02	
Chromium	3.46E-03	5.00E-03	6.93E-01	

Residential Excess Lifetime Cancer Risks

---------- SECTOR=McNairy PATHWAY=Residential Adult Ingestion of Vegetables from Groundwater ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Cobalt	1.06E-03	6.00E-02	1.77E-02	
Iron	3.08E+00	3.00E-01	1.03E+01	
Lead	1.62E-03	1.00E-07	1.62E+04	
Manganese	2.65E-02	4.60E-02	1.89E-01	
Nickel	1.79E-03	2.00E-02	8.96E-02	
Nitrate		1.60E+00		
Orthophosphate				
Selenium	5.31E-04	5.00E-03	1.06E-01	
Tetraoxo-sulfate(1-)				
Thallium	8.50E-06			
Vanadium	1.45E-02	7.00E-03	2.06E+00	
Zinc	1.92E-01	3.00E-01	6.41E-01	
1,1-Dichloroethene	2.99E-04	9.00E-03	3.32E-02	
1,2-Dichloroethane	5.47E-05			
Bis(2-ethylhexyl)phthalate	7.59E-05	2.00E-02	3.80E-03	
Bromodichloromethane	1.72E-04	2.00E-02	8.61E-03	
Chloroform	2.36E-04	1.00E-02	2.36E-02	
Di-n-butyl phthalate	1.46E-05	1.00E-01	1.46E-04	
Di-n-octylphthalate	7.91E-05	2.00E-02	3.96E-03	
Dibromochloromethane	1.20E-04	2.00E-02	6.02E-03	
Tetrachloroethene	2.29E-04	1.00E-02	2.29E-02	
Trichloroethene	4.27E-04	6.00E-03	7.11E-02	
Vinyl chloride	8.49E-04			
cis-1,2-Dichloroethene	5.34E-04	1.00E-02	5.34E-02	
Actinium-228				
Alpha activity				
Beta activity				
Cesium-137				
Lead-210				
Lead-212				
Lead-214				
Neptunium-237				
Plutonium-239				
Potassium-40				
Technetium-99				
Thorium-228				
Thorium-230				
Thorium-234				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				1.62E+04

---------- SECTOR=McNairy PATHWAY=Residential Adult Inhalation of Groundwater Household Use ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum				
Arsenic				
Barium		1.43E-04		
Beryllium				
Bromide				
Cadmium		5.71E-05		
Chromium				
Cobalt				
Iron				
Lead		2.86E-04		

Residential Excess Lifetime Cancer Risks

---------- SECTOR=McNairy PATHWAY=Residential Adult Inhalation of Groundwater Household Use ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Manganese		1.43E-05		
Nickel				
Nitrate				
Orthophosphate				
Selenium				
Tetraoxo-sulfate(1-)				
Thallium				
Vanadium				
Zinc				
1,1-Dichloroethene	5.87E-04			
1,2-Dichloroethane	8.12E-05	2.86E-03	2.84E-02	
Bis(2-ethylhexyl)phthalate				
Bromodichloromethane	4.32E-04			
Chloroform	5.48E-04			
Di-n-butyl phthalate				
Di-n-octylphthalate				
Dibromochloromethane	3.25E-04			
Tetrachloroethene	7.92E-04			
Trichloroethene	1.32E-03			
Vinyl chloride	1.14E-03			
cis-1,2-Dichloroethene	1.14E-03			
Actinium-228				
Alpha activity				
Beta activity				
Cesium-137				
Lead-210				
Lead-212				
Lead-214				
Neptunium-237				
Plutonium-239				
Potassium-40				
Technetium-99				
Thorium-228				
Thorium-230				
Thorium-234				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				2.84E-02

---------- SECTOR=McNairy PATHWAY=Residential Adult Inhalation of Groundwater While Showering ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum				
Arsenic				
Barium		1.43E-04		
Beryllium				
Bromide				
Cadmium		5.71E-05		
Chromium				
Cobalt				
Iron				
Lead		2.86E-04		
Manganese		1.43E-05		
Nickel				
Nitrate				

Residential Excess Lifetime Cancer Risks

---------- SECTOR=McNairy PATHWAY=Residential Adult Inhalation of Groundwater While Showering ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Orthophosphate				
Selenium				
Tetraoxo-sulfate(1-)				
Thallium				
Vanadium				
Zinc				
1,1-Dichloroethene	5.41E-05			
1,2-Dichloroethane	7.48E-06	2.86E-03	2.62E-03	
Bis(2-ethylhexyl)phthalate				
Bromodichloromethane	3.98E-05			
Chloroform	5.05E-05			
Di-n-butyl phthalate				
Di-n-octylphthalate				
Dibromochloromethane	2.99E-05			
Tetrachloroethene	7.29E-05			
Trichloroethene	1.21E-04			
Vinyl chloride	1.05E-04			
cis-1,2-Dichloroethene	1.05E-04			
Actinium-228				
Alpha activity				
Beta activity				
Cesium-137				
Lead-210				
Lead-212				
Lead-214				
Neptunium-237				
Plutonium-239				
Potassium-40				
Technetium-99				
Thorium-228				
Thorium-230				
Thorium-234				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				2.62E-03

---------- SECTOR=McNairy PATHWAY=Residential Child Dermal Contact with Groundwater ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	8.55E-03	1.00E-01	8.55E-02	
Arsenic	2.51E-05	1.23E-04	2.04E-01	
Barium	3.35E-05	4.90E-03	6.85E-03	
Beryllium	7.97E-07	5.00E-05	1.59E-02	
Bromide				
Cadmium	1.81E-07	5.00E-06	3.61E-02	
Chromium	2.33E-05	1.00E-04	2.33E-01	
Cobalt	6.73E-06	4.80E-02	1.40E-04	
Iron	2.07E-02	4.50E-02	4.60E-01	
Lead	1.09E-05	1.50E-08	7.25E+02	
Manganese	1.50E-04	1.87E-03	8.04E-02	
Nickel	1.06E-05	5.40E-03	1.96E-03	
Nitrate	5.05E-05	8.00E-01	6.31E-05	
Orthophosphate				
Selenium	2.80E-06	2.20E-03	1.27E-03	
Tetraoxo-sulfate(1-)				

Residential Excess Lifetime Cancer Risks

---------- SECTOR=McNairy PATHWAY=Residential Child Dermal Contact with Groundwater ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Thallium	5.71E-08			
Vanadium	9.69E-05	7.00E-05	1.38E+00	
Zinc	7.49E-04	6.00E-02	1.25E-02	
1,1-Dichloroethene	6.13E-06	9.00E-03	6.81E-04	
1,2-Dichloroethane	5.05E-07			
Bis(2-ethylhexyl)phthalate	1.16E-05	3.80E-03	3.06E-03	
Bromodichloromethane	2.94E-06	1.96E-02	1.50E-04	
Chloroform	5.72E-06	2.00E-03	2.86E-03	
Di-n-butyl phthalate	1.10E-05	1.00E-01	1.10E-04	
Di-n-octylphthalate	1.43E-02	1.80E-02	7.96E-01	
Dibromochloromethane	1.49E-06	1.20E-02	1.24E-04	
Tetrachloroethene	3.43E-04	1.00E-02	3.43E-02	
Trichloroethene	2.47E-05	9.00E-04	2.74E-02	
Vinyl chloride	9.75E-06			
cis-1,2-Dichloroethene	1.34E-05	1.00E-02	1.34E-03	
Actinium-228				
Alpha activity				
Beta activity				
Cesium-137				
Lead-210				
Lead-212				
Lead-214				
Neptunium-237				
Plutonium-239				
Potassium-40				
Technetium-99				
Thorium-228				
Thorium-230				
Thorium-234				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				7.28E+02

---------- SECTOR=McNairy PATHWAY=Residential Child Ingestion of Groundwater ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	5.94E+00	1.00E+00	5.94E+00	
Arsenic	1.74E-02	3.00E-04	5.80E+01	
Barium	2.33E-02	7.00E-02	3.33E-01	
Beryllium	5.53E-04	5.00E-03	1.11E-01	
Bromide	2.97E-03			
Cadmium	1.25E-04	5.00E-04	2.51E-01	
Chromium	1.62E-02	5.00E-03	3.24E+00	
Cobalt	4.67E-03	6.00E-02	7.79E-02	
Iron	1.44E+01	3.00E-01	4.79E+01	
Lead	7.55E-03	1.00E-07	7.55E+04	
Manganese	1.04E-01	4.60E-02	2.27E+00	
Nickel	7.36E-03	2.00E-02	3.68E-01	
Nitrate	3.50E-02	1.60E+00	2.19E-02	
Orthophosphate	6.68E-03			
Selenium	1.94E-03	5.00E-03	3.89E-01	
Tetraoxo-sulfate(1-)	1.13E+00			
Thallium	3.96E-05			
Vanadium	6.73E-02	7.00E-03	9.62E+00	
Zinc	5.20E-01	3.00E-01	1.73E+00	

Residential Excess Lifetime Cancer Risks

---------- SECTOR=McNairy PATHWAY=Residential Child Ingestion of Groundwater ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
1,1-Dichloroethene	4.78E-04	9.00E-03	5.31E-02	
1,2-Dichloroethane	6.61E-05			
Bis(2-ethylhexyl)phthalate	3.45E-04	2.00E-02	1.72E-02	
Bromodichloromethane	3.52E-04	2.00E-02	1.76E-02	
Chloroform	4.46E-04	1.00E-02	4.46E-02	
Di-n-butyl phthalate	6.61E-05	1.00E-01	6.61E-04	
Di-n-octylphthalate	3.70E-04	2.00E-02	1.85E-02	
Dibromochloromethane	2.65E-04	2.00E-02	1.32E-02	
Tetrachloroethene	6.44E-04	1.00E-02	6.44E-02	
Trichloroethene	1.07E-03	6.00E-03	1.79E-01	
Vinyl chloride	9.28E-04			
cis-1,2-Dichloroethene	9.30E-04	1.00E-02	9.30E-02	
Actinium-228				
Alpha activity				
Beta activity				
Cesium-137				
Lead-210				
Lead-212				
Lead-214				
Neptunium-237				
Plutonium-239				
Potassium-40				
Technetium-99				
Thorium-228				
Thorium-230				
Thorium-234				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				7.56E+04

---------- SECTOR=McNairy PATHWAY=Residential Child Ingestion of Vegetables from Groundwater ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	4.00E+00	1.00E+00	4.00E+00	
Arsenic	1.20E-02	3.00E-04	4.01E+01	
Barium	1.58E-02	7.00E-02	2.26E-01	
Beryllium	3.75E-04	5.00E-03	7.50E-02	
Bromide				
Cadmium	1.16E-04	5.00E-04	1.16E-01	
Chromium	1.09E-02	5.00E-03	2.18E+00	
Cobalt	3.35E-03	6.00E-02	5.58E-02	
Iron	9.68E+00	3.00E-01	3.23E+01	
Lead	5.09E-03	1.00E-07	5.09E+04	
Manganese	8.34E-02	4.60E-02	5.96E-01	
Nickel	5.63E-03	2.00E-02	2.82E-01	
Nitrate		1.60E+00		
Orthophosphate				
Selenium	1.67E-03	5.00E-03	3.34E-01	
Tetraoxo-sulfate(1-)				
Thallium	2.67E-05			
Vanadium	4.55E-02	7.00E-03	6.49E+00	
Zinc	6.05E-01	3.00E-01	2.02E+00	
1,1-Dichloroethene	9.40E-04	9.00E-03	1.04E-01	
1,2-Dichloroethane	1.72E-04			
Bis(2-ethylhexyl)phthalate	2.39E-04	2.00E-02	1.19E-02	

Residential Excess Lifetime Cancer Risks

---------- SECTOR=McNairy PATHWAY=Residential Child Ingestion of Vegetables from Groundwater ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Bromodichloromethane	5.42E-04	2.00E-02	2.71E-02	
Chloroform	7.42E-04	1.00E-02	7.42E-02	
Di-n-butyl phthalate	4.58E-05	1.00E-01	4.58E-04	
Di-n-octylphthalate	2.49E-04	2.00E-02	1.24E-02	
Dibromochloromethane	3.78E-04	2.00E-02	1.89E-02	
Tetrachloroethene	7.20E-04	1.00E-02	7.20E-02	
Trichloroethene	1.34E-03	6.00E-03	2.24E-01	
Vinyl chloride	2.67E-03			
cis-1,2-Dichloroethene	1.68E-03	1.00E-02	1.68E-01	
Actinium-228				
Alpha activity				
Beta activity				
Cesium-137				
Lead-210				
Lead-212				
Lead-214				
Neptunium-237				
Plutonium-239				
Potassium-40				
Technetium-99				
Thorium-228				
Thorium-230				
Thorium-234				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				5.10E+04

---------- SECTOR=McNairy PATHWAY=Residential Child Inhalation of Groundwater Household Use ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum				
Arsenic				
Barium		1.43E-04		
Beryllium				
Bromide				
Cadmium		5.71E-05		
Chromium				
Cobalt				
Iron				
Lead		2.86E-04		
Manganese		1.43E-05		
Nickel				
Nitrate				
Orthophosphate				
Selenium				
Tetraoxo-sulfate(1-)				
Thallium				
Vanadium				
Zinc				
1,1-Dichloroethene	5.87E-04			
1,2-Dichloroethane	8.12E-05	2.86E-03	2.84E-02	
Bis(2-ethylhexyl)phthalate				
Bromodichloromethane	4.32E-04			
Chloroform	5.48E-04			
Di-n-butyl phthalate				

Residential Excess Lifetime Cancer Risks

---------- SECTOR=McNairy PATHWAY=Residential Child Inhalation of Groundwater Household Use ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Di-n-octylphthalate				
Dibromochloromethane	3.25E-04			
Tetrachloroethene	7.92E-04			
Trichloroethene	1.32E-03			
Vinyl chloride	1.14E-03			
cis-1,2-Dichloroethene	1.14E-03			
Actinium-228				
Alpha activity				
Beta activity				
Cesium-137				
Lead-210				
Lead-212				
Lead-214				
Neptunium-237				
Plutonium-239				
Potassium-40				
Technetium-99				
Thorium-228				
Thorium-230				
Thorium-234				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				2.84E-02

---------- SECTOR=McNairy PATHWAY=Residential Child Inhalation of Groundwater While Showering ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum				
Arsenic				
Barium		1.43E-04		
Beryllium				
Bromide				
Cadmium		5.71E-05		
Chromium				
Cobalt				
Iron				
Lead		2.86E-04		
Manganese		1.43E-05		
Nickel				
Nitrate				
Orthophosphate				
Selenium				
Tetraoxo-sulfate(1-)				
Thallium				
Vanadium				
Zinc				
1,1-Dichloroethene	5.41E-05			
1,2-Dichloroethane	7.48E-06	2.86E-03	2.62E-03	
Bis(2-ethylhexyl)phthalate				
Bromodichloromethane	3.98E-05			
Chloroform	5.05E-05			
Di-n-butyl phthalate				
Di-n-octylphthalate				
Dibromochloromethane	2.99E-05			
Tetrachloroethene	7.29E-05			

Residential Excess Lifetime Cancer Risks

---------- SECTOR=McNairy PATHWAY=Residential Child Inhalation of Groundwater While Showering ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Trichloroethene	1.21E-04			
Vinyl chloride	1.05E-04			
cis-1,2-Dichloroethene	1.05E-04			
Actinium-228				
Alpha activity				
Beta activity				
Cesium-137				
Lead-210				
Lead-212				
Lead-214				
Neptunium-237				
Plutonium-239				
Potassium-40				
Technetium-99				
Thorium-228				
Thorium-230				
Thorium-234				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				2.62E-03

---------- SECTOR=RGA PATHWAY=Residential Adult Dermal Contact with Groundwater ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	3.03E-03	1.00E-01	3.03E-02	
Antimony	6.91E-07	8.00E-06	8.64E-02	
Arsenic	1.45E-06	1.23E-04	1.18E-02	
Barium	2.09E-05	4.90E-03	4.26E-03	
Beryllium	5.03E-07	5.00E-05	1.01E-02	
Bromide				
Cadmium	7.36E-08	5.00E-06	1.47E-02	
Chromium	5.61E-06	1.00E-04	5.61E-02	
Cobalt	4.91E-06	4.80E-02	1.02E-04	
Copper	1.09E-05	1.20E-02	9.11E-04	
Iron	1.93E-02	4.50E-02	4.28E-01	
Lead	1.63E-06	1.50E-08	1.08E+02	
Manganese	1.52E-04	1.87E-03	8.15E-02	
Mercury	8.18E-09	2.10E-05	3.90E-04	
Nickel	9.79E-06	5.40E-03	1.81E-03	
Nitrate	2.36E-03	8.00E-01	2.94E-03	
Orthophosphate				
Silver	6.31E-07	9.00E-04	7.01E-04	
Tetraoxo-sulfate(1-)				
Thallium	2.94E-08			
Uranium	1.82E-07	2.55E-03	7.13E-05	
Vanadium	7.65E-06	7.00E-05	1.09E-01	
Zinc	3.80E-05	6.00E-02	6.34E-04	
1,1-Dichloroethene	2.94E-06	9.00E-03	3.26E-04	
Bis(2-ethylhexyl)phthalate	1.16E-06	3.80E-03	3.06E-04	
Bromodichloromethane	1.15E-06	1.96E-02	5.89E-05	
Carbon tetrachloride	7.73E-05	4.55E-04	1.70E-01	
Chloroform	1.28E-05	2.00E-03	6.39E-03	
Di-n-butyl phthalate	5.72E-06	1.00E-01	5.72E-05	
Di-n-octylphthalate	1.34E-03	1.80E-02	7.43E-02	
N-Nitroso-di-n-propylamine	1.39E-07			

Residential Excess Lifetime Cancer Risks

---------- SECTOR=RGA PATHWAY=Residential Adult Dermal Contact with Groundwater ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Tetrachloroethene	4.04E-04	1.00E-02	4.04E-02	
Toluene	8.06E-05	1.60E-01	5.03E-04	
Trichloroethene	6.52E-03	9.00E-04	7.24E+00	
Vinyl chloride	4.83E-05			
cis-1,2-Dichloroethene	1.84E-04	1.00E-02	1.84E-02	
trans-1,2-Dichloroethene	6.55E-07	2.00E-02	3.28E-05	
Alpha activity				
Americium-241				
Beta activity				
Cesium-137				
Lead-210				
Lead-214				
Neptunium-237				
Plutonium-239				
Technetium-99				
Thorium-228				
Thorium-230				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				1.17E+02

---------- SECTOR=RGA PATHWAY=Residential Adult Ingestion of Groundwater ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	1.67E+00	1.00E+00	1.67E+00	
Antimony	3.81E-04	4.00E-04	9.52E-01	
Arsenic	7.98E-04	3.00E-04	2.66E+00	
Barium	1.15E-02	7.00E-02	1.64E-01	
Beryllium	2.77E-04	5.00E-03	5.55E-02	
Bromide	1.26E-02			
Cadmium	4.05E-05	5.00E-04	8.11E-02	
Chromium	3.09E-03	5.00E-03	6.18E-01	
Cobalt	2.71E-03	6.00E-02	4.51E-02	
Copper	6.03E-03	4.00E-02	1.51E-01	
Iron	1.06E+01	3.00E-01	3.54E+01	
Lead	8.97E-04	1.00E-07	8.97E+03	
Manganese	8.38E-02	4.60E-02	1.82E+00	
Mercury	4.51E-06	3.00E-04	1.50E-02	
Nickel	5.39E-03	2.00E-02	2.70E-01	
Nitrate	1.30E+00	1.60E+00	8.11E-01	
Orthophosphate	9.86E-04			
Silver	3.48E-04	5.00E-03	6.95E-02	
Tetraoxo-sulfate(1-)	3.61E-01			
Thallium	1.62E-05			
Uranium	1.00E-04	3.00E-03	3.34E-02	
Vanadium	4.21E-03	7.00E-03	6.02E-01	
Zinc	2.10E-02	3.00E-01	6.98E-02	
1,1-Dichloroethene	1.82E-04	9.00E-03	2.02E-02	
Bis(2-ethylhexyl)phthalate	2.74E-05	2.00E-02	1.37E-03	
Bromodichloromethane	1.10E-04	2.00E-02	5.48E-03	
Carbon tetrachloride	1.94E-03	7.00E-04	2.77E+00	
Chloroform	7.91E-04	1.00E-02	7.91E-02	
Di-n-butyl phthalate	2.74E-05	1.00E-01	2.74E-04	
Di-n-octylphthalate	2.74E-05	2.00E-02	1.37E-03	
N-Nitroso-di-n-propylamine	2.74E-05			

Residential Excess Lifetime Cancer Risks

---------- SECTOR=RGA PATHWAY=Residential Adult Ingestion of Groundwater ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Tetrachloroethene	6.02E-04	1.00E-02	6.02E-02	
Toluene	9.86E-04	2.00E-01	4.93E-03	
Trichloroethene	2.24E-01	6.00E-03	3.74E+01	
Vinyl chloride	3.64E-03			
cis-1,2-Dichloroethene	1.01E-02	1.00E-02	1.01E+00	
trans-1,2-Dichloroethene	3.37E-04	2.00E-02	1.69E-02	
Alpha activity				
Americium-241				
Beta activity				
Cesium-137				
Lead-210				
Lead-214				
Neptunium-237				
Plutonium-239				
Technetium-99				
Thorium-228				
Thorium-230				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				9.05E+03

---------- SECTOR=RGA PATHWAY=Residential Adult Ingestion of Vegetables from Groundwater ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	8.64E-01	1.00E+00	8.64E-01	
Antimony	2.02E-04	4.00E-04	5.05E-01	
Arsenic	4.23E-04	3.00E-04	1.41E+00	
Barium	5.99E-03	7.00E-02	8.55E-02	
Beryllium	1.44E-04	5.00E-03	2.88E-02	
Bromide				
Cadmium	2.89E-05	5.00E-04	2.89E-02	
Chromium	1.60E-03	5.00E-03	3.19E-01	
Cobalt	1.49E-03	6.00E-02	2.48E-02	
Copper	3.80E-03	4.00E-02	9.49E-02	
Iron	5.49E+00	3.00E-01	1.83E+01	
Lead	4.64E-04	1.00E-07	4.64E+03	
Manganese	5.15E-02	4.60E-02	3.68E-01	
Mercury	4.26E-06	3.00E-04	1.42E-02	
Nickel	3.17E-03	2.00E-02	1.58E-01	
Nitrate		1.60E+00		
Orthophosphate				
Silver	1.79E-04	5.00E-03	3.59E-02	
Tetraoxo-sulfate(1-)				
Thallium	8.39E-06			
Uranium	5.18E-05	3.00E-03	1.73E-02	
Vanadium	2.18E-03	7.00E-03	3.12E-01	
Zinc	1.87E-02	3.00E-01	6.23E-02	
1,1-Dichloroethene	2.74E-04	9.00E-03	3.05E-02	
Bis(2-ethylhexyl)phthalate	1.46E-05	2.00E-02	7.29E-04	
Bromodichloromethane	1.29E-04	2.00E-02	6.47E-03	
Carbon tetrachloride	1.51E-03	7.00E-04	2.15E+00	
Chloroform	1.01E-03	1.00E-02	1.01E-01	
Di-n-butyl phthalate	1.46E-05	1.00E-01	1.46E-04	
Di-n-octylphthalate	1.41E-05	2.00E-02	7.07E-04	
N-Nitroso-di-n-propylamine	6.05E-05			

Residential Excess Lifetime Cancer Risks

---------- SECTOR=RGA PATHWAY=Residential Adult Ingestion of Vegetables from Groundwater ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Tetrachloroethene	5.16E-04	1.00E-02	5.16E-02	
Toluene	8.03E-04	2.00E-01	4.02E-03	
Trichloroethene	2.16E-01	6.00E-03	3.60E+01	
Vinyl chloride	8.05E-03			
cis-1,2-Dichloroethene	1.40E-02	1.00E-02	1.40E+00	
trans-1,2-Dichloroethene	2.12E-03	2.00E-02	1.06E-01	
Alpha activity				
Americium-241				
Beta activity				
Cesium-137				
Lead-210				
Lead-214				
Neptunium-237				
Plutonium-239				
Technetium-99				
Thorium-228				
Thorium-230				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				4.70E+03

---------- SECTOR=RGA PATHWAY=Residential Adult Inhalation of Groundwater Household Use ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum				
Antimony				
Arsenic				
Barium		1.43E-04		
Beryllium				
Bromide				
Cadmium		5.71E-05		
Chromium				
Cobalt				
Copper				
Iron				
Lead		2.86E-04		
Manganese		1.43E-05		
Mercury		8.57E-05		
Nickel				
Nitrate				
Orthophosphate				
Silver				
Tetraoxo-sulfate(1-)				
Thallium				
Uranium				
Vanadium				
Zinc				
1,1-Dichloroethene	5.39E-04			
Bis(2-ethylhexyl)phthalate				
Bromodichloromethane	3.25E-04			
Carbon tetrachloride	5.74E-03	5.71E-04	1.01E+01	
Chloroform	2.35E-03			
Di-n-butyl phthalate				
Di-n-octylphthalate				
N-Nitroso-di-n-propylamine				

Residential Excess Lifetime Cancer Risks

---------- SECTOR=RGA PATHWAY=Residential Adult Inhalation of Groundwater Household Use ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Tetrachloroethene	1.78E-03			
Toluene	2.92E-03	1.14E-01	2.56E-02	
Trichloroethene	6.65E-01			
Vinyl chloride	1.08E-02			
cis-1,2-Dichloroethene	3.01E-02			
trans-1,2-Dichloroethene	1.00E-03			
Alpha activity				
Americium-241				
Beta activity				
Cesium-137				
Lead-210				
Lead-214				
Neptunium-237				
Plutonium-239				
Technetium-99				
Thorium-228				
Thorium-230				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				1.01E+01

---------- SECTOR=RGA PATHWAY=Residential Adult Inhalation of Groundwater While Showering ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum				
Antimony				
Arsenic				
Barium		1.43E-04		
Beryllium				
Bromide				
Cadmium		5.71E-05		
Chromium				
Cobalt				
Copper				
Iron				
Lead		2.86E-04		
Manganese		1.43E-05		
Mercury		8.57E-05		
Nickel				
Nitrate				
Orthophosphate				
Silver				
Tetraoxo-sulfate(1-)				
Thallium				
Uranium				
Vanadium				
Zinc				
1,1-Dichloroethene	4.96E-05			
Bis(2-ethylhexyl)phthalate				
Bromodichloromethane	2.99E-05			
Carbon tetrachloride	5.29E-04	5.71E-04	9.26E-01	
Chloroform	2.16E-04			
Di-n-butyl phthalate				
Di-n-octylphthalate				
N-Nitroso-di-n-propylamine				

Residential Excess Lifetime Cancer Risks

---------- SECTOR=RGA PATHWAY=Residential Adult Inhalation of Groundwater While Showering ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Tetrachloroethene	1.64E-04			
Toluene	2.69E-04	1.14E-01	2.36E-03	
Trichloroethene	6.13E-02			
Vinyl chloride	9.95E-04			
cis-1,2-Dichloroethene	2.77E-03			
trans-1,2-Dichloroethene	9.20E-05			
Alpha activity				
Americium-241				
Beta activity				
Cesium-137				
Lead-210				
Lead-214				
Neptunium-237				
Plutonium-239				
Technetium-99				
Thorium-228				
Thorium-230				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				9.28E-01

---------- SECTOR=RGA PATHWAY=Residential Child Dermal Contact with Groundwater ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	5.80E-03	1.00E-01	5.80E-02	
Antimony	1.32E-06	8.00E-06	1.66E-01	
Arsenic	2.77E-06	1.23E-04	2.25E-02	
Barium	4.00E-05	4.90E-03	8.16E-03	
Beryllium	9.64E-07	5.00E-05	1.93E-02	
Bromide				
Cadmium	1.41E-07	5.00E-06	2.82E-02	
Chromium	1.07E-05	1.00E-04	1.07E-01	
Cobalt	9.40E-06	4.80E-02	1.96E-04	
Copper	2.09E-05	1.20E-02	1.75E-03	
Iron	3.69E-02	4.50E-02	8.20E-01	
Lead	3.12E-06	1.50E-08	2.08E+02	
Manganese	2.91E-04	1.87E-03	1.56E-01	
Mercury	1.57E-08	2.10E-05	7.46E-04	
Nickel	1.87E-05	5.40E-03	3.47E-03	
Nitrate	4.51E-03	8.00E-01	5.64E-03	
Orthophosphate				
Silver	1.21E-06	9.00E-04	1.34E-03	
Tetraoxo-sulfate(1-)				
Thallium	5.64E-08			
Uranium	3.48E-07	2.55E-03	1.37E-04	
Vanadium	1.46E-05	7.00E-05	2.09E-01	
Zinc	7.28E-05	6.00E-02	1.21E-03	
1,1-Dichloroethene	5.62E-06	9.00E-03	6.25E-04	
Bis(2-ethylhexyl)phthalate	2.23E-06	3.80E-03	5.86E-04	
Bromodichloromethane	2.21E-06	1.96E-02	1.13E-04	
Carbon tetrachloride	1.48E-04	4.55E-04	3.25E-01	
Chloroform	2.45E-05	2.00E-03	1.22E-02	
Di-n-butyl phthalate	1.10E-05	1.00E-01	1.10E-04	
Di-n-octylphthalate	2.56E-03	1.80E-02	1.42E-01	
N-Nitroso-di-n-propylamine	2.67E-07			

Residential Excess Lifetime Cancer Risks

---------- SECTOR=RGA PATHWAY=Residential Child Dermal Contact with Groundwater ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Tetrachloroethene	7.74E-04	1.00E-02	7.74E-02	
Toluene	1.54E-04	1.60E-01	9.64E-04	
Trichloroethene	1.25E-02	9.00E-04	1.39E+01	
Vinyl chloride	9.25E-05			
cis-1,2-Dichloroethene	3.52E-04	1.00E-02	3.52E-02	
trans-1,2-Dichloroethene	1.25E-06	2.00E-02	6.27E-05	
Alpha activity				
Americium-241				
Beta activity				
Cesium-137				
Lead-210				
Lead-214				
Neptunium-237				
Plutonium-239				
Technetium-99				
Thorium-228				
Thorium-230				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				2.24E+02

---------- SECTOR=RGA PATHWAY=Residential Child Ingestion of Groundwater ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	4.03E+00	1.00E+00	4.03E+00	
Antimony	9.19E-04	4.00E-04	2.30E+00	
Arsenic	1.93E-03	3.00E-04	6.42E+00	
Barium	2.78E-02	7.00E-02	3.97E-01	
Beryllium	6.70E-04	5.00E-03	1.34E-01	
Bromide	3.05E-02			
Cadmium	9.79E-05	5.00E-04	1.96E-01	
Chromium	7.46E-03	5.00E-03	1.49E+00	
Cobalt	6.53E-03	6.00E-02	1.09E-01	
Copper	1.45E-02	4.00E-02	3.64E-01	
Iron	2.56E+01	3.00E-01	8.54E+01	
Lead	2.16E-03	1.00E-07	2.16E+04	
Manganese	2.02E-01	4.60E-02	4.40E+00	
Mercury	1.09E-05	3.00E-04	3.63E-02	
Nickel	1.30E-02	2.00E-02	6.51E-01	
Nitrate	3.13E+00	1.60E+00	1.96E+00	
Orthophosphate	2.38E-03			
Silver	8.39E-04	5.00E-03	1.68E-01	
Tetraoxo-sulfate(1-)	8.72E-01			
Thallium	3.91E-05			
Uranium	2.42E-04	3.00E-03	8.06E-02	
Vanadium	1.02E-02	7.00E-03	1.45E+00	
Zinc	5.06E-02	3.00E-01	1.69E-01	
1,1-Dichloroethene	4.39E-04	9.00E-03	4.88E-02	
Bis(2-ethylhexyl)phthalate	6.61E-05	2.00E-02	3.31E-03	
Bromodichloromethane	2.65E-04	2.00E-02	1.32E-02	
Carbon tetrachloride	4.67E-03	7.00E-04	6.68E+00	
Chloroform	1.91E-03	1.00E-02	1.91E-01	
Di-n-butyl phthalate	6.61E-05	1.00E-01	6.61E-04	
Di-n-octylphthalate	6.61E-05	2.00E-02	3.31E-03	
N-Nitroso-di-n-propylamine	6.61E-05			

Residential Excess Lifetime Cancer Risks

---------- SECTOR=RGA PATHWAY=Residential Child Ingestion of Groundwater ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Tetrachloroethene	1.45E-03	1.00E-02	1.45E-01	
Toluene	2.38E-03	2.00E-01	1.19E-02	
Trichloroethene	5.42E-01	6.00E-03	9.03E+01	
Vinyl chloride	8.80E-03			
cis-1,2-Dichloroethene	2.45E-02	1.00E-02	2.45E+00	
trans-1,2-Dichloroethene	8.14E-04	2.00E-02	4.07E-02	
Alpha activity				
Americium-241				
Beta activity				
Cesium-137				
Lead-210				
Lead-214				
Neptunium-237				
Plutonium-239				
Technetium-99				
Thorium-228				
Thorium-230				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				2.19E+04

---------- SECTOR=RGA PATHWAY=Residential Child Ingestion of Vegetables from Groundwater ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	2.72E+00	1.00E+00	2.72E+00	
Antimony	6.36E-04	4.00E-04	1.59E+00	
Arsenic	1.33E-03	3.00E-04	4.44E+00	
Barium	1.88E-02	7.00E-02	2.69E-01	
Beryllium	4.54E-04	5.00E-03	9.07E-02	
Bromide				
Cadmium	9.08E-05	5.00E-04	9.08E-02	
Chromium	5.02E-03	5.00E-03	1.00E+00	
Cobalt	4.67E-03	6.00E-02	7.79E-02	
Copper	1.19E-02	4.00E-02	2.99E-01	
Iron	1.73E+01	3.00E-01	5.75E+01	
Lead	1.46E-03	1.00E-07	1.46E+04	
Manganese	1.62E-01	4.60E-02	1.16E+00	
Mercury	1.34E-05	3.00E-04	4.46E-02	
Nickel	9.97E-03	2.00E-02	4.98E-01	
Nitrate		1.60E+00		
Orthophosphate				
Silver	5.65E-04	5.00E-03	1.13E-01	
Tetraoxo-sulfate(1-)				
Thallium	2.64E-05			
Uranium	1.63E-04	3.00E-03	5.43E-02	
Vanadium	6.87E-03	7.00E-03	9.81E-01	
Zinc	5.88E-02	3.00E-01	1.96E-01	
1,1-Dichloroethene	8.63E-04	9.00E-03	9.59E-02	
Bis(2-ethylhexyl)phthalate	4.58E-05	2.00E-02	2.29E-03	
Bromodichloromethane	4.07E-04	2.00E-02	2.04E-02	
Carbon tetrachloride	4.73E-03	7.00E-04	6.76E+00	
Chloroform	3.18E-03	1.00E-02	3.18E-01	
Di-n-butyl phthalate	4.58E-05	1.00E-01	4.58E-04	
Di-n-octylphthalate	4.45E-05	2.00E-02	2.22E-03	
N-Nitroso-di-n-propylamine	1.90E-04			

Residential Excess Lifetime Cancer Risks

---------- SECTOR=RGA PATHWAY=Residential Child Ingestion of Vegetables from Groundwater ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Tetrachloroethene	1.62E-03	1.00E-02	1.62E-01	
Toluene	2.53E-03	2.00E-01	1.26E-02	
Trichloroethene	6.79E-01	6.00E-03	1.13E+02	
Vinyl chloride	2.53E-02			
cis-1,2-Dichloroethene	4.42E-02	1.00E-02	4.42E+00	
trans-1,2-Dichloroethene	6.68E-03	2.00E-02	3.34E-01	
Alpha activity				
Americium-241				
Beta activity				
Cesium-137				
Lead-210				
Lead-214				
Neptunium-237				
Plutonium-239				
Technetium-99				
Thorium-228				
Thorium-230				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				1.48E+04

---------- SECTOR=RGA PATHWAY=Residential Child Inhalation of Groundwater Household Use ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum				
Antimony				
Arsenic				
Barium		1.43E-04		
Beryllium				
Bromide				
Cadmium		5.71E-05		
Chromium				
Cobalt				
Copper				
Iron				
Lead		2.86E-04		
Manganese		1.43E-05		
Mercury		8.57E-05		
Nickel				
Nitrate				
Orthophosphate				
Silver				
Tetraoxo-sulfate(1-)				
Thallium				
Uranium				
Vanadium				
Zinc				
1,1-Dichloroethene	5.39E-04			
Bis(2-ethylhexyl)phthalate				
Bromodichloromethane	3.25E-04			
Carbon tetrachloride	5.74E-03	5.71E-04	1.01E+01	
Chloroform	2.35E-03			
Di-n-butyl phthalate				
Di-n-octylphthalate				
N-Nitroso-di-n-propylamine				

Residential Excess Lifetime Cancer Risks

---------- SECTOR=RGA PATHWAY=Residential Child Inhalation of Groundwater Household Use ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Tetrachloroethene	1.78E-03			
Toluene	2.92E-03	1.14E-01	2.56E-02	
Trichloroethene	6.65E-01			
Vinyl chloride	1.08E-02			
cis-1,2-Dichloroethene	3.01E-02			
trans-1,2-Dichloroethene	1.00E-03			
Alpha activity				
Americium-241				
Beta activity				
Cesium-137				
Lead-210				
Lead-214				
Neptunium-237				
Plutonium-239				
Technetium-99				
Thorium-228				
Thorium-230				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				1.01E+01

---------- SECTOR=RGA PATHWAY=Residential Child Inhalation of Groundwater While Showering ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum				
Antimony				
Arsenic				
Barium		1.43E-04		
Beryllium				
Bromide				
Cadmium		5.71E-05		
Chromium				
Cobalt				
Copper				
Iron				
Lead		2.86E-04		
Manganese		1.43E-05		
Mercury		8.57E-05		
Nickel				
Nitrate				
Orthophosphate				
Silver				
Tetraoxo-sulfate(1-)				
Thallium				
Uranium				
Vanadium				
Zinc				
1,1-Dichloroethene	4.96E-05			
Bis(2-ethylhexyl)phthalate				
Bromodichloromethane	2.99E-05			
Carbon tetrachloride	5.29E-04	5.71E-04	9.26E-01	
Chloroform	2.16E-04			
Di-n-butyl phthalate				
Di-n-octylphthalate				
N-Nitroso-di-n-propylamine				

Residential Excess Lifetime Cancer Risks

---------- SECTOR=RGA PATHWAY=Residential Child Inhalation of Groundwater While Showering ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Tetrachloroethene	1.64E-04			
Toluene	2.69E-04	1.14E-01	2.36E-03	
Trichloroethene	6.13E-02			
Vinyl chloride	9.95E-04			
cis-1,2-Dichloroethene	2.77E-03			
trans-1,2-Dichloroethene	9.20E-05			
Alpha activity				
Americium-241				
Beta activity				
Cesium-137				
Lead-210				
Lead-214				
Neptunium-237				
Plutonium-239				
Technetium-99				
Thorium-228				
Thorium-230				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				9.28E-01

---------- SECTOR=WAG 6 PATHWAY=Residential Adult Dermal Contact with Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	1.42E-02	1.00E-01	1.42E-01	
Antimony	2.80E-06	8.00E-06	3.50E-01	
Arsenic	1.28E-05	1.23E-04	1.04E-01	
Beryllium	6.92E-07	5.00E-05	1.38E-02	
Cadmium	2.13E-07	1.00E-05	2.13E-02	
Chromium	2.84E-05	1.00E-04	2.84E-01	
Cobalt	9.72E-06	4.80E-02	2.02E-04	
Iron	2.61E-02	4.50E-02	5.81E-01	
Lead	1.91E-05	1.50E-08	1.28E+03	
Thallium	1.63E-06			
Uranium	6.33E-05	2.55E-03	2.48E-02	
Vanadium	3.42E-05	7.00E-05	4.88E-01	
Zinc	6.15E-05	6.00E-02	1.02E-03	
2-Methylnaphthalene	2.57E-06			
Acenaphthene	5.99E-06	1.86E-02	3.22E-04	
Acenaphthylene	1.05E-06			
Anthracene	1.16E-05	2.28E-01	5.09E-05	
Benz(a)anthracene	1.82E-05			
Benzo(a)pyrene	1.78E-05			
Benzo(b)fluoranthene	2.09E-05			
Benzo(ghi)perylene	1.01E-05			
Benzo(k)fluoranthene	1.69E-05			
Bis(2-ethylhexyl)phthalate	4.79E-07	3.80E-03	1.26E-04	
Chrysene	1.92E-05			
Di-n-butyl phthalate	3.57E-06	1.00E-01	3.57E-05	
Dibenz(a,h)anthracene	5.27E-06			
Fluoranthene	3.64E-05	1.24E-02	2.93E-03	
Fluorene	4.56E-06	2.00E-02	2.28E-04	
Indeno(1,2,3-cd)pyrene	9.61E-06			
Naphthalene	3.08E-06	2.86E-02	1.08E-04	
PCB-1254	4.88E-07	1.80E-05	2.71E-02	

Residential Excess Lifetime Cancer Risks

---------- SECTOR=WAG 6 PATHWAY=Residential Adult Dermal Contact with Soil ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
PCB-1260	2.68E-07			
PCB-1262	1.09E-07			
Phenanthrene	2.55E-05			
Polychlorinated biphenyl	8.62E-07			
Pyrene	3.21E-05	9.30E-03	3.45E-03	
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				1.28E+03

---------- SECTOR=WAG 6 PATHWAY=Residential Adult Ingestion of Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	8.11E-03	1.00E+00	8.11E-03	
Antimony	1.60E-06	4.00E-04	4.00E-03	
Arsenic	7.31E-06	3.00E-04	2.44E-02	
Beryllium	3.96E-07	5.00E-03	7.91E-05	
Cadmium	6.08E-07	1.00E-03	6.08E-04	
Chromium	1.62E-05	5.00E-03	3.25E-03	
Cobalt	5.55E-06	6.00E-02	9.25E-05	
Iron	1.49E-02	3.00E-01	4.98E-02	
Lead	1.09E-05	1.00E-07	1.09E+02	
Thallium	9.34E-07			
Uranium	3.62E-05	3.00E-03	1.21E-02	
Vanadium	1.95E-05	7.00E-03	2.79E-03	
Zinc	3.51E-05	3.00E-01	1.17E-04	
2-Methylnaphthalene	7.35E-07			
Acenaphthene	1.71E-06	6.00E-02	2.85E-05	
Acenaphthylene	3.01E-07			
Anthracene	3.31E-06	3.00E-01	1.10E-05	
Benz(a)anthracene	5.19E-06			
Benzo(a)pyrene	5.08E-06			
Benzo(b)fluoranthene	5.97E-06			
Benzo(ghi)perylene	2.90E-06			
Benzo(k)fluoranthene	4.84E-06			
Bis(2-ethylhexyl)phthalate	1.37E-07	2.00E-02	6.85E-06	
Chrysene	5.48E-06			
Di-n-butyl phthalate	1.02E-06	1.00E-01	1.02E-05	
Dibenz(a,h)anthracene	1.51E-06			
Fluoranthene	1.04E-05	4.00E-02	2.60E-04	
Fluorene	1.30E-06	4.00E-02	3.26E-05	
Indeno(1,2,3-cd)pyrene	2.75E-06			
Naphthalene	8.81E-07	3.57E-02	2.47E-05	
PCB-1254	2.32E-07	2.00E-05	1.16E-02	
PCB-1260	1.28E-07			
PCB-1262	5.21E-08			
Phenanthrene	7.28E-06			
Polychlorinated biphenyl	4.10E-07			
Pyrene	9.17E-06	3.00E-02	3.06E-04	
Alpha activity				
Beta activity				
Cesium-137				

Residential Excess Lifetime Cancer Risks

---------- SECTOR=WAG 6 PATHWAY=Residential Adult Ingestion of Soil ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Neptunium-237				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				1.09E+02

---------- SECTOR=WAG 6 PATHWAY=Residential Adult Ingestion of Vegetables From Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	1.68E+00	1.00E+00	1.68E+00	
Antimony	3.44E-04	4.00E-04	8.60E-01	
Arsenic	1.57E-03	3.00E-04	5.24E+00	
Beryllium	8.27E-05	5.00E-03	1.65E-02	
Cadmium	1.92E-04	1.00E-03	1.92E-01	
Chromium	3.36E-03	5.00E-03	6.72E-01	
Cobalt	1.25E-03	6.00E-02	2.09E-02	
Iron	3.10E+00	3.00E-01	1.03E+01	
Lead	2.27E-03	1.00E-07	2.27E+04	
Thallium	1.94E-04			
Uranium	7.50E-03	3.00E-03	2.50E+00	
Vanadium	4.06E-03	7.00E-03	5.80E-01	
Zinc	1.47E-02	3.00E-01	4.88E-02	
2-Methylnaphthalene	1.77E-04			
Acenaphthene	3.88E-04	6.00E-02	6.46E-03	
Acenaphthylene	7.56E-05			
Anthracene	7.43E-04	3.00E-01	2.48E-03	
Benz(a)anthracene	1.09E-03			
Benzo(a)pyrene	1.06E-03			
Benzo(b)fluoranthene	1.25E-03			
Benzo(ghi)perylene	6.03E-04			
Benzo(k)fluoranthene	1.00E-03			
Bis(2-ethylhexyl)phthalate	2.96E-05	2.00E-02	1.48E-03	
Chrysene	1.15E-03			
Di-n-butyl phthalate	2.20E-04	1.00E-01	2.20E-03	
Dibenz(a,h)anthracene	3.13E-04			
Fluoranthene	2.24E-03	4.00E-02	5.61E-02	
Fluorene	2.92E-04	4.00E-02	7.30E-03	
Indeno(1,2,3-cd)pyrene	5.71E-04			
Naphthalene	2.48E-04	3.57E-02	6.95E-03	
PCB-1254	4.86E-05	2.00E-05	2.43E+00	
PCB-1260	2.65E-05			
PCB-1262	1.09E-05			
Phenanthrene	1.60E-03			
Polychlorinated biphenyl	8.58E-05			
Pyrene	1.98E-03	3.00E-02	6.60E-02	
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				2.27E+04

Residential Excess Lifetime Cancer Risks

---------- SECTOR=WAG 6 PATHWAY=Residential Adult Inhalation of Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	3.78E-07			
Antimony	7.47E-11			
Arsenic	3.41E-10			
Beryllium	1.85E-11			
Cadmium	2.84E-11	5.71E-05	4.97E-07	
Chromium	7.57E-10			
Cobalt	2.59E-10			
Iron	6.97E-07			
Lead	5.10E-10	2.86E-04	1.79E-06	
Thallium	4.36E-11			
Uranium	1.69E-09			
Vanadium	9.11E-10			
Zinc	1.64E-09			
2-Methylnaphthalene	3.43E-11			
Acenaphthene	7.98E-11			
Acenaphthylene	1.41E-11			
Anthracene	1.55E-10			
Benz(a)anthracene	2.42E-10			
Benzo(a)pyrene	2.37E-10			
Benzo(b)fluoranthene	2.79E-10			
Benzo(ghi)perylene	1.35E-10			
Benzo(k)fluoranthene	2.26E-10			
Bis(2-ethylhexyl)phthalate	6.39E-12			
Chrysene	2.56E-10			
Di-n-butyl phthalate	4.76E-11			
Dibenz(a,h)anthracene	7.02E-11			
Fluoranthene	4.85E-10			
Fluorene	6.08E-11			
Indeno(1,2,3-cd)pyrene	1.28E-10			
Naphthalene	4.11E-11			
PCB-1254	1.08E-11			
PCB-1260	5.96E-12			
PCB-1262	2.43E-12			
Phenanthrene	3.40E-10			
Polychlorinated biphenyl	1.91E-11			
Pyrene	4.28E-10			
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				2.28E-06

---------- SECTOR=WAG 6 PATHWAY=Residential Child Dermal Contact with Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	7.30E-02	1.00E-01	7.30E-01	
Antimony	1.44E-05	8.00E-06	1.80E+00	
Arsenic	6.59E-05	1.23E-04	5.35E-01	
Beryllium	3.56E-06	5.00E-05	7.12E-02	
Cadmium	1.09E-06	1.00E-05	1.09E-01	
Chromium	1.46E-04	1.00E-04	1.46E+00	
Cobalt	5.00E-05	4.80E-02	1.04E-03	
Iron	1.35E-01	4.50E-02	2.99E+00	
Lead	9.84E-05	1.50E-08	6.56E+03	

Residential Excess Lifetime Cancer Risks

---------- SECTOR=WAG 6 PATHWAY=Residential Child Dermal Contact with Soil ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Thallium	8.41E-06			
Uranium	3.26E-04	2.55E-03	1.28E-01	
Vanadium	1.76E-04	7.00E-05	2.51E+00	
Zinc	3.16E-04	6.00E-02	5.27E-03	
2-Methylnaphthalene	1.32E-05			
Acenaphthene	3.08E-05	1.86E-02	1.66E-03	
Acenaphthylene	5.43E-06			
Anthracene	5.97E-05	2.28E-01	2.62E-04	
Benz(a)anthracene	9.35E-05			
Benzo(a)pyrene	9.15E-05			
Benzo(b)fluoranthene	1.07E-04			
Benzo(ghi)perylene	5.22E-05			
Benzo(k)fluoranthene	8.71E-05			
Bis(2-ethylhexyl)phthalate	2.47E-06	3.80E-03	6.49E-04	
Chrysene	9.87E-05			
Di-n-butyl phthalate	1.84E-05	1.00E-01	1.84E-04	
Dibenz(a,h)anthracene	2.71E-05			
Fluoranthene	1.87E-04	1.24E-02	1.51E-02	
Fluorene	2.35E-05	2.00E-02	1.17E-03	
Indeno(1,2,3-cd)pyrene	4.94E-05			
Naphthalene	1.59E-05	2.86E-02	5.56E-04	
PCB-1254	2.51E-06	1.80E-05	1.39E-01	
PCB-1260	1.38E-06			
PCB-1262	5.62E-07			
Phenanthrene	1.31E-04			
Polychlorinated biphenyl	4.43E-06			
Pyrene	1.65E-04	9.30E-03	1.78E-02	
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				6.57E+03

---------- SECTOR=WAG 6 PATHWAY=Residential Child Ingestion of Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	7.83E-02	1.00E+00	7.83E-02	
Antimony	1.54E-05	4.00E-04	3.86E-02	
Arsenic	7.06E-05	3.00E-04	2.35E-01	
Beryllium	3.82E-06	5.00E-03	7.64E-04	
Cadmium	5.87E-06	1.00E-03	5.87E-03	
Chromium	1.57E-04	5.00E-03	3.13E-02	
Cobalt	5.36E-05	6.00E-02	8.93E-04	
Iron	1.44E-01	3.00E-01	4.81E-01	
Lead	1.06E-04	1.00E-07	1.06E+03	
Thallium	9.02E-06			
Uranium	3.49E-04	3.00E-03	1.16E-01	
Vanadium	1.89E-04	7.00E-03	2.69E-02	
Zinc	3.39E-04	3.00E-01	1.13E-03	
2-Methylnaphthalene	7.10E-06			
Acenaphthene	1.65E-05	6.00E-02	2.75E-04	
Acenaphthylene	2.91E-06			
Anthracene	3.20E-05	3.00E-01	1.07E-04	

Residential Excess Lifetime Cancer Risks

---------- SECTOR=WAG 6 PATHWAY=Residential Child Ingestion of Soil ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Benz(a)anthracene	5.01E-05			
Benzo(a)pyrene	4.90E-05			
Benzo(b)fluoranthene	5.76E-05			
Benzo(ghi)perylene	2.80E-05			
Benzo(k)fluoranthene	4.67E-05			
Bis(2-ethylhexyl)phthalate	1.32E-06	2.00E-02	6.61E-05	
Chrysene	5.29E-05			
Di-n-butyl phthalate	9.85E-06	1.00E-01	9.85E-05	
Dibenz(a,h)anthracene	1.45E-05			
Fluoranthene	1.00E-04	4.00E-02	2.51E-03	
Fluorene	1.26E-05	4.00E-02	3.15E-04	
Indeno(1,2,3-cd)pyrene	2.65E-05			
Naphthalene	8.51E-06	3.57E-02	2.38E-04	
PCB-1254	2.24E-06	2.00E-05	1.12E-01	
PCB-1260	1.23E-06			
PCB-1262	5.03E-07			
Phenanthrene	7.03E-05			
Polychlorinated biphenyl	3.96E-06			
Pyrene	8.86E-05	3.00E-02	2.95E-03	
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				1.06E+03

---------- SECTOR=WAG 6 PATHWAY=Residential Child Ingestion of Vegetables From Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	5.31E+00	1.00E+00	5.31E+00	
Antimony	1.08E-03	4.00E-04	2.71E+00	
Arsenic	4.96E-03	3.00E-04	1.65E+01	
Beryllium	2.61E-04	5.00E-03	5.21E-02	
Cadmium	6.07E-04	1.00E-03	6.07E-01	
Chromium	1.06E-02	5.00E-03	2.12E+00	
Cobalt	3.95E-03	6.00E-02	6.58E-02	
Iron	9.77E+00	3.00E-01	3.26E+01	
Lead	7.16E-03	1.00E-07	7.16E+04	
Thallium	6.12E-04			
Uranium	2.37E-02	3.00E-03	7.89E+00	
Vanadium	1.28E-02	7.00E-03	1.83E+00	
Zinc	4.62E-02	3.00E-01	1.54E-01	
2-Methylnaphthalene	5.57E-04			
Acenaphthene	1.22E-03	6.00E-02	2.04E-02	
Acenaphthylene	2.38E-04			
Anthracene	2.34E-03	3.00E-01	7.81E-03	
Benz(a)anthracene	3.44E-03			
Benzo(a)pyrene	3.34E-03			
Benzo(b)fluoranthene	3.93E-03			
Benzo(ghi)perylene	1.90E-03			
Benzo(k)fluoranthene	3.17E-03			
Bis(2-ethylhexyl)phthalate	9.32E-05	2.00E-02	4.66E-03	
Chrysene	3.63E-03			
Di-n-butyl phthalate	6.95E-04	1.00E-01	6.95E-03	

Residential Excess Lifetime Cancer Risks

---------- SECTOR=WAG 6 PATHWAY=Residential Child Ingestion of Vegetables From Soil ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Dibenz(a,h)anthracene	9.86E-04			
Fluoranthene	7.07E-03	4.00E-02	1.77E-01	
Fluorene	9.21E-04	4.00E-02	2.30E-02	
Indeno(1,2,3-cd)pyrene	1.80E-03			
Naphthalene	7.83E-04	3.57E-02	2.19E-02	
PCB-1254	1.53E-04	2.00E-05	7.66E+00	
PCB-1260	8.35E-05			
PCB-1262	3.43E-05			
Phenanthrene	5.05E-03			
Polychlorinated biphenyl	2.70E-04			
Pyrene	6.24E-03	3.00E-02	2.08E-01	
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				7.16E+04

---------- SECTOR=WAG 6 PATHWAY=Residential Child Inhalation of Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	1.83E-06			
Antimony	3.60E-10			
Arsenic	1.65E-09			
Beryllium	8.91E-11			
Cadmium	1.37E-10	5.71E-05	2.40E-06	
Chromium	3.66E-09			
Cobalt	1.25E-09			
Iron	3.37E-06			
Lead	2.46E-09	2.86E-04	8.62E-06	
Thallium	2.10E-10			
Uranium	8.15E-09			
Vanadium	4.40E-09			
Zinc	7.91E-09			
2-Methylnaphthalene	1.66E-10			
Acenaphthene	3.85E-10			
Acenaphthylene	6.79E-11			
Anthracene	7.47E-10			
Benz(a)anthracene	1.17E-09			
Benzo(a)pyrene	1.14E-09			
Benzo(b)fluoranthene	1.34E-09			
Benzo(ghi)perylene	6.53E-10			
Benzo(k)fluoranthene	1.09E-09			
Bis(2-ethylhexyl)phthalate	3.09E-11			
Chrysene	1.23E-09			
Di-n-butyl phthalate	2.30E-10			
Dibenz(a,h)anthracene	3.39E-10			
Fluoranthene	2.34E-09			
Fluorene	2.94E-10			
Indeno(1,2,3-cd)pyrene	6.18E-10			
Naphthalene	1.99E-10			
PCB-1254	5.23E-11			
PCB-1260	2.88E-11			
PCB-1262	1.17E-11			

Residential Excess Lifetime Cancer Risks

---------- SECTOR=WAG 6 PATHWAY=Residential Child Inhalation of Soil ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Phenanthrene	1.64E-09			
Polychlorinated biphenyl	9.24E-11			
Pyrene	2.07E-09			
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				1.10E-05

Residential Excess Lifetime Cancer Risks

---------- SECTOR=McNairy PATHWAY=Residential Adult Dermal Contact with Groundwater ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	2.17E-03			
Arsenic	6.36E-06	3.66E+00	2.33E-05	
Barium	8.51E-06			
Beryllium	2.02E-07	4.30E+02	8.69E-05	
Bromide				
Cadmium	4.58E-08			
Chromium	5.91E-06			
Cobalt	1.71E-06			
Iron	5.25E-03			
Lead	2.76E-06			
Manganese	3.81E-05			
Nickel	2.69E-06			
Nitrate	1.28E-05			
Orthophosphate				
Selenium	7.10E-07			
Tetraoxo-sulfate(1-)				
Thallium	1.45E-08			
Vanadium	2.46E-05			
Zinc	1.90E-04			
1,1-Dichloroethene	1.55E-06	6.00E-01	9.32E-07	
1,2-Dichloroethane	1.28E-07	9.10E-02	1.16E-08	
Bis(2-ethylhexyl)phthalate	2.94E-06	7.37E-02	2.17E-07	
Bromodichloromethane	7.45E-07	6.33E-02	4.72E-08	
Chloroform	1.45E-06	3.05E-02	4.42E-08	
Di-n-butyl phthalate	2.78E-06			
Di-n-octylphthalate	3.63E-03			
Dibromochloromethane	3.77E-07	1.40E-01	5.27E-08	
Tetrachloroethene	8.71E-05	5.20E-02	4.53E-06	
Trichloroethene	6.26E-06	7.33E-02	4.59E-07	
Vinyl chloride	2.47E-06	1.90E+00	4.70E-06	
cis-1,2-Dichloroethene	3.40E-06			
Actinium-228				
Alpha activity				
Beta activity				
Cesium-137				
Lead-210				
Lead-212				
Lead-214				
Neptunium-237				
Plutonium-239				
Potassium-40				
Technetium-99				
Thorium-228				
Thorium-230				
Thorium-234				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				1.21E-04

---------- SECTOR=McNairy PATHWAY=Residential Adult Ingestion of Groundwater ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	1.19E+00			
Arsenic	3.50E-03	1.50E+00	5.25E-03	
Barium	4.69E-03			
Beryllium	1.11E-04	4.30E+00	4.79E-04	

Residential Excess Lifetime Cancer Risks

---------- SECTOR=McNairy PATHWAY=Residential Adult Ingestion of Groundwater ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Bromide	5.98E-04			
Cadmium	2.52E-05			
Chromium	3.26E-03			
Cobalt	9.41E-04			
Iron	2.89E+00			
Lead	1.52E-03			
Manganese	2.10E-02			
Nickel	1.48E-03			
Nitrate	7.05E-03			
Orthophosphate	1.34E-03			
Selenium	3.91E-04			
Tetraoxo-sulfate(1-)	2.28E-01			
Thallium	7.97E-06			
Vanadium	1.35E-02			
Zinc	1.05E-01			
1,1-Dichloroethene	9.62E-05	6.00E-01	5.77E-05	
1,2-Dichloroethane	1.33E-05	9.10E-02	1.21E-06	
Bis(2-ethylhexyl)phthalate	6.93E-05	1.40E-02	9.71E-07	
Bromodichloromethane	7.08E-05	6.20E-02	4.39E-06	
Chloroform	8.98E-05	6.10E-03	5.48E-07	
Di-n-butyl phthalate	1.33E-05			
Di-n-octylphthalate	7.45E-05			
Dibromochloromethane	5.32E-05	8.40E-02	4.47E-06	
Tetrachloroethene	1.30E-04	5.20E-02	6.74E-06	
Trichloroethene	2.16E-04	1.10E-02	2.37E-06	
Vinyl chloride	1.87E-04	1.90E+00	3.55E-04	
cis-1,2-Dichloroethene	1.87E-04			
Actinium-228	6.47E+05	1.62E-12	1.05E-06	
Alpha activity	7.32E+05			
Beta activity	6.62E+06			
Cesium-137	2.93E+05	3.16E-11	9.25E-06	
Lead-210	1.00E+07	1.01E-09	1.01E-02	
Lead-212	5.36E+05	1.80E-11	9.64E-06	
Lead-214	2.88E+05	2.94E-13	8.47E-08	
Neptunium-237	1.92E+05	3.00E-10	5.77E-05	
Plutonium-239	3.17E+04	3.16E-10	1.00E-05	
Potassium-40	1.62E+06	1.25E-11	2.02E-05	
Technetium-99	7.37E+06	1.40E-12	1.03E-05	
Thorium-228	2.93E+04	2.31E-10	6.76E-06	
Thorium-230	3.24E+04	3.75E-11	1.22E-06	
Thorium-234	1.71E+07	1.93E-11	3.30E-04	
Uranium-234	4.48E+04	4.44E-11	1.99E-06	
Uranium-235	2.75E+05	4.70E-11	1.29E-05	
Uranium-238	2.99E+04	6.20E-11	1.85E-06	
Pathway Total				1.68E-02

---------- SECTOR=McNairy PATHWAY=Residential Adult Ingestion of Vegetables from Groundwater ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	6.18E-01			
Arsenic	1.86E-03	1.50E+00	2.79E-03	
Barium	2.44E-03			
Beryllium	5.79E-05	4.30E+00	2.49E-04	
Bromide				
Cadmium	1.80E-05			
Chromium	1.68E-03			

Residential Excess Lifetime Cancer Risks

---------- SECTOR=McNairy PATHWAY=Residential Adult Ingestion of Vegetables from Groundwater ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Cobalt	5.17E-04			
Iron	1.50E+00			
Lead	7.86E-04			
Manganese	1.29E-02			
Nickel	8.70E-04			
Nitrate				
Orthophosphate				
Selenium	2.58E-04			
Tetraoxo-sulfate(1-)				
Thallium	4.13E-06			
Vanadium	7.02E-03			
Zinc	9.34E-02			
1,1-Dichloroethene	1.45E-04	6.00E-01	8.71E-05	
1,2-Dichloroethane	2.66E-05	9.10E-02	2.42E-06	
Bis(2-ethylhexyl)phthalate	3.69E-05	1.40E-02	5.16E-07	
Bromodichloromethane	8.36E-05	6.20E-02	5.18E-06	
Chloroform	1.15E-04	6.10E-03	6.99E-07	
Di-n-butyl phthalate	7.08E-06			
Di-n-octylphthalate	3.84E-05			
Dibromochloromethane	5.84E-05	8.40E-02	4.91E-06	
Tetrachloroethene	1.11E-04	5.20E-02	5.78E-06	
Trichloroethene	2.07E-04	1.10E-02	2.28E-06	
Vinyl chloride	4.13E-04	1.90E+00	7.84E-04	
cis-1,2-Dichloroethene	2.59E-04			
Actinium-228	1.79E+03	1.62E-12	2.89E-09	
Alpha activity				
Beta activity				
Cesium-137	1.27E+05	3.16E-11	4.03E-06	
Lead-210	4.02E+06	1.01E-09	4.06E-03	
Lead-212	2.52E+03	1.80E-11	4.54E-08	
Lead-214	5.89E+01	2.94E-13	1.73E-11	
Neptunium-237	1.00E+05	3.00E-10	3.01E-05	
Plutonium-239	1.63E+04	3.16E-10	5.17E-06	
Potassium-40	1.53E+06	1.25E-11	1.91E-05	
Technetium-99	2.19E+09	1.40E-12	3.07E-03	
Thorium-228	5.39E+03	2.31E-10	1.25E-06	
Thorium-230	1.67E+04	3.75E-11	6.28E-07	
Thorium-234	1.67E+06	1.93E-11	3.22E-05	
Uranium-234	2.32E+04	4.44E-11	1.03E-06	
Uranium-235	1.42E+05	4.70E-11	6.70E-06	
Uranium-238	1.55E+04	6.20E-11	9.62E-07	
Pathway Total				1.12E-02

---------- SECTOR=McNairy PATHWAY=Residential Adult Inhalation of Groundwater Household Use ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum				
Arsenic		5.00E+01		
Barium				
Beryllium		8.40E+00		
Bromide				
Cadmium		6.10E+00		
Chromium		4.10E+01		
Cobalt				
Iron				
Lead				

Residential Excess Lifetime Cancer Risks

---------- SECTOR=McNairy PATHWAY=Residential Adult Inhalation of Groundwater Household Use ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Manganese				
Nickel				
Nitrate				
Orthophosphate				
Selenium				
Tetraoxo-sulfate(1-)				
Thallium				
Vanadium				
Zinc				
1,1-Dichloroethene	2.85E-04	1.20E+00	3.42E-04	
1,2-Dichloroethane	3.95E-05	9.10E-02	3.59E-06	
Bis(2-ethylhexyl)phthalate				
Bromodichloromethane	2.10E-04			
Chloroform	2.66E-04	8.10E-02	2.16E-05	
Di-n-butyl phthalate				
Di-n-octylphthalate				
Dibromochloromethane	1.58E-04			
Tetrachloroethene	3.84E-04	2.00E-03	7.69E-07	
Trichloroethene	6.39E-04	6.00E-03	3.84E-06	
Vinyl chloride	5.54E-04	3.00E-01	1.66E-04	
cis-1,2-Dichloroethene	5.55E-04			
Actinium-228		3.27E-11		
Alpha activity				
Beta activity				
Cesium-137		1.91E-11		
Lead-210		3.86E-09		
Lead-212		3.85E-11		
Lead-214		6.23E-12		
Neptunium-237		3.45E-08		
Plutonium-239		2.78E-08		
Potassium-40		7.46E-12		
Technetium-99		2.89E-12		
Thorium-228		9.68E-08		
Thorium-230		1.72E-08		
Thorium-234		1.90E-11		
Uranium-234		1.40E-08		
Uranium-235		1.30E-08		
Uranium-238		1.24E-08		
Pathway Total				5.38E-04

---------- SECTOR=McNairy PATHWAY=Residential Adult Inhalation of Groundwater While Showering ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum				
Arsenic		5.00E+01		
Barium				
Beryllium		8.40E+00		
Bromide				
Cadmium		6.10E+00		
Chromium		4.10E+01		
Cobalt				
Iron				
Lead				
Manganese				
Nickel				
Nitrate				

Residential Excess Lifetime Cancer Risks

---------- SECTOR=McNairy PATHWAY=Residential Adult Inhalation of Groundwater While Showering ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Orthophosphate				
Selenium				
Tetraoxo-sulfate(1-)				
Thallium				
Vanadium				
Zinc				
1,1-Dichloroethene	2.63E-05	1.20E+00	3.15E-05	
1,2-Dichloroethane	3.63E-06	9.10E-02	3.31E-07	
Bis(2-ethylhexyl)phthalate				
Bromodichloromethane	1.93E-05			
Chloroform	2.45E-05	8.10E-02	1.99E-06	
Di-n-butyl phthalate				
Di-n-octylphthalate				
Dibromochloromethane	1.45E-05			
Tetrachloroethene	3.54E-05	2.00E-03	7.08E-08	
Trichloroethene	5.89E-05	6.00E-03	3.53E-07	
Vinyl chloride	5.10E-05	3.00E-01	1.53E-05	
cis-1,2-Dichloroethene	5.11E-05			
Actinium-228		3.27E-11		
Alpha activity				
Beta activity				
Cesium-137		1.91E-11		
Lead-210		3.86E-09		
Lead-212		3.85E-11		
Lead-214		6.23E-12		
Neptunium-237		3.45E-08		
Plutonium-239		2.78E-08		
Potassium-40		7.46E-12		
Technetium-99		2.89E-12		
Thorium-228		9.68E-08		
Thorium-230		1.72E-08		
Thorium-234		1.90E-11		
Uranium-234		1.40E-08		
Uranium-235		1.30E-08		
Uranium-238		1.24E-08		
Pathway Total				4.96E-05

---------- SECTOR=McNairy PATHWAY=Residential Child Dermal Contact with Groundwater ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	7.33E-04			
Arsenic	2.15E-06	3.66E+00	7.86E-06	
Barium	2.88E-06			
Beryllium	6.83E-08	4.30E+02	2.94E-05	
Bromide				
Cadmium	1.55E-08			
Chromium	2.00E-06			
Cobalt	5.77E-07			
Iron	1.77E-03			
Lead	9.32E-07			
Manganese	1.29E-05			
Nickel	9.08E-07			
Nitrate	4.33E-06			
Orthophosphate				
Selenium	2.40E-07			
Tetraoxo-sulfate(1-)				

Residential Excess Lifetime Cancer Risks

---------- SECTOR=McNairy PATHWAY=Residential Child Dermal Contact with Groundwater ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Thallium	4.89E-09			
Vanadium	8.31E-06			
Zinc	6.42E-05			
1,1-Dichloroethene	5.25E-07	6.00E-01	3.15E-07	
1,2-Dichloroethane	4.33E-08	9.10E-02	3.94E-09	
Bis(2-ethylhexyl)phthalate	9.95E-07	7.37E-02	7.33E-08	
Bromodichloromethane	2.52E-07	6.33E-02	1.59E-08	
Chloroform	4.90E-07	3.05E-02	1.50E-08	
Di-n-butyl phthalate	9.39E-07			
Di-n-octylphthalate	1.23E-03			
Dibromochloromethane	1.27E-07	1.40E-01	1.78E-08	
Tetrachloroethene	2.94E-05	5.20E-02	1.53E-06	
Trichloroethene	2.12E-06	7.33E-02	1.55E-07	
Vinyl chloride	8.36E-07	1.90E+00	1.59E-06	
cis-1,2-Dichloroethene	1.15E-06			
Actinium-228				
Alpha activity				
Beta activity				
Cesium-137				
Lead-210				
Lead-212				
Lead-214				
Neptunium-237				
Plutonium-239				
Potassium-40				
Technetium-99				
Thorium-228				
Thorium-230				
Thorium-234				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				4.09E-05

---------- SECTOR=McNairy PATHWAY=Residential Child Ingestion of Groundwater ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	5.09E-01			
Arsenic	1.49E-03	1.50E+00	2.24E-03	
Barium	2.00E-03			
Beryllium	4.74E-05	4.30E+00	2.04E-04	
Bromide	2.55E-04			
Cadmium	1.07E-05			
Chromium	1.39E-03			
Cobalt	4.01E-04			
Iron	1.23E+00			
Lead	6.47E-04			
Manganese	8.93E-03			
Nickel	6.31E-04			
Nitrate	3.00E-03			
Orthophosphate	5.73E-04			
Selenium	1.67E-04			
Tetraoxo-sulfate(1-)	9.72E-02			
Thallium	3.40E-06			
Vanadium	5.77E-03			
Zinc	4.46E-02			

Residential Excess Lifetime Cancer Risks

---------- SECTOR=McNairy PATHWAY=Residential Child Ingestion of Groundwater ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
1,1-Dichloroethene	4.10E-05	6.00E-01	2.46E-05	
1,2-Dichloroethane	5.67E-06	9.10E-02	5.16E-07	
Bis(2-ethylhexyl)phthalate	2.95E-05	1.40E-02	4.13E-07	
Bromodichloromethane	3.02E-05	6.20E-02	1.87E-06	
Chloroform	3.82E-05	6.10E-03	2.33E-07	
Di-n-butyl phthalate	5.67E-06			
Di-n-octylphthalate	3.17E-05			
Dibromochloromethane	2.27E-05	8.40E-02	1.90E-06	
Tetrachloroethene	5.52E-05	5.20E-02	2.87E-06	
Trichloroethene	9.18E-05	1.10E-02	1.01E-06	
Vinyl chloride	7.95E-05	1.90E+00	1.51E-04	
cis-1,2-Dichloroethene	7.97E-05			
Actinium-228	5.71E+04	1.62E-12	9.25E-08	
Alpha activity	6.46E+04			
Beta activity	5.84E+05			
Cesium-137	2.58E+04	3.16E-11	8.16E-07	
Lead-210	8.84E+05	1.01E-09	8.93E-04	
Lead-212	4.73E+04	1.80E-11	8.51E-07	
Lead-214	2.54E+04	2.94E-13	7.47E-09	
Neptunium-237	1.70E+04	3.00E-10	5.09E-06	
Plutonium-239	2.79E+03	3.16E-10	8.83E-07	
Potassium-40	1.43E+05	1.25E-11	1.79E-06	
Technetium-99	6.51E+05	1.40E-12	9.11E-07	
Thorium-228	2.58E+03	2.31E-10	5.97E-07	
Thorium-230	2.86E+03	3.75E-11	1.07E-07	
Thorium-234	1.51E+06	1.93E-11	2.91E-05	
Uranium-234	3.96E+03	4.44E-11	1.76E-07	
Uranium-235	2.43E+04	4.70E-11	1.14E-06	
Uranium-238	2.64E+03	6.20E-11	1.64E-07	
Pathway Total				3.56E-03

---------- SECTOR=McNairy PATHWAY=Residential Child Ingestion of Vegetables from Groundwater ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	3.43E-01			
Arsenic	1.03E-03	1.50E+00	1.55E-03	
Barium	1.35E-03			
Beryllium	3.21E-05	4.30E+00	1.38E-04	
Bromide				
Cadmium	9.98E-06			
Chromium	9.34E-04			
Cobalt	2.87E-04			
Iron	8.30E-01			
Lead	4.36E-04			
Manganese	7.15E-03			
Nickel	4.83E-04			
Nitrate				
Orthophosphate				
Selenium	1.43E-04			
Tetraoxo-sulfate(1-)				
Thallium	2.29E-06			
Vanadium	3.90E-03			
Zinc	5.19E-02			
1,1-Dichloroethene	8.06E-05	6.00E-01	4.83E-05	
1,2-Dichloroethane	1.48E-05	9.10E-02	1.34E-06	
Bis(2-ethylhexyl)phthalate	2.05E-05	1.40E-02	2.87E-07	

Residential Excess Lifetime Cancer Risks

---------- SECTOR=McNairy PATHWAY=Residential Child Ingestion of Vegetables from Groundwater ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Bromodichloromethane	4.64E-05	6.20E-02	2.88E-06	
Chloroform	6.36E-05	6.10E-03	3.88E-07	
Di-n-butyl phthalate	3.93E-06			
Di-n-octylphthalate	2.13E-05			
Dibromochloromethane	3.24E-05	8.40E-02	2.73E-06	
Tetrachloroethene	6.17E-05	5.20E-02	3.21E-06	
Trichloroethene	1.15E-04	1.10E-02	1.27E-06	
Vinyl chloride	2.29E-04	1.90E+00	4.35E-04	
cis-1,2-Dichloroethene	1.44E-04			
Actinium-228	2.05E+02	1.62E-12	3.33E-10	
Alpha activity				
Beta activity				
Cesium-137	1.47E+04	3.16E-11	4.63E-07	
Lead-210	4.62E+05	1.01E-09	4.67E-04	
Lead-212	2.90E+02	1.80E-11	5.22E-09	
Lead-214	6.77E+00	2.94E-13	1.99E-12	
Neptunium-237	1.15E+04	3.00E-10	3.46E-06	
Plutonium-239	1.88E+03	3.16E-10	5.94E-07	
Potassium-40	1.76E+05	1.25E-11	2.20E-06	
Technetium-99	2.52E+08	1.40E-12	3.53E-04	
Thorium-228	6.20E+02	2.31E-10	1.43E-07	
Thorium-230	1.93E+03	3.75E-11	7.22E-08	
Thorium-234	1.92E+05	1.93E-11	3.70E-06	
Uranium-234	2.67E+03	4.44E-11	1.18E-07	
Uranium-235	1.64E+04	4.70E-11	7.70E-07	
Uranium-238	1.78E+03	6.20E-11	1.11E-07	
Pathway Total				3.01E-03

---------- SECTOR=McNairy PATHWAY=Residential Child Inhalation of Groundwater Household Use ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum				
Arsenic		5.00E+01		
Barium				
Beryllium		8.40E+00		
Bromide				
Cadmium		6.10E+00		
Chromium		4.10E+01		
Cobalt				
Iron				
Lead				
Manganese				
Nickel				
Nitrate				
Orthophosphate				
Selenium				
Tetraoxo-sulfate(1-)				
Thallium				
Vanadium				
Zinc				
1,1-Dichloroethene	2.85E-04	1.20E+00	3.42E-04	
1,2-Dichloroethane	3.95E-05	9.10E-02	3.59E-06	
Bis(2-ethylhexyl)phthalate				
Bromodichloromethane	2.10E-04			
Chloroform	2.66E-04	8.10E-02	2.16E-05	
Di-n-butyl phthalate				

Residential Excess Lifetime Cancer Risks

---------- SECTOR=McNairy PATHWAY=Residential Child Inhalation of Groundwater Household Use ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Di-n-octylphthalate				
Dibromochloromethane	1.58E-04			
Tetrachloroethene	3.84E-04	2.00E-03	7.69E-07	
Trichloroethene	6.39E-04	6.00E-03	3.84E-06	
Vinyl chloride	5.54E-04	3.00E-01	1.66E-04	
cis-1,2-Dichloroethene	5.55E-04			
Actinium-228		3.27E-11		
Alpha activity				
Beta activity				
Cesium-137		1.91E-11		
Lead-210		3.86E-09		
Lead-212		3.85E-11		
Lead-214		6.23E-12		
Neptunium-237		3.45E-08		
Plutonium-239		2.78E-08		
Potassium-40		7.46E-12		
Technetium-99		2.89E-12		
Thorium-228		9.68E-08		
Thorium-230		1.72E-08		
Thorium-234		1.90E-11		
Uranium-234		1.40E-08		
Uranium-235		1.30E-08		
Uranium-238		1.24E-08		
Pathway Total				5.38E-04

---------- SECTOR=McNairy PATHWAY=Residential Child Inhalation of Groundwater While Showering ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum				
Arsenic		5.00E+01		
Barium				
Beryllium		8.40E+00		
Bromide				
Cadmium		6.10E+00		
Chromium		4.10E+01		
Cobalt				
Iron				
Lead				
Manganese				
Nickel				
Nitrate				
Orthophosphate				
Selenium				
Tetraoxo-sulfate(1-)				
Thallium				
Vanadium				
Zinc				
1,1-Dichloroethene	2.63E-05	1.20E+00	3.15E-05	
1,2-Dichloroethane	3.63E-06	9.10E-02	3.31E-07	
Bis(2-ethylhexyl)phthalate				
Bromodichloromethane	1.93E-05			
Chloroform	2.45E-05	8.10E-02	1.99E-06	
Di-n-butyl phthalate				
Di-n-octylphthalate				
Dibromochloromethane	1.45E-05			
Tetrachloroethene	3.54E-05	2.00E-03	7.08E-08	

Residential Excess Lifetime Cancer Risks

---------- SECTOR=McNairy PATHWAY=Residential Child Inhalation of Groundwater While Showering ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Trichloroethene	5.89E-05	6.00E-03	3.53E-07	
Vinyl chloride	5.10E-05	3.00E-01	1.53E-05	
cis-1,2-Dichloroethene	5.11E-05			
Actinium-228		3.27E-11		
Alpha activity				
Beta activity				
Cesium-137		1.91E-11		
Lead-210		3.86E-09		
Lead-212		3.85E-11		
Lead-214		6.23E-12		
Neptunium-237		3.45E-08		
Plutonium-239		2.78E-08		
Potassium-40		7.46E-12		
Technetium-99		2.89E-12		
Thorium-228		9.68E-08		
Thorium-230		1.72E-08		
Thorium-234		1.90E-11		
Uranium-234		1.40E-08		
Uranium-235		1.30E-08		
Uranium-238		1.24E-08		
Pathway Total				4.96E-05

---------- SECTOR=RGA PATHWAY=Residential Adult Dermal Contact with Groundwater ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	1.47E-03			
Antimony	3.36E-07			
Arsenic	7.03E-07	3.66E+00	2.57E-06	
Barium	1.01E-05			
Beryllium	2.45E-07	4.30E+02	1.05E-04	
Bromide				
Cadmium	3.57E-08			
Chromium	2.73E-06			
Cobalt	2.38E-06			
Copper	5.31E-06			
Iron	9.36E-03			
Lead	7.90E-07			
Manganese	7.39E-05			
Mercury	3.97E-09			
Nickel	4.76E-06			
Nitrate	1.14E-03			
Orthophosphate				
Silver	3.07E-07			
Tetraoxo-sulfate(1-)				
Thallium	1.43E-08			
Uranium	8.83E-08			
Vanadium	3.71E-06			
Zinc	1.85E-05			
1,1-Dichloroethene	1.43E-06	6.00E-01	8.56E-07	
Bis(2-ethylhexyl)phthalate	5.65E-07	7.37E-02	4.16E-08	
Bromodichloromethane	5.60E-07	6.33E-02	3.55E-08	
Carbon tetrachloride	3.76E-05	2.00E-01	7.51E-06	
Chloroform	6.21E-06	3.05E-02	1.89E-07	
Di-n-butyl phthalate	2.78E-06			
Di-n-octylphthalate	6.49E-04			
N-Nitroso-di-n-propylamine	6.76E-08	2.80E+01	1.89E-06	

Residential Excess Lifetime Cancer Risks

---------- SECTOR=RGA PATHWAY=Residential Adult Dermal Contact with Groundwater ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Tetrachloroethene	1.96E-04	5.20E-02	1.02E-05	
Toluene	3.91E-05			
Trichloroethene	3.17E-03	7.33E-02	2.32E-04	
Vinyl chloride	2.34E-05	1.90E+00	4.46E-05	
cis-1,2-Dichloroethene	8.94E-05			
trans-1,2-Dichloroethene	3.18E-07			
Alpha activity				
Americium-241				
Beta activity				
Cesium-137				
Lead-210				
Lead-214				
Neptunium-237				
Plutonium-239				
Technetium-99				
Thorium-228				
Thorium-230				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				4.05E-04

---------- SECTOR=RGA PATHWAY=Residential Adult Ingestion of Groundwater ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	8.11E-01			
Antimony	1.85E-04			
Arsenic	3.88E-04	1.50E+00	5.81E-04	
Barium	5.59E-03			
Beryllium	1.35E-04	4.30E+00	5.79E-04	
Bromide	6.13E-03			
Cadmium	1.97E-05			
Chromium	1.50E-03			
Cobalt	1.31E-03			
Copper	2.93E-03			
Iron	5.16E+00			
Lead	4.36E-04			
Manganese	4.07E-02			
Mercury	2.19E-06			
Nickel	2.62E-03			
Nitrate	6.30E-01			
Orthophosphate	4.79E-04			
Silver	1.69E-04			
Tetraoxo-sulfate(1-)	1.75E-01			
Thallium	7.88E-06			
Uranium	4.87E-05			
Vanadium	2.05E-03			
Zinc	1.02E-02			
1,1-Dichloroethene	8.83E-05	6.00E-01	5.30E-05	
Bis(2-ethylhexyl)phthalate	1.33E-05	1.40E-02	1.86E-07	
Bromodichloromethane	5.32E-05	6.20E-02	3.30E-06	
Carbon tetrachloride	9.41E-04	1.30E-01	1.22E-04	
Chloroform	3.84E-04	6.10E-03	2.34E-06	
Di-n-butyl phthalate	1.33E-05			
Di-n-octylphthalate	1.33E-05			
N-Nitroso-di-n-propylamine	1.33E-05	7.00E+00	9.32E-05	

Residential Excess Lifetime Cancer Risks

---------- SECTOR=RGA PATHWAY=Residential Adult Ingestion of Groundwater ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Tetrachloroethene	2.92E-04	5.20E-02	1.52E-05	
Toluene	4.79E-04			
Trichloroethene	1.09E-01	1.10E-02	1.20E-03	
Vinyl chloride	1.77E-03	1.90E+00	3.36E-03	
cis-1,2-Dichloroethene	4.92E-03			
trans-1,2-Dichloroethene	1.64E-04			
Alpha activity	4.04E+05			
Americium-241	4.00E+04	3.28E-10	1.31E-05	
Beta activity	7.65E+06			
Cesium-137	2.59E+05	3.16E-11	8.19E-06	
Lead-210	2.38E+06	1.01E-09	2.40E-03	
Lead-214	1.76E+05	2.94E-13	5.18E-08	
Neptunium-237	3.22E+05	3.00E-10	9.66E-05	
Plutonium-239	1.09E+03	3.16E-10	3.44E-07	
Technetium-99	6.38E+07	1.40E-12	8.93E-05	
Thorium-228	1.81E+04	2.31E-10	4.18E-06	
Thorium-230	2.60E+04	3.75E-11	9.76E-07	
Uranium-234	3.95E+04	4.44E-11	1.75E-06	
Uranium-235	2.80E+03	4.70E-11	1.32E-07	
Uranium-238	3.95E+05	6.20E-11	2.45E-05	
Pathway Total				8.65E-03

---------- SECTOR=RGA PATHWAY=Residential Adult Ingestion of Vegetables from Groundwater ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	4.20E-01			
Antimony	9.81E-05			
Arsenic	2.06E-04	1.50E+00	3.08E-04	
Barium	2.91E-03			
Beryllium	7.00E-05	4.30E+00	3.01E-04	
Bromide				
Cadmium	1.40E-05			
Chromium	7.75E-04			
Cobalt	7.22E-04			
Copper	1.84E-03			
Iron	2.67E+00			
Lead	2.25E-04			
Manganese	2.50E-02			
Mercury	2.07E-06			
Nickel	1.54E-03			
Nitrate				
Orthophosphate				
Silver	8.72E-05			
Tetraoxo-sulfate(1-)				
Thallium	4.08E-06			
Uranium	2.52E-05			
Vanadium	1.06E-03			
Zinc	9.08E-03			
1,1-Dichloroethene	1.33E-04	6.00E-01	7.99E-05	
Bis(2-ethylhexyl)phthalate	7.08E-06	1.40E-02	9.91E-08	
Bromodichloromethane	6.29E-05	6.20E-02	3.90E-06	
Carbon tetrachloride	7.31E-04	1.30E-01	9.50E-05	
Chloroform	4.90E-04	6.10E-03	2.99E-06	
Di-n-butyl phthalate	7.08E-06			
Di-n-octylphthalate	6.87E-06			
N-Nitroso-di-n-propylamine	2.94E-05	7.00E+00	2.06E-04	

Residential Excess Lifetime Cancer Risks

---------- SECTOR=RGA PATHWAY=Residential Adult Ingestion of Vegetables from Groundwater ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Tetrachloroethene	2.50E-04	5.20E-02	1.30E-05	
Toluene	3.90E-04			
Trichloroethene	1.05E-01	1.10E-02	1.15E-03	
Vinyl chloride	3.91E-03	1.90E+00	7.43E-03	
cis-1,2-Dichloroethene	6.82E-03			
trans-1,2-Dichloroethene	1.03E-03			
Alpha activity				
Americium-241	2.03E+04	3.28E-10	6.66E-06	
Beta activity				
Cesium-137	1.13E+05	3.16E-11	3.56E-06	
Lead-210	9.54E+05	1.01E-09	9.64E-04	
Lead-214	3.60E+01	2.94E-13	1.06E-11	
Neptunium-237	1.68E+05	3.00E-10	5.03E-05	
Plutonium-239	5.61E+02	3.16E-10	1.77E-07	
Technetium-99	1.89E+10	1.40E-12	2.65E-02	
Thorium-228	3.33E+03	2.31E-10	7.70E-07	
Thorium-230	1.34E+04	3.75E-11	5.04E-07	
Uranium-234	2.04E+04	4.44E-11	9.06E-07	
Uranium-235	1.45E+03	4.70E-11	6.80E-08	
Uranium-238	2.05E+05	6.20E-11	1.27E-05	
Pathway Total				3.72E-02

---------- SECTOR=RGA PATHWAY=Residential Adult Inhalation of Groundwater Household Use ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum				
Antimony				
Arsenic		5.00E+01		
Barium				
Beryllium		8.40E+00		
Bromide				
Cadmium		6.10E+00		
Chromium		4.10E+01		
Cobalt				
Copper				
Iron				
Lead				
Manganese				
Mercury				
Nickel				
Nitrate				
Orthophosphate				
Silver				
Tetraoxo-sulfate(1-)				
Thallium				
Uranium				
Vanadium				
Zinc				
1,1-Dichloroethene	2.62E-04	1.20E+00	3.14E-04	
Bis(2-ethylhexyl)phthalate				
Bromodichloromethane	1.58E-04			
Carbon tetrachloride	2.79E-03	5.30E-02	1.48E-04	
Chloroform	1.14E-03	8.10E-02	9.23E-05	
Di-n-butyl phthalate				
Di-n-octylphthalate				
N-Nitroso-di-n-propylamine				

Residential Excess Lifetime Cancer Risks

---------- SECTOR=RGA PATHWAY=Residential Adult Inhalation of Groundwater Household Use ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Tetrachloroethene	8.67E-04	2.00E-03	1.73E-06	
Toluene	1.42E-03			
Trichloroethene	3.23E-01	6.00E-03	1.94E-03	
Vinyl chloride	5.25E-03	3.00E-01	1.57E-03	
cis-1,2-Dichloroethene	1.46E-02			
trans-1,2-Dichloroethene	4.86E-04			
Alpha activity				
Americium-241		3.85E-08		
Beta activity				
Cesium-137		1.91E-11		
Lead-210		3.86E-09		
Lead-214		6.23E-12		
Neptunium-237		3.45E-08		
Plutonium-239		2.78E-08		
Technetium-99		2.89E-12		
Thorium-228		9.68E-08		
Thorium-230		1.72E-08		
Uranium-234		1.40E-08		
Uranium-235		1.30E-08		
Uranium-238		1.24E-08		
Pathway Total				4.07E-03

---------- SECTOR=RGA PATHWAY=Residential Adult Inhalation of Groundwater While Showering ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum				
Antimony				
Arsenic		5.00E+01		
Barium				
Beryllium		8.40E+00		
Bromide				
Cadmium		6.10E+00		
Chromium		4.10E+01		
Cobalt				
Copper				
Iron				
Lead				
Manganese				
Mercury				
Nickel				
Nitrate				
Orthophosphate				
Silver				
Tetraoxo-sulfate(1-)				
Thallium				
Uranium				
Vanadium				
Zinc				
1,1-Dichloroethene	2.41E-05	1.20E+00	2.89E-05	
Bis(2-ethylhexyl)phthalate				
Bromodichloromethane	1.45E-05			
Carbon tetrachloride	2.57E-04	5.30E-02	1.36E-05	
Chloroform	1.05E-04	8.10E-02	8.50E-06	
Di-n-butyl phthalate				
Di-n-octylphthalate				
N-Nitroso-di-n-propylamine				

Residential Excess Lifetime Cancer Risks

---------- SECTOR=RGA PATHWAY=Residential Adult Inhalation of Groundwater While Showering ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Tetrachloroethene	7.98E-05	2.00E-03	1.60E-07	
Toluene	1.31E-04			
Trichloroethene	2.98E-02	6.00E-03	1.79E-04	
Vinyl chloride	4.83E-04	3.00E-01	1.45E-04	
cis-1,2-Dichloroethene	1.34E-03			
trans-1,2-Dichloroethene	4.47E-05			
Alpha activity				
Americium-241		3.85E-08		
Beta activity				
Cesium-137		1.91E-11		
Lead-210		3.86E-09		
Lead-214		6.23E-12		
Neptunium-237		3.45E-08		
Plutonium-239		2.78E-08		
Technetium-99		2.89E-12		
Thorium-228		9.68E-08		
Thorium-230		1.72E-08		
Uranium-234		1.40E-08		
Uranium-235		1.30E-08		
Uranium-238		1.24E-08		
Pathway Total				3.75E-04

---------- SECTOR=RGA PATHWAY=Residential Child Dermal Contact with Groundwater ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	4.97E-04			
Antimony	1.13E-07			
Arsenic	2.38E-07	3.66E+00	8.70E-07	
Barium	3.43E-06			
Beryllium	8.26E-08	4.30E+02	3.55E-05	
Bromide				
Cadmium	1.21E-08			
Chromium	9.21E-07			
Cobalt	8.06E-07			
Copper	1.80E-06			
Iron	3.16E-03			
Lead	2.67E-07			
Manganese	2.50E-05			
Mercury	1.34E-09			
Nickel	1.61E-06			
Nitrate	3.87E-04			
Orthophosphate				
Silver	1.04E-07			
Tetraoxo-sulfate(1-)				
Thallium	4.83E-09			
Uranium	2.98E-08			
Vanadium	1.26E-06			
Zinc	6.24E-06			
1,1-Dichloroethene	4.82E-07	6.00E-01	2.89E-07	
Bis(2-ethylhexyl)phthalate	1.91E-07	7.37E-02	1.41E-08	
Bromodichloromethane	1.89E-07	6.33E-02	1.20E-08	
Carbon tetrachloride	1.27E-05	2.00E-01	2.54E-06	
Chloroform	2.10E-06	3.05E-02	6.40E-08	
Di-n-butyl phthalate	9.39E-07			
Di-n-octylphthalate	2.19E-04			
N-Nitroso-di-n-propylamine	2.29E-08	2.80E+01	6.40E-07	

Residential Excess Lifetime Cancer Risks

---------- SECTOR=RGA PATHWAY=Residential Child Dermal Contact with Groundwater ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Tetrachloroethene	6.63E-05	5.20E-02	3.45E-06	
Toluene	1.32E-05			
Trichloroethene	1.07E-03	7.33E-02	7.84E-05	
Vinyl chloride	7.92E-06	1.90E+00	1.51E-05	
cis-1,2-Dichloroethene	3.02E-05			
trans-1,2-Dichloroethene	1.08E-07			
Alpha activity				
Americium-241				
Beta activity				
Cesium-137				
Lead-210				
Lead-214				
Neptunium-237				
Plutonium-239				
Technetium-99				
Thorium-228				
Thorium-230				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				1.37E-04

---------- SECTOR=RGA PATHWAY=Residential Child Ingestion of Groundwater ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	3.45E-01			
Antimony	7.88E-05			
Arsenic	1.65E-04	1.50E+00	2.48E-04	
Barium	2.38E-03			
Beryllium	5.74E-05	4.30E+00	2.47E-04	
Bromide	2.61E-03			
Cadmium	8.39E-06			
Chromium	6.40E-04			
Cobalt	5.60E-04			
Copper	1.25E-03			
Iron	2.20E+00			
Lead	1.86E-04			
Manganese	1.73E-02			
Mercury	9.33E-07			
Nickel	1.12E-03			
Nitrate	2.69E-01			
Orthophosphate	2.04E-04			
Silver	7.19E-05			
Tetraoxo-sulfate(1-)	7.47E-02			
Thallium	3.36E-06			
Uranium	2.07E-05			
Vanadium	8.72E-04			
Zinc	4.33E-03			
1,1-Dichloroethene	3.76E-05	6.00E-01	2.26E-05	
Bis(2-ethylhexyl)phthalate	5.67E-06	1.40E-02	7.94E-08	
Bromodichloromethane	2.27E-05	6.20E-02	1.41E-06	
Carbon tetrachloride	4.01E-04	1.30E-01	5.21E-05	
Chloroform	1.64E-04	6.10E-03	9.99E-07	
Di-n-butyl phthalate	5.67E-06			
Di-n-octylphthalate	5.67E-06			
N-Nitroso-di-n-propylamine	5.67E-06	7.00E+00	3.97E-05	

Residential Excess Lifetime Cancer Risks

---------- SECTOR=RGA PATHWAY=Residential Child Ingestion of Groundwater ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Tetrachloroethene	1.24E-04	5.20E-02	6.47E-06	
Toluene	2.04E-04			
Trichloroethene	4.64E-02	1.10E-02	5.11E-04	
Vinyl chloride	7.54E-04	1.90E+00	1.43E-03	
cis-1,2-Dichloroethene	2.10E-03			
trans-1,2-Dichloroethene	6.97E-05			
Alpha activity	3.56E+04			
Americium-241	3.53E+03	3.28E-10	1.16E-06	
Beta activity	6.75E+05			
Cesium-137	2.29E+04	3.16E-11	7.23E-07	
Lead-210	2.10E+05	1.01E-09	2.12E-04	
Lead-214	1.55E+04	2.94E-13	4.57E-09	
Neptunium-237	2.84E+04	3.00E-10	8.52E-06	
Plutonium-239	9.60E+01	3.16E-10	3.03E-08	
Technetium-99	5.63E+06	1.40E-12	7.88E-06	
Thorium-228	1.60E+03	2.31E-10	3.69E-07	
Thorium-230	2.30E+03	3.75E-11	8.61E-08	
Uranium-234	3.48E+03	4.44E-11	1.55E-07	
Uranium-235	2.47E+02	4.70E-11	1.16E-08	
Uranium-238	3.49E+04	6.20E-11	2.16E-06	
Pathway Total				2.79E-03

---------- SECTOR=RGA PATHWAY=Residential Child Ingestion of Vegetables from Groundwater ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	2.33E-01			
Antimony	5.45E-05			
Arsenic	1.14E-04	1.50E+00	1.71E-04	
Barium	1.61E-03			
Beryllium	3.89E-05	4.30E+00	1.67E-04	
Bromide				
Cadmium	7.79E-06			
Chromium	4.30E-04			
Cobalt	4.01E-04			
Copper	1.02E-03			
Iron	1.48E+00			
Lead	1.25E-04			
Manganese	1.39E-02			
Mercury	1.15E-06			
Nickel	8.54E-04			
Nitrate				
Orthophosphate				
Silver	4.84E-05			
Tetraoxo-sulfate(1-)				
Thallium	2.26E-06			
Uranium	1.40E-05			
Vanadium	5.89E-04			
Zinc	5.04E-03			
1,1-Dichloroethene	7.39E-05	6.00E-01	4.44E-05	
Bis(2-ethylhexyl)phthalate	3.93E-06	1.40E-02	5.50E-08	
Bromodichloromethane	3.49E-05	6.20E-02	2.16E-06	
Carbon tetrachloride	4.06E-04	1.30E-01	5.28E-05	
Chloroform	2.72E-04	6.10E-03	1.66E-06	
Di-n-butyl phthalate	3.93E-06			
Di-n-octylphthalate	3.81E-06			
N-Nitroso-di-n-propylamine	1.63E-05	7.00E+00	1.14E-04	

Residential Excess Lifetime Cancer Risks

---------- SECTOR=RGA PATHWAY=Residential Child Ingestion of Vegetables from Groundwater ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Tetrachloroethene	1.39E-04	5.20E-02	7.23E-06	
Toluene	2.17E-04			
Trichloroethene	5.82E-02	1.10E-02	6.40E-04	
Vinyl chloride	2.17E-03	1.90E+00	4.12E-03	
cis-1,2-Dichloroethene	3.78E-03			
trans-1,2-Dichloroethene	5.73E-04			
Alpha activity				
Americium-241	2.33E+03	3.28E-10	7.66E-07	
Beta activity				
Cesium-137	1.30E+04	3.16E-11	4.10E-07	
Lead-210	1.10E+05	1.01E-09	1.11E-04	
Lead-214	4.14E+00	2.94E-13	1.22E-12	
Neptunium-237	1.93E+04	3.00E-10	5.79E-06	
Plutonium-239	6.45E+01	3.16E-10	2.04E-08	
Technetium-99	2.18E+09	1.40E-12	3.05E-03	
Thorium-228	3.83E+02	2.31E-10	8.85E-08	
Thorium-230	1.54E+03	3.75E-11	5.79E-08	
Uranium-234	2.35E+03	4.44E-11	1.04E-07	
Uranium-235	1.66E+02	4.70E-11	7.82E-09	
Uranium-238	2.36E+04	6.20E-11	1.46E-06	
Pathway Total				8.49E-03

---------- SECTOR=RGA PATHWAY=Residential Child Inhalation of Groundwater Household Use ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum				
Antimony				
Arsenic		5.00E+01		
Barium				
Beryllium		8.40E+00		
Bromide				
Cadmium		6.10E+00		
Chromium		4.10E+01		
Cobalt				
Copper				
Iron				
Lead				
Manganese				
Mercury				
Nickel				
Nitrate				
Orthophosphate				
Silver				
Tetraoxo-sulfate(1-)				
Thallium				
Uranium				
Vanadium				
Zinc				
1,1-Dichloroethene	2.62E-04	1.20E+00	3.14E-04	
Bis(2-ethylhexyl)phthalate				
Bromodichloromethane	1.58E-04			
Carbon tetrachloride	2.79E-03	5.30E-02	1.48E-04	
Chloroform	1.14E-03	8.10E-02	9.23E-05	
Di-n-butyl phthalate				
Di-n-octylphthalate				
N-Nitroso-di-n-propylamine				

Residential Excess Lifetime Cancer Risks

---------- SECTOR=RGA PATHWAY=Residential Child Inhalation of Groundwater Household Use ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Tetrachloroethene	8.67E-04	2.00E-03	1.73E-06	
Toluene	1.42E-03			
Trichloroethene	3.23E-01	6.00E-03	1.94E-03	
Vinyl chloride	5.25E-03	3.00E-01	1.57E-03	
cis-1,2-Dichloroethene	1.46E-02			
trans-1,2-Dichloroethene	4.86E-04			
Alpha activity				
Americium-241		3.85E-08		
Beta activity				
Cesium-137		1.91E-11		
Lead-210		3.86E-09		
Lead-214		6.23E-12		
Neptunium-237		3.45E-08		
Plutonium-239		2.78E-08		
Technetium-99		2.89E-12		
Thorium-228		9.68E-08		
Thorium-230		1.72E-08		
Uranium-234		1.40E-08		
Uranium-235		1.30E-08		
Uranium-238		1.24E-08		
Pathway Total				4.07E-03

---------- SECTOR=RGA PATHWAY=Residential Child Inhalation of Groundwater While Showering ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum				
Antimony				
Arsenic		5.00E+01		
Barium				
Beryllium		8.40E+00		
Bromide				
Cadmium		6.10E+00		
Chromium		4.10E+01		
Cobalt				
Copper				
Iron				
Lead				
Manganese				
Mercury				
Nickel				
Nitrate				
Orthophosphate				
Silver				
Tetraoxo-sulfate(1-)				
Thallium				
Uranium				
Vanadium				
Zinc				
1,1-Dichloroethene	2.41E-05	1.20E+00	2.89E-05	
Bis(2-ethylhexyl)phthalate				
Bromodichloromethane	1.45E-05			
Carbon tetrachloride	2.57E-04	5.30E-02	1.36E-05	
Chloroform	1.05E-04	8.10E-02	8.50E-06	
Di-n-butyl phthalate				
Di-n-octylphthalate				
N-Nitroso-di-n-propylamine				

Residential Excess Lifetime Cancer Risks

---------- SECTOR=RGA PATHWAY=Residential Child Inhalation of Groundwater While Showering ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Tetrachloroethene	7.98E-05	2.00E-03	1.60E-07	
Toluene	1.31E-04			
Trichloroethene	2.98E-02	6.00E-03	1.79E-04	
Vinyl chloride	4.83E-04	3.00E-01	1.45E-04	
cis-1,2-Dichloroethene	1.34E-03			
trans-1,2-Dichloroethene	4.47E-05			
Alpha activity				
Americium-241		3.85E-08		
Beta activity				
Cesium-137		1.91E-11		
Lead-210		3.86E-09		
Lead-214		6.23E-12		
Neptunium-237		3.45E-08		
Plutonium-239		2.78E-08		
Technetium-99		2.89E-12		
Thorium-228		9.68E-08		
Thorium-230		1.72E-08		
Uranium-234		1.40E-08		
Uranium-235		1.30E-08		
Uranium-238		1.24E-08		
Pathway Total				3.75E-04

---------- SECTOR=WAG 6 PATHWAY=Residential Adult Dermal Contact with Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	6.89E-03			
Antimony	1.36E-06			
Arsenic	6.22E-06	3.66E+00	2.27E-05	
Beryllium	3.36E-07	4.30E+02	1.45E-04	
Cadmium	1.03E-07			
Chromium	1.38E-05			
Cobalt	4.72E-06			
Iron	1.27E-02			
Lead	9.29E-06			
Thallium	7.94E-07			
Uranium	3.07E-05			
Vanadium	1.66E-05			
Zinc	2.99E-05			
2-Methylnaphthalene	1.25E-06			
Acenaphthene	2.91E-06			
Acenaphthylene	5.12E-07			
Anthracene	5.63E-06			
Benz(a)anthracene	8.82E-06	2.35E+00	2.08E-05	
Benzo(a)pyrene	8.63E-06	2.35E+01	2.03E-04	
Benzo(b)fluoranthene	1.01E-05	2.35E+00	2.39E-05	
Benzo(ghi)perylene	4.93E-06			
Benzo(k)fluoranthene	8.22E-06	2.35E-01	1.94E-06	
Bis(2-ethylhexyl)phthalate	2.33E-07	7.37E-02	1.72E-08	
Chrysene	9.31E-06	2.35E-02	2.19E-07	
Di-n-butyl phthalate	1.74E-06			
Dibenz(a,h)anthracene	2.56E-06	2.35E+01	6.02E-05	
Fluoranthene	1.77E-05			
Fluorene	2.22E-06			
Indeno(1,2,3-cd)pyrene	4.67E-06	2.35E+00	1.10E-05	
Naphthalene	1.50E-06			
PCB-1254	2.37E-07	2.22E+00	5.27E-07	

Residential Excess Lifetime Cancer Risks

---------- SECTOR=WAG 6 PATHWAY=Residential Adult Dermal Contact with Soil ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
PCB-1260	1.30E-07	2.22E+00	2.89E-07	
PCB-1262	5.31E-08	2.22E+00	1.18E-07	
Phenanthrene	1.24E-05			
Polychlorinated biphenyl	4.19E-07	2.22E+00	9.30E-07	
Pyrene	1.56E-05			
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				4.91E-04

---------- SECTOR=WAG 6 PATHWAY=Residential Adult External Exposure to Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum				
Antimony				
Arsenic				
Beryllium				
Cadmium				
Chromium				
Cobalt				
Iron				
Lead				
Thallium				
Uranium				
Vanadium				
Zinc				
2-Methylnaphthalene				
Acenaphthene				
Acenaphthylene				
Anthracene				
Benz(a)anthracene				
Benzo(a)pyrene				
Benzo(b)fluoranthene				
Benzo(ghi)perylene				
Benzo(k)fluoranthene				
Bis(2-ethylhexyl)phthalate				
Chrysene				
Di-n-butyl phthalate				
Dibenz(a,h)anthracene				
Fluoranthene				
Fluorene				
Indeno(1,2,3-cd)pyrene				
Naphthalene				
PCB-1254				
PCB-1260				
PCB-1262				
Phenanthrene				
Polychlorinated biphenyl				
Pyrene				
Alpha activity	5.68E+02			
Beta activity	1.25E+03			
Cesium-137	9.75E+00	2.09E-06	2.04E-05	

Residential Excess Lifetime Cancer Risks

---------- SECTOR=WAG 6 PATHWAY=Residential Adult External Exposure to Soil ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Neptunium-237	1.66E+01	4.62E-07	7.66E-06	
Uranium-234	1.71E+02	2.14E-11	3.66E-09	
Uranium-235	1.01E+01	2.65E-07	2.68E-06	
Uranium-238	2.29E+02	6.57E-08	1.50E-05	
Pathway Total				4.58E-05

---------- SECTOR=WAG 6 PATHWAY=Residential Adult Ingestion of Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	3.94E-03			
Antimony	7.77E-07			
Arsenic	3.55E-06	1.50E+00	5.33E-06	
Beryllium	1.92E-07	4.30E+00	8.26E-07	
Cadmium	2.95E-07			
Chromium	7.88E-06			
Cobalt	2.70E-06			
Iron	7.26E-03			
Lead	5.31E-06			
Thallium	4.54E-07			
Uranium	1.76E-05			
Vanadium	9.48E-06			
Zinc	1.71E-05			
2-Methylnaphthalene	3.57E-07			
Acenaphthene	8.31E-07			
Acenaphthylene	1.46E-07			
Anthracene	1.61E-06			
Benz(a)anthracene	2.52E-06	7.30E-01	1.84E-06	
Benzo(a)pyrene	2.47E-06	7.30E+00	1.80E-05	
Benzo(b)fluoranthene	2.90E-06	7.30E-01	2.12E-06	
Benzo(ghi)perylene	1.41E-06			
Benzo(k)fluoranthene	2.35E-06	7.30E-02	1.71E-07	
Bis(2-ethylhexyl)phthalate	6.65E-08	1.40E-02	9.32E-10	
Chrysene	2.66E-06	7.30E-03	1.94E-08	
Di-n-butyl phthalate	4.96E-07			
Dibenz(a,h)anthracene	7.31E-07	7.30E+00	5.34E-06	
Fluoranthene	5.05E-06			
Fluorene	6.33E-07			
Indeno(1,2,3-cd)pyrene	1.33E-06	7.30E-01	9.74E-07	
Naphthalene	4.28E-07			
PCB-1254	1.13E-07	2.00E+00	2.26E-07	
PCB-1260	6.20E-08	2.00E+00	1.24E-07	
PCB-1262	2.53E-08	2.00E+00	5.06E-08	
Phenanthrene	3.54E-06			
Polychlorinated biphenyl	1.99E-07	2.00E+00	3.99E-07	
Pyrene	4.46E-06			
Alpha activity	2.59E+04			
Beta activity	5.70E+04			
Cesium-137	4.45E+02	3.16E-11	1.41E-08	
Neptunium-237	7.57E+02	3.00E-10	2.27E-07	
Uranium-234	7.81E+03	4.44E-11	3.47E-07	
Uranium-235	4.61E+02	4.70E-11	2.17E-08	
Uranium-238	1.04E+04	6.20E-11	6.47E-07	
Pathway Total				3.67E-05

Residential Excess Lifetime Cancer Risks

---------- SECTOR=WAG 6 PATHWAY=Residential Adult Ingestion of Vegetables From Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	8.18E-01			
Antimony	1.67E-04			
Arsenic	7.64E-04	1.50E+00	1.15E-03	
Beryllium	4.01E-05	4.30E+00	1.73E-04	
Cadmium	9.34E-05			
Chromium	1.63E-03			
Cobalt	6.08E-04			
Iron	1.50E+00			
Lead	1.10E-03			
Thallium	9.43E-05			
Uranium	3.64E-03			
Vanadium	1.97E-03			
Zinc	7.12E-03			
2-Methylnaphthalene	8.58E-05			
Acenaphthene	1.88E-04			
Acenaphthylene	3.67E-05			
Anthracene	3.61E-04			
Benz(a)anthracene	5.29E-04	7.30E-01	3.86E-04	
Benzo(a)pyrene	5.15E-04	7.30E+00	3.76E-03	
Benzo(b)fluoranthene	6.05E-04	7.30E-01	4.42E-04	
Benzo(ghi)perylene	2.93E-04			
Benzo(k)fluoranthene	4.88E-04	7.30E-02	3.56E-05	
Bis(2-ethylhexyl)phthalate	1.44E-05	1.40E-02	2.01E-07	
Chrysene	5.59E-04	7.30E-03	4.08E-06	
Di-n-butyl phthalate	1.07E-04			
Dibenz(a,h)anthracene	1.52E-04	7.30E+00	1.11E-03	
Fluoranthene	1.09E-03			
Fluorene	1.42E-04			
Indeno(1,2,3-cd)pyrene	2.77E-04	7.30E-01	2.02E-04	
Naphthalene	1.21E-04			
PCB-1254	2.36E-05	2.00E+00	4.72E-05	
PCB-1260	1.29E-05	2.00E+00	2.57E-05	
PCB-1262	5.28E-06	2.00E+00	1.06E-05	
Phenanthrene	7.78E-04			
Polychlorinated biphenyl	4.17E-05	2.00E+00	8.33E-05	
Pyrene	9.61E-04			
Alpha activity				
Beta activity				
Cesium-137	9.80E+04	3.16E-11	3.10E-06	
Neptunium-237	1.59E+05	3.00E-10	4.76E-05	
Uranium-234	1.62E+06	4.44E-11	7.19E-05	
Uranium-235	9.58E+04	4.70E-11	4.50E-06	
Uranium-238	2.18E+06	6.20E-11	1.35E-04	
Pathway Total				7.68E-03

---------- SECTOR=WAG 6 PATHWAY=Residential Adult Inhalation of Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	1.84E-07			
Antimony	3.63E-11			
Arsenic	1.66E-10	5.00E+01	8.29E-09	
Beryllium	8.97E-12	8.40E+00	7.53E-11	
Cadmium	1.38E-11	6.10E+00	8.40E-11	
Chromium	3.68E-10	4.10E+01	1.51E-08	
Cobalt	1.26E-10			
Iron	3.39E-07			
Lead	2.48E-10			

Residential Excess Lifetime Cancer Risks

---------- SECTOR=WAG 6 PATHWAY=Residential Adult Inhalation of Soil ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Thallium	2.12E-11			
Uranium	8.20E-10			
Vanadium	4.43E-10			
Zinc	7.96E-10			
2-Methylnaphthalene	1.67E-11			
Acenaphthene	3.88E-11			
Acenaphthylene	6.83E-12			
Anthracene	7.51E-11			
Benz(a)anthracene	1.18E-10	3.10E-01	3.65E-11	
Benzo(a)pyrene	1.15E-10	3.10E+00	3.57E-10	
Benzo(b)fluoranthene	1.35E-10	3.10E-01	4.19E-11	
Benzo(ghi)perylene	6.57E-11			
Benzo(k)fluoranthene	1.10E-10	3.10E-02	3.40E-12	
Bis(2-ethylhexyl)phthalate	3.10E-12			
Chrysene	1.24E-10	3.10E-03	3.85E-13	
Di-n-butyl phthalate	2.31E-11			
Dibenz(a,h)anthracene	3.41E-11	3.10E+00	1.06E-10	
Fluoranthene	2.36E-10			
Fluorene	2.95E-11			
Indeno(1,2,3-cd)pyrene	6.22E-11	3.10E-01	1.93E-11	
Naphthalene	2.00E-11			
PCB-1254	5.27E-12	2.00E+00	1.05E-11	
PCB-1260	2.89E-12	2.00E+00	5.79E-12	
PCB-1262	1.18E-12	2.00E+00	2.36E-12	
Phenanthrene	1.65E-10			
Polychlorinated biphenyl	9.30E-12	2.00E+00	1.86E-11	
Pyrene	2.08E-10			
Alpha activity				
Beta activity				
Cesium-137	2.08E-02	1.91E-11	3.97E-13	
Neptunium-237	3.53E-02	3.45E-08	1.22E-09	
Uranium-234	3.64E-01	1.40E-08	5.10E-09	
Uranium-235	2.15E-02	1.30E-08	2.80E-10	
Uranium-238	4.87E-01	1.24E-08	6.04E-09	
Pathway Total				3.68E-08

---------- SECTOR=WAG 6 PATHWAY=Residential Child Dermal Contact with Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	6.26E-03			
Antimony	1.23E-06			
Arsenic	5.64E-06	3.66E+00	2.07E-05	
Beryllium	3.05E-07	4.30E+02	1.31E-04	
Cadmium	9.38E-08			
Chromium	1.25E-05			
Cobalt	4.28E-06			
Iron	1.15E-02			
Lead	8.44E-06			
Thallium	7.21E-07			
Uranium	2.79E-05			
Vanadium	1.51E-05			
Zinc	2.71E-05			
2-Methylnaphthalene	1.13E-06			
Acenaphthene	2.64E-06			
Acenaphthylene	4.65E-07			
Anthracene	5.12E-06			

Residential Excess Lifetime Cancer Risks

---------- SECTOR=WAG 6 PATHWAY=Residential Child Dermal Contact with Soil ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Benz(a)anthracene	8.01E-06	2.35E+00	1.89E-05	
Benzo(a)pyrene	7.84E-06	2.35E+01	1.85E-04	
Benzo(b)fluoranthene	9.21E-06	2.35E+00	2.17E-05	
Benzo(ghi)perylene	4.47E-06			
Benzo(k)fluoranthene	7.46E-06	2.35E-01	1.76E-06	
Bis(2-ethylhexyl)phthalate	2.11E-07	7.37E-02	1.56E-08	
Chrysene	8.46E-06	2.35E-02	1.99E-07	
Di-n-butyl phthalate	1.58E-06			
Dibenz(a,h)anthracene	2.32E-06	2.35E+01	5.47E-05	
Fluoranthene	1.60E-05			
Fluorene	2.01E-06			
Indeno(1,2,3-cd)pyrene	4.24E-06	2.35E+00	9.98E-06	
Naphthalene	1.36E-06			
PCB-1254	2.15E-07	2.22E+00	4.78E-07	
PCB-1260	1.18E-07	2.22E+00	2.63E-07	
PCB-1262	4.82E-08	2.22E+00	1.07E-07	
Phenanthrene	1.12E-05			
Polychlorinated biphenyl	3.80E-07	2.22E+00	8.44E-07	
Pyrene	1.42E-05			
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				4.45E-04

---------- SECTOR=WAG 6 PATHWAY=Residential Child External Exposure to Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum				
Antimony				
Arsenic				
Beryllium				
Cadmium				
Chromium				
Cobalt				
Iron				
Lead				
Thallium				
Uranium				
Vanadium				
Zinc				
2-Methylnaphthalene				
Acenaphthene				
Acenaphthylene				
Anthracene				
Benz(a)anthracene				
Benzo(a)pyrene				
Benzo(b)fluoranthene				
Benzo(ghi)perylene				
Benzo(k)fluoranthene				
Bis(2-ethylhexyl)phthalate				
Chrysene				
Di-n-butyl phthalate				

Residential Excess Lifetime Cancer Risks

---------- SECTOR=WAG 6 PATHWAY=Residential Child External Exposure to Soil ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Dibenz(a,h)anthracene				
Fluoranthene				
Fluorene				
Indeno(1,2,3-cd)pyrene				
Naphthalene				
PCB-1254				
PCB-1260				
PCB-1262				
Phenanthrene				
Polychlorinated biphenyl				
Pyrene				
Alpha activity	1.00E+02			
Beta activity	2.21E+02			
Cesium-137	1.72E+00	2.09E-06	3.60E-06	
Neptunium-237	2.93E+00	4.62E-07	1.35E-06	
Uranium-234	3.02E+01	2.14E-11	6.46E-10	
Uranium-235	1.78E+00	2.65E-07	4.73E-07	
Uranium-238	4.04E+01	6.57E-08	2.65E-06	
Pathway Total				8.08E-06

---------- SECTOR=WAG 6 PATHWAY=Residential Child Ingestion of Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	6.71E-03			
Antimony	1.32E-06			
Arsenic	6.05E-06	1.50E+00	9.08E-06	
Beryllium	3.27E-07	4.30E+00	1.41E-06	
Cadmium	5.03E-07			
Chromium	1.34E-05			
Cobalt	4.60E-06			
Iron	1.24E-02			
Lead	9.05E-06			
Thallium	7.73E-07			
Uranium	2.99E-05			
Vanadium	1.62E-05			
Zinc	2.91E-05			
2-Methylnaphthalene	6.08E-07			
Acenaphthene	1.42E-06			
Acenaphthylene	2.49E-07			
Anthracene	2.74E-06			
Benz(a)anthracene	4.29E-06	7.30E-01	3.14E-06	
Benzo(a)pyrene	4.20E-06	7.30E+00	3.07E-05	
Benzo(b)fluoranthene	4.94E-06	7.30E-01	3.61E-06	
Benzo(ghi)perylene	2.40E-06			
Benzo(k)fluoranthene	4.00E-06	7.30E-02	2.92E-07	
Bis(2-ethylhexyl)phthalate	1.13E-07	1.40E-02	1.59E-09	
Chrysene	4.53E-06	7.30E-03	3.31E-08	
Di-n-butyl phthalate	8.45E-07			
Dibenz(a,h)anthracene	1.25E-06	7.30E+00	9.09E-06	
Fluoranthene	8.60E-06			
Fluorene	1.08E-06			
Indeno(1,2,3-cd)pyrene	2.27E-06	7.30E-01	1.66E-06	
Naphthalene	7.29E-07			
PCB-1254	1.92E-07	2.00E+00	3.85E-07	
PCB-1260	1.06E-07	2.00E+00	2.11E-07	
PCB-1262	4.31E-08	2.00E+00	8.62E-08	

Residential Excess Lifetime Cancer Risks

---------- SECTOR=WAG 6 PATHWAY=Residential Child Ingestion of Soil ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Phenanthrene	6.02E-06			
Polychlorinated biphenyl	3.40E-07	2.00E+00	6.79E-07	
Pyrene	7.59E-06			
Alpha activity	9.15E+03			
Beta activity	2.01E+04			
Cesium-137	1.57E+02	3.16E-11	4.96E-09	
Neptunium-237	2.67E+02	3.00E-10	8.01E-08	
Uranium-234	2.76E+03	4.44E-11	1.22E-07	
Uranium-235	1.63E+02	4.70E-11	7.65E-09	
Uranium-238	3.69E+03	6.20E-11	2.29E-07	
Pathway Total				6.08E-05

---------- SECTOR=WAG 6 PATHWAY=Residential Child Ingestion of Vegetables From Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	4.55E-01			
Antimony	9.30E-05			
Arsenic	4.25E-04	1.50E+00	6.37E-04	
Beryllium	2.23E-05	4.30E+00	9.61E-05	
Cadmium	5.20E-05			
Chromium	9.08E-04			
Cobalt	3.38E-04			
Iron	8.37E-01			
Lead	6.13E-04			
Thallium	5.25E-05			
Uranium	2.03E-03			
Vanadium	1.10E-03			
Zinc	3.96E-03			
2-Methylnaphthalene	4.78E-05			
Acenaphthene	1.05E-04			
Acenaphthylene	2.04E-05			
Anthracene	2.01E-04			
Benz(a)anthracene	2.95E-04	7.30E-01	2.15E-04	
Benzo(a)pyrene	2.87E-04	7.30E+00	2.09E-03	
Benzo(b)fluoranthene	3.37E-04	7.30E-01	2.46E-04	
Benzo(ghi)perylene	1.63E-04			
Benzo(k)fluoranthene	2.71E-04	7.30E-02	1.98E-05	
Bis(2-ethylhexyl)phthalate	7.99E-06	1.40E-02	1.12E-07	
Chrysene	3.11E-04	7.30E-03	2.27E-06	
Di-n-butyl phthalate	5.95E-05			
Dibenz(a,h)anthracene	8.45E-05	7.30E+00	6.17E-04	
Fluoranthene	6.06E-04			
Fluorene	7.90E-05			
Indeno(1,2,3-cd)pyrene	1.54E-04	7.30E-01	1.13E-04	
Naphthalene	6.71E-05			
PCB-1254	1.31E-05	2.00E+00	2.62E-05	
PCB-1260	7.16E-06	2.00E+00	1.43E-05	
PCB-1262	2.94E-06	2.00E+00	5.88E-06	
Phenanthrene	4.33E-04			
Polychlorinated biphenyl	2.32E-05	2.00E+00	4.64E-05	
Pyrene	5.35E-04			
Alpha activity				
Beta activity				
Cesium-137	1.13E+04	3.16E-11	3.57E-07	
Neptunium-237	1.83E+04	3.00E-10	5.49E-06	
Uranium-234	1.87E+05	4.44E-11	8.29E-06	

Residential Excess Lifetime Cancer Risks

---------- SECTOR=WAG 6 PATHWAY=Residential Child Ingestion of Vegetables From Soil ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Uranium-235	1.10E+04	4.70E-11	5.19E-07	
Uranium-238	2.51E+05	6.20E-11	1.56E-05	
Pathway Total				4.16E-03

---------- SECTOR=WAG 6 PATHWAY=Residential Child Inhalation of Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	1.57E-07			
Antimony	3.09E-11			
Arsenic	1.41E-10	5.00E+01	7.06E-09	
Beryllium	7.64E-12	8.40E+00	6.42E-11	
Cadmium	1.17E-11	6.10E+00	7.16E-11	
Chromium	3.13E-10	4.10E+01	1.28E-08	
Cobalt	1.07E-10			
Iron	2.88E-07			
Lead	2.11E-10			
Thallium	1.80E-11			
Uranium	6.98E-10			
Vanadium	3.77E-10			
Zinc	6.78E-10			
2-Methylnaphthalene	1.42E-11			
Acenaphthene	3.30E-11			
Acenaphthylene	5.82E-12			
Anthracene	6.40E-11			
Benz(a)anthracene	1.00E-10	3.10E-01	3.11E-11	
Benzo(a)pyrene	9.81E-11	3.10E+00	3.04E-10	
Benzo(b)fluoranthene	1.15E-10	3.10E-01	3.57E-11	
Benzo(ghi)perylene	5.60E-11			
Benzo(k)fluoranthene	9.34E-11	3.10E-02	2.89E-12	
Bis(2-ethylhexyl)phthalate	2.64E-12			
Chrysene	1.06E-10	3.10E-03	3.28E-13	
Di-n-butyl phthalate	1.97E-11			
Dibenz(a,h)anthracene	2.91E-11	3.10E+00	9.01E-11	
Fluoranthene	2.01E-10			
Fluorene	2.52E-11			
Indeno(1,2,3-cd)pyrene	5.30E-11	3.10E-01	1.64E-11	
Naphthalene	1.70E-11			
PCB-1254	4.49E-12	2.00E+00	8.97E-12	
PCB-1260	2.46E-12	2.00E+00	4.93E-12	
PCB-1262	1.01E-12	2.00E+00	2.01E-12	
Phenanthrene	1.41E-10			
Polychlorinated biphenyl	7.92E-12	2.00E+00	1.58E-11	
Pyrene	1.77E-10			
Alpha activity				
Beta activity				
Cesium-137	3.66E-03	1.91E-11	7.00E-14	
Neptunium-237	6.23E-03	3.45E-08	2.15E-10	
Uranium-234	6.43E-02	1.40E-08	9.00E-10	
Uranium-235	3.80E-03	1.30E-08	4.94E-11	
Uranium-238	8.60E-02	1.24E-08	1.07E-09	
Pathway Total				2.28E-08

