Attachment 17b
OB/OD Unit

Human Health Risk Assessment

For

Tooele Army Depot-North Area
Tooele, Utah

Contract No. W91278-12-D-0011
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TABLE OF CONTENTS

Page

1.0 INTRODUCTION 1

2.0 REVISED RISK ASSESSMENT APPROACH 2
2.1 Risk Assessment Guidance 2
2.2 Data Evaluation 2
2.3 Exposure Assessment 2
2.4 Toxicity Assessment 3
2.5 Risk Characterization 4

3.0 REVISED HUMAN HEALTH RISK ASSESSMENT RESULTS 19
3.1 Cancer Risks and Hazard Indices 20
3.2 Lead Exposures 20
3.3 Breast Milk Pathway 21
3.4 Acute Hazard Characterization from Direct Inhalation 21
3.5 Risks Based on Soil Sampling Data 21

4.0 UNCERTAINTY ANALYSIS 36
4.1 Uncertainty Associated with Evaluation of Lead 36
4.2 Uncertainty Associated with Risks Based on Soil Sampling Data 37

5.0 REFERENCE 39

APPENDICES - Appear on CD only

Appendix A Evaluation of Risks Using Emission Factors Based on the 95% Upper Confidence Limit
Appendix B Supplement Information for Chemicals of Potential Concern
Appendix C Supplement AIHQ Values
Appendix D IRAP-*h* Input/Output Files (Stand-Alone CD)
Appendix E Hazard Indices and Cancer Risks by Exposure Pathway
Appendix F Hazard Indices by Target Organ
Appendix G Acute Hazard Quotients
Appendix H RAGS Part D Spreadsheet for On-Site OB/OD Workers
Appendix I Adult Lead Model Results
Appendix J RAGS Part D Spreadsheets for Evaluation of Non-Detected Chemicals

TABLES

Page

Table 2-1 COPCS for the Human Health Risk Assessment....5
Table 2-2 Summary of Receptors....12
Table 2-3 Summary of Exposure Pathways....13
Table 3-1 Summary of Cancer Risks....24
Table 3-2 Summary of Hazard Indices....25
Table 3-3 Summary of Hazard Indices by Exposure Pathway for South/West OB/OD TEAD-North Boundary....26
Table 3-4 Summary of Cancer Risks by Exposure Pathway for South/West OB/OD TEAD-North Boundary....27
Table 3-5 Major Contributors to Risk From Ingestion of Produce for Receptors at the South/West OB/OD TEAD-North Boundary....28
Table 3-6 Major Contributors to Risk From Ingestion of Milk for Receptors at the South/West OB/OD TEAD-North Boundary....29
Table 3-7 Summary of Lead Concentrations in Surface Soil, Air, and Surface Water....30
Table 3-8 Summary of Breast Milk Average Daily Dose (2,3,7,8-TCDD) TEQ....31
Table 3-9 Acute Inhalation Hazardous Quotient....32
Table 3-10 Major Contributors to Acute Inhalation Hazard Quotient....33
Table 3-11 Summary of Cancer Risks and Hazard Indices for On-Site Workers Exposed to Surface Soil....34
Table 3-12 Adult Lead Modeling Results....35
Table 4-1 Summary of Cancer Risks and Hazard Indices Associated with Non-Detected Chemicals....37

FIGURES

Page

Figure 2-1 TEAD-North Location Map....14
Figure 2-2 USGS Map of TEAD-North and Surrounding Area....15
Figure 2-3 Aerial Photo of TEAD-North and Surrounding Area....16
Figure 2-4 Tooele City Map....17
Figure 2-5 Zoning Map of TEAD-North and Surrounding Area....18

1.0 INTRODUCTION

The Tooele Army Depot-North Area (TEAD-N) submitted Attachment 26-OB/OD Risk Assessment and Risk Management to the Utah Department of Environmental Quality (UDEQ) in April 2002. Attachment 26 was submitted to support modification (September 2005) of the Resource, Conservation and Recovery Act (RCRA) Permit to include Module VI for the Open Burning (OB) and Open Detonation (OD) Unit at TEAD-N. The Permit also includes static firing (SF) that is conducted at the OB/OD Unit.

Changes in operational needs for TEAD-N warrant the evaluation of modified OB/OD treatment limits (from those specified in the initial Permit). Also, additional OB/OD emission factor test data are now available. Therefore, the human health risk assessment included in Attachment 26 of the Permit Application has been updated in the sections that follow and re-titled as Attachment 17b. These risk results have been used for the development of the TEAD-N OB/OD Risk Management Plan (RMP).

The revised human health risk assessment is summarized in the sections that follow. These Sections provide the complete human health risk assessment (HHRA) information and data needed to support the TEAD-N Risk Management Plan.

2.0 REVISED RISK ASSESSMENT APPROACH

2.1 RISK ASSESSMENT GUIDANCE

The HHRA for the Permit Application was based on the Human Health Risk Assessment Protocol (HHRAP) for Hazardous Waste Combustion Facilities (USEPA, July 1998) and commercially available software developed by Lakes Environmental, *Industrial Risk Assessment Program – Human Health for the U.S. EPA OSW Human Health Risk Assessment Protocol (HHRAP)*, referred to as IRAP-*h* View. The HHRAP was updated by U. S. Environmental Protection Agency (USEPA) Region 6 in September 2005 and IRAP-*h* View was updated in February 2005. The revised HHRA was prepared using version 3.2 of the IRAP-*h* View program.

The overall methodology for preparing HHRAs for combustion facilities presented in the updated 2005 HHRAP guidance has not changed from the 1998 HHRAP guidance. However, revisions in the updated 2005 HHRAP guidance that could have an impact on the results of the initial analysis included revisions to the chemical and physical constants used in the food change modeling and the hierarchy for acute toxicity values.

2.2 DATA EVALUATION

The data evaluation for the revised HHRA was performed using the methodology presented in the original HHRA. The chemicals evaluated in the revised HHRA are presented in Table 2.1 and correspond to chemicals that had nonzero OB/OD/SF emission factors based on Attachment 25 Addendum No. 1.

2.3 EXPOSURE ASSESSMENT

The revised HHRA evaluated risks to the receptors identified in the original HHRA. The revised HHRA also evaluated the same receptor locations as the original HHRA with the addition of the guard shack receptor location. Table 2.2 lists the receptors and locations evaluated in the revised HHRA. Receptor locations were determined using the location of the maximum air concentrations estimated by the air dispersion modeling. There are currently no receptors located at the south/west OB/OD TEAD-N boundary. Table 2.3 lists the exposure pathways that were evaluated for each receptor.

The location of the site is shown in Figure 2-1. Figure 2-2 shows the USGS topographic map for TEAD-N and the surrounding area. An aerial photo of the site is shown in Figure 2-3. Figure 2-4 shows the land use for city of Tooele. Figure 2-5 shows the zoning map for TEAD-N and the surrounding areas. A detail description of land use in the area was included in the HHRA presented in Attachment 17. As can be seen from Figure 2-4 land use in Tooele is a mainly residential along with some areas of commercial/industrial development. As can be seen from Figure 2-5, land south and west of TEAD-N is zoned for multiple use (i.e., agricultural, grazing, and mining) while land east and north of the site is zoned residential and commercial.

Typically HHRAs are preformed using 95% UCLs. As discussed in Attachment 17a the database for the emission factors was inadequate to calculate statistically defensible 95% UCLs, therefore

the HHRA was performed using average emission factors. An evaluation of the human health risks using emission factors based on the 95% UCL is presented in Appendix A.

In accordance with the HHRAP guidance annual air concentrations were used to estimate cancer risks. The annual air concentrations for the OB, OD, and SF units are based on days on which these units are in operation and do not include non-operational days. This is a conservative assumption that deviates for standard risk assessment methodology because the exposure point concentrations should represent the average concentration over the time period for which the receptor is exposed.

2.4 TOXICITY ASSESSMENT

The toxicity assessment was performed in accordance with the updated 2005 HHRAP guidance. The 2005 HHRAP guidance follows current USEPA guidance which uses a different hierarchy for selecting toxicity criteria than the hierarchy that was used in the 1998 HHRAP. The current USEPA guidance recommends the following sources for obtaining cancer slope factors and reference doses (USEPA, 2003a):

- Tier 1 - Integrated Risk Information System (IRIS) (online).

- Tier 2 - USEPA Provisional Peer Reviewed Toxicity Values (PPRTVs) – The Office of Research and Development/National Center for Environmental Assessment (NCEA) Superfund Health Risk Technical Support Center develops PPRTVs on a chemical-specific basis when requested by USEPA's Superfund program.

- Tier 3 - Other Toxicity Values – These sources include but are not limited to California Environmental Protection Agency (Cal/EPA) toxicity values, the Agency for Toxic Substances and Disease Registry (ATSDR) Minimal Risk Levels (MRLs), and the Annual Health Effects Assessment Summary Tables (HEAST) (USEPA, 1997).

The 2005 HHRAP guidance recommends the following hierarchy for selecting acute toxicity criteria:

1. Cal/EPA Acute RELs – the concentration in air at or below which no adverse health effects are anticipated in the general population, including sensitive individuals, for a specified exposure period (Cal/EPA, 1999).

2. Acute inhalation exposure guidelines (AEGL-1) – "the airborne concentration of a substance above which it is predicted that the general population, including susceptible individuals, could experience notable discomfort, irritation, or certain asymptomatic nonsensory effects. However, the effects are not disabling and are transient and reversible upon cessation of exposure" (NOAA, 2001).

3. Level 1 emergency planning guidelines (ERPG-1) – "the maximum concentration in air below which it is believed nearly all individuals could be exposed for up to one hour without experiencing other than mild transient adverse effects or perceiving a clearly defined objectionable odor" (DoE, 2001; SCAPA, 2001).

4. Temporary emergency exposure limits (TEEL-1) - ”the maximum concentration in air below which it is believed nearly all individuals could be exposed without experiencing other than mild transient adverse health effects or perceiving a clearly defined objectionable odor” (DoE, 2001; SCAPA, 2001).

5. AEGL-2 values – “the airborne concentration of a substance above which it is predicted that the general population, including susceptible individuals, could experience irreversible or other serious, long-lasting adverse health effects or an impaired ability to escape.” AEGL-2 values are to be used only if lower ERPG-1 or TEEL-1 values are not available (NOAA, 2001).

The hierarchy is presented in order of preference, from 1 (most preferred) to 5 (least preferred).

The 2005 HHRAP toxicity criteria database was checked for updated values. In addition, the above sources were used to obtain toxicity criteria for chemicals which were not listed in the 2005 HHRAP database. Supplemental and updated reference doses and cancer slope factors are presented in Appendix B. Supplemental and updated acute inhalation exposure criteria are presented in Appendix C.

2.5 RISK CHARACTERIZATION

The risk characterization was performed using the methodology presented in the original HHRA except that the Utah Toxic Screening Levels (TSLs) were not used. The detailed human health risk assessment (that includes the inhalation pathway) process takes precedence over the Utah TSLs.

TABLE 2.1 COPCS FOR THE HUMAN HEALTH RISK ASSESSMENT

Cas No.	COPC	Listed in USEPA HHRAP Database(1)	Supplemental Input(2)	Quantitatively Evaluated(3)
71-55-6	1,1,1-Trichloroethane	X	X	X
3268-87-9	1,2,3,4,6,7,8,9-Octachlorodibenzodioxin	X	X	X
39001-02-0	1,2,3,4,6,7,8,9-Octachlorodibenzofuran	X	X	X
35822-46-9	1,2,3,4,6,7,8-Heptachlorodibenzodioxin	X		X
67562-39-4	1,2,3,4,6,7,8-Heptachlorodibenzofuran	X		X
55673-89-7	1,2,3,4,7,8,9-Heptachlorodibenzofuran	X		X
70648-26-9	1,2,3,4,7,8-hexachlorodibenzofuran	X		X
39227-28-6	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	X		X
57117-44-9	1,2,3,6,7,8-hexachlorodibenzofuran	X		X
57653-85-7	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	X		X
72918-21-9	1,2,3,7,8,9-Hexachlorodibenzofuran	X		X
19408-74-3	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	X		X
57117-41-6	1,2,3,7,8-Pentachlorodibenzofuran	X	X	X
40321-76-4	1,2,3,7,8-Pentachlorodibenzo-p-dioxin	X		X
120-82-1	1,2,4-Trichlorobenzene	X		X
95-63-6	1,2,4-Trimethylbenzene		X	X
107-06-2	1,2-Dichloroethane	X		X
78-87-5	1,2-Dichloropropane	X		X
463-49-0	1,2-Propadiene			
	1,3-Butadiyne			
108-67-8	1,3,5-Trimethylbenzene	X		X
99-35-4	1,3,5-Trinitrobenzene	X		X
106-99-0	1,3-Butadiene		X	X
541-73-1	1,3-Dichlorobenzene			
99-65-0	1,3-Dinitrobenzene	X		X
106-46-7	1,4-Dichlorobenzene	X		X
123-91-1	1,4-Dioxane	X		X
71-36-3	1-Butanol		X	X
123-92-2	1-Butanol 3-methyl-acetate			
137-32-6	1-Butanol, 2-methyl-			
123-51-3	1-Butanol, 3-methyl-			
	1-Butanol, 3-methyl-, acetate			
689-97-4	1-Buten-3-yne			
106-98-9	1-Butene			
	1-Butene / Isobutylene			
592-76-7	1-Heptene			
592-41-6	1-Hexene			
522-43-0	1-Nitropryene			
7789-99-3	1-Pentanol,2-methyl-, acetate			
109-67-1	1-Pentene			
71-23-8	1-Propanol 1-Propene, 2-methyl-			
	1-Propene,2-methyl-Isomer			
74-99-7	1-Propyne			
60851-34-5	2,3,4,6,7,8-Hexachlorodibenzofuran	X		X
57117-31-4	2,3,4,7,8-Pentachlorodibenzofuran	X	X	X
51207-31-9	2,3,7,8-Tetrachlorodibenzofuran	X		X

TABLE 2.1 COPCS FOR THE HUMAN HEALTH RISK ASSESSMENT Page 2 of 7				
Cas No.	**COPC**	**Listed in USEPA HHRAP Database(1)**	**Supplemental Input(2)**	**Quantitatively Evaluated(3)**
1746-01-6	2,3,7,8-Tetrachlorodibenzo-p-Dioxin	X		X
118-96-7	2,4,6-Trinitrotoluene	X		X
51-28-5	2,4-Dinitrophenol	X		X
121-14-2	2,4-Dinitrotoluene	X		X
606-20-2	2,6-Dinitrotoluene	X		X
35572-78-2	2-Amino-4,6-Dinitrotoluene		X	X
78-93-3	2-Butanone	X		X
4170-30-3	2-Butenal			
503-17-3	2-Butyne			
	2-Hexanol			
	2-methyl-2,3-pentanediol			
91-57-6	2-Methylnaphthalene		X	X
95-48-7	2-methylphenol	X		X
119-75-5	2-Nitrodiphenylamine			
581-89-5	2-Nitronaphthalene			
88-75-5	2-Nitrophenol	X		X
88-72-2	2-Nitrotoluene		X	X
108-11-2	2-Pentanol, 4-methyl-			
67-63-0	2-Propanol			
78-85-3	2-Propenal, 2-methyl-			
78-94-4	3-Buten-2-one			
	3-Chloropropene			
620-14-4	3-Ethyltoluene			
99-08-1	3-Nitrotoluene		X	X
19406-51-0	4-Amino-2,6-Dinitrotoluene		X	X
59-50-7	4-Chloro-3-methylphenol	X		X
	4-Ethyltoluene			
100-02-7	4-Nitrophenol	X		X
99-99-0	4-Nitrotoluene		X	X
83-32-9	Acenaphthene	X		X
208-96-8	Acenaphthylene		X	X
75-07-0	Acetaldehyde	X		X
64-19-7	Acetic Acid			
123-86-4	Acetic Acid, butyl ester			
142-92-7	Acetic Acid, hexyl ester			
67-64-1	Acetone	X		X
75-05-8	Acetonitrile	X		X
98-86-2	Acetophenone	X		X
74-86-2	Acetylene			
107-02-8	Acrolein	X		X
107-13-1	Acrylonitrile	X		X
	Aliphatic with triple C-N bond			
107-05-1	Allyl Chloride		X	X
98-83-9	Alpha Methyl Styrene		X	X
7429-90-5	Aluminum		X	X
7664-41-7	Ammonia		X	X
120-12-7	Anthracene	X		X
7440-36-0	Antimony	X		X
7440-38-2	Arsenic	X		X

TABLE 2.1 COPCS FOR THE HUMAN HEALTH RISK ASSESSMENT Page 3 of 7				
Cas No.	**COPC**	**Listed in USEPA HHRAP Database(1)**	**Supplemental Input(2)**	**Quantitatively Evaluated(3)**
7440-39-3	Barium	X	X	X
100-52-7	Benzaldehyde	X		X
	Benzaldehyde, 4-ethyl-			
53951-50-1	Benzaldehyde,ethyl-			
71-43-2	Benzene	X		X
102-96-5	Benzene, (2-nitroethenyl)-			
96-09-3	Benzene, (epoxyethyl)-, R,			
	Benzene, 1,3,5-trimethyl-			
	Benzene, 1-ethenyl-3-methyl-			
	Benzene, 1-ethyl-2methyl-			
	Benzene, 2-methyl- 1,3,5-trinitro			
103-65-1	Benzene, propyl-			
	Benzenecarbothioic acid, 2,6-dic			
56-55-3	Benzo(a)anthracene	X		X
50-32-8	Benzo(a)pyrene	X		X
205-99-2	Benzo(b)fluoranthene	X		X
192-97-2	Benzo(e)pyrene			
191-24-2	Benzo(g,h,i)perylene		X	X
207-08-9	Benzo(k)fluoranthene	X		X
271-89-6	Benzofuran			
65-85-0	Benzoic acid	X		X
100-47-0	Benzonitrile	X		X
100-51-6	Benzyl alcohol	X	X	X
100-44-7	Benzyl chloride	X		X
1195-79-5	Bicyclo [2.2.1] heptan-2-one, 1,3,3-trimethyl-			
	Bicyclo [2.2.1] heptan-2-one, 5,5,6-trimethyl-, exo-			
10385-78-1	Bicyclo[2.2.1]heptan-2-one, 1,7,7-trimethyl-, (1S)-			
	Bicyclo[2.2.1]heptan-2-one, 5,5,6-trimethyl-, endo-			
92-52-4	Biphenyl		X	X
117-81-7	Bis(2-ethylhexyl)phthalate	X		X
507-70-0	Borneol			
74-83-9	Bromomethane	X		X
123-72-8	Butanal			
141-32-2	Butyl acrylate			
85-68-7	Butylbenzylphthalate	X		X
123-72-8	Butyraldehyde			
7440-43-9	Cadmium	X		X
7440-70-2	Calcium			
79-92-5	Camphene			
76-22-2	Camphor			
	Camphor & Benzoic Acid			
124-38-9	Carbon dioxide			
75-15-0	Carbon Disulfide	X		X
630-08-0	Carbon monoxide			
56-23-5	Carbon tetrachloride	X		X
7782-50-5	Chlorine	X		X
108-90-7	Chlorobenzene	X	X	X
75-00-3	Chloroethane	X		X
67-66-3	Chloroform	X		X

TABLE 2.1 COPCS FOR THE HUMAN HEALTH RISK ASSESSMENT Page 4 of 7				
Cas No.	**COPC**	**Listed in USEPA HHRAP Database(1)**	**Supplemental Input(2)**	**Quantitatively Evaluated(3)**
74-87-3	Chloromethane	X		X
25168-05-2	Chlorotoluenes			
7440-47-3	Chromium	X		X
218-01-9	Chrysene	X		X
590-18-1	cis-2-Butene			
627-20-3	cis-2-Pentene			
7440-48-4	Cobalt		X	X
7440-50-8	Copper		X	X
98-82-8	Cumene	X		X
110-82-7	Cyclohexane		X	X
108-94-1	Cyclohexanone		X	X
	Cyclopentane, methylene- isomer			
142-29-0	Cyclopentene			
112-31-2	Decanal			
53-70-3	Dibenz(a,h)anthracene	X		X
132-64-9	Dibenzofuran		X	X
	Dichlorodiflouromethane			
60-29-7	Diethyl ether		X	X
84-66-2	Diethylphthalate	X		X
	Dimethylbenzene isomer			
84-74-2	Di-n-butylphthalate	X		X
117-84-0	Di-n-octylphthalate	X		X
122-39-4	Diphenylamine		X	X
629-97-0	Docosane			
143-07-7	Dodecanoic acid			
112-95-8	Eicosane			
7440-44-0	Elemental Carbon			
74-84-0	Ethane			
460-19-5	Ethanedinitrile		X	X
64-17-5	Ethanol			
111-76-2	Ethanol, 2-butoxy-		X	X
937-30-4	Ethanone, 1-(4-ethylphenyl)-			
1009-61-6	Ethanone, 1,1'-(1,4-phenylene)bi			
75-00-3	Ethyl chloride	X		X
100-41-4	Ethylbenzene	X		X
	Ethylbenzoic acid			
74-85-1	Ethylene			
25550-14-5	Ethylmethylbenzene isomer			
	Filterable particulate matter 10 micron			
	Filterable particulate matter 10 micron			
	Filterable particulate matter 10 micron			
	Filterable particulate matter 2.5 micron			
	Filterable particulate matter 2.5 micron			
206-44-0	Fluoranthene	X		X
86-73-7	Fluorene	X		X
50-00-0	Formaldehyde	X		X
76-13-1	Freon 113		X	X
110-00-9	Furan		X	X
1191-99-7	Furan 2,3-dihydro-			

TABLE 2.1 COPCS FOR THE HUMAN HEALTH RISK ASSESSMENT Page 5 of 7				
Cas No.	**COPC**	**Listed in USEPA HHRAP Database(1)**	**Supplemental Input(2)**	**Quantitatively Evaluated(3)**
1708-29-8	Furan, 2,5-dihydro			
109-99-9	Furan, tetrahydro-	X		X
142-82-5	Heptane			
	Heptane, 3-methylene-			
87-68-3	Hexachloro-1,3-butadiene	X		X
118-74-1	Hexachlorobenzene	X		X
544-76-3	Hexadecane			
66-25-1	Hexanal			
	Hexane			
124-04-9	Hexanedioic acid isomer			
	Hexanedioic acid, Bis (2-ethylhexyl)			
630-06-8	Hexatriacontane			
18540-29-9	Hexavalent Chromium	X		X
2691-41-0	HMX		X	X
7647-01-0	Hydrogen Chloride	X		X
74-90-8	Hydrogen Cyanide		X	X
7664-39-3	Hydrogen Fluoride			
193-39-5	Indeno(1,2,3-cd)pyrene	X		X
7439-89-6	Iron		X	X
124-76-5	Isoborneol			
75-28-5	Isobutane			
115-11-7	Isobutene			
84-69-5	Isobutyl phthlate			
	Isobutylene			
31394-54-4	Isoheptane			
78-78-4	Isopentane			
98-82-8	Isopropylbenzene	X		X
7439-92-1	Lead	X		X
7439-95-4	Magnesium			
7439-96-5	Manganese		X	X
541-73-1	m-Dichlorobenzene	X		X
7439-97-6	Mercury	X		X
79-41-4	Methacrylic acid, isopropyl ester			
74-82-8	Methane			
75-52-5	Methane, nitro-			
100-97-0	Methenamine			
74-87-3	Methyl chloride	X		X
71-55-6	Methyl chloroform	X	X	X
80-62-6	Methyl Methacrylate		X	X
1634-04-4	Methyl tert-Butyl Ether	X		X
108-87-2	Methylcyclohexane		X	X
96-37-7	Methylcyclopentane			
75-09-2	Methylene chloride	X		X
630-03-5	Nanocosane			
91-20-3	Naphthalene	X		X
106-97-8	n-Butane			
124-18-5	n-Decane			
142-82-5	n-Heptane			
110-54-3	n-Hexane		X	X

TABLE 2.1 COPCS FOR THE HUMAN HEALTH RISK ASSESSMENT Page 6 of 7				
Cas No.	**COPC**	**Listed in USEPA HHRAP Database(1)**	**Supplemental Input(2)**	**Quantitatively Evaluated(3)**
7440-02-0	Nickel	X		X
7697-37-2	Nitric Acid			
10102-43-9	Nitric oxide			
98-95-3	Nitrobenzene	X		X
10102-44-0	Nitrogen dioxide			
	Nitrogen Oxides			
55-63-0	Nitroglycerine		X	X
556-88-7	Nitroguanidine (NQ)			
75-52-5	Nitromethane			
86-30-6	N-Nitrosodiphenylamine	X		X
111-84-2	n-Nonane			
	Noanal			
111-65-9	n-Octane			
	Nonadecane			
112-05-0	Nonanoic acid			
109-66-0	n-Pentane			
630-02-4	Octacosane			
	Octane			
95-50-1	o-Dichlorobenzene	X		X
	Organic Carbon			
95-47-6	o-Xylene	X		X
	Particulate Cyanide			
	Particulate Perchlorate			
106-46-7	p-Dichlorobenzene	X		X
78-11-5	Pentaerythritol tetranitrate			
110-62-3	Pentanal			
	Pentane			
630-07-9	Pentatriacontane			
622-96-8	p-Ethyltoluene			
85-01-8	Phenanthrene	X		X
108-95-2	Phenol	X		X
	Phenol, 2-ethyl-			
536-74-3	Phenylethyne			
	Propanal			
74-98-6	Propane			
	Propane, 2,2-dimethoxy-			
	Propanoic acid, 3- ethoxy, ethyl e			
115-07-1	Propene			
123-38-6	Proprionaldehyde			
115-07-1	Propylene			
74-99-7	Propyne			
129-00-0	Pyrene	X		X
110-86-1	Pyridine	X		X
121-82-4	RDX		X	X
7782-49-2	Selenium	X		X
353-66-2	Silane, difluorodimethyl-			

TABLE 2.1 COPCS FOR THE HUMAN HEALTH RISK ASSESSMENT Page 7 of 7				
Cas No.	**COPC**	**Listed in USEPA HHRAP Database(1)**	**Supplemental Input(2)**	**Quantitatively Evaluated(3)**
7440-22-4	Silver	X		X
7440-24-6	Strontium		X	X
100-42-5	Styrene	X		X
7446-09-5	Sulfur dioxide			
7664-93-9	Sulfuric Acid			
75-65-0	tert-Butyl Alcohol			
12408-10-5	teterachlobenzene isomer			
127-18-4	Tetrachloroethylene	X		X
646-31-1	Tetracosane			
479-45-8	TETRYL		X	X
7440-28-0	Thallium	X		X
7440-32-6	Titanium		X	X
108-88-3	Toluene	X	X	X
	Total Carbon			
	Total HpCDD			
	Total HpCDF			
	Total HxCDD			
	Total HxCDF			
	Total Non-methane Hydrocarbons			
	Total PeCDD			
	Total PeCDF			
	Total TCDD			
	Total TCDF			
624-64-6	trans-2-Butene			
4050-45-7	trans-2-Hexene			
646-04-8	trans-2-Pentene			
638-68-6	Triacontane			
79-01-6	Trichloroethene	X		X
75-69-4	Trichloroflouromethane	X		X
25551-13-7	Trimethylbenzene isomer			
88-89-1	Trinitrophenol (Picric Acid)			
12789-66-1	TSP			
7440-62-2	Vanadium		X	X
108-05-4	Vinyl acetate	X		X
75-01-4	Vinyl chloride	X		X
1330-20-7	Xylenes	X	X	X
7440-66-6	Zinc	X		X
7440-67-7	Zirconium			

Notes:

COPC - Chemical of Potential Concern

HHRAP - Human health risk assessment protocol

1 - These chemicals were listed in the USEPA (2005) HHRAP Appendix A for consideration as a COPC. Also, they are listed in the corresponding version of the IRAP-h View risk software.

2 - Toxicity information for chemical was available in USEPA's Integrated Risk Information System (IRIS), Health Effects Assessment Summary Tables (USEPA, 1997), and USEPA Region 3 Risk-Based Concentration Table (April, 2007).

3 - A chemical was quantitatively evaluated in the human health risk assessment if there was current toxicity criteria available or if an appropriate surrogate could be identified if there was no current toxicity criteria available.

TABLE 2.2 SUMMARY OF RECEPTORS

Receptor	Firing Control Point	Guard Shack	North/East OB/OD Unit Boundary	South/West OB/OD TEAD Boundary(1)	Grantsville	Tooele	Stockton	Grantsville Reservoir	Rush Lake
On-Site Worker	X	X	X						
Child Resident				X	X	X	X		
Adult Resident				X	X	X	X		
Child Farmer				X	X	X	X		
Adult Farmer				X	X	X	X		
Child Recreational Fisher				X(2)	X(2)	X(2)	X(2)	X(3)	X(3)
Adult Recreational Fisher				X(2)	X(2)	X(2)	X(2)	X(3)	X(3)

Notes:

1 - Hypothetical (potential future) receptors at the maximum off-site concentration location based on the dispersion modeling.

2 - Recreational fisher is assume to ingest fish caught in Grantsville Reservoir.

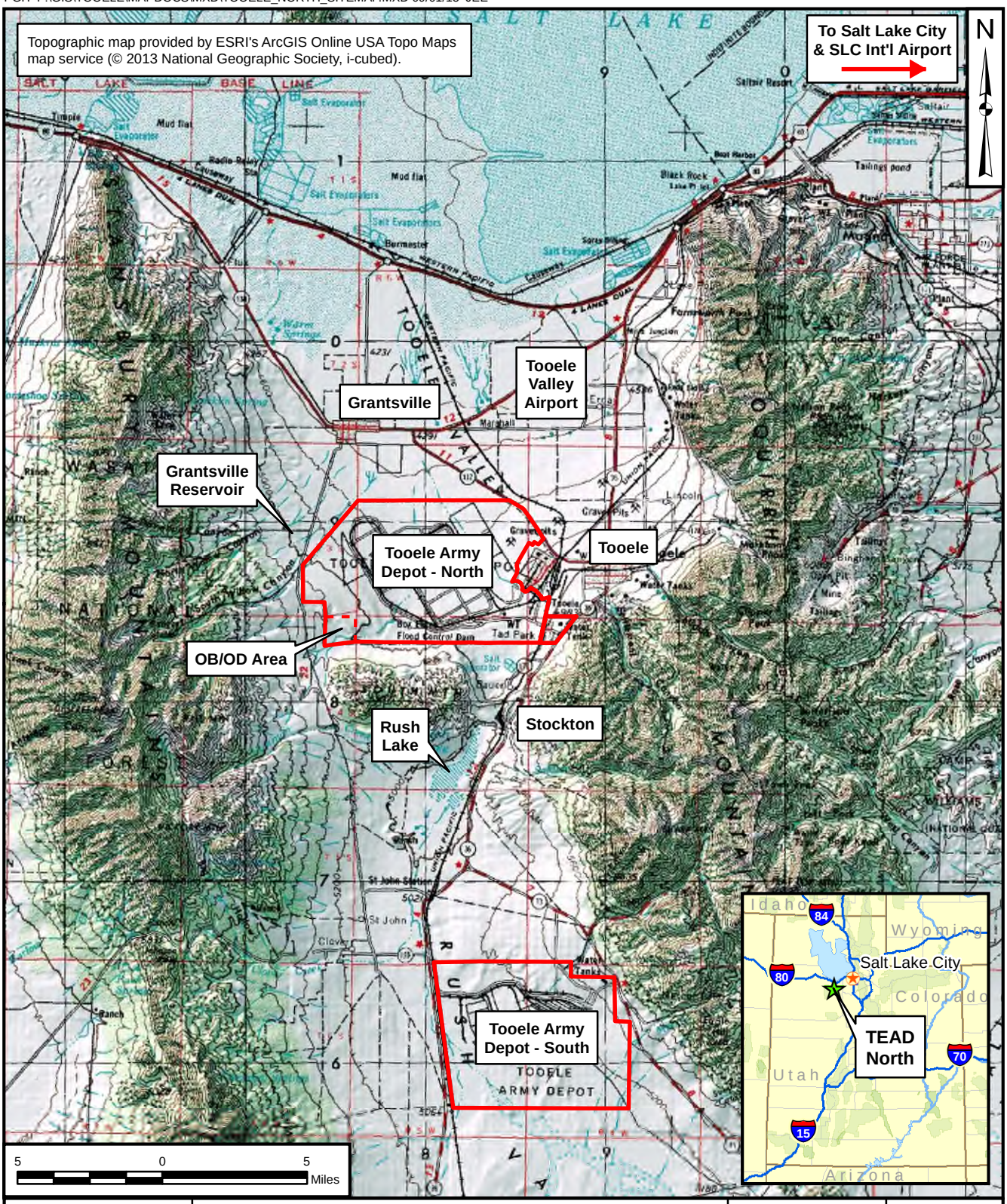
3 - Evaluated only for ingestion of fish.

TABLE 2.3 SUMMARY OF EXPOSURE PATHWAYS

Exposure Pathway	Adult Farmer	Farmer Child	Adult Resident	Resident Child	Adult Fisher	Fisher Child	Acute Receptor	Industrial Worker
Inhalation of Vapors and Particulates	X	X	X	X	X	X	X	X
Incidental Ingestion of Soil	X	X	X	X	X	X		
Ingestion of Drinking Water from Surface Water Sources	X	X	X	X	X	X		
Ingestion of Homegrown Produce	X	X	X	X	X	X		
Ingestion of Homegrown Beef	X	X						
Ingestion of Milk from Homegrown Cows	X	X						
Ingestion of Homegrown Chicken	X	X						
Ingestion of Eggs from Homegrown Chickens	X	X						
Ingestion of Homegrown Pork	X	X						
Ingestion of Fish					X	X		
Ingestion of Breast Milk(1)	X		X		X			

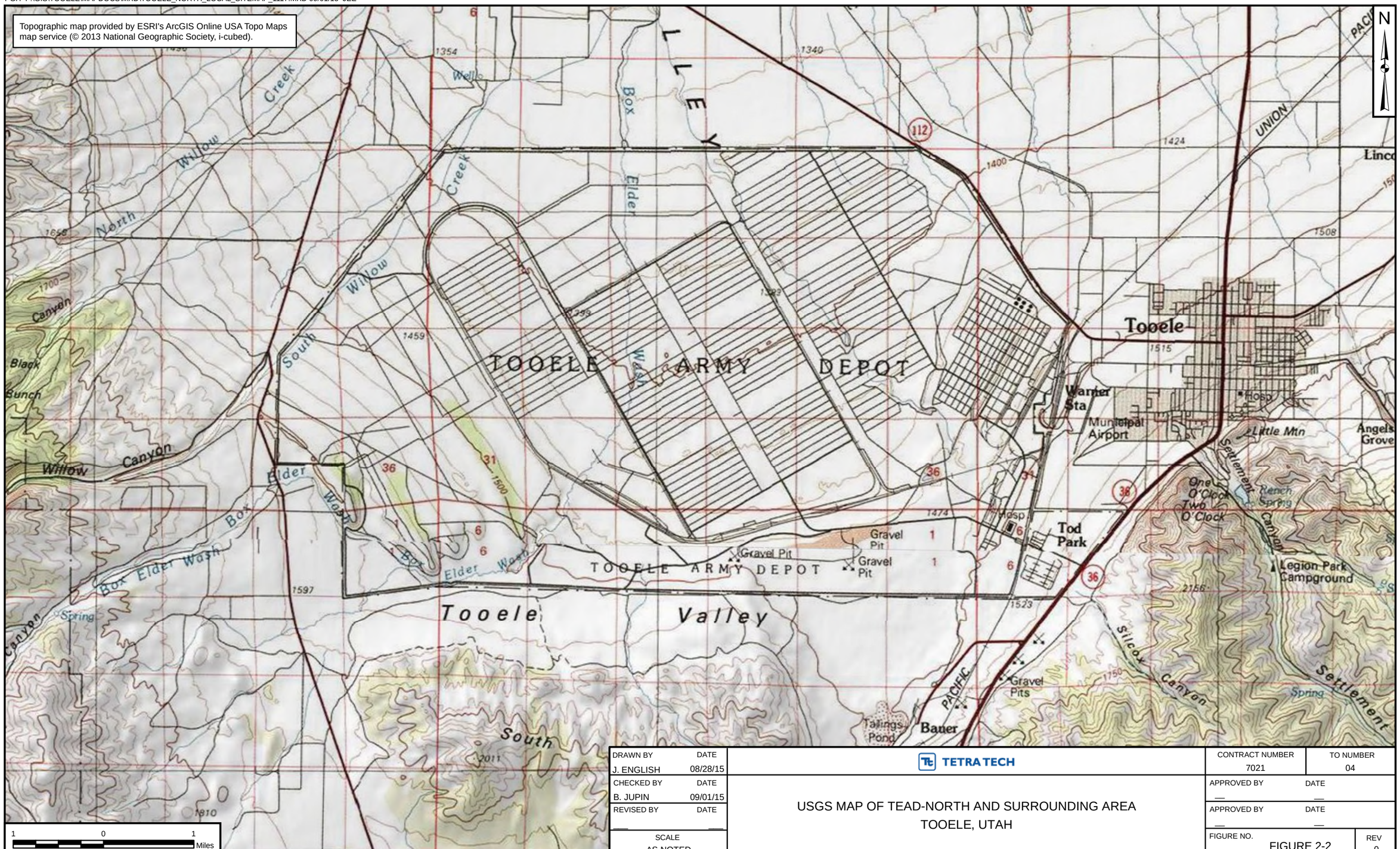
Notes:
X - Indicates that this pathway is quantitatively evaluated for receptor.

PGH P:\GIS\TOOELE\MAPDOCS\MXD\TOOELE_NORTH_SITEMAP.MXD 09/01/15 JEE



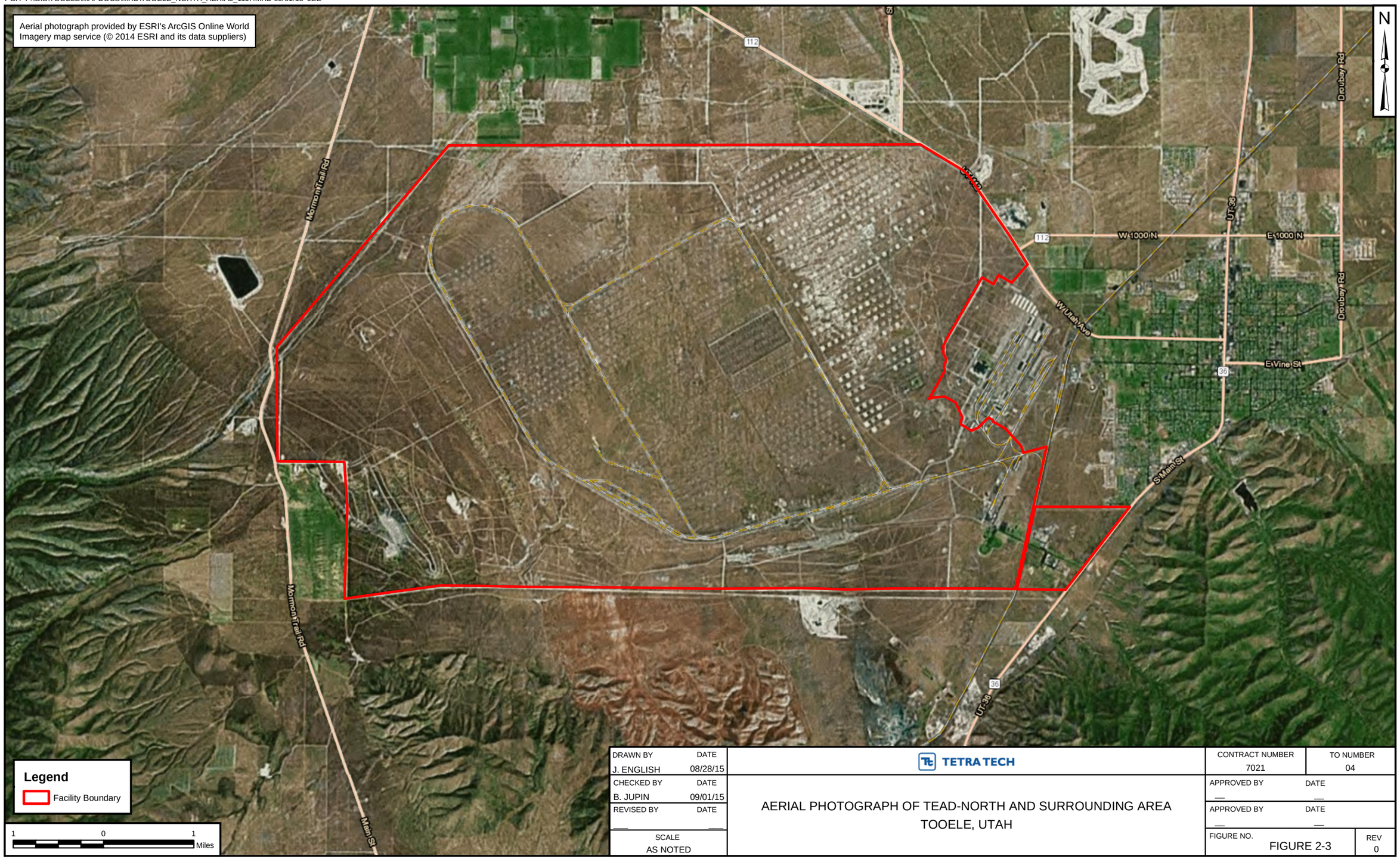
DRAWN BY	DATE		CONTRACT NUMBER	TO NUMBER
J. ENGLISH	07/25/14	TETRA TECH	7021	04
CHECKED BY	DATE			
B. JUPIN	09/01/15	TEAD - NORTH LOCATION MAP TOOELE, UTAH		
SCALE			FIGURE NO.	REV
AS NOTED			FIGURE 2-1	0

PGH P:\GIS\TOOELE\MAPDOCS\MXD\TOOELE_NORTH_LOCAL_SITEMAP_1117.MXD 09/01/15 JEE



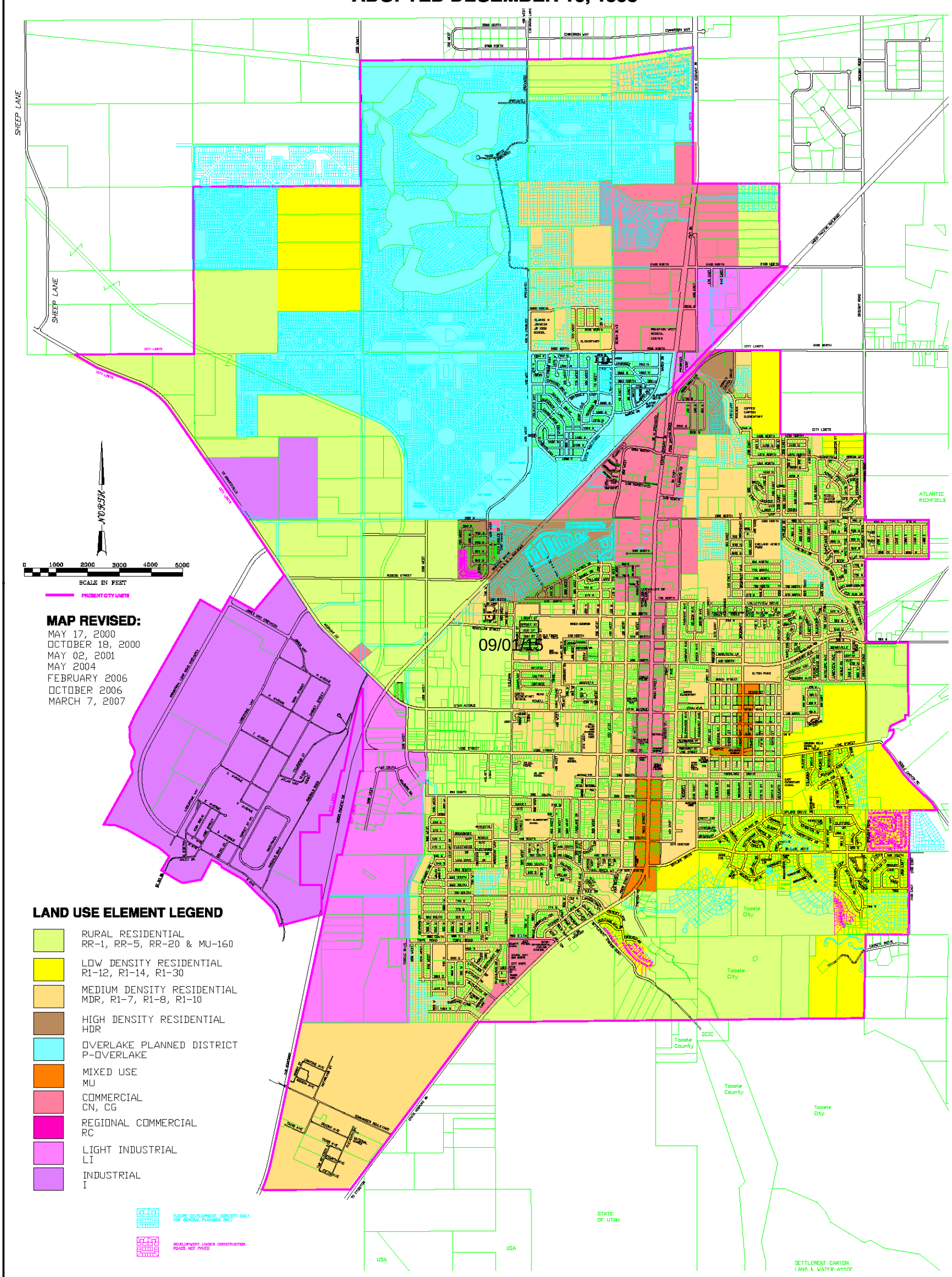
DRAWN BY	DATE	TETRA TECH	CONTRACT NUMBER	TO NUMBER
J. ENGLISH	08/28/15		7021	04
CHECKED BY	DATE	USGS MAP OF TEAD-NORTH AND SURROUNDING AREA TOOELE, UTAH	APPROVED BY	DATE
B. JUPIN	09/01/15		—	—
REVISED BY	DATE		APPROVED BY	DATE
—	—		—	—
SCALE AS NOTED			FIGURE NO. FIGURE 2-2	REV 0

PGH P:\GIS\TOOELE\MAPDOCS\MXD\TOOELE_NORTH_AERIAL_1117.MXD 09/01/15 JEE



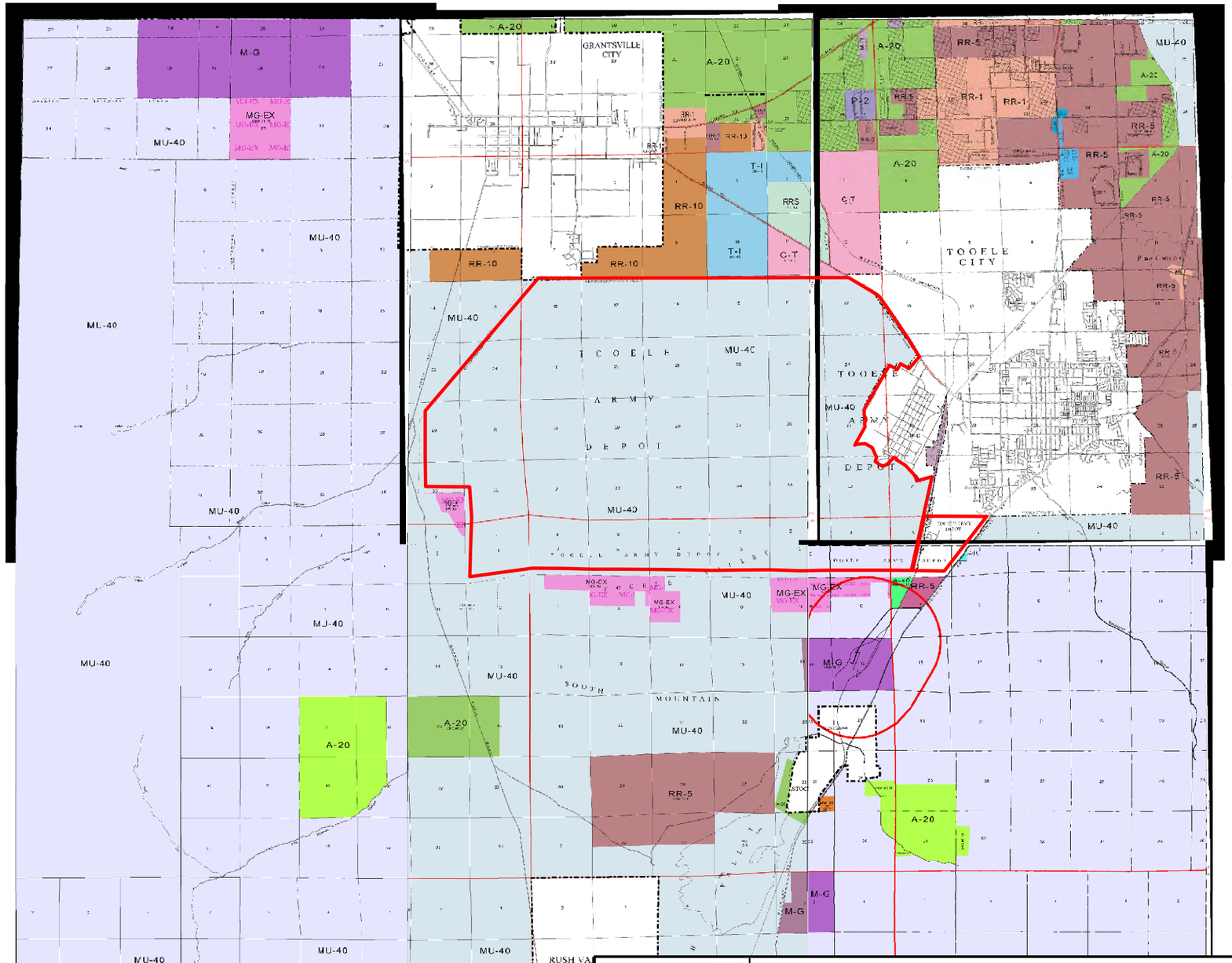
DRAWN BY	DATE	TETRA TECH	CONTRACT NUMBER	TO NUMBER
J. ENGLISH	08/28/15		7021	04
CHECKED BY	DATE	AERIAL PHOTOGRAPH OF TEAD-NORTH AND SURROUNDING AREA TOOELE, UTAH	APPROVED BY	DATE
B. JUPIN	09/01/15			
REVISED BY	DATE		APPROVED BY	DATE
SCALE AS NOTED			FIGURE NO. FIGURE 2-3	REV 0

TOOELE CITY MAP
GENERAL PLAN - LAND USE ELEMENT
ADOPTED DECEMBER 16, 1998



DRAWN BY	DATE	TETRA TECH	CONTRACT NUMBER	TO NUMBER
J. ENGLISH	08/28/15		7021	04
CHECKED BY	DATE	TOOELE CITY MAP	APPROVED BY	DATE
B. JUPIN	09/01/15	GENERAL PLAN - LAND USE ELEMENT	—	—
REVISED BY	DATE	TOOELE, UTAH	APPROVED BY	DATE
—	—		—	—
SCALE			FIGURE NO.	REV
AS NOTED			FIGURE 2-4	0

PGH P:\GIS\TOOELE\MAPDOCS\MXD\TOOELE_NORTH_LAND_USE_ZONES_2015.MXD 09/01/15 JEE



N

A-20, A-40	Agricultural
M-G	Manufacturing General
MG-EX	Mining, Quarry, Sand and Gravel Excavation
MU-40	Multiple Use
R-M-7	Multiple Residential
RR-1, 5, 10	Rural Residental
C-T	Commercial Tourism
C-G	Commercial General
C-H	Commercial Highway
T-I	Technology Industries
RRS	Recreation & Racing Sports
P-2	Planned Rural Residential

Legend

Facility Boundary

2 0 2 Miles

DRAWN BY	DATE
J. ENGLISH	08/28/15
CHECKED BY	DATE
B. JUPIN	09/01/15
REVISED BY	DATE
SCALE	
AS NOTED	

TETRA TECH

ZONING MAP OF TEAD-NORTH AND SURROUNDING AREA
TOOELE, UTAH

CONTRACT NUMBER	TO NUMBER
7021	04
APPROVED BY	DATE
APPROVED BY	DATE
FIGURE NO.	REV
FIGURE 2-5	0

3.0 REVISED HUMAN HEALTH RISK ASSESSMENT RESULTS

The revised dispersion modeling results were used as input to the IRAP-*h* View model to obtain quantitative risk and hazard characterization estimates commensurate with the HHRA and TEAD-N protocol. These risk and hazard characterization results include the following:

- Cancer risks and hazard indices
- The results of the risk assessment of exposure to lead
- The results of the risk assessment of exposure to COPCs from the consumption of breast milk
- An acute hazard characterization of direct inhalation of COPCs in air.