Current Industrial Excess Lifetime Cancer Risks

---------- SECTOR=Central PATHWAY=Current Industrial Dermal Contact with Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Di-n-butyl phthalate	5.05E-06	1.00E-01	5.05E-05	
Alpha activity				
Beta activity				
Pathway Total				5.05E-05

---------- SECTOR=Central PATHWAY=Current Industrial Ingestion of Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Di-n-butyl phthalate	5.87E-07	1.00E-01	5.87E-06	
Alpha activity				
Beta activity				
Pathway Total				5.87E-06

---------- SECTOR=Central PATHWAY=Current Industrial Inhalation of Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Di-n-butyl phthalate	5.48E-11			
Alpha activity				
Beta activity				
Pathway Total				

---------- SECTOR=East PATHWAY=Current Industrial Dermal Contact with Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Cadmium	1.60E-07	1.00E-05	1.60E-02	
Chromium	2.86E-05	1.00E-04	2.86E-01	
Thallium	2.52E-06			
Uranium	5.75E-05	2.55E-03	2.26E-02	
Acenaphthene	5.47E-07	1.86E-02	2.94E-05	
Anthracene	9.26E-07	2.28E-01	4.06E-06	
Benz(a)anthracene	3.04E-06			
Benzo(a)pyrene	3.34E-06			
Benzo(b)fluoranthene	5.89E-06			
Benzo(ghi)perylene	1.56E-06			
Benzo(k)fluoranthene	3.66E-06			
Chrysene	3.34E-06			
Di-n-butyl phthalate	5.17E-06	1.00E-01	5.17E-05	
Dibenz(a,h)anthracene	6.73E-07			
Fluoranthene	8.84E-06	1.24E-02	7.13E-04	
Fluorene	3.79E-07	2.00E-02	1.89E-05	
Indeno(1,2,3-cd)pyrene	1.77E-06			
PCB-1260	8.33E-06			
Phenanthrene	4.88E-06			
Polychlorinated biphenyl	2.52E-05			
Pyrene	7.57E-06	9.30E-03	8.14E-04	
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				

Current Industrial Excess Lifetime Cancer Risks

---------- SECTOR=East PATHWAY=Current Industrial Dermal Contact with Soil ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Uranium-235				
Uranium-238				
Pathway Total				3.27E-01

---------- SECTOR=East PATHWAY=Current Industrial Ingestion of Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Cadmium	1.86E-07	1.00E-03	1.86E-04	
Chromium	6.66E-06	5.00E-03	1.33E-03	
Thallium	5.87E-07			
Uranium	1.34E-05	3.00E-03	4.46E-03	
Acenaphthene	6.36E-08	6.00E-02	1.06E-06	
Anthracene	1.08E-07	3.00E-01	3.59E-07	
Benz(a)anthracene	3.53E-07			
Benzo(a)pyrene	3.89E-07			
Benzo(b)fluoranthene	6.85E-07			
Benzo(ghi)perylene	1.81E-07			
Benzo(k)fluoranthene	4.26E-07			
Chrysene	3.89E-07			
Di-n-butyl phthalate	6.01E-07	1.00E-01	6.01E-06	
Dibenz(a,h)anthracene	7.83E-08			
Fluoranthene	1.03E-06	4.00E-02	2.57E-05	
Fluorene	4.40E-08	4.00E-02	1.10E-06	
Indeno(1,2,3-cd)pyrene	2.05E-07			
PCB-1260	1.61E-06			
Phenanthrene	5.68E-07			
Polychlorinated biphenyl	4.89E-06			
Pyrene	8.81E-07	3.00E-02	2.94E-05	
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-235				
Uranium-238				
Pathway Total				6.04E-03

---------- SECTOR=East PATHWAY=Current Industrial Inhalation of Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Cadmium	1.74E-11	5.71E-05	3.04E-07	
Chromium	6.22E-10			
Thallium	5.48E-11			
Uranium	1.25E-09			
Acenaphthene	5.94E-12			
Anthracene	1.00E-11			
Benz(a)anthracene	3.30E-11			
Benzo(a)pyrene	3.63E-11			
Benzo(b)fluoranthene	6.39E-11			
Benzo(ghi)perylene	1.69E-11			
Benzo(k)fluoranthene	3.97E-11			
Chrysene	3.63E-11			
Di-n-butyl phthalate	5.61E-11			

Current Industrial Excess Lifetime Cancer Risks

---------- SECTOR=East PATHWAY=Current Industrial Inhalation of Soil ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Dibenz(a,h)anthracene	7.31E-12			
Fluoranthene	9.59E-11			
Fluorene	4.11E-12			
Indeno(1,2,3-cd)pyrene	1.92E-11			
PCB-1260	1.51E-10			
Phenanthrene	5.30E-11			
Polychlorinated biphenyl	4.57E-10			
Pyrene	8.22E-11			
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-235				
Uranium-238				
Pathway Total				3.04E-07

---------- SECTOR=Far East/Northeast PATHWAY=Current Industrial Dermal Contact with Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	2.91E-02	1.00E-01	2.91E-01	
Antimony	6.10E-06	8.00E-06	7.63E-01	
Chromium	2.19E-05	1.00E-04	2.19E-01	
Uranium	5.51E-05	2.55E-03	2.16E-02	
Benz(a)anthracene	1.68E-07			
Benzo(a)pyrene	1.68E-07			
Benzo(b)fluoranthene	1.68E-07			
Benzo(k)fluoranthene	2.10E-07			
Chrysene	1.68E-07			
Fluoranthene	3.57E-07	1.24E-02	2.88E-05	
PCB-1260	1.41E-08			
Phenanthrene	1.68E-07			
Polychlorinated biphenyl	1.41E-08			
Pyrene	2.03E-07	9.30E-03	2.18E-05	
Alpha activity				
Beta activity				
Uranium-235				
Uranium-238				
Pathway Total				1.29E+00

---------- SECTOR=Far East/Northeast PATHWAY=Current Industrial Ingestion of Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	6.77E-03	1.00E+00	6.77E-03	
Antimony	1.42E-06	4.00E-04	3.55E-03	
Chromium	5.08E-06	5.00E-03	1.02E-03	
Uranium	1.28E-05	3.00E-03	4.27E-03	
Benz(a)anthracene	1.96E-08			
Benzo(a)pyrene	1.96E-08			
Benzo(b)fluoranthene	1.96E-08			
Benzo(k)fluoranthene	2.45E-08			
Chrysene	1.96E-08			
Fluoranthene	4.15E-08	4.00E-02	1.04E-06	

Current Industrial Excess Lifetime Cancer Risks

---------- SECTOR=Far East/Northeast PATHWAY=Current Industrial Ingestion of Soil ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
PCB-1260	2.74E-09			
Phenanthrene	1.96E-08			
Polychlorinated biphenyl	2.74E-09			
Pyrene	2.36E-08	3.00E-02	7.87E-07	
Alpha activity				
Beta activity				
Uranium-235				
Uranium-238				
Pathway Total				1.56E-02

---------- SECTOR=Far East/Northeast PATHWAY=Current Industrial Inhalation of Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	6.32E-07			
Antimony	1.32E-10			
Chromium	4.75E-10			
Uranium	1.20E-09			
Benz(a)anthracene	1.83E-12			
Benzo(a)pyrene	1.83E-12			
Benzo(b)fluoranthene	1.83E-12			
Benzo(k)fluoranthene	2.28E-12			
Chrysene	1.83E-12			
Fluoranthene	3.88E-12			
PCB-1260	2.56E-13			
Phenanthrene	1.83E-12			
Polychlorinated biphenyl	2.56E-13			
Pyrene	2.21E-12			
Alpha activity				
Beta activity				
Uranium-235				
Uranium-238				
Pathway Total				

---------- SECTOR=Far North/Northwest PATHWAY=Current Industrial Dermal Contact with Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Antimony	2.95E-06	8.00E-06	3.68E-01	
Beryllium	1.45E-06	5.00E-05	2.90E-02	
Cadmium	1.26E-07	1.00E-05	1.26E-02	
Chromium	5.72E-05	1.00E-04	5.72E-01	
Thallium	6.31E-07			
Uranium	2.91E-05	2.55E-03	1.14E-02	
Acenaphthene	2.10E-07	1.86E-02	1.13E-05	
Anthracene	6.73E-07	2.28E-01	2.95E-06	
Benz(a)anthracene	1.43E-06			
Benzo(a)pyrene	1.18E-06			
Benzo(b)fluoranthene	1.09E-06			
Benzo(ghi)perylene	5.47E-07			
Benzo(k)fluoranthene	1.22E-06			
Bis(2-ethylhexyl)phthalate	3.37E-07	3.80E-03	8.86E-05	
Chrysene	1.47E-06			
Di-n-butyl phthalate	1.68E-07	1.00E-01	1.68E-06	

Current Industrial Excess Lifetime Cancer Risks

---------- SECTOR=Far North/Northwest PATHWAY=Current Industrial Dermal Contact with Soil ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Fluoranthene	3.53E-06	1.24E-02	2.85E-04	
Fluorene	2.10E-07	2.00E-02	1.05E-05	
Indeno(1,2,3-cd)pyrene	5.89E-07			
Phenanthrene	1.70E-06			
Pyrene	1.65E-06	9.30E-03	1.77E-04	
Alpha activity				
Beta activity				
Neptunium-237				
Uranium-235				
Uranium-238				
Pathway Total				9.94E-01

---------- SECTOR=Far North/Northwest PATHWAY=Current Industrial Ingestion of Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Antimony	6.85E-07	4.00E-04	1.71E-03	
Beryllium	3.38E-07	5.00E-03	6.75E-05	
Cadmium	1.47E-07	1.00E-03	1.47E-04	
Chromium	1.33E-05	5.00E-03	2.66E-03	
Thallium	1.47E-07			
Uranium	6.76E-06	3.00E-03	2.25E-03	
Acenaphthene	2.45E-08	6.00E-02	4.08E-07	
Anthracene	7.83E-08	3.00E-01	2.61E-07	
Benz(a)anthracene	1.66E-07			
Benzo(a)pyrene	1.37E-07			
Benzo(b)fluoranthene	1.27E-07			
Benzo(ghi)perylene	6.36E-08			
Benzo(k)fluoranthene	1.42E-07			
Bis(2-ethylhexyl)phthalate	3.91E-08	2.00E-02	1.96E-06	
Chrysene	1.71E-07			
Di-n-butyl phthalate	1.96E-08	1.00E-01	1.96E-07	
Fluoranthene	4.11E-07	4.00E-02	1.03E-05	
Fluorene	2.45E-08	4.00E-02	6.12E-07	
Indeno(1,2,3-cd)pyrene	6.85E-08			
Phenanthrene	1.98E-07			
Pyrene	1.92E-07	3.00E-02	6.39E-06	
Alpha activity				
Beta activity				
Neptunium-237				
Uranium-235				
Uranium-238				
Pathway Total				6.86E-03

---------- SECTOR=Far North/Northwest PATHWAY=Current Industrial Inhalation of Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Antimony	6.39E-11			
Beryllium	3.15E-11			
Cadmium	1.37E-11	5.71E-05	2.40E-07	
Chromium	1.24E-09			
Thallium	1.37E-11			
Uranium	6.31E-10			

Current Industrial Excess Lifetime Cancer Risks

---------- SECTOR=Far North/Northwest PATHWAY=Current Industrial Inhalation of Soil ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Acenaphthene	2.28E-12			
Anthracene	7.31E-12			
Benz(a)anthracene	1.55E-11			
Benzo(a)pyrene	1.28E-11			
Benzo(b)fluoranthene	1.19E-11			
Benzo(ghi)perylene	5.94E-12			
Benzo(k)fluoranthene	1.32E-11			
Bis(2-ethylhexyl)phthalate	3.65E-12			
Chrysene	1.60E-11			
Di-n-butyl phthalate	1.83E-12			
Fluoranthene	3.84E-11			
Fluorene	2.28E-12			
Indeno(1,2,3-cd)pyrene	6.39E-12			
Phenanthrene	1.85E-11			
Pyrene	1.79E-11			
Alpha activity				
Beta activity				
Neptunium-237				
Uranium-235				
Uranium-238				
Pathway Total				2.40E-07

---------- SECTOR=Northeast PATHWAY=Current Industrial Dermal Contact with Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Chromium	4.06E-05	1.00E-04	4.06E-01	
Uranium	2.91E-05	2.55E-03	1.14E-02	
Zinc	1.48E-04	6.00E-02	2.46E-03	
Acenaphthene	1.68E-07	1.86E-02	9.05E-06	
Anthracene	3.37E-07	2.28E-01	1.48E-06	
Benz(a)anthracene	1.47E-06			
Benzo(a)pyrene	1.26E-06			
Benzo(b)fluoranthene	1.81E-06			
Benzo(ghi)perylene	7.15E-07			
Benzo(k)fluoranthene	1.18E-06			
Chrysene	1.68E-06			
Fluoranthene	3.62E-06	1.24E-02	2.92E-04	
Indeno(1,2,3-cd)pyrene	7.57E-07			
PCB-1260	1.09E-07			
Phenanthrene	1.98E-06			
Polychlorinated biphenyl	1.09E-07			
Pyrene	2.86E-06	9.30E-03	3.08E-04	
Alpha activity				
Beta activity				
Uranium-235				
Uranium-238				
Pathway Total				4.20E-01

---------- SECTOR=Northeast PATHWAY=Current Industrial Ingestion of Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Chromium	9.44E-06	5.00E-03	1.89E-03	

Current Industrial Excess Lifetime Cancer Risks

---------- SECTOR=Northeast PATHWAY=Current Industrial Ingestion of Soil ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Uranium	6.76E-06	3.00E-03	2.25E-03	
Zinc	3.43E-05	3.00E-01	1.14E-04	
Acenaphthene	1.96E-08	6.00E-02	3.26E-07	
Anthracene	3.91E-08	3.00E-01	1.30E-07	
Benz(a)anthracene	1.71E-07			
Benzo(a)pyrene	1.47E-07			
Benzo(b)fluoranthene	2.10E-07			
Benzo(ghi)perylene	8.32E-08			
Benzo(k)fluoranthene	1.37E-07			
Chrysene	1.96E-07			
Fluoranthene	4.21E-07	4.00E-02	1.05E-05	
Indeno(1,2,3-cd)pyrene	8.81E-08			
PCB-1260	2.10E-08			
Phenanthrene	2.30E-07			
Polychlorinated biphenyl	2.10E-08			
Pyrene	3.33E-07	3.00E-02	1.11E-05	
Alpha activity				
Beta activity				
Uranium-235				
Uranium-238				
Pathway Total				4.28E-03

---------- SECTOR=Northeast PATHWAY=Current Industrial Inhalation of Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Chromium	8.82E-10			
Uranium	6.31E-10			
Zinc	3.21E-09			
Acenaphthene	1.83E-12			
Anthracene	3.65E-12			
Benz(a)anthracene	1.60E-11			
Benzo(a)pyrene	1.37E-11			
Benzo(b)fluoranthene	1.96E-11			
Benzo(ghi)perylene	7.76E-12			
Benzo(k)fluoranthene	1.28E-11			
Chrysene	1.83E-11			
Fluoranthene	3.93E-11			
Indeno(1,2,3-cd)pyrene	8.22E-12			
PCB-1260	1.96E-12			
Phenanthrene	2.15E-11			
Polychlorinated biphenyl	1.96E-12			
Pyrene	3.11E-11			
Alpha activity				
Beta activity				
Uranium-235				
Uranium-238				
Pathway Total				

---------- SECTOR=Northwest PATHWAY=Current Industrial Dermal Contact with Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Antimony	8.43E-07	8.00E-06	1.05E-01	

Current Industrial Excess Lifetime Cancer Risks

---------- SECTOR=Northwest PATHWAY=Current Industrial Dermal Contact with Soil ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Beryllium	6.80E-07	5.00E-05	1.36E-02	
Cadmium	8.55E-08	1.00E-05	8.55E-03	
Chromium	4.26E-05	1.00E-04	4.26E-01	
Iron	2.57E-02	4.50E-02	5.70E-01	
Lead	2.74E-05	1.50E-08	1.83E+03	
Vanadium	3.47E-05	7.00E-05	4.96E-01	
Benz(a)anthracene	1.26E-06			
Benzo(a)pyrene	1.68E-06			
Benzo(b)fluoranthene	2.22E-06			
Benzo(k)fluoranthene	1.26E-06			
Chrysene	1.22E-06			
Fluoranthene	1.68E-06	1.24E-02	1.36E-04	
Pyrene	1.68E-06	9.30E-03	1.81E-04	
Alpha activity				
Beta activity				
Uranium-238				
Pathway Total				1.83E+03

---------- SECTOR=Northwest PATHWAY=Current Industrial Ingestion of Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Antimony	1.96E-07	4.00E-04	4.90E-04	
Beryllium	1.58E-07	5.00E-03	3.16E-05	
Cadmium	9.94E-08	1.00E-03	9.94E-05	
Chromium	9.91E-06	5.00E-03	1.98E-03	
Iron	5.97E-03	3.00E-01	1.99E-02	
Lead	6.37E-06	1.00E-07	6.37E+01	
Vanadium	8.08E-06	7.00E-03	1.15E-03	
Benz(a)anthracene	1.47E-07			
Benzo(a)pyrene	1.96E-07			
Benzo(b)fluoranthene	2.59E-07			
Benzo(k)fluoranthene	1.47E-07			
Chrysene	1.42E-07			
Fluoranthene	1.96E-07	4.00E-02	4.89E-06	
Pyrene	1.96E-07	3.00E-02	6.52E-06	
Alpha activity				
Beta activity				
Uranium-238				
Pathway Total				6.37E+01

---------- SECTOR=Northwest PATHWAY=Current Industrial Inhalation of Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Antimony	1.83E-11			
Beryllium	1.48E-11			
Cadmium	9.28E-12	5.71E-05	1.63E-07	
Chromium	9.25E-10			
Iron	5.57E-07			
Lead	5.94E-10	2.86E-04	2.08E-06	
Vanadium	7.54E-10			
Benz(a)anthracene	1.37E-11			
Benzo(a)pyrene	1.83E-11			

Current Industrial Excess Lifetime Cancer Risks

---------- SECTOR=Northwest PATHWAY=Current Industrial Inhalation of Soil ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Benzo(b)fluoranthene	2.41E-11			
Benzo(k)fluoranthene	1.37E-11			
Chrysene	1.32E-11			
Fluoranthene	1.83E-11			
Pyrene	1.83E-11			
Alpha activity				
Beta activity				
Uranium-238				
Pathway Total				2.24E-06

---------- SECTOR=Southeast PATHWAY=Current Industrial Dermal Contact with Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	2.99E-02	1.00E-01	2.99E-01	
Antimony	1.26E-06	8.00E-06	1.58E-01	
Cadmium	1.47E-07	1.00E-05	1.47E-02	
Chromium	4.96E-05	1.00E-04	4.96E-01	
Benz(a)anthracene	2.95E-07			
Benzo(a)pyrene	3.37E-07			
Benzo(b)fluoranthene	2.95E-07			
Benzo(k)fluoranthene	2.52E-07			
Chrysene	3.37E-07			
Fluoranthene	6.31E-07	1.24E-02	5.09E-05	
PCB-1262	9.59E-08			
Phenanthrene	2.95E-07			
Polychlorinated biphenyl	9.59E-08			
Pyrene	5.05E-07	9.30E-03	5.43E-05	
Alpha activity				
Beta activity				
Pathway Total				9.68E-01

---------- SECTOR=Southeast PATHWAY=Current Industrial Ingestion of Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	6.95E-03	1.00E+00	6.95E-03	
Antimony	2.94E-07	4.00E-04	7.34E-04	
Cadmium	1.71E-07	1.00E-03	1.71E-04	
Chromium	1.15E-05	5.00E-03	2.31E-03	
Benz(a)anthracene	3.42E-08			
Benzo(a)pyrene	3.91E-08			
Benzo(b)fluoranthene	3.42E-08			
Benzo(k)fluoranthene	2.94E-08			
Chrysene	3.91E-08			
Fluoranthene	7.34E-08	4.00E-02	1.83E-06	
PCB-1262	1.86E-08			
Phenanthrene	3.42E-08			
Polychlorinated biphenyl	1.86E-08			
Pyrene	5.87E-08	3.00E-02	1.96E-06	
Alpha activity				
Beta activity				
Pathway Total				1.02E-02

Current Industrial Excess Lifetime Cancer Risks

---------- SECTOR=Southeast PATHWAY=Current Industrial Inhalation of Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	6.49E-07			
Antimony	2.74E-11			
Cadmium	1.60E-11	5.71E-05	2.80E-07	
Chromium	1.08E-09			
Benz(a)anthracene	3.20E-12			
Benzo(a)pyrene	3.65E-12			
Benzo(b)fluoranthene	3.20E-12			
Benzo(k)fluoranthene	2.74E-12			
Chrysene	3.65E-12			
Fluoranthene	6.85E-12			
PCB-1262	1.74E-12			
Phenanthrene	3.20E-12			
Polychlorinated biphenyl	1.74E-12			
Pyrene	5.48E-12			
Alpha activity				
Beta activity				
Pathway Total				2.80E-07

---------- SECTOR=Southwest PATHWAY=Current Industrial Dermal Contact with Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Antimony	3.05E-06	8.00E-06	3.82E-01	
Beryllium	7.93E-07	5.00E-05	1.59E-02	
Cadmium	1.53E-07	1.00E-05	1.53E-02	
Chromium	4.47E-05	1.00E-04	4.47E-01	
Iron	3.58E-02	4.50E-02	7.95E-01	
Thallium	1.48E-06			
Uranium	1.05E-04	2.55E-03	4.14E-02	
Zinc	1.06E-04	6.00E-02	1.76E-03	
Acenaphthene	4.16E-06	1.86E-02	2.24E-04	
Acenaphthylene	9.26E-07			
Anthracene	7.65E-06	2.28E-01	3.36E-05	
Benz(a)anthracene	2.11E-05			
Benzo(a)pyrene	2.03E-05			
Benzo(b)fluoranthene	2.15E-05			
Benzo(ghi)perylene	9.95E-06			
Benzo(k)fluoranthene	1.42E-05			
Bis(2-ethylhexyl)phthalate	3.37E-07	3.80E-03	8.86E-05	
Chrysene	1.90E-05			
Dibenz(a,h)anthracene	5.47E-06			
Fluoranthene	4.59E-05	1.24E-02	3.70E-03	
Fluorene	5.05E-06	2.00E-02	2.52E-04	
Indeno(1,2,3-cd)pyrene	7.59E-06			
Naphthalene	1.01E-08	2.86E-02	3.54E-07	
PCB-1260	9.59E-08			
Phenanthrene	2.41E-05			
Polychlorinated biphenyl	9.59E-08			
Pyrene	3.87E-05	9.30E-03	4.16E-03	
Alpha activity				
Beta activity				
Neptunium-237				
Uranium-235				
Uranium-238				
Pathway Total				1.71E+00

Current Industrial Excess Lifetime Cancer Risks

---------- SECTOR=Southwest PATHWAY=Current Industrial Ingestion of Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Antimony	7.10E-07	4.00E-04	1.78E-03	
Beryllium	1.84E-07	5.00E-03	3.69E-05	
Cadmium	1.77E-07	1.00E-03	1.77E-04	
Chromium	1.04E-05	5.00E-03	2.08E-03	
Iron	8.32E-03	3.00E-01	2.77E-02	
Thallium	3.44E-07			
Uranium	2.45E-05	3.00E-03	8.18E-03	
Zinc	2.46E-05	3.00E-01	8.20E-05	
Acenaphthene	4.84E-07	6.00E-02	8.07E-06	
Acenaphthylene	1.08E-07			
Anthracene	8.90E-07	3.00E-01	2.97E-06	
Benz(a)anthracene	2.45E-06			
Benzo(a)pyrene	2.37E-06			
Benzo(b)fluoranthene	2.50E-06			
Benzo(ghi)perylene	1.16E-06			
Benzo(k)fluoranthene	1.65E-06			
Bis(2-ethylhexyl)phthalate	3.91E-08	2.00E-02	1.96E-06	
Chrysene	2.21E-06			
Dibenz(a,h)anthracene	6.36E-07			
Fluoranthene	5.34E-06	4.00E-02	1.33E-04	
Fluorene	5.87E-07	4.00E-02	1.47E-05	
Indeno(1,2,3-cd)pyrene	8.82E-07			
Naphthalene	1.17E-09	3.57E-02	3.29E-08	
PCB-1260	1.86E-08			
Phenanthrene	2.80E-06			
Polychlorinated biphenyl	1.86E-08			
Pyrene	4.50E-06	3.00E-02	1.50E-04	
Alpha activity				
Beta activity				
Neptunium-237				
Uranium-235				
Uranium-238				
Pathway Total				4.04E-02

---------- SECTOR=Southwest PATHWAY=Current Industrial Inhalation of Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Antimony	6.63E-11			
Beryllium	1.72E-11			
Cadmium	1.66E-11	5.71E-05	2.90E-07	
Chromium	9.70E-10			
Iron	7.77E-07			
Thallium	3.21E-11			
Uranium	2.29E-09			
Zinc	2.30E-09			
Acenaphthene	4.52E-11			
Acenaphthylene	1.00E-11			
Anthracene	8.31E-11			
Benz(a)anthracene	2.29E-10			
Benzo(a)pyrene	2.21E-10			
Benzo(b)fluoranthene	2.34E-10			
Benzo(ghi)perylene	1.08E-10			
Benzo(k)fluoranthene	1.54E-10			
Bis(2-ethylhexyl)phthalate	3.65E-12			
Chrysene	2.06E-10			
Dibenz(a,h)anthracene	5.94E-11			
Fluoranthene	4.98E-10			

Current Industrial Excess Lifetime Cancer Risks

---------- SECTOR=Southwest PATHWAY=Current Industrial Inhalation of Soil ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Fluorene	5.48E-11			
Indeno(1,2,3-cd)pyrene	8.24E-11			
Naphthalene	1.10E-13			
PCB-1260	1.74E-12			
Phenanthrene	2.61E-10			
Polychlorinated biphenyl	1.74E-12			
Pyrene	4.20E-10			
Alpha activity				
Beta activity				
Neptunium-237				
Uranium-235				
Uranium-238				
Pathway Total				2.90E-07

---------- SECTOR=West PATHWAY=Current Industrial Dermal Contact with Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	1.53E-02	1.00E-01	1.53E-01	
Antimony	2.09E-06	8.00E-06	2.61E-01	
Arsenic	2.78E-05	1.23E-04	2.26E-01	
Beryllium	6.62E-07	5.00E-05	1.32E-02	
Cadmium	3.81E-07	1.00E-05	3.81E-02	
Chromium	2.64E-05	1.00E-04	2.64E-01	
Cobalt	9.98E-06	4.80E-02	2.08E-04	
Uranium	7.63E-05	2.55E-03	2.99E-02	
Zinc	6.31E-05	6.00E-02	1.05E-03	
2-Methylnaphthalene	3.79E-06			
Acenaphthene	1.42E-05	1.86E-02	7.61E-04	
Anthracene	6.13E-05	2.28E-01	2.69E-04	
Benz(a)anthracene	8.47E-05			
Benzo(a)pyrene	7.62E-05			
Benzo(b)fluoranthene	9.48E-05			
Benzo(ghi)perylene	1.56E-05			
Benzo(k)fluoranthene	9.35E-05			
Bis(2-ethylhexyl)phthalate	4.21E-07	3.80E-03	1.11E-04	
Chrysene	9.12E-05			
Di-n-butyl phthalate	8.63E-07	1.00E-01	8.63E-06	
Dibenz(a,h)anthracene	1.58E-05			
Fluoranthene	1.90E-04	1.24E-02	1.53E-02	
Fluorene	1.32E-05	2.00E-02	6.58E-04	
Indeno(1,2,3-cd)pyrene	1.60E-05			
Naphthalene	6.11E-06	2.86E-02	2.14E-04	
PCB-1254	2.42E-06	1.80E-05	1.35E-01	
PCB-1260	4.04E-08			
Phenanthrene	1.47E-04			
Polychlorinated biphenyl	1.42E-06			
Pyrene	1.66E-04	9.30E-03	1.79E-02	
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				1.16E+00

Current Industrial Excess Lifetime Cancer Risks

---------- SECTOR=West PATHWAY=Current Industrial Ingestion of Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	3.56E-03	1.00E+00	3.56E-03	
Antimony	4.85E-07	4.00E-04	1.21E-03	
Arsenic	6.45E-06	3.00E-04	2.15E-02	
Beryllium	1.54E-07	5.00E-03	3.08E-05	
Cadmium	4.43E-07	1.00E-03	4.43E-04	
Chromium	6.14E-06	5.00E-03	1.23E-03	
Cobalt	2.32E-06	6.00E-02	3.87E-05	
Uranium	1.78E-05	3.00E-03	5.92E-03	
Zinc	1.47E-05	3.00E-01	4.89E-05	
2-Methylnaphthalene	4.40E-07			
Acenaphthene	1.65E-06	6.00E-02	2.74E-05	
Anthracene	7.13E-06	3.00E-01	2.38E-05	
Benz(a)anthracene	9.85E-06			
Benzo(a)pyrene	8.86E-06			
Benzo(b)fluoranthene	1.10E-05			
Benzo(ghi)perylene	1.81E-06			
Benzo(k)fluoranthene	1.09E-05			
Bis(2-ethylhexyl)phthalate	4.89E-08	2.00E-02	2.45E-06	
Chrysene	1.06E-05			
Di-n-butyl phthalate	1.00E-07	1.00E-01	1.00E-06	
Dibenz(a,h)anthracene	1.84E-06			
Fluoranthene	2.21E-05	4.00E-02	5.52E-04	
Fluorene	1.53E-06	4.00E-02	3.82E-05	
Indeno(1,2,3-cd)pyrene	1.86E-06			
Naphthalene	7.11E-07	3.57E-02	1.99E-05	
PCB-1254	4.70E-07	2.00E-05	2.35E-02	
PCB-1260	7.83E-09			
Phenanthrene	1.71E-05			
Polychlorinated biphenyl	2.74E-07			
Pyrene	1.93E-05	3.00E-02	6.44E-04	
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				5.88E-02

---------- SECTOR=West PATHWAY=Current Industrial Inhalation of Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	3.32E-07			
Antimony	4.53E-11			
Arsenic	6.03E-10			
Beryllium	1.44E-11			
Cadmium	4.13E-11	5.71E-05	7.24E-07	
Chromium	5.73E-10			
Cobalt	2.17E-10			
Uranium	1.66E-09			
Zinc	1.37E-09			
2-Methylnaphthalene	4.11E-11			
Acenaphthene	1.54E-10			
Anthracene	6.66E-10			
Benz(a)anthracene	9.19E-10			
Benzo(a)pyrene	8.27E-10			
Benzo(b)fluoranthene	1.03E-09			

Current Industrial Excess Lifetime Cancer Risks

---------- SECTOR=West PATHWAY=Current Industrial Inhalation of Soil ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Benzo(ghi)perylene	1.69E-10			
Benzo(k)fluoranthene	1.01E-09			
Bis(2-ethylhexyl)phthalate	4.57E-12			
Chrysene	9.91E-10			
Di-n-butyl phthalate	9.36E-12			
Dibenz(a,h)anthracene	1.71E-10			
Fluoranthene	2.06E-09			
Fluorene	1.43E-10			
Indeno(1,2,3-cd)pyrene	1.74E-10			
Naphthalene	6.63E-11			
PCB-1254	4.38E-11			
PCB-1260	7.31E-13			
Phenanthrene	1.60E-09			
Polychlorinated biphenyl	2.56E-11			
Pyrene	1.80E-09			
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				7.24E-07

Current Industrial Excess Lifetime Cancer Risks

---------- SECTOR=Central PATHWAY=Current Industrial Dermal Contact with Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Di-n-butyl phthalate	1.80E-06			
Alpha activity				
Beta activity				
Pathway Total				

---------- SECTOR=Central PATHWAY=Current Industrial External Exposure to Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Di-n-butyl phthalate				
Alpha activity	4.74E+01			
Beta activity	1.22E+02			
Pathway Total				

---------- SECTOR=Central PATHWAY=Current Industrial Ingestion of Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Di-n-butyl phthalate	2.10E-07			
Alpha activity	3.24E+03			
Beta activity	8.37E+03			
Pathway Total				

---------- SECTOR=Central PATHWAY=Current Industrial Inhalation of Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Di-n-butyl phthalate	1.96E-11			
Alpha activity				
Beta activity				
Pathway Total				

---------- SECTOR=East PATHWAY=Current Industrial Dermal Contact with Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Cadmium	5.71E-08			
Chromium	1.02E-05			
Thallium	9.02E-07			
Uranium	2.05E-05			
Acenaphthene	1.95E-07			
Anthracene	3.31E-07			
Benz(a)anthracene	1.08E-06	2.35E+00	2.55E-06	
Benzo(a)pyrene	1.19E-06	2.35E+01	2.81E-05	
Benzo(b)fluoranthene	2.10E-06	2.35E+00	4.95E-06	
Benzo(ghi)perylene	5.56E-07			
Benzo(k)fluoranthene	1.31E-06	2.35E-01	3.08E-07	
Chrysene	1.19E-06	2.35E-02	2.81E-08	
Di-n-butyl phthalate	1.85E-06			

Current Industrial Excess Lifetime Cancer Risks

---------- SECTOR=East PATHWAY=Current Industrial Dermal Contact with Soil ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Dibenz(a,h)anthracene	2.40E-07	2.35E+01	5.66E-06	
Fluoranthene	3.16E-06			
Fluorene	1.35E-07			
Indeno(1,2,3-cd)pyrene	6.31E-07	2.35E+00	1.49E-06	
PCB-1260	2.98E-06	2.22E+00	6.61E-06	
Phenanthrene	1.74E-06			
Polychlorinated biphenyl	9.02E-06	2.22E+00	2.00E-05	
Pyrene	2.70E-06			
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-235				
Uranium-238				
Pathway Total				6.98E-05

---------- SECTOR=East PATHWAY=Current Industrial External Exposure to Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Cadmium				
Chromium				
Thallium				
Uranium				
Acenaphthene				
Anthracene				
Benz(a)anthracene				
Benzo(a)pyrene				
Benzo(b)fluoranthene				
Benzo(ghi)perylene				
Benzo(k)fluoranthene				
Chrysene				
Di-n-butyl phthalate				
Dibenz(a,h)anthracene				
Fluoranthene				
Fluorene				
Indeno(1,2,3-cd)pyrene				
PCB-1260				
Phenanthrene				
Polychlorinated biphenyl				
Pyrene				
Alpha activity	1.52E+02			
Beta activity	1.95E+02			
Cesium-137	2.28E+00	2.09E-06	4.77E-06	
Neptunium-237	1.83E+00	4.62E-07	8.44E-07	
Uranium-235	1.83E+00	2.65E-07	4.84E-07	
Uranium-238	4.16E+01	6.57E-08	2.73E-06	
Pathway Total				8.83E-06

---------- SECTOR=East PATHWAY=Current Industrial Ingestion of Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Cadmium	6.64E-08			

Current Industrial Excess Lifetime Cancer Risks

---------- SECTOR=East PATHWAY=Current Industrial Ingestion of Soil ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Chromium	2.38E-06			
Thallium	2.10E-07			
Uranium	4.78E-06			
Acenaphthene	2.27E-08			
Anthracene	3.84E-08			
Benz(a)anthracene	1.26E-07	7.30E-01	9.21E-08	
Benzo(a)pyrene	1.39E-07	7.30E+00	1.01E-06	
Benzo(b)fluoranthene	2.45E-07	7.30E-01	1.79E-07	
Benzo(ghi)perylene	6.46E-08			
Benzo(k)fluoranthene	1.52E-07	7.30E-02	1.11E-08	
Chrysene	1.39E-07	7.30E-03	1.01E-09	
Di-n-butyl phthalate	2.15E-07			
Dibenz(a,h)anthracene	2.80E-08	7.30E+00	2.04E-07	
Fluoranthene	3.67E-07			
Fluorene	1.57E-08			
Indeno(1,2,3-cd)pyrene	7.34E-08	7.30E-01	5.36E-08	
PCB-1260	5.77E-07	2.00E+00	1.15E-06	
Phenanthrene	2.03E-07			
Polychlorinated biphenyl	1.75E-06	2.00E+00	3.49E-06	
Pyrene	3.15E-07			
Alpha activity	1.04E+04			
Beta activity	1.34E+04			
Cesium-137	1.56E+02	3.16E-11	4.94E-09	
Neptunium-237	1.25E+02	3.00E-10	3.75E-08	
Uranium-235	1.25E+02	4.70E-11	5.88E-09	
Uranium-238	2.84E+03	6.20E-11	1.76E-07	
Pathway Total				6.43E-06

---------- SECTOR=East PATHWAY=Current Industrial Inhalation of Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Cadmium	6.20E-12	6.10E+00	3.78E-11	
Chromium	2.22E-10	4.10E+01	9.11E-09	
Thallium	1.96E-11			
Uranium	4.46E-10			
Acenaphthene	2.12E-12			
Anthracene	3.59E-12			
Benz(a)anthracene	1.18E-11	3.10E-01	3.65E-12	
Benzo(a)pyrene	1.30E-11	3.10E+00	4.02E-11	
Benzo(b)fluoranthene	2.28E-11	3.10E-01	7.08E-12	
Benzo(ghi)perylene	6.04E-12			
Benzo(k)fluoranthene	1.42E-11	3.10E-02	4.40E-13	
Chrysene	1.30E-11	3.10E-03	4.02E-14	
Di-n-butyl phthalate	2.00E-11			
Dibenz(a,h)anthracene	2.61E-12	3.10E+00	8.09E-12	
Fluoranthene	3.43E-11			
Fluorene	1.47E-12			
Indeno(1,2,3-cd)pyrene	6.85E-12	3.10E-01	2.12E-12	
PCB-1260	5.38E-11	2.00E+00	1.08E-10	
Phenanthrene	1.89E-11			
Polychlorinated biphenyl	1.63E-10	2.00E+00	3.26E-10	
Pyrene	2.94E-11			
Alpha activity				
Beta activity				
Cesium-137	1.46E-02	1.91E-11	2.79E-13	
Neptunium-237	1.17E-02	3.45E-08	4.03E-10	

Current Industrial Excess Lifetime Cancer Risks

---------- SECTOR=East PATHWAY=Current Industrial Inhalation of Soil ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Uranium-235	1.17E-02	1.30E-08	1.52E-10	
Uranium-238	2.65E-01	1.24E-08	3.29E-09	
Pathway Total				1.35E-08

---------- SECTOR=Far East/Northeast PATHWAY=Current Industrial Dermal Contact with Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	1.04E-02			
Antimony	2.18E-06			
Chromium	7.81E-06			
Uranium	1.97E-05			
Benz(a)anthracene	6.01E-08	2.35E+00	1.42E-07	
Benzo(a)pyrene	6.01E-08	2.35E+01	1.42E-06	
Benzo(b)fluoranthene	6.01E-08	2.35E+00	1.42E-07	
Benzo(k)fluoranthene	7.51E-08	2.35E-01	1.77E-08	
Chrysene	6.01E-08	2.35E-02	1.42E-09	
Fluoranthene	1.28E-07			
PCB-1260	5.05E-09	2.22E+00	1.12E-08	
Phenanthrene	6.01E-08			
Polychlorinated biphenyl	5.05E-09	2.22E+00	1.12E-08	
Pyrene	7.26E-08			
Alpha activity				
Beta activity				
Uranium-235				
Uranium-238				
Pathway Total				1.74E-06

---------- SECTOR=Far East/Northeast PATHWAY=Current Industrial External Exposure to Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum				
Antimony				
Chromium				
Uranium				
Benz(a)anthracene				
Benzo(a)pyrene				
Benzo(b)fluoranthene				
Benzo(k)fluoranthene				
Chrysene				
Fluoranthene				
PCB-1260				
Phenanthrene				
Polychlorinated biphenyl				
Pyrene				
Alpha activity	1.02E+02			
Beta activity	2.01E+02			
Uranium-235	2.28E+00	2.65E-07	6.05E-07	
Uranium-238	3.97E+01	6.57E-08	2.61E-06	
Pathway Total				3.22E-06

Current Industrial Excess Lifetime Cancer Risks

---------- SECTOR=Far East/Northeast PATHWAY=Current Industrial Ingestion of Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	2.42E-03			
Antimony	5.07E-07			
Chromium	1.82E-06			
Uranium	4.58E-06			
Benz(a)anthracene	6.99E-09	7.30E-01	5.10E-09	
Benzo(a)pyrene	6.99E-09	7.30E+00	5.10E-08	
Benzo(b)fluoranthene	6.99E-09	7.30E-01	5.10E-09	
Benzo(k)fluoranthene	8.74E-09	7.30E-02	6.38E-10	
Chrysene	6.99E-09	7.30E-03	5.10E-11	
Fluoranthene	1.48E-08			
PCB-1260	9.78E-10	2.00E+00	1.96E-09	
Phenanthrene	6.99E-09			
Polychlorinated biphenyl	9.78E-10	2.00E+00	1.96E-09	
Pyrene	8.44E-09			
Alpha activity	6.96E+03			
Beta activity	1.38E+04			
Uranium-235	1.56E+02	4.70E-11	7.34E-09	
Uranium-238	2.72E+03	6.20E-11	1.69E-07	
Pathway Total				2.42E-07

---------- SECTOR=Far East/Northeast PATHWAY=Current Industrial Inhalation of Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	2.26E-07			
Antimony	4.73E-11			
Chromium	1.70E-10	4.10E+01	6.95E-09	
Uranium	4.27E-10			
Benz(a)anthracene	6.53E-13	3.10E-01	2.02E-13	
Benzo(a)pyrene	6.53E-13	3.10E+00	2.02E-12	
Benzo(b)fluoranthene	6.53E-13	3.10E-01	2.02E-13	
Benzo(k)fluoranthene	8.16E-13	3.10E-02	2.53E-14	
Chrysene	6.53E-13	3.10E-03	2.02E-15	
Fluoranthene	1.38E-12			
PCB-1260	9.14E-14	2.00E+00	1.83E-13	
Phenanthrene	6.53E-13			
Polychlorinated biphenyl	9.14E-14	2.00E+00	1.83E-13	
Pyrene	7.88E-13			
Alpha activity				
Beta activity				
Uranium-235	1.46E-02	1.30E-08	1.90E-10	
Uranium-238	2.54E-01	1.24E-08	3.15E-09	
Pathway Total				1.03E-08

---------- SECTOR=Far North/Northwest PATHWAY=Current Industrial Dermal Contact with Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Antimony	1.05E-06			
Beryllium	5.18E-07	4.30E+02	2.23E-04	
Cadmium	4.51E-08			
Chromium	2.04E-05			
Thallium	2.25E-07			
Uranium	1.04E-05			
Acenaphthene	7.51E-08			

Current Industrial Excess Lifetime Cancer Risks

---------- SECTOR=Far North/Northwest PATHWAY=Current Industrial Dermal Contact with Soil ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Anthracene	2.40E-07			
Benz(a)anthracene	5.11E-07	2.35E+00	1.20E-06	
Benzo(a)pyrene	4.21E-07	2.35E+01	9.91E-06	
Benzo(b)fluoranthene	3.91E-07	2.35E+00	9.20E-07	
Benzo(ghi)perylene	1.95E-07			
Benzo(k)fluoranthene	4.36E-07	2.35E-01	1.03E-07	
Bis(2-ethylhexyl)phthalate	1.20E-07	7.37E-02	8.86E-09	
Chrysene	5.26E-07	2.35E-02	1.24E-08	
Di-n-butyl phthalate	6.01E-08			
Fluoranthene	1.26E-06			
Fluorene	7.51E-08			
Indeno(1,2,3-cd)pyrene	2.10E-07	2.35E+00	4.95E-07	
Phenanthrene	6.08E-07			
Pyrene	5.88E-07			
Alpha activity				
Beta activity				
Neptunium-237				
Uranium-235				
Uranium-238				
Pathway Total				2.36E-04

---------- SECTOR=Far North/Northwest PATHWAY=Current Industrial External Exposure to Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Antimony				
Beryllium				
Cadmium				
Chromium				
Thallium				
Uranium				
Acenaphthene				
Anthracene				
Benz(a)anthracene				
Benzo(a)pyrene				
Benzo(b)fluoranthene				
Benzo(ghi)perylene				
Benzo(k)fluoranthene				
Bis(2-ethylhexyl)phthalate				
Chrysene				
Di-n-butyl phthalate				
Fluoranthene				
Fluorene				
Indeno(1,2,3-cd)pyrene				
Phenanthrene				
Pyrene				
Alpha activity	4.85E+01			
Beta activity	1.62E+02			
Neptunium-237	2.74E+00	4.62E-07	1.27E-06	
Uranium-235	9.13E-01	2.65E-07	2.42E-07	
Uranium-238	2.10E+01	6.57E-08	1.38E-06	
Pathway Total				2.89E-06

Current Industrial Excess Lifetime Cancer Risks

---------- SECTOR=Far North/Northwest PATHWAY=Current Industrial Ingestion of Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Antimony	2.45E-07			
Beryllium	1.21E-07	4.30E+00	5.18E-07	
Cadmium	5.24E-08			
Chromium	4.75E-06			
Thallium	5.24E-08			
Uranium	2.42E-06			
Acenaphthene	8.74E-09			
Anthracene	2.80E-08			
Benz(a)anthracene	5.94E-08	7.30E-01	4.34E-08	
Benzo(a)pyrene	4.89E-08	7.30E+00	3.57E-07	
Benzo(b)fluoranthene	4.54E-08	7.30E-01	3.32E-08	
Benzo(ghi)perylene	2.27E-08			
Benzo(k)fluoranthene	5.07E-08	7.30E-02	3.70E-09	
Bis(2-ethylhexyl)phthalate	1.40E-08	1.40E-02	1.96E-10	
Chrysene	6.12E-08	7.30E-03	4.46E-10	
Di-n-butyl phthalate	6.99E-09			
Fluoranthene	1.47E-07			
Fluorene	8.74E-09			
Indeno(1,2,3-cd)pyrene	2.45E-08	7.30E-01	1.79E-08	
Phenanthrene	7.07E-08			
Pyrene	6.84E-08			
Alpha activity	3.32E+03			
Beta activity	1.11E+04			
Neptunium-237	1.88E+02	3.00E-10	5.63E-08	
Uranium-235	6.25E+01	4.70E-11	2.94E-09	
Uranium-238	1.44E+03	6.20E-11	8.91E-08	
Pathway Total				1.12E-06

---------- SECTOR=Far North/Northwest PATHWAY=Current Industrial Inhalation of Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Antimony	2.28E-11			
Beryllium	1.13E-11	8.40E+00	9.45E-11	
Cadmium	4.89E-12	6.10E+00	2.99E-11	
Chromium	4.44E-10	4.10E+01	1.82E-08	
Thallium	4.89E-12			
Uranium	2.26E-10			
Acenaphthene	8.16E-13			
Anthracene	2.61E-12			
Benz(a)anthracene	5.55E-12	3.10E-01	1.72E-12	
Benzo(a)pyrene	4.57E-12	3.10E+00	1.42E-11	
Benzo(b)fluoranthene	4.24E-12	3.10E-01	1.31E-12	
Benzo(ghi)perylene	2.12E-12			
Benzo(k)fluoranthene	4.73E-12	3.10E-02	1.47E-13	
Bis(2-ethylhexyl)phthalate	1.31E-12			
Chrysene	5.71E-12	3.10E-03	1.77E-14	
Di-n-butyl phthalate	6.53E-13			
Fluoranthene	1.37E-11			
Fluorene	8.16E-13			
Indeno(1,2,3-cd)pyrene	2.28E-12	3.10E-01	7.08E-13	
Phenanthrene	6.60E-12			
Pyrene	6.39E-12			
Alpha activity				
Beta activity				
Neptunium-237	1.75E-02	3.45E-08	6.04E-10	
Uranium-235	5.84E-03	1.30E-08	7.59E-11	
Uranium-238	1.34E-01	1.24E-08	1.66E-09	

Current Industrial Excess Lifetime Cancer Risks

---------- SECTOR=Far North/Northwest PATHWAY=Current Industrial Inhalation of Soil ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Pathway Total				2.07E-08

---------- SECTOR=Northeast PATHWAY=Current Industrial Dermal Contact with Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Chromium	1.45E-05			
Uranium	1.04E-05			
Zinc	5.27E-05			
Acenaphthene	6.01E-08			
Anthracene	1.20E-07			
Benz(a)anthracene	5.26E-07	2.35E+00	1.24E-06	
Benzo(a)pyrene	4.51E-07	2.35E+01	1.06E-05	
Benzo(b)fluoranthene	6.46E-07	2.35E+00	1.52E-06	
Benzo(ghi)perylene	2.55E-07			
Benzo(k)fluoranthene	4.21E-07	2.35E-01	9.91E-08	
Chrysene	6.01E-07	2.35E-02	1.42E-08	
Fluoranthene	1.29E-06			
Indeno(1,2,3-cd)pyrene	2.70E-07	2.35E+00	6.37E-07	
PCB-1260	3.88E-08	2.22E+00	8.62E-08	
Phenanthrene	7.06E-07			
Polychlorinated biphenyl	3.88E-08	2.22E+00	8.62E-08	
Pyrene	1.02E-06			
Alpha activity				
Beta activity				
Uranium-235				
Uranium-238				
Pathway Total				1.43E-05

---------- SECTOR=Northeast PATHWAY=Current Industrial External Exposure to Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Chromium				
Uranium				
Zinc				
Acenaphthene				
Anthracene				
Benz(a)anthracene				
Benzo(a)pyrene				
Benzo(b)fluoranthene				
Benzo(ghi)perylene				
Benzo(k)fluoranthene				
Chrysene				
Fluoranthene				
Indeno(1,2,3-cd)pyrene				
PCB-1260				
Phenanthrene				
Polychlorinated biphenyl				
Pyrene				
Alpha activity	1.46E+02			
Beta activity	2.32E+02			
Uranium-235	9.13E-01	2.65E-07	2.42E-07	
Uranium-238	2.10E+01	6.57E-08	1.38E-06	

Current Industrial Excess Lifetime Cancer Risks

---------- SECTOR=Northeast PATHWAY=Current Industrial External Exposure to Soil ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Pathway Total				1.62E-06

---------- SECTOR=Northeast PATHWAY=Current Industrial Ingestion of Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Chromium	3.37E-06			
Uranium	2.42E-06			
Zinc	1.23E-05			
Acenaphthene	6.99E-09			
Anthracene	1.40E-08			
Benz(a)anthracene	6.12E-08	7.30E-01	4.46E-08	
Benzo(a)pyrene	5.24E-08	7.30E+00	3.83E-07	
Benzo(b)fluoranthene	7.51E-08	7.30E-01	5.48E-08	
Benzo(ghi)perylene	2.97E-08			
Benzo(k)fluoranthene	4.89E-08	7.30E-02	3.57E-09	
Chrysene	6.99E-08	7.30E-03	5.10E-10	
Fluoranthene	1.50E-07			
Indeno(1,2,3-cd)pyrene	3.15E-08	7.30E-01	2.30E-08	
PCB-1260	7.51E-09	2.00E+00	1.50E-08	
Phenanthrene	8.21E-08			
Polychlorinated biphenyl	7.51E-09	2.00E+00	1.50E-08	
Pyrene	1.19E-07			
Alpha activity	9.97E+03			
Beta activity	1.59E+04			
Uranium-235	6.25E+01	4.70E-11	2.94E-09	
Uranium-238	1.44E+03	6.20E-11	8.91E-08	
Pathway Total				6.31E-07

---------- SECTOR=Northeast PATHWAY=Current Industrial Inhalation of Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Chromium	3.15E-10	4.10E+01	1.29E-08	
Uranium	2.26E-10			
Zinc	1.15E-09			
Acenaphthene	6.53E-13			
Anthracene	1.31E-12			
Benz(a)anthracene	5.71E-12	3.10E-01	1.77E-12	
Benzo(a)pyrene	4.89E-12	3.10E+00	1.52E-11	
Benzo(b)fluoranthene	7.01E-12	3.10E-01	2.17E-12	
Benzo(ghi)perylene	2.77E-12			
Benzo(k)fluoranthene	4.57E-12	3.10E-02	1.42E-13	
Chrysene	6.53E-12	3.10E-03	2.02E-14	
Fluoranthene	1.40E-11			
Indeno(1,2,3-cd)pyrene	2.94E-12	3.10E-01	9.10E-13	
PCB-1260	7.01E-13	2.00E+00	1.40E-12	
Phenanthrene	7.67E-12			
Polychlorinated biphenyl	7.01E-13	2.00E+00	1.40E-12	
Pyrene	1.11E-11			
Alpha activity				
Beta activity				
Uranium-235	5.84E-03	1.30E-08	7.59E-11	
Uranium-238	1.34E-01	1.24E-08	1.66E-09	

Current Industrial Excess Lifetime Cancer Risks

---------- SECTOR=Northeast PATHWAY=Current Industrial Inhalation of Soil ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Pathway Total				1.47E-08

---------- SECTOR=Northwest PATHWAY=Current Industrial Dermal Contact with Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Antimony	3.01E-07			
Beryllium	2.43E-07	4.30E+02	1.04E-04	
Cadmium	3.05E-08			
Chromium	1.52E-05			
Iron	9.17E-03			
Lead	9.78E-06			
Vanadium	1.24E-05			
Benz(a)anthracene	4.51E-07	2.35E+00	1.06E-06	
Benzo(a)pyrene	6.01E-07	2.35E+01	1.42E-05	
Benzo(b)fluoranthene	7.94E-07	2.35E+00	1.87E-06	
Benzo(k)fluoranthene	4.51E-07	2.35E-01	1.06E-07	
Chrysene	4.36E-07	2.35E-02	1.03E-08	
Fluoranthene	6.01E-07			
Pyrene	6.01E-07			
Alpha activity				
Beta activity				
Uranium-238				
Pathway Total				1.22E-04

---------- SECTOR=Northwest PATHWAY=Current Industrial External Exposure to Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Antimony				
Beryllium				
Cadmium				
Chromium				
Iron				
Lead				
Vanadium				
Benz(a)anthracene				
Benzo(a)pyrene				
Benzo(b)fluoranthene				
Benzo(k)fluoranthene				
Chrysene				
Fluoranthene				
Pyrene				
Alpha activity	8.28E+01			
Beta activity	2.24E+02			
Uranium-238	1.46E+01	6.57E-08	9.60E-07	
Pathway Total				9.60E-07

Current Industrial Excess Lifetime Cancer Risks

---------- SECTOR=Northwest PATHWAY=Current Industrial Ingestion of Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Antimony	7.00E-08			
Beryllium	5.65E-08	4.30E+00	2.43E-07	
Cadmium	3.55E-08			
Chromium	3.54E-06			
Iron	2.13E-03			
Lead	2.27E-06			
Vanadium	2.89E-06			
Benz(a)anthracene	5.24E-08	7.30E-01	3.83E-08	
Benzo(a)pyrene	6.99E-08	7.30E+00	5.10E-07	
Benzo(b)fluoranthene	9.24E-08	7.30E-01	6.74E-08	
Benzo(k)fluoranthene	5.24E-08	7.30E-02	3.83E-09	
Chrysene	5.07E-08	7.30E-03	3.70E-10	
Fluoranthene	6.99E-08			
Pyrene	6.99E-08			
Alpha activity	5.67E+03			
Beta activity	1.53E+04			
Uranium-238	1.00E+03	6.20E-11	6.20E-08	
Pathway Total				9.25E-07

---------- SECTOR=Northwest PATHWAY=Current Industrial Inhalation of Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Antimony	6.53E-12			
Beryllium	5.28E-12	8.40E+00	4.43E-11	
Cadmium	3.31E-12	6.10E+00	2.02E-11	
Chromium	3.30E-10	4.10E+01	1.35E-08	
Iron	1.99E-07			
Lead	2.12E-10			
Vanadium	2.69E-10			
Benz(a)anthracene	4.89E-12	3.10E-01	1.52E-12	
Benzo(a)pyrene	6.53E-12	3.10E+00	2.02E-11	
Benzo(b)fluoranthene	8.62E-12	3.10E-01	2.67E-12	
Benzo(k)fluoranthene	4.89E-12	3.10E-02	1.52E-13	
Chrysene	4.73E-12	3.10E-03	1.47E-14	
Fluoranthene	6.53E-12			
Pyrene	6.53E-12			
Alpha activity				
Beta activity				
Uranium-238	9.34E-02	1.24E-08	1.16E-09	
Pathway Total				1.48E-08

---------- SECTOR=Southeast PATHWAY=Current Industrial Dermal Contact with Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	1.07E-02			
Antimony	4.51E-07			
Cadmium	5.26E-08			
Chromium	1.77E-05			
Benz(a)anthracene	1.05E-07	2.35E+00	2.48E-07	
Benzo(a)pyrene	1.20E-07	2.35E+01	2.83E-06	
Benzo(b)fluoranthene	1.05E-07	2.35E+00	2.48E-07	
Benzo(k)fluoranthene	9.02E-08	2.35E-01	2.12E-08	
Chrysene	1.20E-07	2.35E-02	2.83E-09	

Current Industrial Excess Lifetime Cancer Risks

---------- SECTOR=Southeast PATHWAY=Current Industrial Dermal Contact with Soil ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Fluoranthene	2.25E-07			
PCB-1262	3.43E-08	2.22E+00	7.61E-08	
Phenanthrene	1.05E-07			
Polychlorinated biphenyl	3.43E-08	2.22E+00	7.61E-08	
Pyrene	1.80E-07			
Alpha activity				
Beta activity				
Pathway Total				3.50E-06

---------- SECTOR=Southeast PATHWAY=Current Industrial External Exposure to Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum				
Antimony				
Cadmium				
Chromium				
Benz(a)anthracene				
Benzo(a)pyrene				
Benzo(b)fluoranthene				
Benzo(k)fluoranthene				
Chrysene				
Fluoranthene				
PCB-1262				
Phenanthrene				
Polychlorinated biphenyl				
Pyrene				
Alpha activity	7.53E+01			
Beta activity	1.11E+02			
Pathway Total				

---------- SECTOR=Southeast PATHWAY=Current Industrial Ingestion of Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	2.48E-03			
Antimony	1.05E-07			
Cadmium	6.12E-08			
Chromium	4.12E-06			
Benz(a)anthracene	1.22E-08	7.30E-01	8.93E-09	
Benzo(a)pyrene	1.40E-08	7.30E+00	1.02E-07	
Benzo(b)fluoranthene	1.22E-08	7.30E-01	8.93E-09	
Benzo(k)fluoranthene	1.05E-08	7.30E-02	7.65E-10	
Chrysene	1.40E-08	7.30E-03	1.02E-10	
Fluoranthene	2.62E-08			
PCB-1262	6.64E-09	2.00E+00	1.33E-08	
Phenanthrene	1.22E-08			
Polychlorinated biphenyl	6.64E-09	2.00E+00	1.33E-08	
Pyrene	2.10E-08			
Alpha activity	5.15E+03			
Beta activity	7.58E+03			
Pathway Total				1.47E-07

Current Industrial Excess Lifetime Cancer Risks

---------- SECTOR=Southeast PATHWAY=Current Industrial Inhalation of Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	2.32E-07			
Antimony	9.79E-12			
Cadmium	5.71E-12	6.10E+00	3.48E-11	
Chromium	3.85E-10	4.10E+01	1.58E-08	
Benz(a)anthracene	1.14E-12	3.10E-01	3.54E-13	
Benzo(a)pyrene	1.31E-12	3.10E+00	4.05E-12	
Benzo(b)fluoranthene	1.14E-12	3.10E-01	3.54E-13	
Benzo(k)fluoranthene	9.79E-13	3.10E-02	3.03E-14	
Chrysene	1.31E-12	3.10E-03	4.05E-15	
Fluoranthene	2.45E-12			
PCB-1262	6.20E-13	2.00E+00	1.24E-12	
Phenanthrene	1.14E-12			
Polychlorinated biphenyl	6.20E-13	2.00E+00	1.24E-12	
Pyrene	1.96E-12			
Alpha activity				
Beta activity				
Pathway Total				1.58E-08

---------- SECTOR=Southwest PATHWAY=Current Industrial Dermal Contact with Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Antimony	1.09E-06			
Beryllium	2.83E-07	4.30E+02	1.22E-04	
Cadmium	5.45E-08			
Chromium	1.60E-05			
Iron	1.28E-02			
Thallium	5.28E-07			
Uranium	3.77E-05			
Zinc	3.78E-05			
Acenaphthene	1.49E-06			
Acenaphthylene	3.31E-07			
Anthracene	2.73E-06			
Benz(a)anthracene	7.54E-06	2.35E+00	1.78E-05	
Benzo(a)pyrene	7.26E-06	2.35E+01	1.71E-04	
Benzo(b)fluoranthene	7.68E-06	2.35E+00	1.81E-05	
Benzo(ghi)perylene	3.55E-06			
Benzo(k)fluoranthene	5.07E-06	2.35E-01	1.19E-06	
Bis(2-ethylhexyl)phthalate	1.20E-07	7.37E-02	8.86E-09	
Chrysene	6.79E-06	2.35E-02	1.60E-07	
Dibenz(a,h)anthracene	1.95E-06	2.35E+01	4.60E-05	
Fluoranthene	1.64E-05			
Fluorene	1.80E-06			
Indeno(1,2,3-cd)pyrene	2.71E-06	2.35E+00	6.38E-06	
Naphthalene	3.61E-09			
PCB-1260	3.43E-08	2.22E+00	7.61E-08	
Phenanthrene	8.59E-06			
Polychlorinated biphenyl	3.43E-08	2.22E+00	7.61E-08	
Pyrene	1.38E-05			
Alpha activity				
Beta activity				
Neptunium-237				
Uranium-235				
Uranium-238				
Pathway Total				3.83E-04

Current Industrial Excess Lifetime Cancer Risks

---------- SECTOR=Southwest PATHWAY=Current Industrial External Exposure to Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Antimony				
Beryllium				
Cadmium				
Chromium				
Iron				
Thallium				
Uranium				
Zinc				
Acenaphthene				
Acenaphthylene				
Anthracene				
Benz(a)anthracene				
Benzo(a)pyrene				
Benzo(b)fluoranthene				
Benzo(ghi)perylene				
Benzo(k)fluoranthene				
Bis(2-ethylhexyl)phthalate				
Chrysene				
Dibenz(a,h)anthracene				
Fluoranthene				
Fluorene				
Indeno(1,2,3-cd)pyrene				
Naphthalene				
PCB-1260				
Phenanthrene				
Polychlorinated biphenyl				
Pyrene				
Alpha activity	7.23E+01			
Beta activity	2.66E+02			
Neptunium-237	1.37E+00	4.62E-07	6.33E-07	
Uranium-235	2.74E+00	2.65E-07	7.26E-07	
Uranium-238	7.63E+01	6.57E-08	5.01E-06	
Pathway Total				6.37E-06

---------- SECTOR=Southwest PATHWAY=Current Industrial Ingestion of Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Antimony	2.54E-07			
Beryllium	6.59E-08	4.30E+00	2.83E-07	
Cadmium	6.34E-08			
Chromium	3.71E-06			
Iron	2.97E-03			
Thallium	1.23E-07			
Uranium	8.76E-06			
Zinc	8.79E-06			
Acenaphthene	1.73E-07			
Acenaphthylene	3.84E-08			
Anthracene	3.18E-07			
Benz(a)anthracene	8.77E-07	7.30E-01	6.40E-07	
Benzo(a)pyrene	8.45E-07	7.30E+00	6.17E-06	
Benzo(b)fluoranthene	8.93E-07	7.30E-01	6.52E-07	
Benzo(ghi)perylene	4.13E-07			
Benzo(k)fluoranthene	5.90E-07	7.30E-02	4.31E-08	
Bis(2-ethylhexyl)phthalate	1.40E-08	1.40E-02	1.96E-10	
Chrysene	7.89E-07	7.30E-03	5.76E-09	
Dibenz(a,h)anthracene	2.27E-07	7.30E+00	1.66E-06	
Fluoranthene	1.91E-06			

Current Industrial Excess Lifetime Cancer Risks

---------- SECTOR=Southwest PATHWAY=Current Industrial Ingestion of Soil ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Fluorene	2.10E-07			
Indeno(1,2,3-cd)pyrene	3.15E-07	7.30E-01	2.30E-07	
Naphthalene	4.19E-10			
PCB-1260	6.64E-09	2.00E+00	1.33E-08	
Phenanthrene	9.99E-07			
Polychlorinated biphenyl	6.64E-09	2.00E+00	1.33E-08	
Pyrene	1.61E-06			
Alpha activity	4.95E+03			
Beta activity	1.82E+04			
Neptunium-237	9.38E+01	3.00E-10	2.81E-08	
Uranium-235	1.88E+02	4.70E-11	8.81E-09	
Uranium-238	5.22E+03	6.20E-11	3.24E-07	
Pathway Total				1.01E-05

---------- SECTOR=Southwest PATHWAY=Current Industrial Inhalation of Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Antimony	2.37E-11			
Beryllium	6.15E-12	8.40E+00	5.17E-11	
Cadmium	5.91E-12	6.10E+00	3.61E-11	
Chromium	3.47E-10	4.10E+01	1.42E-08	
Iron	2.78E-07			
Thallium	1.15E-11			
Uranium	8.18E-10			
Zinc	8.20E-10			
Acenaphthene	1.61E-11			
Acenaphthylene	3.59E-12			
Anthracene	2.97E-11			
Benz(a)anthracene	8.18E-11	3.10E-01	2.54E-11	
Benzo(a)pyrene	7.89E-11	3.10E+00	2.44E-10	
Benzo(b)fluoranthene	8.34E-11	3.10E-01	2.59E-11	
Benzo(ghi)perylene	3.86E-11			
Benzo(k)fluoranthene	5.51E-11	3.10E-02	1.71E-12	
Bis(2-ethylhexyl)phthalate	1.31E-12			
Chrysene	7.37E-11	3.10E-03	2.28E-13	
Dibenz(a,h)anthracene	2.12E-11	3.10E+00	6.57E-11	
Fluoranthene	1.78E-10			
Fluorene	1.96E-11			
Indeno(1,2,3-cd)pyrene	2.94E-11	3.10E-01	9.12E-12	
Naphthalene	3.92E-14			
PCB-1260	6.20E-13	2.00E+00	1.24E-12	
Phenanthrene	9.33E-11			
Polychlorinated biphenyl	6.20E-13	2.00E+00	1.24E-12	
Pyrene	1.50E-10			
Alpha activity				
Beta activity				
Neptunium-237	8.75E-03	3.45E-08	3.02E-10	
Uranium-235	1.75E-02	1.30E-08	2.28E-10	
Uranium-238	4.87E-01	1.24E-08	6.04E-09	
Pathway Total				2.12E-08

Current Industrial Excess Lifetime Cancer Risks

---------- SECTOR=West PATHWAY=Current Industrial Dermal Contact with Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	5.47E-03			
Antimony	7.45E-07			
Arsenic	9.91E-06	3.66E+00	3.63E-05	
Beryllium	2.36E-07	4.30E+02	1.02E-04	
Cadmium	1.36E-07			
Chromium	9.43E-06			
Cobalt	3.56E-06			
Uranium	2.73E-05			
Zinc	2.25E-05			
2-Methylnaphthalene	1.35E-06			
Acenaphthene	5.06E-06			
Anthracene	2.19E-05			
Benz(a)anthracene	3.02E-05	2.35E+00	7.12E-05	
Benzo(a)pyrene	2.72E-05	2.35E+01	6.41E-04	
Benzo(b)fluoranthene	3.39E-05	2.35E+00	7.97E-05	
Benzo(ghi)perylene	5.56E-06			
Benzo(k)fluoranthene	3.34E-05	2.35E-01	7.86E-06	
Bis(2-ethylhexyl)phthalate	1.50E-07	7.37E-02	1.11E-08	
Chrysene	3.26E-05	2.35E-02	7.67E-07	
Di-n-butyl phthalate	3.08E-07			
Dibenz(a,h)anthracene	5.64E-06	2.35E+01	1.33E-04	
Fluoranthene	6.78E-05			
Fluorene	4.70E-06			
Indeno(1,2,3-cd)pyrene	5.71E-06	2.35E+00	1.34E-05	
Naphthalene	2.18E-06			
PCB-1254	8.66E-07	2.22E+00	1.92E-06	
PCB-1260	1.44E-08	2.22E+00	3.21E-08	
Phenanthrene	5.26E-05			
Polychlorinated biphenyl	5.06E-07	2.22E+00	1.12E-06	
Pyrene	5.93E-05			
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				1.09E-03

---------- SECTOR=West PATHWAY=Current Industrial External Exposure to Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum				
Antimony				
Arsenic				
Beryllium				
Cadmium				
Chromium				
Cobalt				
Uranium				
Zinc				
2-Methylnaphthalene				
Acenaphthene				
Anthracene				
Benz(a)anthracene				
Benzo(a)pyrene				
Benzo(b)fluoranthene				

Current Industrial Excess Lifetime Cancer Risks

---------- SECTOR=West PATHWAY=Current Industrial External Exposure to Soil ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Benzo(ghi)perylene				
Benzo(k)fluoranthene				
Bis(2-ethylhexyl)phthalate				
Chrysene				
Di-n-butyl phthalate				
Dibenz(a,h)anthracene				
Fluoranthene				
Fluorene				
Indeno(1,2,3-cd)pyrene				
Naphthalene				
PCB-1254				
PCB-1260				
Phenanthrene				
Polychlorinated biphenyl				
Pyrene				
Alpha activity	2.96E+02			
Beta activity	5.09E+02			
Cesium-137	3.07E+00	2.09E-06	6.41E-06	
Neptunium-237	6.94E+00	4.62E-07	3.21E-06	
Uranium-234	4.33E+01	2.14E-11	9.26E-10	
Uranium-235	3.02E+00	2.65E-07	7.99E-07	
Uranium-238	5.51E+01	6.57E-08	3.62E-06	
Pathway Total				1.40E-05

---------- SECTOR=West PATHWAY=Current Industrial Ingestion of Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	1.27E-03			
Antimony	1.73E-07			
Arsenic	2.31E-06	1.50E+00	3.46E-06	
Beryllium	5.50E-08	4.30E+00	2.36E-07	
Cadmium	1.58E-07			
Chromium	2.19E-06			
Cobalt	8.29E-07			
Uranium	6.34E-06			
Zinc	5.24E-06			
2-Methylnaphthalene	1.57E-07			
Acenaphthene	5.88E-07			
Anthracene	2.55E-06			
Benz(a)anthracene	3.52E-06	7.30E-01	2.57E-06	
Benzo(a)pyrene	3.16E-06	7.30E+00	2.31E-05	
Benzo(b)fluoranthene	3.94E-06	7.30E-01	2.87E-06	
Benzo(ghi)perylene	6.47E-07			
Benzo(k)fluoranthene	3.88E-06	7.30E-02	2.83E-07	
Bis(2-ethylhexyl)phthalate	1.75E-08	1.40E-02	2.45E-10	
Chrysene	3.79E-06	7.30E-03	2.77E-08	
Di-n-butyl phthalate	3.58E-08			
Dibenz(a,h)anthracene	6.56E-07	7.30E+00	4.79E-06	
Fluoranthene	7.89E-06			
Fluorene	5.46E-07			
Indeno(1,2,3-cd)pyrene	6.64E-07	7.30E-01	4.85E-07	
Naphthalene	2.54E-07			
PCB-1254	1.68E-07	2.00E+00	3.35E-07	
PCB-1260	2.80E-09	2.00E+00	5.59E-09	
Phenanthrene	6.12E-06			
Polychlorinated biphenyl	9.80E-08	2.00E+00	1.96E-07	

Current Industrial Excess Lifetime Cancer Risks

---------- SECTOR=West PATHWAY=Current Industrial Ingestion of Soil ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Pyrene	6.90E-06			
Alpha activity	2.03E+04			
Beta activity	3.48E+04			
Cesium-137	2.10E+02	3.16E-11	6.63E-09	
Neptunium-237	4.75E+02	3.00E-10	1.43E-07	
Uranium-234	2.96E+03	4.44E-11	1.31E-07	
Uranium-235	2.06E+02	4.70E-11	9.70E-09	
Uranium-238	3.77E+03	6.20E-11	2.34E-07	
Pathway Total				3.89E-05

---------- SECTOR=West PATHWAY=Current Industrial Inhalation of Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	1.19E-07			
Antimony	1.62E-11			
Arsenic	2.15E-10	5.00E+01	1.08E-08	
Beryllium	5.13E-12	8.40E+00	4.31E-11	
Cadmium	1.48E-11	6.10E+00	9.01E-11	
Chromium	2.05E-10	4.10E+01	8.40E-09	
Cobalt	7.74E-11			
Uranium	5.92E-10			
Zinc	4.89E-10			
2-Methylnaphthalene	1.47E-11			
Acenaphthene	5.49E-11			
Anthracene	2.38E-10			
Benz(a)anthracene	3.28E-10	3.10E-01	1.02E-10	
Benzo(a)pyrene	2.95E-10	3.10E+00	9.16E-10	
Benzo(b)fluoranthene	3.68E-10	3.10E-01	1.14E-10	
Benzo(ghi)perylene	6.04E-11			
Benzo(k)fluoranthene	3.62E-10	3.10E-02	1.12E-11	
Bis(2-ethylhexyl)phthalate	1.63E-12			
Chrysene	3.54E-10	3.10E-03	1.10E-12	
Di-n-butyl phthalate	3.34E-12			
Dibenz(a,h)anthracene	6.12E-11	3.10E+00	1.90E-10	
Fluoranthene	7.36E-10			
Fluorene	5.10E-11			
Indeno(1,2,3-cd)pyrene	6.20E-11	3.10E-01	1.92E-11	
Naphthalene	2.37E-11			
PCB-1254	1.57E-11	2.00E+00	3.13E-11	
PCB-1260	2.61E-13	2.00E+00	5.22E-13	
Phenanthrene	5.71E-10			
Polychlorinated biphenyl	9.15E-12	2.00E+00	1.83E-11	
Pyrene	6.44E-10			
Alpha activity				
Beta activity				
Cesium-137	1.96E-02	1.91E-11	3.74E-13	
Neptunium-237	4.44E-02	3.45E-08	1.53E-09	
Uranium-234	2.76E-01	1.40E-08	3.87E-09	
Uranium-235	1.93E-02	1.30E-08	2.50E-10	
Uranium-238	3.52E-01	1.24E-08	4.36E-09	
Pathway Total				3.07E-08

Excavation Excess Lifetime Cancer Risks

---------- SECTOR=Central PATHWAY=Excavation Dermal Contact with Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Antimony	4.43E-06	8.00E-06	5.54E-01	
Cadmium	6.17E-08	1.00E-05	6.17E-03	
Chromium	3.47E-05	1.00E-04	3.47E-01	
Iron	2.59E-02	4.50E-02	5.75E-01	
Thallium	5.69E-07			
Bis(2-ethylhexyl)phthalate	1.25E-07	3.80E-03	3.28E-05	
Di-n-butyl phthalate	2.58E-06	1.00E-01	2.58E-05	
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Pathway Total				1.48E+00

---------- SECTOR=Central PATHWAY=Excavation Ingestion of Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Antimony	9.90E-06	4.00E-04	2.47E-02	
Cadmium	6.88E-07	1.00E-03	6.88E-04	
Chromium	7.74E-05	5.00E-03	1.55E-02	
Iron	5.78E-02	3.00E-01	1.93E-01	
Thallium	1.27E-06			
Bis(2-ethylhexyl)phthalate	1.39E-07	2.00E-02	6.95E-06	
Di-n-butyl phthalate	2.87E-06	1.00E-01	2.87E-05	
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Pathway Total				2.33E-01

---------- SECTOR=Central PATHWAY=Excavation Inhalation of Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Antimony	9.63E-11			
Cadmium	6.69E-12	5.71E-05	1.17E-07	
Chromium	7.53E-10			
Iron	5.62E-07			
Thallium	1.23E-11			
Bis(2-ethylhexyl)phthalate	1.35E-12			
Di-n-butyl phthalate	2.80E-11			
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Pathway Total				1.17E-07

---------- SECTOR=East PATHWAY=Excavation Dermal Contact with Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	1.16E-02	1.00E-01	1.16E-01	

Excavation Excess Lifetime Cancer Risks

---------- SECTOR=East PATHWAY=Excavation Dermal Contact with Soil ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Antimony	5.07E-07	8.00E-06	6.34E-02	
Arsenic	5.81E-06	1.23E-04	4.72E-02	
Beryllium	4.57E-07	5.00E-05	9.14E-03	
Cadmium	8.38E-08	1.00E-05	8.38E-03	
Chromium	1.41E-05	1.00E-04	1.41E-01	
Cobalt	6.97E-06	4.80E-02	1.45E-04	
Lead	8.87E-06	1.50E-08	5.91E+02	
Manganese	4.17E-04	1.87E-03	2.23E-01	
Thallium	5.42E-07			
Uranium	8.02E-06	2.55E-03	3.14E-03	
Acenaphthene	4.05E-07	1.86E-02	2.18E-05	
Anthracene	1.27E-06	2.28E-01	5.57E-06	
Benz(a)anthracene	1.30E-06			
Benzo(a)pyrene	1.30E-06			
Benzo(b)fluoranthene	1.37E-06			
Benzo(ghi)perylene	1.13E-06			
Benzo(k)fluoranthene	1.27E-06			
Bis(2-ethylhexyl)phthalate	2.49E-07	3.80E-03	6.55E-05	
Chrysene	1.31E-06			
Di-n-butyl phthalate	2.25E-06	1.00E-01	2.25E-05	
Dibenz(a,h)anthracene	4.98E-07			
Fluoranthene	1.51E-06	1.24E-02	1.22E-04	
Fluorene	2.80E-07	2.00E-02	1.40E-05	
Indeno(1,2,3-cd)pyrene	1.24E-06			
Naphthalene	1.25E-07	2.86E-02	4.36E-06	
PCB-1260	4.52E-07			
Phenanthrene	1.40E-06			
Polychlorinated biphenyl	8.72E-07			
Pyrene	1.48E-06	9.30E-03	1.59E-04	
Trichloroethene	1.07E-05	9.00E-04	1.19E-02	
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-235				
Uranium-238				
Pathway Total				5.92E+02

---------- SECTOR=East PATHWAY=Excavation Ingestion of Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	2.59E-02	1.00E+00	2.59E-02	
Antimony	1.13E-06	4.00E-04	2.83E-03	
Arsenic	1.30E-05	3.00E-04	4.32E-02	
Beryllium	1.02E-06	5.00E-03	2.04E-04	
Cadmium	9.36E-07	1.00E-03	9.36E-04	
Chromium	3.15E-05	5.00E-03	6.29E-03	
Cobalt	1.56E-05	6.00E-02	2.59E-04	
Lead	1.98E-05	1.00E-07	1.98E+02	
Manganese	9.30E-04	4.60E-02	2.02E-02	
Thallium	1.21E-06			
Uranium	1.79E-05	3.00E-03	5.97E-03	
Acenaphthene	4.52E-07	6.00E-02	7.53E-06	
Anthracene	1.42E-06	3.00E-01	4.72E-06	
Benz(a)anthracene	1.46E-06			
Benzo(a)pyrene	1.45E-06			

Excavation Excess Lifetime Cancer Risks

---------- SECTOR=East PATHWAY=Excavation Ingestion of Soil ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Benzo(b)fluoranthene	1.53E-06			
Benzo(ghi)perylene	1.27E-06			
Benzo(k)fluoranthene	1.42E-06			
Bis(2-ethylhexyl)phthalate	2.78E-07	2.00E-02	1.39E-05	
Chrysene	1.46E-06			
Di-n-butyl phthalate	2.52E-06	1.00E-01	2.52E-05	
Dibenz(a,h)anthracene	5.56E-07			
Fluoranthene	1.68E-06	4.00E-02	4.21E-05	
Fluorene	3.13E-07	4.00E-02	7.82E-06	
Indeno(1,2,3-cd)pyrene	1.39E-06			
Naphthalene	1.39E-07	3.57E-02	3.89E-06	
PCB-1260	8.41E-07			
Phenanthrene	1.56E-06			
Polychlorinated biphenyl	1.62E-06			
Pyrene	1.65E-06	3.00E-02	5.50E-05	
Trichloroethene	4.77E-06	6.00E-03	7.95E-04	
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-235				
Uranium-238				
Pathway Total				1.98E+02

---------- SECTOR=East PATHWAY=Excavation Inhalation of Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	2.52E-07			
Antimony	1.10E-11			
Arsenic	1.26E-10			
Beryllium	9.93E-12			
Cadmium	9.10E-12	5.71E-05	1.59E-07	
Chromium	3.06E-10			
Cobalt	1.51E-10			
Lead	1.93E-10	2.86E-04	6.74E-07	
Manganese	9.05E-09	1.43E-05	6.33E-04	
Thallium	1.18E-11			
Uranium	1.74E-10			
Acenaphthene	4.39E-12			
Anthracene	1.38E-11			
Benz(a)anthracene	1.42E-11			
Benzo(a)pyrene	1.41E-11			
Benzo(b)fluoranthene	1.49E-11			
Benzo(ghi)perylene	1.23E-11			
Benzo(k)fluoranthene	1.38E-11			
Bis(2-ethylhexyl)phthalate	2.70E-12			
Chrysene	1.42E-11			
Di-n-butyl phthalate	2.45E-11			
Dibenz(a,h)anthracene	5.41E-12			
Fluoranthene	1.64E-11			
Fluorene	3.04E-12			
Indeno(1,2,3-cd)pyrene	1.35E-11			
Naphthalene	1.35E-12			
PCB-1260	8.18E-12			
Phenanthrene	1.52E-11			
Polychlorinated biphenyl	1.58E-11			

Excavation Excess Lifetime Cancer Risks

---------- SECTOR=East PATHWAY=Excavation Inhalation of Soil ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Pyrene	1.60E-11			
Trichloroethene	1.05E-05			
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-235				
Uranium-238				
Pathway Total				6.34E-04

---------- SECTOR=Far East/Northeast PATHWAY=Excavation Dermal Contact with Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	1.13E-02	1.00E-01	1.13E-01	
Antimony	3.93E-06	8.00E-06	4.91E-01	
Arsenic	1.06E-05	1.23E-04	8.66E-02	
Beryllium	7.06E-07	5.00E-05	1.41E-02	
Cadmium	3.94E-08	1.00E-05	3.94E-03	
Chromium	1.75E-05	1.00E-04	1.75E-01	
Iron	2.18E-02	4.50E-02	4.85E-01	
Lead	1.86E-05	1.50E-08	1.24E+03	
Manganese	8.53E-04	1.87E-03	4.57E-01	
Thallium	6.44E-07			
Uranium	2.91E-05	2.55E-03	1.14E-02	
Vanadium	3.65E-05	7.00E-05	5.21E-01	
Benz(a)anthracene	4.05E-07			
Benzo(a)pyrene	4.67E-07			
Benzo(b)fluoranthene	5.60E-07			
Benzo(ghi)perylene	1.93E-07			
Benzo(k)fluoranthene	4.67E-07			
Bis(2-ethylhexyl)phthalate	2.18E-07	3.80E-03	5.74E-05	
Butyl benzyl phthalate	1.25E-07	1.22E-01	1.02E-06	
Chrysene	4.67E-07			
Di-n-butyl phthalate	1.46E-06	1.00E-01	1.46E-05	
Fluoranthene	6.85E-07	1.24E-02	5.52E-05	
Indeno(1,2,3-cd)pyrene	2.09E-07			
PCB-1254	5.43E-08	1.80E-05	3.02E-03	
PCB-1260	5.46E-08			
Phenanthrene	2.18E-07			
Polychlorinated biphenyl	1.42E-07			
Pyrene	6.85E-07	9.30E-03	7.37E-05	
Alpha activity				
Beta activity				
Cesium-137				
Uranium-235				
Uranium-238				
Pathway Total				1.25E+03

---------- SECTOR=Far East/Northeast PATHWAY=Excavation Ingestion of Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	2.53E-02	1.00E+00	2.53E-02	

Excavation Excess Lifetime Cancer Risks

---------- SECTOR=Far East/Northeast PATHWAY=Excavation Ingestion of Soil ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Antimony	8.78E-06	4.00E-04	2.19E-02	
Arsenic	2.38E-05	3.00E-04	7.92E-02	
Beryllium	1.58E-06	5.00E-03	3.15E-04	
Cadmium	4.39E-07	1.00E-03	4.39E-04	
Chromium	3.90E-05	5.00E-03	7.80E-03	
Iron	4.88E-02	3.00E-01	1.63E-01	
Lead	4.16E-05	1.00E-07	4.16E+02	
Manganese	1.91E-03	4.60E-02	4.14E-02	
Thallium	1.44E-06			
Uranium	6.50E-05	3.00E-03	2.17E-02	
Vanadium	8.14E-05	7.00E-03	1.16E-02	
Benz(a)anthracene	4.52E-07			
Benzo(a)pyrene	5.21E-07			
Benzo(b)fluoranthene	6.26E-07			
Benzo(ghi)perylene	2.15E-07			
Benzo(k)fluoranthene	5.21E-07			
Bis(2-ethylhexyl)phthalate	2.43E-07	2.00E-02	1.22E-05	
Butyl benzyl phthalate	1.39E-07	2.00E-01	6.95E-07	
Chrysene	5.21E-07			
Di-n-butyl phthalate	1.62E-06	1.00E-01	1.62E-05	
Fluoranthene	7.65E-07	4.00E-02	1.91E-05	
Indeno(1,2,3-cd)pyrene	2.33E-07			
PCB-1254	1.01E-07	2.00E-05	5.06E-03	
PCB-1260	1.02E-07			
Phenanthrene	2.43E-07			
Polychlorinated biphenyl	2.64E-07			
Pyrene	7.65E-07	3.00E-02	2.55E-05	
Alpha activity				
Beta activity				
Cesium-137				
Uranium-235				
Uranium-238				
Pathway Total				4.17E+02

---------- SECTOR=Far East/Northeast PATHWAY=Excavation Inhalation of Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	2.46E-07			
Antimony	8.54E-11			
Arsenic	2.31E-10			
Beryllium	1.53E-11			
Cadmium	4.27E-12	5.71E-05	7.48E-08	
Chromium	3.79E-10			
Iron	4.74E-07			
Lead	4.05E-10	2.86E-04	1.42E-06	
Manganese	1.85E-08	1.43E-05	1.30E-03	
Thallium	1.40E-11			
Uranium	6.32E-10			
Vanadium	7.92E-10			
Benz(a)anthracene	4.39E-12			
Benzo(a)pyrene	5.07E-12			
Benzo(b)fluoranthene	6.08E-12			
Benzo(ghi)perylene	2.10E-12			
Benzo(k)fluoranthene	5.07E-12			
Bis(2-ethylhexyl)phthalate	2.37E-12			
Butyl benzyl phthalate	1.35E-12			

Excavation Excess Lifetime Cancer Risks

---------- SECTOR=Far East/Northeast PATHWAY=Excavation Inhalation of Soil ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Chrysene	5.07E-12			
Di-n-butyl phthalate	1.58E-11			
Fluoranthene	7.44E-12			
Indeno(1,2,3-cd)pyrene	2.26E-12			
PCB-1254	9.83E-13			
PCB-1260	9.88E-13			
Phenanthrene	2.37E-12			
Polychlorinated biphenyl	2.57E-12			
Pyrene	7.44E-12			
Alpha activity				
Beta activity				
Cesium-137				
Uranium-235				
Uranium-238				
Pathway Total				1.30E-03

---------- SECTOR=Far North/Northwest PATHWAY=Excavation Dermal Contact with Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	1.15E-02	1.00E-01	1.15E-01	
Antimony	1.88E-06	8.00E-06	2.34E-01	
Arsenic	6.97E-06	1.23E-04	5.67E-02	
Beryllium	5.48E-07	5.00E-05	1.10E-02	
Cadmium	8.99E-08	1.00E-05	8.99E-03	
Chromium	4.96E-05	1.00E-04	4.96E-01	
Cobalt	7.73E-06	4.80E-02	1.61E-04	
Copper	2.42E-03	1.20E-02	2.02E-01	
Iron	2.18E-02	4.50E-02	4.84E-01	
Lead	2.10E-05	1.50E-08	1.40E+03	
Manganese	5.58E-04	1.87E-03	2.99E-01	
Mercury	1.40E-07	2.10E-05	6.64E-03	
Nickel	4.45E-03	5.40E-03	8.23E-01	
Thallium	7.87E-07			
Uranium	6.63E-04	2.55E-03	2.60E-01	
Zinc	5.51E-05	6.00E-02	9.18E-04	
2,4-Dinitrotoluene	1.28E-06	1.70E-03	7.53E-04	
Acenaphthene	1.56E-07	1.86E-02	8.37E-06	
Anthracene	4.98E-07	2.28E-01	2.18E-06	
Benz(a)anthracene	1.06E-06			
Benzo(a)pyrene	8.72E-07			
Benzo(b)fluoranthene	8.10E-07			
Benzo(ghi)perylene	4.05E-07			
Benzo(k)fluoranthene	9.03E-07			
Bis(2-ethylhexyl)phthalate	2.87E-07	3.80E-03	7.54E-05	
Chrysene	1.09E-06			
Di-n-butyl phthalate	1.99E-06	1.00E-01	1.99E-05	
Fluoranthene	1.27E-06	1.24E-02	1.03E-04	
Fluorene	1.56E-07	2.00E-02	7.78E-06	
Indeno(1,2,3-cd)pyrene	4.36E-07			
N-Nitrosodiphenylamine	1.29E-06			
PCB-1254	4.40E-08	1.80E-05	2.44E-03	
PCB-1260	5.75E-08			
Phenanthrene	1.29E-06			
Polychlorinated biphenyl	1.18E-07			
Pyrene	1.29E-06	9.30E-03	1.39E-04	
Alpha activity				

Excavation Excess Lifetime Cancer Risks

---------- SECTOR=Far North/Northwest PATHWAY=Excavation Dermal Contact with Soil ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Beta activity				
Cesium-137				
Neptunium-237				
Plutonium-239				
Technetium-99				
Thorium-230				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				1.40E+03

---------- SECTOR=Far North/Northwest PATHWAY=Excavation Ingestion of Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	2.58E-02	1.00E+00	2.58E-02	
Antimony	4.19E-06	4.00E-04	1.05E-02	
Arsenic	1.56E-05	3.00E-04	5.19E-02	
Beryllium	1.22E-06	5.00E-03	2.45E-04	
Cadmium	1.00E-06	1.00E-03	1.00E-03	
Chromium	1.11E-04	5.00E-03	2.22E-02	
Cobalt	1.73E-05	6.00E-02	2.88E-04	
Copper	5.41E-03	4.00E-02	1.35E-01	
Iron	4.86E-02	3.00E-01	1.62E-01	
Lead	4.69E-05	1.00E-07	4.69E+02	
Manganese	1.24E-03	4.60E-02	2.71E-02	
Mercury	3.12E-07	3.00E-04	1.04E-03	
Nickel	9.92E-03	2.00E-02	4.96E-01	
Thallium	1.76E-06			
Uranium	1.48E-03	3.00E-03	4.94E-01	
Zinc	1.23E-04	3.00E-01	4.10E-04	
2,4-Dinitrotoluene	1.43E-06	2.00E-03	7.15E-04	
Acenaphthene	1.74E-07	6.00E-02	2.90E-06	
Anthracene	5.56E-07	3.00E-01	1.85E-06	
Benz(a)anthracene	1.18E-06			
Benzo(a)pyrene	9.73E-07			
Benzo(b)fluoranthene	9.04E-07			
Benzo(ghi)perylene	4.52E-07			
Benzo(k)fluoranthene	1.01E-06			
Bis(2-ethylhexyl)phthalate	3.20E-07	2.00E-02	1.60E-05	
Chrysene	1.22E-06			
Di-n-butyl phthalate	2.22E-06	1.00E-01	2.22E-05	
Fluoranthene	1.42E-06	4.00E-02	3.56E-05	
Fluorene	1.74E-07	4.00E-02	4.34E-06	
Indeno(1,2,3-cd)pyrene	4.87E-07			
N-Nitrosodiphenylamine	1.45E-06			
PCB-1254	8.18E-08	2.00E-05	4.09E-03	
PCB-1260	1.07E-07			
Phenanthrene	1.44E-06			
Polychlorinated biphenyl	2.19E-07			
Pyrene	1.44E-06	3.00E-02	4.79E-05	
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Plutonium-239				
Technetium-99				

Excavation Excess Lifetime Cancer Risks

---------- SECTOR=Far North/Northwest PATHWAY=Excavation Ingestion of Soil ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Thorium-230				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				4.70E+02

---------- SECTOR=Far North/Northwest PATHWAY=Excavation Inhalation of Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	2.50E-07			
Antimony	4.07E-11			
Arsenic	1.51E-10			
Beryllium	1.19E-11			
Cadmium	9.76E-12	5.71E-05	1.71E-07	
Chromium	1.08E-09			
Cobalt	1.68E-10			
Copper	5.26E-08			
Iron	4.72E-07			
Lead	4.56E-10	2.86E-04	1.59E-06	
Manganese	1.21E-08	1.43E-05	8.47E-04	
Mercury	3.03E-12	8.57E-05	3.53E-08	
Nickel	9.65E-08			
Thallium	1.71E-11			
Uranium	1.44E-08			
Zinc	1.20E-09			
2,4-Dinitrotoluene	1.39E-11			
Acenaphthene	1.69E-12			
Anthracene	5.41E-12			
Benz(a)anthracene	1.15E-11			
Benzo(a)pyrene	9.46E-12			
Benzo(b)fluoranthene	8.79E-12			
Benzo(ghi)perylene	4.39E-12			
Benzo(k)fluoranthene	9.80E-12			
Bis(2-ethylhexyl)phthalate	3.11E-12			
Chrysene	1.18E-11			
Di-n-butyl phthalate	2.16E-11			
Fluoranthene	1.38E-11			
Fluorene	1.69E-12			
Indeno(1,2,3-cd)pyrene	4.73E-12			
N-Nitrosodiphenylamine	1.41E-11			
PCB-1254	7.95E-13			
PCB-1260	1.04E-12			
Phenanthrene	1.40E-11			
Polychlorinated biphenyl	2.13E-12			
Pyrene	1.40E-11			
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Plutonium-239				
Technetium-99				
Thorium-230				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				8.49E-04

Excavation Excess Lifetime Cancer Risks

---------- SECTOR=Northeast PATHWAY=Excavation Dermal Contact with Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	9.68E-03	1.00E-01	9.68E-02	
Antimony	1.82E-06	8.00E-06	2.28E-01	
Arsenic	3.70E-06	1.23E-04	3.01E-02	
Barium	8.18E-05	4.90E-03	1.67E-02	
Beryllium	4.49E-07	5.00E-05	8.98E-03	
Cadmium	2.42E-08	1.00E-05	2.42E-03	
Chromium	1.65E-05	1.00E-04	1.65E-01	
Cobalt	6.20E-06	4.80E-02	1.29E-04	
Manganese	3.35E-04	1.87E-03	1.79E-01	
Thallium	1.11E-06			
Uranium	5.38E-05	2.55E-03	2.11E-02	
Vanadium	2.30E-05	7.00E-05	3.28E-01	
Zinc	2.70E-05	6.00E-02	4.49E-04	
2,6-Dinitrotoluene	1.20E-06	8.50E-04	1.41E-03	
Acenaphthene	1.30E-06	1.86E-02	6.97E-05	
Anthracene	1.39E-06	2.28E-01	6.09E-06	
Benz(a)anthracene	3.18E-06			
Benzo(a)pyrene	2.86E-06			
Benzo(b)fluoranthene	3.19E-06			
Benzo(ghi)perylene	1.39E-06			
Benzo(k)fluoranthene	2.42E-06			
Bis(2-ethylhexyl)phthalate	1.87E-07	3.80E-03	4.92E-05	
Chrysene	3.27E-06			
Di-n-butyl phthalate	1.37E-06	1.00E-01	1.37E-05	
Dibenz(a,h)anthracene	1.24E-06			
Fluoranthene	2.27E-06	1.24E-02	1.83E-04	
Fluorene	1.25E-06	2.00E-02	6.26E-05	
Indeno(1,2,3-cd)pyrene	2.16E-06			
N-Nitroso-di-n-propylamine	1.23E-06			
Naphthalene	1.24E-06	2.86E-02	4.33E-05	
PCB-1254	9.71E-09	1.80E-05	5.40E-04	
PCB-1260	4.35E-08			
Phenanthrene	1.93E-06			
Polychlorinated biphenyl	8.03E-08			
Pyrene	2.09E-06	9.30E-03	2.25E-04	
Alpha activity				
Beta activity				
Neptunium-237				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				1.08E+00

---------- SECTOR=Northeast PATHWAY=Excavation Ingestion of Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	2.16E-02	1.00E+00	2.16E-02	
Antimony	4.06E-06	4.00E-04	1.02E-02	
Arsenic	8.27E-06	3.00E-04	2.76E-02	
Barium	1.83E-04	7.00E-02	2.61E-03	
Beryllium	1.00E-06	5.00E-03	2.00E-04	
Cadmium	2.70E-07	1.00E-03	2.70E-04	
Chromium	3.69E-05	5.00E-03	7.39E-03	
Cobalt	1.39E-05	6.00E-02	2.31E-04	
Manganese	7.47E-04	4.60E-02	1.62E-02	
Thallium	2.48E-06			
Uranium	1.20E-04	3.00E-03	4.00E-02	

Excavation Excess Lifetime Cancer Risks

---------- SECTOR=Northeast PATHWAY=Excavation Ingestion of Soil ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Vanadium	5.13E-05	7.00E-03	7.33E-03	
Zinc	6.02E-05	3.00E-01	2.01E-04	
2,6-Dinitrotoluene	1.34E-06	1.00E-03	1.34E-03	
Acenaphthene	1.45E-06	6.00E-02	2.41E-05	
Anthracene	1.55E-06	3.00E-01	5.17E-06	
Benz(a)anthracene	3.54E-06			
Benzo(a)pyrene	3.19E-06			
Benzo(b)fluoranthene	3.56E-06			
Benzo(ghi)perylene	1.55E-06			
Benzo(k)fluoranthene	2.70E-06			
Bis(2-ethylhexyl)phthalate	2.09E-07	2.00E-02	1.04E-05	
Chrysene	3.64E-06			
Di-n-butyl phthalate	1.53E-06	1.00E-01	1.53E-05	
Dibenz(a,h)anthracene	1.38E-06			
Fluoranthene	2.53E-06	4.00E-02	6.33E-05	
Fluorene	1.40E-06	4.00E-02	3.50E-05	
Indeno(1,2,3-cd)pyrene	2.41E-06			
N-Nitroso-di-n-propylamine	1.37E-06			
Naphthalene	1.38E-06	3.57E-02	3.87E-05	
PCB-1254	1.81E-08	2.00E-05	9.04E-04	
PCB-1260	8.10E-08			
Phenanthrene	2.16E-06			
Polychlorinated biphenyl	1.49E-07			
Pyrene	2.34E-06	3.00E-02	7.79E-05	
Alpha activity				
Beta activity				
Neptunium-237				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				1.36E-01

---------- SECTOR=Northeast PATHWAY=Excavation Inhalation of Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	2.10E-07			
Antimony	3.95E-11			
Arsenic	8.04E-11			
Barium	1.78E-09	1.43E-04	1.24E-05	
Beryllium	9.74E-12			
Cadmium	2.63E-12	5.71E-05	4.60E-08	
Chromium	3.59E-10			
Cobalt	1.35E-10			
Manganese	7.27E-09	1.43E-05	5.09E-04	
Thallium	2.41E-11			
Uranium	1.17E-09			
Vanadium	4.99E-10			
Zinc	5.85E-10			
2,6-Dinitrotoluene	1.30E-11			
Acenaphthene	1.41E-11			
Anthracene	1.51E-11			
Benz(a)anthracene	3.45E-11			
Benzo(a)pyrene	3.10E-11			
Benzo(b)fluoranthene	3.46E-11			
Benzo(ghi)perylene	1.50E-11			
Benzo(k)fluoranthene	2.63E-11			

Excavation Excess Lifetime Cancer Risks

---------- SECTOR=Northeast PATHWAY=Excavation Inhalation of Soil ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Bis(2-ethylhexyl)phthalate	2.03E-12			
Chrysene	3.54E-11			
Di-n-butyl phthalate	1.49E-11			
Dibenz(a,h)anthracene	1.35E-11			
Fluoranthene	2.46E-11			
Fluorene	1.36E-11			
Indeno(1,2,3-cd)pyrene	2.35E-11			
N-Nitroso-di-n-propylamine	1.33E-11			
Naphthalene	1.34E-11			
PCB-1254	1.76E-13			
PCB-1260	7.88E-13			
Phenanthrene	2.10E-11			
Polychlorinated biphenyl	1.45E-12			
Pyrene	2.27E-11			
Alpha activity				
Beta activity				
Neptunium-237				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				5.21E-04

---------- SECTOR=Northwest PATHWAY=Excavation Dermal Contact with Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	9.48E-03	1.00E-01	9.48E-02	
Antimony	1.59E-06	8.00E-06	1.98E-01	
Arsenic	4.24E-06	1.23E-04	3.45E-02	
Beryllium	5.34E-07	5.00E-05	1.07E-02	
Cadmium	3.24E-08	1.00E-05	3.24E-03	
Chromium	1.84E-05	1.00E-04	1.84E-01	
Cobalt	6.27E-06	4.80E-02	1.31E-04	
Iron	1.67E-02	4.50E-02	3.71E-01	
Lead	9.68E-06	1.50E-08	6.45E+02	
Manganese	3.58E-04	1.87E-03	1.92E-01	
Mercury	1.24E-07	2.10E-05	5.90E-03	
Thallium	5.16E-07			
Uranium	1.57E-05	2.55E-03	6.15E-03	
Vanadium	2.60E-05	7.00E-05	3.71E-01	
Benz(a)anthracene	9.34E-07			
Benzo(a)pyrene	1.24E-06			
Benzo(b)fluoranthene	1.24E-06			
Benzo(k)fluoranthene	9.34E-07			
Bis(2-ethylhexyl)phthalate	2.49E-07	3.80E-03	6.55E-05	
Chrysene	9.03E-07			
Di-n-butyl phthalate	1.25E-07	1.00E-01	1.25E-06	
Fluoranthene	1.24E-06	1.24E-02	9.97E-05	
N-Nitroso-di-n-propylamine	1.53E-06			
Phenanthrene	1.56E-07			
Polychlorinated biphenyl	9.34E-07			
Pyrene	1.24E-06	9.30E-03	1.33E-04	
Alpha activity				
Beta activity				
Neptunium-237				
Uranium-235				
Uranium-238				

Excavation Excess Lifetime Cancer Risks

---------- SECTOR=Northwest PATHWAY=Excavation Dermal Contact with Soil ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Pathway Total				6.47E+02

---------- SECTOR=Northwest PATHWAY=Excavation Ingestion of Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	2.12E-02	1.00E+00	2.12E-02	
Antimony	3.54E-06	4.00E-04	8.85E-03	
Arsenic	9.47E-06	3.00E-04	3.16E-02	
Beryllium	1.19E-06	5.00E-03	2.38E-04	
Cadmium	3.61E-07	1.00E-03	3.61E-04	
Chromium	4.11E-05	5.00E-03	8.21E-03	
Cobalt	1.40E-05	6.00E-02	2.33E-04	
Iron	3.73E-02	3.00E-01	1.24E-01	
Lead	2.16E-05	1.00E-07	2.16E+02	
Manganese	8.00E-04	4.60E-02	1.74E-02	
Mercury	2.77E-07	3.00E-04	9.23E-04	
Thallium	1.15E-06			
Uranium	3.50E-05	3.00E-03	1.17E-02	
Vanadium	5.80E-05	7.00E-03	8.29E-03	
Benz(a)anthracene	1.04E-06			
Benzo(a)pyrene	1.38E-06			
Benzo(b)fluoranthene	1.39E-06			
Benzo(k)fluoranthene	1.04E-06			
Bis(2-ethylhexyl)phthalate	2.78E-07	2.00E-02	1.39E-05	
Chrysene	1.01E-06			
Di-n-butyl phthalate	1.39E-07	1.00E-01	1.39E-06	
Fluoranthene	1.38E-06	4.00E-02	3.45E-05	
N-Nitroso-di-n-propylamine	1.71E-06			
Phenanthrene	1.74E-07			
Polychlorinated biphenyl	1.74E-06			
Pyrene	1.38E-06	3.00E-02	4.60E-05	
Alpha activity				
Beta activity				
Neptunium-237				
Uranium-235				
Uranium-238				
Pathway Total				2.16E+02

---------- SECTOR=Northwest PATHWAY=Excavation Inhalation of Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	2.06E-07			
Antimony	3.44E-11			
Arsenic	9.21E-11			
Beryllium	1.16E-11			
Cadmium	3.51E-12	5.71E-05	6.15E-08	
Chromium	3.99E-10			
Cobalt	1.36E-10			
Iron	3.63E-07			
Lead	2.10E-10	2.86E-04	7.36E-07	
Manganese	7.78E-09	1.43E-05	5.45E-04	
Mercury	2.69E-12	8.57E-05	3.14E-08	

Excavation Excess Lifetime Cancer Risks

---------- SECTOR=Northwest PATHWAY=Excavation Inhalation of Soil ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Thallium	1.12E-11			
Uranium	3.40E-10			
Vanadium	5.64E-10			
Benz(a)anthracene	1.01E-11			
Benzo(a)pyrene	1.34E-11			
Benzo(b)fluoranthene	1.35E-11			
Benzo(k)fluoranthene	1.01E-11			
Bis(2-ethylhexyl)phthalate	2.70E-12			
Chrysene	9.80E-12			
Di-n-butyl phthalate	1.35E-12			
Fluoranthene	1.34E-11			
N-Nitroso-di-n-propylamine	1.66E-11			
Phenanthrene	1.69E-12			
Polychlorinated biphenyl	1.69E-11			
Pyrene	1.34E-11			
Alpha activity				
Beta activity				
Neptunium-237				
Uranium-235				
Uranium-238				
Pathway Total				5.45E-04

---------- SECTOR=Southeast PATHWAY=Excavation Dermal Contact with Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	9.37E-03	1.00E-01	9.37E-02	
Antimony	7.74E-07	8.00E-06	9.68E-02	
Arsenic	4.56E-06	1.23E-04	3.71E-02	
Barium	9.49E-05	4.90E-03	1.94E-02	
Beryllium	4.97E-07	5.00E-05	9.93E-03	
Cadmium	4.52E-08	1.00E-05	4.52E-03	
Chromium	1.43E-05	1.00E-04	1.43E-01	
Cobalt	5.31E-06	4.80E-02	1.11E-04	
Iron	1.53E-02	4.50E-02	3.41E-01	
Lead	8.60E-06	1.50E-08	5.74E+02	
Manganese	3.19E-04	1.87E-03	1.71E-01	
Mercury	5.22E-08	2.10E-05	2.49E-03	
Thallium	5.70E-07			
Uranium	5.33E-06	2.55E-03	2.09E-03	
Vanadium	2.18E-05	7.00E-05	3.11E-01	
Zinc	2.94E-05	6.00E-02	4.90E-04	
1,1,2-Trichloroethane	1.29E-07	3.24E-03	3.97E-05	
1,1-Dichloroethene	2.69E-06	9.00E-03	2.99E-04	
Acenaphthene	1.03E-06	1.86E-02	5.52E-05	
Anthracene	1.61E-06	2.28E-01	7.07E-06	
Benz(a)anthracene	1.66E-06			
Benzo(a)pyrene	1.66E-06			
Benzo(b)fluoranthene	1.70E-06			
Benzo(ghi)perylene	1.62E-06			
Benzo(k)fluoranthene	1.60E-06			
Bis(2-ethylhexyl)phthalate	2.39E-07	3.80E-03	6.28E-05	
Carbon tetrachloride	1.63E-07	4.55E-04	3.57E-04	
Chrysene	1.68E-06			
Di-n-butyl phthalate	1.30E-06	1.00E-01	1.30E-05	
Di-n-octylphthalate	1.87E-07	1.80E-02	1.04E-05	
Dibenz(a,h)anthracene	1.43E-06			

Excavation Excess Lifetime Cancer Risks

---------- SECTOR=Southeast PATHWAY=Excavation Dermal Contact with Soil ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Fluoranthene	1.32E-06	1.24E-02	1.06E-04	
Fluorene	6.23E-07	2.00E-02	3.11E-05	
Indeno(1,2,3-cd)pyrene	1.62E-06			
Naphthalene	4.98E-07	2.86E-02	1.74E-05	
PCB-1254	1.84E-07	1.80E-05	1.02E-02	
PCB-1262	4.56E-08			
Phenanthrene	1.66E-06			
Polychlorinated biphenyl	9.41E-07			
Pyrene	1.44E-06	9.30E-03	1.55E-04	
Tetrachloroethene	1.60E-07	1.00E-02	1.60E-05	
Trichloroethene	5.13E-05	9.00E-04	5.70E-02	
Vinyl chloride	9.53E-07			
trans-1,2-Dichloroethene	3.10E-04	2.00E-02	1.55E-02	
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-235				
Uranium-238				
Pathway Total				5.75E+02

---------- SECTOR=Southeast PATHWAY=Excavation Ingestion of Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	2.09E-02	1.00E+00	2.09E-02	
Antimony	1.73E-06	4.00E-04	4.32E-03	
Arsenic	1.02E-05	3.00E-04	3.40E-02	
Barium	2.12E-04	7.00E-02	3.03E-03	
Beryllium	1.11E-06	5.00E-03	2.22E-04	
Cadmium	5.04E-07	1.00E-03	5.04E-04	
Chromium	3.20E-05	5.00E-03	6.40E-03	
Cobalt	1.19E-05	6.00E-02	1.98E-04	
Iron	3.43E-02	3.00E-01	1.14E-01	
Lead	1.92E-05	1.00E-07	1.92E+02	
Manganese	7.13E-04	4.60E-02	1.55E-02	
Mercury	1.17E-07	3.00E-04	3.88E-04	
Thallium	1.27E-06			
Uranium	1.19E-05	3.00E-03	3.97E-03	
Vanadium	4.86E-05	7.00E-03	6.94E-03	
Zinc	6.56E-05	3.00E-01	2.19E-04	
1,1,2-Trichloroethane	5.75E-08	4.00E-03	1.44E-05	
1,1-Dichloroethene	1.20E-06	9.00E-03	1.33E-04	
Acenaphthene	1.15E-06	6.00E-02	1.91E-05	
Anthracene	1.80E-06	3.00E-01	5.99E-06	
Benz(a)anthracene	1.85E-06			
Benzo(a)pyrene	1.85E-06			
Benzo(b)fluoranthene	1.89E-06			
Benzo(ghi)perylene	1.81E-06			
Benzo(k)fluoranthene	1.78E-06			
Bis(2-ethylhexyl)phthalate	2.67E-07	2.00E-02	1.33E-05	
Carbon tetrachloride	7.26E-08	7.00E-04	1.04E-04	
Chrysene	1.88E-06			
Di-n-butyl phthalate	1.45E-06	1.00E-01	1.45E-05	
Di-n-octylphthalate	2.09E-07	2.00E-02	1.04E-05	
Dibenz(a,h)anthracene	1.60E-06			
Fluoranthene	1.47E-06	4.00E-02	3.67E-05	

Excavation Excess Lifetime Cancer Risks

---------- SECTOR=Southeast PATHWAY=Excavation Ingestion of Soil ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Fluorene	6.95E-07	4.00E-02	1.74E-05	
Indeno(1,2,3-cd)pyrene	1.81E-06			
Naphthalene	5.56E-07	3.57E-02	1.56E-05	
PCB-1254	3.42E-07	2.00E-05	1.71E-02	
PCB-1262	8.49E-08			
Phenanthrene	1.86E-06			
Polychlorinated biphenyl	1.75E-06			
Pyrene	1.60E-06	3.00E-02	5.35E-05	
Tetrachloroethene	7.13E-08	1.00E-02	7.13E-06	
Trichloroethene	2.29E-05	6.00E-03	3.82E-03	
Vinyl chloride	4.25E-07			
trans-1,2-Dichloroethene	1.39E-04	2.00E-02	6.93E-03	
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-235				
Uranium-238				
Pathway Total				1.92E+02

---------- SECTOR=Southeast PATHWAY=Excavation Inhalation of Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	2.03E-07			
Antimony	1.68E-11			
Arsenic	9.91E-11			
Barium	2.06E-09	1.43E-04	1.44E-05	
Beryllium	1.08E-11			
Cadmium	4.90E-12	5.71E-05	8.59E-08	
Chromium	3.11E-10			
Cobalt	1.15E-10			
Iron	3.33E-07			
Lead	1.87E-10	2.86E-04	6.54E-07	
Manganese	6.93E-09	1.43E-05	4.85E-04	
Mercury	1.13E-12	8.57E-05	1.32E-08	
Thallium	1.24E-11			
Uranium	1.16E-10			
Vanadium	4.72E-10			
Zinc	6.38E-10			
1,1,2-Trichloroethane	6.81E-08			
1,1-Dichloroethene	7.93E-06			
Acenaphthene	1.12E-11			
Anthracene	1.75E-11			
Benz(a)anthracene	1.80E-11			
Benzo(a)pyrene	1.80E-11			
Benzo(b)fluoranthene	1.84E-11			
Benzo(ghi)perylene	1.76E-11			
Benzo(k)fluoranthene	1.73E-11			
Bis(2-ethylhexyl)phthalate	2.59E-12			
Carbon tetrachloride	1.59E-07	5.71E-04	2.79E-04	
Chrysene	1.83E-11			
Di-n-butyl phthalate	1.41E-11			
Di-n-octylphthalate	2.03E-12			
Dibenz(a,h)anthracene	1.55E-11			
Fluoranthene	1.43E-11			
Fluorene	6.76E-12			

Excavation Excess Lifetime Cancer Risks

---------- SECTOR=Southeast PATHWAY=Excavation Inhalation of Soil ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Indeno(1,2,3-cd)pyrene	1.76E-11			
Naphthalene	5.41E-12			
PCB-1254	3.32E-12			
PCB-1262	8.26E-13			
Phenanthrene	1.81E-11			
Polychlorinated biphenyl	1.70E-11			
Pyrene	1.56E-11			
Tetrachloroethene	1.35E-07			
Trichloroethene	5.06E-05			
Vinyl chloride	2.05E-03			
trans-1,2-Dichloroethene	1.35E-09			
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-235				
Uranium-238				
Pathway Total				7.79E-04

---------- SECTOR=Southwest PATHWAY=Excavation Dermal Contact with Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	8.65E-03	1.00E-01	8.65E-02	
Antimony	1.77E-06	8.00E-06	2.21E-01	
Arsenic	5.74E-06	1.23E-04	4.67E-02	
Barium	9.25E-05	4.90E-03	1.89E-02	
Beryllium	5.03E-07	5.00E-05	1.01E-02	
Cadmium	5.40E-08	1.00E-05	5.40E-03	
Chromium	1.41E-05	1.00E-04	1.41E-01	
Iron	1.59E-02	4.50E-02	3.52E-01	
Lead	8.63E-06	1.50E-08	5.75E+02	
Manganese	3.23E-04	1.87E-03	1.73E-01	
Mercury	4.73E-08	2.10E-05	2.25E-03	
Silver	3.60E-07	9.00E-04	4.00E-04	
Thallium	5.18E-07			
Uranium	7.67E-06	2.55E-03	3.01E-03	
Vanadium	1.99E-05	7.00E-05	2.84E-01	
Zinc	3.26E-05	6.00E-02	5.43E-04	
2-Hexanone	3.42E-08			
Acenaphthene	1.40E-06	1.86E-02	7.52E-05	
Acenaphthylene	6.85E-07			
Anthracene	1.47E-06	2.28E-01	6.45E-06	
Benz(a)anthracene	1.96E-06			
Benzo(a)pyrene	2.00E-06			
Benzo(b)fluoranthene	1.99E-06			
Benzo(ghi)perylene	1.54E-06			
Benzo(k)fluoranthene	1.79E-06			
Bis(2-ethylhexyl)phthalate	5.01E-07	3.80E-03	1.32E-04	
Butyl benzyl phthalate	1.35E-06	1.22E-01	1.11E-05	
Chrysene	2.03E-06			
Di-n-butyl phthalate	3.48E-06	1.00E-01	3.48E-05	
Di-n-octylphthalate	1.89E-06	1.80E-02	1.05E-04	
Dibenz(a,h)anthracene	1.70E-06			
Fluoranthene	2.49E-06	1.24E-02	2.01E-04	
Fluorene	8.88E-07	2.00E-02	4.44E-05	
Indeno(1,2,3-cd)pyrene	1.57E-06			

Excavation Excess Lifetime Cancer Risks

---------- SECTOR=Southwest PATHWAY=Excavation Dermal Contact with Soil ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Iodomethane				
Methylene chloride	1.54E-07	5.70E-02	2.71E-06	
N-Nitroso-di-n-propylamine	1.81E-06			
N-Nitrosodiphenylamine	1.81E-06			
Naphthalene	3.74E-07	2.86E-02	1.31E-05	
PCB-1260	5.36E-08			
Phenanthrene	2.04E-06			
Polychlorinated biphenyl	7.10E-08			
Pyrene	2.42E-06	9.30E-03	2.60E-04	
Trichloroethene	2.78E-06	9.00E-04	3.09E-03	
Vinyl chloride	2.72E-07			
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-235				
Uranium-238				
Pathway Total				5.77E+02

---------- SECTOR=Southwest PATHWAY=Excavation Ingestion of Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	1.93E-02	1.00E+00	1.93E-02	
Antimony	3.95E-06	4.00E-04	9.87E-03	
Arsenic	1.28E-05	3.00E-04	4.27E-02	
Barium	2.06E-04	7.00E-02	2.95E-03	
Beryllium	1.12E-06	5.00E-03	2.25E-04	
Cadmium	6.02E-07	1.00E-03	6.02E-04	
Chromium	3.15E-05	5.00E-03	6.29E-03	
Iron	3.54E-02	3.00E-01	1.18E-01	
Lead	1.93E-05	1.00E-07	1.93E+02	
Manganese	7.22E-04	4.60E-02	1.57E-02	
Mercury	1.06E-07	3.00E-04	3.52E-04	
Silver	8.04E-07	5.00E-03	1.61E-04	
Thallium	1.16E-06			
Uranium	1.71E-05	3.00E-03	5.70E-03	
Vanadium	4.44E-05	7.00E-03	6.35E-03	
Zinc	7.28E-05	3.00E-01	2.43E-04	
2-Hexanone	1.53E-08			
Acenaphthene	1.56E-06	6.00E-02	2.60E-05	
Acenaphthylene	7.65E-07			
Anthracene	1.64E-06	3.00E-01	5.47E-06	
Benz(a)anthracene	2.18E-06			
Benzo(a)pyrene	2.24E-06			
Benzo(b)fluoranthene	2.23E-06			
Benzo(ghi)perylene	1.71E-06			
Benzo(k)fluoranthene	2.00E-06			
Bis(2-ethylhexyl)phthalate	5.59E-07	2.00E-02	2.80E-05	
Butyl benzyl phthalate	1.51E-06	2.00E-01	7.54E-06	
Chrysene	2.26E-06			
Di-n-butyl phthalate	3.89E-06	1.00E-01	3.89E-05	
Di-n-octylphthalate	2.11E-06	2.00E-02	1.05E-04	
Dibenz(a,h)anthracene	1.90E-06			
Fluoranthene	2.78E-06	4.00E-02	6.96E-05	
Fluorene	9.91E-07	4.00E-02	2.48E-05	
Indeno(1,2,3-cd)pyrene	1.76E-06			

Excavation Excess Lifetime Cancer Risks

---------- SECTOR=Southwest PATHWAY=Excavation Ingestion Of Soil .....
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Iodomethane	5.39E-08			
Methylene chloride	6.90E-08	6.00E-02	1.15E-06	
N-Nitroso-di-n-propylamine	2.02E-06			
N-Nitrosodiphenylamine	2.02E-06			
Naphthalene	4.17E-07	3.57E-02	1.17E-05	
PCB-1260	9.98E-08			
Phenanthrene	2.28E-06			
Polychlorinated biphenyl	1.32E-07			
Pyrene	2.70E-06	3.00E-02	9.00E-05	
Trichloroethene	1.24E-06	6.00E-03	2.07E-04	
Vinyl chloride	1.22E-07			
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-235				
Uranium-238				
Pathway Total				1.93E+02

..... SECTOR=Southwest PATHWAY=Excavation Inhalation of Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	1.88E-07			
Antimony	3.84E-11			
Arsenic	1.25E-10			
Barium	2.01E-09	1.43E-04	1.41E-05	
Beryllium	1.09E-11			
Cadmium	5.86E-12	5.71E-05	1.03E-07	
Chromium	3.06E-10			
Iron	3.44E-07			
Lead	1.87E-10	2.86E-04	6.56E-07	
Manganese	7.02E-09	1.43E-05	4.91E-04	
Mercury	1.03E-12	8.57E-05	1.20E-08	
Silver	7.82E-12			
Thallium	1.12E-11			
Uranium	1.66E-10			
Vanadium	4.32E-10			
Zinc	7.08E-10			
2-Hexanone	1.49E-13			
Acenaphthene	1.52E-11			
Acenaphthylene	7.44E-12			
Anthracene	1.60E-11			
Benz(a)anthracene	2.12E-11			
Benzo(a)pyrene	2.17E-11			
Benzo(b)fluoranthene	2.17E-11			
Benzo(ghi)perylene	1.67E-11			
Benzo(k)fluoranthene	1.95E-11			
Bis(2-ethylhexyl)phthalate	5.44E-12			
Butyl benzyl phthalate	1.47E-11			
Chrysene	2.20E-11			
Di-n-butyl phthalate	3.78E-11			
Di-n-octylphthalate	2.05E-11			
Dibenz(a,h)anthracene	1.85E-11			
Fluoranthene	2.71E-11			
Fluorene	9.64E-12			
Indeno(1,2,3-cd)pyrene	1.71E-11			

Excavation Excess Lifetime Cancer Risks

..... SECTOR=Southwest PATHWAY=Excavation Inhalation Of Soil ..... (continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Iodomethane				
Methylene chloride	3.10E-07	8.57E-01	3.61E-07	
N-Nitroso-di-n-propylamine	1.97E-11			
N-Nitrosodiphenylamine	1.97E-11			
Naphthalene	4.06E-12			
PCB-1260	9.70E-13			
Phenanthrene	2.22E-11			
Polychlorinated biphenyl	1.28E-12			
Pyrene	2.63E-11			
Trichloroethene	2.74E-06			
Vinyl chloride	5.87E-04			
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-235				
Uranium-238				
Pathway Total				5.06E-04

---------- SECTOR=West PATHWAY=Excavation Dermal Contact with Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	1.17E-02	1.00E-01	1.17E-01	
Antimony	1.27E-06	8.00E-06	1.59E-01	
Arsenic	6.77E-05	1.23E-04	5.50E-01	
Barium	9.94E-05	4.90E-03	2.03E-02	
Beryllium	5.00E-07	5.OOE-05	9.99E-03	
Cadmium	1.17E-07	1.00E-05	1.17E-02	
Chromium	1.75E-05	1.00E-04	1.75E-01	
Cobalt	6.23E-06	4.80E-02	1.30E-04	
Uranium	7.47E-05	2.55E-03	2.93E-02	
Vanadium	2.35E-05	7.00E-05	3.36E-01	
Zinc	3.80E-05	6.00E-02	6.33E-04	
2-Methylnaphthalene	1.98E-06			
Acenaphthene	7.21E-06	1.86E-02	3.88E-04	
Anthracene	1.21E-05	2.28E-01	5.32E-05	
Benz(a)anthracene	1.44E-05			
Benzo(a)pyrene	1.35E-05			
Benzo(b)fluoranthene	1.59E-05			
Benzo(ghi)perylene	8.05E-06			
Benzo(k)fluoranthene	1.41E-05			
Bis(2-ethylhexyl)phthalate	3.11E-07	3.80E-03	8.19E-05	
Chrysene	1.54E-05			
Di-n-butyl phthalate	6.38E-07	1.00E-01	6.38E-06	
Dibenz(a,h)anthracene	7.57E-06			
Fluoranthene	2.66E-05	1.24E-02	2.15E-03	
Fluorene	5.20E-06	2.00E-02	2.60E-04	
Indeno(1,2,3-cd)pyrene	8.26E-06			
Naphthalene	2.94E-06	2.86E-02	1.03E-04	
PCB-1254	4.87E-07	1.80E-05	2.70E-02	
PCB-1260	2.99E-08			
Phenanthrene	2.18E-05			
Polychlorinated biphenyl	4.45E-07			
Pyrene	2.52E-05	9.30E-03	2.71E-03	
Trichloroethene	8.20E-06	9.OOE-04	9.12E-03	
Alpha activity				

Excavation Excess Lifetime Cancer Risks

---------- SECTOR=West PATHWAY=Excavation Dermal Contact with Soil ..... (continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				1.45E+00

---------- SECTOR=West PATHWAY=Excavation Ingestion of Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	2.61E-02	1.00E+00	2.61E-02	
Antimony	2.85E-06	4.00E-04	7.11E-03	
Arsenic	1.51E-04	3.00E-04	5.04E-01	
Barium	2.22E-04	7.00E-02	3.17E-03	
Beryllium	1.12E-06	5.00E-03	2.23E-04	
Cadmium	1.30E-06	1.00E-03	1.30E-03	
Chromium	3.91E-05	5.00E-03	7.83E-03	
Cobalt	1.39E-05	6.00E-02	2.32E-04	
Uranium	1.67E-04	3.00E-03	5.56E-02	
Vanadium	5.25E-05	7.00E-03	7.50E-03	
Zinc	8.48E-05	3.00E-01	2.83E-04	
2-Methylnaphthalene	2.21E-06			
Acenaphthene	8.05E-06	6.00E-02	1.34E-04	
Anthracene	1.35E-05	3.00E-01	4.513-05	
Benz(a)anthracene	1.61E-05			
Benzo(a)pyrene	1.51E-05			
Benzo(b)fluoranthene	1.77E-05			
Benzo(ghi)perylene	8.99E-06			
Benzo(k)fluoranthene	1.57E-05			
Bis(2-ethylhexyl)phthalate	3.48E-07	2.00E-02	1.74E-05	
Chrysene	1.72E-05			
Di-n-butyl phthalate	7.12E-07	1.00E-01	7.12E-06	
Dibenz(a,h)anthracene	8.45E-06			
Fluoranthene	2.97E-05	4.00E-02	7.43E-04	
Fluorene	5.81E-06	4.00E-02	1.45E-04	
Indeno(1,2,3-cd)pyrene	9.22E-06			
Naphthalene	3.29E-06	3.57E-02	9.21E-05	
PCB-1254	9.05E-07	2.00E-05	4.53E-02	
PCB-1260	5.56E-08			
Phenanthrene	2.43E-05			
Polychlorinated biphenyl	8.28E-07			
Pyrene	2.82E-05	3.00E-02	9.39E-04	
Trichloroethene	3.66E-06	6.00E-03	6.11E-04	
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				6.61E-01

Excavation Excess Lifetime Cancer Risks

---------- SECTOR=West PATHWAY=Excavation Inhalation of Soil ....

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	2.54E-07			
Antimony	2.77E-11			
Arsenic	1.47E-09			
Barium	2.16E-09	1.43E-04	1.51E-05	
Beryllium	1.08E-11			
Cadmium	1.27E-11	5.71E-05	2.223-07	
Chromium	3.81E-10			
Cobalt	1.35E-10			
Uranium	1.62E-09			
Vanadium	5.11E-10			
Zinc	8.24E-10			
2-Methylnaphthalene	2.15E-11			
Acenaphthene	7.83E-11			
Anthracene	1.32E-10			
Benz(a)anthracene	1.56E-10			
Benzo(a)pyrene	1.47E-10			
Benzo(b)fluoranthene	1.72E-10			
Benzo(ghi)perylene	8.74E-11			
Benzo(k)fluoranthene	1.53E-10			
Bis(2-ethylhexyl)phthalate	3.38E-12			
Chrysene	1.67E-10			
Di-n-butyl phthalate	6.93E-12			
Dibenz (a,h)anthracene	8.22E-11			
Fluoranthene	2.89E-10			
Fluorene	5.65E-11			
Indeno(1,2,3-cd)pyrene	8.97E-11			
Naphthalene	3.20E-11			
PCB-1254	8.80E-12			
PCB-1260	5.41E-13			
Phenanthrene	2.37E-10			
Polychlorinated biphenyl	8.05E-12			
Pyrene	2.74E-10			
Trichloroethene	8.10E-06			
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				1.53E-05

Excavation Excess Lifetime Cancer Risks

---------- SECTOR=Central PATHWAY=Excavation Dermal Contact with Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Antimony	1.58E-06			
Cadmium	2.20E-08			
Chromium	1.24E-05			
Iron	9.24E-03			
Thallium	2.03E-07			
Bis(2-ethylhexyl)phthalate	4.45E-08	7.373-02	3.28E-09	
Di-n-butyl phthalate	9.20E-07			
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Pathway Total				3.28E-09

---------- SECTOR=Central PATHWAY=Excavation External Exposure to Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Antimony				
Cadmium				
Chromium				
Iron				
Thallium				
Bis(2-ethylhexyl)phthalate				
Di-n-butyl phthalate				
Alpha activity	8.51E+01			
Beta activity	1.27E+02			
Cesium-137	7.90E-01	2.09E-06	1.65E-06	
Neptunium-237	5.08E-01	4.623-07	2.35E-07	
Pathway Total				1.893-06

---------- SECTOR=Central PATHWAY=Excavation Ingestion of Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Antimony	3.54E-06			
Cadmium	2.46E-07			
Chromium	2.77E-05			
Iron	2.06E-02			
Thallium	4.53E-07			
Bis(2-ethylhexyl)phthalate	4.97E-08	1.40E-02	6.95E-10	
Di-n-butyl phthalate	1.03E-06			
Alpha activity	5.59E+04			
Beta activity	8.32E+04			
Cesium-137	5.19E+02	3.16E-11	1.64E-08	
Neptunium-237	3.34E+02	3.00E-10	1.00E-07	
Pathway Total				1.17E-07

---------- SECTOR=Central PATHWAY=Excavation Inhalation of Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Antimony	3.44E-11			

Excavation Excess Lifetime Cancer Risks

..... SECTOR=Central PATHWAY=Excavation Inhalation of Soil ..... (continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Cadmium	2.39E-12	6.10E+00	1.46E-11	
Chromium	2.69E-10	4.10E+01	1.10E-08	
Iron	2.01E-07			
Thallium	4.41E-12			
Bis(2-ethylhexyl)phthalate	4.83E-13			
Di-n-butyl phthalate	9.98E-12			
Alpha activity				
Beta activity				
Cesium-137	5.05E-03	1.91E-11	9.64E-14	
Neptunium-237	3.24E-03	3.45E-08	1.12E-10	
Pathway Total				1.12E-08

---------- SECTOR=East PATHWAY=Excavation Dermal Contact with Soil .....

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	4.15E-03			
Antimony	1.81E-07			
Arsenic	2.07E-06	3.66E+00	7.59E-06	
Beryllium	1.63E-07	4.30E+02	7.02E-05	
Cadmium	2.99E-08			
Chromium	5.03E-06			
Cobalt	2.49E-06			
Lead	3.17E-06			
Manganese	1.49E-04			
Thallium	1.94E-07			
Uranium	2.86E-06			
Acenaphthene	1.45E-07			
Anthracene	4.53E-07			
Benz(a)anthracene	4.66E-07	2.35E+00	1.10E-06	
Benzo(a)pyrene	4.64E-07	2.35E+01	1.09E-05	
Benzo(b)fluoranthene	4.89E-07	2.35E+00	1.15E-06	
Benzo(ghi)perylene	4.05E-07			
Benzo(k)fluoranthene	4.53E-07	2.35E-01	1.07E-07	
Bis(2-ethylhexyl)phthalate	8.90E-08	7.37E-02	6.55E-09	
Chrysene	4.67E-07	2.35E-02	1.10E-08	
Di-n-butyl phthalate	8.05E-07			
Dibenz(a,h)anthracene	1.78E-07	2.35E+01	4.19E-06	
Fluoranthene	5.39E-07			
Fluorene	1.00E-07			
Indeno(1,2,3-cd)pyrene	4.44E-07	2.35E+00	1.05E-06	
Naphthalene	4.45E-08			
PCB-1260	1.61E-07	2.22E+00	3.59E-07	
Phenanthrene	5.01E-07			
Polychlorinated biphenyl	3.11E-07	2.22E+00	6.92E-07	
Pyrene	5.27E-07			
Trichloroethene	3.82E-06	7.33E-02	2.80E-07	
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-235				
Uranium-238				
Pathway Total				9.77E-05

Excavation Excess Lifetime Cancer Risks

---------- SECTOR=East PATHWAY=Excavation External Exposure to Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte specific	Total Pathway Risk
Aluminum				
Antimony				
Arsenic				
Beryllium				
Cadmium				
Chromium				
Cobalt				
Lead				
Manganese				
Thallium				
Uranium				
Acenaphthene				
Anthracene				
Benz (a)anthracene				
Benzo (a)pyrene				
Benzo(b) fluoranthene				
Benzo(ghi)perylene				
Benzo(k) fluoranthene				
Bis(2-ethylhexyl)phthalate				
Chrysene				
Di-n-butyl phthalate				
Dibenz (a,h)anthracene				
Fluoranthene				
Fluorene				
Indeno(1,2,3-cd)pyrene				
Naphthalene				
PCB-1260				
Phenanthrene				
Polychlorinated biphenyl				
Pyrene				
Trichloroethene				
Alpha activity	9.06E+01			
Beta activity	1.18E+02			
Cesium-137	7.333-01	2.093-06	1.53E-06	
Neptunium-237	6.69E-01	4.62E-07	3.09E-07	
Uranium-235	5.12E-01	2.65E-07	1.36E-07	
uranium-238	5.82E+00	6.57E-08	3.82E-07	
Pathway Total				2.36E-06

---------- SECTOR=East PATHWAY=Excavation Ingestion of Soil ----------

Analyte	carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	9.26E-03			
Antimony	4.04E-07			
Arsenic	4.63E-06	1.50E+00	6.95E-06	
Beryllium	3.65E-07	4.30E+00	1.57E-06	
Cadmium	3.34E-07			
Chromium	1.12E-05			
Cobalt	5.56E-06			
Lead	7.07E-06			
Manganese	3.32E-04			
Thallium	4.33E-07			
Uranium	6.39E-06			
Acenaphthene	1.61E-07			
Anthracene	5.06E-07			
Benz (a)anthracene	5.20E-07	7.30E-01	3.79E-07	
Benzo(a)pyrene	5.18E-07	7.30E+00	3.78E-06	

Excavation Excess Lifetime Cancer Risks

..... SECTOR=East PATHWAY=Excavation Ingestion Of Soil ..... (continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Benzo(b)fluoranthene	5.46E-07	7.30E-01	3.98E-07	
Benzo(ghi)perylene	4.52E-07			
Benzo(k)fluoranthene	5.05E-07	7.303-02	3.69E-08	
Bis(2-ethylhexyl)phthalate	9.93E-08	1.40E-02	1.39E-09	
Chrysene	5.21E-07	7.30E-03	3.81E-09	
Di-n-butyl phthalate	8.99E-07			
Dibenz(a,h)anthracene	1.99E-07	7.30E+00	1.45E-06	
Fluoranthene	6.01E-07			
Fluorene	1.12E-07			
Indeno(1,2,3-cd)pyrene	4.95E-07	7.30E-01	3.62E-07	
Naphthalene	4.97E-08			
PCB-1260	3.00E-07	2.00E+00	6.01E-07	
Phenanthrene	5.593-07			
Polychlorinated biphenyl	5.79E-07	2.00E+00	1.16E-06	
Pyrene	5.89E-07			
Trichloroethene	1.70E-06	1.10E-02	1.87E-08	
Alpha activity	5.95E+04			
Beta activity	7.78E+04			
Cesium-137	4.81E+02	3.16E-11	1.52E-08	
Neptunium-237	4.40E+02	3.00E-10	1.32E-07	
Uranium-235	3.37E+02	4.70E-11	1.58E-08	
Uranium-238	3.82E+03	6.20E-11	2.37E-07	
Pathway Total				1.71E-05

---------- SECTOR=East PATHWAY=Excavation Inhalation of Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	9.00E-08			
Antimony	3.93E-12			
Arsenic	4.51E-11	5.00E+01	2.25E-09	
Beryllium	3.55E-12	8.40E+00	2.98E-11	
Cadmium	3.253-12	6.10E+00	1.98E-11	
Chromium	1.09E-10	4.10E+01	4.48E-09	
Cobalt	5.40E-11			
Lead	6.88E-11			
Manganese	3.23E-09			
Thallium	4.21E-12			
Uranium	6.22E-11			
Acenaphthene	1.57E-12			
Anthracene	4.92E-12			
Benz(a)anthracene	5.06E-12	3.10E-01	1.57E-12	
Benzo(a)pyrene	5.04E-12	3.10E+00	1.56E-11	
Benzo(b)fluoranthene	5.31E-12	3.10E-01	1.64E-12	
Benzo(ghi)perylene	4.40E-12			
Benzo(k)fluoranthene	4.91E-12	3.10E-02	1.52E-13	
Bis(2-ethylhexyl)phthalate	9.66E-13			
Chrysene	5.07E-12	3.10E-03	1.57E-14	
Di-n-butyl phthalate	8.74E-12			
Dibenz(a,h)anthracene	1.93E-12	3.10E+00	5.99E-12	
Fluoranthene	5.853-12			
Fluorene	1.09E-12			
Indeno(1,2,3-cd)pyrene	4.82E-12	3.10E-01	1.49E-12	
Naphthalene	4.83E-13			
PCB-1260	2.92E-12	2.00E+00	5.84E-12	
Phenanthrene	5.433-12			
Polychlorinated biphenyl	5.64E-12	2.00E+00	1.13E-11	

Excavation Excess Lifetime Cancer Risks

---------- SECTOR=East PATHWAY=Excavation Inhalation of Soil ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Pyrene	5.73E-12			
Trichloroethene	3.77E-06	6.00E-03	2.26E-08	
Alpha activity				
Beta activity				
Cesium-137	4.68E-03	1.91E-11	8.94E-14	
Neptunium-237	4.27E-03	3.45E-08	1.47E-10	
Uranium-235	3.27E-03	1.30E-08	4.26E-11	
Uranium-238	3.72E-02	1.243-08	4.61E-10	
Pathway Total				3.01E-08

---------- SECTOR=Far East/Northeast PATHWAY=Excavation Dermal Contact with Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	4.04E-03			
Antimony	1.40E-06			
Arsenic	3.80E-06	3.66E+00	1.39E-05	
Beryllium	2.52E-07	4.30E+02	1.08E-04	
Cadmium	1.41E-08			
Chromium	6.24E-06			
Iron	7.80E-03			
Lead	6.66E-06			
Manganese	3.05E-04			
Thallium	2.3 OE-07			
Uranium	1.04E-05			
Vanadium	1.3 OE-05			
Benz (a)anthracene	1.45E-07	2.35E+00	3.40E-07	
Benzo(a)pyrene	1.67E-07	2.35E+01	3.93E-06	
Benzo(b)fluoranthene	2.00E-07	2.35E+00	4.71E-07	
Benzo(ghi)perylene	6.89E-08			
Benzo(k)fluoranthene	1.67E-07	2.35E-01	3.93E-08	
Bis(2-ethylhexyl)phthalate	7.78E-08	7.37E-02	5.74E-09	
Butyl benzyl phthalate	4.45E-08			
Chrysene	1.67E-07	2.35E-02	3.933-09	
Di-n-butyl phthalate	5.20E-07			
Fluoranthene	2.45E-07			
Indeno(1,2,3-cd)pyrene	7.45E-08	2.35E+00	1.75E-07	
PCB-1254	1.94E-08	2.22E+00	4.31E-08	
PCB-1260	1.95E-08	2.22E+00	4.34E-08	
Phenanthrene	7.78E-08			
Polychlorinated biphenyl	5.07E-08	2.22E+00	1.13E-07	
Pyrene	2.45E-07			
Alpha activity				
Beta activity				
Cesium-137				
Uranium-235				
Uranium-238				
Pathway Total				1.28E-04

---------- SECTOR=Far East/Northeast PATHWAY=Excavation External Exposure to Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum				

Excavation Excess Lifetime Cancer Risks

..... SECTOR=Far East/Northeast PATHWAY=Excavation External Exposure to Soil .....
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Antimony				
Arsenic				
Beryllium				
Cadmium				
Chromium				
Iron				
Lead				
Manganese				
Thallium				
Uranium				
Vanadium				
Benz(a)anthracene				
Benzo(a)pyrene				
Benzo(b)fluoranthene				
Benzo(ghi)perylene				
Benzo(k)fluoranthene				
Bis(2-ethylhexyl)phthalate				
Butyl benzyl phthalate				
Chrysene				
Di-n-butyl phthalate				
Fluoranthene				
Indeno(1,2,3-cd)pyrene				
PCB-1254				
PCB-1260				
Phenanthrene				
Polychlorinated biphenyl				
Pyrene				
Alpha activity	7.61E+01			
Beta activity	1.18E+02			
Cesium-137	9.00E-01	2.09E-06	1.88E-06	
Uranium-235	1.14E+00	2.65E-07	3.02E-07	
Uranium-238	2.10E+01	6.57E-08	1.38E-06	
Pathway Total				3.56E-06

---------- SECTOR=Far East/Northeast PATHWAY=Excavation Ingestion of Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	9.02E-03			
Antimony	3.13E-06			
Arsenic	8.49E-06	1.50E+00	1.27E-05	
Beryllium	5.63E-07	4.30E+00	2.42E-06	
Cadmium	1.57E-07			
Chromium	1.39E-05			
Iron	1.74E-02			
Lead	1.49E-05			
Manganese	6.80E-04			
Thallium	5.13E-07			
Uranium	2.32E-05			
Vanadium	2.91E-05			
Benz(a)anthracene	1.61E-07	7.30E-01	1.18E-07	
Benzo(a)pyrene	1.86E-07	7.30E+00	1.36E-06	
Benzo(b)fluoranthene	2.23E-07	7.30E-01	1.63E-07	
Benzo(ghi)perylene	7.70E-08			
Benzo(k)fluoranthene	1.86E-07	7.30E-02	1.36E-08	
Bis(2-ethylhexyl)phthalate	8.69E-08	1.40E-02	1.22E-09	
Butyl benzyl phthalate	4.97E-08			

Excavation Excess Lifetime Cancer Risks

SECTOR=Far East/Northeast PATHWAY=Excavation Ingestion Of Soil (continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Chrysene	1.86E-07	7.30E-03	1.36E-09	
Di-n-butyl phthalate	5.80E-07			
Fluoranthene	2.73E-07			
Indeno(1,2,3-cd)pyrene	8.32E-08	7.30E-01	6.07E-08	
PCB-1254	3.61E-08	2.00E+00	7.22E-08	
PCB-1260	3.63E-08	2.00E+00	7.26E-08	
Phenanthrene	8.69E-08			
Polychlorinated biphenyl	9.43E-08	2.00E+00	1.89E-07	
Pyrene	2.73E-07			
Alpha activity	5.00E+04			
Beta activity	7.77E+04			
Cesium-137	5.91E+02	3.16E-11	1.87E-08	
Uranium-235	7.50E+02	4.70E-11	3.52E-08	
Uranium-238	1.38E+04	6.20E-11	8.56E-07	
Pathway Total				1.81E-05

SECTOR=Far East/Northeast PATHWAY=Excavation Inhalation Of Soil

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	8.77E-08			
Antimony	3.05E-11			
Arsenic	8.26E-11	5.00E+01	4.13E-09	
Beryllium	5.48E-12	8.40E+00	4.60E-11	
Cadmium	1.53E-12	6.10E+00	9.31E-12	
Chromium	1.35E-10	4.10E+01	5.55E-09	
Iron	1.69E-07			
Lead	1.45E-10			
Manganese	6.62E-09			
Thallium	4.99E-12			
Uranium	2.26E-10			
Vanadium	2.83E-10			
Benz(a)anthracene	1.57E-12	3.10E-01	4.86E-13	
Benzo(a)pyrene	1.81E-12	3.10E+00	5.61E-12	
Benzo(b)fluoranthene	2.17E-12	3.10E-01	6.74E-13	
Benzo(ghi)perylene	7.48E-13			
Benzo(k)fluoranthene	1.81E-12	3.10E-02	5.61E-14	
Bis(2-ethylhexyl)phthalate	8.45E-13			
Butyl benzyl phthalate	4.83E-13			
Chrysene	1.81E-12	3.10E-03	5.61E-15	
Di-n-butyl phthalate	5.64E-12			
Fluoranthene	2.66E-12			
Indeno(1,2,3-cd)pyrene	8.09E-13	3.10E-01	2.51E-13	
PCB-1254	3.51E-13	2.00E+00	7.02E-13	
PCB-1260	3.53E-13	2.00E+00	7.06E-13	
Phenanthrene	8.45E-13			
Polychlorinated biphenyl	9.17E-13	2.00E+00	1.83E-12	
Pyrene	2.66E-12			
Alpha activity				
Beta activity				
Cesium-137	5.75E-03	1.91E-11	1.10E-13	
Uranium-235	7.29E-03	1.30E-08	9.48E-11	
Uranium-238	1.34E-01	1.24E-08	1.66E-09	
Pathway Total				1.15E-08

Excavation Excess Lifetime Cancer Risks

---------- SECTOR=Far North/Northwest PATHWAY=Excavation Dermal Contact with Soil .....

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	4.12E-03			
Antimony	6.70E-07			
Arsenic	2.49E-06	3.66E+00	9.11E-06	
Beryllium	1.96E-07	4.30E+02	8.42E-05	
Cadmium	3.21E-08			
Chromium	1.77E-05			
Cobalt	2.76E-06			
Copper	8.65E-04			
Iron	7.77E-03			
Lead	7.50E-06			
Manganese	1.99E-04			
Mercury	4.98E-08			
Nickel	1.593-03			
Thallium	2.81E-07			
Uranium	2.37E-04			
Zinc	1.97E-05			
2,4-Dinitrotoluene	4.57E-07	8.00E-01	3.66E-07	
Acenaphthene	5.56E-08			
Anthracene	1.78E-07			
Benz(a)anthracene	3.783-07	2.35E+00	8.90E-07	
Benzo(a)pyrene	3.11E-07	2.35E+01	7.33E-06	
Benzo(b)fluoranthene	2.89E-07	2.35E+00	6.81E-07	
Benzo(ghi)perylene	1.453-07			
Benzo(k)fluoranthene	3.22E-07	2.35E-01	7.59E-08	
Bis(2-ethylhexyl)phthalate	1.02E-07	7.37E-02	7.54E-09	
Chrysene	3.89E-07	2.35E-02	9.16E-09	
Di-n-butyl phthalate	7.10E-07			
Fluoranthene	4.55E-07			
Fluorene	5.56E-08			
Indeno(1,2,3-cd)pyrene	1.563-07	2.35E+00	3.67E-07	
N-Nitrosodiphenylamine	4.62E-07	1.96E-02	9.06E-09	
PCB-1254	1.57E-08	2.22E+00	3.49E-08	
PCB-1260	2.05E-08	2.22E+00	4.56E-08	
Phenanthrene	4.603-07			
Polychlorinated biphenyl	4.20E-08	2.22E+00	9.34E-08	
Pyrene	4.60E-07			
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Plutonium-239				
Technetium-99				
Thorium-230				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				1.03E-04

---------- SECTOR=Far North/Northwest PATHWAY=Excavation External Exposure to Soil .....

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum				
Antimony				
Arsenic				
Beryllium				
Cadmium				
Chromium				

Excavation Excess Lifetime Cancer Risks

..... SECTOR=Far North/Northwest PATHWAY=Excavation External Exposure to Soil ..... (continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Cobalt				
Copper				
Iron				
Lead				
Manganese				
Mercury				
Nickel				
Thallium				
Uranium				
Zinc				
2,4-Dinitrotoluene				
Acenaphthene				
Anthracene				
Benz(a)anthracene				
Benzo(a)pyrene				
Benzo(b)fluoranthene				
Benzo(ghi)perylene				
Benzo(k)fluoranthene				
Bis(2-ethylhexyl)phthalate				
Chrysene				
Di-n-butyl phthalate				
Fluoranthene				
Fluorene				
Indeno(1,2,3-cd)pyrene				
N-Nitrosodiphenylamine				
PCB-1254				
PCB-1260				
Phenanthrene				
Polychlorinated biphenyl				
Pyrene				
Alpha activity	1.31E+02			
Beta activity	4.19E+02			
Cesium-137	1.12E+01	2.09E-06	2.35E-05	
Neptunium-237	1.66E+01	4.62E-07	7.65E-06	
Plutonium-239	5.74E+00	1.26E-11	7.23E-11	
Technetium-99	1.64E+04	6.19E-13	1.01E-08	
Thorium-230	1.86E+01	4.40E-11	8.16E-10	
Uranium-234	2.25E+02	2.14E-11	4.83E-09	
Uranium-235	4.15E+00	2.65E-07	1.10E-06	
Uranium-238	4.80E+02	6.57E-08	3.15E-05	
Pathway Total				6.37E-05

---------- SECTOR=Far North/Northwest PATHWAY=Excavation Ingestion of Soil ----------

Analyte	carcinogenic CDI	Slope Factor	Analyte specific	Total Pathway Risk
Aluminum	9.20E-03			
Antimony	1.50E-06			
Arsenic	5.56E-06	1.50E+00	8.34E-06	
Beryllium	4.37E-07	4.30E+00	1.88E-06	
Cadmium	3.59E-07			
Chromium	3.96E-05			
Cobalt	6.16E-06			
copper	1.93E-03			
Iron	1.73E-02			
Lead	1.67E-05			
Manganese	4.45E-04			

Excavation Excess Lifetime Cancer Risks

..... SECTOR=Far North/Northwest PATHWAY=Excavation Ingestion of Soil .....
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Mercury	1.11E-07			
Nickel	3.54E-03			
Thallium	6.28E-07			
Uranium	5.293-04			
Zinc	4.39E-05			
2,4-Dinitrotoluene	5.11E-07	6.80E-01	3.47E-07	
Acenaphthene	6.21E-08			
Anthracene	1.993-07			
Benz(a)anthracene	4.22E-07	7.30E-01	3.083-07	
Benzo(a)pyrene	3.48E-07	7.30E+00	2.54E-06	
Benzo(b)fluoranthene	3.23E-07	7.30E-01	2.36E-07	
Benzo(ghi)perylene	1.61E-07			
Benzo(k)fluoranthene	3.60E-07	7.30E-02	2.63E-08	
Bis(2-ethylhexyl)phthalate	1.14E-07	1.40E-02	1.60E-09	
Chrysene	4.34E-07	7.30E-03	3.17E-09	
Di-n-butyl phthalate	7.92E-07			
Fluoranthene	5.08E-07			
Fluorene	6.21E-08			
Indeno(1,2,3-cd)pyrene	1.74E-07	7.30E-01	1.27E-07	
N-Nitrosodiphenylamine	5.16E-07	4.90E-03	2.53E-09	
PCB-1254	2.92E-08	2.00E+00	5.84E-08	
PCB-1260	3.82E-08	2.00E+00	7.64E-08	
Phenanthrene	5.14E-07			
Polychlorinated biphenyl	7.82E-08	2.00E+00	1.56E-07	
Pyrene	5.14E-07			
Alpha activity	8.63E+04			
Beta activity	2.75E+05			
Cesium-137	7.37E+03	3.16E-11	2.33E-07	
Neptunium-237	1.09E+04	3.00E-10	3.26E-06	
Plutonium-239	3.77E+03	3.16E-10	1.19E-06	
Technetium-99	1.07E+07	1.40E-12	1.50E-05	
Thorium-230	1.22E+04	3.75E-11	4.57E-07	
Uranium-234	1.48E+05	4.44E-11	6.58E-06	
Uranium-235	2.72E+03	4.70E-11	1.28E-07	
Uranium-238	3.15E+05	6.20E-11	1.95E-05	
Pathway Total				6.05E-05

---------- SECTOR=Far North/Northwest PATHWAY=Excavation Inhalation of Soil .....

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	8.95E-08			
Antimony	1.45E-11			
Arsenic	5.40E-11	5.00E+01	2.703-09	
Beryllium	4.25E-12	8.40E+00	3.57E-11	
Cadmium	3.49E-12	6.10E+00	2.13E-11	
Chromium	3.85E-10	4.10E+01	1.58E-08	
Cobalt	5.99E-11			
Copper	1.88E-08			
Iron	1.69E-07			
Lead	1.63E-10			
Manganese	4.32E-09			
Mercury	1.08E-12			
Nickel	3.45E-08			
Thallium	6.10E-12			
Uranium	5.14E-09			
Zinc	4.27E-10			

Excavation Excess Lifetime Cancer Risks

SECTOR=Far North/Northwest PATHWAY=Excavation Inhalation of Soil (continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
2,4-Dinitrotoluene	4.97E-12			
Acenaphthene	6.04E-13			
Anthracene	1.93E-12			
Benz(a)anthracene	4.10E-12	3.10E-01	1.27E-12	
Benzo(a)pyrene	3.38E-12	3.10E+00	1.05E-11	
Benzo(b)fluoranthene	3.14E-12	3.10E-01	9.73E-13	
Benzo(ghi)perylene	1.57E-12			
Benzo(k)fluoranthene	3.50E-12	3.10E-02	1.09E-13	
Bis(2-ethylhexyl)phthalate	1.11E-12			
Chrysene	4.23E-12	3.10E-03	1.31E-14	
Di-n-butyl phthalate	7.70E-12			
Fluoranthene	4.94E-12			
Fluorene	6.04E-13			
Indeno(1,2,3-cd)pyrene	1.69E-12	3.10E-01	5.24E-13	
N-Nitrosodiphenylamine	5.02E-12			
PCB-1254	2.84E-13	2.00E+00	5.68E-13	
PCB-1260	3.72E-13	2.00E+00	7.43E-13	
Phenanthrene	5.00E-12			
Polychlorinated biphenyl	7.61E-13	2.00E+00	1.52E-12	
Pyrene	5.00E-12			
Alpha activity				
Beta activity				
Cesium-137	7.17E-02	1.91E-11	1.37E-12	
Neptunium-237	1.06E-01	3.45E-08	3.65E-09	
Plutonium-239	3.67E-02	2.78E-08	1.02E-09	
Technetium-99	1.04E+02	2.89E-12	3.02E-10	
Thorium-230	1.19E-01	1.72E-08	2.04E-09	
Uranium-234	1.44E+00	1.40E-08	2.02E-08	
Uranium-235	2.65E-02	1.30E-08	3.44E-10	
Uranium-238	3.07E+00	1.24E-08	3.80E-08	
Pathway Total				8.41E-08

SECTOR=Northeast PATHWAY=Excavation Dermal Contact with Soil

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	3.46E-03			
Antimony	6.50E-07			
Arsenic	1.32E-06	3.66E+00	4.84E-06	
Barium	2.92E-05			
Beryllium	1.60E-07	4.30E+02	6.89E-05	
Cadmium	8.64E-09			
Chromium	5.91E-06			
Cobalt	2.22E-06			
Manganese	1.20E-04			
Thallium	3.96E-07			
Uranium	1.92E-05			
vanadium	8.20E-06			
Zinc	9.63E-06			
2,6-Dinitrotoluene	4.29E-07	8.00E-01	3.43E-07	
Acenaphthene	4.63E-07			
Anthracene	4.96E-07			
Benz(a)anthracene	1.13E-06	2.35E+00	2.67E-06	
Benzo(a)pyrene	1.02E-06	2.35E+01	2.40E-05	
Benzo(b)fluoranthene	1.14E-06	2.35E+00	2.68E-06	
Benzo(ghi)perylene	4.95E-07			
Benzo(k)fluoranthene	8.64E-07	2.35E-01	2.03E-07	

Excavation Excess Lifetime Cancer Risks

..... SECTOR=Northeast PATHWAY=Excavation Dermal Contact with Soil .....
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Bis(2-ethylhexyl)phthalate	6.67E-08	7.37E-02	4.92E-09	
Chrysene	1.17E-06	2.35E-02	2.75E-08	
Di-n-butyl phthalate	4.89E-07			
Dibenz(a,h)anthracene	4.43E-07	2.35E+01	1.04E-05	
Fluoranthene	8.10E-07			
Fluorene	4.47E-07			
Indeno(1,2,3-cd)pyrene	7.73E-07	2.35E+00	1.82E-06	
N-Nitroso-di-n-propylamine	4.38E-07	2.80E+01	1.23E-05	
Naphthalene	4.42E-07			
PCB-1254	3.47E-09	2.22E+00	7.713-09	
PCB-1260	1.56E-08	2.22E+00	3.46E-08	
Phenanthrene	6.90E-07			
Polychlorinated biphenyl	2.87E-08	2.22E+00	6.383-08	
Pyrene	7.48E-07			
Alpha activity				
Beta activity				
Neptunium-237				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				1 283-04

---------- SECTOR=Northeast PATHWAY=Excavation External Exposure to Soil .....

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Cadmium				
Chromium				
Cobalt				
Manganese				
Thallium				
Uranium				
Vanadium				
Zinc				
2,6-Dinitrotoluene				
Acenaphthene				
Anthracene				
Benz(a)anthracene				
Benzo(a)pyrene				
Benzo(b)fluoranthene				
Benzo(ghi)perylene				
Benzo(k)fluoranthene				
Bis(2-ethylhexyl)phthalate				
Chrysene				
Di-n-butyl phthalate				
Dibenz(a,h)anthracene				
Fluoranthene				
Fluorene				
Indeno(1,2,3-cd)pyrene				
N-Nitroso-di-n-propylamine				
Naphthalene				
PCB-1254				

Excavation Excess Lifetime Cancer Risks

---------- SECTOR=Northeast PATHWAY-Excavation External Exposure to Soil (continued) ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
PCB-1260				
Phenanthrene				
Polychlorinated biphenyl				
Pyrene				
Alpha activity	7.05E+01			
Beta activity	1.25E+02			
Neptunium-237	6.77E-01	4.62E-07	3.13E-07	
Uranium-234	3.79E+01	2.14E-11	8.10E-10	
uranium-235	1.44E+00	2.65E-07	3.81E-07	
Uranium-238	3.89E+01	6.57E-08	2.56E-06	
Pathway Total				3.25E-06

---------- SECTOR=Northeast PATHWAY=Excavation Ingestion of Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	7.72E-03			
Antimony	1.45E-06			
Arsenic	2.95E-06	1.50E+00	4.43E-06	
Barium	6.52E-05			
Beryllium	3.58E-07	4.30E+00	1.54E-06	
Cadmium	9.65E-08			
Chromium	1.32E-05			
Cobalt	4.95E-06			
Manganese	2.67E-04			
Thallium	8.84E-07			
Uranium	4.29E-05			
Vanadium	1.83E-05			
Zinc	2.15E-05			
2,6-Dinitrotoluene	4.79E-07	6.80E-01	3.26E-07	
Acenaphthene	5.17E-07			
Anthracene	5.54E-07			
Benz(a)anthracene	1.27E-06	7.30E-01	9.243-07	
Benzo(a)pyrene	1.14E-06	7.30E+00	8.31E-06	
Benzo(b)fluoranthene	1.27E-06	7.30E-01	9.28E-07	
Benzo(ghi)perylene	5.52E-07			
Benzo(k)fluoranthene	9.64E-07	7.30E-02	7.04E-08	
Bis(2-ethylhexyl)phthalate	7.45E-08	1.40E-02	1.04E-09	
Chrysene	1.3 OE-06	7.30E-03	9.50E-09	
Di-n-butyl phthalate	5.45E-07			
Dibenz(a,h)anthracene	4.94E-07	7.30E+00	3.61E-06	
Fluoranthene	9.04E-07			
Fluorene	4.99E-07			
Indeno(1,2,3-cd)pyrene	8.62E-07	7.30E-01	6.30E-07	
N-Nitroso-di-n-propylamine	4.89E-07	7.00E+00	3.42E-06	
Naphthalene	4.93E-07			
PCB-1254	6.45E-09	2.00E+00	1.29E-08	
PCB-1260	2.89E-08	2.00E+00	5.79E-08	
Phenanthrene	7.71E-07			
Polychlorinated biphenyl	5.34E-08	2.00E+00	1.07E-07	
Pyrene	8.35E-07			
Alpha activity	4.63E+04			
Beta activity	8.20E+04			
Neptunium-237	4.45E+02	3.00E-10	1.34E-07	
Uranium-234	2.49E+04	4.44E-11	1.10E-06	
Uranium-235	9.45E+02	4.70E-11	4.44E-08	
Uranium-238	2.56E+04	6.20E-11	1.58E-06	

Excavation Excess Lifetime Cancer Risks

..... SECTOR=Northeast PATHWAY=Excavation Ingestion of Soil .....
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Pathway Total				2.72E-05

---------- SECTOR=Northeast PATHWAY=Excavation Inhalation of Soil .....

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	7.51E-08			
Antimony	1.41E-11			
Arsenic	2.87E-11	5.00E+01	1.44E-09	
Barium	6.34E-10			
Beryllium	3.48E-12	8.40E+00	2.92E-11	
Cadmium	9.38E-13	6.10E+00	5.72E-12	
Chromium	1.28E-10	4.10E+01	5.26E-09	
Cobalt	4.81E-11			
Manganese	2.59E-09			
Thallium	8.60E-12			
Uranium	4.17E-10			
Vanadium	1.78E-10			
Zinc	2.09E-10			
2,6-Dinitrotoluene	4.66E-12			
Acenaphthene	5.03E-12			
Anthracene	5.39E-12			
Benz(a)anthracene	1.23E-11	3.10E-01	3.82E-12	
Benzo(a)pyrene	1.11E-11	3.10E+00	3.43E-11	
Benzo(b)fluoranthene	1.24E-11	3.10E-01	3.83E-12	
Benzo(ghi)perylene	5.37E-12			
Benzo(k)fluoranthene	9.38E-12	3.10E-02	2.91E-13	
Bis(2-ethylhexyl)phthalate	7.24E-13			
Chrysene	1.27E-11	3.10E-03	3.92E-14	
Di-n-butyl phthalate	5.30E-12			
Dibenz(a,h)anthracene	4.81E-12	3.10E+00	1.49E-11	
Fluoranthene	8.79E-12			
Fluorene	4.86E-12			
Indeno(1,2,3-cd)pyrene	8.39E-12	3.10E-01	2.60E-12	
N-Nitroso-di-n-propylamine	4.75E-12			
Naphthalene	4.80E-12			
PCB-1254	6.28E-14	2.00E+00	1.26E-13	
PCB-1260	2.81E-13	2.00E+00	5.63E-13	
Phenanthrene	7.50E-12			
Polychlorinated biphenyl	5.19E-13	2.00E+00	1.04E-12	
Pyrene	8.12E-12			
Alpha activity				
Beta activity				
Neptunium-237	4.33E-03	3.45E-08	1.49E-10	
Uranium-234	2.42E-01	1.40E-08	3.39E-09	
Uranium-235	9.19E-03	1.30E-08	1.19E-10	
Uranium-238	2.48E-01	1.24E-08	3.08E-09	
Pathway Total				1.35E-08

---------- SECTOR=Northwest PATHWAY=Excavation Dermal Contact with Soil .....

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	3.38E-03			

Excavation Excess Lifetime Cancer Risks

..... SECTOR=Northwest PATHWAY=Excavation Dermal Contact with Soil (continued) .....

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Antimony	5.66E-07			
Arsenic	1.51E-06	3.66E+00	5.54E-06	
Beryllium	1.91E-07	4.30E+02	8.20E-05	
Cadmium	1.16E-08			
Chromium	6.57E-06			
Cobalt	2.243-06			
Iron	5.973-03			
Lead	3.46E-06			
Manganese	1.28E-04			
Mercury	4.43E-08			
Thallium	1.84E-07			
Uranium	5.60E-06			
Vanadium	9.28E-06			
Benz(a)anthracene	3.34E-07	2.35E+00	7.86E-07	
Benzo(a)pyrene	4.423-07	2.35E+01	1.04E-05	
Benzo(b)fluoranthene	4.44E-07	2.35E+00	1.05E-06	
Benzo(k)fluoranthene	3.34E-07	2.35E-01	7.86E-08	
Bis(2-ethylhexyl)phthalate	8.90E-08	7.373-02	6.55E-09	
Chrysene	3.223-07	2.35E-02	7.59E-09	
Di-n-butyl phthalate	4.45E-08			
Fluoranthene	4.41E-07			
N-Nitroso-di-n-propylamine	5.46E-07	2.80E+01	1.53E-05	
Phenanthrene	5.56E-08			
Polychlorinated biphenyl	3.34E-07	2.22E+00	7.41E-07	
Pyrene	4.42E-07			
Alpha activity				
Beta activity				
Neptunium-237				
Uranium-235				
Uranium-238				
Pathway Total				1.16E-04

---------- SECTOR=Northwest PATHWAY=Excavation External Exposure to Soil ----------

Analyte	carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum				
Antimony				
Arsenic				
Beryllium				
Cadmium				
Chromium				
Cobalt				
Iron				
Lead				
Manganese				
Mercury				
Thallium				
Uranium				
Vanadium				
Benz(a)anthracene				
Benzo(a)pyrene				
Benzo(b)fluoranthene				
Benzo(k)fluoranthene				
Bis(2-ethylhexyl)phthalate				
Chrysene				
Di-n-butyl phthalate				

Excavation Excess Lifetime Cancer Risks

..... SECTOR=Northwest PATHWAY=Excavation External Exposure to Soil .....
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Fluoranthene				
N-Nitroso-di-n-propylamine				
Phenanthrene				
Polychlorinated biphenyl				
Pyrene				
Alpha activity	7.54E+01			
Beta activity	1.32E+02			
Neptunium-237	1.40E+00	4.623-07	6.46E-07	
Uranium-235	6.53E-01	2.65E-07	1.73E-07	
Uranium-238	1.13E+01	6.573-08	7.44E-07	
Pathway Total				1.56E-06

---------- SECTOR=Northwest PATHWAY=Excavation Ingestion of Soil .....

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	7.56E-03			
Antimony	1.26E-06			
Arsenic	3.38E-06	1.50E+00	5.07E-06	
Beryllium	4.26E-07	4.30E+00	1.83E-06	
Cadmium	1.29E-07			
Chromium	1.47E-05			
Cobalt	5.003-06			
Iron	1.33E-02			
Lead	7.72E-06			
Manganese	2.86E-04			
Mercury	9.89E-08			
Thallium	4.12E-07			
Uranium	1.25E-05			
Vanadium	2.07E-05			
Benz(a)anthracene	3.72E-07	7.30E-01	2.72E-07	
Benzo(a)pyrene	4.94E-07	7.30E+00	3.60E-06	
Benzo(b)fluoranthene	4.95E-07	7.30E-01	3.62E-07	
Benzo(k)fluoranthene	3.723-07	7.30E-02	2.72E-08	
Bis(2-ethylhexyl)phthalate	9.93E-08	1.40E-02	1.39E-09	
Chrysene	3.603-07	7.30E-03	2.63E-09	
Di-n-butyl phthalate	4.97E-08			
Fluoranthene	4.93E-07			
N-Nitroso-di-n-propylamine	6.09E-07	7.00E+00	4.26E-06	
Phenanthrene	6.21E-08			
Polychlorinated biphenyl	6.21E-07	2.00E+00	1.24E-06	
Pyrene	4.93E-07			
Alpha activity	4.95E+04			
Beta activity	8.70E+04			
Neptunium-237	9.19E+02	3.00E-10	2.76E-07	
Uranium-235	4.29E+02	4.70E-11	2.02E-08	
Uranium-238	7.44E+03	6.20E-11	4.62E-07	
Pathway Total				1.74E-05

---------- SECTOR=Northwest PATHWAY=Excavation Inhalation of Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	7.35E-08			

Excavation Excess Lifetime Cancer Risks

SECTOR=Northwest PATHWAY=Excavation Inhalation of Soil (continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Antimony	1.23E-11			
Arsenic	3.29E-11	5.00E+01	1.64E-09	
Beryllium	4.14E-12	8.40E+00	3.48E-11	
Cadmium	1.26E-12	6.10E+00	7.66E-12	
Chromium	1.43E-10	4.10E+01	5.853-09	
Cobalt	4.86E-11			
Iron	1.3 0E-07			
Lead	7.51E-11			
Manganese	2.78E-09			
Mercury	9.61E-13			
Thallium	4.00E-12			
uranium	1.22E-10			
Vanadium	2.02E-10			
Benz (a)anthracene	3.62E-12	3.10E-01	1.12E-12	
Benzo (a)pyrene	4.80E-12	3.10E+00	1.49E-11	
Benzo(b) fluoranthene	4.82E-12	3.10E-01	1.49E-12	
Benzo(k) fluoranthene	3.62E-12	3.10E-02	1.12E-13	
Bis(2-ethylhexyl)phthalate	9.66E-13			
Chrysene	3.50E-12	3.10E-03	1.09E-14	
Di-n-butyl phthalate	4.83E-13			
Fluoranthene	4.79E-12			
N-Nitroso-di-n-propylamine	5.92E-12			
Phenanthrene	6.04E-13			
Polychlorinated biphenyl'	6.04E-12	2.00E+00	1.21E-11	
Pyrene	4.79E-12			
Alpha activity				
Beta activity				
Neptunium-237	8.94E-03	3.45E-08	3.08E-10	
uranium-235	4.17E-03	1.30E-08	5.43E-11	
Uranium-238	7.24E-02	1.24E-08	8.98E-10	
Pathway Total				8.82E-09

SECTOR=Southeast PATHWAY=Excavation Dermal Contact with Soil

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	3.35E-03			
Antimony	2.76E-07			
Arsenic	1.63E-06	3.66E+00	5.96E-06	
Barium	3.39E-05			
Beryllium	1.77E-07	4.30E+02	7.63E-05	
Cadmium	1.61E-08			
Chromium	5.12E-06			
Cobalt	1.90E-06			
Iron	5.48E-03			
Lead	3.07E-06			
Manganese	1.14E-04			
Mercury	1.86E-08			
Thallium	2.04E-07			
Uranium	1.91E-06			
Vanadium	7.77E-06			
Zinc	1.05E-05			
1,1,2-Trichloroethane	4.60E-08	7.04E-02	3.24E-09	
1,1-Dichloroethene	9.60E-07	6.00E-01	5.76E-07	
Acenaphthene	3.67E-07			
Anthracene	5.75E-07			
Benz (a)anthracene	5.93E-07	2.35E+00	1.40E-06	

Excavation Excess Lifetime Cancer Risks

---------- SECTOR=Southeast PATHWAY=Excavation Dermal Contact with Soil ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Benzo(a)pyrene	5.92E-07	2.35E+01	1.39E-05	
Benzo(b)fluoranthene	6.05E-07	2.35E+00	1.43E-06	
Benzo(ghi)perylene	5.78E-07			
Benzo(k)fluoranthene	5.70E-07	2.35E-01	1.343-07	
Bis(2-ethylhexyl)phthalate	8.53E-08	7.373-02	6.28E-09	
Carbon tetrachloride	5.81E-08	2.00E-01	1.16E-08	
Chrysene	6.01E-07	2.35E-02	1.42E-08	
Di-n-butyl phthalate	4.64E-07			
Di-n-octylphthalate	6.673-08			
Dibenz(a,h)anthracene	5.12E-07	2.35E+01	1.20E-05	
Fluoranthene	4.70E-07			
Fluorene	2.22E-07			
Indeno(1,2,3-cd)pyrene	5.78E-07	2.35E+00	1.36E-06	
Naphthalene	1.78E-07			
PCB-1254	6.56E-08	2.22E+00	1.46E-07	
PCB-1262	1.63E-08	2.22E+00	3.62E-08	
Phenanthrene	5.94E-07			
Polychlorinated biphenyl	3.36E-07	2.22E+00	7.47E-07	
Pyrene	5.13E-07			
Tetrachloroethene	5.70E-08	5.20E-02	2.96E-09	
Trichloroethene	1.83E-05	7.33E-02	1.34E-06	
Vinyl chloride	3.40E-07	1.90E+00	6.473-07	
trans-1,2-Dichloroethene	1.11E-04			
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-235				
Uranium-238				
Pathway Total				1.16E-04

---------- SECTOR=Southeast PATHWAY=Excavation External Exposure to Soil .....

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Cadmium				
Chromium				
Cobalt				
Iron				
Lead				
Manganese				
Mercury				
Thallium				
Uranium				
Vanadium				
Zinc				
1,1,2-Trichloroethane				
1,1-Dichloroethene				
Acenaphthene				
Anthracene				
Benz(a)anthracene				
Benzo(a)pyrene				

Excavation Excess Lifetime Cancer Risks

..... SECTOR=Southeast PATHWAY=Excavation External Exposure to Soil ..... (continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Benzo(b)fluoranthene				
Benzo(ghi)perylene				
Benzo(k)fluoranthene				
Bis(2-ethylhexyl)phthalate				
Carbon tetrachloride				
Chrysene				
Di-n-butyl phthalate				
Di-n-octylphthalate				
Dibenz(a,h)anthracene				
Fluoranthene				
Fluorene				
Indeno(1,2,3-cd)pyrene				
Naphthalene				
PCB-1254				
PCB-1262				
Phenanthrene				
Polychlorinated biphenyl				
Pyrene				
Tetrachloroethene				
Trichloroethene				
Vinyl chloride				
trans-1,2-Dichloroethene				
Alpha activity	7.47E+01			
Beta activity	1.14E+02			
Cesium-137	6.433-01	2.09E-06	1.34E-06	
Neptunium-237	9.57E-01	4.62E-07	4.42E-07	
Uranium-235	3.55E-01	2.65E-07	9.41E-08	
Uranium-238	3.88E+00	6.57E-08	2.55E-07	
Pathway Total				2.133-06

---------- SECTOR=Southeast PATHWAY=Excavation Ingestion of Soil .....

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	7.47E-03			
Antimony	6.17E-07			
Arsenic	3.64E-06	1.50E+00	5.46E-06	
Barium	7.57E-05			
Beryllium	3.96E-07	4.30E+00	1.70E-06	
Cadmium	1.80E-07			
Chromium	1.14E-05			
Cobalt	4.23E-06			
Iron	1.22E-02			
Lead	6.86E-06			
Manganese	2.55E-04			
Mercury	4.16E-08			
Thallium	4.55E-07			
Uranium	4.25E-06			
Vanadium	1.73E-05			
Zinc	2.34E-05			
1,1,2-Trichloroethane	2.05E-08	5.70E-02	1.17E-09	
1,1-Dichloroethene	4.29E-07	6.00E-01	2.57E-07	
Acenaphthene	4.10E-07			
Anthracene	6.42E-07			
Benz(a)anthracene	6.62E-07	7.30E-01	4.84E-07	
Benzo(a)pyrene	6.60E-07	7.30E+00	4.82E-06	
Benzo(b)fluoranthene	6.76E-07	7.30E-01	4.93E-07	

Excavation Excess Lifetime Cancer Risks

..... SECTOR=Southeast PATHWAY=Excavation Ingestion of Soil ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Benzo(ghi)perylene	6.46E-07			
Benzo(k)fluoranthene	6.37E-07	7.30E-02	4.65E-08	
Bis(2-ethylhexyl)phthalate	9.52E-08	1.40E-02	1.33E-09	
Carbon tetrachloride	2.59E-08	1.30E-01	3.37E-09	
Chrysene	6.71E-07	7.30E-03	4.90E-09	
Di-n-butyl phthalate	5.18E-07			
Di-n-octylphthalate	7.45E-08			
Dibenz(a,h)anthracene	5.71E-07	7.30E+00	4.17E-06	
Fluoranthene	5.24E-07			
Fluorene	2.48E-07			
Indeno(1,2,3-cd)pyrene	6.45E-07	7.30E-01	4.71E-07	
Naphthalene	1.99E-07			
PCB-1254	1.22E-07	2.00E+00	2.44E-07	
PCB-1262	3.03E-08	2.00E+00	6.07E-08	
Phenanthrene	6.63E-07			
Polychlorinated biphenyl	6.25E-07	2.00E+00	1.25E-06	
Pyrene	5.73E-07			
Tetrachloroethene	2.55E-08	5.20E-02	1.32E-09	
Trichloroethene	8.18E-06	1.10E-02	9.00E-08	
Vinyl chloride	1.52E-07	1.90E+00	2.89E-07	
trans-1,2-Dichloroethene	4.95E-05			
Alpha activity	4.91E+04			
Beta activity	7.49E+04			
Cesium-137	4.22E+02	3.16E-11	1.33E-08	
Neptunium-237	6.28E+02	3.00E-10	1.89E-07	
Uranium-235	2.33E+02	4.70E-11	1.10E-08	
Uranium-238	2.55E+03	6.20E-11	1.58E-07	
Pathway Total				2.02E-05

---------- SECTOR=Southeast PATHWAY=Excavation Inhalation of Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	7.27E-08			
Antimony	6.00E-12			
Arsenic	3.54E-11	5.00E+01	1.77E-09	
Barium	7.36E-10			
Beryllium	3.85E-12	8.40E+00	3.23E-11	
Cadmium	1.75E-12	6.10E+00	1.07E-11	
Chromium	1.11E-10	4.10E+01	4.56E-09	
Cobalt	4.12E-11			
Iron	1.19E-07			
Lead	6.67E-11			
Manganese	2.48E-09			
Mercury	4.05E-13			
Thallium	4.42E-12			
Uranium	4.14E-11			
Vanadium	1.69E-10			
Zinc	2.28E-10			
1,1,2-Trichloroethane	2.43E-08	5.70E-02	1.39E-09	
1,1-Dichloroethene	2.83E-06	1.20E+00	3.40E-06	
Acenaphthene	3.98E-12			
Anthracene	6.25E-12			
Benz(a)anthracene	6.44E-12	3.10E-01	2.00E-12	
Benzo(a)pyrene	6.42E-12	3.10E+00	1.99E-11	
Benzo(b)fluoranthene	6.57E-12	3.10E-01	2.04E-12	
Benzo(ghi)perylene	6.28E-12			

Excavation Excess Lifetime Cancer Risks

SECTOR=Southeast PATHWAY-Excavation Inhalation of Soil (continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Benzo(k)fluoranthene	6.19E-12	3.10E-02	1.92E-13	
Bis(2-ethylhexyl)phthalate	9.26E-13			
Carbon tetrachloride	5.69E-08	5.30E-02	3.01E-09	
Chrysene	6.53E-12	3.10E-03	2.02E-14	
Di-n-butyl phthalate	5.04E-12			
Di-n-octylphthalate	7.24E-13			
Dibenz(a,h)anthracene	5.55E-12	3.10E+00	1.72E-11	
Fluoranthene	5.10E-12			
Fluorene	2.41E-12			
Indeno(1,2,3-cd)pyrene	6.27E-12	3.10E-01	1.94E-12	
Naphthalene	1.93E-12			
PCB-1254	1.19E-12	2.00E+00	2.37E-12	
PCB-1262	2.95E-13	2.00E+00	5.90E-13	
Phenanthrene	6.45E-12			
Polychlorinated biphenyl	6.08E-12	2.00E+00	1.22E-11	
Pyrene	5.57E-12			
Tetrachloroethene	4.81E-08	2.00E-03	9.63E-11	
Trichloroethene	1.81E-05	6.00E-03	1.08E-07	
Vinyl chloride	7.33E-04	3.00E-01	2.20E-04	
trans-1,2-Dichloroethene	4.81E-10			
Alpha activity				
Beta activity				
Cesium-137	4.11E-03	1.91E-11	7.84E-14	
Neptunium-237	6.11E-03	3.45E-08	2.11E-10	
Uranium-235	2.27E-03	1.30E-08	2.95E-11	
Uranium-238	2.48E-02	1.24E-08	3.07E-10	
Pathway Total				2.243-04

SECTOR=Southwest PATHWAY=Excavation Dermal Contact with Soil

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	3.09E-03			
Antimony	6.32E-07			
Arsenic	2.05E-06	3.66E+00	7.50E-06	
Barium	3.30E-05			
Beryllium	1.80E-07	4.30E+02	7.72E-05	
Cadmium	1.93E-08			
Chromium	5.033-06			
Iron	5.66E-03			
Lead	3.08E-06			
Manganese	1.15E-04			
Mercury	1.69E-08			
Silver	1.29E-07			
Thallium	1.85E-07			
Uranium	2.74E-06			
Vanadium	7.11E-06			
Zinc	1.16E-05			
2-Hexanone	1.22E-08			
Acenaphthene	4.99E-07			
Acenaphthylene	2.45E-07			
Anthracene	5.25E-07			
Benz(a)anthracene	6.99E-07	2.35E+00	1.65E-06	
Benzo(a)pyrene	7.15E-07	2.35E+01	1.68E-05	
Benzo(b)fluoranthene	7.12E-07	2.35E+00	1.68E-06	
Benzo(ghi)perylene	5.49E-07			
Benzo(k)fluoranthene	6.41E-07	2.35E-01	1.51E-07	

Excavation Excess Lifetime Cancer Risks

---------- SECTOR=Southwest PATHWAY=Excavation Dermal Contact with Soil .....
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Bis(2-ethylhexyl)phthalate	1.79E-07	7.37E-02	1.32E-08	
Butyl benzyl phthalate	4.833-07			
Chrysene	7.24E-07	2.35E-02	1.70E-08	
Di-n-butyl phthalate	1.243-06			
Di-n-octylphthalate	6.74E-07			
Dibenz(a,h)anthracene	6.09E-07	2.35E+01	1.43E-05	
Fluoranthene	8.90E-07			
Fluorene	3.17E-07			
Indeno(1,2,3-cd)pyrene	5.62E-07	2.35E+00	1.32E-06	
Iodomethane				
Methylene chloride	5.52E-08	7.89E-03	4.36E-10	
N-Nitroso-di-n-propylamine	6.47E-07	2.80E+01	1.81E-05	
N-Nitrosodiphenylamine	6.47E-07	1.96E-02	1.27E-08	
Naphthalene	1.333-07			
PCB-1260	1.92E-08	2.22E+00	4.26E-08	
Phenanthrene	7.303-07			
Polychlorinated biphenyl	2.54E-08	2.22E+00	5.63E-08	
Pyrene	8.64E-07			
Trichloroethene	9.92E-07	7.33E-02	7.283-08	
Vinyl chloride	9.73E-08	1.90E+00	1.85E-07	
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-235				
Uranium-238				
Pathway Total				1.39E-04

---------- SECTOR=Southwest PATHWAY=Excavation External Exposure to Soil .....

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Cadmium				
Chromium				
Iron				
Lead				
Manganese				
Mercury				
Silver				
Thallium				
Uranium				
Vanadium				
Zinc				
2-Hexanone				
Acenaphthene				
Acenaphthylene				
Anthracene				
Benz(a)anthracene				
Benzo(a)pyrene				
Benzo(b)fluoranthene				
Benzo(ghi)perylene				
Benzo(k)fluoranthene				

Excavation Excess Lifetime Cancer Risks

SECTOR=Southwest PATHWAY-Excavation External Exposure to Soil (continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Bis(2-ethylhexyl)phthalate				
Butyl benzyl phthalate				
Chrysene				
Di-n-butyl phthalate				
Di-n-octylphthalate				
Dibenz(a,h)anthracene				
Fluoranthene				
Fluorene				
Indeno(1,2,3-cd)pyrene				
Iodomethane				
Methylene chloride				
N-Nitroso-di-n-propylamine				
N-Nitrosodiphenylamine				
Naphtha1ene				
PCB-1260				
Phenanthrene				
Polychlorinated biphenyl				
Pyrene				
Trichloroethene				
Vinyl chloride				
Alpha activity	6.47E+01			
Beta activity	1.39E+02			
Cesium-137	7.08E-01	2.09E-06	1.48E-06	
Neptunium-237	6.88E-01	4.62E-07	3.18E-07	
Uranium-235	9.33E-01	2.65E-07	2.47E-07	
Uranium-238	5.56E+00	6.57E-08	3.65E-07	
Pathway Total				2.41E-06

SECTOR=Southwest PATHWAY=Excavation Ingestion of Soil

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	6.90E-03			
Antimony	1.41E-06			
Arsenic	4.58E-06	1.50E+00	6.87E-06	
Barium	7.37E-05			
Beryllium	4.01E-07	4.30E+00	1.72E-06	
Cadmium	2.15E-07			
chromium	1.12E-05			
Iron	1.26E-02			
Lead	6.88E-06			
Manganese	2.58E-04			
Mercury	3.77E-08			
Silver	2.87E-07			
Thallium	4.13E-07			
Uranium	6.11E-06			
vanadium	1.59E-05			
Zinc	2.60E-05			
2-Hexanone	5.46E-09			
Acenaphthene	5.57E-07			
Acenaphthylene	2.73E-07			
Anthracene	5.86E-07			
Benz(a)anthracene	7.80E-07	7.30E-01	5.70E-07	
Benzo(a)pyrene	7.98E-07	7.30E+00	5.83E-06	
Benzo(b)fluoranthene	7.95E-07	7.30E-01	5.81E-07	
Benzo(ghi)perylene	6.12E-07			
Benzo(k)fluoranthene	7.15E-07	7.30E-02	5.22E-08	

Excavation Excess Lifetime Cancer Risks

---------- SECTOR=Southwest PATHWAY=Excavation Ingestion Of Soil .....
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Bis(2-ethylhexyl)phthalate	2.00E-07	1.40E-02	2.80E-09	
Butyl benzyl phthalate	5.39E-07			
Chrysene	8.08E-07	7.30E-03	5.903-09	
Di-n-butyl phthalate	1.39E-06			
Di-n-octylphthalate	7.52E-07			
Dibenz(a,h)anthracene	6.79E-07	7.30E+00	4.96E-06	
Fluoranthene	9.94E-07			
Fluorene	3.54E-07			
Indeno(1,2,3-cd)pyrene	6.27E-07	7.30E-01	4.58E-07	
Iodomethane	1.93E-08			
Methylene chloride	2.46E-08	7.50E-03	1.85E-10	
N-Nitroso-di-n-propylamine	7.22E-07	7.00E+00	5.06E-06	
N-Nitrosodiphenylamine	7.22E-07	4.90E-03	3.543-09	
Naphthalene	1.49E-07			
PCB-1260	3.56E-08	2.00E+00	7.13E-08	
Phenanthrene	8.15E-07			
Polychlorinated biphenyl	4.72E-08	2.00E+00	9.43E-08	
Pyrene	9.65E-07			
Trichloroethene	4.43E-07	1.10E-02	4.87E-09	
Vinyl chloride	4.34E-08	1.90E+00	8.25E-08	
Alpha activity	4.25E+04			
Beta activity	9.14E+04			
Cesium-137	4.65E+02	3.16E-11	1.47E-08	
Neptunium-237	4.52E+02	3.00E-10	1.36E-07	
Uranium-235	6.13E+02	4.70E-11	2.88E-08	
Uranium-238	3.65E+03	6.20E-11	2.26E-07	
Pathway Total				2.68E-05

..... SECTOR=Southwest PATHWAY=Excavation Inhalation of Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	6.71E-08			
Antimony	1.37E-11			
Arsenic	4.45E-11	5.00E+01	2.23E-09	
Barium	7.17E-10			
Beryllium	3.90E-12	8.40E+00	3.28E-11	
Cadmium	2.09E-12	6.10E+00	1.28E-11	
Chromium	1.09E-10	4.10E+01	4.48E-09	
Iron	1.23E-07			
Lead	6.69E-11			
Manganese	2.51E-09			
Mercury	3.673-13			
Silver	2.79E-12			
Thallium	4.01E-12			
Uranium	5.94E-11			
Vanadium	1.54E-10			
Zinc	2.53E-10			
2-Hexanone	5.31E-14			
Acenaphthene	5.42E-12			
Acenaphthylene	2.66E-12			
Anthracene	5.70E-12			
Benz(a)anthracene	7.59E-12	3.10E-01	2.35E-12	
Benzo(a)pyrene	7.76E-12	3.10E+00	2.41E-11	
Benzo(b)fluoranthene	7.733-12	3.10E-01	2.40E-12	
Benzo(ghi)perylene	5.96E-12			
Benzo(k)fluoranthene	6.96E-12	3.10E-02	2.16E-13	

Excavation Excess Lifetime Cancer Risks

SECTOR=Southwest PATHWAY=Excavation Inhalation of Soil (continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Bis(2-ethylhexyl)phthalate	1.94E-12			
Butyl benzyl phthalate	5.24E-12			
Chrysene	7.86E-12	3.10E-03	2.44E-14	
Di-n-butyl phthalate	1.35E-11			
Di-n-octylphthalate	7.32E-12			
Dibenz(a,h)anthracene	6.61E-12	3.10E+00	2.05E-11	
Fluoranthene	9.67E-12			
Fluorene	3.44E-12			
Indeno(1,2,3-cd)pyrene	6.10E-12	3.10E-01	1.89E-12	
Iodomethane				
Methylene chloride	1.11E-07	1.65E-03	1.82E-10	
N-Nitroso-di-n-propylamine	7.03E-12			
N-Nitrosodiphenylamine	7.03E-12			
Naphthalene	1.45E-12			
PCB-1260	3.47E-13	2.00E+00	6.93E-13	
Phenanthrene	7.93E-12			
Polychlorinated biphenyl	4.593-13	2.00E+00	9.17E-13	
Pyrene	9.38E-12			
Trichloroethene	9.79E-07	6.00E-03	5.88E-09	
Vinyl chloride	2.10E-04	3.00E-01	6.29E-05	
Alpha activity				
Beta activity				
Cesium-137	4.53E-03	1.91E-11	8.64E-14	
Neptunium-237	4.39E-03	3.453-08	1.52E-10	
Uranium-235	5.96E-03	1.30E-08	7.75E-11	
Uranium-238	3.55E-02	1.24E-08	4.40E-10	
Pathway Total				6.29E-05

SECTOR=West PATHWAY=Excavation Dermal Contact with Soil

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	4.17E-03			
Antimony	4.55E-07			
Arsenic	2.42E-05	3.66E+00	8.84E-05	
Barium	3.55E-05			
Beryllium	1.78E-07	4.30E+02	7.67E-05	
Cadmium	4.17E-08			
Chromium	6.26E-06			
Cobalt	2.223-06			
Uranium	2.67E-05			
Vanadium	8.40E-06			
Zinc	1.36E-05			
2-Methylnaphthalene	7.06E-07			
Acenaphthene	2.57E-06			
Anthracene	4.33E-06			
Benz(a)anthracene	5.15E-06	2.35E+00	1.21E-05	
Benzo(a)pyrene	4.82E-06	2.35E+01	1.14E-04	
Benzo(b)fluoranthene	5.67E-06	2.35E+00	1.33E-05	
Benzo(ghi)perylene	2.88E-06			
Benzo(k)fluoranthene	5.04E-06	2.35E-01	1.19E-06	
Bis(2-ethylhexyl)phthalate	1.11E-07	7.37E-02	8.19E-09	
Chrysene	5.51E-06	2.35E-02	1.30E-07	
Di-n-butyl phthalate	2.28E-07			
Dibenz(a,h)anthracene	2.70E-06	2.35E+01	6.36E-05	
Fluoranthene	9.51E-06			
Fluorene	1.86E-06			

Excavation Excess Lifetime Cancer Risks

..... SECTOR=West PATHWAY=Excavation Dermal Contact with Soil .....
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Indeno(1,2,3-cd)pyrene	2.953-06	2.35E+00	6.95E-06	
Naphthalene	1.05E-06			
PCB-1254	1.74E-07	2.22E+00	3.86E-07	
PCB-1260	1.07E-08	2.22E+00	2.37E-08	
Phenanthrene	7.78E-06			
Polychlorinated biphenyl	1.59E-07	2.22E+00	3.53E-07	
Pyrene	9.01E-06			
Trichloroethene	2.933-06	7.33E-02	2.15E-07	
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				3.773-04

---------- SECTOR=West PATHWAY=Excavation External Exposure to Soil .....

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Cadmium				
Chromium				
Cobalt				
Uranium				
Vanadium				
Zinc				
2-Methylnaphthalene				
Acenaphthene				
Anthracene				
Benz(a)anthracene				
Benzo(a)pyrene				
Benzo(b)fluoranthene				
Benzo(ghi)perylene				
Benzo(k)fluoranthene				
Bis(2-ethylhexyl)phthalate				
Chrysene				
Di-n-butyl phthalate				
Dibenz(a,h)anthracene				
Fluoranthene				
Fluorene				
Indeno(1,2,3-cd)pyrene				
Naphthalene				
PCB-1254				
PCB-1260				
Phenanthrene				
Polychlorinated biphenyl				
Pyrene				
Trichloroethene				
Alpha activity	2.80E+02			
Beta activity	4.88E+02			
Cesium-137	1.35E+00	2.09E-06	2.81E-06	

Excavation Excess Lifetime Cancer Risks

---------- SECTOR=West PATHWAY=Excavation External Exposure to Soil (continued) ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Neptunium-237	2.90E+00	4.62E-07	1.34E-06	
Uranium-234	4.10E+01	2.14E-11	8.77E-10	
Uranium-235	1.83E+00	2.65E-07	4.85E-07	
Uranium-238	5.38E+01	6.57E-08	3.53E-06	
Pathway Total				8.17E-06

---------- SECTOR=West PATHWAY=Excavation Ingestion of Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	9.31E-03			
Antimony	1.02E-06			
Arsenic	5.40E-05	1.50E+00	8.10E-05	
Barium	7.92E-05			
Beryllium	3.98E-07	4.30E+00	1.71E-06	
Cadmium	4.66E-07			
Chromium	1.40E-05			
Cobalt	4.97E-06			
Uranium	5.96E-05			
Vanadium	1.88E-05			
Zinc	3.03E-05			
2-Methylnaphthalene	7.88E-07			
Acenaphthene	2.87E-06			
Anthracene	4.84E-06			
Benz(a)anthracene	5.74E-06	7.30E-01	4.19E-06	
Benzo(a)pyrene	5.383-06	7.30E+00	3.93E-05	
Benzo(b)fluoranthene	6.33E-06	7.30E-01	4.62E-06	
Benzo(ghi)perylene	3.21E-06			
Benzo(k)fluoranthene	5.62E-06	7.30E-02	4.10E-07	
Bis(2-ethylhexyl)phthalate	1.243-07	1.40E-02	1.74E-09	
Chrysene	6.15E-06	7.30E-03	4.49E-08	
Di-n-butyl phthalate	2.54E-07			
Dibenz(a,h)anthracene	3.02E-06	7.30E+00	2.20E-05	
Fluoranthene	1.06E-05			
Fluorene	2.07E-06			
Indeno(1,2,3-cd)pyrene	3.29E-06	7.30E-01	2.40E-06	
Naphthalene	1.17E-06			
PCB-1254	3.23E-07	2.00E+00	6.47E-07	
PCB-1260	1.99E-08	2.00E+00	3.97E-08	
Phenanthrene	8.693-06			
Polychlorinated biphenyl	2.96E-07	2.00E+00	5.91E-07	
Pyrene	1.01E-05			
Trichloroethene	1.31E-06	1.10E-02	1.44E-08	
Alpha activity	1.84E+05			
Beta activity	3.20E+05			
Cesium-137	8.85E+02	3.16E-11	2.80E-08	
Neptunium-237	1.91E+03	3.00E-10	5.72E-07	
Uranium-234	2.69E+04	4.44E-11	1.19E-06	
Uranium-235	1.20E+03	4.70E-11	5.65E-08	
Uranium-238	3.53E+04	6.20E-11	2.19E-06	
Pathway Total				1.61E-04

Excavation Excess Lifetime Cancer Risks

---------- SECTOR=West PATHWAY=Excavation Inhalation of Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	9.06E-08			
Antimony	9.88E-12			
Arsenic	5.25E-10	5.00E+01	2.62E-08	
Barium	7.71E-10			
Beryllium	3.87E-12	8.40E+00	3.25E-11	
Cadmium	4.53E-12	6.10E+00	2.76E-11	
Chromium	1.36E-10	4.10E+01	5.57E-09	
Cobalt	4.83E-11			
Uranium	5.79E-10			
Vanadium	1.82E-10			
Zinc	2.94E-10			
2-Methylnaphthalene	7.66E-12			
Acenaphthene	2.79E-11			
Anthracene	4.70E-11			
Benz(a)anthracene	5.59E-11	3.10E-01	1.73E-11	
Benzo(a)pyrene	5.23E-11	3.10E+00	1.62E-10	
Benzo(b)fluoranthene	6.15E-11	3.10E-01	1.91E-11	
Benzo(ghi)perylene	3.12E-11			
Benzo(k)fluoranthene	5.47E-11	3.10E-02	1.70E-12	
Bis(2-ethylhexyl)phthalate	1.21E-12			
Chrysene	5.98E-11	3.10E-03	1.85E-13	
Di-n-butyl phthalate	2.47E-12			
Dibenz(a,h)anthracene	2.93E-11	3.10E+00	9.10E-11	
Fluoranthene	1.03E-10			
Fluorene	2.02E-11			
Indeno(1,2,3-cd)pyrene	3.20E-11	3.10E-01	9.93E-12	
Naphthalene	1.14E-11			
PCB-1254	3.14E-12	2.00E+00	6.29E-12	
PCB-1260	1.93E-13	2.00E+00	3.86E-13	
Phenanthrene	8.45E-11			
Polychlorinated biphenyl	2.88E-12	2.00E+00	5.75E-12	
Pyrene	9.79E-11			
Trichloroethene	2.89E-06	6.00E-03	1.73E-08	
Alpha activity				
Beta activity				
Cesium-137	8.60E-03	1.91E-11	1.64E-13	
Neptunium-237	1.85E-02	3.45E-08	6.40E-10	
Uranium-234	2.62E-01	1.40E-08	3.66E-09	
Uranium-235	1.17E-02	1.30E-08	1.52E-10	
Uranium-238	3.43E-01	1.24E-08	4.26E-09	
Pathway Total				5.83E-08

Future Industrial Excess Lifetime Cancer Risks

---------- SECTOR=Central PATHWAY=Future Industrial Dermal Contact with Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Di-n-butyl phthalate	5.05E-06	1.00E-01	5.05E-05	
Alpha activity				
Beta activity				
Pathway Total				5.05E-05

---------- SECTOR=Central PATHWAY=Future Industrial Ingestion Of Soil ....

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Di-n-butyl phthalate	5.87E-07	1.00E-01	5.87E-06	
Alpha activity				
Beta activity				
Pathway Total				5.87E-06

---------- SECTOR=Central PATHWAY=Future Industrial Inhalation Of Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Di-n-butyl phthalate	5.48E-11			
Alpha activity				
Beta activity				
Pathway Total				

---------- SECTOR=East PATHWAY=Future Industrial Dermal Contact with Soil ....

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Cadmium	1.60E-07	1.00E-05	1.60E-02	
Chromium	2.86E-05	1.00E-04	2.86E-01	
Thallium	2.52E-06			
Uranium	5.75E-05	2.55E-03	2.26E-02	
Acenaphthene	5.47E-07	1.86E-02	2.94E-05	
Anthracene	9.26E-07	2.28E-01	4.06E-06	
Benz(a)anthracene	3.04E-06			
Benzo(a)pyrene	3.34E-06			
Benzo(b)fluoranthene	5.89E-06			
Benzo(ghi)perylene	1.56E-06			
Benzo(k)fluoranthene	3.663-06			
Chrysene	3.343-06			
Di-n-butyl phthalate	5.17E-06	1.00E-01	5.17E-05	
Dibenz(a,h)anthracene	6.73E-07			
Fluoranthene	8.84E-06	1.24E-02	7.13E-04	
Fluorene	3.79E-07	2.00E-02	1.89E-05	
Indeno(1,2,3-cd)pyrene	1.773-06			
PCB-1260	8.33E-06			
Phenanthrene	4.88E-06			
Polychlorinated biphenyl	2.52E-05			
Pyrene	7.57E-06	9.30E-03	8.14E-04	
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				

Future Industrial Excess Lifetime Cancer Risks

..... SECTOR=East PATHWAY=Future Industrial Dermal Contact with Soil .....
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Uranium-235				
Uranium-238				
Pathway Total				3.27E-01

---------- SECTOR=East PATHWAY=Future Industrial Ingestion of Soil .....

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Cadmium	1.86E-07	1.00E-03	1.86E-04	
Chromium	6.66E-06	5.00E-03	1.33E-03	
Thallium	5.87E-07			
Uranium	1.34E-05	3.00E-03	4.46E-03	
Acenaphthene	6.36E-08	6.00E-02	1.06E-06	
Anthracene	1.08E-07	3.00E-01	3.59E-07	
Benz(a)anthracene	3.53E-07			
Benzo(a)pyrene	3.89E-07			
Benzo(b)fluoranthene	6.85E-07			
Benzo(ghi)perylene	1.81E-07			
Benzo(k)fluoranthene	4.26E-07			
Chrysene	3.89E-07			
Di-n-butyl phthalate	6.01E-07	1.00E-01	6.01E-06	
Dibenz (a,h)anthracene	7.83E-08			
Fluoranthene	1.03E-06	4.00E-02	2.57E-05	
Fluorene	4.40E-08	4.00E-02	1.10E-06	
Indeno(1,2,3-cd)pyrene	2.05E-07			
PCB-1260	1.61E-06			
Phenanthrene	5.68E-07			
Polychlorinated biphenyl	4.89E-06			
Pyrene	8.81E-07	3.003-02	2.94E-05	
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-235				
Uranium-238				
Pathway Total				6.04E-03

---------- SECTOR=East PATHWAY=Future Industrial Inhalation of Soil .....

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Cadmium	1.74E-11	5.71E-05	3.04E-07	
Chromium	6.22E-10			
Thallium	5.48E-11			
Uranium	1.25E-09			
Acenaphthene	5.94E-12			
Anthracene	1.00E-11			
Benz(a)anthracene	3.30E-11			
Benzo(a)pyrene	3.63E-11			
Benzo(b)fluoranthene	6.39E-11			
Benzo(ghi)perylene	1.69E-11			
Benzo(k)fluoranthene	3.97E-11			
Chrysene	3.63E-11			
Di-n-butyl phthalate	5.61E-11			

Future Industrial Excess Lifetime Cancer Risks

---------- SECTOR=East PATHWAY=Future Industrial Inhalation of Soil ..... (continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Dibenz(a,h)anthracene	7.31E-12			
Fluoranthene	9.59E-11			
Fluorene	4.11E-12			
Indeno(1,2,3-cd)pyrene	1.92E-11			
PCB-1260	1.51E-10			
Phenanthrene	5.30E-11			
Polychlorinated biphenyl	4.57E-10			
Pyrene	8.22E-11			
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-235				
Uranium-238				
Pathway Total				3.04E-07

---------- SECTOR=Far East/Northeast PATHWAY=Future Industrial Dermal Contact with Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	2.91E-02	1.00E-01	2.91E-01	
Antimony	6.10E-06	8.00E-06	7.63E-01	
Chromium	2.19E-05	1.00E-04	2.19E-01	
Uranium	5.51E-05	2.55E-03	2.16E-02	
Benz(a)anthracene	1.68E-07			
Benzo(a)pyrene	1.68E-07			
Benzo(b)fluoranthene	1.68E-07			
Benzo(k)fluoranthene	2.10E-07			
Chrysene	1.68E-07			
Fluoranthene	3.57E-07	1.24E-02	2.88E-05	
PCB-1260	1.41E-08			
Phenanthrene	1.68E-07			
Polychlorinated biphenyl	1.41E-08			
Pyrene	2.03E-07	9.30E-03	2.18E-05	
Alpha activity				
Beta activity				
uranium-235				
Uranium-238				
Pathway Total				1.29E+00

---------- SECTOR=Far East/Northeast PATHWAY=Future Industrial Ingestion of Soil .....

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	6.77E-03	1.00E+00	6.77E-03	
Antimony	1.42E-06	4.00E-04	3.55E-03	
Chromium	5.08E-06	5.00E-03	1.02E-03	
uranium	1.28E-05	3.00E-03	4.27E-03	
Benz(a)anthracene	1.96E-08			
Benzo(a)pyrene	1.96E-08			
Benzo(b)fluoranthene	1.96E-08			
Benzo(k)fluoranthene	2.45E-08			
Chrysene	1.96E-08			
Fluoranthene	4.15E-08	4.00E-02	1.04E-06	

Future Industrial Excess Lifetime Cancer Risks

..... SECTOR=Far East/Northeast PATHWAY=Future Industrial Ingestion of Soil ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
PCB-1260	2.74E-09			
Phenanthrene	1.96E-08			
Polychlorinated biphenyl	2.74E-09			
Pyrene	2.36E-08	3.00E-02	7.87E-07	
Alpha activity				
Beta activity				
Uranium-235				
Uranium-238				
Pathway Total				1.56E-02

---------- SECTOR=Far East/Northeast PATHWAY=Future Industrial Inhalation of Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	6.32E-07			
Antimony	1.32E-10			
Chromium	4.75E-10			
Uranium	1.20E-09			
Benz(a)anthracene	1.83E-12			
Benzo(a)pyrene	1.83E-12			
Benzo(b)fluoranthene	1.83E-12			
Benzo(k)fluoranthene	2.28E-12			
Chrysene	1.83E-12			
Fluoranthene	3.88E-12			
PCB-1260	2.56E-13			
Phenanthrene	1.83E-12			
Polychlorinated biphenyl	2.56E-13			
Pyrene	2.21E-12			
Alpha activity				
Beta activity				
Uranium-235				
Uranium-238				
Pathway Total				

---------- SECTOR=Far North/Northwest PATHWAY=Future Industrial Dermal Contact with Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Antimony	2.95E-06	8.00E-06	3.68E-01	
Beryllium	1.45E-06	5.00E-05	2.90E-02	
Cadmium	1.26E-07	1.00E-05	1.26E-02	
Chromium	5.72E-05	1.00E-04	5.72E-01	
Thallium	6.31E-07			
Uranium	2.91E-05	2.55E-03	1.14E-02	
Acenaphthene	2.10E-07	1.86E-02	1.13E-05	
Anthracene	6.73E-07	2.28E-01	2.95E-06	
Benz(a)anthracene	1.43E-06			
Benzo(a)pyrene	1.18E-06			
Benzo(b)fluoranthene	1.09E-06			
Benzo(ghi)perylene	5.47E-07			
Benzo(k)fluoranthene	1.22E-06			
Bis(2-ethylhexyl)phthalate	3.37E-07	3.80E-03	8.86E-05	
Chrysene	1.47E-06			
Di-n-butyl phthalate	1.68E-07	1.00E-01	1.68E-06	

Future Industrial Excess Lifetime Cancer Risks

SECTOR=Far North/Northwest PATHWAY=Future Industrial Dermal Contact with Soil (continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Fluoranthene	3.533-06	1.24E-02	2.85E-04	
Fluorene	2.103-07	2.00E-02	1.05E-05	
Indeno(1,2,3-cd)pyrene	5.893-07			
Phenanthrene	1.70E-06			
Pyrene	1.653-06	9.30E-03	1.77E-04	
Alpha activity				
Beta activity				
Neptunium-237				
Uranium-235				
Uranium-238				
Pathway Total				9.943-01

SECTOR=Far North/Northwest PATHWAY=Future Industrial Ingestion of Soil

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Antimony	6.85E-07	4.00E-04	1.71E-03	
Beryllium	3.38E-07	5.00E-03	6.75E-05	
Cadmium	1.47E-07	1.00E-03	1.47E-04	
Chromium	1.33E-05	5.00E-03	2.66E-03	
Thallium	1.47E-07			
Uranium	6.76E-06	3.00E-03	2.25E-03	
Acenaphthene	2.45E-08	6.00E-02	4.08E-07	
Anthracene	7.83E-08	3.00E-01	2.61E-07	
Benz(a)anthracene	1.66E-07			
Benzo(a)pyrene	1.37E-07			
Benzo(b)fluoranthene	1.27E-07			
Benzo(ghi)perylene	6.36E-08			
Benzo(k)fluoranthene	1.42E-07			
Bis(2-ethylhexyl)phthalate	3.91E-08	2.00E-02	1.96E-06	
Chrysene	1.71E-07			
Di-n-butyl phthalate	1.96E-08	1.00E-01	1.96E-07	
Fluoranthene	4.11E-07	4.00E-02	1.03E-05	
Fluorene	2.45E-08	4.00E-02	6.12E-07	
Indeno(1,2,3-cd)pyrene	6.85E-08			
Phenanthrene	1.98E-07			
Pyrene	1.92E-07	3.00E-02	6.39E-06	
Alpha activity				
Beta activity				
Neptunium-237				
Uranium-235				
Uranium-238				
Pathway Total				6.86E-03

SECTOR=Far North/Northwest PATHWAY=Future Industrial Inhalation of Soil

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Antimony	6.39E-11			
Beryllium	3.15E-11			
Cadmium	1.37E-11	5.71E-05	2.40E-07	
Chromium	1.24E-09			
Thallium	1.37E-11			
Uranium	6.31E-10			

Future Industrial Excess Lifetime Cancer Risks

..... SECTOR=Far North/Northwest PATHWAY=Future Industrial Inhalation of Soil .....
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Acenaphthene	2.28E-12			
Anthracene	7.31E-12			
Benz(a)anthracene	1.55E-11			
Benzo(a)pyrene	1.28E-11			
Benzo(b)fluoranthene	1.19E-11			
Benzo(ghi)perylene	5.94E-12			
Benzo(k)fluoranthene	1.32E-11			
Bis(2-ethylhexyl)phthalate	3.65E-12			
Chrysene	1.60E-11			
Di-n-butyl phthalate	1.83E-12			
Fluoranthene	3.84E-11			
Fluorene	2.28E-12			
Indeno(1,2,3-cd)pyrene	6.39E-12			
Phenanthrene	1.85E-11			
Pyrene	1.79E-11			
Alpha activity				
Beta activity				
Neptunium-237				
Uranium-235				
Uranium-238				
Pathway Total				2.40E-07

---------- SECTOR=McNairy PATHWAY=Future Industrial Dermal Contact with Groundwater .....

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	3.19E-03	1.00E-01	3.19E-02	
Arsenic	9.35E-06	1.23E-04	7.60E-02	
Barium	1.25E-05	4.90E-03	2.55E-03	
Beryllium	2.97E-07	5.00E-05	5.94E-03	
Bromide				
Cadmium	6.74E-08	5.00E-06	1.35E-02	
Chromium	8.70E-06	1.00E-04	8.70E-02	
Cobalt	2.51E-06	4.80E-02	5.23E-05	
Iron	7.72E-03	4.50E-02	1.72E-01	
Lead	4.05E-06	1.50E-08	2.70E+02	
Manganese	5.60E-05	1.87E-03	3.00E-02	
Nickel	3.95E-06	5.40E-03	7.32E-04	
Nitrate	1.88E-05	8.00E-01	2.35E-05	
Orthophosphate				
Selenium	1.04E-06	2.20E-03	4.75E-04	
Tetraoxo-sulfate(1-)				
Thallium	2.13E-08			
Vanadium	3.62E-05	7.00E-05	5.17E-01	
Zinc	2.79E-04	6.00E-02	4.66E-03	
1,1-Dichloroethene	2.28E-06	9.00E-03	2.54E-04	
1,2-Dichloroethane	1.88E-07			
Bis(2-ethylhexyl)phthalate	4.33E-06	3.80E-03	1.14E-03	
Bromodichloromethane	1.10E-06	1.96E-02	5.59E-05	
Chloroform	2.13E-06	2.00E-03	1.07E-03	
Di-n-butyl phthalate	4.08E-06	1.00E-01	4.08E-05	
Di-n-octylphthalate	5.34E-03	1.80E-02	2.97E-01	
Dibromochloromethane	5.54E-07	1.20E-02	4.62E-05	
Tetrachloroethene	1.28E-04	1.00E-02	1.28E-02	
Trichloroethene	9.21E-06	9.00E-04	1.02E-02	
Vinyl chloride	3.64E-06			
cis-1,2-Dichloroethene	5.00E-06	1.00E-02	5.00E-04	

Future Industrial Excess Lifetime Cancer Risks

..... SECTOR=McNairy PATHWAY=Future Industrial Dermal Contact with Groundwater ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Actinium-228				
Alpha activity				
Beta activity				
Cesium-137				
Lead-210				
Lead-212				
Lead-214				
Neptunium-237				
Plutonium-239				
Potassium-40				
Technetium-99				
Thorium-228				
Thorium-230				
Thorium-234				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				2.72E+02

---------- SECTOR=McNairy PATHWAY=Future Industrial Ingestion Of Groundwater ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	8.78E-01	1.00E+00	8.78E-01	
Arsenic	2.57E-03	3.00E-04	8.58E+00	
Barium	3.45E-03	7.00E-02	4.92E-02	
Beryllium	8.19E-05	5.00E-03	1.643-02	
Bromide	4.40E-04			
Cadmium	1.86E-05	5.00E-04	3.71E-02	
Chromium	2.40E-03	5.00E-03	4.79E-01	
Cobalt	6.92E-04	6.00E-02	1.15E-02	
Iron	2.13E+00	3.00E-01	7.09E+00	
Lead	1.12E-03	1.00E-07	1.12E+04	
Manganese	1.54E-02	4.60E-02	3.35E-01	
Nickel	1.09E-03	2.00E-02	5.44E-02	
Nitrate	5.19E-03	1.60E+00	3.24E-03	
Orthophosphate	9.88E-04			
Selenium	2.88E-04	5.00E-03	5.75E-02	
Tetraoxo-sulfate(1-)	1.68E-01			
Thallium	5.86E-06			
Vanadium	9.96E-03	7.00E-03	1.42E+00	
Zinc	7.69E-02	3.00E-01	2.56E-01	
1,1-Dichloroethene	7.07E-05	9.00E-03	7.86E-03	
1,2-Dichloroethane	9.78E-06			
Bis(2-ethylhexyl)phthalate	5.10E-05	2.00E-02	2.55E-03	
Bromodichloromethane	5.21E-05	2.00E-02	2.60E-03	
Chloroform	6.60E-05	1.00E-02	6.60E-03	
Di-n-butyl phthalate	9.78E-06	1.00E-01	9.78E-05	
Di-n-octylphthalate	5.47E-05	2.00E-02	2.74E-03	
Dibromochloromethane	3.91E-05	2.00E-02	1.96E-03	
Tetrachloroethene	9.53E-05	1.00E-02	9.53E-03	
Trichloroethene	1.59E-04	6.00E-03	2.64E-02	
Vinyl chloride	1.37E-04			
cis-1,2-Dichloroethene	1.38E-04	1.00E-02	1.38E-02	
Actinium-228				
Alpha activity				
Beta activity				

Future Industrial Excess Lifetime Cancer Risks

..... SECTOR=McNairy PATHWAY=Future Industrial Ingestion of Groundwater ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Cesium-137				
Lead-210				
Lead-212				
Lead-214				
Neptunium-237				
Plutonium-239				
Potassium-40				
Technetium-99				
Thorium-228				
Thorium-230				
Thorium-234				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				1.12E+04

---------- SECTOR=McNairy PATHWAY=Future Industrial Inhalation of Groundwater While Showering ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum				
Arsenic				
Barium		1.43E-04		
Beryllium				
Bromide				
Cadmium		5.71E-05		
Chromium				
Cobalt				
Iron				
Lead		2.86E-04		
Manganese		1.43E-05		
Nickel				
Nitrate				
Orthophosphate				
Selenium				
Tetraoxo-sulfate(1-)				
Thallium				
Vanadium				
Zinc				
1,1-Dichloroethene	3.86E-05			
1,2-Dichloroethane	5.34E-06	2.86E-03	1.87E-03	
Bis(2-ethylhexyl)phthalate				
Bromodichloromethane	2.84E-05			
Chloroform	3.61E-05			
Di-n-butyl phthalate				
Di-n-octylphthalate				
Dibromochloromethane	2.14E-05			
Tetrachloroethene	5.21E-05			
Trichloroethene	8.66E-05			
Vinyl chloride	7.50E-05			
cis-1,2-Dichloroethene	7.52E-05			
Actinium-228				
Alpha activity				
Beta activity				
Cesium-137				
Lead-210				
Lead-212				

Future Industrial Excess Lifetime Cancer Risks

---------- SECTOR=McNairy PATHWAY=Future Industrial Inhalation of Groundwater While Showering (continued) ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Lead-214				
Neptunium-237				
plutonium-239				
Potassium-40				
Technetium-99				
Thorium-228				
Thorium-230				
Thorium-234				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				1.87E-03

---------- SECTOR=Northeast PATHWAY=Future Industrial Dermal Contact with Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
chromium	4.06E-05	1.00E-04	4.06E-01	
Uranium	2.91E-05	2.55E-03	1.14E-02	
Zinc	1.48E-04	6.00E-02	2.46E-03	
Acenaphthene	1.68E-07	1.86E-02	9.053-06	
Anthracene	3.37E-07	2.28E-01	1.48E-06	
Benz (a) anthracene	1.47E-06			
Benzo(a)pyrene	1.26E-06			
Benzo(b)fluoranthene	1.81E-06			
Benzo(ghi)perylene	7.15E-07			
Benzo(k)fluoranthene	1.18E-06			
Chrysene	1.68E-06			
Fluoranthene	3.62E-06	1.24E-02	2.92E-04	
Indeno(1,2,3-cd)pyrene	7.57E-07			
PCB-1260	1.09E-07			
Phenanthrene	1.98E-06			
Polychlorinated biphenyl	1.09E-07			
Pyrene	2.86E-06	9.30E-03	3.08E-04	
Alpha activity				
Beta activity				
uranium-235				
Uranium-238				
Pathway Total				4.20E-01

---------- SECTOR=Northeast PATHWAY=Future Industrial Ingestion of Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Chromium	9.44E-06	5.00E-03	1.89E-03	
Uranium	6.76E-06	3.00E-03	2.25E-03	
Zinc	3.433-05	3.00E-01	1.143-04	
Acenaphthene	1.96E-08	6.00E-02	3.26E-07	
Anthracene	3.91E-08	3.003-01	1.30E-07	
Benz (a)anthracene	1.71E-07			
Benzo(a)pyrene	1.47E-07			
Benzo(b)fluoranthene	2.10E-07			
Benzo (ghi)perylene	8.32E-08			
Benzo(k)fluoranthene	1.37E-07			

Future Industrial Excess Lifetime Cancer Risks

..... SECTOR=Northeast PATHWAY=Future Industrial Ingestion Of Soil .....
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Chrysene	1.96E-07			
Fluoranthene	4.21E-07	4.00E-02	1.05E-05	
Indeno(1,2,3-cd)pyrene	8.81E-08			
PCB-1260	2.10E-08			
Phenanthrene	2.30E-07			
Polychlorinated biphenyl -	2.10E-08			
Pyrene	3.33E-07	3.00E-02	1.11E-05	
Alpha activity				
Beta activity				
Uranium-235				
Uranium-238				
Pathway Total				4.283-03

---------- SECTOR=Northeast PATHWAY=Future Industrial Inhalation Of Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Chromium	8.82E-10			
Uranium	6.31E-10			
Zinc	3.21E-09			
Acenaphthene	1.83E-12			
Anthracene	3.65E-12			
Benz(a)anthracene	1.60E-11			
Benzo(a)pyrene	1.37E-11			
Benzo(b)fluoranthene	1.96E-11			
Benzo(ghi)perylene	7.76E-12			
Benzo(k)fluoranthene	1.28E-11			
Chrysene	1.83E-11			
Fluoranthene	3.93E-11			
Indeno(1,2,3-cd)pyrene	8.22E-12			
PCB-1260	1.96E-12			
Phenanthrene	2.15E-11			
Polychlorinated biphenyl	1.96E-12			
Pyrene	3.11E-11			
Alpha activity				
Beta activity				
Uranium-235				
Uranium-238				
Pathway Total				

---------- SECTOR=Northwest PATHWAY=Future Industrial Dermal Contact with Soil .....

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Antimony	8.43E-07	8.00E-06	1.05E-01	
Beryllium	6.80E-07	5.00E-05	1.36E-02	
Cadmium	8.553-08	1.00E-05	8.55E-03	
Chromium	4.26E-05	1.00E-04	4.26E-01	
Iron	2.57E-02	4.50E-02	5.70E-01	
Lead	2.743-05	1.50E-08	1.83E+03	
Vanadium	3.47E-05	7.00E-05	4.96E-01	
Benz(a)anthracene	1.26E-06			
Benzo(a)pyrene	1.68E-06			
Benzo(b)fluoranthene	2.22E-06			

Future Industrial Excess Lifetime Cancer Risks

SECTOR=Northwest PATHWAY-Future Industrial Dermal Contact with Soil (continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Benzo(k)fluoranthene	1.26E-06			
Chrysene	1.22E-06			
Fluoranthene	1.68E-06	1.24E-02	1.36E-04	
Pyrene	1.68E-06	9.30E-03	1.81E-04	
Alpha activity				
Beta activity				
Uranium-238				
Pathway Total				1.83E+03

SECTOR=Northwest PATHWAY=Future Industrial Ingestion of Soil

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Antimony	1.96E-07	4.00E-04	4.90E-04	
Beryl1iium	1.58E-07	5.00E-03	3.16E-05	
Cadmium	9.94E-08	1.00E-03	9.94E-05	
Chromium	9.91E-06	5.00E-03	1.98E-03	
Iron	5.97E-03	3.00E-01	1.99E-02	
Lead	6.37E-06	1.00E-07	6.37E+01	
Vanadium	8.08E-06	7.00E-03	1.15E-03	
Benz(a)anthracene	1.47E-07			
Benzo(a)pyrene	1.96E-07			
Benzo(b)fluoranthene	2.59E-07			
Benzo(k)fluoranthene	1.47E-07			
Chrysene	1.42E-07			
Fluoranthene	1.96E-07	4.00E-02	4.89E-06	
Pyrene	1.96E-07	3.00E-02	6.52E-06	
Alpha activity				
Beta activity				
Uranium-238				
Pathway Total				6.37E+01

SECTOR=Northwest PATHWAY=Future Industrial Inhalation of Soil

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Antimony	1.83E-11			
Beryllium	1.48E-11			
Cadmium	9.28E-12	5.71E-05	1.63E-07	
Chromium	9.25E-10			
Iron	5.57E-07			
Lead	5.94E-10	2.86E-04	2.08E-06	
Vanadium	7.54E-10			
Benz(a)anthracene	1.37E-11			
Benzo(a)pyrene	1.83E-11			
Benzo(b)fluoranthene	2.41E-11			
Benzo(k)fluoranthene	1.37E-11			
Chrysene	1.32E-11			
Fluoranthene	1.83E-11			
Pyrene	1.83E-11			
Alpha activity				
Beta activity				
Uranium-238				
Pathway Total				2.24E-06

Future Industrial Excess Lifetime Cancer Risks

---------- SECTOR=RGA PATHWAY=Future Industrial Dermal Contact with Groundwater ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	2.16E-03	1.00E-01	2.16E-02	
Antimony	4.94E-07	8.00E-06	6.17E-02	
Arsenic	1.03E-06	1.23E-04	8.41E-03	
Barium	1.49E-05	4.90E-03	3.04E-03	
Beryllium	3.60E-07	5.00E-05	7.19E-03	
Bromide				
Cadmium	5.26E-08	5.00E-06	1.05E-02	
Chromium	4.01E-06	1.00E-04	4.01E-02	
Cobalt	3.51E-06	4.80E-02	7.31E-05	
Copper	7.81E-06	1.20E-02	6.51E-04	
Iron	1.38E-02	4.50E-02	3.06E-01	
Lead	1.16E-06	1.50E-08	7.75E+01	
Manganese	1.09E-04	1.87E-03	5.82E-02	
Mercury	5.84E-09	2.10E-05	2.78E-04	
Nickel	6.99E-06	5.40E-03	1.30E-03	
Nitrate	1.68E-03	8.00E-01	2.10E-03	
Orthophosphate				
Silver	4.51E-07	9.00E-04	5.01E-04	
Tetraoxo-sulfate(1-)				
Thallium	2.10E-08			
Uranium	1.30E-07	2.55E-03	5.09E-05	
Vanadium	5.46E-06	7.00E-05	7.80E-02	
Zinc	2.72E-05	6.00E-02	4.53E-04	
1,1-Dichloroethene	2.10E-06	9.00E-03	2.33E-04	
Bis(2-ethylhexyl)phthalate	8.31E-07	3.80E-03	2.19E-04	
Bromodichloromethane	8.24E-07	1.96E-02	4.20E-05	
Carbon tetrachloride	5.52E-05	4.55E-04	1.21E-01	
Chloroform	9.13E-06	2.00E-03	4.57E-03	
Di-n-butyl phthalate	4.08E-06	1.00E-01	4.08E-05	
Di-n-octylphthalate	9.55E-04	1.80E-02	5.31E-02	
N-Nitroso-di-n-propylamine	9.95E-08			
Tetrachloroethene	2.89E-04	1.00E-02	2.89E-02	
Toluene	5.75E-05	1.60E-01	3.60E-04	
Trichloroethene	4.65E-03	9.00E-04	5.17E+00	
Vinyl chloride	3.45E-05			
cis-1,2-Dichloroethene	1.31E-04	1.00E-02	1.31E-02	
trans-1,2-Dichloroethene	4.68E-07	2.00E-02	2.34E-05	
Alpha activity				
Americium-241				
Beta activity				
Cesium-137				
Lead-210				
Lead-214				
Neptunium-237				
Plutonium-239				
Technetium-99				
Thorium-228				
Thorium-230				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				8.35E+01

---------- SECTOR=RGA PATHWAY=Future Industrial Ingestion of Groundwater .....

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	5.96E-01	1.00E+00	5.96E-01	

Future Industrial Excess Lifetime Cancer Risks

---------- SECTOR=RGA PATHWAY=Future Industrial Ingestion of Groundwater ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Antimony	1.36E-04	4.00E-04	3.40E-01	
Arsenic	2.85E-04	3.00E-04	9.50E-01	
Barium	4.11E-03	7.00E-02	5.87E-02	
Beryllium	9.91E-05	5.00E-03	1.98E-02	
Bromide	4.51E-03			
Cadmium	1.45E-05	5.00E-04	2.90E-02	
Chromium	1.10E-03	5.00E-03	2.21E-01	
Cobalt	9.66E-04	6.00E-02	1.61E-02	
Copper	2.15E-03	4.00E-02	5.38E-02	
Iron	3.79E+00	3.00E-01	1.26E+01	
Lead	3.20E-04	1.00E-07	3.20E+03	
Manganese	2.99E-02	4.60E-02	6.51E-01	
Mercury	1.61E-06	3.00E-04	5.37E-03	
Nickel	1.93E-03	2.00E-02	9.63E-02	
Nitrate	4.64E-01	1.60E+00	2.90E-01	
Orthophosphate	3.52E-04			
Silver	1.24E-04	5.00E-03	2.48E-02	
Tetraoxo-sulfate(1-)	1.29E-01			
Thallium	5.79E-06			
Uranium	3.58E-05	3.00E-03	1.19E-02	
Vanadium	1.50E-03	7.00E-03	2.15E-01	
Zinc	7.48E-03	3.00E-01	2.49E-02	
1,1-Dichloroethene	6.49E-05	9.00E-03	7.21E-03	
Bis(2-ethylhexyl)phthalate	9.78E-06	2.00E-02	4.89E-04	
Bromodichloromethane	3.91E-05	2.00E-02	1.96E-03	
Carbon tetrachloride	6.92E-04	7.00E-04	9.88E-01	
Chloroform	2.83E-04	1.00E-02	2.83E-02	
Di-n-butyl phthalate	9.78E-06	1.00E-01	9.78E-05	
Di-n-octylphthalate	9.78E-06	2.00E-02	4.89E-04	
N-Nitroso-di-n-propylamine	9.78E-06			
Tetrachloroethene	2.15E-04	1.00E-02	2.15E-02	
Toluene	3.52E-04	2.00E-01	1.76E-03	
Trichloroethene	8.01E-02	6.00E-03	1.34E+01	
Vinyl chloride	1.30E-03			
cis-1,2-Dichloroethene	3.62E-03	1.00E-02	3.62E-01	
trans-1,2-Dichloroethene	1.20E-04	2.00E-02	6.02E-03	
Alpha activity				
Americium-241				
Beta activity				
Cesium-137				
Lead-210				
Lead-214				
Neptunium-237				
Plutonium-239				
Technetium-99				
Thorium-228				
Thorium-230				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				3.23E+03

---------- SECTOR=RGA PATHWAY=Future Industrial Inhalation of Groundwater while Showering ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum				

Future Industrial Excess Lifetime Cancer Risks

---------- SECTOR=RGA PATHWAY=Future Industrial Inhalation of Groundwater While Showering ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Antimony				
Arsenic				
Barium		1.43E-04		
Beryllium				
Bromide				
Cadmium		5.71E-05		
Chromium				
Cobalt				
Copper				
Iron				
Lead		2.86E-04		
Manganese		1.43E-05		
Mercury		8.57E-05		
Nickel				
Nitrate				
Orthophosphate				
Silver				
Tetraoxo-sulfate(1-)				
Thallium				
Uranium				
Vanadium				
Zinc				
1,1-Dichloroethene	3.55E-05			
Bis(2-ethylhexyl)phthalate				
Bromodichloromethane	2.14E-05			
Carbon tetrachloride	3.78E-04	5.71E-04	6.62E-01	
Chloroform	1.54E-04			
Di-n-butyl phthalate				
Di-n-octylphthalate				
N-Nitroso-di-n-propylamine				
Tetrachloroethene	1.17E-04			
Toluene	1.92E-04	1.14E-01	1.68E-03	
Trichloroethene	4.38E-02			
Vinyl chloride	7.11E-04			
cis-1,2-Dichloroethene	1.98E-03			
trans-1,2-Dichloroethene	6.57E-05			
Alpha activity				
Americium-241				
Beta activity				
Cesium-137				
Lead-210				
Lead-214				
Neptunium-237				
Plutonium-239				
Technetium-99				
Thorium-228				
Thorium-230				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				6.63E-01

---------- SECTOR=Southeast PATHWAY=Future Industrial Dermal Contact with Soil .....

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	2.99E-02	1.00E-01	2.99E-01	

Future Industrial Excess Lifetime Cancer Risks

---------- SECTOR=Southeast PATHWAY=Future Industrial Dermal Contact with Soil ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Antimony	1.26E-06	8.00E-06	1.58E-01	
Cadmium	1.47E-07	1.00E-05	1.47E-02	
Chromium	4.96E-05	1.00E-04	4.96E-01	
Benz(a)anthracene	2.95E-07			
Benzo(a)pyrene	3.37E-07			
Benzo(b)fluoranthene	2.953-07			
Benzo(k)fluoranthene	2.52E-07			
Chrysene	3.37E-07			
Fluoranthene	6.31E-07	1.24E-02	5.09E-05	
PCB-1262	9.59E-08			
Phenanthrene	2.95E-07			
Polychlorinated biphenyl	9.59E-08			
Pyrene	5.05E-07	9.3 OE-03	5.43E-05	
Alpha activity				
Beta activity				
Pathway Total				9.68E-01

---------- SECTOR=Southeast PATHWAY=Future Industrial Ingestion of Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	6.95E-03	1.00E+00	6.95E-03	
Antimony	2.94E-07	4.00E-04	7.34E-04	
Cadmium	1.71E-07	1.00E-03	1.71E-04	
Chromium	1.15E-05	5.00E-03	2.3 1E-03	
Benz(a)anthracene	3.423-08			
Benzo(a)pyrene	3.91E-08			
Benzo(b)fluoranthene	3.42E-08			
Benzo(k)fluoranthene	2.94E-08			
Chrysene	3.91E-08			
Fluoranthene	7.34E-08	4.00E-02	1.83E-06	
PCB-1262	1.86E-08			
Phenanthrene	3.42E-08			
Polychlorinated biphenyl	1.86E-08			
Pyrene	5.87E-08	3.00E-02	1.96E-06	
Alpha activity				
Beta activity				
Pathway Total				1.02E-02

---------- SECTOR=Southeast PATHWAY=Future Industrial Inhalation of Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	6.49E-07			
Antimony	2.74E-11			
Cadmium	1.60E-11	5.71E-05	2.80E-07	
Chromium	1.08E-09			
Benz(a)anthracene	3.20E-12			
Benzo(a)pyrene	3.65E-12			
Benzo(b)fluoranthene	3.20E-12			
Benzo(k)fluoranthene	2.74E-12			
Chrysene	3.65E-12			
Fluoranthene	6.85E-12			
PCB-1262	1.74E-12			

Future Industrial Excess Lifetime Cancer Risks

..... SECTOR=Southeast PATHWAY=Future Industrial Inhalation of Soil ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Phenanthrene	3.20E-12			
Polychlorinated biphenyl	1.74E-12			
Pyrene	5.48E-12			
Alpha activity				
Beta activity				
Pathway Total				2.80E-07

---------- SECTOR=Southwest PATHWAY=Future Industrial Dermal Contact with Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Antimony	3.05E-06	8.00E-06	3.82E-01	
Beryllium	7.93E-07	5.00E-05	1.59E-02	
Cadmium	1.53E-07	1.00E-05	1.53E-02	
Chromium	4.47E-05	1.00E-04	4.47E-01	
Iron	3.58E-02	4.50E-02	7.95E-01	
Thallium	1.48E-06			
Uranium	1.05E-04	2.55E-03	4.14E-02	
Zinc	1.06E-04	6.00E-02	1.76E-03	
Acenaphthene	4.16E-06	1.86E-02	2.24E-04	
Acenaphthylene	9.26E-07			
Anthracene	7.65E-06	2.28E-01	3.36E-05	
Benz(a)anthracene	2.11E-05			
Benzo(a)pyrene	2.03E-05			
Benzo(b)fluoranthene	2.15E-05			
Benzo(ghi)perylene	9.95E-06			
Benzo(k)fluoranthene	1.42E-05			
Bis(2-ethylhexyl)phthalate	3.37E-07	3.80E-03	8.86E-05	
Chrysene	1.90E-05			
Dibenz(a,h)anthracene	5.47E-06			
Fluoranthene	4.59E-05	1.24E-02	3.70E-03	
Fluorene	5.05E-06	2.00E-02	2.52E-04	
Indeno(1,2,3-cd)pyrene	7.59E-06			
Naphthalene	1.01E-08	2.86E-02	3.54E-07	
PCB-1260	9.59E-08			
Phenanthrene	2.41E-05			
Polychlorinated biphenyl	9.59E-08			
Pyrene	3.87E-05	9.30E-03	4.16E-03	
Alpha activity				
Beta activity				
Neptunium-237				
Uranium-235				
Uranium-238				
Pathway Total				1.71E+00

---------- SECTOR=Southwest PATHWAY=Future Industrial Ingestion of Soil .....

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Antimony	7.10E-07	4.00E-04	1.78E-03	
Beryllium	1.84E-07	5.00E-03	3.69E-05	
Cadmium	1.77E-07	1.00E-03	1.773-04	
Chromium	1.04E-05	5.00E-03	2.08E-03	
Iron	8.32E-03	3.00E-01	2.77E-02	

Future Industrial Excess Lifetime Cancer Risks

---------- SECTOR=Southwest PATHWAY=Future Industrial Ingestion of Soil ..... (conthued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Thallium	3.44E-07			
Uranium	2.45E-05	3.00E-03	8.18E-03	
Zinc	2.46E-05	3.00E-01	8.20E-05	
Acenaphthene	4.84E-07	6.00E-02	8.07E-06	
Acenaphthylene	1.08E-07			
Anthracene	8.90E-07	3.00E-01	2.97E-06	
Benz(a)anthracene	2.45E-06			
Benzo(a)pyrene	2.37E-06			
Benzo(b)fluoranthene	2.50E-06			
Benzo(ghi)perylene	1.16E-06			
Benzo(k)fluoranthene	1.65E-06			
Bis(2-ethylhexyl)phthalate	3.91E-08	2.00E-02	1.96E-06	
Chrysene	2.21E-06			
Dibenz(a,h)anthracene	6.36E-07			
Fluoranthene	5.34E-06	4.00E-02	1.33E-04	
Fluorene	5.87E-07	4.00E-02	1.47E-05	
Indeno(1,2,3-cd)pyrene	8.82E-07			
Naphthalene	1.17E-09	3.57E-02	3.29E-08	
PCB-1260	1.86E-08			
Phenanthrene	2.80E-06			
Polychlorinated biphenyl	1.86E-08			
Pyrene	4.50E-06	3.00E-02	1.50E-04	
Alpha activity				
Beta activity				
Neptunium-237				
Uranium-235				
Uranium-238				
Pathway Total				4.04E-02

---------- SECTOR=Southwest PATHWAY=Future Industrial Inhalation of Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Antimony	6.63E-11			
Beryllium	1.72E-11			
Cadmium	1.66E-11	5.71E-05	2.90E-07	
Chromium	9.70E-10			
Iron	7.77E-07			
Thallium	3.21E-11			
Uranium	2.29E-09			
Zinc	2.30E-09			
Acenaphthene	4.52E-11			
Acenaphthylene	1.00E-11			
Anthracene	8.31E-11			
Benz(a)anthracene	2.29E-10			
Benzo(a)pyrene	2.21E-10			
Benzo(b)fluoranthene	2.34E-10			
Benzo(ghi)perylene	1.08E-10			
Benzo(k)fluoranthene	1.54E-10			
Bis(2-ethylhexyl)phthalate	3.65E-12			
Chrysene	2.06E-10			
Dibenz(a,h)anthracene	5.94E-11			
Fluoranthene	4.98E-10			
Fluorene	5.48E-11			
Indeno(1,2,3-cd)pyrene	8.24E-11			
Naphthalene	1.10E-13			
PCB-1260	1.74E-12			

Future Industrial Excess Lifetime Cancer Risks

..... SECTOR-Southwest PATHWAY=Future Industrial Inhalation of Soil ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Phenanthrene	2.61E-10			
Polychlorinated biphenyl	1.74E-12			
Pyrene	4.20E-10			
Alpha activity				
Beta activity				
Neptunium-237				
Uranium-235				
Uranium-238				
Pathway Total				2.90E-07

---------- SECTOR=West PATHWAY=Future Industrial Dermal Contact with Soil .....

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	1.53E-02	1.0 OE-01	1.53E-01	
Antimony	2.09E-06	8.00E-06	2.61E-01	
Arsenic	2.78E-05	1.23E-04	2.26E-01	
Beryllium	6.62E-07	5.OOE-05	1.32E-02	
Cadmium	3.81E-07	1.00E-05	3.81E-02	
Chromium	2.64E-05	1.00E-04	2.64E-01	
Cobalt	9.98E-06	4.80E-02	2.08E-04	
Uranium	7.63E-05	2.55E-03	2.99E-02	
Zinc	6.31E-05	6.00E-02	1.05E-03	
2-Methylnaphthalene	3.79E-06			
Acenaphthene	1.42E-05	1.86E-02	7.61E-04	
Anthracene	6.13E-05	2.28E-01	2.69E-04	
Benz(a)anthracene	8.47E-05			
Benzo(a)pyrene	7.62E-05			
Benzo(b)fluoranthene	9.48E-05			
Benzo(ghi)perylene	1.56E-05			
Benzo(k)fluoranthene	9.35E-05			
Bis(2-ethylhexyl)phthalate	4.21E-07	3.80E-03	1.11E-04	
Chrysene	9.12E-05			
Di-n-butyl phthalate	8.63E-07	1.00E-01	8.63E-06	
Dibenz(ah)anthracene	1.58E-05			
Fluoranthene	1.90E-04	1.24E-02	1.53E-02	
Fluorene	1.32E-05	2.00E-02	6.58E-04	
Indeno(1,2,3-cd)pyrene	1.60E-05			
Naphthalene	6.11E-06	2.86E-02	2.14E-04	
PCB-1254	2.423-06	1.80E-05	1.35E-01	
PCB-1260	4.04E-08			
Phenanthrene	1.47E-04			
Polychlorinated biphenyl	1.42E-06			
Pyrene	1.66E-04	9.30E-03	1.79E-02	
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				1.16E+00

Future Industrial Excess Lifetime Cancer Risks

---------- SECTOR=West PATHWAY=Future Industrial Ingestion of Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	3.56E-03	1.00E+00	3.56E-03	
Antimony	4.85E-07	4.00E-04	1.21E-03	
Arsenic	6.45E-06	3.00E-04	2.15E-02	
Beryllium	1.54E-07	5.00E-03	3.08E-05	
Cadmium	4.43E-07	1.00E-03	4.43E-04	
Chromium	6.14E-06	5.00E-03	1.23E-03	
Cobalt	2.32E-06	6.00E-02	3.87E-05	
Uranium	1.78E-05	3.00E-03	5.92E-03	
Zinc	1.47E-05	3.00E-01	4.89E-05	
2-Methylnaphthalene	4.40E-07			
Acenaphthene	1.65E-06	6.00E-02	2.743-05	
Anthracene	7.13E-06	3.00E-01	2.38E-05	
Benz(a)anthracene	9.85E-06			
Benzo(a)pyrene	8.86E-06			
Benzo(b)fluoranthene	1.10E-05			
Benzo(ghi)perylene	1.81E-06			
Benzo(k)fluoranthene	1.09E-05			
Bis(2-ethylhexyl)phthalate	4.89E-08	2.00E-02	2.45E-06	
Chrysene	1.06E-05			
Di-n-butyl phthalate	1.00E-07	1.00E-01	1.00E-06	
Dibenz(a,h)anthracene	1.84E-06			
Fluoranthene	2.21E-05	4.00E-02	5.52E-04	
Fluorene	1.53E-06	4.00E-02	3.82E-05	
Indeno(1,2,3-cd)pyrene	1.86E-06			
Naphthalene	7.11E-07	3.57E-02	1.99E-05	
PCB-1254	4.70E-07	2.00E-05	2.35E-02	
PCB-1260	7.83E-09			
Phenanthrene	1.71E-05			
Polychlorinated biphenyl	2.74E-07			
Pyrene	1.93E-05	3.00E-02	6.44E-04	
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				5.88E-02

---------- SECTOR=West PATHWAY=Future Industrial Inhalation of Soil ....

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	3.32E-07			
Antimony	4.53E-11			
Arsenic	6.03E-10			
Beryl1ium	1.44E-11			
Cadmium	4.13E-11	5.71E-05	7.24E-07	
Chromium	5.73E-10			
Cobalt	2.17E-10			
Uranium	1.66E-09			
Zinc	1.37E-09			
2-Methylnaphthalene	4.11E-11			
Acenaphthene	1.54E-10			
Anthracene	6.66E-10			
Benz(a)anthracene	9.19E-10			
Benzo(a)pyrene	8.27E-10			
Benzo(b)fluoranthene	1.03E-09			

Future Industrial Excess Lifetime Cancer Risks

..... SECTOR=West PATHWAY=Future Industrial Inhalation of Soil ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Benzo(ghi)perylene	1.69E-10			
Benzo(k)fluoranthene	1.01E-09			
Bis(2-ethylhexyl)phthalate	4.57E-12			
Chrysene	9.91E-10			
Di-n-butyl phthalate	9.36E-12			
Dibenz(a,h)anthracene	1.71E-10			
Fluoranthene	2.06E-09			
Fluorene	1.43E-10			
Indeno(1,2,3-cd)pyrene	1.74E-10			
Naphthalene	6.63E-11			
PCB-1254	4.38E-11			
PCB-1260	7.31E-13			
Phenanthrene	1.60E-09			
Polychlorinated biphenyl	2.56E-11			
Pyrene	1.80E-09			
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				7.24E-07

Future Industrial Excess Lifetime Cancer Risks

---------- SECTOR=Central PATHWAY=Future Industrial Dermal Contact with Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Di-n-butyl phthalate	1.80E-06			
Alpha activity				
Beta activity				
Pathway Total				

---------- SECTOR=Central PATHWAY=Future Industrial External Exposure to Soil ....

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Di-n-butyl phthalate				
Alpha activity	4.74E+01			
Beta activity	1.22E+02			
Pathway Total				

---------- SECTOR=Central PATHWAY=Future Industrial Ingestion of Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Di-n-butyl phthalate	2.10E-07			
Alpha activity	3.24E+03			
Beta activity	8.37E+03			
Pathway Total				

---------- SECTOR=Central PATHWAY=Future Industrial Inhalation of Soil ....

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Di-n-butyl phthalate	1.96E-11			
Alpha activity				
Beta activity				
Pathway Total				

---------- SECTOR=East PATHWAY=Future Industrial Dermal Contact with Soil ----------

Analyte	carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Cadmium	5.71E-08			
Chromium	1.02E-05			
Thallium	9.02E-07			
Uranium	2.05E-05			
Acenaphthene	1.95E-07			
Anthracene	3.31E-07			
Benz(a)anthracene	1.08E-06	2.35E+00	2.55E-06	
Benzo(a)pyrene	1.19E-06	2.35E+01	2.81E-05	
Benzo(b)fluoranthene	2.10E-06	2.35E+00	4.95E-06	
Benzo(ghi)perylene	5.56E-07			
Benzo(k)fluoranthene	1.31E-06	2.35E-01	3.08E-07	
Chrysene	1.19E-06	2.35E-02	2.81E-08	
Di-n-butyl phthalate	1.85E-06			

Future Industrial Excess Lifetime Cancer Risks

..... SECTOR=East PATHWAY=Future Industrial Dermal Contact with Soil ..... (continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Dibenz(a,h)anthracene	2.403-07	2.35E+01	5.66E-06	
Fluoranthene	3.16E-06			
Fluorene	1.35E-07			
Indeno(1,2,3-cd)pyrene	6.31E-07	2.35E+00	1.493-06	
PCB-1260	2.98E-06	2.22E+00	6.61E-06	
Phenanthrene	1.74E-06			
Polychlorinated biphenyl	9.023-06	2.22E+00	2.003-05	
Pyrene	2.70E-06			
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-235				
Uranium-238				
Pathway Total				6.98E-05

---------- SECTOR=East PATHWAY=Future Industrial External Exposure to Soil .....

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Cadmium				
Chromium				
Thallium				
Uranium				
Acenaphthene				
Anthracene				
Benz(a)anthracene				
Benzo(a)pyrene				
Benzo(b)fluoranthene				
Benzo(ghi)perylene				
Benzo(k)fluoranthene				
Chrysene				
Di-n-butyl phthalate				
Dibenz(a,h)anthracene				
Fluoranthene				
Fluorene				
Indeno(1,2,3-cd)pyrene				
PCB-1260				
Phenanthrene				
Polychlorinated biphenyl				
Pyrene				
Alpha activity	1.52E+02			
Beta activity	1.95E+02			
Cesium-137	2.28E+00	2.09E-06	4.77E-06	
Neptunium-237	1.83E+00	4.62E-07	8.44E-07	
Uranium-235	1.83E+00	2.65E-07	4.84E-07	
Uranium-238	4.16E+01	6.573-08	2.73E-06	
Pathway Total				8.83E-06

---------- SECTOR=East PATHWAY=Future Industrial Ingestion of Soil .....