The following target levels or benchmarks for characterizing risks and hazards were based on the TEAD-N Protocol:

- Cancer risk less than or equal to 1×10^{-6} for off-site receptors and 1×10^{-4} for on-site workers
- HI less than or equal to 1.0 for noncarcinogens
- Media-specific concentrations for lead
    - Air concentration of less than or equal to 1.5 $\mu g/m^3$ (maximum quarterly concentration based on the National Ambient Air Quality Standards [NAAQS]/Utah Ambient Air Quality Standards [UAAQS])
    - Soil concentration of less than or equal to 400 mg/kg (based on the OSWER screening level for residential exposures)
    - Drinking water concentration of 4 $\mu g/L$
- Average daily dose of 2,3,7,8-TCDD (based on application of toxicity equivalent factor for other dioxins and furans) to nursing infants exposed to contaminated breast milk of 60 pg/kg-day (based on the HHRA Protocol)
- Acute Hazard Quotient (AQC) for inhalation less than or equal to 1.0.

In accordance with the HHRAP guidance cancer risks and hazard indices for all receptors are calculated using the annual or yearly air concentrations. AQCs were calculated using maximum one hour air concentrations and acute inhalation exposure criteria.

The following sections discuss the results of the revised HHRA. IRAP-*h* modeling input/output files are provided in Appendix D. However, the IRAP-*h* software is needed to read these files.

3.1 CANCER RISKS AND HAZARD INDICES

Cancer risks and hazard indices are summarized in Tables 3-1 and 3-2, respectively. Cancer risks and hazard indices were less than the target levels for all receptors at all locations with the exception of the south/west OB/OD TEAD-N boundary. Cancer risks for all receptors (hypothetical) exceeded the target level of 1 x 10-6 at the south/west OB/OD TEAD-N boundary. Emissions from the OB unit were the major contributor to the elevated cancer risks. Hazard indices exceeded the target level of 1 for all receptors with the exception of the hypothetical adult resident at the south/west OB/OD TEAD-N boundary. Emissions from the OD and SF units were the major contributors to the elevated hazard indices. As noted above there are currently no receptors located at the south/west OB/OD TEAD-N boundary.

Tables 3-3 and 3-4 present a summary of cancer risks and hazard indices for hypothetical receptors at the south/west OB/OD TEAD-N boundary by exposure pathway. Cancer risks and hazard indices for receptors at the other receptor locations are presented in Appendix E. Ingestion of produce was the major contributor to the elevated cancer risks for the child and adult recreational fisher and the child and adult resident. Ingestion of produce and ingestion of milk were the major contributors to the elevated cancer risks for the child and adult farmer. Ingestion of produce was the major contributor to the elevated hazard index for the child recreational fisher and child resident. Ingestion of produce and ingestion of milk were the major contributors to the elevated hazard index for the child and adult farmers. HIs for individual target organs were all less than one (Appendix F), although target organs effects were not available for all chemicals (e.g., lead).

Table 3.5 lists the major contributors to the elevated cancer risks and hazard indices for ingestion of produce for hypothetical receptors at the south/west OB/OD TEAD-N boundary. Emissions of lead from the OB and SF units and cadmium from the OD unit were the major contributors to the elevated cancer risks for all receptors. Emissions of lead from the OB and SF units were the major contributors to the elevated hazard indices for the child recreational fisher, child resident, child farmer, and adult farmer.

Table 3.6 lists the major contributors to the elevated cancer risks and hazard indices for ingestion of milk for the child and adult farmers at the south/west OB/OD TEAD-N boundary. For the child farmer, dibenzo(a,h)anthracene for the OD unit and lead from the OB and SF units were the major contributors to the elevated cancer risks. For the adult farmer, benzo(a)pyrene, dibenzo(a,h)anthracene, indeno(1,2,3-cd)pyrene, lead, and 2,3,7,8-TCDD from the OD unit and lead from the OB and SF units were the major contributors to the elevated cancer risks. Lead from the OB and SF units was the major contributor to the elevated hazard indices for the child and adult farmer.

3.2 LEAD EXPOSURES

Table 3.7 presents a summary of estimated lead concentrations in surface soil, air, and surface water. The estimated lead concentrations in each medium are all significantly less than the chemical-specific target levels referenced in the preceding text.

3.3 BREAST MILK PATHWAY

Estimated 2,3,7,8-TCDD TEQ concentrations in breast milk are presented in Table 3.8. The estimated concentrations are all significantly less than the chemical-specific target level of 60 pg/kg-day referenced in the preceding text.

3.4 ACUTE HAZARD CHARACTERIZATION FROM DIRECT INHALATION

Table 3.9 summarizes the AHQs for the direct inhalation exposure pathway. AHQs for chemicals by source are listed in Appendix G. AHQs for the OD and SF units were less than the target level of 1. AHQs for the OB unit exceeded the target level of 1 at the Firing Control Point, Guard Shack, North/East OB/OD Boundary, and South/West OB/OD TEAD-N Boundary. Table 3.10 lists the chemicals which were the major contributors to the AHQs. Lead, hydrogen chloride, and chlorine were the major contributors to the AHQs for the OB unit.

3.5 RISKS BASED ON SOIL SAMPLING DATA

3.5.1 Risk for Chemicals Other than Lead

A risk assessment was performed on the surface soil data that was collected at the site in April 2006 (TtNUS, 2006), July 2007 (TtNUS, 2007), November 2009 (TtNUS, 2010), and October 2014 (Tetra Tech, 2015). Soil data were collected from the OB, OD, and SF Units and risks associated with exposure to surface soil were evaluated for an OB/OD worker. The risk assessment was conducted in accordance with USEPA's Risk Assessment Guidance for Superfund (RAGS) Part A (USEPA, 1989). The OB/OD worker was assumed to be exposed to surface soil by incidental ingestion and dermal contact. Three scenarios were evaluated: 1) the OB/OD worker had no personnel protective equipment, 2) the OB/OD worker wore long sleeve shirts and gloves, and 3) a future outdoor industrial worker. The exposure assumptions used in this HHRA are presented in the RAGS Part D Table 4s in Appendix H.

Standard USEPA default exposure assumptions were used for the unprotected worker and future outdoor worker scenarios which assumed that the worker's hands, forearms, and head were exposed. These body surface areas correspond to an exposed total body surface area of 3,527 cm^2 (USEPA, 2014). For the protected worker it was assumed that only the head was exposed which corresponds to an exposed total body surface area of 1,250 cm^2. An incidental ingestion rate of 100 mg/day was used for the both the unprotected and protected worker (USEPA, 2014). The soil adherence rate was assumed to be 0.12 mg/cm^2 for both the unprotected and protected worker (USEPA, 2014). Workers may be at the OB unit 60 days a year, at the OD unit 120 days a year, and at the SF unit 60 days a year. The unprotected and protected workers only have contact with one unit each work day. The future outdoor worker was assumed to be exposed 250 days a year (USEPA, 2014).

The exposure point concentration (EPC) is calculated for COPCs only and is an estimate of the chemical concentration within an exposure unit (EU) likely to be contacted over time by a receptor and is used to estimate exposure intakes. An exposure unit is defined as the area typically encountered/ traversed by a receptor under a particular land use scenario. Four EUs were evaluated

in this analysis, the OB unit, the OD unit, the SF unit, and all three units combined. Two types of soil samples were collected at the OB, OD, and SF units. Discrete soil samples were collected from all three units in 2006, 2007, and 2009. Soil samples collected in 2014 were collected using the incremental sampling methodology (ISM). EPCs for discrete soil samples were calculated following the USEPA's Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites (2002) and using USEPA's ProUCL software version 5.0.00 (2013a). In general, the concentration selected for the EPC was the value recommended by the ProUCL guidance, subject to final review by the risk assessor or a statistician. EPCs for ISM samples were calculated following the Incremental Sampling Methodology (ITRC, 2012). The distribution-based UCL and the rationale for selecting the EPCs for each zone are described on the RAGS Part D Table 3s' presented in Appendices H and I.

Cancer risks and hazard indices were estimated for four exposure units (EUs). The OB, OD, and SF units were treated as separate EUs. Also the three units were combined and treated as one EU.

Potential cancer risks and hazard indices are summarized in Table 3.11. The results of the risk assessment in RAGS Part D format are included in Appendix H. Hazard indices for unprotected workers, protected workers, and a future outdoor industrial worker were less than or equal to unity (1), indicating that adverse noncarcinogenic effects are not anticipated for these receptors under the defined exposure conditions.

Cancer risks for unprotected workers, protected workers, and a future outdoor industrial worker were less that the target level of 1×10^{-4}.

3.5.2 Risks for Lead

Surface soil samples (based on 2006, 2007, 2009, and 2014 data) from the OB/OD Unit were evaluated for potential risks to onsite workers. Concentrations of lead in surface soil from the OB Unit in 2006 (1,620 mg/kg), 2007 (8,840 mg/kg), 2009 (27,000 mg/kg), and 2014 (11,000 mg/kg) exceeded the USEPA screening level of 800 mg/kg for industrial workers (USEPA, 2015).

Exposures to lead in surface soil posed to industrial workers were evaluated using a slope factor approach developed by the USEPA TRW for lead (USEPA, 2003b, 2009c). As the model (often referred to as the "Adult Lead Model"), recommends, average lead concentrations in surface soil were used as the EPCs, and central tendency exposure assumptions were used to estimate receptor intake (USEPA, 2003a, 2009c). Thus, the incidental soil ingestion rate is assumed to be 50 mg/day (USEPA, 2003b, 2009c). An exposure frequency of 60 days/year is assumed for the OB worker, 210 days/year for an OB/OD/SF worker, and 219 days/year for the outdoor worker. Values of 1.8 and 1.0 µg/dL were used for the standard deviation and baseline blood lead concentration, respectively, (USEPA, 2009c). Default parameters were used for the remaining model input parameters. Results of the model runs are summarized in Table 3.12 and model printouts are included in Appendix I.

For the 2006 surface soil samples, results for all workers do not exceed the USEPA goal of no more than 5% of children (fetuses of exposed women) exceeding a 10 µg/dL blood-lead level. For the 2007 and 2014 surface soil samples, results for outdoor workers exposed to soil at the OB unit exceeded the USEPA goal of no more than 5% of children exceeding a 10 µg/dL blood-lead level.

For the 2009 surface soil samples, results for OB workers and outdoor workers exposed to soil at the OB unit exceeded the USEPA goal of no more than 5% of children exceeding a 10 µg/dL blood-lead level.

TABLE 3.1 SUMMARY OF CANCER RISKS

Receptor	OD	OB	SF	Total
Firing Control Point				
Adult Worker(1)	5E-09	3E-08	3E-09	4E-08
Guard Shack				
Adult Worker(1)	6E-09	8E-08	5E-09	9E-08
North/East OB/OD Unit Boundary				
Adult Worker(1)	3E-08	5E-07	4E-08	5E-07
South/West OB/OD TEAD Boundary				
Child Resident	4E-07	1E-06	4E-07	**2E-06**
Adult Resident	8E-07	**2E-06**	9E-07	**4E-06**
Child Farmer	1E-06	**2E-06**	1E-06	**4E-06**
Adult Farmer	**3E-06**	**7E-06**	**4E-06**	**1E-05**
Child Recreational Fisher(2)	4E-07	1E-06	4E-07	**2E-06**
Adult Recreational Fisher(2)	8E-07	**2E-06**	9E-07	**4E-06**
Grantsville				
Child Resident	9E-09	5E-08	9E-09	7E-08
Adult Resident	2E-08	1E-07	2E-08	1E-07
Child Farmer	2E-08	1E-07	2E-08	1E-07
Adult Farmer	7E-08	4E-07	7E-08	5E-07
Child Recreational Fisher(2)	9E-09	6E-08	9E-09	7E-08
Adult Recreational Fisher(2)	2E-08	1E-07	2E-08	2E-07
Tooele				
Child Resident	2E-09	8E-09	2E-09	1E-08
Adult Resident	3E-09	2E-08	3E-09	2E-08
Child Farmer	3E-09	2E-08	4E-09	2E-08
Adult Farmer	1E-08	5E-08	1E-08	8E-08
Child Recreational Fisher(2)	2E-09	1E-08	2E-09	1E-08
Adult Recreational Fisher(2)	3E-09	3E-08	3E-09	4E-08
Stockton				
Child Resident	4E-09	2E-08	5E-09	3E-08
Adult Resident	8E-09	5E-08	9E-09	6E-08
Child Farmer	9E-09	5E-08	1E-08	7E-08
Adult Farmer	3E-08	2E-07	4E-08	2E-07
Child Recreational Fisher(2)	4E-09	3E-08	5E-09	4E-08
Adult Recreational Fisher(2)	8E-09	6E-08	9E-09	8E-08
Grantsville Reservoir				
Child Recreational Fisher(3)	4E-16	3E-09	3E-17	3E-09
Adult Recreational Fisher(3)	2E-15	2E-08	1E-16	2E-08
Rush Lake				
Child Recreational Fisher(3)	3E-15	4E-09	5E-17	4E-09
Adult Recreational Fisher(3)	2E-14	2E-08	3E-16	2E-08

Notes:

1 - Exposed only by Inhalation.

2 - Assumes fishing occurs at Grantsville Reservoir.

3 - Exposed only by ingestion of fish.

Shaded values exceed target level of 1×10^{-6}.

TABLE 3.2 SUMMARY OF HAZARD INDICES

Receptor	OD	OB	SF	Total
Firing Control Point				
Adult Worker[1]	2E-02	2E-03	1E-03	2E-02
Guard Shack				
Adult Worker[1]	2E-02	6E-03	2E-03	3E-02
North/East OB/OD Unit Boundary				
Adult Worker[1]	9E-02	4E-02	1E-02	1E-01
South/West OB/OD TEAD Boundary				
Child Resident	1E+00	2E-01	1E+00	**3E+00**
Adult Resident	6E-01	8E-02	5E-01	1E+00
Child Farmer	**3E+00**	4E-01	**3E+00**	**7E+00**
Adult Farmer	**2E+00**	2E-01	**2E+00**	**4E+00**
Child Recreational Fisher[2]	1E+00	2E-01	1E+00	**3E+00**
Adult Recreational Fisher[2]	6E-01	8E-02	5E-01	1E+00
Grantsville				
Child Resident	5E-02	2E-02	3E-02	9E-02
Adult Resident	2E-02	8E-03	1E-02	4E-02
Child Farmer	8E-02	3E-02	6E-02	2E-01
Adult Farmer	4E-02	1E-02	3E-02	9E-02
Child Recreational Fisher[2]	5E-02	2E-02	3E-02	9E-02
Adult Recreational Fisher[2]	2E-02	8E-03	1E-02	4E-02
Tooele				
Child Resident	2E-02	1E-02	5E-03	4E-02
Adult Resident	9E-03	4E-03	2E-03	2E-02
Child Farmer	3E-02	1E-02	1E-02	5E-02
Adult Farmer	1E-02	5E-03	5E-03	2E-02
Child Recreational Fisher[2]	2E-02	1E-02	5E-03	4E-02
Adult Recreational Fisher[2]	9E-03	5E-03	2E-03	2E-02
Stockton				
Child Resident	3E-02	1E-02	1E-02	6E-02
Adult Resident	1E-02	6E-03	5E-03	2E-02
Child Farmer	3E-02	1E-02	1E-02	5E-02
Adult Farmer	1E-02	5E-03	5E-03	2E-02
Child Recreational Fisher[2]	2E-02	1E-02	5E-03	4E-02
Adult Recreational Fisher[2]	9E-03	5E-03	2E-03	2E-02
Grantsville Reservoir				
Child Recreational Fisher[3]	4E-05	1E-04	4E-11	1E-04
Adult Recreational Fisher[3]	4E-05	1E-04	4E-11	1E-04
Rush Lake				
Child Recreational Fisher[3]	6E-05	1E-04	1E-10	2E-04
Adult Recreational Fisher[3]	6E-05	1E-04	1E-10	2E-04

Notes:

1 - Exposed only by Inhalation.

2 - Assumes fishing occurs at Grantsville Reservoir.

3 - Exposed only by ingestion of fish.

Shaded values exceed target level of 1.

TABLE 3.3 SUMMARY OF HAZARD INDICES BY EXPOSURE PATHWAY FOR SOUTH/WEST OB/OD TEAD BOUNDARY

Exposure Pathway	Adult Farmer	Child Farmer	Adult Recreational Fisher	Child Recreational Fisher	Adult Resident	Child Resident
Inhalation	6E-02	2E-01	8E-02	2E-01	8E-02	2E-01
Ingestion of Produce	**2E+00**	**4E+00**	1E+00	**3E+00**	1E+00	**3E+00**
Ingestion of Beef	1E-01	8E-02	0E+00	0E+00	0E+00	0E+00
Ingestion of Chicken	4E-07	3E-07	0E+00	0E+00	0E+00	0E+00
Ingestion of Drinking Water	1E-02	3E-02	1E-02	3E-02	1E-02	3E-02
Ingestion of Eggs	1E-08	8E-09	0E+00	0E+00	0E+00	0E+00
Ingestion of Fish	0E+00	0E+00	1E-04	1E-04	0E+00	0E+00
Ingestion of Milk	**2E+00**	**3E+00**	0E+00	0E+00	0E+00	0E+00
Ingestion of Pork	3E-04	2E-04	0E+00	0E+00	0E+00	0E+00
Ingestion of Soil	2E-04	1E-03	2E-04	1E-03	2E-04	1E-03
Total Hazard Index	**4E+00**	**7E+00**	1E+00	**3E+00**	1E+00	**3E+00**

Shaded values exceeded noncarcinogenic target level of 1.

TABLE 3.4 SUMMARY OF CANCER RISKS BY EXPOSURE PATHWAY FOR SOUTH/WEST OB/OD TEAD-NORTH BOUNDARY

Exposure Pathway	Adult Farmer	Child Farmer	Adult Recreational Fisher	Child Recreational Fisher	Adult Resident	Child Resident
Inhalation	6E-07	3E-07	6E-07	3E-07	6E-07	3E-07
Ingestion of Produce	**6E-06**	**2E-06**	**3E-06**	1E-06	**3E-06**	1E-06
Ingestion of Beef	1E-06	9E-08	0E+00	0E+00	0E+00	0E+00
Ingestion of Chicken	1E-10	1E-11	0E+00	0E+00	0E+00	0E+00
Ingestion of Drinking Water	7E-09	2E-09	5E-09	2E-09	5E-09	2E-09
Ingestion of Eggs	5E-11	6E-12	0E+00	0E+00	0E+00	0E+00
Ingestion of Fish	0E+00	0E+00	2E-08	3E-09	0E+00	0E+00
Ingestion of Milk	**6E-06**	1E-06	0E+00	0E+00	0E+00	0E+00
Ingestion of Pork	3E-08	3E-09	0E+00	0E+00	0E+00	0E+00
Ingestion of Soil	7E-10	9E-10	5E-10	9E-10	5E-10	9E-10
Total Cancer Risk	**1E-05**	**4E-06**	**4E-06**	**2E-06**	**4E-06**	**2E-06**

Shaded values exceed target risk level of 1×10^{-6}.

TABLE 3.5 MAJOR CONTRIBUTORS TO RISK FROM INGESTION OF PRODUCE FOR RECEPTORS AT THE SOUTH/WEST OB/OD TEAD-NORTH BOUNDARY

Receptor	Source	Chemical	Cancer Risk	Hazard Quotient
Child Resident	OB	Lead	4E-07	1E+00
	OD	Cadmium	7E-07	--
	SF	Lead	4E-07	1E+00
Adult Resident	OB	Lead	8E-07	5E-01
	OD	Cadmium	1E-06	--
	SF	Lead	8E-07	5E-01
Child Recreational Fisher	OB	Lead	4E-07	1E+00
	OD	Cadmium	7E-07	--
	SF	Lead	4E-07	1E+00
Adult Recreational Fisher	OB	Lead	8E-07	5E-01
	OD	Cadmium	1E-06	--
	SF	Lead	8E-07	5E-01
Child Farmer	OB	Lead	5E-07	2E+00
	OD	Cadmium	1E-06	--
	OD	Lead	--	1E-01
	SF	Lead	6E-07	2E+00
Adult Farmer	OB	Lead	2E-06	7E-01
	OD	Cadmium	3E-06	--
	SF	Lead	2E-06	7E-01

Notes:
Major contributors are those chemicals with cancer risks greater than 1×10^{-7} or hazard quotients greater than 0.1.

TABLE 3.6 MAJOR CONTRIBUTORS TO RISK FROM INGESTION OF MILK FOR RECEPTORS AT THE SOUTH/WEST OB/OD TEAD-NORTH BOUNDARY

Receptor	Source	Chemical	Cancer Risk	Hazard Quotient
Child Farmer	OD	Dibenz(a,h)anthracene	3E-07	--
	OB	Lead	4E-07	1E+00
	SF	Lead	5E-07	1E+00
Adult Farmer	OD	Benzo(a)pyrene	3E-07	--
	OD	Dibenz(a,h)anthracene	1E-06	--
	OD	Indeno(1,2,3-cd) pyrene	3E-07	--
	OD	Lead	1E-07	--
	OD	TetraCDD, 2,3,7,8-	2E-07	--
	OB	Lead	2E-06	9E-01
	SF	Lead	2E-06	9E-01

Notes:
Major contributors are those chemicals with cancer risks greater than 1×10^{-7} or hazard quotients greater than 0.1.

TABLE 3.7 SUMMARY OF LEAD CONCENTRATIONS IN SURFACE SOIL, AIR, AND SURFACE WATER

Location	Source	Maximum Soil Concentration (mg/kg)	Air Concentration (µg/m^3)	Maximum Water Concentration (µg/L)
Firing Control Point	OB	2.6E-03	4.5E-03	--
	OD	1.3E-04	2.3E-04	--
	SF	1.3E-03	2.3E-03	--
	Total	4.0E-03	6.9E-03	--
Grantsville	OB	4.2E-04	1.2E-03	--
	OD	5.9E-05	1.6E-04	--
	SF	4.4E-04	1.3E-03	--
	Total	9.2E-04	2.6E-03	--
Grantsville Reservoir	OB	2.2E-04	6.2E-04	1.2E-02
	OD	3.2E-05	9.0E-05	1.5E-03
	SF	2.2E-04	6.4E-04	1.1E-02
	Total	4.6E-04	1.4E-03	2.4E-02
Guard Shack	OB	2.2E-03	4.8E-03	--
	OD	3.1E-04	6.2E-04	--
	SF	1.8E-03	3.9E-03	--
	Total	4.3E-03	9.3E-03	--
North/East OB/OD Boundary	OB	1.3E-02	2.3E-02	--
	OD	3.0E-03	3.6E-03	--
	SF	1.8E-02	3.0E-02	--
	Total	3.4E-02	5.8E-02	--
Rush Lake	OB	2.9E-04	8.6E-04	1.6E-02
	OD	3.7E-05	1.1E-04	2.0E-03
	SF	3.3E-04	9.3E-04	1.7E-02
	Total	6.5E-04	1.9E-03	3.5E-02
South/West OB/OD TEAD Boundary	OB	2.2E-02	3.4E-02	--
	OD	1.3E-03	2.5E-03	--
	SF	2.3E-02	3.8E-02	--
	Total	4.7E-02	7.4E-02	--
Stockton	OB	1.8E-04	5.3E-04	--
	OD	2.5E-05	7.2E-05	--
	SF	2.2E-04	6.4E-04	--
	Total	4.3E-04	1.2E-03	--
Tooele	OB	6.3E-05	1.9E-04	--
	OD	7.7E-06	2.4E-05	--
	SF	6.8E-05	2.0E-04	--
	Total	1.4E-04	4.1E-04	--

Shaded values are greater than target levels.
Target Levels:
Soil = 400 mg/kg
Air = 1.5 µg/m^3
Water = 4 µg/L

TABLE 3.8 SUMMARY OF BREAST MILK AVERAGE DAILY DOSE (2,3,7,8-TCDD) TEQ

Location	Receptor	Source	Concentration (pg/kg-day)
Grantsville	Adult Farmer	OD	5.7E-03
	Adult Recreational Fisher	OD	1.9E-05
	Adult Resident	OD	1.5E-05
South/West OB/OB TEAD Boundary	Adult Farmer	OD	8.8E-02
	Adult Recreational Fisher	OD	2.3E-04
	Adult Resident	OD	2.3E-04
Stockton	Adult Farmer	OD	2.5E-03
	Adult Recreational Fisher	OD	1.1E-05
	Adult Resident	OD	6.7E-06
Tooele	Adult Farmer	OD	8.5E-04
	Adult Recreational Fisher	OD	6.4E-06
	Adult Resident	OD	2.3E-06

Target level = 60 pg/kg-day for 2,3,7,8-TCDD TEQ

TABLE 3.9 ACUTE INHALATION HAZARD QUOTIENT

Source	Firing Control Point	Guard Shack	North/East OB/OD Boundary	South/West OD/OD TEAD Boundary	Grantsville	Grantsville Reservoir	Rush Lake	Stockton	Tooele
OB	**2E+00**	9E-01	**2E+00**	**2E+00**	5E-01	4E-01	4E-01	4E-01	3E-01
OD	3E-01	5E-01	1E+00	1E+00	3E-01	4E-01	3E-01	3E-01	2E-01
SF	5E-01	3E-01	6E-01	6E-01	2E-01	2E-01	1E-01	1E-01	1E-01

Shaded values exceed target level of 1.

TABLE 3.10 MAJOR CONTRIBUTORS TO THE ACUTE INHALATION HAZARD QUOTIENT

Source	Chemical	Firing Control Point	Guard Shack	North/East OB/OD Boundary	South/West OB/OD TEAD Boundary
OB	Lead	5E-01	3E-01	5E-01	6E-01
	Hydrogen chloride	8E-01	4E-01	9E-01	1E+00
	Chlorine	3E-01	1E-01	3E-01	3E-01
	Total	**2E+00**	**9E-01**	**2E+00**	**2E+00**

Notes: Major contributors are those chemicals with an acute hazard quotient greater than 0.1.

TABLE 3.11 SUMMARY OF CANCER RISKS AND HAZARD INDICES FOR ON-SITE WORKERS EXPOSED TO SURFACE SOIL

Source	Unprotect Workers[1]							
	Cancer Risk				Hazard Index			
	2006	2007	2009	2014	2006	2007	2009	2014
OB Unit	1E-06	4E-06	2E-06	1E-06	0.3	0.05	0.05	0.09
OD Unit	2E-06	4E-06	2E-06	8E-07	0.04	0.07	0.05	0.05
SF Unit	2E-06	(4)	4E-06	3E-06	0.2	(4)	0.1	0.1
All Soils	6E-06	1E-05	1E-05	7E-06	0.3	0.2	0.3	0.3
Source	**Protected Workers[2]**							
	Cancer Risk				**Hazard Index**			
	2006	**2007**	**2009**	**2014**	**2006**	**2007**	**2009**	**2014**
OB Unit	1E-06	4E-06	2E-06	1E-06	0.2	0.05	0.05	0.08
OD Unit	2E-06	4E-06	2E-06	7E-07	0.04	0.06	0.05	0.04
SF Unit	2E-06	(4)	4E-06	3E-06	0.2	(4)	0.09	0.1
All Soils	5E-06	1E-05	1E-05	7E-06	0.2	0.2	0.3	0.3
Source	**Future Outdoor Workers[3]**							
	Cancer Risk				**Hazard Index**			
	2006	**2007**	**2009**	**2014**	**2006**	**2007**	**2009**	**2014**
OB Unit	6E-06	2E-05	8E-06	6E-06	1	0.2	0.2	0.4
OD Unit	4E-06	9E-06	4E-06	2E-06	0.09	0.1	0.1	0.1
SF Unit	7E-06	(4)	2E-05	1E-05	0.8	(4)	0.4	0.5
All Soils	7E-06	1E-05	1E-05	9E-06	0.3	0.2	0.4	0.4

Notes:
1 - Unprotected workers head, hands, and forearms are assumed to be exposed.
2 - Protected workers are assumes to wear gloves and long sleeved shirts, only the head is assumed to be exposed.
3 - Default USEPA industrial worker.
4 - No surface soil samples were collected at the SF unit in 2007.

TABLE 3.12 ADULT LEAD MODELING RESULTS

Receptor	2006		2007		2009		2014	
	Blood Lead Geometric Mean Concentration (µg/dL)	**Percent of Receptors Exceeding 10 µg/dL**	**Blood Lead Geometric Mean Concentration (µg/dL)**	**Percent of Receptors Exceeding 10 µg/dL**	**Blood Lead Geometric Mean Concentration (µg/dL)**	**Percent of Receptors Exceeding 10 µg/dL**	**Blood Lead Geometric Mean Concentration (µg/dL)**	**Percent of Receptors Exceeding 10 µg/dL**
OB Workers(1)	1.4	0.02%	2.8	0.9%	4.6	6.5%	3.3	2.0%
	(2)	(2)	(2)	(2)	(2)	(2)	1.1	0.01%
OB/OD/SF Workers(3)	2.3	0.4%	2.3	0.4%	3.5	2.3%	2.7	0.8%
Outdoor Workers - OB Unit(4)	2.3	0.4%	7.5	25%	14	65%	9.5	39%
Outdoor Workers – SF Unit(4)	(2)	(2)	(2)	(2)	(2)	(2)	1.5	0.04%
Outdoor Workers - All Units(5)	2.4	0.4%	2.4	0.4%	3.6	2.6%	2.8	0.9%

Notes:
1 - OB workers are exposed to the OB unit 60 days a year.
2 – Lead concentrations in soil were below the OSWER screening level of 400 mg/kg at the SF Unit in 2006, 2007, and 2009.
3 - OB/OD/SF workers are exposed to the entire site (OB, OD, & SF units) 210 days a year.
4 - Outdoor workers are the default USEPA industrial worker and are assumed to be exposed to the OB unit 219 days a year.
5 - Outdoor workers are the default USEPA industrial worker and are assumed to be exposed to the entire site (OB, OD, & SF units) 219 days a year.

4.0 UNCERTAINTY ANALYSIS

The revised HHRA was prepared following the methodology presented in the original HHRA and the TEAD-N protocol. The uncertainty analysis presented as part of the original HHRA is also applicable to this analysis. The only new significant sources of uncertainty involves the evaluation of lead and chemicals that were not detected in surface soil samples which might be present in soil at concentrations below the detection limits.

4.1 UNCERTAINTY ASSOCIATED WITH EVALUATION OF LEAD

Lead was identified as a major contributor to the elevated cancer risks and hazard indices for receptors at the South/West OB/OD TEAD-N Boundary. However, USEPA's IRIS database does not currently list a reference dose (RfD) or reference concentration (RfC) for lead because a threshold level for exposure has not been established. While USEPA has characterized lead as a probable human carcinogen, it has not developed a cancer slope factor (CSF) for lead. The toxicity criteria (reference dose/concentrations, cancer slope factors) for lead used in this evaluation were obtained from the HHRAP database. The oral RfD and inhalation RfC are based on the national ambient air quality standard for lead. The oral CSF and unit risk values were obtained from the California EPA.

While the HHRAP database provides toxicity criteria for lead the HHRAP guidance also states "…we generally recommend that risk assessments evaluating lead as a COPC use the IEUBK model when soil concentrations are calculated to be above the benchmark. We don't generally recommend evaluating carcinogenic risks or noncarcinogenic hazards of lead."

USEPA has typically relied on the neurological effects observed in children as the sensitive endpoint for evaluating lead toxicity. Consequently, USEPA developed the Integrated Exposure Uptake Biokinetic (IEUBK) Model for Lead in Children (USEPA, 1994). For evaluating lead exposures by adults USEPA has developed an Interim Approach to Assessing Risks Associated Adult Exposures to Lead in Soil (USEPA, 2003b). This interim model is intended for assessing adult lead risks associated with nonresidential (industrial) exposure scenarios. In general children are more susceptible to lead exposures than adults because of higher soil ingestion rates and greater absorption by the gut, in addition to nutritional variables and lower body weight. In fact USEPA's interim approach for assessing adult exposures to lead is based not on limiting adult toxicity, but rather on limiting fetal toxicity by limiting indirect fetal exposure through direct maternal exposures to lead (USEPA, 2003b).

Guidance from both the Office of Prevention, Pesticides, and Toxic Substances (OPPTS) and Office of Solid Waste and Emergency Response (OSWER) recommend 400 mg/kg as the lowest screening level for lead-contaminated soil in a residential setting, where children are frequently present (USEPA, 1994). Guidance for the USEPA Technical Review Workgroup (TRW) for Lead indicates that "a reasonable screening level for soil lead at commercial/industrial (i.e., non-residential) sites is 800 mg/kg" for a typical non-contact intensive worker (USEPA, 2013b). Using the toxicity criteria for lead from the HHRAP database and the 400 mg/kg residential screening level results in an ILCR of 2×10^{-6} and an HI of 12 for children exposed to lead in soil. Using the toxicity criteria for lead from the HHRAP database and the 800 mg/kg industrial

screening levels results in an ILCR of 4 x 10^{-6} and an HI of 2 for industrial workers exposed to lead in soil. These ILCRs and HI exceeds the target levels.

Therefore, while the revised risk assessment indicated that cancer risks and hazard indices for exposures to lead exceed the target levels, there is uncertainty associated with these cancer risks and hazard indices since they are not based on standard USEPA protocol.

4.2 UNCERTAINTY ASSOCIATED WITH RISKS BASED ON SOIL SAMPLING DATA

Section 3.5 discussed the risks associated with the surface soil data that was collected at the site in April 2006 (TtNUS, 2006), July 2007 (TtNUS, 2007), November 2009 (TtNUS, 2010), and October 2014 (Tetra Tech, 2015). Only chemicals that were detected in surface soil were evaluated in the HHRA. It is possible that a chemical could be present in soil at a concentration that was less than the detection limit. A separate risk evaluation was performed for the chemicals which were not detected in surface soil using the detection limits as the EPCs. The results of the analysis in RAGS Part D format are included in Appendix J. The cancer risks and hazard indices for an unprotected worker, protected worker, and future outdoor industrial worker exposed to soil from all three units is presented in Table 4.1. All cancer risks are less than 10^{-7} and all hazard indices are less than 0.01. Consequently adverse carcinogenic and non-carcinogenic effects are not anticipated for these receptors under the defined exposure conditions even if the nondetected chemicals were present at concentrations less than their detection limits.

Table 4.1 SUMMARY OF CANCER RISKS AND HAZARD INDICES ASSOCIATED WITH NON-DETECTED CHEMICALS

Receptor	Cancer Risks				Hazard Index			
	2006	2007	2009	2014	2006	2007	2009	2014
Unprotected Worker	7E-09	3E-08	2E-09	2E-09	0.002	0.005	0.0003	0.0006
Protected Worker	4E-09	2E-08	1E-09	2E-09	0.001	0.004	0.0003	0.0004
Future Worker	9E-09	3E-08	2E-09	2E-09	0.002	0.006	0.0003	0.0007

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APPENDICES - Appear on CD only

Appendix A **Evaluation of Risks Using Emission Factors Based on the 95% Upper Confidence Limit**

Appendix B **Supplement Information for Chemicals of Potential Concern**

Appendix C **Supplement AIHQ Values**

Appendix D **IRAP-*h* Input/Output Files (Stand-Alone CD)**

Appendix E **Hazard Indices and Cancer Risks by Exposure Pathway**

Appendix F **Hazard Indices by Target Organ**

Appendix G **Acute Hazard Quotients**

Appendix H **RAGS Part D Spreadsheet for On-Site OB/OD Workers**

Appendix I **Adult Lead Model Results**

Appendix J **RAGS Part D Spreadsheets for Evaluation of Non-Detected Chemicals**

APPENDIX A
EVALUATION OF RISKS USING EMISSION FACTORS BASED ON THE 95% UPPER CONFIDENCE LIMIT

1.0 INTRODUCTION

As discussed in Attachment 17, the database for the emission factors was inadequate to calculate 95 percent upper confidence intervals (UCLs), consequently the evaluation of human health risks presented in Attachment 17a was based on average emission factors. This appendix presents an evaluation of the human health risks using emission factors based on 95% UCLs. The emission factors based on 95% UCLs were used as input to the IRAP-*h* View model to obtain quantitative risk and hazard characterization estimates commensurate with the HHRA and TEAD-N protocol. These risk and hazard characterization results include the following:

- Cancer risks and hazard indices
- The results of the risk assessment of exposure to lead
- The results of the risk assessment of exposure to COPCs from the consumption of breast milk
- An acute hazard characterization of direct inhalation of COPCs in air.

The following target levels or benchmarks for characterizing risks and hazards were based on the TEAD-N Protocol:

- Cancer risk less than or equal to 1×10^{-6} for off-site receptors and 1×10^{-4} for on-site workers
- HI less than or equal to 1.0 for noncarcinogens
- Media-specific concentrations for lead
    - Air concentration of less than or equal to 1.5 $\mu g/m^3$ (maximum quarterly concentration based on the National Ambient Air Quality Standards [NAAQS]/Utah Ambient Air Quality Standards [UAAQS])
    - Soil concentration of less than or equal to 400 mg/kg (based on the OSWER screening level for residential exposures)
    - Drinking water concentration of 4 $\mu g/L$

- Average daily dose of 2,3,7,8-TCDD (based on application of toxicity equivalent factor for other dioxins and furans) to nursing infants exposed to contaminated breast milk of 60 pg/kg-day (based on the HHRA Protocol)
- Acute Hazard Quotient (AQC) for inhalation less than or equal to 1.0.

The following sections discuss the results of the revised HHRA. IRAP-*h* modeling input/output files are provided in Appendix D. However, the IRAP-*h* software is needed to read these files.

2.1 Cancer Risks and Hazard Indices

Cancer risks and hazard indices are summarized in Tables 2.1 and 2.2, respectively. Cancer risks exceeded the acceptable level of 1×10^{-6} for the adult worker at North/East OB/OD boundary,

for all receptors at the South/West OB/OD TEAD-N boundary, the adult farmer at Grantsville, and the adult farmer at Stockton. Emissions from the OB unit were the major contributor to the elevated cancer risks at all locations. Emissions from the OD and SF units were also major contributors to the elevated cancer risks for adult farmers at the South/West OB/OB boundary. Hazard indices were less than the target levels for all receptors at all locations with the exception of the South/West OB/OD TEAD-N boundary. Emissions from the OD and SF units were the major contributors to the elevated hazard indices for the child resident and child recreational user. Emissions from the OD, OB, and SF unit were the major contributors to the elevated hazard indices for the child and adult farmers. As noted above there are currently no receptors located at the South/West OB/OD TEAD-N boundary.

Table 2.3 presents a summary of hazard indices by exposure pathway for hypothetical receptors at the South/West OB/OD TEAD-N boundary. Hazard indices for receptors at the other receptor locations are presented in Attachment A. Ingestion of produce and ingestion of milk were the major contributors to the elevated hazard index for the child and adult farmers. Ingestion of produce was the major contributor to the elevated hazard index for the child and adult recreational users and child and adult residents. HIs for individual target organs were all less than one (Attachment B) with the exception of the kidney (HQ = 2) for the child farmer, although target organs effects were not available for all chemicals (e.g., lead).

Tables 2.4 to 2.7 presents a summary of the cancer risks by exposure pathways for receptors at North/East OB/OD boundary, South/West OB/OD TEAD-N boundary, Grantsville, and Stockton. Cancer risks for receptors at the other receptor locations are presented in Attachment A. Inhalation was the major contributor to the cancer risk for the on-site worker at the North/East OB/OD Boundary. Inhalation, ingestion of produce, ingestion of beef, and ingestion of milk were the major contributors to the elevated cancer risks for the adult farmer at the South/West OB/OB boundary. Inhalation, ingestion of produce, and ingestion of milk were the major contributors to the elevated cancer risks for the child and adult farmer at the South/West OB/OB boundary. Inhalation and ingestion of produce were the major contributors to the elevated cancer risks for the child and adult recreational user and child and adult resident at the South/West OB/OB boundary. Ingestion of milk was the major contributor the cancer risk for the adult farmer at Grantsville. While the cumulative cancer risk for adult farmers at Stockton exceeded 1×10^{-6} the cancer risks for all the individual exposure pathways were less than 1×10^{-6}.

Table 2.8 lists the major contributors to the elevated cancer risks from inhalation for on-site workers at the North/East OB/OD boundary. Emissions of cadmium and cobalt from the OD unit were the major contributors to the elevated cancer risks for the on-site workers.

Table 2.9 lists the major contributors to the elevated cancer risks from inhalation for hypothetical residents at the South/West OB/OD TEAD-N boundary. Emissions of cadmium from the OD unit were the major contributor to the elevated cancer risks for the child resident, child recreational user, and child farmer. Emissions of cadmium and cobalt from the OD unit were the major contributors to the elevated cancer risks from the adult resident, adult recreational user, and adult farmer.

Table 2.10 lists the major contributors to the elevated cancer risks and hazard indices from ingestion of produce for hypothetical receptors at the South/West OB/OD TEAD-N boundary. Emissions of lead from the OB and SF units and cadmium, indeno(1,2,3)pyrene, and lead from the OD unit were the major contributors to the elevated cancer risks. Emissions of lead from the OB and SF units and cadmium, lead, and vanadium were the major contributors to the elevated hazard indices. There is uncertainty associated with the estimated cancer risks and hazard indices for lead and these uncertainties are discussed in Section 3.