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Cadmium	6.64E-08			

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Future Industrial Excess Lifetime Cancer Risks

SECTOR-East PATHWAY-Future Industrial Ingestion of Soil (continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Chromium	2.38E-06			
Thallium	2.10E-07			
Uranium	4.78E-06			
Acenaphthene	2.27E-08			
Anthracene	3.84E-08			
Benz(a)anthracene	1.26E-07	7.30E-01	9.21E-08	
Benzo(a)pyrene	1.39E-07	7.30E+00	1.01E-06	
Benzo(b)fluoranthene	2.45E-07	7.30E-01	1.79E-07	
Benzo(ghi)perylene	6.46E-08			
Benzo(k)fluoranthene	1.52E-07	7.30E-02	1.11E-08	
Chrysene	1.39E-07	7.30E-03	1.01E-09	
Di-n-butyl phthalate	2.15E-07			
Dibenz(a,h)anthracene	2.80E-08	7.30E+00	2.04E-07	
Fluoranthene	3.67E-07			
Fluorene	1.57E-08			
Indeno(1,2,3-cd)pyrene	7.34E-08	7.30E-01	5.36E-08	
PCB-1260	5.77E-07	2.00E+00	1.15E-06	
Phenanthrene	2.03E-07			
Polychlorinated biphenyl	1.75E-06	2.00E+00	3.49E-06	
Pyrene	3.15E-07			
Alpha activity	1.04E+04			
Beta activity	1.34E+04			
Cesium-137	1.56E+02	3.16E-11	4.94E-09	
Neptunium-237	1.25E+02	3.00E-10	3.75E-08	
Uranium-235	1.25E+02	4.70E-11	5.883-09	
Uranium-238	2.84E+03	6.20E-11	1.76E-07	
Pathway Total				6.43E-06

SECTOR=East PATHWAY=Future Industrial Inhalation of Soil

Analyte	carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Cadmium	6.20E-12	6.10E+00	3.78E-11	
Chromium	2.22E-10	4.10E+01	9.11E-09	
Thallium	1.96E-11			
Uranium	4.46E-10			
Acenaphthene	2.12E-12			
Anthracene	3.59E-12			
Benz(a)anthracene	1.18E-11	3.10E-01	3.65E-12	
Benzo(a)pyrene	1.30E-11	3.10E+00	4.02E-11	
Benzo(b)fluoranthene	2.28E-11	3.10E-01	7.08E-12	
Benzo(ghi)perylene	6.04E-12			
Benzo(k)fluoranthene	1.42E-11	3.10E-02	4.40E-13	
Chrysene	1.30E-11	3.10E-03	4.02E-14	
Di-n-butyl phthalate	2.00E-11			
Dibenz(a,h)anthracene	2.61E-12	3.10E+00	8.09E-12	
Fluoranthene	3.43E-11			
Fluorene	1.47E-12			
Indeno(1,2,3-cd)pyrene	6.85E-12	3.10E-01	2.12E-12	
PCB-1260	5.38E-11	2.00E+00	1.08E-10	
Phenanthrene	1.89E-11			
Polychlorinated biphenyl	1.63E-10	2.00E+00	3.26E-10	
Pyrene	2.94E-11			
Alpha activity				
Beta activity				
Cesium-137	1.46E-02	1.91E-11	2.79E-13	
Neptunium-237	1.17E-02	3.45E-08	4.03E-10	

Future Industrial Excess Lifetime Cancer Risks

..... SECTOR=East PATHWAY=Future Industrial Inhalation of Soil ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Uranium-235	1.17E-02	1.30E-08	1.52E-10	
Uranium-238	2.65E-01	1.24E-08	3.29E-09	
Pathway Total				1.35E-08

---------- SECTOR=Far East/Northeast PATHWAY=Future Industrial Dermal Contact with Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	1.04E-02			
Antimony	2.18E-06			
Chromium	7.81E-06			
Uranium	1.97E-05			
Benz(a)anthracene	6.01E-08	2.35E+00	1.42E-07	
Benzo(a)pyrene	6.01E-08	2.35E+01	1.42E-06	
Benzo(b)fluoranthene	6.01E-08	2.35E+00	1.42E-07	
Benzo(k)fluoranthene	7.51E-08	2.35E-01	1.77E-08	
Chrysene	6.01E-08	2.35E-02	1.42E-09	
Fluoranthene	1.28E-07			
PCB-1260	5.05E-09	2.22E+00	1.12E-08	
Phenanthrene	6.01E-08			
Polychlorinated biphenyl	5.05E-09	2.22E+00	1.12E-08	
Pyrene	7.26E-08			
Alpha activity				
Beta activity				
Uranium-235				
Uranium-238				
Pathway Total				1.74E-06

---------- SECTOR=Far East/Northeast PATHWAY=Future Industrial External Exposure to Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum				
Antimony				
Chromium				
Uranium				
Benz(a)anthracene				
Benzo(a)pyrene				
Benzo(b)fluoranthene				
Benzo(k)fluoranthene				
Chrysene				
Fluoranthene				
PCB-1260				
Phenanthrene				
Polychlorinated biphenyl				
Pyrene				
Alpha activity	1.02E+02			
Beta activity	2.01E+02			
Uranium-235	2.28E+00	2.65E-07	6.05E-07	
Uranium-238	3.97E+01	6.57E-08	2.61E-06	
Pathway Total				3.22E-06

Future Industrial Excess Lifetime Cancer Risks

---------- SECTOR=Far East/Northeast PATHWAY=Future Industrial Ingestion Of Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	2.42E-03			
Antimony	5.07E-07			
Chromium	1.82E-06			
Uranium	4.583-06			
Benz(a)anthracene	6.99E-09	7.30E-01	5.10E-09	
Benzo(a)pyrene	6.99E-09	7.30E+00	5.10E-08	
Benzo(b)fluoranthene	6.99E-09	7.30E-01	5.10E-09	
Benzo(k)fluoranthene	8.743-09	7.30E-02	6.38E-10	
Chrysene	6.99E-09	7.30E-03	5.10E-11	
Fluoranthene	1.48E-08			
PCB-1260	9.78E-10	2.00E+00	1.96E-09	
Phenanthrene	6.99E-09			
Polychlorinated biphenyl	9.78E-10	2.00E+00	1.96E-09	
Pyrene	8.44E-09			
Alpha activity	6.96E+03			
Beta activity	1.38E+04			
Uranium-235	1.56E+02	4.70E-11	7.34E-09	
Uranium-238	2.72E+03	6.20E-11	1.69E-07	
Pathway Total				2.42E-07

---------- SECTOR=Far East/Northeast PATHWAY=Future Industrial Inhalation of Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	2.26E-07			
Antimony	4.73E-11			
chromium	1.70E-10	4.10E+01	6.95E-09	
Uranium	4.27E-10			
Benz(a)anthracene	6.53E-13	3.10E-01	2.02E-13	
Benzo(a)pyrene	6.53E-13	3.10E+00	2.02E-12	
Benzo(b)fluoranthene	6.53E-13	3.10E-01	2.02E-13	
Benzo(k)fluoranthene	8.16E-13	3.10E-02	2.53E-14	
Chrysene	6.53E-13	3.103-03	2.02E-15	
Fluoranthene	1.38E-12			
PCB-1260	9.14E-14	2.00E+00	1.83E-13	
Phenanthrene	6.53E-13			
Polychlorinated biphenyl	9.14E-14	2.00E+00	1.83E-13	
Pyrene	7.88E-13			
Alpha activity				
Beta activity				
Uranium-235	1.463-02	1.30E-08	1.90E-10	
Uranium-238	2.54E-01	1.24E-08	3.15E-09	
Pathway Total				1.03E-08

---------- SECTOR=Far North/Northwest PATHWAY=Future Industrial Dermal Contact with Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Antimony	1.05E-06			
Beryllium	5.18E-07	4.30E+02	2.23E-04	
Cadmium	4.51E-08			
chromium	2.04E-05			
Thallium	2.25E-07			
Uranium	1.04E-05			
Acenaphthene	7.51E-08			

Future Industrial Excess Lifetime Cancer Risks

---------- SECTOR=Far North/Northwest PATHWAY=Future Industrial Dermal Contact with Soil ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Anthracene	2.40E-07			
Benz(a)anthracene	5.11E-07	2.35E+00	1.20E-06	
Benzo(a)pyrene	4.21E-07	2.35E+01	9.91E-06	
Benzo(b)fluoranthene	3.91E-07	2.35E+00	9.20E-07	
Benzo(ghi)perylene	1.95E-07			
Benzo(k)fluoranthene	4.363-07	2.35E-01	1.03E-07	
Bis(2-ethylhexyl)phthalate	1.20E-07	7.37E-02	8.86E-09	
Chrysene	5.26E-07	2.35E-02	1.24E-08	
Di-n-butyl phthalate	6.01E-08			
Fluoranthene	1.26E-06			
Fluorene	7.51E-08			
Indeno(1,2,3-cd)pyrene	2.10E-07	2.35E+00	4.95E-07	
Phenanthrene	6.08E-07			
Pyrene	5.88E-07			
Alpha activity				
Beta activity				
Neptunium-237				
Uranium-235				
Uranium-238				
Pathway Total				2.36E-04

---------- SECTOR=Far North/Northwest PATHWAY=Future Industrial External Exposure to Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Antimony				
Beryllium				
Cadmium				
Chromium				
Thallium				
Uranium				
Acenaphthene				
Anthracene				
Benz(a)anthracene				
Benzo(a)pyrene				
Benzo(b)fluoranthene				
Benzo(ghi)perylene				
Benzo(k)fluoranthene				
Bis(2-ethylhexyl)phthalate				
Chrysene				
Di-n-butyl phthalate				
Fluoranthene				
Fluorene				
Indeno(1,2,3-cd)pyrene				
Phenanthrene				
Pyrene				
Alpha activity	4.85E+01			
Beta activity	1.62E+02			
Neptunium-237	2.74E+00	4.62E-07	1.27E-06	
Uranium-235	9.13E-01	2.65E-07	2.42E-07	
Uranium-238	2.10E+01	6.57E-08	1.38E-06	
Pathway Total				2.89E-06

Future Industrial Excess Lifetime Cancer Risks

---------- SECTOR=Far North/Northwest PATHWAY=Future Industrial Ingestion of Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Antimony	2.45E-07			
Beryllium	1.21E-07	4.30E+00	5.18E-07	
Cadmium	5.24E-08			
Chromium	4.75E-06			
Thallium	5.24E-08			
Uranium	2.42E-06			
Acenaphthene	8.74E-09			
Anthracene	2.80E-08			
Benz(a)anthracene	5.94E-08	7.30E-01	4.34E-08	
Benzo(a)pyrene	4.89E-08	7.30E+00	3.57E-07	
Benzo(b)fluoranthene	4.54E-08	7.30E-01	3.32E-08	
Benzo(ghi)perylene	2.27E-08			
Benzo(k)fluoranthene	5.07E-08	7.30E-02	3.70E-09	
Bis(2-ethylhexyl)phthalate	1.40E-08	1.40E-02	1.96E-10	
Chrysene	6.12E-08	7.30E-03	4.46E-10	
Di-n-butyl phthalate	6.99E-09			
Fluoranthene	1.47E-07			
Fluorene	8.74E-09			
Indeno(1,2,3-cd)pyrene	2.45E-08	7.30E-01	1.79E-08	
Phenanthrene	7.07E-08			
Pyrene	6.84E-08			
Alpha activity	3.32E+03			
Beta activity	1.11E+04			
Neptunium-237	1.88E+02	3.00E-10	5.63E-08	
Uranium-235	6.25E+01	4.70E-11	2.94E-09	
Uranium-238	1.44E+03	6.20E-11	8.91E-08	
Pathway Total				1.12E-06

---------- SECTOR=Far North/Northwest PATHWAY=Future Industrial Inhalation of Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Antimony	2.28E-11			
Beryllium	1.13E-11	8.40E+00	9.45E-11	
Cadmium	4.89E-12	6.10E+00	2.99E-11	
Chromium	4.44E-10	4.10E+01	1.82E-08	
Thallium	4.89E-12			
Uranium	2.26E-10			
Acenaphthene	8.16E-13			
Anthracene	2.61E-12			
Benz(a)anthracene	5.55E-12	3.10E-01	1.72E-12	
Benzo(a)pyrene	4.57E-12	3.10E+00	1.42E-11	
Benzo(b)fluoranthene	4.243-12	3.10E-01	1.31E-12	
Benzo(ghi)perylene	2.12E-12			
Benzo(k)fluoranthene	4.73E-12	3.10E-02	1.47E-13	
Bis(2-ethylhexyl)phthalate	1.31E-12			
Chrysene	5.71E-12	3.10E-03	1.77E-14	
Di-n-butyl phthalate	6.53E-13			
Fluoranthene	1.37E-11			
Fluorene	8.16E-13			
Indeno(1,2,3-cd)pyrene	2.28E-12	3.10E-01	7.08E-13	
Phenanthrene	6.60E-12			
Pyrene	6.39E-12			
Alpha activity				
Beta activity				
Neptunium-237	1.75E-02	3.45E-08	6.04E-10	
Uranium-235	5.84E-03	1.30E-08	7.59E-11	
Uranium-238	1.34E-01	1.24E-08	1.66E-09	

Future Industrial Excess Lifetime Cancer Risks

..... SECTOR=Far North/Northwest PATHWAY=Future Industrial Inhalation of Soil ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Pathway Total				2.07E-08

---------- SECTOR=McNairy PATHWAY=Future Industrial Dermal Contact with Groundwater .....

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	1.14E-03			
Arsenic	3.34E-06	3.66E+00	1.22E-05	
Barium	4.473-06			
Beryllium	1.06E-07	4.30E+02	4.56E-05	
Bromide				
Cadmium	2.41E-08			
Chromium	3.11E-06			
Cobalt	8.97E-07			
Iron	2.76E-03			
Lead	1.45E-06			
Manganese	2.00E-05			
Nickel	1.41E-06			
Nitrate	6.72E-06			
Orthophosphate				
Selenium	3.73E-07			
Tetraoxo-sulfate(1-)				
Thallium	7.60E-09			
Vanadium	1.29E-05			
Zinc	9.98E-05			
1,1-Dichloroethene	8.16E-07	6.00E-01	4.90E-07	
1,2-Dichloroethane	6.72E-08	9.10E-02	6.12E-09	
Bis(2-ethylhexyl)phthalate	1.55E-06	7.37E-02	1.14E-07	
Bromodichloromethane	3.92E-07	6.33E-02	2.48E-08	
Chloroform	7.62E-07	3.05E-02	2.32E-08	
Di-n-butyl phthalate	1.46E-06			
Di-n-octylphthalate	1.91E-03			
Dibromochloromethane	1.98E-07	1.40E-01	2.77E-08	
Tetrachloroethene	4.57E-05	5.20E-02	2.38E-06	
Trichloroethene	3.29E-06	7.33E-02	2.41E-07	
Vinyl chloride	1.30E-06	1.90E+00	2.47E-06	
cis-1,2-Dichloroethene	1.78E-06			
Actinium-228				
Alpha activity				
Beta activity				
Cesium-137				
Lead-210				
Lead-212				
Lead-214				
Neptunium-237				
Plutonium-239				
Potassium-40				
Technetium-99				
Thorium-228				
Thorium-230				
Thorium-234				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				6.36E-05

Future Industrial Excess Lifetime Cancer Risks

---------- SECTOR=McNairy PATHWAY-Future Industrial Ingestion of Groundwater ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	3.14E-01			
Arsenic	9.19E-04	1.50E+00	1.38E-03	
Barium	1.23E-03			
Beryllium	2.923-05	4.30E+00	1.26E-04	
Bromide	1.57E-04			
Cadmium	6.63E-06			
chromium	8.56E-04			
Cobalt	2.47E-04			
Iron	7.60E-01			
Lead	3.99E-04			
Manganese	5.51E-03			
Nickel	3.893-04			
Nitrate	1.85E-03			
Orthophosphate	3.53E-04			
Selenium	1.03E-04			
Tetraoxo-sulfate(1-)	5.99E-02			
Thallium	2.093-06			
vanadium	3.56E-03			
Zinc	2.75E-02			
1,1-Dichloroethene	2.53E-05	6.00E-01	1.52E-05	
1,2-Dichloroethane	3.49E-06	9.10E-02	3.18E-07	
Bis(2-ethylhexyl)phthalate	1.82E-05	1.40E-02	2.55E-07	
Bromodichloromethane	1.86E-05	6.20E-02	1.15E-06	
Chloroform	2.36E-05	6.10E-03	1.44E-07	
Di-n-butyl phthalate	3.49E-06			
Di-n-octylphthalate	1.96E-05			
Dibromochloromethane	1.40E-05	8.40E-02	1.17E-06	
Tetrachloroethene	3.40E-05	5.20E-02	1.77E-06	
Trichloroethene	5.66E-05	1.10E-02	6.23E-07	
Vinyl chloride	4.903-05	1.90E+00	9.32E-05	
cis-1,2-Dichloroethene	4.92E-05			
Actinium-228	1.70E+05	1.62E-12	2.75E-07	
Alpha activity	1.92E+05			
Beta activity	1.74E+06			
Cesium-137	7.69E+04	3.16E-11	2.43E-06	
Lead-210	2.63E+06	1.01E-09	2.66E-03	
Lead-212	1.41E+05	1.80E-11	2.53E-06	
Lead-214	7.56E+04	2.94E-13	2.22E-08	
Neptunium-237	5.05E+04	3.00E-10	1.51E-05	
Plutonium-239	8.32E+03	3.16E-10	2.63E-06	
Potassium-40	4.25E+05	1.25E-11	5.31E-06	
Technetium-99	1.94E+06	1.40E-12	2.71E-06	
Thorium-228	7.69E+03	2.31E-10	1.78E-06	
Thorium-230	8.52E+03	3.75E-11	3.19E-07	
Thorium-234	4.49E+06	1.93E-11	8.67E-05	
Uranium-234	1.18E+04	4.44E-11	5.23E-07	
Uranium-235	7.23E+04	4.70E-11	3.40E-06	
Uranium-238	7.85E+03	6.20E-11	4.87E-07	
Pathway Total				4.40E-03

---------- SECTOR=McNairy PATHWAY=Future Industrial Inhalation of Groundwater While Showering ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum				
Arsenic		5.00E+01		
Barium				
Beryllium		8.40E+00		

Future Industrial Excess Lifetime Cancer Risks

---------- SECTOR=McNairy PATHWAY=Future Industrial Inhalation of Groundwater While Showering ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Bromide				
Cadmium		6.10E+00		
Chromium		4.10E+01		
Cobalt				
Iron				
Lead				
Manganese				
Nickel				
Nitrate				
Orthophosphate				
Selenium				
Tetraoxo-sulfate(1-)				
Thallium				
Vanadium				
Zinc				
1,1-Dichloroethene	1.38E-05	1.20E+00	1.66E-05	
1,2-Dichloroethane	1.91E-06	9.10E-02	1.74E-07	
Bis(2-ethylhexyl)phthalate				
Bromodichloromethane	1.02E-05			
Chloroform	1.29E-05	8.10E-02	1.04E-06	
Di-n-butyl phthalate				
Di-n-octylphthalate				
Dibromochloromethane	7.63E-06			
Tetrachloroethene	1.86E-05	2.00E-03	3.72E-08	
Trichloroethene	3.09E-05	6.00E-03	1.86E-07	
Vinyl chloride	2.68E-05	3.00E-01	8.03E-06	
cis-1,2-Dichloroethene	2.68E-05			
Actinium-228		3.27E-11		
Alpha activity				
Beta activity				
Cesium-137		1.91E-11		
Lead-210		3.86E-09		
Lead-212		3.85E-11		
Lead-214		6.23E-12		
Neptunium-237		3.45E-08		
Plutonium-239		2.78E-08		
Potassium-40		7.46E-12		
Technetium-99		2.89E-12		
Thorium-228		9.68E-08		
Thorium-230		1.72E-08		
Thorium-234		1.90E-11		
Uranium-234		1.40E-08		
Uranium-235		1.30E-08		
Uranium-238		1.24E-08		
Pathway Total				2.60E-05

---------- SECTOR=Northeast PATHWAY=Future Industrial Dermal Contact with Soil .....

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Chromium	1.45E-05			
Uranium	1.04E-05			
Zinc	5.27E-05			
Acenaphthene	6.01E-08			
Anthracene	1.20E-07			
Benz(a)anthracene	5.26E-07	2.35E+00	1.24E-06	
Benzo(a)pyrene	4.51E-07	2.35E+01	1.06E-05	

Future Industrial Excess Lifetime Cancer Risks

---------- SECTOR=Northeast PATHWAY=Future Industrial Dermal Contact with Soil ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Benzo(b)fluoranthene	6.46E-07	2.35E+00	1.52E-06	
Benzo(ghi)perylene	2.55E-07			
Benzo(k)fluoranthene	4.21E-07	2.35E-01	9.91E-08	
Chrysene	6.01E-07	2.35E-02	1.42E-08	
Fluoranthene	1.29E-06			
Indeno(1,2,3-cd)pyrene	2.70E-07	2.35E+00	6.373-07	
PCB-1260	3.88E-08	2.22E+00	8.62E-08	
Phenanthrene	7.06E-07			
Polychlorinated biphenyl	3.88E-08	2.22E+00	8.62E-08	
Pyrene	1.02E-06			
Alpha activity				
Beta activity				
Uranium-235				
Uranium-238				
Pathway Total				1.43E-05

---------- SECTOR=Northeast PATHWAY=Future Industrial External Exposure to Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Chromium				
Uranium				
Zinc				
Acenaphthene				
Anthracene				
Benz(a)anthracene				
Benzo(a)pyrene				
Benzo(b)fluoranthene				
Benzo(ghi)perylene				
Benzo(k)fluoranthene				
Chrysene				
Fluoranthene				
Indeno(1,2,3-cd)pyrene				
PCB-1260				
Phenanthrene				
Polychlorinated biphenyl				
Pyrene				
Alpha activity	1.46E+02			
Beta activity	2.32E+02			
Uranium-235	9.13E-01	2.65E-07	2.423-07	
Uranium-238	2.10E+01	6.57E-08	1.38E-06	
Pathway Total				1.62E-06

---------- SECTOR=Northeast PATHWAY=Future Industrial Ingestion of Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte specific	Total Pathway Risk
chromium	3.37E-06			
Uranium	2.42E-06			
Zinc	1.23E-05			
Acenaphthene	6.99E-09			
Anthracene	1.40E-08			
Benz(a)anthracene	6.12E-08	7.30E-01	4.46E-08	
Benzo(a)pyrene	5.24E-08	7.30E+00	3.83E-07	

Future Industrial Excess Lifetime Cancer Risks

SECTOR=Northeast PATHWAY=Future Industrial Ingestion of Soil (continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Benzo(b)fluoranthene	7.51E-08	7.30E-01	5.48E-08	
Benzo(ghi)perylene	2.97E-08			
Benzo(k)fluoranthene	4.893-08	7.30E-02	3.57E-09	
Chrysene	6.99E-08	7.30E-03	5.10E-10	
Fluoranthene	1.50E-07			
Indeno(1,2,3-cd)pyrene	3.15E-08	7.30E-01	2.30E-08	
PCB-1260	7.51E-09	2.00E+00	1.50E-08	
Phenanthrene	8.21E-08			
Polychlorinated biphenyl	7.51E-09	2.00E+00	1.50E-08	
Pyrene	1.19E-07			
Alpha activity	9.97E+03			
Beta activity	1.59E+04			
Uranium-235	6.25E+01	4.70E-11	2.94E-09	
Uranium-238	1.44E+03	6.20E-11	8.91E-08	
Pathway Total				6.31E-07

SECTOR=Northeast PATHWAY=Future Industrial Inhalation of Soil

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Chromium	3.15E-10	4.10E+01	1.29E-08	
Uranium	2.26E-10			
Zinc	1.15E-09			
Acenaphthene	6.53E-13			
Anthracene	1.31E-12			
Benz(a)anthracene	5.71E-12	3.10E-01	1.77E-12	
Benzo(a)pyrene	4.89E-12	3.10E+00	1.52E-11	
Benzo(b)fluoranthene	7.01E-12	3.10E-01	2.17E-12	
Benzo(ghi)perylene	2.77E-12			
Benzo(k)fluoranthene	4.57E-12	3.10E-02	1.42E-13	
Chrysene	6.53E-12	3.10E-03	2.02E-14	
Fluoranthene	1.40E-11			
Indeno(1,2,3-cd)pyrene	2.94E-12	3.10E-01	9.10E-13	
PCB-1260	7.01E-13	2.00E+00	1.40E-12	
Phenanthrene	7.67E-12			
Polychlorinated biphenyl	7.01E-13	2.00E+00	1.40E-12	
Pyrene	1.11E-11			
Alpha activity				
Beta activity				
Uranium-235	5.84E-03	1.30E-08	7.59E-11	
Uranium-238	1.34E-01	1.24E-08	1.66E-09	
Pathway Total				1.47E-08

SECTOR=Northwest PATHWAY=Future Industrial Dermal Contact with Soil

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Antimony	3.01E-07			
Beryllium	2.43E-07	4.30E+02	1.04E-04	
Cadmium	3.05E-08			
Chromium	1.52E-05			
Iron	9.17E-03			
Lead	9.78E-06			
Vanadium	1.24E-05			

Future Industrial Excess Lifetime Cancer Risks

SECTOR=Northwest PATHWAY=Future Industrial Dermal Contact with Soil (continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Benz(a)anthracene	4.51E-07	2.35E+00	1.06E-06	
Benzo(a)pyrene	6.01E-07	2.35E+01	1.423-'05	
Benzo(b)fluoranthene	7.94E-07	2.35E+00	1.87E-06	
Benzo(k)fluoranthene	4.51E-07	2.35E-01	1.06E-07	
Chrysene	4.36E-07	2.35E-02	1.03E-08	
Fluoranthene	6.01E-07			
Pyrene	6.01E-07			
Alpha activity				
Beta activity				
Uranium-238				
Pathway Total				1.22E-04

SECTOR=Northwest PATHWAY=Future Industrial External Exposure to Soil

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Antimony				
Beryllium				
Cadmium				
Chromium				
Iron				
Lead				
Vanadium				
Benz(a)anthracene				
Benzo(a)pyrene				
Benzo(b)fluoranthene				
Benzo(k)fluoranthene				
Chrysene				
Fluoranthene				
Pyrene				
Alpha activity	8.28E+01			
Beta activity	2.24E+02			
Uranium-238	1.46E+01	6.57E-08	9.60E-07	
Pathway Total				9.60E-07

SECTOR=Northwest PATHWAY=Future Industrial Ingestion of Soil

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Antimony	7.00E-08			
Beryllium	5.65E-08	4.30E+00	2.43E-07	
Cadmium	3.55E-08			
Chromium	3.543-06			
Iron	2.13E-03			
Lead	2.27E-06			
Vanadium	2.89E-06			
Benz(a)anthracene	5.24E-08	7.30E-01	3.83E-08	
Benzo(a)pyrene	6.99E-08	7.30E+00	5.10E-07	
Benzo(b)fluoranthene	9.24E-08	7.30E-01	6.74E-08	
Benzo(k)fluoranthene	5.24E-08	7.30E-02	3.83E-09	
Chrysene	5.07E-08	7.30E-03	3.70E-10	
Fluoranthene	6.99E-08			
Pyrene	6.99E-08			
Alpha activity	5.67E+03			

Future Industrial Excess Lifetime Cancer Risks

SECTOR=Northwest PATHWAY=Future Industrial Ingestion of Soil (continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Beta activity	1.53E+04			
Uranium-238	1.00E+03	6.20E-11	6.20E-08	
Pathway Total				9.25E-07

SECTOR=Northwest PATHWAY=Future Industrial Inhalation of Soil

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Antimony	6.53E-12			
Beryl1ium	5.28E-12	8.40E+00	4.43E-11	
Cadmium	3.31E-12	6.10E+00	2.02E-11	
Chromium	3.30E-10	4.10E+01	1.35E-08	
Iron	1.99E-07			
Lead	2.12E-10			
Vanadium	2.69E-10			
Benz(a)anthracene	4.89E-12	3.10E-01	1.52E-12	
Benzo(a)pyrene	6.53E-12	3.10E+00	2.02E-11	
Benzo(b)fluoranthene	8.62E-12	3.10E-01	2.67E-12	
Benzo(k)fluoranthene	4.89E-12	3.10E-02	1.52E-13	
Chrysene	4.73E-12	3.10E-03	1.47E-14	
Fluoranthene	6.53E-12			
Pyrene	6.53E-12			
Alpha activity				
Beta activity				
Uranium-238	9.34E-02	1.24E-08	1.16E-09	
Pathway Total				1.483-08

SECTOR=RGA PATHWAY=Future Industrial Dermal Contact with Groundwater

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	7.73E-04			
Antimony	1.76E-07			
Arsenic	3.69E-07	3.66E+00	1.35E-06	
Barium	5.33E-06			
Beryllium	1.28E-07	4.30E+02	5.52E-05	
Bromide				
Cadmium	1.88E-08			
Chromium	1.43E-06			
Cobalt	1.25E-06			
Copper	2.79E-06			
Iron	4.92E-03			
Lead	4.15E-07			
Manganese	3.88E-05			
Mercury	2.09E-09			
Nickel	2.50E-06			
Nitrate	6.01E-04			
Orthophosphate				
Silver	1.61E-07			
Tetraoxo-sulfate(1-)				
Thallium	7.51E-09			
Uranium	4.64E-08			
Vanadium	1.95E-06			
Zinc	9.70E-06			

Future Industrial Excess Lifetime Cancer Risks

..... SECTOR=RGA PATHWAY=Future Industrial Dermal Contact with Groundwater ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
1,1-Dichloroethene	7.49E-07	6.00E-01	4.49E-07	
Bis(2-ethylhexyl)phthalate	2.97E-07	7.37E-02	2.19E-08	
Bromodichloromethane	2.94E-07	6.33E-02	1.86E-08	
Carbon tetrachloride	1.97E-05	2.00E-01	3.95E-06	
Chloroform	3.26E-06	3.05E-02	9.95E-08	
Di-n-butyl phthalate	1.46E-06			
Di-n-octylphthalate	3.41E-04			
N-Nitroso-di-n-propylamine	3.55E-08	2.80E+01	9.95E-07	
Tetrachloroethene	1.03E-04	5.20E-02	5.36E-06	
Toluene	2.06E-05			
Trichloroethene	1.66E-03	7.33E-02	1.22E-04	
Vinyl chloride	1.23E-05	1.90E+00	2.34E-05	
cis-1,2-Dichloroethene	4.69E-05			
trans-1,2-Dichloroethene	1.67E-07			
Alpha activity				
Americium-241				
Beta activity				
Cesium-137				
Lead-210				
Lead-214				
Neptunium-237				
Plutonium-239				
Technetium-99				
Thorium-228				
Thorium-230				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				2.13E-04

---------- SECTOR=RGA PATHWAY=Future Industrial Ingestion Of Groundwater ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	2.13E-01			
Antimony	4.863-05			
Arsenic	1.02E-04	1.50E+00	1.53E-04	
Barium	1.47E-03			
Beryllium	3.54E-05	4.30E+00	1.52E-04	
Bromide	1.61E-03			
Cadmium	5.17E-06			
chromium	3.94E-04			
Cobalt	3.45E-04			
Copper	7.69E-04			
Iron	1.35E+00			
Lead	1.14E-04			
Manganese	1.07E-02			
Mercury	5.75E-07			
Nickel	6.88E-04			
Nitrate	1.66E-01			
Orthophosphate	1.26E-04			
Silver	4.44E-05			
Tetraoxo-sulfate(1-)	4.61E-02			
Thallium	2.07E-06			
uranium	1.28E-05			
Vanadium	5.37E-04			
Zinc	2.67E-03			

Future Industrial Excess Lifetime Cancer Risks

---------- SECTOR=RGA PATHWAY=Future Industrial Ingestion Of Groundwater .....
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
1,1-Dichloroethene	2.32E-05	6.00E-01	1.39E-05	
Bis(2-ethylhexyl)phthalate	3.49E-06	1.40E-02	4.893-08	
Bromodichloromethane	1.40E-05	6.20E-02	8.67E-07	
Carbon tetrachloride	2.47E-04	1.3 OE-01	3.213-05	
Chloroform	1.01E-04	6.10E-03	6.16E-07	
Di-n-butyl phthalate	3.49E-06			
Di-n-octylphthalate	3.49E-06			
N-Nitroso-di-n-propylamine	3.49E-06	7.00E+00	2.45E-05	
Tetrachloroethene	7.67E-05	5.20E-02	3.99E-06	
Toluene	1.26E-04			
Trichloroethene	2.86E-02	1.10E-02	3.15E-04	
Vinyl chloride	4.65E-04	1.90E+00	8.83E-04	
cis-1,2-Dichloroethene	1.29E-03			
trans-1,2-Dichloroethene	4.30E-05			
Alpha activity	1.06E+05			
Americium-241	1.05E+04	3.28E-10	3.443-06	
Beta activity	2.01E+06			
Cesium-137	6.81E+04	3.16E-11	2.15E-06	
Lead-210	6.25E+05	1.01E-09	6.31E-04	
Lead-214	4.63E+04	2.94E-13	1.36E-08	
Neptunium-237	8.46E+04	3.00E-10	2.54E-05	
Plutonium-239	2.86E+02	3.16E-10	9.03E-08	
Technetium-99	1.67E+07	1.40E-12	2.34E-05	
Thorium-228	4.75E+03	2.31E-10	1.10E-06	
Thorium-230	6.83E+03	3.75E-11	2.56E-07	
Uranium-234	1.04E+04	4.44E-11	4.60E-07	
Uranium-235	7.35E+02	4.70E-11	3.45E-08	
Uranium-238	1.04E+05	6.20E-11	6.433-06	
Pathway Total				2.27E-03

---------- SECTOR=RGA PATHWAY=Future Industrial Inhalation Of Groundwater While Showering ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum				
Antimony				
Arsenic		5.00E+01		
Barium				
Beryl1ium		8.40E+00		
Bromide				
Cadmium		6.10E+00		
Chromium		4.10E+01		
Cobalt				
Copper				
Iron				
Lead				
Manganese				
Mercury				
Nickel				
Nitrate				
Orthophosphate				
Silver				
Tetraoxo-sulfate(1-)				
Thallium				
Uranium				
Vanadium				
Zinc				

Future Industrial Excess Lifetime Cancer Risks

---------- SECTOR=RGA PATHWAY=Future Industrial Inhalation Of Groundwater While Showering ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
1,1-Dichloroethene	1.27E-05	1.20E+00	1.52E-05	
Bis(2-ethylhexyl)phthalate				
Bromodichloromethane	7.63E-06			
Carbon tetrachloride	1.35E-04	5.30E-02	7.153-06	
Chloroform	5.51E-05	8.10E-02	4.47E-06	
Di-n-butyl phthalate				
Di-n-octylphthalate				
N-Nitroso-di-n-propylamine				
Tetrachloroethene	4.19E-05	2.00E-03	8.38E-08	
Toluene	6.87E-05			
Trichloroethene	1.56E-02	6.00E-03	9.38E-05	
Vinyl chloride	2.54E-04	3.00E-01	7.61E-05	
cis-1,2-Dichloroethene	7.06E-04			
trans-1,2-Dichloroethene	2.35E-05			
Alpha activity				
Americium-241		3.853-08		
Beta activity				
Cesium-137		1.91E-11		
Lead-210		3.86E-09		
Lead-214		6.23E-12		
Neptunium-237		3.45E-08		
Plutonium-239		2.78E-08		
Technetium-99		2.89E-12		
Thorium-228		9.68E-08		
Thorium-230		1.72E-08		
Uranium-234		1.40E-08		
Uranium-235		1.30E-08		
Uranium-238		1.24E-08		
Pathway Total				1.97E-04

..... SECTOR=Southeast PATHWAY=Future Industrial Dermal Contact with Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	1.07E-02			
Antimony	4.51E-07			
Cadmium	5.26E-08			
Chromium	1.77E-05			
Benz(a)anthracene	1.05E-07	2.35E+00	2.48E-07	
Benzo(a)pyrene	1.20E-07	2.35E+01	2.83E-06	
Benzo(b)fluoranthene	1.05E-07	2.35E+00	2.48E-07	
Benzo(k)fluoranthene	9.02E-08	2.35E-01	2.12E-08	
Chrysene	1.20E-07	2.35E-02	2.83E-09	
Fluoranthene	2.25E-07			
PCB-1262	3.43E-08	2.22E+00	7.61E-08	
Phenanthrene	1.05E-07			
Polychlorinated biphenyl	3.43E-08	2.22E+00	7.61E-08	
Pyrene	1.80E-07			
Alpha activity				
Beta activity				
Pathway Total				3.50E-06

Future Industrial Excess Lifetime Cancer Risks

---------- SECTOR=Southeast PATHWAY=Future Industrial External Exposure to Soil .....

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum				
Antimony				
Cadmium				
Chromium				
Benz(a)anthracene				
Benzo(a)pyrene				
Benzo(b)fluoranthene				
Benzo(k)fluoranthene				
Chrysene				
Fluoranthene				
PCB-1262				
Phenanthrene				
Polychlorinated biphenyl				
Pyrene				
Alpha activity	7.53E+01			
Beta activity	1.11E+02			
Pathway Total				

---------- SECTOR=Southeast PATHWAY=Future Industrial Ingestion Of Soil .....

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	2.48E-03			
Antimony	1.05E-07			
Cadmium	6.12E-08			
Chromium	4.12E-06			
Benz(a)anthracene	1.22E-08	7.30E-01	8.93E-09	
Benzo(a)pyrene	1.40E-08	7.30E+00	1.02E-07	
Benzo(b)fluoranthene	1.22E-08	7.30E-01	8.93E-09	
Benzo(k)fluoranthene	1.05E-08	7.30E-02	7.65E-10	
Chrysene	1.40E-08	7.30E-03	1.02E-10	
Fluoranthene	2.62E-08			
PCB-1262	6.64E-09	2.00E+00	1.33E-08	
Phenanthrene	1.22E-08			
Polychlorinated biphenyl	6.64E-09	2.00E+00	1.33E-08	
Pyrene	2.10E-08			
Alpha activity	5.15E+03			
Beta activity	7.58E+03			
Pathway Total				1.47E-07

---------- SECTOR=Southeast PATHWAY=Future Industrial Inhalation Of Soil .....

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	2.32E-07			
Antimony	9.79E-12			
Cadmium	5.71E-12	6.10E+00	3.48E-11	
Chromium	3.85E-10	4.10E+01	1.58E-08	
Benz(a)anthracene	1.14E-12	3.10E-01	3.54E-13	
Benzo(a)pyrene	1.31E-12	3.10E+00	4.05E-12	
Benzo(b)fluoranthene	1.14E-12	3.10E-01	3.54E-13	
Benzo(k)fluoranthene	9.79E-13	3.10E-02	3.03E-14	
Chrysene	1.31E-12	3.10E-03	4.05E-15	
Fluoranthene	2.45E-12			
PCB-1262	6.20E-13	2.00E+00	1.24E-12	

Future Industrial Excess Lifetime Cancer Risks

---------- SECTOR=Southeast PATHWAY=Future Industrial Inhalation Of Soil .....
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Phenanthrene	1.14E-12			
Polychlorinated biphenyl	6.20E-13	2.00E+00	1.24E-12	
Pyrene	1.96E-12			
Alpha activity				
Beta activity				
Pathway Total				1.58E-08

---------- SECTOR=Southwest PATHWAY=Future Industrial Dermal Contact with Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Antimony	1.09E-06			
Beryllium	2.83E-07	4.30E+02	1.22E-04	
Cadmium	5.45E-08			
Chromium	1.60E-05			
Iron	1.28E-02			
Thallium	5.28E-07			
Uranium	3.77E-05			
Zinc	3.78E-05			
Acenaphthene	1.49E-06			
Acenaphthylene	3.31E-07			
Anthracene	2.73E-06			
Benz(a)anthracene	7.54E-06	2.35E+00	1.78E-05	
Benzo(a)pyrene	7.263-06	2.35E+01	1.71E-04	
Benzo(b)fluoranthene	7.68E-06	2.35E+00	1.81E-05	
Benzo(ghi)perylene	3.55E-06			
Benzo(k)fluoranthene	5.07E-06	2.35E-01	1.19E-06	
Bis(2-ethylhexyl)phthalate	1.20E-07	7.37E-02	8.86E-09	
Chrysene	6.79E-06	2.35E-02	1.60E-07	
Dibenz(a,h)anthracene	1.95E-06	2.35E+01	4.60E-05	
Fluoranthene	1.64E-05			
Fluorene	1.80E-06			
Indeno(1,2,3-cd)pyrene	2.71E-06	2.35E+00	6.38E-06	
Naphthalene	3.61E-09			
PCB-1260	3.43E-08	2.22E+00	7.61E-08	
Phenanthrene	8.59E-06			
Polychlorinated biphenyl	3.433-08	2.22E+00	7.61E-08	
Pyrene	1.38E-05			
Alpha activity				
Beta activity				
Neptunium-237				
Uranium-235				
Uranium-238				
Pathway Total				3.83E-04

---------- SECTOR=Southwest PATHWAY=Future Industrial External Exposure to Soil .....

Analyte	Carcinogenic CDI	Slope Factor	Analyte specific	Total Pathway Risk
Antimony				
Beryllium				
Cadmium				
Chromium				
Iron				

Future Industrial Excess Lifetime Cancer Risks

..... SECTOR=Southwest PATHWAY=Future Industrial External Exposure to Soil .....
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Thallium				
Uranium				
Zinc				
Acenaphthene				
Acenaphthylene				
Anthracene				
Benz(a)anthracene				
Benzo(a)pyrene				
Benzo(b)fluoranthene				
Benzo(ghi)perylene				
Benzo(k)fluoranthene				
Bis(2-ethylhexyl)phthalate				
Chrysene				
Dibenz(a,h)anthracene				
Fluoranthene				
Fluorene				
Indeno(1,2,3-cd)pyrene				
Naphthalene				
PCB-1260				
Phenanthrene				
Polychlorinated biphenyl				
Pyrene				
Alpha activity	7.23E+01			
Beta activity	2.66E+02			
Neptunium-237	1.37E+00	4.62E-07	6.33E-07	
Uranium-235	2.74E+00	2.653-07	7.26E-07	
Uranium-238	7.63E+01	6.57E-08	5.01E-06	
Pathway Total				6.37E-06

---------- SECTOR=Southwest PATHWAY=Future Industrial Ingestion Of Soil .....

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Antimony	2.543-07			
Beryllium	6.59E-08	4.30E+00	2.83E-07	
Cadmium	6.34E-08			
Chromium	3.71E-06			
Iron	2.97E-03			
Thallium	1.23E-07			
Uranium	8.76E-06			
Zinc	8.79E-06			
Acenaphthene	1.733-07			
Acenaphthylene	3.84E-08			
Anthracene	3.18E-07			
Benz(a)anthracene	8.773-07	7.30E-01	6.40E-07	
Benzo(a)pyrene	8.45E-07	7.30E+00	6.17E-06	
Benzo(b)fluoranthene	8.933-07	7.30E-01	6.52E-07	
Benzo(ghi)perylene	4.13E-07			
Benzo(k)fluoranthene	5.90E-07	7.30E-02	4.31E-08	
Bis(2-ethylhexyl)phthalate	1.40E-08	1.40E-02	1.96E-10	
Chrysene	7.89E-07	7.30E-03	5.76E-09	
Dibenz(a,h)anthracene	2.27E-07	7.30E+00	1.66E-06	
Fluoranthene	1.91E-06			
Fluorene	2.10E-07			
Indeno(1,2,3-cd)pyrene	3.15E-07	7.30E-01	2.30E-07	
Naphthalene	4.19E-10			
PCB-1260	6.64E-09	2.00E+00	1.33E-08	

Future Industrial Excess Lifetime Cancer Risks

---------- SECTOR=Southwest PATHWAY=Future Industrial Ingestion of Soil ..... (continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Phenanthrene	9.99E-07			
Polychlorinated biphenyl	6.64E-09	2.00E+00	1.33E-08	
Pyrene	1.61E-06			
Alpha activity	4.95E+03			
Beta activity	1.82E+04			
Neptunium-237	9.38E+01	3.00E-10	2.81E-08	
Uranium-235	1.88E+02	4.70E-11	8.81E-09	
Uranium-238	5.22E+03	6.20E-11	3.24E-07	
Pathway Total				1.01E-05

---------- SECTOR=Southwest PATHWAY=Future Industrial Inhalation of Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Antimony	2.37E-11			
Beryllium	6.15E-12	8.40E+00	5.17E-11	
Cadmium	5.91E-12	6.10E+00	3.61E-11	
Chromium	3.47E-10	4.10E+01	1.42E-08	
Iron	2.78E-07			
Thallium	1.15E-11			
Uranium	8.18E-10			
Zinc	8.20E-10			
Acenaphthene	1.61E-11			
Acenaphthylene	3.59E-12			
Anthracene	2.97E-11			
Benz(a)anthracene	8.18E-11	3.10E-01	2.54E-11	
Benzo(a)pyrene	7.89E-11	3.10E+00	2.44E-10	
Benzo(b)fluoranthene	8.34E-11	3.10E-01	2.59E-11	
Benzo(ghi)perylene	3.86E-11			
Benzo(k)fluoranthene	5.51E-11	3.10E-02	1.71E-12	
Bis(2-ethylhexyl)phthalate	1.31E-12			
Chrysene	7.37E-11	3.10E-03	2.28E-13	
Dibenz(a,h)anthracene	2.12E-11	3.10E+00	6.57E-11	
Fluoranthene	1.78E-10			
Fluorene	1.96E-11			
Indeno(1,2,3-cd)pyrene	2.94E-11	3.10E-01	9.12E-12	
Naphthalene	3.92E-14			
PCB-1260	6.203-13	2.00E+00	1.24E-12	
Phenanthrene	9.33E-11			
Polychlorinated biphenyl	6.20E-13	2.00E+00	1.24E-12	
Pyrene	1.50E-10			
Alpha activity				
Beta activity				
Neptunium-237	8.75E-03	3.45E-08	3.02E-10	
uranium-235	1.75E-02	1.30E-08	2.28E-10	
Uranium-238	4.87E-01	1.24E-08	6.04E-09	
Pathway Total				2.12E-08

---------- SECTOR=West PATHWAY=Future Industrial Dermal Contact with Soil .....

Analyte	carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	5.47E-03			
Antimony	7.45E-07			

Future Industrial Excess Lifetime Cancer Risks

---------- SECTOR=West PATHWAY=Future Industrial Dermal Contact with Soil .....
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Arsenic	9.91E-06	3.66E+00	3.63E-05	
Beryl1ium	2.36E-07	4.30E+02	1.02E-04	
Cadmium	1.36E-07			
Chromium	9.43E-06			
Cobalt	3.56E-06			
Uranium	2.73E-05			
Zinc	2.25E-05			
2-Methylnaphthalene	1.35E-06			
Acenaphthene	5.06E-06			
Anthracene	2.19E-05			
Benz(a)anthracene	3.02E-05	2.35E+00	7.12E-05	
Benzo(a)pyrene	2.72E-05	2.35E+01	6.41E-04	
Benzo(b)fluoranthene	3.39E-05	2.35E+00	7.97E-05	
Benzo(ghi)perylene	5.56E-06			
Benzo(k)fluoranthene	3.34E-05	2.35E-01	7.86E-06	
Bis(2-ethylhexyl)phthalate	1.50E-07	7.37E-02	1.11E-08	
Chrysene	3.26E-05	2.35E-02	7.67E-07	
Di-n-butyl phthalate	3.08E-07			
Dibenz(a,h)anthracene	5.64E-06	2.35E+01	1.33E-04	
Fluoranthene	6.78E-05			
Fluorene	4.70E-06			
Indeno(1,2,3-cd)pyrene	5.71E-06	2.35E+00	1.34E-05	
Naphthalene	2.18E-06			
PCB-1254	8.66E-07	2.22E+00	1.92E-06	
PCB-1260	1.44E-08	2.22E+00	3.21E-08	
Phenanthrene	5.26E-05			
Polychlorinated biphenyl	5.06E-07	2.22E+00	1.12E-06	
Pyrene	5.93E-05			
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				1.09E-03

---------- SECTOR=West PATHWAY=Future Industrial External Exposure to Soil .....

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum				
Antimony				
Arsenic				
Beryllium				
Cadmium				
Chromium				
Cobalt				
Uranium				
Zinc				
2-Methylnaphthalene				
Acenaphthene				
Anthracene				
Benz(a)anthracene				
Benzo(a)pyrene				
Benzo(b)fluoranthene				
Benzo(ghi)perylene				

Future Industrial Excess Lifetime Cancer Risks

---------- SECTOR=West PATHWAY=Future Industrial External Exposure to Soil ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Benzo(k)fluoranthene				
Bis(2-ethylhexyl)phthalate				
Chrysene				
Di-n-butyl phthalate				
Dibenz(a,h)anthracene				
Fluoranthene				
Fluorene				
Indeno(1,2,3-cd)pyrene				
Naphthalene				
PCB-1254				
PCB-1260				
Phenanthrene				
Polychlorinated biphenyl				
Pyrene				
Alpha activity	2.96E+02			
Beta activity	5.09E+02			
Cesium-137	3.07E+00	2.093-06	6.41E-06	
Neptunium-237	6.94E+00	4.62E-07	3.21E-06	
Uranium-234	4.33E+01	2.14E-11	9.26E-10	
Uranium-235	3.02E+00	2.65E-07	7.99E-07	
Uranium-238	5.51E+01	6.57E-08	3.62E-06	
Pathway Total				1.40E-05

---------- SECTOR-West PATHWAY=Future Industrial Ingestion of Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	1.27E-03			
Antimony	1.73E-07			
Arsenic	2.31E-06	1.50E+00	3.46E-06	
Beryllium	5.50E-08	4.30E+00	2.36E-07	
Cadmium	1.583-07			
Chromium	2.19E-06			
Cobalt	8.293-07			
Uranium	6.34E-06			
Zinc	5.24E-06			
2-Methylnaphthalene	1.57E-07			
Acenaphthene	5.88E-07			
Anthracene	2.55E-06			
Benz(a)anthracene	3.52E-06	7.30E-01	2.57E-06	
Benzo(a)pyrene	3.16E-06	7.30E+00	2.31E-05	
Benzo(b)fluoranthene	3.94E-06	7.30E-01	2.87E-06	
Benzo(ghi)perylene	6.47E-07			
Benzo(k)fluoranthene	3.88E-06	7.30E-02	2.83E-07	
Bis(2-ethylhexyl)phthalate	1.75E-08	1.40E-02	2.45E-10	
Chrysene	3.79E-06	7.30E-03	2.77E-08	
Di-n-butyl phthalate	3.58E-08			
Dibenz(a,h)anthracene	6.56E-07	7.30E+00	4.79E-06	
Fluoranthene	7.893-06			
Fluorene	5.46E-07			
Indeno(1,2,3-cd)pyrene	6.64E-07	7.30E-01	4.85E-07	
Naphthalene	2.54E-07			
PCB-1254	1.68E-07	2.00E+00	3.35E-07	
PCB-1260	2.80E-09	2.00E+00	5.59E-09	
Phenanthrene	6.12E-06			
Polychlorinated biphenyl	9.80E-08	2.00E+00	1.96E-07	
Pyrene	6.90E-06			

Future Industrial Excess Lifetime Cancer Risks

..... SECTOR=West PATHWAY=Future Industrial Ingestion Of Soil ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Alpha activity	2.03E+04			
Beta activity	3.48E+04			
Cesium-137	2.10E+02	3.16E-11	6.63E-09	
Neptunium-237	4.75E+02	3.00E-10	1.43E-07	
Uranium-234	2.96E+03	4.44E-11	1.31E-07	
Uranium-235	2.06E+02	4.70E-11	9.70E-09	
Uranium-238	3.77E+03	6.20E-11	2.34E-07	
Pathway Total				3.89E-05

---------- SECTOR=West PATHWAY=Future Industrial Inhalation Of Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	1.19E-07			
Antimony	1.62E-11			
Arsenic	2.15E-10	5.00E+01	1.08E-08	
Beryllium	5.13E-12	8.40E+00	4.31E-11	
Cadmium	1.48E-11	6.10E+00	9.01E-11	
Chromium	2.05E-10	4.10E+01	8.40E-09	
Cobalt	7.74E-11			
Uranium	5.92E-10			
Zinc	4.89E-10			
2-Methylnaphthalene	1.47E-11			
Acenaphthene	5.49E-11			
Anthracene	2.38E-10			
Benz(a)anthracene	3.28E-10	3.10E-01	1.02E-10	
Benzo(a)pyrene	2.95E-10	3.10E+00	9.16E-10	
Benzo(b)fluoranthene	3.68E-10	3.10E-01	1.14E-10	
Benzo(ghi)perylene	6.04E-11			
Benzo(k)fluoranthene	3.62E-10	3.10E-02	1.12E-11	
Bis(2-ethylhexyl)phthalate	1.63E-12			
Chrysene	3.54E-10	3.10E-03	1.10E-12	
Di-n-butyl phthalate	3.34E-12			
Dibenz(a,h)anthracene	6.12E-11	3.10E+00	1.90E-10	
Fluoranthene	7.36E-10			
Fluorene	5.10E-11			
Indeno(1,2,3-cd)pyrene	6.20E-11	3.10E-01	1.92E-11	
Naphthalene	2.37E-11			
PCB-1254	1.57E-11	2.00E+00	3.13E-11	
PCB-1260	2.61E-13	2.00E+00	5.22E-13	
Phenanthrene	5.71E-10			
Polychlorinated biphenyl	9.15E-12	2.00E+00	1.83E-11	
Pyrene	6.44E-10			
Alpha activity				
Beta activity				
Cesium-137	1.96E-02	1.91E-11	3.74E-13	
Neptunium-237	4.44E-02	3.45E-08	1.53E-09	
Uranium-234	2.76E-01	1.40E-08	3.87E-09	
Uranium-235	1.93E-02	1.30E-08	2.50E-10	
Uranium-238	3.52E-01	1.24E-08	4.36E-09	
Pathway Total				3.07E-08

Recreational Excess Lifetime Cancer Risks

SECTOR=Central PATHWAY=Recreational Adult Ingestion of Quail

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Di-n-butyl phthalate		1.00E-01		
Alpha activity				
Beta activity				
Pathway Total				

SECTOR=Central PATHWAY=Recreational Adult Ingestion of Rabbit

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Di-n-butyl phthalate	3.51E-08	1.00E-01	3.51E-07	
Alpha activity				
Beta activity				
Pathway Total				3.51E-07

SECTOR=Central PATHWAY=Recreational Adult Ingestion of Venison

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Di-n-butyl phthalate	3.21E-09	1.00E-01	3.21E-08	
Alpha activity				
Beta activity				
Pathway Total				3.21E-08

SECTOR=Central PATHWAY=Recreational Child Ingestion of Quail

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Di-n-butyl phthalate		1.00E-01		
Alpha activity				
Beta activity				
Pathway Total				

SECTOR=Central PATHWAY=Recreational Child Ingestion of Rabbit

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Di-n-butyl phthalate	3.38E-08	1.00E-01	3.38E-07	
Alpha activity				
Beta activity				
Pathway Total				3.38E-07

SECTOR=Central PATHWAY=Recreational Child Ingestion of Venison

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Di-n-butyl phthalate	3.39E-09	1.00E-01	3.393-08	

Recreational Excess Lifetime Cancer Risks

..... SECTOR=Central PATHWAY=Recreational Child Ingestion of Venison ..... (continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Alpha activity				
Beta activity				
Pathway Total				3.39E-08

---------- SECTOR=Central PATHWAY=Recreational Teen Ingestion of Quail .....

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Di-n-butyl phthalate		1.00E-01		
Alpha activity				
Beta activity				
Pathway Total				

---------- SECTOR=Central PATHWAY=Recreational Teen Ingestion of Rabbit .....

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Di-n-butyl phthalate	2.84E-08	1.00E-01	2.84E-07	
Alpha activity				
Beta activity				
Pathway Total				2.84E-07

---------- SECTOR=Central PATHWAY=Recreational Teen Ingestion of Venison ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Eathway Hazard Index
Di-n-butyl phthalate	5.22E-09	1.00E-01	5.22E-08	
Alpha activity				
Beta activity				
Pathway Total				5.22E-08

---------- SECTOR=East PATHWAY=Recreational Adult Ingestion of Quail .....

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Cadmium	1.26E-08	1.00E-03	1.26E-05	
Chromium	2.06E-09	5.00E-03	4.11E-07	
Tha11ium	7.14E-10			
Uranium	4.42E-07	3.00E-03	1.47E-04	
Acenaphthene		6.00E-02		
Anthracene		3.00E-01		
Benz(a)anthracene				
Benzo(a)pyrene	2.13E-08			
Benzo(b)fluoranthene				
Benzo(ghi)perylene				
Benzo(k)fluoranthene				
Chrysene				
Di-n-butyl phthalate		1.00E-01		

Recreational Excess Lifetime Cancer Risks

SECTOR=East PATHWAY=Recreational Adult Ingestion of Quail (continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Dibenz(a,h)anthracene				
Fluoranthene		4.00E-02		
Fluorene		4.00E-02		
Indeno(1,2,3-cd)pyrene				
PCB-1260	1.74E-07			
Phenanthrene	5.66E-09			
Polychlorinated biphenyl				
Pyrene		3.00E-02		
Alpha activity				
Beta activity				
Cesium-137				
'Neptunium-237				
Uranium-235				
Uranium-238				
Pathway Total				1.60E-04

SECTOR=East PATHWAY=Recreational Adult Ingestion of Rabbit

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Cadmium	1.29E-09	1.00E-03	1.29E-06	
Chromium	4.25E-07	5.00E-03	8.49E-05	
Thallium	1.49E-07			
uranium	2.71E-08	3.00E-03	9.02E-06	
Acenaphthene	2.77E-10	6.00E-02	4.61E-09	
Anthracene	5.69E-10	3.00E-01	1.90E-09	
Benz(a)anthracene	2.95E-08			
Benzo(a)pyrene	7.96E-08			
Benzo(b)fluoranthene	1.40E-07			
Benzo(ghi)perylene	1.15E-07			
Benzo(k)fluoranthene	4.27E-07			
Chrysene	3.24E-08			
Di-n-butyl phthalate	8.81E-09	1.00E-01	8.81E-08	
Dibenz(a,h)anthracene	7.86E-08			
Fluoranthene	1.51E-08	4.00E-02	3.76E-07	
Fluorene	2.33E-10	4.00E-02	5.82E-09	
Indeno(1,2,3-cd)pyrene	1.31E-07			
PCB-1260	3.22E-06			
Phenanthrene	4.48E-09			
Polychlorinated biphenyl	7.99E-07			
Pyrene	1.29E-08	3.00E-02	4.30E-07	
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-235				
Uranium-238				
Pathway Total				9.62E-05

SECTOR=East PATHWAY=Recreational Adult Ingestion of Venison

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Cadmium	1.27E-10	1.00E-03	1.27E-07	

Recreational Excess Lifetime Cancer Risks

SECTOR=East PATHWAY=Recreational Adult Ingestion Of Venison (continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Chromium	3.87E-08	5.00E-03	7.73E-06	
Thallium	1.34E-08			
Uranium	2.45E-09	3.00E-03	8.15E-07	
Acenaphthene	2.59E-11	6.00E-02	4.31E-10	
Anthracene	5.30E-11	3.00E-01	1.77E-10	
Benz(a)anthracene	2.66E-09			
Benzo(a)pyrene	7.15E-09			
Benzo(b)fluoranthene	1.26E-08			
Benzo(ghi)perylene	1.03E-08			
Benzo(k)fluoranthene	3.83E-08			
Chrysene	2.93E-09			
Di-n-butyl phthalate	8.06E-10	1.00E-01	8.06E-09	
Dibenz(a,h)anthracene	7.04E-09			
Fluoranthene	1.38E-09	4.00E-02	3.44E-08	
Fluorene	2.17E-11	4.00E-02	5.42E-10	
Indeno(1,2,3-cd)pyrene	1.17E-08			
PCB-1260	2.88E-07			
Phenanthrene	4.13E-10			
Polychlorinated biphenyl	7.19E-08			
Pyrene	1.18E-09	3.00E-02	3.94E-08	
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-235				
Uranium-238				
Pathway Total				8.76E-06

SECTOR=East PATHWAY=Recreational Child Ingestion of Quail

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Cadmium	1.22E-08	1.00E-03	1.22E-05	
Chromium	1.99E-09	5.00E-03	3.97E-07	
Thallium	6.89E-10			
Uranium	4.27E-07	3.00E-03	1.42E-04	
Acenaphthene		6.00E-02		
Anthracene		3.00E-01		
Benz(a)anthracene				
Benzo(a)pyrene	2.05E-08			
Benzo(b)fluoranthene				
Benzo(ghi)perylene				
Benzo(k)fluoranthene				
Chrysene				
Di-n-butyl phthalate		1.00E-01		
Dibenz(a,h)anthracene				
Fluoranthene		4.00E-02		
Fluorene		4.00E-02		
Indeno(1,2,3-cd)pyrene				
PCB-1260	1.68E-07			
Phenanthrene	5.46E-09			
Polychlorinated biphenyl				
Pyrene		3.00E-02		
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				

Recreational Excess Lifetime Cancer Risks

..... SECTOR=East PATHWAY=Recreational Child Ingestion of Quail ..... (continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Uranium-235				
Uranium-238				
Pathway Total				1.55E-04

..... SECTOR=East PATHWAY=Recreational Child Ingestion of Rabbit ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Cadmium	1.24E-09	1.00E-03	1.24E-06	
Chromium	4.10E-07	5.00E-03	8.20E-05	
Thallium	1.44E-07			
Uranium	2.61E-08	3.00E-03	8.71E-06	
Acenaphthene	2.67E-10	6.00E-02	4.45E-09	
Anthracene	5.50E-10	3.00E-01	1.83E-09	
Benz(a)anthracene	2.84E-08			
Benzo(a)pyrene	7.68E-08			
Benzo(b)fluoranthene	1.35E-07			
Benzo(ghi)perylene	1.11E-07			
Benzo(k)fluoranthene	4.13E-07			
Chrysene	3.13E-08			
Di-n-butyl phthalate	8.51E-09	1.00E-01	8.51E-08	
Dibenz(a,h)anthracene	7.59E-08			
Fluoranthene	1.45E-08	4.00E-02	3.63E-07	
Fluorene	2.25E-10	4.00E-02	5.62E-09	
Indeno(1,2,3-cd)pyrene	1.26E-07			
PCB-1260	3.11E-06			
Phenanthrene	4.32E-09			
Polychlorinated biphenyl	7.72E-07			
Pyrene	1.25E-08	3.00E-02	4.15E-07	
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-235				
Uranium-238				
Pathway Total				9.28E-05

---------- SECTOR=East PATHWAY=Recreational Child Ingestion of Venison ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Cadmium	1.34E-10	1.00E-03	1.34E-07	
Chromium	4.08E-08	5.00E-03	8.16E-06	
Thallium	1.41E-08			
Uranium	2.58E-09	3.00E-03	8.61E-07	
Acenaphthene	2.73E-11	6.00E-02	4.55E-10	
Anthracene	5.59E-11	3.00E-01	1.86E-10	
Benz(a)anthracene	2.81E-09			
Benzo(a)pyrene	7.55E-09			
Benzo(b)fluoranthene	1.33E-08			
Benzo(ghi)perylene	1.09E-08			
Benzo(k)fluoranthene	4.04E-08			
Chrysene	3.09E-09			
Di-n-butyl phthalate	8.52E-10	1.00E-01	8.52E-09	

Recreational Excess Lifetime Cancer Risks

---------- SECTOR=East PATHWAY=Recreational Child Ingestion of Venison ..... (continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Dibenz(a,h)anthracene	7.44E-09			
Fluoranthene	1.46E-09	4.00E-02	3.64E-08	
Fluorene	2.29E-11	4.00E-02	5.72E-10	
Indeno(1,2,3-cd)pyrene	1.24E-08			
PCB-1260	3.05E-07			
Phenanthrene	4.373-10			
Polychlorinated biphenyl	7.59E-08			
Pyrene	1.25E-09	3.00E-02	4.16E-08	
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-235				
Uranium-238				
Pathway Total				9.25E-06

---------- SECTOR=East PATHWAY=Recreational Teen Ingestion of Quail ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Cadmium	1.05E-08	1.00E-03	1.05E-05	
Chromium	1.71E-09	5.00E-03	3.42E-07	
Thallium	5.93E-10			
Uranium	3.67E-07	3.00E-03	1.22E-04	
Acenaphthene		6.00E-02		
Anthracene		3.00E-01		
Benz(a)anthracene				
Benzo(a)pyrene	1.77E-08			
Benzo(b)fluoranthene				
Benzo(ghi)perylene				
Benzo(k)fluoranthene				
Chrysene				
Di-n-butyl phthalate		1.00E-01		
Dibenz(a,h)anthracene				
Fluoranthene		4.00E-02		
F1uorene		4.003-02		
Indeno(1,2,3-cd)pyrene				
PCB-1260	1.44E-07			
Phenanthrene	4.70E-09			
Polychlorinated biphenyl				
Pyrene		3.00E-02		
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-235				
Uranium-238				
Pathway Total				1.33E-04

---------- SECTOR=East PATHWAY=Recreational Teen Ingestion of Rabbit .....

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Cadmium	1.04E-09	1.00E-03	1.04E-06	

Recreational Excess Lifetime Cancer Risks

SECTOR=East PATHWAY=Recreational Teen Ingestion of Rabbit (continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Chromium	3.44E-07	5.00E-03	6.87E-05	
Thallium	1.21E-07			
Uranium	2.19E-08	3.00E-03	7.30E-06	
Acenaphthene	2.24E-10	6.00E-02	3.73E-09	
Anthracene	4.60E-10	3.00E-01	1.53E-09	
Benz (a)anthracene	2.38E-08			
Benzo (a)pyrene	6.44E-08			
Benzo(b) fluoranthene	1.13E-07			
Benzo(ghi)perylene	9.32E-08			
Benzo(k) fluoranthene	3.46E-07			
Chrysene	2.62E-08			
Di-n-butyl phthalate	7.13E-09	1.00E-01	7.13E-08	
Dibenz (a,h) anthracene	6.36E-08			
Fluoranthene	1.22E-08	4.00E-02	3.04E-07	
Fluorene	1.88E-10	4.00E-02	4.71E-09	
Indeno(1,2,3-cd)pyrene	1.06E-07			
PCB-1260	2.61E-06			
Phenanthrene	3.62E-09			
Polychlorinated biphenyl	6.46E-07			
Pyrene	1.04E-08	3.00E-02	3.48E-07	
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-235				
Uranium-238				
Pathway Total				7.78E-05

SECTOR=East PATHWAY=Recreational Teen Ingestion of Venison

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Cadmium	2.07E-10	1.00E-03	2.07E-07	
chromium	6.29E-08	5.00E-03	1.26E-05	
Thallium	2.18E-08			
Uranium	3.98E-09	3.00E-03	1.33E-06	
Acenaphthene	4.21E-11	6.00E-02	7.02E-10	
Anthracene	8.62E-11	3.00E-01	2.87E-10	
Benz (a)anthracene	4.33E-09			
Benzo(a)pyrene	1.16E-08			
Benzo(b) fluoranthene	2.05E-08			
Benzo(ghi)perylene	1.68E-08			
Benzo(k) fluoranthene	6.23E-08			
Chrysene	4.76E-09			
Di-n-butyl phthalate	1.31E-09	1.00E-01	1.31E-08	
Dibenz (a,h) anthracene	1.15E-08			
Fluoranthene	2.24E-09	4.00E-02	5.61E-08	
Fluorene	3.53E-11	4.00E-02	8.82E-10	
Indeno(1,2,3-cd)pyrene	1.91E-08			
PCB-1260	4.69E-07			
Phenanthrene	6.73E-10			
Polychlorinated biphenyl	1.17E-07			
Pyrene	1.92E-09	3.00E-02	6.41E-08	
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				

Recreational Excess Lifetime Cancer Risks

..... SECTOR=East PATHWAY=Recreational Teen Ingestion of Venison ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Uranium-235				
Uranium-238				
Pathway Total				1.43E-05

---------- SECTOR=Far East/Northeast PATHWAY-Recreational Adult Ingestion of Quail ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	2.74E-06	1.00E+00	2.74E-06	
Antimony	2.25E-11	4.00E-04	5.63E-08	
Chromium	1.37E-08	5.00E-03	2.74E-06	
Uranium	3.69E-06	3.00E-03	1.23E-03	
Benz(a)anthracene				
Benzo(a)pyrene	9.32E-09			
Benzo(b)fluoranthene				
Benzo(k)fluoranthene				
Chrysene				
Fluoranthene		4.00E-02		
PCB-1260	2.57E-09			
Phenanthrene	1.70E-09			
Polychlorinated biphenyl				
Pyrene		3.00E-02		
Alpha activity				
Beta activity				
Uranium-235				
Uranium-238				
Pathway Total				1.24E-03

---------- SECTOR=Far East/Northeast PATHWAY=Recreational Adult Ingestion of Rabbit ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	3.52E-04	1.00E+00	3.52E-04	
Antimony	2.25E-09	4.00E-04	5.64E-06	
Chromium	1.77E-06	5.00E-03	3.54E-04	
Uranium	1.41E-07	3.00E-03	4.71E-05	
Benz(a)anthracene	8.90E-09			
Benzo(a)pyrene	2.18E-08			
Benzo(b)fluoranthene	2.18E-08			
Benzo(k)fluoranthene	1.34E-07			
Chrysene	8.90E-09			
Fluoranthene	3.32E-09	4.00E-02	8.29E-08	
PCB-1260	2.98E-08			
Phenanthrene	8.41E-10			
Polychlorinated biphenyl	2.44E-09			
Pyrene	1.89E-09	3.00E-02	6.29E-08	
Alpha activity				
Beta activity				
Uranium-235				
Uranium-238				
Pathway Total				7.59E-04

Recreational Excess Lifetime Cancer Risks

---------- SECTOR=Far East/Northeast PATHWAY=Recreational Adult Ingestion of Venison ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	5.04E-05	1.00E+00	5.04E-05	
Antimony	3.29E-10	4.00E-04	8.23E-07	
Chromium	2.57E-07	5.00E-03	5.14E-05	
Uranium	2.04E-08	3.00E-03	6.81E-06	
Benz(a)anthracene	1.28E-09			
Benzo(a)pyrene	3.14E-09			
Benzo(b)fluoranthene	3.14E-09			
Benzo(k)fluoranthene	1.92E-08			
Chrysene	1.28E-09			
Fluoranthene	4.85E-10	4.00E-02	1.21E-08	
PCB-1260	4.26E-09			
Phenanthrene	1.24E-10			
Polychlorinated biphenyl	3.51E-10			
Pyrene	2.76E-10	3.00E-02	9.20E-09	
Alpha activity				
Beta activity				
Uranium-235				
Uranium-238				
Pathway Total				1.09E-04

---------- SECTOR=Far East/Northeast PATHWAY=Recreational Child Ingestion of Quail ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	2.65E-06	1.00E+00	2.65E-06	
Antimony	2.18E-11	4.00E-04	5.44E-08	
Chromium	1.32E-08	5.00E-03	2.64E-06	
Uranium	3.56E-06	3.00E-03	1.19E-03	
Benz(a)anthracene				
Benzo(a)pyrene	9.00E-09			
Benzo(b)fluoranthene				
Benzo(k)fluoranthene				
Chrysene				
Fluoranthene		4.00E-02		
PCB-1260	2.48E-09			
Phenanthrene	1.64E-09			
Polychlorinated biphenyl				
Pyrene		3.00E-02		
Alpha activity				
Beta activity				
Uranium-235				
Uranium-238				
Pathway Total				1.19E-03

---------- SECTOR=Far East/Northeast PATHWAY=Recreational Child Ingestion of Rabbit ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	3.40E-04	1.00E+00	3.40E-04	
Antimony	2.18E-09	4.00E-04	5.44E-06	
Chromium	1.71E-06	5.00E-03	3.41E-04	
Uranium	1.37E-07	3.00E-03	4.55E-05	
Benz(a)anthracene	8.60E-09			
Benzo(a)pyrene	2.11E-08			
Benzo(b)fluoranthene	2.11E-08			

Recreational Excess Lifetime Cancer Risks

..... SECTOR=Far East/Northeast PATHWAY=Recreational Child Ingestion of Rabbit ..... (continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Benzo(k)fluoranthene	1.29E-07			
Chrysene	8.60E-09			
Fluoranthene	3.20E-09	4.00E-02	8.01E-08	
PCB-1260	2.88E-08			
Phenanthrene	8.12E-10			
Polychlorinated biphenyl	2.3 6E-09			
Pyrene	1.82E-09	3.00E-02	6.08E-08	
Alpha activity				
Beta activity				
Uranium-235				
Uranium-238				
Pathway Total				7.32E-04

---------- SECTOR=Far East/Northeast PATHWAY=Recreational Child Ingestion of Venison .....

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	5.32E-05	1.00E+00	5.32E-05	
Antimony	3.48E-10	4.00E-04	8.69E-07	
Chromium	2.71E-07	5.00E-03	5.43E-05	
Uranium	2.16E-08	3.00E-03	7.19E-06	
Benz(a)anthracene	1.35E-09			
Benzo(a)pyrene	3.31E-09			
Benzo(b)fluoranthene	3.31E-09			
Benzo(k)fluoranthene	2.03E-08			
Chrysene	1.35E-09			
Fluoranthene	5.12E-10	4.00E-02	1.28E-08	
PCB-1260	4.50E-09			
Phenanthrene	1.31E-10			
Polychlorinated biphenyl	3.70E-10			
Pyrene	2.91E-10	3.OOE-02	9.72E-09	
Alpha activity				
Beta activity				
Uranium-235				
Uranium-238				
Pathway Total				1.16E-04

---------- SECTOR=Far East/Northeast PATHWAY=Recreational Teen Ingestion of Quail .....

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	2.28E-06	1.00E+00	2.28E-06	
Antimony	1.87E-11	4.00E-04	4.68E-08	
Chromium	1.14E-08	5.00E-03	2.27E-06	
Uranium	3.07E-06	3.00E-03	1.02E-03	
Benz(a)anthracene				
Benzo(a)pyrene	7.75E-09			
Benzo(b)fluoranthene				
Benzo(k)fluoranthene				
Chrysene				
Fluoranthene		4.00E-02		
PCB-1260	2.13E-09			
Phenanthrene	1.41E-09			
Polychlorinated biphenyl				

Recreational Excess Lifetime Cancer Risks

..... SECTOR=Far East/Northeast PATHWAY=Recreational Teen Ingestion of Quail ..... (continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Pyrene		3.00E-02		
Alpha activity				
Beta activity				
Uranium-235				
Uranium-238				
Pathway Total				1.03E-03

---------- SECTOR=Far East/Northeast PATHWAY=Recreational Teen Ingestion of Rabbit ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	2.85E-04	1.00E+00	2.85E-04	
Antimony	1.82E-09	4.00E-04	4.56E-06	
Chromium	1.43E-06	5.00E-03	2.86E-04	
Uranium	1.14E-07	3.00E-03	3.81E-05	
Benz(a)anthracene	7.20E-09			
Benzo(a)pyrene	1.77E-08			
Benzo(b)fluoranthene	1.77E-08			
Benzo(k)fluoranthene	1.08E-07			
Chrysene	7.20E-09			
Fluoranthene	2.68E-09	4.00E-02	6.71E-08	
PCB-1260	2.41E-08			
Phenanthrene	6.81E-10			
Polychlorinated biphenyl	1.97E-09			
Pyrene	1.53E-09	3.00E-02	5.09E-08	
Alpha activity				
Beta activity				
Uranium-235				
Uranium-238				
Pathway Total				6.14E-04

---------- SECTOR=Far East/Northeast PATHWAY=Recreational Teen Ingestion of Venison .....

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	8.20E-05	1.00E+00	8.20E-05	
Antimony	5.36E-10	4.00E-04	1.34E-06	
Chromium	4.18E-07	5.00E-03	8.37E-05	
Uranium	3.32E-08	3.00E-03	1.11E-05	
Benz(a)anthracene	2.09E-09			
Benzo(a)pyrene	5.10E-09			
Benzo(b)fluoranthene	5.10E-09			
Benzo(k)fluoranthene	3.12E-08			
Chrysene	2.09E-09			
Fluoranthene	7.90E-10	4.00E-02	1.97E-08	
PCB-1260	6.94E-09			
Phenanthrene	2.02E-10			
Polychlorinated biphenyl	5.71E-10			
Pyrene	4.49E-10	3.00E-02	1.50E-08	
Alpha activity				
Beta activity				
Uranium-235				
Uranium-238				
Pathway Total				1.78E-04

Recreational Excess Lifetime Cancer Risks

---------- SECTOR=Far North/Northwest PATHWAY=Recreational Adult Ingestion of Quail ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Antimony	1.09E-11	4.00E-04	2.72E-08	
Beryllium	1.12E-10	5.00E-03	2.24E-08	
Cadmium	8.68E-08	1.00E-03	8.68E-05	
Chromium	3.58E-08	5.00E-03	7.16E-06	
Thallium	1.55E-09			
Uranium	1.95E-06	3.00E-03	6.49E-04	
Acenaphthene		6.00E-02		
Anthracene		3.00E-01		
Benz(a)anthracene				
Benzo(a)pyrene	6.52E-08			
Benzo(b)fluoranthene				
Benzo(ghi)perylene				
Benzo(k)fluoranthene				
Bis(2-ethylhexyl)phthalate		2.00E-02		
Chrysene				
Di-n-butyl phthalate		1.00E-01		
Fluoranthene		4.00E-02		
Fluorene		4.00E-02		
Indeno(1,2,3-cd)pyrene				
Phenanthrene	1.72E-08			
Pyrene		3.00E-02		
Alpha activity				
Beta activity				
Neptunium-237				
Uranium-235				
Uranium-238				
Pathway Total				7.433-04

---------- SECTOR=Far North/Northwest PATHWAY=Recreational Adult Ingestion of Rabbit ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Antimony	1.09E-09	4.00E-04	2.72E-06	
Beryllium	1.19E-08	5.00E-03	2.39E-06	
Cadmium	5.55E-09	1.00E-03	5.55E-06	
Chromium	4.633-06	5.00E-03	9.25E-04	
Thallium	2.04E-07			
Uranium	7.46E-08	3.00E-03	2.49E-05	
Acenaphthene	5.81E-10	6.00E-02	9.68E-09	
Anthracene	2.263-09	3.00E-01	7.53E-09	
Benz(a)anthracene	7.57E-08			
Benzo(a)pyrene	1.53E-07			
Benzo(b)fluoranthene	1.42E-07			
Benzo(ghi)perylene	2.21E-07			
Benzo(k)fluoranthene	7.77E-07			
Bis(2-ethylhexyl)phthalate	3.13E-09	2.00E-02	1.56E-07	
Chrysene	7.79E-08			
Di-n-butyl phthalate	1.56E-09	1.00E-01	1.56E-08	
Fluoranthene	3.28E-08	4.00E-02	8.21E-07	
Fluorene	7.06E-10	4.00E-02	1.76E-08	
Indeno(1,2,3-cd)pyrene	2.38E-07			
Phenanthrene	8.51E-09			
Pyrene	1.53E-08	3.00E-02	5.10E-07	
Alpha activity				
Beta activity				
Neptunium-237				
Uranium-235				
Uranium-238				

Recreational Excess Lifetime Cancer Risks

---------- SECTOR=Far North/Northwest PATHWAY=Recreational Adult Ingestion Of Rabbit ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Pathway Total				9.63E-04

---------- SECTOR=Far North/Northwest PATHWAY-Recreational Adult Ingestion Of Venison ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Antimony	1.59E-10	4.00E-04	3.97E-07	
Beryllium	1.71E-09	5.00E-03	3.42E-07	
Cadmium	8.73E-10	1.00E-03	8.73E-07	
Chromium	6.73E-07	5.00E-03	1.35E-04	
Thallium	2.91E-08			
Uranium	1.08E-08	3.00E-03	3.59E-06	
Acenaphthene	8.67E-11	6.00E-02	1.44E-09	
Anthracene	3.36E-10	3.00E-01	1.12E-09	
Benz(a)anthracene	1.09E-08			
Benzo(a)pyrene	2.19E-08			
Benzo(b)fluoranthene	2.04E-08			
Benzo(ghi)perylene	3.16E-08			
Benzo(k)fluoranthene	1.11E-07			
Bis(2-ethylhexyl)phthalate	4.57E-10	2.00E-02	2.29E-08	
Chrysene	1.12E-08			
Di-n-butyl phthalate	2.29E-10	1.00E-01	2.29E-09	
Fluoranthene	4.80E-09	4.00E-02	1.20E-07	
Fluorene	1.05E-10	4.00E-02	2.62E-09	
Indeno(1,2,3-cd)pyrene	3.40E-08			
Phenanthrene	1.26E-09			
Pyrene	2.24E-09	3.00E-02	7.46E-08	
Alpha activity				
Beta activity				
Neptunium-237				
Uranium-235				
Uranium-238				
Pathway Total				1.40E-04

---------- SECTOR=Far North/Northwest PATHWAY=Recreational Child Ingestion Of Quail ----------.

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Antimony	1.05E-11	4.00E-04	2.63E-08	
Beryllium	1.08E-10	5.00E-03	2.16E-08	
Cadmium	8.38E-08	1.00E-03	8.38E-05	
Chromium	3.46E-08	5.00E-03	6.91E-06	
Thallium	1.50E-09			
Uranium	1.88E-06	3.00E-03	6.26E-04	
Acenaphthene		6.00E-02		
Anthracene		3.00E-01		
Benz(a)anthracene				
Benzo(a)pyrene	6.30E-08			
Benzo(b)fluoranthene				
Benzo(ghi)perylene				
Benzo(k)fluoranthene				
Bis(2-ethylhexyl)phthalate		2.00E-02		
Chrysene				
Di-n-butyl phthalate		1.00E-01		

Recreational Excess Lifetime Cancer Risks

..... SECTOR=Far North/Northwest PATHWAY=Recreational Child Ingestion of Quail ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Fluoranthene		4.00E-02		
Fluorene		4.00E-02		
Indeno(1,2,3-cd)pyrene				
Phenanthrene	1.66E-08			
Pyrene		3.00E-02		
Alpha activity				
Beta activity				
Neptunium-237				
Uranium-235				
Uranium-238				
Pathway Total				7.17E-04

---------- SECTOR=Far North/Northwest PATHWAY=Recreational Child Ingestion of Rabbit ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Antimony	1.05E-09	4.00E-04	2.63E-06	
Beryllium	1.15E-08	5.00E-03	2.30E-06	
Cadmium	5.36E-09	1.00E-03	5.36E-06	
Chromium	4.47E-06	5.00E-03	8.94E-04	
Thallium	1.97E-07			
Uranium	7.20E-08	3.00E-03	2.40E-05	
Acenaphthene	5.61E-10	6.00E-02	9.35E-09	
Anthracene	2.18E-09	3.00E-01	7.27E-09	
Benz(a)anthracene	7.31E-08			
Benzo(a)pyrene	1.48E-07			
Benzo(b)fluoranthene	1.37E-07			
Benzo(ghi)perylene	2.13E-07			
Benzo(k)fluoranthene	7.50E-07			
Bis(2-ethylhexyl)phthalate	3.02E-09	2.00E-02	1.51E-07	
Chrysene	7.52E-08			
Di-n-butyl phthalate	1.51E-09	1.00E-01	1.51E-08	
Fluoranthene	3.17E-08	4.00E-02	7.93E-07	
Fluorene	6.81E-10	4.00E-02	1.70E-08	
Indeno(1,2,3-cd)pyrene	2.30E-07			
Phenanthrene	8.22E-09			
Pyrene	1.48E-08	3.00E-02	4.93E-07	
Alpha activity				
Beta activity				
Neptunium-237				
Uranium-235				
Uranium-238				
Pathway Total				9.29E-04

---------- SECTOR=Far North/Northwest PATHWAY=Recreational Child Ingestion of Venison .....

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Antimony	1.68E-10	4.00E-04	4.19E-07	
Beryllium	1.81E-09	5.00E-03	3.62E-07	
Cadmium	9.22E-10	1.00E-03	9.22E-07	
Chromium	7.10E-07	5.00E-03	1.42E-04	
Thallium	3.08E-08			
Uranium	1.14E-08	3.00E-03	3.79E-06	

Recreational Excess Lifetime Cancer Risks

---------- SECTOR=Far North/Northwest PATHWAY=Recreational Child Ingestion Of Venison ..... (continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Acenaphthene	9.15E-11	6.00E-02	1.533-09	
Anthracene	3.54E-10	3.00E-01	1.18E-09	
Benz(a)anthracene	1.15E-08			
Benzo(a)pyrene	2.32E-08			
Benzo(b)fluoranthene	2.15E-08			
Benzo(ghi)perylene	3.34E-08			
Benzo(k)fluoranthene	1.17E-07			
Bis(2-ethylhexyl)phthalate	4.83E-10	2.00E-02	2.41E-08	
Chrysene	1.19E-08			
Di-n-butyl phthalate	2.41E-10	1.00E-01	2.41E-09	
Fluoranthene	5.07E-09	4.00E-02	1.27E-07	
Fluorene	1.11E-10	4.00E-02	2.77E-09	
Indeno(1,2,3-cd)pyrene	3.59E-08			
Phenanthrene	1.33E-09			
Pyrene	2.36E-09	3.00E-02	7.88E-08	
Alpha activity				
Beta activity				
Neptunium-237				
Uranium-235				
Uranium-238				
Pathway Total				1.48E-04

---------- SECTOR=Far North/Northwest PATHWAY=Recreational Teen Ingestion of Quail ----------.

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Antimony	9.05E-12	4.00E-04	2.26E-08	
Beryllium	9.29E-11	5.00E-03	1.86E-08	
Cadmium	7.22E-08	1.00E-03	7.22E-05	
Chromium	2.98E-08	5.00E-03	5.953-06	
Thallium	1.29E-09			
Uranium	1.62E-06	3.00E-03	5.39E-04	
Acenaphthene		6.00E-02		
Anthracene		3.00E-01		
Benz(a)anthracene				
Benzo(a)pyrene	5.42E-08			
Benzo(b)fluoranthene				
Benzo(ghi)perylene				
Benzo(k)fluoranthene				
Bis(2-ethylhexyl)phthalate		2.00E-02		
Chrysene				
Di-n-butyl phthalate		1.00E-01		
Fluoranthene		4.00E-02		
Fluorene		4.00E-02		
Indeno(1,2,3-cd)pyrene				
Phenanthrene	1.43E-08			
Pyrene		3.00E-02		
Alpha activity				
Beta activity				
Neptunium-237				
Uranium-235				
Uranium-238				
Pathway Total				6.18E-04

Recreational Excess Lifetime Cancer Risks

---------- SECTOR=Far North/Northwest PATHWAY=Recreational Teen Ingestion of Rabbit .....

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Antimony	8.81E-10	4.00E-04	2.203-06	
Beryllium	9.65E-09	5.00E-03	1.93E-06	
Cadmium	4.49E-09	1.00E-03	4.49E-06	
Chromium	3.74E-06	5.00E-03	7.49E-04	
Thallium	1.65E-07			
Uranium	6.04E-08	3.00E-03	2.01E-05	
Acenaphthene	4.70E-10	6.00E-02	7.83E-09	
Anthracene	1.83E-09	3.00E-01	6.09E-09	
Benz(a)anthracene	6.12E-08			
Benzo(a)pyrene	1.24E-07			
Benzo(b)fluoranthene	1.15E-07			
Benzo(ghi)perylene	1.79E-07			
Benzo(k)fluoranthene	6.29E-07			
Bis(2-ethylhexyl)phthalate	2.53E-09	2.00E-02	1.27E-07	
Chrysene	6.30E-08			
Di-n-butyl phthalate	1.27E-09	1.00E-01	1.27E-08	
Fluoranthene	2.66E-08	4.00E-02	6.64E-07	
Fluorene	5.71E-10	4.00E-02	1.43E-08	
Indeno(1,2,3-cd)pyrene	1.92E-07			
Phenanthrene	6.89E-09			
Pyrene	1.24E-08	3.00E-02	4.13E-07	
Alpha activity				
Beta activity				
Neptunium-237				
Uranium-235				
Uranium-238				
Pathway Total				7.79E-04

---------- SECTOR=Far North/Northwest PATHWAY=Recreational Teen Ingestion of Venison .....

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Antimony	2.59E-10	4.00E-04	6.47E-07	
Beryllium	2.79E-09	5.00E-03	5.58E-07	
Cadmium	1.42E-09	1.00E-03	1.42E-06	
Chromium	1.10E-06	5.00E-03	2.19E-04	
Tha11ium	4.74E-08			
Uranium	1.75E-08	3.00E-03	5.85E-06	
Acenaphthene	1.41E-10	6.00E-02	2.35E-09	
Anthracene	5.46E-10	3.00E-01	1.82E-09	
Benz(a)anthracene	1.78E-08			
Benzo(a)pyrene	3.57E-08			
Benzo(b)fluoranthene	3.32E-08			
Benzo(ghi)perylene	5.15E-08			
Benzo(k)fluoranthene	1.81E-07			
Bis(2-ethylhexyl)phthalate	7.44E-10	2.00E-02	3.72E-08	
Chrysene	1.83E-08			
Di-n-butyl phthalate	3.72E-10	1.00E-01	3.72E-09	
Fluoranthene	7.82E-09	4.00E-02	1.95E-07	
Fluorene	1.71E-10	4.00E-02	4.27E-09	
Indeno(1,2,3-cd)pyrene	5.54E-08			
Phenanthrene	2.04E-09			
Fyrene	3.64E-09	3.00E-02	1.21E-07	
Alpha activity				
Beta activity				
Neptunium-237				
Uranium-235				
Uranium-238				

Recreational Excess Lifetime Cancer Risks

---------- SECTOR=Far North/Northwest PATHWAY=Recreational Teen Ingestion'of Venison ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Pathway Total				2.28E-04

---------- SECTOR=Northeast PATHWAY=Recreational Adult Ingestion of Quail ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Chromium	4.90E-09	5.00E-03	9.81E-07	
Uranium	3.763-07	3.00E-03	1.25E-04	
Zinc		3.00E-01		
Acenaphthene		6.00E-02		
Anthracene		3.00E-01		
Benz (a)anthracene				
Benzo(a)pyrene	1.35E-08			
Benzo(b)fluoranthene				
Benzo(ghi)perylene				
Benzo(k)fluoranthene				
Chrysene				
Fluoranthene		4.00E-02		
Indeno(1,2,3-cd)pyrene				
PCB-1260	3.80E-09			
Phenanthrene	3.85E-09			
Polychlorinated biphenyl				
Pyrene		3.00E-02		
Alpha activity				
Beta activity				
Uranium-235				
Uranium-238				
Pathway Total				1.26E-04

---------- SECTOR=Northeast PATHWAY=Recreational Adult Ingestion of Rabbit ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Chromium	1.01E-06	5.00E-03	2.02E-04	
Uranium	2.30E-08	3.00E-03	7.67E-06	
Zinc	1.51E-04	3.00E-01	5.04E-04	
Acenaphthene	1.43E-10	6.00E-02	2.39E-09	
Anthracene	3.48E-10	3.00E-01	1.16E-09	
Benz (a)anthracene	2.40E-08			
Benzo(a)pyrene	5.05E-08			
Benzo(b)fluoranthene	7.24E-08			
Benzo(ghi)perylene	8.90E-08			
Benzo(k)fluoranthene	2.31E-07			
Chrysene	2.75E-08			
Fluoranthene	1.04E-08	4.00E-02	2.59E-07	
Indeno(1,2,3-cd)pyrene	9.42E-08			
PCB-1260	7.06E-08			
Phenanthrene	3.05E-09			
Polychlorinated biphenyl	5.78E-09			
Pyrene	8.20E-09	3.00E-02	2.73E-07	
Alpha activity				
Beta activity				
Uranium-235				
Uranium-238				

Recreational Excess Lifetime Cancer Risks

---------- SECTOR=Northeast PATHWAY=Recreational Adult Ingestion of Rabbit ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Pathway Total				7.14E-04

---------- SECTOR=Northeast PATHWAY=Recreational Adult Ingestion of Venison ....

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Chromium	9.21E-08	5.OOE-03	1.84E-05	
Uranium	2.08E-09	3.00E-03	6.93E-07	
Zinc	1.52E-05	3.00E-01	5.05E-05	
Acenaphthene	1.34E-11	6.00E-02	2.233-10	
Anthracene	3.24E-11	3.00E-01	1.08E-10	
Benz(a)anthracene	2.17E-09			
Benzo(a)pyrene	4.54E-09			
Benzo(b)fluoranthene	6.51E-09			
Benzo(ghi)perylene	7.98E-09			
Benzo(k)fluoranthene	2.07E-08			
Chrysene	2.48E-09			
Fluoranthene	9.49E-10	4.00E-02	2.37E-08	
Indeno(1,2,3-cd)pyrene	8.45E-09			
PCB-1260	6.32E-09			
Phenanthrene	2.82E-10			
Polychlorinated biphenyl	5.20E-10			
Pyrene	7.50E-10	3.00E-02	2.50E-08	
Alpha activity				
Beta activity				
Uranium-235				
Uranium-238				
Pathway Total				6.97E-05

..... SECTOR=Northeast PATHWAY-Recreational Child Ingestion of Quail ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Chromium	4.74E-09	5.00E-03	9.47E-07	
Uranium	3.63E-07	3.00E-03	1.21E-04	
Zinc		3.00E-01		
Acenaphthene		6.00E-02		
Anthracene		3.00E-01		
Benz(a)anthracene				
Benzo(a)pyrene	1.30E-08			
Benzo(b)fluoranthene				
Benzo(ghi)perylene				
Benzo(k)fluoranthene				
Chrysene				
Fluoranthene		4.00E-02		
Indeno(1,2,3-cd)pyrene				
PCB-1260	3.67E-09			
Phenanthrene	3.72E-09			
Polychlorinated biphenyl				
Pyrene		3.00E-02		
Alpha activity				
Beta activity				
Uranium-235				
Uranium-238				

Recreational Excess Lifetime Cancer Risks

SECTOR=Northeast PATHWAY=Recreational Child Ingestion of Quail (continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Pathway Total				1.22E-04

SECTOR=Northeast PATHWAY-Recreational Child Ingestion of Rabbit

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Chromium	9.77E-07	5.00E-03	1.95E-04	
Uranium	2.223-08	3.00E-03	7.40E-06	
Zinc	1.46E-04	3.00E-01	4.86E-04	
Acenaphthene	1.38E-10	6.00E-02	2.31E-09	
Anthracene	3.363-10	3.00E-01	1.12E-09	
Benz (a)anthracene	2.323-08			
Benzo (a)pyrene	4.88E-08			
Benzo(b)fluoranthene	6.99E-08			
Benzo(ghi)perylene	8.59E-08			
Benzo(k)fluoranthene	2.23E-07			
Chrysene	2.65E-08			
Fluoranthene	1.00E-08	4.00E-02	2.50E-07	
Indeno(1,2,3-cd)pyrene	9.10E-08			
PCB-1260	6.81E-08			
Phenanthrene	2.94E-09			
Polychlorinated biphenyl	5.58E-09			
Pyrene	7.91E-09	3.00E-02	2.64E-07	
Alpha activity				
Beta activity				
Uranium-235				
Uranium-238				
Pathway Total				6.90E-04

SECTOR=Northeast PATHWAY=Recreational Child Ingestion of Venison

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Chromium	9.73E-08	5.00E-03	1.95E-05	
Uranium	2.20E-09	3.00E-03	7.32E-07	
Zinc	1.60E-05	3.00E-01	5.33E-05	
Acenaphthene	1.41E-11	6.00E-02	2.36E-10	
Anthracene	3.42E-11	3.00E-01	1.14E-10	
Benz (a)anthracene	2.29E-09			
Benzo(a)pyrene	4.79E-09			
Benzo(b)fluoranthene	6.87E-09			
Benzo(ghi)perylene	8.43E-09			
Benzo(k)fluoranthene	2.19E-08			
Chxysene	2.62E-09			
Fluoranthene	1.00E-09	4.00E-02	2.51E-08	
Indeno(1,2,3-cd)pyrene	8.923-09			
PCB-1260	6.67E-09			
Phenanthrene	2.97E-10			
Polychlorinated biphenyl	5.49E-10			
Pyrene	7.92E-10	3.00E-02	2.64E-08	
Alpha activity				
Beta activity				
Uranium-235				
Uranium-238				

Recreational Excess Lifetime Cancer Risks

---------- SECTOR=Northeast PATHWAY=Recreational Child Ingestion of Venison ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Pathway Total				7.36E-05

---------- SECTOR=Northeast PATHWAY=Recreational Teen Ingestion of Quail .....

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Chromium	4.08E-09	5.00E-03	8.15E-07	
Uranium	3.12E-07	3.00E-03	1.04E-04	
Zinc		3.00E-01		
Acenaphthene		6.00E-02		
Anthracene		3.00E-01		
Benz(a)anthracene				
Benzo(a)pyrene	1.12E-08			
Benzo(b)fluoranthene				
Benzo(ghi)perylene				
Benzo(k)fluoranthene				
Chrysene				
Fluoranthene		4.00E-02		
Indeno(1,2,3-cd)pyrene				
PCB-1260	3.16E-09			
Phenanthrene	3.20E-09			
Polychlorinated biphenyl				
Pyrene		3.00E-02		
Alpha activity				
Beta activity				
Uranium-235				
Uranium-238				
Pathway Total				1.05E-04

---------- SECTOR=Northeast PATHWAY=Recreational Teen Ingestion of Rabbit ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Chromium	8.19E-07	5.00E-03	1.64E-04	
Uranium	1.86E-08	3.00E-03	6.20E-06	
Zinc	1.22E-04	3.00E-01	4.07E-04	
Acenaphthene	1.16E-10	6.00E-02	1.93E-09	
Anthracene	2.82E-10	3.00E-01	9.39E-10	
Benz(a)anthracene	1.94E-08			
Benzo(a)pyrene	4.09E-08			
Benzo(b)fluoranthene	5.86E-08			
Benzo(ghi)perylene	7.20E-08			
Benzo(k)fluoranthene	1.87E-07			
Chrysene	2.22E-08			
Fluoranthene	8.39E-09	4.00E-02	2.10E-07	
Indeno(1,2,3-cd)pyrene	7.62E-08			
PCB-1260	5.71E-08			
Phenanthrene	2.47E-09			
Polychlorinated biphenyl	4.68E-09			
Pyrene	6.63E-09	3.00E-02	2.21E-07	
Alpha activity				
Beta activity				
Uranium-235				
Uranium-238				

Recreational Excess Lifetime Cancer Risks

---------- S ETOR Northeast PA[illegible] creational Too ngestion of Rabbit ----------
continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Pathway Total				5 08E-04

---------- SECTOR Northeast PATHWAY=Re reati Toen Ingo tioo of Wooison ----------

Analyte	Noncarcinogenic CDI	Roferenco Dose	Hazard Quotient	Pathway Hazard Index
Chromium	1.50E-07	5.00E-03	3.00E-05	
Uranium	3.39E-09	3.00E-03	1.13E-06	
Zinc	2.47E-05	3.00E-01	8.22E-05	
Acenaphthene	2.18E-11	6.00E-02	3.63E-10	
Anthracene	5.27E-11	3.00E-01	1.76E-10	
Benz(a)anthracene	3.53E-09			
Benzo(a)pyrene	7.39E-09			
Benzo(b)fluoranthene	1.06E-08			
Benzo(ghi)perylene	1.30E-08			
Benzo(k)fluoranthene	3.37E-08			
Chrysene	4.03E-09			
Fluoranthene	1.54E-09	4 00E-02	3 86E-08	
Indeno(1,2,3-cd)pyrene	1.38E-08			
PCB-1260	1.03E-08			
Phenanthrene	4.58E-10			
Polychlorinated biphenyl	8.46E-10			
Pyrene	1.22E-09	3 00E-02	4 07E-08	
Alpha activity				
Beta activity				
Uranium-235				
Uranium-238				
Pathway Total				1 13E-04

---------- SECTOR=Northwe t PATHWAY=Recr ational Adult Ingestion of il ----------

Analyte	Noncarcinogenic CDI	Referen o Dose	Hazard Quotient	Pathway Hazard Index
Antimony	7.04E-13	4.00E-04	1.76E-09	
Beryllium	1.18E-11	5.00E-03	2.37E-09	
Cadmium	1.33E-08	1.00E-03	1.33E-05	
Chromium	6.03E-09	5.00E-03	1.21E-06	
Iron	3.71E-04	3.00E-01	1.24E-03	
Lead	1.93E-10	1.00E-07	1.93E-03	
Vanadium	1.24E-09	7.00E-03	1.78E-07	
Benz(a)anthracene				
Benzo(a)pyrene	2.11E-08			
Benzo(b)fluoranthene				
Benzo(k)fluoranthene				
Chrysene				
Fluoranthene		4.00E-02		
Pyrene		3.00E-02		
Alpha activity				
Beta activity				
Uranium-238				
Pathway Total				3 18E-03

Recreational Excess Lifetime Cancer Risks

---------- SECTOR=Northwest PATHWAY=Recreational Adult Ingestion of Rabbit .....

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Antimony	1.12E-10	4.00E-04	2.81E-07	
Beryllium	2.02E-09	5.00E-03	4.04E-07	
Cadmium	1.36E-09	1.00E-03	1.36E-06	
Chromium	1.24E-06	5.00E-03	2.49E-04	
Iron	1.52E-03	3.00E-01	5.08E-03	
Lead	4.06E-08	1.00E-07	4.06E-01	
Vanadium	2.54E-07	7.00E-03	3.63E-05	
Benz(a)anthracene	2.41E-08			
Benzo(a)pyrene	7.89E-08			
Benzo(b)fluoranthene	1.04E-07			
Benzo(k)fluoranthene	2.90E-07			
Chrysene	2.33E-08			
Fluoranthene	5.65E-09	4.00E-02	1.41E-07	
Pyrene	5.65E-09	3.00E-02	1.88E-07	
Alpha activity				
Beta activity				
Uranium-238				
Pathway Total				4.11E-01

---------- SECTOR=Northwest PATHWAY=Recreational Adult Ingestion Of Venison .....

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Antimony	1.03E-11	4.00E-04	2.57E-08	
Beryllium	1.81E-10	5.00E-03	3.63E-08	
Cadmium	1.34E-10	1.00E-03	1.34E-07	
chromium	1.13E-07	5.00E-03	2.27E-05	
Iron	1.37E-04	3.00E-01	4.56E-04	
Lead	3.763-09	1.00E-07	3.76E-02	
Vanadium	2.28E-08	7.00E-03	3.26E-06	
Benz(a)anthracene	2.18E-09			
Benzo(a)pyrene	7.09E-09			
Benzo(b)fluoranthene	9.37E-09			
Benzo(k)fluoranthene	2.6 OE-08			
Chrysene	2.10E-09			
Fluoranthene	5.17E-10	4.00E-02	1.29E-08	
Pyrene	5.17E-10	3.00E-02	1.72E-08	
Alpha activity				
Beta activity				
Uranium-238				
Pathway Total				3.81E-02

---------- SECTOR=Northwest PATHWAY=Recreational Child Ingestion Of Quail .....

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Antimony	6.80E-13	4.00E-04	1.70E-09	
Beryllium	1.14E-11	5.00E-03	2.29E-09	
Cadmium	1.28E-08	1.00E-03	1.28E-05	
Chromium	5.82E-09	5.00E-03	1.16E-06	
Iron	3.59E-04	3.00E-01	1.20E-03	
Lead	1.86E-10	1.00E-07	1.86E-03	
Vanadium	1.20E-09	7.00E-03	1.72E-07	
Benz(a)anthracene				
Benzo(a)pyrene	2.03E-08			

Recreational Excess Lifetime Cancer Risks

---------- SECTOR=Northwest PATHWAY-Recreational Child Ingestion of Quail ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Benzo(b)fluoranthene				
Benzo(k)fluoranthene				
Chrysene				
Fluoranthene		4.00E-02		
Pyrene		3.00E-02		
Alpha activity				
Beta activity				
Uranium-238				
Pathway Total				3.07E-03

---------- SECTOR=Northwest PATHWAY=Recreational Child Ingestion of Rabbit ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Antimony	1.09E-10	4.00E-04	2.71E-07	
Beryllium	1.95E-09	5.00E-03	3.90E-07	
Cadmium	1.31E-09	1.00E-03	1.31E-06	
Chromium	1.20E-06	5.00E-03	2.40E-04	
Iron	1.47E-03	3.00E-01	4.91E-03	
Lead	3.92E-08	1.00E-07	3.92E-01	
Vanadium	2.45E-07	7.00E-03	3.51E-05	
Benz(a)anthracene	2.33E-08			
Benzo(a)pyrene	7.62E-08			
Benzo(b)fluoranthene	1.01E-07			
Benzo(k)fluoranthene	2.80E-07			
Chrysene	2.25E-08			
Fluoranthene	5.45E-09	4.00E-02	1.36E-07	
Pyrene	5.45E-09	3.00E-02	1.82E-07	
Alpha activity				
Beta activity				
Uranium-238				
Pathway Total				3.97E-01

---------- SECTOR=Northwest PATHWAY=Recreational Child Ingestion of Venison ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Antimony	1.09E-11	4.00E-04	2.71E-08	
Beryllium	1.92E-10	5.00E-03	3.83E-08	
Cadmium	1.41E-10	1.00E-03	1.41E-07	
Chromium	1.20E-07	5.00E-03	2.39E-05	
Iron	1.45E-04	3.00E-01	4.82E-04	
Lead	3.97E-09	1.00E-07	3.97E-02	
Vanadium	2.41E-08	7.00E-03	3.44E-06	
Benz(a)anthracene	2.30E-09			
Benzo(a)pyrene	7.49E-09			
Benzo(b)fluoranthene	9.89E-09			
Benzo(k)fluoranthene	2.75E-08			
Chrysene	2.22E-09			
Fluoranthene	5.46E-10	4.00E-02	1.36E-08	
Pyrene	5.46E-10	3.00E-02	1.82E-08	
Alpha activity				
Beta activity				
Uranium-238				

Recreational Excess Lifetime Cancer Risks

..... SECTOR=Northwest PATHWAY=Recreational Child Ingestion of Venison ..... (continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Pathway Total				4.02E-02

---------- SECTOR=Northwest PATHWAY=Recreational Teen Ingestion of Quail .....

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Antimony	5.85E-13	4.00E-04	1.46E-09	
Beryllium	9.85E-12	5.00E-03	1.97E-09	
Cadmium	1.11E-08	1.00E-03	1.11E-05	
Chromium	5.01E-09	5.00E-03	1.00E-06	
Iron	3.09E-04	3.00E-01	1.03E-03	
Lead	1.60E-10	1.00E-07	1.60E-03	
Vanadium	1.03E-09	7.00E-03	1.48E-07	
Benz(a)anthracene				
Benzo(a)pyrene	1.75E-08			
Benzo(b)fluoranthene				
Benzo(k)fluoranthene				
Chrysene				
Fluoranthene		4.00E-02		
Pyrene		3.00E-02		
Alpha activity				
Beta activity				
Uranium-238				
Pathway Total				2.65E-03

---------- SECTOR=Northwest PATHWAY=Recreational Teen Ingestion of Rabbit ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Antimony	9.10E-11	4.00E-04	2.27E-07	
Beryllium	1.63E-09	5.00E-03	3.27E-07	
Cadmium	1.10E-09	1.00E-03	1.10E-06	
Chromium	1.01E-06	5.00E-03	2.01E-04	
Iron	1.23E-03	3.00E-01	4.11E-03	
Lead	3.28E-08	1.00E-07	3.28E-01	
Vanadium	2.06E-07	7.00E-03	2.94E-05	
Benz(a)anthracene	1.95E-08			
Benzo(a)pyrene	6.38E-08			
Benzo(b)fluoranthene	8.43E-08			
Benzo(k)fluoranthene	2.35E-07			
Chrysene	1.89E-08			
Fluoranthene	4.57E-09	4.00E-02	1.14E-07	
Pyrene	4.57E-09	3.00E-02	1.52E-07	
Alpha activity				
Beta activity				
Uranium-238				
Pathway Total				3.33E-01

Recreational Excess Lifetime Cancer Risks

---------- SECTOR=Northwest PATHWAY=Recreational Teen Ingestion of Venison .....

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Antimony	1.67E-11	4.00E-04	4.18E-08	
Beryllium	2.95E-10	5.00E-03	5.91E-08	
Cadmium	2.18E-10	1.00E-03	2.18E-07	
Chromium	1.84E-07	5.00E-03	3.69E-05	
Iron	2.233-04	3.00E-01	7.43E-04	
Lead	6.12E-09	1.00E-07	6.12E-02	
Vanadium	3.71E-08	7.00E-03	5.30E-06	
Benz(a)anthracene	3.543-09			
Benzo(a)pyrene	1.15E-08			
Benzo(b)fluoranthene	1.52E-08			
Benzo(k)fluoranthene	4.23E-08			
Chrysene	3.42E-09			
Fluoranthene	8.42E-10	4.00E-02	2.10E-08	
Pyrene	8.42E-10	3.00E-02	2.81E-08	
Alpha activity				
Beta activity				
Uranium-238				
Pathway Total				6.19E-02

---------- SECTOR=Southeast PATHWAY=Recreational Adult Ingestion of Quail ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	8.863-07	1.00E+00	8.86E-07	
Antimony	1.47E-12	4.00E-04	3.67E-09	
Cadmium	3.19E-08	1.00E-03	3.19E-05	
Chromium	9.783-09	5.00E-03	1.96E-06	
Benz(a)anthracene				
Benzo(a)pyrene	5.87E-09			
Benzo(b)fluoranthene				
Benzo(k)fluoranthene				
Chrysene				
Fluoranthene		4.00E-02		
PCB-1262				
Phenanthrene	9.36E-10			
Polychlorinated biphenyl				
Pyrene		3.00E-02		
Alpha activity				
Beta activity				
Pathway Total				3.47E-05

---------- SECTOR=Southeast PATHWAY=Recreational Adult Ingestion of Rabbit .....

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	1.82E-04	1.00E+00	1.82E-04	
Antimony	2.35E-10	4.00E-04	5.86E-07	
Cadmium	3.25E-09	1.00E-03	3.25E-06	
Chromium	2.02E-06	5.00E-03	4.04E-04	
Benz(a)anthracene	7.83E-09			
Benzo(a)pyrene	2.20E-08			
Benzo(b)fluoranthene	1.92E-08			
Benzo(k)fluoranthene	8.09E-08			
Chrysene	8.95E-09			
Fluoranthene	2.95E-09	4.00E-02	7.37E-08	

Recreational Excess Lifetime Cancer Risks

..... SECTOR=Southeast PATHWAY=Recreational Adult Ingestion of Rabbit ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
PCB-1262	8.33E-09			
Phenanthrene	7.40E-10			
Polychlorinated biphenyl	8.33E-09			
Pyrene	2.36E-09	3.00E-02	7.86E-08	
Alpha activity				
Beta activity				
Pathway Total				5.89E-04

---------- SECTOR=Southeast PATHWAY=Recreational Adult Ingestion of Venison .....

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	1.63E-05	1.00E+00	1.63E-05	
Antimony	2.14E-11	4.00E-04	5.36E-08	
Cadmium	3.21E-10	1.OOE-03	3.21E-07	
Chromium	1.84E-07	5.00E-03	3.67E-05	
Benz(a)anthracene	7.07E-10			
Benzo(a)pyrene	1.97E-09			
Benzo(b)fluoranthene	1.73E-09			
Benzo(k)fluoranthene	7.24E-09			
Chrysene	8.08E-10			
Fluoranthene	2.70E-10	4.00E-02	6.75E-09	
PCB-1262	7.49E-10			
Phenanthrene	6.84E-11			
Polychlorinated biphenyl	7.49E-10			
Pyrene	2.16E-10	3.00E-02	7.20E-09	
Alpha activity				
Beta activity				
Pathway Total				5.34E-05

---------- SECTOR=Southeast PATHWAY=Recreational Child Ingestion of Quail .....

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	8.55E-07	1.00E+00	8.55E-07	
Antimony	1.42E-12	4.00E-04	3.54E-09	
Cadmium	3.08E-08	1.00E-03	3.08E-05	
Chromium	9.443-09	5.00E-03	1.89E-06	
Benz(a)anthracene				
Benzo(a)pyrene	5.66E-09			
Benzo(b)fluoranthene				
Benzo(k)fluoranthene				
Chrysene				
Fluoranthene		4.00E-02		
PCB-1262				
Phenanthrene	9.03E-10			
Polychlorinated biphenyl				
Pyrene		3.00E-02		
Alpha activity				
Beta activity				
Pathway Total				3.35E-05

Recreational Excess Lifetime Cancer Risks

---------- SECTOR=Southeast PATHWAY=Recreational Child Ingestion of Rabbit ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	1.76E-04	1.00E+00	1.76E-04	
Antimony	2.26E-10	4.003-04	5.66E-07	
Cadmium	3.14E-09	1.00E-03	3.14E-06	
Chromium	1.95E-06	5.00E-03	3.903-04	
Benz(a)anthracene	7.563-09			
Benzo(a)pyrene	2.12E-08			
Benzo(b)fluoranthene	1.86E-08			
Benzo(k)fluoranthene	7.81E-08			
Chrysene	8.64E-09			
Fluoranthene	2.853-09	4.00E-02	7.12E-08	
PCB-1262	8.04E-09			
Phenanthrene	7.15E-10			
Polychlorinated biphenyl	8.04E-09			
	2.28E-09	3.00E-02	7.59E-08	
Alpha activity				
Beta activity				
Pathway Total				5.69E-04

---------- SECTOR=Southeast PATHWAY=Recreational Child Ingestion of Venison ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	1.72E-05	1.00E+00	1.72E-05	
Antimony	2.263-11	4.00E-04	5.66E-08	
Cadmium	3.39E-10	1.00E-03	3.39E-07	
Chromium	1.94E-07	5.00E-03	3.88E-05	
Benz(a)anthracene	7.46E-10			
Benzo(a)pyrene	2.08E-09			
Benzo(b)fluoranthene	1.82E-09			
Benzo(k)fluoranthene	7.65E-09			
Chrysene	8.53E-10			
Fluoranthene	2.85E-10	4.00E-02	7.13E-09	
PCB-1262	7.91E-10			
Phenanthrene	7.22E-11			
Polychlorinated biphenyl	7.91E-10			
Pyrene	2.28E-10	3.00E-02	7.60E-09	
Alpha activity				
Beta activity				
Pathway Total				5.64E-05

---------- SECTOR=Southeast PATHWAY=Recreational Teen Ingestion of Quail ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	7.36E-07	1.00E+00	7.36E-07	
Antimony	1.22E-12	4.00E-04	3.05E-09	
Cadmium	2.65E-08	1.00E-03	2.65E-05	
Chromium	8.13E-09	5.00E-03	1.63E-06	
Benz(a)anthracene				
Benzo(a)pyrene	4.88E-09			
Benzo(b)fluoranthene				
Benzo(k)fluoranthene				
Chrysene				
Fluoranthene		4.00E-02		
PCB-1262				

Recreational Excess Lifetime Cancer Risks

..... SECTOR=Southeast PATHWAY=Recreational Teen Ingestion of Quail .....
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Phenanthrene	7.78E-10			
Polychlorinated biphenyl				
Pyrene		3.00E-02		
Alpha activity				
Beta activity				
Pathway Total				2.89E-05

---------- SECTOR=Southeast PATHWAY=Recreational Teen Ingestion of Rabbit .....

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	1.47E-04	1.00E+00	1.47E-04	
Antimony	1.90E-10	4.00E-04	4.74E-07	
Cadmium	2.63E-09	1.00E-03	2.63E-06	
Chromium	1.63E-06	5.00E-03	3.27E-04	
Benz(a)anthracene	6.343-09			
Benzo(a)pyrene	1.78E-08			
Benzo(b)fluoranthene	1.55E-08			
Benzo(k)fluoranthene	6.54E-08			
Chrysene	7.24E-09			
Fluoranthene	2.39E-09	4.00E-02	5.96E-08	
PCB-1262	6.74E-09			
Phenanthrene	5.99E-10			
Polychlorinated biphenyl	6.74E-09			
Pyrene	1.91E-09	3.00E-02	6.36E-08	
Alpha activity				
Beta activity				
Pathway Total				4.77E-04

---------- SECTOR=Southeast PATHWAY=Recreational Teen Ingestion of Venison ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	2.65E-05	1.00E+00	2.65E-05	
Antimony	3.49E-11	4.00E-04	8.72E-08	
Cadmium	5.22E-10	1.00E-03	5.22E-07	
Chromium	2.99E-07	5.00E-03	5.98E-05	
Benz(a)anthracene	1.15E-09			
Benzo(a)pyrene	3.21E-09			
Benzo(b)fluoranthene	2.81E-09			
Benzo(k)fluoranthene	1.18E-08			
Chrysene	1.31E-09			
Fluoranthene	4.39E-10	4.00E-02	1.10E-08	
PCB-1262	1.22E-09			
Phenanthrene	1.11E-10			
Polychlorinated biphenyl	1.22E-09			
Pyrene	3.51E-10	3.00E-02	1.17E-08	
Alpha activity				
Beta activity				
Pathway Total				8.70E-05

Recreational Excess Lifetime Cancer Risks

---------- SECTOR=Southwest PATHWAY-Recreational Adult Ingestion Of Quail ....

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Antimony	5.32E-12	4.00E-04	1.33E-08	
Beryllium	2.88E-11	5.00E-03	5.76E-09	
Cadmium	4.95E-08	1.00E-03	4.95E-05	
chromium	1.32E-08	5.00E-03	2.643-06	
Iron	1.08E-03	3.00E-01	3.60E-03	
Thallium	1.71E-09			
Uranium	3.33E-06	3.00E-03	1.11E-03	
Zinc		3.00E-01		
Acenaphthene		6.003-02		
Acenaphthylene				
Anthracene		3.00E-01		
Benz (a)anthracene				
Benzo (a)pyrene	5.31E-07			
Benzo(b)fluoranthene				
Benzo(ghi)perylene				
Benzo(k)fluoranthene				
Bis(2-ethylhexyl)phthalate		2.00E-02		
Chrysene				
Dibenz (a,h)anthracene				
Fluoranthene		4.00E-02		
Fluorene		4.00E-02		
Indeno(1,2,3-cd)pyrene				
Naphthalene		3.57E-02		
PCB-1260	8.21E-09			
Phenanthrene	1.14E-07			
Polychlorinated biphenyl				
Pyrene		3.00E-02		
Alpha activity				
Beta activity				
Neptunium-237				
Uranium-235				
Uranium-238				
Pathway Total				4.76E-03

---------- SECTOR=Southwest PATHWAY=Recreational Adult Ingestion Of Rabbit .....

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Antimony	8.50E-10	4.00E-04	2.12E-06	
Beryllium	4.91E-09	5.00E-03	9.82E-07	
Cadmium	5.05E-09	1.00E-03	5.05E-06	
Chromium	2.72E-06	5.00E-03	5.44E-04	
Iron	4.43E-03	3.00E-01	1.48E-02	
Thallium	3.59E-07			
Uranium	2.04E-07	3.00E-03	6.79E-05	
Zinc	2.64E-04	3.00E-01	8.81E-04	
Acenaphthene	8.65E-09	6.00E-02	1.44E-07	
Acenaphthylene	6.50E-10			
Anthracene	1.93E-08	3.00E-01	6.44E-08	
Benz (a)anthracene	8.41E-07			
Benzo (a)pyrene	1.99E-06			
Benzo(b)fluoranthene	2.10E-06			
Benzo(ghi)perylene	3.02E-06			
Benzo(k)fluoranthene	6.81E-06			
Bis(2-ethylhexyl)phthalate	2.35E-09	2.00E-02	1.18E-07	
Chrysene	7.57E-07			
Dibenz(a,h)anthracene	2.62E-06			
Fluoranthene	3.21E-07	4.00E-02	8.02E-06	

Recreational Excess Lifetime Cancer Risks

..... SECTOR=Southwest PATHWAY=Recreational Adult Ingestion of Rabbit .....
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Fluorene	1.27E-08	4.00E-02	3.19E-07	
Indeno(1,2,3-cd)pyrene	2.31E-06			
Naphthalene	3.75E-12	3.57E-02	1.05E-10	
PCB-1260	1.52E-07			
Phenanthrene	9.05E-08			
Polychlorinated biphenyl	1.25E-08			
Pyrene	2.713-07	3.00E-02	9.02E-06	
Alpha activity				
Beta activity				
Neptunium-237				
Uranium-235				
Uranium-238				
Pathway Total				1.63E-02

---------- SECTOR=Southwest PATHWAY=Recreational Adult Ingestion of Venison .....

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Antimony	7.77E-11	4.00E-04	1.94E-07	
Beryllium	4.41E-10	5.00E-03	8.82E-08	
Cadmium	4.97E-10	1.00E-03	4.97E-07	
Chromium	2.48E-07	5.00E-03	4.95E-05	
Iron	3.98E-04	3.00E-01	1.33E-03	
Thallium	3.22E-08			
Uranium	1.84E-08	3.00E-03	6.14E-06	
Zinc	2.65E-05	3.00E-01	8.83E-05	
Acenaphthene	8.08E-10	6.00E-02	1.35E-08	
Acenaphthylene	6.24E-11			
Anthracene	1.80E-09	3.00E-01	5.99E-09	
Benz(a)anthracene	7.58E-08			
Benzo(a)pyrene	1.79E-07			
Benzo(b)fluoranthene	1.89E-07			
Benzo(ghi)perylene	2.71E-07			
Benzo(k)fluoranthene	6.10E-07			
Bis(2-ethylhexyl)phthalate	2.16E-10	2.00E-02	1.08E-08	
Chrysene	6.83E-08			
Dibenz(a,h)anthracene	2.35E-07			
Fluoranthene	2.94E-08	4.00E-02	7.34E-07	
Fluorene	1.19E-09	4.00E-02	2.97E-08	
Indeno(1,2,3-cd)pyrene	2.07E-07			
Naphthalene	3.67E-13	3.57E-02	1.03E-11	
PCB-1260	1.36E-08			
Phenanthrene	8.36E-09			
Polychlorinated biphenyl	1.12E-09			
Pyrene	2.48E-08	3.00E-02	8.26E-07	
Alpha activity				
Beta activity				
Neptunium-237				
Uranium-235				
Uranium-238				
Pathway Total				1.47E-03

Recreational Excess Lifetime Cancer Risks

---------- SECTOR=Southwest PATHWAY=Recreational Child Ingestion of Quail ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Antimony	5.14E-12	4.00E-04	1.28E-08	
Beryllium	2.78E-11	5.00E-03	5.56E-09	
Cadmium	4.77E-08	1.00E-03	4.77E-05	
Chromium	1.27E-08	5.00E-03	2.55E-06	
Iron	1.04E-03	3.00E-01	3.47E-03	
Thallium	1.66E-09			
Uranium	3.21E-06	3.00E-03	1.07E-03	
Zinc		3.00E-01		
Acenaphthene		6.00E-02		
Acenaphthylene				
Anthracene		3.00E-01		
Benz(a)anthracene				
Benzo(a)pyrene	5.12E-07			
Benzo(b)fluoranthene				
Benzo(ghi)perylene				
Benzo(k)fluoranthene				
Bis(2-ethylhexyl)phthalate		2.00E-02		
Chrysene				
Dibenz(a,h)anthracene				
Fluoranthene		4.00E-02		
Fluorene		4.00E-02		
Indeno(1,2,3-cd)pyrene				
Naphthalene		3.57E-02		
PCB-1260	7.93E-09			
Phenanthrene	1.10E-07			
Polychlorinated biphenyl				
Pyrene		3.00E-02		
Alpha activity				
Beta activity				
Neptunium-237				
Uranium-235				
Uranium-238				
Pathway Total				4.60E-03

---------- SECTOR-Southwest PATHWAY=Recreational Child Ingestion Of Rabbit ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Antimony	8.21E-10	4.00E-04	2.05E-06	
Beryllium	4.74E-09	5.00E-03	9.48E-07	
Cadmium	4.87E-09	1.00E-03	4.87E-06	
Chromium	2.63E-06	5.00E-03	5.25E-04	
Iron	4.28E-03	3.00E-01	1.43E-02	
Thallium	3.47E-07			
Uranium	1.97E-07	3.00E-03	6.56E-05	
Zinc	2.55E-04	3.00E-01	8.50E-04	
Acenaphthene	8.36E-09	6.00E-02	1.39E-07	
Acenaphthylene	6.27E-10			
Anthracene	1.87E-08	3.00E-01	6.22E-08	
Benz(a)anthracene	8.12E-07			
Benzo(a)pyrene	1.92E-06			
Benzo(b)fluoranthene	2.03E-06			
Benzo(ghi)perylene	2.92E-06			
Benzo(k)fluoranthene	6.58E-06			
Bis(2-ethylhexyl)phthalate	2.27E-09	2.003-02	1.14E-07	
Chrysene	7.31E-07			
Dibenz(a,h)anthracene	2.53E-06			
Fluoranthene	3.10E-07	4.00E-02	7.75E-06	

Recreational Excess Lifetime Cancer Risks

..... SECTOR=Southwest PATHWAY=Recreational Child Ingestion of Rabbit ..... (continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Fluorene	1.23E-08	4.00E-02	3.08E-07	
Indeno(1,2,3-cd)pyrene	2.23E-06			
Naphthalene	3.62E-12	3.57E-02	1.01E-10	
PCB-1260	1.47E-07			
Phenanthrene	8.74E-08			
Polychlorinated biphenyl	1.20E-08			
Pyrene	2.61E-07	3.00E-02	8.71E-06	
Alpha activity				
Beta activity				
Neptunium-237				
Uranium-235				
Uranium-238				
Pathway Total				1.57E-02

---------- SECTOR=Southwest PATHWAY=Recreational Child Ingestion of Venison .....

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Antimony	8.20E-11	4.00E-04	2.05E-07	
Beryllium	4.66E-10	5.00E-03	9.32E-08	
Cadmium	5.25E-10	1.00E-03	5.25E-07	
chromium	2.62E-07	5.00E-03	5.23E-05	
Iron	4.20E-04	3.00E-01	1.40E-03	
Thallium	3.40E-08			
Uranium	1.94E-08	3.00E-03	6.48E-06	
Zinc	2.80E-05	3.00E-01	9.33E-05	
Acenaphthene	8.54E-10	6.00E-02	1.42E-08	
Acenaphthylene	6.59E-11			
Anthracene	1.90E-09	3.00E-01	6.33E-09	
Benz(a)anthracene	8.01E-08			
Benzo(a)pyrene	1.89E-07			
Benzo(b)fluoranthene	1.99E-07			
Benzo(ghi)perylene	2.86E-07			
Benzo(k)fluoranthene	6.44E-07			
Bis(2-ethylhexyl)phthalate	2.28E-10	2.00E-02	1.14E-08	
Chrysene	7.21E-08			
Dibenz(a,h)anthracene	2.48E-07			
Fluoranthene	3.10E-08	4.00E-02	7.76E-07	
Fluorene	1.25E-09	4.00E-02	3.13E-08	
Indeno(1,2,3-cd)pyrene	2.18E-07			
Naphthalene	3.88E-13	3.57E-02	1.09E-11	
PCB-1260	1.44E-08			
Phenanthrene	8.83E-09			
Polychlorinated biphenyl	1.18E-09			
Pyrene	2.62E-08	3.00E-02	8.72E-07	
Alpha activity				
Beta activity				
Neptunium-237				
Uranium-235				
Uranium-238				
Pathway Total				1.56E-03

Recreational Excess Lifetime Cancer Risks

---------- SECTOR=Southwest PATHWAY=Recreational Teen Ingestion of Quail ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Antimony	4.42E-12	4.00E-04	1.11E-08	
Beryllium	2.39E-11	5.00E-03	4.79E-09	
Cadmium	4.11E-08	1.00E-03	4.11E-05	
Chromium	1.10E-08	5.00E-03	2.19E-06	
Iron	8.97E-04	3.00E-01	2.99E-03	
Thallium	1.43E-09			
Uranium	2.77E-06	3.00E-03	9.22E-04	
Zinc		3.00E-01		
Acenaphthene		6.00E-02		
Acenaphthylene				
Anthracene		3.00E-01		
Benz(a)anthracene				
Benzo(a)pyrene	4.41E-07			
Benzo(b)fluoranthene				
Benzo(ghi)perylene				
Benzo(k)fluoranthene				
Bis(2-ethylhexyl)phthalate		2.00E-02		
Chrysene				
Dibenz(a,h)anthracene				
Fluoranthene		4.00E-02		
Fluorene		4.00E-02		
Indeno(1,2,3-cd)pyrene				
Naphthalene		3.57E-02		
PCB-1260	6.82E-09			
Phenanthrene	9.51E-08			
Polychlorinated biphenyl				
Pyrene		3.00E-02		
Alpha activity				
Beta activity				
Neptunium-237				
Uranium-235				
Uranium-238				
Pathway Total				3.96E-03

---------- SECTOR=Southwest PATHWAY=Recreational Teen Ingestion of Rabbit ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Antimony	6.88E-10	4.00E-04	1.72E-06	
Beryllium	3.97E-09	5.00E-03	7.94E-07	
Cadmium	4.08E-09	1.00E-03	4.08E-06	
Chromium	2.20E-06	5.00E-03	4.40E-04	
Iron	3.58E-03	3.00E-01	1.19E-02	
Thallium	2.90E-07			
Uranium	1.65E-07	3.00E-03	5.49E-05	
Zinc	2.14E-04	3.00E-01	7.12E-04	
Acenaphthene	7.00E-09	6.00E-02	1.17E-07	
Acenaphthylene	5.26E-10			
Anthracene	1.56E-08	3.00E-01	5.21E-08	
Benz(a)anthracene	6.80E-07			
Benzo(a)pyrene	1.61E-06			
Benzo(b)fluoranthene	1.70E-06			
Benzo(ghi)perylene	2.45E-06			
Benzo(k)fluoranthene	5.51E-06			
Bis(2-ethylhexyl)phthalate	1.90E-09	2.00E-02	9.52E-08	
Chrysene	6.12E-07			
Dibenz(a,h)anthracene	2.12E-06			
Fluoranthene	2.60E-07	4.00E-02	6.49E-06	

Recreational Excess Lifetime Cancer Risks

---------- SECTOR=Southwest PATHWAY=Recreational Teen Ingestion of Rabbit ..... (continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Fluorene	1.03E-08	4.00E-02	2.58E-07	
Indeno(1,2,3-cd)pyrene	1.87E-06			
Naphthalene	3.03E-12	3.57E-02	8.49E-11	
PCB-1260	1.23E-07			
Phenanthrene	7.32E-08			
Polychlorinated biphenyl	1.01E-08			
Pyrene	2.19E-07	3.00E-02	7.30E-06	
Alpha activity				
Beta activity				
Neptunium-237				
Uranium-235				
Uranium-238				
Pathway Total				1.32E-02

---------- SECTOR=Southwest PATHWAY=Recreational Teen Ingestion of Venison ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Antimony	1.26E-10	4.00E-04	3.16E-07	
Beryllium	7.18E-10	5.00E-03	1.44E-07	
Cadmium	8.10E-10	1.00E-03	8.10E-07	
Chromium	4.03E-07	5.00E-03	8.06E-05	
Iron	6.48E-04	3.00E-01	2.16E-03	
Thallium	5.23E-08			
Uranium	3.00E-08	3.00E-03	9.99E-06	
Zinc	4.31E-05	3.00E-01	1.44E-04	
Acenaphthene	1.32E-09	6.00E-02	2.19E-08	
Acenaphthylene	1.02E-10			
Anthracene	2.93E-09	3.00E-01	9.75E-09	
Benz(a)anthracene	1.23E-07			
Benzo(a)pyrene	2.91E-07			
Benzo(b)fluoranthene	3.08E-07			
Benzo(ghi)perylene	4.41E-07			
Benzo(k)fluoranthene	9.93E-07			
Bis(2-ethylhexyl)phthalate	3.51E-10	2.00E-02	1.75E-08	
Chrysene	1.11E-07			
Dibenz(a,h)anthracene	3.83E-07			
Fluoranthene	4.78E-08	4.00E-02	1.20E-06	
Fluorene	1.93E-09	4.00E-02	4.83E-08	
Indeno(1,2,3-cd)pyrene	3.36E-07			
Naphthalene	5.98E-13	3.57E-02	1.67E-11	
PCB-1260	2.22E-08			
Phenanthrene	1.36E-08			
Polychlorinated biphenyl	1.83E-09			
Pyrene	4.03E-08	3.00E-02	1.34E-06	
Alpha activity				
Beta activity				
Neptunium-237				
Uranium-235				
Uranium-238				
Pathway Total				2.40E-03

Recreational Excess Lifetime Cancer Risks

---------- SECTOR=West PATHWAY=Recreational Adult Ingestion Of Quail ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	2.61E-07	1.00E+00	2.61E-07	
Antimony	1.39E-12	4.00E-04	3.49E-09	
Arsenic	7.14E-10	3.003-04	2.38E-06	
Beryllium	9.22E-12	5.00E-03	1.84E-09	
Cadmium	4.74E-08	1.00E-03	4.74E-05	
Chromium	2.993-09	5.00E-03	5.98E-07	
Cobalt		6.00E-02		
Uranium	9.24E-07	3.003-03	3.08E-04	
Zinc		3.00E-01		
2-Methylnaphthalene				
Acenaphthene		6.00E-02		
Anthracene		3.00E-01		
Benz(a)anthracene				
Benzo(a)pyrene	7.63E-07			
Benzo(b)fluoranthene				
Benzo(ghi)perylene				
Benzo(k)fluoranthene				
Bis(2-ethylhexyl)phthalate		2.00E-02		
Chrysene				
Di-n-butyl phthalate		1.00E-01		
Dibenz(a,h)anthracene				
Fluoranthene		4.00E-02		
Fluorene		4.00E-02		
Indeno(1,2,3-cd)pyrene				
Naphthalene		3.57E-02		
PCB-1254	8.11E-08	2.00E-05	4.05E-03	
PCB-1260	1.33E-09			
Phenanthrene	2.69E-07			
Polychlorinated biphenyl				
Fyrene		3.00E-02		
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				4.41E-03

---------- SECTOR=West PATHWAY=Recreational Adult Ingestion Of Rabbit ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	5.35E-05	1.00E+00	5.35E-05	
Antimony	2.23E-10	4.00E-04	5.57E-07	
Arsenic	1.44E-07	3.00E-04	4.80E-04	
Beryllium	1.57E-09	5.00E-03	3.14E-07	
Cadmium	4.83E-09	1.00E-03	4.833-06	
Chromium	6.17E-07	5.00E-03	1.23E-04	
Cobalt	2.69E-09	6.003-02	4.49E-08	
Uranium	5.66E-08	3.00E-03	1.89E-05	
Zinc	6.05E-05	3.00E-01	2.02E-04	
2-Methylnaphthalene	1.44E-09			
Acenaphthene	1.13E-08	6.00E-02	1.88E-07	
Anthracene	5.94E-08	3.00E-01	1.98E-07	
Benz(a)anthracene	1.29E-06			
Benzo(a)pyrene	2.86E-06			
Benzo(b)fluoranthene	3.55E-06			

Recreational Excess Lifetime Cancer Risks

..... SECTOR=West PATHWAY=Recreational Adult Ingestion Of Rabbit .....
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Benzo(ghi)perylene	1.82E-06			
Benzo(k)fluoranthene	1.72E-05			
Bis(2-ethylhexyl)phthalate	1.13E-09	2.00E-02	5.65E-08	
Chrysene	1.39E-06			
Di-n-butyl phthalate	2.32E-09	1.00E-01	2.32E-08	
Dibenz(a,h)anthracene	2.91E-06			
Fluoranthene	5.10E-07	4.00E-02	1.27E-05	
Fluorene	1.27E-08	4.00E-02	3.19E-07	
Indeno(1,2,3-cd)pyrene	1.86E-06			
Naphthalene	8.70E-10	3.57E-02	2.44E-08	
PCB-1254	1.21E-07	2.00E-05	6.04E-03	
PCB-1260	2.46E-08			
Phenanthrene	2.13E-07			
Polychlorinated biphenyl	7.06E-08			
Pyrene	4.46E-07	3.00E-02	1.49E-05	
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				6.96E-03

---------- SECTOR=West PATHWAY=Recreational Adult Ingestion Of Venison .....

Analyte	.Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	4.80E-06	1.00E+00	4.80E-06	
Antimony	2.04E-11	4.00E-04	5.09E-08	
Arsenic	1.31E-08	3.00E-04	4.37E-05	
Beryllium	1.41E-10	5.00E-03	2.82E-08	
Cadmium	4.76E-10	1.00E-03	4.76E-07	
Chromium	5.62E-08	5.00E-03	1.12E-05	
Cobalt	2.46E-10	6.00E-02	4.11E-09	
Uranium	5.11E-09	3.00E-03	1.70E-06	
Zinc	6.07E-06	3.00E-01	2.02E-05	
2-Methylnaphthalene	1.37E-10			
Acenaphthene	1.06E-09	6.00E-02	1.76E-08	
Anthracene	5.53E-09	3.00E-01	1.84E-08	
Benz(a)anthracene	1.17E-07			
Benzo(a)pyrene	2.57E-07			
Benzo(b)fluoranthene	3.19E-07			
Benzo(ghi)perylene	1.63E-07			
Benzo(k)fluoranthene	1.54E-06			
Bis(2-ethylhexyl)phthalate	1.03E-10	2.00E-02	5.17E-09	
Chrysene	1.26E-07			
Di-n-butyl phthalate	2.12E-10	1.00E-01	2.12E-09	
Dibenz(a,h)anthracene	2.60E-07			
Fluoranthene	4.67E-08	4.00E-02	1.17E-06	
Fluorene	1.19E-09	4.00E-02	2.96E-08	
Indeno(1,2,3-cd)pyrene	1.67E-07			
Naphthalene	8.53E-11	3.57E-02	2.39E-09	
PCB-1254	1.09E-08	2.00E-05	5.44E-04	
PCB-1260	2.20E-09			
Phenanthrene	1.96E-08			
Polychlorinated biphenyl	6.35E-09			

Recreational Excess Lifetime Cancer Risks

---------- SECTOR=West PATHWAY=Recreational Adult Ingestion Of Venison ----------
(conthued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Pyrene	4.08E-08	3.00E-02	1.36E-06	
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				6.28E-04

---------- SECTOR=West PATHWAY=Recreational Child Ingestion Of Quail ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	2.52E-07	1.00E+00	2.52E-07	
Antimony	1.35E-12	4.00E-04	3.37E-09	
Arsenic	6.89E-10	3.00E-04	2.30E-06	
Beryllium	8.90E-12	5.00E-03	1.78E-09	
Cadmium	4.57E-08	1.00E-03	4.57E-05	
Chromium	2.89E-09	5.00E-03	5.77E-07	
Cobalt		6.00E-02		
Uranium	8.92E-07	3.00E-03	2.97E-04	
Zinc		3.00E-01		
2-Methylnaphthalene				
Acenaphthene		6.00E-02		
Anthracene		3.00E-01		
Benz(a)anthracene				
Benzo(a)pyrene	7.37E-07			
Benzo(b)fluoranthene				
Benzo(ghi)perylene				
Benzo(k)fluoranthene				
Bis(2-ethylhexyl)phthalate		2.00E-02		
Chrysene				
Di-n-butyl phthalate		1.00E-01		
Dibenz(a,h)anthracene				
Fluoranthene		4.00E-02		
Fluorene		4.00E-02		
Indeno(1,2,3-cd)pyrene				
Naphthalene		3.57E-02		
PCB-1254	7.83E-08	2.00E-05	3.91E-03	
PCB-1260	1.28E-09			
Phenanthrene	2.60E-07			
Polychlorinated biphenyl				
Pyrene		3.00E-02		
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				4.26E-03

Recreational Excess Lifetime Cancer Risks

---------- SECTOR=West PATHWAY=Recreational Child Ingestion Of Rabbit .....

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	5.17E-05	1.00E+00	5.17E-05	
Antimony	2.15E-10	4.00E-04	5.38E-07	
Arsenic	1.39E-07	3.00E-04	4.64E-04	
Beryllium	1.52E-09	5.00E-03	3.04E-07	
Cadmium	4.67E-09	1.00E-03	4.67E-06	
Chromium	5.96E-07	5.00E-03	1.19E-04	
Cobalt	2.60E-09	6.00E-02	4.33E-08	
Uranium	5.46E-08	3.00E-03	1.82E-05	
Zinc	5.84E-05	3.00E-01	1.95E-04	
2-Methylnaphthalene	1.39E-09			
Acenaphthene	1.09E-08	6.00E-02	1.82E-07	
Anthracene	5.74E-08	3.00E-01	1.91E-07	
Benz(a)anthracene	1.25E-06			
Benzo(a)pyrene	2.76E-06			
Benzo(b)fluoranthene	3.43E-06			
Benzo(ghi)perylene	1.75E-06			
Benzo(k)fluoranthene	1.66E-05			
Bis(2-ethylhexyl)phthalate	1.09E-09	2.00E-02	5.45E-08	
Chrysene	1.35E-06			
Di-n-butyl phthalate	2.24E-09	1.00E-01	2.24E-08	
Dibenz (a,h)anthracene	2.81E-06			
Fluoranthene	4.92E-07	4.00E-02	1.23E-05	
Fluorene	1.23E-08	4.00E-02	3.08E-07	
Indeno(1,2,3-cd)pyrene	1.80E-06			
Naphthalene	8.40E-10	3.57E-02	2.35E-08	
PCB-1254	1.17E-07	2.00E-05	5.84E-03	
PCB-1260	2.38E-08			
Phenanthrene	2.05E-07			
Polychlorinated biphenyl	6.82E-08			
Pyrene	4.31E-07	3.00E-02	1.44E-05	
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				6.72E-03

---------- SECTOR=West PATHWAY=Recreational Child Ingestion of Venison .....

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	5.06E-06	1.00E+00	5.06E-06	
Antimony	2.15E-11	4.00E-04	5.37E-08	
Arsenic	1.39E-08	3.00E-04	4.62E-05	
Beryllium	1.49E-10	5.00E-03	2.98E-08	
Cadmium	5.03E-10	1.00E-03	5.03E-07	
Chromium	5.93E-08	5.00E-03	1.19E-05	
Cobalt	2.60E-10	6.00E-02	4.34E-09	
Uranium	5.40E-09	3.00E-03	1.80E-06	
Zinc	6.41E-06	3.00E-01	2.14E-05	
2-Methylnaphthalene	1.45E-10			
Acenaphthene	1.11E-09	6.00E-02	1.86E-08	
Anthracene	5.84E-09	3.00E-01	1.95E-08	
Benz(a)anthracene	1.23E-07			
Benzo(a)pyrene	2.71E-07			
Benzo(b)fluoranthene	3.37E-07			

Recreational Excess Lifetime Cancer Risks

..... SECTOR=West PATHWAY=Recreational Child Ingestion of Venison ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Benzo(ghi)perylene	1.72E-07			
Benzo(k)fluoranthene	1.63E-06			
Bis(2-ethylhexyl)phthalate	1.09E-10	2.00E-02	5.46E-09	
Chrysene	1.33E-07			
Di-n-butyl phthalate	2.24E-10	1.00E-01	2.24E-09	
Dibenz(a,h)anthracene	2.75E-07			
Fluoranthene	4.93E-08	4.00E-02	1.23E-06	
Fluorene	1.25E-09	4.00E-02	3.13E-08	
Indeno(1,2,3-cd)pyrene	1.76E-07			
Naphthalene	9.00E-11	3.57E-02	2.523-09	
PCB-1254	1.15E-08	2.00E-05	5.74E-04	
PCB-1260	2.33E-09			
Phenanthrene	2.07E-08			
Polychlorinated biphenyl	6.71E-09			
Pyrene	4.31E-08	3.00E-02	1.44E-06	
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				6.64E-04

---------- SECTOR=West PATHWAY=Recreational Teen Ingestion of Quail ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	2.17E-07	1.00E+00	2.17E-07	
Antimony	1.16E-12	4.00E-04	2.903-09	
Arsenic	5.93E-10	3.00E-04	1.98E-06	
Beryllium	7.66E-12	5.00E-03	1.53E-09	
Cadmium	3.94E-08	1.00E-03	3.94E-05	
Chromium	2.48E-09	5.00E-03	4.97E-07	
Cobalt		6.00E-02		
Uranium	7.68E-07	3.00E-03	2.56E-04	
Zinc		3.00E-01		
2-Methylnaphthalene				
Acenaphthene		6.00E-02		
Anthracene		3.00E-01		
Benz(a)anthracene				
Benzo(a)pyrene	6.34E-07			
Benzo(b)fluoranthene				
Benzo(ghi)perylene				
Benzo(k)fluoranthene				
Bis(2-ethylhexyl)phthalate		2.00E-02		
Chrysene				
Di-n-butyl phthalate		1.00E-01		
Dibenz(a,h)anthracene				
Fluoranthene		4.00E-02		
Fluorene		4.00E-02		
Indeno(1,2,3-cd)pyrene				
Naphthalene		3.57E-02		
PCB-1254	6.74E-08	2.00E-05	3.37E-03	
PCB-1260	1.10E-09			
Phenanthrene	2.23E-07			
Polychlorinated biphenyl				

Recreational Excess Lifetime Cancer Risks

SECTOR=West PATHWAY=Recreational Teen Ingestion of Quail (continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Pyrene		3.00E-02		
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				3.673-03

SECTOR=West PATHWAY=Recreational Teen Ingestion of Rabbit

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	4.33E-05	1.00E+00	4.33E-05	
Antimony	1.80E-10	4.00E-04	4.51E-07	
Arsenic	1.17E-07	3.00E-04	3.89E-04	
Beryllium	1.27E-09	5.00E-03	2.54E-07	
Cadmium	3.91E-09	1.00E-03	3.91E-06	
Chromium	4.99E-07	5.00E-03	9.98E-05	
Cobalt	2.18E-09	6.00E-02	3.63E-08	
Uranium	4.58E-08	3.OOE-03	1.53E-05	
Zinc	4.89E-05	3.00E-01	1.63E-04	
2-Methylnaphthalene	1.17E-09			
Acenaphthene	9.14E-09	6.00E-02	1.523-07	
Anthracene	4.81E-08	3.00E-01	1.60E-07	
Benz(a)anthracene	1.05E-06			
Benzo(a)pyrene	2.31E-06			
Benzo(b)fluoranthene	2.88E-06			
Benzo(ghi)perylene	1.47E-06			
Benzo(k)fluoranthene	1.39E-05			
Bis(2-ethylhexyl)phthalate	9.14E-10	2.00E-02	4.57E-08	
Chrysene	1.13E-06			
Di-n-butyl phthalate	1.87E-09	1.00E-01	1.87E-08	
Dibenz(a,h)anthracene	2.35E-06			
Fluoranthene	4.12E-07	4.00E-02	1.03E-05	
Fluorene	1.03E-08	4.00E-02	2.58E-07	
Indeno(1,2,3-cd)pyrene	1.51E-06			
Naphthalene	7.04E-10	3.57E-02	1.97E-08	
PCB-1254	9.78E-08	2.00E-05	4.89E-03	
PCB-1260	1.99E-08			
Phenanthrene	1.72E-07			
Polychlorinated biphenyl	5.71E-08			
Pyrene	3.61E-07	3.00E-02	1.20E-05	
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				5.63E-03

Recreational Excess Lifetime Cancer Risks

---------- SECTOR=West PATHWAY=Recreational Teen Ingestion of Venison ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	7.81E-06	1.00E+00	7.81E-06	
Antimony	3.31E-11	4.00E-04	8.28E-08	
Arsenic	2.14E-08	3.00E-04	7.12E-05	
Beryllium	2.30E-10	5.00E-03	4.60E-08	
Cadmium	7.76E-10	1.00E-03	7.76E-07	
Chromium	9.14E-08	5.00E-03	1.83E-05	
Cobalt	4.01E-10	6.00E-02	6.68E-09	
Uranium	8.32E-09	3.00E-03	2.773-06	
Zinc	9.88E-06	3.00E-01	3.29E-05	
2-Methylnaphthalene	2.23E-10			
Acenaphthene	1.72E-09	6.00E-02	2.86E-08	
Anthracene	9.00E-09	3.00E-01	3.00E-08	
Benz(a)anthracene	1.90E-07			
Benzo(a)pyrene	4.18E-07			
Benzo(b)fluoranthene	5.20E-07			
Benzo(ghi)perylene	2.65E-07			
Benzo(k)fluoranthene	2.51E-06			
Bis(2-ethylhexyl)phthalate	1.68E-10	2.00E-02	8.42E-09	
Chrysene	2.05E-07			
Di-n-butyl phthalate	3.45E-10	1.00E-01	3.45E-09	
Dibenz(a,h)anthracene	4.24E-07			
Fluoranthene	7.60E-08	4.00E-02	1.90E-06	
Fluorene	1.93E-09	4.00E-02	4.83E-08	
Indeno(1,2,3-cd)pyrene	2.72E-07			
Naphthalene	1.39E-10	3.57E-02	3.89E-09	
PCB-1254	1.77E-08	2.00E-05	8.85E-04	
PCB-1260	3.59E-09			
Phenanthrene	3.20E-08			
Polychlorinated biphenyl	1.03E-08			
Pyrene	6.653-08	3.00E-02	2.22E-06	
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				1.02E-03

Recreational Excess Lifetime Cancer Risks

---------- SECTOR=Central PATHWAY=Recreational Adult Ingestion of Quail ....

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Di-n-butyl phthalate				
Alpha activity				
Beta activity				
Pathway Total				

---------- SECTOR=Central PATHWAY=Recreational Adult Ingestion of Rabbit ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Di-n-butyl phthalate	1.10E-08			
Alpha activity				
Beta activity				
Pathway Total				

---------- SECTOR=Central PATHWAY=Recreational Adult Ingestion of Venison ....

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Di-n-butyl phthalate	1.01E-09			
Alpha activity				
Beta activity				
Pathway Total				

---------- SECTOR=Central PATHWAY=Recreational Child Ingestion of Quail ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Di-n-butyl phthalate				
Alpha activity				
Beta activity				
Pathway Total				

---------- SECTOR=Central PATHWAY=Recreational Child Ingestion of Rabbit ....

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Di-n-butyl phthalate	2.90E-09			
Alpha activity				
Beta activity				
Pathway Total				

---------- SECTOR=Central PATHWAY=Recreational Child Ingestion of Venison ....

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Di-n-butyl phthalate	2.90E-10			

Recreational Excess Lifetime Cancer Risks

SECTOR=Central PATHWAY=Recreational Child Ingestion of Venison (centinued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Alpha activity				
Beta activity				
Pathway Total				

SECTOR=Central PATHWAY=Recreational Teen Ingestion of Quail

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Di-n-butyl phthalate				
Alpha activity				
Beta activity				
Pathway Total				

SECTOR=Central PATHWAY=Recreational Teen Ingestion of Rabbit

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Di-n-butyl phthalate	4.86E-09			
Alpha activity				
Beta activity				
Pathway Total				

SECTOR=Central PATHWAY=Recreational Teen Ingestion of Venison

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Di-n-butyl phthalate	8.96E-10			
Alpha activity				
Beta activity				
Pathway Total				

SECTOR=East PATHWAY=Recreational Adult Ingestion of Quail

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Cadmium	3.97E-09			
Chromium	6.47E-10			
Thallium	2.24E-10			
Uranium	1.39E-07			
Acenaphthene				
Anthracene				
Benz (a)anthracene		7.30E-01		
Benzo(a)pyrene	6.68E-09	7.30E+00	4.88E-08	
Benzo(b)fluoranthene		7.30E-01		
Benzo(ghi)perylene				
Benzo(k)fluoranthene		7.30E-02		
Chrysene		7.30E-03		
Di-n-butyl phthalate				

Recreational Excess Lifetime Cancer Risks

SECTOR=East PATHWAY=Recreational Adult Ingestion of Quail (continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Dibenz (a,h) anthracene		7.30E+00		
Fluoranthene				
Fluorene				
Indeno(1,2,3-cd)pyrene		7.30E-01		
PCB-1260	5.46E-08	2.00E+00	1.09E-07	
Phenanthrene	1.78E-09			
Polychlorinated biphenyl		2.00E+00		
Pyrene				
Alpha activity				
Beta activity				
Cesium-137		3.16E-11		
Neptunium-237	5.27E-03	3.00E-10	1.58E-12	
Uranium-235	3.74E+00	4.70E-11	1.76E-10	
Uranium-238	8.60E+01	6.20E-11	5.34E-09	
Pathway Total				1.63E-07

SECTOR=East PATHWAY=Recreational Adult Ingestion Of Rabbit

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Cadmium	4.05E-10			
Chromium	1.33E-07			
Thallium	4.69E-08			
Uranium	8.51E-09			
Acenaphthene	8.70E-11			
Anthracene	1.79E-10			
Benz(a)anthracene	9.26E-09	7.30E-01	6.76E-09	
Benzo(a)pyrene	2.50E-08	7.30E+00	1.83E-07	
Benzo(b)fluoranthene	4.40E-08	7.30E-01	3.22E-08	
Benzo(ghi)perylene	3.62E-08			
Benzo(k)fluoranthene	1.34E-07	7.30E-02	9.81E-09	
Chrysene	1.02E-08	7.30E-03	7.44E-11	
Di-n-butyl phthalate	2.77E-09			
Dibenz (a,h) anthracene	2.47E-08	7.30E+00	1.80E-07	
Fluoranthene	4.73E-09			
Fluorene	7.32E-11			
Indeno(1,2,3-cd)pyrene	4.11E-08	7.30E-01	3.00E-08	
PCB-1260	1.01E-06	2.00E+00	2.02E-06	
Phenanthrene	1.41E-09			
Polychlorinated biphenyl	2.51E-07	2.00E+00	5.02E-07	
Pyrene	4.06E-09			
Alpha activity				
Beta activity				
Cesium-137	7.24E+01	3.16E-11	2.29E-09	
Neptunium-237	8.57E-01	3.00E-10	2.57E-10	
Uranium-235	3.06E-01	4.70E-11	1.44E-11	
Uranium-238	7.42E+00	6.20E-11	4.60E-10	
Pathway Total				2.97E-06

SECTOR=East PATHWAY=Recreational Adult Ingestion of Venison

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Cadmium	3.99E-11			

Recreational Excess Lifetime Cancer Risks

..... SECTOR=East PATHWAY-Recreational Adult Ingestion Of Venison ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Chromium	1.21E-08			
Thallium	4.21E-09			
Uranium	7.69E-10			
Acenaphthene	8.13E-12			
Anthracene	1.66E-11			
Benz(a)anthracene	8.35E-10	7.30E-01	6.10E-10	
Benzo(a)pyrene	2.25E-09	7.30E+00	1.64E-08	
Benzo(b)fluoranthene	3.96E-09	7.30E-01	2.89E-09	
Benzo(ghi)perylene	3.25E-09			
Benzo(k)fluoranthene	1.20E-08	7.30E-02	8.79E-10	
Chrysene	9.20E-10	7.30E-03	6.71E-12	
Di-n-butyl phthalate	2.53E-10			
Dibenz(a,h)anthracene	2.21E-09	7.30E+00	1.62E-08	
Fluoranthene	4.33E-10			
Fluorene	6.81E-12			
Indeno(1,2,3-cd)pyrene	3.68E-09	7.30E-01	2.69E-09	
PCB-1260	9.06E-08	2.00E+00	1.81E-07	
Phenanthrene	1.30E-10			
Polychlorinated biphenyl	2.26E-08	2.00E+00	4.52E-08	
Pyrene	3.71E-10			
Alpha activity				
Beta activity				
Cesium-137	6.89E+00	3.16E-11	2.18E-10	
Neptunium-237	7.89E-02	3.00E-10	2.37E-11	
Uranium-235	2.78E-02	4.70E-11	1.31E-12	
Uranium-238	6.75E-01	6.20E-11	4.19E-11	
Pathway Total				2.66E-07

---------- SECTOR=East PATHWAY=Recreational Child Ingestion Of Quail ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte specific	Total Pathway Risk
Cadmium	1.04E-09			
Chromium	1.70E-10			
Thallium	5.91E-11			
Uranium	3.66E-08			
Acenaphthene				
Anthracene				
Benz(a)anthracene		7.30E-01		
Benzo(a)pyrene	1.76E-09	7.30E+00	1.28E-08	
Benzo(b)fluoranthene		7.30E-01		
Benzo(ghi)perylene				
Benzo(k)fluoranthene		7.30E-02		
Chrysene		7.30E-03		
Di-n-butyl phthalate				
Dibenz(a,h)anthracene		7.30E+00		
Fluoranthene				
Fluorene				
Indeno(1,2,3-cd)pyrene		7.30E-01		
PCB-1260	1.44E-08	2.00E+00	2.87E-08	
Phenanthrene	4.68E-10			
Polychlorinated biphenyl		2.00E+00		
Pyrene				
Alpha activity				
Beta activity				
Cesium-137		3.16E-11		
Neptunium-237	2.87E-04	3.00E-10	8.62E-14	

Recreational Excess Lifetime Cancer Risks

..... SECTOR=East PATHWAY=Recreational Child Ingestion of Quail ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Uranium-235	2.04E-01	4.70E-11	9.58E-12	
Uranium-238	4.69E+00	6.20E-11	2.91E-10	
Pathway Total				4.19E-08

..... SECTOR=East PATHWAY=Recreational Child Ingestion of Rabbit ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Cadmium	1.07E-10			
Chromium	3.51E-08			
Thallium	1.24E-08			
Uranium	2.24E-09			
Acenaphthene	2.29E-11			
Anthracene	4.71E-11			
Benz(a)anthracene	2.44E-09	7.30E-01	1.78E-09	
Benzo(a)pyrene	6.59E-09	7.30E+00	4.81E-08	
Benzo(b)fluoranthene	1.16E-08	7.30E-01	8.47E-09	
Benzo(ghi)perylene	9.53E-09			
Benzo(k)fluoranthene	3.54E-08	7.30E-02	2.58E-09	
Chrysene	2.68E-09	7.30E-03	1.96E-11	
Di-n-butyl phthalate	7.29E-10			
Dibenz(a,h)anthracene	6.51E-09	7.30E+00	4.75E-08	
Fluoranthene	1.25E-09			
Fluorene	1.93E-11			
Indeno(1,2,3-cd)pyrene	1.08E-08	7.30E-01	7.90E-09	
PCB-1260	2.67E-07	2.00E+00	5.33E-07	
Phenanthrene	3.70E-10			
Polychlorinated biphenyl	6.61E-08	2.00E+00	1.32E-07	
Pyrene	1.07E-09			
Alpha activity				
Beta activity				
Cesium-137	3.95E+00	3.16E-11	1.25E-10	
Neptunium-237	4.68E-02	3.00E-10	1.40E-11	
Uranium-235	1.67E-02	4.70E-11	7.85E-13	
Uranium-238	4.05E-01	6.20E-11	2.51E-11	
Pathway Total				7.82E-07

---------- SECTOR=East PATHWAY=Recreational Child Ingestion of Venison .....

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Cadmium	1.15E-11			
Chromium	3.50E-09			
Thallium	1.21E-09			
Uranium	2.21E-10			
Acenaphthene	2.34E-12			
Anthracene	4.79E-12			
Benz(a)anthracene	2.41E-10	7.30E-01	1.76E-10	
Benzo(a)pyrene	6.47E-10	7.30E+00	4.73E-09	
Benzo(b)fluoranthene	1.14E-09	7.30E-01	8.32E-10	
Benzo(ghi)perylene	9.35E-10			
Benzo(k)fluoranthene	3.47E-09	7.30E-02	2.53E-10	
Chrysene	2.65E-10	7.30E-03	1.93E-12	
Di-n-butyl phthalate	7.30E-11			

Recreational Excess Lifetime Cancer Risks

---------- SECTOR-East PATHWAY=Recreational Child Ingestion of Venison ..... (continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Dibenz (a,h) anthracene	6.38E-10	7.30E+00	4.65E-09	
Fluoranthene	1.25E-10			
Fluorene	1.96E-12			
Indeno(1,2,3-cd) pyrene	1.06E-09	7.30E-01	7.75E-10	
PCB-1260	2.61E-08	2.00E+00	5.22E-08	
Phenanthrene	3.74E-11			
Polychlorinated biphenyl	6.51E-09	2.00E+00	1.30E-08	
Pyrene	1.07E-10			
Alpha activity				
Beta activity				
Cesium-137	4.11E-01	3.16E-11	1.30E-11	
Neptunium-237	4.71E-03	3.00E-10	1.41E-12	
Uranium-235	1.66E-03	4.70E-11	7.80E-14	
Uranium-238	4.03E-02	6.20E-11	2.50E-12	
Pathway Total				7.66E-08

---------- SECTOR=East PATHWAY=Recreational Teen Ingestion of Quail ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Cadmium	1.80E-09			
Chromium	2.93E-10			
Thallium	1.02E-10			
Uranium	6.303-08			
Acenaphthene				
Anthracene				
Benz (a) anthracene		7.30E-01		
Benzo(a) pyrene	3.03E-09	7.30E+00	2.21E-08	
Benzo(b) fluoranthene		7.30E-01		
Benzo(ghi) perylene				
Benzo(k) fluoranthene		7.30E-02		
Chrysene		7.30E-03		
Di-n-butyl phthalate				
Dibenz (a,h) anthracene		7.30E+00		
Fluoranthene				
Fluorene				
Indeno(1,2,3-cd) pyrene		7.30E-01		
PCB-1260	2.47E-08	2.00E+00	4.95E-08	
Phenanthrene	8.06E-10			
Polychlorinated biphenyl		2.00E+00		
Pyrene				
Alpha activity				
Beta activity				
Cesium-137		3.16E-11		
Neptunium-237	1.47E-03	3.00E-10	4.40E-13	
Uranium-235	1.04E+00	4.70E-11	4.89E-11	
Uranium-238	2.40E+01	6.20E-11	1.49E-09	
Pathway Total				7.31E-08

---------- SECTOR=East PATHWAY=Recreational Teen Ingestion of Rabbit .....

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Cadmium	1.79E-10			

Recreational Excess Lifetime Cancer Risks

SECTOR=East PATHWAY=Recreational Teen Ingestion of Rabbit (continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Chromium	5.89E-08			
Tha11ium	2.07E-08			
Uranium	3.75E-09			
Acenaphthene	3.84E-11			
Anthracene	7.89E-11			
Benz (a) anthracene	4.09E-09	7.30E-01	2.98E-09	
Benzo(a)pyrene	1.10E-08	7.30E+00	8.063-08	
Benzo(b)fluoranthene	1.94E-08	7.30E-01	1.42E-08	
Benzo(ghi)perylene	1.60E-08			
Benzo(k)fluoranthene	5.93E-08	7.30E-02	4.33E-09	
Chrysene	4.50E-09	7.30E-03	3.28E-11	
Di-n-butyl phthalate	1.22E-09			
Dibenz (a,h)anthracene	1.09E-08	7.30E+00	7.96E-08	
Fluoranthene	2.09E-09			
Fluorene	3.23E-11			
Indeno(1,2,3-cd)pyrene	1.81E-08	7.30E-01	1.32E-08	
PCB-1260	4.47E-07	2.00E+00	8.93E-07	
Phenanthrene	6.21E-10			
Polychlorinated biphenyl	1.11E-07	2.00E+00	2.22E-07	
Pyrene	1.79E-09			
Alpha activity				
Beta activity				
Cesium-137	1.96E+01	3.16E-11	6.21E-10	
Neptunium-237	2.32E-01	3.00E-10	6.97E-11	
Uranium-235	8.30E-02	4.70E-11	3.90E-12	
Uranium-238	2.01E+00	6.20E-11	1.25E-10	
Pathway Total				1.31E-06

SECTOR=East PATHWAY=Recreational Teen Ingestion of Venison

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Cadmium	3.54E-11			
Chromium	1.08E-08			
Thallium	3.73E-09			
Uranium	6.83E-10			
Acenaphthene	7.22E-12			
Anthracene	1.48E-11			
Benz(a)anthracene	7.42E-10	7.30E-01	5.41E-10	
Benzo(a)pyrene	2.00E-09	7.30E+00	1.46E-08	
Benzo(b)fluoranthene	3.52E-09	7.30E-01	2.57E-09	
Benzo(ghi)perylene	2.88E-09			
Benzo(k)fluoranthene	1.07E-08	7.30E-02	7.80E-10	
Chrysene	8.17E-10	7.30E-03	5.96E-12	
Di-n-butyl phthalate	2.25E-10			
Dibenz (a,h)anthracene	1.97E-09	7.30E+00	1.43E-08	
Fluoranthene	3.85E-10			
Fluorene	6.05E-12			
Indeno(1,2,3-cd)pyrene	3.27E-09	7.30E-01	2.39E-09	
PCB-1260	8.05E-08	2.00E+00	1.61E-07	
Phenanthrene	1.15E-10			
Polychlorinated biphenyl	2.01E-08	2.00E+00	4.01E-08	
Pyrene	3.30E-10			
Alpha activity				
Beta activity				
Cesium-137	3.76E+00	3.16E-11	1.19E-10	
Neptunium-237	4.30E-02	3.00E-10	1.29E-11	

Recreational Excess Lifetime Cancer Risks

---------- SECTOR=East PATHWAY=Recreational Teen Ingestion of Venison ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Uranium-235	1.52E-02	4.70E-11	7.13E-13	
Uranium-238	3.68E-01	6.20E-11	2.28E-11	
Pathway Total				2.36E-07

..... SECTOR=Far East/Northeast PATHWAY=Recreational Adult Ingestion of Quail ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	8.61E-07			
Antimony	7.08E-12			
Chromium	4.30E-09			
uranium	1.16E-06			
Benz(a)anthracene		7.30E-01		
Benzo(a)pyrene	2.933-09	7.30E+00	2.14E-08	
Benzo(b)fluoranthene		7.30E-01		
Benzo(k)fluoranthene		7.30E-02		
Chrysene		7.30E-03		
Fluoranthene				
PCB-1260	8.07E-10	2.00E+00	1.61E-09	
Phenanthrene	5.34E-10			
Polychlorinated biphenyl		2.00E+00		
Pyrene				
Alpha activity				
Beta activity				
Uranium-235	4.07E+01	4.70E-11	1.91E-09	
Uranium-238	7.17E+02	6.20E-11	4.44E-08	
Pathway Total				6.93E-08

---------- SECTOR=Far East/Northeast PATHWAY=Recreational Adult Ingestion of Rabbit ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	1.11E-04			
Antimony	7.09E-10			
Chromium	5.56E-07			
uranium	4.45E-08			
Benz(a)anthracene	2.80E-09	7.30E-01	2.04E-09	
Benzo(a)pyrene	6.86E-09	7.30E+00	5.01E-08	
Benzo(b)fluoranthene	6.86E-09	7.30E-01	5.01E-09	
Benzo(k)fluoranthene	4.21E-08	7.30E-02	3.07E-09	
Chrysene	2.80E-09	7.30E-03	2.04E-11	
Fluoranthene	1.04E-09			
PCB-1260	9.37E-09	2.00E+00	1.87E-08	
Phenanthrene	2.64E-10			
Polychlorinated biphenyl	7.67E-10	2.00E+00	1.53E-09	
Pyrene	5.93E-10			
Alpha activity				
Beta activity				
Uranium-235	2.09E+00	4.70E-11	9.82E-11	
Uranium-238	3.87E+01	6.20E-11	2.40E-09	
Pathway Total				8.30E-08

Recreational Excess Lifetime Cancer Risks

---------- SECTOR=Far East/Northeast PATHWAY=Recreational Adult Ingestion of Venison ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	1.58E-05			
Antimony	1.03E-10			
Chromium	8.08E-08			
Uranium	6.42E-09			
Benz(a)anthracene	4.03E-10	7.30E-01	2.94E-10	
Benzo(a)pyrene	9.85E-10	7.30E+00	7.19E-09	
Benzo(b)fluoranthene	9.85E-10	7.30E-01	7.19E-10	
Benzo(k)fluoranthene	6.03E-09	7.30E-02	4.40E-10	
Chrysene	4.03E-10	7.30E-03	2.94E-12	
Fluoranthene	1.52E-10			
PCB-1260	1.34E-09	2.00E+00	2.68E-09	
Phenanthrene	3.90E-11			
Polychlorinated biphenyl	1.10E-10	2.00E+00	2.20E-10	
Pyrene	8.67E-11			
Alpha activity				
Beta activity				
Uranium-235	3.03E-01	4.70E-11	1.42E-11	
Uranium-238	5.63E+00	6.20E-11	3.49E-10	
Pathway Total				1.19E-08

---------- SECTOR=Far East/Northeast PATHWAY=Recreational Child Ingestion of Quail ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	2.27E-07			
Antimony	1.87E-12			
Chromium	1.13E-09			
Uranium	3.05E-07			
Benz(a)anthracene		7.30E-01		
Benzo(a)pyrene	7.71E-10	7.30E+00	5.63E-09	
Benzo(b)fluoranthene		7.30E-01		
Benzo(k)fluoranthene		7.30E-02		
Chrysene		7.30E-03		
Fluoranthene				
PCB-1260	2.12E-10	2.00E+00	4.25E-10	
Phenanthrene	1.41E-10			
Polychlorinated biphenyl		2.00E+00		
Pyrene				
Alpha activity				
Beta activity				
Uranium-235	2.22E+00	4.70E-11	1.04E-10	
Uranium-238	3.91E+01	6.20E-11	2.42E-09	
Pathway Total				8.58E-09

---------- SECTOR=Far East/Northeast PATHWAY=Recreational Child Ingestion of Rabbit ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	2.91E-05			
Antimony	1.87E-10			
Chromium	1.46E-07			
Uranium	1.17E-08			
Benz(a)anthracene	7.37E-10	7.30E-01	5.38E-10	
Benzo(a)pyrene	1.81E-09	7.30E+00	1.32E-08	
Benzo(b)fluoranthene	1.81E-09	7.30E-01	1.32E-09	

Recreational Excess Lifetime Cancer Risks

..... SECTOR=Far East/Northeast PATHWAY=Recreational Child Ingestion Of Rabbit ..... (continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Benzo(k)fluoranthene	1.11E-08	7.30E-02	8.10E-10	
Chrysene	7.37E-10	7.30E-03	5.38E-12	
Fluoranthene	2.75E-10			
PCB-1260	2.47E-09	2.00E+00	4.93E-09	
Phenanthrene	6.96E-11			
Polychlorinated biphenyl	2.02E-10	2.00E+00	4.04E-10	
Pyrene	1.56E-10			
Alpha activity				
Beta activity				
Uranium-235	1.14E-01	4.70E-11	5.36E-12	
Uranium-238	2.11E+00	6.20E-11	1.31E-10	
Pathway Total				2.13E-08

---------- SECTOR=Far East/Northeast PATHWAY=Recreational Child Ingestion of Venison ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	4.56E-06			
Antimony	2.98E-11			
chromium	2.33E-08			
Uranium	1.85E-09			
Benz(a)anthracene	1.16E-10	7.30E-01	8.48E-11	
Benzo(a)pyrene	2.84E-10	7.30E+00	2.07E-09	
Benzo(b)fluoranthene	2.84E-10	7.30E-01	2.07E-10	
Benzo(k)fluoranthene	1.74E-09	7.30E-02	1.27E-10	
Chrysene	1.16E-10	7.30E-03	8.48E-13	
Fluoranthene	4.39E-11			
PCB-1260	3.86E-10	2.00E+00	7.72E-10	
Phenanthrene	1.12E-11			
Polychlorinated biphenyl	3.17E-11	2.00E+00	6.35E-11	
Pyrene	2.50E-11			
Alpha activity				
Beta activity				
Uranium-235	1.81E-02	4.70E-11	8.49E-13	
Uranium-238	3.36E-01	6.20E-11	2.08E-11	
Pathway Total				3.35E-09

---------- SECTOR=Far East/Northeast PATHWAY=Recreational Teen Ingestion of Quail ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	3.91E-07			
Antimony	3.21E-12			
chromium	1.95E-09			
Uranium	5.26E-07			
Benz(a)anthracene		7.30E-01		
Benzo(a)pyrene	1.33E-09	7.30E+00	9.69E-09	
Benzo(b)fluoranthene		7.30E-01		
Benzo(k)fluoranthene		7.30E-02		
Chrysene		7.30E-03		
Fluoranthene				
PCB-1260	3.66E-10	2.00E+00	7.31E-10	
Phenanthrene	2.42E-10			
Polychlorinated biphenyl		2.00E+00		

Recreational Excess Lifetime Cancer Risks

..... SECTOR=Far East/Northeast PATHWAY=Recreational Teen Ingestion of Quail ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Pyrene				
Alpha activity				
Beta activity				
Uranium-235	1.13E+01	4.70E-11	5.33E-10	
Uranium-238	2.00E+02	6.20E-11	1.24E-08	
Pathway Total				2.33E-08

---------- SECTOR=Far East/Northeast PATHWAY=Recreational Teen Ingestion of Rabbit .....

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	4.88E-05			
Antimony	3.13E-10			
Chromium	2.45E-07			
Uranium	1.96E-08			
Benz(a)anthracene	1.23E-09	7.30E-01	9.01E-10	
Benzo(a)pyrene	3.03E-09	7.30E+00	2.21E-08	
Benzo(b)fluoranthene	3.03E-09	7.30E-01	2.21E-09	
Benzo(k)fluoranthene	1.86E-08	7.30E-02	1.36E-09	
Chrysene	1.23E-09	7.30E-03	9.01E-12	
Fluoranthene	4.60E-10			
PCB-1260	4.13E-09	2.00E+00	8.27E-09	
Phenanthrene	1.17E-10			
Polychlorinated biphenyl	3.39E-10	2.00E+00	6.77E-10	
Pyrene	2.62E-10			
Alpha activity				
Beta activity				
Uranium-235	5.66E-01	4.70E-11	2.66E-11	
Uranium-238	1.05E+01	6.20E-11	6.51E-10	
Pathway Total				3.62E-08

---------- SECTOR=Far East/Northeast PATHWAY=Recreational Teen Ingestion of Venison ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	1.41E-05			
Antimony	9.18E-11			
Chromium	7.17E-08			
Uranium	5.70E-09			
Benz(a)anthracene	3.58E-10	7.30E-01	2.61E-10	
Benzo(a)pyrene	8.75E-10	7.30E+00	6.39E-09	
Benzo(b)fluoranthene	8.75E-10	7.30E-01	6.39E-10	
Benzo(k)fluoranthene	5.35E-09	7.30E-02	3.91E-10	
Chrysene	3.58E-10	7.30E-03	2.61E-12	
Fluoranthene	1.35E-10			
PCB-1260	1.19E-09	2.00E+00	2.38E-09	
Phenanthrene	3.46E-11			
Polychlorinated biphenyl	9.79E-11	2.00E+00	1.96E-10	
Pyrene	7.70E-11			
Alpha activity				
Beta activity				
Uranium-235	1.65E-01	4.70E-11	7.77E-12	
Uranium-238	3.07E+00	6.20E-11	1.90E-10	
Pathway Total				1.05E-08

Recreational Excess Lifetime Cancer Risks

---------- SECTOR=Far North/Northwest PATHWAY=Recreational Adult Ingestion of Quail ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Antimony	3.42E-12			
Beryllium	3.51E-11	4.30E+00	1.51E-10	
Cadmium	2.73E-08			
Chromium	1.13E-08			
Thallium	4.88E-10			
Uranium	6.12E-07			
Acenaphthene				
Anthracene		7.30E-01		
Benz(a)anthracene	2.05E-08	7.30E+00	1.50E-07	
Benzo(a)pyrene		7.30E-01		
Benzo(b)fluoranthene				
Benzo(ghi)perylene		7.30E-02		
Benzo(k)fluoranthene		1.40E-02		
Bis(2-ethylhexyl)phthalate		7.30E-03		
Chrysene				
Di-n-butyl phthalate				
Fluoranthene				
Fluorene		7.30E-01		
Indeno(1,2,3-cd)pyrene	5.40E-09			
Phenanthrene				
Pyrene				
Alpha activity				
Beta activity				
Neptunium-237	6.88E-02	3.00E-10	2.06E-11	
Uranium-235	1.63E+01	4.70E-11	7.65E-10	
Uranium-238	3.79E+02	6.20E-11	2.35E-08	
Pathway Total				1.743-07

---------- SECTOR=Far North/Northwest PATHWAY=Recreational Adult Ingestion of Rabbit ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Antimony	3.42E-10			
Beryllium	3.75E-09	4.30E+00	1.61E-08	
Cadmium	1.74E-09			
Chromium	1.45E-06			
Thallium	6.40E-08			
Uranium	2.35E-08			
Acenaphthene	1.83E-10			
Anthracene	7.10E-10			
Benz(a)anthracene	2.38E-08	7.30E-01	1.74E-08	
Benzo(a)pyrene	4.81E-08	7.30E+00	3.51E-07	
Benzo(b)fluoranthene	4.463-08	7.30E-01	3.26E-08	
Benzo(ghi)perylene	6.94E-08			
Benzo(k)fluoranthene	2.44E-07	7.30E-02	1.78E-08	
Bis(2-ethylhexyl)phthalate	9.83E-10	1.40E-02	1.38E-11	
Chrysene	2.45E-08	7.30E-03	1.79E-10	
Di-n-butyl phthalate	4.92E-10			
Fluoranthene	1.03E-08			
Fluorene	2.22E-10			
Indeno(1,2,3-cd)pyrene	7.47E-08	7.30E-01	5.45E-08	
Phenanthrene	2.68E-09			
Pyrene	4.81E-09			
Alpha activity				
Beta activity				
Neptunium-237	7.01E+00	3.00E-10	2.10E-09	
Uranium-235	8.36E-01	4.70E-11	3.93E-11	
Uranium-238	2.05E+01	6.20E-11	1.27E-09	

Recreational Excess Lifetime Cancer Risks

..... SECTOR=Far North/Northwest PATHWAY=Recreational Adult Ingestion of Rabbit ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Pathway Total				4.93E-07

---------- SECTOR=Far North/Northwest PATHWAY=Recreational Adult Ingestion of Venison ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Antimony	4.99E-11			
Beryllium	5.38E-10	4.30E+00	2.31E-09	
Cadmium	2.74E-10			
Chromium	2.11E-07			
Thallium	9.16E-09			
Uranium	3.39E-09			
Acenaphthene	2.72E-11			
Anthracene	1.05E-10			
Benz(a)anthracene	3.43E-09	7.30E-01	2.50E-09	
Benzo(a)pyrene	6.90E-09	7.30E+00	5.04E-08	
Benzo(b)fluoranthene	6.41E-09	7.30E-01	4.68E-09	
Benzo(ghi)perylene	9.93E-09			
Benzo(k)fluoranthene	3.50E-08	7.30E-02	2.55E-09	
Bis(2-ethylhexyl)phthalate	1.44E-10	1.40E-02	2.01E-12	
Chrysene	3.53E-09	7.30E-03	2.58E-11	
Di-n-butyl phthalate	7.19E-11			
Fluoranthene	1.51E-09			
Fluorene	3.30E-11			
Indeno(1,2,3-cd)pyrene	1.07E-08	7.30E-01	7.81E-09	
Phenanthrene	3.95E-10			
Pyrene	7.03E-10			
Alpha activity				
Beta activity				
Neptunium-237	1.03E+00	3.00E-10	3.09E-10	
Uranium-235	1.21E-01	4.70E-11	5.70E-12	
Uranium-238	2.97E+00	6.20E-11	1.84E-10	
Pathway Total				7.07E-08

---------- SECTOR=Far North/Northwest PATHWAY=Recreational Child Ingestion of Quail ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Antimony	9.01E-13			
Beryllium	9.25E-12	4.30E+00	3.98E-11	
Cadmium	7.19E-09			
Chromium	2.96E-09			
Thallium	1.29E-10			
Uranium	1.61E-07			
Acenaphthene				
Anthracene				
Benz(a)anthracene		7.30E-01		
Benzo(a)pyrene	5.40E-09	7.30E+00	3.94E-08	
Benzo(b)fluoranthene		7.30E-01		
Benzo(ghi)perylene				
Benzo(k)fluoranthene		7.30E-02		
Bis(2-ethylhexyl)phthalate		1.40E-02		
Chrysene		7.30E-03		
Di-n-butyl phthalate				

Recreational Excess Lifetime Cancer Risks

---------- SECTOR=Far North/Northwest PATHWAY=Recreational Child Ingestion of Quail (continued) ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Fluoranthene				
Fluorene				
Indeno(1,2,3-cd)pyrene		7.30E-01		
Phenanthrene	1.42E-09			
Pyrene				
Alpha activity				
Beta activity				
Neptunium-237	3.75E-03	3.00E-10	1.13E-12	
Uranium-235	8.88E-01	4.70E-11	4.17E-11	
Uranium-238	2.07E+01	6.20E-11	1.28E-09	
Pathway Total				4 08E-08

---------- SECTOR=Far North/Northwest PATHWAY=Recreational Child Ingestion of Rabbit ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Antimony	9.01E-11			
Beryllium	9.88E-10	4.30E+00	4.25E-09	
Cadmium	4.59E-10			
Chromium	3.83E-07			
Thallium	1.69E-08			
Uranium	6.18E-09			
Acenaphthene	4.81E-11			
Anthracene	1.87E-10			
Benz(a)anthracene	6.26E-09	7.30E-01	4.57E-09	
Benzo(a)pyrene	1.27E-08	7.30E+00	9.24E-08	
Benzo(b)fluoranthene	1.17E-08	7.30E-01	8.58E-09	
Benzo(ghi)perylene	1.83E-08			
Benzo(k)fluoranthene	6.43E-08	7.30E-02	4.70E-09	
Bis(2-ethylhexyl)phthalate	2.59E-10	1.40E-02	3.62E-12	
Chrysene	6.45E-09	7.30E-03	4.71E-11	
Di-n-butyl phthalate	1.29E-10			
Fluoranthene	2.72E-09			
Fluorene	5.84E-11			
Indeno(1,2,3-cd)pyrene	1.97E-08	7.30E-01	1.44E-08	
Phenanthrene	7.05E-10			
Pyrene	1.27E-09			
Alpha activity				
Beta activity				
Neptunium-237	3.83E-01	3.00E-10	1.15E-10	
Uranium-235	4.56E-02	4.70E-11	2.14E-12	
Uranium-238	1.12E+00	6.20E-11	6.92E-11	
Pathway Total				1.29E-07

---------- SECTOR=Far North/Northwest PATHWAY=Recreational Child Ingestion of Venison ----------

Analyte	carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Antimony	1.44E-11			
Beryllium	1.55E-10	4.30E+00	6.67E-10	
Cadmium	7.90E-11			
Chromium	6.09E-08			
Thallium	2.64E-09			
Uranium	9.75E-10			

Recreational Excess Lifetime Cancer Risks

---------- SECTOR=Far North/Northwest PATHWAY-Recreational Child Ingestion Of Venison .....
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	.Total Pathway Risk
Acenaphthene	7.84E-12			
Anthracene	3.04E-11			
Benz(a)anthracene	9.87E-10	7.30E-01	7.21E-10	
Benzo(a)pyrene	1.99E-09	7.30E+00	1.45E-08	
Benzo(b)fluoranthene	1.84E-09	7.30E-01	1.35E-09	
Benzo(ghi)perylene	2.86E-09			
Benzo(k)fluoranthene	1.01E-08	7.30E-02	7.35E-10	
Bis(2-ethylhexyllphthalate	4.14E-11	1.40E-02	5.79E-13	
Chrysene	1.02E-09	7.30E-03	7.42E-12	
Di-n-butyl phthalate	2.07E-11			
Fluoranthene	4.35E-10			
Fluorene	9.49E-12			
Indeno(1,2,3-cd)pyrene	3.08E-09	7.30E-01	2.25E-09	
Phenanthrene	1.14E-10			
Pyrene	2.03E-10			
Alpha activity				
Beta activity				
Neptunium-237	6.15E-02	3.00E-10	1.85E-11	
Uranium-235	7.23E-03	4.70E-11	3.40E-13	
Uranium-238	1.77E-01	6.20E-11	1.10E-11	
Pathway Total				2.03E-08

---------- SECTOR=Far North/Northwest PATHWAY=Recreational Teen Ingestion Of Quail .....

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Antimony	1.55E-12			
Beryllium	1.59E-11	4.30E+00	6.85E-11	
Cadmium	1.24E-08			
Chromium	5.10E-09			
Thallium	2.21E-10			
Uranium	2.77E-07			
Acenaphthene				
Anthracene				
Benz(a)anthracene		7.30E-01		
Benzo(a)pyrene	9.30E-09	7.30E+00	6.79E-08	
Benzo(b)fluoranthene		7.30E-01		
Benzo(ghi)perylene				
Benzo(k)fluoranthene		7.30E-02		
Bis(2-ethylhexyl)phthalate		1.40E-02		
Chrysene		7.30E-03		
Di-n-butyl phthalate				
Fluoranthene				
Fluorene				
Indeno(1,2,3-cd)pyrene		7.30E-01		
Phenanthrene	2.45E-09			
Pyrene				
Alpha activity				
Beta activity				
Neptunium-237	1.92E-02	3.00E-10	5.75E-12	
Uranium-235	4.53E+00	4.70E-11	2.13E-10	
Uranium-238	1.06E+02	6.20E-11	6.54E-09	
Pathway Total				7.47E-08

Recreational Excess Lifetime Cancer Risks

---------- SECTOR=Far North/Northwest PATHWAY=Recreational Teen Ingestion of Rabbit ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Antimony	1.51E-10			
Beryllium	1.66E-09	4.30E+00	7.12E-09	
Cadmium	7.69E-10			
Chromium	6.42E-07			
Thallium	2.82E-08			
Uranium	1.03E-08			
Acenaphthene	8.05E-11			
Anthracene	3.13E-10			
Benz(a)anthracene	1.05E-08	7.30E-01	7.66E-09	
Benzo(a)pyrene	2.12E-08	7.30E+00	1.55E-07	
Benzo(b)fluoranthene	1.97E-08	7.30E-01	1.44E-08	
Benzo(ghi)perylene	3.06E-08			
Benzo(k)fluoranthene	1.08E-07	7.30E-02	7.87E-09	
Bis(2-ethylhexyl)phthalate	4.34E-10	1.40E-02	6.07E-12	
Chrysene	1.08E-08	7.30E-03	7.89E-11	
Di-n-butyl phthalate	2.17E-10			
Fluoranthene	4.55E-09			
Fluorene	9.79E-11			
Indeno(1,2,3-cd)pyrene	3.30E-08	7.30E-01	2.41E-08	
Phenanthrene	1.18E-09			
Pyrene	2.12E-09			
Alpha activity				
Beta activity				
Neptunium-237	1.90E+00	3.00E-10	5.70E-10	
Uranium-235	2.26E-01	4.70E-11	1.06E-11	
Uranium-238	5.55E+00	6.20E-11	3.44E-10	
Pathway Total				2.17E-07

---------- SECTOR=Far North/Northwest PATHWAY=Recreational Teen Ingestion of Venison ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Antimony	4.43E-11			
Beryllium	4.78E-10	4.30E+00	2.05E-09	
Cadmium	2.44E-10			
Chromium	1.88E-07			
Thallium	8.13E-09			
Uranium	3.01E-09			
Acenaphthene	2.42E-11			
Anthracene	9.36E-11			
Benz(a)anthracene	3.04E-09	7.30E-01	2.22E-09	
Benzo(a)pyrene	6.13E-09	7.30E+00	4.47E-08	
Benzo(b)fluoranthene	5.69E-09	7.30E-01	4.15E-09	
Benzo(ghi)perylene	8.82E-09			
Benzo(k)fluoranthene	3.10E-08	7.30E-02	2.27E-09	
Bis(2-ethylhexyl)phthalate	1.28E-10	1.40E-02	1.79E-12	
Chrysene	3.13E-09	7.30E-03	2.29E-11	
Di-n-butyl phthalate	6.38E-11			
Fluoranthene	1.34E-09			
Fluorene	2.93E-11			
Indeno(1,2,3-cd)pyrene	9.50E-09	7.30E-01	6.94E-09	
Phenanthrene	3.51E-10			
Pyrene	6.25E-10			
Alpha activity				
Beta activity				
Neptunium-237	5.63E-01	3.00E-10	1.69E-10	
Uranium-235	6.61E-02	4.70E-11	3.11E-12	
Uranium-238	1.62E+00	6.20E-11	1.01E-10	

Recreational Excess Lifetime Cancer Risks

---------- SECTOR=Far North/Northwest PATHWAY=Recreational Teen Ingestion of Venison ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Pathway Total				6.26E-08

---------- SECTOR=Northeast PATHWAY=Recreational Adult Ingestion of Quail ....

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Chromium	1.54E-09			
Uranium	1.18E-07			
Zinc				
Acenaphthene				
Anthracene				
Benz(a)anthracene		7.30E-01		
Benzo(a)pyrene	4.24E-09	7.30E+00	3.10E-08	
Benzo(b)fluoranthene		7.30E-01		
Benzo(ghi)perylene				
Benzo(k)fluoranthene		7.30E-02		
Chrysene		7.30E-03		
Fluoranthene				
Indeno(1,2,3-cd)pyrene		7.30E-01		
PCB-1260	1.20E-09	2.00E+00	2.39E-09	
Phenanthrene	1.21E-09			
Polychlorinated biphenyl		2.00E+00		
Pyrene				
Alpha activity				
Beta activity				
Uranium-235	3.14E+00	4.70E-11	1.48E-10	
Uranium-238	7.32E+01	6.20E-11	4.54E-09	
Pathway Total				3.80E-08

---------- SECTOR-Northeast PATHWAY=Recreational Adult Ingestion of Rabbit .....

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Chromium	3.18E-07			
Uranium	7.233-09			
Zinc	4.75E-05			
Acenaphthene	4.50E-11			
Anthracene	1.09E-10			
Benz(a)anthracene	7.55E-09	7.30E-01	5.51E-09	
Benzo(a)pyrene	1.59E-08	7.30E+00	1.16E-07	
Benzo(b)fluoranthene	2.28E-08	7.30E-01	1.66E-08	
Benzo(ghi)perylene	2.80E-08			
Benzo(k)fluoranthene	7.27E-08	7.30E-02	5.313-09	
Chrysene	8.63E-09	7.30E-03	6.30E-11	
Fluoranthene	3.26E-09			
Indeno(1,2,3-cd)pyrene	2.96E-08	7.30E-01	2.16E-08	
PCB-1260	2.22E-08	2.00E+00	4.44E-08	
Phenanthrene	9.58E-10			
Polychlorinated biphenyl	1.82E-09	2.00E+00	3.63E-09	
Fyrene	2.58E-09			
Alpha activity				
Beta activity				
Uranium-235	2.58E-01	4.70E-11	1.21E-11	
Uranium-238	6.31E+00	6.20E-11	3.91E-10	

Recreational Excess Lifetime Cancer Risks

..... SECTOR=Northeast PATHWAY=Recreational Adult Ingestion Of Rabbit ..... (continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Pathway Total				2.13E-07

..... SECTOR=Northeast PATHWAY=Recreational Adult Ingestion Of Venison ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Chromium	2.90E-08			
Uranium	6.54E-10			
Zinc	4.76E-06			
Acenaphthene	4.21E-12			
Anthracene	1.02E-11			
Benz (a) anthracene	6.81E-10	7.30E-01	4.97E-10	
Benzo (a) pyrene	1.43E-09	7.30E+00	1.04E-08	
Benzo(b) fluoranthene	2.05E-09	7.30E-01	1.49E-09	
Benzo(ghi)perylene	2.51E-09			
Benzo(k) fluoranthene	6.52E-09	7.30E-02	4.76E-10	
Chrysene	7.78E-10	7.30E-03	5.683-12	
Fluoranthene	2.98E-10			
Indeno(1,2,3-cd)pyrene	2.66E-09	7.30E-01	1.94E-09	
PCB-1260	1.99E-09	2.00E+00	3.97E-09	
Phenanthrene	8.85E-11			
Polychlorinated biphenyl	1.63E-10	2.00E+00	3.273-10	
Pyrene	2.36E-10			
Alpha activity				
Beta activity				
Uranium-235	2.34E-02	4.70E-11	1.10E-12	
Uranium-238	5.74E-01	6.20E-11	3.56E-11	
Pathway Total				1.92E-08

---------- SECTOR=Northeast PATHWAY=Recreational Child Ingestion of Quail .....

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
chromium	4.06E-10			
uranium	3.11E-08			
Zinc				
Acenaphthene				
Anthracene				
Benz(a)anthracene		7.30E-01		
Benzo (a)pyrene	1.12E-09	7.30E+00	8.15E-09	
Benzo(b) fluoranthene		7.3OE-01		
Benzo(ghi)perylene				
Benzo(k) fluoranthene		7.30E-02		
Chrysene		7.30E-03		
Fluoranthene				
Indeno(1,2,3-cd)pyrene		7.30E-01		
PCB-1260	3.15E-10	2.00E+00	6.30E-10	
Phenanthrene	3.19E-10			
Polychlorinated biphenyl		2.00E+00		
Pyrene				
Alpha activity				
Beta activity				
Uranium-235	1.71E-01	4.70E-11	8.05E-12	
Uranium-238	3.99E+00	6.20E-11	2.47E-10	

Recreational Excess Lifetime Cancer Risks

..... SECTOR=Northeast PATHWAY=Recreational Child Ingestion Of Quail ..... (continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Pathway Total				9.04E-09

..... SECTOR=Northeast PATHWAY=Recreational Child Ingestion Of Rabbit ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Chromium	8.38E-08			
Uranium	1.90E-09			
Zinc	1.25E-05			
Acenaphthene	1.19E-11			
Anthracene	2.88E-11			
Benz(a)anthracene	1.99E-09	7.30E-01	1.45E-09	
Benzo(a)pyrene	4.18E-09	7.30E+00	3.05E-08	
Benzo(b)fluoranthene	5.99E-09	7.30E-01	4.37E-09	
Benzo(ghi)perylene	7.37E-09			
Benzo(k)fluoranthene	1.91E-08	7.30E-02	1.40E-09	
Chrysene	2.27E-09	7.30E-03	1.66E-11	
Fluoranthene	8.58E-10			
Indeno(1,2,3-cd)pyrene	7.80E-09	7.30E-01	5.69E-09	
PCB-1260	5.84E-09	2.00E+00	1.17E-08	
Phenanthrene	2.52E-10			
Polychlorinated biphenyl	4.78E-10	2.00E+00	9.56E-10	
Pyrene	6.78E-10			
Alpha activity				
Beta activity				
Uranium-235	1.41E-02	4.70E-11	6.60E-13	
Uranium-238	3.44E-01	6.20E-11	2.13E-11	
Pathway Total				5.61E-08

---------- SECTOR=Northeast PATHWAY=Recreational Child Ingestion Of Venison .....

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Chromium	8.34E-09			
Uranium	1.88E-10			
Zinc	1.37E-06			
Acenaphthene	1.21E-12			
Anthracene	2.93E-12			
Benz(a)anthracene	1.96E-10	7.30E-01	1.43E-10	
Benzo(a)pyrene	4.11E-10	7.30E+00	3.00E-09	
Benzo(b)fluoranthene	5.89E-10	7.30E-01	4.30E-10	
Benzo(ghi)perylene	7.22E-10			
Benzo(k)fluoranthene	1.88E-09	7.30E-02	1.37E-10	
Chrysene	2.24E-10	7.30E-03	1.64E-12	
Fluoranthene	8.59E-11			
Indeno(1,2,3-cd)pyrene	7.65E-10	7.30E-01	5.58E-10	
PCB-1260	5.72E-10	2.00E+00	1.14E-09	
Phenanthrene	2.55E-11			
Polychlorinated biphenyl	4.70E-11	2.00E+00	9.41E-11	
Pyrene	6.79E-11			
Alpha activity				
Beta activity				
Uranium-235	1.40E-03	4.70E-11	6.56E-14	
Uranium-238	3.43E-02	6.20E-11	2.12E-12	

Recreational Excess Lifetime Cancer Risks

..... SECTOR=Northeast PATHWAY=Recreational Child Ingestion of Venison ..... (continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Pathway Total				5.51E-09

---------- SECTOR=Northeast PATHWAY=Recreational Teen Ingestion of Quail ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Chromium	6.99E-10			
Uranium	5.35E-08			
Zinc				
Acenaphthene				
Anthracene				
Benz(a)anthracene		7.30E-01		
Benzo(a)pyrene	1.92E-09	7.30E+00	1.40E-08	
Benzo(b)fluoranthene		7.3 OE-01		
Benzo(ghi)perylene				
Benzo(k)fluoranthene		7.30E-02		
Chrysene		7.30E-03		
Fluoranthene				
Indeno(1,2,3-cd)pyrene		7.30E-01		
PCB-1260	5.42E-10	2.00E+00	1.08E-09	
Phenanthrene	5.49E-10			
Polychlorinated biphenyl		2.00E+00		
Pyrene				
Alpha activity				
Beta activity				
Uranium-235	8.75E-01	4.70E-11	4.11E-11	
Uranium-238	2.04E+01	6.20E-11	1.26E-09	
Pathway Total				1.64E-08

---------- SECTOR=Northeast PATHWAY=Recreational Teen Ingestion of Rabbit ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Chromium	1.40E-07			
Uranium	3.19E-09			
Zinc	2.10E-05			
Acenaphthene	1.99E-11			
Anthracene	4.83E-11			
Benz(a)anthracene	3.33E-09	7.30E-01	2.43E-09	
Benzo(a)pyrene	7.01E-09	7.30E+00	5.11E-08	
Benzo(b)fluoranthene	1.00E-08	7.30E-01	7.33E-09	
Benzo(ghi)perylene	1.23E-08			
Benzo(k)fluoranthene	3.21E-08	7.30E-02	2.34E-09	
Chrysene	3.81E-09	7.30E-03	2.78E-11	
Fluoranthene	1.44E-09			
Indeno(1,2,3-cd)pyrene	1.31E-08	7.30E-01	9.54E-09	
PCB-1260	9.79E-09	2.00E+00	1.96E-08	
Phenanthrene	4.23E-10			
Polychlorinated biphenyl	8.01E-10	2.00E+00	1.60E-09	
Pyrene	1.14E-09			
Alpha activity				
Beta activity				
Uranium-235	6.98E-02	4.70E-11	3.28E-12	
Uranium-238	1.71E+00	6.20E-11	1.06E-10	

Recreational Excess Lifetime Cancer Risks

..... SECTOR=Northeast PATHWAY=Recreational Teen Ingestion of Rabbit .....
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Pathway Total				9.41E-08

---------- SECTOR=Northeast PATHWAY=Recreational Teen Ingestion of Venison .....

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
chromium	2.57E-08			
Uranium	5.80E-10			
Zinc	4.23E-06			
Acenaphthene	3.73E-12			
Anthracene	9.04E-12			
Benz(a)anthracene	6.05E-10	7.30E-01	4.41E-10	
Benzo(a)pyrene	1.27E-09	7.30E+00	9.25E-09	
Benzo(b)fluoranthene	1.82E-09	7.30E-01	1.33E-09	
Benzo(ghi)perylene	2.23E-09			
Benzo(k)fluoranthene	5.79E-09	7.30E-02	4.22E-10	
Chrysene	6.91E-10	7.30E-03	5.05E-12	
Fluoranthene	2.65E-10			
Indeno(1,2,3-cd)pyrene	2.36E-09	7.30E-01	1.72E-09	
PCB-1260	1.76E-09	2.00E+00	3.53E-09	
Phenanthrene	7.86E-11			
Polychlorinated biphenyl	1.45E-10	2.00E+00	2.90E-10	
Pyrene	2.09E-10			
Alpha activity				
Beta activity				
Uranium-235	1.28E-02	4.70E-11	6.00E-13	
Uranium-238	3.13E-01	6.20E-11	1.94E-11	
Pathway Total				1.70E-08

---------- SECTOR=Northwest PATHWAY=Recreational Adult Ingestion of Quail .....

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Antimony	2.21E-13			
Beryllium	3.72E-12	4.30E+00	1.60E-11	
Cadmium	4.18E-09			
Chromium	1.89E-09			
Iron	1.17E-04			
Lead	6.07E-11			
Vanadium	3.91E-10			
Benz(a)anthracene		7.30E-01		
Benzo(a)pyrene	6.62E-09	7.30E+00	4.83E-08	
Benzo(b)fluoranthene		7.30E-01		
Benzo(k)fluoranthene		7.30E-02		
Chrysene		7.30E-03		
Fluoranthene				
Pyrene				
Alpha activity				
Beta activity				
Uranium-238	5.96E+01	6.20E-11	3.70E-09	
Pathway Total				5.20E-08

Recreational Excess Lifetime Cancer Risks

---------- SECTOR=Northwest PATHWAY-Recreational Adult Ingestion of Rabbit ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte specific	Total Pathway Risk
Antimony	3.53E-11			
Beryllium	6.35E-10	4.30E+00	2.73E-09	
Cadmium	4.26E-10			
Chromium	3.91E-07			
Iron	4.79E-04			
Lead	1.28E-08			
Vanadium	7.99E-08			
Benz(a)anthracene	7.58E-09	7.30E-01	5.53E-09	
Benzo(a)pyrene	2.48E-08	7.30E+00	1.81E-07	
Benzo(b)fluoranthene	3.28E-08	7.30E-01	2.39E-08	
Benzo(k)fluoranthene	9.13E-08	7.30E-02	6.66E-09	
Chrysene	7.33E-09	7.30E-03	5.35E-11	
Fluoranthene	1.77E-09			
Pyrene	1.77E-09			
Alpha activity				
Beta activity				
Uranium-238	5.14E+00	6.20E-11	3.19E-10	
Pathway Total				2.20E-07

---------- SECTOR=Northwest PATHWAY=Recreational Adult Ingestion of Venison ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Antimony	3.23E-12			
Beryllium	5.70E-11	4.30E+00	2.45E-10	
Cadmium	4.20E-11			
chromium	3.56E-08			
Iron	4.30E-05			
Lead	1.18E-09			
Vanadium	7.16E-09			
Benz(a)anthracene	6.84E-10	7.30E-01	4.99E-10	
Benzo(a)pyrene	2.23E-09	7.30E+00	1.63E-08	
Benzo(b)fluoranthene	2.94E-09	7.30E-01	2.15E-09	
Benzo(k)fluoranthene	8.18E-09	7.30E-02	5.97E-10	
Chrysene	6.61E-10	7.30E-03	4.82E-12	
Fluoranthene	1.62E-10			
Pyrene	1.62E-10			
Alpha activity				
Beta activity				
Uranium-238	4.68E-01	6.20E-11	2.90E-11	
Pathway Total				1.98E-08

---------- SECTOR=Northwest PATHWAY=Recreational Child Ingestion of Quail ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Antimony	5.82E-14			
Beryllium	9.80E-13	4.30E+00	4.21E-12	
Cadmium	1.10E-09			
Chromium	4.99E-10			
Iron	3.07E-05			
Lead	1.60E-11			
Vanadium	1.03E-10			
Benz(a)anthracene		7.30E-01		
Benzo(a)pyrene	1.74E-09	7.30E+00	1.27E-08	

Recreational Excess Lifetime Cancer Risks

SECTOR=Northwest PATHWAY=Recreational Child Ingestion of Quail (continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Benzo(b)fluoranthene		7.30E-01		
Benzo(k)fluoranthene		7.30E-02		
Chrysene		7.30E-03		
Fluoranthene				
Pyrene				
Alpha activity				
Beta activity				
Uranium-238	3.25E+00	6.20E-11	2.02E-10	
Pathway Total				1.29E-08

SECTOR=Northwest PATHWAY=Recreational Child Ingestion of Rabbit

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Antimony	9.31E-12			
Beryllium	1.67E-10	4.30E+00	7.19E-10	
Cadmium	1.12E-10			
Chromium	1.03E-07			
Iron	1.26E-04			
Lead	3.36E-09			
Vanadium	2.10E-08			
Benz(a)anthracene	2.00E-09	7.30E-01	1.46E-09	
Benzo(a)pyrene	6.53E-09	7.30E+00	4.77E-08	
Benzo(b)fluoranthene	8.63E-09	7.30E-01	6.30E-09	
Benzo(k)fluoranthene	2.40E-08	7.30E-02	1.75E-09	
Chrysene	1.93E-09	7.30E-03	1.41E-11	
Fluoranthene	4.67E-10			
Pyrene	4.67E-10			
Alpha activity				
Beta activity				
Uranium-238	2.80E-01	6.20E-11	1.74E-11	
Pathway Total				5.79E-08

SECTOR=Northwest PATHWAY=Recreational Child Ingestion of Venison

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Antimony	9.30E-13			
Beryllium	1.64E-11	4.30E+00	7.06E-11	
Cadmium	1.21E-11			
Chromium	1.03E-08			
Iron	1.24E-05			
Lead	3.40E-10			
Vanadium	2.06E-09			
Benz(a)anthracene	1.97E-10	7.30E-01	1.44E-10	
Benzo(a)pyrene	6.42E-10	7.30E+00	4.68E-09	
Benzo(b)fluoranthene	8.48E-10	7.30E-01	6.19E-10	
Benzo(k)fluoranthene	2.35E-09	7.30E-02	1.72E-10	
Chrysene	1.90E-10	7.30E-03	1.39E-12	
Fluoranthene	4.68E-11			
Pyrene	4.68E-11			
Alpha activity				
Beta activity				
Uranium-238	2.79E-02	6.20E-11	1.73E-12	

Recreational Excess Lifetime Cancer Risks

..... SECTOR=Northwest PATHWAY=Recreational Child Ingestion of Venison ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Pathway Total				5.69E-09

..... SECTOR=Northwest PATHWAY-Recreational Teen Ingestion of Quail .....

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Antimony	1.00E-13			
Beryllium	1.69E-12	4.30E+00	7.26E-12	
Cadmium	1.89E-09			
chromium	8.59E-10			
Iron	5.29E-05			
Lead	2.75E-11			
Vanadium	1.77E-10			
Benz (a)anthracene		7.30E-01		
Benzo(a)pyrene	3.00E-09	7.30E+00	2.19E-08	
Benzo(b)fluoranthene		7.30E-01		
Benzo(k)fluoranthene		7.30E-02		
Chrysene		7.30E-03		
Fluoranthene				
Pyrene				
Alpha activity				
Beta activity				
Uranium-238	1.66E+01	6.20E-11	1.03E-09	
Pathway Total				2.30E-08

---------- SECTOR=Northwest PATHWAY=Recreational Teen Ingestion of Rabbit .....

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Antimony	1.56E-11			
Beryllium	2.80E-10	4.30E+00	1.20E-09	
Cadmium	1.88E-10			
Chromium	1.73E-07			
Iron	2.11E-04			
Lead	5.63E-09			
Vanadium	3.53E-08			
Benz(a)anthracene	3.34E-09	7.30E-01	2.44E-09	
Benzo(a)pyrene	1.09E-08	7.30E+00	7.99E-08	
Benzo(b)fluoranthene	1.45E-08	7.30E-01	1.06E-08	
Benzo(k)fluoranthene	4.03E-08	7.30E-02	2.94E-09	
Chrysene	3.23E-09	7.30E-03	2.36E-11	
Fluoranthene	7.83E-10			
Pyrene	7.83E-10			
Alpha activity				
Beta activity				
Uranium-238.	1.39E+00	6.20E-11	8.64E-11	
Pathway Total				9.71E-08

Recreational Excess Lifetime Cancer Risks

---------- SECTOR=Northwest PATHWAY=Recreational Teen Ingestion of Venison ....

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Antimony	2.87E-12			
Beryllium	5.06E-11	4.30E+00	2.18E-10	
Cadmium	3.73E-11			
Chromium	3.16E-08			
Iron	3.82E-05			
Lead	1.05E-09			
Vanadium	6.36E-09			
Benz(a)anthracene	6.07E-10	7.30E-01	4.43E-10	
Benzo(a)pyrene	1.98E-09	7.30E+00	1.44E-08	
Benzo(b)fluoranthene	2.61E-09	7.30E-01	1.91E-09	
Benzo(k)fluoranthene	7.26E-09	7.30E-02	5.30E-10	
Chrysene	5.87E-10	7.30E-03	4.28E-12	
Fluoranthene	1.44E-10			
Pyrene	1.44E-10			
Alpha activity				
Beta activity				
Uranium-238	2.55E-01	6.20E-11	1.58E-11	
Pathway Total				1.76E-08

---------- SECTOR=Southeast PATHWAY=Recreational Adult Ingestion of Quail ....

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	2.78E-07			
Antimony	4.61E-13			
Cadmium	1.00E-08			
chromium	3.07E-09			
Benz(a)anthracene		7.30E-01		
Benzo(a)pyrene	1.84E-09	7.30E+00	1.35E-08	
Benzo(b)fluoranthene		7.30E-01		
Benzo(k)fluoranthene		7.30E-02		
Chrysene		7.30E-03		
Fluoranthene				
PCB-1262		2.00E+00		
Phenanthrene	2.94E-10			
Polychlorinated biphenyl		2.00E+00		
Pyrene				
Alpha activity				
Beta activity				
Pathway Total				1.353-08

---------- SECTOR=Southeast PATHWAY=Recreational Adult Ingestion of Rabbit ....

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	5.71E-05			
Antimony	7.37E-11			
Cadmium	1.02E-09			
Chromium	6.34E-07			
Benz(a)anthracene	2.46E-09	7.30E-01	1.80E-09	
Benzo(a)pyrene	6.90E-09	7.30E+00	5.04E-08	
Benzo(b)fluoranthene	6.04E-09	7.30E-01	4.41E-09	
Benzo(k)fluoranthene	2.54E-08	7.30E-02	1.86E-09	
Chrysene	2.81E-09	7.30E-03	2.0SE-11	
Fluoranthene	9.27E-10			

Recreational Excess Lifetime Cancer Risks

..... SECTOR=Southeast PATHWAY=Recreational Adult Ingestion of Rabbit ..... (centhued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
PCB-1262	2.62E-09	2.00E+00	5.23E-09	
Phenanthrene	2.33E-10			
Polychlorinated biphenyl	2.62E-09	2.00E+00	5.23E-09	
Pyrene	7.41E-10			
Alpha activity				
Beta activity				
Pathway Total				6.89E-08

---------- SECTOR=Southeast PATHWAY=Recreational Adult Ingestion of Venison ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	5.12E-06			
Antimony	6.74E-12			
Cadmium	1.01E-10			
Chromium	5.77E-08			
Benz(a)anthracene	2.22E-10	7.30E-01	1.62E-10	
Benzo(a)pyrene	6.20E-10	7.30E+00	4.53E-09	
Benzo(b)fluoranthene	5.43E-10	7.30E-01	3.96E-10	
Benzo(k)fluoranthene	2.28E-09	7.30E-02	1.66E-10	
Chrysene	2.54E-10	7.30E-03	1.85E-12	
Fluoranthene	8.48E-11			
PCB-1262	2.35E-10	2.00E+00	4.71E-10	
Phenanthrene	2.15E-11			
Polychlorinated biphenyl	2.35E-10	2.00E+00	4.71E-10	
Pyrene	6.79E-11			
Alpha activity				
Beta activity				
Pathway Total				6.20E-09

---------- SECTOR=Southeast PATHWAY=Recreational Child Ingestion of Quail ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	7.33E-08			
Antimony	1.21E-13			
Cadmium	2.64E-09			
Chromium	8.09E-10			
Benz(a)anthracene		7.30E-01		
Benzo(a)pyrene	4.86E-10	7.30E+00	3.54E-09	
Benzo(b)fluoranthene		7.30E-01		
Benzo(k)fluoranthene		7.30E-02		
Chrysene		7.30E-03		
Fluoranthene				
PCB-1262		2.00E+00		
Phenanthrene	7.74E-11			
Polychlorinated biphenyl		2.00E+00		
Pyrene				
Alpha activity				
Beta activity				
Pathway Total				3.54E-09

Recreational Excess Lifetime Cancer Risks

---------- SECTOR=Southeast PATHWAY=Recreational Child Ingestion of Rabbit ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	1.50E-05			
Antimony	1.94E-11			
Cadmium	2.69E-10			
Chromium	1.67E-07			
Benz(a)anthracene	6.48E-10	7.30E-01	4.73E-10	
Benzo(a)pyrene	1.82E-09	7.30E+00	1.33E-08	
Benzo(b)fluoranthene	1.59E-09	7.30E-01	1.16E-09	
Benzo(k)fluoranthene	6.69E-09	7.30E-02	4.88E-10	
Chrysene	7.41E-10	7.30E-03	5.413-12	
Fluoranthene	2.44E-10			
PCB-1262	6.89E-10	2.00E+00	1.38E-09	
Phenanthrene	6.13E-11			
Polychlorinated biphenyl	6.89E-10	2.00E+00	1.38E-09	
Pyrene	1.95E-10			
Alpha activity				
Beta activity				
Pathway Total				1.82E-08

---------- SECTOR=Southeast PATHWAY=Recreational Child Ingestion of Venison ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	1.47E-06			
Antimony	1.94E-12			
Cadmium	2.90E-11			
Chromium	1.66E-08			
Benz(a)anthracene	6.40E-11	7.30E-01	4.67E-11	
Benzo(a)pyrene	1.79E-10	7.30E+00	1.30E-09	
Benzo(b)fluoranthene	1.56E-10	7.30E-01	1.14E-10	
Benzo(k)fluoranthene	6.56E-10	7.30E-02	4.79E-11	
Chrysene	7.31E-11	7.30E-03	5.34E-13	
Fluoranthene	2.44E-11			
PCB-1262	6.78E-11	2.00E+00	1.36E-10	
Phenanthrene	6.19E-12			
Polychlorinated biphenyl	6.78E-11	2.00E+00	1.36E-10	
Pyrene	1.95E-11			
Alpha activity				
Beta activity				
Pathway Total				1.78E-09

---------- SECTOR=Southeast PATHWAY=Recreational Teen Ingestion of Quail .....

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	1.26E-07			
Antimony	2.09E-13			
Cadmium	4.54E-09			
Chromium	1.39E-09			
Benz(a)anthracene		7.30E-01		
Benzo(a)pyrene	8.36E-10	7.30E+00	6.10E-09	
Benzo(b)fluoranthene		7.30E-01		
Benzo(k)fluoranthene		7.30E-02		
Chrysene		7.30E-03		
Fluoranthene				
PCB-1262		2.00E+00		

Recreational Excess Lifetime Cancer Risks

SECTOR=Southeast PATHWAY=Recreational Teen Ingestion of Quail (continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Phenanthrene	1.33E-10			
Polychlorinated biphenyl		2.00E+00		
Pyrene				
Alpha activity				
Beta activity				
Pathway Total				6.10E-09

SECTOR-Southeast PATHWAY=Recreational Teen Ingestion of Rabbit

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	2.52E-05			
Antimony	3.25E-11			
Cadmium	4.51E-10			
Chromium	2.80E-07			
Benz(a)anthracene	1.09E-09	7.30E-01	7.93E-10	
Benzo(a)pyrene	3.05E-09	7.30E+00	2.22E-08	
Benzo(b)fluoranthene	2.67E-09	7.30E-01	1.95E-09	
Benzo(k)fluoranthene	1.12E-08	7.30E-02	8.19E-10	
Chrysene	1.24E-09	7.30E-03	9.06E-12	
Fluoranthene	4.09E-10			
PCB-1262	1.15E-09	2.00E+00	2.31E-09	
Phenanthrene	1.03E-10			
Polychlorinated biphenyl	1.15E-09	2.00E+00	2.31E-09	
Pyrene	3.27E-10			
Alpha activity				
Beta activity				
Pathway Total				3.04E-08

SECTOR=Southeast PATHWAY=Recreational Teen Ingestion of Venison

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	4.54E-06			
Antimony	5.98E-12			
Cadmium	8.95E-11			
Chromium	5.13E-08			
Benz(a)anthracene	1.97E-10	7.30E-01	1.44E-10	
Benzo(a)pyrene	5.51E-10	7.30E+00	4.02E-09	
Benzo(b)fluoranthene	4.82E-10	7.30E-01	3.52E-10	
Benzo(k)fluoranthene	2.02E-09	7.30E-02	1.48E-10	
Chrysene	2.25E-10	7.30E-03	1.65E-12	
Fluoranthene	7.53E-11			
PCB-1262	2.09E-10	2.00E+00	4.18E-10	
Phenanthrene	1.91E-11			
Polychlorinated biphenyl	2.09E-10	2.00E+00	4.18E-10	
Pyrene	6.03E-11			
Alpha activity				
Beta activity				
Pathway Total				5.50E-09

Recreational Excess Lifetime Cancer Risks

---------- SECTOR=Southwest PATHWAY=Recreational Adult Ingestion Of Quail ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte specific	Total Pathway Risk
Antimony	1.67E-12			
Beryllium	9.05E-12	4.30E+00	3.89E-11	
Cadmium	1.55E-08			
Chromium	4.14E-09			
Iron	3.39E-04			
Thallium	5.39E-10			
Uranium	1.05E-06			
Zinc				
Acenaphthene				
Acenaphthylene				
Anthracene				
Benz(a)anthracene		7.30E-01		
Benzo(a)pyrene	1.67E-07	7.30E+00	1.22E-06	
Benzo(b)fluoranthene		7.30E-01		
Benzo(ghi)perylene				
Benzo(k)fluoranthene		7.30E-02		
Bis(2-ethylhexyl)phthalate		1.40E-02		
Chrysene		7.30E-03		
Dibenz(a,h)anthracene		7.30E+00		
Fluoranthene				
Fluorene				
Indeno(1,2,3-cd)pyrene		7.30E-01		
Naphthalene				
PCB-1260	2.58E-09	2.00E+00	5.16E-09	
Phenanthrene	3.60E-08			
Polychlorinated biphenyl		2.00E+00		
Pyrene				
Alpha activity				
Beta activity				
Neptunium-237	1.62E-02	3.00E-10	4.87E-12	
Uranium-235	2.30E+01	4.70E-11	1.08E-09	
Uranium-238	6.48E+02	6.20E-11	4.02E-08	
Pathway Total				1.26E-06

---------- SECTOR=Southwest PATHWAY=Recreational Adult Ingestion Of Rabbit ....

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Antimony	2.67E-10			
Beryllium	1.54E-09	4.30E+00	6.64E-09	
Cadmium	1.59E-09			
Chromium	8.55E-07			
Iron	1.39E-03			
Thallium	1.13E-07			
Uranium	6.40E-08			
Zinc	8.30E-05			
Acenaphthene	2.72E-09			
Acenaphthylene	2.04E-10			
Anthracene	6.07E-09			
Benz(a)anthracene	2.64E-07	7.30E-01	1.93E-07	
Benzo(a)pyrene	6.25E-07	7.30E+00	4.56E-06	
Benzo(b)fluoranthene	6.61E-07	7.30E-01	4.82E-07	
Benzo(ghi)perylene	9.50E-07			
Benzo(k)fluoranthene	2.14E-06	7.30E-02	1.56E-07	
Bis(2-ethylhexyl)phthalate	7.40E-10	1.40E-02	1.04E-11	
Chrysene	2.38E-07	7.30E-03	1.74E-09	
Dibenz(a,h)anthracene	8.24E-07	7.30E+00	6.02E-06	
Fluoranthene	1.01E-07			

Recreational Excess Lifetime Cancer Risks

---------- SECTOR=Southwest PATHWAY=Recreational Adult Ingestion of Rabbit ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Fluorene	4.01E-09			
Indeno(1,2,3-cd)pyrene	7.25E-07	7.30E-01	5.29E-07	
Naphthalene	1.18E-12			
PCB-1260	4.79E-08	2.00E+00	9.57E-08	
Phenanthrene	2.84E-08			
Polychlorinated biphenyl	3.92E-09	2.00E+00	7.84E-09	
Pyrene	8.51E-08			
Alpha activity				
Beta activity				
Neptunium-237	2.64E+00	3.00E-10	7.92E-10	
Uranium-235	1.89E+00	4.70E-11	8.87E-11	
Uranium-238	5.59E+01	6.20E-11	3.47E-09	
Pathway Total				1.21E-05

---------- SECTOR=Southwest PATHWAY-Recreational Adult Ingestion of Venison ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Antimony	2.44E-11			
Beryllium	1.39E-10	4.30E+00	5.96E-10	
Cadmium	1.56E-10			
chromium	7.78E-08			
Iron	1.25E-04			
Thallium	1.01E-08			
Uranium	5.79E-09			
Zinc	8.33E-06			
Acenaphthene	2.54E-10			
Acenaphthylene	1.96E-11			
Anthracene	5.65E-10			
Benz(a)anthracene	2.38E-08	7.30E-01	1.74E-08	
Benzo(a)pyrene	5.61E-08	7.30E+00	4.10E-07	
Benzo(b)fluoranthene	5.94E-08	7.30E-01	4.33E-08	
Benzo(ghi)perylene	8.52E-08			
Benzo(k)fluoranthene	1.92E-07	7.30E-02	1.40E-08	
Bis(2-ethylhexyl)phthalate	6.77E-11	1.40E-02	9.48E-13	
Chrysene	2.15E-08	7.30E-03	1.57E-10	
Dibenz(a,h)anthracene	7.39E-08	7.30E+00	5.39E-07	
Fluoranthene	9.23E-09			
Fluorene	3.73E-10			
Indeno(1,2,3-cd)pyrene	6.50E-08	7.30E-01	4.74E-08	
Naphthalene	1.15E-13			
PCB-1260	4.28E-09	2.00E+00	8.57E-09	
Phenanthrene	2.63E-09			
Polychlorinated biphenyl	3.52E-10	2.00E+00	7.05E-10	
Pyrene	7.79E-09			
Alpha activity				
Beta activity				
Neptunium-237	2.43E-01	3.00E-10	7.29E-11	
Uranium-235	1.71E-01	4.70E-11	8.05E-12	
Uranium-238	5.09E+00	6.20E-11	3.16E-10	
Pathway Total				1.08E-06

Recreational Excess Lifetime Cancer Risks

---------- SECTOR=Southwest PATHWAY=Recreational Child Ingestion of Quail ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Antimony	4.40E-13			
Beryllium	2.38E-12	4.30E+00	1.02E-11	
Cadmium	4.09E-09			
Chromium	1.09E-09			
Iron	8.93E-05			
Thallium	1.42E-10			
Uranium	2.75E-07			
Zinc				
Acenaphthene				
Acenaphthylene				
Anthracene				
Benz(a)anthracene		7.30E-01		
Benzo(a)pyrene	4.39E-08	7.30E+00	3.21E-07	
Benzo(b)fluoranthene		7.30E-01		
Benzo(ghi)perylene				
Benzo(k)fluoranthene		7.30E-02		
Bis(2-ethylhexyl)phthalate		1.40E-02		
Chrysene		7.30E-03		
Dibenz(a,h)anthracene		7.30E+00		
Fluoranthene				
Fluorene				
Indeno(1,2,3-cd)pyrene		7.30E-01		
Naphthalene				
PCB-1260	6.79E-10	2.00E+00	1.36E-09	
Phenanthrene	9.47E-09			
Polychlorinated biphenyl		2.00E+00		
Pyrene				
Alpha activity				
Beta activity				
Neptunium-237	8.85E-04	3.00E-10	2.65E-13	
Uranium-235	1.26E+00	4.70E-11	5.90E-11	
Uranium-238	3.54E+01	6.20E-11	2.19E-09	
Pathway Total				3.24E-07

---------- SECTOR=Southwest PATHWAY=Recreational Child Ingestion Of Rabbit .....

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Antimony	7.03E-11			
Beryllium	4.06E-10	4.30E+00	1.75E-09	
Cadmium	4.18E-10			
Chromium	2.25E-07			
Iron	3.67E-04			
Thallium	2.97E-08			
Uranium	1.69E-08			
Zinc	2.19E-05			
Acenaphthene	7.16E-10			
Acenaphthylene	5.38E-11			
Anthracene	1.60E-09			
Benz(a)anthracene	6.96E-08	7.30E-01	5.08E-08	
Benzo(a)pyrene	1.64E-07	7.30E+00	1.20E-06	
Benzo(b)fluoranthene	1.74E-07	7.30E-01	1.27E-07	
Benzo(ghi)perylene	2.50E-07			
Benzo(k)fluoranthene	5.64E-07	7.30E-02	4.11E-08	
Bis(2-ethylhexyl)phthalate	1.95E-10	1.40E-02	2.73E-12	
Chrysene	6.26E-08	7.30E-03	4.57E-10	
Dibenz(a,h)anthracene	2.17E-07	7.30E+00	1.58E-06	
Fluoranthene	2.66E-08			

Recreational Excess Lifetime Cancer Risks

---------- SECTOR=Southwest PATHWAY=Recreational Child Ingestion of Rabbit (continued) ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Fluorene	1.05E-09			
Indeno(1,2,3-cd)pyrene	1.91E-07	7.30E-01	1.39E-07	
Naphthalene	3.10E-13			
PCB-1260	1.26E-08	2.00E+00	2.52E-08	
Phenanthrene	7.49E-09			
Polychlorinated biphenyl	1.03E-09	2.00E+00	2.06E-09	
Pyrene	2.24E-08			
Alpha activity				
Beta activity				
Neptunium-237	1.44E-01	3.00E-10	4.32E-11	
Uranium-235	1.03E-01	4.70E-11	4.84E-12	
Uranium-238	3.05E+00	6.20E-11	1.89E-10	
Pathway Total				3.17E-06

---------- SECTOR=Southwest PATHWAY=Recreational Child Ingestion of Venison ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Antimony	7.03E-12			
Beryllium	3.99E-11	4.30E+00	1.72E-10	
Cadmium	4.50E-11			
chromium	2.24E-08			
Iron	3.60E-05			
Thallium	2.91E-09			
uranium	1.67E-09			
Zinc	2.40E-06			
Acenaphthene	7.32E-11			
Acenaphthylene	5.65E-12			
Anthracene	1.63E-10			
Benz(a)anthracene	6.87E-09	7.30E-01	5.01E-09	
Benzo(a)pyrene	1.62E-08	7.30E+00	1.18E-07	
Benzo(b)fluoranthene	1.71E-08	7.30E-01	1.25E-08	
Benzo(ghi)perylene	2.45E-08			
Benzo(k)fluoranthene	5.52E-08	7.30E-02	4.03E-09	
Bis(2-ethylhexyl)phthalate	1.95E-11	1.40E-02	2.73E-13	
Chrysene	6.18E-09	7.30E-03	4.51E-11	
Dibenz(a,h)anthracene	2.13E-08	7.30E+00	1.55E-07	
Fluoranthene	2.66E-09			
Fluorene	1.07E-10			
Indeno(1,2,3-cd)pyrene	1.87E-08	7.30E-01	1.37E-08	
Naphthalene	3.32E-14			
PCB-1260	1.23E-09	2.00E+00	2.47E-09	
Phenanthrene	7.57E-10			
Polychlorinated biphenyl	1.02E-10	2.00E+00	2.03E-10	
Pyrene	2.243-09			
Alpha activity				
Beta activity				
Neptunium-237	1.45E-02	3.00E-10	4.35E-12	
uranium-235	1.02E-02	4.70E-11	4.80E-13	
Uranium-238	3.04E-01	6.20E-11	1.88E-11	
Pathway Total				3.11E-07

Recreational Excess Lifetime Cancer Risks

---------- SECTOR=Southwest PATHWAY=Recreational Teen Ingestion of Quail .....

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Antimony	7.58E-13			
Beryllium	4.10E-12	4.30E+00	1.76E-11	
Cadmium	7.05E-09			
Chromium	1.88E-09			
Iron	1.54E-04			
Thallium	2.44E-10			
Uranium	4.74E-07			
Zinc				
Acenaphthene				
Acenaphthylene				
Anthracene				
Benz(a)anthracene		7.30E-01		
Benzo(a)pyrene	7.56E-08	7.30E+00	5.52E-07	
Benzo(b)fluoranthene		7.30E-01		
Benzo(ghi)perylene				
Benzo(k)fluoranthene		7.30E-02		
Bis(2-ethylhexyl)phthalate		1.40E-02		
Chrysene		7.30E-03		
Dibenz (a,h)anthracene		7.30E+00		
Fluoranthene				
Fluorene				
Indeno(1,2,3-cd)pyrene		7.30E-01		
Naphthalene				
PCB-1260	1.17E-09	2.00E+00	2.34E-09	
Phenanthrene	1.63E-08			
Polychlorinated biphenyl		2.00E+00		
Pyrene				
Alpha activity				
Beta activity				
Neptunium-237	4.52E-03	3.00E-10	1.36E-12	
Uranium-235	6.41E+00	4.70E-11	3.01E-10	
Uranium-238	1.81E+02	6.20E-11	1.12E-08	
Pathway Total				5.66E-07

---------- SECTOR=Southwest PATHWAY=Recreational Teen Ingestion of Rabbit .....

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Antimony	1.18E-10			
Beryllium	6.81E-10	4.30E+00	2.93E-09	
Cadmium	7.00E-10			
Chromium	3.77E-07			
Iron	6.14E-04			
Thallium	4.98E-08			
Uranium	2.83E-08			
Zinc	3.66E-05			
Acenaphthene	1.20E-09			
Acenaphthylene	9.01E-11			
Anthracene	2.68E-09			
Benz(a)anthracene	1.17E-07	7.30E-01	8.51E-08	
Benzo(a)pyrene	2.76E-07	7.30E+00	2.01E-06	
Benzo(b)fluoranthene	2.91E-07	7.30E-01	2.13E-07	
Benzo(ghi)perylene	4.19E-07			
Benzo(k)fluoranthene	9.45E-07	7.30E-02	6.90E-08	
Bis(2-ethylhexyl)phthalate	3.27E-10	1.40E-02	4.57E-12	
Chrysene	1.05E-07	7.30E-03	7.66E-10	
Dibenz (a,h)anthracene	3.64E-07	7.30E+00	2.66E-06	
Fluoranthene	4.45E-08			

Recreational Excess Lifetime Cancer Risks

SECTOR-Southwest PATHWAY=Recreational Teen Ingestion Of Rabbit (continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Fluorene	1.77E-09			
Indeno(1,2,3-cd)pyrene	3.20E-07	7.30E-01	2.33E-07	
Naphthalene	5.20E-13			
PCB-1260	2.11E-08	2.00E+00	4.22E-08	
Phenanthrene	1.26E-08			
Polychlorinated biphenyl	1.73E-09	2.00E+00	3.46E-09	
Pyrene	3.753-08			
Alpha activity				
Beta activity				
Neptunium-237	7.16E-01	3.00E-10	2.15E-10	
Uranium-235	5.12E-01	4.70E-11	2.40E-11	
Uranium-238	1.52E+01	6.20E-11	9.40E-10	
Pathway Total				5.32E-06

SECTOR=Southwest PATHWAY=Recreational Teen Ingestion of Venison

Analyte	Carcinogenic CDI-	Slope Factor	Analyte specific	Total Pathway Risk
Antimony	2.17E-11			
Beryllium	1.23E-10	4.30E+00	5.29E-10	
Cadmium	1.39E-10			
Chromium	6.91E-08			
Iron	1.11E-04			
Thallium	8.97E-09			
Uranium	5.14E-09			
Zinc	7.40E-06			
Acenaphthene	2.26E-10			
Acenaphthylene	1.74E-11			
Anthracene	5.02E-10			
Benz (a)anthracene	2.12E-08	7.30E-01	1.55E-08	
Benzo(a)pyrene	4.98E-08	7.30E+00	3.64E-07	
Benzo(b)fluoranthene	5.27E-08	7.30E-01	3.85E-08	
Benzo(ghi)perylene	7.57E-08			
Benzo(k)fluoranthene	1.70E-07	7.30E-02	1.24E-08	
Bis(2-ethylhexyl)phthalate	6.01E-11	1.40E-02	8.42E-13	
Chrysene	1.91E-08	7.30E-03	1.39E-10	
Dibenz (a,h)anthracene	6.56E-08	7.30E+00	4.79E-07	
Fluoranthene	8.20E-09			
Fluorene	3.31E-10			
Indeno(1,2,3-cd)pyrene	5.77E-08	7.30E-01	4.21E-08	
Naphthalene	1.02E-13			
PCB-1260	3.80E-09	2.00E+00	7.61E-09	
Phenanthrene	2.33E-09			
Polychlorinated biphenyl	3.13E-10	2.00E+00	6.26E-10	
Pyrene	6.91E-09			
Alpha activity				
Beta activity				
Neptunium-237	1.33E-01	3.00E-10	3.98E-11	
Uranium-235	9.35E-02	4.70E-11	4.39E-12	
Uranium-238	2.78E+00	6.20E-11	1.72E-10	
Pathway Total				9.60E-07

Recreational Excess Lifetime Cancer Risks

---------- SECTOR=West PATHWAY=Recreational Adult Ingestion of Quail ....

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	8.20E-08			
Antimony	4.38E-13			
Arsenic	2.24E-10	1.50E+00	3.36E-10	
Beryllium	2.90E-12	4.30E+00	1.25E-11	
Cadmium	1.49E-08			
Chromium	9.40E-10			
Cobalt				
Uranium	2.90E-07			
Zinc				
2-Methylnaphthalene				
Acenaphthene				
Anthracene				
Benz(a)anthracene		7.30E-01		
Benzo(a)pyrene	2.40E-07	7.30E+00	1.75E-06	
Benzo(b)fluoranthene		7.30E-01		
Benzo(ghi)perylene				
Benzo(k)fluoranthene		7.30E-02		
Bis(2-ethylhexyl)phthalate		1.40E-02		
Chrysene		7.30E-03		
Di-n-butyl phthalate				
Dibenz(a,h)anthracene		7.30E+00		
Fluoranthene				
Fluorene				
Indeno(1,2,3-cd)pyrene		7.30E-01		
Naphthalene				
PCB-1254	2.55E-08	2.00E+00	5.10E-08	
PCB-1260	4.17E-10	2.00E+00	8.34E-10	
Phenanthrene	8.45E-08			
Polychlorinated biphenyl		2.00E+00		
Pyrene				
Alpha activity				
Beta activity				
Cesium-137		3.16E-11		
Neptunium-237	3.16E-02	3.00E-10	9.47E-12	
Uranium-234	1.36E+02	4.44E-11	6.02E-09	
Uranium-235	9.72E+00	4.70E-11	4.57E-10	
Uranium-238	1.80E+02	6.20E-11	1.11E-08	
Pathway Total				1.82E-06

---------- SECTOR=West PATHWAY=Recreational Adult Ingestion of Rabbit ....

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	1.68E-05			
Antimony	7.00E-11			
Arsenic	4.53E-08	1.50E+00	6.79E-08	
Beryllium	4.94E-10	4.30E+00	2.12E-09	
Cadmium	1.52E-09			
Chromium	1.94E-07			
Cobalt	8.46E-10			
Uranium	1.78E-08			
Zinc	1.90E-05			
2-Methylnaphthalene	4.53E-10			
Acenaphthene	3.55E-09			
Anthracene	1.87E-08			
Benz(a)anthracene	4.07E-07	7.30E-01	2.97E-07	
Benzo(a)pyrene	8.98E-07	7.30E+00	6.55E-06	
Benzo(b)fluoranthene	1.12E-06	7.30E-01	8.15E-07	

Recreational Excess Lifetime Cancer Risks

SECTOR=West PATHWAY=Recreational Adult Ingestion of Rabbit (continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Benzo(ghi)perylene	5.71E-07			
Benzo(k)fluoranthene	5.41E-06	7.30E-02	3.95E-07	
Bis(2-ethylhexyl)phthalate	3.55E-10	1.40E-02	4.97E-12	
Chrysene	4.38E-07	7.303-03	3.203-09	
Di-n-butyl phthalate	7.283-10			
Dibenz(a,h)anthracene	9.14E-07	7.30E+00	6.673-06	
Fluoranthene	1.60E-07			
Fluorene	4.01E-09			
Indeno(1,2,3-cd)pyrene	5.86E-07	7.30E-01	4.28E-07	
Naphthalene	2.73E-10			
PCB-1254	3.80E-08	2.00E+00	7.603-08	
PCB-1260	7.73E-09	2.00E+00	1.55E-08	
Phenanthrene	6.68E-08			
Polychlorinated biphenyl	2.22E-08	2.00E+00	4.44E-08	
Pyrene	1.40E-07			
Alpha activity				
Beta activity				
Cesium-137	1.53E+02	3.16E-11	4.85E-09	
Neptunium-237	5.14E+00	3.00E-10	1.54E-09	
Uranium-234	8.30E+00	4.44E-11	3.69E-10	
Uranium-235	7.97E-01	4.70E-11	3.75E-11	
Uranium-238	1.55E+01	6.20E-11	9.61E-10	
Pathway Total				1.54E-05

SECTOR=West PATHWAY=Recreational Adult Ingestion of Venison

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	1.51E-06			
Antimony	6.40E-12			
Arsenic	4.12E-09	1.50E+00	6.18E-09	
Beryllium	4.44E-11	4.30E+00	1.91E-10	
Cadmium	1.50E-10			
Chromium	1.77E-08			
Cobalt	7.743-11			
Uranium	1.61E-09			
Zinc	1.91E-06			
2-Methylnaphthalene	4.31E-11			
Acenaphthene	3.32E-10			
Anthracene	1.74E-09			
Benz(a)anthracene	3.67E-08	7.30E-01	2.68E-08	
Benzo(a)pyrene	8.07E-08	7.30E+00	5.89E-07	
Benzo(b)fluoranthene	1.00E-07	7.30E-01	7.33E-08	
Benzo(ghi)perylene	5.11E-08			
Benzo(k)fluoranthene	4.84E-07	7.30E-02	3.53E-08	
Bis(2-ethylhexyl)phthalate	3.25E-11	1.40E-02	4.55E-13	
Chrysene	3.95E-08	7.30E-03	2.89E-10	
Di-n-butyl phthalate	6.66E-11			
Dibenz(a,h)anthracene	8.18E-08	7.30E+00	5.97E-07	
Fluoranthene	1.47E-08			
Fluorene	3.73E-10			
Indeno(1,2,3-cd)pyrene	5.25E-08	7.30E-01	3.83E-08	
Naphthalene	2.68E-11			
PCB-1254	3.42E-09	2.00E+00	6.83E-09	
PCB-1260	6.92E-10	2.00E+00	1.38E-09	
Phenanthrene	6.17E-09			
Polychlorinated biphenyl	2.00E-09	2.00E+00	3.99E-09	

Recreational Excess Lifetime Cancer Risks

..... SECTOR=West PATHWAY=Recreational Adult Ingestion of Venison ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Pyrene	1.28E-08			
Alpha activity				
Beta activity				
Cesium-137	1.46E+01	3.16E-11	4.61E-10	
Neptunium-237	4.73E-01	3.00E-10	1.42E-10	
Uranium-234	7.51E-01	4.44E-11	3.33E-11	
Uranium-235	7.24E-02	4.70E-11	3.40E-12	
Uranium-238	1.41E+00	6.20E-11	8.75E-11	
Pathway Total				1.38E-06

---------- SECTOR=West PATHWAY=Recreational Child Ingestion of Quail ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	2.16E-08			
Antimony	1.15E-13			
Arsenic	5.91E-11	1.50E+00	8.86E-11	
Beryllium	7.63E-13	4.30E+00	3.28E-12	
Cadmium	3.92E-09			
Chromium	2.47E-10			
Cobalt				
Uranium	7.65E-08			
Zinc				
2-Methylnaphthalene				
Acenaphthene				
Anthracene				
Benz(a)anthracene		7.30E-01		
Benzo(a)pyrene	6.31E-08	7.30E+00	4.61E-07	
Benzo(b)fluoranthene		7.30E-01		
Benzo(ghi)perylene				
Benzo(k)fluoranthene		7.30E-02		
Bis(2-ethylhexyl)phthalate		1.40E-02		
Chrysene		7.30E-03		
Di-n-butyl phthalate				
Dibenz(a,h)anthracene		7.30E+00		
Fluoranthene				
Fluorene				
Indeno(1,2,3-cd)pyrene		7.30E-01		
Naphthalene				
PCB-1254	6.71E-09	2.00E+00	1.34E-08	
PCB-1260	1.10E-10	2.00E+00	2.20E-10	
Phenanthrene	2.22E-08			
Polychlorinated biphenyl		2.00E+00		
Pyrene				
Alpha activity				
Beta activity				
Cesium-137		3.16E-11		
Neptunium-237	1.72E-03	3.00E-10	5.16E-13	
Uranium-234	7.40E+00	4.44E-11	3.28E-10	
Uranium-235	5.30E-01	4.70E-11	2.49E-11	
Uranium-238	9.80E+00	6.20E-11	6.08E-10	
Pathway Total				4.76E-07

Recreational Excess Lifetime Cancer Risks

---------- SECTOR=West PATHWAY=Recreational Child Ingestion of Rabbit ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	4.43E-06			
Antimony	1.84E-11			
Arsenic	1.19E-08	1.50E+00	1.79E-08	
Beryllium	1.30E-10	4.30E+00	5.59E-10	
Cadmium	4.00E-10			
Chromium	5.11E-08			
Cobalt	2.23E-10			
Uranium	4.68E-09			
Zinc	5.01E-06			
2-Methylnaphthalene	1.19E-10			
Acenaphthene	9.35E-10			
Anthracene	4.92E-09			
Benz(a)anthracene	1.07E-07	7.30E-01	7.82E-08	
Benzo(a)pyrene	2.36E-07	7.30E+00	1.73E-06	
Benzo(b)fluoranthene	2.94E-07	7.30E-01	2.15E-07	
Benzo(ghi)perylene	1.50E-07			
Benzo(k)fluoranthene	1.42E-06	7.30E-02	1.04E-07	
Bis(2-ethylhexyl)phthalate	9.35E-11	1.40E-02	1.31E-12	
Chrysene	1.15E-07	7.30E-03	8.43E-10	
Di-n-butyl phthalate	1.92E-10			
Dibenz(a,h)anthracene	2.41E-07	7.30E+00	1.76E-06	
Fluoranthene	4.22E-08			
Fluorene	1.05E-09			
Indeno(1,2,3-cd)pyrene	1.54E-07	7.30E-01	1.13E-07	
Naphthalene	7.20E-11			
PCB-1254	1.00E-08	2.00E+00	2.00E-08	
PCB-1260	2.04E-09	2.00E+00	4.07E-09	
Phenanthrene	1.76E-08			
Polychlorinated biphenyl	5.84E-09	2.00E+00	1.17E-08	
Pyrene	3.69E-08			
Alpha activity				
Beta activity				
Cesium-137	8.37E+00	3.16E-11	2.64E-10	
Neptunium-237	2.80E-01	3.00E-10	8.40E-11	
Uranium-234	4.53E-01	4.44E-11	2.01E-11	
Uranium-235	4.35E-02	4.70E-11	2.04E-12	
Uranium-238	8.46E-01	6.20E-11	5.24E-11	
Pathway Total				4.05E-06

---------- SECTOR=West PATHWAY=Recreational Child Ingestion of Venison ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	4.34E-07			
Antimony	1.84E-12			
Arsenic	1.19E-09	1.50E+00	1.78E-09	
Beryllium	1.28E-11	4.30E+00	5.50E-11	
Cadmium	4.31E-11			
Chromium	5.08E-09			
Cobalt	2.23E-11			
Uranium	4.63E-10			
Zinc	5.49E-07			
2-Methylnaphthalene	1.24E-11			
Acenaphthene	9.55E-11			
Anthracene	5.01E-10			
Benz(a)anthracene	1.06E-08	7.30E-01	7.71E-09	
Benzo(a)pyrene	2.32E-08	7.30E+00	1.70E-07	
Benzo(b)fluoranthene	2.89E-08	7.30E-01	2.11E-08	

Recreational Excess Lifetime Cancer Risks

---------- SECTOR=West PATHWAY=Recreational Child Ingestion of Venison .....
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Benzo(ghi)perylene	1.47E-08			
Benzo(k)fluoranthene	1.39E-07	7.30E-02	1.02E-08	
Bis(2-ethylhexyl)phthalate	9.36E-12	1.40E-02	1.31E-13	
Chrysene	1.14E-08	7.30E-03	8.31E-11	
Di-n-butyl phthalate	1.92E-11			
Dibenz(a,h)anthracene	2.36E-08	7.30E+00	1.72E-07	
Fluoranthene	4.22E-09			
Fluorene	1.07E-10			
Indeno(1,2,3-cd)pyrene	1.51E-08	7.30E-01	1.10E-08	
Naphthalene	7.72E-12			
PCB-1254	9.84E-10	2.00E+00	1.97E-09	
PCB-1260	1.99E-10	2.00E+00	3.99E-10	
Phenanthrene	1.78E-09			
Polychlorinated biphenyl	5.75E-10	2.00E+00	1.15E-09	
	3.70E-09			
Alpha activity				
Beta activity				
Cesium-137	8.71E-01	3.16E-11	2.75E-11	
Neptunium-237	2.82E-02	3.00E-10	8.46E-12	
Uranium-234	4.48E-02	4.44E-11	1.99E-12	
Uranium-235	4.32E-03	4.70E-11	2.03E-13	
Uranium-238	8.42E-02	6.20E-11	5.22E-12	
Pathway Total				3.97E-07

---------- SECTOR=West PATHWAY=Recreational Teen Ingestion of Quail ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	3.72E-08			
Antimony	1.99E-13			
Arsenic	1.02E-10	1.50E+00	1.53E-10	
Beryllium	1.31E-12	4.30E+00	5.65E-12	
Cadmium	6.75E-09			
Chromium	4.26E-10			
Cobalt				
Uranium	1.32E-07			
Zinc				
2-Methylnaphthalene				
Acenaphthene				
Anthracene				
Benz(a)anthracene		7.30E-01		
Benzo(a)pyrene	1.09E-07	7.30E+00	7.94E-07	
Benzo(b)fluoranthene		7.30E-01		
Benzo(ghi)perylene				
Benzo(k)fluoranthene		7.30E-02		
Bis(2-ethylhexyl)phthalate		1.40E-02		
Chrysene		7.30E-03		
Di-n-butyl phthalate				
Dibenz(a,h)anthracene		7.30E+00		
Fluoranthene				
Fluorene				
Indeno(1,2,3-cd)pyrene		7.30E-01		
Naphthalene				
PCB-1254	1.16E-08	2.00E+00	2.31E-08	
PCB-1260	1.89E-10	2.00E+00	3.78E-10	
Phenanthrene	3.83E-08			
Polychlorinated biphenyl		2.00E+00		

Recreational Excess Lifetime Cancer Risks

---------- SECTOR=West PATHWAY=Recreational Teen Ingestion of Quail ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Pyrene				
Alpha activity				
Beta activity				
Cesium-137		3.16E-11		
Neptunium-237	8.79E-03	3.00E-10	2.64E-12	
Uranium-234	3.78E+01	4.44E-11	1.68E-09	
Uranium-235	2.71E+00	4.70E-11	1.27E-10	
Uranium-238	5.00E+01	6.20E-11	3.10E-09	
Pathway Total				8.22E-07

---------- SECTOR=West PATHWAY=Recreational Teen Ingestion of Rabbit ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	7.42E-06			
Antimony	3.09E-11			
Arsenic	2.00E-08	1.50E+00	3.00E-08	
Beryllium	2.18E-10	4.30E+00	9.38E-10	
Cadmium	6.71E-10			
Chromium	8.56E-08			
Cobalt	3.73E-10			
Uranium	7.85E-09			
Zinc	8.39E-06			
2-Methylnaphthalene	2.00E-10			
Acenaphthene	1.57E-09			
Anthracene	8.24E-09			
Benz(a)anthracene	1.79E-07	7.30E-01	1.31E-07	
Benzo(a)pyrene	3.96E-07	7.30E+00	2.89E-06	
Benzo(b)fluoranthene	4.93E-07	7.30E-01	3.60E-07	
Benzo(ghi)perylene	2.52E-07			
Benzo(k)fluoranthene	2.39E-06	7.30E-02	1.74E-07	
Bis(2-ethylhexyl)phthalate	1.57E-10	1.40E-02	2.19E-12	
Chrysene	1.93E-07	7.30E-03	1.41E-09	
Di-n-butyl phthalate	3.21E-10			
Dibenz(a,h)anthracene	4.03E-07	7.30E+00	2.94E-06	
Fluoranthene	7.07E-08			
Fluorene	1.77E-09			
Indeno(1,2,3-cd)pyrene	2.58E-07	7.30E-01	1.89E-07	
Naphthalene	1.21E-10			
PCB-1254	1.68E-08	2.00E+00	3.35E-08	
PCB-1260	3.41E-09	2.00E+00	6.83E-09	
Phenanthrene	2.95E-08			
Polychlorinated biphenyl	9.79E-09	2.00E+00	1.96E-08	
Pyrene	6.19E-08			
Alpha activity				
Beta activity				
Cesium-137	4.16E+01	3.16E-11	1.31E-09	
Neptunium-237	1.39E+00	3.00E-10	4.18E-10	
Uranium-234	2.25E+00	4.44E-11	1.00E-10	
Uranium-235	2.16E-01	4.70E-11	1.02E-11	
Uranium-238	4.20E+00	6.20E-11	2.61E-10	
Pathway Total				6.78E-06

Recreational Excess Lifetime Cancer Risks

---------- SECTOR=West PATHWAY=Recreational Teen Ingestion of Venison ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	1.34E-06			
Antimony	5.68E-12			
Arsenic	3.66E-09	1.50E+00	5.493-09	
Beryllium	3.94E-11	4.30E+00	1.69E-10	
Cadmium	1.33E-10			
Chromium	1.57E-08			
Cobalt	6.88E-11			
Uranium	1.43E-09			
Zinc	1.69E-06			
2-Methylnaphthalene	3.82E-11			
Acenaphthene	2.94E-10			
Anthracene	1.54E-09			
Benz(a)anthracene	3.26E-08	7.30E-01	2.38E-08	
Benzo(a)pyrene	7.16E-08	7.30E+00	5.23E-07	
Benzo(b)fluoranthene	8.92E-08	7.30E-01	6.51E-08	
Benzo(ghi)perylene	4.54E-08			
Benzo(k)fluoranthene	4.30E-07	7.30E-02	3.14E-08	
Bis(2-ethylhexyl)phthalate	2.89E-11	1.40E-02	4.04E-13	
Chrysene	3.51E-08	7.30E-03	2.56E-10	
Di-n-butyl phthalate	5.91E-11			
Dibenz(a,h)anthracene	7.27E-08	7.30E+00	5.30E-07	
Fluoranthene	1.30E-08			
Fluorene	3.31E-10			
Indeno(1,2,3-cd)pyrene	4.66E-08	7.30E-01	3.40E-08	
Naphthalene	2.38E-11			
PCB-1254	3.03E-09	2.00E+00	6.073-09	
PCB-1260	6.15E-10	2.00E+00	1.23E-09	
Phenanthrene	5.48E-09			
Polychlorinated biphenyl	1.77E-09	2.00E+00	3.55E-09	
Pyrene	1.14E-08			
Alpha activity				
Beta activity				
Cesium-137	7.96E+00	3.16E-11	2.52E-10	
Neptunium-237	2.58E-01	3.00E-10	7.74E-11	
Uranium-234	4.09E-01	4.44E-11	1.82E-11	
Uranium-235	3.95E-02	4.70E-11	1.863-12	
Uranium-238	7.69E-01	6.20E-11	4.773-11	
Pathway Total				1.22E-06

Residential Excess Lifetime Cancer Risks

SECTOR-Central PATHWAY=Residential Adult Dermal Contact with Soil

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Di-n-butyl phthalate	5.75E-06	1.00E-01	5.75E-05	
Alpha activity				
Beta activity				
Pathway Total				5.75E-05

SECTOR-Central PATHWAY=Residential Adult Ingestion of Soil

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Di-n-butyl phthalate	1.64E-06	1.00E-01	1.64E-05	
Alpha activity				
Beta activity				
Pathway Total				1.64E-05

SECTOR=Central PATHWAY=Residential Adult Ingestion of Vegetables From Soil

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Di-n-butyl phthalate	3.55E-04	1.00E-01	3.55E-03	
Alpha activity				
Beta activity				
Pathway Total				3.55E-03

SECTOR=Central PATHWAY=Residential Adult Inhalation of Soil

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Di-n-butyl phthalate	7.67E-11			
Alpha activity				
Beta activity				
Pathway Total				

SECTOR=Central PATHWAY=Residential Child Dermal Contact with Soil

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Di-n-butyl phthalate	2.96E-05	1.00E-01	2.96E-04	
Alpha activity				
Beta activity				
Pathway Total				2.96E-04

SECTOR=Central PATHWAY=Residential Child Ingestion of Soil

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Di-n-butyl phthalate	1.59E-05	1.00E-01	1.59E-04	

Residential Excess Lifetime Cancer Risks

..... SECTOR=Central PATHWAY=Residential Child Ingestion of Soil .....
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Alpha activity				
Beta activity				
Pathway Total				1.59E-04

---------- SECTOR=Central PATHWAY=Residential Child Ingestion of Vegetables From Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Di-n-butyl phthalate	1.12E-03	1.0 OE-01	1.12E-02	
Alpha activity				
Beta activity				
Pathway Total				1.12E-02

---------- SECTOR=Central PATHWAY=Residential Child Inhalation of Soil .....

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Di-n-butyl phthalate	3.70E-10			
Alpha activity				
Beta activity				
Pathway Total				

---------- SECTOR=East PATHWAY=Residential Adult Dermal Contact with Soil .....