Table 2.11 lists the major contributors to the elevated cancer risks from ingestion of beef for hypothetical adult farmers at the South/West OB/OD TEAD-N boundary. Emissions of lead from the OB and SF units and benzo(a)pyrene, benzo(k)fluoranthene, cadmium, dibenzo(a,h)anthracene, indeno(1,2,3)pyrene, 1,2,3,7-8 PCDD, and 2,3,7,8-TCDD from the OD unit were the major contributors to the elevated cancer risks.

Table 2.12 lists the major contributors to the elevated cancer risks and hazard indices for ingestion of milk for the child and adult farmers at the South/West OB/OD TEAD-N boundary. Lead from the OB and SF units and benzo(a)pyrene, benzo(k)fluoranthene, cadmium, dibenzo(a,h)anthracene, indeno(1,2,3-cd)pyrene, 1,2,3,7,8-PCDD, and 2,3,7,8-TCDD from the OD unit were the major contributors to the elevated cancer risks. Lead from the OB and SF units and benzo(g,h,i)perylene and lead from the OD unit were the majors contributor to the elevated hazard indices.

Table 2.13 lists the major contributors to the elevated cancer risks from ingestion of milk by adult farmers at Grantsville. Benzo(a)pyrene, benzo(k)fluoranthene, dibenzo(a,h)anthracene, indeno(1,2,3-cd)pyrene, and 2,3,7,8-TCDD from the OD unit were the major contributors to the elevated cancer risks for the adult farmer.

2.2 Lead Exposures

Table 2.14 presents a summary of estimated lead concentrations in surface soil, air, and surface water. The estimated lead concentrations in each medium are all significantly less than the chemical-specific target levels referenced in the preceding text.

2.3 Breast Milk Pathway

Estimated 2,3,7,8-TCDD TEQ concentrations in breast milk are presented in Table 2.15. The estimated concentrations are all significantly less than the chemical-specific target level of 60 pg/kg-day referenced in the preceding text.

2.4 Acute Hazard Characterization from Direct Inhalation

Table 2.16 summarizes the AHQs for the direct inhalation exposure pathway. AHQs for chemicals by source are listed in Attachment C. AHQs for the OD unit exceeded the target level of 1 at all locations. AHQs for the OB unit exceeded the target level of 1 at the Firing Control Point, North/East OB/OD Boundary, and South/West OB/OD TEAD-N Boundary. AHQs for the SF unit were less than the target level of 1 at all locations. Table 2.17 lists the chemicals

which were the major contributors to the AHQs. Lead, hydrogen chloride, and chlorine were the major contributors to the AHQs for the OB unit. Acrolein, hexachlorobenzene, lead, nickel, strontium, cadmium, and vanadium were the major contributors to the AHQs for the OD unit.

3.0 UNCERTAINTY ANALYSIS

This evaluation was prepared following the methodology presented in the TEAD-N protocol and used in the HHRA presented in Attachment 17a. The uncertainty analysis presented as part of the HHRA in Attachment 17a is also applicable to this analysis. The only new significant sources of uncertainty involve the evaluation of lead.

Lead was identified as a major contributor to the elevated cancer risks and hazard indices for receptors at the South/West OB/OD TEAD-N Boundary. However, USEPA's IRIS database does not currently list a reference dose (RfD) or reference concentration (RfC) for lead because a threshold level for exposure has not been established. While USEPA has characterized lead as a probably human carcinogen, it has not developed a cancer slope factor (CSF) for lead. The toxicity criteria (reference dose/concentrations, cancer slope factors) for lead used in this evaluation were obtained from the HHRAP database. The oral RfD and inhalation RfC are based on the national ambient air quality standard for lead. The oral CSF and unit risk values were obtained from the California EPA.

While the HHRAP database provides toxicity criteria for lead the HHRAP guidance also states "…we generally recommend that risk assessments evaluating lead as a COPC use the IEUBK model when soil concentrations are calculated to be above the benchmark. We don't generally recommend evaluating carcinogenic risks or noncarcinogenic hazards of lead."

USEPA has typically relied on the neurological effects observed in children as the sensitive endpoint for evaluating lead toxicity. Consequently, USEPA developed the Integrated Exposure Uptake Biokinetic (IEUBK) Model for Lead in Children (USEPA, 1994). For evaluating lead exposures by adults USEPA has developed an Interim Approach to Assessing Risks Associated Adult Exposures to Lead in Soil (USEPA, 2003). This interim model is intended for assessing adult lead risks associated with nonresidential (industrial) exposure scenarios. In general children are more susceptible to lead exposures than adults because of higher soil ingestion rates and greater absorption by the gut, in addition to nutritional variables and lower body weight. In fact USEPA's interim approach for assessing adult exposures to lead is based not on limiting adult toxicity, but rather on limiting fetal toxicity by limiting indirect fetal exposure through direct maternal exposures to lead (USEPA, 2003).

Guidance from both the Office of Prevention, Pesticides, and Toxic Substances (OPPTS) and Office of Solid Waste and Emergency Response (OSWER) recommend 400 mg/kg as the lowest screening level for lead-contaminated soil in a residential setting, where children are frequently present (USEPA, 1994). Guidance for the USEPA Technical Review Workgroup (TRW) for Lead indicates that "a reasonable screening level for soil lead at commercial/industrial (i.e., non-residential) sites is 800 mg/kg" for a typical non-contact intensive worker (USEPA, 2010). Using the toxicity criteria for lead from the HHRAP database and the 400 mg/kg residential screening level results in an ILCR of 2×10^{-6} and an HI of 12 for children exposed to lead in soil.

Using the toxicity criteria for lead from the HHRAP database and the 800 mg/kg industrial screening levels results in an ILCR of 4×10^{-6} and an HI of 2 for industrial workers exposed to lead in soil. These ILCRs and HI exceeds the target levels.

Therefore, while cancer risks and hazard indices for exposures to lead exceed the target levels, there is uncertainty associated with these cancer risks and hazard indices since they are not based on standard USEPA protocol.

4.0 REFERENCES

USEPA (U.S. Environmental Protection Agency), 1994. Guidance Manual for the Integrated Exposure Uptake Kinetic Model for Lead in Children. EPA/540/R-93-081. Office of Emergency and Remedial Response, Washington, D.C. February.

USEPA, 2003. Recommendations of the Technical Review Workgroup for Lead for an Interim Approach to Assessing Risks Associated with Adult Exposures to Lead in Soil. December.

USEPA, 2010. USEPA Technical Review Workgroup for Lead. Guidance Document. "Frequently Asked Question (FAQs) on the Adult Lead Model." May 10. http://www.epa.gov/superfund/lead/almfaq.htm

TABLE 2.1 SUMMARY OF CANCER RISKS

Receptor	OD	OB	SF	Total
Firing Control Point				
Adult Worker[1]	7E-09	2E-07	4E-09	2E-07
Guard Shack				
Adult Worker[1]	8E-09	5E-07	6E-09	6E-07
North/East OB/OD Unit Boundary				
Adult Worker[1]	4E-08	**3E-06**	5E-08	**3E-06**
South/West OB/OD TEAD Boundary				
Child Resident	6E-07	**7E-06**	6E-07	**8E-06**
Adult Resident	1E-06	**1E-05**	1E-06	**2E-05**
Child Farmer	1E-06	**2E-05**	1E-06	**2E-05**
Adult Farmer	**5E-06**	**8E-05**	**5E-06**	**9E-05**
Child Recreational Fisher[2]	6E-07	7E-06	6E-07	**8E-06**
Adult Recreational Fisher[2]	1E-06	**1E-05**	1E-06	**2E-05**
Grantsville				
Child Resident	1E-08	3E-07	1E-08	4E-07
Adult Resident	2E-08	7E-07	3E-08	7E-07
Child Farmer	3E-08	1E-06	3E-08	1E-06
Adult Farmer	9E-08	**4E-06**	1E-07	**5E-06**
Child Recreational Fisher[2]	1E-08	4E-07	1E-08	5E-07
Adult Recreational Fisher[2]	2E-08	1E-06	3E-08	1E-06
Tooele				
Child Resident	2E-09	6E-08	2E-09	6E-08
Adult Resident	5E-09	1E-07	5E-09	1E-07
Child Farmer	5E-09	2E-07	5E-09	2E-07
Adult Farmer	2E-08	7E-07	2E-08	7E-07
Child Recreational Fisher[2]	2E-09	1E-07	2E-09	1E-07
Adult Recreational Fisher[2]	5E-09	6E-07	5E-09	6E-07
Stockton				
Child Resident	6E-09	2E-07	6E-09	2E-07
Adult Resident	1E-08	3E-07	1E-08	3E-07
Child Farmer	1E-08	5E-07	1E-08	5E-07
Adult Farmer	4E-08	**2E-06**	5E-08	**2E-06**
Child Recreational Fisher[2]	6E-09	2E-07	6E-09	3E-07
Adult Recreational Fisher[2]	1E-08	7E-07	1E-08	8E-07
Grantsville Reservoir				
Child Recreational Fisher[3]	1E-15	9E-08	5E-17	9E-08
Adult Recreational Fisher[3]	6E-15	4E-07	2E-16	4E-07

TABLE 2.1 SUMMARY OF CANCER RISKS

Receptor	OD	OB	SF	Total
Rush Lake				
Child Recreational Fisher(3)	7E-15	1E-07	7E-17	1E-07
Adult Recreational Fisher(3)	3E-14	6E-07	4E-16	6E-07

Notes:
1 - Exposed only by Inhalation.
2 - Assumes fishing occurs at Grantsville Reservoir.
3 - Exposed only by ingestion of fish.
Shaded values exceed target level of 1×10^{-6}.

TABLE 2.2 SUMMARY OF HAZARD INDICES

Receptor	OD	OB	SF	Total
Firing Control Point				
Adult Worker[1]	2E-02	1E-02	1E-03	4E-02
Guard Shack				
Adult Worker[1]	2E-02	3E-02	2E-03	6E-02
North/East OB/OD Unit Boundary				
Adult Worker[1]	1E-01	2E-01	2E-02	3E-01
South/West OB/OD TEAD Boundary				
Child Resident	**2E+00**	1E+00	**2E+00**	**5E+00**
Adult Resident	8E-01	5E-01	7E-01	**2E+00**
Child Farmer	**5E+00**	**3E+00**	**5E+00**	**1E+01**
Adult Farmer	**2E+00**	**2E+00**	**2E+00**	**7E+00**
Child Recreational Fisher[2]	**2E+00**	1E+00	**2E+00**	**5E+00**
Adult Recreational Fisher[2]	8E-01	5E-01	7E-01	**2E+00**
Grantsville				
Child Resident	6E-02	2E-01	4E-02	3E-01
Adult Resident	2E-02	9E-02	1E-02	1E-01
Child Farmer	1E-01	3E-01	9E-02	5E-01
Adult Farmer	5E-02	2E-01	5E-02	3E-01
Child Recreational Fisher[2]	6E-02	2E-01	4E-02	3E-01
Adult Recreational Fisher[2]	2E-02	1E-01	1E-02	1E-01
Tooele				
Child Resident	2E-02	2E-01	7E-03	2E-01
Adult Resident	1E-02	8E-02	3E-03	9E-02
Child Farmer	3E-02	2E-01	2E-02	2E-01
Adult Farmer	1E-02	9E-02	8E-03	1E-01
Child Recreational Fisher[2]	2E-02	2E-01	7E-03	2E-01
Adult Recreational Fisher[2]	1E-02	8E-02	3E-03	9E-02
Stockton				
Child Resident	3E-02	2E-01	2E-02	2E-01
Adult Resident	1E-02	8E-02	8E-03	1E-01
Child Farmer	6E-02	2E-01	5E-02	3E-01
Adult Farmer	3E-02	1E-01	2E-02	2E-01
Child Recreational Fisher[2]	3E-02	2E-01	2E-02	2E-01
Adult Recreational Fisher[2]	1E-02	8E-02	8E-03	1E-01
Grantsville Reservoir				
Child Recreational Fisher[3]	4E-05	1E-03	3E-09	1E-03
Adult Recreational Fisher[3]	4E-05	1E-03	3E-09	1E-03

TABLE 2.2 SUMMARY OF HAZARD INDICES

Receptor	OD	OB	SF	Total
Rush Lake				
Child Recreational Fisher[3]	6E-05	1E-03	4E-09	2E-03
Adult Recreational Fisher[3]	6E-05	1E-03	4E-09	2E-03

Notes:
1 - Exposed only by Inhalation.
2 - Assumes fishing occurs at Grantsville Reservoir.
3 - Exposed only by ingestion of fish.
Shaded values exceed target level of 1.

TABLE 2.3 SUMMARY OF HAZARD INDICES BY EXPOSURE PATHWAY FOR SOUTH/WEST OB/OD TEAD BOUNDARY

Exposure Pathway	Adult Farmer	Child Farmer	Adult Recreational Fisher	Child Recreational Fisher	Adult Resident	Child Resident
Inhalation	1E-01	5E-01	2E-01	5E-01	2E-01	5E-01
Ingestion of Produce	**3E+00**	**6E+00**	**2E+00**	**4E+00**	**2E+00**	**4E+00**
Ingestion of Beef	4E-01	2E-01	0E+00	0E+00	0E+00	0E+00
Ingestion of Chicken	2E-06	2E-06	0E+00	0E+00	0E+00	0E+00
Ingestion of Drinking Water	8E-02	2E-01	8E-02	2E-01	8E-02	2E-01
Ingestion of Eggs	8E-08	6E-08	0E+00	0E+00	0E+00	0E+00
Ingestion of Fish	0E+00	0E+00	1E-03	1E-03	0E+00	0E+00
Ingestion of Milk	**3E+00**	**6E+00**	0E+00	0E+00	0E+00	0E+00
Ingestion of Pork	8E-03	6E-03	0E+00	0E+00	0E+00	0E+00
Ingestion of Soil	2E-04	2E-03	2E-04	2E-03	2E-04	2E-03
Total Hazard Index	**7E+00**	**1E+01**	**2E+00**	**5E+00**	**2E+00**	**5E+00**

Shaded values exceeded noncarcinogenic target level of 1.

TABLE 2.4 SUMMARY OF CANCER RISKS BY EXPOSURE PATHWAY FOR NORTH/EAST OB/OD TEAD BOUNDARY

Exposure Pathway	On-Site Worker
Inhalation	**3E-06**
Ingestion of Produce	0E+00
Ingestion of Beef	0E+00
Ingestion of Chicken	0E+00
Ingestion of Drinking Water	0E+00
Ingestion of Eggs	0E+00
Ingestion of Fish	0E+00
Ingestion of Milk	0E+00
Ingestion of Pork	0E+00
Ingestion of Soil	0E+00
Total Cancer Risk	**3E-06**

Shaded values exceed target risk level of 1×10^{-6}.

TABLE 2.5 SUMMARY OF CANCER RISKS BY EXPOSURE PATHWAY FOR SOUTH/WEST OB/OD TEAD BOUNDARY

Exposure Pathway	Adult Farmer	Child Farmer	Adult Recreational Fisher	Child Recreational Fisher	Adult Resident	Child Resident
Inhalation	**3E-06**	**2E-06**	**3E-06**	**2E-06**	**3E-06**	**2E-06**
Ingestion of Produce	**2E-05**	**9E-06**	**1E-05**	**6E-06**	**1E-05**	**6E-06**
Ingestion of Beef	**1E-05**	1E-06	0E+00	0E+00	0E+00	0E+00
Ingestion of Chicken	4E-09	4E-10	0E+00	0E+00	0E+00	0E+00
Ingestion of Drinking Water	3E-08	1E-08	2E-08	1E-08	2E-08	1E-08
Ingestion of Eggs	2E-09	2E-10	0E+00	0E+00	0E+00	0E+00
Ingestion of Fish	0E+00	0E+00	4E-07	9E-08	0E+00	0E+00
Ingestion of Milk	**5E-05**	**1E-05**	0E+00	0E+00	0E+00	0E+00
Ingestion of Pork	5E-07	6E-08	0E+00	0E+00	0E+00	0E+00
Ingestion of Soil	2E-08	2E-08	1E-08	2E-08	1E-08	2E-08
Total Cancer Risk	**9E-05**	**2E-05**	**2E-05**	**8E-06**	**2E-05**	**8E-06**

Shaded values exceed target risk level of 1×10^{-6}.

TABLE 2.6 SUMMARY OF CANCER RISKS BY EXPOSURE PATHWAY FOR GRANTSVILLE

Exposure Pathway	Adult Farmer	Child Farmer	Adult Recreational Fisher	Child Recreational Fisher	Adult Resident	Child Resident
Inhalation	2E-07	1E-07	2E-07	1E-07	2E-07	1E-07
Ingestion of Produce	9E-07	3E-07	5E-07	2E-07	5E-07	2E-07
Ingestion of Beef	8E-07	7E-08	0E+00	0E+00	0E+00	0E+00
Ingestion of Chicken	2E-10	2E-11	0E+00	0E+00	0E+00	0E+00
Ingestion of Drinking Water	3E-08	1E-08	2E-08	1E-08	2E-08	1E-08
Ingestion of Eggs	1E-10	1E-11	0E+00	0E+00	0E+00	0E+00
Ingestion of Fish	0E+00	0E+00	4E-07	9E-08	0E+00	0E+00
Ingestion of Milk	**3E-06**	7E-07	0E+00	0E+00	0E+00	0E+00
Ingestion of Pork	3E-08	3E-09	0E+00	0E+00	0E+00	0E+00
Ingestion of Soil	7E-10	9E-10	5E-10	9E-10	5E-10	9E-10
Total Cancer Risk	**5E-06**	1E-06	1E-06	5E-07	7E-07	4E-07

Shaded values exceed target risk level of 1×10^{-6}.

TABLE 2.7 SUMMARY OF CANCER RISKS BY EXPOSURE PATHWAY FOR STOCKTON

Exposure Pathway	Adult Farmer	Child Farmer	Adult Recreational Fisher	Child Recreational Fisher	Adult Resident	Child Resident
Inhalation	9E-08	5E-08	9E-08	5E-08	9E-08	5E-08
Ingestion of Produce	4E-07	1E-07	2E-07	1E-07	2E-07	1E-07
Ingestion of Beef	3E-07	3E-08	0E+00	0E+00	0E+00	0E+00
Ingestion of Chicken	7E-11	7E-12	0E+00	0E+00	0E+00	0E+00
Ingestion of Drinking Water	3E-08	1E-08	2E-08	1E-08	2E-08	1E-08
Ingestion of Eggs	4E-11	4E-12	0E+00	0E+00	0E+00	0E+00
Ingestion of Fish	0E+00	0E+00	4E-07	9E-08	0E+00	0E+00
Ingestion of Milk	1E-06	3E-07	0E+00	0E+00	0E+00	0E+00
Ingestion of Pork	1E-08	1E-09	0E+00	0E+00	0E+00	0E+00
Ingestion of Soil	3E-10	4E-10	2E-10	4E-10	2E-10	4E-10
Total Cancer Risk	**2E-06**	5E-07	8E-07	3E-07	3E-07	2E-07

Shaded values exceed target risk level of 1×10^{-6}.

TABLE 2.8 MAJOR CONTRIBUTORS TO RISK FROM INHALATION FOR RECEPTORS AT THE NORTH/EAST OB/OD TEAD BOUNDARY

Receptor	Source	Chemical	Cancer Risk	Hazard Quotient
On-Site Worker	OD Unit	Cadmium	3E-06	--
	OD Unit	Cobalt	1E-07	--

Notes:

Major contributors are those chemicals with cancer risks greater than 1×10^{-7} or hazard quotients greater than 0.1.

TABLE 2.9 MAJOR CONTRIBUTORS TO RISK FROM INHALATION FOR RECEPTORS AT THE SOUTH/WEST OB/OD TEAD BOUNDARY

Receptor	Source	Chemical	Cancer Risk	Hazard Quotient
Child Resident	OD Unit	Cadmium	2E-06	--
Adult Resident	OD Unit	Cobalt	1E-07	--
	OD Unit	Cadmium	3E-06	--
Child Recreational Fisher	OD Unit	Cadmium	2E-06	--
Adult Recreational Fisher	OD Unit	Cobalt	1E-07	--
	OD Unit	Cadmium	3E-06	--
Child Farmer	OD Unit	Cadmium	2E-06	--
Adult Farmer	OD Unit	Cadmium	3E-06	--
	OD Unit	Cobalt	1E-07	--

Notes:

Major contributors are those chemicals with cancer risks greater than 1×10^{-7} or hazard quotients greater than 0.1.

TABLE 2.10 MAJOR CONTRIBUTORS TO RISK FROM INGESTION OF PRODUCI FOR RECEPTORS AT THE SOUTH/WEST OB/OD TEAD BOUNDARY

Receptor	Source	Chemical	Cancer Risk	Hazard Quotient
Child Resident	OB Unit	Lead	5E-07	2E+00
	OD Unit	Cadmium	4E-06	3E-01
	OD Unit	Indeno(1,2,3-cd) pyrene	2E-07	--
	OD Unit	Lead	6E-08	2E-01
	OD Unit	Vanadium	--	2E-01
	SF Unit	Lead	5E-07	2E+00
Adult Resident	OB Unit	Lead	1E-06	7E-01
	OD Unit	Cadmium	9E-06	1E-01
	OD Unit	Indeno(1,2,3-cd) pyrene	4E-07	--
	OD Unit	Lead	1E-07	8E-02
	SF Unit	Lead	1E-06	7E-01
Child Recreational Fisher	OB Unit	Lead	5E-07	2E+00
	OD Unit	Cadmium	4E-06	3E-01
	OD Unit	Indeno(1,2,3-cd) pyrene	2E-07	--
	OD Unit	Lead	6E-08	2E-01
	OD Unit	Vanadium	--	2E-01
	SF Unit	Lead	5E-07	2E+00
Adult Recreational Fisher	OB Unit	Lead	1E-06	7E-01
	OD Unit	Cadmium	9E-06	1E-01
	OD Unit	Indeno(1,2,3-cd) pyrene	4E-07	--
	OD Unit	Lead	1E-07	8E-02
	SF Unit	Lead	1E-06	7E-01
Child Farmer	OB Unit	Lead	8E-07	2E+00
	OD Unit	Cadmium	7E-06	5E-01
	OD Unit	Indeno(1,2,3-cd) pyrene	3E-07	--
	OD Unit	Lead	8E-08	3E-01
	OD Unit	Vanadium	--	3E-01
	SF Unit	Lead	8E-07	2E+00
Adult Farmer	OB Unit	Lead	2E-06	1E+00
	OD Unit	Cadmium	2E-05	2E-01
	OD Unit	Indeno(1,2,3-cd) pyrene	7E-07	--
	OD Unit	Lead	2E-07	1E-01
	OD Unit	Vanadium	--	1E-01
	SF Unit	Lead	2E-06	1E+00

Notes:

Major contributors are those chemicals with cancer risks greater than 1×10^{-7} or hazard quotients greater than 0.1.

TABLE 2.11 MAJOR CONTRIBUTORS TO RISK FROM INGESTION OF BEEF FOR RECEPTORS AT THE SOUTH/WEST OB/OD TEAD BOUNDARY

Receptor	Source	Chemical	Cancer Risk	Hazard Quotient
Adult Farmer	OB Unit	Lead	2E-07	--
	OD Unit	Benzo(a)pyrene	1E-06	--
	OD Unit	Benzo(k)fluoranthene	9E-07	--
	OD Unit	Cadmium	6E-07	--
	OD Unit	Dibenzo(a,h)anthracene	4E-06	--
	OD Unit	Indeno(1,2,3-cd) pyrene	5E-06	--
	OD Unit	PECDD, 1,2,3,7,8-	3E-07	--
	OD Unit	TCDD, 2,3,7,8-	9E-07	--
	SF Unit	Lead	2E-07	--

Notes:

Major contributors are those chemicals with cancer risks greater than 1×10^{-7} or hazard quotients greater than 0.1.

TABLE 2.12 MAJOR CONTRIBUTORS TO RISK FROM INGESTION OF MILK FOR RECEPTORS AT THE SOUTH/WEST OB/OD TEAD BOUNDARY

Receptor	Source	Chemical	Cancer Risk	Hazard Quotient
Child Farmer	OB Unit	Lead	6E-07	2E+00
	OD Unit	Benzo(a)pyrene	1E-06	--
	OD Unit	Benzo(g,h,i)perylene	--	1E+00
	OD Unit	Benzo(k)fluoranthene	8E-07	--
	OD Unit	Cadmium	1E-07	1E-02
	OD Unit	Dibenzo(a,h)anthracene	4E-06	--
	OD Unit	Indeno(1,2,3-cd) pyrene	5E-06	--
	OD Unit	Lead	7E-08	2E-01
	OD Unit	PECDD, 1,2,3,7,8-	3E-07	2E-02
	OD Unit	TCDD, 2,3,7,8-	8E-07	7E-02
	SF Unit	Lead	6E-07	2E+00
Adult Farmer	OB Unit	Lead	3E-06	1E+00
	OD Unit	Benzo(a)anthracene	1E-07	--
	OD Unit	Benzo(a)pyrene	5E-06	--
	OD Unit	Benzo(g,h,i)perylene	--	7E-01
	OD Unit	Benzo(k)fluoranthene	3E-06	--
	OD Unit	Cadmium	6E-07	6E-03
	OD Unit	Dibenzo(a,h)anthracene	1E-05	--
	OD Unit	Indeno(1,2,3-cd) pyrene	2E-05	--
	OD Unit	Lead	3E-07	1E-01
	OD Unit	TCDD, 2,3,7,8-	3E-06	4E-02
	SF Unit	Lead	3E-06	1E+00

Notes:

Major contributors are those chemicals with cancer risks greater than 1×10^{-7} or hazard quotients greater than 0.1.

TABLE 2.13 MAJOR CONTRIBUTORS TO RISK FROM INGESTION OF MILK FOR RECEPTORS AT GRANTSVILLE

Receptor	Source	Chemical	Cancer Risk	Hazard Quotient
Adult Farmer	OD Unit	Benzo(a)pyrene	3E-07	--
	OD Unit	Benzo(k)fluoranthene	2E-07	--
	OD Unit	Dibenzo(a,h)anthracene	9E-07	--
	OD Unit	Indeno(1,2,3-cd) pyrene	8E-07	--
	OD Unit	TCDD, 2,3,7,8-	2E-07	--

Notes:

Major contributors are those chemicals with cancer risks greater than 1×10^{-7} or hazard quotients greater than 0.1.

TABLE 2.14 SUMMARY OF LEAD CONCENTRATIONS IN SURFACE SOIL, AIR, AND SURFACE WATER

Location	Source	Maximum Soil Concentration (mg/kg)	Air Concentration (ug/m^3)	Maximum Water Concentration (ug/L)
Firing Control Point	OB	3.6E-03	6.3E-03	--
	OD	3.4E-04	5.9E-04	--
	SF	1.7E-03	3.1E-03	--
	Total	5.7E-03	1.0E-02	--
Grantsville	OB	5.9E-04	1.7E-03	--
	OD	1.5E-04	4.2E-04	--
	SF	6.1E-04	1.8E-03	--
	Total	1.4E-03	3.9E-03	--
Grantsville Reservoir	OB	3.0E-04	8.8E-04	1.6E-02
	OD	8.2E-05	2.3E-04	3.8E-03
	SF	3.0E-04	8.8E-04	1.5E-02
	Total	6.9E-04	2.0E-03	3.5E-02
Guard Shack	OB	3.1E-03	6.7E-03	--
	OD	8.0E-04	1.6E-03	--
	SF	2.4E-03	5.4E-03	--
	Total	6.3E-03	1.4E-02	--
North/East OB/OD Boundary	OB	1.8E-02	3.3E-02	--
	OD	7.7E-03	9.4E-03	--
	SF	2.5E-02	4.2E-02	--
	Total	5.0E-02	8.5E-02	--
Rush Lake	OB	4.1E-04	1.2E-03	2.2E-02
	OD	9.7E-05	2.8E-04	5.2E-03
	SF	4.5E-04	1.3E-03	2.4E-02
	Total	9.6E-04	2.8E-03	5.1E-02
South/West OB/OD TEAD Boundary	OB	3.2E-02	4.8E-02	--
	OD	3.5E-03	6.5E-03	--
	SF	3.2E-02	5.2E-02	--
	Total	6.7E-02	1.1E-01	--
Stockton	OB	2.6E-04	7.4E-04	--
	OD	6.6E-05	1.9E-04	--
	SF	3.0E-04	8.8E-04	--
	Total	6.3E-04	1.8E-03	--
Tooele	OB	8.9E-05	2.7E-04	--
	OD	2.0E-05	6.2E-05	--
	SF	9.4E-05	2.7E-04	--
	Total	2.0E-04	6.0E-04	--

Shaded values are greater than target levels.
Target Levels:
Soil = 400 mg/kg
Air = 1.5 ug/m^3
Water = 4 ug/L

TABLE 2.15 SUMMARY OF BREAST MILK AVERAGE DAILY DOSE (2,3,7,8-TCDD) TEQ

Location	Receptor	Source	Concentration (pg/kg-day)
Grantsville	Adult Farmer	OD Unit	1.6E-01
	Adult Recreational Fisher	OD Unit	5.1E-04
	Adult Resident	OD Unit	3.9E-04
South/West OB/OB TEAD Boundary	Adult Farmer	OD Unit	2.4E+00
	Adult Recreational Fisher	OD Unit	6.1E-03
	Adult Resident	OD Unit	6.0E-03
Stockton	Adult Farmer	OD Unit	6.9E-02
	Adult Recreational Fisher	OD Unit	3.0E-04
	Adult Resident	OD Unit	1.8E-04
Tooele	Adult Farmer	OD Unit	2.3E-02
	Adult Recreational Fisher	OD Unit	1.8E-04
	Adult Resident	OD Unit	6.1E-05

Target level = 60 pg/kg-day for 2,3,7,8-TCDD TEQ

TABLE 2.16 ACUTE INHALATION HAZARD QUOTIENT

Source	Firing Control Point	Guard Shack	North/East OB/OD Boundary	South/West OD/OD TEAD Boundary	Grantsville	Grantsville Reservoir	Rush Lake	Stockton	Tooele
OB	**2E+00**	1E+00	**2E+00**	**2E+00**	6E-01	5E-01	5E-01	5E-01	3E-01
OD	**5E+00**	**8E+00**	**2E+01**	**2E+01**	**5E+00**	**6E+00**	**4E+00**	**4E+00**	**3E+00**
SF	9E-01	6E-01	1E+00	1E+00	3E-01	4E-01	3E-01	3E-01	2E-01

Shaded values exceed target level of 1.

TABLE 2.17 MAJOR CONTRIBUTORS TO THE ACUTE INHALATION HAZARD QUOTIENT

Source	Chemical	Firing Control Point	Guard Shack	North/East OB/OD Boundary	South/West OD/OD TEAD Boundary	Grantsville	Grantsville Reservoir	Rush Lake	Stockton	Tooele
OB	Lead	7E-01	3E-01	8E-01	9E-01	--	--	--	--	--
	Hydrogen chloride	8E-01	4E-01	9E-01	1E+00	--	--	--	--	--
	Chlorine	4E-01	1E-01	4E-01	4E-01	--	--	--	--	--
	Total	**2E+00**	**9E-01**	**2E+00**	**2E+00**	--	--	--	--	--
OD	Acrolein	3E+00	6E+00	1E+01	1E+01	3E+00	4E+00	3E+00	3E+00	2E+00
	Hexachlorobenzene	1E-01	2E-01	4E-01	4E-01	1E-01	1E-01	--	--	--
	Lead	--	--	1E-01	1E-01	--	--	--	--	--
	Nickel	--	2E-01	3E-01	3E-01	--	1E-01	--	--	--
	Strontium	--	1E-01	2E-01	2E-01	--	--	--	--	--
	Cadmium	3E-01	5E-01	1E+00	9E-01	3E-01	3E-01	2E-01	2E-01	2E-01
	Vanadium	5E-01	9E-01	2E+00	2E+00	5E-01	6E-01	4E-01	4E-01	3E-01
	Total	**5E+00**	**8E+00**	**2E+01**	**2E+01**	**5E+00**	**6E+00**	**4E+00**	**4E+00**	**3E+00**

Notes: Major contributors are those chemicals with an acute hazard quotient greater than 0.1.

Attachment A

Hazard Indices and Cancer Risks by Exposure Pathway

RECEPTOR NAME	SCENARIO	PATHWAY	TOTAL CANCER RISK	TOTAL HAZARD QUOTIENT
Firing Control Point	resident_adult	air inhalation	2.1099E-007	3.6034E-002
Firing Control Point	resident_adult	above ground vegetables	0.0000E+000	0.0000E+000
Firing Control Point	resident_adult	beef	0.0000E+000	0.0000E+000
Firing Control Point	resident_adult	chicken	0.0000E+000	0.0000E+000
Firing Control Point	resident_adult	drinking water	0.0000E+000	0.0000E+000
Firing Control Point	resident_adult	eggs	0.0000E+000	0.0000E+000
Firing Control Point	resident_adult	fish	0.0000E+000	0.0000E+000
Firing Control Point	resident_adult	milk	0.0000E+000	0.0000E+000
Firing Control Point	resident_adult	pork	0.0000E+000	0.0000E+000
Firing Control Point	resident_adult	soil	0.0000E+000	0.0000E+000
		Total	2.1099E-007	3.6034E-002
Grantsville - ANN	farmer_adult	air inhalation	2.0454E-007	5.4227E-003
Grantsville - ANN	farmer_adult	above ground vegetables	9.3571E-007	6.1645E-002
Grantsville - ANN	farmer_adult	beef	7.5703E-007	1.7497E-002
Grantsville - ANN	farmer_adult	chicken	1.5719E-010	1.0464E-007
Grantsville - ANN	farmer_adult	drinking water	3.3186E-008	8.3302E-002
Grantsville - ANN	farmer_adult	eggs	9.6457E-011	3.7439E-009
Grantsville - ANN	farmer_adult	fish	0.0000E+000	0.0000E+000
Grantsville - ANN	farmer_adult	milk	2.7017E-006	1.0144E-001
Grantsville - ANN	farmer_adult	pork	2.8155E-008	5.2379E-004
Grantsville - ANN	farmer_adult	soil	6.5290E-010	5.2105E-006
		Total	4.6613E-006	2.6984E-001
Grantsville - ANN	farmer_child	air inhalation	1.2272E-007	2.1691E-002
Grantsville - ANN	farmer_child	above ground vegetables	3.3746E-007	1.4821E-001
Grantsville - ANN	farmer_child	beef	6.9808E-008	1.0756E-002
Grantsville - ANN	farmer_child	chicken	1.6076E-011	7.1347E-008
Grantsville - ANN	farmer_child	drinking water	1.1117E-008	1.8604E-001
Grantsville - ANN	farmer_child	eggs	1.0417E-011	2.6956E-009
Grantsville - ANN	farmer_child	fish	0.0000E+000	0.0000E+000
Grantsville - ANN	farmer_child	milk	6.7237E-007	1.6830E-001
Grantsville - ANN	farmer_child	pork	3.2250E-009	3.9999E-004
Grantsville - ANN	farmer_child	soil	9.1407E-010	4.8632E-005
		Total	1.2176E-006	5.3545E-001
Grantsville - ANN	fisher_adult	air inhalation	2.0454E-007	7.2303E-003
Grantsville - ANN	fisher_adult	above ground vegetables	4.7824E-007	4.1982E-002
Grantsville - ANN	fisher_adult	beef	0.0000E+000	0.0000E+000

RECEPTOR NAME	SCENARIO	PATHWAY	TOTAL CANCER RISK	TOTAL HAZARD QUOTIENT
Grantsville - ANN	fisher_adult	chicken	0.0000E+000	0.0000E+000
Grantsville - ANN	fisher_adult	drinking water	2.4890E-008	8.3302E-002
Grantsville - ANN	fisher_adult	eggs	0.0000E+000	0.0000E+000
Grantsville - ANN	fisher_adult	fish	4.4979E-007	1.1157E-003
Grantsville - ANN	fisher_adult	milk	0.0000E+000	0.0000E+000
Grantsville - ANN	fisher_adult	pork	0.0000E+000	0.0000E+000
Grantsville - ANN	fisher_adult	soil	4.8968E-010	5.2105E-006
		Total	1.1579E-006	1.3363E-001
Grantsville - ANN	fisher_child	air inhalation	1.2272E-007	2.1691E-002
Grantsville - ANN	fisher_child	above ground vegetables	2.3016E-007	1.0102E-001
Grantsville - ANN	fisher_child	beef	0.0000E+000	0.0000E+000
Grantsville - ANN	fisher_child	chicken	0.0000E+000	0.0000E+000
Grantsville - ANN	fisher_child	drinking water	1.1117E-008	1.8604E-001
Grantsville - ANN	fisher_child	eggs	0.0000E+000	0.0000E+000
Grantsville - ANN	fisher_child	fish	8.9958E-008	1.1157E-003
Grantsville - ANN	fisher_child	milk	0.0000E+000	0.0000E+000
Grantsville - ANN	fisher_child	pork	0.0000E+000	0.0000E+000
Grantsville - ANN	fisher_child	soil	9.1407E-010	4.8632E-005
		Total	4.5487E-007	3.0991E-001
Grantsville - ANN	resident_adult	air inhalation	2.0454E-007	7.2303E-003
Grantsville - ANN	resident_adult	above ground vegetables	4.7824E-007	4.1982E-002
Grantsville - ANN	resident_adult	beef	0.0000E+000	0.0000E+000
Grantsville - ANN	resident_adult	chicken	0.0000E+000	0.0000E+000
Grantsville - ANN	resident_adult	drinking water	2.4890E-008	8.3302E-002
Grantsville - ANN	resident_adult	eggs	0.0000E+000	0.0000E+000
Grantsville - ANN	resident_adult	fish	0.0000E+000	0.0000E+000
Grantsville - ANN	resident_adult	milk	0.0000E+000	0.0000E+000
Grantsville - ANN	resident_adult	pork	0.0000E+000	0.0000E+000
Grantsville - ANN	resident_adult	soil	4.8968E-010	5.2105E-006
		Total	7.0815E-007	1.3252E-001
Grantsville - ANN	resident_child	air inhalation	1.2272E-007	2.1691E-002
Grantsville - ANN	resident_child	above ground vegetables	2.3016E-007	1.0102E-001
Grantsville - ANN	resident_child	beef	0.0000E+000	0.0000E+000
Grantsville - ANN	resident_child	chicken	0.0000E+000	0.0000E+000
Grantsville - ANN	resident_child	drinking water	1.1117E-008	1.8604E-001
Grantsville - ANN	resident_child	eggs	0.0000E+000	0.0000E+000

RECEPTOR NAME	SCENARIO	PATHWAY	TOTAL CANCER RISK	TOTAL HAZARD QUOTIENT
Grantsville - ANN	resident_child	fish	0.0000E+000	0.0000E+000
Grantsville - ANN	resident_child	milk	0.0000E+000	0.0000E+000
Grantsville - ANN	resident_child	pork	0.0000E+000	0.0000E+000
Grantsville - ANN	resident_child	soil	9.1407E-010	4.8632E-005
		Total	3.6491E-007	3.0880E-001
Grantsville Rsvr	fisher_adult	air inhalation	0.0000E+000	0.0000E+000
Grantsville Rsvr	fisher_adult	above ground vegetables	0.0000E+000	0.0000E+000
Grantsville Rsvr	fisher_adult	beef	0.0000E+000	0.0000E+000
Grantsville Rsvr	fisher_adult	chicken	0.0000E+000	0.0000E+000
Grantsville Rsvr	fisher_adult	drinking water	0.0000E+000	0.0000E+000
Grantsville Rsvr	fisher_adult	eggs	0.0000E+000	0.0000E+000
Grantsville Rsvr	fisher_adult	fish	4.4979E-007	1.1157E-003
Grantsville Rsvr	fisher_adult	milk	0.0000E+000	0.0000E+000
Grantsville Rsvr	fisher_adult	pork	0.0000E+000	0.0000E+000
Grantsville Rsvr	fisher_adult	soil	0.0000E+000	0.0000E+000
		Total	4.4979E-007	1.1157E-003
Grantsville Rsvr	fisher_child	air inhalation	0.0000E+000	0.0000E+000
Grantsville Rsvr	fisher_child	above ground vegetables	0.0000E+000	0.0000E+000
Grantsville Rsvr	fisher_child	beef	0.0000E+000	0.0000E+000
Grantsville Rsvr	fisher_child	chicken	0.0000E+000	0.0000E+000
Grantsville Rsvr	fisher_child	drinking water	0.0000E+000	0.0000E+000
Grantsville Rsvr	fisher_child	eggs	0.0000E+000	0.0000E+000
Grantsville Rsvr	fisher_child	fish	8.9958E-008	1.1157E-003
Grantsville Rsvr	fisher_child	milk	0.0000E+000	0.0000E+000
Grantsville Rsvr	fisher_child	pork	0.0000E+000	0.0000E+000
Grantsville Rsvr	fisher_child	soil	0.0000E+000	0.0000E+000
		Total	8.9958E-008	1.1157E-003
Guard Shack	resident_adult	air inhalation	5.5609E-007	5.9385E-002
Guard Shack	resident_adult	above ground vegetables	0.0000E+000	0.0000E+000
Guard Shack	resident_adult	beef	0.0000E+000	0.0000E+000
Guard Shack	resident_adult	chicken	0.0000E+000	0.0000E+000
Guard Shack	resident_adult	drinking water	0.0000E+000	0.0000E+000
Guard Shack	resident_adult	eggs	0.0000E+000	0.0000E+000
Guard Shack	resident_adult	fish	0.0000E+000	0.0000E+000
Guard Shack	resident_adult	milk	0.0000E+000	0.0000E+000
Guard Shack	resident_adult	pork	0.0000E+000	0.0000E+000

RECEPTOR NAME	SCENARIO	PATHWAY	TOTAL CANCER RISK	TOTAL HAZARD QUOTIENT
Guard Shack	resident_adult	soil	0.0000E+000	0.0000E+000
		Total	5.5609E-007	5.9385E-002
NE OB/OB ANN	resident_adult	air inhalation	3.2554E-006	3.3027E-001
NE OB/OB ANN	resident_adult	above ground vegetables	0.0000E+000	0.0000E+000
NE OB/OB ANN	resident_adult	beef	0.0000E+000	0.0000E+000
NE OB/OB ANN	resident_adult	chicken	0.0000E+000	0.0000E+000
NE OB/OB ANN	resident_adult	drinking water	0.0000E+000	0.0000E+000
NE OB/OB ANN	resident_adult	eggs	0.0000E+000	0.0000E+000
NE OB/OB ANN	resident_adult	fish	0.0000E+000	0.0000E+000
NE OB/OB ANN	resident_adult	milk	0.0000E+000	0.0000E+000
NE OB/OB ANN	resident_adult	pork	0.0000E+000	0.0000E+000
NE OB/OB ANN	resident_adult	soil	0.0000E+000	0.0000E+000
		Total	3.2554E-006	3.3027E-001
Rush Lake	fisher_adult	air inhalation	0.0000E+000	0.0000E+000
Rush Lake	fisher_adult	above ground vegetables	0.0000E+000	0.0000E+000
Rush Lake	fisher_adult	beef	0.0000E+000	0.0000E+000
Rush Lake	fisher_adult	chicken	0.0000E+000	0.0000E+000
Rush Lake	fisher_adult	drinking water	0.0000E+000	0.0000E+000
Rush Lake	fisher_adult	eggs	0.0000E+000	0.0000E+000
Rush Lake	fisher_adult	fish	5.9581E-007	1.5257E-003
Rush Lake	fisher_adult	milk	0.0000E+000	0.0000E+000
Rush Lake	fisher_adult	pork	0.0000E+000	0.0000E+000
Rush Lake	fisher_adult	soil	0.0000E+000	0.0000E+000
		Total	5.9581E-007	1.5257E-003
Rush Lake	fisher_child	air inhalation	0.0000E+000	0.0000E+000
Rush Lake	fisher_child	above ground vegetables	0.0000E+000	0.0000E+000
Rush Lake	fisher_child	beef	0.0000E+000	0.0000E+000
Rush Lake	fisher_child	chicken	0.0000E+000	0.0000E+000
Rush Lake	fisher_child	drinking water	0.0000E+000	0.0000E+000
Rush Lake	fisher_child	eggs	0.0000E+000	0.0000E+000
Rush Lake	fisher_child	fish	1.1916E-007	1.5257E-003
Rush Lake	fisher_child	milk	0.0000E+000	0.0000E+000
Rush Lake	fisher_child	pork	0.0000E+000	0.0000E+000
Rush Lake	fisher_child	soil	0.0000E+000	0.0000E+000
		Total	1.1916E-007	1.5257E-003
SW OB/OB/TEAD ANN	farmer_adult	air inhalation	3.2144E-006	1.1489E-001

RECEPTOR NAME	SCENARIO	PATHWAY	TOTAL CANCER RISK	TOTAL HAZARD QUOTIENT
SW OB/OB/TEAD ANN	farmer_adult	above ground vegetables	2.3596E-005	2.5841E+000
SW OB/OB/TEAD ANN	farmer_adult	beef	1.3796E-005	3.9515E-001
SW OB/OB/TEAD ANN	farmer_adult	chicken	3.5613E-009	2.3709E-006
SW OB/OB/TEAD ANN	farmer_adult	drinking water	3.3186E-008	8.3302E-002
SW OB/OB/TEAD ANN	farmer_adult	eggs	2.1854E-009	8.4826E-008
SW OB/OB/TEAD ANN	farmer_adult	fish	0.0000E+000	0.0000E+000
SW OB/OB/TEAD ANN	farmer_adult	milk	5.1337E-005	3.3191E+000
SW OB/OB/TEAD ANN	farmer_adult	pork	5.0262E-007	8.1141E-003
SW OB/OB/TEAD ANN	farmer_adult	soil	1.5032E-008	2.3414E-004
		Total	9.2499E-005	6.5049E+000
SW OB/OB/TEAD ANN	farmer_child	air inhalation	1.9286E-006	4.5955E-001
SW OB/OB/TEAD ANN	farmer_child	above ground vegetables	8.5096E-006	6.2127E+000
SW OB/OB/TEAD ANN	farmer_child	beef	1.2721E-006	2.4292E-001
SW OB/OB/TEAD ANN	farmer_child	chicken	3.6423E-010	1.6165E-006
SW OB/OB/TEAD ANN	farmer_child	drinking water	1.1117E-008	1.8604E-001
SW OB/OB/TEAD ANN	farmer_child	eggs	2.3602E-010	6.1075E-008
SW OB/OB/TEAD ANN	farmer_child	fish	0.0000E+000	0.0000E+000
SW OB/OB/TEAD ANN	farmer_child	milk	1.2776E-005	5.5067E+000
SW OB/OB/TEAD ANN	farmer_child	pork	5.7573E-008	6.1962E-003
SW OB/OB/TEAD ANN	farmer_child	soil	2.1045E-008	2.1853E-003
		Total	2.4577E-005	1.2616E+001
SW OB/OB/TEAD ANN	fisher_adult	air inhalation	3.2144E-006	1.5318E-001
SW OB/OB/TEAD ANN	fisher_adult	above ground vegetables	1.2059E-005	1.7598E+000
SW OB/OB/TEAD ANN	fisher_adult	beef	0.0000E+000	0.0000E+000
SW OB/OB/TEAD ANN	fisher_adult	chicken	0.0000E+000	0.0000E+000
SW OB/OB/TEAD ANN	fisher_adult	drinking water	2.4890E-008	8.3302E-002
SW OB/OB/TEAD ANN	fisher_adult	eggs	0.0000E+000	0.0000E+000
SW OB/OB/TEAD ANN	fisher_adult	fish	4.4979E-007	1.1157E-003
SW OB/OB/TEAD ANN	fisher_adult	milk	0.0000E+000	0.0000E+000
SW OB/OB/TEAD ANN	fisher_adult	pork	0.0000E+000	0.0000E+000
SW OB/OB/TEAD ANN	fisher_adult	soil	1.1274E-008	2.3414E-004
		Total	1.5759E-005	1.9977E+000
SW OB/OB/TEAD ANN	fisher_child	air inhalation	1.9286E-006	4.5955E-001
SW OB/OB/TEAD ANN	fisher_child	above ground vegetables	5.8035E-006	4.2345E+000
SW OB/OB/TEAD ANN	fisher_child	beef	0.0000E+000	0.0000E+000
SW OB/OB/TEAD ANN	fisher_child	chicken	0.0000E+000	0.0000E+000