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Cadmium	1.82E-07	1.00E-05	1.82E-02	
Chromium	3.26E-05	1.00E-04	3.26E-01	
Thallium	2.88E-06			
Uranium	6.56E-05	2.55E-03	2.57E-02	
Acenaphthene	6.23E-07	1.86E-02	3.35E-05	
Anthracene	1.05E-06	2.28E-01	4.63E-06	
Benz(a)anthracene	3.46E-06			
Benzo(a)pyrene	3.81E-06			
Benzo(b)fluoranthene	6.71E-06			
Benzo(ghi)perylene	1.77E-06			
Benzo(k)fluoranthene	4.17E-06			
Chrysene	3.81E-06			
Di-n-butyl phthalate	5.89E-06	1.00E-01	5.89E-05	
Dibenz(a,h)anthracene	7.67E-07			
Fluoranthene	1.01E-05	1.24E-02	8.12E-04	
Fluorene	4.32E-07	2.00E-02	2.16E-05	
Indeno(1,2,3-cd)pyrene	2.01E-06			
PCB-1260	9.49E-06			
Phenanthrene	5.56E-06			
Polychlorinated biphenyl	2.88E-05			
Pyrene	8.63E-06	9.30E-03	9.28E-04	
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				

Residential Excess Lifetime Cancer Risks

---------- SECTOR=East PATHWAY=Residential Adult Dermal Contact with Soil ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Uranium-235				
Uranium-238				
Pathway Total				3.72E-01

---------- SECTOR=East PATHWAY=Residential Adult Ingestion of Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Cadmium	5.21E-07	1.00E-03	5.21E-04	
Chromium	1.87E-05	5.00E-03	3.73E-03	
Thallium	1.64E-06			
Uranium	3.75E-05	3.00E-03	1.25E-02	
Acenaphthene	1.78E-07	6.00E-02	2.97E-06	
Anthracene	3.01E-07	3.00E-01	1.00E-06	
Benz(a)anthracene	9.89E-07			
Benzo(a)pyrene	1.09E-06			
Benzo(b)fluoranthene	1.92E-06			
Benzo(ghi)perylene	5.07E-07			
Benzo(k)fluoranthene	1.19E-06			
Chrysene	1.09E-06			
Di-n-butyl phthalate	1.68E-06	1.00E-01	1.68E-05	
Dibenz(a,h)anthracene	2.19E-07			
Fluoranthene	2.88E-06	4.00E-02	7.19E-05	
Fluorene	1.23E-07	4.00E-02	3.08E-06	
Indeno(1,2,3-cd)pyrene	5.75E-07			
PCB-1260	4.52E-06			
Phenanthrene	1.59E-06			
Polychlorinated biphenyl	1.37E-05			
Pyrene	2.47E-06	3.00E-02	8.22E-05	
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-235				
Uranium-238				
Pathway Total				1.69E-02

---------- SECTOR=East PATHWAY=Residential Adult Ingestion Of Vegetables From Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Cadmium	1.65E-04	1.00E-03	1.65E-01	
Chromium	3.86E-03	5.00E-03	7.72E-01	
Thallium	3.42E-04			
Uranium	7.77E-03	3.00E-03	2.59E+00	
Acenaphthene	4.04E-05	6.00E-02	6.73E-04	
Anthracene	6.76E-05	3.00E-01	2.25E-04	
Benz(a)anthracene	2.08E-04			
Benzo(a)pyrene	2.27E-04			
Benzo(b)fluoranthene	4.00E-04			
Benzo(ghi)perylene	1.05E-04			
Benzo(k)fluoranthene	2.47E-04			
Chrysene	2.29E-04			
Di-n-butyl phthalate	3.63E-04	1.00E-01	3.63E-03	

Residential Excess Lifetime Cancer Risks

..... SECTOR=East PATHWAY=Residential Adult Ingestion of Vegetables From Soil .....
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Dibenz(a,h)anthracene	4.55E-05			
Fluoranthene	6.21E-04	4.00E-02	1.553-02	
Fluorene	2.76E-05	4.00E-02	6.91E-04	
Indeno(1,2,3-cd)pyrene	1.20E-04			
PCB-1260	9.38E-04			
Phenanthrene	3.50E-04			
Polychlorinated biphenyl	2.86E-03			
Pyrene	5.32E-04	3.00E-02	1.77E-02	
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-235				
Uranium-238				
Pathway Total				3.57E+00

---------- SECTOR=East PATHWAY=Residential Adult Inhalation of Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Cadmium	2.43E-11	5.71E-05	4.25E-07	
Chromium	8.70E-10			
Thallium	7.67E-11			
Uranium	1.75E-09			
Acenaphthene	8.31E-12			
Anthracene	1.41E-11			
Benz(a)anthracene	4.61E-11			
Benzo(a)pyrene	5.08E-11			
Benzo(b)fluoranthene	8.95E-11			
Benzo(ghi)perylene	2.37E-11			
Benzo(k)fluoranthene	5.56E-11			
Chrysene	5.08E-11			
Di-n-butyl phthalate	7.86E-11			
Dibenz(a,h)anthracene	1.02E-11			
Fluoranthene	1.34E-10			
Fluorene	5.75E-12			
Indeno(1,2,3-cd)pyrene	2.68E-11			
PCB-1260	2.11E-10			
Phenanthrene	7.42E-11			
Polychlorinated biphenyl	6.39E-10			
Pyrene	1.15E-10			
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-235				
Uranium-238				
Pathway Total				4.25E-07

---------- SECTOR=East PATHWAY=Residential Child Dermal Contact with Soil .....

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Cadmium	9.37E-07	1.00E-05	9.37E-02	

Residential Excess Lifetime Cancer Risks

SECTOR-East PATHWAY=Residential Child Dermal Contact with Soil (continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
chromium	1.68E-04	1.00E-04	1.68E+00	
Thallium	1.48E-05			
Uranium	3.37E-04	2.55E-03	1.32E-01	
Acenaphthene	3.21E-06	1.86E-02	1.72E-04	
Anthracene	5.43E-06	2.28E-01	2.38E-05	
Benz(a)anthracene	1.78E-05			
Benzo(a)pyrene	1.96E-05			
Benzo(b)fluoranthene	3.45E-05			
Benzo(ghi)perylene	9.13E-06			
Benzo(k)fluoranthene	2.15E-05			
Chrysene	1.96E-05			
Di-n-butyl phthalate	3.03E-05	1.00E-01	3.03E-04	
Dibenz(a,h)anthracene	3.95E-06			
Fluoranthene	5.18E-05	1.24E-02	4.18E-03	
Fluorene	2.22E-06	2.00E-02	1.11E-04	
Indeno(1,2,3-cd)pyrene	1.04E-05			
PCB-1260	4.88E-05			
Phenanthrene	2.86E-05			
Polychlorinated biphenyl	1.48E-04			
Pyrene	4.44E-05	9.30E-03	4.77E-03	
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-235				
Uranium-238				
Pathway Total				1.91E+00

SECTOR=East PATHWAY=Residential Child Ingestion of Soil

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Cadmium	5.03E-06	1.00E-03	5.03E-03	
Chromium	1.80E-04	5.00E-03	3.60E-02	
Thallium	1.59E-05			
Uranium	3.62E-04	3.00E-03	1.21E-01	
Acenaphthene	1.72E-06	6.00E-02	2.87E-05	
Anthracene	2.91E-06	3.00E-01	9.70E-06	
Benz(a)anthracene	9.55E-06			
Benzo(a)pyrene	1.05E-05			
Benzo(b)fluoranthene	1.85E-05			
Benzo(ghi)perylene	4.89E-06			
Benzo(k)fluoranthene	1.15E-05			
Chrysene	1.05E-05			
Di-n-butyl phthalate	1.63E-05	1.00E-01	1.63E-04	
Dibenz(a,h)anthracene	2.12E-06			
Fluoranthene	2.78E-05	4.00E-02	6.94E-04	
Fluorene	1.19E-06	4.00E-02	2.98E-05	
Indeno(1,2,3-cd)pyrene	5.56E-06			
PCB-1260	4.36E-05			
Phenanthrene	1.54E-05			
Polychlorinated biphenyl	1.32E-04			
Pyrene	2.38E-05	3.00E-02	7.94E-04	
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				

Residential Excess Lifetime Cancer Risks

---------- SECTOR=East PATHWAY=Residential Child Ingestion of Soil ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Uranium-235				
Uranium-238				
Pathway Total				1.63E-01

---------- SECTOR=East PATHWAY=Residential Child Ingestion of Vegetables From Soil .....

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Cadmium	5.19E-04	1.00E-03	5.19E-01	
Chromium	1.22E-02	5.00E-03	2.44E+00	
Thallium	1.08E-03			
Uranium	2.45E-02	3.00E-03	8.17E+00	
Acenaphthene	1.27E-04	6.00E-02	2.12E-03	
Anthracene	2.13E-04	3.00E-01	7.10E-04	
Benz(a)anthracene	6.55E-04			
Benzo(a)pyrene	7.17E-04			
Benzo(b)fluoranthene	1.26E-03			
Benzo(ghi)perylene	3.32E-04			
Benzo(k)fluoranthene	7.80E-04			
Chrysene	7.21E-04			
Di-n-butyl phthalate	1.15E-03	1.00E-01	1.15E-02	
Dibenz(a,h)anthracene	1.44E-04			
Fluoranthene	1.96E-03	4.00E-02	4.89E-02	
Fluorene	8.72E-05	4.00E-02	2.18E-03	
Indeno(1,2,3-cd)pyrene	3.77E-04			
PCB-1260	2.96E-03			
Phenanthrene	1.10E-03			
Polychlorinated biphenyl	9.03E-03			
Pyrene	1.68E-03	3.00E-02	5.59E-02	
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-235				
Uranium-238				
Pathway Total				1.12E+01

---------- SECTOR=East PATHWAY=Residential Child Inhalation of Soil .....

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Cadmium	1.17E-10	5.71E-05	2.05E-06	
Chromium	4.20E-09			
Thallium	3.70E-10			
Uranium	8.44E-09			
Acenaphthene	4.01E-11			
Anthracene	6.79E-11			
Benz(a)anthracene	2.23E-10			
Benzo(a)pyrene	2.45E-10			
Benzo(b)fluoranthene	4.32E-10			
Benzo(ghi)perylene	1.14E-10			
Benzo(k)fluoranthene	2.68E-10			
Chrysene	2.45E-10			
Di-n-butyl phthalate	3.79E-10			

Residential Excess Lifetime Cancer Risks

SECTOR=East PATHWAY=Residential child Inhalation of Soil (continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Dibenz(a,h)anthracene	4.94E-11			
Fluoranthene	6.48E-10			
Fluorene	2.78E-11			
Indeno(1,2,3-cd)pyrene	1.30E-10			
PCB-1260	1.02E-09			
Phenanthrene	3.58E-10			
Polychlorinated biphenyl	3.09E-09			
Pyrene	5.55E-10			
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-235				
Uranium-238				
Pathway Total				2.053-06

SECTOR=Far East/Northeast PATHWAY=Residential Adult Dermal Contact with Soil

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	3.31E-02	1.00E-01	3.31E-01	
Antimony	6.95E-06	8.00E-06	8.69E-01	
Chromium	2.49E-05	1.00E-04	2.49E-01	
Uranium	6.28E-05	2.55E-03	2.46E-02	
Benz(a)anthracene	1.92E-07			
Benzo(a)pyrene	1.92E-07			
Benzo(b)fluoranthene	1.92E-07			
Benzo(k)fluoranthene	2.40E-07			
Chrysene	1.92E-07			
Fluoranthene	4.07E-07	1.24E-02	3.28E-05	
PCB-1260	1.61E-08			
Phenanthrene	1.92E-07			
Polychlorinated biphenyl	1.61E-08			
Pyrene	2.32E-07	9.30E-03	2.49E-05	
Alpha activity				
Beta activity				
Uranium-235				
Uranium-238				
Pathway Total				1.47E+00

SECTOR=Far East/Northeast PATHWAY=Residential Adult Ingestion of Soil

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	1.89E-02	1.00E+00	1.89E-02	
Antimony	3.97E-06	4.00E-04	9.93E-03	
Chromium	1.42E-05	5.00E-03	2.85E-03	
Uranium	3.59E-05	3.00E-03	1.20E-02	
Benz(a)anthracene	5.48E-08			
Benzo(a)pyrene	5.48E-08			
Benzo(b)fluoranthene	5.48E-08			
Benzo(k)fluoranthene	6.85E-08			
Chrysene	5.48E-08			
Fluoranthene	1.16E-07	4.00E-02	2.91E-06	

Residential Excess Lifetime Cancer Risks

..... SECTOR=Far East/Northeast PATHWAY-Residential Adult Ingestion Of Soil ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
PCB-1260	7.67E-09			
Phenanthrene	5.48E-08			
Polychlorinated biphenyl	7.67E-09			
Pyrene	6.61E-08	3.00E-02	2.20E-06	
Alpha activity				
Beta activity				
Uranium-235				
Uranium-238				
Pathway Total				4.37E-02

---------- SECTOR=Far East/Northeast PATHWAY=Residential Adult Ingestion of Vegetables From Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	3.94E+00	1.00E+00	3.94E+00	
Antimony	8.54E-04	4.00E-04	2.13E+00	
Chromium	2.95E-03	5.00E-03	5.90E-01	
Uranium	7.45E-03	3.00E-03	2.48E+00	
Benz(a)anthracene	1.15E-05			
Benzo(a)pyrene	1.14E-05			
Benzo(b)fluoranthene	1.14E-05			
Benzo(k)fluoranthene	1.42E-05			
Chrysene	1.15E-05			
Fluoranthene	2.51E-05	4.00E-02	6.27E-04	
PCB-1260	1.59E-06			
Phenanthrene	1.21E-05			
Polychlorinated biphenyl	1.60E-06			
Pyrene	1.43E-05	3.00E-02	4.763-04	
Alpha activity				
Beta activity				
Uranium-235				
Uranium-238				
Pathway Total				9.14E+00

---------- SECTOR=Far East/Northeast PATHWAY=Residential Adult Inhalation of Soil .....

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	8.84E-07			
Antimony	1.85E-10			
Chromium	6.64E-10			
Uranium	1.67E-09			
Benz(a)anthracene	2.56E-12			
Benzo(a)pyrene	2.56E-12			
Benzo(b)fluoranthene	2.56E-12			
Benzo(k)fluoranthene	3.20E-12			
Chrysene	2.56E-12			
Fluoranthene	5.42E-12			
PCB-1260	3.58E-13			
Phenanthrene	2.56E-12			
Polychlorinated biphenyl	3.58E-13			
Pyrene	3.09E-12			
Alpha activity				
Beta activity				

Residential Excess Lifetime Cancer Risks

..... SECTOR=Far East/Northeast PATHWAY=Residential Adult Inhalation of Soil ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Uranium-235				
Uranium-238				
Pathway Total				

---------- SECTOR=Far East/Northeast PATHWAY-Residential Child Dermal Contact with Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	1.71E-01	1.00E-01	1.71E+00	
Antimony	3.58E-05	8.00E-06	4.47E+00	
Chromium	1.28E-04	1.00E-04	1.28E+00	
Uranium	3.23E-04	2.55E-03	1.27E-01	
Benz(a)anthracene	9.87E-07			
Benzo(a)pyrene	9.87E-07			
Benzo(b)fluoranthene	9.87E-07			
Benzo(k)fluoranthene	1.23E-06			
Chrysene	9.87E-07			
Fluoranthene	2.09E-06	1.24E-02	1.69E-04	
PCB-1260	8.29E-08			
Phenanthrene	9.87E-07			
Polychlorinated biphenyl	8.29E-08			
Pyrene	1.19E-06	9.30E-03	1.28E-04	
Alpha activity				
Beta activity				
Uranium-235				
Uranium-238				
Pathway Total				7.59E+00

---------- SECTOR=Far East/Northeast PATHWAY=Residential Child Ingestion of Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	1.83E-01	1.00E+00	1.83E-01	
Antimony	3.84E-05	4.00E-04	9.593-02	
Chromium	1.37E-04	5.00E-03	2.75E-02	
Uranium	3.47E-04	3.00E-03	1.16E-01	
Benz(a)anthracene	5.29E-07			
Benzo(a)pyrene	5.29E-07			
Benzo(b)fluoranthene	5.29E-07			
Benzo(k)fluoranthene	6.61E-07			
Chrysene	5.29E-07			
Fluoranthene	1.12E-06	4.00E-02	2.81E-05	
PCB-1260	7.41E-08			
Phenanthrene	5.29E-07			
Polychlorinated biphenyl	7.41E-08			
Pyrene	6.39E-07	3.00E-02	2.13E-05	
Alpha activity				
Beta activity				
Uranium-235				
Uranium-238				
Pathway Total				4.22E-01

Residential Excess Lifetime Cancer Risks

---------- SECTOR=Far East/Northeast PATHWAY=Residential Child Ingestion of Vegetables From Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	1.24E+01	1.00E+00	1.24E+01	
Antimony	2.69E-03	4.00E-04	6.73E+00	
Chromium	9.30E-03	5.00E-03	1.86E+00	
Uranium	2.35E-02	3.00E-03	7.83E+00	
Benz(a)anthracene	3.63E-05			
Benzo(a)pyrene	3.61E-05			
Benzo(b)fluoranthene	3.61E-05			
Benzo(k)fluoranthene	4.49E-05			
Chrysene	3.63E-05			
Fluoranthene	7.91E-05	4.00E-02	1.98E-03	
PCB-1260	5.02E-06			
Phenanthrene	3.80E-05			
Polychlorinated biphenyl	5.06E-06			
Pyrene	4.50E-05	3.00E-02	1.50E-03	
Alpha activity				
Beta activity				
Uranium-235				
Uranium-238				
Pathway Total				2.88E+01

..... SECTOR=Far East/Northeast PATHWAY=Residential Child Inhalation of Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	4.27E-06			
Antimony	8.95E-10			
Chromium	3.21E-09			
Uranium	8.09E-09			
Benz(a)anthracene	1.23E-11			
Benzo(a)pyrene	1.23E-11			
Benzo(b)fluoranthene	1.23E-11			
Benzo(k)fluoranthene	1.54E-11			
Chrysene	1.23E-11			
Fluoranthene	2.62E-11			
PCB-1260	1.73E-12			
Phenanthrene	1.23E-11			
Polychlorinated biphenyl	1.73E-12			
Pyrene	1.49E-11			
Alpha activity				
Beta activity				
Uranium-235				
Uranium-238				
Pathway Total				

---------- SECTOR=Far North/Northwest PATHWAY=Residential Adult Dermal Contact with Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Antimony	3.36E-06	8.00E-06	4.20E-01	
Beryllium	1.65E-06	5.00E-05	3.31E-02	
Cadmium	1.44E-07	1.00E-05	1.44E-02	
Chromium	6.52E-05	1.00E-04	6.52E-01	
Thallium	7.19E-07			
Uranium	3.31E-05	2.55E-03	1.30E-02	
Acenaphthene	2.40E-07	1.86E-02	1.29E-05	

Residential Excess Lifetime Cancer Risks

---------- SECTOR=Far North/Northwest PATHWAY=Residential Adult Dermal Contact with Soil ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Anthracene	7.673-07	2.28E-01	3.36E-06	
Benz(a)anthracene	1.633-06			
Benzo(a)pyrene	1.34E-06			
Benzo(b)fluoranthene	1.25E-06			
Benzo(ghi)perylene	6.23E-07			
Benzo(k)fluoranthene	1.39E-06			
Bis(2-ethylhexyl)phthalate	3.84E-07	3.803-03	1.01E-04	
Chrysene	1.68E-06			
Di-n-butyl phthalate	1.92E-07	1.00E-01	1.923-06	
Fluoranthene	4.03E-06	1.24E-02	3.25E-04	
Fluorene	2.40E-07	2.00E-02	1.2OE-05	
Indeno(1,2,3-cd)pyrene	6.71E-07			
Phenanthrene	1.94E-06			
Pyrene	1.88E-06	9.3OE-03	2.02E-04	
Alpha activity				
Beta activity				
Neptunium-237				
Uranium-235				
Uranium-238				
Pathway Total				1.13E+00

---------- SECTOR=Far North/Northwest PATHWAY-Residential Adult Ingestion of Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Antimony	1.923-06	4.00E-04	4.79E-03	
Beryllium	9.45E-07	5.003-03	1.89E-04	
Cadmium	4.11E-07	1.00E-03	4.11E-04	
Chromium	3.73E-05	5.00E-03	7.45E-03	
Thallium	4.11E-07			
Uranium	1.89E-05	3.003-03	6.31E-03	
Acenaphthene	6.85E-08	6.00E-02	1.14E-06	
Anthracene	2.19E-07	3.00E-01	7.31E-07	
Benz(a)anthracene	4.663-07			
Benzo(a)pyrene	3.84E-07			
Benzo(b)fluoranthene	3.56E-07			
Benzo(ghi)perylene	1.78E-07			
Benzo(k)fluoranthene	3.97E-07			
Bis(2-ethylhexyl)phthalate	1.10E-07	2.00E-02	5.48E-06	
Chrysene	4.79E-07			
Di-n-butyl phthalate	5.48E-08	1.00E-01	5.48E-07	
Fluoranthene	1.15E-06	4.00E-02	2.88E-05	
Fluorene	6.85E-08	4.00E-02	1.71E-06	
Indeno(1,2,3-cd)pyrene	1.92E-07			
Phenanthrene	5.553-07			
Pyrene	5.36E-07	3.00E-02	1.79E-05	
Alpha activity				
Beta activity				
Neptunium-237				
Uranium-235				
Uranium-238				
Pathway Total				1.92E-02

Residential Excess Lifetime Cancer Risks

---------- SECTOR=Far North/Northwest PATHWAY=Residential Adult Ingestion of Vegetables From Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Antimony	4.12E-04	4.00E-04	1.03E+00	
Beryl1ium	1.98E-04	5.00E-03	3.953-02	
Cadmium	1.30E-04	1.00E-03	1.30E-01	
Chromium	7.71E-03	5.00E-03	1.54E+00	
Thallium	8.54E-05			
Uranium	3.93E-03	3.00E-03	1.31E+00	
Acenaphthene	1.55E-05	6.00E-02	2.59E-04	
Anthracene	4.91E-05	3.00E-01	1.64E-04	
Benz(a)anthracene	9.78E-05			
Benzo(a)pyrene	8.01E-05			
Benzo(b)fluoranthene	7.43E-05			
Benzo(ghi)pexylene	3.70E-05			
Benzo(k)fluoranthene	8.25E-05			
Bis(2-ethylhexyl)phthalate	2.36E-05	2.00E-02	1.18E-03	
Chrysene	1.01E-04			
Di-n-butyl phthalate	1.18E-05	1.00E-01	1.18E-04	
Fluoranthene	2.48E-04	4.00E-02	6.21E-03	
Fluorene	1.54E-05	4.00E-02	3.84E-04	
Indeno(1,2,3-cd)pyrene	3.99E-05			
Phenanthrene	1.22E-04			
Pyrene	1.16E-04	3.00E-02	3.86E-03	
Alpha activity				
Beta activity				
Neptunium-237				
Uranium-235				
Uranium-238				
Pathway Total				4.06E+00

---------- SECTOR=Far North/Northwest PATHWAY=Residential Adult Inhalation of Soil ....

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Antimony	8.95E-11			
Beryllium	4.41E-11			
Cadmium	1.92E-11	5.71E-05	3.36E-07	
Chromium	1.74E-09			
Thallium	1.92E-11			
Uranium	8.84E-10			
Acenaphthene	3.20E-12			
Anthracene	1.02E-11			
Benz(a)anthracene	2.17E-11			
Benzo(a)pyrene	1.79E-11			
Benzo(b)fluoranthene	1.66E-11			
Benzo(ghi)perylene	8.31E-12			
Benzo(k)fluoranthene	1.85E-11			
Bis(2-ethylhexyl)phthalate	5.11E-12			
Chrysene	2.24E-11			
Di-n-butyl phthalate	2.56E-12			
Fluoranthene	5.37E-11			
Fluorene	3.20E-12			
Indeno(1,2,3-cd)pyrene	8.95E-12			
Phenanthrene	2.59E-11			
Pyrene	2.50E-11			
Alpha activity				
Beta activity				
Neptunium-237				
Uranium-235				
Uranium-238				

Residential Excess Lifetime Cancer Risks

---------- SECTOR=Far North/Northwest PATHWAY=Residential Adult Inhalation Of Soil ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Pathway Total				3.36E-07

---------- SECTOR=Far North/Northwest PATHWAY=Residential Child Dermal Contact with Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Antimony	1.73E-05	8.00E-06	2.16E+00	
Beryllium	8.51E-06	5.00E-05	1.70E-01	
Cadmium	7.40E-07	1.00E-05	7.40E-02	
Chromium	3.35E-04	1.00E-04	3.35E+00	
Thallium	3.703-06			
Uranium	1.71E-04	2.55E-03	6.69E-02	
Acenaphthene	1.23E-06	1.86E-02	6.63E-05	
Anthracene	3.95E-06	2.28E-01	1.73E-05	
Benz(a)anthracene	8.39E-06			
Benzo(a)pyrene	6.91E-06			
Benzo(b)fluoranthene	6.41E-06			
Benzo(ghi)perylene	3.21E-06			
Benzo(k)fluoranthene	7.15E-06			
Bis(2-ethylhexyl)phthalate	1.97E-06	3.80E-03	5.19E-04	
Chrysene	8.63E-06			
Di-n-butyl phthalate	9.87E-07	1.00E-01	9.87E-06	
Fluoranthene	2.07E-05	1.24E-02	1.67E-03	
Fluorene	1.23E-06	2.00E-02	6.17E-05	
Indeno(1,2,3-cd)pyrene	3.453-06			
Phenanthrene	9.99E-06			
Pyrene	9.66E-06	9.30E-03	1.04E-03	
Alpha activity				
Beta activity				
Neptunium-237				
Uranium-235				
Uranium-238				
Pathway Total				5.83E+00

---------- SECTOR=Far North/Northwest PATHWAY=Residential Child Ingestion Of Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Antimony	1.85E-05	4.00E-04	4.63E-02	
Beryllium	9.13E-06	5.00E-03	1.83E-03	
Cadmium	3.97E-06	1.00E-03	3.973-03	
Chromium	3.60E-04	5.00E-03	7.20E-02	
Thallium	3.97E-06			
Uranium	1.83E-04	3.00E-03	6.10E-02	
Acenaphthene	6.61E-07	6.00E-02	1.10E-05	
Anthracene	2.12E-06	3.00E-01	7.05E-06	
Benz(a)anthracene	4.503-06			
Benzo(a)pyrene	3.70E-06			
Benzo(b)fluoranthene	3.44E-06			
Benzo(ghi)perylene	1.72E-06			
Benzo(k)fluoranthene	3.84E-06			
Bis(2-ethylhexyl)phthalate	1.06E-06	2.00E-02	5.29E-05	
Chrysene	4.63E-06			
Di-n-butyl phthalate	5.29E-07	1.00E-01	5.29E-06	

Residential Excess Lifetime Cancer Risks

..... SECTOR=Far North/Northwest PATHWAY=Residential Child Ingestion Of Soil .....
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Fluoranthene	1.11E-05	4.00E-02	2.78E-04	
Fluorene	6.61E-07	4.00E-02	1.65E-05	
Indeno(1,2,3-cd)pyrene	1.85E-06			
Phenanthrene	5.35E-06			
Pyrene	5.18E-06	3.00E-02	1.73E-04	
Alpha activity				
Beta activity				
Neptunium-237				
Uranium-235				
Uranium-238				
Pathway Total				1.86E-01

---------- SECTOR=Far North/Northwest PATHWAY=Residential Child Ingestion Of Vegetables From Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Antimony	1.30E-03	4.00E-04	3.25E+00	
Beryllium	6.23E-04	5.00E-03	1.25E-01	
Cadmium	4.10E-04	1.00E-03	4.10E-01	
Chromium	2.43E-02	5.00E-03	4.87E+00	
Thallium	2.69E-04			
Uranium	1.24E-02	3.00E-03	4.13E+00	
Acenaphthene	4.89E-05	6.00E-02	8.16E-04	
Anthracene	1.55E-04	3.00E-01	5.16E-04	
Benz(a)anthracene	3.08E-04			
Benzo(a)pyrene	2.52E-04			
Benzo(b)fluoranthene	2.34E-04			
Benzo(ghi)perylene	1.17E-04			
Benzo(k)fluoranthene	2.60E-04			
Bis(2-ethylhexyl)phthalate	7.46E-05	2.00E-02	3.73E-03	
Chrysene	3.18E-04			
Di-n-butyl phthalate	3.73E-05	1.00E-01	3.73E-04	
Fluoranthene	7.83E-04	4.00E-02	1.96E-02	
Fluorene	4.84E-05	4.00E-02	1.21E-03	
Indeno(1,2,3-cd)pyrene	1.26E-04			
Phenanthrene	3.85E-04			
Pyrene	3.65E-04	3.00E-02	1.22E-02	
Alpha activity				
Beta activity				
Neptunium-237				
Uranium-235				
Uranium-238				
Pathway Total				1.28E+01

---------- SECTOR=Far North/Northwest PATHWAY=Residential Child Inhalation Of Soil .....

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Antimony	4.32E-10			
Beryllium	2.13E-10			
Cadmium	9.26E-11	5.71E-05	1.62E-06	
Chromium	8.39E-09			
Thallium	9.26E-11			
Uranium	4.27E-09			

Residential Excess Lifetime Cancer Risks

---------- SECTOR=Far North/Northwest PATHWAY=Residential Child Inhalation of Soil ..... (continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Acenaphthene	1.54E-11			
Anthracene	4.94E-11			
Benz(a)anthracene	1.05E-10			
Benzo(a)pyrene	8.64E-11			
Benzo(b)fluoranthene	8.02E-11			
Benzo(ghi)perylene	4.01E-11			
Benzo(k)fluoranthene	8.95E-11			
Bis(2-ethylhexyl)phthalate	2.473-11			
Chrysene	1.08E-10			
Di-n-butyl phthalate	1.23E-11			
Fluoranthene	2.59E-10			
Fluorene	1.54E-11			
Indeno(1,2,3-cd)pyrene	4.32E-11			
Phenanthrene	1.25E-10			
Pyrene	1.21E-10			
Alpha activity				
Beta activity				
Neptunium-237				
Uranium-235				
Uranium-238				
Pathway Total				1.62E-06

---------- SECTOR=McNairy PATHWAY=Residential Adult Dermal Contact with Groundwater .....

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	4.46E-03	1.00E-01	4.46E-02	
Arsenic	1.31E-05	1.23E-04	1.06E-01	
Barium	1.75E-05	4.90E-03	3.58E-03	
Beryllium	4.16E-07	5.00E-05	8.32E-03	
Bromide				
Cadmium	9.43E-08	5.00E-06	1.89E-02	
Chromium	1.22E-05	1.00E-04	1.22E-01	
Cobalt	3.51E-06	4.80E-02	7.32E-05	
Iron	1.08E-02	4.50E-02	2.40E-01	
Lead	5.68E-06	1.50E-08	3.78E+02	
Manganese	7.84E-05	1.87E-03	4.20E-02	
Nickel	5.53E-06	5.40E-03	1.02E-03	
Nitrate	2.64E-05	8.00E-01	3.29E-05	
Orthophosphate				
Selenium	1.46E-06	2.20E-03	6.65E-04	
Tetraoxo-sulfate(1-)				
Thallium	2.983-08			
Vanadium	5.06E-05	7.00E-05	7.23E-01	
Zinc	3.91E-04	6.00E-02	6.52E-03	
1,1-Dichloroethene	3.20E-06	9.00E-03	3.55E-04	
1,2-Dichloroethane	2.64E-07			
Bis(2-ethylhexyl)phthalate	6.06E-06	3.80E-03	1.60E-03	
Bromodichloromethane	1.53E-06	1.96E-02	7.83E-05	
Chloroform	2.99E-06	2.00E-03	1.49E-03	
Di-n-butyl phthalate	5.72E-06	1.00E-01	5.72E-05	
Di-n-octylphthalate	7.48E-03	1.80E-02	4.16E-01	
Dibromochloromethane	7.76E-07	1.20E-02	6.46E-05	
Tetrachloroethene	1.79E-04	1.00E-02	1.79E-02	
Trichloroethene	1.29E-05	9.00E-04	1.43E-02	
Vinyl chloride	5.09E-06			
cis-1,2-Dichloroethene	7.00E-06	1.00E-02	7.00E-04	

Residential Excess Lifetime Cancer Risks

---------- SECTOR=McNairy PATHWAY=Residential Adult Dermal Contact with Groundwater .....
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Actinium-228				
Alpha activity				
Beta activity				
Cesium-137				
Lead-210				
Lead-212				
Lead-214				
Neptunium-237				
Plutonium-239				
Potassium-40				
Technetium-99				
Thorium-228				
Thorium-230				
Thorium-234				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				3.80E+02

..... SECTOR=McNairy PATHWAY=Residential Adult Ingestion of Groundwater ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	2.46E+00	1.00E+00	2.46E+00	
Arsenic	7.21E-03	3.00E-04	2.40E+01	
Barium	9.65E-03	7.00E-02	1.38E-01	
Beryllium	2.29E-04	5.00E-03	4.59E-02	
Bromide	1.23E-03			
Cadmium	5.20E-05	5.00E-04	1.04E-01	
Chromium	6.71E-03	5.00E-03	1.34E+00	
Cobalt	1.94E-03	6.00E-02	3.23E-02	
Iron	5.96E+00	3.00E-01	1.99E+01	
Lead	3.13E-03	1.00E-07	3.13E+04	
Manganese	4.32E-02	4.60E-02	9.39E-01	
Nickel	3.05E-03	2.00E-02	1.52E-01	
Nitrate	1.45E-02	1.60E+00	9.07E-03	
Orthophosphate	2.77E-03			
Selenium	8.06E-04	5.00E-03	1.61E-01	
Tetraoxo-sulfate(1-)	4.70E-01			
Thallium	1.64E-05			
Vanadium	2.79E-02	7.00E-03	3.98E+00	
Zinc	2.15E-01	3.00E-01	7.18E-01	
1,1-Dichloroethene	1.98E-04	9.00E-03	2.20E-02	
1,2-Dichloroethane	2.74E-05			
Bis(2-ethylhexyl)phthalate	1.43E-04	2.00E-02	7.14E-03	
Bromodichloromethane	1.46E-04	2.00E-02	7.29E-03	
Chloroform	1.85E-04	1.00E-02	1.85E-02	
Di-n-butyl phthalate	2.74E-05	1.00E-01	2.74E-04	
Di-n-octylphthalate	1.53E-04	2.00E-02	7.66E-03	
Dibromochloromethane	1.10E-04	2.00E-02	5.48E-03	
Tetrachloroethene	2.67E-04	1.00E-02	2.67E-02	
Trichloroethene	4.44E-04	6.00E-03	7.40E-02	
Vinyl chloride	3.84E-04			
cis-1,2-Dichloroethene	3.85E-04	1.00E-02	3.85E-02	
Actinium-228				
Alpha activity				
Beta activity				

Residential Excess Lifetime Cancer Risks

SECTOR=McNairy PATHWAY=Residential Adult Ingestion of Groundwater (continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Cesium-137				
Lead-210				
Lead-212				
Lead-214				
Neptunium-237				
plutonium-239				
potassium-40				
Technetium-99				
Thorium-228				
Thorium-230				
Thorium-234				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				3.13E+04

SECTOR=McNairy PATHWAY=Residential Adult Ingestion of Vegetables from Groundwater

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	1.27E+00	1.00E+00	1.27E+00	
Arsenic	3.82E-03	3.00E-04	1.27E+01	
Barium	5.02E-03	7.00E-02	7.18E-02	
Beryllium	1.19E-04	5.00E-03	2.38E-02	
Bromide				
Cadmium	3.70E-05	5.00E-04	3.70E-02	
Chromium	3.46E-03	5.00E-03	6.93E-01	
Cobalt	1.06E-03	6.00E-02	1.77E-02	
Iron	3.08E+00	3.00E-01	1.03E+01	
Lead	1.62E-03	1.00E-07	1.62E+04	
Manganese	2.65E-02	4.60E-02	1.89E-01	
Nickel	1.79E-03	2.00E-02	8.96E-02	
Nitrate		1.60E+00		
Orthophosphate				
Selenium	5.31E-04	5.00E-03	1.06E-01	
Tetraoxo-sulfate(1-)				
Thallium	8.50E-06			
Vanadium	1.45E-02	7.00E-03	2.06E+00	
Zinc	1.92E-01	3.00E-01	6.41E-01	
1,1-Dichloroethene	2.99E-04	9.00E-03	3.32E-02	
1,2-Dichloroethane	5.47E-05			
Bis(2-ethylhexyl)phthalate	7.59E-05	2.00E-02	3.80E-03	
Bromodichloromethane	1.72E-04	2.00E-02	8.61E-03	
Chloroform	2.36E-04	1.00E-02	2.36E-02	
Di-n-butyl phthalate	1.46E-05	1.00E-01	1.46E-04	
Di-n-octylphthalate	7.91E-05	2.00E-02	3.96E-03	
Dibromochloromethane	1.20E-04	2.00E-02	6.02E-03	
Tetrachloroethene	2.29E-04	1.00E-02	2.29E-02	
Trichloroethene	4.27E-04	6.00E-03	7.11E-02	
Vinyl chloride	8.49E-04			
cis-1,2-Dichloroethene	5.34E-04	1.00E-02	5.34E-02	
Actinium-228				
Alpha activity				
Beta activity				
Cesium-137				
Lead-210				
Lead-212				

Residential Excess Lifetime Cancer Risks

---------- SECTOR=McNairy PATHWAY=Residential Adult Ingestion of Vegetables from Groundwater ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Lead-214				
Neptunium-237				
Plutonium-239				
Potassium-40				
Technetium-99				
Thorium-228				
Thorium-230				
Thorium-234				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				1.62E+04

---------- SECTOR=McNairy PATHWAY=Residential Adult Inhalation of Groundwater Household Use ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum				
Arsenic				
Barium		1.43E-04		
Beryllium				
Bromide				
Cadmium		5.71E-05		
Chromium				
Cobalt				
Iron				
Lead		2.86E-04		
Manganese		1.43E-05		
Nickel				
Nitrate				
Orthophosphate				
Selenium				
Tetraoxo-sulfate(1-)				
Thallium				
Vanadium				
Zinc				
1,1-Dichloroethene	5.87E-04			
1,2-Dichloroethane	8.12E-05	2.86E-03	2.84E-02	
Bis(2-ethylhexyl)phthalate				
Bromodichloromethane	4.32E-04			
Chloroform	5.48E-04			
Di-n-butyl phthalate				
Di-n-octylphthalate				
Dibromochloromethane	3.25E-04			
Tetrachloroethene	7.92E-04			
Trichloroethene	1.32E-03			
Vinyl chloride	1.14E-03			
cis-1,2-Dichloroethene	1.14E-03			
Actinium-228				
Alpha activity				
Beta activity				
Cesium-137				
Lead-210				
Lead-212				
Lead-214				
Neptunium-237				
Plutonium-239				

Residential Excess Lifetime Cancer Risks

---------- SECTOR=McNairy PATHWAY=Residential Adult Inhalation of Groundwater Household Use ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Potassium-40				
Technetium-99				
Thorium-228				
Thorium-230				
Thorium-234				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				2.84E-02

---------- SECTOR=McNairy PATHWAY=Residential Adult Inhalation of Groundwater While Showering ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum				
Arsenic				
Barium		1.43E-04		
Beryllium				
Bromide				
Cadmium		5.71E-05		
Chromium				
Cobalt				
Iron				
Lead		2.86E-04		
Manganese		1.43E-05		
Nickel				
Nitrate				
Orthophosphate				
Selenium				
Tetraoxo-sulfate(1-)				
Thallium				
Vanadium				
Zinc				
1,1-Dichloroethene	5.41E-05			
1,2-Dichloroethane	7.48E-06	2.86E-03	2.62E-03	
Bis(2-ethylhexyl)phthalate				
Bromodichloromethane	3.98E-05			
Chloroform	5.05E-05			
Di-n-butyl phthalate				
Di-n-octylphthalate				
Dibromochloromethane	2.99E-05			
Tetrachloroethene	7.29E-05			
Trichloroethene	1.21E-04			
Vinyl chloride	1.05E-04			
cis-1,2-Dichloroethene	1.05E-04			
Actinium-228				
Alpha activity				
Beta activity				
Cesium-137				
Lead-210				
Lead-212				
Lead-214				
Neptunium-237				
Plutonium-239				
Potassium-40				
Technetium-99				
Thorium-228				

Residential Excess Lifetime Cancer Risks

---------- SECTOR=McNairy PATHWAY=Residential Adult Inhalation of Groundwater While Showering ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Thorium-230				
Thorium-234				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				2.62E-03

---------- SECTOR=McNairy PATHWAY=Residential Child Dermal Contact with Groundwater ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	8.55E-03	1.00E-01	8.55E-02	
Arsenic	2.51E-05	1.23E-04	2.04E-01	
Barium	3.35E-05	4.90E-03	6.85E-03	
Beryllium	7.97E-07	5.00E-05	1.59E-02	
Bromide				
Cadmium	1.81E-07	5.00E-06	3.61E-02	
Chromium	2.33E-05	1.00E-04	2.33E-01	
Cobalt	6.73E-06	4.80E-02	1.40E-04	
Iron	2.07E-02	4.50E-02	4.60E-01	
Lead	1.09E-05	1.50E-08	7.25E+02	
Manganese	1.50E-04	1.87E-03	8.04E-02	
Nickel	1.06E-05	5.40E-03	1.96E-03	
Nitrate	5.05E-05	8.00E-01	6.31E-05	
Orthophosphate				
Selenium	2.80E-06	2.20E-03	1.27E-03	
Tetraoxo-sulfate(1-)				
Thallium	5.71E-08			
Vanadium	9.69E-05	7.00E-05	1.38E+00	
Zinc	7.49E-04	6.00E-02	1.25E-02	
1,1-Dichloroethene	6.13E-06	9.00E-03	6.81E-04	
1,2-Dichloroethane	5.05E-07			
Bis(2-ethylhexyl)phthalate	1.16E-05	3.80E-03	3.06E-03	
Bromodichloromethane	2.94E-06	1.96E-02	1.50E-04	
Chlorofo m	5.72E-06	2.00E-03	2.86E-03	
Di-n-butyl phthalate	1.10E-05	1.00E-01	1.10E-04	
Di-n-octylphthalate	1.43E-02	1.80E-02	7.96E-01	
Dibromochloromethane	1.49E-06	1.20E-02	1.24E-04	
Tetrachloroethene	3.43E-04	1.00E-02	3.43E-02	
Trichloroethene	2.47E-05	9.00E-04	2.74E-02	
Vinyl chloride	9.75E-06			
cis-1,2-Dichloroethene	1.34E-05	1.00E-02	1.34E-03	
Actinium-228				
Alpha activity				
Beta activity				
Cesium-137				
Lead-210				
Lead-212				
Lead-214				
Neptunium-237				
Plutonium-239				
Potassium-40				
Technetium-99				
Thorium-228				
Thorium-230				
Thorium-234				
Uranium-234				

Residential Excess Lifetime Cancer Risks

---------- SECTOR=McNairy PATHWAY=Residential Child Dermal Contact with Groundwater ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
uranium-235				
Uranium-238				
Pathway Total				7.28E+02

---------- SECTOR=McNairy PATHWAY=Residential Child Ingestion Of Groundwater ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	5.94E+00	1.00E+00	5.94E+00	
Arsenic	1.74E-02	3.00E-04	5.80E+01	
Barium	2.33E-02	7.00E-02	3.33E-01	
Beryllium	5.53E-04	5.00E-03	1.11E-01	
Bromide	2.97E-03			
Cadmium	1.25E-04	5.00E-04	2.51E-01	
Chromium	1.62E-02	5.00E-03	3.24E+00	
Cobalt	4.67E-03	6.00E-02	7.79E-02	
Iron	1.44E+01	3.00E-01	4.79E+01	
Lead	7.55E-03	1.00E-07	7.55E+04	
Manganese	1.04E-01	4.60E-02	2.27E+00	
Nickel	7.36E-03	2.00E-02	3.68E-01	
Nitrate	3.50E-02	1.60E+00	2.19E-02	
Orthophosphate	6.68E-03			
Selenium	1.94E-03	5.00E-03	3.89E-01	
Tetraoxo-sulfate(1-)	1.13E+00			
Thallium	3.96E-05			
Vanadium	6.73E-02	7.00E-03	9.62E+00	
Zinc	5.20E-01	3.00E-01	1.73E+00	
1,1-Dichloroethene	4.78E-04	9.00E-03	5.31E-02	
1,2-Dichloroethane	6.61E-05			
Bis(2-ethylhexyl)phthalate	3.45E-04	2.00E-02	1.72E-02	
Bromodichloromethane	3.52E-04	2.00E-02	1.76E-02	
Chloroform	4.46E-04	1.00E-02	4.46E-02	
Di-n-butyl phthalate	6.61E-05	1.00E-01	6.61E-04	
Di-n-octylphthalate	3.70E-04	2.00E-02	1.85E-02	
Dibromochloromethane	2.65E-04	2.00E-02	1.32E-02	
Tetrachloroethene	6.44E-04	1.00E-02	6.44E-02	
Trichloroethene	1.07E-03	6.00E-03	1.79E-01	
Vinyl chloride	9.28E-04			
cis-1,2-Dichloroethene	9.30E-04	1.00E-02	9.30E-02	
Actinium-228				
Alpha activity				
Beta activity				
Cesium-137				
Lead-210				
Lead-212				
Lead-214				
Neptunium-237				
Plutonium-239				
Potassium-40				
Technetium-99				
Thorium-228				
Thorium-230				
Thorium-234				
Uranium-234				
uranium-235				
Uranium-238				
Pathway Total				7.56E+04

Residential Excess Lifetime Cancer Risks

---------- SECTOR=McNairy PATHWAY=Residential Child Ingestion of Vegetables from Groundwater ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	4.00E+00	1.00E+00	4.00E+00	
Arsenic	1.20E-02	3.00E-04	4.01E+01	
Barium	1.58E-02	7.00E-02	2.26E-01	
Beryl1ium	3.75E-04	5.00E-03	7.50E-02	
Bromide				
Cadmium	1.16E-04	5.00E-04	1.16E-01	
Chromium	1.09E-02	5.00E-03	2.18E+00	
Cobalt	3.35E-03	6.00E-02	5.58E-02	
Iron	9.68E+00	3.00E-01	3.23E+01	
Lead	5.09E-03	1.00E-07	5.09E+04	
Manganese	8.34E-02	4.60E-02	5.96E-01	
Nickel	5.63E-03	2.00E-02	2.82E-01	
Nitrate		1.60E+00		
Orthophosphate				
Selenium	1.67E-03	5.00E-03	3.34E-01	
Tetraoxo-sulfate(1-)				
Thallium	2.67E-05			
Vanadium	4.55E-02	7.00E-03	6.49E+00	
Zinc	6.05E-01	3.00E-01	2.02E+00	
1,1-Dichloroethene	9.40E-04	9.00E-03	1.04E-01	
1,2-Dichloroethane	1.72E-04			
Bis(2-ethylhexyl)phthalate	2.39E-04	2.00E-02	1.19E-02	
Bromodichloromethane	5.42E-04	2.00E-02	2.71E-02	
Chlorofo m	7.42E-04	1.00E-02	7.42E-02	
Di-n-butyl phthalate	4.58E-05	1.00E-01	4.58E-04	
Di-n-octylphthalate	2.49E-04	2.00E-02	1.24E-02	
Dibromochloromethane	3.78E-04	2.00E-02	1.89E-02	
Tetrachloroethene	7.20E-04	1.00E-02	7.20E-02	
Trichloroethene	1.34E-03	6.00E-03	2.24E-01	
Vinyl chloride	2.67E-03			
cis-1,2-Dichloroethene	1.68E-03	1.00E-02	1.68E-01	
Actinium-228				
Alpha activity				
Beta activity				
Cesium-137				
Lead-210				
Lead-212				
Lead-214				
Neptunium-237				
Plutonium-239				
Potassium-40				
Technetium-99				
Thorium-228				
Thorium-230				
Thorium-234				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				5.10E+04

---------- SECTOR=McNairy PATHWAY=Residential Child Inhalation of Groundwater Household Use ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum				
Arsenic				
Barium		1.43E-04		
Beryllium				

Residential Excess Lifetime Cancer Risks

---------- SECTOR=McNairy PATHWAY=Residential Child Inhalation of Groundwater Household Use ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Bromide				
Cadmium		5.71E-05		
Chromium				
Cobalt				
Iron				
Lead		2.86E-04		
Manganese		1.43E-05		
Nickel				
Nitrate				
Orthophosphate				
Selenium				
Tetraoxo-sulfate(1-)				
Thallium				
Vanadium				
Zinc				
1,1-Dichloroethene	5.87E-04			
1,2-Dichloroethane	8.12E-05	2.86E-03	2.84E-02	
Bis(2-ethylhexyl)phthalate				
Bromodichloromethane	4.32E-04			
Chloroform	5.48E-04			
Di-n-butyl phthalate				
Di-n-octylphthalate				
Dibromochloromethane	3.25E-04			
Tetrachloroethene	7.92E-04			
Trichloroethene	1.32E-03			
Vinyl chloride	1.14E-03			
cis-1,2-Dichloroethene	1.14E-03			
Actinium-228				
Alpha activity				
Beta activity				
Cesium-137				
Lead-210				
Lead-212				
Lead-214				
Neptunium-237				
Plutonium-239				
Potassium-40				
Technetium-99				
Thorium-228				
Thorium-230				
Thorium-234				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				2.84E-02

---------- SECTOR=McNairy PATHWAY=Residential Child Inhalation of Groundwater While Showering ----------.

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum				
Arsenic				
Barium		1.43E-04		
Beryllium				
Bromide				
Cadmium		5.71E-05		
Chromium				

Residential Excess Lifetime Cancer Risks

---------- SECTOR=McNairy PATHWAY=Residential Child Inhalation of Groundwater While Showering ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Cobalt				
Iron				
Lead		2.863-04		
Manganese		1.43E-05		
Nickel				
Nitrate				
Orthophosphate				
Selenium				
Tetraoxo-sulfate(1-)				
Thallium				
Vanadium				
Zinc				
1,1-Dichloroethene	5.41E-05			
1,2-Dichloroethane	7.48E-06	2.86E-03	2.62E-03	
Bis(2-ethylhexyl)phthalate				
Bromodichloromethane	3.98E-05			
Chloroform	5.05E-05			
Di-n-butyl phthalate				
Di-n-octylphthalate				
Dibromochloromethane	2.99E-05			
Tetrachloroethene	7.29E-05			
Trichloroethene	1.21E-04			
Vinyl chloride	1.05E-04			
cis-1,2-Dichloroethene	1.05E-04			
Actinium-228				
Alpha activity				
Beta activity				
Cesium-137				
Lead-210				
Lead-212				
Lead-214				
Neptunium-237				
Plutonium-239				
Potassium-40				
Technetium-99				
Thorium-228				
Thorium-230				
Thorium-234				
Uranium-234				
uranium-235				
Uranium-238				
Pathway Total				2.62E-03

---------- SECTOR=Northeast PATHWAY=Residential Adult Dermal Contact with Soil ....

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Chromium	4.63E-05	1.00E-04	4.63E-01	
Uranium	3.31E-05	2.55E-03	1.30E-02	
Zinc	1.68E-04	6.00E-02	2.80E-03	
Acenaphthene	1.92E-07	1.86E-02	1.03E-05	
Anthracene	3.84E-07	2.28E-01	1.68E-06	
Benz(a)anthracene	1.68E-06			
Benzo(a)pyrene	1.44E-06			
Benzo(b)fluoranthene	2.06E-06			
Benzo(ghi)perylene	8.15E-07			
Benzo(k)fluoranthene	1.34E-06			

Residential Excess Lifetime Cancer Risks

..... SECTOR=Northeast PATHWAY=Residential Adult Dermal Contact with Soil ----------.
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Chrysene	1.92E-06			
Fluoranthene	4.12E-06	1.24E-02	3.33E-04	
Indeno(1,2,3-cd)pyrene	8.63E-07			
PCB-1260	1.24E-07			
Phenanthrene	2.253-06			
Polychlorinated biphenyl -	1.24E-07			
Pyrene	3.26E-06	9.30E-03	3.51E-04	
Alpha activity				
Beta activity				
Uranium-235				
Uranium-238				
Pathway Total				4.79E-01

---------- SECTOR-Northeast PATHWAY=Residential Adult Ingestion of Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Chromium	2.64E-05	5.00E-03	5.29E-03	
Uranium	1.89E-05	3.00E-03	6.31E-03	
Zinc	9.62E-05	3.00E-01	3.21E-04	
Acenaphthene	5.48E-08	6.00E-02	9.13E-07	
Anthracene	1.10E-07	3.00E-01	3.65E-07	
Benz(a)anthracene	4.79E-07			
Benzo(a)pyrene	4.11E-07			
Benzo(b)fluoranthene	5.893-07			
Benzo(ghi)perylene	2.33E-07			
Benzo(k)fluoranthene	3.84E-07			
Chrysene	5.48E-07			
Fluoranthene	1.18E-06	4.00E-02	2.95E-05	
Indeno(1,2,3-cd)pyrene	2.47E-07			
PCB-1260	5.89E-08			
Phenanthrene	6.44E-07			
Polychlorinated biphenyl	5.89E-08			
Pyrene	9.32E-07	3.00E-02	3.11E-05	
Alpha activity				
Beta activity				
Uranium-235				
Uranium-238				
Pathway Total				1.20E-02

---------- SECTOR=Northeast PATHWAY=Residential Adult Ingestion of Vegetables From Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Chromium	5.47E-03	5.00E-03	1.09E+00	
Uranium	3.93E-03	3.00E-03	1.31E+00	
Zinc	4.01E-02	3.00E-01	1.34E-01	
Acenaphthene	1.24E-05	6.00E-02	2.07E-04	
Anthracene	2.46E-05	3.00E-01	8.19E-05	
Benz(a)anthracene	1.01E-04			
Benzo(a)pyrene	8.58E-05			
Benzo(b)fluoranthene	1.23E-04			
Benzo(ghi)perylene	4.84E-05			
Benzo(k)fluoranthene	7.96E-05			

Residential Excess Lifetime Cancer Risks

---------- SECTOR=Northeast PATHWAY=Residential Adult Ingestion Of Vegetables From Soil ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Chrysene	1.15E-04			
Fluoranthene	2.54E-04	4.00E-02	6.36E-03	
Indeno(1,2,3-cd)pyrene	5.13E-05			
PCB-1260	1.22E-05			
Phenanthrene	1.42E-04			
Polychlorinated biphenyl	1.23E-05			
Pyrene	2.01E-04	3.00E-02	6.70E-03	
Alpha activity				
Beta activity				
Uranium-235				
Uranium-238				
Pathway Total				2.55E+00

---------- SECTOR=Northeast PATHWAY=Residential Adult Inhalation of Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
chromium	1.23E-09			
Uranium	8.84E-10			
Zinc	4.49E-09			
Acenaphthene	2.56E-12			
Anthracene	5.11E-12			
Benz(a)anthracene	2.24E-11			
Benzo(a)pyrene	1.92E-11			
Benzo(b)fluoranthene	2.75E-11			
Benzo(ghi)perylene	1.09E-11			
Benzo(k)fluoranthene	1.79E-11			
Chrysene	2.56E-11			
Fluoranthene	5.50E-11			
Indeno(1,2,3-cd)pyrene	1.15E-11			
PCB-1260	2.75E-12			
Phenanthrene	3.00E-11			
Polychlorinated biphenyl	2.75E-12			
Pyrene	4.35E-11			
Alpha activity				
Beta activity				
Uranium-235				
Uranium-238				
Pathway Total				

---------- SECTOR=Northeast PATHWAY=Residential Child Dermal Contact with Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Chromium	2.38E-04	1.00E-04	2.38E+00	
Uranium	1.71E-04	2.55E-03	6.69E-02	
Zinc	8.66E-04	6.00E-02	1.44E-02	
Acenaphthene	9.87E-07	1.86E-02	5.30E-05	
Anthracene	1.97E-06	2.28E-01	8.66E-06	
Benz(a)anthracene	8.63E-06			
Benzo(a)pyrene	7.40E-06			
Benzo(b)fluoranthene	1.06E-05			
Benzo(ghi)perylene	4.19E-06			
Benzo(k)fluoranthene	6.91E-06			

Residential Excess Lifetime Cancer Risks

..... SECTOR=Northeast PATHWAY=Residential Child Dermal Contact with Soil ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Chrysene	9.87E-06			
Fluoranthene	2.12E-05	1.24E-02	1.71E-03	
Indeno(1,2,3-cd)pyrene	4.44E-06			
PCB-1260	6.36E-07			
Phenanthrene	1.16E-05			
Polychlorinated biphenyl,	6.36E-07			
Pyrene	1.68E-05	9.30E-03	1.80E-03	
Alpha activity				
Beta activity				
Uranium-235				
Uranium-238				
Pathway Total				2.47E+00

---------- SECTOR=Northeast PATHWAY=Residential Child Ingestion Of Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Chromium	2.55E-04	5.00E-03	5.11E-02	
Uranium	1.83E-04	3.00E-03	6.10E-02	
Zinc	9.28E-04	3.00E-01	3.09E-03	
Acenaphthene	5.29E-07	6.00E-02	8.82E-06	
Anthracene	1.06E-06	3.00E-01	3.53E-06	
Benz(a)anthracene	4.63E-06			
Benzo(a)pyrene	3.97E-06			
Benzo(b)fluoranthene	5.69E-06			
Benzo(ghi)perylene	2.25E-06			
Benzo(k)fluoranthene	3.70E-06			
Chrysene	5.29E-06			
Fluoranthene	1.14E-05	4.00E-02	2.84E-04	
Indeno(1,2,3-cd)pyrene	2.38E-06			
PCB-1260	5.69E-07			
Phenanthrene	6.22E-06			
Polychlorinated biphenyl	5.69E-07			
Pyrene	8.99E-06	3.00E-02	3.00E-04	
Alpha activity				
Beta activity				
Uranium-235				
Uranium-238				
Pathway Total				1.16E-01

---------- SECTOR=Northeast PATHWAY=Residential Child Ingestion of Vegetables From Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Chromium	1.73E-02	5.00E-03	3.45E+00	
Uranium	1.24E-02	3.00E-03	4.13E+00	
Zinc	1.26E-01	3.00E-01	4.22E-01	
Acenaphthene	3.92E-05	6.00E-02	6.53E-04	
Anthracene	7.75E-05	3.00E-01	2.58E-04	
Benz(a)anthracene	3.18E-04			
Benzo(a)pyrene	2.71E-04			
Benzo(b)fluoranthene	3.88E-04			
Benzo(ghi)perylene	1.53E-04			
Benzo(k)fluoranthene	2.51E-04			

Residential Excess Lifetime Cancer Risks

SECTOR-Northeast PATHWAY-Residential Child Ingestion of Vegetables From Soil (continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Chrysene	3.63E-04			
Fluoranthene	8.02E-04	4.00E-02	2.00E-02	
Indeno(1,2,3-cd)pyrene	1.62E-04			
PCB-1260	3.85E-05			
Phenanthrene	4.473-04			
Polychlorinated biphenyl	3.88E-05			
Pyrene	6.34E-04	3.00E-02	2.11E-02	
Alpha activity				
Beta activity				
Uranium-235				
Uranium-238				
Pathway Total				8.05E+00

SECTOR=Northeast PATHWAY=Residential Child Inhalation of Soil

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Chromium	5.96E-09			
Uranium	4.27E-09			
Zinc	2.17E-08			
Acenaphthene	1.23E-11			
Anthracene	2.47E-11			
Benz(a)anthracene	1.08E-10			
Benzo(a)pyrene	9.26E-11			
Benzo(b)fluoranthene	1.33E-10			
Benzo(ghi)perylene	5.25E-11			
Benzo(k)fluoranthene	8.64E-11			
Chrysene	1.23E-10			
Fluoranthene	2.65E-10			
Indeno(1,2,3-cd)pyrene	5.55E-11			
PCB-1260	1.33E-11			
Phenanthrene	1.45E-10			
Polychlorinated biphenyl	1.33E-11			
Pyrene	2.10E-10			
Alpha activity				
Beta activity				
Uranium-235				
Uranium-238				
Pathway Total				

SECTOR=Northwest PATHWAY=Residential Adult Dermal Contact with Soil

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Antimony	9.60E-07	8.00E-06	1.20E-01	
Beryllium	7.753-07	5.00E-05	1.55E-02	
Cadmium	9.74E-08	1.00E-05	9.74E-03	
Chromium	4.86E-05	1.00E-04	4.86E-01	
Iron	2.93E-02	4.50E-02	6.50E-01	
Lead	3.12E-05	1.50E-08	2.08E+03	
Vanadium	3.96E-05	7.00E-05	5.66E-01	
Benz(a)anthracene	1.44E-06			
Benzo(a)pyrene	1.92E-06			
Benzo(b)fluoranthene	2.53E-06			

Residential Excess Lifetime Cancer Risks

---------- SECTOR=Northwest PATHWAY=Residential Adult Dermal Contact with Soil ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Benzo(k)fluoranthene	1.44E-06			
Chrysene	1.39E-06			
Fluoranthene	1.92E-06	1.243-02	1.55E-04	
Pyrene	1.92E-06	9.30E-03	2.06E-04	
Alpha activity				
Beta activity				
Uranium-238				
Pathway Total				2.08E+03

---------- SECTOR=Northwest PATHWAY=Residential Adult Ingestion of Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Antimony	5.49E-07	4.00E-04	1.37E-03	
Beryllium	4.43E-07	5.00E-03	8.86E-05	
Cadmium	2.78E-07	1.00E-03	2.78E-04	
Chromium	2.78E-05	5.00E-03	5.55E-03	
Iron	1.67E-02	3.00E-01	5.57E-02	
Lead	1.78E-05	1.00E-07	1.78E+02	
Vanadium	2.26E-05	7.00E-03	3.23E-03	
Benz(a)anthracene	4.11E-07			
Benzo(a)pyrene	5.48E-07			
Benzo(b)fluoranthene	7.24E-07			
Benzo(k)fluoranthene	4.11E-07			
Chrysene	3.97E-07			
Fluoranthene	5.48E-07	4.00E-02	1.37E-05	
Pyrene	5.48E-07	3.00E-02	1.83E-05	
Alpha activity				
Beta activity				
Uranium-238				
Pathway Total				1.78E+02

---------- SECTOR=Northwest PATHWAY=Residential Adult Ingestion of Vegetables From Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Antimony	1.18E-04	4.00E-04	2.95E-01	
Beryllium	9.26E-05	5.00E-03	1.85E-02	
Cadmium	8.81E-05	1.00E-03	8.81E-02	
Chromium	5.75E-03	5.00E-03	1.15E+00	
Iron	3.46E+00	3.00E-01	1.15E+01	
Lead	3.70E-03	1.00E-07	3.70E+04	
Vanadium	4.71E-03	7.00E-03	6.72E-01	
Benz(a)anthracene	8.63E-05			
Benzo(a)pyrene	1.14E-04			
Benzo(b)fluoranthene	1.51E-04			
Benzo(k)fluoranthene	8.53E-05			
Chrysene	8.34E-05			
Fluoranthene	1.18E-04	4.00E-02	2.96E-03	
Pyrene	1.18E-04	3.00E-02	3.94E-03	
Alpha activity				
Beta activity				
Uranium-238				
Pathway Total				3.70E+04

Residential Excess Lifetime Cancer Risks

---------- SECTOR=Northwest PATHWAY=Residential Adult Inhalation of Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Antimony	2.56E-11			
Beryllium	2.07E-11			
Cadmium	1.30E-11	5.71E-05	2.27E-07	
Chromium	1.29E-09			
Iron	7.80E-07			
Lead	8.32E-10	2.86E-04	2.91E-06	
Vanadium	1.06E-09			
Benz(a)anthracene	1.92E-11			
Benzo(a)pyrene	2.56E-11			
Benzo(b)fluoranthene	3.38E-11			
Benzo(k)fluoranthene	1.92E-11			
Chrysene	1.85E-11			
Fluoranthene	2.56E-11			
Pyrene	2.56E-11			
Alpha activity				
Beta activity				
Uranium-238				
Pathway Total				3.14E-06

---------- SECTOR=Northwest PATHWAY=Residential Child Dermal Contact with Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Antimony	4.94E-06	8.00E-06	6.17E-01	
Beryllium	3.99E-06	5.00E-05	7.98E-02	
Cadmium	5.01E-07	1.00E-05	5.01E-02	
Chromium	2.50E-04	1.00E-04	2.50E+00	
Iron	1.50E-01	4.50E-02	3.34E+00	
Lead	1.61E-04	1.50E-08	1.07E+04	
Vanadium	2.04E-04	7.00E-05	2.91E+00	
Benz(a)anthracene	7.40E-06			
Benzo(a)pyrene	9.87E-06			
Benzo(b)fluoranthene	1.30E-05			
Benzo(k)fluoranthene	7.40E-06			
Chrysene	7.15E-06			
Fluoranthene	9.87E-06	1.24E-02	7.96E-04	
Pyrene	9.87E-06	9.30E-03	1.06E-03	
Alpha activity				
Beta activity				
Uranium-238				
Pathway Total				1.07E+04

---------- SECTOR=Northwest PATHWAY=Residential Child Ingestion of Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Antimony	5.30E-06	4.00E-04	1.32E-02	
Beryllium	4.28E-06	5.00E-03	8.56E-04	
Cadmium	2.69E-06	1.00E-03	2.69E-03	
Chromium	2.68E-04	5.00E-03	5.36E-02	
Iron	1.61E-01	3.00E-01	5.38E-01	
Lead	1.72E-04	1.00E-07	1.72E+03	
Vanadium	2.18E-04	7.00E-03	3.12E-02	
Benz(a)anthracene	3.97E-06			
Benzo(a)pyrene	5.29E-06			

Residential Excess Lifetime Cancer Risks

..... SECTOR=Northwest PATHWAY=Residential Child Ingestion of Soil ..... (continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Benzo(b)fluoranthene	6.99E-06			
Benzo(k)fluoranthene	3.97E-06			
Chrysene	3.84E-06			
Fluoranthene	5.29E-06	4.00E-02	1.32E-04	
Pyrene	5.29E-06	3.00E-02	1.76E-04	
Alpha activity				
Beta activity				
Uranium-238				
Pathway Total				1.72E+03

---------- SECTOR=Northwest PATHWAY=Residential Child Ingestion of Vegetables From Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Antimony	3.72E-04	4.00E-04	9.30E-01	
Beryllium	2.92E-04	5.00E-03	5.84E-02	
Cadmium	2.78E-04	1.00E-03	2.78E-01	
Chromium	1.81E-02	5.00E-03	3.62E+00	
Iron	1.09E+01	3.00E-01	3.64E+01	
Lead	1.17E-02	1.00E-07	1.17E+05	
Vanadium	1.48E-02	7.00E-03	2.12E+00	
Benz(a)anthracene	2.72E-04			
Benzo(a)pyrene	3.61E-04			
Benzo(b)fluoranthene	4.77E-04			
Benzo(k)fluoranthene	2.69E-04			
Chrysene	2.63E-04			
Fluoranthene	3.73E-04	4.00E-02	9.32E-03	
Pyrene	3.73E-04	3.00E-02	1.24E-02	
Alpha activity				
Beta activity				
Uranium-238				
Pathway Total				1.17E+05

---------- SECTOR=Northwest PATHWAY=Residential Child Inhalation of Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Antimony	1.24E-10			
Beryllium	9.98E-11			
Cadmium	6.27E-11	5.71E-05	1.10E-06	
Chromium	6.25E-09			
Iron	3.77E-06			
Lead	4.023-09	2.86E-04	1.41E-05	
Vanadium	5.10E-09			
Benz(a)anthracene	9.26E-11			
Benzo(a)pyrene	1.23E-10			
Benzo(b)fluoranthene	1.63E-10			
Benzo(k)fluoranthene	9.26E-11			
Chrysene	8.95E-11			
Fluoranthene	1.23E-10			
Pyrene	1.23E-10			
Alpha activity				
Beta activity				
Uranium-238				

Residential Excess Lifetime Cancer Risks

---------- SECTOR-Northwest PATHWAY=Residential Child Inhalation Of Soil .....
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Pathway Total				1.52E-05

---------- SECTOR=RGA PATHWAY=Residential Adult Dermal Contact with Groundwater ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	3.03E-03	1.00E-01	3.03E-02	
Antimony	6.91E-07	8.00E-06	8.64E-02	
Arsenic	1.45E-06	1.23E-04	1.18E-02	
Barium	2.09E-05	4.90E-03	4.26E-03	
Beryllium	5.03E-07	5.00E-05	1.01E-02	
Bromide				
Cadmium	7.36E-08	5.00E-06	1.47E-02	
Chromium	5.61E-06	1.00E-04	5.61E-02	
Cobalt	4.91E-06	4.80E-02	1.02E-04	
Copper	1.09E-05	1.20E-02	9.11E-04	
Iron	1.93E-02	4.50E-02	4.28E-01	
Lead	1.63E-06	1.50E-08	1.08E+02	
Manganese	1.52E-04	1.87E-03	8.15E-02	
Mercury	8.18E-09	2.10E-05	3.90E-04	
Nickel	9.79E-06	5.40E-03	1.81E-03	
Nitrate	2.36E-03	8.00E-01	2.94E-03	
Orthophosphate				
Silver	6.31E-07	9.00E-04	7.01E-04	
Tetraoxo-sulfate(1-)				
Thallium	2.94E-08			
Uranium	1.82E-07	2.55E-03	7.13E-05	
Vanadium	7.65E-06	7.00E-05	1.09E-01	
Zinc	3.80E-05	6.00E-02	6.34E-04	
1,1-Dichloroethene	2.94E-06	9.00E-03	3.26E-04	
Bis(2-ethylhexyl)phthalate	1.16E-06	3.80E-03	3.06E-04	
Bromodichloromethane	1.15E-06	1.96E-02	5.89E-05	
Carbon tetrachloride	7.73E-05	4.55E-04	1.70E-01	
Chloroform	1.28E-05	2.00E-03	6.39E-03	
Di-n-butyl phthalate	5.72E-06	1.00E-01	5.72E-05	
Di-n-octylphthalate	1.34E-03	1.80E-02	7.43E-02	
N-Nitroso-di-n-propylamine	1.39E-07			
Tetrachloroethene	4.04E-04	1.00E-02	4.04E-02	
Toluene	8.06E-05	1.60E-01	5.03E-04	
Trichloroethene	6.52E-03	9.00E-04	7.24E+00	
Vinyl chloride	4.83E-05			
cis-1,2-Dichloroethene	1.84E-04	1.00E-02	1.84E-02	
trans-1,2-Dichloroethene	6.55E-07	2.00E-02	3.28E-05	
Alpha activity				
Americium-241				
Beta activity				
Cesium-137				
Lead-210				
Lead-214				
Neptunium-237				
Plutonium-239				
Technetium-99				
Thorium-228				
Thorium-230				
Uranium-234				
Uranium-235				
Uranium-238				

Residential Excess Lifetime Cancer Risks

..... SECTOR=RGA PATHWAY-Residential Adult Dermal Contact with Groundwater ..... (continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Pathway Total				1.17E+02

---------- SECTOR=RGA PATHWAY=Residential Adult Ingestion of Groundwater ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	1.67E+00	1.00E+00	1.67E+00	
Antimony	3.81E-04	4.00E-04	9.52E-01	
Arsenic	7.98E-04	3.00E-04	2.66E+00	
Barium	1.15E-02	7.00E-02	1.64E-01	
Beryllium	2.77E-04	5.00E-03	5.55E-02	
Bromide	1.26E-02			
Cadmium	4.05E-05	5.00E-04	8.11E-02	
Chromium	3.09E-03	5.00E-03	6.18E-01	
Cobalt	2.71E-03	6.00E-02	4.51E-02	
Copper	6.03E-03	4.00E-02	1.51E-01	
Iron	1.06E+01	3.00E-01	3.54E+01	
Lead	8.97E-04	1.00E-07	8.97E+03	
Manganese	8.38E-02	4.60E-02	1.82E+00	
Mercury	4.51E-06	3.00E-04	1.50E-02	
Nickel	5.39E-03	2.00E-02	2.70E-01	
Nitrate	1.30E+00	1.60E+00	8.11E-01	
Orthophosphate	9.86E-04			
Silver	3.48E-04	5.00E-03	6.95E-02	
Tetraoxo-sulfate(1-)	3.61E-01			
Thallium	1.62E-05			
Uranium	1.00E-04	3.00E-03	3.34E-02	
Vanadium	4.21E-03	7.00E-03	6.02E-01	
Zinc	2.10E-02	3.00E-01	6.98E-02	
1,1-Dichloroethene	1.82E-04	9.00E-03	2.02E-02	
Bis(2-ethylhexyl)phthalate	2.74E-05	2.00E-02	1.37E-03	
Bromodichloromethane	1.10E-04	2.00E-02	5.48E-03	
Carbon tetrachloride	1.94E-03	7.00E-04	2.77E+00	
Chloroform	7.91E-04	1.00E-02	7.91E-02	
Di-n-butyl phthalate	2.74E-05	1.00E-01	2.74E-04	
Di-n-octylphthalate	2.74E-05	2.00E-02	1.37E-03	
N-Nitroso-di-n-propylamine	2.74E-05			
Tetrachloroethene	6.02E-04	1.00E-02	6.02E-02	
Toluene	9.86E-04	2.00E-01	4.93E-03	
Trichloroethene	2.24E-01	6.00E-03	3.74E+01	
Vinyl chloride	3.64E-03			
cis-1,2-Dichloroethene	1.01E-02	1.00E-02	1.01E+00	
trans-1,2-Dichloroethene	3.37E-04	2.00E-02	1.69E-02	
Alpha activity				
Americium-241				
Beta activity				
Cesium-137				
Lead-210				
Lead-214				
Neptunium-237				
Plutonium-239				
Technetium-99				
Thorium-228				
Thorium-230				
Uranium-234				
Uranium-235				
Uranium-238				

Residential Excess Lifetime Cancer Risks

---------- SECTOR=RGA PATHWAY=Residential Adult Ingestion of Groundwater .....
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Pathway Total				9.05E+03

---------- SECTOR-RGA PATHWAY=Residential Adult Ingestion of Vegetables from Groundwater ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	8.64E-01	1.00E+00	8.64E-01	
Antimony	2.02E-04	4.00E-04	5.05E-01	
Arsenic	4.23E-04	3.00E-04	1.41E+00	
Barium	5.99E-03	7.00E-02	8.55E-02	
Beryllium	1.44E-04	5.00E-03	2.88E-02	
Bromide				
Cadmium	2.89E-05	5.00E-04	2.89E-02	
chromium	1.60E-03	5.00E-03	3.19E-01	
Cobalt	1.49E-03	6.00E-02	2.48E-02	
Copper	3.80E-03	4.00E-02	9.49E-02	
Iron	5.49E+00	3.00E-01	1.83E+01	
Lead	4.64E-04	1.00E-07	4.64E+03	
Manganese	5.15E-02	4.60E-02	3.68E-01	
Mercury	4.26E-06	3.00E-04	1.42E-02	
Nickel	3.17E-03	2.00E-02	1.58E-01	
Nitrate		1.60E+00		
Orthophosphate				
Silver	1.79E-04	5.00E-03	3.59E-02	
Tetraoxo-sulfate(1-)				
Thallium	8.39E-06			
Uranium	5.18E-05	3.00E-03	1.73E-02	
Vanadium	2.18E-03	7.00E-03	3.12E-01	
Zinc	1.87E-02	3.00E-01	6.23E-02	
1,1-Dichloroethene	2.74E-04	9.00E-03	3.05E-02	
Bis(2-ethylhexyl)phthalate	1.46E-05	2.00E-02	7.29E-04	
Bromodichloromethane	1.29E-04	2.00E-02	6.47E-03	
Carbon tetrachloride	1.51E-03	7.00E-04	2.15E+00	
Chloroform	1.01E-03	1.00E-02	1.01E-01	
Di-n-butyl phthalate	1.46E-05	1.00E-01	1.46E-04	
Di-n-octylphthalate	1.41E-05	2.00E-02	7.07E-04	
N-Nitroso-di-n-propylamine	6.05E-05			
Tetrachloroethene	5.16E-04	1.00E-02	5.16E-02	
Toluene	8.03E-04	2.00E-01	4.02E-03	
Trichloroethene	2.16E-01	6.00E-03	3.60E+01	
Vinyl chloride	8.05E-03			
cis-1,2-Dichloroethene	1.40E-02	1.00E-02	1.40E+00	
trans-1,2-Dichloroethene	2.12E-03	2.00E-02	1.06E-01	
Alpha activity				
Americium-241				
Beta activity				
Cesium-137				
Lead-210				
Lead-214				
Neptunium-237				
Plutonium-239				
Technetium-99				
Thorium-228				
Thorium-230				
Uranium-234				
Uranium-235				
Uranium-238				

Residential Excess Lifetime Cancer Risks

---------- SECTOR-RGA PATHWAY=Residential Adult Ingestion of Vegetables from Groundwater ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Pathway Total				4.70E+03

---------- SECTOR=RGA PATHWAY-Residential Adult Inhalation of Groundwater Household Use ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum				
Antimony				
Arsenic				
Barium		1.43E-04		
Beryllium				
Bromide				
Cadmium		5.71E-05		
Chromium				
Cobalt				
Copper				
Iron				
Lead		2.86E-04		
Manganese		1.43E-05		
Mercury		8.57E-05		
Nickel				
Nitrate				
Orthophosphate				
Silver				
Tetraoxo-sulfate(1-)				
Thallium				
Uranium				
Vanadium				
Zinc				
1,1-Dichloroethene	5.39E-04			
Bis(2-ethylhexyl)phthalate				
Bromodichloromethane	3.25E-04			
Carbon tetrachloride	5.743-03	5.71E-04	1.01E+01	
Chloroform	2.35E-03			
Di-n-butyl phthalate				
Di-n-octylphthalate				
N-Nitroso-di-n-propylamine				
Tetrachloroethene	1.783-03			
Toluene	2.92E-03	1.14E-01	2.56E-02	
Trichloroethene	6.65E-01			
Vinyl chloride	1.08E-02			
cis-1,2-Dichloroethene	3.01E-02			
trans-1,2-Dichloroethene	1.00E-03			
Alpha activity				
Americium-241				
Beta activity				
Cesium-137				
Lead-210				
Lead-214				
Neptunium-237				
Plutonium-239				
Technetium-99				
Thorium-228				
Thorium-230				
Uranium-234				
Uranium-235				
Uranium-238				

Residential Excess Lifetime Cancer Risks

---------- SECTOR=RGA PATHWAY=Residential Adult Inhalation of Groundwater Household Use ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Pathway Total				1.01E+01

---------- SECTOR=RGA PATHWAY=Residential Adult Inhalation of Groundwater While Showering ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum				
Antimony				
Arsenic				
Barium		1.43E-04		
Beryllium				
Bromide				
Cadmium		5.71E-05		
Chromium				
Cobalt				
Copper				
Iron				
Lead		2.86E-04		
Manganese		1.43E-05		
Mercury		8.57E-05		
Nickel				
Nitrate				
Orthophosphate				
Silver				
Tetraoxo-sulfate(1-)				
Thallium				
Uranium				
Vanadium				
Zinc				
1,1-Dichloroethene	4.96E-05			
Bis(2-ethylhexyl)phthalate				
Bromodichloromethane	2.99E-05			
Carbon tetrachloride	5.29E-04	5.71E-04	9.26E-01	
Chloroform	2.16E-04			
Di-n-butyl phthalate				
Di-n-octylphthalate				
N-Nitroso-di-n-propylamine				
Tetrachloroethene	1.64E-04			
Toluene	2.69E-04	1.14E-01	2.36E-03	
Trichloroethene	6.13E-02			
Vinyl chloride	9.95E-04			
cis-1,2-Dichloroethene	2.77E-03			
trans-1,2-Dichloroethene	9.20E-05			
Alpha activity				
Americium-241				
Beta activity				
Cesium-137				
Lead-210				
Lead-214				
Neptunium-237				
Plutonium-239				
Technetium-99				
Thorium-228				
Thorium-230				
Uranium-234				
Uranium-235				
Uranium-238				

Residential Excess Lifetime Cancer Risks

---------- SECTOR=RGA PATHWAY=Residential Adult Inhalation of Groundwater while Showering ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Pathway Total				9.28E-01

---------- SECTOR-RGA PATHWAY=Residential Child Dermal Contact with Groundwater ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	5.80E-03	1.00E-01	5.80E-02	
Antimony	1.32E-06	8.00E-06	1.66E-01	
Arsenic	2.773-06	1.233-04	2.25E-02	
Barium	4.00E-05	4.90E-03	8.16E-03	
Beryllium	9.643-07	5.00E-05	1.93E-02	
Bromide				
Cadmium	1.41E-07	5.00E-06	2.82E-02	
Chromium	1.07E-05	1.00E-04	1.07E-01	
Cobalt	9.40E-06	4.80E-02	1.96E-04	
Copper	2.09E-05	1.20E-02	1.75E-03	
Iron	3.69E-02	4.50E-02	8.20E-01	
Lead	3.12E-06	1.50E-08	2.08E+02	
Manganese	2.91E-04	1.87E-03	1.56E-01	
Mercury	1.57E-08	2.10E-05	7.46E-04	
Nickel	1.87E-05	5.40E-03	3.47E-03	
Nitrate	4.51E-03	8.00E-01	5.64E-03	
Orthophosphate				
Silver	1.21E-06	9.00E-04	1.34E-03	
Tetraoxo-sulfate(1-)				
Thallium	5.64E-08			
Uranium	3.48E-07	2.55E-03	1.37E-04	
Vanadium	1.46E-05	7.00E-05	2.09E-01	
Zinc	7.28E-05	6.00E-02	1.21E-03	
1,1-Dichloroethene	5.62E-06	9.00E-03	6.25E-04	
Bis(2-ethylhexyl)phthalate	2.23E-06	3.80E-03	5.86E-04	
Bromodichloromethane	2.21E-06	1.96E-02	1.13E-04	
Carbon tetrachloride	1.48E-04	4.55E-04	3.25E-01	
Chloroform	2.453-05	2.00E-03	1.22E-02	
Di-n-butyl phthalate	1.10E-05	1.00E-01	1.10E-04	
Di-n-octylphthalate	2.56E-03	1.80E-02	1.42E-01	
N-Nitroso-di-n-propylamine	2.67E-07			
Tetrachloroethene	7.74E-04	1.00E-02	7.74E-02	
Toluene	1.54E-04	1.60E-01	9.64E-04	
Trichloroethene	1.25E-02	9.00E-04	1.39E+01	
Vinyl chloride	9.25E-05			
cis-1,2-Dichloroethene	3.52E-04	1.00E-02	3.52E-02	
trans-1,2-Dichloroethene	1.25E-06	2.00E-02	6.27E-05	
Alpha activity				
Americium-241				
Beta activity				
Cesium-137				
Lead-210				
Lead-214				
Neptunium-237				
Plutonium-239				
Technetium-99				
Thorium-228				
Thorium-230				
Uranium-234				
Uranium-235				
Uranium-238				

Residential Excess Lifetime Cancer Risks

---------- SECTOR=RGA PATHWAY=Residential Child Dermal Contact with Groundwater ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Pathway Total				2.24E+02

---------- SECTOR=RGA PATHWAY=Residential Child Ingestion of Groundwater ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	4.03E+00	1.00E+00	4.03E+00	
Antimony	9.19E-04	4.00E-04	2.30E+00	
Arsenic	1.93E-03	3.00E-04	6.42E+00	
Barium	2.78E-02	7.00E-02	3.97E-01	
Beryllium	6.70E-04	5.00E-03	1.34E-01	
Bromide	3.05E-02			
Cadmium	9.79E-05	5.00E-04	1.96E-01	
Chromium	7.46E-03	5.00E-03	1.49E+00	
Cobalt	6.53E-03	6.00E-02	1.09E-01	
Copper	1.45E-02	4.00E-02	3.64E-01	
Iron	2.56E+01	3.00E-01	8.54E+01	
Lead	2.16E-03	1.00E-07	2.16E+04	
Manganese	2.02E-01	4.60E-02	4.40E+00	
Mercury	1.09E-05	3.00E-04	3.63E-02	
Nickel	1.30E-02	2.00E-02	6.51E-01	
Nitrate	3.13E+00	1.60E+00	1.96E+00	
Orthophosphate	2.38E-03			
Silver	8.39E-04	5.00E-03	1.68E-01	
Tetraoxo-sulfate(1-)	8.72E-01			
Thallium	3.91E-05			
Uranium	2.42E-04	3.00E-03	8.06E-02	
vanadium	1.02E-02	7.00E-03	1.45E+00	
Zinc	5.06E-02	3.00E-01	1.69E-01	
1,1-Dichloroethene	4.39E-04	9.00E-03	4.88E-02	
Bis(2-ethylhexyl)phthalate	6.61E-05	2.00E-02	3.31E-03	
Bromodichloromethane	2.65E-04	2.00E-02	1.32E-02	
Carbon tetrachloride	4.67E-03	7.00E-04	6.68E+00	
Chloroform	1.91E-03	1.00E-02	1.91E-01	
Di-n-butyl phthalate	6.61E-05	1.00E-01	6.61E-04	
Di-n-octylphthalate	6.61E-05	2.00E-02	3.31E-03	
N-Nitroso-di-n-propylamine	6.61E-05			
Tetrachloroethene	1.45E-03	1.00E-02	1.45E-01	
Toluene	2.38E-03	2.00E-01	1.19E-02	
Trichloroethene	5.42E-01	6.00E-03	9.03E+01	
Vinyl chloride	8.80E-03			
cis-1,2-Dichloroethene	2.45E-02	1.00E-02	2.45E+00	
trans-1,2-Dichloroethene	8.14E-04	2.00E-02	4.07E-02	
Alpha activity				
Americium-241				
Beta activity				
Cesium-137				
Lead-210				
Lead-214				
Neptunium-237				
plutonium-239				
Technetium-99				
Thorium-228				
Thorium-230				
Uranium-234				
Uranium-235				
Uranium-238				

Residential Excess Lifetime Cancer Risks

---------- SECTOR=RGA PATHWAY=Residential Child Ingestion of Groundwater ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Pathway Total				2.19E+04

---------- SECTOR=RGA PATHWAY=Residential Child Ingestion of Vegetables from Groundwater ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	2.72E+00	1.00E+00	2.72E+00	
Antimony	6.36E-04	4.00E-04	1.59E+00	
Arsenic	1.33E-03	3.00E-04	4.44E+00	
Barium	1.88E-02	7.00E-02	2.69E-01	
Beryllium	4.54E-04	5.00E-03	9.07E-02	
Bromide				
Cadmium	9.08E-05	5.00E-04	9.08E-02	
Chromium	5.02E-03	5.00E-03	1.00E+00	
Cobalt	4.67E-03	6.00E-02	7.79E-02	
Copper	1.19E-02	4.00E-02	2.99E-01	
Iron	1.73E+01	3.00E-01	5.75E+01	
Lead	1.46E-03	1.00E-07	1.46E+04	
Manganese	1.62E-01	4.60E-02	1.16E+00	
Mercury	1.34E-05	3.00E-04	4.46E-02	
Nickel	9.97E-03	2.00E-02	4.98E-01	
Nitrate		1.60E+00		
Orthophosphate				
Silver	5.65E-04	5.00E-03	1.13E-01	
Tetraoxo-sulfate(1-)				
Thallium	2.64E-05			
Uranium	1.63E-04	3.00E-03	5.43E-02	
Vanadium	6.87E-03	7.00E-03	9.81E-01	
Zinc	5.88E-02	3.00E-01	1.96E-01	
1,1-Dichloroethene	8.63E-04	9.00E-03	9.59E-02	
Bis(2-ethylhexyl)phthalate	4.58E-05	2.00E-02	2.29E-03	
Bromodichloromethane	4.07E-04	2.00E-02	2.04E-02	
Carbon tetrachloride	4.73E-03	7.00E-04	6.76E+00	
Chloroform	3.18E-03	1.00E-02	3.18E-01	
Di-n-butyl phthalate	4.58E-05	1.00E-01	4.58E-04	
Di-n-octylphthalate	4.45E-05	2.00E-02	2.22E-03	
N-Nitroso-di-n-propylamine	1.90E-04			
Tetrachloroethene	1.62E-03	1.00E-02	1.62E-01	
Toluene	2.53E-03	2.00E-01	1.26E-02	
Trichloroethene	6.79E-01	6.00E-03	1.13E+02	
Vinyl chloride	2.53E-02			
cis-1,2-Dichloroethene	4.42E-02	1.00E-02	4.42E+00	
trans-1,2-Dichloroethene	6.68E-03	2.00E-02	3.34E-01	
Alpha activity				
Americium-241				
Beta activity				
Cesium-137				
Lead-210				
Lead-214				
Neptunium-237				
Plutonium-239				
Technetium-99				
Thorium-228				
Thorium-230				
Uranium-234				
Uranium-235				
Uranium-238				

Residential Excess Lifetime Cancer Risks

---------- SECTOR=RGA PATHWAY=Residential Child Ingestion of Vegetables from Groundwater (continued) ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Pathway Total				1.48E+04

---------- SECTOR=RGA PATHWAY=Residential Child Inhalation of Groundwater Household Use ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum				
Antimony				
Arsenic				
Barium		1.43E-04		
Beryllium				
Bromide				
Cadmium		5.71E-05		
Chromium				
Cobalt				
Copper				
Iron				
Lead		2.86E-04		
Manganese		1.43E-05		
Mercury		8.57E-05		
Nickel				
Nitrate				
Orthophosphate				
Silver				
Tetraoxo-sulfate(1-)				
Thallium				
Uranium				
Vanadium				
Zinc				
1,1-Dichloroethene	5.39E-04			
Bis(2-ethylhexyl)phthalate				
Bromodichloromethane	3.25E-04			
Carbon tetrachloride	5.74E-03	5.71E-04	1.01E+01	
Chloroform	2.35E-03			
Di-n-butyl phthalate				
Di-n-octylphthalate				
N-Nitroso-di-n-propylamine				
Tetrachloroethene	1.78E-03			
Toluene	2.92E-03	1.14E-01	2.56E-02	
Trichloroethene	6.65E-01			
Vinyl chloride	1.08E-02			
cis-1,2-Dichloroethene	3.01E-02			
trans-1,2-Dichloroethene	1.00E-03			
Alpha activity				
Americium-241				
Beta activity				
Cesium-137				
Lead-210				
Lead-214				
Neptunium-237				
plutonium-239				
Technetium-99				
Thorium-228				
Thorium-230				
Uranium-234				
Uranium-235				
Uranium-238				

Residential Excess Lifetime Cancer Risks

---------- SECTOR-RGA PATHWAY=Residential Child Inhalation of Groundwater Household Use ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Pathway Total				1.01E+01

---------- SECTOR=RGA PATHWAY=Residential Child Inhalation of Groundwater While Showering ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum				
Antimony				
Arsenic				
Barium		1.43E-04		
Beryllium				
Bromide				
Cadmium		5.71E-05		
Chromium				
Cobalt				
Copper				
Iron				
Lead		2.86E-04		
Manganese		1.43E-05		
Mercury		8.57E-05		
Nickel				
Nitrate				
Orthophosphate				
Silver				
Tetraoxo-sulfate(1-)				
Thallium				
Uranium				
Vanadium				
Zinc				
1,1-Dichloroethene	4.96E-05			
Bis(2-ethylhexyl)phthalate				
Bromodichloromethane	2.99E-05			
Carbon tetrachloride	5.29E-04	5.71E-04	9.26E-01	
Chloroform	2.16E-04			
Di-n-butyl phthalate				
Di-n-octylphthalate				
N-Nitroso-di-n-propylamine				
Tetrachloroethene	1.64E-04			
Toluene	2.693-04	1.14E-01	2.36E-03	
Trichloroethene	6.13E-02			
Vinyl chloride	9.95E-04			
cis-1,2-Dichloroethene	2.77E-03			
trans-1,2-Dichloroethene	9.20E-05			
Alpha activity				
Americium-241				
Beta activity				
Cesium-137				
Lead-210				
Lead-214				
Neptunium-237				
Plutonium-239				
Technetium-99				
Thorium-228				
Thorium-230				
Uranium-234				
Uranium-235				
Uranium-238				

Residential Excess Lifetime Cancer Risks

---------- SECTOR=RGA PATHWAY=Residential Child Inhalation of Groundwater While Showering ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Pathway Total				9.28E-01

---------- SECTOR=Southeast PATHWAY=Residential Adult Dermal Contact with Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	3.40E-02	1.00E-01	3.40E-01	
Antimony	1.44E-06	8.00E-06	1.80E-01	
Cadmium	1.68E-07	1.00E-05	1.68E-02	
Chromium	5.66E-05	1.00E-04	5.66E-01	
Benz(a)anthracene	3.36E-07			
Benzo(a)pyrene	3.84E-07			
Benzo(b)fluoranthene	3.36E-07			
Benzo(k)fluoranthene	2.88E-07			
Chrysene	3.84E-07			
Fluoranthene	7.19E-07	1.24E-02	5.80E-05	
PCB-1262	1.09E-07			
Phenanthrene	3.36E-07			
Polychlorinated biphenyl	1.09E-07			
Pyrene	5.75E-07	9.30E-03	6.19E-05	
Alpha activity				
Beta activity				
Pathway Total				1.10E+00

---------- SECTOR=Southeast PATHWAY=Residential Adult Ingestion of Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	1.95E-02	1.00E+00	1.95E-02	
Antimony	8.22E-07	4.00E-04	2.05E-03	
Cadmium	4.79E-07	1.00E-03	4.79E-04	
Chromium	3.23E-05	5.00E-03	6.47E-03	
Benz(a)anthracene	9.59E-08			
Benzo(a)pyrene	1.10E-07			
Benzo(b)fluoranthene	9.59E-08			
Benzo(k)fluoranthene	8.22E-08			
Chrysene	1.10E-07			
Fluoranthene	2.05E-07	4.00E-02	5.14E-06	
PCB-1262	5.21E-08			
Phenanthrene	9.59E-08			
Polychlorinated biphenyl	5.21E-08			
Pyrene	1.64E-07	3.00E-02	5.48E-06	
Alpha activity				
Beta activity				
Pathway Total				2.85E-02

---------- SECTOR=Southeast PATHWAY=Residential Adult Ingestion of Vegetables From Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	4.04E+00	1.00E+00	4.04E+00	

Residential Excess Lifetime Cancer Risks

SECTOR=Southeast PATHWAY=Residential Adult Ingestion of Vegetables From Soil (continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Antimony	1.77E-04	4.00E-04	4.42E-01	
Cadmium	1.52E-04	1.00E-03	1.52E-01	
Chromium	6.69E-03	5.00E-03	1.34E+00	
Benz(a)anthracene	2.01E-05			
Benzo(a)pyrene	2.29E-05			
Benzo(b)fluoranthene	2.00E-05			
Benzo(k)fluoranthene	1.71E-05			
Chrysene	2.30E-05			
Fluoranthene	4.43E-05	4.00E-02	1.11E-03	
PCB-1262	1.09E-05			
Phenanthrene	2.11E-05			
Polychlorinated biphenyl	1.09E-05			
Pyrene	3.55E-05	3.00E-02	1.18E-03	
Alpha activity				
Beta activity				
Pathway Total				5.98E+00

SECTOR=Southeast PATHWAY=Residential Adult Inhalation of Soil

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	9.08E-07			
Antimony	3.84E-11			
Cadmium	2.24E-11	5.71E-05	3.92E-07	
Chromium	1.51E-09			
Benz(a)anthracene	4.47E-12			
Benzo(a)pyrene	5.11E-12			
Benzo(b)fluoranthene	4.47E-12			
Benzo(k)fluoranthene	3.84E-12			
Chrysene	5.11E-12			
Fluoranthene	9.59E-12			
PCB-1262	2.43E-12			
Phenanthrene	4.47E-12			
Polychlorinated biphenyl	2.43E-12			
Pyrene	7.67E-12			
Alpha activity				
Beta activity				
Pathway Total				3.92E-07

SECTOR=Southeast PATHWAY=Residential Child Dermal Contact with Soil

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	1.75E-01	1.00E-01	1.75E+00	
Antimony	7.40E-06	8.00E-06	9.25E-01	
Cadmium	8.63E-07	1.00E-05	8.63E-02	
Chromium	2.91E-04	1.00E-04	2.91E+00	
Benz(a)anthracene	1.73E-06			
Benzo(a)pyrene	1.97E-06			
Benzo(b)fluoranthene	1.73E-06			
Benzo(k)fluoranthene	1.48E-06			
Chrysene	1.97E-06			
Fluoranthene	3.70E-06	1.24E-02	2.98E-04	
PCB-1262	5.62E-07			

Residential Excess Lifetime Cancer Risks

..... SECTOR=Southeast PATHWAY=Residential Child Dermal Contact with Soil ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Phenanthrene	1.73E-06			
Polychlorinated biphenyl	5.62E-07			
Pyrene	2.96E-06	9.30E-03	3.18E-04	
Alpha activity				
Beta activity				
Pathway Total				5.67E+00

---------- SECTOR=Southeast PATHWAY=Residential Child Ingestion of Soil .....

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	1.88E-01	1.00E+00	1.88E-01	
Antimony	7.94E-06	4.003-04	1.98E-02	
Cadmium	4.63E-06	1.00E-03	4.63E-03	
Chromium	3.12E-04	5.00E-03	6.24E-02	
Benz(a)anthracene	9.26E-07			
Benzo(a)pyrene	1.06E-06			
Benzo(b)fluoranthene	9.26E-07			
Benzo(k)fluoranthene	7.94E-07			
Chrysene	1.06E-06			
Fluoranthene	1.98E-06	4.00E-02	4.96E-05	
PCB-1262	5.03E-07			
Phenanthrene	9.26E-07			
Polychlorinated biphenyl	5.03E-07			
Pyrene	1.59E-06	3.00E-02	5.29E-05	
Alpha activity				
Beta activity				
Pathway Total				2.75E-01

---------- SECTOR=Southeast PATHWAY=Residential Child Ingestion of Vegetables From Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	1.27E+01	1.00E+00	1.27E+01	
Antimony	5.57E-04	4.00E-04	1.39E+00	
Cadmium	4.78E-04	1.00E-03	4.78E-01	
Chromium	2.11E-02	5.00E-03	4.22E+00	
Benz(a)anthracene	6.35E-05			
Benzo(a)pyrene	7.21E-05			
Benzo(b)fluoranthene	6.31E-05			
Benzo(k)fluoranthene	5.38E-05			
Chrysene	7.26E-05			
Fluoranthene	1.40E-04	4.00E-02	3.50E-03	
PCB-1262	3.43E-05			
Phenanthrene	6.66E-05			
Polychlorinated biphenyl	3.43E-05			
Pyrene	1.12E-04	3.00E-02	3.73E-03	
Alpha activity				
Beta activity				
Pathway Total				1.88E+01

Residential Excess Lifetime Cancer Risks

---------- SECTOR=Southeast PATHWAY-Residential Child Inhalation of Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	4.38E-06			
Antimony	1.85E-10			
Cadmium	1.08E-10	5.71E-05	1.89E-06	
Chromium	7.28E-09			
Benz(a)anthracene	2.16E-11			
Benzo(a)pyrene	2.47E-11			
Benzo(b)fluoranthene	2.16E-11			
Benzo(k)fluoranthene	1.85E-11			
Chrysene	2.47E-11			
Fluoranthene	4.63E-11			
PCB-1262	1.17E-11			
Phenanthrene	2.16E-11			
Polychlorinated biphenyl	1.17E-11			
Pyrene	3.70E-11			
Alpha activity				
Beta activity				
Pathway Total				1.89E-06

---------- SECTOR=Southwest PATHWAY=Residential Adult Dermal Contact with Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Antimony	3.48E-06	8.00E-06	4.35E-01	
Beryllium	9.04E-07	5.00E-05	1.81E-02	
Cadmium	1.74E-07	1.00E-05	1.74E-02	
Chromium	5.09E-05	1.00E-04	5.09E-01	
Iron	4.08E-02	4.50E-02	9.06E-01	
Thallium	1.683-06			
Uranium	1.20E-04	2.553-03	4.713-02	
Zinc	1.213-04	6.00E-02	2.01E-03	
Acenaphthene	4.75E-06	1.86E-02	2.55E-04	
Acenaphthylene	1.05E-06			
Anthracene	8.72E-06	2.28E-01	3.82E-05	
Benz(a)anthracene	2.41E-05			
Benzo(a)pyrene	2.32E-05			
Benzo(b)fluoranthene	2.453-05			
Benzo(ghi)perylene	1.13E-05			
Benzo(k)fluoranthene	1.62E-05			
Bis(2-ethylhexyl)phthalate	3.84E-07	3.80E-03	1.01E-04	
Chrysene	2.17E-05			
Dibenz(ah)anthracene	6.23E-06			
Fluoranthene	5.23E-05	1.24E-02	4.223-03	
Fluorene	5.75E-06	2.00E-02	2.88E-04	
Indeno(1,2,3-cd)pyrene	8.65E-06			
Naphthalene	1.15E-08	2.86E-02	4.03E-07	
PCB-1260	1.09E-07			
Phenanthrene	2.74E-05			
Polychlorinated biphenyl	1.09E-07			
Pyrene	4.41E-05	9.30E-03	4.74E-03	
Alpha activity				
Beta activity				
Neptunium-237				
Uranium-235				
Uranium-238				
Pathway Total				1.95E+00

Residential Excess Lifetime Cancer Risks

---------- SECTOR=Southwest PATHWAY=Residential Adult Ingestion of Soil .....

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Antimony	1.99E-06	4.00E-04	4.97E-03	
Beryllium	5.17E-07	5.00E-03	1.03E-04	
Cadmium	4.97E-07	1.00E-03	4.97E-04	
Chromium	2.91E-05	5.00E-03	5.82E-03	
Iron	2.33E-02	3.00E-01	7.77E-02	
Thallium	9.62E-07			
Uranium	6.87E-05	3.00E-03	2.29E-02	
Zinc	6.89E-05	3.00E-01	2.3 OE-04	
Acenaphthene	1.36E-06	6.00E-02	2.26E-05	
Acenaphthylene	3.01E-07			
Anthracene	2.49E-06	3.00E-01	8.3OE-06	
Benz(a)anthracene	6.87E-06			
Benzo(a)pyrene	6.62E-06			
Benzo(b)fluoranthene	7.00E-06			
Benzo(ghi)perylene	3.24E-06			
Benzo(k)fluoranthene	4.62E-06			
Bis(2-ethylhexyl)phthalate	1.10E-07	2.00E-02	5.48E-06	
Chrysene	6.19E-06			
Dibenz(a,h)anthracene	1.78E-06			
Fluoranthene	1.49E-05	4.00E-02	3.73E-04	
Fluorene	1.64E-06	4.00E-02	4.11E-05	
Indeno(1,2,3-cd)pyrene	2.47E-06			
Naphthalene	3.29E-09	3.57E-02	9.21E-08	
PCB-1260	5.21E-08			
Phenanthrene	7.83E-06			
Polychlorinated biphenyl	5.21E-08			
Pyrene	1.26E-05	3.00E-02	4.20E-04	
Alpha activity				
Beta activity				
Neptunium-237				
Uranium-235				
Uranium-238				
Pathway Total				1.13E-01

---------- SECTOR=Southwest PATHWAY=Residential Adult Ingestion of Vegetables From Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Antimony	4.27E-04	4.00E-04	1.07E+00	
Beryllium	1.08E-04	5.00E-03	2.16E-02	
Cadmium	1.57E-04	1.00E-03	1.57E-01	
Chromium	6.03E-03	5.00E-03	1.21E+00	
Iron	4.83E+00	3.00E-01	1.61E+01	
Thal1ium	2.00E-04			
Uranium	1.42E-02	3.00E-03	4.75E+00	
Zinc	2.87E-02	3.00E-01	9.58E-02	
Acenaphthene	3.07E-04	6.00E-02	5.12E-03	
Acenaphthylene	7.56E-05			
Anthracene	5.58E-04	3.00E-01	1.86E-03	
Benz(a)anthracene	1.44E-03			
Benzo(a)pyrene	1.38E-03			
Benzo(b)fluoranthene	1.46E-03			
Benzo(ghi)perylene	6.74E-04			
Benzo(k)fluoranthene	9.60E-04			
Bis(2-ethylhexyl)phthalate	2.36E-05	2.00E-02	1.18E-03	
Chrysene	1.30E-03			
Dibenz(a,h)anthracene	3.70E-04			
Fluoranthene	3.22E-03	4.00E-02	8.06E-02	

Residential Excess Lifetime Cancer Risks

---------- SECTOR=Southwest PATHWAY=Residential Adult Ingestion of Vegetables From Soil ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Fluorene	3.68E-04	4.00E-02	9.21E-03	
Indeno(1,2,3-cd)pyrene	5.14E-04			
Naphthalene	9.26E-07	3.57E-02	2.59E-05	
PCB-1260	1.08E-05			
Phenanthrene	1.72E-03			
Polychlorinated biphenyl -	1.09E-05			
Pyrene	2.72E-03	3.00E-02	9.06E-02	
Alpha activity				
Beta activity				
Neptunium-237				
Uranium-235				
Uranium-238				
Pathway Total				2.36E+01

---------- SECTOR=Southwest PATHWAY=Residential Adult Inhalation of Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Antimony	9.28E-11			
Beryllium	2.41E-11			
Cadmium	2.323-11	5.71E-05	4.06E-07	
Chromium	1.36E-09			
Iron	1.09E-06			
Thallium	4.49E-11			
Uranium	3.20E-09			
Zinc	3.21E-09			
Acenaphthene	6.33E-11			
Acenaphthylene	1.41E-11			
Anthracene	1.16E-10			
Benz(a)anthracene	3.21E-10			
Benzo(a)pyrene	3.09E-10			
Benzo(b)fluoranthene	3.27E-10			
Benzo(ghi)perylene	1.51E-10			
Benzo(k)fluoranthene	2.16E-10			
Bis(2-ethylhexyl)phthalate	5.11E-12			
Chrysene	2.89E-10			
Dibenz(a,h)anthracene	8.31E-11			
Fluoranthene	6.97E-10			
Fluorene	7.67E-11			
Indeno(1,2,3-cd)pyrene	1.15E-10			
Naphtha1ene	1.53E-13			
PCB-1260	2.43E-12			
Phenanthrene	3.65E-10			
Polychlorinated biphenyl	2.43E-12			
Pyrene	5.88E-10			
Alpha activity				
Beta activity				
Neptunium-237				
Uranium-235				
Uranium-238				
Pathway Total				4.06E-07

Residential Excess Lifetime Cancer Risks

---------- SECTOR=Southwest PATHWAY=Residential Child Dermal Contact with Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Antimony	1.79E-05	8.00E-06	2.24E+00	
Beryllium	4.65E-06	5.00E-05	9.30E-02	
Cadmium	8.94E-07	1.00E-05	8.94E-02	
Chromium	2.62E-04	1.00E-04	2.62E+00	
Iron	2.10E-01	4.50E-02	4.66E+00	
Thallium	8.66E-06			
Uranium	6.18E-04	2.55E-03	2.42E-01	
Zinc	6.20E-04	6.00E-02	1.03E-02	
Acenaphthene	2.44E-05	1.86E-02	1.31E-03	
Acenaphthylene	5.43E-06			
Anthracene	4.49E-05	2.28E-01	1.97E-04	
Benz(a)anthracene	1.24E-04			
Benzo(a)pyrene	1.19E-04			
Benzo(b)fluoranthene	1.26E-04			
Benzo(ghi)perylene	5.84E-05			
Benzo(k)fluoranthene	8.33E-05			
Bis(2-ethylhexyl)phthalate	1.97E-06	3.80E-03	5.19E-04	
Chrysene	1.11E-04			
Dibenz(a,h)anthracene	3.21E-05			
Fluoranthene	2.69E-04	1.24E-02	2.17E-02	
Fluorene	2.96E-05	2.00E-02	1.48E-03	
Indeno(1,2,3-cd)pyrene	4.45E-05			
Naphthalene	5.92E-08	2.86E-02	2.07E-06	
PCB-1260	5.62E-07			
Phenanthrene	1.41E-04			
Polychlorinated biphenyl	5.62E-07			
Pyrene	2.27E-04	9.30E-03	2.44E-02	
Alpha activity				
Beta activity				
Neptunium-237				
Uranium-235				
Uranium-238				
Pathway Total				1.00E+01

..... SECTOR=Southwest PATHWAY=Residential Child Ingestion of Soil .....

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Antimony	1.92E-05	4.00E-04	4.80E-02	
Beryllium	4.99E-06	5.00E-03	9.98E-04	
Cadmium	4.80E-06	1.00E-03	4.80E-03	
Chromium	2.81E-04	5.00E-03	5.62E-02	
Iron	2.25E-01	3.00E-01	7.50E-01	
Thallium	9.29E-06			
Uranium	6.63E-04	3.00E-03	2.21E-01	
Zinc	6.65E-04	3.00E-01	2.22E-03	
Acenaphthene	1.31E-05	6.00E-02	2.18E-04	
Acenaphthylene	2.91E-06			
Anthracene	2.41E-05	3.00E-01	8.02E-05	
Benz(a)anthracene	6.64E-05			
Benzo(a)pyrene	6.39E-05			
Benzo(b)fluoranthene	6.76E-05			
Benzo(ghi)perylene	3.13E-05			
Benzo(k)fluoranthene	4.46E-05			
Bis(2-ethylhexyl)phthalate	1.06E-06	2.00E-02	5.29E-05	
Chrysene	5.97E-05			
Dibenz(a,h)anthracene	1.72E-05			
Fluoranthene	1.44E-04	4.00E-02	3.61E-03	

Residential Excess Lifetime Cancer Risks

SECTOR=Southwest PATHWAY=Residential Child Ingestion of Soil (continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Fluorene	1.59E-05	4.00E-02	3.97E-04	
Indeno(1,2,3-cd)pyrene	2.39E-05			
Naphthalene	3.17E-08	3.57E-02	8.89E-07	
PCB-1260	5.03E-07			
Phenanthrene	7.56E-05			
Polychlorinated biphenyl-	5.03E-07			
	1.22E-04	3.00E-02	4.05E-03	
Alpha activity				
Beta activity				
Neptunium-237				
Uranium-235				
Uranium-238				
Pathway Total				1.09E+00

SECTOR=Southwest PATHWAY=Residential Child Ingestion of Vegetables From Soil

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Antimony	1.35E-03	4.00E-04	3.37E+00	
Beryllium	3.40E-04	5.00E-03	6.81E-02	
Cadmium	4.96E-04	1.00E-03	4.96E-01	
chromium	1.90E-02	5.00E-03	3.80E+00	
Iron	1.52E+01	3.00E-01	5.08E+01	
Thallium	6.30E-04			
Uranium	4.49E-02	3.00E-03	1.50E+01	
Zinc	9.06E-02	3.00E-01	3.02E-01	
Acenaphthene	9.69E-04	6.00E-02	1.61E-02	
Acenaphthylene	2.38E-04			
Anthracene	1.76E-03	3.00E-01	5.87E-03	
Benz(a)anthracene	4.55E-03			
Benzo(a)pyrene	4.36E-03			
Benzo(b)fluoranthene	4.61E-03			
Benzo(ghi)perylene	2.12E-03			
Benzo(k)fluoranthene	3.03E-03			
Bis(2-ethylhexyl)phthalate	7.46E-05	2.00E-02	3.73E-03	
Chrysene	4.10E-03			
Dibenz(a,h)anthracene	1.17E-03			
Fluoranthene	1.02E-02	4.00E-02	2.54E-01	
Fluorene	1.16E-03	4.00E-02	2.91E-02	
Indeno(1,2,3-cd)pyrene	1.62E-03			
Naphthalene	2.92E-06	3.573-02	8.18E-05	
PCB-1260	3.41E-05			
Phenanthrene	5.44E-03			
Polychlorinated biphenyl	3.43E-05			
Pyrene	8.573-03	3.00E-02	2.86E-01	
Alpha activity				
Beta activity				
Neptunium-237				
Uranium-235				
Uranium-238				
Pathway Total				7.44E+01

Residential Excess Lifetime Cancer Risks

---------- SECTOR=Southwest PATHWAY=Residential Child Inhalation of Soil .....

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Antimony	4.48E-10			
Beryllium	1.16E-10			
Cadmium	1.12E-10	5.71E-05	1.96E-06	
Chromium	6.56E-09			
Iron	5.25E-06			
Thallium	2.17E-10			
Uranium	1.55E-08			
Zinc	1.55E-08			
Acenaphthene	3.05E-10			
Acenaphthylene	6.79E-11			
Anthracene	5.61E-10			
Benz(a)anthracene	1.55E-09			
Benzo(a)pyrene	1.49E-09			
Benzo(b)fluoranthene	1.58E-09			
Benzo(ghi)perylene	7.30E-10			
Benzo(k)fluoranthene	1.04E-09			
Bis(2-ethylhexyl)phthalate	2.47E-11			
Chrysene	1.39E-09			
Dibenz(a,h)anthracene	4.01E-10			
Fluoranthene	3.37E-09			
Fluorene	3.70E-10			
Indeno(1,2,3-cd)pyrene	5.57E-10			
Naphthalene	7.41E-13			
PCB-1260	1.17E-11			
Phenanthrene	1.76E-09			
Polychlorinated biphenyl	1.17E-11			
Pyrene	2.84E-09			
Alpha activity				
Beta activity				
Neptunium-237				
Uranium-235				
Uranium-238				
Pathway Total				1.96E-06

---------- SECTOR=West PATHWAY=Residential Adult Dermal Contact with Soil .....

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	1.74E-02	1.00E-01	1.74E-01	
Antimony	2.38E-06	8.00E-06	2.97E-01	
Arsenic	3.16E-05	1.23E-04	2.57E-01	
Beryllium	7.54E-07	5.00E-05	1.51E-02	
Cadmium	4.34E-07	1.00E-05	4.34E-02	
Chromium	3.01E-05	1.00E-04	3.01E-01	
Cobalt	1.14E-05	4.80E-02	2.37E-04	
Uranium	8.70E-05	2.55E-03	3.41E-02	
Zinc	7.19E-05	6.00E-02	1.20E-03	
2-Methylnaphthalene	4.32E-06			
Acenaphthene	1.61E-05	1.86E-02	8.68E-04	
Anthracene	6.99E-05	2.28E-01	3.07E-04	
Benz(a)anthracene	9.65E-05			
Benzo(a)pyrene	8.68E-05			
Benzo(b)fluoranthene	1.08E-04			
Benzo(ghi)perylene	1.77E-05			
Benzo(k)fluoranthene	1.06E-04			
Bis(2-ethylhexyl)phthalate	4.79E-07	3.80E-03	1.26E-04	
Chrysene	1.04E-04			
Di-n-butyl phthalate	9.83E-07	1.00E-01	9.83E-06	

Residential Excess Lifetime Cancer Risks

---------- SECTOR=West PATHWAY=Residential Adult Dermal Contact with Soil ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Dibenz (a,h) anthracene	1.80E-05			
Fluoranthene	2.163-04	1.24E-02	1.75E-02	
Fluorene	1.50E-05	2.00E-02	7.49E-04	
Indeno(1,2,3-cd)pyrene	1.82E-05			
Naphthalene	6.96E-06	2.86E-02	2.44E-04	
PCB-1254	2.76E-06	1.80E-05	1.53E-01	
PCB-1260	4.603-08			
Phenanthrene	1.68E-04			
Polychlorinated biphenyl	1.61E-06			
Pyrene	1.89E-04	9.30E-03	2.04E-02	
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				1.32E+00

---------- SECTOR=West PATHWAY=Residential Adult Ingestion of Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	9.97E-03	1.00E+00	9.97E-03	
Antimony	1.36E-06	4.00E-04	3.40E-03	
Arsenic	1.81E-05	3.00E-04	6.02E-02	
Beryllium	4.31E-07	5.00E-03	8.62E-05	
Cadmium	1.24E-06	1.00E-03	1.24E-03	
Chromium	1.72E-05	5.00E-03	3.44E-03	
Cobalt	6.50E-06	6.00E-02	1.08E-04	
Uranium	4.97E-05	3.00E-03	1.66E-02	
Zinc	4.11E-05	3.00E-01	1.37E-04	
2-Methylnaphthalene	1.23E-06			
Acenaphthene	4.61E-06	6.00E-02	7.68E-05	
Anthracene	2.00E-05	3.00E-01	6.66E-05	
Benz(a)anthracene	2.76E-05			
Benzo(a)pyrene	2.483-05			
Benzo(b) fluoranthene	3.09E-05			
Benzo(ghi)perylene	5.07E-06			
Benzo(k) fluoranthene	3.04E-05			
Bis(2-ethylhexyl)phthalate	1.37E-07	2.00E-02	6.85E-06	
Chrysene	2.97E-05			
Di-n-butyl phthalate	2.81E-07	1.00E-01	2.81E-06	
Dibenz (a,h) anthracene	5.14E-06			
Fluoranthene	6.18E-05	4.00E-02	1.55E-03	
Fluorene	4.28E-06	4.00E-02	1.07E-04	
Indeno(1,2,3-cd)pyrene	5.20E-06			
Naphtha1ene	1.99E-06	3.573-02	5.57E-05	
PCB-1254	1.32E-06	2.00E-05	6.58E-02	
PCB-1260	2.19E-08			
Phenanthrene	4.79E-05			
Polychlorinated biphenyl	7.68E-07			
Pyrene	5.41E-05	3.00E-02	1.80E-03	
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				

Residential Excess Lifetime Cancer Risks

SECTOR=West PATHWAY=Residential Adult Ingestion of Soil (continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				1.65E-01

SECTOR=West PATHWAY=Residential Adult Ingestion of Vegetables From Soil

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	2.07E+00	1.00E+00	2.07E+00	
Antimony	2.92E-04	4.00E-04	7.30E-01	
Arsenic	3.883-03	3.00E-04	1.29E+01	
Beryllium	9.01E-05	5.00E-03	1.80E-02	
Cadmium	3.92E-04	1.00E-03	3.92E-01	
Chromium	3.56E-03	5.00E-03	7.12E-01	
Cobalt	1.46E-03	6.00E-02	2.44E-02	
Uranium	1.03E-02	3.00E-03	3.44E+00	
Zinc	1.71E-02	3.00E-01	5.71E-02	
2-Methylnaphthalene	2.96E-04			
Acenaphthene	1.04E-03	6.00E-02	1.74E-02	
Anthracene	4.48E-03	3.00E-01	1.49E-02	
Benz(a)anthracene	5.79E-03			
Benzo(a)pyrene	5.18E-03			
Benzo(b)fluoranthene	6.44E-03			
Benzo(ghi)perylene	1.05E-03			
Benzo(k)fluoranthene	6.32E-03			
Bis(2-ethylhexyl)phthalate	2.96E-05	2.00E-02	1.48E-03	
Chrysene	6.24E-03			
Di-n-butyl phthalate	6.06E-05	1.00E-01	6.06E-04	
Dibenz(a,h)anthracene	1.07E-03			
Fluoranthene	1.33E-02	4.00E-02	3.34E-01	
Fluorene	9.60E-04	4.00E-02	2.40E-02	
Indeno(1,2,3-cd)pyrene	1.08E-03			
Naphthalene	5.60E-04	3.57E-02	1.57E-02	
PCB-1254	2.75E-04	2.00E-05	1.37E+01	
PCB-1260	4.55E-06			
Phenanthrene	1.06E-02			
Polychlorinated biphenyl	1.61E-04			
Pyrene	1.17E-02	3.00E-02	3.89E-01	
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				3.49E+01

SECTOR=West PATHWAY=Residential Adult Inhalation of Soil

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	4.65E-07			
Antimony	6.34E-11			

Residential Excess Lifetime Cancer Risks

SECTOR=West PATHWAY=Residential Adult Inhalation of Soil (continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Arsenic	8.43E-10			
Beryllium	2.01E-11			
Cadmium	5.79E-11	5.71E-05	1.01E-06	
Chromium	8.03E-10			
Cobalt	3.03E-10			
Uranium	2.32E-09			
Zinc	1.92E-09			
2-Methylnaphthalene	5.75E-11			
Acenaphthene	2.15E-10			
Anthracene	9.323-10			
Benz(a)anthracene	1.29E-09			
Benzo(a)pyrene	1.16E-09			
Benzo(b)fluoranthene	1.44E-09			
Benzo(ghi)perylene	2.37E-10			
Benzo(k)fluoranthene	1.42E-09			
Bis(2-ethylhexyl)phthalate	6.39E-12			
Chrysene	1.39E-09			
Di-n-butyl phthalate	1.31E-11			
Dibenz(a,h)anthracene	2.40E-10			
Fluoranthene	2.89E-09			
Fluorene	2.00E-10			
Indeno(1,2,3-cd)pyrene	2.43E-10			
Naphthalene	9.29E-11			
PCB-1254	6.14E-11			
PCB-1260	1.02E-12			
Phenanthrene	2.24E-09			
Polychlorinated biphenyl	3.59E-11			
Pyrene	2.52E-09			
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-234				
uranium-235				
Uranium-238				
Pathway Total				1.01E-06

SECTOR=West PATHWAY=Residential Child Dermal Contact with Soil

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	8.98E-02	1.00E-01	8.98E-01	
Antimony	1.22E-05	8.00E-06	1.53E+00	
Arsenic	1.63E-04	1.23E-04	1.32E+00	
Beryllium	3.88E-06	5.00E-05	7.76E-02	
Cadmium	2.23E-06	1.00E-05	2.23E-01	
Chromium	1.55E-04	1.00E-04	1.55E+00	
Cobalt	5.85E-05	4.80E-02	1.22E-03	
Uranium	4.47E-04	2.55E-03	1.75E-01	
Zinc	3.70E-04	6.00E-02	6.17E-03	
2-Methylnaphthalene	2.22E-05			
Acenaphthene	8.30E-05	1.86E-02	4.46E-03	
Anthracene	3.60E-04	2.28E-01	1.58E-03	
Benz(a)anthracene	4.96E-04			
Benzo(a)pyrene	4.47E-04			
Benzo(b)fluoranthene	5.56E-04			
Benzo(ghi)perylene	9.13E-05			

Residential Excess Lifetime Cancer Risks

SECTOR=West PATHWAY=Residential Child Dermal Contact with Soil (continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Benzo(k)fluoranthene	5.48E-04			
Bis(2-ethylhexyl)phthalate	2.47E-06	3.80E-03	6.49E-04	
Chrysene	5.35E-04			
Di-n-butyl phthalate	5.06E-06	1.00E-01	5.06E-05	
Dibenz(a,h)anthracene	9.26E-05			
Fluoranthene	1.11E-03	1.24E-02	8.98E-02	
Fluorene	7.71E-05	2.00E-02	3.86E-03	
Indeno(1,2,3-cd)pyrene	9.37E-05			
Naphthalene	3.58E-05	2.86E-02	1.25E-03	
PCB-1254	1.42E-05	1.80E-05	7.89E-01	
PCB-1260	2.37E-07			
Phenanthrene	8.63E-04			
Polychlorinated biphenyl	8.30E-06			
Pyrene	9.74E-04	9.30E-03	1.05E-01	
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				6.78E+00

SECTOR=West PATHWAY=Residential Child Ingestion of Soil

Analyte	Noncarcinogenic CDI	Refcrence Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	9.63E-02	1.00E+00	9.63E-02	
Antimony	1.31E-05	4.00E-04	3.28E-02	
Arsenic	1.74E-04	3.00E-04	5.82E-01	
Beryllium	4.16E-06	5.00E-03	8.32E-04	
Cadmium	1.20E-05	1.00E-03	1.20E-02	
Chromium	1.66E-04	5.00E-03	3.32E-02	
Cobalt	6.27E-05	6.00E-02	1.05E-03	
Uranium	4.80E-04	3.00E-03	1.60E-01	
Zinc	3.97E-04	3.00E-01	1.32E-03	
2-Methylnaphthalene	1.19E-05			
Acenaphthene	4.45E-05	6.00E-02	7.42E-04	
Anthracene	1.93E-04	3.00E-01	6.43E-04	
Benz(a)anthracene	2.66E-04			
Benzo(a)pyrene	2.39E-04			
Benzo(b)fluoranthene	2.98E-04			
Benzo(ghi)perylene	4.89E-05			
Benzo(k)fluoranthene	2.94E-04			
Bis(2-ethylhexyl)phthalate	1.32E-06	2.00E-02	6.61E-05	
Chrysene	2.87E-04			
Di-n-butyl phthalate	2.71E-06	1.00E-01	2.71E-05	
Dibenz(a,h)anthracene	4.97E-05			
Fluoranthene	5.97E-04	4.00E-02	1.49E-02	
Fluorene	4.14E-05	4.00E-02	1.03E-03	
Indeno(1,2,3-cd)pyrene	5.03E-05			
Naphthalene	1.92E-05	3.57E-02	5.38E-04	
PCB-1254	1.27E-05	2.00E-05	6.35E-01	
PCB-1260	2.12E-07			
Phenanthrene	4.63E-04			
Polychlorinated biphenyl	7.42E-06			
Pyrene	5.22E-04	3.00E-02	1.74E-02	

Residential Excess Lifetime Cancer Risks

---------- SECTOR=West PATHWAY=Residential Child Ingestion of Soil ----------
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				1.59E+00

---------- SECTOR=West PATHWAY=Residential Child Ingestion of Vegetables From Soil ----------

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	6.53E+00	1.00E+00	6.53E+00	
Antimony	9.21E-04	4.00E-04	2.30E+00	
Arsenic	1.22E-02	3.00E-04	4.08E+01	
Beryllium	2.84E-04	5.00E-03	5.68E-02	
Cadmium	1.24E-03	1.00E-03	1.24E+00	
Chromium	1.12E-02	5.00E-03	2.25E+00	
Cobalt	4.62E-03	6.00E-02	7.70E-02	
Uranium	3.25E-02	3.00E-03	1.08E+01	
Zinc	5.41E-02	3.00E-01	1.80E-01	
2-Methylnaphthalene	9.35E-04			
Acenaphthene	3.29E-03	6.00E-02	5.49E-02	
Anthracene	1.41E-02	3.00E-01	4.71E-02	
Benz(a)anthracene	1.83E-02			
Benzo(a)pyrene	1.63E-02			
Benzo(b)fluoranthene	2.03E-02			
Benzo(ghi)perylene	3.32E-03			
Benzo(k)fluoranthene	1.99E-02			
Bis(2-ethylhexyl)phthalate	9.32E-05	2.00E-02	4.66E-03	
Chrysene	1.97E-02			
Di-n-butyl phthalate	1.91E-04	1.00E-01	1.91E-03	
Dibenz(a,h)anthracene	3.37E-03			
Fluoranthene	4.21E-02	4.00E-02	1.05E+00	
Fluorene	3.03E-03	4.00E-02	7.57E-02	
Indeno(1,2,3-cd)pyrene	3.41E-03			
Naphthalene	1.77E-03	3.57E-02	4.95E-02	
PCB-1254	8.67E-04	2.00E-05	4.33E+01	
PCB-1260	1.43E-05			
Phenanthrene	3.33E-02			
Polychlorinated biphenyl	5.06E-04			
Pyrene	3.68E-02	3.00E-02	1.23E+00	
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				1.10E+02

Residential Excess Lifetime Cancer Risks

---------- SECTOR=West PATHWAY=Residential Child Inhalation of Soil ....

Analyte	Noncarcinogenic CDI	Reference Dose	Hazard Quotient	Pathway Hazard Index
Aluminum	2.25E-06			
Antimony	3.06E-10			
Arsenic	4.07E-09			
Beryllium	9.71E-11			
Cadmium	2.793-10	5.713-05	4.89E-06	
chromium	3.87E-09			
Cobalt	1.46E-09			
Uranium	1.12E-08			
Zinc	9.26E-09			
2-Methylnaphthalene	2.78E-10			
Acenaphthene	1.04E-09			
Anthracene	4.50E-09			
Benz(a)anthracene	6.21E-09			
Benzo(a)pyrene	5.593-09			
Benzo(b)fluoranthene	6.95E-09			
Benzo(ghi)perylene	1.14E-09			
Benzo(k)fluoranthene	6.85E-09			
Bis(2-ethylhexyl)phthalate	3.09E-11			
Chrysene	6.693-09			
Di-n-butyl phthalate	6.33E-11			
Dibenz(a,h)anthracene	1.16E-09			
Fluoranthene	1.39E-08			
Fluorene	9.65E-10			
Indeno(1,2,3-cd)pyrene	1.17E-09			
Naphthalene	4.48E-10			
PCB-1254	2.96E-10			
PCB-1260	4.94E-12			
Phenanthrene	1.08E-08			
Polychlorinated biphenyl	1.73E-10			
Pyrene	1.22E-08			
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				4.89E-06

Residential Excess Lifetime Cancer Risks

---------- SECTOR=Central PATHWAY=Residential Adult Dermal Contact with Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte specific	Total Pathway Risk
Di-n-butyl phthalate	2.79E-06			
Alpha activity				
Beta activity				
Pathway Total				

---------- SECTOR=Central PATHWAY=Residential Adult External Exposure to Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Di-n-butyl phthalate				
Alpha activity	2.71E+02			
Beta activity	6.98E+02			
Pathway Total				

---------- SECTOR=Central PATHWAY=Residential Adult Ingestion of Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Di-n-butyl phthalate	7.98E-07			
Alpha activity	1.23E+04			
Beta activity	3.19E+04			
Pathway Total				

---------- SECTOR=Central PATHWAY=Residential Adult Ingestion of Vegetables From Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Di-n-butyl phthalate	1.72E-04			
Alpha activity				
Beta activity				
Pathway Total				

---------- SECTOR=Central PATHWAY=Residential Adult Inhalation of Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Di-n-butyl phthalate	3.73E-11			
Alpha activity				
Beta activity				
Pathway Total				

---------- SECTOR=Central PATHWAY=Residential Child Dermal Contact with Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Di-n-butyl phthalate	2.54E-06			

Residential Excess Lifetime Cancer Risks

---------- SECTOR=Central PATHWAY=Residential Child Dermal Contact with Soil .....
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Alpha activity				
Beta activity				
Pathway Total				

---------- SECTOR=Central PATHWAY=Residential Child External Exposure to Soil .....

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Di-n-butyl phthalate				
Alpha activity	4.77E+01			
Beta activity	1.23E+02			
Pathway Total				

---------- SECTOR=Central PATHWAY=Residential Child Ingestion of Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Di-n-butyl phthalate	1.36E-06			
Alpha activity	4.36E+03			
Beta activity	1.12E+04			
Pathway Total				

---------- SECTOR=Central PATHWAY=Residential Child Ingestion of Vegetables From Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Di-n-butyl phthalate	9.59E-05			
Alpha activity				
Beta activity				
Pathway Total				

---------- SECTOR=Central PATHWAY=Residential Child Inhalation of Soil .....

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Di-n-butyl phthalate	3.17E-11			
Alpha activity				
Beta activity				
Pathway Total				

---------- SECTOR=East PATHWAY=Residential Adult Dermal Contact with Soil .....

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Cadmium	8.85E-08			

Residential Excess Lifetime Cancer Risks

---------- SECTOR=East PATHWAY=Residential Adult Dermal Contact with Soil ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Chromium	1.59E-05			
Thallium	1.40E-06			
Uranium	3.18E-05			
Acenaphthene	3.03E-07			
Anthracene	5.12E-07			
Benz(a)anthracene	1.68E-06	2.35E+00	3.96E-06	
Benzo(a)pyrene	1.85E-06	2.35E+01	4.36E-05	
Benzo(b)fluoranthene	3.26E-06	2.35E+00	7.68E-06	
Benzo(ghi)perylene	8.62E-07			
Benzo(k)fluoranthene	2.03E-06	2.35E-01	4.773-07	
Chrysene	1.85E-06	2.353-02	4.363-08	
Di-n-butyl phthalate	2.863-06			
Dibenz(a,h)anthracene	3.73E-07	2.35E+01	8.77E-06	
Fluoranthene	4.89E-06			
Fluorene	2.10E-07			
Indeno(1,2,3-cd)pyrene	9.78E-07	2.35E+00	2.30E-06	
PCB-1260	4.61E-06	2.22E+00	1.02E-05	
Phenanthrene	2.70E-06			
Polychlorinated biphenyl	1.40E-05	2.22E+00	3.11E-05	
Pyrene	4.19E-06			
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-235				
Uranium-238				
Pathway Total				1.08E-04

---------- SECTOR=East PATHWAY=Residential Adult External Exposure to Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Cadmium				
Chromium				
Thallium				
Uranium				
Acenaphthene				
Anthracene				
Benz(a)anthracene				
Benzo(a)pyrene				
Benzo(b)fluoranthene				
Benzo(ghi)perylene				
Benzo(k)fluoranthene				
Chrysene				
Di-n-butyl phthalate				
Dibenz(a,h)anthracene				
Fluoranthene				
Fluorene				
Indeno(1,2,3-cd)pyrene				
PCB-1260				
Phenanthrene				
Polychlorinated biphenyl				
Pyrene				
Alpha activity	8.66E+02			
Beta activity	1.11E+03			
Cesium-137	1.30E+01	2.09E-06	2.73E-05	
Neptunium-237	1.04E+01	4.62E-07	4.82E-06	

Residential Excess Lifetime Cancer Risks

..... SECTOR=East PATHWAY=Residential Adult External Exposure to Soil ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Uranium-235	1.04E+01	2.65E-07	2.76E-06	
Uranium-238	2.37E+02	6.573-08	1.56E-05	
Pathway Total				5.04E-05

---------- SECTOR-East PATHWAY=Residential Adult Ingestion Of Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Cadmium	2.53E-07			
Chromium	9.06E-06			
Thallium	7.98E-07			
Uranium	1.82E-05			
Acenaphthene	8.65E-08			
Anthracene	1.46E-07			
Benz(a)anthracene	4.80E-07	7.30E-01	3.51E-07	
Benzo(a)pyrene	5.29E-07	7.30E+00	3.86E-06	
Benzo(b)fluoranthene	9.32E-07	7.30E-01	6.80E-07	
Benzo(ghi)perylene	2.46E-07			
Benzo(k)fluoranthene	5.79E-07	7.303-02	4.23E-08	
Chrysene	5.29E-07	7.30E-03	3.86E-09	
Di-n-butyl phthalate	8.18E-07			
Dibenz(a,h)anthracene	1.06E-07	7.30E+00	7.77E-07	
Fluoranthene	1.40E-06			
Fluorene	5.99E-08			
Indeno(1,2,3-cd)pyrene	2.79E-07	7.30E-01	2.04E-07	
PCB-1260	2.20E-06	2.00E+00	4.39E-06	
Phenanthrene	7.72E-07			
Polychlorinated biphenyl	6.65E-06	2.00E+00	1.33E-05	
Pyrene	1.20E-06			
Alpha activity	3.95E+04			
Beta activity	5.09E+04			
Cesium-137	5.95E+02	3.16E-11	1.88E-08	
Neptunium-237	4.76E+02	3.00E-10	1.43E-07	
Uranium-235	4.76E+02	4.70E-11	2.24E-08	
Uranium-238	1.08E+04	6.20E-11	6.71E-07	
Pathway Total				2.45E-05

---------- SECTOR=East PATHWAY=Residential Adult Ingestion Of Vegetables From Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Cadmium	8.00E-05			
Chromium	1.88E-03			
Thallium	1.66E-04			
Uranium	3.78E-03			
Acenaphthene	1.96E-05			
Anthracene	3.28E-05			
Benz(a)anthracene	1.01E-04	7.30E-01	7.36E-05	
Benzo(a)pyrene	1.10E-04	7.30E+00	8.06E-04	
Benzo(b)fluoranthene	1.94E-04	7.30E-01	1.42E-04	
Benzo(ghi)perylene	5.12E-05			
Benzo(k)fluoranthene	1.20E-04	7.30E-02	8.78E-06	
Chrysene	1.11E-04	7.30E-03	8.11E-07	
Di-n-butyl phthalate	1.76E-04			

Residential Excess Lifetime Cancer Risks

---------- SECTOR=East PATHWAY=Residential Adult Ingestion of Vegetables From Soil ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Dibenz(a,h)anthracene	2.21E-05	7.30E+00	1.61E-04	
Fluoranthene	3.01E-04			
Fluorene	1.34E-05			
Indeno(1,2,3-cd)pyrene	5.81E-05	7.30E-01	4.24E-05	
PCB-1260	4.55E-04	2.00E+00	9.11E-04	
Phenanthrene	1.70E-04			
Polychlorinated biphenyl	1.39E-03	2.00E+00	2.78E-03	
Pyrene	2.58E-04			
Alpha activity				
Beta activity				
Cesium-137	1.31E+05	3.16E-11	4.14E-06	
Neptunium-237	9.98E+04	3.00E-10	3.00E-05	
Uranium-235	9.88E+04	4.70E-11	4.64E-06	
Uranium-238	2.26E+06	6.20E-11	1.40E-04	
Pathway Total				5.11E-03

---------- SECTOR=East PATHWAY=Residential Adult Inhalation of Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Cadmium	1.18E-11	6.10E+00	7.20E-11	
Chromium	4.23E-10	4.10E+01	1.73E-08	
Thallium	3.73E-11			
Uranium	8.49E-10			
Acenaphthene	4.04E-12			
Anthracene	6.83E-12			
Benz(a)anthracene	2.24E-11	3.10E-01	6.95E-12	
Benzo(a)pyrene	2.47E-11	3.10E+00	7.65E-11	
Benzo(b)fluoranthene	4.35E-11	3.10E-01	1.35E-11	
Benzo(ghi)perylene	1.15E-11			
Benzo(k)fluoranthene	2.70E-11	3.10E-02	8.37E-13	
Chrysene	2.47E-11	3.10E-03	7.65E-14	
Di-n-butyl phthalate	3.82E-11			
Dibenz(a,h)anthracene	4.97E-12	3.10E+00	1.54E-11	
Fluoranthene	6.52E-11			
Fluorene	2.79E-12			
Indeno(1,2,3-cd)pyrene	1.30E-11	3.10E-01	4.04E-12	
PCB-1260	1.02E-10	2.00E+00	2.05E-10	
Phenanthrene	3.60E-11			
Polychlorinated biphenyl	3.10E-10	2.00E+00	6.21E-10	
Pyrene	5.59E-11			
Alpha activity				
Beta activity				
Cesium-137	2.78E-02	1.91E-11	5.30E-13	
Neptunium-237	2.223-02	3.45E-08	7.66E-10	
Uranium-235	2.22E-02	1.30E-08	2.89E-10	
Uranium-238	5.05E-01	1.24E-08	6.27E-09	
Pathway Total				2.57E-08

---------- SECTOR=East PATHWAY=Residential Child Dermal Contact with Soil ....

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Cadmium	8.03E-08			

Residential Excess Lifetime Cancer Risks

..... SECTOR=East PATHWAY=Residential Child Dermal Contact with Soil .....
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Chromium	1.44E-05			
Thallium	1.27E-06			
Uranium	2.89E-05			
Acenaphthene	2.753-07			
Anthracene	4.65E-07			
Benz(a)anthracene	1.533-06	2.35E+00	3.59E-06	
Benzo(a)pyrene	1.68E-06	2.35E+01	3.96E-05	
Benzo(b)fluoranthene	2.96E-06	2.35E+00	6.97E-06	
Benzo(ghi)perylene	7.82E-07			
Benzo(k)fluoranthene	1.843-06	2.35E-01	4.33E-07	
Chrysene	1.68E-06	2.35E-02	3.96E-08	
Di-n-butyl phthalate	2.60E-06			
Dibenz(a,h)anthracene	3.38E-07	2.35E+01	7.97E-06	
Fluoranthene	4.44E-06			
Fluorene	1.90E-07			
Indeno(1,2,3-cd)pyrene	8.88E-07	2.35E+00	2.09E-06	
PCB-1260	4.19E-06	2.22E+00	9.30E-06	
Phenanthrene	2.45E-06			
Polychlorinated biphenyl	1.27E-05	2.22E+00	2.82E-05	
Pyrene	3.81E-06			
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237'				
Uranium-235				
Uranium-238				
Pathway Total				9.82E-05

---------- SECTOR=East PATHWAY=Residential Child External Exposure to Soil .....

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Cadmium				
Chromium				
Thallium				
Uranium				
Acenaphthene				
Anthracene				
Benz(a)anthracene				
Benzo(a)pyrene				
Benzo(b)fluoranthene				
Benzo(ghi)perylene				
Benzo(k)fluoranthene				
Chrysene				
Di-n-butyl phthalate				
Dibenz(a,h)anthracene				
Fluoranthene				
Fluorene				
Indeno(1,2,3-cd)pyrene				
PCB-1260				
Phenanthrene				
Polychlorinated biphenyl				
Alpha activity	1.53E+02			
Beta activity	1.97E+02			
Cesium-137	2.30E+00	2.09E-06	4.81E-06	
Neptunium-237	1.84E+00	4.62E-07	8.51E-07	

Residential Excess Lifetime Cancer Risks

---------- SECTOR=East PATHWAY=Residential Child External Exposure to Soil ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Uranium-235	1.84E+00	2.653-07	4.88E-07	
Uranium-238	4.19E+01	6.57E-08	2.75E-06	
Pathway Total				8.90E-06

---------- SECTOR=East PATHWAY=Residential Child Ingestion of Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Cadmium	4.31E-07			
Chromium	1.54E-05			
Thallium	1.36E-06			
Uranium	3.10E-05			
Acenaphthene	1.47E-07			
Anthracene	2.49E-07			
Benz(a)anthracene	8.18E-07	7.30E-01	5.97E-07	
Benzo(a)pyrene	9.01E-07	7.30E+00	6.58E-06	
Benzo(b)fluoranthene	1.59E-06	7.30E-01	1.16E-06	
Benzo(ghi)perylene	4.19E-07			
Benzo(k)fluoranthene	9.86E-07	7.30E-02	7.20E-08	
Chrysene	9.01E-07	7.30E-03	6.58E-09	
Di-n-butyl phthalate	1.39E-06			
Dibenz (a,h)anthracene	1.81E-07	7.30E+00	1.32E-06	
Fluoranthene	2.38E-06			
Fluorene	1.02E-07			
Indeno(1,2,3-cd)pyrene	4.76E-07	7.30E-01	3.48E-07	
PCB-1260	3.74E-06	2.00E+00	7.48E-06	
Phenanthrene	1.32E-06			
Polychlorinated biphenyl	1.13E-05	2.00E+00	2.27E-05	
Pyrene	2.04E-06			
Alpha activity	1.39E+04			
Beta activity	1.80E+04			
Cesium-137	2.10E+02	3.16E-11	6.64E-09	
Neptunium-237	1.68E+02	3.00E-10	5.04E-08	
Uranium-235	1.68E+02	4.70E-11	7.90E-09	
Uranium-238	3.82E+03	6.20E-11	2.37E-07	
Pathway Total				4.05E-05

---------- SECTOR=East PATHWAY=Residential Child Ingestion of Vegetables From Soil .....

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Cadmium	4.45E-05			
Chromium	1.04E-03			
Thallium	9.23E-05			
Uranium	2.10E-03			
Acenaphthene	1.09E-05			
Anthracene	1.83E-05			
Benz(a)anthracene	5.61E-05	7.30E-01	4.10E-05	
Benzo(a)pyrene	6.14E-05	7.30E+00	4.49E-04	
Benzo(b)fluoranthene	1.08E-04	7.30E-01	7.90E-05	
Benzo(ghi)perylene	2.85E-05			
Benzo(k)fluoranthene	6.69E-05	7.30E-02	4.88E-06	
Chrysene	6.18E-05	7.30E-03	4.51E-07	
Di-n-butyl phthalate	9.82E-05			

Residential Excess Lifetime Cancer Risks

..... SECTOR=East PATHWAY=Residential child Ingestion of Vegetables From Soil ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Dibenz (a,h) anthracene	1.23E-05	7.30E+00	8.98E-05	
Fluoranthene	1.68E-04			
Fluorene	7.47E-06			
Indeno(1,2,3-cd)pyrene	3.23E-05	7.30E-01	2.36E-05	
PCB-1260	2.53E-04	2.00E+00	5.07E-04	
Phenanthrene	9.46E-05			
Polychlorinated biphenyl	7.74E-04	2.00E+00	1.553-03	
Pyrene	1.44E-04			
Alpha activity				
Beta activity				
Cesium-137	1.51E+04	3.16E-11	4.77E-07	
Neptunium-237	1.15E+04	3.00E-10	3.45E-06	
Uranium-235	1.14E+04	4.70E-11	5.35E-07	
Uranium-238	2.60E+05	6.20E-11	1.61E-05	
Pathway Total				2.763-03

---------- SECTOR=East PATHWAY=Residential Child Inhalation of Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Cadmium	1.01E-11	6.10E+00	6.13E-11	
Chromium	3.60E-10	4.10E+01	1.48E-08	
Thallium	3.17E-11			
Uranium	7.23E-10			
Acenaphthene	3.44E-12			
Anthracene	5.82E-12			
Benz(a)anthracene	1.91E-11	3.10E-01	5.92E-12	
Benzo(a)pyrene	2.10E-11	3.10E+00	6.52E-11	
Benzo(b)fluoranthene	3.70E-11	3.10E-01	1.15E-11	
Benzo(ghi)perylene	9.79E-12			
Benzo(k)fluoranthene	2.3 OE-11	3.10E-02	7.13E-13	
Chrysene	2.10E-11	3.10E-03	6.52E-14	
Di-n-butyl phthalate	3.25E-11			
Dibenz (a,h) anthracene	4.23E-12	3.10E+00	1.31E-11	
Fluoranthene	5.55E-11			
Fluorene	2.38E-12			
Indeno(1,2,3-cd)pyrene	1.11E-11	3.10E-01	3.44E-12	
PCB-1260	8.73E-11	2.00E+00	1.75E-10	
Phenanthrene	3.07E-11			
Polychlorinated biphenyl	2.64E-10	2.00E+00	5.29E-10	
Pyrene	4.76E-11			
Alpha activity				
Beta activity				
Cesium-137	4.90E-03	1.91E-11	9.36E-14	
Neptunium-237	3.92E-03	3.45E-08	1.35E-10	
Uranium-235	3.92E-03	1.30E-08	5.10E-11	
Uranium-238	8.92E-02	1.24E-08	1.11E-09	
Pathway Total				1.69E-08

---------- SECTOR=Far East/Northeast PATHWAY=Residential Adult Dermal Contact with Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	1.61E-02			

Residential Excess Lifetime Cancer Risks

---------- SECTOR=Far East/Northeast PATHWAY-Residential Adult Dermal Contact with Soil ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Antimony	3.38E-06			
Chromium	1.21E-05			
Uranium	3.05E-05			
Benz (a)anthracene	9.323-08	2.35E+00	2.19E-07	
Benzo(a)pyrene	9.32E-08	2.35E+01	2.19E-06	
Benzo(b)fluoranthene	9.32E-08	2.35E+00	2.19E-07	
Benzo(k)fluoranthene	1.16E-07	2.35E-01	2.74E-08	
Chrysene	9.32E-08	2.353-02	2.19E-09	
Fluoranthene	1.98E-07			
PCB-1260	7.823-09	2.22E+00	1.74E-08	
Phenanthrene	9.32E-08			
Polychlorinated biphenyl	7.82E-09	2.22E+00	1.74E-08	
Pyrene	1.12E-07			
Alpha activity				
Beta activity				
Uranium-235				
Uranium-238				
Pathway Total				2.70E-06

---------- SECTOR=Far East/Northeast PATHWAY=Residential Adult External Exposure to Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte specific	Total Pathway Risk
Aluminum				
Antimony				
Chromium				
Uranium				
Benz (a) anthracene				
Benzo(a) pyrene				
Benzo(b) fluoranthene				
Benzo(k) fluoranthene				
Chrysene				
Fluoranthene				
PCB-1260				
Phenanthrene				
Polychlorinated biphenyl				
Pyrene				
Alpha activity	5.81E+02			
Beta activity	1.15E+03			
Uranium-235	1.30E+01	2.65E-07	3.46E-06	
Uranium-238	2.27E+02	6.57E-08	1.49E-05	
Pathway Total				1.84E-05

---------- SECTOR=Far East/Northeast PATHWAY=Residential Adult Ingestion of Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	9.20E-03			
Antimony	1.93E-06			
Chromium	6.91E-06			
Uranium	1.74E-05			
Benz (a)anthracene	2.66E-08	7.30E-01	1.94E-08	
Benzo(a)pyrene	2.66E-08	7.30E+00	1.94E-07	
Benzo(b)fluoranthene	2.66E-08	7.30E-01	1.94E-08	

Residential Excess Lifetime Cancer Risks

---------- SECTOR=Far East/Northeast PATHWAY=Residential Adult Ingestion of Soil .....
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Benzo(k)fluoranthene	3.33E-08	7.303-02	2.433-09	
Chrysene	2.66E-08	7.30E-03	1.94E-10	
Fluoranthene	5.65E-08			
PCB-1260	3.73E-09	2.00E+00	7.45E-09	
Phenanthrene	2.66E-08			
Polychlorinated biphenyl	3.73E-09	2.00E+00	7.45E-09	
Pyrene	3.21E-08			
Alpha activity	2.65E+04			
Beta activity	5.24E+04			
Uranium-235	5.95E+02	4.70E-11	2.80E-08	
Uranium-238	1.04E+04	6.20E-11	6.42E-07	
Pathway Total				9.21E-07

---------- SECTOR=Far East/Northeast PATHWAY=Residential Adult Ingestion of Vegetables From Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	1.91E+00			
Antimony	4.15E-04			
Chromium	1.43E-03			
Uranium	3.62E-03			
Benz(a)anthracene	5.59E-06	7.30E-01	4.08E-06	
Benzo(a)pyrene	5.563-06	7.30E+00	4.06E-05	
Benzo(b)fluoranthene	5.56E-06	7.30E-01	4.06E-06	
Benzo(k)fluoranthene	6.91E-06	7.30E-02	5.04E-07	
Chrysene	5.59E-06	7.30E-03	4.08E-08	
Fluoranthene	1.22E-05			
PCB-1260	7.73E-07	2.00E+00	1.55E-06	
Phenanthrene	5.863-06			
Polychlorinated biphenyl	7.79E-07	2.00E+00	1.56E-06	
Pyrene	6.93E-06			
Alpha activity				
Beta activity				
Uranium-235	1.24E+05	4.70E-11	5.80E-06	
Uranium-238	2.16E+06	6.20E-11	1.34E-04	
Pathway Total				1.92E-04

..... SECTOR=Far East/Northeast PATHWAY=Residential Adult Inhalation of Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	4.29E-07			
Antimony	9.00E-11			
Chromium	3.23E-10	4.10E+01	1.323-08	
Uranium	8.14E-10			
Benz(a)anthracene	1.24E-12	3.10E-01	3.85E-13	
Benzo(a)pyrene	1.24E-12	3.10E+00	3.85E-12	
Benzo(b)fluoranthene	1.24E-12	3.10E-01	3.85E-13	
Benzo(k)fluoranthene	1.55E-12	3.10E-02	4.81E-14	
Chrysene	1.24E-12	3.10E-03	3.85E-15	
Fluoranthene	2.63E-12			
PCB-1260	1.74E-13	2.00E+00	3.48E-13	
Phenanthrene	1.24E-12			
Polychlorinated biphenyl	1.74E-13	2.00E+00	3.48E-13	

Residential Excess Lifetime Cancer Risks

---------- SECTOR=Far East/Northeast PATHWAY=Residential Adult Inhalation of Soil ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Pyrene	1.50E-12			
Alpha activity				
Beta activity				
Uranium-235	2.783-02	1.30E-08	3.61E-10	
Uranium-238	4.83E-01	1.24E-08	5.99E-09	
Pathway Total				1.96E-08

---------- SECTOR=Far East/Northeast PATHWAY=Residential Child Dermal Contact with Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	1.46E-02			
Antimony	3.07E-06			
Chromium	1.10E-05			
Uranium	2.77E-05			
Benz(a)anthracene	8.46E-08	2.35E+00	1.99E-07	
Benzo(a)pyrene	8.46E-08	2.35E+01	1.99E-06	
Benzo(b)fluoranthene	8.46E-08	2.35E+00	1.99E-07	
Benzo(k)fluoranthene	1.06E-07	2.35E-01	2.493-08	
Chrysene	8.46E-08	2.35E-02	1.99E-09	
Fluoranthene	1.79E-07			
PCB-1260	7.10E-09	2.22E+00	1.58E-08	
Phenanthrene	8.46E-08			
Polychlorinated biphenyl	7.10E-09	2.22E+00	1.58E-08	
Pyrene	1.02E-07			
Alpha activity				
Beta activity				
Uranium-235				
Uranium-238				
Pathway Total				2.45E-06

---------- SECTOR=Far East/Northeast PATHWAY=Residential Child External Exposure to Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum				
Antimony				
Chromium				
Uranium				
Benz(a)anthracene				
Benzo(a)pyrene				
Benzo(b)fluoranthene				
Benzo(k)fluoranthene				
Chrysene				
Fluoranthene				
PCB-1260				
Phenanthrene				
Polychlorinated biphenyl				
Pyrene				
Alpha activity	1.03E+02			
Beta activity	2.03E+02			
Uranium-235	2.30E+00	2.65E-07	6.10E-07	
Uranium-238	4.00E+01	6.57E-08	2.63E-06	
Pathway Total				3.24E-06

Residential Excess Lifetime Cancer Risks

---------- SECTOR=Far East/Northeast PATHWAY=Residential Child Ingestion of Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	1.57E-02			
Antimony	3.29E-06			
Chromium	1.18E-05			
Uranium	2.973-05			
Benz(a)anthracene	4.533-08	7.30E-01	3.31E-08	
Benzo(a)pyrene	4.53E-08	7.30E+00	3.31E-07	
Benzo(b)fluoranthene	4.53E-08	7.30E-01	3.31E-08	
Benzo(k)fluoranthene	5.673-08	7.30E-02	4.14E-09	
Chrysene	4.53E-08	7.30E-03	3.31E-10	
Fluoranthene	9.62E-08			
PCB-1260	6.35E-09	2.00E+00	1.27E-08	
Phenanthrene	4.53E-08			
Polychlorinated biphenyl	6.35E-09	2.00E+00	1.27E-08	
Pyrene	5.473-08			
Alpha activity	9.36E+03			
Beta activity	1.85E+04			
Uranium-235	2.10E+02	4.70E-11	9.87E-09	
Uranium-238	3.65E+03	6.20E-11	2.27E-07	
Pathway Total				6.64E-07

---------- SECTOR=Far East/Northeast PATHWAY=Residential Child Ingestion of Vegetables From Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	1.06E+00			
Antimony	2.313-04			
Chromium	7.97E-04			
Uranium	2.01E-03			
Benz(a)anthracene	3.11E-06	7.30E-01	2.27E-06	
Benzo(a)pyrene	3.09E-06	7.30E+00	2.263-05	
Benzo(b)fluoranthene	3.09E-06	7.30E-01	2.26E-06	
Benzo(k)fluoranthene	3.84E-06	7.30E-02	2.81E-07	
Chrysene	3.11E-06	7.30E-03	2.27E-08	
Fluoranthene	6.78E-06			
PCB-1260	4.30E-07	2.00E+00	8.603-07	
Phenanthrene	3.26E-06			
Polychlorinated biphenyl	4.33E-07	2.00E+00	8.67E-07	
Pyrene	3.86E-06			
Alpha activity				
Beta activity				
Uranium-235	1.42E+04	4.70E-11	6.69E-07	
Uranium-238	2.49E+05	6.20E-11	1.54E-05	
Pathway Total				4.52E-05

---------- SECTOR=Far East/Northeast PATHWAY=Residential Child Inhalation of Soil .....

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	3.66E-07			
Antimony	7.67E-11			
Chromium	2.75E-10	4.10E+01	1.13E-08	
Uranium	6.93E-10			
Benz(a)anthracene	1.06E-12	3.10E-01	3.28E-13	
Benzo(a)pyrene	1.06E-12	3.10E+00	3.28E-12	
Benzo(b)fluoranthene	1.06E-12	3.10E-01	3.28E-13	

Residential Excess Lifetime Cancer Risks

---------- SECTOR=Far East/Northeast PATHWAY=Residential Child Inhalation of Soil ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Benzo(k)fluoranthene	1.32E-12	3.10E-02	4.103-14	
Chrysene	1.06E-12	3.10E-03	3.28E-15	
Fluoranthene	2.24E-12			
PCB-1260	1.48E-13	2.00E+00	2.96E-13	
Phenanthrene	1.06E-12			
Polychlorinated biphenyl	1.48E-13	2.00E+00	2.96E-13	
Pyrene	1.28E-12			
Alpha activity				
Beta activity				
Uranium-235	4.90E-03	1.30E-08	6.373-11	
Uranium-238	8.53E-02	1.24E-08	1.06E-09	
Pathway Total				1.243-08

---------- SECTOR=Far North/Northwest PATHWAY=Residential Adult Dermal Contact with Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Antimony	1.63E-06			
Beryllium	8.03E-07	4.30E+02	3.453-04	
Cadmium	6.99E-08			
Chromium	3.17E-05			
Thallium	3.49E-07			
Uranium	1.61E-05			
Acenaphthene	1.16E-07			
Anthracene	3.73E-07			
Benz(a)anthracene	7.92E-07	2.35E+00	1.86E-06	
Benzo(a)pyrene	6.52E-07	2.35E+01	1.54E-05	
Benzo(b)fluoranthene	6.05E-07	2.35E+00	1.43E-06	
Benzo(ghi)perylene	3.03E-07			
Benzo(k)fluoranthene	6.75E-07	2.35E-01	1.59E-07	
Bis(2-ethylhexyl)phthalate	1.86E-07	7.37E-02	1.37E-08	
Chrysene	8.15E-07	2.35E-02	1.92E-08	
Di-n-butyl phthalate	9.32E-08			
Fluoranthene	1.96E-06			
Fluorene	1.16E-07			
Indeno(1,2,3-cd)pyrene	3.26E-07	2.35E+00	7.68E-07	
Phenanthrene	9.43E-07			
Pyrene	9.12E-07			
Alpha activity				
Beta activity				
Neptunium-237				
Uranium-235				
Uranium-238				
Pathway Total				3.65E-04

---------- SECTOR=Far North/Northwest PATHWAY=Residential Adult External Exposure to Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Antimony				
Beryllium				
Cadmium				
Chromium				
Thallium				

Residential Excess Lifetime Cancer Risks

---------- SECTOR=Far North/Northwest PATHWAY=Residential Adult External Exposure to Soil ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Uranium				
Acenaphthene				
Anthracene				
Benz(a)anthracene				
Benzo(a)pyrene				
Benzo(b)fluoranthene				
Benzo(ghi)perylene				
Benzo(k)fluoranthene				
Bis(2-ethylhexyl)phthalate				
Chrysene				
Di-n-butyl phthalate				
Fluoranthene				
Fluorene				
Indeno(1,2,3-cd)pyrene				
Phenanthrene				
Pyrene				
Alpha activity	2.77E+02			
Beta activity	9.27E+02			
Neptunium-237	1.56E+01	4.623-07	7.23E-06	
Uranium-235	5.22E+00	2.65E-07	1.38E-06	
Uranium-238	1.20E+02	6.57E-08	7.88E-06	
Pathway Total				1.65E-05

---------- SECTOR=Far North/Northwest PATHWAY=Residential Adult Ingestion of Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Antimony	9.32E-07			
Beryllium	4.59E-07	4.30E+00	1.97E-06	
Cadmium	2.00E-07			
Chromium	1.81E-05			
Thallium	2.003-07			
Uranium	9.20E-06			
Acenaphthene	3.33E-08			
Anthracene	1.06E-07			
Benz(a)anthracene	2.26E-07	7.30E-01	1.65E-07	
Benzo(a)pyrene	1.86E-07	7.30E+00	1.36E-06	
Benzo(b)fluoranthene	1.73E-07	7.30E-01	1.26E-07	
Benzo(ghi)perylene	8.65E-08			
Benzo(k)fluoranthene	1.93E-07	7.30E-02	1.41E-08	
Bis(2-ethylhexyl)phthalate	5.32E-08	1.40E-02	7.45E-10	
Chrysene	2.33E-07	7.30E-03	1.70E-09	
Di-n-butyl phthalate	2.66E-08			
Fluoranthene	5.59E-07			
Fluorene	3.33E-08			
Indeno(1,2,3-cd)pyrene	9.32E-08	7.30E-01	6.80E-08	
Phenanthrene	2.69E-07			
Pyrene	2.61E-07			
Alpha activity	1.26E+04			
Beta activity	4.23E+04			
Neptunium-237	7.14E+02	3.00E-10	2.14E-07	
Uranium-235	2.38E+02	4.70E-11	1.12E-08	
Uranium-238	5.47E+03	6.20E-11	3.39E-07	
Pathway Total				4.27E-06

Residential Excess Lifetime Cancer Risks

---------- SECTOR=Far North/Northwest PATHWAY=Residential Adult Ingestion of Vegetables From Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Antimony	2.00E-04			
Beryllium	9.59E-05	4.30E+00	4.12E-04	
Cadmium	6.32E-05			
Chromium	3.75E-03			
Thallium	4.15E-05			
Uranium	1.91E-03			
Acenaphthene	7.54E-06			
Anthracene	2.39E-05			
Benz(a)anthracene	4.75E-05	7.303-01	3.47E-05	
Benzo(a)pyrene	3.89E-05	7.30E+00	2.84E-04	
Benzo(b)fluoranthene	3.61E-05	7.30E-01	2.64E-05	
Benzo(ghi)perylene	1.80E-05			
Benzo(k)fluoranthene	4.01E-05	7.30E-02	2.93E-06	
Bis(2-ethylhexyl)phthalate	1.15E-05	1.40E-02	1.61E-07	
Chrysene	4.89E-05	7.30E-03	3.57E-07	
Di-n-butyl phthalate	5.74E-06			
Fluoranthene	1.21E-04			
Fluorene	7.46E-06			
Indeno(1,2,3-cd)pyrene	1.943-05	7.30E-01	1.41E-05	
Phenanthrene	5.93E-05			
Pyrene	5.62E-05			
Alpha activity				
Beta activity				
Neptunium-237	1.50E+05	3.00E-10	4.493-05	
Uranium-235	4.94E+04	4.70E-11	2.32E-06	
Uranium-238	1.14E+06	6.20E-11	7.08E-05	
Pathway Total				8.93E-04

---------- SECTOR=Far North/Northwest PATHWAY=Residential Adult Inhalation of Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Antimony	4.35E-11			
Beryllium	2.14E-11	8.40E+00	1.80E-10	
Cadmium	9.31E-12	6.10E+00	5.68E-11	
Chromium	8.44E-10	4.10E+01	3.46E-08	
Thallium	9.31E-12			
Uranium	4.29E-10			
Acenaphthene	1.55E-12			
Anthracene	4.97E-12			
Benz(a)anthracene	1.06E-11	3.10E-01	3.27E-12	
Benzo(a)pyrene	8.69E-12	3.10E+00	2.69E-11	
Benzo(b)fluoranthene	8.07E-12	3.10E-01	2.50E-12	
Benzo(ghi)perylene	4.04E-12			
Benzo(k)fluoranthene	9.00E-12	3.10E-02	2.79E-13	
Bis(2-ethylhexyl)phthalate	2.48E-12			
Chrysene	1.09E-11	3.10E-03	3.37E-14	
Di-n-butyl phthalate	1.24E-12			
Fluoranthene	2.61E-11			
Fluorene	1.55E-12			
Indeno(1,2,3-cd)pyrene	4.35E-12	3.10E-01	1.35E-12	
Phenanthrene	1.26E-11			
Pyrene	1.22E-11			
Alpha activity				
Beta activity				
Neptunium-237	3.33E-02	3.45E-08	1.15E-09	
Uranium-235	1.11E-02	1.30E-08	1.44E-10	
Uranium-238	2.55E-01	1.24E-08	3.17E-09	

Residential Excess Lifetime Cancer Risks

---------- SECTOR=Far North/Northwest PATHWAY=Residential Adult Inhalation of Soil ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Pathway Total				3.94E-08

---------- SECTOR=Far North/Northwest PATHWAY=Residential Child Dermal Contact with Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Antimony	1.48E-06			
Beryllium	7.29E-07	4.30E+02	3.14E-04	
Cadmium	6.34E-08			
Chromium	2.88E-05			
Thallium	3.17E-07			
Uranium	1.46E-05			
Acenaphthene	1.06E-07			
Anthracene	3.38E-07			
Benz(a)anthracene	7.19E-07	2.35E+00	1.69E-06	
Benzo(a)pyrene	5.92E-07	2.35E+01	1.39E-05	
Benzo(b)fluoranthene	5.50E-07	2.35E+00	1.293-06	
Benzo(ghi)perylene	2.75E-07			
Benzo(k)fluoranthene	6.13E-07	2.35E-01	1.443-07	
Bis(2-ethylhexyl)phthalate	1.69E-07	7.37E-02	1.25E-08	
Chrysene	7.40E-07	2.35E-02	1.74E-08	
Di-n-butyl phthalate	8.46E-08			
Fluoranthene	1.78E-06			
Fluorene	1.06E-07			
Indeno(1,2,3-cd)pyrene	2.96E-07	2.35E+00	6.97E-07	
Phenanthrene	8.56E-07			
Pyrene	8.28E-07			
Alpha activity				
Beta activity				
Neptunium-237				
Uranium-235				
Uranium-238				
Pathway Total				3.31E-04

---------- SECTOR=Far North/Northwest PATHWAY=Residential Child External Exposure to Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Antimony				
Beryllium				
Cadmium				
Chromium				
Thallium				
Uranium				
Acenaphthene				
Anthracene				
Benz(a)anthracene				
Benzo(a)pyrene				
Benzo(b)fluoranthene				
Benzo(ghi)perylene				
Benzo(k)fluoranthene				
Bis(2-ethylhexyl)phthalate				
Chrysene				
Di-n-butyl phthalate				

Residential Excess Lifetime Cancer Risks

---------- SECTOR-Far North/Northwest PATHWAY=Residential Child External Exposure to Soil ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Fluoranthene				
Fluorene				
Indeno(1,2,3-cd)pyrene				
Phenanthrene				
Pyrene				
Alpha activity	4.89E+01			
Beta activity	1.64E+02			
Neptunium-237	2.76E+00	4.62E-07	1.28E-06	
Uranium-235	9.21E-01	2.65E-07	2.44E-07	
Uranium-238	2.12E+01	6.57E-08	1.393-06	
Pathway Total				2.91E-06

---------- SECTOR=Far North/Northwest PATHWAY=Residen ial Child Ingestion f Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Antimony	1.59E-06			
Beryllium	7.823-07	4.30E+00	3.363-06	
Cadmium	3.40E-07			
Chromium	3.08E-05			
Thallium	3.40E-07			
Uranium	1.57E-05			
Acenaphthene	5.67E-08			
Anthracene	1.81E-07			
Benz(a)anthracene	3.85E-07	7.30E-01	2.81E-07	
Benzo(a)pyrene	3.17E-07	7.30E+00	2.32E-06	
Benzo(b)fluoranthene	2.95E-07	7.30E-01	2.153-07	
Benzo(ghi)perylene	1.47E-07			
Benzo(k)fluoranthene	3.29E-07	7.30E-02	2.40E-08	
Bis(2-ethylhexyl)phthalate	9.07E-08	1.40E-02	1.27E-09	
Chrysene	3.97E-07	7.30E-03	2.90E-09	
Di-n-butyl phthalate	4.53E-08			
Fluoranthene	9.52E-07			
Fluorene	5.67E-08			
Indeno(1,2,3-cd)pyrene	1.59E-07	7.30E-01	1.16E-07	
Phenanthrene	4.59E-07			
Pyrene	4.443-07			
Alpha activity	4.46E+03			
Beta activity	1.49E+04			
Neptunium-237	2.52E+02	3.00E-10	7.56E-08	
Uranium-235	8.40E+01	4.70E-11	3.953-09	
Uranium-238	1.93E+03	6.20E-11	1.20E-07	
Pathway Total				6.52E-06

---------- SECTOR=Far North/Northwest PATHWAY=Residential Child Ingestion of Vegetables From Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Antimony	1.11E-04			
Beryllium	5.34E-05	4.30E+00	2.3 OE-04	
Cadmium	3.51E-05			
Chromium	2.09E-03			
Thallium	2.31E-05			
Uranium	1.06E-03			

Residential Excess Lifetime Cancer Risks

---------- SECTOR=Far North/Northwest PATHWAY=Residential Child Ingestion of Vegetables From Soil ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Acenaphthene	4.20E-06			
Anthracene	1.33E-05			
Benz(a)anthracene	2.64E-05	7.30E-01	1.93E-05	
Benzo(a)pyrene	2.16E-05	7.30E+00	1.58E-04	
Benzo(b)fluoranthene	2.01E-05	7.30E-01	1.47E-05	
Benzo(ghi)perylene	1.00E-05			
Benzo(k)fluoranthene	2.23E-05	7.30E-02	1.63E-06	
Bis(2-ethylhexyl)phthalate	6.39E-06	1.40E-02	8.95E-08	
Chrysene	2.72E-05	7.30E-03	1.99E-07	
Di-n-butyl phthalate	3.20E-06			
Fluoranthene	6.71E-05			
Fluorene	4.15E-06			
Indeno(1,2,3-cd)pyrene	1.08E-05	7.30E-01	7.87E-06	
Phenanthrene	3.30E-05			
Pyrene	3.13E-05			
Alpha activity				
Beta activity				
Neptunium-237	1.73E+04	3.00E-10	5.18E-06	
Uranium-235	5.70E+03	4.70E-11	2.68E-07	
Uranium-238	1.32E+05	6.20E-11	8.16E-06	
Pathway Total				4.45E-04

---------- SECTOR=Far North/Northwest PATHWAY=Residential Child Inhalation of Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Antimony	3.70E-11			
Beryllium	1.83E-11	8.40E+00	1.53E-10	
Cadmium	7.93E-12	6.10E+00	4.84E-11	
Chromium	7.19E-10	4.10E+01	2.95E-08	
Thallium	7.93E-12			
Uranium	3.66E-10			
Acenaphthene	1.32E-12			
Anthracene	4.23E-12			
Benz(a)anthracene	8.99E-12	3.10E-01	2.79E-12	
Benzo(a)pyrene	7.41E-12	3.10E+00	2.30E-11	
Benzo(b)fluoranthene	6.88E-12	3.10E-01	2.13E-12	
Benzo(ghi)perylene	3.44E-12			
Benzo(k)fluoranthene	7.67E-12	3.10E-02	2.38E-13	
Bis(2-ethylhexyl)phthalate	2.12E-12			
Chrysene	9.26E-12	3.10E-03	2.87E-14	
Di-n-butyl phthalate	1.06E-12			
Fluoranthene	2.22E-11			
Fluorene	1.32E-12			
Indeno(1,2,3-cd)pyrene	3.70E-12	3.10E-01	1.15E-12	
Phenanthrene	1.07E-11			
Pyrene	1.04E-11			
Alpha activity				
Beta activity				
Neptunium-237	5.88E-03	3.453-08	2.03E-10	
Uranium-235	1.96E-03	1.30E-08	2.55E-11	
Uranium-238	4.51E-02	1.24E-08	5.59E-10	
Pathway Total				3.05E-08

Residential Excess Lifetime Cancer Risks

---------- SECTOR=McNairy PATHWAY=Residential Adult Dermal Contact with Groundwater .....

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	2.17E-03			
Arsenic	6.36E-06	3.66E+00	2.33E-05	
Barium	8.51E-06			
Beryllium	2.023-07	4.30E+02	8.69E-05	
Bromide				
Cadmium	4.58E-08			
Chromium	5.91E-06			
Cobalt	1.71E-06			
Iron	5.25E-03			
Lead	2.763-06			
Manganese	3.81E-05			
Nickel	2.693-06			
Nitrate	1.283-05			
Orthophosphate				
Selenium	7.10E-07			
Tetraoxo-sulfate(1-)				
Thallium	1.45E-08			
Vanadium	2.463-05			
Zinc	1.90E-04			
1,1-Dichloroethene	1.55E-06	6.00E-01	9.32E-07	
1,2-Dichloroethane	1.28E-07	9.10E-02	1.16E-08	
Bis(2-ethylhexyl)phthalate	2.94E-06	7.37E-02	2.17E-07	
Bromodichloromethane	7.45E-07	6.33E-02	4.72E-08	
Chloroform	1.45E-06	3.05E-02	4.42E-08	
Di-n-butyl phthalate	2.783-06			
Di-n-octylphthalate	3.63E-03			
Dibromochloromethane	3.77E-07	1.40E-01	5.27E-08	
Tetrachloroethene	8.71E-05	5.203-02	4.53E-06	
Trichloroethene	6.26E-06	7.33E-02	4.59E-07	
Vinyl chloride	2.47E-06	1.90E+00	4.70E-06	
cis-1,2-Dichloroethene	3.40E-06			
Actinium-228				
Alpha activity				
Beta activity				
Cesium-137				
Lead-210				
Lead-212				
Lead-214				
Neptunium-237				
Plutonium-239				
Potassium-40				
Technetium-99				
Thorium-228				
Thorium-230				
Thorium-234				
uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				1.21E-04

------ SECTOR=McNairy PATHWAY=Residential Adult Ingestion of Groundwater --------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	1.19E+00			
Arsenic	3.50E-03	1.50E+00	5.25E-03	
Barium	4.69E-03			
Beryllium	1.11E-04	4.30E+00	4.79E-04	

Residential Excess Lifetime Cancer Risks

..... SECTOR=McNairy PATHWAY=Residential Adult Ingestion Of Groundwater .....
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Bromide	5.98E-04			
Cadmium	2.52E-05			
Chromium	3.26E-03			
Cobalt	9.413-04			
Iron	2.89E+00			
Lead	1.52E-03			
Manganese	2.10E-02			
Nickel	1.48E-03			
Nitrate	7.053-03			
Orthophosphate	1.343-03			
Selenium	3.91E-04			
Tetraoxo-sulfate(1-)	2.28E-01			
Thallium	7.97E-0.6			
Vanadium	1.35E-02			
Zinc	1.05E-01			
1,1-Dichloroethene	9.62E-05	6.00E-01	5.77E-05	
1,2-Dichloroethane	1.33E-05	9.10E-02	1.21E-06	
Bis(2-ethylhexyl)phthalate	6.93E-05	1.40E-02	9.71E-07	
Bromodichloromethane	7.08E-05	6.20E-02	4.39E-06	
Chloroform	8.98E-05	6.10E-03	5.48E-07	
Di-n-butyl phthalate	1.33E-05			
Di-n-octylphthalate	7.45E-05			
Dibromochloromethane	5.32E-05	8.40E-02	4.47E-06	
Tetrachloroethene	1.30E-04	5.20E-02	6.74E-06	
Trichloroethene	2.16E-04	1.10E-02	2.37E-06	
Vinyl chloride	1.87E-04	1.90E+00	3.55E-04	
cis-1,2-Dichloroethene	1.87E-04			
Actinium-228	6.47E+05	1.62E-12	1.05E-06	
Alpha activity	7.32E+05			
Beta activity	6.62E+06			
Cesium-137	2.93E+05	3.16E-11	9.25E-06	
Lead-210	1.00E+07	1.01E-09	1.01E-02	
Lead-212	5.36E+05	1.80E-11	9.64E-06	
Lead-214	2.88E+05	2.94E-13	8.47E-08	
Neptunium-237	1.92E+05	3.00E-10	5.77E-05	
Plutonium-239	3.17E+04	3.16E-10	1.00E-05	
Potassium-40	1.62E+06	1.25E-11	2.02E-05	
Technetium-99	7.37E+06	1.40E-12	1.03E-05	
Thorium-228	2.93E+04	2.31E-10	6.76E-06	
Thorium-230	3.24E+04	3.75E-11	1.22E-06	
Thorium-234	1.71E+07	1.93E-11	3.30E-04	
Uranium-234	4.48E+04	4.44E-11	1.99E-06	
Uranium-235	2.75E+05	4.70E-11	1.29E-05	
Uranium-238	2.99E+04	6.20E-11	1.85E-06	
Pathway Total				1.68E-02

---------- SECTOR=McNairy PATHWAY=Residential Adult Ingestion Of Vegetables from Groundwater ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	6.18E-01			
Arsenic	1.86E-03	1.50E+00	2.79E-03	
Barium	2.44E-03			
Beryllium	5.79E-05	4.30E+00	2.49E-04	
Bromide				
Cadmium	1.80E-05			
Chromium	1.68E-03			

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Residential Excess Lifetime Cancer Risks

---------- SECTOR=McNairy PATHWAY=Residential Adult Ingestion of Vegetables from Groundwater ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Cobalt	5.17E-04			
Iron	1.50E+00			
Lead	7.86E-04			
Manganese	1.29E-02			
Nickel	8.70E-04			
Nitrate				
Orthophosphate				
Selenium	2.58E-04			
Tetraoxo-sulfate(1-)				
Thallium	4.13E-06			
Vanadium	7.02E-03			
Zinc	9.34E-02			
1,1-Dichloroethene	1.45E-04	6.00E-01	8.71E-05	
1,2-Dichloroethane	2.66E-05	9.10E-02	2.42E-06	
Bis(2-ethylhexyl)phthalate	3.69E-05	1.40E-02	5.16E-07	
Bromodichloromethane	8.36E-05	6.20E-02	5.18E-06	
Chloroform	1.15E-04	6.10E-03	6.99E-07	
Di-n-butyl phthalate	7.08E-06			
Di-n-octylphthalate	3.84E-05			
Dibromochloromethane	5.84E-05	8.40E-02	4.91E-06	
Tetrachloroethene	1.11E-04	5.20E-02	5.78E-06	
Trichloroethene	2.07E-04	1.10E-02	2.28E-06	
Vinyl chloride	4.13E-04	1.90E+00	7.84E-04	
cis-1,2-Dichloroethene	2.59E-04			
Actinium-228	1.79E+03	1.62E-12	2.89E-09	
Alpha activity				
Beta activity				
Cesium-137	1.27E+05	3.16E-11	4.03E-06	
Lead-210	4.02E+06	1.01E-09	4.06E-03	
Lead-212	2.52E+03	1.80E-11	4.54E-08	
Lead-214	5.89E+01	2.94E-13	1.73E-11	
Neptunium-237	1.00E+05	3.00E-10	3.01E-05	
Plutonium-239	1.63E+04	3.16E-10	5.173-06	
Potassium-40	1.53E+06	1.25E-11	1.91E-05	
Technetium-99	2.19E+09	1.40E-12	3.07E-03	
Thorium-228	5.39E+03	2.31E-10	1.25E-06	
Thorium-230	1.67E+04	3.75E-11	6.28E-07	
Thorium-234	1.67E+06	1.93E-11	3.22E-05	
Uranium-234	2.32E+04	4.44E-11	1.03E-06	
Uranium-235	1.42E+05	4.70E-11	6.703-06	
Uranium-238	1.55E+04	6.20E-11	9.62E-07	
Pathway Total				1.12E-02

---------- SECTOR=McNairy PATHWAY=Residential Adult Inhalation of Groundwater Household Use ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum				
Arsenic		5.00E+01		
Barium				
Beryllium		8.40E+00		
Bromide				
Cadmium		6.10E+00		
Chromium		4.10E+01		
Cobalt				
Iron				
Lead				

Residential Excess Lifetime Cancer Risks

SECTOR=McNairy PATHWAY=Residential Adult Inhalation of Groundwater Household Use (continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Manganese				
Nickel				
Nitrate				
Orthophosphate				
Selenium				
Tetraoxo-sulfate(1-)				
Thallium				
Vanadium				
Zinc				
1,1-Dichloroethene	2.85E-04	1.20E+00	3.42E-04	
1,2-Dichloroethane	3.95E-05	9.10E-02	3.59E-06	
Bis(2-ethylhexyl)phthalate				
Bromodichloromethane	2.10E-04			
Chloroform	2.66E-04	8.10E-02	2.16E-05	
Di-n-butyl phthalate				
Di-n-octylphthalate				
Dibromochloromethane	1.58E-04			
Tetrachloroethene	3.84E-04	2.00E-03	7.69E-07	
Trichloroethene	6.39E-04	6.00E-03	3.84E-06	
Vinyl chloride	5.54E-04	3.00E-01	1.66E-04	
cis-1,2-Dichloroethene	5.55E-04			
Actinium-228		3.27E-11		
Alpha activity				
Beta activity				
Cesium-137		1.91E-11		
Lead-210		3.86E-09		
Lead-212		3.85E-11		
Lead-214		6.23E-12		
Neptunium-237		3.45E-08		
Plutonium-239		2.78E-08		
Potassium-40		7.46E-12		
Technetium-99		2.89E-12		
Thorium-228		9.68E-08		
Thorium-230		1.72E-08		
Thorium-234		1.90E-11		
Uranium-234		1.40E-08		
Uranium-235		1.30E-08		
Uranium-238		1.24E-08		
Pathway Total				5.38E-04

SECTOR=McNairy PATHWAY=Residential Adult Inhalation of Groundwater While Showering

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum				
Arsenic		5.00E+01		
Barium				
Beryllium		8.40E+00		
Bromide				
Cadmium		6.10E+00		
Chromium		4.10E+01		
Cobalt				
Iron				
Lead				
Manganese				
Nickel				
Nitrate				

Residential Excess Lifetime Cancer Risks

---------- SECTOR=McNairy PATHWAY=Residential Adult Inhalation of Groundwater While Showering ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Orthophosphate				
Selenium				
Tetraoxo-sulfate(1-)				
Thallium				
vanadium				
Zinc				
1,1-Dichloroethene	2.63E-05	1.20E+00	3.15E-05	
1,2-Dichloroethane	3.633-06	9.10E-02	3.313-07	
Bis(2-ethylhexyl)phthalate				
Bromodichloromethane	1.93E-05			
Chloroform	2.45E-05	8.10E-02	1.99E-06	
Di-n-butyl phthalate				
Di-n-octylphthalate				
Dibromochloromethane	1.45E-05			
Tetrachloroethene	3.54E-05	2.00E-03	7.083-08	
Trichloroethene	5.893-05	6.00E-03	3.53E-07	
Vinyl chloride	5.10E-05	3.003-01	1.53E-05	
cis-1,2-Dichloroethene	5.11E-05			
Actinium-228		3.27E-11		
Alpha activity				
Beta activity				
Cesium-137		1.91E-11		
Lead-210		3.86E-09		
Lead-212		3.85E-11		
Lead-214		6.23E-12		
Neptunium-237		3.45E-08		
Plutonium-239		2.78E-08		
Potassium-40		7.463-12		
Technetium-99		2.89E-12		
Thorium-228		9.683-08		
Thorium-230		1.72E-08		
Thorium-234		1.90E-11		
Uranium-234		1.4 0E-08		
Uranium-235		1.30E-08		
Uranium-238		1.24E-08		
Pathway Total				4.963-05

---------- SECTOR=McNairy PATHWAY=Residential Child Dermal Contact with Groundwater ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	7.33E-04			
Arsenic	2.15E-06	3.66E+00	7.86E-06	
Barium	2.88E-06			
Beryllium	6.833-08	4.3 0E+02	2.94E-05	
Bromide				
Cadmium	1.55E-08			
Chromium	2.00E-06			
Cobalt	5.773-07			
Iron	1.77E-03			
Lead	9.32E-07			
Manganese	1.29E-05			
Nickel	9.08E-07			
Nitrate	4.33E-06			
Orthophosphate				
Selenium	2.40E-07			
Tetraoxo-sulfate(1-)				

Residential Excess Lifetime Cancer Risks

..... SECTOR=McNairy PATHWAY=Residential Child Dermal Contact with Groundwater .....
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Thallium	4.89E-09			
Vanadium	8.31E-06			
Zinc	6.42E-05			
1,1-Dichloroethene	5.25E-07	6.00E-01	3.15E-07	
1,2-Dichloroethane	4.33E-08	9.10E-02	3.943-09	
Bis(2-ethylhexyl)phthalate	9.95E-07	7.37E-02	7.33E-08	
Bromodichloromethane	2.52E-07	6.33E-02	1.59E-08	
Chlorofo m	4.90E-07	3.05E-02	1.50E-08	
Di-n-butyl phthalate	9.39E-07			
Di-n-octylphthalate	1.23E-03			
Dibromochloromethane	1.27E-07	1.40E-01	1.78E-08	
Tetrachloroethene	2.94E-05	5.20E-02	1.53E-06	
Trichloroethene	2.12E-06	7.33E-02	1.55E-07	
Vinyl chloride	8.36E-07	1.90E+00	1.59E-06	
cis-1,2-Dichloroethene	1.15E-06			
Actinium-228				
Alpha activity				
Beta activity				
Cesium-137				
Lead-210				
Lead-212				
Lead-214				
Neptunium-237				
Plutonium-239				
Potassium-40				
Technetium-99				
Thorium-228				
Thorium-230				
Thorium-234				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				4.09E-05

---------- SECTOR=McNairy PATHWAY=Residential Child Ingestion of Groundwater .....

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	5.09E-01			
Arsenic	1.49E-03	1.50E+00	2.24E-03	
Barium	2.00E-03			
Beryllium	4.74E-05	4.30E+00	2.04E-04	
Bromide	2.55E-04			
Cadmium	1.07E-05			
Chromium	1.39E-03			
Cobalt	4.01E-04			
Iron	1.23E+00			
Lead	6.47E-04			
Manganese	8.93E-03			
Nickel	6.31E-04			
Nitrate	3.00E-03			
Orthophosphate	5.73E-04			
Selenium	1.67E-04			
Tetraoxo-sulfate(1-)	9.72E-02			
Thallium	3.40E-06			
Vanadium	5.77E-03			
Zinc	4.46E-02			

Residential Excess Lifetime Cancer Risks

---------- SECTOR=McNairy PATHWAY=Residential Child Ingestion of Groundwater ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
1,1-Dichloroethene	4.103-05	6.00E-01	2.463-05	
1,2-Dichloroethane	5.673-06	9.10E-02	5.16E-07	
Bis(2-ethylhexyl)phthalate	2.95E-05	1.40E-02	4.13E-07	
Bromodichloromethane	3.02E-05	6.203-02	1.873-06	
Chloroform	3.823-05	6.10E-03	2.33E-07	
Di-n-butyl phthalate	5.67E-06			
Di-n-octylphthalate	3.17E-05			
Dibromochloromethane	2.27E-05	8.40E-02	1.90E-06	
Tetrachloroethene	5.52E-05	5.20E-02	2.87E-06	
Trichloroethene	9.18E-05	1.10E-02	1.013-06	
Vinyl chloride	7.95E-05	1.90E+00	1.51E-04	
cis-1,2-Dichloroethene	7.97E-05			
Actinium-228	5.71E+04	1.62E-12	9.25E-08	
Alpha activity	6.46E+04			
Beta activity	5.84E+05			
Cesium-137	2.58E+04	3.16E-11	8.16E-07	
Lead-210	8.84E+05	1.01E-09	8.93E-04	
Lead-212	4.73E+04	1.80E-11	8.51E-07	
Lead-214	2.54E+04	2.94E-13	7.47E-09	
Neptunium-237	1.70E+04	3.00E-10	5.093-06	
Plutonium-239	2.79E+03	3.16E-10	8.83E-07	
Potassium-40	1.43E+05	1.25E-11	1.793-06	
Technetium-99	6.51E+05	1.40E-12	9.11E-07	
Thorium-228	2.58E+03	2.31E-10	5.973-07	
Thorium-230	2.86E+03	3.75E-11	1.07E-07	
Thorium-234	1.51E+06	1.93E-11	2.91E-05	
Uranium-234	3.96E+03	4.44E-11	1.76E-07	
Uranium-235	2.43E+04	4.70E-11	1.14E-06	
Uranium-238	2.64E+03	6.20E-11	1.64E-07	
Pathway Total				3.56E-03

---------- SECTOR=McNairy PATHWAY=Residential Child Ingestion of Vegetables from Groundwater ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	3.43E-01			
Arsenic	1.03E-03	1.50E+00	1.55E-03	
Barium	1.35E-03			
Beryllium	3.21E-05	4.30E+00	1.38E-04	
Bromide				
Cadmium	9.98E-06			
Chromium	9.34E-04			
Cobalt	2.87E-04			
Iron	8.30E-01			
Lead	4.36E-04			
Manganese	7.15E-03			
Nickel	4.83E-04			
Nitrate				
Orthophosphate				
Selenium	1.43E-04			
Tetraoxo-sulfate(1-)				
Thallium	2.293-06			
Vanadium	3.90E-03			
Zinc	5.193-02			
1,1-Dichloroethene	8.06E-05	6.00E-01	4.83E-05	
1,2-Dichloroethane	1.48E-05	9.10E-02	1.34E-06	
Bis(2-ethylhexyl)phthalate	2.05E-05	1.40E-02	2.87E-07	

Residential Excess Lifetime Cancer Risks

---------- SECTOR=McNairy PATHWAY=Residential Child Ingestion of Vegetables from Groundwater ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Bromodichloromethane	4.64E-05	6.20E-02	2.88E-06	
Chlorofo m	6.36E-05	6.10E-03	3.88E-07	
Di-n-butyl phthalate	3.93E-06			
Di-n-octylphthalate	2.13E-05			
Dibromochloromethane	3.24E-05	8.40E-02	2.733-06	
Tetrachloroethene	6.17E-05	5.20E-02	3.21E-06	
Trichloroethene	1.15E-04	1.10E-02	1.27E-06	
Vinyl chloride	2.29E-04	1.90E+00	4.35E-04	
cis-1,2-Dichloroethene	1.44E-04			
Actinium-228	2.05E+02	1.62E-12	3.33E-10	
Alpha activity				
Beta activity				
Cesium-137	1.47E+04	3.16E-11	4.63E-07	
Lead-210	4.62E+05	1.01E-09	4.67E-04	
Lead-212	2.90E+02	1.80E-11	5.22E-09	
Lead-214	6.77E+00	2.94E-13	1.99E-12	
Neptunium-237	1.15E+04	3.00E-10	3.46E-06	
Plutonium-239	1.88E+03	3.16E-10	5.94E-07	
Potassium-40	1.76E+05	1.25E-11	2.20E-06	
Technetium-99	2.52E+08	1.40E-12	3.53E-04	
Thorium-228	6.20E+02	2.31E-10	1.43E-07	
Thorium-230	1.93E+03	3.75E-11	7.22E-08	
Thorium-234	1.92E+05	1.93E-11	3.70E-06	
Uranium-234	2.67E+03	4.44E-11	1.18E-07	
Uranium-235	1.64E+04	4.70E-11	7.70E-07	
Uranium-238	1.78E+03	6.20E-11	1.11E-07	
Pathway Total				3.01E-03

---------- SECTOR=McNairy PATHWAY=Residential Child Inhalation of Groundwater Household Use ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum				
Arsenic		5.00E+01		
Barium				
Beryllium		8.40E+00		
Bromide				
Cadmium		6.10E+00		
Chromium		4.10E+01		
Cobalt				
Iron				
Lead				
Manganese				
Nickel				
Nitrate				
Orthophosphate				
Selenium				
Tetraoxo-sulfate(1-)				
Tha11ium				
Vanadium				
Zinc				
1,1-Dichloroethene	2.85E-04	1.20E+00	3.42E-04	
1,2-Dichloroethane	3.95E-05	9.10E-02	3.59E-06	
Bis(2-ethylhexyl)phthalate				
Bromodichloromethane	2.10E-04			
Chloroform	2.66E-04	8.10E-02	2.16E-05	
Di-n-butyl phthalate				

Residential Excess Lifetime Cancer Risks

---------- SECTOR=McNairy PATHWAY=Residential Child Inhalation of Groundwater Household Use ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Di-n-octylphthalate				
Dibromochloromethane	1.58E-04			
Tetrachloroethene	3.84E-04	2.003-03	7.69E-07	
Trichloroethene	6.39E-04	6.00E-03	3.84E-06	
Vinyl chloride	5.54E-04	3.00E-01	1.66E-04	
cis-1,2-Dichloroethene	5.55E-04			
Actinium-228		3.27E-11		
Alpha activity				
Beta activity				
Cesium-137		1.91E-11		
Lead-210		3.86E-09		
Lead-212		3.85E-11		
Lead-214		6.233-12		
Neptunium-237		3.45E-08		
Plutonium-239		2.783-08		
Potassium-40		7.46E-12		
Technetium-99		2.89E-12		
Thorium-228		9.68E-08		
Thorium-230		1.72E-08		
Thorium-234		1.90E-11		
Uranium-234		1.40E-08		
Uranium-235		1.30E-08		
Uranium-238		1.24E-08		
Pathway Total				5.38E-04

---------- SECTOR=McNairy PATHWAY=Residential Child Inhalation of Groundwater While Showering ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum				
Arsenic		5.00E+01		
Barium				
Beryllium		8.40E+00		
Bromide				
Cadmium		6.10E+00		
Chromium		4.10E+01		
Cobalt				
Iron				
Lead				
Manganese				
Nickel				
Nitrate				
Orthophosphate				
Selenium				
Tetraoxo-sulfate(1-)				
Thallium				
vanadium				
Zinc				
1,1-Dichloroethene	2.63E-05	1.20E+00	3.15E-05	
1,2-Dichloroethane	3.63E-06	9.10E-02	3.31E-07	
Bis(2-ethylhexyl)phthalate				
Bromodichloromethane	1.93E-05			
Chloroform	2.45E-05	8.10E-02	1.99E-06	
Di-n-butyl phthalate				
Di-n-octylphthalate				
Dibromochloromethane	1.45E-05			
Tetrachloroethene	3.54E-05	2.00E-03	7.08E-08	

Residential Excess Lifetime Cancer Risks

---------- SECTOR=McNairy PATHWAY=Residential Child Inhalation of Groundwater While Showering ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Trichloroethene	5.89E-05	6.00E-03	3.53E-07	
Vinyl chloride	5.10E-05	3.00E-01	1.53E-05	
cis-1,2-Dichloroethene	5.11E-05			
Actinium-228		3.27E-11		
Alpha activity				
Beta activity				
Cesium-137		1.91E-11		
Lead-210		3.86E-09		
Lead-212		3.85E-11		
Lead-214		6.23E-12		
Neptunium-237		3.45E-08		
Plutonium-239		2.78E-08		
Potassium-40		7.46E-12		
Technetium-99		2.89E-12		
Thorium-228		9.68E-08		
Thorium-230		1.72E-08		
Thorium-234		1.90E-11		
Uranium-234		1.40E-08		
Uranium-235		1.3 OE-08		
Uranium-238		1.24E-08		
Pathway Total				4.96E-05

---------- SECTOR=Northeast PATHWAY=Residential Adult Dermal Contact with Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Chromium	2.25E-05			
Uranium	1.61E-05			
Zinc	8.17E-05			
Acenaphthene	9.32E-08			
Anthracene	1.86E-07			
Benz(a)anthracene	8.15E-07	2.35E+00	1.92E-06	
Benzo(a)pyrene	6.99E-07	2.35E+01	1.65E-05	
Benzo(b)fluoranthene	1.00E-06	2.35E+00	2.36E-06	
Benzo(ghi)perylene	3.96E-07			
Benzo(k)fluoranthene	6.52E-07	2.35E-01	1.54E-07	
Chrysene	9.32E-07	2.35E-02	2.19E-08	
Fluoranthene	2.00E-06			
Indeno(1,2,3-cd)pyrene	4.19E-07	2.35E+00	9.87E-07	
PCB-1260	6.01E-08	2.22E+00	1.34E-07	
Phenanthzene	1.09E-06			
Polychlorinated biphenyl	6.01E-08	2.22E+00	1.34E-07	
Pyrene	1.58E-06			
Alpha activity				
Beta activity				
Uranium-235				
Uranium-238				
Pathway Total				2.22E-05

---------- SECTOR=Northeast PATHWAY=Residential Adult External Exposure to Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Chromium				

Residential Excess Lifetime Cancer Risks

..... SECTOR=Northeast PATHWAY=Residential Adult External Exposure to Soil ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Uranium				
Zinc				
Acenaphthene				
Anthracene				
Benz(a)anthracene				
Benzo(a)pyrene				
Benzo(b)fluoranthene				
Benzo(ghi)perylene				
Benzo(k)fluoranthene				
Chrysene				
Fluoranthene				
Indeno(1,2,3-cd)pyrene				
PCB-1260				
Phenanthrene				
Polychlorinated biphenyl				
Pyrene				
Alpha activity	8.32E+02			
Beta activity	1.33E+03			
Uranium-235	5.22E+00	2.653-07	1.38E-06	
Uranium-238	1.20E+02	6.573-08	7.883-06	
Pathway Total				9.26E-06

---------- SECTOR=Northeast PATHWAY=Residential Adult Ingestion of Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Chromium	1.28E-05			
Uranium	9.20E-06			
Zinc	4.67E-05			
Acenaphthene	2.66E-08			
Anthracene	5.32E-08			
Benz(a)anthracene	2.33E-07	7.30E-01	1.70E-07	
Benzo(a)pyrene	2.00E-07	7.30E+00	1.46E-06	
Benzo(b)fluoranthene	2.86E-07	7.30E-01	2.09E-07	
Benzo(ghi)perylene	1.13E-07			
Benzo(k)fluoranthene	1.86E-07	7.30E-02	1.36E-08	
Chrysene	2.66E-07	7.30E-03	1.94E-09	
Fluoranthene	5.72E-07			
Indeno(1,2,3-cd)pyrene	1.20E-07	7.30E-01	8.74E-08	
PCB-1260	2.86E-08	2.00E+00	5.72E-08	
Phenanthrene	3.13E-07			
Polychlorinated biphenyl	2.86E-08	2.00E+00	5.72E-08	
Pyrene	4.52E-07			
Alpha activity	3.80E+04			
Beta activity	6.05E+04			
Uranium-235	2.38E+02	4.70E-11	1.12E-08	
Uranium-238	5.47E+03	6.20E-11	3.39E-07	
Pathway Total				2.40E-06

---------- SECTOR=Northeast PATHWAY=Residential Adult Ingestion of Vegetables From Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Chromium	2.66E-03			

Residential Excess Lifetime Cancer Risks

---------- SECTOR=Northeast PATHWAY=Residential Adult Ingestion of Vegetables From Soil ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Uranium	1.91E-03			
Zinc	1.953-02			
Acenaphthene	6.03E-06			
Anthracene	1.19E-05			
Benz(a)anthracene	4.893-05	7.30E-01	3.573-05	
Benzo(a)pyrene	4.17E-05	7.30E+00	3.04E-04	
Benzo(b)fluoranthene	5.973-05	7.303-01	4.363-05	
Benzo(ghi)perylene	2.353-05			
Benzo(k)fluoranthene	3.873-05	7.30E-02	2.82E-06	
Chrysene	5.59E-05	7.30E-03	4.08E-07	
Fluoranthene	1.23E-04			
Indeno(1,2,3-cd)pyrene	2.49E-05	7.30E-01	1.82E-05	
PCB-1260	5.933-06	2.00E+00	1.19E-05	
Phenanthrene	6.88E-05			
Polychlorinated biphenyl	5.983-06	2.00E+00	1.20E-05	
Pyrene	9.76E-05			
Alpha activity				
Beta activity				
Uranium-235	4.94E+04	4.70E-11	2.32E-06	
Uranium-238	1.14E+06	6.20E-11	7.08E-05	
Pathway Total				5.02E-04

.---------- SECTOR=Northeast PATHWAY=Residential Adult Inhalation of Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Chromium	5.99E-10	4.10E+01	2.46E-08	
Uranium	4.29E-10			
Zinc	2.18E-09			
Acenaphthene	1.24E-12			
Anthracene	2.48E-12			
Benz(a)anthracene	1.09E-11	3.10E-01	3.37E-12	
Benzo(a)pyrene	9.31E-12	3.10E+00	2.89E-11	
Benzo(b)fluoranthene	1.34E-11	3.10E-01	4.143-12	
Benzo(ghi)perylene	5.28E-12			
Benzo(k)fluoranthene	8.693-12	3.10E-02	2.693-13	
Chrysene	1.24E-11	3.10E-03	3.85E-14	
Fluoranthene	2.67E-11			
Indeno(1,2,3-cd)pyrene	5.59E-12	3.10E-01	1.73E-12	
PCB-1260	1.34E-12	2.00E+00	2.67E-12	
Phenanthrene	1.46E-11			
Polychlorinated biphenyl	1.34E-12	2.00E+00	2.67E-12	
Pyrene	2.11E-11			
Alpha activity				
Beta activity				
Uranium-235	1.11E-02	1.30E-08	1.44E-10	
Uranium-238	2.55E-01	1.243-08	3.17E-09	
Pathway Total				2.79E-08

---------- SECTOR=Northeast PATHWAY=Residential Child Dermal Contact with Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Chromium	2.04E-05			

Residential Excess Lifetime Cancer Risks

---------- SECTOR=Northeast PATHWAY=Residential Child Dermal Contact with Soil ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Uranium	1.46E-05			
Zinc	7.42E-05			
Acenaphthene	8.46E-08			
Anthracene	1.69E-07			
Benz (a)anthracene	7.40E-07	2.35E+00	1.74E-06	
Benzo (a)pyrene	6.34E-07	2.35E+01	1.49E-05	
Benzo(b)fluoranthene	9.09E-07	2.35E+00	2.14E-06	
Benzo(ghi)perylene	3.59E-07			
Benzo(k)fluoranthene	5.92E-07	2.35E-01	1.39E-07	
Chrysene	8.46E-07	2.35E-02	1.99E-08	
Fluoranthene	1.82E-06			
Indeno(1,2,3-cd)pyrene	3.81E-07	2.35E+00	8.96E-07	
PCB-1260	5.45E-08	2.22E+00	1.21E-07	
Phenanthrene	9.94E-07			
Polychlorinated biphenyl	5.45E-08	2.22E+00	1.21E-07	
Pyrene	1.443-06			
Alpha activity				
Beta activity				
Uranium-235				
Uranium-238				
Pathway Total				2.01E-05

---------- SECTOR=Northeast PATHWAY-Residential Child External Exposure to Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte specific	Total Pathway Risk
Chromium				
Uranium				
Zinc				
Acenaphthene				
Anthracene				
Benz (a)anthracene				
Benzo(a)pyrene				
Benzo(b)fluoranthene				
Benzo(ghi)perylene				
Benzo(k)fluoranthene				
Chrysene				
Fluoranthene				
Indeno(1,2,3-cd)pyrene				
PCB-1260				
Phenanthrene				
Polychlorinated biphenyl				
Pyrene				
Alpha activity	1.47E+02			
Beta activity	2.34E+02			
Uranium-235	9.21E-01	2.65E-07	2.44E-07	
Uranium-238	2.12E+01	6.57E-08	1.39E-06	
Pathway Total				1.63E-06

---------- SECTOR=Northeast PATHWAY=Residential Child Ingestion of Soil ....

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Chromium	2.19E-05			

Residential Excess Lifetime Cancer Risks

..... SECTOR=Northeast PATHWAY=Residential Child Ingestion of Soil ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Uranium	1.57E-05			
Zinc	7.96E-05			
Acenaphthene	4.53E-08			
Anthracene	9.07E-08			
Benz(a)anthracene	3.973-07	7.30E-01	2.90E-07	
Benzo(a)pyrene	3.403-07	7.30E+00	2.48E-06	
Benzo(b)fluoranthene	4.87E-07	7.303-01	3.56E-07	
Benzo(ghi)perylene	1.933-07			
Benzo(k)fluoranthene	3.17E-07	7.30E-02	2.32E-08	
Chrysene	4.53E-07	7.30E-03	3.31E-09	
Fluoranthene	9.75E-07			
Indeno(1,2,3-cd)pyrene	2.04E-07	7.30E-01	1.493-07	
PCB-1260	4.87E-08	2.00E+00	9.75E-08	
Phenanthrene	5.333-07			
Polychlorinated biphenyl	4.873-08	2.00E+00	9.75E-08	
Pyrene	7.71E-07			
Alpha activity	1.34E+04			
Beta activity	2.13E+04			
Uranium-235	8.40E+01	4.70E-11	3.95E-09	
Uranium-238	1.93E+03	6.20E-11	1.20E-07	
Pathway Total				3.62E-06

---------- SECTOR=Northeast PATHWAY=Residential Child Ingestion of Vegetables From Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Chromium	1.48E-03			
Uranium	1.06E-03			
Zinc	1.08E-02			
Acenaphthene	3.36E-06			
Anthracene	6.64E-06			
Benz(a)anthracene	2.72E-05	7.30E-01	1.99E-05	
Benzo(a)pyrene	2.32E-05	7.30E+00	1.69E-04	
Benzo(b)fluoranthene	3.32E-05	7.303-01	2.43E-05	
Benzo(ghi)perylene	1.31E-05			
Benzo(k)fluoranthene	2.15E-05	7.30E-02	1.57E-06	
Chrysene	3.11E-05	7.303-03	2.27E-07	
Fluoranthene	6.87E-05			
Indeno(1,2,3-cd)pyrene	1.39E-05	7.30E-01	1.01E-05	
PCB-1260	3.30E-06	2.00E+00	6.61E-06	
Phenanthrene	3.83E-05			
Polychlorinated biphenyl	3.33E-06	2.00E+00	6.66E-06	
Pyrene	5.43E-05			
Alpha activity				
Beta activity				
Uranium-235	5.70E+03	4.70E-11	2.68E-07	
Uranium-238	1.32E+05	6.20E-11	8.16E-06	
Pathway Total				2.473-04

..... SECTOR=Northeast PATHWAY=Residential Child Inhalation of Soil .....

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Chromium	5.10E-10	4.10E+01	2.09E-08	

Residential Excess Lifetime Cancer Risks

..... SECTOR=Northeast PATHWAY=Residential Child Inhalation of Soil ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Uranium	3.66E-10			
Zinc	1.86E-09			
Acenaphthene	1.06E-12			
Anthracene	2.12E-12			
Benz(a)anthracene	9.26E-12	3.10E-01	2.873-12	
Benzo(a)pyrene	7.93E-12	3.10E+00	2.46E-11	
Benzo(b)fluoranthene	1.14E-11	3.10E-01	3.53E-12	
Benzo(ghi)perylene	4.50E-12			
Benzo(k)fluoranthene	7.41E-12	3.10E-02	2.30E-13	
Chrysene	1.06E-11	3.10E-03	3.28E-14	
Fluoranthene	2.27E-11			
Indeno(1,2,3-cd)pyrene	4.76E-12	3.10E-01	1.48E-12	
PCB-1260	1.14E-12	2.00E+00	2.27E-12	
Phenanthrene	1.24E-11			
Polychlorinated biphenyl	1.14E-12	2.00E+00	2.273-12	
	1.80E-11			
Alpha activity				
Beta activity				
Uranium-235	1.96E-03	1.30E-08	2.55E-11	
Uranium-238	4.51E-02	1.24E-08	5.59E-10	
Pathway Total				2.16E-08

---------- SECTOR=Northwest PATHWAY=Residential Adult Dermal Contact with Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Antimony	4.66E-07			
Beryllium	3.773-07	4.30E+02	1.62E-04	
Cadmium	4.73E-08			
Chromium	2.36E-05			
Iron	1.42E-02			
Lead	1.52E-05			
Vanadium	1.92E-05			
Benz(a)anthracene	6.99E-07	2.35E+00	1.65E-06	
Benzo(a)pyrene	9.32E-07	2.35E+01	2.19E-05	
Benzo(b)fluoranthene	1.23E-06	2.35E+00	2.90E-06	
Benzo(k)fluoranthene	6.99E-07	2.35E-01	1.653-07	
Chrysene	6.75E-07	2.35E-02	1.59E-08	
Fluoranthene	9.32E-07			
Pyrene	9.32E-07			
Alpha activity				
Beta activity				
Uranium-238				
Pathway Total				1.89E-04

---------- SECTOR=Northwest PATHWAY=Residential Adult External Exposure to Soil ----------

Analyte	carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Antimony				
Beryllium				
Cadmium				
Chromium				
Iron				

Residential Excess Lifetime Cancer Risks

..... SECTOR=Northwest PATHWAY=Residential Adult External Exposure to Soil .....
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Lead				
Vanadium				
Benz(a)anthracene				
Benzo(a)pyrene				
Benzo(b)fluoranthene				
Benzo(k)fluoranthene				
Chrysene				
Fluoranthene				
Pyrene				
Alpha activity	4.73E+02			
Beta activity	1.28E+03			
Uranium-238	8.35E+01	6.57E-08	5.48E-06	
Pathway Total				5.48E-06

---------- SECTOR=Northwest PATHWAY=Residential Adult Ingestion of Soil .....

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Antimony	2.663-07			
Beryllium	2.15E-07	4.30E+00	9.25E-07	
Cadmium	1.35E-07			
Chromium	1.35E-05			
Iron	8.12E-03			
Lead	8.663-06			
Vanadium	1.10E-05			
Benz(a)anthracene	2.00E-07	7.30E-01	1.46E-07	
Benzo(a)pyrene	2.663-07	7.30E+00	1.94E-06	
Benzo(b)fluoranthene	3.52E-07	7.30E-01	2.57E-07	
Benzo(k)fluoranthene	2.00E-07	7.30E-02	1.46E-08	
Chrysene	1.933-07	7.30E-03	1.41E-09	
Fluoranthene	2.66E-07			
Pyrene	2.66E-07			
Alpha activity	2.16E+04			
Beta activity	5.84E+04			
Uranium-238	3.81E+03	6.20E-11	2.36E-07	
Pathway Total				3.52E-06

---------- SECTOR=Northwest PATHWAY=Residential Adult Ingestion of Vegetables From Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Antimony	5.73E-05			
Beryllium	4.50E-05	4.30E+00	1.93E-04	
Cadmium	4.28E-05			
Chromium	2.79E-03			
Iron	1.68E+00			
Lead	1.80E-03			
Vanadium	2.29E-03			
Benz(a)anthracene	4.19E-05	7.30E-01	3.06E-05	
Benzo(a)pyrene	5.56E-05	7.30E+00	4.06E-04	
Benzo(b)fluoranthene	7.34E-05	7.30E-01	5.36E-05	
Benzo(k)fluoranthene	4.15E-05	7.30E-02	3.03E-06	
Chrysene	4.05E-05	7.30E-03	2.96E-07	
Fluoranthene	5.74E-05			

Residential Excess Lifetime Cancer Risks

---------- SECTOR=Northwest PATHWAY=Residential Adult Ingestion of Vegetables From Soil ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Pyrene	5.74E-05			
Alpha activity				
Beta activity				
Uranium-238	7.94E+05	6.20E-11	4.92E-05	
Pathway Total				7.36E-04

..... SECTOR=Northwest PATHWAY=Residential Adult Inhalation of Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Antimony	1.24E-11			
Beryllium	1.00E-11	8.40E+00	8.44E-11	
Cadmium	6.31E-12	6.10E+00	3.85E-11	
Chromium	6.29E-10	4.10E+01	2.58E-08	
Iron	3.79E-07			
Lead	4.04E-10			
Vanadium	5.13E-10			
Benz(a)anthracene	9.31E-12	3.10E-01	2.89E-12	
Benzo(a)pyrene	1.24E-11	3.10E+00	3.85E-11	
Benzo(b)fluoranthene	1.64E-11	3.10E-01	5.09E-12	
Benzo(k)fluoranthene	9.31E-12	3.10E-02	2.89E-13	
Chrysene	9.00E-12	3.10E-03	2.79E-14	
Fluoranthene	1.24E-11			
Pyrene	1.24E-11			
Alpha activity				
Beta activity				
Uranium-238	1.78E-01	1.243-08	2.20E-09	
Pathway Total				2.82E-08

---------- SECTOR=Northwest PATHWAY=Residential Child Dermal contact with Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Antimony	4.23E-07			
Beryllium	3.42E-07	4.30E+02	1.47E-04	
Cadmium	4.30E-08			
Chromium	2.14E-05			
Iron	1.29E-02			
Lead	1.38E-05			
Vanadium	1.75E-05			
Benz(a)anthracene	6.34E-07	2.35E+00	1.49E-06	
Benzo(a)pyrene	8.46E-07	2.35E+01	1.99E-05	
Benzo(b)fluoranthene	1.12E-06	2.35E+00	2.63E-06	
Benzo(k)fluoranthene	6.34E-07	2.35E-01	1.49E-07	
Chrysene	6.13E-07	2.353-02	1.44E-08	
Fluoranthene	8.46E-07			
Pyrene	8.46E-07			
Alpha activity				
Beta activity				
Uranium-238				
Pathway Total				1.71E-04

Residential Excess Lifetime Cancer Risks

---------- SECTOR=Northwest PATHWAY=Residential Child External Exposure to Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Antimony				
Beryllium				
Cadmium				
Chromium				
Iron				
Lead				
Vanadium				
Benz(a)anthracene				
Benzo(a)pyrene				
Benzo(b)fluoranthene				
Benzo(k)fluoranthene				
Chrysene				
Fluoranthene				
Pyrene				
Alpha activity	8.35E+01			
Beta activity	2.26E+02			
Uranium-238	1.47E+01	6.57E-08	9.68E-07	
Pathway Total				9.68E-07

---------- SECTOR=Northwest PATHWAY=Residential Child Ingestion of Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Antimony	4.543-07			
Beryllium	3.67E-07	4.30E+00	1.58E-06	
Cadmium	2.3 OE-07			
Chromium	2.30E-05			
Iron	1.38E-02			
Lead	1.48E-05			
Vanadium	1.87E-05			
Benz(a)anthracene	3.40E-07	7.30E-01	2.48E-07	
Benzo(a)pyrene	4.53E-07	7.30E+00	3.31E-06	
Benzo(b)fluoranthene	5.99E-07	7.3 OE-01	4.37E-07	
Benzo(k)fluoranthene	3.40E-07	7.3 OE-02	2.48E-08	
Chrysene	3.29E-07	7.30E-03	2.40E-09	
Fluoranthene	4.53E-07			
Pyrene	4.53E-07			
Alpha activity	7.61E+03			
Beta activity	2.06E+04			
Uranium-238	1.34E+03	6.20E-11	8.33E-08	
Pathway Total				5.68E-06

---------- SECTOR=Northwest PATHWAY=Residential Child Ingestion of Vegetables From Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Antimony	3.19E-05			
Beryllium	2.50E-05	4.30E+00	1.08E-04	
Cadmium	2.38E-05			
Chromium	1.55E-03			
Iron	9.37E-01			
Lead	1.00E-03			
Vanadium	1.27E-03			
Benz(a)anthracene	2.33E-05	7.30E-01	1.70E-05	
Benzo(a)pyrene	3.09E-05	7.30E+00	2.26E-04	

Residential Excess Lifetime Cancer Risks

---------- SECTOR=Northwest PATHWAY=Residential Child Ingestion of Vegetables From Soil ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Benzo(b) fluoranthene	4.09E-05	7.303-01	2.98E-05	
Benzo(k) fluoranthene	2.31E-05	7.3 0E-02	1.68E-06	
Chrysene	2.263-05	7.3 03-03	1.65E-07	
Fluoranthene	3.20E-05			
Pyrene	3.20E-05			
Alpha activity				
Beta activity				
Uranium-238	9.16E+04	6.20E-11	5.68E-06	
Pathway Total				3.883-04

---------- SECTOR=Northwest PATHWAY=Residential Child Inhalation of Soil ....

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Antimony	1.06E-11			
Beryllium	8.56E-12	8.40E+00	7.19E-11	
Cadmium	5.37E-12	6.10E+00	3.28E-11	
Chromium	5.36E-10	4.10E+01	2.20E-08	
Iron	3.23E-07			
Lead	3.44E-10			
Vanadium	4.37E-10			
Benz(a)anthracene	7.93E-12	3.10E-01	2.463-12	
Benzo(a)pyrene	1.06E-11	3.10E+00	3.28E-11	
Benzo(b) fluoranthene	1.40E-11	3.10E-01	4.33E-12	
Benzo(k) fluoranthene	7.93E-12	3.10E-02	2.46E-13	
Chrysene	7.67E-12	3.10E-03	2.383-14	
Fluoranthene	1.06E-11			
Pyrene	1.06E-11			
Alpha activity				
Beta activity				
Uranium-238	3.14E-02	1.24E-08	3.89E-10	
Pathway Total				2.25E-08

---------- SECTOR=RGA PATHWAY=Residential Adult Dermal Contact with Groundwater ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	1.47E-03			
Antimony	3.36E-07			
Arsenic	7.03E-07	3.66E+00	2.57E-06	
Barium	1.01E-05			
Beryllium	2.45E-07	4.30E+02	1.OSE-04	
Bromide				
Cadmium	3.57E-08			
Chromium	2.73E-06			
Cobalt	2.38E-06			
Copper	5.31E-06			
Iron	9.36E-03			
Lead	7.90E-07			
Manganese	7.39E-05			
Mercury	3.97E-09			
Nickel	4.76E-06			
Nitrate	1.14E-03			
Orthophosphate				

Residential Excess Lifetime Cancer Risks

..... SECTOR=RGA PATHWAY=Residential Adult Dermal Contact with Groundwater .....
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Silver	3.07E-07			
Tetraoxo-sulfate(1-)				
Thallium	1.43E-08			
Uranium	8.83E-08			
Vanadium	3.71E-06			
Zinc	1.85E-05			
1,1-Dichloroethene	1.43E-06	6.00E-01	8.56E-07	
Bis(2-ethylhexyl)phthalate	5.65E-07	7.37E-02	4.16E-08	
Bromodichloromethane	5.60E-07	6.33E-02	3.55E-08	
Carbon tetrachloride	3.76E-05	2.00E-01	7.51E-06	
Chloroform	6.21E-06	3.05E-02	1.89E-07	
Di-n-butyl phthalate	2.78E-06			
Di-n-octylphthalate	6.49E-04			
N-Nitroso-di-n-propylamine	6.76E-08	2.80E+01	1.89E-06	
Tetrachloroethene	1.96E-04	5.20E-02	1.02E-05	
Toluene	3.91E-05			
Trichloroethene	3.17E-03	7.33E-02	2.32E-04	
Vinyl chloride	2.34E-05	1.90E+00	4.46E-05	
cis-1,2-Dichloroethene	8.94E-05			
trans-1,2-Dichloroethene	3.18E-07			
Alpha activity				
Americium-241				
Beta activity				
Cesium-137				
Lead-210				
Lead-214				
Neptunium-237				
Plutonium-239				
Technetium-99				
Thorium-228				
Thorium-230				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				4.05E-04

---------- SECTOR=RGA PATHWAY=Residential Adult Ingestion of Groundwater .....

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	8.11E-01			
Antimony	1.85E-04			
Arsenic	3.88E-04	1.50E+00	5.81E-04	
Barium	5.59E-03			
Beryllium	1.35E-04	4.30E+00	5.79E-04	
Bromide	6.13E-03			
Cadmium	1.97E-05			
Chromium	1.50E-03			
Cobalt	1.31E-03			
Copper	2.93E-03			
Iron	5.16E+00			
Lead	4.36E-04			
Manganese	4.07E-02			
Mercury	2.19E-06			
Nickel	2.62E-03			
Nitrate	6.30E-01			
Orthophosphate	4.79E-04			

Residential Excess Lifetime Cancer Risks

SECTOR=RGA PATHWAY=Residential Adult Ingestion of Groundwater (continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Silver	1.69E-04			
Tetraoxo-sulfate(1-)	1.75E-01			
Thallium	7.883-06			
Uranium	4.87E-05			
Vanadium	2.05E-03			
Zinc	1.02E-02			
1,1-Dichloroethene	8.83E-05	6.00E-01	5.30E-05	
Bis(2-ethylhexyl)phthalate	1.33E-05	1.40E-02	1.86E-07	
Bromodichloromethane	5.32E-05	6.20E-02	3.30E-06	
Carbon tetrachloride	9.41E-04	1.30E-01	1.22E-04	
Chloroform	3.84E-04	6.10E-03	2.34E-06	
Di-n-butyl phthalate	1.33E-05			
Di-n-octylphthalate	1.33E-05			
N-Nitroso-di-n-propylamine	1.33E-05	7.00E+00	9.32E-05	
Tetrachloroethene	2.92E-04	5.20E-02	1.52E-05	
Toluene	4.79E-04			
Trichloroethene	1.09E-01	1.10E-02	1.20E-03	
Vinyl chloride	1.77E-03	1.90E+00	3.36E-03	
cis-1,2-Dichloroethene	4.92E-03			
trans-1,2-Dichloroethene	1.64E-04			
Alpha activity	4.04E+05			
Americium-241	4.00E+04	3.28E-10	1.31E-05	
Beta activity	7.65E+06			
Cesium-137	2.59E+05	3.16E-11	8.19E-06	
Lead-210	2.38E+06	1.01E-09	2.40E-03	
Lead-214	1.76E+05	2.94E-13	5.18E-08	
Neptunium-237	3.22E+05	3.00E-10	9.66E-05	
Plutonium-239	1.09E+03	3.16E-10	3.44E-07	
Technetium-99	6.38E+07	1.40E-12	8.93E-05	
Thorium-228	1.81E+04	2.31E-10	4.18E-06	
Thorium-230	2.60E+04	3.75E-11	9.76E-07	
Uranium-234	3.95E+04	4.44E-11	1.75E-06	
Uranium-235	2.80E+03	4.70E-11	1.32E-07	
Uranium-238	3.95E+05	6.20E-11	2.45E-05	
Pathway Total				8.65E-03

SECTOR=RGA PATHWAY=Residential Adult Ingestion of Vegetables from Groundwater

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	4.20E-01			
Antimony	9.81E-05			
Arsenic	2.06E-04	1.50E+00	3.08E-04	
Barium	2.91E-03			
Beryllium	7.00E-05	4.30E+00	3.01E-04	
Bromide				
Cadmium	1.40E-05			
Chromium	7.75E-04			
Cobalt	7.22E-04			
Copper	1.84E-03			
Iron	2.67E+00			
Lead	2.25E-04			
Manganese	2.50E-02			
Mercury	2.07E-06			
Nickel	1.54E-03			
Nitrate				
Orthophosphate				

Residential Excess Lifetime Cancer Risks

---------- SECTOR=RGA PATHWAY=Residential Adult Ingestion of Vegetables from Groundwater ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Silver	8.72E-05			
Tetraoxo-sulfate(1-)				
Thallium	4.08E-06			
Uranium	2.52E-05			
Vanadium	1.06E-03			
Zinc	9.08E-03			
1,1-Dichloroethene	1.33E-04	6.00E-01	7.99E-05	
Bis(2-ethylhexyl)phthalate	7.08E-06	1.40E-02	9.91E-08	
Bromodichloromethane	6.29E-05	6.20E-02	3.90E-06	
Carbon tetrachloride	7.31E-04	1.30E-01	9.50E-05	
Chloroform	4.90E-04	6.10E-03	2.99E-06	
Di-n-butyl phthalate	7.08E-06			
Di-n-octylphthalate	6.87E-06			
N-Nitroso-di-n-propylamine	2.94E-05	7.00E+00	2.06E-04	
Tetrachloroethene	2.50E-04	5.20E-02	1.30E-05	
Toluene	3.90E-04			
Trichloroethene	1.05E-01	1.10E-02	1.15E-03	
Vinyl chloride	3.91E-03	1.90E+00	7.43E-03	
cis-1,2-Dichloroethene	6.82E-03			
trans-1,2-Dichloroethene	1.03E-03			
Alpha activity				
Americium-241	2.03E+04	3.28E-10	6.66E-06	
Beta activity				
Cesium-137	1.13E+05	3.16E-11	3.56E-06	
Lead-210	9.54E+05	1.01E-09	9.64E-04	
Lead-214	3.60E+01	2.94E-13	1.06E-11	
Neptunium-237	1.68E+05	3.00E-10	5.03E-05	
Plutonium-239	5.61E+02	3.16E-10	1.77E-07	
Technetium-99	1.89E+10	1.40E-12	2.65E-02	
Thorium-228	3.33E+03	2.31E-10	7.70E-07	
Thorium-230	1.34E+04	3.75E-11	5.04E-07	
Uranium-234	2.04E+04	4.44E-11	9.06E-07	
Uranium-235	1.45E+03	4.70E-11	6.80E-08	
Uranium-238	2.05E+05	6.20E-11	1.27E-05	
Pathway Total				3.72E-02

---------- SECTOR=RGA PATHWAY=Residential Adult Inhalation of Groundwater Household Use ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum				
Antimony				
Arsenic		5.00E+01		
Barium				
Beryllium		8.40E+00		
Bromide				
Cadmium		6.10E+00		
Chromium		4.10E+01		
Cobalt				
Copper				
Iron				
Lead				
Manganese				
Mercury				
Nickel				
Nitrate				
Orthophosphate				

Residential Excess Lifetime Cancer Risks

---------- SECTOR=RGA PATHWAY=Residential Adult Inhalation Of Groundwater Household Use ----------.
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte specific	Total Pathway Risk
Silver				
Tetraoxo-sulfate(1-)				
Thallium				
Uranium				
Vanadium				
Zinc				
1,1-Dichloroethene	2.62E-04	1.20E+00	3.14E-04	
Bis (2-ethylhexyl)phthalate				
Bromodichloromethane	1.58E-04			
Carbon tetrachloride	2.79E-03	5.30E-02	1.48E-04	
Qlorof o m	1.14E-03	8.10E-02	9.23E-05	
Di-n-butyl phthalate				
Di-n-octylphthalate				
N-Nitroso-di-n-propylamine				
Tetrachloroethene	8.67E-04	2.00E-03	1.73E-06	
Toluene	1.42E-03			
Trichloroethene	3.23E-01	6.00E-03	1.94E-03	
Vinyl chloride	5.25E-03	3.00E-01	1.57E-03	
cis-1,2-Dichloroethene	1.46E-02			
trans-1,2-Dichloroethene	4.86E-04			
Alpha activity				
Americium-241		3.85E-08		
Beta activity				
Cesium-137		1.91E-11		
Lead-210		3.86E-09		
Lead-214		6.233-12		
Neptunium-237		3.45E-08		
Plutonium-239		2.783-08		
Technetium-99		2.89E-12		
Thorium-228		9.68E-08		
Thorium-230		1.72E-08		
uranium-234		1.40E-08		
uranium-235		1.30E-08		
Uranium-238		1.24E-08		
Pathway Total				4.07E-03

---------- SECTOR=RGA PATHWAY=Residential Adult Inhalation Of Groundwater While Showering ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum				
Antimony				
Arsenic		5.00E+01		
Barium				
Beryllium		8.40E+00		
Bromide				
Cadmium		6.10E+00		
Chromium		4.10E+01		
Cobalt				
Copper				
Iron				
Lead				
Manganese				
Mercury				
Nickel				
Nitrate				
Orthophosphate				

Residential Excess Lifetime Cancer Risks

---------- SECTOR=RGA PATHWAY=Residential Adult Inhalation Of Groundwater While Showering ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Silver				
Tetraoxo-sulfate(1-)				
Thallium				
Uranium				
Vanadium				
Zinc				
1,1-Dichloroethene	2.41E-05	1.20E+00	2.89E-05	
Bis(2-ethylhexyl)phthalate				
Bromodichloromethane	1.45E-05			
Carbon tetrachloride	2.57E-04	5.30E-02	1.36E-05	
Chloroform	1.05E-04	8.10E-02	8.503-06	
Di-n-butyl phthalate				
Di-n-octylphthalate				
N-Nitroso-di-n-propylamine				
Tetrachloroethene	7.98E-05	2.00E-03	1.60E-07	
Toluene	1.31E-04			
Trichloroethene	2.98E-02	6.00E-03	1.79E-04	
Vinyl chloride	4.83E-04	3.00E-01	1.45E-04	
cis-1,2-Dichloroethene	1.34E-03			
trans-1,2-Dichloroethene	4.47E-05			
Alpha activity				
Americium-241		3.85E-08		
Beta activity				
Cesium-137		1.91E-11		
Lead-210		3.86E-09		
Lead-214		6.23E-12		
Neptunium-237		3.45E-08		
Plutonium-239		2.78E-08		
Technetium-99		2.89E-12		
Thorium-228		9.68E-08		
Thorium-230		1.72E-08		
Uranium-234		1.40E-08		
Uranium-235		1.3 OE-08		
Uranium-238		1.24E-08		
Pathway Total				3.75E-04

---------- SECTOR=RGA PATHWAY=Residential Child Dermal Contact with Groundwater ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	4.97E-04			
Antimony	1.13E-07			
Arsenic	2.38E-07	3.66E+00	8.70E-07	
Barium	3.43E-06			
Beryllium	8.26E-08	4.30E+02	3.55E-05	
Bromide				
Cadmium	1.21E-08			
Chromium	9.21E-07			
Cobalt	8.063-07			
Copper	1.80E-06			
Iron	3.16E-03			
Lead	2.67E-07			
Manganese	2.50E-05			
Mercury	1.34E-09			
Nickel	1.61E-06			
Nitrate	3.87E-04			
Orthophosphate				

Residential Excess Lifetime Cancer Risks

---------- SECTOR=RGA PATHWAY=Residential Child Dermal Contact with Groundwater .....
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Silver	1.04E-07			
Tetraoxo-sulfate(1-)				
Thallium	4.833-09			
Uranium	2.98E-08			
Vanadium	1.26E-06			
Zinc	6.24E-06			
1,1-Dichloroethene	4.82E-07	6.003-01	2.89E-07	
Bis(2-ethylhexyl)phthalate	1.91E-07	7.373-02	1.41E-08	
Bromodichloromethane	1.89E-07	6.33E-02	1.20E-08	
Carbon tetrachloride,	1.27E-05	2.00E-01	2.54E-06	
Chloroform	2.10E-06	3.05E-02	6.403-08	
Di-n-butyl phthalate	9.393-07			
Di-n-octylphthalate	2.193-04			
N-Nitroso-di-n-propylamine	2.293-08	2.80E+01	6.40E-07	
Tetrachloroethene	6.633-05	5.20E-02	3.45E-06	
Toluene	1.32E-05			
Trichloroethene	1.07E-03	7.33E-02	7.84E-05	
Vinyl chloride	7.92E-06	1.90E+00	1.51E-05	
cis-1,2-Dichloroethene	3.02E-05			
trans-1,2-Dichloroethene	1.08E-07			
Alpha activity				
Americium-241				
Beta activity				
Cesium-137				
Lead-210				
Lead-214				
Neptunium-237				
Plutonium-239				
Technetium-99				
Thorium-228				
Thorium-230				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				1.37E-04

---------- SECTOR=RGA PATHWAY=Residential Child Ingestion Of Groundwater ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	3.45E-01			
Antimony	7.88E-05			
Arsenic	1.65E-04	1.50E+00	2.48E-04	
Barium	2.38E-03			
Beryllium	5.74E-05	4.30E+00	2.47E-04	
Bromide	2.61E-03			
Cadmium	8.39E-06			
Chromium	6.40E-04			
Cobalt	5.60E-04			
Copper	1.25E-03			
Iron	2.20E+00			
Lead	1.86E-04			
Manganese	1.73E-02			
Mercury	9.33E-07			
Nickel	1.12E-03			
Nitrate	2.69E-01			
Orthophosphate	2.04E-04			

Residential Excess Lifetime Cancer Risks

..... SECTOR=RGA PATHWAY=Residential Child Ingestion of Groundwater ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte specific	Total Pathway Risk
Silver	7.19E-05			
Tetraoxo-sulfate(1-)	7.47E-02			
Thallium	3.36E-06			
Uranium	2.07E-05			
Vanadium	8.72E-04			
Zinc	4.33E-03			
1,1-Dichloroethene	3.76E-05	6.00E-01	2.26E-05	
Bis(2-ethylhexyl)phthalate	5.67E-06	1.40E-02	7.94E-08	
Bromodichloromethane	2.27E-05	6.20E-02	1.41E-06	
Carbon tetrachloride	4.01E-04	1.30E-01	5.21E-05	
Chloroform	1.64E-04	6.10E-03	9.99E-07	
Di-n-butyl phthalate	5.67E-06			
Di-n-octylphthalate	5.67E-06			
N-Nitroso-di-n-propylamine	5.67E-06	7.00E+00	3.97E-05	
Tetrachloroethene	1.24E-04	5.20E-02	6.47E-06	
Toluene	2.04E-04			
Trichloroethene	4.64E-02	1.10E-02	5.11E-04	
Vinyl chloride	7.54E-04	1.90E+00	1.43E-03	
cis-1,2-Dichloroethene	2.10E-03			
trans-1,2-Dichloroethene	6.97E-05			
Alpha activity	3.56E+04			
Americium-241	3.53E+03	3.28E-10	1.16E-06	
Beta activity	6.75E+05			
Cesium-137	2.29E+04	3.16E-11	7.23E-07	
Lead-210	2.10E+05	1.01E-09	2.12E-04	
Lead-214	1.55E+04	2.94E-13	4.57E-09	
Neptunium-237	2.84E+04	3.00E-10	8.52E-06	
Plutonium-239	9.60E+01	3.16E-10	3.03E-08	
Technetium-99	5.63E+06	1.40E-12	7.88E-06	
Thorium-228	1.60E+03	2.31E-10	3.69E-07	
Thorium-230	2.30E+03	3.75E-11	8.61E-08	
Uranium-234	3.48E+03	4.44E-11	1.55E-07	
Uranium-235	2.47E+02	4.70E-11	1.16E-08	
Uranium-238	3.49E+04	6.20E-11	2.16E-06	
Pathway Total				2.79E-03

---------- SECTOR=RGA PATHWAY=Residential Child Ingestion of Vegetables from Groundwater ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	2.33E-01			
Antimony	5.45E-05			
Arsenic	1.14E-04	1.50E+00	1.71E-04	
Barium	1.61E-03			
Beryllium	3.89E-05	4.30E+00	1.67E-04	
Bromide				
Cadmium	7.79E-06			
Chromium	4.30E-04			
Cobalt	4.01E-04			
Copper	1.02E-03			
Iron	1.48E+00			
Lead	1.25E-04			
Manganese	1.39E-02			
Mercury	1.15E-06			
Nickel	8.54E-04			
Nitrate				
Orthophosphate				

Residential Excess Lifetime Cancer Risks

---------- SECTOR=RGA PATHWAY=Residential Child Ingestion of Vegetables from Groundwater ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Silver	4.84E-05			
Tetraoxo-sulfate(1-)				
Thallium	2.26E-06			
Uranium	1.40E-05			
Vanadium	5.89E-04			
Zinc	5.04E-03			
1,1-Dichloroethene	7.39E-05	6.00E-01	4.44E-05	
Bis(2-ethylhexyl)phthalate	3.93E-06	1.40E-02	5.503-08	
Bromodichloromethane	3.49E-05	6.20E-02	2.16E-06	
Carbon tetrachloride	4.06E-04	1.3 OE-01	5.28E-05	
Chloroform	2.72E-04	6.10E-03	1.66E-06	
Di-n-butyl phthalate	3.93E-06			
Di-n-octylphthalate	3.81E-06			
N-Nitroso-di-n-propylamine	1.63E-05	7.00E+00	1.14E-04	
Tetrachloroethene	1.39E-04	5.20E-02	7.23E-06	
Toluene	2.17E-04			
Trichloroethene	5.82E-02	1.10E-02	6.40E-04	
Vinyl chloride	2.17E-03	1.90E+00	4.12E-03	
cis-1,2-Dichloroethene	3.78E-03			
trans-1,2-Dichloroethene	5.73E-04			
Alpha activity				
Americium-241	2.33E+03	3.28E-10	7.663-07	
Beta activity				
Cesium-137	1.30E+04	3.16E-11	4.10E-07	
Lead-210	1.10E+05	1.01E-09	1.11E-04	
Lead-214	4.14E+00	2.94E-13	1.22E-12	
Neptunium-237	1.93E+04	3.00E-10	5.79E-06	
Plutonium-239	6.45E+01	3.16E-10	2.04E-08	
Technetium-99	2.18E+09	1.40E-12	3.05E-03	
Thorium-228	3.83E+02	2.31E-10	8.85E-08	
Thorium-230	1.54E+03	3.75E-11	5.79E-08	
Uranium-234	2.35E+03	4.44E-11	1.04E-07	
Uranium-235	1.66E+02	4.70E-11	7.82E-09	
Uranium-238	2.36E+04	6.20E-11	1.46E-06	
Pathway Total				8.49E-03

---------- SECTOR=RGA PATHWAY=Residential Child Inhalation of Groundwater Household Use ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum				
Antimony				
Arsenic		5.00E+01		
Barium				
Beryllium		8.40E+00		
Bromide				
Cadmium		6.10E+00		
Chromium		4.10E+01		
Cobalt				
Copper				
Iron				
Lead				
Manganese				
Mercury				
Nickel				
Nitrate				
Orthophosphate				

Residential Excess Lifetime Cancer Risks

SECTOR=RGA PATHWAY-Residential Child Inhalation of Groundwater Household Use (continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Silver				
Tetraoxo-sulfate(1-)				
Thallium				
Uranium				
Vanadium				
Zinc				
1,1-Dichloroethene	2.623-04	1.20E+00	3.14E-04	
Bis(2-ethylhexyl)phthalate				
Bromodichloromethane	1.58E-04			
Carbon tetrachloride	2.793-03	5.30E-02	1.48E-04	
Chloroform	1.14E-03	8.10E-02	9.23E-05	
Di-n-butyl phthalate				
Di-n-octylphthalate				
N-Nitroso-di-n-propylamine				
Tetrachloroethene	8.67E-04	2.00E-03	1.73E-06	
Toluene	1.42E-03			
Trichloroethene	3.23E-01	6.003-03	1.94E-03	
Vinyl chloride	5.253-03	3.00E-01	1.57E-03	
cis-1,2-Dichloroethene	1.46E-02			
trans-1,2-Dichloroethene	4.86E-04			
Alpha activity				
Americium-241		3.85E-08		
Beta activity				
Cesium-137		1.91E-11		
Lead-210		3.86E-09		
Lead-214		6.23E-12		
Neptunium-237		3.45E-08		
Plutonium-239		2.78E-08		
Technetium-99		2.89E-12		
Thorium-228		9.68E-08		
Thorium-230		1.72E-08		
Uranium-234		1.40E-08		
Uranium-235		1.30E-08		
Uranium-238		1.24E-08		
Pathway Total				4.073-03

SECTOR=RGA PATHWAY=Residential Child Inhalation of Groundwater While Showering

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum				
Antimony				
Arsenic		5.00E+01		
Barium				
Beryllium		8.40E+00		
Bromide				
Cadmium		6.10E+00		
Chromium		4.10E+01		
Cobalt				
Copper				
Iron				
Lead				
Manganese				
Mercury				
Nickel				
Nitrate				
Orthophosphate				

Residential Excess Lifetime Cancer Risks

SECTOR=RGA PATHWAY=Residential Child Inhalation Of Groundwater While Showering (continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Silver				
Tetraoxo-sulfate(1-)				
Thallium				
Uranium				
Vanadium				
Zinc				
1,1-Dichloroethene	2.41E-05	1.20E+00	2.89E-05	
Bis(2-ethylhexyl)phthalate				
Bromodichloromethane	1.45E-05			
Carbon tetrachloride	2.57E-04	5.30E-02	1.36E-05	
Chloroform	1.05E-04	8.10E-02	8.50E-06	
Di-n-butyl phthalate				
Di-n-octylphthalate				
N-Nitroso-di-n-propylamine				
Tetrachloroethene	7.98E-05	2.00E-03	1.60E-07	
Toluene	1.31E-04			
Trichloroethene	2.98E-02	6.00E-03	1.79E-04	
Vinyl chloride	4.83E-04	3.00E-01	1.45E-04	
cis-1,2-Dichloroethene	1.34E-03			
trans-1,2-Dichloroethene	4.47E-05			
Alpha activity				
Americium-241		3.85E-08		
Beta activity				
Cesium-137		1.91E-11		
Lead-210		3.86E-09		
Lead-214		6.23E-12		
Neptunium-237		3.45E-08		
Plutonium-239		2.78E-08		
Technetium-99		2.89E-12		
Thorium-228		9.68E-08		
Thorium-230		1.72E-08		
Uranium-234		1.40E-08		
Uranium-235		1.30E-08		
Uranium-238		1.24E-08		
Pathway Total				3.75E-04

SECTOR=Southeast PATHWAY-Residential Adult Dermal Contact with Soil

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	1.65E-02			
Antimony	6.99E-07			
Cadmium	8.15E-08			
chromium	2.75E-05			
Benz(a)anthracene	1.63E-07	2.35E+00	3.84E-07	
Benzo(a)pyrene	1.86E-07	2.35E+01	4.39E-06	
Benzo(b)fluoranthene	1.63E-07	2.35E+00	3.84E-07	
Benzo(k)fluoranthene	1.40E-07	2.35E-01	3.29E-08	
Chrysene	1.86E-07	2.35E-02	4.39E-09	
Fluoranthene	3.49E-07			
PCB-1262	5.31E-08	2.22E+00	1.18E-07	
Phenanthrene	1.63E-07			
Polychlorinated biphenyl	5.31E-08	2.22E+00	1.18E-07	
Pyrene	2.79E-07			
Alpha activity				
Beta activity				
Pathway Total				5.43E-06

Residential Excess Lifetime Cancer Risks

SECTOR=Southeast PATHWAY=Residential Adult External Exposure to Soil

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum				
Antimony				
Cadmium				
Chromium				
Benz(a)anthracene				
Benzo(a)pyrene				
Benzo(b)fluoranthene				
Benzo(k)fluoranthene				
Chrysene				
Fluoranthene				
PCB-1262				
Phenanthrene				
Polychlorinated biphenyl				
Pyrene				
Alpha activity	4.30E+02			
Beta activity	6.33E+02			
Pathway Total				

SECTOR=Southeast PATHWAY=Residential Adult Ingestion of Soil

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	9.45E-03			
Antimony	3.99E-07			
Cadmium	2.33E-07			
Chromium	1.57E-05			
Benz(a)anthracene	4.66E-08	7.30E-01	3.40E-08	
Benzo(a)pyrene	5.32E-08	7.30E+00	3.89E-07	
Benzo(b)fluoranthene	4.66E-08	7.30E-01	3.40E-08	
Benzo(k)fluoranthene	3.99E-08	7.30E-02	2.91E-09	
Chrysene	5.32E-08	7.30E-03	3.89E-10	
Fluoranthene	9.98E-08			
PCB-1262	2.53E-08	2.00E+00	5.06E-08	
Phenanthrene	4.66E-08			
Polychlorinated biphenyl	2.53E-08	2.00E+00	5.06E-08	
Pyrene	7.98E-08			
Alpha activity	1.96E+04			
Beta activity	2.89E+04			
Pathway Total				5.61E-07

SECTOR=Southeast PATHWAY=Residential Adult Ingestion of Vegetables From Soil

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	1.96E+00			
Antimony	8.58E-05			
Cadmium	7.37E-05			
Chromium	3.25E-03			
Benz(a)anthracene	9.78E-06	7.30E-01	7.14E-06	
Benzo(a)pyrene	1.11E-05	7.30E+00	8.11E-05	
Benzo(b)fluoranthene	9.72E-06	7.30E-01	7.10E-06	
Benzo(k)fluoranthene	8.29E-06	7.30E-02	6.053-07	
Chrysene	1.12E-05	7.30E-03	8.16E-08	
Fluoranthene	2.15E-05			
PCB-1262	5.28E-06	2.00E+00	1.06E-05	

Residential Excess Lifetime Cancer Risks

---------- SECTOR=Southeast PATHWAY=Residential Adult Ingestion of Vegetables From Soil ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte specific	Total Pathway Risk
Phenanthrene	1.03E-05			
Polychlorinated biphenyl	5.28E-06	2.00E+00	1.06E-05	
Pyrene	1.72E-05			
Alpha activity				
Beta activity				
Pathway Total				1.17E-04

---------- SECTOR=Southeast PATHWAY-Residential Adult Inhalation of Soil ....

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	4.41E-07			
Antimony	1.86E-11			
Cadmium	1.09E-11	6.10E+00	6.63E-11	
Chromium	7.33E-10	4.10E+01	3.00E-08	
Benz(a)anthracene	2.17E-12	3.10E-01	6.74E-13	
Benzo(a)pyrene	2.48E-12	3.10E+00	7.70E-12	
Benzo(b)fluoranthene	2.17E-12	3.10E-01	6.74E-13	
Benzo(k)fluoranthene	1.86E-12	3.10E-02	5.77E-14	
Chrysene	2.48E-12	3.10E-03	7.70E-15	
Fluoranthene	4.66E-12			
PCB-1262	1.18E-12	2.00E+00	2.363-12	
Phenanthrene	2.17E-12			
Polychlorinated biphenyl	1.18E-12	2.00E+00	2.363-12	
Pyrene	3.73E-12			
Alpha activity				
Beta activity				
Pathway Total				3.01E-08

---------- SECTOR=Southeast PATHWAY=Residential Child Dermal Contact with Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	1.50E-02			
Antimony	6.34E-07			
Cadmium	7.40E-08			
chromium	2.49E-05			
Benz(a)anthracene	1.483-07	2.35E+00	3.493-07	
Benzo(a)pyrene	1.69E-07	2.35E+01	3.98E-06	
Benzo(b)fluoranthene	1.48E-07	2.35E+00	3.49E-07	
Benzo(k)fluoranthene	1.27E-07	2.35E-01	2.99E-08	
Chrysene	1.69E-07	2.35E-02	3.98E-09	
Fluoranthene	3.17E-07			
PCB-1262	4.82E-08	2.22E+00	1.07E-07	
Phenanthrene	1.48E-07			
Polychlorinated biphenyl	4.82E-08	2.22E+00	1.07E-07	
Pyrene	2.54E-07			
Alpha activity				
Beta activity				
Pathway Total				4.93E-06

Residential Excess Lifetime Cancer Risks

---------- SECTOR=Southeast PATHWAY=Residential Child External Exposure to Soil .....