RECEPTOR NAME	SCENARIO	PATHWAY	TOTAL CANCER RISK	TOTAL HAZARD QUOTIENT
SW OB/OB/TEAD ANN	fisher_child	drinking water	1.1117E-008	1.8604E-001
SW OB/OB/TEAD ANN	fisher_child	eggs	0.0000E+000	0.0000E+000
SW OB/OB/TEAD ANN	fisher_child	fish	8.9958E-008	1.1157E-003
SW OB/OB/TEAD ANN	fisher_child	milk	0.0000E+000	0.0000E+000
SW OB/OB/TEAD ANN	fisher_child	pork	0.0000E+000	0.0000E+000
SW OB/OB/TEAD ANN	fisher_child	soil	2.1045E-008	2.1853E-003
		Total	7.8543E-006	4.8834E+000
SW OB/OB/TEAD ANN	resident_adult	air inhalation	3.2144E-006	1.5318E-001
SW OB/OB/TEAD ANN	resident_adult	above ground vegetables	1.2059E-005	1.7598E+000
SW OB/OB/TEAD ANN	resident_adult	beef	0.0000E+000	0.0000E+000
SW OB/OB/TEAD ANN	resident_adult	chicken	0.0000E+000	0.0000E+000
SW OB/OB/TEAD ANN	resident_adult	drinking water	2.4890E-008	8.3302E-002
SW OB/OB/TEAD ANN	resident_adult	eggs	0.0000E+000	0.0000E+000
SW OB/OB/TEAD ANN	resident_adult	fish	0.0000E+000	0.0000E+000
SW OB/OB/TEAD ANN	resident_adult	milk	0.0000E+000	0.0000E+000
SW OB/OB/TEAD ANN	resident_adult	pork	0.0000E+000	0.0000E+000
SW OB/OB/TEAD ANN	resident_adult	soil	1.1274E-008	2.3414E-004
		Total	1.5309E-005	1.9966E+000
SW OB/OB/TEAD ANN	resident_child	air inhalation	1.9286E-006	4.5955E-001
SW OB/OB/TEAD ANN	resident_child	above ground vegetables	5.8035E-006	4.2345E+000
SW OB/OB/TEAD ANN	resident_child	beef	0.0000E+000	0.0000E+000
SW OB/OB/TEAD ANN	resident_child	chicken	0.0000E+000	0.0000E+000
SW OB/OB/TEAD ANN	resident_child	drinking water	1.1117E-008	1.8604E-001
SW OB/OB/TEAD ANN	resident_child	eggs	0.0000E+000	0.0000E+000
SW OB/OB/TEAD ANN	resident_child	fish	0.0000E+000	0.0000E+000
SW OB/OB/TEAD ANN	resident_child	milk	0.0000E+000	0.0000E+000
SW OB/OB/TEAD ANN	resident_child	pork	0.0000E+000	0.0000E+000
SW OB/OB/TEAD ANN	resident_child	soil	2.1045E-008	2.1853E-003
		Total	7.7643E-006	4.8823E+000
Stockton - ANN	farmer_adult	air inhalation	9.1055E-008	2.4164E-003
Stockton - ANN	farmer_adult	above ground vegetables	4.0298E-007	2.8016E-002
Stockton - ANN	farmer_adult	beef	3.3198E-007	7.8436E-003
Stockton - ANN	farmer_adult	chicken	6.7098E-011	4.4668E-008
Stockton - ANN	farmer_adult	drinking water	3.3186E-008	8.3302E-002
Stockton - ANN	farmer_adult	eggs	4.1174E-011	1.5982E-009
Stockton - ANN	farmer_adult	fish	0.0000E+000	0.0000E+000

RECEPTOR NAME	SCENARIO	PATHWAY	TOTAL CANCER RISK	TOTAL HAZARD QUOTIENT
Stockton - ANN	farmer_adult	milk	1.1879E-006	4.6095E-002
Stockton - ANN	farmer_adult	pork	1.2343E-008	2.3260E-004
Stockton - ANN	farmer_adult	soil	2.7904E-010	2.3893E-006
		Total	2.0598E-006	1.6791E-001
Stockton - ANN	farmer_child	air inhalation	5.4633E-008	9.6657E-003
Stockton - ANN	farmer_child	above ground vegetables	1.4533E-007	6.7355E-002
Stockton - ANN	farmer_child	beef	3.0613E-008	4.8219E-003
Stockton - ANN	farmer_child	chicken	6.8623E-012	3.0456E-008
Stockton - ANN	farmer_child	drinking water	1.1117E-008	1.8604E-001
Stockton - ANN	farmer_child	eggs	4.4468E-012	1.1507E-009
Stockton - ANN	farmer_child	fish	0.0000E+000	0.0000E+000
Stockton - ANN	farmer_child	milk	2.9563E-007	7.6476E-002
Stockton - ANN	farmer_child	pork	1.4139E-009	1.7762E-004
Stockton - ANN	farmer_child	soil	3.9066E-010	2.2300E-005
		Total	5.3914E-007	3.4456E-001
Stockton - ANN	fisher_adult	air inhalation	9.1055E-008	3.2219E-003
Stockton - ANN	fisher_adult	above ground vegetables	2.0596E-007	1.9080E-002
Stockton - ANN	fisher_adult	beef	0.0000E+000	0.0000E+000
Stockton - ANN	fisher_adult	chicken	0.0000E+000	0.0000E+000
Stockton - ANN	fisher_adult	drinking water	2.4890E-008	8.3302E-002
Stockton - ANN	fisher_adult	eggs	0.0000E+000	0.0000E+000
Stockton - ANN	fisher_adult	fish	4.4979E-007	1.1157E-003
Stockton - ANN	fisher_adult	milk	0.0000E+000	0.0000E+000
Stockton - ANN	fisher_adult	pork	0.0000E+000	0.0000E+000
Stockton - ANN	fisher_adult	soil	2.0928E-010	2.3893E-006
		Total	7.7190E-007	1.0672E-001
Stockton - ANN	fisher_child	air inhalation	5.4633E-008	9.6657E-003
Stockton - ANN	fisher_child	above ground vegetables	9.9121E-008	4.5909E-002
Stockton - ANN	fisher_child	beef	0.0000E+000	0.0000E+000
Stockton - ANN	fisher_child	chicken	0.0000E+000	0.0000E+000
Stockton - ANN	fisher_child	drinking water	1.1117E-008	1.8604E-001
Stockton - ANN	fisher_child	eggs	0.0000E+000	0.0000E+000
Stockton - ANN	fisher_child	fish	8.9958E-008	1.1157E-003
Stockton - ANN	fisher_child	milk	0.0000E+000	0.0000E+000
Stockton - ANN	fisher_child	pork	0.0000E+000	0.0000E+000
Stockton - ANN	fisher_child	soil	3.9066E-010	2.2300E-005

RECEPTOR NAME	SCENARIO	PATHWAY	TOTAL CANCER RISK	TOTAL HAZARD QUOTIENT
		Total	2.5522E-007	2.4275E-001
Stockton - ANN	resident_adult	air inhalation	9.1055E-008	3.2219E-003
Stockton - ANN	resident_adult	above ground vegetables	2.0596E-007	1.9080E-002
Stockton - ANN	resident_adult	beef	0.0000E+000	0.0000E+000
Stockton - ANN	resident_adult	chicken	0.0000E+000	0.0000E+000
Stockton - ANN	resident_adult	drinking water	2.4890E-008	8.3302E-002
Stockton - ANN	resident_adult	eggs	0.0000E+000	0.0000E+000
Stockton - ANN	resident_adult	fish	0.0000E+000	0.0000E+000
Stockton - ANN	resident_adult	milk	0.0000E+000	0.0000E+000
Stockton - ANN	resident_adult	pork	0.0000E+000	0.0000E+000
Stockton - ANN	resident_adult	soil	2.0928E-010	2.3893E-006
		Total	3.2211E-007	1.0561E-001
Stockton - ANN	resident_child	air inhalation	5.4633E-008	9.6657E-003
Stockton - ANN	resident_child	above ground vegetables	9.9121E-008	4.5909E-002
Stockton - ANN	resident_child	beef	0.0000E+000	0.0000E+000
Stockton - ANN	resident_child	chicken	0.0000E+000	0.0000E+000
Stockton - ANN	resident_child	drinking water	1.1117E-008	1.8604E-001
Stockton - ANN	resident_child	eggs	0.0000E+000	0.0000E+000
Stockton - ANN	resident_child	fish	0.0000E+000	0.0000E+000
Stockton - ANN	resident_child	milk	0.0000E+000	0.0000E+000
Stockton - ANN	resident_child	pork	0.0000E+000	0.0000E+000
Stockton - ANN	resident_child	soil	3.9066E-010	2.2300E-005
		Total	1.6526E-007	2.4164E-001
Tooele - ANN	farmer_adult	air inhalation	3.0352E-008	8.2998E-004
Tooele - ANN	farmer_adult	above ground vegetables	1.2395E-007	8.9141E-003
Tooele - ANN	farmer_adult	beef	1.0750E-007	2.5922E-003
Tooele - ANN	farmer_adult	chicken	2.0505E-011	1.3650E-008
Tooele - ANN	farmer_adult	drinking water	3.3186E-008	8.3302E-002
Tooele - ANN	farmer_adult	eggs	1.2583E-011	4.8839E-010
Tooele - ANN	farmer_adult	fish	0.0000E+000	0.0000E+000
Tooele - ANN	farmer_adult	milk	3.8532E-007	1.5091E-002
Tooele - ANN	farmer_adult	pork	3.9998E-009	7.7399E-005
Tooele - ANN	farmer_adult	soil	8.5345E-011	7.6453E-007
		Total	6.8443E-007	1.1081E-001
Tooele - ANN	farmer_child	air inhalation	1.8211E-008	3.3199E-003
Tooele - ANN	farmer_child	above ground vegetables	4.4701E-008	2.1431E-002

RECEPTOR NAME	SCENARIO	PATHWAY	TOTAL CANCER RISK	TOTAL HAZARD QUOTIENT
Tooele - ANN	farmer_child	beef	9.9132E-009	1.5935E-003
Tooele - ANN	farmer_child	chicken	2.0971E-012	9.3071E-009
Tooele - ANN	farmer_child	drinking water	1.1117E-008	1.8604E-001
Tooele - ANN	farmer_child	eggs	1.3589E-012	3.5164E-010
Tooele - ANN	farmer_child	fish	0.0000E+000	0.0000E+000
Tooele - ANN	farmer_child	milk	9.5893E-008	2.5038E-002
Tooele - ANN	farmer_child	pork	4.5815E-010	5.9105E-005
Tooele - ANN	farmer_child	soil	1.1948E-010	7.1356E-006
		Total	1.8042E-007	2.3749E-001
Tooele - ANN	fisher_adult	air inhalation	3.0352E-008	1.1066E-003
Tooele - ANN	fisher_adult	above ground vegetables	6.3349E-008	6.0708E-003
Tooele - ANN	fisher_adult	beef	0.0000E+000	0.0000E+000
Tooele - ANN	fisher_adult	chicken	0.0000E+000	0.0000E+000
Tooele - ANN	fisher_adult	drinking water	2.4890E-008	8.3302E-002
Tooele - ANN	fisher_adult	eggs	0.0000E+000	0.0000E+000
Tooele - ANN	fisher_adult	fish	4.4979E-007	1.1157E-003
Tooele - ANN	fisher_adult	milk	0.0000E+000	0.0000E+000
Tooele - ANN	fisher_adult	pork	0.0000E+000	0.0000E+000
Tooele - ANN	fisher_adult	soil	6.4009E-011	7.6453E-007
		Total	5.6844E-007	9.1595E-002
Tooele - ANN	fisher_child	air inhalation	1.8211E-008	3.3199E-003
Tooele - ANN	fisher_child	above ground vegetables	3.0488E-008	1.4608E-002
Tooele - ANN	fisher_child	beef	0.0000E+000	0.0000E+000
Tooele - ANN	fisher_child	chicken	0.0000E+000	0.0000E+000
Tooele - ANN	fisher_child	drinking water	1.1117E-008	1.8604E-001
Tooele - ANN	fisher_child	eggs	0.0000E+000	0.0000E+000
Tooele - ANN	fisher_child	fish	8.9958E-008	1.1157E-003
Tooele - ANN	fisher_child	milk	0.0000E+000	0.0000E+000
Tooele - ANN	fisher_child	pork	0.0000E+000	0.0000E+000
Tooele - ANN	fisher_child	soil	1.1948E-010	7.1356E-006
		Total	1.4989E-007	2.0509E-001
Tooele - ANN	resident_adult	air inhalation	3.0352E-008	1.1066E-003
Tooele - ANN	resident_adult	above ground vegetables	6.3349E-008	6.0708E-003
Tooele - ANN	resident_adult	beef	0.0000E+000	0.0000E+000
Tooele - ANN	resident_adult	chicken	0.0000E+000	0.0000E+000
Tooele - ANN	resident_adult	drinking water	2.4890E-008	8.3302E-002

RECEPTOR NAME	SCENARIO	PATHWAY	TOTAL CANCER RISK	TOTAL HAZARD QUOTIENT
Tooele - ANN	resident_adult	eggs	0.0000E+000	0.0000E+000
Tooele - ANN	resident_adult	fish	0.0000E+000	0.0000E+000
Tooele - ANN	resident_adult	milk	0.0000E+000	0.0000E+000
Tooele - ANN	resident_adult	pork	0.0000E+000	0.0000E+000
Tooele - ANN	resident_adult	soil	6.4009E-011	7.6453E-007
		Total	1.1865E-007	9.0480E-002
Tooele - ANN	resident_child	air inhalation	1.8211E-008	3.3199E-003
Tooele - ANN	resident_child	above ground vegetables	3.0488E-008	1.4608E-002
Tooele - ANN	resident_child	beef	0.0000E+000	0.0000E+000
Tooele - ANN	resident_child	chicken	0.0000E+000	0.0000E+000
Tooele - ANN	resident_child	drinking water	1.1117E-008	1.8604E-001
Tooele - ANN	resident_child	eggs	0.0000E+000	0.0000E+000
Tooele - ANN	resident_child	fish	0.0000E+000	0.0000E+000
Tooele - ANN	resident_child	milk	0.0000E+000	0.0000E+000
Tooele - ANN	resident_child	pork	0.0000E+000	0.0000E+000
Tooele - ANN	resident_child	soil	1.1948E-010	7.1356E-006
		Total	5.9935E-008	2.0397E-001

Attachment B

Hazard Indices by Target Organ

TABLE B-1
HAZARD INDICES BY TARGET ORGAN
ADULT FARMER

Source	Chemical	Organ	HI
OD Unit	Cumene (Isopropylbenzene)	Adrenal	2E-09
OD Unit	Nitrobenzene	Adrenal	5E-08
OD Unit	Trichlorobenzene, 1,2,4-	Adrenal	7E-08
		Total	1E-07
OD Unit	Antimony	Blood	1E-04
OD Unit	Barium	Blood	9E-03
OB Unit	Benzene	Blood	4E-06
OD Unit	Benzene	Blood	2E-05
SF Unit	Benzene	Blood	4E-06
OD Unit	Ethanol, 2-Butoxy-	Blood	4E-09
OD Unit	Fluoranthene	Blood	3E-06
OD Unit	Fluorene	Blood	1E-08
OB Unit	HMX	Blood	7E-03
OD Unit	HMX	Blood	7E-02
OD Unit	Nitrobenzene	Blood	5E-08
OD Unit	Styrene	Blood	5E-07
OD Unit	Trinitrobenzene, 1,3,5 (sym-)	Blood	1E-06
OD Unit	Zinc	Blood	2E-02
SF Unit	Zinc	Blood	1E-06
		Total	1E-01
OB Unit	Aluminum	Body Weight	2E-03
OD Unit	Aluminum	Body Weight	3E-03
OD Unit	Cresol, o-	Body Weight	6E-09
OD Unit	Cyclohexane	Body Weight	7E-10
OD Unit	Dichlorodifluoromethane	Body Weight	5E-09
OD Unit	Diethyl phthalate	Body Weight	3E-07
OD Unit	Formaldehyde	Body Weight	1E-05
OB Unit	Naphthalene	Body Weight	3E-07
OD Unit	Naphthalene	Body Weight	2E-04
OD Unit	Nickel	Body Weight	3E-03
OD Unit	Phenol	Body Weight	2E-08
OD Unit	Tetrachloroethylene (Perchloroethylene)	Body Weight	9E-08
OD Unit	Xylene, m-	Body Weight	2E-07
OD Unit	Xylene, o-	Body Weight	2E-07
		Total	8E-03
OD Unit	Arsenic	Cardiovascular	3E-06
OD Unit	Phenol	Cardiovascular	2E-08
OD Unit	Trichlorofluoromethane (Freon 11)	Cardiovascular	1E-09
		Total	3E-06
OD Unit	Arsenic	Developmental	3E-06
OB Unit	Carbon tetrachloride	Developmental	2E-08
OD Unit	Carbon tetrachloride	Developmental	2E-07
OD Unit	Chloroethane	Developmental	7E-11
OB Unit	Ethylbenzene	Developmental	7E-10
OD Unit	Ethylbenzene	Developmental	2E-08
OD Unit	Methyl ethyl ketone (2-Butanone)	Developmental	2E-09

TABLE B-1
HAZARD INDICES BY TARGET ORGAN
ADULT FARMER

Source	Chemical	Organ	HI
OD Unit	TetraCDD, 2,3,7,8-	Developmental	6E-02
		Total	6E-02
OD Unit	Methyl Tert-butyl Ether	Eye	9E-10
		Total	9E-10
OD Unit	Benzaldehyde	Gastrointestinal	3E-07
OD Unit	Copper	Gastrointestinal	6E-03
SF Unit	Copper	Gastrointestinal	3E-02
OB Unit	Dinitrotoluene, 2,4-	Gastrointestinal	4E-09
OD Unit	Dinitrotoluene, 2,4-	Gastrointestinal	5E-06
OD Unit	Iron	Gastrointestinal	4E-06
OD Unit	Methyl bromide (Bromomethane)	Gastrointestinal	4E-06
		Total	4E-02
OD Unit	Acetophenone	General	2E-08
OD Unit	Acrolein	General	1E-02
OD Unit	Di-n-butyl phthalate	General	2E-06
OD Unit	Trichlorofluoromethane (Freon 11)	General	1E-09
OD Unit	Xylene, m-	General	2E-07
OD Unit	Xylene, o-	General	2E-07
		Total	1E-02
OD Unit	Cobalt	Immune System	7E-03
		Total	7E-03
OD Unit	Acetone	Kidney	2E-07
OD Unit	Barium	Kidney	9E-03
OD Unit	Benzaldehyde	Kidney	3E-07
OD Unit	Benzo(g,h,i)perylene	Kidney	9E-01
OD Unit	Cadmium	Kidney	2E-01
OD Unit	Cumene (Isopropylbenzene)	Kidney	2E-09
OB Unit	Ethylbenzene	Kidney	7E-10
OD Unit	Ethylbenzene	Kidney	2E-08
OD Unit	Fluoranthene	Kidney	3E-06
OD Unit	Methyl Tert-butyl Ether	Kidney	9E-10
OD Unit	Nitrobenzene	Kidney	5E-08
OD Unit	Phenol	Kidney	2E-08
OD Unit	Pyrene	Kidney	9E-07
OB Unit	Toluene	Kidney	6E-10
OD Unit	Toluene	Kidney	1E-08
OD Unit	Trichlorofluoromethane (Freon 11)	Kidney	1E-09
OD Unit	Vanadium	Kidney	1E-01
OD Unit	Vinyl Acetate	Kidney	1E-08
		Total	1E+00
OD Unit	Acenaphthene	Liver	7E-09
OD Unit	Acenaphthylene	Liver	2E-05
OD Unit	Amino-2,6-Dinitrotoluene, 4-	Liver	2E-05
OD Unit	Amino-4,6-Dinitrotoluene, 2-	Liver	2E-05

TABLE B-1
HAZARD INDICES BY TARGET ORGAN
ADULT FARMER

Source	Chemical	Organ	HI
OD Unit	Butylbenzylphthalate	Liver	4E-06
OB Unit	Carbon tetrachloride	Liver	2E-08
OD Unit	Carbon tetrachloride	Liver	2E-07
OD Unit	Chlorobenzene	Liver	3E-06
OB Unit	Chloroform (Trichloromethane)	Liver	1E-06
OD Unit	Chloroform (Trichloromethane)	Liver	1E-06
OD Unit	Dichlorodifluoromethane	Liver	5E-09
OD Unit	Dichloroethane, 1,2- (Ethylene Dichloride)	Liver	8E-09
OB Unit	Ethylbenzene	Liver	7E-10
OD Unit	Ethylbenzene	Liver	2E-08
OD Unit	Ethylhexyl phthalate, bis-2-	Liver	1E-05
OD Unit	Fluoranthene	Liver	3E-06
OD Unit	Hexachlorobenzene	Liver	4E-05
OB Unit	HMX	Liver	7E-03
OD Unit	HMX	Liver	7E-02
OD Unit	Methyl Tert-butyl Ether	Liver	9E-10
OB Unit	Methylene chloride	Liver	7E-09
OD Unit	Methylene chloride	Liver	1E-07
OD Unit	Nitrobenzene	Liver	5E-08
OD Unit	Styrene	Liver	5E-07
OD Unit	Tetrachloroethylene (Perchloroethylene)	Liver	9E-08
OB Unit	Toluene	Liver	6E-10
OD Unit	Toluene	Liver	1E-08
OD Unit	Trichloroethane, 1,1,1-	Liver	5E-09
OD Unit	Trinitrotoluene, 2,4,6-	Liver	2E-04
OB Unit	Vinyl Chloride	Liver	1E-08
OD Unit	Vinyl Chloride	Liver	3E-07
		Total	8E-02

OD Unit	Ally Chloride	Nervous System	3E-05
OD Unit	Arsenic	Nervous System	3E-06
OD Unit	Butanol, 1-	Nervous System	4E-09
OD Unit	Carbon disulfide	Nervous System	4E-08
OB Unit	Carbon tetrachloride	Nervous System	2E-08
OD Unit	Carbon tetrachloride	Nervous System	2E-07
OD Unit	Cobalt	Nervous System	7E-03
OD Unit	Cresol, o-	Nervous System	6E-09
OB Unit	Dinitrotoluene, 2,4-	Nervous System	4E-09
OD Unit	Dinitrotoluene, 2,4-	Nervous System	5E-06
OD Unit	Freon 113	Nervous System	3E-09
OB Unit	Hexane, n-	Nervous System	2E-08
OD Unit	Hexane, n-	Nervous System	2E-07
OD Unit	Manganese	Nervous System	6E-03
OB Unit	Methyl chloride (Chloromethane)	Nervous System	1E-08
OD Unit	Methyl chloride (Chloromethane)	Nervous System	3E-08
OD Unit	Phenol	Nervous System	2E-08
OD Unit	Styrene	Nervous System	5E-07
OB Unit	Toluene	Nervous System	6E-10
OD Unit	Toluene	Nervous System	1E-08
OD Unit	Trichloroethane, 1,1,1-	Nervous System	5E-09

TABLE B-1
HAZARD INDICES BY TARGET ORGAN
ADULT FARMER

Source	Chemical	Organ	HI
OD Unit	Xylene, m-	Nervous System	2E-07
OD Unit	Xylene, o-	Nervous System	2E-07
		Total	1E-02
OD Unit	Acetaldehyde	No Effect	7E-06
OD Unit	Anthracene	No Effect	9E-09
OD Unit	Barium	No Effect	9E-03
OD Unit	Benzoic acid	No Effect	2E-09
OB Unit	Chlorine	No Effect	4E-02
OD Unit	Chromium	No Effect	1E-05
OD Unit	Chromium, hexavalent	No Effect	9E-04
		Total	5E-02
OD Unit	Diethyl phthalate	Organ (weight)	3E-07
OD Unit	Nickel	Organ (weight)	3E-03
		Total	3E-03
OD Unit	Cobalt	Reproductive	7E-03
OD Unit	Acrylonitrile	Reproductive System	1E-05
OD Unit	Butadiene, 1,3-	Reproductive System	8E-06
OD Unit	Carbon disulfide	Reproductive System	4E-08
OD Unit	Methyl ethyl ketone (2-Butanone)	Reproductive System	2E-09
		Total	7E-03
OD Unit	Ammonia	Respiratory	3E-05
OD Unit	Methyl Methacrylate	Respiratory	3E-10
OD Unit	Acetaldehyde	Respiratory Tract	7E-06
OD Unit	Acrolein	Respiratory Tract	1E-02
OD Unit	Acrylonitrile	Respiratory Tract	1E-05
OB Unit	Chlorine	Respiratory Tract	4E-02
OD Unit	Chromium, hexavalent	Respiratory Tract	9E-04
OD Unit	Formaldehyde	Respiratory Tract	1E-05
OB Unit	Hydrogen chloride	Respiratory Tract	1E-02
OD Unit	Hydrogen chloride	Respiratory Tract	2E-04
OD Unit	Methyl bromide (Bromomethane)	Respiratory Tract	4E-06
OB Unit	Naphthalene	Respiratory Tract	3E-07
OD Unit	Naphthalene	Respiratory Tract	2E-04
OD Unit	Nickel	Respiratory Tract	3E-03
OD Unit	Selenium	Respiratory Tract	7E-04
OB Unit	Toluene	Respiratory Tract	6E-10
OD Unit	Toluene	Respiratory Tract	1E-08
OD Unit	Trichlorofluoromethane (Freon 11)	Respiratory Tract	1E-09
OD Unit	Vinyl Acetate	Respiratory Tract	1E-08
		Total	7E-02
OD Unit	Arsenic	Skin	3E-06
OD Unit	Silver	Skin	2E-02
		Total	2E-02
OD Unit	Nitrotoluene, 3-	Spleen	1E-09

TABLE B-1
HAZARD INDICES BY TARGET ORGAN
ADULT FARMER

Source	Chemical	Organ	HI
OD Unit	Nitrotoluene, 4-	Spleen	6E-08
		Total	6E-08
OD Unit	Trichlorobenzene, 1,2,4-	Urinary	7E-08
		Total	7E-08
OD Unit	Acetonitrile	Whole Body	6E-07
OD Unit	Vinyl Acetate	Whole Body	1E-08
		Total	7E-07

TABLE B-2
HAZARD INDICES BY TARGET ORGAN
CHILD FARMER

Source	Chemical	Organ	HI
OD Unit	Cumene (Isopropylbenzene)	Adrenal	8E-09
OD Unit	Nitrobenzene	Adrenal	1E-07
OD Unit	Trichlorobenzene, 1,2,4-	Adrenal	1E-07
		Total	2E-07
OD Unit	Antimony	Blood	5E-04
OD Unit	Barium	Blood	3E-02
OB Unit	Benzene	Blood	1E-05
OD Unit	Benzene	Blood	6E-05
SF Unit	Benzene	Blood	2E-05
OD Unit	Ethanol, 2-Butoxy-	Blood	1E-08
OD Unit	Fluoranthene	Blood	5E-06
OD Unit	Fluorene	Blood	4E-08
OB Unit	HMX	Blood	2E-02
OD Unit	HMX	Blood	2E-01
OD Unit	Nitrobenzene	Blood	1E-07
OD Unit	Styrene	Blood	2E-06
OD Unit	Trinitrobenzene, 1,3,5 (sym-)	Blood	3E-06
OD Unit	Zinc	Blood	6E-02
SF Unit	Zinc	Blood	3E-06
		Total	3E-01
OB Unit	Aluminum	Body Weight	9E-03
OD Unit	Aluminum	Body Weight	1E-02
OD Unit	Cresol, o-	Body Weight	2E-08
OD Unit	Cyclohexane	Body Weight	3E-09
OD Unit	Dichlorodifluoromethane	Body Weight	2E-08
OD Unit	Diethyl phthalate	Body Weight	5E-07
OD Unit	Formaldehyde	Body Weight	5E-05
OB Unit	Naphthalene	Body Weight	1E-06
OD Unit	Naphthalene	Body Weight	7E-04
OD Unit	Nickel	Body Weight	6E-03
OD Unit	Phenol	Body Weight	7E-08
OD Unit	Tetrachloroethylene (Perchloroethylene)	Body Weight	4E-07
OD Unit	Xylene, m-	Body Weight	1E-06
OD Unit	Xylene, o-	Body Weight	6E-07
		Total	3E-02
OD Unit	Arsenic	Cardiovascular	7E-06
OD Unit	Phenol	Cardiovascular	7E-08
OD Unit	Trichlorofluoromethane (Freon 11)	Cardiovascular	4E-09
		Total	7E-06
OD Unit	Arsenic	Developmental	7E-06
OB Unit	Carbon tetrachloride	Developmental	1E-07
OD Unit	Carbon tetrachloride	Developmental	7E-07
OD Unit	Chloroethane	Developmental	3E-10
OB Unit	Ethylbenzene	Developmental	3E-09
OD Unit	Ethylbenzene	Developmental	1E-07

TABLE B-2
HAZARD INDICES BY TARGET ORGAN
CHILD FARMER

Source	Chemical	Organ	HI
OD Unit	Methyl ethyl ketone (2-Butanone)	Developmental	7E-09
OD Unit	TetraCDD, 2,3,7,8-	Developmental	8E-02
		Total	8E-02
OD Unit	Methyl Tert-butyl Ether	Eye	4E-09
		Total	4E-09
OD Unit	Benzaldehyde	Gastrointestinal	1E-06
OD Unit	Copper	Gastrointestinal	1E-02
SF Unit	Copper	Gastrointestinal	8E-02
OB Unit	Dinitrotoluene, 2,4-	Gastrointestinal	8E-09
OD Unit	Dinitrotoluene, 2,4-	Gastrointestinal	1E-05
OD Unit	Iron	Gastrointestinal	1E-05
OD Unit	Methyl bromide (Bromomethane)	Gastrointestinal	1E-05
		Total	9E-02
OD Unit	Acetophenone	General	9E-08
OD Unit	Acrolein	General	4E-02
OD Unit	Di-n-butyl phthalate	General	3E-06
OD Unit	Trichlorofluoromethane (Freon 11)	General	4E-09
OD Unit	Xylene, m-	General	1E-06
OD Unit	Xylene, o-	General	6E-07
		Total	4E-02
OD Unit	Cobalt	Immune System	2E-02
		Total	2E-02
OD Unit	Acetone	Kidney	9E-07
OD Unit	Barium	Kidney	3E-02
OD Unit	Benzaldehyde	Kidney	1E-06
OD Unit	Benzo(g,h,i)perylene	Kidney	1E+00
OD Unit	Cadmium	Kidney	6E-01
OD Unit	Cumene (Isopropylbenzene)	Kidney	8E-09
OB Unit	Ethylbenzene	Kidney	3E-09
OD Unit	Ethylbenzene	Kidney	1E-07
OD Unit	Fluoranthene	Kidney	5E-06
OD Unit	Methyl Tert-butyl Ether	Kidney	4E-09
OD Unit	Nitrobenzene	Kidney	1E-07
OD Unit	Phenol	Kidney	7E-08
OD Unit	Pyrene	Kidney	1E-06
OB Unit	Toluene	Kidney	2E-09
OD Unit	Toluene	Kidney	5E-08
OD Unit	Trichlorofluoromethane (Freon 11)	Kidney	4E-09
OD Unit	Vanadium	Kidney	3E-01
OD Unit	Vinyl Acetate	Kidney	5E-08
		Total	2E+00
OD Unit	Acenaphthene	Liver	2E-08
OD Unit	Acenaphthylene	Liver	3E-05
OD Unit	Amino-2,6-Dinitrotoluene, 4-	Liver	4E-05

TABLE B-2
HAZARD INDICES BY TARGET ORGAN
CHILD FARMER

Source	Chemical	Organ	HI
OD Unit	Amino-4,6-Dinitrotoluene, 2-	Liver	4E-05
OD Unit	Butylbenzylphthalate	Liver	6E-06
OB Unit	Carbon tetrachloride	Liver	1E-07
OD Unit	Carbon tetrachloride	Liver	7E-07
OD Unit	Chlorobenzene	Liver	1E-05
OB Unit	Chloroform (Trichloromethane)	Liver	5E-06
OD Unit	Chloroform (Trichloromethane)	Liver	5E-06
OD Unit	Dichlorodifluoromethane	Liver	2E-08
OD Unit	Dichloroethane, 1,2- (Ethylene Dichloride)	Liver	3E-08
OB Unit	Ethylbenzene	Liver	3E-09
OD Unit	Ethylbenzene	Liver	1E-07
OD Unit	Ethylhexyl phthalate, bis-2-	Liver	2E-05
OD Unit	Fluoranthene	Liver	5E-06
OD Unit	Hexachlorobenzene	Liver	6E-05
OB Unit	HMX	Liver	2E-02
OD Unit	HMX	Liver	2E-01
OD Unit	Methyl Tert-butyl Ether	Liver	4E-09
OB Unit	Methylene chloride	Liver	3E-08
OD Unit	Methylene chloride	Liver	4E-07
OD Unit	Nitrobenzene	Liver	1E-07
OD Unit	Styrene	Liver	2E-06
OD Unit	Tetrachloroethylene (Perchloroethylene)	Liver	4E-07
OB Unit	Toluene	Liver	2E-09
OD Unit	Toluene	Liver	5E-08
OD Unit	Trichloroethane, 1,1,1-	Liver	2E-08
OD Unit	Trinitrotoluene, 2,4,6-	Liver	5E-04
OB Unit	Vinyl Chloride	Liver	5E-08
OD Unit	Vinyl Chloride	Liver	1E-06
		Total	2E-01

OD Unit	Ally Chloride	Nervous System	1E-04
OD Unit	Arsenic	Nervous System	7E-06
OD Unit	Butanol, 1-	Nervous System	9E-09
OD Unit	Carbon disulfide	Nervous System	2E-07
OB Unit	Carbon tetrachloride	Nervous System	1E-07
OD Unit	Carbon tetrachloride	Nervous System	7E-07
OD Unit	Cobalt	Nervous System	2E-02
OD Unit	Cresol, o-	Nervous System	2E-08
OB Unit	Dinitrotoluene, 2,4-	Nervous System	8E-09
OD Unit	Dinitrotoluene, 2,4-	Nervous System	1E-05
OD Unit	Freon 113	Nervous System	1E-08
OB Unit	Hexane, n-	Nervous System	1E-07
OD Unit	Hexane, n-	Nervous System	9E-07
OD Unit	Manganese	Nervous System	2E-02
OB Unit	Methyl chloride (Chloromethane)	Nervous System	5E-08
OD Unit	Methyl chloride (Chloromethane)	Nervous System	1E-07
OD Unit	Phenol	Nervous System	7E-08
OD Unit	Styrene	Nervous System	2E-06
OB Unit	Toluene	Nervous System	2E-09
OD Unit	Toluene	Nervous System	5E-08

TABLE B-2
HAZARD INDICES BY TARGET ORGAN
CHILD FARMER

Source	Chemical	Organ	HI
OD Unit	Trichloroethane, 1,1,1-	Nervous System	2E-08
OD Unit	Xylene, m-	Nervous System	1E-06
OD Unit	Xylene, o-	Nervous System	6E-07
		Total	5E-02
OD Unit	Acetaldehyde	No Effect	3E-05
OD Unit	Anthracene	No Effect	2E-08
OD Unit	Barium	No Effect	3E-02
OD Unit	Benzoic acid	No Effect	7E-09
OB Unit	Chlorine	No Effect	2E-01
OD Unit	Chromium	No Effect	2E-05
OD Unit	Chromium, hexavalent	No Effect	3E-03
		Total	2E-01
OD Unit	Diethyl phthalate	Organ (weight)	5E-07
OD Unit	Nickel	Organ (weight)	6E-03
		Total	6E-03
OD Unit	Cobalt	Reproductive	2E-02
OD Unit	Acrylonitrile	Reproductive System	5E-05
OD Unit	Butadiene, 1,3-	Reproductive System	3E-05
OD Unit	Carbon disulfide	Reproductive System	2E-07
OD Unit	Methyl ethyl ketone (2-Butanone)	Reproductive System	7E-09
		Total	2E-02
OD Unit	Ammonia	Respiratory	1E-04
OD Unit	Methyl Methacrylate	Respiratory	1E-09
OD Unit	Acetaldehyde	Respiratory Tract	3E-05
OD Unit	Acrolein	Respiratory Tract	4E-02
OD Unit	Acrylonitrile	Respiratory Tract	5E-05
OB Unit	Chlorine	Respiratory Tract	2E-01
OD Unit	Chromium, hexavalent	Respiratory Tract	3E-03
OD Unit	Formaldehyde	Respiratory Tract	5E-05
OB Unit	Hydrogen chloride	Respiratory Tract	4E-02
OD Unit	Hydrogen chloride	Respiratory Tract	9E-04
OD Unit	Methyl bromide (Bromomethane)	Respiratory Tract	1E-05
OB Unit	Naphthalene	Respiratory Tract	1E-06
OD Unit	Naphthalene	Respiratory Tract	7E-04
OD Unit	Nickel	Respiratory Tract	6E-03
OD Unit	Selenium	Respiratory Tract	1E-03
OB Unit	Toluene	Respiratory Tract	2E-09
OD Unit	Toluene	Respiratory Tract	5E-08
OD Unit	Trichlorofluoromethane (Freon 11)	Respiratory Tract	4E-09
OD Unit	Vinyl Acetate	Respiratory Tract	5E-08
		Total	3E-01
OD Unit	Arsenic	Skin	7E-06
OD Unit	Silver	Skin	4E-02
		Total	4E-02

TABLE B-2
HAZARD INDICES BY TARGET ORGAN
CHILD FARMER

Source	Chemical	Organ	HI
OD Unit	Nitrotoluene, 3-	Spleen	2E-09
OD Unit	Nitrotoluene, 4-	Spleen	1E-07
		Total	1E-07
OD Unit	Trichlorobenzene, 1,2,4-	Urinary	1E-07
		Total	1E-07
OD Unit	Acetonitrile	Whole Body	3E-06
OD Unit	Vinyl Acetate	Whole Body	5E-08
		Total	3E-06

TABLE B-3
HAZARD INDICES BY TARGET ORGAN
ADULT RECREATIONAL FISHER

Source	Chemical	Organ	HI
OD Unit	Cumene (Isopropylbenzene)	Adrenal	3E-09
OD Unit	Nitrobenzene	Adrenal	5E-08
OD Unit	Trichlorobenzene, 1,2,4-	Adrenal	1E-08
		Total	6E-08
OD Unit	Antimony	Blood	2E-04
OD Unit	Barium	Blood	1E-02
OB Unit	Benzene	Blood	5E-06
OD Unit	Benzene	Blood	2E-05
SF Unit	Benzene	Blood	5E-06
OD Unit	Ethanol, 2-Butoxy-	Blood	4E-09
OD Unit	Fluoranthene	Blood	2E-07
OD Unit	Fluorene	Blood	1E-08
OB Unit	HMX	Blood	7E-03
OD Unit	HMX	Blood	7E-02
OD Unit	Nitrobenzene	Blood	5E-08
OD Unit	Styrene	Blood	7E-07
OD Unit	Trinitrobenzene, 1,3,5 (sym-)	Blood	7E-07
OD Unit	Zinc	Blood	1E-02
SF Unit	Zinc	Blood	8E-07
		Total	1E-01
OB Unit	Aluminum	Body Weight	3E-03
OD Unit	Aluminum	Body Weight	4E-03
OD Unit	Cresol, o-	Body Weight	8E-09
OD Unit	Cyclohexane	Body Weight	1E-09
OD Unit	Dichlorodifluoromethane	Body Weight	6E-09
OD Unit	Diethyl phthalate	Body Weight	1E-07
OD Unit	Formaldehyde	Body Weight	2E-05
OB Unit	Naphthalene	Body Weight	4E-07
OD Unit	Naphthalene	Body Weight	2E-04
OD Unit	Nickel	Body Weight	1E-03
OD Unit	Phenol	Body Weight	2E-08
OD Unit	Tetrachloroethylene (Perchloroethylene)	Body Weight	1E-07
OD Unit	Xylene, m-	Body Weight	3E-07
OD Unit	Xylene, o-	Body Weight	2E-07
		Total	8E-03
OD Unit	Arsenic	Cardiovascular	2E-06
OD Unit	Phenol	Cardiovascular	2E-08
OD Unit	Trichlorofluoromethane (Freon 11)	Cardiovascular	1E-09
		Total	2E-06
OD Unit	Arsenic	Developmental	2E-06
OB Unit	Carbon tetrachloride	Developmental	3E-08
OD Unit	Carbon tetrachloride	Developmental	2E-07
OD Unit	Chloroethane	Developmental	9E-11
OB Unit	Ethylbenzene	Developmental	9E-10
OD Unit	Ethylbenzene	Developmental	3E-08
OD Unit	Methyl ethyl ketone (2-Butanone)	Developmental	2E-09

TABLE B-3
HAZARD INDICES BY TARGET ORGAN
ADULT RECREATIONAL FISHER

Source	Chemical	Organ	HI
OD Unit	TetraCDD, 2,3,7,8-	Developmental	1E-04
		Total	1E-04
OD Unit	Methyl Tert-butyl Ether	Eye	1E-09
		Total	1E-09
OD Unit	Benzaldehyde	Gastrointestinal	4E-07
OD Unit	Copper	Gastrointestinal	4E-03
SF Unit	Copper	Gastrointestinal	2E-02
OB Unit	Dinitrotoluene, 2,4-	Gastrointestinal	3E-09
OD Unit	Dinitrotoluene, 2,4-	Gastrointestinal	4E-06
OD Unit	Iron	Gastrointestinal	3E-06
OD Unit	Methyl bromide (Bromomethane)	Gastrointestinal	5E-06
		Total	3E-02
OD Unit	Acetophenone	General	3E-08
OD Unit	Acrolein	General	1E-02
OD Unit	Di-n-butyl phthalate	General	5E-08
OD Unit	Trichlorofluoromethane (Freon 11)	General	1E-09
OD Unit	Xylene, m-	General	3E-07
OD Unit	Xylene, o-	General	2E-07
		Total	1E-02
OD Unit	Cobalt	Immune System	8E-03
		Total	8E-03
OD Unit	Acetone	Kidney	3E-07
OD Unit	Barium	Kidney	1E-02
OD Unit	Benzaldehyde	Kidney	4E-07
OD Unit	Benzo(g,h,i)perylene	Kidney	2E-03
OD Unit	Cadmium	Kidney	2E-01
OD Unit	Cumene (Isopropylbenzene)	Kidney	3E-09
OB Unit	Ethylbenzene	Kidney	9E-10
OD Unit	Ethylbenzene	Kidney	3E-08
OD Unit	Fluoranthene	Kidney	2E-07
OD Unit	Methyl Tert-butyl Ether	Kidney	1E-09
OD Unit	Nitrobenzene	Kidney	5E-08
OD Unit	Phenol	Kidney	2E-08
OD Unit	Pyrene	Kidney	5E-08
OB Unit	Toluene	Kidney	8E-10
OD Unit	Toluene	Kidney	2E-08
OD Unit	Trichlorofluoromethane (Freon 11)	Kidney	1E-09
OD Unit	Vanadium	Kidney	7E-02
OD Unit	Vinyl Acetate	Kidney	2E-08
		Total	2E-01
OD Unit	Acenaphthene	Liver	8E-09
OD Unit	Acenaphthylene	Liver	4E-06
OD Unit	Amino-2,6-Dinitrotoluene, 4-	Liver	1E-05
OD Unit	Amino-4,6-Dinitrotoluene, 2-	Liver	1E-05

TABLE B-3
HAZARD INDICES BY TARGET ORGAN
ADULT RECREATIONAL FISHER

Source	Chemical	Organ	HI
OD Unit	Butylbenzylphthalate	Liver	4E-08
OB Unit	Carbon tetrachloride	Liver	3E-08
OD Unit	Carbon tetrachloride	Liver	2E-07
OD Unit	Chlorobenzene	Liver	3E-06
OB Unit	Chloroform (Trichloromethane)	Liver	2E-06
OD Unit	Chloroform (Trichloromethane)	Liver	2E-06
OD Unit	Dichlorodifluoromethane	Liver	6E-09
OD Unit	Dichloroethane, 1,2- (Ethylene Dichloride)	Liver	1E-08
OB Unit	Ethylbenzene	Liver	9E-10
OD Unit	Ethylbenzene	Liver	3E-08
OD Unit	Ethylhexyl phthalate, bis-2-	Liver	2E-06
OD Unit	Fluoranthene	Liver	2E-07
OD Unit	Hexachlorobenzene	Liver	3E-07
OB Unit	HMX	Liver	7E-03
OD Unit	HMX	Liver	7E-02
OD Unit	Methyl Tert-butyl Ether	Liver	1E-09
OB Unit	Methylene chloride	Liver	9E-09
OD Unit	Methylene chloride	Liver	1E-07
OD Unit	Nitrobenzene	Liver	5E-08
OD Unit	Styrene	Liver	7E-07
OD Unit	Tetrachloroethylene (Perchloroethylene)	Liver	1E-07
OB Unit	Toluene	Liver	8E-10
OD Unit	Toluene	Liver	2E-08
OD Unit	Trichloroethane, 1,1,1-	Liver	6E-09
OD Unit	Trinitrotoluene, 2,4,6-	Liver	1E-04
OB Unit	Vinyl Chloride	Liver	2E-08
OD Unit	Vinyl Chloride	Liver	4E-07
		Total	8E-02

OD Unit	Ally Chloride	Nervous System	4E-05
OD Unit	Arsenic	Nervous System	2E-06
OD Unit	Butanol, 1-	Nervous System	3E-09
OD Unit	Carbon disulfide	Nervous System	6E-08
OB Unit	Carbon tetrachloride	Nervous System	3E-08
OD Unit	Carbon tetrachloride	Nervous System	2E-07
OD Unit	Cobalt	Nervous System	8E-03
OD Unit	Cresol, o-	Nervous System	8E-09
OB Unit	Dinitrotoluene, 2,4-	Nervous System	3E-09
OD Unit	Dinitrotoluene, 2,4-	Nervous System	4E-06
OD Unit	Freon 113	Nervous System	4E-09
OB Unit	Hexane, n-	Nervous System	3E-08
OD Unit	Hexane, n-	Nervous System	3E-07
OD Unit	Manganese	Nervous System	7E-03
OB Unit	Methyl chloride (Chloromethane)	Nervous System	2E-08
OD Unit	Methyl chloride (Chloromethane)	Nervous System	4E-08
OD Unit	Phenol	Nervous System	2E-08
OD Unit	Styrene	Nervous System	7E-07
OB Unit	Toluene	Nervous System	8E-10
OD Unit	Toluene	Nervous System	2E-08
OD Unit	Trichloroethane, 1,1,1-	Nervous System	6E-09

TABLE B-3
HAZARD INDICES BY TARGET ORGAN
ADULT RECREATIONAL FISHER

Source	Chemical	Organ	HI
OD Unit	Xylene, m-	Nervous System	3E-07
OD Unit	Xylene, o-	Nervous System	2E-07
		Total	2E-02
OD Unit	Acetaldehyde	No Effect	9E-06
OD Unit	Anthracene	No Effect	6E-09
OD Unit	Barium	No Effect	1E-02
OD Unit	Benzoic acid	No Effect	2E-09
OB Unit	Chlorine	No Effect	5E-02
OD Unit	Chromium	No Effect	8E-07
OD Unit	Chromium, hexavalent	No Effect	7E-04
		Total	7E-02
OD Unit	Diethyl phthalate	Organ (weight)	1E-07
OD Unit	Nickel	Organ (weight)	1E-03
		Total	1E-03
OD Unit	Cobalt	Reproductive	8E-03
OD Unit	Acrylonitrile	Reproductive System	2E-05
OD Unit	Butadiene, 1,3-	Reproductive System	1E-05
OD Unit	Carbon disulfide	Reproductive System	6E-08
OD Unit	Methyl ethyl ketone (2-Butanone)	Reproductive System	2E-09
		Total	8E-03
OD Unit	Ammonia	Respiratory	4E-05
OD Unit	Methyl Methacrylate	Respiratory	3E-10
OD Unit	Acetaldehyde	Respiratory Tract	9E-06
OD Unit	Acrolein	Respiratory Tract	1E-02
OD Unit	Acrylonitrile	Respiratory Tract	2E-05
OB Unit	Chlorine	Respiratory Tract	5E-02
OD Unit	Chromium, hexavalent	Respiratory Tract	7E-04
OD Unit	Formaldehyde	Respiratory Tract	2E-05
OB Unit	Hydrogen chloride	Respiratory Tract	1E-02
OD Unit	Hydrogen chloride	Respiratory Tract	3E-04
OD Unit	Methyl bromide (Bromomethane)	Respiratory Tract	5E-06
OB Unit	Naphthalene	Respiratory Tract	4E-07
OD Unit	Naphthalene	Respiratory Tract	2E-04
OD Unit	Nickel	Respiratory Tract	1E-03
OD Unit	Selenium	Respiratory Tract	2E-05
OB Unit	Toluene	Respiratory Tract	8E-10
OD Unit	Toluene	Respiratory Tract	2E-08
OD Unit	Trichlorofluoromethane (Freon 11)	Respiratory Tract	1E-09
OD Unit	Vinyl Acetate	Respiratory Tract	2E-08
		Total	8E-02
OD Unit	Arsenic	Skin	2E-06
OD Unit	Silver	Skin	2E-04
		Total	2E-04
OD Unit	Nitrotoluene, 3-	Spleen	7E-10
OD Unit	Nitrotoluene, 4-	Spleen	2E-08

TABLE B-3
HAZARD INDICES BY TARGET ORGAN
ADULT RECREATIONAL FISHER

Source	Chemical	Organ	HI
		Total	3E-08
OD Unit	Trichlorobenzene, 1,2,4-	Urinary	1E-08
		Total	1E-08
OD Unit	Acetonitrile	Whole Body	9E-07
OD Unit	Vinyl Acetate	Whole Body	2E-08
		Total	9E-07

TABLE B-4
HAZARD INDICES BY TARGET ORGAN
CHILD RECREATIONAL FISHER

Source	Chemical	Organ	HI
OD Unit	Cumene (Isopropylbenzene)	Adrenal	8E-09
OD Unit	Nitrobenzene	Adrenal	1E-07
OD Unit	Trichlorobenzene, 1,2,4-	Adrenal	3E-08
		Total	1E-07
OD Unit	Antimony	Blood	5E-04
OD Unit	Barium	Blood	3E-02
OB Unit	Benzene	Blood	1E-05
OD Unit	Benzene	Blood	6E-05
SF Unit	Benzene	Blood	2E-05
OD Unit	Ethanol, 2-Butoxy-	Blood	9E-09
OD Unit	Fluoranthene	Blood	6E-07
OD Unit	Fluorene	Blood	3E-08
OB Unit	HMX	Blood	2E-02
OD Unit	HMX	Blood	2E-01
OD Unit	Nitrobenzene	Blood	1E-07
OD Unit	Styrene	Blood	2E-06
OD Unit	Trinitrobenzene, 1,3,5 (sym-)	Blood	2E-06
OD Unit	Zinc	Blood	3E-02
SF Unit	Zinc	Blood	2E-06
		Total	2E-01
OB Unit	Aluminum	Body Weight	8E-03
OD Unit	Aluminum	Body Weight	1E-02
OD Unit	Cresol, o-	Body Weight	2E-08
OD Unit	Cyclohexane	Body Weight	3E-09
OD Unit	Dichlorodifluoromethane	Body Weight	2E-08
OD Unit	Diethyl phthalate	Body Weight	3E-07
OD Unit	Formaldehyde	Body Weight	5E-05
OB Unit	Naphthalene	Body Weight	1E-06
OD Unit	Naphthalene	Body Weight	7E-04
OD Unit	Nickel	Body Weight	4E-03
OD Unit	Phenol	Body Weight	7E-08
OD Unit	Tetrachloroethylene (Perchloroethylene)	Body Weight	4E-07
OD Unit	Xylene, m-	Body Weight	1E-06
OD Unit	Xylene, o-	Body Weight	6E-07
		Total	2E-02
OD Unit	Arsenic	Cardiovascular	4E-06
OD Unit	Phenol	Cardiovascular	7E-08
OD Unit	Trichlorofluoromethane (Freon 11)	Cardiovascular	4E-09
		Total	4E-06
OD Unit	Arsenic	Developmental	4E-06
OB Unit	Carbon tetrachloride	Developmental	1E-07
OD Unit	Carbon tetrachloride	Developmental	7E-07
OD Unit	Chloroethane	Developmental	3E-10
OB Unit	Ethylbenzene	Developmental	3E-09
OD Unit	Ethylbenzene	Developmental	1E-07
OD Unit	Methyl ethyl ketone (2-Butanone)	Developmental	7E-09

TABLE B-4
HAZARD INDICES BY TARGET ORGAN
CHILD RECREATIONAL FISHER

Source	Chemical	Organ	HI
OD Unit	TetraCDD, 2,3,7,8-	Developmental	3E-04
		Total	3E-04
OD Unit	Methyl Tert-butyl Ether	Eye	4E-09
		Total	4E-09
OD Unit	Benzaldehyde	Gastrointestinal	1E-06
OD Unit	Copper	Gastrointestinal	1E-02
SF Unit	Copper	Gastrointestinal	5E-02
OB Unit	Dinitrotoluene, 2,4-	Gastrointestinal	6E-09
OD Unit	Dinitrotoluene, 2,4-	Gastrointestinal	9E-06
OD Unit	Iron	Gastrointestinal	7E-06
OD Unit	Methyl bromide (Bromomethane)	Gastrointestinal	1E-05
		Total	6E-02
OD Unit	Acetophenone	General	9E-08
OD Unit	Acrolein	General	4E-02
OD Unit	Di-n-butyl phthalate	General	1E-07
OD Unit	Trichlorofluoromethane (Freon 11)	General	4E-09
OD Unit	Xylene, m-	General	1E-06
OD Unit	Xylene, o-	General	6E-07
		Total	4E-02
OD Unit	Cobalt	Immune System	2E-02
		Total	2E-02
OD Unit	Acetone	Kidney	9E-07
OD Unit	Barium	Kidney	3E-02
OD Unit	Benzaldehyde	Kidney	1E-06
OD Unit	Benzo(g,h,i)perylene	Kidney	4E-03
OD Unit	Cadmium	Kidney	4E-01
OD Unit	Cumene (Isopropylbenzene)	Kidney	8E-09
OB Unit	Ethylbenzene	Kidney	3E-09
OD Unit	Ethylbenzene	Kidney	1E-07
OD Unit	Fluoranthene	Kidney	6E-07
OD Unit	Methyl Tert-butyl Ether	Kidney	4E-09
OD Unit	Nitrobenzene	Kidney	1E-07
OD Unit	Phenol	Kidney	7E-08
OD Unit	Pyrene	Kidney	2E-07
OB Unit	Toluene	Kidney	2E-09
OD Unit	Toluene	Kidney	5E-08
OD Unit	Trichlorofluoromethane (Freon 11)	Kidney	4E-09
OD Unit	Vanadium	Kidney	2E-01
OD Unit	Vinyl Acetate	Kidney	5E-08
		Total	6E-01
OD Unit	Acenaphthene	Liver	2E-08
OD Unit	Acenaphthylene	Liver	1E-05
OD Unit	Amino-2,6-Dinitrotoluene, 4-	Liver	2E-05
OD Unit	Amino-4,6-Dinitrotoluene, 2-	Liver	3E-05

TABLE B-4
HAZARD INDICES BY TARGET ORGAN
CHILD RECREATIONAL FISHER

Source	Chemical	Organ	HI
OD Unit	Butylbenzylphthalate	Liver	1E-07
OB Unit	Carbon tetrachloride	Liver	1E-07
OD Unit	Carbon tetrachloride	Liver	7E-07
OD Unit	Chlorobenzene	Liver	1E-05
OB Unit	Chloroform (Trichloromethane)	Liver	5E-06
OD Unit	Chloroform (Trichloromethane)	Liver	5E-06
OD Unit	Dichlorodifluoromethane	Liver	2E-08
OD Unit	Dichloroethane, 1,2- (Ethylene Dichloride)	Liver	3E-08
OB Unit	Ethylbenzene	Liver	3E-09
OD Unit	Ethylbenzene	Liver	1E-07
OD Unit	Ethylhexyl phthalate, bis-2-	Liver	4E-06
OD Unit	Fluoranthene	Liver	6E-07
OD Unit	Hexachlorobenzene	Liver	4E-07
OB Unit	HMX	Liver	2E-02
OD Unit	HMX	Liver	2E-01
OD Unit	Methyl Tert-butyl Ether	Liver	4E-09
OB Unit	Methylene chloride	Liver	3E-08
OD Unit	Methylene chloride	Liver	4E-07
OD Unit	Nitrobenzene	Liver	1E-07
OD Unit	Styrene	Liver	2E-06
OD Unit	Tetrachloroethylene (Perchloroethylene)	Liver	4E-07
OB Unit	Toluene	Liver	2E-09
OD Unit	Toluene	Liver	5E-08
OD Unit	Trichloroethane, 1,1,1-	Liver	2E-08
OD Unit	Trinitrotoluene, 2,4,6-	Liver	3E-04
OB Unit	Vinyl Chloride	Liver	5E-08
OD Unit	Vinyl Chloride	Liver	1E-06
		Total	2E-01

OD Unit	Ally Chloride	Nervous System	1E-04
OD Unit	Arsenic	Nervous System	4E-06
OD Unit	Butanol, 1-	Nervous System	7E-09
OD Unit	Carbon disulfide	Nervous System	2E-07
OB Unit	Carbon tetrachloride	Nervous System	1E-07
OD Unit	Carbon tetrachloride	Nervous System	7E-07
OD Unit	Cobalt	Nervous System	2E-02
OD Unit	Cresol, o-	Nervous System	2E-08
OB Unit	Dinitrotoluene, 2,4-	Nervous System	6E-09
OD Unit	Dinitrotoluene, 2,4-	Nervous System	9E-06
OD Unit	Freon 113	Nervous System	1E-08
OB Unit	Hexane, n-	Nervous System	1E-07
OD Unit	Hexane, n-	Nervous System	9E-07
OD Unit	Manganese	Nervous System	2E-02
OB Unit	Methyl chloride (Chloromethane)	Nervous System	5E-08
OD Unit	Methyl chloride (Chloromethane)	Nervous System	1E-07
OD Unit	Phenol	Nervous System	7E-08
OD Unit	Styrene	Nervous System	2E-06
OB Unit	Toluene	Nervous System	2E-09
OD Unit	Toluene	Nervous System	5E-08
OD Unit	Trichloroethane, 1,1,1-	Nervous System	2E-08

TABLE B-4
HAZARD INDICES BY TARGET ORGAN
CHILD RECREATIONAL FISHER

Source	Chemical	Organ	HI
OD Unit	Xylene, m-	Nervous System	1E-06
OD Unit	Xylene, o-	Nervous System	6E-07
		Total	4E-02
OD Unit	Acetaldehyde	No Effect	3E-05
OD Unit	Anthracene	No Effect	2E-08
OD Unit	Barium	No Effect	3E-02
OD Unit	Benzoic acid	No Effect	7E-09
OB Unit	Chlorine	No Effect	2E-01
OD Unit	Chromium	No Effect	2E-06
OD Unit	Chromium, hexavalent	No Effect	2E-03
		Total	2E-01
OD Unit	Diethyl phthalate	Organ (weight)	3E-07
OD Unit	Nickel	Organ (weight)	4E-03
		Total	4E-03
OD Unit	Cobalt	Reproductive	2E-02
OD Unit	Acrylonitrile	Reproductive System	5E-05
OD Unit	Butadiene, 1,3-	Reproductive System	3E-05
OD Unit	Carbon disulfide	Reproductive System	2E-07
OD Unit	Methyl ethyl ketone (2-Butanone)	Reproductive System	7E-09
		Total	2E-02
OD Unit	Ammonia	Respiratory	1E-04
OD Unit	Methyl Methacrylate	Respiratory	1E-09
OD Unit	Acetaldehyde	Respiratory Tract	3E-05
OD Unit	Acrolein	Respiratory Tract	4E-02
OD Unit	Acrylonitrile	Respiratory Tract	5E-05
OB Unit	Chlorine	Respiratory Tract	2E-01
OD Unit	Chromium, hexavalent	Respiratory Tract	2E-03
OD Unit	Formaldehyde	Respiratory Tract	5E-05
OB Unit	Hydrogen chloride	Respiratory Tract	4E-02
OD Unit	Hydrogen chloride	Respiratory Tract	9E-04
OD Unit	Methyl bromide (Bromomethane)	Respiratory Tract	1E-05
OB Unit	Naphthalene	Respiratory Tract	1E-06
OD Unit	Naphthalene	Respiratory Tract	7E-04
OD Unit	Nickel	Respiratory Tract	4E-03
OD Unit	Selenium	Respiratory Tract	4E-05
OB Unit	Toluene	Respiratory Tract	2E-09
OD Unit	Toluene	Respiratory Tract	5E-08
OD Unit	Trichlorofluoromethane (Freon 11)	Respiratory Tract	4E-09
OD Unit	Vinyl Acetate	Respiratory Tract	5E-08
		Total	2E-01
OD Unit	Arsenic	Skin	4E-06
OD Unit	Silver	Skin	6E-04
		Total	6E-04
OD Unit	Nitrotoluene, 3-	Spleen	2E-09

TABLE B-4
HAZARD INDICES BY TARGET ORGAN
CHILD RECREATIONAL FISHER

Source	Chemical	Organ	HI
OD Unit	Nitrotoluene, 4-	Spleen	6E-08
		Total	6E-08
OD Unit	Trichlorobenzene, 1,2,4-	Urinary	3E-08
		Total	3E-08
OD Unit	Acetonitrile	Whole Body	3E-06
OD Unit	Vinyl Acetate	Whole Body	5E-08
		Total	3E-06

TABLE B-5
HAZARD INDICES BY TARGET ORGAN
ADULT RESIDENT

Source	Chemical	Organ	HI
OD Unit	Cumene (Isopropylbenzene)	Adrenal	3E-09
OD Unit	Nitrobenzene	Adrenal	5E-08
OD Unit	Trichlorobenzene, 1,2,4-	Adrenal	1E-08
		Total	6E-08
OD Unit	Antimony	Blood	2E-04
OD Unit	Barium	Blood	1E-02
OB Unit	Benzene	Blood	5E-06
OD Unit	Benzene	Blood	2E-05
SF Unit	Benzene	Blood	5E-06
OD Unit	Ethanol, 2-Butoxy-	Blood	4E-09
OD Unit	Fluoranthene	Blood	2E-07
OD Unit	Fluorene	Blood	1E-08
OB Unit	HMX	Blood	7E-03
OD Unit	HMX	Blood	7E-02
OD Unit	Nitrobenzene	Blood	5E-08
OD Unit	Styrene	Blood	7E-07
OD Unit	Trinitrobenzene, 1,3,5 (sym-)	Blood	7E-07
OD Unit	Zinc	Blood	1E-02
SF Unit	Zinc	Blood	8E-07
		Total	1E-01
OB Unit	Aluminum	Body Weight	3E-03
OD Unit	Aluminum	Body Weight	4E-03
OD Unit	Cresol, o-	Body Weight	8E-09
OD Unit	Cyclohexane	Body Weight	1E-09
OD Unit	Dichlorodifluoromethane	Body Weight	6E-09
OD Unit	Diethyl phthalate	Body Weight	1E-07
OD Unit	Formaldehyde	Body Weight	2E-05
OB Unit	Naphthalene	Body Weight	4E-07
OD Unit	Naphthalene	Body Weight	2E-04
OD Unit	Nickel	Body Weight	1E-03
OD Unit	Phenol	Body Weight	2E-08
OD Unit	Tetrachloroethylene (Perchloroethylene)	Body Weight	1E-07
OD Unit	Xylene, m-	Body Weight	3E-07
OD Unit	Xylene, o-	Body Weight	2E-07
		Total	8E-03
OD Unit	Arsenic	Cardiovascular	2E-06
OD Unit	Phenol	Cardiovascular	2E-08
OD Unit	Trichlorofluoromethane (Freon 11)	Cardiovascular	1E-09
		Total	2E-06
OD Unit	Arsenic	Developmental	2E-06
OB Unit	Carbon tetrachloride	Developmental	3E-08
OD Unit	Carbon tetrachloride	Developmental	2E-07
OD Unit	Chloroethane	Developmental	9E-11
OB Unit	Ethylbenzene	Developmental	9E-10
OD Unit	Ethylbenzene	Developmental	3E-08
OD Unit	Methyl ethyl ketone (2-Butanone)	Developmental	2E-09

TABLE B-5
HAZARD INDICES BY TARGET ORGAN
ADULT RESIDENT

Source	Chemical	Organ	HI
OD Unit	TetraCDD, 2,3,7,8-	Developmental	1E-04
		Total	1E-04
OD Unit	Methyl Tert-butyl Ether	Eye	1E-09
		Total	1E-09
OD Unit	Benzaldehyde	Gastrointestinal	4E-07
OD Unit	Copper	Gastrointestinal	4E-03
SF Unit	Copper	Gastrointestinal	2E-02
OB Unit	Dinitrotoluene, 2,4-	Gastrointestinal	3E-09
OD Unit	Dinitrotoluene, 2,4-	Gastrointestinal	4E-06
OD Unit	Iron	Gastrointestinal	3E-06
OD Unit	Methyl bromide (Bromomethane)	Gastrointestinal	5E-06
		Total	3E-02
OD Unit	Acetophenone	General	3E-08
OD Unit	Acrolein	General	1E-02
OD Unit	Di-n-butyl phthalate	General	4E-08
OD Unit	Trichlorofluoromethane (Freon 11)	General	1E-09
OD Unit	Xylene, m-	General	3E-07
OD Unit	Xylene, o-	General	2E-07
		Total	1E-02
OD Unit	Cobalt	Immune System	8E-03
		Total	8E-03
OD Unit	Acetone	Kidney	3E-07
OD Unit	Barium	Kidney	1E-02
OD Unit	Benzaldehyde	Kidney	4E-07
OD Unit	Benzo(g,h,i)perylene	Kidney	2E-03
OD Unit	Cadmium	Kidney	2E-01
OD Unit	Cumene (Isopropylbenzene)	Kidney	3E-09
OB Unit	Ethylbenzene	Kidney	9E-10
OD Unit	Ethylbenzene	Kidney	3E-08
OD Unit	Fluoranthene	Kidney	2E-07
OD Unit	Methyl Tert-butyl Ether	Kidney	1E-09
OD Unit	Nitrobenzene	Kidney	5E-08
OD Unit	Phenol	Kidney	2E-08
OD Unit	Pyrene	Kidney	5E-08
OB Unit	Toluene	Kidney	8E-10
OD Unit	Toluene	Kidney	2E-08
OD Unit	Trichlorofluoromethane (Freon 11)	Kidney	1E-09
OD Unit	Vanadium	Kidney	7E-02
OD Unit	Vinyl Acetate	Kidney	2E-08
		Total	2E-01
OD Unit	Acenaphthene	Liver	8E-09
OD Unit	Acenaphthylene	Liver	4E-06
OD Unit	Amino-2,6-Dinitrotoluene, 4-	Liver	1E-05
OD Unit	Amino-4,6-Dinitrotoluene, 2-	Liver	1E-05

TABLE B-5
HAZARD INDICES BY TARGET ORGAN
ADULT RESIDENT

Source	Chemical	Organ	HI
OD Unit	Butylbenzylphthalate	Liver	3E-08
OB Unit	Carbon tetrachloride	Liver	3E-08
OD Unit	Carbon tetrachloride	Liver	2E-07
OD Unit	Chlorobenzene	Liver	3E-06
OB Unit	Chloroform (Trichloromethane)	Liver	2E-06
OD Unit	Chloroform (Trichloromethane)	Liver	2E-06
OD Unit	Dichlorodifluoromethane	Liver	6E-09
OD Unit	Dichloroethane, 1,2- (Ethylene Dichloride)	Liver	1E-08
OB Unit	Ethylbenzene	Liver	9E-10
OD Unit	Ethylbenzene	Liver	3E-08
OD Unit	Ethylhexyl phthalate, bis-2-	Liver	2E-06
OD Unit	Fluoranthene	Liver	2E-07
OD Unit	Hexachlorobenzene	Liver	7E-08
OB Unit	HMX	Liver	7E-03
OD Unit	HMX	Liver	7E-02
OD Unit	Methyl Tert-butyl Ether	Liver	1E-09
OB Unit	Methylene chloride	Liver	9E-09
OD Unit	Methylene chloride	Liver	1E-07
OD Unit	Nitrobenzene	Liver	5E-08
OD Unit	Styrene	Liver	7E-07
OD Unit	Tetrachloroethylene (Perchloroethylene)	Liver	1E-07
OB Unit	Toluene	Liver	8E-10
OD Unit	Toluene	Liver	2E-08
OD Unit	Trichloroethane, 1,1,1-	Liver	6E-09
OD Unit	Trinitrotoluene, 2,4,6-	Liver	1E-04
OB Unit	Vinyl Chloride	Liver	2E-08
OD Unit	Vinyl Chloride	Liver	4E-07
		Total	8E-02

OD Unit	Ally Chloride	Nervous System	4E-05
OD Unit	Arsenic	Nervous System	2E-06
OD Unit	Butanol, 1-	Nervous System	3E-09
OD Unit	Carbon disulfide	Nervous System	6E-08
OB Unit	Carbon tetrachloride	Nervous System	3E-08
OD Unit	Carbon tetrachloride	Nervous System	2E-07
OD Unit	Cobalt	Nervous System	8E-03
OD Unit	Cresol, o-	Nervous System	8E-09
OB Unit	Dinitrotoluene, 2,4-	Nervous System	3E-09
OD Unit	Dinitrotoluene, 2,4-	Nervous System	4E-06
OD Unit	Freon 113	Nervous System	4E-09
OB Unit	Hexane, n-	Nervous System	3E-08
OD Unit	Hexane, n-	Nervous System	3E-07
OD Unit	Manganese	Nervous System	7E-03
OB Unit	Methyl chloride (Chloromethane)	Nervous System	2E-08
OD Unit	Methyl chloride (Chloromethane)	Nervous System	4E-08
OD Unit	Phenol	Nervous System	2E-08
OD Unit	Styrene	Nervous System	7E-07
OB Unit	Toluene	Nervous System	8E-10
OD Unit	Toluene	Nervous System	2E-08
OD Unit	Trichloroethane, 1,1,1-	Nervous System	6E-09

TABLE B-5
HAZARD INDICES BY TARGET ORGAN
ADULT RESIDENT

Source	Chemical	Organ	HI
OD Unit	Xylene, m-	Nervous System	3E-07
OD Unit	Xylene, o-	Nervous System	2E-07
		Total	2E-02
OD Unit	Acetaldehyde	No Effect	9E-06
OD Unit	Anthracene	No Effect	6E-09
OD Unit	Barium	No Effect	1E-02
OD Unit	Benzoic acid	No Effect	2E-09
OB Unit	Chlorine	No Effect	5E-02
OD Unit	Chromium	No Effect	8E-07
OD Unit	Chromium, hexavalent	No Effect	7E-04
		Total	7E-02
OD Unit	Diethyl phthalate	Organ (weight)	1E-07
OD Unit	Nickel	Organ (weight)	1E-03
		Total	1E-03
OD Unit	Cobalt	Reproductive	8E-03
OD Unit	Acrylonitrile	Reproductive System	2E-05
OD Unit	Butadiene, 1,3-	Reproductive System	1E-05
OD Unit	Carbon disulfide	Reproductive System	6E-08
OD Unit	Methyl ethyl ketone (2-Butanone)	Reproductive System	2E-09
		Total	8E-03
OD Unit	Ammonia	Respiratory	4E-05
OD Unit	Methyl Methacrylate	Respiratory	3E-10
OD Unit	Acetaldehyde	Respiratory Tract	9E-06
OD Unit	Acrolein	Respiratory Tract	1E-02
OD Unit	Acrylonitrile	Respiratory Tract	2E-05
OB Unit	Chlorine	Respiratory Tract	5E-02
OD Unit	Chromium, hexavalent	Respiratory Tract	7E-04
OD Unit	Formaldehyde	Respiratory Tract	2E-05
OB Unit	Hydrogen chloride	Respiratory Tract	1E-02
OD Unit	Hydrogen chloride	Respiratory Tract	3E-04
OD Unit	Methyl bromide (Bromomethane)	Respiratory Tract	5E-06
OB Unit	Naphthalene	Respiratory Tract	4E-07
OD Unit	Naphthalene	Respiratory Tract	2E-04
OD Unit	Nickel	Respiratory Tract	1E-03
OD Unit	Selenium	Respiratory Tract	2E-05
OB Unit	Toluene	Respiratory Tract	8E-10
OD Unit	Toluene	Respiratory Tract	2E-08
OD Unit	Trichlorofluoromethane (Freon 11)	Respiratory Tract	1E-09
OD Unit	Vinyl Acetate	Respiratory Tract	2E-08
		Total	8E-02
OD Unit	Arsenic	Skin	2E-06
OD Unit	Silver	Skin	2E-04
		Total	2E-04
OD Unit	Nitrotoluene, 3-	Spleen	7E-10

TABLE B-5
HAZARD INDICES BY TARGET ORGAN
ADULT RESIDENT

Source	Chemical	Organ	HI
OD Unit	Nitrotoluene, 4-	Spleen	2E-08
		Total	3E-08
OD Unit	Trichlorobenzene, 1,2,4-	Urinary	1E-08
		Total	1E-08
OD Unit	Acetonitrile	Whole Body	9E-07
OD Unit	Vinyl Acetate	Whole Body	2E-08
		Total	9E-07

TABLE B-6
HAZARD INDICES BY TARGET ORGAN
CHILD RESIDENT

Source	Chemical	Organ	HI
OD Unit	Cumene (Isopropylbenzene)	Adrenal	8E-09
OD Unit	Nitrobenzene	Adrenal	1E-07
OD Unit	Trichlorobenzene, 1,2,4-	Adrenal	3E-08
		Total	1E-07
OD Unit	Antimony	Blood	5E-04
OD Unit	Barium	Blood	3E-02
OB Unit	Benzene	Blood	1E-05
OD Unit	Benzene	Blood	6E-05
SF Unit	Benzene	Blood	2E-05
OD Unit	Ethanol, 2-Butoxy-	Blood	9E-09
OD Unit	Fluoranthene	Blood	6E-07
OD Unit	Fluorene	Blood	3E-08
OB Unit	HMX	Blood	2E-02
OD Unit	HMX	Blood	2E-01
OD Unit	Nitrobenzene	Blood	1E-07
OD Unit	Styrene	Blood	2E-06
OD Unit	Trinitrobenzene, 1,3,5 (sym-)	Blood	2E-06
OD Unit	Zinc	Blood	3E-02
SF Unit	Zinc	Blood	2E-06
		Total	2E-01
OB Unit	Aluminum	Body Weight	8E-03
OD Unit	Aluminum	Body Weight	1E-02
OD Unit	Cresol, o-	Body Weight	2E-08
OD Unit	Cyclohexane	Body Weight	3E-09
OD Unit	Dichlorodifluoromethane	Body Weight	2E-08
OD Unit	Diethyl phthalate	Body Weight	3E-07
OD Unit	Formaldehyde	Body Weight	5E-05
OB Unit	Naphthalene	Body Weight	1E-06
OD Unit	Naphthalene	Body Weight	7E-04
OD Unit	Nickel	Body Weight	4E-03
OD Unit	Phenol	Body Weight	7E-08
OD Unit	Tetrachloroethylene (Perchloroethylene)	Body Weight	4E-07
OD Unit	Xylene, m-	Body Weight	1E-06
OD Unit	Xylene, o-	Body Weight	6E-07
		Total	2E-02
OD Unit	Arsenic	Cardiovascular	4E-06
OD Unit	Phenol	Cardiovascular	7E-08
OD Unit	Trichlorofluoromethane (Freon 11)	Cardiovascular	4E-09
		Total	4E-06
OD Unit	Arsenic	Developmental	4E-06
OB Unit	Carbon tetrachloride	Developmental	1E-07
OD Unit	Carbon tetrachloride	Developmental	7E-07
OD Unit	Chloroethane	Developmental	3E-10
OB Unit	Ethylbenzene	Developmental	3E-09
OD Unit	Ethylbenzene	Developmental	1E-07
OD Unit	Methyl ethyl ketone (2-Butanone)	Developmental	7E-09

TABLE B-6
HAZARD INDICES BY TARGET ORGAN
CHILD RESIDENT

Source	Chemical	Organ	HI
OD Unit	TetraCDD, 2,3,7,8-	Developmental	3E-04
		Total	3E-04
OD Unit	Methyl Tert-butyl Ether	Eye	4E-09
		Total	4E-09
OD Unit	Benzaldehyde	Gastrointestinal	1E-06
OD Unit	Copper	Gastrointestinal	1E-02
SF Unit	Copper	Gastrointestinal	5E-02
OB Unit	Dinitrotoluene, 2,4-	Gastrointestinal	6E-09
OD Unit	Dinitrotoluene, 2,4-	Gastrointestinal	9E-06
OD Unit	Iron	Gastrointestinal	7E-06
OD Unit	Methyl bromide (Bromomethane)	Gastrointestinal	1E-05
		Total	6E-02
OD Unit	Acetophenone	General	9E-08
OD Unit	Acrolein	General	4E-02
OD Unit	Di-n-butyl phthalate	General	1E-07
OD Unit	Trichlorofluoromethane (Freon 11)	General	4E-09
OD Unit	Xylene, m-	General	1E-06
OD Unit	Xylene, o-	General	6E-07
		Total	4E-02
OD Unit	Cobalt	Immune System	2E-02
		Total	2E-02
OD Unit	Acetone	Kidney	9E-07
OD Unit	Barium	Kidney	3E-02
OD Unit	Benzaldehyde	Kidney	1E-06
OD Unit	Benzo(g,h,i)perylene	Kidney	4E-03
OD Unit	Cadmium	Kidney	4E-01
OD Unit	Cumene (Isopropylbenzene)	Kidney	8E-09
OB Unit	Ethylbenzene	Kidney	3E-09
OD Unit	Ethylbenzene	Kidney	1E-07
OD Unit	Fluoranthene	Kidney	6E-07
OD Unit	Methyl Tert-butyl Ether	Kidney	4E-09
OD Unit	Nitrobenzene	Kidney	1E-07
OD Unit	Phenol	Kidney	7E-08
OD Unit	Pyrene	Kidney	2E-07
OB Unit	Toluene	Kidney	2E-09
OD Unit	Toluene	Kidney	5E-08
OD Unit	Trichlorofluoromethane (Freon 11)	Kidney	4E-09
OD Unit	Vanadium	Kidney	2E-01
OD Unit	Vinyl Acetate	Kidney	5E-08
		Total	6E-01
OD Unit	Acenaphthene	Liver	2E-08
OD Unit	Acenaphthylene	Liver	1E-05
OD Unit	Amino-2,6-Dinitrotoluene, 4-	Liver	2E-05
OD Unit	Amino-4,6-Dinitrotoluene, 2-	Liver	3E-05

TABLE B-6
HAZARD INDICES BY TARGET ORGAN
CHILD RESIDENT

Source	Chemical	Organ	HI
OD Unit	Butylbenzylphthalate	Liver	1E-07
OB Unit	Carbon tetrachloride	Liver	1E-07
OD Unit	Carbon tetrachloride	Liver	7E-07
OD Unit	Chlorobenzene	Liver	1E-05
OB Unit	Chloroform (Trichloromethane)	Liver	5E-06
OD Unit	Chloroform (Trichloromethane)	Liver	5E-06
OD Unit	Dichlorodifluoromethane	Liver	2E-08
OD Unit	Dichloroethane, 1,2- (Ethylene Dichloride)	Liver	3E-08
OB Unit	Ethylbenzene	Liver	3E-09
OD Unit	Ethylbenzene	Liver	1E-07
OD Unit	Ethylhexyl phthalate, bis-2-	Liver	4E-06
OD Unit	Fluoranthene	Liver	6E-07
OD Unit	Hexachlorobenzene	Liver	2E-07
OB Unit	HMX	Liver	2E-02
OD Unit	HMX	Liver	2E-01
OD Unit	Methyl Tert-butyl Ether	Liver	4E-09
OB Unit	Methylene chloride	Liver	3E-08
OD Unit	Methylene chloride	Liver	4E-07
OD Unit	Nitrobenzene	Liver	1E-07
OD Unit	Styrene	Liver	2E-06
OD Unit	Tetrachloroethylene (Perchloroethylene)	Liver	4E-07
OB Unit	Toluene	Liver	2E-09
OD Unit	Toluene	Liver	5E-08
OD Unit	Trichloroethane, 1,1,1-	Liver	2E-08
OD Unit	Trinitrotoluene, 2,4,6-	Liver	3E-04
OB Unit	Vinyl Chloride	Liver	5E-08
OD Unit	Vinyl Chloride	Liver	1E-06
		Total	2E-01

OD Unit	Ally Chloride	Nervous System	1E-04
OD Unit	Arsenic	Nervous System	4E-06
OD Unit	Butanol, 1-	Nervous System	7E-09
OD Unit	Carbon disulfide	Nervous System	2E-07
OB Unit	Carbon tetrachloride	Nervous System	1E-07
OD Unit	Carbon tetrachloride	Nervous System	7E-07
OD Unit	Cobalt	Nervous System	2E-02
OD Unit	Cresol, o-	Nervous System	2E-08
OB Unit	Dinitrotoluene, 2,4-	Nervous System	6E-09
OD Unit	Dinitrotoluene, 2,4-	Nervous System	9E-06
OD Unit	Freon 113	Nervous System	1E-08
OB Unit	Hexane, n-	Nervous System	1E-07
OD Unit	Hexane, n-	Nervous System	9E-07
OD Unit	Manganese	Nervous System	2E-02
OB Unit	Methyl chloride (Chloromethane)	Nervous System	5E-08
OD Unit	Methyl chloride (Chloromethane)	Nervous System	1E-07
OD Unit	Phenol	Nervous System	7E-08
OD Unit	Styrene	Nervous System	2E-06
OB Unit	Toluene	Nervous System	2E-09
OD Unit	Toluene	Nervous System	5E-08
OD Unit	Trichloroethane, 1,1,1-	Nervous System	2E-08

TABLE B-6
HAZARD INDICES BY TARGET ORGAN
CHILD RESIDENT

Source	Chemical	Organ	HI
OD Unit	Xylene, m-	Nervous System	1E-06
OD Unit	Xylene, o-	Nervous System	6E-07
		Total	4E-02
OD Unit	Acetaldehyde	No Effect	3E-05
OD Unit	Anthracene	No Effect	2E-08
OD Unit	Barium	No Effect	3E-02
OD Unit	Benzoic acid	No Effect	7E-09
OB Unit	Chlorine	No Effect	2E-01
OD Unit	Chromium	No Effect	2E-06
OD Unit	Chromium, hexavalent	No Effect	2E-03
		Total	2E-01
OD Unit	Diethyl phthalate	Organ (weight)	3E-07
OD Unit	Nickel	Organ (weight)	4E-03
		Total	4E-03
OD Unit	Cobalt	Reproductive	2E-02
OD Unit	Acrylonitrile	Reproductive System	5E-05
OD Unit	Butadiene, 1,3-	Reproductive System	3E-05
OD Unit	Carbon disulfide	Reproductive System	2E-07
OD Unit	Methyl ethyl ketone (2-Butanone)	Reproductive System	7E-09
		Total	2E-02
OD Unit	Ammonia	Respiratory	1E-04
OD Unit	Methyl Methacrylate	Respiratory	1E-09
OD Unit	Acetaldehyde	Respiratory Tract	3E-05
OD Unit	Acrolein	Respiratory Tract	4E-02
OD Unit	Acrylonitrile	Respiratory Tract	5E-05
OB Unit	Chlorine	Respiratory Tract	2E-01
OD Unit	Chromium, hexavalent	Respiratory Tract	2E-03
OD Unit	Formaldehyde	Respiratory Tract	5E-05
OB Unit	Hydrogen chloride	Respiratory Tract	4E-02
OD Unit	Hydrogen chloride	Respiratory Tract	9E-04
OD Unit	Methyl bromide (Bromomethane)	Respiratory Tract	1E-05
OB Unit	Naphthalene	Respiratory Tract	1E-06
OD Unit	Naphthalene	Respiratory Tract	7E-04
OD Unit	Nickel	Respiratory Tract	4E-03
OD Unit	Selenium	Respiratory Tract	4E-05
OB Unit	Toluene	Respiratory Tract	2E-09
OD Unit	Toluene	Respiratory Tract	5E-08
OD Unit	Trichlorofluoromethane (Freon 11)	Respiratory Tract	4E-09
OD Unit	Vinyl Acetate	Respiratory Tract	5E-08
		Total	2E-01
OD Unit	Arsenic	Skin	4E-06
OD Unit	Silver	Skin	6E-04
		Total	6E-04
OD Unit	Nitrotoluene, 3-	Spleen	2E-09

TABLE B-6
HAZARD INDICES BY TARGET ORGAN
CHILD RESIDENT

Source	Chemical	Organ	HI
OD Unit	Nitrotoluene, 4-	Spleen	6E-08
		Total	6E-08
OD Unit	Trichlorobenzene, 1,2,4-	Urinary	3E-08
		Total	3E-08
OD Unit	Acetonitrile	Whole Body	3E-06
OD Unit	Vinyl Acetate	Whole Body	5E-08
		Total	3E-06

Attachment C

Acute Hazard Quotients

RECEPTOR NAME	SCENARIO	SOURCE	COPC	ACUTE INHALATION HAZARD QUOTIENT
Firing Control Point	**resident_adult**	**OB_UNIT**	Ethylbenzene	1.2811E-008
			Toluene	7.3419E-007
			Hexane, n-	1.0872E-007
			Dinitrotoluene, 2,4-	3.9950E-007
			RDX	2.2954E-010
			Diphenylamine	2.9420E-007
			HMX	1.9195E-006
			Nitroglycerine	2.3994E-006
			Carbon tetrachloride	4.6341E-006
			Dinitrotoluene, 2,6-	3.9990E-007
			Chloroform (Trichloromethane)	2.2408E-005
			Benzene	7.1632E-004
			Methyl chloride (Chloromethane)	4.6614E-008
			Aluminum	5.8699E-003
			Lead	6.9339E-001
			Vinyl Chloride	6.6943E-008
			Methylene chloride	1.3137E-005
			Hydrogen chloride	8.4057E-001
			Chlorine	3.5032E-001
			Naphthalene	9.6680E-008
			Total	1.8909E+000
		OD_UNIT	Nitrophenol, 4-	6.2636E-006
			Ethylbenzene	1.5414E-007
			Styrene	7.7583E-005
			Benzyl chloride	2.6964E-005
			Benzyl alcohol	6.1788E-008
			Benzaldehyde	2.0509E-005
			Dichlorobenzene,1,4-	5.6368E-008
			Butadiene, 1,3-	3.4905E-008
			Acrolein	3.4060E+000
			Ally Chloride	9.5753E-006
			Dichloroethane, 1,2- (Ethylene Dich	3.2037E-007
			Acrylonitrile	3.5033E-006
			Vinyl Acetate	3.1280E-007
			Xylene, m-	3.5033E-006
			Trimethylbenzene, 1,3,5-	3.6943E-008

RECEPTOR NAME	SCENARIO	SOURCE	COPC	ACUTE INHALATION HAZARD QUOTIENT
			Methylcyclohexane	3.2046E-009
			Toluene	5.7393E-006
			Chlorobenzene	3.2000E-006
			Cyclohexanone	1.4455E-008
			Phenol	1.9120E-006
			Tetrahydrofuran	4.1019E-008
			Furan	7.2727E-007
			Hexane, n-	3.7398E-007
			Cyclohexane	1.3854E-008
			Ethanol, 2-Butoxy-	1.1030E-007
			Ethylhexyl phthalate, bis-2-	6.0494E-006
			Di-n-octylphthalate	6.8159E-008
			Hexachlorobenzene	1.1816E-001
			Trinitrotoluene, 2,4,6-	1.3695E-004
			Anthracene	2.3530E-006
			Trichlorobenzene, 1,2,4-	1.3194E-005
			Dinitrotoluene, 2,4-	1.3320E-004
			RDX	1.5307E-005
			Tetrachloroethylene (Perchloroethyl	5.6910E-006
			Pyrene	8.7708E-007
			Dibenzofuran	2.0488E-007
			Xylenes	9.8721E-008
			Methyl Tert-butyl Ether	4.9503E-008
			TetraCDD, 2,3,7,8-	3.8148E-007
			Chromium, hexavalent	0.0000E+000
			Benzo(g,h,i)perylene	1.1206E-006
			Indeno(1,2,3-cd) pyrene	3.0764E-004
			Amino-2,6-Dinitrotoluene, 4-	0.0000E+000
			HexaCDD, 1,2,3,7,8,9-	1.7379E-011
			Benzo(b)fluoranthene	2.4765E-005
			Fluoranthene	4.4734E-003
			Benzo(k)fluoranthene	3.5068E-004
			Acenaphthylene	3.2357E-003
			Chrysene	7.2585E-006
			HMX	3.6943E-006
			OctaCDD, 1,2,3,4,6,7,8,9-	2.6276E-011

RECEPTOR NAME	SCENARIO	SOURCE	COPC	ACUTE INHALATION HAZARD QUOTIENT
			Amino-4,6-Dinitrotoluene, 2-	0.0000E+000
			HeptaCDD, 1,2,3,4,6,7,8-	4.1463E-013
			OctaCDF, 1,2,3,4,6,7,8,9-	9.8861E-010
			HexaCDD, 1,2,3,4,7,8-	1.2425E-010
			PentaCDD, 1,2,3,7,8-	1.7350E-008
			Ethanedinitrile	2.9268E-005
			Tetryl	2.0509E-008
			Formaldehyde	3.9439E-003
			Benzo(a)pyrene	8.5889E-006
			TetraCDF, 2,3,7,8-	6.9863E-008
			Dibenz(a,h)anthracene	2.5398E-009
			Nitroglycerine	1.5382E-006
			HeptaCDF, 1,2,3,4,7,8,9-	2.5284E-011
			Carbon tetrachloride	1.2152E-005
			Benzo(a)anthracene	2.7226E-005
			Cyanide	0.0000E+000
			PentaCDF, 2,3,4,7,8-	1.9069E-007
			PentaCDF, 1,2,3,7,8-	3.0794E-009
			HexaCDF, 1,2,3,6,7,8-	1.5355E-009
			HexaCDD, 1,2,3,6,7,8-	1.7227E-011
			Dinitrotoluene, 2,6-	2.1030E-007
			HexaCDF, 2,3,4,6,7,8-	3.7203E-009
			Benzoic acid	6.1658E-006
			Acetone	5.1827E-007
			Chloroform (Trichloromethane)	7.7831E-006
			HeptaCDF, 1,2,3,4,6,7,8-	7.3929E-011
			HexaCDF, 1,2,3,4,7,8-	2.2096E-009
			Butanol, 1-	5.1382E-007
			Benzene	1.1357E-003
			Trichloroethane, 1,1,1-	1.0856E-006
			HexaCDF, 1,2,3,7,8,9-	1.1520E-011
			Methyl bromide (Bromomethane)	1.5009E-005
			Methyl chloride (Chloromethane)	4.7642E-008
			Hydrogen Cyanide	9.0731E-004
			Aluminum	2.8618E-003
			Iron	7.6910E-005

RECEPTOR NAME	SCENARIO	SOURCE	COPC	ACUTE INHALATION HAZARD QUOTIENT
			Lead	3.2737E-002
			Manganese	2.8726E-004
			Nickel	8.7262E-002
			Silver	4.0975E-004
			Strontium	6.5582E-002
			Thallium (l)	1.9512E-002
			Titanium	7.8915E-006
			Antimony	3.6856E-004
			Arsenic	2.4304E-004
			Barium	7.5880E-003
			Cadmium	2.8726E-001
			Chromium	1.1490E-004
			Cobalt	2.7642E-005
			Copper	2.4292E-002
			Vanadium	5.1382E-001
			Zinc	2.1572E-002
			Chloroethane	8.4942E-010
			Vinyl Chloride	4.7877E-007
			Acetonitrile	5.6336E-006
			Acetaldehyde	2.3151E-006
			Methylene chloride	7.2473E-005
			Carbon disulfide	1.5893E-005
			Trichlorofluoromethane (Freon 11)	8.7414E-010
			Dichlorodifluoromethane	1.9274E-010
			Freon 113	3.0758E-008
			Hydrogen chloride	7.0305E-003
			Ammonia	4.6922E-004
			Selenium	7.7429E-006
			Methyl ethyl ketone (2-Butanone)	2.0363E-006
			Methyl Methacrylate	8.3623E-009
			Acenaphthene	3.0769E-006
			Diethyl phthalate	2.6666E-004
			Di-n-butyl phthalate	2.0386E-006
			Phenanthrene	3.9960E-005
			Butylbenzylphthalate	3.1034E-006
			Fluorene	2.9257E-007