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum				
Antimony				
Cadmium				
Chromium				
Benz(a)anthracene				
Benzo(a)pyrene				
Benzo(b)fluoranthene				
Benzo(k)fluoranthene				
Chrysene				
Fluoranthene				
PCB-1262				
Phenanthrene				
Polychlorinated biphenyl				
Pyrene				
Alpha activity	7.59E+01			
Beta activity	1.12E+02			
Pathway Total				

---------- SECTOR=Southeast PATHWAY=Residential Child Ingestion of Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	1.61E-02			
Antimony	6.80E-07			
Cadmium	3.97E-07			
Chromium	2.68E-05			
Benz(a)anthracene	7.94E-08	7.30E-01	5.79E-08	
Benzo(a)pyrene	9.07E-08	7.30E+00	6.62E-07	
Benzo(b)fluoranthene	7.94E-08	7.30E-01	5.79E-08	
Benzo(k)fluoranthene	6.80E-08	7.30E-02	4.97E-09	
Chrysene	9.07E-08	7.30E-03	6.62E-10	
Fluoranthene	1.70E-07			
PCB-1262	4.31E-08	2.00E+00	8.62E-08	
Phenanthrene	7.94E-08			
Polychlorinated biphenyl	4.31E-08	2.00E+00	8.62E-08	
Pyrene	1.36E-07			
Alpha activity	6.93E+03			
Beta activity	1.02E+04			
Pathway Total				9.56E-07

---------- SECTOR=Southeast PATHWAY=Residential Child Ingestion of Vegetables From Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	1.09E+00			
Antimony	4.78E-05			
Cadmium	4.10E-05			
Chromium	1.81E-03			
Benz(a)anthracene	5.44E-06	7.30E-01	3.97E-06	
Benzo(a)pyrene	6.18E-06	7.30E+00	4.51E-05	
Benzo(b)fluoranthene	5.41E-06	7.30E-01	3.95E-06	
Benzo(k)fluoranthene	4.61E-06	7.30E-02	3.37E-07	
Chrysene	6.22E-06	7.30E-03	4.54E-08	
Fluoranthene	1.20E-05			
PCB-1262	2.94E-06	2.00E+00	5.88E-06	

Residential Excess Lifetime Cancer Risks

SECTOR=Southeast PATHWAY=Residential Child Ingestion of Vegetables From Soil (continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Phenanthrene	5.71E-06			
Polychlorinated biphenyl	2.94E-06	2.00E+00	5.883-06	
Pyrene	9.59E-06			
Alpha activity				
Beta activity				
Pathway Total				6.523-05

SECTOR=Southeast PATHWAY=Residential Child Inhalation of Soil

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	3.76E-07			
Antimony	1.59E-11			
Cadmium	9.26E-12	6.10E+00	5.65E-11	
Chromium	6.24E-10	4.10E+01	2.56E-08	
Benz(a)anthracene	1.85E-12	3.10E-01	5.74E-13	
Benzo(a)pyrene	2.12E-12	3.10E+00	6.56E-12	
Benzo(b)fluoranthene	1.85E-12	3.10E-01	5.74E-13	
Benzo(k)fluoranthene	1.59E-12	3.10E-02	4.92E-14	
Chrysene	2.12E-12	3.10E-03	6.56E-15	
Fluoranthene	3.97E-12			
PCB-1262	1.01E-12	2.00E+00	2.01E-12	
Phenanthrene	1.85E-12			
Polychlorinated biphenyl	1.01E-12	2.00E+00	2.01E-12	
Pyrene	3.17E-12			
Alpha activity				
Beta activity				
Pathway Total				2.57E-08

SECTOR=Southwest PATHWAY=Residential Adult Dermal Contact with Soil

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Antimony	1.69E-06			
Beryllium	4.39E-07	4.30E+02	1.89E-04	
Cadmium	8.44E-08			
Chromium	2.47E-05			
Iron	1.98E-02			
Thallium	8.18E-07			
Uranium	5.84E-05			
Zinc	5.86E-05			
Acenaphthene	2.30E-06			
Acenaphthylene	5.12E-07			
Anthracene	4.24E-06			
Benz(a)anthracene	1.17E-05	2.35E+00	2.75E-05	
Benzo(a)pyrene	1.13E-05	2.35E+01	2.65E-04	
Benzo(b)fluoranthene	1.19E-05	2.35E+00	2.80E-05	
Benzo(ghi)perylene	5.51E-06			
Benzo(k)fluoranthene	7.86E-06	2.35E-01	1.85E-06	
Bis(2-ethylhexyl)phthalate	1.86E-07	7.37E-02	1.37E-08	
Chrysene	1.05E-05	2.35E-02	2.48E-07	
Dibenz(a,h)anthracene	3.03E-06	2.35E+01	7.13E-05	
Fluoranthene	2.54E-05			
Fluorene	2.79E-06			

Residential Excess Lifetime Cancer Risks

SECTOR=Southwest PATHWAY=Residential Adult Dermal Contact with Soil
(centinued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Indeno(1,2,3-cd)pyrene	4.20E-06	2.35E+00	9.89E-06	
Naphthalene	5.59E-09			
PCB-1260	5.31E-08	2.22E+00	1.18E-07	
Phenanthrene	1.33E-05			
Polychlorinated biphenyl	5.31E-08	2.22E+00	1.18E-07	
Fyrene	2.14E-05			
Alpha activity				
Beta activity				
Neptunium-237				
Uranium-235				
Uranium-238				
Pathway Total				5.933-04

SECTOR=Southwest PATHWAY=Residential Adult External Exposure to Soil

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Antimony				
Beryllium				
Cadmium				
Chromium				
Iron				
Thallium				
Uranium				
Zinc				
Acenaphthene				
Acenaphthylene				
Anthracene				
Benz(a)anthracene				
Benzo(a)pyrene				
Benzo(b)fluoranthene				
Benzo(ghi)perylene				
Benzo(k)fluoranthene				
Bis(2-ethylhexyl)phthalate				
Chrysene				
Dibenz(a,h)anthracene				
Fluoranthene				
Fluorene				
Indeno(1,2,3-cd)pyrene				
Naphthalene				
PCB-1260				
Phenanthrene				
Polychlorinated biphenyl				
Pyrene				
Alpha activity	4.13E+02			
Beta activity	1.52E+03			
Neptunium-237	7.82E+00	4.62E-07	3.61E-06	
Uranium-235	1.56E+01	2.65E-07	4.15E-06	
Uranium-238	4.36E+02	6.57E-08	2.86E-05	
Pathway Total				3.64E-05

Residential Excess Lifetime Cancer Risks

---------- SECTOR=Southwest PATHWAY=Residential Adult Ingestion of Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Antimony	9.66E-07			
Beryllium	2.51E-07	4.30E+00	1.08E-06	
Cadmium	2.413-07			
Chromium	1.41E-05			
Iron	1.13E-02			
Thallium	4.67E-07			
Uranium	3.34E-05			
Zinc	3.35E-05			
Acenaphthene	6.59E-07			
Acenaphthylene	1.46E-07			
Anthracene	1.21E-06			
Benz(a)anthracene	3.34E-06	7.30E-01	2.44E-06	
Benzo(a)pyrene	3.22E-06	7.30E+00	2.35E-05	
Benzo(b)fluoranthene	3.40E-06	7.303-01	2.48E-06	
Benzo(ghi)perylene	1.57E-06			
Benzo(k)fluoranthene	2.25E-06	7.30E-02	1.64E-07	
Bis(2-ethylhexyl)phthalate	5.32E-08	1.40E-02	7.45E-10	
Chrysene	3.013-06	7.30E-03	2.19E-08	
Dibenz(a,h)anthracene	8.65E-07	7.30E+00	6.31E-06	
Fluoranthene	7.26E-06			
Fluorene	7.98E-07			
Indeno(1,2,3-cd)pyrene	1.20E-06	7.303-01	8.76E-07	
Naphthalene	1.603-09			
PCB-1260	2.53E-08	2.00E+00	5.06E-08	
Phenanthrene	3.80E-06			
Polychlorinated biphenyl	2.53E-08	2.00E+00	5.06E-08	
Pyrene	6.12E-06			
Alpha activity	1.89E+04			
Beta activity	6.94E+04			
Neptunium-237	3.57E+02	3.00E-10	1.07E-07	
Uranium-235	7.14E+02	4.70E-11	3.363-08	
Uranium-238	1.99E+04	6.20E-11	1.23E-06	
Pathway Total				3.83E-05

---------- SECTOR=Southwest PATHWAY=Residential Adult Ingestion of Vegetables From Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Antimony	2.083-04			
Beryllium	5.24E-05	4.30E+00	2.25E-04	
Cadmium	7.63E-05			
chromium	2.93E-03			
Iron	2.35E+00			
Thallium	9.71E-05			
Uranium	6.92E-03			
Zinc	1.40E-02			
Acenaphthene	1.493-04			
Acenaphthylene	3.67E-05			
Anthracene	2.713-04			
Benz(a)anthracene	7.01E-04	7.30E-01	5.12E-04	
Benzo(a)pyrene	6.71E-04	7.30E+00	4.90E-03	
Benzo(b)fluoranthene	7.10E-04	7.30E-01	5.18E-04	
Benzo(ghi)perylene	3.27E-04			
Benzo(k)fluoranthene	4.66E-04	7.30E-02	3.40E-05	
Bis(2-ethylhexyl)phthalate	1.15E-05	1.40E-02	1.61E-07	
Chrysene	6.31E-04	7.30E-03	4.61E-06	
Dibenz(a,h)anthracene	1.80E-04	7.30E+00	1.31E-03	
Fluoranthene	1.57E-03			

Residential Excess Lifetime Cancer Risks

SECTOR=Southwest PATHWAY=Residential Adult Ingestion of Vegetables From Soil (continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Fluorene	1.79E-04			
Indeno(1,2,3-cd)pyrene	2.49E-04	7.30E-01	1.82E-04	
Naphthalene	4.50E-07			
PCB-1260	5.24E-06	2.00E+00	1.05E-05	
Phenanthrene	8.37E-04			
Polychlorinated biphenyl	5.28E-06	2.00E+00	1.06E-05	
Pyrene	1.32E-03			
Alpha activity				
Beta activity				
Neptunium-237	7.49E+04	3.00E-10	2.25E-05	
Uranium-235	1.48E+05	4.70E-11	6.97E-06	
Uranium-238	4.14E+06	6.20E-11	2.57E-04	
Pathway Total				8.00E-03

SECTOR=Southwest PATHWAY=Residential Adult Inhalation of Soil

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Antimony	4.51E-11			
Beryllium	1.17E-11	8.40E+00	9.83E-11	
Cadmium	1.13E-11	6.10E+00	6.87E-11	
Chromium	6.60E-10	4.10E+01	2.70E-08	
Iron	5.28E-07			
Thallium	2.18E-11			
Uranium	1.56E-09			
Zinc	1.56E-09			
Acenaphthene	3.07E-11			
Acenaphthylene	6.83E-12			
Anthracene	5.65E-11			
Benz(a)anthracene	1.56E-10	3.10E-01	4.83E-11	
Benzo(a)pyrene	1.50E-10	3.10E+00	4.65E-10	
Benzo(b)fluoranthene	1.59E-10	3.10E-01	4.92E-11	
Benzo(ghi)perylene	7.34E-11			
Benzo(k)fluoranthene	1.05E-10	3.10E-02	3.25E-12	
Bis(2-ethylhexyl)phthalate	2.48E-12			
Chrysene	1.40E-10	3.10E-03	4.35E-13	
Dibenz(a,h)anthracene	4.04E-11	3.10E+00	1.25E-10	
Fluoranthene	3.39E-10			
Fluorene	3.73E-11			
Indeno(1,2,3-cd)pyrene	5.60E-11	3.10E-01	1.74E-11	
Naphthalene	7.45E-14			
PCB-1260	1.18E-12	2.00E+00	2.36E-12	
Phenanthrene	1.77E-10			
Polychlorinated biphenyl	1.18E-12	2.00E+00	2.36E-12	
Pyrene	2.85E-10			
Alpha activity				
Beta activity				
Neptunium-237	1.67E-02	3.45E-08	5.75E-10	
Uranium-235	3.33E-02	1.30E-08	4.33E-10	
Uranium-238	9.27E-01	1.24E-08	1.15E-08	
Pathway Total				4.04E-08

Residential Excess Lifetime Cancer Risks

---------- SECTOR=Southwest PATHWAY=Residential Child Dermal Contact with Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Antimony	1.53E-06			
Beryllium	3.99E-07	4.30E+02	1.71E-04	
Cadmium	7.67E-08			
Chromium	2.25E-05			
Iron	1.80E-02			
Thallium	7.42E-07			
Uranium	5.30E-05			
Zinc	5.32E-05			
Acenaphthene	2.09E-06			
Acenaphthylene	4.65E-07			
Anthracene	3.853-06			
Benz (a)anthracene	1.06E-05	2.35E+00	2.50E-05	
Benzo (a)pyrene	1.02E-05	2.35E+01	2.41E-04	
Benzo(b)fluoranthene	1.08E-05	2.35E+00	2.553-05	
Benzo(ghi)perylene	5.003-06			
Benzo(k)fluoranthene	7.14E-06	2.35E-01	1.68E-06	
Bis(2-ethylhexyl)phthalate	1.69E-07	7.37E-02	1.25E-08	
Chrysene	9.55E-06	2.35E-02	2.25E-07	
Dibenz (a,h)anthracene	2.75E-06	2.35E+01	6.473-05	
Fluoranthene	2.31E-05			
Fluorene	2.54E-06			
Indeno(1,2,3-cd)pyrene	3.81E-06	2.35E+00	8.98E-06	
Naphthalene	5.07E-09			
PCB-1260	4.82E-08	2.22E+00	1.07E-07	
Phenanthrene	1.21E-05			
Polychlorinated biphenyl	4.82E-08	2.22E+00	1.07E-07	
Pyrene	1.94E-05			
Alpha activity				
Beta activity				
Neptunium-237				
uranium-235				
Uranium-238				
Pathway Total				5.38E-04

---------- SECTOR=Southwest PATHWAY=Residential Child External Exposure to Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte specific	Total Pathway Risk
Antimony				
Beryllium				
Cadmium				
Chromium				
Iron				
Thallium				
Uranium				
Zinc				
Acenaphthene				
Acenaphthylene				
Anthracene				
Benz (a)anthracene				
Benzo(a)pyrene				
Benzo(b)fluoranthene				
Benzo(ghi)perylene				
Benzo(k)fluoranthene				
Bis(2-ethylhexyl)phthalate				
Chrysene				
Dibenz (a,h)anthracene				
Fluoranthene				

Residential Excess Lifetime Cancer Risks

..... SECTOR=Southwest PATHWAY=Residential Child External Exposure to Soil ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Fluorene				
Indeno(1,2,3-cd)pyrene				
Naphthalene				
PCB-1260				
Phenanthrene				
Polychlorinated biphenyl				
Pyrene				
Alpha activity	7.29E+01			
Beta activity	2.68E+02			
Neptunium-237	1.38E+00	4.62E-07	6.38E-07	
Uranium-235	2.76E+00	2.65E-07	7.32E-07	
Uranium-238	7.69E+01	6.57E-08	5.05E-06	
Pathway Total				6.42E-06

---------- SECTOR=Southwest PATHWAY=Residential Child Ingestion Of Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Antimony	1.65E-06			
Beryllium	4.28E-07	4.30E+00	1.84E-06	
Cadmium	4.11E-07			
Chromium	2.41E-05			
Iron	1.93E-02			
Thallium	7.96E-07			
Uranium	5.68E-05			
Zinc	5.70E-05			
Acenaphthene	1.12E-06			
Acenaphthylene	2.49E-07			
Anthracene	2.06E-06			
Benz(a)anthracene	5.69E-06	7.30E-01	4.15E-06	
Benzo(a)pyrene	5.48E-06	7.30E+00	4.00E-05	
Benzo(b)fluoranthene	5.80E-06	7.30E-01	4.23E-06	
Benzo(ghi)perylene	2.68E-06			
Benzo(k)fluoranthene	3.83E-06	7.30E-02	2.79E-07	
Bis(2-ethylhexyl)phthalate	9.07E-08	1.40E-02	1.27E-09	
Chrysene	5.12E-06	7.30E-03	3.74E-08	
Dibenz(a,h)anthracene	1.47E-06	7.30E+00	1.08E-05	
Fluoranthene	1.24E-05			
Fluorene	1.36E-06			
Indeno(1,2,3-cd)pyrene	2.04E-06	7.30E-01	1.49E-06	
Naphthalene	2.72E-09			
PCB-1260	4.31E-08	2.00E+00	8.62E-08	
Phenanthrene	6.48E-06			
Polychlorinated biphenyl	4.31E-08	2.00E+00	8.62E-08	
Pyrene	1.04E-05			
Alpha activity	6.65E+03			
Beta activity	2.45E+04			
Neptunium-237	1.26E+02	3.00E-10	3.78E-08	
Uranium-235	2.52E+02	4.70E-11	1.18E-08	
Uranium-238	7.01E+03	6.20E-11	4.35E-07	
Pathway Total				6.35E-05

Residential Excess Lifetime Cancer Risks

---------- SECTOR=Southwest PATHWAY=Residential Child Ingestion of Vegetables From Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Antimony	1.16E-04			
Beryllium	2.923-05	4.30E+00	1.25E-04	
Cadmium	4.253-05			
Chromium	1.63E-03			
Iron	1.31E+00			
Thallium	5.403-05			
Uranium	3.85E-03			
Zinc	7.77E-03			
Acenaphthene	8.31E-05			
Acenaphthylene	2.04E-05			
Anthracene	1.51E-04			
Benz(a)anthracene	3.90E-04	7.30E-01	2.85E-04	
Benzo(a)pyrene	3.74E-04	7.30E+00	2.733-03	
Benzo(b)fluoranthene	3.95E-04	7.30E-01	2.88E-04	
Benzo(ghi)perylene	1.82E-04			
Benzo(k)fluoranthene	2.60E-04	7.30E-02	1.89E-05	
Bis(2-ethylhexyl)phthalate	6.393-06	1.40E-02	8.95E-08	
Chrysene	3.513-04	7.30E-03	2.56E-06	
Dibenz(a,h)anthracene	1.00E-04	7.30E+00	7.30E-04	
Fluoranthene	8.71E-04			
Fluorene	9.96E-05			
Indeno(1,2,3-cd)pyrene	1.39E-04	7.30E-01	1.01E-04	
Naphthalene	2.50E-07			
PCB-1260	2.92E-06	2.00E+00	5.843-06	
Phenanthrene	4.66E-04			
Polychlorinated biphenyl	2.94E-06	2.00E+00	5.88E-06	
Pyrene	7.35E-04			
Alpha activity				
Beta activity				
Neptunium-237	8.63E+03	3.00E-10	2.59E-06	
Uranium-235	1.71E+04	4.70E-11	8.03E-07	
Uranium-238	4.78E+05	6.20E-11	2.96E-05	
Pathway Total				4.32E-03

---------- SECTOR=Southwest PATHWAY=Residential Child Inhalation of Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Antimony	3.84E-11			
Beryllium	9.97E-12	8.40E+00	8.38E-11	
Cadmium	9.59E-12	6.10E+00	5.85E-11	
Chromium	5.62E-10	4.10E+01	2.30E-08	
Iron	4.50E-07			
Thallium	1.86E-11			
Uranium	1.33E-09			
Zinc	1.33E-09			
Acenaphthene	2.62E-11			
Acenaphthylene	5.82E-12			
Anthracene	4.81E-11			
Benz(a)anthracene	1.33E-10	3.10E-01	4.11E-11	
Benzo(a)pyrene	1.28E-10	3.10E+00	3.96E-10	
Benzo(b)fluoranthene	1.35E-10	3.10E-01	4.19E-11	
Benzo(ghi)perylene	6.26E-11			
Benzo(k)fluoranthene	8.93E-11	3.10E-02	2.77E-12	
Bis(2-ethylhexyl)phthalate	2.12E-12			
Chrysene	1.19E-10	3.10E-03	3.70E-13	
Dibenz(a,h)anthracene	3.44E-11	3.10E+00	1.07E-10	
Fluoranthene	2.88E-10			

Residential Excess Lifetime Cancer Risks

..... SECTOR=Southwest PATHWAY=Residential Child Inhalation of Soil ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Fluorene	3.17E-11			
Indeno(1,2,3-cd)pyrene	4.77E-11	3.10E-01	1.48E-11	
Naphthalene	6.35E-14			
PCB-1260	1.01E-12	2.00E+00	2.01E-12	
Phenanthrene	1.51E-10			
Polychlorinated biphenyl	1.01E-12	2.00E+00	2.01E-12	
Pyrene	2.43E-10			
Alpha activity				
Beta activity				
Neptunium-237	2.94E-03	3.45E-08	1.01E-10	
Uranium-235	5.88E-03	1.30E-08	7.64E-11	
Uranium-238	1.64E-01	1.24E-08	2.03E-09	
Pathway Total				2.60E-08

---------- SECTOR=West PATHWAY=Residential Adult Dermal Contact with Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	8.47E-03			
Antimony	1.15E-06			
Arsenic	1.54E-05	3.66E+00	5.62E-05	
Beryllium	3.66E-07	4.30E+02	1.58E-04	
Cadmium	2.11E-07			
Chromium	1.46E-05			
Cobalt	5.52E-06			
Uranium	4.22E-05			
Zinc	3.49E-05			
2-Methylnaphthalene	2.10E-06			
Acenaphthene	7.84E-06			
Anthracene	3.40E-05			
Benz(a)anthracene	4.69E-05	2.35E+00	1.10E-04	
Benzo(a)pyrene	4.22E-05	2.35E+01	9.93E-04	
Benzo(b)fluoranthene	5.25E-05	2.35E+00	1.24E-04	
Benzo(ghi)perylene	8.62E-06			
Benzo(k)fluoranthene	5.17E-05	2.35E-01	1.22E-05	
Bis(2-ethylhexyl)phthalate	2.33E-07	7.37E-02	1.72E-08	
Chrysene	5.05E-05	2.35E-02	1.19E-06	
Di-n-butyl phthalate	4.77E-07			
Dibenz(a,h)anthracene	8.74E-06	2.35E+01	2.06E-04	
Fluoranthene	1.05E-04			
Fluorene	7.28E-06			
Indeno(1,2,3-cd)pyrene	8.85E-06	2.35E+00	2.08E-05	
Naphthalene	3.38E-06			
PCB-1254	1.34E-06	2.22E+00	2.98E-06	
PCB-1260	2.24E-08	2.22E+00	4.97E-08	
Phenanthrene	8.15E-05			
Polychlorinated biphenyl	7.84E-07	2.22E+00	1.74E-06	
Pyrene	9.20E-05			
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				1.69E-03

Residential Excess Lifetime Cancer Risks

---------- SECTOR=West PATHWAY=Residential Adult External Exposure to Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum				
Antimony				
Arsenic				
Beryllium				
Cadmium				
Chromium				
Cobalt				
Uranium				
Zinc				
2-Methylnaphthalene				
Acenaphthene				
Anthracene				
Benz(a)anthracene				
Benzo(a)pyrene				
Benzo(b)fluoranthene				
Benzo(ghi)perylene				
Benzo(k)fluoranthene				
Bis(2-ethylhexyl)phthalate				
Chrysene				
Di-n-butyl phthalate				
Dibenz(a,h)anthracene				
Fluoranthene				
Fluorene				
Indeno(1,2,3-cd)pyrene				
Naphthalene				
PCB-1254				
PCB-1260				
Phenanthrene				
Polychlorinated biphenyl				
Pyrene				
Alpha activity	1.69E+03			
Beta activity	2.91E+03			
Cesium-137	1.75E+01	2.09E-06	3.66E-05	
Neptunium-237	3.97E+01	4.62E-07	1.83E-05	
Uranium-234	2.47E+02	2.14E-11	5.29E-09	
Uranium-235	1.72E+01	2.65E-07	4.56E-06	
Uranium-238	3.15E+02	6.57E-08	2.07E-05	
Pathway Total				8.02E-05

---------- SECTOR=West PATHWAY=Residential Adult Ingestion of Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	4.84E-03			
Antimony	6.60E-07			
Arsenic	8.78E-06	1.50E+00	1.32E-05	
Beryllium	2.09E-07	4.30E+00	9.00E-07	
Cadmium	6.02E-07			
Chromium	8.35E-06			
Cobalt	3.16E-06			
Uranium	2.41E-05			
Zinc	2.00E-05			
2-Methylnaphthalene	5.99E-07			
Acenaphthene	2.24E-06			
Anthracene	9.70E-06			
Benz(a)anthracene	1.34E-05	7.30E-01	9.77E-06	
Benzo(a)pyrene	1.20E-05	7.30E+00	8.79E-05	
Benzo(b)fluoranthene	1.50E-05	7.30E-01	1.09E-05	

Residential Excess Lifetime Cancer Risks

SECTOR=West PATHWAY=Residential Adult Ingestion of Soil (continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Benzo(ghi)perylene	2.46E-06			
Benzo(k)fluoranthene	1.48E-05	7.30E-02	1.08E-06	
Bis(2-ethylhexyl)phthalate	6.65E-08	1.40E-02	9.32E-10	
Chrysene	1.44E-05	7.30E-03	1.0SE-07	
Di-n-butyl phthalate	1.36E-07			
Dibenz(a,h)anthracene	2.50E-06	7.30E+00	1.82E-05	
Fluoranthene	3.00E-05			
Fluorene	2.08E-06			
Indeno(1,2,3-cd)pyrene	2.53E-06	7.30E-01	1.85E-06	
Naphthalene	9.66E-07			
PCB-1254	6.39E-07	2.00E+00	1.28E-06	
PCB-1260	1.06E-08	2.00E+00	2.13E-08	
Phenanthrene	2.33E-05			
Polychlorinated biphenyl	3.73E-07	2.00E+00	7.46E-07	
Pyrene	2.63E-05			
Alpha activity	7.72E+04			
Beta activity	1.33E+05			
Cesium-137	8.00E+02	3.16E-11	2.53E-08	
Neptunium-237	1.81E+03	3.00E-10	5.43E-07	
Uranium-234	1.13E+04	4.44E-11	5.01E-07	
Uranium-235	7.86E+02	4.70E-11	3.69E-08	
Uranium-238	1.44E+04	6.20E-11	8.90E-07	
Pathway Total				1.48E-04

SECTOR=West PATHWAY=Residential Adult Ingestion of Vegetables From Soil

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	1.01E+00			
Antimony	1.42E-04			
Arsenic	1.89E-03	1.50E+00	2.83E-03	
Beryllium	4.37E-05	4.30E+00	1.88E-04	
Cadmium	1.91E-04			
Chromium	1.73E-03			
Cobalt	7.11E-04			
Uranium	5.01E-03			
Zinc	8.32E-03			
2-Methylnaphthalene	1.44E-04			
Acenaphthene	5.07E-04			
Anthracene	2.17E-03			
Benz(a)anthracene	2.81E-03	7.30E-01	2.05E-03	
Benzo(a)pyrene	2.51E-03	7.30E+00	1.84E-02	
Benzo(b)fluoranthene	3.13E-03	7.30E-01	2.28E-03	
Benzo(ghi)perylene	5.12E-04			
Benzo(k)fluoranthene	3.07E-03	7.30E-02	2.24E-04	
Bis(2-ethylhexyl)phthalate	1.44E-05	1.40E-02	2.01E-07	
Chrysene	3.03E-03	7.30E-03	2.21E-05	
Di-n-butyl phthalate	2.94E-05			
Dibenz(a,h)anthracene	5.19E-04	7.30E+00	3.79E-03	
Fluoranthene	6.48E-03			
Fluorene	4.66E-04			
Indeno(1,2,3-cd)pyrene	5.25E-04	7.30E-01	3.84E-04	
Naphthalene	2.72E-04			
PCB-1254	1.33E-04	2.00E+00	2.67E-04	
PCB-1260	2.21E-06	2.00E+00	4.42E-06	
Phenanthrene	5.13E-03			
Polychlorinated biphenyl	7.80E-05	2.00E+00	1.56E-04	

Residential Excess Lifetime Cancer Risks

---------- SECTOR=West PATHWAY=Residential Adult Ingestion of Vegetables From Soil ----------
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Pyrene	5.67E-03			
Alpha activity				
Beta activity				
Cesium-137	1.76E+05	3.16E-11	5.56E-06	
Neptunium-237	3.80E+05	3.00E-10	1.14E-04	
Uranium-234	2.34E+06	4.44E-11	1.04E-04	
Uranium-235	1.63E+05	4.70E-11	7.67E-06	
Uranium-238	2.99E+06	6.20E-11	1.86E-04	
Pathway Total				3.10E-02

---------- SECTOR=West PATHWAY=Residential Adult Inhalation of Soil ....

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	2.26E-07			
Antimony	3.08E-11			
Arsenic	4.10E-10	5.00E+01	2.05E-08	
Beryllium	9.77E-12	8.40E+00	8.21E-11	
Cadmium	2.81E-11	6.10E+00	1.71E-10	
Chromium	3.90E-10	4.10E+01	1.60E-08	
Cobalt	1.47E-10			
Uranium	1.13E-09			
Zinc	9.31E-10			
2-Methylnaphthalene	2.79E-11			
Acenaphthene	1.04E-10			
Anthracene	4.53E-10			
Benz(a)anthracene	6.25E-10	3.10E-01	1.94E-10	
Benzo(a)pyrene	5.62E-10	3.10E+00	1.74E-09	
Benzo(b)fluoranthene	7.00E-10	3.10E-01	2.17E-10	
Benzo(ghi)perylene	1.15E-10			
Benzo(k)fluoranthene	6.90E-10	3.10E-02	2.14E-11	
Bis(2-ethylhexyl)phthalate	3.10E-12			
Chrysene	6.73E-10	3.10E-03	2.09E-12	
Di-n-butyl phthalate	6.36E-12			
Dibenz(a,h)anthracene	1.17E-10	3.10E+00	3.61E-10	
Fluoranthene	1.40E-09			
Fluorene	9.71E-11			
Indeno(1,2,3-cd)pyrene	1.18E-10	3.10E-01	3.66E-11	
Naphthalene	4.51E-11			
PCB-1254	2.98E-11	2.00E+00	5.96E-11	
PCB-1260	4.97E-13	2.00E+00	9.94E-13	
Phenanthrene	1.09E-09			
Polychlorinated biphenyl	1.74E-11	2.00E+00	3.48E-11	
Pyrene	1.23E-09			
Alpha activity				
Beta activity				
Cesium-137	3.73E-02	1.91E-11	7.13E-13	
Neptunium-237	8.44E-02	3.45E-08	2.913-09	
Uranium-234	5.26E-01	1.40E-08	7.37E-09	
Uranium-235	3.67E-02	1.30E-08	4.77E-10	
Uranium-238	6.70E-01	1.24E-08	8.30E-09	
Pathway Total				5.84E-08

Residential Excess Lifetime Cancer Risks

---------- SECTOR=West PATHWAY=Residential Child Dermal Contact with Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	7.69E-03			
Antimony	1.05E-06			
Arsenic	1.393-05	3.66E+00	5.10E-05	
Beryllium	3.33E-07	4.30E+02	1.43E-04	
Cadmium	1.91E-07			
Chromium	1.33E-05			
Cobalt	5.01E-06			
Uranium	3.84E-05			
Zinc	3.173-05			
2-Methylnaphthalene	1.90E-06			
Acenaphthene	7.12E-06			
Anthracene	3.08E-05			
Benz(a)anthracene	4.25E-05	2.35E+00	1.00E-04	
Benzo(a)pyrene	3.83E-05	2.35E+01	9.02E-04	
Benzo(b)fluoranthene	4.76E-05	2.35E+00	1.12E-04	
Benzo(ghi)perylene	7.82E-06			
Benzo(k)fluoranthene	4.70E-05	2.353-01	1.11E-05	
Bis(2-ethylhexyl)phthalate	2.11E-07	7.37E-02	1.56E-08	
Chrysene	4.59E-05	2.3 5E-02	1.08E-06	
Di-n-butyl phthalate	4.333-07			
Dibenz(a,h)anthracene	7.943-06	2.35E+01	1.87E-04	
Fluoranthene	9.54E-05			
Fluorene	6.61E-06			
Indeno(1,2,3-cd)pyrene	8.03E-06	2.35E+00	1.89E-05	
Naphthalene	3.07E-06			
PCB-1254	1.22E-06	2.22E+00	2.71E-06	
PCB-1260	2.03E-08	2.22E+00	4.51E-08	
Phenanthrene	7.40E-05			
Polychlorinated biphenyl	7.12E-07	2.22E+00	1.58E-06	
Pyrene	8.35E-05			
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-234				
Uranium-235				
Uranium-238				
Pathway Total				1.53E-03

---------- SECTOR=West PATHWAY=Residential Child External Exposure to Soil .....

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum				
Antimony				
Arsenic				
Beryllium				
Cadmium				
Chromium				
Cobalt				
Uranium				
Zinc				
2-Methylnaphthalene				
Acenaphthene				
Anthracene				
Benz(a)anthracene				
Benzo(a)pyrene				
Benzo(b)fluoranthene				

Residential Excess Lifetime Cancer Risks

SECTOR=West PATHWAY=Residential Child External Exposure to Soil (continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Benzo(ghi)perylene				
Benzo(k)fluoranthene				
Bis(2-ethylhexyl)phthalate				
Chrysene				
Di-n-butyl phthalate				
Dibenz(a,h)anthracene				
Fluoranthene				
Fluorene				
Indeno(1,2,3-cd)pyrene				
Naphthalene				
PCB-1254				
PCB-1260				
Phenanthrene				
Polychlorinated biphenyl				
Pyrene				
Alpha activity	2.98E+02			
Beta activity	5.13E+02			
Cesium-137	3.09E+00	2.09E-06	6.46E-06	
Neptunium-237	7.00E+00	4.62E-07	3.23E-06	
Uranium-234	4.36E+01	2.14E-11	9.33E-10	
Uranium-235	3.04E+00	2.65E-07	8.06E-07	
Uranium-238	5.55E+01	6.57E-08	3.65E-06	
Pathway Total				1.42E-05

SECTOR=West PATHWAY=Residential Child Ingestion Of Soil

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	8.25E-03			
Antimony	1.12E-06			
Arsenic	1.50E-05	1.50E+00	2.24E-05	
Beryllium	3.57E-07	4.30E+00	1.53E-06	
Cadmium	1.03E-06			
Chromium	1.42E-05			
Cobalt	5.38E-06			
Uranium	4.11E-05			
Zinc	3.40E-05			
2-Methylnaphthalene	1.02E-06			
Acenaphthene	3.82E-06			
Anthracene	1.65E-05			
Benz(a)anthracene	2.28E-05	7.30E-01	1.67E-05	
Benzo(a)pyrene	2.05E-05	7.30E+00	1.50E-04	
Benzo(b)fluoranthene	2.55E-05	7.30E-01	1.86E-05	
Benzo(ghi)perylene	4.20E-06			
Benzo(k)fluoranthene	2.52E-05	7.30E-02	1.84E-06	
Bis(2-ethylhexyl)phthalate	1.13E-07	1.40E-02	1.59E-09	
Chrysene	2.46E-05	7.30E-03	1.79E-07	
Di-n-butyl phthalate	2.32E-07			
Dibenz(a,h)anthracene	4.26E-06	7.30E+00	3.11E-05	
Fluoranthene	5.12E-05			
Fluorene	3.54E-06			
Indeno(1,2,3-cd)pyrene	4.31E-06	7.30E-01	3.14E-06	
Naphthalene	1.65E-06			
PCB-1254	1.09E-06	2.00E+00	2.18E-06	
PCB-1260	1.81E-08	2.00E+00	3.63E-08	
Phenanthrene	3.97E-05			
Polychlorinated biphenyl	6.36E-07	2.00E+00	1.27E-06	

Residential Excess Lifetime Cancer Risks

..... SECTOR=West PATHWAY=Residential Child Ingestion of Soil ..... (continued)

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Pyrene	4.48E-05			
Alpha activity	2.72E+04			
Beta activity	4.68E+04			
Cesium-137	2.82E+02	3.16E-11	8.92E-09	
Neptunium-237	6.39E+02	3.00E-10	1.92E-07	
Uranium-234	3.98E+03	4.44E-11	1.77E-07	
Uranium-235	2.77E+02	4.70E-11	1.30E-08	
Uranium-238	5.07E+03	6.20E-11	3.14E-07	
Pathway Total				2.50E-04

---------- SECTOR=West PATHWAY=Residential Child Ingestion Of Vegetables From Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	5.60E-01			
Antimony	7.89E-05			
Arsenic	1.05E-03	1.50E+00	1.57E-03	
Beryllium	2.43E-05	4.30E+00	1.05E-04	
Cadmium	1.06E-04			
Chromium	9.63E-04			
Cobalt	3.96E-04			
Uranium	2.79E-03			
Zinc	4.63E-03			
2-Methylnaphthalene	8.01E-05			
Acenaphthene	2.82E-04			
Anthracene	1.21E-03			
Benz(a)anthracene	1.56E-03	7.30E-01	1.14E-03	
Benzo(a)pyrene	1.40E-03	7.30E+00	1.02E-02	
Benzo(b)fluoranthene	1.74E-03	7.30E-01	1.27E-03	
Benzo(ghi)perylene	2.85E-04			
Benzo(k)fluoranthene	1.71E-03	7.30E-02	1.25E-04	
Bis(2-ethylhexyl)phthalate	7.99E-06	1.40E-02	1.12E-07	
Chrysene	1.69E-03	7.30E-03	1.23E-05	
Di-n-butyl phthalate	1.64E-05			
Dibenz(a,h)anthracene	2.89E-04	7.30E+00	2.11E-03	
Fluoranthene	3.61E-03			
Fluorene	2.60E-04			
Indeno(1,2,3-cd)pyrene	2.92E-04	7.30E-01	2.13E-04	
Naphthalene	1.52E-04			
PCB-1254	7.43E-05	2.00E+00	1.49E-04	
PCB-1260	1.23E-06	2.00E+00	2.46E-06	
Phenanthrene	2.85E-03			
Polychlorinated biphenyl	4.34E-05	2.00E+00	8.68E-05	
Pyrene	3.16E-03			
Alpha activity				
Beta activity				
Cesium-137	2.03E+04	3.16E-11	6.41E-07	
Neptunium-237	4.38E+04	3.00E-10	1.31E-05	
Uranium-234	2.70E+05	4.44E-11	1.20E-05	
Uranium-235	1.88E+04	4.70E-11	8.84E-07	
Uranium-238	3.45E+05	6.20E-11	2.14E-05	
Pathway Total				1.71E-02

Residential Excess Lifetime Cancer Risks

---------- SECTOR=West PATHWAY=Residential Child Inhalation of Soil ----------

Analyte	Carcinogenic CDI	Slope Factor	Analyte Specific	Total Pathway Risk
Aluminum	1.93E-07			
Antimony	2.62E-11			
Arsenic	3.49E-10	5.00E+01	1.74E-08	
Beryllium	8.32E-12	8.40E+00	6.99E-11	
Cadmium	2.39E-11	6.10E+00	1.46E-10	
Chromium	3.32E-10	4.10E+01	1.36E-08	
Cobalt	1.25E-10			
Uranium	9.60E-10			
Zinc	7.93E-10			
2-Methylnaphthalene	2.38E-11			
Acenaphthene	8.90E-11			
Anthracene	3.86E-10			
Benz (a)anthracene	5.32E-10	3.10E-01	1.65E-10	
Benzo (a)pyrene	4.79E-10	3.10E+00	1.48E-09	
Benzo(b)fluoranthene	5.96E-10	3.10E-01	1.85E-10	
Benzo(ghi)perylene	9.79E-11			
Benzo(k)fluoranthene	5.87E-10	3.10E-02	1.82E-11	
Bis(2-ethylhexyl)phthalate	2.64E-12			
Chrysene	5.74E-10	3.10E-03	1.78E-12	
Di-n-butyl phthalate	5.42E-12			
Dibenz (a,h)anthracene	9.93E-11	3.10E+00	3.08E-10	
Fluoranthene	1.19E-09			
Fluorene	8.27E-11			
Indeno(1,2,3-cd)pyrene	1.00E-10	3.10E-01	3.12E-11	
Naphthalene	3.84E-11			
PCB-1254	2.54E-11	2.00E+00	5.08E-11	
PCB-1260	4.23E-13	2.00E+00	8.46E-13	
Phenanthrene	9.26E-10			
Polychlorinated biphenyl	1.48E-11	2.00E+00	2.97E-11	
Pyrene	1.04E-09			
Alpha activity				
Beta activity				
Cesium-137	6.58E-03	1.91E-11	1.26E-13	
Neptunium-237	1.49E-02	3.45E-08	5.14E-10	
Uranium-234	9.28E-02	1.40E-08	1.30E-09	
Uranium-235	6.47E-03	1.30E-08	8.41E-11	
Uranium-238	1.18E-01	1.24E-08	1.47E-09	
Pathway Total				3.69E-08

APPENDIX G

RESULTS OF IEUBK LEAD MODELING

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From: Kowetha Davidson (1060 COM, MS6480)
Health and Environmental Risk Analysis Section
Life Sciences Division

Date: May 15, 1998

Subject: Integrated Exposure Uptake Biokinetic (IEUBK) Model for Lead

The printouts and graphs of the results from the lead model are enclosed in this report. The model was run for children ages 0 to 5 years. Five years was selected because this age group was used previously for your sites. The concentrations of lead in groundwater and surface soil are listed in the Table; default concentrations of lead in air (0.1 μg Pb/m^3) and diet were used for all sites. Groundwater water was considered to be the source of exposure via drinking water. Site-specific surface soil was considered to be the source of soil lead; the concentrations for soil lead were modeled separately (using default concentrations for other media) and with site-specific values for groundwater. Groundwater was also modeled separately using the default values for soil lead concentration (200 μg/kg of soil) and other media or zero lead concentrations in all media except water. The concentration of lead in house dust was calculated using the multiple source analysis in which the values for dust were based on a 70% conversion of soil lead to dust lead and an air-to-dust conversion of 100 μg Pb in dust/μg Pb/m^3 of air.

The current directive from EPA's Office of Solid Waste and Emergency Response (OSWER) (directive # 9344.4-12) recommends a screening level of 400 ppm (mg/kg or μg/g) for soil lead in residential land-use areas. A screening level is not a cleanup level, but is defined as the level of contamination above which there may be sufficient concern to warrant a site-specific study of risk. The directive also states that OSWER would attempt to limit exposure of children to soil lead such that the estimated risk of blood lead exceeding 10 μg/dL would be 5% or less and that OSWER would apply EPA's IEUBK model on a site-specific basis.

The results of the IEUBK model show that the probability of blood lead concentrations exceeding 10 μg/dL for children 0 to 5 years of age is <0.01% when the site-specific concentrations for soil were considered along with default lead contributions from other media. The probability of blood lead exceeding 10 μg/dL is only 2.11 or 2.25% when

site-specific soil lead levels are modeled with RGA groundwater as the source of drinking water. However, when site-specific soil lead is modeled with McNairy groundwater as the source of drinking water, the probability of blood lead levels in children exceeding 10 μg/dL is 38.16%. The results of the IEUBK model showed that soil lead at the site is a minor contributor to lead uptake, .and it is not considered a potential health concern.

The results of the IEUBK model also showed that both RGA and McNairy groundwater sources are potential health concerns when modeled with default lead contributions from other media; the probability of blood lead levels exceeding 10 μg/dL is 10.61 and 50.13% for RGA and McNairy groundwater sources, respectively,. When the same ground water sources were modeled assuming no lead contribution from other media, only the McNairy source showed a potential health concern. The probability of exceeding 10 μg Pb/dL was 30.26% compared with only 0.25% for RGA. These results show that both groundwater sources could be potential health concern in case of off-site migration. These results also showed that RGA groundwater is a potential problem only if the lead levels in other media are equal to or greater than default lead levels.

Lead Concentrations in Water and Soil					
Site	Surface Soil (μg/kg)	RGA groundwater (μg/L)	McNairy groundwater (μg/L)	PbB Conc.[a] (μg/L)	Probability[b]
WAG6	7.98	32.7	–	3.9	2.11
	7.98	–	114	9.0	38.16
	7.98	–	–	1.7	0.00
	default[c]	32.7	–	5.7	10.61
	default[c]	–	114	10.4	50.13
	zero concentration"	32.7	–	2.7	0.25
	zero concentration'	–	114	8.1	30.26
Sector 7 (NW)	13.0	32.7	–	3.9	2.25
	13.0	–	114	9.0	38.16
	13.0	–	–	1.8	0.01

"Geometric mean of blood lead (PbB) concentration.
[b]Probability of blood lead concentrations exceeding 10 μg/dL, the level of concern for children.
"Lead in soil and other media are modeled at default concentrations or zero concentrations.

#1
WAG 6

LEAD MODEL Version 0.99d

AIR CONCENTRATION: 0.100 ug Pb/m3 DEFAULT
Indoor AIR Pb Conc: 30.0 percent of outdoor.
Other AIR Parameters:

Age	Time Outdoors (hr)	Vent. Rate (m3/day)	Lung Abs. (%)
0-1	1.0	2.0	32.0
1-2	2.0	3.0	32.0
2-3	3.0	5.0	32.0
3-4	4.0	5.0	32.0
4-5	4.0	5.0	32.0
5-6	4.0	7.0	32.0
6-7	4.0	7.0	32.0

DIET: DEFAULT

DRINKING WATER Conc: 32.70 ug Pb/L
WATER Consumption: **DEFAULT**

SOIL & DUST:
Soil: constant conc.
Dust: Multiple Source Analysis

Age	Surface Soil (ug Pb/g)	House Dust (ug Pb/g)
0-1	8.0	15.6
1-2	8.0	15.6
2-3	8.0	15.6
3-4	8.0	15.6
4-5	8.0	15.6
5-6	8.0	15.6
6-7	8.0	15.6

Additional Dust Sources: None DEFAULT
Soil contribution conversion **factor**: 0.70
Air contribution conversion factor: 100.0

PAINT Intake: 0.00 ug Pb/day **DEFAULT**

MATERNAL CONTRIBUTION: Infant Model
Maternal Blood Conc: 2.50 ug Pb/dL

CALCULATED BLOOD **Pb** and Pb UPTAKES:

YEAR	Blood Level (ug/dL)	Total Uptake (ug/day)	Soil+Dust Uptake (ug/day)
0.5-1:	3.2	5.95	0.29
1-2:	4.3	10.57	0.45
2-3:	4.2	11.31	0.45
3-4:	4.0	11.48	0.46
4-5:	3.9	11.67	0.34
5-5:	3.7	12.32	0.31
6-7:	3.6	12.81	0.29

YEAR	Diet Uptake (ug/day)	Water Uptake (ug/day)	Paint Uptake (ug/day)	Air Uptake (ug/day)
0.5-1:	2.58	3.06	0.00	0.02

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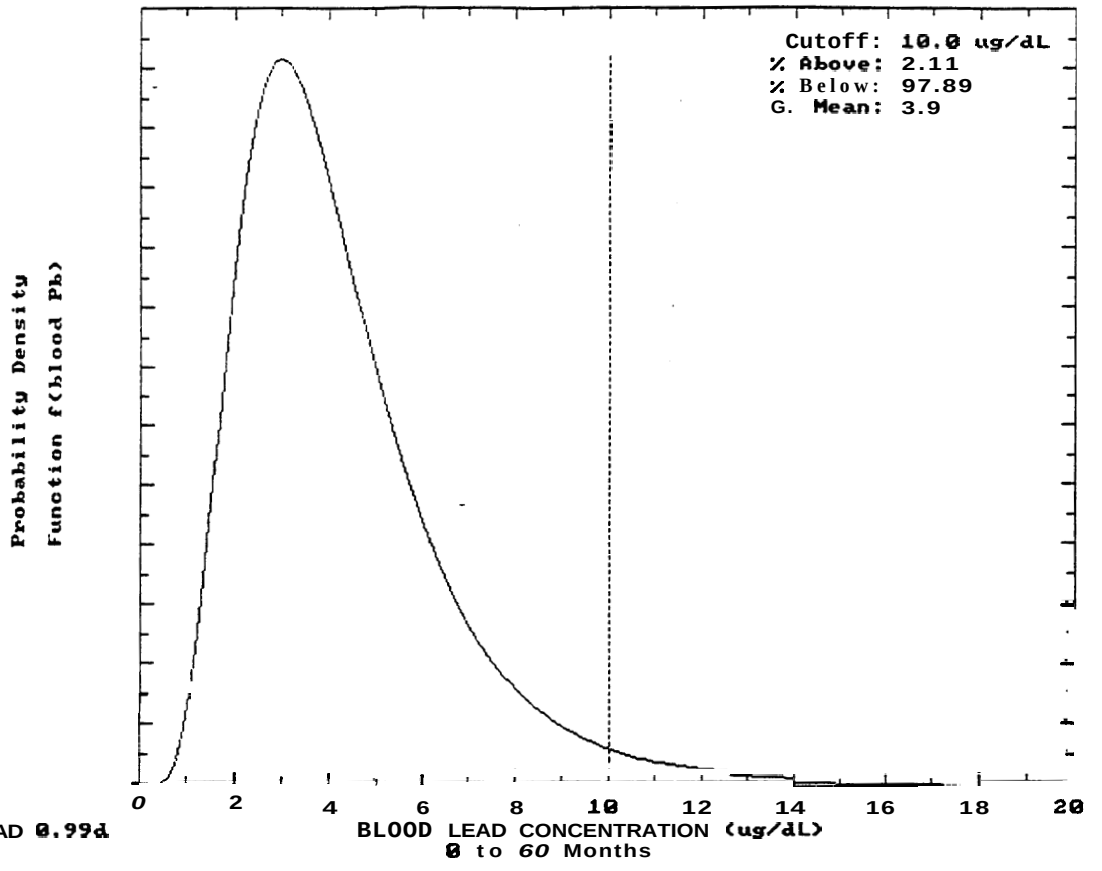
1-2:	2.63	7.45	0.00	0.03
2-3:	2.98	7.82	0.00	0.06
3-4:	2.90	8.06	0.00	0.07
4-5:	2.82	8.44	0.00	0.07
5-6:	2.99	8.93	0.00	0.09
6-7:	3.31	9.11	0.00	0.09

#1



WAG 6

532066

#2

WA66

LEAD MODEL Version 0.99d

AIR CONCENTRATION: 0.100 ug Pb/m3 DEFAULT
Indoor AIR Pb Conc: 30.0 percent of outdoor.
Other AIR Parameters:

Age	Time Outdoors (hr)	Vent. Rate (m3/day)	Lung Abs. (%)
0-1	1.0	2.0	32.0
1-2	2.0	3.0	32.0
2-3	3.0	5.0	32.0
3-4	4.0	5.0	32.0
4-5	4.0	5.0	32.0
5-6	4.0	7.0	32.0
6-7	4.0	7.0	32.0

DIET: DEFAULT

DRINKING WATER Conc: 114.00 ug Pb/L
WATER Consumption: DEFAULT

SOIL & DUST:
Soil: constant conc.
Dust: Multiple Source Analysis

Age	Surface Soil (ug Pb/g)	House Dust (ug Pb/g)
0-1	8.0	15.6
1-2	8.0	15.6
2-3	8.0	15.6
3-4	8.0	15.6
4-5	8.0	15.6
5-6	8.0	15.6
6-7	8.0	15.6

Additional Dust Sources: None DEFAULT
Soil contribution conversion factor: 0.70
Air contribution conversion factor: 100.0

PAINT Intake: 0.00 ug Pb/day DEFAULT

MATERNAL CONTRIBUTION: Infant Model
Maternal Blood Conc: 2.50 ug Pb/dL

CALCULATED BLOOD Pb and Pb UPTAKES:

YEAR	Blood Level (ug/dL)	Total Uptake (ug/day)	Soil+Dust Uptake (ug/day)
0.5-1:	6.7	12.54	0.27
1-2:	9.9	25.39	0.39
2-3:	9.9	27.18	0.40
3-4:	9.7	28.22	0.41
4-5:	9.5	29.50	0.31
5-6:	9.4	31.38	0.28
6-7:	9.0	32.41	0.27

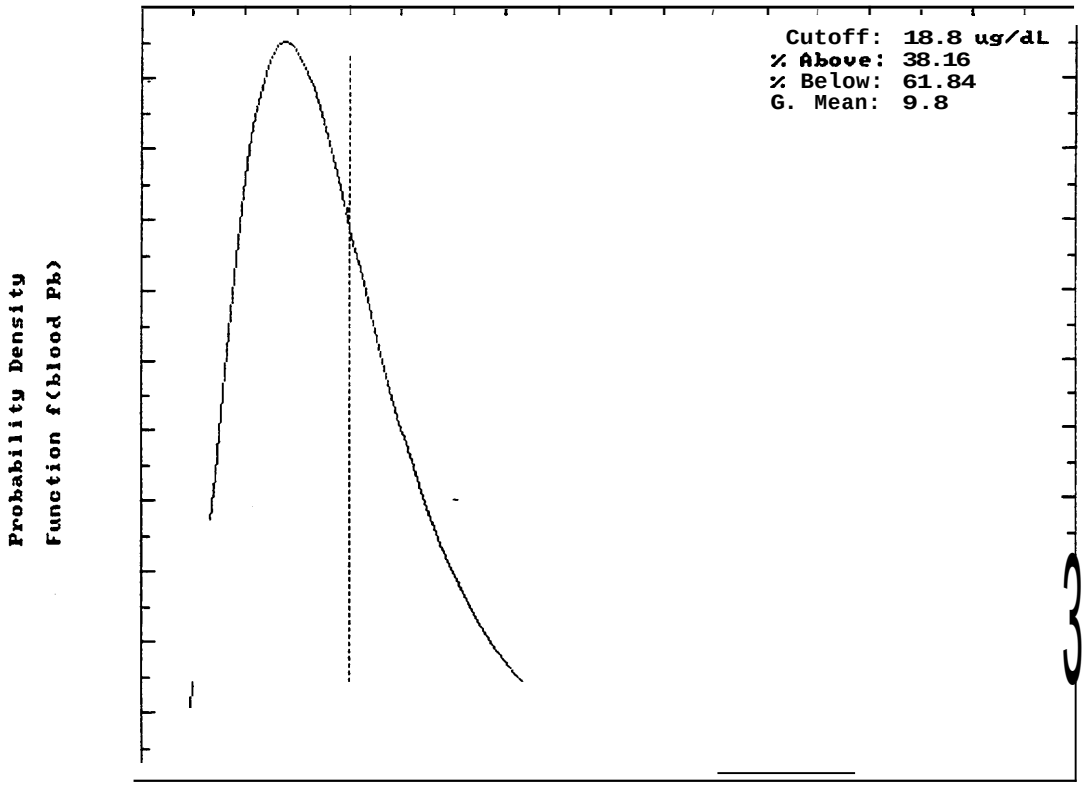
YEAR	Diet Uptake (ug/day)	Water Uptake (ug/day)	Paint Uptake (ug/day)	Air Uptake (ug/day)
0.5-1:	2.39	9.86	0.00	0.02

532067

#2

1-2:	2.30	22.67	0.00	0.03
2-3:	2.64	24.08	0.00	0.06
3-4:	2.60	25.14	0.00	0.07
4-5:	2.55	26.58	0.00	0.07
5-6:	2.71	28.30	0.00	0.09
6-7:	3.02	29.03	0.00	0.09

2


Cutoff: 18.8 ug/dL
% Above: 38.16
% Below: 61.84
G. Mean: 9.8
Probability Density
Function f(blood Pb)

3

WAG 6

#3
WA66

LEAD MODEL Version 0.99d

AIR CONCENTRATION: 0.100 ug Pb/m3 DEFAULT
Indoor AIR Pb Conc: 30.0 percent of outdoor.
Other AIR Parameters:

Age	Time Outdoors (hr)	Vent. Rate (m3/day)	Lung Abs. (%)
0-1	1.0	2.0	32.0
1-2	2.0	3.0	32.0
2-3	3.0	5.0	32.0
3-4	4.0	5.0	32.0
4-5	4.0	5.0	32.0
5-6	4.0	7.0	32.0
6-7	4.0	7.0	32.0

DIET: DEFAULT

DRINKING WATER Conc: 4.00 ug Pb/L DEFAULT
WATER Consumption: DEFAULT

SOIL & DUST:
Soil: constant conc.
Dust: Multiple Source Analysis

Age	Surface Soil (ug Pb/g)	House Dust (ug Pb/g)
0-1	8.0	15.6
1-2	8.0	15.6
2-3	8.0	15.6
3-4	8.0	15.6
4-5	8.0	15.6
5-6	8.0	15.6
6-7	8.0	15.6

Additional Dust Sources: None **DEFAULT**
Soil contribution conversion factor: 0.70
Air contribution conversion factor: 100.0

PAINT Intake: 0.00 ug Pb/day DEFAULT

MATERNAL CONTRIBUTION: Infant Model
Maternal Blood Conc: 2.50 ug Pb/dL

CALCULATED BLOOD Pb and Pb UPTAKES:

YEAR	Blood Level (ug/dL)	Total Uptake (ug/day)	Soil+Dust Uptake (ug/day)
0.5-1:	1.9	3.37	0.30
1-2:	1.8	4.26	0.48
2-3:	1.7	4.68	0.48
3-4:	1.6	4.61	0.48
4-5:	1.5	4.43	0.36
5-6:	1.4	4.65	0.32
6-7:	1.4	4.98	0.30

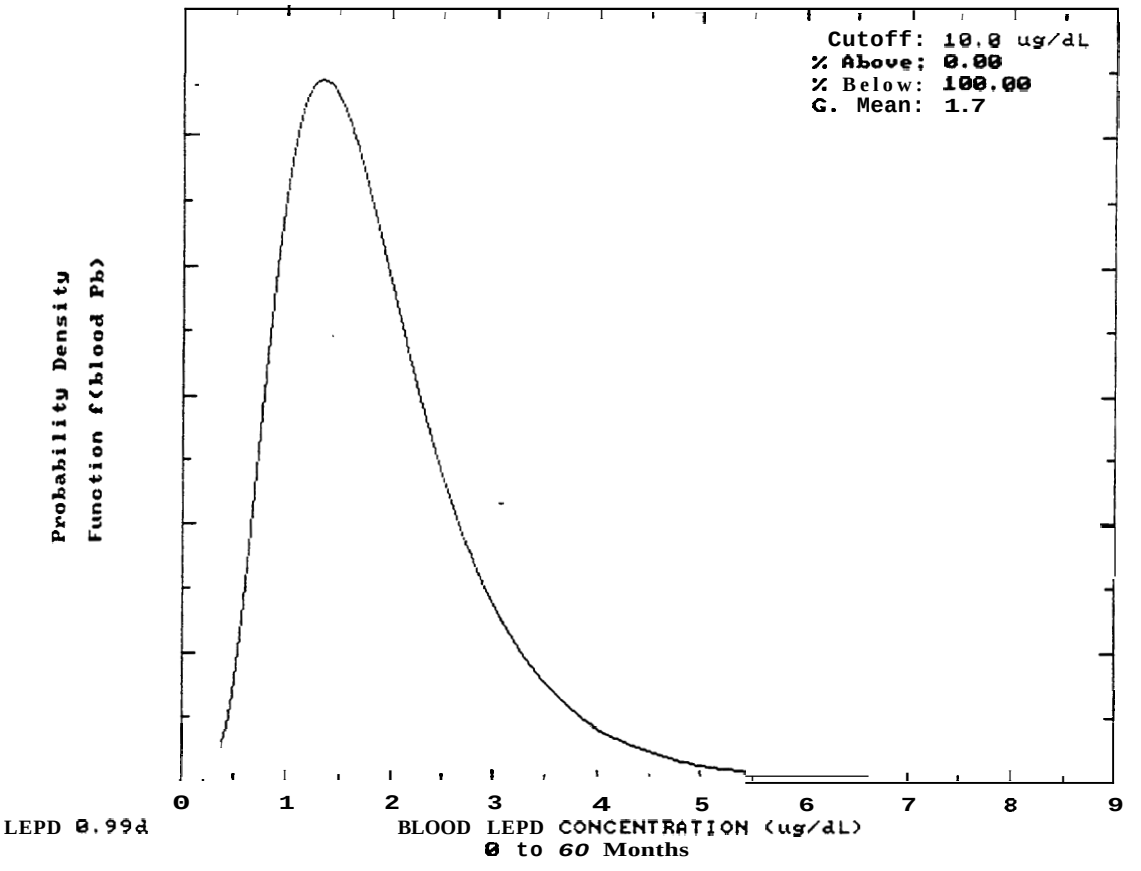
YEAR	Diet Uptake (ug/day)	Water Uptake (ug/day)	Paint Uptake (ug/day)	Air Uptake (ug/day)
0.5-1:	2.66	0.39	0.00	0.02

532070

#3

1-2:	2.79	0.96	0.00	0.03
2-3:	3.14	1.01	0.00	0.06
3-4:	3.03	1.03	0.00	0.07
4-5:	2.93	1.07	0.00	0.07
5-6:	3.10	1.13	0.00	0.09
6-7:	3.42	1.15	0.00	0.09

#3



WAG6

532072

#7

WA66

LEAD MODEL Version 0.99d

AIR CONCENTRATION: **0.100** ug Pb/m3 DEFAULT
Indoor **AIR** Pb Conc: 30.0 percent of outdoor.
Other AIR Parameters:

Age	Time Outdoors (hr)	Vent. Rate (m3/day)	Lung Abs. (%)
0-1	1.0	2.0	32.0
1-2	2.0	3.0	32.0
2-3	3.0	5.0	32.0
3-4	4.0	5.0	32.0
4-5	4.0	5.0	32.0
5-6	4.0	7.0	32.0
6-7	4.0	7.0	32.0

DIET: DEFAULT

DRINKING WATER Conc: 32.70 ug Pb/L
WATER Consumption: DEFAULT

SOIL & DUST:
Soil: constant conc. Default
Dust: Multiple Source Analysis

Age	Soil (ug Pb/g)	House Dust (ug Pb/g)
0-1	200.0	**150.0**
1-2	200.0	**150.0**
2-3	200.0	**150.0**
3-4	200.0	**150.0**
4-5	200.0	**150.0**
5-6	**200.0**	**150.0**
6-7	**200.0**	**150.0**

Additional Dust Sources: None DEFAULT
Soil contribution conversion factor: 0.70
Air contribution conversion factor: 100.0

PAINT Intake: 0.00 ug Pb/day DEFAULT

MATERNAL CONTRIBUTION: Infant **Model**
Maternal Blood Conc: **2.50** **ug** Pb/dL

CALCULATED BLOOD Pb and Pb UPTAKES:

YEAR	Blood Level (ug/dL)	Total Uptake (ug/day)	Soil+Dust Uptake (ug/day)
0.5-1:	**5.1**	**9.39**	3.95
1-2:	**6.4**	**15.73**	6.08
2-3:	**6.1**	**16.60**	6.17
3-4:	5.9	16.91	6.27
4-5:	5.3	15.81	4.74
5-6:	5.0	16.10	4.31
6-7:	4.6	16.40	4.09

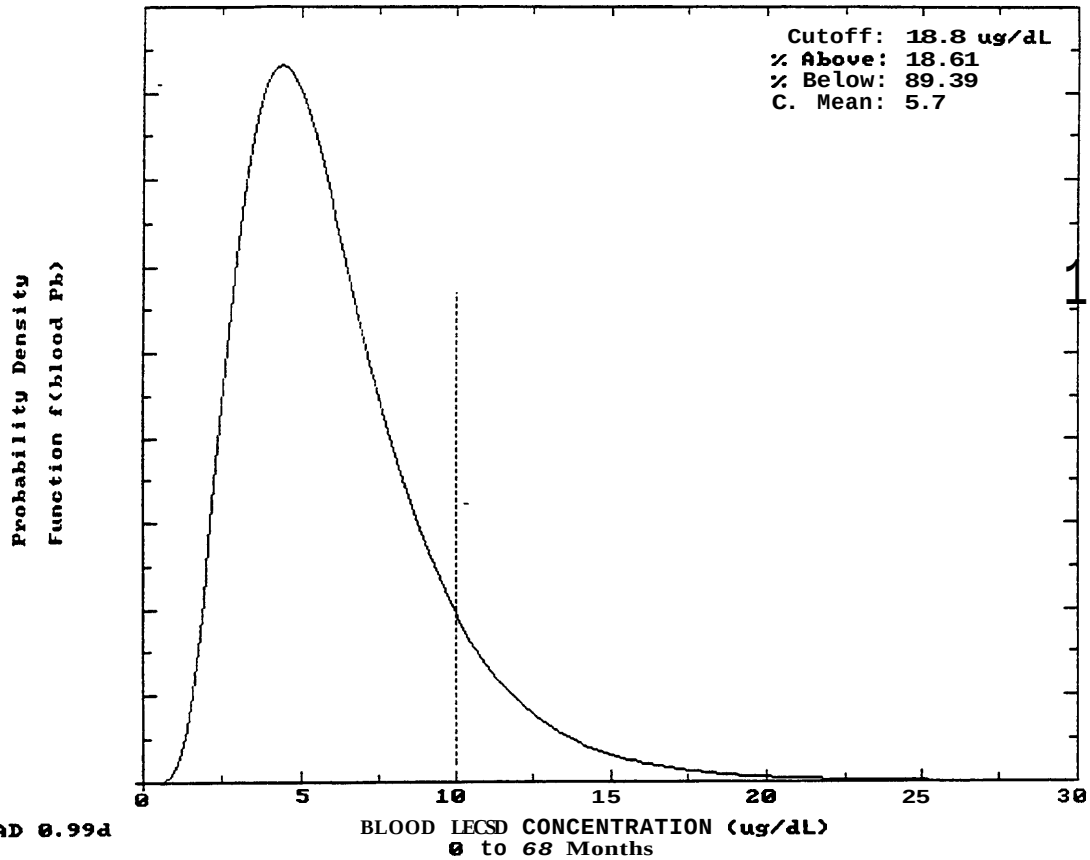
YEAR	Diet Uptake (ug/day)	Water Uptake (ug/day)	Paint Uptake (ug/day)	Air Uptake (ug/day)
0.5-1:	2.48	2.94	0.00	0.02

532073

#4

1-2:	2.51	7.11	0.00	0.03
2-3:	2.86	7.50	0.00	0.06
3-4:	2.80	7.78	0.00	0.07
4-5:	2.75	8.24	0.00	0.07
5-6:	2.93	a.77	0.00	0.09
6-7:	3.25	8.97	0.00	0.09

#4



LEAD 0.99d

WAG 6

532075

#5

WA66

LEAD MODEL Version 0.99d

AIR CONCENTRATION: 0.100 ug Pb/m3 DEFAULT
Indoor AIR Pb Conc: 30.0 percent of outdoor.
Other AIR Parameters:

Age	Time Outdoors (hr)	Vent. Rate (m3/day)	Lung Abs. (%)
0-1	1.0	2.0	32.0
1-2	2.0	3.0	32.0
2-3	3.0	5.0	32.0
3-4	4.0	5.0	32.0
4-5	4.0	5.0	32.0
5-6	4.0	7.0	32.0
6-7	4.0	7.0	32.0

DIET: DEFAULT

DRINKING WATER Conc: 114.00 ug Pb/L
WATER Consumption: .DEFAULT

SOIL & DUST:
soil: constant conc. Default
Dust: Multiple Source Analysis

Age	Soil (ug Pb/g)	House Dust (ug Pb/g)
0-1	200.0	150.0
1-2	200.0	150.0
2-3	200.0	150.0
3-4	200.0	150.0
4-5	200.0	150.0
5-6	200.0	150.0
6-7	200.0	150.0

Additional Dust Sources: None DEFAULT
Soil contribution conversion factor: 0.70
Air contribution conversion factor: 100.0

PAINT Intake: 0.00 ug Pb/day DEFAULT

MATERNAL CONTRIBUTION: Infant Model
Maternal Blood Conc: 2.50 ug Pb/dL

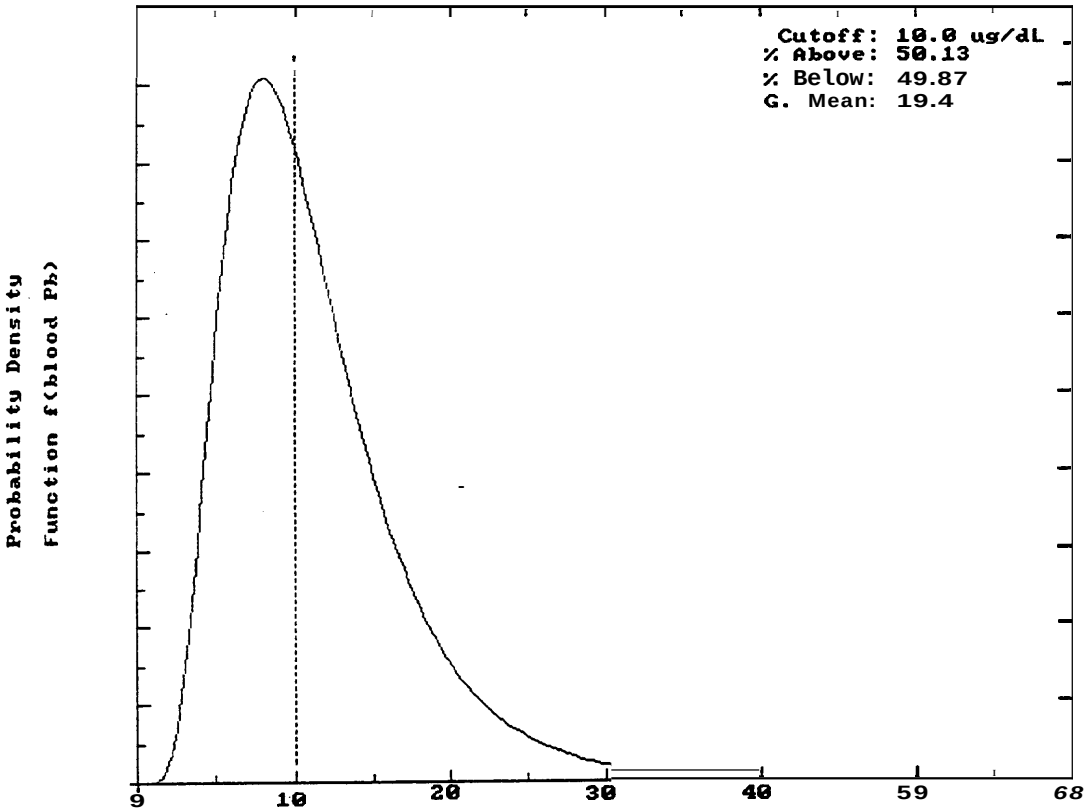
CALCULATED BLOOD Pb and Pb UPTAKES:

YEAR	Blood Level (ug/dL)	Total Uptake (ug/day)	Soil+Dust Uptake (ug/day)
0.5-1:	8.2	15.52	3.67
1-2:	11.5	29.42	5.35
2-3:	11.4	31.39	5.49
3-4:	11.1	32.64	5.64
4-5:	10.7	32.92	4.30
5-6:	10.4	34.53	3.92
6-7:	9.8	35.43	3.74

YEAR	Diet Uptake (ug/day)	Water Uptake (ug/day)	Paint Uptake (ug/day)	Air Uptake (ug/day)
0.5-1:	2.31	9.52	0.00	0.02

532076

#5



LEAD 0.99d

WAG 6

532077

#5

1-2:	2.21	21.83	0.00	0.03
2-3:	2.55	23.29	0.00	0.06
3-4:	2.52	24.41	0.00	0.07
4-5:	2.50	26.06	0.00	0.07
5-6:	2.67	27.84	0.00	0.09
6-7:	2.98	28.62	0.00	0.09

#6
WAG 6
LEAD MODEL Version 0.99d

AIR CONCENTRATION: **0.000** ug Pb/m3
Indoor AIR Pb Conc: 30.0 percent of outdoor.
Other AIR Parameters:

Age	Time Outdoors (hr)	Vent. Rate (m3/day)	Lung Abs. (%)
0-1	1.0	2.0	32.0
1-2	2.0	3.0	32.0
2-3	3.0	5.0	32.0
3-4	4.0	5.0	32.0
4-5	4.0	5.0	32.0
5-6	4.0	7.0	32.0
6-7	4.0	7.0	32.0

DIET: daily Pb consumption by year as follows:
0-1: **0.00** ug Pb/day
1-2: 0.00 ug Pb/day
2-3: **0.00** ug Pb/day
3-4: 0.00 ug Pb/day
4-5: 0.00 ug Pb/day
5-6: **0.00** ug Pb/day
6-7: **0.00** ug Pb/day

DRINKING WATER **Conc:** **32.70** ug Pb/L
WATER Consumption: DEFAULT

SOIL & DUST:
Soil: constant conc.
Dust: Multiple Source Analysis

Age	Soil (ug Pb/g)	House Dust (ug Pb/g)
0-1	0.0	0.0
1-2	0.0	0.0
2-3	0.0	0.0
3-4	0.0	0.0
4-5	0.0	0.0
5-6	0.0	0.0
6-7	0.0	0.0

Additional Dust Sources: None DEFAULT
Soil contribution conversion factor: 0.70
Air contribution conversion factor: 100.0

PAINT Intake: 0.00 ug Pb/day DEFAULT

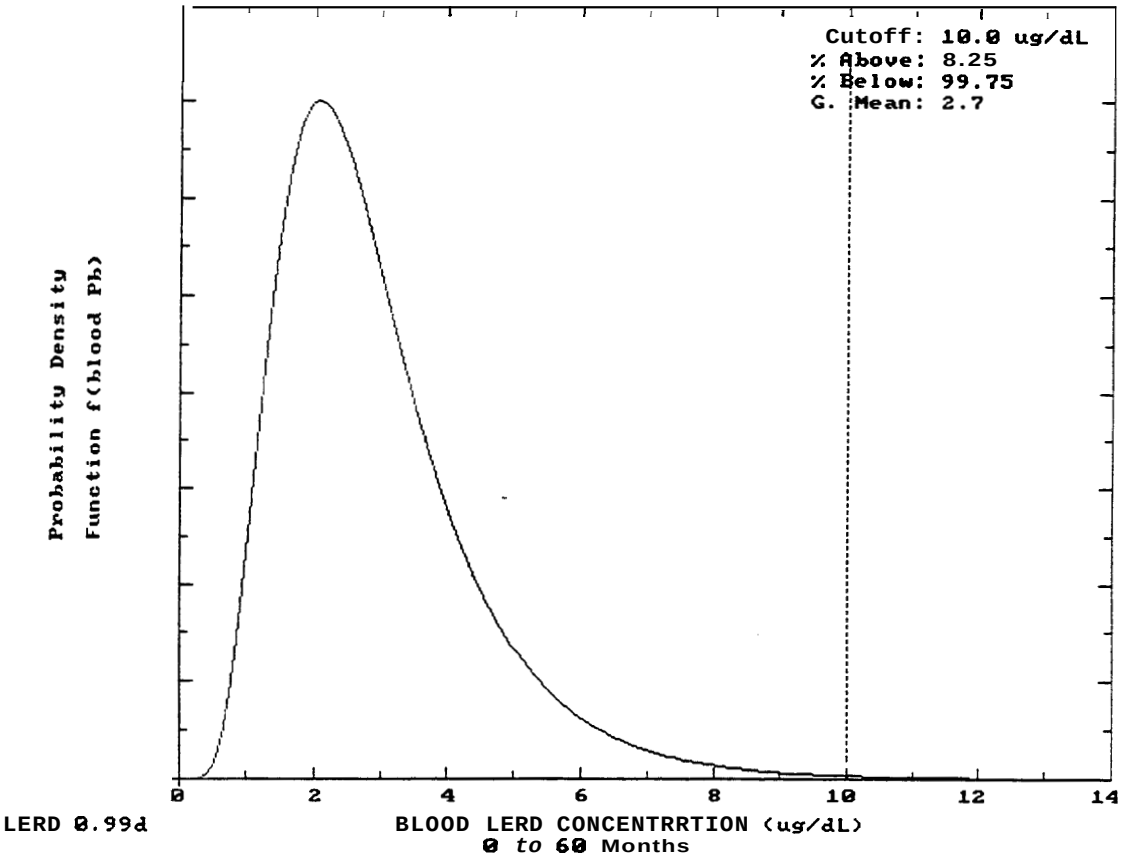
MATERNAL CONTRIBUTION: Infant Model
Maternal Blood Conc: **2.50** ug Pb/dL

CALCULATED BLOOD Pb and Pb UPTAKES:

YEAR	Blood Level (ug/dL)	Total Uptake (ug/day)	Soil+Dust Uptake (ug/day)
0.5-1:	1.7	3.16	0.00
1-2:	3.0	7.64	0.00
2-3:	3.0	8.01	0.00
3-4:	2.9	8.22	0.00

532079

#6



WAG 6

532080

#6

4-5:	2.8	8.58	0.00
5-6:	2.8	9.07	0.00
6-7:	2.6	9.26	0.00

YEAR	Diet Uptake (ug/day)	Water Uptake (ug/day)	Paint Uptake (ug/day)	Air Uptake (ug/day)
0.5-1:	0.00	3.16	0.00	0.00
1-2:	0.00	7.64	0.00	0.00
2-3:	0.00	8.01	0.00	0.00
3-4:	0.00	8.22	0.00	0.00
4-5:	0.00	8.58	0.00	0.00
5-6:	0.00	9.07	0.00	0.00
6-7:	0.00	9.26	0.00	0.00

#7

WAG 6

EAD MODEL Version 0.99d

AIR CONCENTRATION: 0.000 ug Pb/m3
Indoor AIR Pb Conc: 30.0 percent of outdoor.
Other AIR Parameters:

Age	Time Outdoors (hr)	Vent. Rate (m3/day)	Lung Abs. (%)
0-1	1.0	2.0	32.0
1-2	2.0	3.0	32.0
2-3	3.0	5.0	32.0
3-4	4.0	5.0	32.0
4-5	4.0	5.0	32.0
5-6	4.0	7.0	32.0
6-7	4.0	7.0	32.0

DIET: daily Pb consumption by year as follows:

0-1: 0.00 ug Pb/day
1-2: 0.00 ug Pb/day
2-3: 0.00 ug Pb/day
3-4: 0.00 ug Pb/day
4-5: 0.00 ug Pb/day
5-6: 0.00 ug Pb/day
6-7: 0.00 ug Pb/day

DRINKING WATER Conc: 114.00 ug Pb/L
WATER Consumption: DEFAULT

31L & DUST:
Soil: constant conc.
Dust: Multiple Source Analysis

Age	Soil (ug Pb/g)	House Dust (ug Pb/g)
0-1	0.0	0.0
1-2	0.0	0.0
2-3	0.0	0.0
3-4	0.0	0.0
4-5	0.0	0.0
5-6	0.0	0.0
6-7	0.0	0.0

Additional Dust Sources: None DEFAULT
Soil contribution conversion factor: 0.70
Air contribution conversion factor: 100.0

PAINT Intake: 0.00 ug Pb/day DEFAULT

MATERNAL CONTRIBUTION: Infant Model
Maternal Blood Conc: 2.50 ug Pb/dL

CALCULATED BLOOD Pb and Pb UPTAKES:

YEAR	Blood Level (ug/dL)	Total Uptake (ug/day)	Soil+Dust Uptake (ug/day)
.5-1:	5.5	10.14	0.00
1-2:	9.0	23.14	0.00
2-3:	9.0	24.57	0.00
3-4:	8.8	25.58	0.00

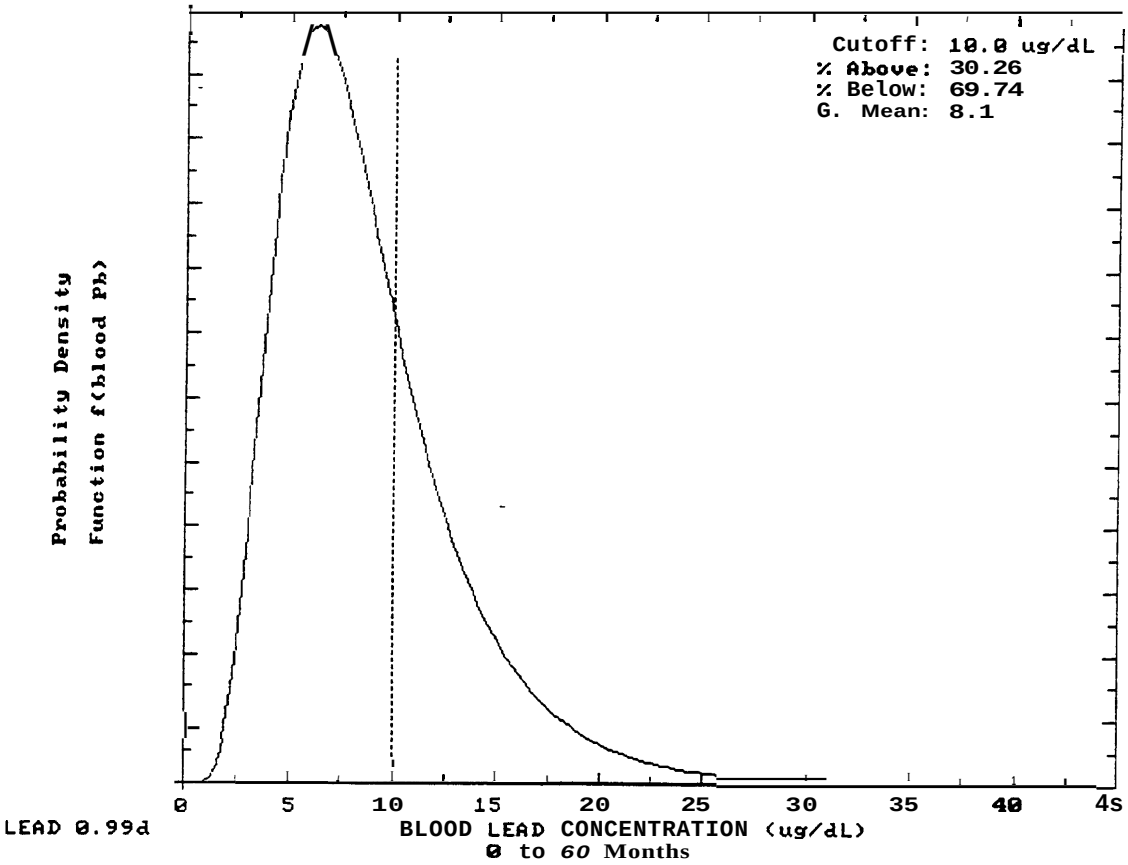
532082

#7

4-5:	8.7	26.96	0.00
5-6:	8.6	28.68	0.00
6-7:	8.2	29.42	0.00

YEAR	Diet Uptake (ug/day)	Water Uptake (ug/day)	Paint Uptake (ug/day)	Air Uptake (ug/day)
0.5-1:	0.00	10.14	0.00	0.00
1-2:	0.00	23.14	0.00	0.00
2-3:	0.00	24.57	0.00	0.00
3-4:	0.00	25.58	0.00	0.00
4-5:	0.00	26.96	0.00	0.00
5-6:	0.00	28.68	0.00	0.00
6-7:	0.00	29.42	0.00	0.00

#7



WAG 6

532084

#8
Sector 7 (NW)
LEAD MODEL Version 0.99d

AIR CONCENTRATION: 0.100 ug Pb/m3 DEFAULT
Indoor AIR Pb Conc: 30 0 percent of outdoor.
Other AIR Parameters:

Age	Time Outdoors (hr)	Vent. Rate (m3/day)	Lung Abs. (%)
0-1	1.0	2.0	32.0
1-2	2.0	3.0	32.0
2-3	3.0	5.0	32.0
3-4	4.0	5.0	32.0
4-5	4.0	5.0	32.0
5-6	4.0	7.0	32.0
6-7	4.0	7.0	32.0

DIET: DEFAULT

DRINKING WATER Conc: 32.70 ug Pb/L
WATER Consumption: DEFAULT

SOIL & DUST:
Soil: constant conc.
Dust: Multiple Source Analysis

Age	Surface Soil (ug Pb/g)	House Dust (ug Pb/g)
0-1	13.0	19.1
1-2	13.0	19.1
2-3	13.0	19.1
3-4	13.0	19.1
4-5	13.0	19.1
5-6	13.0	19.1
6-7	13.0	19.1

Additional Dust Sources: None DEFAULT
Soil contribution conversion factor: 0.70
Air contribution conversion factor: 100.0

PAINT Intake: 0.00 ug Pb/day DEFAULT

MATERNAL CONTRIBUTION: Infant Model
Maternal Blood Conc: 2.50 ug Pb/dL

CALCULATED BLOOD Pb and Pb UPTAKES:

YEAR	Blood Level (ug/dL)	Total Uptake (ug/day)	Soil+Dust Uptake (ug/day)
0.5-1:	3.3	6.04	0.39
1-2:	4.3	10.71	0.60
2-3:	4.2	11.46	0.61
3-4:	4.1	11.63	0.62
4-5:	3.9	11.78	0.46
5-6:	3.8	12.42	0.42
6-7:	3.6	12.90	0.39

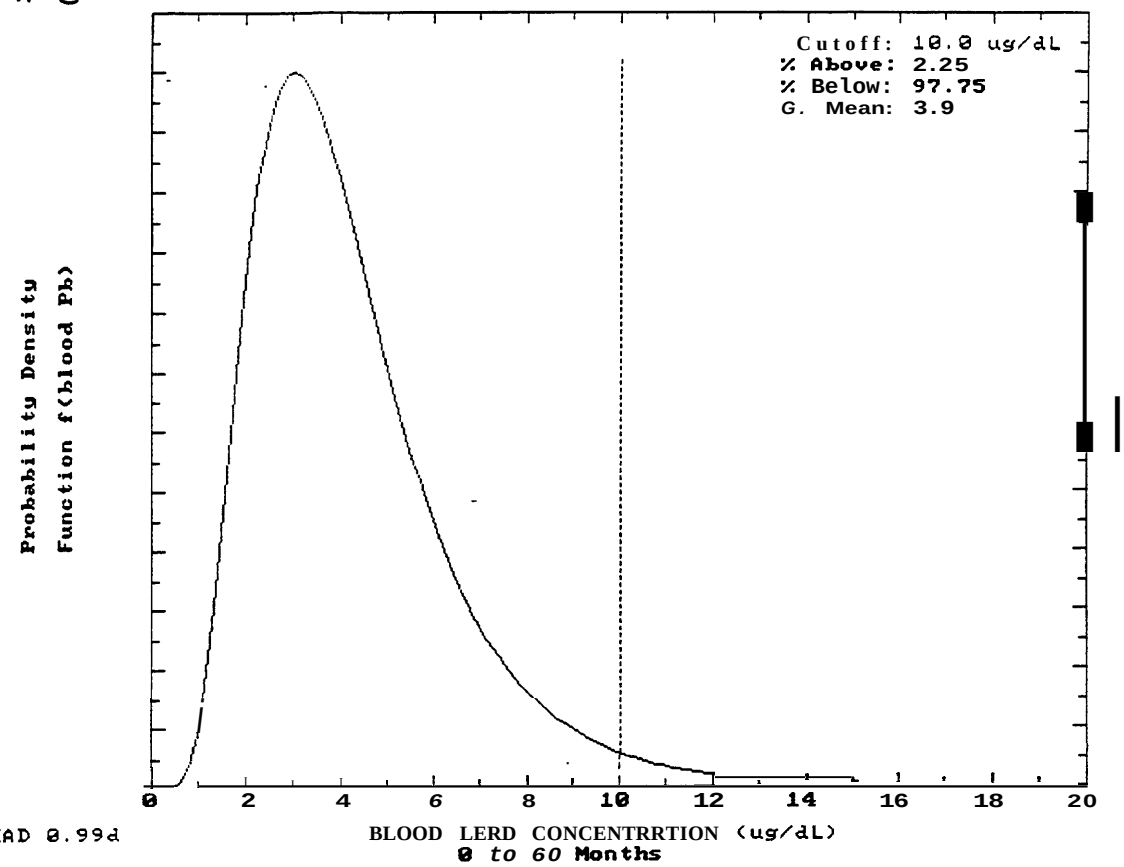
YEAR	Diet Uptake (ug/day)	Water Uptake (ug/day)	Paint Uptake (ug/day)	Air Uptake (ug/day)
0.5-1:	2.58	3.05	0.00	0.02

532085

8

1-2:	2.63	7.44	0.00	0.03
2-3:	2.98	**7.01**	0.00	0.06
3-4:	2.90	8.05	0.00	0.07
4-5:	2.82	8.43	0.00	0.07
5-6:	2.98	8.93	0.00	0.09
6-7:	3.31	**9.11**	0.00	0.09

8


Cutoff: 10.0 ug/dL
% Above: 2.25
% Below: 97.75
G. Mean: 3.9
Probability Density
Function f(blood Pb)
0
2
4
6
8
10
12
14
16
18
20
LEAD 0.99d
BLOOD LERD CONCENTRRTION (ug/dL)
0 to 60 Months

Sector 7 (NW)

#9
Sector 7 (NW)
LEAD MODEL Version 0.99d

AIR CONCENTRATION: 0.100 ug Pb/m3 DEFAULT
Indoor AIR Pb Conc: 30.0 percent of outdoor.
Other AIR Parameters:

Age	Time Outdoors (hr)	Vent. Rate (m3/day)	Lung Abs. (%)
0-1	1.0	2.0	32.0
1-2	2.0	3.0	32.0
2-3	3.0	5.0	32.0
3-4	4.0	5.0	32.0
4-5	4.0	5.0	32.0
5-6	4.0	7.0	32.0
6-7	4.0	7.0	32.0

DIET: DEFAULT

DRINKING WATER Conc: 114.00 ug Pb/L
WATER Consumption: DEFAULT

SOIL & DUST:
Soil: constant conc.
Dust: Multiple Source Analysis

Age	Soil (ug Pb/g)	House Dust (ug Pb/g)
0-1	13.0	19.1
1-2	13.0	19.1
2-3	13.0	19.1
3-4	13.0	19.1
4-5	13.0	19.1
5-6	13.0	19.1
6-7	13.0	19.1

Additional Dust Sources: None DEFAULT
Soil contribution conversion factor: 0.70
Air contribution conversion factor: 100.0

PAINT Intake: 0.00 ug Pb/day DEFAULT

MATERNAL CONTRIBUTION: Infant Model
Maternal Blood Conc: 2.50 ug Pb/dL

CALCULATED BLOOD Pb and Pb UPTAKES:

YEAR	Blood Level (ug/dL)	Total Uptake (ug/day)	Soil+Dust Uptake (ug/day)
0.5-1:	6.7	12.62	0.36
1-2:	10.0	25.50	0.53
2-3:	9.9	27.29	0.54
3-4:	9.7	28.34	0.55
4-5:	9.6	29.59	0.42
5-6:	9.4	31.47	0.38
6-7:	9.0	32.49	0.36

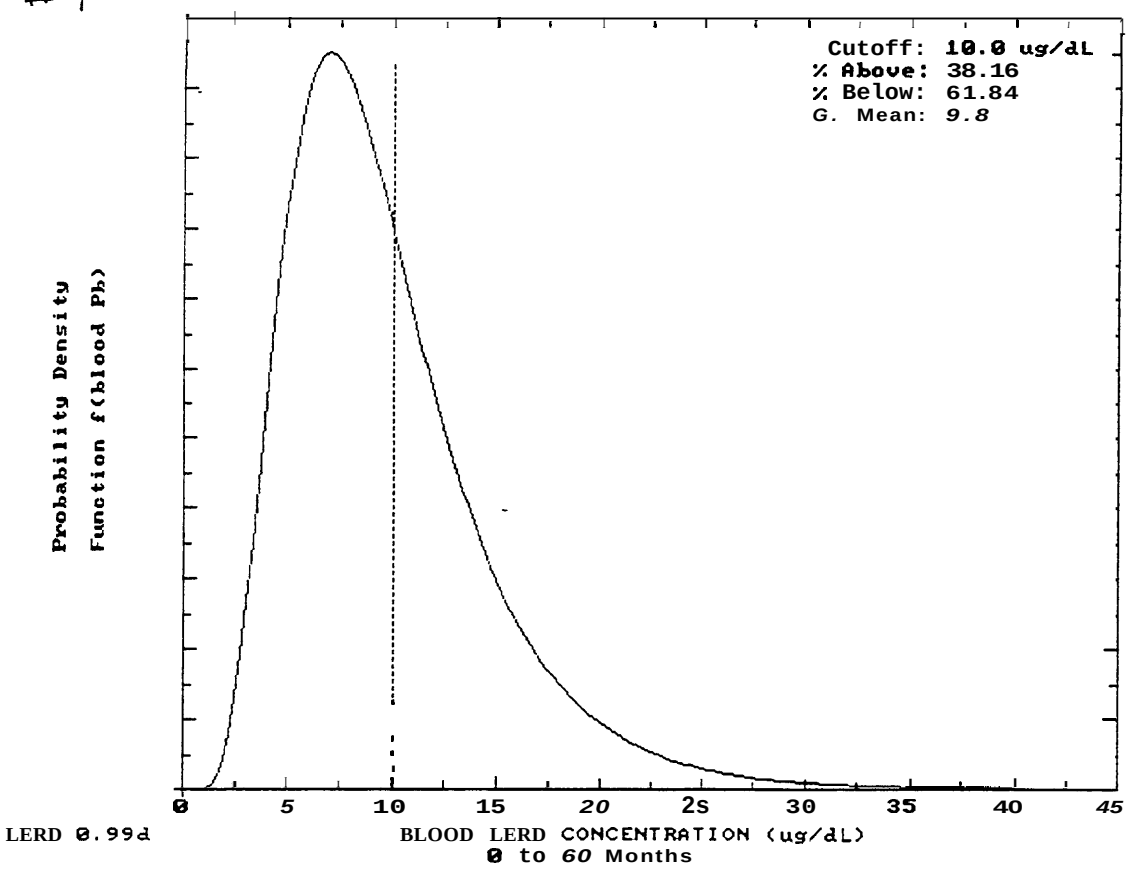
YEAR	Diet Uptake (ug/day)	Water Uptake (ug/day)	Paint Uptake (ug/day)	Air Uptake (ug/day)
0.5-1:	2.39	9.85	0.00	0.02

532088

#9

1-2:	2.30	22.64	0.00	0.03
2-3:	2.63	24.06	0.00	0.06
3-4:	2.59	25.12.	0.00	0.07
4-5:	2.55	26.56	0.00	0.07
5-6:	2.71	28.28	0.00	0.09
6-7:	3.02	29.01	0.00	0.09

#9



Sector 7 (NW)

532090

10
Sector 7 (NW)

LEAD MODEL Version 0.99d

AIR CONCENTRATION: 0.100 ug Pb/m3 DEFAULT
Indoor AIR Pb Conc: 30.0 percent of outdoor.
Other AIR Parameters:

Age	Time Outdoors (hr)	Vent. Rate (m3/day)	Lung Abs. (%)
0-1	1.0	2.0	32.0
1-2	2.0	3.0	32.0
2-3	3.0	5.0	32.0
3-4	4.0	5.0	32.0
4-5	4.0	5.0	32.0
5-6	4.0	7.0	32.0
6-7	4.0	7.0	32.0

DIET: DEFAULT

DRINKING WATER Conc: 4.00 ug Pb/L DEFAULT
WATER Consumption: DEFAULT

SOIL & DUST:
Soil: constant conc.
Dust: Multiple Source Analysis

Age	Soil (ug Pb/g)	House Dust (ug Pb/g)
0-1	13.0	19.1
1-2	13.0	19.1
2-3	13.0	19.1
3-4	13.0	19.1
4-5	13.0	19.1
5-6	13.0	19.1
6-7	13.0	19.1

Additional Dust Sources: None DEFAULT
Soil contribution conversion factor: 0.70
Air contribution conversion factor: 100.0

PAINT Intake: 0.00 ug Pb/day DEFAULT

MATERNAL CONTRIBUTION: Infant Model
Maternal Blood Conc: 2.50 ug Pb/dL

CALCULATED BLOOD Pb and Pb UPTAKES:

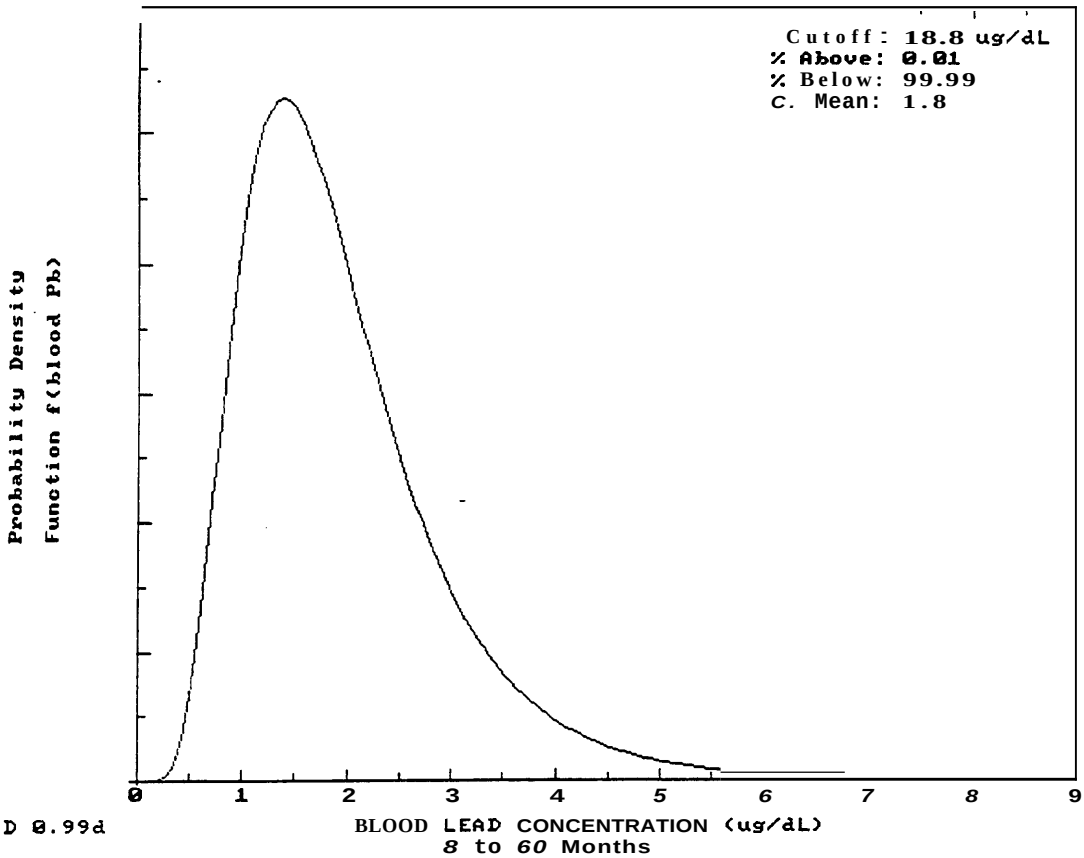
YEAR	Blood Level (ug/dL)	Total Uptake (ug/day)	Soil+Dust Uptake (ug/day)
0.5-1:	1.9	3.47	0.40
1-2:	1.9	4.42	0.64
2-3:	1.8	4.04	0.64
3-4:	1.7	4.77	0.64
4-5:	1.5	4.55	0.48
5-6:	1.5	4.76	0.43
6-7:	1.4	5.08	0.41

YEAR	Diet Uptake (ug/day)	Water Uptake (ug/day)	Paint Uptake (ug/day)	Air Uptake (ug/day)
0.5-1:	2.66	0.38	0.00	0.02

#10

1-2:	2.78	0.96	0.00	0.03
2-3:	3.13	1.00	0.00	0.06
3-4:	3.03	1.03	0.00	0.07
4-5:	2.93	1.07	0.00	0.07
5-6:	3.10	1.13	0.00	0.09
6-7:	3.42	1.15	0.00	0.09

#10



LEAD 0.99d

Sector 7 (NW)

532093

APPENDIX H

CENTRAL TENDENCY EXPOSURE PARAMETERS

DEC 1 6 1993

ATTACHMENT 2

SUPERFUND'S STANDARD DEFAULT EXPOSURE FACTORS FOR THE CENTRAL TENDENCY AND REASONABLE MAXIMUM EXPOSURE

PRELIMINARY REVIEW DRAFT (5/5/93)

532096

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1.0 INTRODUCTION

Last spring, EPA's Risk Assessment Council released a memorandum entitled "Guidance on Risk Characterization for Risk Managers and Risk Assessors" (U.S. EPA 1992) in which the council advocated greater interface between risk assessment and risk management, greater discussion of confidence and uncertainty in the risk assessment, and presentation of the range of possible exposures including the use of multiple risk descriptors. Focusing specifically on this last point regarding the exposure assessment, the Risk Assessment Council (RAC) clearly indicated that it expects all risk assessments "to address or provide descriptions of (1) individual risk to include the central tendency and high end portions of the risk distribution, (2) important subgroups of the population such as highly exposed or highly susceptible groups or individuals, if known, and (3) population risk".

For several years now, the Superfund program has considered exposure to sensitive subgroups or populations as applicable and has been estimating individual risk corresponding to the reasonable maximum exposure (RME). The Risk Assessment Guidance for Superfund: Human Health Evaluation Manual (Part A) (U.S. EPA 1989) also known as RAGS, defines the RME as the highest exposure that is reasonably expected to occur at a site and in practice is estimated by combining 90 - 95th percentile values for some but not all exposure parameters. Shortly after RAGS was released, the Superfund Program developed the "Standard Default Exposure Factors" Supplemental Guidance (U.S. EPA 1991) to promote consistency in the evaluation of the RME exposure in baseline risk assessments when site-specific data was lacking. It is the position of the Superfund Program that RAGS and the standard default values for the RME are consistent with the Risk Assessment Council's expectation to provide a description of the high-end portion of the risk distribution.

Until the guidance contained herein was developed, existing Superfund guidance did not provide a framework in which to estimate risk corresponding to the central tendency portion of the risk distribution as called for by the Risk Assessment Council. Perceiving a need to fill this void, a workgroup was organized by the Superfund Program in October of 1992, comprised mainly of EPA Regional Superfund risk assessors, with the purpose of defining the central tendency for use in Superfund baseline risk assessments. Over the course of the following six months, the workgroup convened periodically to discuss an approach and identify standard default exposure factors for the central tendency. In doing so, the workgroup also felt it beneficial to review the current default exposure factors for the RME and identify whether any changes were warranted at this time. Consequently, this guidance builds on the concepts identified in RAGS Part A and the Risk Assessment Council's recommendations regarding risk descriptors for the central tendency. It supersedes the standard default exposure factors for the RME

contained in the guidance of the same name (U.S. EPA 1991).

Reliance on the point estimate approach vs. the use of monte carlo techniques to characterize the range of possible exposure estimates was initially discussed by the workgroup as both approaches have merit in addressing the Risk Assessment Council's call to present the range of possible exposures and risk outcomes. In the end, the workgroup concluded that too many issues regarding the practical application of monte carlo techniques remained unresolved and would require a significant investment of time and resources to address such that the traditional point estimate approach to exposure assessments was favored at this time. Additionally, the point estimate approach to exposure was deemed fully consistent with the intent of the Risk Assessment Council in their memo.

As there presently is an agency-wide effort underway to address all of the Risk Assessment Council's recommendations (including the use of monte carlo techniques and revisions to EPA's Exposure Factors Handbook incorporating distributions for the various exposure parameters), the guidance contained herein for the Superfund Program is subject to change and consequently should be viewed as interim in status. When such agency-wide guidance is available, it is expected that it may supersede this guidance.

The guidance contained herein has been developed to encourage a consistent approach to assessing exposures when there is a lack of site-specific data or consensus on which parameter value to choose, given a range of possibilities. Accordingly, the exposure factors presented in this document are generally considered most appropriate and should be used in baseline risk assessments unless alternate or site-specific values can be clearly justified by supporting data.

Supporting data for many of the exposure factors presented in this guidance can be found in the Exposure Factors Handbook (EFH; U.S. EPA, 1990). Additionally, in some instances, peer reviewed studies were utilized to identify suitable default values as well as group consensus techniques when a faced with a great deal of uncertainty. In these instances, either the study or a clearly documented logical approach used to identify default factors is referenced.

The general exposure equation into which these standard *factors* are to be utilized is as follows:

$$\text{Intake} = \frac{C \times IR \times EF \times ED}{BW \times AT} \quad \textit{where}$$

C = Concentration of the contaminant in a given medium
IR = Intake/Contact Rate; the amount of contaminated medium contacted per unit time or event
EF = Exposure Frequency

ED = Exposure Duration
BW = Body Weight
AT = Averaging Time (equal to exposure duration for non-carcinogens and 70 years for carcinogens)

1.1 **Central Tendency (CT)**
The Risk Assessment Council defined the central tendency risk descriptor as either the arithmetic mean risk or the median risk and continues to say that the arithmetic mean risk can be derived by using average values for all the exposure factors though cautions that when dealing with skewed data, the median or 50th percentile may better approximate the midpoint of a distribution (U.S. EPA 1992). As a result, any approach to the identification of default factors for the central tendency should seek to identify average or 50th percentile values whenever possible. In keeping with this approach, default exposure factors approximating the average or 50th percentile value have been identified whenever possible for use in central tendency exposure evaluations.

1.2 **Reasonable Maximum Exposure (RME)**
The Risk Assessment Council defined a high end risk descriptor as one which characterizes risk to an individual at the upper end of the risk distribution. Conceptually, it can be equated to about the 90th percentile of the population distribution (U.S. EPA 1992). As previously indicated, the reasonable maximum exposure (RME) terminology used by the Superfund Program is believed consistent with this description. The Risk Assessment Guidance for Superfund: Human Health Evaluation Manual (Part A) (RAGS) defines the RME as the highest exposure that is reasonably expected to occur at a site and in practice is estimated by combining upper bound (90 - 95th percentile) values for some but not all exposure parameters. Consequently, the Superfund Program will continue to use the current terminology of reasonable maximum exposure (RME) in fulfilling the Risk Assessment Council's mandate to evaluate a high end risk descriptor.

In keeping with the previous default factor guidance (U.S. EPA 1991), 90 to 95th percentile values were targeted in this guidance document when identifying default factors for intake/contact rate, exposure frequency, and exposure duration. An average value or conservative estimate of the media average contacted over the exposure period was targeted for identification of default values for body weight and exposure concentration respectively.

Within the context of this guidance, standard default exposure factors have been identified for various exposure pathways and receptor populations owing to the different nature and magnitude of the assumed exposure. Generally speaking, default values for residential and occupational receptors have been identified and serve as the general basis for organization of this guidance.

1.3 **Residential Exposure**

Residential default exposure factors are generally relevant whenever there are or reasonably may be expected to be residences on or adjacent to the site. The contamination may be on the site itself or may have migrated from it. With the exception of exposure to contaminated soils, distinctions are not usually made in the default parameters for exposures to different aged receptors. Because of the higher intake to body weight ratio presumed to occur during the early years (ages 1-6) for this exposure pathway, special attention should be given to evaluating exposure for this pathway and is discussed in sections 7.4. and 7.5.

1.4 **Occupational Exposure**

Occupational default exposure factors are generally relevant whenever the site serves or may reasonably be expected to serve as a place of temporary or permanent employment. Examples of employment in which one may be presumed to come in contact with contaminated media might include employment at the facility itself or nearby facilities (commercial/ industrial), servicing of the facility (grounds keeper/utility maintenance), or construction of new facilities or the demolition of old facilities on or adjacent to the site.

2.0 CONCENTRATION

Central Tendency and RME

The concentration term in the intake equation is the arithmetic average of the concentration that is contacted over the exposure period. Because of the uncertainty associated with any estimate of exposure concentration, the 95% percent upper confidence limit on the arithmetic average concentration will be used for this variable in both the central tendency and reasonable maximum exposure estimates. Consideration should be given to the data set upon which the 95% upper confidence limit of the mean value is generated so as to represent as closely as possible the nature (acute vs. chronic) of potential exposures.

In some instances, there may be great variability in measured or modeled concentration values such as when too few samples are taken or when model inputs are uncertain. In these cases, the upper confidence limit on the average concentration may even exceed the maximum value observed or predicted. Should this

scenario arise, then the simple arithmetic mean and maximum concentrations should be used for the central tendency and reasonable maximum exposure concentrations respectively.

3.0 EXPOSURE FREQUENCY

The following default exposure frequencies may be utilized unless otherwise indicated or site-specific data is available.

3.1 Central Tendency

3.1.1 Residential

The central tendency residential default exposure frequency of 234 days/year corresponds to the fraction of time estimated that is actually spent at home (64 percent) for both men and women based on a study of time use patterns summarized in the EFH (U.S. EPA 1990). Because the study included both personal and work related travel, a 365 day year was used from which to compute the 64 percent.

3.1.2 Occupational ?

3.2 Reasonable Maximum Exposure

3.2.1 Residential

The RME residential default exposure frequency of 350 days/year is based on the previously identified default value which assumes a two week vacation each year. This is viewed as a reasonably conservative estimate of exposure frequency absent site-specific data.

3.2.2

The RME [redacted]l default exposure frequency of 250, days/year is consistent with the previously identified default value and is based on a 5 day work week with two weeks of vacation each year. This is viewed as a reasonably conservative estimate of exposure frequency absent site-specific data.

4.0 EXPOSURE DURATION

The following default exposure durations may be utilized unless otherwise indicated or site-specific data is available.

4.1 Central Tendency

4.1.1 Residential

The residential central tendency default exposure duration of 9 years is based on data summarized in the EFH (U.S. EPA 1990) in which the average length of residence in the same house of people who own their own home was estimated to be 9 years.

4.1.2 Occupational ?

4.2 Reasonable Maximum Exposure

4.2.1 Residential

The RME residential default exposure duration of 30 years is based on data summarized in the EFH (U.S. EPA 1990) in which the 90th percentile for the length of residence in the same house of people who own their own home was estimated to be 30 years.

4.2.2 Occupational

The RME occupational default exposure duration of 25 years is based upon the 95th percentile for the number of years worked at the same location as reported by the U.S. Bureau of Labor Statistics, 1990.

5.0 BODY WEIGHT

The average body weight is to be utilized for both the central tendency and RME exposure evaluations in keeping with the respective definitions.

5.1 Child

The approximate average body weight of young children (boys and girls combined) under the age of 6 years is approximately 15 kg (U.S. EPA 1990). Distributions of body weights and average body weights and for other age groups can be found in the EFH (U.S. EPA 1990).

5.2 Adult

The average body weight of 70 kg corresponds to the average weight of men and women age 18-75 as reported in EFH (U.S. EPA 1990). Distributions of body weights and average body weights for other age groups can be found in the EFH (U.S. EPA 1990).

6.0 INGESTION OF POTABLE WATER

6.1 Central Tendency

6.1.1. Residential Ingestion Rate

The central tendency potable water ingestion rate for an adult of 1.4 l/day is based on the average intake observed from five studies as summarized in the EFH (U.S. EPA 1990). The observed range reported across the five studies was from 0.26 - 2.8 l/day.

6.1.2 Occupational Ingestion Rate

No data upon which to base a default value.

6.2 Reasonable Maximum Exposure

621 Residential Ingestion Rate

The RME potable water ingestion rate of 2.2 l/day is close to the 90th percentile of values measured and estimated by researchers as summarized in EFH (U.S. EPA 1990). It is also the value currently used by EPA's Office af Water in establishing drinking water standards.

6.2.2. Occupational Ingestion Rate
No data upon which to base a default value.

7.0 INGESTION OF SOIL AND DUST

Due to the importance of the receptor's age and behavioral characteristics, default ingestion rates for this exposure pathway have been established based on the characteristics of the receptor rather than on the location of the exposure (residential vs. occupational). Default ingestion rates for this pathway are as described below in Sections 7.1 and 7.2.

7.1 Central Tendency

7.1.1. Child's Ingestion Rate

Numerous studies have documented that the propensity to ingest non-food items is greatest in the early years of development. As a result, children between the ages of 1 and 6 years are of greatest concern as they are expected to have the greatest exposure to contaminated soils and dusts via ingestion. Numerous studies (tracer studies and estimates of deposition/exposed surface area) have resulted in wide ranging estimates of the amount of soil and dusts ingested by young children making it difficult to identify a single value for use as the central tendency. Additionally, owing to the nature of the experimental studies, it is extremely difficult to separate the contribution to exposure resulting from exterior soils vs. interior dusts. As a result the ingestion rate is reported as the combined rate for soils and dusts.

It was believed by a consensus of workgroup members that the ingestion rate of 100 mg/day as a central tendency ingestion rate for a child between the ages of 1-6 years was within reason based on results using tracer elements (Davis et al. 1990 and Calabrese 1989). Furthermore, 100 mg/day is nearly identical to the ingestion rate for this age group based on age specific values utilized in support of the NAAQS for lead (U.S. EPA 1989b) and the lead biokinetic uptake model.

7.1.2 Adult's Ingestion Rate: Non-Contact Intensive

For the adult who does not engage in soil or dust contact intensive activities on a regular basis (apartment dweller, typical homeowner, office worker, teacher, professional, etc.) the soil and dust default ingestion rate for the central tendency of 50 mg/day based on a study of Calabrese 1990 (with supporting estimates from Hawley 1985).

7.1.3 Adult's Ingestion Rate: Contact Intensive

For adults who routinely *engage* in heavy contact with soils and dusts on a regular basis (including seasonal work), *the* workgroup was unable to identify a default

soil ingestion rate corresponding to the central tendency given the data available. It is suggested that an evaluation of the RME scenario for this receptor be conducted.

7.1.4. Residential: Child + Adult Combined
In evaluating a residential exposure scenario for this pathway, a weighted average of the child's and adult's exposure is to be utilized. The duration of exposure for the central tendency has been defined as consisting of nine years (average number for years at the same dwelling). It is the default position to assume that for 2 of the nine years, intake will be at the child's rate and for the remaining 7 years, intake will be at the adult rate. This is consistent with the proportion of time one is assumed to be a young child that is utilized for RME residential calculations. Thus residential exposure for the central tendency should generally be evaluated as follows:

$$\frac{2 \text{ years} \times 100 \text{ mg/day}}{15 \text{ kg}} + \frac{7 \text{ years} \times 50 \text{ mg/day}}{70 \text{ kg}}$$

18.3 yr · mg/day / kg

7.1.5 Exposure Frequency and Duration: Central Tendency
The default value for the duration of exposure for the central tendency scenario is 9 years for a residential exposure based on the average length of stay in a home as reported in the EFH (U.S.EPA 1990). It should be noted that generally the intake over the 9 year exposure period is to be computed as described in section 7.1.4. The default exposure frequency for the central tendency is 350 days/year due to the nature in which the soil ingestion rates have been computed (average daily exposure). ?

A default exposure frequency and duration has not been specified for the central tendency occupational scenario at this time as it has not been discussed by the workgroup.

7.2 Reasonable Maximum Exposure
7.2.1 Child's Ingestion Rate
The default RME ingestion rate for a young child age 1-6 years of age of 200 mg/day represents the consensus opinion of the workgroup based on review of available data and is believed to correspond to a conservative estimate of an average ingestion rate for this age group over a chronic period of exposure.
Unfortunately, the available data did not support identification of the 90 or 95 percentile value. It was the consensus among workgroup participants that over the 6 year period of concern for this receptor category, the value of 200 mg/day was reasonable to

assume. It should be noted that this value was not necessarily deemed relevant for acute exposures when a child may engage in intensive contact with soils and dusts for a brief period of time. In these situations, ingestion rates greater than this value may be warranted.

7.2.2 Adult's Ingestion Rate: Non-Contact Intensive
The RME default soil and dust ingestion rate of 100 mg/day is based a study of Sedman (1989). This value is presumed suitable for non-contact intensive scenarios (apartment dweller, typical homeowner, office worker, teacher, professional, etc.).

7.2.3 Adult's Ingestion Rate: Contact Intensive
The RME default soil and dust ingestion rate of 480 mg/day is deemed appropriate for acute exposures (those less than a year in duration). This value is based on estimates made by Hawley (1985) in which he estimated deposition rates, exposed surface areas of the hands, and the fraction inadvertently consumed.

7.2.4 Residential: Child + Adult
In evaluating a residential RME exposure scenario, the exposure duration for the RME has been defined as consisting of 30 years (90 percentile for years at the same dwelling U.S. EPA 1990). It shall generally assumed when evaluating the RME residential exposure for the ingestion of soil and dusts that for 6 of the 30 years, intake will be at the child's rate and for the remaining 24 years, intake will be at the adult rate. Thus residential RME exposure for this pathway should generally be evaluated as follows:

$$\frac{6 \text{ years} \times 200 \text{ mg/day}}{15 \text{ kg}} + \frac{24 \text{ years} \times 100 \text{ mg/day}}{70 \text{ kg}} = 114.3 \frac{\text{yr} \cdot \text{mg/day}}{\text{kg}}$$

7.2.5 Exposure Frequency and Duration: RME
The default value for the duration of exposure for the RME scenario is 30 years for a residential exposure based on the 90th percentile for the length of stay in a home as reported in the EFH (U.S.EPA 1990). It should be noted that generally the intake over the 30 year exposure period is to be computed as described in section 7.2.4. The default exposure frequency for the RME is 350 days/year due to the nature in which the soil ingestion rates have been computed (average daily exposure) and assuming a two week period away from home each year.

The default value far the duration of exposure far *the* RME occupational scenario is 25 *years* based on *the* 95th percentile for the number of years worked at the same

location (Bureau of Labor Statistics 1990). The exposure frequency of 250 days/year corresponds to a five day work week.

7.3 **General Exposure Frequency and Duration Considerations**
Owing to the strong age and behavioral dependent nature of this exposure, exposure durations and frequencies other than the default values may be warranted for this exposure pathway. For example, a situation may arise in which a child-care facility is of concern and the residential default values for exposure frequency and duration may not be appropriate. Similarly, certain occupations may lead to intensive exposure but for brief periods of time (i.e. construction workers, field laborers, seasonal workers, etc.) rendering use of the occupational default values for exposure frequency and duration inappropriate.

Additionally, there may be situations in which a Region believes it necessary to adjust the exposure frequency to account for meteorological conditions which may be presumed to drastically reduce or eliminate exposure to potential contaminants via soil ingestion. In these situations, any adjustments to the exposure frequency to reflect local weather patterns should first be approved by the Regional Office.

For these reasons, the default exposure durations and exposure frequencies may not always be relevant for the exposure at hand. Extra care should be taken when identifying suitable exposure frequencies and durations for this exposure pathway.

7.4 **Fraction Ingested From the Contaminated Source**
The fraction ingested from the contaminated source is an important variable that often gets overlooked when evaluating scenarios that are largely dependent on the receptor coming to the source of contamination rather than the contamination migrating to the receptor. Due to variations in the proximity of the receptor to the contaminated source, size of the contaminated source, receptors of concern, mobility of receptors, and the nature of exposure, default values for the fraction ingested from the contaminated source are not possible. However, ~~it is advocated that this factor be given~~ extra careful consideration when evaluating this exposure pathway.

7.5 **Matrix Effect**
A parameter unique to all combinations of compounds and soil types- the matrix effect - accounts for the tendency of a compound to bind to soils. The more "soil loving" a compound is, the less likely it is to

desorb and become bioavailable in the gastrointestinal tract once ingested. Chemical and physical properties of contaminants and the soil can thus have a profound effect on the bioavailability of a compound. Unfortunately the data do not exist to support default desorption values for all compounds at this time though work is currently underway to develop some guidance in this area. At present, any adjustments for this phenomenon are left open to the discretion of the Regional Office.

8.0 INHALATION OF CONTAMINANTS

It is anticipated that at some time in the future, inhalation exposures will be evaluated using inhalation reference concentrations. However, at this time, the methodology is not yet available and consequently, inhalation rates and resulting dose (mg/kg/day) are the approach that is advocated for this exposure pathway. Inhalation rates are dependent on age, sex, and activity level to name just a few factors and can be found in the Exposure Factors Handbook (U.S. EPA 1990).

The same default inhalation rate has been identified for both the central tendency and the RME exposure scenarios. This is in keeping with the assumption regarding inhalation rate used in the derivation of cancer potency estimates and inhalation reference concentrations. The default value of 20 m^3/day corresponds to a reference man's inhalation rate who is at rest 8 hours/day and at a light activity level (i.e. domestic work, personal care, hobbies, minor indoor home improvements) for the remaining 16 hours/day.

9.0 INGESTION OF LOCALLY CAUGHT FISH

The evaluation of this exposure pathway will not always be relevant to every site. The receptor of concern for this pathway is apt to include both the recreational fisherman and a subsistence fisherman and their family. The preferred approach to the evaluation of this exposure pathway is to obtain site-specific data regarding consumption rates and fishing habits. This is due to the strong influence of local habits, populations, and conditions on the resulting exposure.

When site-specific data are not feasible to obtain, the default approach suggested for this exposure pathway is based on an estimate of the average size of a fish meal and merely varies the exposure frequency, duration, and fraction ingested from the contaminated source between the central tendency and the RME estimates. With this approach, recreational and subsistence fishermen can be assumed to consume the same amount of fish per eating occasion yet differ in the frequency or number of fish meals actually consumed and the fraction of fish meals consumed that originated from the contaminated source. This change in approach was adopted because it was believed to better characterize exposure resulting from an intermittent and often

infrequent exposure pathway than the default approach previously advocated which relied on an intake rate averaged over a year of exposure.

The average amount of fish consumed per eating occasion was observed to be 145 g/meal or about 5 ounces as reported in the study of Pao et al. (1982). The range reported for the size of the fish meal was from 43 g/meal (5th percentile) to 565 g/meal (99th percentile). The study was based on the results of a self-administered USDA nationwide consumption survey from 1977-78 of individuals in 48 states. The amount of fish corresponds to consumption habits for fin-fish as reported on a wet weight basis. It does not include shellfish. Although fish consumption habits have likely increased over the past 15 years, the Pao study was believed to be the best study available upon which to base a default value.

Owing to the very site-specific nature of the frequency of this exposure, no defaults are given at this time for exposure frequency (fish meals/year). However, estimates of the average and 90th - 95th percentile for the frequency of exposure should be used for the central tendency and RME respectively. Default values for exposure duration are those which are consistent with residential default values previously identified of 9 years for the central tendency and 30 years for the RME. Additionally, it was believed that a site-specific value for the fraction of fish consumed from the contaminated source was appropriate rather than establishing a default value for this factor. The average and the 90th - 95th percentile values are suggested for the central tendency and RME for this parameter respectively.

10.0 INGESTION OF PRODUCE

The following approach has been suggested for this exposure pathway provided it is relevant to the risk evaluation:

a. Strongly consider evaluating consumption of homegrown produce if it constitutes a current exposure pathway and if produce is available for analysis. If produce is not available for analysis, evaluation of this exposure pathway is open to the discretion of the Regional Office (recognizing that this decision is apt to depend on the level of confidence in available plant uptake models).

b. If the decision is made to employ an uptake model, the Region is strongly encouraged to seek the assistance and/or review of the proposed approach by ECAO-Cincinnati.

c. When evaluating this exposure pathway, preference should be given for site specific consumption rates (obtainable via door to door surveys) if feasible. When site specific consumption rates are not feasible, either generic defaults regarding total consumption rates for all fruits combined or all vegetables combined (USDA 1980) or defaults based on the

average amount of a fruit or vegetable consumed on a given eating occasion (Pao et al. 1982) together with site specific exposure frequencies is suggested.

d. The fraction ingested assumed to originate from a contaminated source will always be a site specific determination.

The choice of which of the approaches described below should be utilized for the identification of default ingestion rate values is left up to the risk assessor based on their understanding of the site. The USDA (1980) results are based on the average consumption rate as self-reported over a three day period and included non-consumers as well as consumers in the calculation. In contrast, the data of interest from Pao et al. (1982) focused on the amount consumed of various food crops for a given eating occasion. If and when default values are used, the same ingestion rate utilized for the central tendency is advocated for use in evaluating the RME scenario. It is suggested that in these instances, merely the exposure frequency, duration, and the fraction ingested from the contaminated source vary between the central tendency and the RME evaluations.

10.1 Total Produce Consumption Rates (USDA 1980, U.S. EPA 1990)

As summarized in the EFH (U.S. EPA 1990), the USDA estimated the average intake on any one day of all fruits combined as 142 g/day per person and approximately 1/5 of this (28 g/day) could be assumed to be homegrown on average or as much as 3/10 of this (42 g/day) could be assumed to be homegrown as a reasonable maximum exposure case.

The average intake on any one day for all vegetables combined was estimated as 201 g/day. Furthermore, approximately 1/4 (50 g/day) of this amount could be assumed to be homegrown on average and as much as 2/5 (80 g/day) could be assumed to be homegrown as a reasonable maximum exposure case.

Due to the nature of the study, (a daily average intake over a three day exposure period), it can be assumed that the contact rates represent a chronic value. If this approach is selected, then the exposure frequency for the central tendency and RME should be 350 days/year. The default exposure duration reflects the residential central tendency value of 9 years or 30 years for the RME scenario. Assumptions regarding the fraction ingested from the contaminated source are not specified though national averages for the fraction that can be assumed to be homegrown have been suggested as a described above.

10.2 Crop Specific Consumption Habits (Pao et al. 1982)
As summarized in the attached table, average values for the amount of a particular fruit or vegetable consumed on a given eating occasion can be identified based on the results of a nationwide survey conducted by the USDA as summarized in Pao et al. (1982). Additionally, the authors' reported the distribution of consumption values observed for each fruit or vegetable included in the survey. The Pao et al. data was based on the USDA nationwide food consumption survey conducted in 1977-78.

Default values for the frequency of exposure have not been identified and are subject to site-specific determinations reflecting local consumption habits. The default exposure duration reflects the residential central tendency value of 9 years or 30 years for the RME scenario. The fraction ingested originating from the contaminated source has not been specified but is open to consideration of site-specific factors.

CENTRAL TENDENCY

Exposure Pathway	Contact Rate	Frequency	Duration	Body Weight
1. Ingestion of Drinking Water				
1a. Residential	1.4 l/day	350(a)	9 years	70 kg
1b. Occupational ?	(1 l)?	(250?)	? 5(b)	70 kg
2. Ingestion of Soil and Dusts[2]				
2a. Child - residential	100 mg/day	350 days/yr[1]	2 years	15 kg
2b. Adult - Non-contact residential	50 mg/day	350 days/yr[1]	7 years	70 kg
2c. Adult - Non-contact occupational	50 mg/day	?	?	70 kg
2d. Adult - Contact Intensive	data insufficient (100)			
3. Inhalation				
3a. Residential	20 m^3/day	234 days/yr	9 years	70 kg
3b. Occupational ?	?	?	?	70 kg
4. Fish Ingestion[2]	145 g/meal	site specific average	9 years	70 kg
5. Ingestion of Produce[2]	142 g/day (fruits) 201 g/day (veg.) or produce specific value for amount per meal (see attachment)	350 days/yr for values indicated or site-specific average if use amt./meal	9 years	70 kg

REASONABLE MAXIMUM EXPOSURE

Exposure Pathway	Contact Rate	Frequency	Duration	Body Weight
1. Ingestion of Drinking Water				
1a. Residential	2 l/day	350 days/yr	30 years	70 kg
1b. Occupational ?	1 l(a) ?	250 ?(a)	? 25	? 70 kg
2. Ingestion of Soil and Dusts[2]				
2a. Child - residential	200 mg/day	350 days/yr[1]	6 years	15 kg
2b. Adult - Non-contact residential	100 mg/day	350 days/yr[1]	24 years	70 kg
2c. Adult - Non-contact occupational	100 mg/day	250 days/yr[1]	25 years	70 kg
2d. Adult - Contact Intensive	480 mg/day	site-specific	site-specific	70 kg
3. Inhalation				
3a. Residential	20 m^3/day	350 days/yr	30 years	70 kg
3b. Occupational ?	?	250 days/yr	25 years	70 kg
4. Fish Ingestion[2]	145 g/meal	site-specific 90-95th %	30 years	70 kg
5. Ingestion of Produce[2]	142 g/day (fruits) 201 g/day (veg.) or produce specific value for amount per meal (see attachment)	350 days/yr for values indicated or site-specific 90-95th % if use amt./meal	30 years	70 kg

[1] Adjustments based on behavioral or meteorological conditions may be warranted based on site-specific conditions and Regional policies.

[2] Though not specified, exposure pathway should include a site-specific value for the fraction ingested originating from the contaminated source.

(a) OSWER Directive 9235.4-02

(b) Euromech Lab Stats 17

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Attachment 2

Quantity Consumed Per Eating Occasion of Various Fruits and Vegetables (grams)
Pao et. al. 1982

	food category	avg.	std. dev.	Percentile 5th	25th	50th	75th	90th	95th	99th	Max.
Fruit	fresh grapefruit	159	58	106	134	134	165	268	268	330	660
	fresh oranges	146	57	73	145	145	145	180	228	360	1160
	raw apples	141	49	69	138	138	138	212	212	276	636
	bananas	106	37	50	95	119	119	136	136	238	476
	cantaloup	171	91	61	136	136	272	272	272	529	896
	raw pears	163	69	82	164	164	164	164	328	328	2132
	raw peaches	160	75	76	152	152	152	304	304	456	760
	raisins	33	28	3	14	28	43	73	73	145	290
	raw strawberries	100	58	37	75	75	149	149	180	298	447
Raw Vegetables	white potatoes	125	90	29	63	105	170	235	280	426	1260
	cabbage /cole slaw	68	46	18	40	60	90	120	120	240	1020
	raw carrots	43	40	4	13	31	55	100	122	183	500
	raw celery	33	24	6	14	26	40	60	80	120	204
	raw cucumbers	80	78	8	24	70	110	168	220	316	840
	lettuce/tossed salads	85	59	10	20	55	93	140	186	270	1080
	raw onions	31	33	3	17	18	36	57	72	180	350
	raw tomatoes	81	55	30	45	62	113	123	182	246	728
Cooked Vegetables[1]	cooked broccoli	112	68	30	78	90	155	185	190	350	680
	cooked cabbage	128	83	28	75	145	150	226	300	480	610
	cooked carrots	79	50	19	46	75	92	150	155	278	736
	corn on/off cob	95	56	21	65	83	123	170	170	330	850
	lima beans	110	75	21	67	88	170	175	219	350	875
	cow peas, field peas and blackeye peas	131	88	22	88	88	175	196	350	350	700
	cooked green peas	90	57	20	43	85	85	170	170	330	680
	cooked spinach	121	70	24	78	103	185	205	205	380	454
	string beans	86	54	18	67	70	135	140	140	280	840
	cooked summer squash	145	98	27	105	108	215	215	352	430	860
	cooked sweet potatoes	136	87	38	86	114	185	225	238	450	1020
	cucumber pickles	45	45	7	16	30	65	90	130	222	455

[1] Cooked vegetables includes canned.

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