RECEPTOR NAME	SCENARIO	SOURCE	COPC	ACUTE INHALATION HAZARD QUOTIENT
			Nitrophenol, 2-	3.0000E-006
			Naphthalene	2.2547E-005
			Xylene, o-	2.2321E-006
			Cresol, o-	1.5382E-007
			Trimethylbenzene, 1,2,4-	2.0502E-008
			Cumene (Isopropylbenzene)	9.7560E-009
			Alpha Methyl Styrene	0.0000E+000
			Acetophenone	8.0975E-007
			Nitrobenzene	1.6824E-006
			Nitrotoluene, 3-	3.6155E-008
			Trinitrobenzene, 1,3,5 (sym-)	5.7960E-007
			Nitrotoluene, 4-	2.0488E-006
			Total	4.6111E+000
		SF_UNIT	Nitroglycerine	2.2469E-006
			Benzene	6.8684E-004
			Lead	6.4541E-001
			Copper	2.7549E-001
			Zinc	2.4813E-006
			Naphthalene	4.9496E-008
			Total	9.2158E-001
Grantsville 1HR	**resident_adult**	**OB_UNIT**	Ethylbenzene	4.1450E-009
			Toluene	2.3755E-007
			Hexane, n-	3.5177E-008
			Dinitrotoluene, 2,4-	1.2926E-007
			RDX	7.4270E-011
			Diphenylamine	9.5190E-008
			HMX	6.2107E-007
			Nitroglycerine	7.7634E-007
			Carbon tetrachloride	1.4994E-006
			Dinitrotoluene, 2,6-	1.2939E-007
			Chloroform (Trichloromethane)	7.2504E-006
			Benzene	2.3177E-004
			Methyl chloride (Chloromethane)	1.5082E-008
			Aluminum	1.8992E-003
			Lead	2.2435E-001
			Vinyl Chloride	2.1660E-008

RECEPTOR NAME	SCENARIO	SOURCE	COPC	ACUTE INHALATION HAZARD QUOTIENT
			Methylene chloride	4.2506E-006
			Hydrogen chloride	2.7197E-001
			Chlorine	1.1335E-001
			Naphthalene	3.1282E-008
			Total	6.1182E-001
		OD_UNIT	Nitrophenol, 4-	6.1172E-006
			Ethylbenzene	1.5054E-007
			Styrene	7.5770E-005
			Benzyl chloride	2.6334E-005
			Benzyl alcohol	6.0344E-008
			Benzaldehyde	2.0030E-005
			Dichlorobenzene,1,4-	5.5051E-008
			Butadiene, 1,3-	3.4089E-008
			Acrolein	3.3264E+000
			Ally Chloride	9.3516E-006
			Dichloroethane, 1,2- (Ethylene Dich	3.1288E-007
			Acrylonitrile	3.4214E-006
			Vinyl Acetate	3.0549E-007
			Xylene, m-	3.4214E-006
			Trimethylbenzene, 1,3,5-	3.6079E-008
			Methylcyclohexane	3.1297E-009
			Toluene	5.6052E-006
			Chlorobenzene	3.1252E-006
			Cyclohexanone	1.4117E-008
			Phenol	1.8673E-006
			Tetrahydrofuran	4.0060E-008
			Furan	7.1027E-007
			Hexane, n-	3.6524E-007
			Cyclohexane	1.3530E-008
			Ethanol, 2-Butoxy-	1.0772E-007
			Ethylhexyl phthalate, bis-2-	5.9080E-006
			Di-n-octylphthalate	6.6566E-008
			Hexachlorobenzene	1.1539E-001
			Trinitrotoluene, 2,4,6-	1.3375E-004
			Anthracene	2.2980E-006
			Trichlorobenzene, 1,2,4-	1.2885E-005

RECEPTOR NAME	SCENARIO	SOURCE	COPC	ACUTE INHALATION HAZARD QUOTIENT
			Dinitrotoluene, 2,4-	1.3009E-004
			RDX	1.4949E-005
			Tetrachloroethylene (Perchloroethyl	5.5580E-006
			Pyrene	8.5658E-007
			Dibenzofuran	2.0009E-007
			Xylenes	9.6414E-008
			Methyl Tert-butyl Ether	4.8346E-008
			TetraCDD, 2,3,7,8-	3.7257E-007
			Chromium, hexavalent	0.0000E+000
			Benzo(g,h,i)perylene	1.0944E-006
			Indeno(1,2,3-cd) pyrene	3.0045E-004
			Amino-2,6-Dinitrotoluene, 4-	0.0000E+000
			HexaCDD, 1,2,3,7,8,9-	1.6973E-011
			Benzo(b)fluoranthene	2.4186E-005
			Fluoranthene	4.3688E-003
			Benzo(k)fluoranthene	3.4248E-004
			Acenaphthylene	3.1601E-003
			Chrysene	7.0888E-006
			HMX	3.6079E-006
			OctaCDD, 1,2,3,4,6,7,8,9-	2.5662E-011
			Amino-4,6-Dinitrotoluene, 2-	0.0000E+000
			HeptaCDD, 1,2,3,4,6,7,8-	4.0494E-013
			OctaCDF, 1,2,3,4,6,7,8,9-	9.6550E-010
			HexaCDD, 1,2,3,4,7,8-	1.2135E-010
			PentaCDD, 1,2,3,7,8-	1.6945E-008
			Ethanedinitrile	2.8584E-005
			Tetryl	2.0030E-008
			Formaldehyde	3.8517E-003
			Benzo(a)pyrene	8.3881E-006
			TetraCDF, 2,3,7,8-	6.8230E-008
			Dibenz(a,h)anthracene	2.4805E-009
			Nitroglycerine	1.5022E-006
			HeptaCDF, 1,2,3,4,7,8,9-	2.4693E-011
			Carbon tetrachloride	1.1868E-005
			Benzo(a)anthracene	2.6589E-005
			Cyanide	0.0000E+000

RECEPTOR NAME	SCENARIO	SOURCE	COPC	ACUTE INHALATION HAZARD QUOTIENT
			PentaCDF, 2,3,4,7,8-	1.8624E-007
			PentaCDF, 1,2,3,7,8-	3.0075E-009
			HexaCDF, 1,2,3,6,7,8-	1.4996E-009
			HexaCDD, 1,2,3,6,7,8-	1.6824E-011
			Dinitrotoluene, 2,6-	2.0538E-007
			HexaCDF, 2,3,4,6,7,8-	3.6333E-009
			Benzoic acid	6.0217E-006
			Acetone	5.0615E-007
			Chloroform (Trichloromethane)	7.6012E-006
			HeptaCDF, 1,2,3,4,6,7,8-	7.2201E-011
			HexaCDF, 1,2,3,4,7,8-	2.1580E-009
			Butanol, 1-	5.0181E-007
			Benzene	1.1092E-003
			Trichloroethane, 1,1,1-	1.0602E-006
			HexaCDF, 1,2,3,7,8,9-	1.1251E-011
			Methyl bromide (Bromomethane)	1.4658E-005
			Methyl chloride (Chloromethane)	4.6528E-008
			Hydrogen Cyanide	8.8610E-004
			Aluminum	2.7949E-003
			Iron	7.5112E-005
			Lead	3.1972E-002
			Manganese	2.8055E-004
			Nickel	8.5223E-002
			Silver	4.0018E-004
			Strontium	6.4049E-002
			Thallium (l)	1.9056E-002
			Titanium	7.7071E-006
			Antimony	3.5995E-004
			Arsenic	2.3736E-004
			Barium	7.4107E-003
			Cadmium	2.8055E-001
			Chromium	1.1222E-004
			Cobalt	2.6996E-005
			Copper	2.3725E-002
			Vanadium	5.0181E-001
			Zinc	2.1067E-002

RECEPTOR NAME	SCENARIO	SOURCE	COPC	ACUTE INHALATION HAZARD QUOTIENT
			Chloroethane	8.2957E-010
			Vinyl Chloride	4.6758E-007
			Acetonitrile	5.5020E-006
			Acetaldehyde	2.2610E-006
			Methylene chloride	7.0779E-005
			Carbon disulfide	1.5521E-005
			Trichlorofluoromethane (Freon 11)	8.5371E-010
			Dichlorodifluoromethane	1.8823E-010
			Freon 113	3.0040E-008
			Hydrogen chloride	6.8662E-003
			Ammonia	4.5825E-004
			Selenium	7.5619E-006
			Methyl ethyl ketone (2-Butanone)	1.9887E-006
			Methyl Methacrylate	8.1669E-009
			Acenaphthene	3.0050E-006
			Diethyl phthalate	2.6043E-004
			Di-n-butyl phthalate	1.9910E-006
			Phenanthrene	3.9026E-005
			Butylbenzylphthalate	3.0309E-006
			Fluorene	2.8573E-007
			Nitrophenol, 2-	2.9299E-006
			Naphthalene	2.2020E-005
			Xylene, o-	2.1799E-006
			Cresol, o-	1.5022E-007
			Trimethylbenzene, 1,2,4-	2.0023E-008
			Cumene (Isopropylbenzene)	9.5280E-009
			Alpha Methyl Styrene	0.0000E+000
			Acetophenone	7.9082E-007
			Nitrobenzene	1.6431E-006
			Nitrotoluene, 3-	3.5310E-008
			Trinitrobenzene, 1,3,5 (sym-)	5.6606E-007
			Nitrotoluene, 4-	2.0009E-006
			Total	4.5034E+000
		SF_UNIT	Nitroglycerine	7.6935E-007
			Benzene	2.3518E-004
			Lead	2.2099E-001

RECEPTOR NAME	SCENARIO	SOURCE	COPC	ACUTE INHALATION HAZARD QUOTIENT
			Copper	9.4329E-002
			Zinc	8.4963E-007
			Naphthalene	1.6948E-008
			Total	3.1556E-001
Grantsville Rsvr	**resident_adult**	**OB_UNIT**	Ethylbenzene	3.1027E-009
			Toluene	1.7782E-007
			Hexane, n-	2.6331E-008
			Dinitrotoluene, 2,4-	9.6756E-008
			RDX	5.5594E-011
			Diphenylamine	7.1253E-008
			HMX	4.6490E-007
			Nitroglycerine	5.8112E-007
			Carbon tetrachloride	1.1224E-006
			Dinitrotoluene, 2,6-	9.6853E-008
			Chloroform (Trichloromethane)	5.4272E-006
			Benzene	1.7349E-004
			Methyl chloride (Chloromethane)	1.1290E-008
			Aluminum	1.4217E-003
			Lead	1.6794E-001
			Vinyl Chloride	1.6213E-008
			Methylene chloride	3.1817E-006
			Hydrogen chloride	2.0358E-001
			Chlorine	8.4846E-002
			Naphthalene	2.3415E-008
			Total	4.5797E-001
		OD_UNIT	Nitrophenol, 4-	7.5984E-006
			Ethylbenzene	1.8699E-007
			Styrene	9.4116E-005
			Benzyl chloride	3.2711E-005
			Benzyl alcohol	7.4955E-008
			Benzaldehyde	2.4880E-005
			Dichlorobenzene,1,4-	6.8380E-008
			Butadiene, 1,3-	4.2343E-008
			Acrolein	4.1319E+000
			Ally Chloride	1.1616E-005
			Dichloroethane, 1,2- (Ethylene Dich	3.8864E-007

RECEPTOR NAME	SCENARIO	SOURCE	COPC	ACUTE INHALATION HAZARD QUOTIENT
			Acrylonitrile	4.2498E-006
			Vinyl Acetate	3.7946E-007
			Xylene, m-	4.2498E-006
			Trimethylbenzene, 1,3,5-	4.4815E-008
			Methylcyclohexane	3.8875E-009
			Toluene	6.9624E-006
			Chlorobenzene	3.8819E-006
			Cyclohexanone	1.7536E-008
			Phenol	2.3194E-006
			Tetrahydrofuran	4.9760E-008
			Furan	8.8225E-007
			Hexane, n-	4.5367E-007
			Cyclohexane	1.6806E-008
			Ethanol, 2-Butoxy-	1.3380E-007
			Ethylhexyl phthalate, bis-2-	7.3385E-006
			Di-n-octylphthalate	8.2684E-008
			Hexachlorobenzene	1.4333E-001
			Trinitrotoluene, 2,4,6-	1.6613E-004
			Anthracene	2.8544E-006
			Trichlorobenzene, 1,2,4-	1.6005E-005
			Dinitrotoluene, 2,4-	1.6158E-004
			RDX	1.8568E-005
			Tetrachloroethylene (Perchloroethyl	6.9037E-006
			Pyrene	1.0640E-006
			Dibenzofuran	2.4853E-007
			Xylenes	1.1976E-007
			Methyl Tert-butyl Ether	6.0052E-008
			TetraCDD, 2,3,7,8-	4.6277E-007
			Chromium, hexavalent	0.0000E+000
			Benzo(g,h,i)perylene	1.3594E-006
			Indeno(1,2,3-cd) pyrene	3.7320E-004
			Amino-2,6-Dinitrotoluene, 4-	0.0000E+000
			HexaCDD, 1,2,3,7,8,9-	2.1082E-011
			Benzo(b)fluoranthene	3.0042E-005
			Fluoranthene	5.4266E-003
			Benzo(k)fluoranthene	4.2541E-004

RECEPTOR NAME	SCENARIO	SOURCE	COPC	ACUTE INHALATION HAZARD QUOTIENT
			Acenaphthylene	3.9253E-003
			Chrysene	8.8052E-006
			HMX	4.4815E-006
			OctaCDD, 1,2,3,4,6,7,8,9-	3.1876E-011
			Amino-4,6-Dinitrotoluene, 2-	0.0000E+000
			HeptaCDD, 1,2,3,4,6,7,8-	5.0299E-013
			OctaCDF, 1,2,3,4,6,7,8,9-	1.1993E-009
			HexaCDD, 1,2,3,4,7,8-	1.5073E-010
			PentaCDD, 1,2,3,7,8-	2.1047E-008
			Ethanedinitrile	3.5505E-005
			Tetryl	2.4880E-008
			Formaldehyde	4.7844E-003
			Benzo(a)pyrene	1.0419E-005
			TetraCDF, 2,3,7,8-	8.4750E-008
			Dibenz(a,h)anthracene	3.0810E-009
			Nitroglycerine	1.8660E-006
			HeptaCDF, 1,2,3,4,7,8,9-	3.0672E-011
			Carbon tetrachloride	1.4742E-005
			Benzo(a)anthracene	3.3028E-005
			Cyanide	0.0000E+000
			PentaCDF, 2,3,4,7,8-	2.3133E-007
			PentaCDF, 1,2,3,7,8-	3.7357E-009
			HexaCDF, 1,2,3,6,7,8-	1.8627E-009
			HexaCDD, 1,2,3,6,7,8-	2.0898E-011
			Dinitrotoluene, 2,6-	2.5511E-007
			HexaCDF, 2,3,4,6,7,8-	4.5131E-009
			Benzoic acid	7.4797E-006
			Acetone	6.2871E-007
			Chloroform (Trichloromethane)	9.4417E-006
			HeptaCDF, 1,2,3,4,6,7,8-	8.9683E-011
			HexaCDF, 1,2,3,4,7,8-	2.6805E-009
			Butanol, 1-	6.2331E-007
			Benzene	1.3777E-003
			Trichloroethane, 1,1,1-	1.3169E-006
			HexaCDF, 1,2,3,7,8,9-	1.3975E-011
			Methyl bromide (Bromomethane)	1.8208E-005

RECEPTOR NAME	SCENARIO	SOURCE	COPC	ACUTE INHALATION HAZARD QUOTIENT
			Methyl chloride (Chloromethane)	5.7794E-008
			Hydrogen Cyanide	1.1007E-003
			Aluminum	3.4716E-003
			Iron	9.3299E-005
			Lead	3.9713E-002
			Manganese	3.4848E-004
			Nickel	1.0586E-001
			Silver	4.9707E-004
			Strontium	7.9558E-002
			Thallium (l)	2.3670E-002
			Titanium	9.5732E-006
			Antimony	4.4710E-004
			Arsenic	2.9484E-004
			Barium	9.2050E-003
			Cadmium	3.4848E-001
			Chromium	1.3939E-004
			Cobalt	3.3532E-005
			Copper	2.9469E-002
			Vanadium	6.2331E-001
			Zinc	2.6168E-002
			Chloroethane	1.0304E-009
			Vinyl Chloride	5.8079E-007
			Acetonitrile	6.8341E-006
			Acetaldehyde	2.8085E-006
			Methylene chloride	8.7917E-005
			Carbon disulfide	1.9280E-005
			Trichlorofluoromethane (Freon 11)	1.0604E-009
			Dichlorodifluoromethane	2.3381E-010
			Freon 113	3.7313E-008
			Hydrogen chloride	8.5287E-003
			Ammonia	5.6921E-004
			Selenium	9.3929E-006
			Methyl ethyl ketone (2-Butanone)	2.4702E-006
			Methyl Methacrylate	1.0144E-008
			Acenaphthene	3.7326E-006
			Diethyl phthalate	3.2349E-004

RECEPTOR NAME	SCENARIO	SOURCE	COPC	ACUTE INHALATION HAZARD QUOTIENT
			Di-n-butyl phthalate	2.4731E-006
			Phenanthrene	4.8475E-005
			Butylbenzylphthalate	3.7648E-006
			Fluorene	3.5491E-007
			Nitrophenol, 2-	3.6393E-006
			Naphthalene	2.7352E-005
			Xylene, o-	2.7077E-006
			Cresol, o-	1.8660E-007
			Trimethylbenzene, 1,2,4-	2.4871E-008
			Cumene (Isopropylbenzene)	1.1835E-008
			Alpha Methyl Styrene	0.0000E+000
			Acetophenone	9.8231E-007
			Nitrobenzene	2.0409E-006
			Nitrotoluene, 3-	4.3859E-008
			Trinitrobenzene, 1,3,5 (sym-)	7.0311E-007
			Nitrotoluene, 4-	2.4854E-006
			Total	5.5938E+000
		SF_UNIT	Nitroglycerine	1.0357E-006
			Benzene	3.1660E-004
			Lead	2.9750E-001
			Copper	1.2698E-001
			Zinc	1.1438E-006
			Naphthalene	2.2815E-008
			Total	4.2480E-001
Guard Shack	**resident_adult**	**OB_UNIT**	Ethylbenzene	7.1266E-009
			Toluene	4.0842E-007
			Hexane, n-	6.0480E-008
			Dinitrotoluene, 2,4-	2.2224E-007
			RDX	1.2769E-010
			Diphenylamine	1.6366E-007
			HMX	1.0678E-006
			Nitroglycerine	1.3348E-006
			Carbon tetrachloride	2.5779E-006
			Dinitrotoluene, 2,6-	2.2246E-007
			Chloroform (Trichloromethane)	1.2466E-005
			Benzene	3.9848E-004

RECEPTOR NAME	SCENARIO	SOURCE	COPC	ACUTE INHALATION HAZARD QUOTIENT
			Methyl chloride (Chloromethane)	2.5931E-008
			Aluminum	3.2654E-003
			Lead	3.8573E-001
			Vinyl Chloride	3.7240E-008
			Methylene chloride	7.3080E-006
			Hydrogen chloride	4.6760E-001
			Chlorine	1.9488E-001
			Naphthalene	5.3782E-008
			Total	1.0519E+000
		OD_UNIT	Nitrophenol, 4-	1.0963E-005
			Ethylbenzene	2.6980E-007
			Styrene	1.3579E-004
			Benzyl chloride	4.7196E-005
			Benzyl alcohol	1.0815E-007
			Benzaldehyde	3.5898E-005
			Dichlorobenzene,1,4-	9.8661E-008
			Butadiene, 1,3-	6.1094E-008
			Acrolein	5.9616E+000
			Ally Chloride	1.6760E-005
			Dichloroethane, 1,2- (Ethylene Dich	5.6075E-007
			Acrylonitrile	6.1318E-006
			Vinyl Acetate	5.4749E-007
			Xylene, m-	6.1318E-006
			Trimethylbenzene, 1,3,5-	6.4661E-008
			Methylcyclohexane	5.6090E-009
			Toluene	1.0046E-005
			Chlorobenzene	5.6009E-006
			Cyclohexanone	2.5301E-008
			Phenol	3.3465E-006
			Tetrahydrofuran	7.1795E-008
			Furan	1.2729E-006
			Hexane, n-	6.5458E-007
			Cyclohexane	2.4248E-008
			Ethanol, 2-Butoxy-	1.9305E-007
			Ethylhexyl phthalate, bis-2-	1.0588E-005
			Di-n-octylphthalate	1.1930E-007

RECEPTOR NAME	SCENARIO	SOURCE	COPC	ACUTE INHALATION HAZARD QUOTIENT
			Hexachlorobenzene	2.0681E-001
			Trinitrotoluene, 2,4,6-	2.3970E-004
			Anthracene	4.1184E-006
			Trichlorobenzene, 1,2,4-	2.3093E-005
			Dinitrotoluene, 2,4-	2.3314E-004
			RDX	2.6791E-005
			Tetrachloroethylene (Perchloroethyl	9.9610E-006
			Pyrene	1.5352E-006
			Dibenzofuran	3.5860E-007
			Xylenes	1.7279E-007
			Methyl Tert-butyl Ether	8.6645E-008
			TetraCDD, 2,3,7,8-	6.6771E-007
			Chromium, hexavalent	0.0000E+000
			Benzo(g,h,i)perylene	1.9614E-006
			Indeno(1,2,3-cd) pyrene	5.3846E-004
			Amino-2,6-Dinitrotoluene, 4-	0.0000E+000
			HexaCDD, 1,2,3,7,8,9-	3.0418E-011
			Benzo(b)fluoranthene	4.3346E-005
			Fluoranthene	7.8298E-003
			Benzo(k)fluoranthene	6.1380E-004
			Acenaphthylene	5.6635E-003
			Chrysene	1.2705E-005
			HMX	6.4661E-006
			OctaCDD, 1,2,3,4,6,7,8,9-	4.5991E-011
			Amino-4,6-Dinitrotoluene, 2-	0.0000E+000
			HeptaCDD, 1,2,3,4,6,7,8-	7.2573E-013
			OctaCDF, 1,2,3,4,6,7,8,9-	1.7304E-009
			HexaCDD, 1,2,3,4,7,8-	2.1748E-010
			PentaCDD, 1,2,3,7,8-	3.0368E-008
			Ethanedinitrile	5.1228E-005
			Tetryl	3.5898E-008
			Formaldehyde	6.9031E-003
			Benzo(a)pyrene	1.5033E-005
			TetraCDF, 2,3,7,8-	1.2228E-007
			Dibenz(a,h)anthracene	4.4455E-009
			Nitroglycerine	2.6923E-006

RECEPTOR NAME	SCENARIO	SOURCE	COPC	ACUTE INHALATION HAZARD QUOTIENT
			HeptaCDF, 1,2,3,4,7,8,9-	4.4254E-011
			Carbon tetrachloride	2.1270E-005
			Benzo(a)anthracene	4.7653E-005
			Cyanide	0.0000E+000
			PentaCDF, 2,3,4,7,8-	3.3377E-007
			PentaCDF, 1,2,3,7,8-	5.3899E-009
			HexaCDF, 1,2,3,6,7,8-	2.6875E-009
			HexaCDD, 1,2,3,6,7,8-	3.0152E-011
			Dinitrotoluene, 2,6-	3.6808E-007
			HexaCDF, 2,3,4,6,7,8-	6.5116E-009
			Benzoic acid	1.0792E-005
			Acetone	9.0713E-007
			Chloroform (Trichloromethane)	1.3623E-005
			HeptaCDF, 1,2,3,4,6,7,8-	1.2940E-010
			HexaCDF, 1,2,3,4,7,8-	3.8675E-009
			Butanol, 1-	8.9934E-007
			Benzene	1.9878E-003
			Trichloroethane, 1,1,1-	1.9001E-006
			HexaCDF, 1,2,3,7,8,9-	2.0163E-011
			Methyl bromide (Bromomethane)	2.6271E-005
			Methyl chloride (Chloromethane)	8.3388E-008
			Hydrogen Cyanide	1.5881E-003
			Aluminum	5.0090E-003
			Iron	1.3462E-004
			Lead	5.7299E-002
			Manganese	5.0279E-004
			Nickel	1.5274E-001
			Silver	7.1719E-004
			Strontium	1.1479E-001
			Thallium (l)	3.4152E-002
			Titanium	1.3813E-005
			Antimony	6.4509E-004
			Arsenic	4.2540E-004
			Barium	1.3281E-002
			Cadmium	5.0279E-001
			Chromium	2.0112E-004

RECEPTOR NAME	SCENARIO	SOURCE	COPC	ACUTE INHALATION HAZARD QUOTIENT
			Cobalt	4.8382E-005
			Copper	4.2519E-002
			Vanadium	8.9934E-001
			Zinc	3.7757E-002
			Chloroethane	1.4868E-009
			Vinyl Chloride	8.3799E-007
			Acetonitrile	9.8606E-006
			Acetaldehyde	4.0522E-006
			Methylene chloride	1.2685E-004
			Carbon disulfide	2.7817E-005
			Trichlorofluoromethane (Freon 11)	1.5300E-009
			Dichlorodifluoromethane	3.3735E-010
			Freon 113	5.3837E-008
			Hydrogen chloride	1.2306E-002
			Ammonia	8.2127E-004
			Selenium	1.3552E-005
			Methyl ethyl ketone (2-Butanone)	3.5641E-006
			Methyl Methacrylate	1.4637E-008
			Acenaphthene	5.3855E-006
			Diethyl phthalate	4.6674E-004
			Di-n-butyl phthalate	3.5682E-006
			Phenanthrene	6.9942E-005
			Butylbenzylphthalate	5.4320E-006
			Fluorene	5.1208E-007
			Nitrophenol, 2-	5.2509E-006
			Naphthalene	3.9465E-005
			Xylene, o-	3.9068E-006
			Cresol, o-	2.6923E-007
			Trimethylbenzene, 1,2,4-	3.5884E-008
			Cumene (Isopropylbenzene)	1.7076E-008
			Alpha Methyl Styrene	0.0000E+000
			Acetophenone	1.4173E-006
			Nitrobenzene	2.9447E-006
			Nitrotoluene, 3-	6.3282E-008
			Trinitrobenzene, 1,3,5 (sym-)	1.0145E-006
			Nitrotoluene, 4-	3.5860E-006

RECEPTOR NAME	SCENARIO	SOURCE	COPC	ACUTE INHALATION HAZARD QUOTIENT
			Total	8.0709E+000
		SF_UNIT	Nitroglycerine	1.4485E-006
			Benzene	4.4280E-004
			Lead	4.1609E-001
			Copper	1.7760E-001
			Zinc	1.5997E-006
			Naphthalene	3.1910E-008
			Total	5.9414E-001
NE OB/OD - 1HR	**resident_adult**	**OB_UNIT**	Ethylbenzene	1.3986E-008
			Toluene	8.0156E-007
			Hexane, n-	1.1870E-007
			Dinitrotoluene, 2,4-	4.3616E-007
			RDX	2.5061E-010
			Diphenylamine	3.2120E-007
			HMX	2.0957E-006
			Nitroglycerine	2.6196E-006
			Carbon tetrachloride	5.0594E-006
			Dinitrotoluene, 2,6-	4.3660E-007
			Chloroform (Trichloromethane)	2.4465E-005
			Benzene	7.8206E-004
			Methyl chloride (Chloromethane)	5.0891E-008
			Aluminum	6.4085E-003
			Lead	7.5702E-001
			Vinyl Chloride	7.3087E-008
			Methylene chloride	1.4343E-005
			Hydrogen chloride	9.1770E-001
			Chlorine	3.8247E-001
			Naphthalene	1.0555E-007
			Total	2.0644E+000
		OD_UNIT	Nitrophenol, 4-	2.3854E-005
			Ethylbenzene	5.8705E-007
			Styrene	2.9547E-004
			Benzyl chloride	1.0269E-004
			Benzyl alcohol	2.3531E-007
			Benzaldehyde	7.8108E-005
			Dichlorobenzene,1,4-	2.1467E-007

RECEPTOR NAME	SCENARIO	SOURCE	COPC	ACUTE INHALATION HAZARD QUOTIENT
			Butadiene, 1,3-	1.3293E-007
			Acrolein	1.2972E+001
			Ally Chloride	3.6467E-005
			Dichloroethane, 1,2- (Ethylene Dich	1.2201E-006
			Acrylonitrile	1.3342E-005
			Vinyl Acetate	1.1913E-006
			Xylene, m-	1.3342E-005
			Trimethylbenzene, 1,3,5-	1.4069E-007
			Methylcyclohexane	1.2204E-008
			Toluene	2.1858E-005
			Chlorobenzene	1.2187E-005
			Cyclohexanone	5.5051E-008
			Phenol	7.2815E-006
			Tetrahydrofuran	1.5622E-007
			Furan	2.7697E-006
			Hexane, n-	1.4243E-006
			Cyclohexane	5.2760E-008
			Ethanol, 2-Butoxy-	4.2006E-007
			Ethylhexyl phthalate, bis-2-	2.3039E-005
			Di-n-octylphthalate	2.5958E-007
			Hexachlorobenzene	4.4999E-001
			Trinitrotoluene, 2,4,6-	5.2156E-004
			Anthracene	8.9612E-006
			Trichlorobenzene, 1,2,4-	5.0248E-005
			Dinitrotoluene, 2,4-	5.0728E-004
			RDX	5.8294E-005
			Tetrachloroethylene (Perchloroethyl	2.1674E-005
			Pyrene	3.3403E-006
			Dibenzofuran	7.8025E-007
			Xylenes	3.7597E-007
			Methyl Tert-butyl Ether	1.8853E-007
			TetraCDD, 2,3,7,8-	1.4528E-006
			Chromium, hexavalent	0.0000E+000
			Benzo(g,h,i)perylene	4.2677E-006
			Indeno(1,2,3-cd) pyrene	1.1716E-003
			Amino-2,6-Dinitrotoluene, 4-	0.0000E+000

RECEPTOR NAME	SCENARIO	SOURCE	COPC	ACUTE INHALATION HAZARD QUOTIENT
			HexaCDD, 1,2,3,7,8,9-	6.6185E-011
			Benzo(b)fluoranthene	9.4315E-005
			Fluoranthene	1.7036E-002
			Benzo(k)fluoranthene	1.3355E-003
			Acenaphthylene	1.2323E-002
			Chrysene	2.7643E-005
			HMX	1.4069E-005
			OctaCDD, 1,2,3,4,6,7,8,9-	1.0007E-010
			Amino-4,6-Dinitrotoluene, 2-	0.0000E+000
			HeptaCDD, 1,2,3,4,6,7,8-	1.5791E-012
			OctaCDF, 1,2,3,4,6,7,8,9-	3.7650E-009
			HexaCDD, 1,2,3,4,7,8-	4.7321E-010
			PentaCDD, 1,2,3,7,8-	6.6076E-008
			Ethanedinitrile	1.1146E-004
			Tetryl	7.8108E-008
			Formaldehyde	1.5020E-002
			Benzo(a)pyrene	3.2710E-005
			TetraCDF, 2,3,7,8-	2.6607E-007
			Dibenz(a,h)anthracene	9.6727E-009
			Nitroglycerine	5.8581E-006
			HeptaCDF, 1,2,3,4,7,8,9-	9.6291E-011
			Carbon tetrachloride	4.6281E-005
			Benzo(a)anthracene	1.0369E-004
			Cyanide	0.0000E+000
			PentaCDF, 2,3,4,7,8-	7.2624E-007
			PentaCDF, 1,2,3,7,8-	1.1728E-008
			HexaCDF, 1,2,3,6,7,8-	5.8477E-009
			HexaCDD, 1,2,3,6,7,8-	6.5607E-011
			Dinitrotoluene, 2,6-	8.0090E-007
			HexaCDF, 2,3,4,6,7,8-	1.4168E-008
			Benzoic acid	2.3482E-005
			Acetone	1.9738E-006
			Chloroform (Trichloromethane)	2.9641E-005
			HeptaCDF, 1,2,3,4,6,7,8-	2.8155E-010
			HexaCDF, 1,2,3,4,7,8-	8.4152E-009
			Butanol, 1-	1.9568E-006

RECEPTOR NAME	SCENARIO	SOURCE	COPC	ACUTE INHALATION HAZARD QUOTIENT
			Benzene	4.3252E-003
			Trichloroethane, 1,1,1-	4.1344E-006
			HexaCDF, 1,2,3,7,8,9-	4.3873E-011
			Methyl bromide (Bromomethane)	5.7162E-005
			Methyl chloride (Chloromethane)	1.8144E-007
			Hydrogen Cyanide	3.4554E-003
			Aluminum	1.0899E-002
			Iron	2.9291E-004
			Lead	1.2468E-001
			Manganese	1.0940E-003
			Nickel	3.3233E-001
			Silver	1.5605E-003
			Strontium	2.4976E-001
			Thallium (l)	7.4310E-002
			Titanium	3.0054E-005
			Antimony	1.4036E-003
			Arsenic	9.2562E-004
			Barium	2.8898E-002
			Cadmium	1.0940E+000
			Chromium	4.3760E-004
			Cobalt	1.0527E-004
			Copper	9.2516E-002
			Vanadium	1.9568E+000
			Zinc	8.2154E-002
			Chloroethane	3.2350E-009
			Vinyl Chloride	1.8233E-006
			Acetonitrile	2.1455E-005
			Acetaldehyde	8.8170E-006
			Methylene chloride	2.7601E-004
			Carbon disulfide	6.0527E-005
			Trichlorofluoromethane (Freon 11)	3.3291E-009
			Dichlorodifluoromethane	7.3402E-010
			Freon 113	1.1714E-007
			Hydrogen chloride	2.6775E-002
			Ammonia	1.7870E-003
			Selenium	2.9488E-005

RECEPTOR NAME	SCENARIO	SOURCE	COPC	ACUTE INHALATION HAZARD QUOTIENT
			Methyl ethyl ketone (2-Butanone)	7.7549E-006
			Methyl Methacrylate	3.1847E-008
			Acenaphthene	1.1718E-005
			Diethyl phthalate	1.0156E-003
			Di-n-butyl phthalate	7.7639E-006
			Phenanthrene	1.5218E-004
			Butylbenzylphthalate	1.1819E-005
			Fluorene	1.1142E-006
			Nitrophenol, 2-	1.1425E-005
			Naphthalene	8.5869E-005
			Xylene, o-	8.5006E-006
			Cresol, o-	5.8581E-007
			Trimethylbenzene, 1,2,4-	7.8079E-008
			Cumene (Isopropylbenzene)	3.7155E-008
			Alpha Methyl Styrene	0.0000E+000
			Acetophenone	3.0839E-006
			Nitrobenzene	6.4072E-006
			Nitrotoluene, 3-	1.3769E-007
			Trinitrobenzene, 1,3,5 (sym-)	2.2074E-006
			Nitrotoluene, 4-	7.8026E-006
			Total	1.7561E+001
		SF_UNIT	Nitroglycerine	3.1434E-006
			Benzene	9.6090E-004
			Lead	9.0293E-001
			Copper	3.8541E-001
			Zinc	3.4714E-006
			Naphthalene	6.9246E-008
			Total	1.2893E+000
Rush Lake	**resident_adult**	**OB_UNIT**	Ethylbenzene	3.1391E-009
			Toluene	1.7990E-007
			Hexane, n-	2.6640E-008
			Dinitrotoluene, 2,4-	9.7890E-008
			RDX	5.6245E-011
			Diphenylamine	7.2088E-008
			HMX	4.7034E-007
			Nitroglycerine	5.8793E-007

RECEPTOR NAME	SCENARIO	SOURCE	COPC	ACUTE INHALATION HAZARD QUOTIENT
			Carbon tetrachloride	1.1355E-006
			Dinitrotoluene, 2,6-	9.7988E-008
			Chloroform (Trichloromethane)	5.4908E-006
			Benzene	1.7552E-004
			Methyl chloride (Chloromethane)	1.1422E-008
			Aluminum	1.4383E-003
			Lead	1.6990E-001
			Vinyl Chloride	1.6403E-008
			Methylene chloride	3.2190E-006
			Hydrogen chloride	2.0597E-001
			Chlorine	8.5840E-002
			Naphthalene	2.3690E-008
			Total	4.6334E-001
		OD_UNIT	Nitrophenol, 4-	5.2948E-006
			Ethylbenzene	1.3030E-007
			Styrene	6.5583E-005
			Benzyl chloride	2.2794E-005
			Benzyl alcohol	5.2231E-008
			Benzaldehyde	1.7337E-005
			Dichlorobenzene,1,4-	4.7649E-008
			Butadiene, 1,3-	2.9506E-008
			Acrolein	2.8792E+000
			Ally Chloride	8.0943E-006
			Dichloroethane, 1,2- (Ethylene Dich	2.7082E-007
			Acrylonitrile	2.9614E-006
			Vinyl Acetate	2.6442E-007
			Xylene, m-	2.9614E-006
			Trimethylbenzene, 1,3,5-	3.1229E-008
			Methylcyclohexane	2.7089E-009
			Toluene	4.8516E-006
			Chlorobenzene	2.7050E-006
			Cyclohexanone	1.2219E-008
			Phenol	1.6162E-006
			Tetrahydrofuran	3.4674E-008
			Furan	6.1478E-007
			Hexane, n-	3.1613E-007

RECEPTOR NAME	SCENARIO	SOURCE	COPC	ACUTE INHALATION HAZARD QUOTIENT
			Cyclohexane	1.1711E-008
			Ethanol, 2-Butoxy-	9.3237E-008
			Ethylhexyl phthalate, bis-2-	5.1137E-006
			Di-n-octylphthalate	5.7617E-008
			Hexachlorobenzene	9.9880E-002
			Trinitrotoluene, 2,4,6-	1.1577E-004
			Anthracene	1.9890E-006
			Trichlorobenzene, 1,2,4-	1.1153E-005
			Dinitrotoluene, 2,4-	1.1260E-004
			RDX	1.2939E-005
			Tetrachloroethylene (Perchloroethyl	4.8108E-006
			Pyrene	7.4142E-007
			Dibenzofuran	1.7319E-007
			Xylenes	8.3452E-008
			Methyl Tert-butyl Ether	4.1846E-008
			TetraCDD, 2,3,7,8-	3.2248E-007
			Chromium, hexavalent	0.0000E+000
			Benzo(g,h,i)perylene	9.4727E-007
			Indeno(1,2,3-cd) pyrene	2.6006E-004
			Amino-2,6-Dinitrotoluene, 4-	0.0000E+000
			HexaCDD, 1,2,3,7,8,9-	1.4691E-011
			Benzo(b)fluoranthene	2.0934E-005
			Fluoranthene	3.7815E-003
			Benzo(k)fluoranthene	2.9644E-004
			Acenaphthylene	2.7353E-003
			Chrysene	6.1358E-006
			HMX	3.1229E-006
			OctaCDD, 1,2,3,4,6,7,8,9-	2.2212E-011
			Amino-4,6-Dinitrotoluene, 2-	0.0000E+000
			HeptaCDD, 1,2,3,4,6,7,8-	3.5050E-013
			OctaCDF, 1,2,3,4,6,7,8,9-	8.3570E-010
			HexaCDD, 1,2,3,4,7,8-	1.0503E-010
			PentaCDD, 1,2,3,7,8-	1.4666E-008
			Ethanedinitrile	2.4741E-005
			Tetryl	1.7337E-008
			Formaldehyde	3.3339E-003

RECEPTOR NAME	SCENARIO	SOURCE	COPC	ACUTE INHALATION HAZARD QUOTIENT
			Benzo(a)pyrene	7.2604E-006
			TetraCDF, 2,3,7,8-	5.9057E-008
			Dibenz(a,h)anthracene	2.1470E-009
			Nitroglycerine	1.3003E-006
			HeptaCDF, 1,2,3,4,7,8,9-	2.1373E-011
			Carbon tetrachloride	1.0273E-005
			Benzo(a)anthracene	2.3015E-005
			Cyanide	0.0000E+000
			PentaCDF, 2,3,4,7,8-	1.6120E-007
			PentaCDF, 1,2,3,7,8-	2.6031E-009
			HexaCDF, 1,2,3,6,7,8-	1.2980E-009
			HexaCDD, 1,2,3,6,7,8-	1.4562E-011
			Dinitrotoluene, 2,6-	1.7777E-007
			HexaCDF, 2,3,4,6,7,8-	3.1449E-009
			Benzoic acid	5.2121E-006
			Acetone	4.3810E-007
			Chloroform (Trichloromethane)	6.5793E-006
			HeptaCDF, 1,2,3,4,6,7,8-	6.2494E-011
			HexaCDF, 1,2,3,4,7,8-	1.8679E-009
			Butanol, 1-	4.3434E-007
			Benzene	9.6004E-004
			Trichloroethane, 1,1,1-	9.1768E-007
			HexaCDF, 1,2,3,7,8,9-	9.7381E-012
			Methyl bromide (Bromomethane)	1.2688E-005
			Methyl chloride (Chloromethane)	4.0273E-008
			Hydrogen Cyanide	7.6697E-004
			Aluminum	2.4191E-003
			Iron	6.5014E-005
			Lead	2.7673E-002
			Manganese	2.4283E-004
			Nickel	7.3765E-002
			Silver	3.4637E-004
			Strontium	5.5438E-002
			Thallium (l)	1.6494E-002
			Titanium	6.6709E-006
			Antimony	3.1155E-004

RECEPTOR NAME	SCENARIO	SOURCE	COPC	ACUTE INHALATION HAZARD QUOTIENT
			Arsenic	2.0545E-004
			Barium	6.4143E-003
			Cadmium	2.4283E-001
			Chromium	9.7131E-005
			Cobalt	2.3366E-005
			Copper	2.0535E-002
			Vanadium	4.3434E-001
			Zinc	1.8235E-002
			Chloroethane	7.1804E-010
			Vinyl Chloride	4.0471E-007
			Acetonitrile	4.7622E-006
			Acetaldehyde	1.9570E-006
			Methylene chloride	6.1263E-005
			Carbon disulfide	1.3435E-005
			Trichlorofluoromethane (Freon 11)	7.3893E-010
			Dichlorodifluoromethane	1.6292E-010
			Freon 113	2.6001E-008
			Hydrogen chloride	5.9431E-003
			Ammonia	3.9664E-004
			Selenium	6.5452E-006
			Methyl ethyl ketone (2-Butanone)	1.7213E-006
			Methyl Methacrylate	7.0689E-009
			Acenaphthene	2.6010E-006
			Diethyl phthalate	2.2542E-004
			Di-n-butyl phthalate	1.7233E-006
			Phenanthrene	3.3779E-005
			Butylbenzylphthalate	2.6234E-006
			Fluorene	2.4731E-007
			Nitrophenol, 2-	2.5360E-006
			Naphthalene	1.9060E-005
			Xylene, o-	1.8868E-006
			Cresol, o-	1.3003E-007
			Trimethylbenzene, 1,2,4-	1.7331E-008
			Cumene (Isopropylbenzene)	8.2470E-009
			Alpha Methyl Styrene	0.0000E+000
			Acetophenone	6.8450E-007

RECEPTOR NAME	SCENARIO	SOURCE	COPC	ACUTE INHALATION HAZARD QUOTIENT
			Nitrobenzene	1.4221E-006
			Nitrotoluene, 3-	3.0562E-008
			Trinitrobenzene, 1,3,5 (sym-)	4.8995E-007
			Nitrotoluene, 4-	1.7319E-006
			Total	3.8979E+000
		SF_UNIT	Nitroglycerine	6.5320E-007
			Benzene	1.9967E-004
			Lead	1.8763E-001
			Copper	8.0088E-002
			Zinc	7.2136E-007
			Naphthalene	1.4389E-008
			Total	2.6792E-001
SW OB/OD/TEAD - 1HR	**resident_adult**	**OB_UNIT**	Ethylbenzene	1.6447E-008
			Toluene	9.4256E-007
			Hexane, n-	1.3958E-007
			Dinitrotoluene, 2,4-	5.1288E-007
			RDX	2.9469E-010
			Diphenylamine	3.7770E-007
			HMX	2.4643E-006
			Nitroglycerine	3.0804E-006
			Carbon tetrachloride	5.9494E-006
			Dinitrotoluene, 2,6-	5.1340E-007
			Chloroform (Trichloromethane)	2.8768E-005
			Benzene	9.1963E-004
			Methyl chloride (Chloromethane)	5.9844E-008
			Aluminum	7.5359E-003
			Lead	8.9019E-001
			Vinyl Chloride	8.5943E-008
			Methylene chloride	1.6866E-005
			Hydrogen chloride	1.0791E+000
			Chlorine	4.4975E-001
			Naphthalene	1.2412E-007
			Total	2.4276E+000
		OD_UNIT	Nitrophenol, 4-	2.0601E-005
			Ethylbenzene	5.0699E-007
			Styrene	2.5518E-004

RECEPTOR NAME	SCENARIO	SOURCE	COPC	ACUTE INHALATION HAZARD QUOTIENT
			Benzyl chloride	8.8688E-005
			Benzyl alcohol	2.0322E-007
			Benzaldehyde	6.7456E-005
			Dichlorobenzene,1,4-	1.8540E-007
			Butadiene, 1,3-	1.1480E-007
			Acrolein	1.1203E+001
			Ally Chloride	3.1494E-005
			Dichloroethane, 1,2- (Ethylene Dich	1.0537E-006
			Acrylonitrile	1.1523E-005
			Vinyl Acetate	1.0288E-006
			Xylene, m-	1.1523E-005
			Trimethylbenzene, 1,3,5-	1.2151E-007
			Methylcyclohexane	1.0540E-008
			Toluene	1.8877E-005
			Chlorobenzene	1.0525E-005
			Cyclohexanone	4.7544E-008
			Phenol	6.2885E-006
			Tetrahydrofuran	1.3491E-007
			Furan	2.3920E-006
			Hexane, n-	1.2300E-006
			Cyclohexane	4.5565E-008
			Ethanol, 2-Butoxy-	3.6277E-007
			Ethylhexyl phthalate, bis-2-	1.9897E-005
			Di-n-octylphthalate	2.2418E-007
			Hexachlorobenzene	3.8862E-001
			Trinitrotoluene, 2,4,6-	4.5043E-004
			Anthracene	7.7391E-006
			Trichlorobenzene, 1,2,4-	4.3395E-005
			Dinitrotoluene, 2,4-	4.3810E-004
			RDX	5.0344E-005
			Tetrachloroethylene (Perchloroethyl	1.8718E-005
			Pyrene	2.8848E-006
			Dibenzofuran	6.7385E-007
			Xylenes	3.2470E-007
			Methyl Tert-butyl Ether	1.6282E-007
			TetraCDD, 2,3,7,8-	1.2547E-006

RECEPTOR NAME	SCENARIO	SOURCE	COPC	ACUTE INHALATION HAZARD QUOTIENT
			Chromium, hexavalent	0.0000E+000
			Benzo(g,h,i)perylene	3.6857E-006
			Indeno(1,2,3-cd) pyrene	1.0118E-003
			Amino-2,6-Dinitrotoluene, 4-	0.0000E+000
			HexaCDD, 1,2,3,7,8,9-	5.7159E-011
			Benzo(b)fluoranthene	8.1453E-005
			Fluoranthene	1.4713E-002
			Benzo(k)fluoranthene	1.1534E-003
			Acenaphthylene	1.0643E-002
			Chrysene	2.3873E-005
			HMX	1.2151E-005
			OctaCDD, 1,2,3,4,6,7,8,9-	8.6424E-011
			Amino-4,6-Dinitrotoluene, 2-	0.0000E+000
			HeptaCDD, 1,2,3,4,6,7,8-	1.3637E-012
			OctaCDF, 1,2,3,4,6,7,8,9-	3.2516E-009
			HexaCDD, 1,2,3,4,7,8-	4.0867E-010
			PentaCDD, 1,2,3,7,8-	5.7065E-008
			Ethanedinitrile	9.6264E-005
			Tetryl	6.7456E-008
			Formaldehyde	1.2972E-002
			Benzo(a)pyrene	2.8249E-005
			TetraCDF, 2,3,7,8-	2.2978E-007
			Dibenz(a,h)anthracene	8.3536E-009
			Nitroglycerine	5.0592E-006
			HeptaCDF, 1,2,3,4,7,8,9-	8.3159E-011
			Carbon tetrachloride	3.9969E-005
			Benzo(a)anthracene	8.9547E-005
			Cyanide	0.0000E+000
			PentaCDF, 2,3,4,7,8-	6.2720E-007
			PentaCDF, 1,2,3,7,8-	1.0128E-008
			HexaCDF, 1,2,3,6,7,8-	5.0502E-009
			HexaCDD, 1,2,3,6,7,8-	5.6660E-011
			Dinitrotoluene, 2,6-	6.9167E-007
			HexaCDF, 2,3,4,6,7,8-	1.2236E-008
			Benzoic acid	2.0280E-005
			Acetone	1.7046E-006

RECEPTOR NAME	SCENARIO	SOURCE	COPC	ACUTE INHALATION HAZARD QUOTIENT
			Chloroform (Trichloromethane)	2.5599E-005
			HeptaCDF, 1,2,3,4,6,7,8-	2.4316E-010
			HexaCDF, 1,2,3,4,7,8-	7.2676E-009
			Butanol, 1-	1.6900E-006
			Benzene	3.7354E-003
			Trichloroethane, 1,1,1-	3.5706E-006
			HexaCDF, 1,2,3,7,8,9-	3.7890E-011
			Methyl bromide (Bromomethane)	4.9366E-005
			Methyl chloride (Chloromethane)	1.5670E-007
			Hydrogen Cyanide	2.9842E-003
			Aluminum	9.4125E-003
			Iron	2.5296E-004
			Lead	1.0767E-001
			Manganese	9.4481E-004
			Nickel	2.8701E-001
			Silver	1.3477E-003
			Strontium	2.1570E-001
			Thallium (l)	6.4176E-002
			Titanium	2.5956E-005
			Antimony	1.2122E-003
			Arsenic	7.9939E-004
			Barium	2.4957E-002
			Cadmium	9.4481E-001
			Chromium	3.7793E-004
			Cobalt	9.0916E-005
			Copper	7.9899E-002
			Vanadium	1.6900E+000
			Zinc	7.0950E-002
			Chloroethane	2.7938E-009
			Vinyl Chloride	1.5747E-006
			Acetonitrile	1.8529E-005
			Acetaldehyde	7.6145E-006
			Methylene chloride	2.3837E-004
			Carbon disulfide	5.2272E-005
			Trichlorofluoromethane (Freon 11)	2.8751E-009
			Dichlorodifluoromethane	6.3392E-010

RECEPTOR NAME	SCENARIO	SOURCE	COPC	ACUTE INHALATION HAZARD QUOTIENT
			Freon 113	1.0117E-007
			Hydrogen chloride	2.3124E-002
			Ammonia	1.5433E-003
			Selenium	2.5467E-005
			Methyl ethyl ketone (2-Butanone)	6.6973E-006
			Methyl Methacrylate	2.7504E-008
			Acenaphthene	1.0120E-005
			Diethyl phthalate	8.7707E-004
			Di-n-butyl phthalate	6.7051E-006
			Phenanthrene	1.3143E-004
			Butylbenzylphthalate	1.0207E-005
			Fluorene	9.6227E-007
			Nitrophenol, 2-	9.8671E-006
			Naphthalene	7.4159E-005
			Xylene, o-	7.3413E-006
			Cresol, o-	5.0592E-007
			Trimethylbenzene, 1,2,4-	6.7431E-008
			Cumene (Isopropylbenzene)	3.2088E-008
			Alpha Methyl Styrene	0.0000E+000
			Acetophenone	2.6633E-006
			Nitrobenzene	5.5334E-006
			Nitrotoluene, 3-	1.1891E-007
			Trinitrobenzene, 1,3,5 (sym-)	1.9063E-006
			Nitrotoluene, 4-	6.7385E-006
			Total	1.5166E+001
		SF_UNIT	Nitroglycerine	2.8497E-006
			Benzene	8.7111E-004
			Lead	8.1857E-001
			Copper	3.4940E-001
			Zinc	3.1471E-006
			Naphthalene	6.2776E-008
			Total	1.1688E+000
Stockton - 1HR	**resident_adult**	**OB_UNIT**	Ethylbenzene	3.1754E-009
			Toluene	1.8198E-007
			Hexane, n-	2.6949E-008
			Dinitrotoluene, 2,4-	9.9024E-008

RECEPTOR NAME	SCENARIO	SOURCE	COPC	ACUTE INHALATION HAZARD QUOTIENT
			RDX	5.6897E-011
			Diphenylamine	7.2923E-008
			HMX	4.7579E-007
			Nitroglycerine	5.9474E-007
			Carbon tetrachloride	1.1487E-006
			Dinitrotoluene, 2,6-	9.9123E-008
			Chloroform (Trichloromethane)	5.5544E-006
			Benzene	1.7756E-004
			Methyl chloride (Chloromethane)	1.1554E-008
			Aluminum	1.4550E-003
			Lead	1.7187E-001
			Vinyl Chloride	1.6593E-008
			Methylene chloride	3.2563E-006
			Hydrogen chloride	2.0835E-001
			Chlorine	8.6834E-002
			Naphthalene	2.3964E-008
			Total	4.6870E-001
		OD_UNIT	Nitrophenol, 4-	5.0868E-006
			Ethylbenzene	1.2518E-007
			Styrene	6.3007E-005
			Benzyl chloride	2.1898E-005
			Benzyl alcohol	5.0179E-008
			Benzaldehyde	1.6656E-005
			Dichlorobenzene,1,4-	4.5777E-008
			Butadiene, 1,3-	2.8347E-008
			Acrolein	2.7661E+000
			Ally Chloride	7.7763E-006
			Dichloroethane, 1,2- (Ethylene Dich	2.6018E-007
			Acrylonitrile	2.8451E-006
			Vinyl Acetate	2.5403E-007
			Xylene, m-	2.8451E-006
			Trimethylbenzene, 1,3,5-	3.0002E-008
			Methylcyclohexane	2.6025E-009
			Toluene	4.6610E-006
			Chlorobenzene	2.5987E-006
			Cyclohexanone	1.1739E-008

RECEPTOR NAME	SCENARIO	SOURCE	COPC	ACUTE INHALATION HAZARD QUOTIENT
			Phenol	1.5527E-006
			Tetrahydrofuran	3.3312E-008
			Furan	5.9062E-007
			Hexane, n-	3.0371E-007
			Cyclohexane	1.1251E-008
			Ethanol, 2-Butoxy-	8.9574E-008
			Ethylhexyl phthalate, bis-2-	4.9128E-006
			Di-n-octylphthalate	5.5353E-008
			Hexachlorobenzene	9.5956E-002
			Trinitrotoluene, 2,4,6-	1.1122E-004
			Anthracene	1.9109E-006
			Trichlorobenzene, 1,2,4-	1.0715E-005
			Dinitrotoluene, 2,4-	1.0817E-004
			RDX	1.2431E-005
			Tetrachloroethylene (Perchloroethyl	4.6218E-006
			Pyrene	7.1229E-007
			Dibenzofuran	1.6638E-007
			Xylenes	8.0173E-008
			Methyl Tert-butyl Ether	4.0202E-008
			TetraCDD, 2,3,7,8-	3.0981E-007
			Chromium, hexavalent	0.0000E+000
			Benzo(g,h,i)perylene	9.1005E-007
			Indeno(1,2,3-cd) pyrene	2.4984E-004
			Amino-2,6-Dinitrotoluene, 4-	0.0000E+000
			HexaCDD, 1,2,3,7,8,9-	1.4114E-011
			Benzo(b)fluoranthene	2.0112E-005
			Fluoranthene	3.6329E-003
			Benzo(k)fluoranthene	2.8479E-004
			Acenaphthylene	2.6278E-003
			Chrysene	5.8947E-006
			HMX	3.0002E-006
			OctaCDD, 1,2,3,4,6,7,8,9-	2.1339E-011
			Amino-4,6-Dinitrotoluene, 2-	0.0000E+000
			HeptaCDD, 1,2,3,4,6,7,8-	3.3673E-013
			OctaCDF, 1,2,3,4,6,7,8,9-	8.0286E-010
			HexaCDD, 1,2,3,4,7,8-	1.0091E-010

RECEPTOR NAME	SCENARIO	SOURCE	COPC	ACUTE INHALATION HAZARD QUOTIENT
			PentaCDD, 1,2,3,7,8-	1.4090E-008
			Ethanedinitrile	2.3769E-005
			Tetryl	1.6656E-008
			Formaldehyde	3.2029E-003
			Benzo(a)pyrene	6.9751E-006
			TetraCDF, 2,3,7,8-	5.6737E-008
			Dibenz(a,h)anthracene	2.0626E-009
			Nitroglycerine	1.2492E-006
			HeptaCDF, 1,2,3,4,7,8,9-	2.0533E-011
			Carbon tetrachloride	9.8690E-006
			Benzo(a)anthracene	2.2110E-005
			Cyanide	0.0000E+000
			PentaCDF, 2,3,4,7,8-	1.5486E-007
			PentaCDF, 1,2,3,7,8-	2.5009E-009
			HexaCDF, 1,2,3,6,7,8-	1.2470E-009
			HexaCDD, 1,2,3,6,7,8-	1.3990E-011
			Dinitrotoluene, 2,6-	1.7078E-007
			HexaCDF, 2,3,4,6,7,8-	3.0213E-009
			Benzoic acid	5.0073E-006
			Acetone	4.2089E-007
			Chloroform (Trichloromethane)	6.3208E-006
			HeptaCDF, 1,2,3,4,6,7,8-	6.0039E-011
			HexaCDF, 1,2,3,4,7,8-	1.7945E-009
			Butanol, 1-	4.1728E-007
			Benzene	9.2232E-004
			Trichloroethane, 1,1,1-	8.8163E-007
			HexaCDF, 1,2,3,7,8,9-	9.3555E-012
			Methyl bromide (Bromomethane)	1.2189E-005
			Methyl chloride (Chloromethane)	3.8691E-008
			Hydrogen Cyanide	7.3684E-004
			Aluminum	2.3241E-003
			Iron	6.2460E-005
			Lead	2.6586E-002
			Manganese	2.3329E-004
			Nickel	7.0867E-002
			Silver	3.3277E-004

RECEPTOR NAME	SCENARIO	SOURCE	COPC	ACUTE INHALATION HAZARD QUOTIENT
			Strontium	5.3260E-002
			Thallium (l)	1.5846E-002
			Titanium	6.4088E-006
			Antimony	2.9931E-004
			Arsenic	1.9738E-004
			Barium	6.1623E-003
			Cadmium	2.3329E-001
			Chromium	9.3315E-005
			Cobalt	2.2449E-005
			Copper	1.9728E-002
			Vanadium	4.1728E-001
			Zinc	1.7519E-002
			Chloroethane	6.8983E-010
			Vinyl Chloride	3.8881E-007
			Acetonitrile	4.5752E-006
			Acetaldehyde	1.8801E-006
			Methylene chloride	5.8857E-005
			Carbon disulfide	1.2907E-005
			Trichlorofluoromethane (Freon 11)	7.0990E-010
			Dichlorodifluoromethane	1.5652E-010
			Freon 113	2.4979E-008
			Hydrogen chloride	5.7096E-003
			Ammonia	3.8106E-004
			Selenium	6.2881E-006
			Methyl ethyl ketone (2-Butanone)	1.6537E-006
			Methyl Methacrylate	6.7911E-009
			Acenaphthene	2.4988E-006
			Diethyl phthalate	2.1656E-004
			Di-n-butyl phthalate	1.6556E-006
			Phenanthrene	3.2452E-005
			Butylbenzylphthalate	2.5204E-006
			Fluorene	2.3760E-007
			Nitrophenol, 2-	2.4363E-006
			Naphthalene	1.8311E-005
			Xylene, o-	1.8127E-006
			Cresol, o-	1.2492E-007

RECEPTOR NAME	SCENARIO	SOURCE	COPC	ACUTE INHALATION HAZARD QUOTIENT
			Trimethylbenzene, 1,2,4-	1.6650E-008
			Cumene (Isopropylbenzene)	7.9230E-009
			Alpha Methyl Styrene	0.0000E+000
			Acetophenone	6.5761E-007
			Nitrobenzene	1.3663E-006
			Nitrotoluene, 3-	2.9362E-008
			Trinitrobenzene, 1,3,5 (sym-)	4.7070E-007
			Nitrotoluene, 4-	1.6638E-006
			Total	3.7448E+000
		SF_UNIT	Nitroglycerine	6.1778E-007
			Benzene	1.8885E-004
			Lead	1.7746E-001
			Copper	7.5745E-002
			Zinc	6.8224E-007
			Naphthalene	1.3609E-008
			Total	2.5339E-001
Tooele - 1HR	**resident_adult**	**OB_UNIT**	Ethylbenzene	2.2907E-009
			Toluene	1.3128E-007
			Hexane, n-	1.9440E-008
			Dinitrotoluene, 2,4-	7.1433E-008
			RDX	4.1044E-011
			Diphenylamine	5.2605E-008
			HMX	3.4322E-007
			Nitroglycerine	4.2903E-007
			Carbon tetrachloride	8.2862E-007
			Dinitrotoluene, 2,6-	7.1505E-008
			Chloroform (Trichloromethane)	4.0068E-006
			Benzene	1.2808E-004
			Methyl chloride (Chloromethane)	8.3349E-009
			Aluminum	1.0496E-003
			Lead	1.2398E-001
			Vinyl Chloride	1.1970E-008
			Methylene chloride	2.3490E-006
			Hydrogen chloride	1.5030E-001
			Chlorine	6.2640E-002
			Naphthalene	1.7287E-008

RECEPTOR NAME	SCENARIO	SOURCE	COPC	ACUTE INHALATION HAZARD QUOTIENT
			Total	3.3811E-001
		OD_UNIT	Nitrophenol, 4-	3.9311E-006
			Ethylbenzene	9.6743E-008
			Styrene	4.8692E-005
			Benzyl chloride	1.6923E-005
			Benzyl alcohol	3.8779E-008
			Benzaldehyde	1.2872E-005
			Dichlorobenzene,1,4-	3.5377E-008
			Butadiene, 1,3-	2.1907E-008
			Acrolein	2.1377E+000
			Ally Chloride	6.0096E-006
			Dichloroethane, 1,2- (Ethylene Dich	2.0107E-007
			Acrylonitrile	2.1987E-006
			Vinyl Acetate	1.9632E-007
			Xylene, m-	2.1987E-006
			Trimethylbenzene, 1,3,5-	2.3186E-008
			Methylcyclohexane	2.0112E-009
			Toluene	3.6021E-006
			Chlorobenzene	2.0083E-006
			Cyclohexanone	9.0722E-009
			Phenol	1.2000E-006
			Tetrahydrofuran	2.5744E-008
			Furan	4.5644E-007
			Hexane, n-	2.3471E-007
			Cyclohexane	8.6947E-009
			Ethanol, 2-Butoxy-	6.9224E-008
			Ethylhexyl phthalate, bis-2-	3.7967E-006
			Di-n-octylphthalate	4.2778E-008
			Hexachlorobenzene	7.4156E-002
			Trinitrotoluene, 2,4,6-	8.5951E-005
			Anthracene	1.4768E-006
			Trichlorobenzene, 1,2,4-	8.2806E-006
			Dinitrotoluene, 2,4-	8.3597E-005
			RDX	9.6066E-006
			Tetrachloroethylene (Perchloroethyl	3.5717E-006
			Pyrene	5.5047E-007

RECEPTOR NAME	SCENARIO	SOURCE	COPC	ACUTE INHALATION HAZARD QUOTIENT
			Dibenzofuran	1.2858E-007
			Xylenes	6.1959E-008
			Methyl Tert-butyl Ether	3.1069E-008
			TetraCDD, 2,3,7,8-	2.3942E-007
			Chromium, hexavalent	0.0000E+000
			Benzo(g,h,i)perylene	7.0330E-007
			Indeno(1,2,3-cd) pyrene	1.9308E-004
			Amino-2,6-Dinitrotoluene, 4-	0.0000E+000
			HexaCDD, 1,2,3,7,8,9-	1.0907E-011
			Benzo(b)fluoranthene	1.5543E-005
			Fluoranthene	2.8075E-003
			Benzo(k)fluoranthene	2.2009E-004
			Acenaphthylene	2.0308E-003
			Chrysene	4.5555E-006
			HMX	2.3186E-006
			OctaCDD, 1,2,3,4,6,7,8,9-	1.6491E-011
			Amino-4,6-Dinitrotoluene, 2-	0.0000E+000
			HeptaCDD, 1,2,3,4,6,7,8-	2.6023E-013
			OctaCDF, 1,2,3,4,6,7,8,9-	6.2046E-010
			HexaCDD, 1,2,3,4,7,8-	7.7983E-011
			PentaCDD, 1,2,3,7,8-	1.0889E-008
			Ethanedinitrile	1.8369E-005
			Tetryl	1.2872E-008
			Formaldehyde	2.4753E-003
			Benzo(a)pyrene	5.3905E-006
			TetraCDF, 2,3,7,8-	4.3847E-008
			Dibenz(a,h)anthracene	1.5940E-009
			Nitroglycerine	9.6539E-007
			HeptaCDF, 1,2,3,4,7,8,9-	1.5868E-011
			Carbon tetrachloride	7.6269E-006
			Benzo(a)anthracene	1.7087E-005
			Cyanide	0.0000E+000
			PentaCDF, 2,3,4,7,8-	1.1968E-007
			PentaCDF, 1,2,3,7,8-	1.9327E-009
			HexaCDF, 1,2,3,6,7,8-	9.6368E-010
			HexaCDD, 1,2,3,6,7,8-	1.0812E-011

RECEPTOR NAME	SCENARIO	SOURCE	COPC	ACUTE INHALATION HAZARD QUOTIENT
			Dinitrotoluene, 2,6-	1.3198E-007
			HexaCDF, 2,3,4,6,7,8-	2.3349E-009
			Benzoic acid	3.8697E-006
			Acetone	3.2527E-007
			Chloroform (Trichloromethane)	4.8848E-006
			HeptaCDF, 1,2,3,4,6,7,8-	4.6399E-011
			HexaCDF, 1,2,3,4,7,8-	1.3868E-009
			Butanol, 1-	3.2248E-007
			Benzene	7.1278E-004
			Trichloroethane, 1,1,1-	6.8133E-007
			HexaCDF, 1,2,3,7,8,9-	7.2300E-012
			Methyl bromide (Bromomethane)	9.4200E-006
			Methyl chloride (Chloromethane)	2.9901E-008
			Hydrogen Cyanide	5.6944E-004
			Aluminum	1.7961E-003
			Iron	4.8270E-005
			Lead	2.0546E-002
			Manganese	1.8029E-004
			Nickel	5.4767E-002
			Silver	2.5717E-004
			Strontium	4.1160E-002
			Thallium (l)	1.2246E-002
			Titanium	4.9528E-006
			Antimony	2.3131E-004
			Arsenic	1.5254E-004
			Barium	4.7623E-003
			Cadmium	1.8029E-001
			Chromium	7.2115E-005
			Cobalt	1.7348E-005
			Copper	1.5246E-002
			Vanadium	3.2248E-001
			Zinc	1.3539E-002
			Chloroethane	5.3311E-010
			Vinyl Chloride	3.0048E-007
			Acetonitrile	3.5357E-006
			Acetaldehyde	1.4530E-006

RECEPTOR NAME	SCENARIO	SOURCE	COPC	ACUTE INHALATION HAZARD QUOTIENT
			Methylene chloride	4.5485E-005
			Carbon disulfide	9.9746E-006
			Trichlorofluoromethane (Freon 11)	5.4862E-010
			Dichlorodifluoromethane	1.2096E-010
			Freon 113	1.9304E-008
			Hydrogen chloride	4.4124E-003
			Ammonia	2.9449E-004
			Selenium	4.8595E-006
			Methyl ethyl ketone (2-Butanone)	1.2780E-006
			Methyl Methacrylate	5.2483E-009
			Acenaphthene	1.9311E-006
			Diethyl phthalate	1.6736E-004
			Di-n-butyl phthalate	1.2795E-006
			Phenanthrene	2.5079E-005
			Butylbenzylphthalate	1.9478E-006
			Fluorene	1.8362E-007
			Nitrophenol, 2-	1.8828E-006
			Naphthalene	1.4151E-005
			Xylene, o-	1.4009E-006
			Cresol, o-	9.6539E-008
			Trimethylbenzene, 1,2,4-	1.2867E-008
			Cumene (Isopropylbenzene)	6.1230E-009
			Alpha Methyl Styrene	0.0000E+000
			Acetophenone	5.0821E-007
			Nitrobenzene	1.0559E-006
			Nitrotoluene, 3-	2.2691E-008
			Trinitrobenzene, 1,3,5 (sym-)	3.6377E-007
			Nitrotoluene, 4-	1.2858E-006
			Total	2.8940E+000
		SF_UNIT	Nitroglycerine	4.8806E-007
			Benzene	1.4919E-004
			Lead	1.4019E-001
			Copper	5.9840E-002
			Zinc	5.3899E-007
			Naphthalene	1.0751E-008
			Total	2.0018E-001

Appendix B

Supplement Information for Chemicals of Potential Concerns

COPC

CAS No.	COPC Name	Symbol	Current	Original
100-51-6	Benzyl alcohol	rfd	0.5	0
106-99-0	Butadiene, 1,3-	cas_number	106-99-0	N/A
106-99-0	Butadiene, 1,3-	copc_name	Butadiene, 1,3-	N/A
106-99-0	Butadiene, 1,3-	mw	54.0	N/A
106-99-0	Butadiene, 1,3-	t_m	1.64E+2	N/A
106-99-0	Butadiene, 1,3-	v_p	2.78E+00	N/A
106-99-0	Butadiene, 1,3-	s	7.35E+2	N/A
106-99-0	Butadiene, 1,3-	h	7.13E-2	N/A
106-99-0	Butadiene, 1,3-	d_a	2.49E-1	N/A
106-99-0	Butadiene, 1,3-	dw	1.08E-5	N/A
106-99-0	Butadiene, 1,3-	k_ow	9.77E+1	N/A
106-99-0	Butadiene, 1,3-	k_oc	1.2E+2	N/A
106-99-0	Butadiene, 1,3-	kd_s	1.2	N/A
106-99-0	Butadiene, 1,3-	kd_sw	9.02	N/A
106-99-0	Butadiene, 1,3-	kd_bs	4.81	N/A
106-99-0	Butadiene, 1,3-	k_sg	1.37E+2	N/A
106-99-0	Butadiene, 1,3-	f_v	1	N/A
106-99-0	Butadiene, 1,3-	rcf	1.85	N/A
106-99-0	Butadiene, 1,3-	br_root_veg	1.54	N/A
106-99-0	Butadiene, 1,3-	br_leafy_veg	2.74	N/A
106-99-0	Butadiene, 1,3-	br_forage	2.74	N/A
106-99-0	Butadiene, 1,3-	bv_leafy_veg	1.03E-2	N/A
106-99-0	Butadiene, 1,3-	bv_forage	1.03E-2	N/A
106-99-0	Butadiene, 1,3-	ba_milk	6.02E-04	N/A
106-99-0	Butadiene, 1,3-	ba_beef	2.86E-03	N/A
106-99-0	Butadiene, 1,3-	ba_pork	3.46E-03	N/A
106-99-0	Butadiene, 1,3-	bcf_egg	7.76E-4	N/A
106-99-0	Butadiene, 1,3-	bcf_chicken	0	N/A
106-99-0	Butadiene, 1,3-	bcf_fish	6.8	N/A
106-99-0	Butadiene, 1,3-	baf_fish	0	N/A
106-99-0	Butadiene, 1,3-	bsaf_fish	0	N/A
106-99-0	Butadiene, 1,3-	rfd	0	N/A
106-99-0	Butadiene, 1,3-	oral_csf	0	N/A
106-99-0	Butadiene, 1,3-	rfc	2E-3	N/A
106-99-0	Butadiene, 1,3-	inhalation_urf	2.86E-5	N/A
106-99-0	Butadiene, 1,3-	inhalation_csf	1E-1	N/A
106-99-0	Butadiene, 1,3-	chemical_type	O	N/A
106-99-0	Butadiene, 1,3-	chemical_subtyp		N/A
106-99-0	Butadiene, 1,3-	br_grain	2.74	N/A
106-99-0	Butadiene, 1,3-	ba_egg	1.20E-03	N/A
106-99-0	Butadiene, 1,3-	ba_chicken	2.11E-03	N/A
106-99-0	Butadiene, 1,3-	inhalation_rfd	5.7E-4	N/A
106-99-0	Butadiene, 1,3-	tef	0	N/A
107-05-1	Ally Chloride	cas_number	107-05-1	N/A
107-05-1	Ally Chloride	copc_name	Ally Chloride	N/A
107-05-1	Ally Chloride	mw	76.5	N/A

COPC

CAS No.	COPC Name	Symbol	Current	Original
107-05-1	Ally Chloride	t_m	139	N/A
107-05-1	Ally Chloride	v_p	12.3	N/A
107-05-1	Ally Chloride	s	3.37E+3	N/A
107-05-1	Ally Chloride	h	1.1E-02	N/A
107-05-1	Ally Chloride	d_a	1.17E-01	N/A
107-05-1	Ally Chloride	dw	1.08E-05	N/A
107-05-1	Ally Chloride	k_ow	85.1	N/A
107-05-1	Ally Chloride	k_oc	43.8	N/A
107-05-1	Ally Chloride	kd_s	0.438	N/A
107-05-1	Ally Chloride	kd_sw	3.29	N/A
107-05-1	Ally Chloride	kd_bs	1.75	N/A
107-05-1	Ally Chloride	k_sg	0	N/A
107-05-1	Ally Chloride	f_v	1	N/A
107-05-1	Ally Chloride	rcf	1.74	N/A
107-05-1	Ally Chloride	br_root_veg	3.98	N/A
107-05-1	Ally Chloride	br_leafy_veg	2.97	N/A
107-05-1	Ally Chloride	br_forage	2.97	N/A
107-05-1	Ally Chloride	bv_leafy_veg	5.77E-02	N/A
107-05-1	Ally Chloride	bv_forage	5.77E-02	N/A
107-05-1	Ally Chloride	ba_milk	6.76E-07	N/A
107-05-1	Ally Chloride	ba_beef	2.14E-06	N/A
107-05-1	Ally Chloride	ba_pork	2.57E-06	N/A
107-05-1	Ally Chloride	bcf_egg	6.76E-04	N/A
107-05-1	Ally Chloride	bcf_chicken	0	N/A
107-05-1	Ally Chloride	bcf_fish	1.72E+01	N/A
107-05-1	Ally Chloride	baf_fish	0	N/A
107-05-1	Ally Chloride	bsaf_fish	0	N/A
107-05-1	Ally Chloride	rfd	0	N/A
107-05-1	Ally Chloride	oral_csf	0	N/A
107-05-1	Ally Chloride	rfc	1E-03	N/A
107-05-1	Ally Chloride	inhalation_urf	0	N/A
107-05-1	Ally Chloride	inhalation_csf	0	N/A
107-05-1	Ally Chloride	chemical_type	O	N/A
107-05-1	Ally Chloride	chemical_subtyp		N/A
107-05-1	Ally Chloride	br_grain	2.97	N/A
107-05-1	Ally Chloride	ba_egg	6.76E-04	N/A
107-05-1	Ally Chloride	ba_chicken	1.71E-06	N/A
107-05-1	Ally Chloride	inhalation_rfd	2.86E-04	N/A
107-05-1	Ally Chloride	tef	0	N/A
108-60-1	Bis(2-chloro-1-methylethyl) ether	cas_number	108-60-1	N/A
108-60-1	Bis(2-chloro-1-methylethyl) ether	copc_name	Bis(2-chloro-1-methy	N/A
108-60-1	Bis(2-chloro-1-methylethyl) ether	mw	171.1	N/A
108-60-1	Bis(2-chloro-1-methylethyl) ether	t_m	1.76E+2	N/A
108-60-1	Bis(2-chloro-1-methylethyl) ether	v_p	5.6E-1	N/A
108-60-1	Bis(2-chloro-1-methylethyl) ether	s	1.7E+3	N/A
108-60-1	Bis(2-chloro-1-methylethyl) ether	h	1.17E-4	N/A

COPC

CAS No.	COPC Name	Symbol	Current	Original
108-60-1	Bis(2-chloro-1-methylethyl) ether	d_a	3.5E-2	N/A
108-60-1	Bis(2-chloro-1-methylethyl) ether	dw	7.36E-6	N/A
108-60-1	Bis(2-chloro-1-methylethyl) ether	k_ow	3.02E+2	N/A
108-60-1	Bis(2-chloro-1-methylethyl) ether	k_oc	6.17E+1	N/A
108-60-1	Bis(2-chloro-1-methylethyl) ether	kd_s	6.17E-1	N/A
108-60-1	Bis(2-chloro-1-methylethyl) ether	kd_sw	4.62	N/A
108-60-1	Bis(2-chloro-1-methylethyl) ether	kd_bs	2.47	N/A
108-60-1	Bis(2-chloro-1-methylethyl) ether	k_sg	0	N/A
108-60-1	Bis(2-chloro-1-methylethyl) ether	f_v	1	N/A
108-60-1	Bis(2-chloro-1-methylethyl) ether	rcf	2.45	N/A
108-60-1	Bis(2-chloro-1-methylethyl) ether	br_root_veg	5.31	N/A
108-60-1	Bis(2-chloro-1-methylethyl) ether	br_leafy_veg	1.43	N/A
108-60-1	Bis(2-chloro-1-methylethyl) ether	br_forage	1.43	N/A
108-60-1	Bis(2-chloro-1-methylethyl) ether	bv_leafy_veg	2.09E+1	N/A
108-60-1	Bis(2-chloro-1-methylethyl) ether	bv_forage	2.09E+1	N/A
108-60-1	Bis(2-chloro-1-methylethyl) ether	ba_milk	1.22E-03	N/A
108-60-1	Bis(2-chloro-1-methylethyl) ether	ba_beef	5.80E-03	N/A
108-60-1	Bis(2-chloro-1-methylethyl) ether	ba_pork	7.02E-03	N/A
108-60-1	Bis(2-chloro-1-methylethyl) ether	bcf_egg	2.4E-3	N/A
108-60-1	Bis(2-chloro-1-methylethyl) ether	bcf_chicken	0	N/A
108-60-1	Bis(2-chloro-1-methylethyl) ether	bcf_fish	16.2	N/A
108-60-1	Bis(2-chloro-1-methylethyl) ether	baf_fish	0	N/A
108-60-1	Bis(2-chloro-1-methylethyl) ether	bsaf_fish	0	N/A
108-60-1	Bis(2-chloro-1-methylethyl) ether	rfd	4E-2	N/A
108-60-1	Bis(2-chloro-1-methylethyl) ether	oral_csf	7E-2	N/A
108-60-1	Bis(2-chloro-1-methylethyl) ether	rfc	0	N/A
108-60-1	Bis(2-chloro-1-methylethyl) ether	inhalation_urf	1E-5	N/A
108-60-1	Bis(2-chloro-1-methylethyl) ether	inhalation_csf	3.5E-2	N/A
108-60-1	Bis(2-chloro-1-methylethyl) ether	chemical_type	O	N/A
108-60-1	Bis(2-chloro-1-methylethyl) ether	chemical_subtyp		N/A
108-60-1	Bis(2-chloro-1-methylethyl) ether	br_grain	1.43	N/A
108-60-1	Bis(2-chloro-1-methylethyl) ether	ba_egg	2.44E-03	N/A
108-60-1	Bis(2-chloro-1-methylethyl) ether	ba_chicken	4.27E-03	N/A
108-60-1	Bis(2-chloro-1-methylethyl) ether	inhalation_rfd	0	N/A
108-60-1	Bis(2-chloro-1-methylethyl) ether	tef	0	N/A
108-87-2	Methylcyclohexane	cas_number	108-87-2	N/A
108-87-2	Methylcyclohexane	copc_name	Methylcyclohexane	N/A
108-87-2	Methylcyclohexane	mw	98.2	N/A
108-87-2	Methylcyclohexane	t_m	1.47E+2	N/A
108-87-2	Methylcyclohexane	v_p	5.7E-2	N/A
108-87-2	Methylcyclohexane	s	1.4E+1	N/A
108-87-2	Methylcyclohexane	h	9.79E-1	N/A
108-87-2	Methylcyclohexane	d_a	9.86E-2	N/A
108-87-2	Methylcyclohexane	dw	8.52E-6	N/A
108-87-2	Methylcyclohexane	k_ow	9.12E+2	N/A
108-87-2	Methylcyclohexane	k_oc	4.6E+3	N/A

COPC

CAS No.	COPC Name	Symbol	Current	Original
108-87-2	Methylcyclohexane	kd_s	4.6E+1	N/A
108-87-2	Methylcyclohexane	kd_sw	3.45E+2	N/A
108-87-2	Methylcyclohexane	kd_bs	1.84E+2	N/A
108-87-2	Methylcyclohexane	k_sg	2.14E+1	N/A
108-87-2	Methylcyclohexane	f_v	1	N/A
108-87-2	Methylcyclohexane	rcf	5.74	N/A
108-87-2	Methylcyclohexane	br_root_veg	1.43E-1	N/A
108-87-2	Methylcyclohexane	br_leafy_veg	7.54E-1	N/A
108-87-2	Methylcyclohexane	br_forage	7.54E-1	N/A
108-87-2	Methylcyclohexane	bv_leafy_veg	8.11E-3	N/A
108-87-2	Methylcyclohexane	bv_forage	8.11E-3	N/A
108-87-2	Methylcyclohexane	ba_milk	2.20E-03	N/A
108-87-2	Methylcyclohexane	ba_beef	1.04E-02	N/A
108-87-2	Methylcyclohexane	ba_pork	1.26E-02	N/A
108-87-2	Methylcyclohexane	bcf_egg	7.24E-3	N/A
108-87-2	Methylcyclohexane	bcf_chicken	0	N/A
108-87-2	Methylcyclohexane	bcf_fish	37.9	N/A
108-87-2	Methylcyclohexane	baf_fish	0	N/A
108-87-2	Methylcyclohexane	bsaf_fish	0	N/A
108-87-2	Methylcyclohexane	rfd	0	N/A
108-87-2	Methylcyclohexane	oral_csf	0	N/A
108-87-2	Methylcyclohexane	rfc	3	N/A
108-87-2	Methylcyclohexane	inhalation_urf	0	N/A
108-87-2	Methylcyclohexane	inhalation_csf	0	N/A
108-87-2	Methylcyclohexane	chemical_type	O	N/A
108-87-2	Methylcyclohexane	chemical_subtyp		N/A
108-87-2	Methylcyclohexane	br_grain	7.54E-1	N/A
108-87-2	Methylcyclohexane	ba_egg	4.39E-03	N/A
108-87-2	Methylcyclohexane	ba_chicken	7.69E-03	N/A
108-87-2	Methylcyclohexane	inhalation_rfd	8.6E-1	N/A
108-87-2	Methylcyclohexane	tef	0	N/A
108-88-3	Toluene	rfd	.08	0.2
108-88-3	Toluene	rfc	4.9	0.4
108-88-3	Toluene	inhalation_rfd	1.4	0.114285714285714
108-90-7	Chlorobenzene	rfc	0.05	0.06
108-90-7	Chlorobenzene	inhalation_rfd	0.014	0.00571428571428571
108-94-1	Cyclohexanone	cas_number	108-94-1	N/A
108-94-1	Cyclohexanone	copc_name	Cyclohexanone	N/A
108-94-1	Cyclohexanone	mw	98.2	N/A
108-94-1	Cyclohexanone	t_m	2.42E+2	N/A
108-94-1	Cyclohexanone	v_p	4.33	N/A
108-94-1	Cyclohexanone	s	5E+3	N/A
108-94-1	Cyclohexanone	h	4.13E-6	N/A
108-94-1	Cyclohexanone	d_a	7.84E-2	N/A
108-94-1	Cyclohexanone	dw	8.62E-6	N/A
108-94-1	Cyclohexanone	k_ow	6.46	N/A

COPC

CAS No.	COPC Name	Symbol	Current	Original
108-94-1	Cyclohexanone	k_oc	5.25	N/A
108-94-1	Cyclohexanone	kd_s	5.25E-2	N/A
108-94-1	Cyclohexanone	kd_sw	3.93E-1	N/A
108-94-1	Cyclohexanone	kd_bs	2.1E-1	N/A
108-94-1	Cyclohexanone	k_sg	0	N/A
108-94-1	Cyclohexanone	f_v	1	N/A
108-94-1	Cyclohexanone	rcf	9.47E-1	N/A
108-94-1	Cyclohexanone	br_root_veg	1.81E+1	N/A
108-94-1	Cyclohexanone	br_leafy_veg	1.32E+1	N/A
108-94-1	Cyclohexanone	br_forage	1.32E+1	N/A
108-94-1	Cyclohexanone	bv_leafy_veg	9.87	N/A
108-94-1	Cyclohexanone	bv_forage	9.87	N/A
108-94-1	Cyclohexanone	ba_milk	6.98E-05	N/A
108-94-1	Cyclohexanone	ba_beef	3.32E-04	N/A
108-94-1	Cyclohexanone	ba_pork	4.01E-04	N/A
108-94-1	Cyclohexanone	bcf_egg	5.13E-5	N/A
108-94-1	Cyclohexanone	bcf_chicken	0	N/A
108-94-1	Cyclohexanone	bcf_fish	3.16	N/A
108-94-1	Cyclohexanone	baf_fish	0	N/A
108-94-1	Cyclohexanone	bsaf_fish	0	N/A
108-94-1	Cyclohexanone	rfd	5	N/A
108-94-1	Cyclohexanone	oral_csf	0	N/A
108-94-1	Cyclohexanone	rfc	0	N/A
108-94-1	Cyclohexanone	inhalation_urf	0	N/A
108-94-1	Cyclohexanone	inhalation_csf	0	N/A
108-94-1	Cyclohexanone	chemical_type	O	N/A
108-94-1	Cyclohexanone	chemical_subtyp		N/A
108-94-1	Cyclohexanone	br_grain	1.32E+1	N/A
108-94-1	Cyclohexanone	ba_egg	1.40E-04	N/A
108-94-1	Cyclohexanone	ba_chicken	2.44E-04	N/A
108-94-1	Cyclohexanone	inhalation_rfd	0	N/A
108-94-1	Cyclohexanone	tef	0	N/A
110-00-9	Furan	cas_number	110-00-9	N/A
110-00-9	Furan	copc_name	Furan	N/A
110-00-9	Furan	mw	68.1	N/A
110-00-9	Furan	t_m	1.88E+2	N/A
110-00-9	Furan	v_p	6E+2	N/A
110-00-9	Furan	s	1E+4	N/A
110-00-9	Furan	h	5.34E-3	N/A
110-00-9	Furan	d_a	1.04E-1	N/A
110-00-9	Furan	dw	1.22E-5	N/A
110-00-9	Furan	k_ow	2.19E+1	N/A
110-00-9	Furan	k_oc	3.52E+1	N/A
110-00-9	Furan	kd_s	3.52E-1	N/A
110-00-9	Furan	kd_sw	2.64	N/A
110-00-9	Furan	kd_bs	1.41	N/A

COPC

CAS No.	COPC Name	Symbol	Current	Original
110-00-9	Furan	k_sg	0	N/A
110-00-9	Furan	f_v	1	N/A
110-00-9	Furan	rcf	1.14	N/A
110-00-9	Furan	br_root_veg	3.26	N/A
110-00-9	Furan	br_leafy_veg	6.51	N/A
110-00-9	Furan	br_forage	6.51	N/A
110-00-9	Furan	bv_leafy_veg	2.8E-2	N/A
110-00-9	Furan	bv_forage	2.8E-2	N/A
110-00-9	Furan	ba_milk	1.99E-04	N/A
110-00-9	Furan	ba_beef	9.44E-04	N/A
110-00-9	Furan	ba_pork	1.14E-03	N/A
110-00-9	Furan	bcf_egg	1.74E-4	N/A
110-00-9	Furan	bcf_chicken	0	N/A
110-00-9	Furan	bcf_fish	2.15	N/A
110-00-9	Furan	baf_fish	0	N/A
110-00-9	Furan	bsaf_fish	0	N/A
110-00-9	Furan	rfd	1E-3	N/A
110-00-9	Furan	oral_csf	0	N/A
110-00-9	Furan	rfc	0	N/A
110-00-9	Furan	inhalation_urf	0	N/A
110-00-9	Furan	inhalation_csf	0	N/A
110-00-9	Furan	chemical_type	O	N/A
110-00-9	Furan	chemical_subtyp		N/A
110-00-9	Furan	br_grain	6.51	N/A
110-00-9	Furan	ba_egg	3.97E-04	N/A
110-00-9	Furan	ba_chicken	6.95E-04	N/A
110-00-9	Furan	inhalation_rfd	0	N/A
110-00-9	Furan	tef	0	N/A
110-54-3	Hexane, n-	cas_number	110-54-3	N/A
110-54-3	Hexane, n-	copc_name	Hexane, n-	N/A
110-54-3	Hexane, n-	mw	86.2	N/A
110-54-3	Hexane, n-	t_m	1.78E+2	N/A
110-54-3	Hexane, n-	v_p	1.97E-1	N/A
110-54-3	Hexane, n-	s	1.24E+1	N/A
110-54-3	Hexane, n-	h	7.68E-1	N/A
110-54-3	Hexane, n-	d_a	2E-1	N/A
110-54-3	Hexane, n-	dw	7.77E-6	N/A
110-54-3	Hexane, n-	k_ow	1.29E+4	N/A
110-54-3	Hexane, n-	k_oc	2.75E+3	N/A
110-54-3	Hexane, n-	kd_s	2.75E+1	N/A
110-54-3	Hexane, n-	kd_sw	2.07E+2	N/A
110-54-3	Hexane, n-	kd_bs	1.1E+2	N/A
110-54-3	Hexane, n-	k_sg	9.23E+1	N/A
110-54-3	Hexane, n-	f_v	1	N/A
110-54-3	Hexane, n-	rcf	44.2	N/A
110-54-3	Hexane, n-	br_root_veg	1.63	N/A

COPC

CAS No.	COPC Name	Symbol	Current	Original
110-54-3	Hexane, n-	br_leafy_veg	1.63E-1	N/A
110-54-3	Hexane, n-	br_forage	1.63E-1	N/A
110-54-3	Hexane, n-	bv_leafy_veg	1.74E-1	N/A
110-54-3	Hexane, n-	bv_forage	1.74E-1	N/A
110-54-3	Hexane, n-	ba_milk	5.86E-03	N/A
110-54-3	Hexane, n-	ba_beef	2.78E-02	N/A
110-54-3	Hexane, n-	ba_pork	3.37E-02	N/A
110-54-3	Hexane, n-	bcf_egg	1.02E-1	N/A
110-54-3	Hexane, n-	bcf_chicken	0	N/A
110-54-3	Hexane, n-	bcf_fish	292	N/A
110-54-3	Hexane, n-	baf_fish	0	N/A
110-54-3	Hexane, n-	bsaf_fish	0	N/A
110-54-3	Hexane, n-	rfd	0	N/A
110-54-3	Hexane, n-	oral_csf	0	N/A
110-54-3	Hexane, n-	rfc	.7	N/A
110-54-3	Hexane, n-	inhalation_urf	0	N/A
110-54-3	Hexane, n-	inhalation_csf	0	N/A
110-54-3	Hexane, n-	chemical_type	O	N/A
110-54-3	Hexane, n-	chemical_subtyp		N/A
110-54-3	Hexane, n-	br_grain	1.63E-1	N/A
110-54-3	Hexane, n-	ba_egg	1.17E-02	N/A
110-54-3	Hexane, n-	ba_chicken	2.05E-02	N/A
110-54-3	Hexane, n-	inhalation_rfd	5.71E-2	N/A
110-54-3	Hexane, n-	tef	0	N/A
110-82-7	Cyclohexane	cas_number	110-82-7	N/A
110-82-7	Cyclohexane	copc_name	Cyclohexane	N/A
110-82-7	Cyclohexane	mw	84.2	N/A
110-82-7	Cyclohexane	t_m	2.8E+2	N/A
110-82-7	Cyclohexane	v_p	1.3E-1	N/A
110-82-7	Cyclohexane	s	1E+3	N/A
110-82-7	Cyclohexane	h	1.09E-2	N/A
110-82-7	Cyclohexane	d_a	9.89E-2	N/A
110-82-7	Cyclohexane	dw	1.15E-5	N/A
110-82-7	Cyclohexane	k_ow	3.39E+2	N/A
110-82-7	Cyclohexane	k_oc	121	N/A
110-82-7	Cyclohexane	kd_s	2.12E-2	N/A
110-82-7	Cyclohexane	kd_sw	1.59E-1	N/A
110-82-7	Cyclohexane	kd_bs	8.5E-2	N/A
110-82-7	Cyclohexane	k_sg	2.14E+1	N/A
110-82-7	Cyclohexane	f_v	1	N/A
110-82-7	Cyclohexane	rcf	2.68	N/A
110-82-7	Cyclohexane	br_root_veg	1.65E+2	N/A
110-82-7	Cyclohexane	br_leafy_veg	1.34	N/A
110-82-7	Cyclohexane	br_forage	1.34	N/A
110-82-7	Cyclohexane	bv_leafy_veg	2.53E-1	N/A
110-82-7	Cyclohexane	bv_forage	2.53E-1	N/A

COPC

CAS No.	COPC Name	Symbol	Current	Original
110-82-7	Cyclohexane	ba_milk	1.30E-03	N/A
110-82-7	Cyclohexane	ba_beef	6.20E-03	N/A
110-82-7	Cyclohexane	ba_pork	7.50E-03	N/A
110-82-7	Cyclohexane	bcf_egg	2.69E-3	N/A
110-82-7	Cyclohexane	bcf_chicken	0	N/A
110-82-7	Cyclohexane	bcf_fish	17.7	N/A
110-82-7	Cyclohexane	baf_fish	0	N/A
110-82-7	Cyclohexane	bsaf_fish	0	N/A
110-82-7	Cyclohexane	rfd	0	N/A
110-82-7	Cyclohexane	oral_csf	0	N/A
110-82-7	Cyclohexane	rfc	6	N/A
110-82-7	Cyclohexane	inhalation_urf	0	N/A
110-82-7	Cyclohexane	inhalation_csf	0	N/A
110-82-7	Cyclohexane	chemical_type	O	N/A
110-82-7	Cyclohexane	chemical_subtyp		N/A
110-82-7	Cyclohexane	br_grain	1.34	N/A
110-82-7	Cyclohexane	ba_egg	2.61E-03	N/A
110-82-7	Cyclohexane	ba_chicken	4.57E-03	N/A
110-82-7	Cyclohexane	inhalation_rfd	1.7	N/A
110-82-7	Cyclohexane	tef	0	N/A
111-76-2	Ethanol, 2-Butoxy-	cas_number	111-76-2	N/A
111-76-2	Ethanol, 2-Butoxy-	copc_name	Ethanol, 2-Butoxy-	N/A
111-76-2	Ethanol, 2-Butoxy-	mw	118.0	N/A
111-76-2	Ethanol, 2-Butoxy-	t_m	1.98E+2	N/A
111-76-2	Ethanol, 2-Butoxy-	v_p	8.8E-1	N/A
111-76-2	Ethanol, 2-Butoxy-	s	1E+6	N/A
111-76-2	Ethanol, 2-Butoxy-	h	5.26E-7	N/A
111-76-2	Ethanol, 2-Butoxy-	d_a	6.51E-2	N/A
111-76-2	Ethanol, 2-Butoxy-	dw	8.15E-6	N/A
111-76-2	Ethanol, 2-Butoxy-	k_ow	6.76	N/A
111-76-2	Ethanol, 2-Butoxy-	k_oc	6.17E+1	N/A
111-76-2	Ethanol, 2-Butoxy-	kd_s	6.17E-1	N/A
111-76-2	Ethanol, 2-Butoxy-	kd_sw	4.62	N/A
111-76-2	Ethanol, 2-Butoxy-	kd_bs	2.47	N/A
111-76-2	Ethanol, 2-Butoxy-	k_sg	0	N/A
111-76-2	Ethanol, 2-Butoxy-	f_v	1	N/A
111-76-2	Ethanol, 2-Butoxy-	rcf	9.52E-1	N/A
111-76-2	Ethanol, 2-Butoxy-	br_root_veg	1.54	N/A
111-76-2	Ethanol, 2-Butoxy-	br_leafy_veg	1.28E+1	N/A
111-76-2	Ethanol, 2-Butoxy-	br_forage	1.28E+1	N/A
111-76-2	Ethanol, 2-Butoxy-	bv_leafy_veg	8.14E+1	N/A
111-76-2	Ethanol, 2-Butoxy-	bv_forage	8.14E+1	N/A
111-76-2	Ethanol, 2-Butoxy-	ba_milk	7.28E-05	N/A
111-76-2	Ethanol, 2-Butoxy-	ba_beef	3.46E-04	N/A
111-76-2	Ethanol, 2-Butoxy-	ba_pork	4.18E-04	N/A
111-76-2	Ethanol, 2-Butoxy-	bcf_egg	5.37E-5	N/A

COPC

CAS No.	COPC Name	Symbol	Current	Original
111-76-2	Ethanol, 2-Butoxy-	bcf_chicken	0	N/A
111-76-2	Ethanol, 2-Butoxy-	bcf_fish	3.16	N/A
111-76-2	Ethanol, 2-Butoxy-	baf_fish	0	N/A
111-76-2	Ethanol, 2-Butoxy-	bsaf_fish	0	N/A
111-76-2	Ethanol, 2-Butoxy-	rfd	5E-1	N/A
111-76-2	Ethanol, 2-Butoxy-	oral_csf	0	N/A
111-76-2	Ethanol, 2-Butoxy-	rfc	1.3E+1	N/A
111-76-2	Ethanol, 2-Butoxy-	inhalation_urf	0	N/A
111-76-2	Ethanol, 2-Butoxy-	inhalation_csf	0	N/A
111-76-2	Ethanol, 2-Butoxy-	chemical_type	O	N/A
111-76-2	Ethanol, 2-Butoxy-	chemical_subtyp		N/A
111-76-2	Ethanol, 2-Butoxy-	br_grain	1.28E+1	N/A
111-76-2	Ethanol, 2-Butoxy-	ba_egg	1.46E-04	N/A
111-76-2	Ethanol, 2-Butoxy-	ba_chicken	2.55E-04	N/A
111-76-2	Ethanol, 2-Butoxy-	inhalation_rfd	3.7	N/A
111-76-2	Ethanol, 2-Butoxy-	tef	0	N/A
119-93-7	Dimethylbenzidine, 3,3'-	cas_number	119-93-7	N/A
119-93-7	Dimethylbenzidine, 3,3'-	copc_name	Dimethylbenzidine, 3	N/A
119-93-7	Dimethylbenzidine, 3,3'-	mw	212.3	N/A
119-93-7	Dimethylbenzidine, 3,3'-	t_m	4.05E+2	N/A
119-93-7	Dimethylbenzidine, 3,3'-	v_p	2.06E-5	N/A
119-93-7	Dimethylbenzidine, 3,3'-	s	1.3E+3	N/A
119-93-7	Dimethylbenzidine, 3,3'-	h	3.31E-9	N/A
119-93-7	Dimethylbenzidine, 3,3'-	d_a	5.34E-2	N/A
119-93-7	Dimethylbenzidine, 3,3'-	dw	6.18E-6	N/A
119-93-7	Dimethylbenzidine, 3,3'-	k_ow	2.19E+2	N/A
119-93-7	Dimethylbenzidine, 3,3'-	k_oc	200	N/A
119-93-7	Dimethylbenzidine, 3,3'-	kd_s	1.98E-2	N/A
119-93-7	Dimethylbenzidine, 3,3'-	kd_sw	1.48E-1	N/A
119-93-7	Dimethylbenzidine, 3,3'-	kd_bs	7.9E-2	N/A
119-93-7	Dimethylbenzidine, 3,3'-	k_sg	0	N/A
119-93-7	Dimethylbenzidine, 3,3'-	f_v	1	N/A
119-93-7	Dimethylbenzidine, 3,3'-	rcf	1.91	N/A
119-93-7	Dimethylbenzidine, 3,3'-	br_root_veg	1.38E+2	N/A
119-93-7	Dimethylbenzidine, 3,3'-	br_leafy_veg	1.72	N/A
119-93-7	Dimethylbenzidine, 3,3'-	br_forage	1.72	N/A
119-93-7	Dimethylbenzidine, 3,3'-	bv_leafy_veg	5.24E+5	N/A
119-93-7	Dimethylbenzidine, 3,3'-	bv_forage	5.24E+5	N/A
119-93-7	Dimethylbenzidine, 3,3'-	ba_milk	1.01E-03	N/A
119-93-7	Dimethylbenzidine, 3,3'-	ba_beef	4.79E-03	N/A
119-93-7	Dimethylbenzidine, 3,3'-	ba_pork	5.80E-03	N/A
119-93-7	Dimethylbenzidine, 3,3'-	bcf_egg	1.74E-3	N/A
119-93-7	Dimethylbenzidine, 3,3'-	bcf_chicken	0	N/A
119-93-7	Dimethylbenzidine, 3,3'-	bcf_fish	12.6	N/A
119-93-7	Dimethylbenzidine, 3,3'-	baf_fish	0	N/A
119-93-7	Dimethylbenzidine, 3,3'-	bsaf_fish	0	N/A

COPC

CAS No.	COPC Name	Symbol	Current	Original
119-93-7	Dimethylbenzidine, 3,3'-	rfd	0	N/A
119-93-7	Dimethylbenzidine, 3,3'-	oral_csf	0	N/A
119-93-7	Dimethylbenzidine, 3,3'-	rfc	0	N/A
119-93-7	Dimethylbenzidine, 3,3'-	inhalation_urf	0	N/A
119-93-7	Dimethylbenzidine, 3,3'-	inhalation_csf	0	N/A
119-93-7	Dimethylbenzidine, 3,3'-	chemical_type	O	N/A
119-93-7	Dimethylbenzidine, 3,3'-	chemical_subtyp		N/A
119-93-7	Dimethylbenzidine, 3,3'-	br_grain	1.72	N/A
119-93-7	Dimethylbenzidine, 3,3'-	ba_egg	2.02E-03	N/A
119-93-7	Dimethylbenzidine, 3,3'-	ba_chicken	3.53E-03	N/A
119-93-7	Dimethylbenzidine, 3,3'-	inhalation_rfd	0	N/A
119-93-7	Dimethylbenzidine, 3,3'-	tef	0	N/A
121-82-4	RDX	cas_number	121-82-4	N/A
121-82-4	RDX	copc_name	RDX	N/A
121-82-4	RDX	mw	222.26	N/A
121-82-4	RDX	t_m	4.79E+2	N/A
121-82-4	RDX	v_p	5.39E-12	N/A
121-82-4	RDX	s	10	N/A
121-82-4	RDX	h	4.27E-12	N/A
121-82-4	RDX	d_a	5.18E-2	N/A
121-82-4	RDX	dw	6E-6	N/A
121-82-4	RDX	k_ow	7.41	N/A
121-82-4	RDX	k_oc	7.17	N/A
121-82-4	RDX	kd_s	8.3E-3	N/A
121-82-4	RDX	kd_sw	6.22E-2	N/A
121-82-4	RDX	kd_bs	3.32E-2	N/A
121-82-4	RDX	k_sg	1.85E+1	N/A
121-82-4	RDX	f_v	2.87E-3	N/A
121-82-4	RDX	rcf	9.61E-1	N/A
121-82-4	RDX	br_root_veg	1.16E+2	N/A
121-82-4	RDX	br_leafy_veg	1.22E+1	N/A
121-82-4	RDX	br_forage	1.22E+1	N/A
121-82-4	RDX	bv_leafy_veg	0	N/A
121-82-4	RDX	bv_forage	0	N/A
121-82-4	RDX	ba_milk	7.91E-05	N/A
121-82-4	RDX	ba_beef	3.76E-04	N/A
121-82-4	RDX	ba_pork	4.55E-04	N/A
121-82-4	RDX	bcf_egg	5.89E-5	N/A
121-82-4	RDX	bcf_chicken	0	N/A
121-82-4	RDX	bcf_fish	3.16	N/A
121-82-4	RDX	baf_fish	0	N/A
121-82-4	RDX	bsaf_fish	0	N/A
121-82-4	RDX	rfd	3E-3	N/A
121-82-4	RDX	oral_csf	1.1E-1	N/A
121-82-4	RDX	rfc	0	N/A
121-82-4	RDX	inhalation_urf	0	N/A

COPC

CAS No.	COPC Name	Symbol	Current	Original
121-82-4	RDX	inhalation_csf	0	N/A
121-82-4	RDX	chemical_type	O	N/A
121-82-4	RDX	chemical_subtyp		N/A
121-82-4	RDX	br_grain	1.22E+1	N/A
121-82-4	RDX	ba_egg	1.58E-04	N/A
121-82-4	RDX	ba_chicken	2.77E-04	N/A
121-82-4	RDX	inhalation_rfd	0	N/A
121-82-4	RDX	tef	0	N/A
122-39-4	Diphenylamine	cas_number	122-39-4	N/A
122-39-4	Diphenylamine	copc_name	Diphenylamine	N/A
122-39-4	Diphenylamine	mw	169.2	N/A
122-39-4	Diphenylamine	t_m	3.26E+2	N/A
122-39-4	Diphenylamine	v_p	8.06E-4	N/A
122-39-4	Diphenylamine	s	5.3E+1	N/A
122-39-4	Diphenylamine	h	1.39E-4	N/A
122-39-4	Diphenylamine	d_a	6.21E-2	N/A
122-39-4	Diphenylamine	dw	7.19E-6	N/A
122-39-4	Diphenylamine	k_ow	3.16E+3	N/A
122-39-4	Diphenylamine	k_oc	2.76E+03	N/A
122-39-4	Diphenylamine	kd_s	2.88E-2	N/A
122-39-4	Diphenylamine	kd_sw	2.16E-1	N/A
122-39-4	Diphenylamine	kd_bs	1.15E-1	N/A
122-39-4	Diphenylamine	k_sg	0	N/A
122-39-4	Diphenylamine	f_v	1	N/A
122-39-4	Diphenylamine	rcf	1.50E+1	N/A
122-39-4	Diphenylamine	br_root_veg	5.48E+2	N/A
122-39-4	Diphenylamine	br_leafy_veg	3.67E-1	N/A
122-39-4	Diphenylamine	br_forage	3.67E-1	N/A
122-39-4	Diphenylamine	bv_leafy_veg	2.15E+2	N/A
122-39-4	Diphenylamine	bv_forage	2.15E+2	N/A
122-39-4	Diphenylamine	ba_milk	3.75E-03	N/A
122-39-4	Diphenylamine	ba_beef	1.78E-02	N/A
122-39-4	Diphenylamine	ba_pork	2.16E-02	N/A
122-39-4	Diphenylamine	bcf_egg	2.51E-2	N/A
122-39-4	Diphenylamine	bcf_chicken	0	N/A
122-39-4	Diphenylamine	bcf_fish	98.9	N/A
122-39-4	Diphenylamine	baf_fish	0	N/A
122-39-4	Diphenylamine	bsaf_fish	0	N/A
122-39-4	Diphenylamine	rfd	2.5E-2	N/A
122-39-4	Diphenylamine	oral_csf	0	N/A
122-39-4	Diphenylamine	rfc	0	N/A
122-39-4	Diphenylamine	inhalation_urf	0	N/A
122-39-4	Diphenylamine	inhalation_csf	0	N/A
122-39-4	Diphenylamine	chemical_type	O	N/A
122-39-4	Diphenylamine	chemical_subtyp		N/A
122-39-4	Diphenylamine	br_grain	3.67E-1	N/A

COPC

CAS No.	COPC Name	Symbol	Current	Original
122-39-4	Diphenylamine	ba_egg	7.50E-03	N/A
122-39-4	Diphenylamine	ba_chicken	1.31E-02	N/A
122-39-4	Diphenylamine	inhalation_rfd	0	N/A
122-39-4	Diphenylamine	tef	0	N/A
132-64-9	Dibenzofuran	cas_number	132-64-9	N/A
132-64-9	Dibenzofuran	copc_name	Dibenzofuran	N/A
132-64-9	Dibenzofuran	mw	168.2	N/A
132-64-9	Dibenzofuran	t_m	3.6E+2	N/A
132-64-9	Dibenzofuran	v_p	2.48E-3	N/A
132-64-9	Dibenzofuran	s	4.22	N/A
132-64-9	Dibenzofuran	h	2.13E-4	N/A
132-64-9	Dibenzofuran	d_a	6.01E-2	N/A
132-64-9	Dibenzofuran	dw	1E-5	N/A
132-64-9	Dibenzofuran	k_ow	1.32E+4	N/A
132-64-9	Dibenzofuran	k_oc	8.13E+3	N/A
132-64-9	Dibenzofuran	kd_s	8.13E+1	N/A
132-64-9	Dibenzofuran	kd_sw	6.1E+2	N/A
132-64-9	Dibenzofuran	kd_bs	3.25E+2	N/A
132-64-9	Dibenzofuran	k_sg	0	N/A
132-64-9	Dibenzofuran	f_v	1	N/A
132-64-9	Dibenzofuran	rcf	4.49E+01	N/A
132-64-9	Dibenzofuran	br_root_veg	5.63E-1	N/A
132-64-9	Dibenzofuran	br_leafy_veg	1.61E-1	N/A
132-64-9	Dibenzofuran	br_forage	1.61E-1	N/A
132-64-9	Dibenzofuran	bv_leafy_veg	6.41E+2	N/A
132-64-9	Dibenzofuran	bv_forage	6.41E+2	N/A
132-64-9	Dibenzofuran	ba_milk	5.89E-03	N/A
132-64-9	Dibenzofuran	ba_beef	2.80E-02	N/A
132-64-9	Dibenzofuran	ba_pork	3.39E-02	N/A
132-64-9	Dibenzofuran	bcf_egg	1.05E-1	N/A
132-64-9	Dibenzofuran	bcf_chicken	0	N/A
132-64-9	Dibenzofuran	bcf_fish	297	N/A
132-64-9	Dibenzofuran	baf_fish	0	N/A
132-64-9	Dibenzofuran	bsaf_fish	0	N/A
132-64-9	Dibenzofuran	rfd	1E-3	N/A
132-64-9	Dibenzofuran	oral_csf	0	N/A
132-64-9	Dibenzofuran	rfc	0	N/A
132-64-9	Dibenzofuran	inhalation_urf	0	N/A
132-64-9	Dibenzofuran	inhalation_csf	0	N/A
132-64-9	Dibenzofuran	chemical_type	O	N/A
132-64-9	Dibenzofuran	chemical_subtyp		N/A
132-64-9	Dibenzofuran	br_grain	1.61E-1	N/A
132-64-9	Dibenzofuran	ba_egg	1.18E-02	N/A
132-64-9	Dibenzofuran	ba_chicken	2.06E-02	N/A
132-64-9	Dibenzofuran	inhalation_rfd	0	N/A
132-64-9	Dibenzofuran	tef	0	N/A

COPC

CAS No.	COPC Name	Symbol	Current	Original
1330-20-7	Xylenes	cas_number	1330-20-7	N/A
1330-20-7	Xylenes	copc_name	Xylenes	N/A
1330-20-7	Xylenes	mw	106.2	N/A
1330-20-7	Xylenes	t_m	2.48E+2	N/A
1330-20-7	Xylenes	v_p	0	N/A
1330-20-7	Xylenes	s	1.61E+2	N/A
1330-20-7	Xylenes	h	5.25E-3	N/A
1330-20-7	Xylenes	d_a	7.14E-2	N/A
1330-20-7	Xylenes	dw	9.34E-6	N/A
1330-20-7	Xylenes	k_ow	1.32E+3	N/A
1330-20-7	Xylenes	k_oc	3.74E+2	N/A
1330-20-7	Xylenes	kd_s	3.74	N/A
1330-20-7	Xylenes	kd_sw	2.81E+1	N/A
1330-20-7	Xylenes	kd_bs	1.5E+1	N/A
1330-20-7	Xylenes	k_sg	0	N/A
1330-20-7	Xylenes	f_v	1	N/A
1330-20-7	Xylenes	rcf	7.63	N/A
1330-20-7	Xylenes	br_root_veg	2.26	N/A
1330-20-7	Xylenes	br_leafy_veg	6.09E-1	N/A
1330-20-7	Xylenes	br_forage	6.09E-1	N/A
1330-20-7	Xylenes	bv_leafy_veg	2.24	N/A
1330-20-7	Xylenes	bv_forage	2.24	N/A
1330-20-7	Xylenes	ba_milk	2.61E-03	N/A
1330-20-7	Xylenes	ba_beef	1.24E-02	N/A
1330-20-7	Xylenes	ba_pork	1.5E-02	N/A
1330-20-7	Xylenes	bcf_egg	1.05E-2	N/A
1330-20-7	Xylenes	bcf_chicken	0	N/A
1330-20-7	Xylenes	bcf_fish	50.4	N/A
1330-20-7	Xylenes	baf_fish	0	N/A
1330-20-7	Xylenes	bsaf_fish	0	N/A
1330-20-7	Xylenes	rfd	2E-1	N/A
1330-20-7	Xylenes	oral_csf	0	N/A
1330-20-7	Xylenes	rfc	1.1E-1	N/A
1330-20-7	Xylenes	inhalation_urf	0	N/A
1330-20-7	Xylenes	inhalation_csf	0	N/A
1330-20-7	Xylenes	chemical_type	O	N/A
1330-20-7	Xylenes	chemical_subtyp		N/A
1330-20-7	Xylenes	br_grain	6.09E-1	N/A
1330-20-7	Xylenes	ba_egg	5.22E-03	N/A
1330-20-7	Xylenes	ba_chicken	9.14E-3	N/A
1330-20-7	Xylenes	inhalation_rfd	3E-2	N/A
1330-20-7	Xylenes	tef	0	N/A
16065-83-1	Chromium III	cas_number	16065-83-1	N/A
16065-83-1	Chromium III	copc_name	Chromium III	N/A
16065-83-1	Chromium III	mw	52.0	N/A
16065-83-1	Chromium III	t_m	2.17E+3	N/A

COPC

CAS No.	COPC Name	Symbol	Current	Original
16065-83-1	Chromium III	v_p	0	N/A
16065-83-1	Chromium III	s	0	N/A
16065-83-1	Chromium III	h	0	N/A
16065-83-1	Chromium III	d_a	1.01E-1	N/A
16065-83-1	Chromium III	dw	4.63E-5	N/A
16065-83-1	Chromium III	k_ow	0	N/A
16065-83-1	Chromium III	k_oc	0	N/A
16065-83-1	Chromium III	kd_s	1.8E+6	N/A
16065-83-1	Chromium III	kd_sw	1.8E+6	N/A
16065-83-1	Chromium III	kd_bs	1.8E+6	N/A
16065-83-1	Chromium III	k_sg	0	N/A
16065-83-1	Chromium III	f_v	0	N/A
16065-83-1	Chromium III	rcf	0	N/A
16065-83-1	Chromium III	br_root_veg	0	N/A
16065-83-1	Chromium III	br_leafy_veg	0	N/A
16065-83-1	Chromium III	br_forage	7.5E-3	N/A
16065-83-1	Chromium III	bv_leafy_veg	0	N/A
16065-83-1	Chromium III	bv_forage	0	N/A
16065-83-1	Chromium III	ba_milk	0	N/A
16065-83-1	Chromium III	ba_beef	0	N/A
16065-83-1	Chromium III	ba_pork	0	N/A
16065-83-1	Chromium III	bcf_egg	0	N/A
16065-83-1	Chromium III	bcf_chicken	0	N/A
16065-83-1	Chromium III	bcf_fish	0	N/A
16065-83-1	Chromium III	baf_fish	0	N/A
16065-83-1	Chromium III	bsaf_fish	0	N/A
16065-83-1	Chromium III	rfd	1.5	N/A
16065-83-1	Chromium III	oral_csf	0	N/A
16065-83-1	Chromium III	rfc	0	N/A
16065-83-1	Chromium III	inhalation_urf	0	N/A
16065-83-1	Chromium III	inhalation_csf	0	N/A
16065-83-1	Chromium III	chemical_type	I	N/A
16065-83-1	Chromium III	chemical_subtyp	Metal	N/A
16065-83-1	Chromium III	br_grain	4.5E-3	N/A
16065-83-1	Chromium III	ba_egg	0	N/A
16065-83-1	Chromium III	ba_chicken	0	N/A
16065-83-1	Chromium III	inhalation_rfd	0	N/A
16065-83-1	Chromium III	tef	0	N/A
1634-04-4	Methyl Tert-butyl Ether	cas_number	1634-04-4	N/A
1634-04-4	Methyl Tert-butyl Ether	copc_name	Methyl Tert-butyl Et	N/A
1634-04-4	Methyl Tert-butyl Ether	mw	88.2	N/A
1634-04-4	Methyl Tert-butyl Ether	t_m	1.65E+2	N/A
1634-04-4	Methyl Tert-butyl Ether	v_p	2.5E+2	N/A
1634-04-4	Methyl Tert-butyl Ether	s	5.1E+4	N/A
1634-04-4	Methyl Tert-butyl Ether	h	5.55E-4	N/A
1634-04-4	Methyl Tert-butyl Ether	d_a	1.02E-1	N/A

COPC

CAS No.	COPC Name	Symbol	Current	Original
1634-04-4	Methyl Tert-butyl Ether	dw	1.05E-5	N/A
1634-04-4	Methyl Tert-butyl Ether	k_ow	8.71	N/A
1634-04-4	Methyl Tert-butyl Ether	k_oc	1.12E+1	N/A
1634-04-4	Methyl Tert-butyl Ether	kd_s	1.12E-1	N/A
1634-04-4	Methyl Tert-butyl Ether	kd_sw	8.4E-1	N/A
1634-04-4	Methyl Tert-butyl Ether	kd_bs	4.48E-1	N/A
1634-04-4	Methyl Tert-butyl Ether	k_sg	0	N/A
1634-04-4	Methyl Tert-butyl Ether	f_v	1	N/A
1634-04-4	Methyl Tert-butyl Ether	rcf	9.8E-1	N/A
1634-04-4	Methyl Tert-butyl Ether	br_root_veg	8.75	N/A
1634-04-4	Methyl Tert-butyl Ether	br_leafy_veg	1.11E+1	N/A
1634-04-4	Methyl Tert-butyl Ether	br_forage	1.11E+1	N/A
1634-04-4	Methyl Tert-butyl Ether	bv_leafy_veg	1.01E-1	N/A
1634-04-4	Methyl Tert-butyl Ether	bv_forage	1.01E-1	N/A
1634-04-4	Methyl Tert-butyl Ether	ba_milk	9.13E-05	N/A
1634-04-4	Methyl Tert-butyl Ether	ba_beef	4.34E-04	N/A
1634-04-4	Methyl Tert-butyl Ether	ba_pork	5.25E-04	N/A
1634-04-4	Methyl Tert-butyl Ether	bcf_egg	6.92E-5	N/A
1634-04-4	Methyl Tert-butyl Ether	bcf_chicken	0	N/A
1634-04-4	Methyl Tert-butyl Ether	bcf_fish	3.16	N/A
1634-04-4	Methyl Tert-butyl Ether	baf_fish	0	N/A
1634-04-4	Methyl Tert-butyl Ether	bsaf_fish	0	N/A
1634-04-4	Methyl Tert-butyl Ether	rfd	0	N/A
1634-04-4	Methyl Tert-butyl Ether	oral_csf	4E-3	N/A
1634-04-4	Methyl Tert-butyl Ether	rfc	3	N/A
1634-04-4	Methyl Tert-butyl Ether	inhalation_urf	0	N/A
1634-04-4	Methyl Tert-butyl Ether	inhalation_csf	0	N/A
1634-04-4	Methyl Tert-butyl Ether	chemical_type	O	N/A
1634-04-4	Methyl Tert-butyl Ether	chemical_subtyp		N/A
1634-04-4	Methyl Tert-butyl Ether	br_grain	1.11E+1	N/A
1634-04-4	Methyl Tert-butyl Ether	ba_egg	1.83E-04	N/A
1634-04-4	Methyl Tert-butyl Ether	ba_chicken	3.19E-04	N/A
1634-04-4	Methyl Tert-butyl Ether	inhalation_rfd	8.57E-1	N/A
1634-04-4	Methyl Tert-butyl Ether	tef	0	N/A
1746-01-6	TetraCDD, 2,3,7,8-	rfd	0	1E-9
1746-01-6	TetraCDD, 2,3,7,8-	inhalation_urf	43	0
191-24-2	Benzo(g,h,i)perylene	cas_number	191-24-2	N/A
191-24-2	Benzo(g,h,i)perylene	copc_name	Benzo(g,h,i)perylene	N/A
191-24-2	Benzo(g,h,i)perylene	mw	276.34	N/A
191-24-2	Benzo(g,h,i)perylene	t_m	551	N/A
191-24-2	Benzo(g,h,i)perylene	v_p	1.3E-13	N/A
191-24-2	Benzo(g,h,i)perylene	s	0.00026	N/A
191-24-2	Benzo(g,h,i)perylene	h	1.41E-07	N/A
191-24-2	Benzo(g,h,i)perylene	d_a	0.49	N/A
191-24-2	Benzo(g,h,i)perylene	dw	0.0000049	N/A
191-24-2	Benzo(g,h,i)perylene	k_ow	4.27E+6	N/A

COPC

CAS No.	COPC Name	Symbol	Current	Original
191-24-2	Benzo(g,h,i)perylene	k_oc	2.68E+6	N/A
191-24-2	Benzo(g,h,i)perylene	kd_s	2.68E+4	N/A
191-24-2	Benzo(g,h,i)perylene	kd_sw	2.01E+5	N/A
191-24-2	Benzo(g,h,i)perylene	kd_bs	1.07E+5	N/A
191-24-2	Benzo(g,h,i)perylene	k_sg	0	N/A
191-24-2	Benzo(g,h,i)perylene	f_v	0.994	N/A
191-24-2	Benzo(g,h,i)perylene	rcf	3.85E+3	N/A
191-24-2	Benzo(g,h,i)perylene	br_root_veg	0.144	N/A
191-24-2	Benzo(g,h,i)perylene	br_leafy_veg	5.7E-3	N/A
191-24-2	Benzo(g,h,i)perylene	br_forage	5.7E-3	N/A
191-24-2	Benzo(g,h,i)perylene	bv_leafy_veg	4.57E8	N/A
191-24-2	Benzo(g,h,i)perylene	bv_forage	4.57E8	N/A
191-24-2	Benzo(g,h,i)perylene	ba_milk	6.09E-3	N/A
191-24-2	Benzo(g,h,i)perylene	ba_beef	2.89E-02	N/A
191-24-2	Benzo(g,h,i)perylene	ba_pork	3.5E-02	N/A
191-24-2	Benzo(g,h,i)perylene	bcf_egg	1.22E-02	N/A
191-24-2	Benzo(g,h,i)perylene	bcf_chicken	2.13E-02	N/A
191-24-2	Benzo(g,h,i)perylene	bcf_fish	2.54E+4	N/A
191-24-2	Benzo(g,h,i)perylene	baf_fish	0	N/A
191-24-2	Benzo(g,h,i)perylene	bsaf_fish	0	N/A
191-24-2	Benzo(g,h,i)perylene	rfd	0.03	N/A
191-24-2	Benzo(g,h,i)perylene	oral_csf	0	N/A
191-24-2	Benzo(g,h,i)perylene	rfc	0.11	N/A
191-24-2	Benzo(g,h,i)perylene	inhalation_urf	0	N/A
191-24-2	Benzo(g,h,i)perylene	inhalation_csf	0	N/A
191-24-2	Benzo(g,h,i)perylene	chemical_type	O	N/A
191-24-2	Benzo(g,h,i)perylene	chemical_subtyp		N/A
191-24-2	Benzo(g,h,i)perylene	br_grain	5.7E-3	N/A
191-24-2	Benzo(g,h,i)perylene	ba_egg	1.22E-2	N/A
191-24-2	Benzo(g,h,i)perylene	ba_chicken	2.13E-2	N/A
191-24-2	Benzo(g,h,i)perylene	inhalation_rfd	0.03	N/A
191-24-2	Benzo(g,h,i)perylene	tef	0	N/A
19406-51-0	Amino-2,6-Dinitrotoluene, 4-	cas_number	19406-51-0	N/A
19406-51-0	Amino-2,6-Dinitrotoluene, 4-	copc_name	Amino-2,6-Dinitrotol	N/A
19406-51-0	Amino-2,6-Dinitrotoluene, 4-	mw	197.2	N/A
19406-51-0	Amino-2,6-Dinitrotoluene, 4-	t_m	4.48E+2	N/A
19406-51-0	Amino-2,6-Dinitrotoluene, 4-	v_p	5.3E-8	N/A
19406-51-0	Amino-2,6-Dinitrotoluene, 4-	s	2.8E+3	N/A
19406-51-0	Amino-2,6-Dinitrotoluene, 4-	h	3.73E-9	N/A
19406-51-0	Amino-2,6-Dinitrotoluene, 4-	d_a	5.61E-2	N/A
19406-51-0	Amino-2,6-Dinitrotoluene, 4-	dw	6.49E-6	N/A
19406-51-0	Amino-2,6-Dinitrotoluene, 4-	k_ow	1.15E+1	N/A
19406-51-0	Amino-2,6-Dinitrotoluene, 4-	k_oc	1.10E+01	N/A
19406-51-0	Amino-2,6-Dinitrotoluene, 4-	kd_s	9.78E-3	N/A
19406-51-0	Amino-2,6-Dinitrotoluene, 4-	kd_sw	7.34E-2	N/A
19406-51-0	Amino-2,6-Dinitrotoluene, 4-	kd_bs	3.91E-2	N/A

COPC

CAS No.	COPC Name	Symbol	Current	Original
19406-51-0	Amino-2,6-Dinitrotoluene, 4-	k_sg	2.14E+1	N/A
19406-51-0	Amino-2,6-Dinitrotoluene, 4-	f_v	9.66E-1	N/A
19406-51-0	Amino-2,6-Dinitrotoluene, 4-	rcf	1.02	N/A
19406-51-0	Amino-2,6-Dinitrotoluene, 4-	br_root_veg	1.04E+2	N/A
19406-51-0	Amino-2,6-Dinitrotoluene, 4-	br_leafy_veg	9.44	N/A
19406-51-0	Amino-2,6-Dinitrotoluene, 4-	br_forage	9.44	N/A
19406-51-0	Amino-2,6-Dinitrotoluene, 4-	bv_leafy_veg	2.02E+4	N/A
19406-51-0	Amino-2,6-Dinitrotoluene, 4-	bv_forage	2.02E+4	N/A
19406-51-0	Amino-2,6-Dinitrotoluene, 4-	ba_milk	1.16E-04	N/A
19406-51-0	Amino-2,6-Dinitrotoluene, 4-	ba_beef	5.52E-04	N/A
19406-51-0	Amino-2,6-Dinitrotoluene, 4-	ba_pork	6.69E-04	N/A
19406-51-0	Amino-2,6-Dinitrotoluene, 4-	bcf_egg	9.13E-5	N/A
19406-51-0	Amino-2,6-Dinitrotoluene, 4-	bcf_chicken	0	N/A
19406-51-0	Amino-2,6-Dinitrotoluene, 4-	bcf_fish	1.31	N/A
19406-51-0	Amino-2,6-Dinitrotoluene, 4-	baf_fish	0	N/A
19406-51-0	Amino-2,6-Dinitrotoluene, 4-	bsaf_fish	0	N/A
19406-51-0	Amino-2,6-Dinitrotoluene, 4-	rfd	2E-3	N/A
19406-51-0	Amino-2,6-Dinitrotoluene, 4-	oral_csf	0	N/A
19406-51-0	Amino-2,6-Dinitrotoluene, 4-	rfc	0	N/A
19406-51-0	Amino-2,6-Dinitrotoluene, 4-	inhalation_urf	0	N/A
19406-51-0	Amino-2,6-Dinitrotoluene, 4-	inhalation_csf	0	N/A
19406-51-0	Amino-2,6-Dinitrotoluene, 4-	chemical_type	O	N/A
19406-51-0	Amino-2,6-Dinitrotoluene, 4-	chemical_subtyp		N/A
19406-51-0	Amino-2,6-Dinitrotoluene, 4-	br_grain	9.44	N/A
19406-51-0	Amino-2,6-Dinitrotoluene, 4-	ba_egg	2.33E-04	N/A
19406-51-0	Amino-2,6-Dinitrotoluene, 4-	ba_chicken	4.07E-04	N/A
19406-51-0	Amino-2,6-Dinitrotoluene, 4-	inhalation_rfd	0	N/A
19406-51-0	Amino-2,6-Dinitrotoluene, 4-	tef	0	N/A
19408-74-3	HexaCDD, 1,2,3,7,8,9-	oral_csf	15000	0.0062
19408-74-3	HexaCDD, 1,2,3,7,8,9-	inhalation_urf	4.3	1.3
208-96-8	Acenaphthylene	cas_number	208-96-8	N/A
208-96-8	Acenaphthylene	copc_name	Acenaphthylene	N/A
208-96-8	Acenaphthylene	mw	152	N/A
208-96-8	Acenaphthylene	t_m	365.5	N/A
208-96-8	Acenaphthylene	v_p	1.2E-06	N/A
208-96-8	Acenaphthylene	s	16.1	N/A
208-96-8	Acenaphthylene	h	1.14E-4	N/A
208-96-8	Acenaphthylene	d_a	0.0439	N/A
208-96-8	Acenaphthylene	dw	0.00000753	N/A
208-96-8	Acenaphthylene	k_ow	8700	N/A
208-96-8	Acenaphthylene	k_oc	612E+03	N/A
208-96-8	Acenaphthylene	kd_s	61.2	N/A
208-96-8	Acenaphthylene	kd_sw	459	N/A
208-96-8	Acenaphthylene	kd_bs	245	N/A
208-96-8	Acenaphthylene	k_sg	0	N/A
208-96-8	Acenaphthylene	f_v	1	N/A

COPC

CAS No.	COPC Name	Symbol	Current	Original
208-96-8	Acenaphthylene	rcf	32.6	N/A
208-96-8	Acenaphthylene	br_root_veg	0.533	N/A
208-96-8	Acenaphthylene	br_leafy_veg	0.205	N/A
208-96-8	Acenaphthylene	br_forage	0.205	N/A
208-96-8	Acenaphthylene	bv_leafy_veg	769	N/A
208-96-8	Acenaphthylene	bv_forage	769	N/A
208-96-8	Acenaphthylene	ba_milk	5.26E-3	N/A
208-96-8	Acenaphthylene	ba_beef	2.5E-2	N/A
208-96-8	Acenaphthylene	ba_pork	3.02E-2	N/A
208-96-8	Acenaphthylene	bcf_egg	1.05E-2	N/A
208-96-8	Acenaphthylene	bcf_chicken	1.84E-2	N/A
208-96-8	Acenaphthylene	bcf_fish	215	N/A
208-96-8	Acenaphthylene	baf_fish	0	N/A
208-96-8	Acenaphthylene	bsaf_fish	0	N/A
208-96-8	Acenaphthylene	rfd	0.06	N/A
208-96-8	Acenaphthylene	oral_csf	0	N/A
208-96-8	Acenaphthylene	rfc	0.21	N/A
208-96-8	Acenaphthylene	inhalation_urf	0	N/A
208-96-8	Acenaphthylene	inhalation_csf	0	N/A
208-96-8	Acenaphthylene	chemical_type	O	N/A
208-96-8	Acenaphthylene	chemical_subtyp		N/A
208-96-8	Acenaphthylene	br_grain	0.205	N/A
208-96-8	Acenaphthylene	ba_egg	1.05E-2	N/A
208-96-8	Acenaphthylene	ba_chicken	1.84E-02	N/A
208-96-8	Acenaphthylene	inhalation_rfd	0.06	N/A
208-96-8	Acenaphthylene	tef	0	N/A
2691-41-0	HMX	cas_number	2691-41-0	N/A
2691-41-0	HMX	copc_name	HMX	N/A
2691-41-0	HMX	mw	296.2	N/A
2691-41-0	HMX	t_m	5.59E+2	N/A
2691-41-0	HMX	v_p	1.6E-3	N/A
2691-41-0	HMX	s	6.6	N/A
2691-41-0	HMX	h	2.6E-15	N/A
2691-41-0	HMX	d_a	4.28E-2	N/A
2691-41-0	HMX	dw	4.95E-6	N/A
2691-41-0	HMX	k_ow	3.89	N/A
2691-41-0	HMX	k_oc	3.8	N/A
2691-41-0	HMX	kd_s	6.11E-3	N/A
2691-41-0	HMX	kd_sw	4.58E-2	N/A
2691-41-0	HMX	kd_bs	2.44E-2	N/A
2691-41-0	HMX	k_sg	1.85E+1	N/A
2691-41-0	HMX	f_v	1	N/A
2691-41-0	HMX	rcf	9.06E-1	N/A
2691-41-0	HMX	br_root_veg	1.48E+2	N/A
2691-41-0	HMX	br_leafy_veg	1.77E+1	N/A
2691-41-0	HMX	br_forage	1.77E+1	N/A

COPC

CAS No.	COPC Name	Symbol	Current	Original
2691-41-0	HMX	bv_leafy_veg	0	N/A
2691-41-0	HMX	bv_forage	0	N/A
2691-41-0	HMX	ba_milk	4.35E-05	N/A
2691-41-0	HMX	ba_beef	2.07E-04	N/A
2691-41-0	HMX	ba_pork	2.50E-04	N/A
2691-41-0	HMX	bcf_egg	3.09E-5	N/A
2691-41-0	HMX	bcf_chicken	0	N/A
2691-41-0	HMX	bcf_fish	3.16	N/A
2691-41-0	HMX	baf_fish	0	N/A
2691-41-0	HMX	bsaf_fish	0	N/A
2691-41-0	HMX	rfd	5E-2	N/A
2691-41-0	HMX	oral_csf	0	N/A
2691-41-0	HMX	rfc	0	N/A
2691-41-0	HMX	inhalation_urf	0	N/A
2691-41-0	HMX	inhalation_csf	0	N/A
2691-41-0	HMX	chemical_type	O	N/A
2691-41-0	HMX	chemical_subtyp		N/A
2691-41-0	HMX	br_grain	1.77E+1	N/A
2691-41-0	HMX	ba_egg	8.71E-05	N/A
2691-41-0	HMX	ba_chicken	1.52E-04	N/A
2691-41-0	HMX	inhalation_rfd	0	N/A
2691-41-0	HMX	tef	0	N/A
3268-87-9	OctaCDD, 1,2,3,4,6,7,8,9-	oral_csf	150	0
3268-87-9	OctaCDD, 1,2,3,4,6,7,8,9-	inhalation_urf	0.013	0
3268-87-9	OctaCDD, 1,2,3,4,6,7,8,9-	inhalation_csf	45	150
3268-87-9	OctaCDD, 1,2,3,4,6,7,8,9-	tef	0.0003	0.0001
35572-78-2	Amino-4,6-Dinitrotoluene, 2-	cas_number	35572-78-2	N/A
35572-78-2	Amino-4,6-Dinitrotoluene, 2-	copc_name	Amino-4,6-Dinitrotol	N/A
35572-78-2	Amino-4,6-Dinitrotoluene, 2-	mw	197.2	N/A
35572-78-2	Amino-4,6-Dinitrotoluene, 2-	t_m	4.48E+2	N/A
35572-78-2	Amino-4,6-Dinitrotoluene, 2-	v_p	5.3E-8	N/A
35572-78-2	Amino-4,6-Dinitrotoluene, 2-	s	3.73E-9	N/A
35572-78-2	Amino-4,6-Dinitrotoluene, 2-	h	3.73E-9	N/A
35572-78-2	Amino-4,6-Dinitrotoluene, 2-	d_a	5.61E-2	N/A
35572-78-2	Amino-4,6-Dinitrotoluene, 2-	dw	6.49E-6	N/A
35572-78-2	Amino-4,6-Dinitrotoluene, 2-	k_ow	1.15E+1	N/A
35572-78-2	Amino-4,6-Dinitrotoluene, 2-	k_oc	11	N/A
35572-78-2	Amino-4,6-Dinitrotoluene, 2-	kd_s	9.78E-3	N/A
35572-78-2	Amino-4,6-Dinitrotoluene, 2-	kd_sw	7.34E-2	N/A
35572-78-2	Amino-4,6-Dinitrotoluene, 2-	kd_bs	3.91E-2	N/A
35572-78-2	Amino-4,6-Dinitrotoluene, 2-	k_sg	2.14E+1	N/A
35572-78-2	Amino-4,6-Dinitrotoluene, 2-	f_v	9.66E-1	N/A
35572-78-2	Amino-4,6-Dinitrotoluene, 2-	rcf	1.02	N/A
35572-78-2	Amino-4,6-Dinitrotoluene, 2-	br_root_veg	1.04E+2	N/A
35572-78-2	Amino-4,6-Dinitrotoluene, 2-	br_leafy_veg	9.44	N/A
35572-78-2	Amino-4,6-Dinitrotoluene, 2-	br_forage	9.44	N/A

COPC

CAS No.	COPC Name	Symbol	Current	Original
35572-78-2	Amino-4,6-Dinitrotoluene, 2-	bv_leafy_veg	2.02E+4	N/A
35572-78-2	Amino-4,6-Dinitrotoluene, 2-	bv_forage	2.02E+4	N/A
35572-78-2	Amino-4,6-Dinitrotoluene, 2-	ba_milk	1.16E-04	N/A
35572-78-2	Amino-4,6-Dinitrotoluene, 2-	ba_beef	5.52E-04	N/A
35572-78-2	Amino-4,6-Dinitrotoluene, 2-	ba_pork	6.69E-04	N/A
35572-78-2	Amino-4,6-Dinitrotoluene, 2-	bcf_egg	9.13E-5	N/A
35572-78-2	Amino-4,6-Dinitrotoluene, 2-	bcf_chicken	0	N/A
35572-78-2	Amino-4,6-Dinitrotoluene, 2-	bcf_fish	1.31	N/A
35572-78-2	Amino-4,6-Dinitrotoluene, 2-	baf_fish	0	N/A
35572-78-2	Amino-4,6-Dinitrotoluene, 2-	bsaf_fish	0	N/A
35572-78-2	Amino-4,6-Dinitrotoluene, 2-	rfd	2E-3	N/A
35572-78-2	Amino-4,6-Dinitrotoluene, 2-	oral_csf	0	N/A
35572-78-2	Amino-4,6-Dinitrotoluene, 2-	rfc	0	N/A
35572-78-2	Amino-4,6-Dinitrotoluene, 2-	inhalation_urf	0	N/A
35572-78-2	Amino-4,6-Dinitrotoluene, 2-	inhalation_csf	0	N/A
35572-78-2	Amino-4,6-Dinitrotoluene, 2-	chemical_type	O	N/A
35572-78-2	Amino-4,6-Dinitrotoluene, 2-	chemical_subtyp		N/A
35572-78-2	Amino-4,6-Dinitrotoluene, 2-	br_grain	9.44	N/A
35572-78-2	Amino-4,6-Dinitrotoluene, 2-	ba_egg	2.33E-04	N/A
35572-78-2	Amino-4,6-Dinitrotoluene, 2-	ba_chicken	4.07E-04	N/A
35572-78-2	Amino-4,6-Dinitrotoluene, 2-	inhalation_rfd	0	N/A
35572-78-2	Amino-4,6-Dinitrotoluene, 2-	tef	0	N/A
35822-46-9	HeptaCDD, 1,2,3,4,6,7,8-	oral_csf	1500	0
35822-46-9	HeptaCDD, 1,2,3,4,6,7,8-	inhalation_urf	0.43	0
39001-02-0	OctaCDF, 1,2,3,4,6,7,8,9-	oral_csf	150	0
39001-02-0	OctaCDF, 1,2,3,4,6,7,8,9-	inhalation_urf	0.013	0
39001-02-0	OctaCDF, 1,2,3,4,6,7,8,9-	inhalation_csf	45	150
39001-02-0	OctaCDF, 1,2,3,4,6,7,8,9-	tef	0.0003	0.0001
39227-28-6	HexaCDD, 1,2,3,4,7,8-	oral_csf	15000	0
39227-28-6	HexaCDD, 1,2,3,4,7,8-	inhalation_urf	4.3	0
40321-76-4	PentaCDD, 1,2,3,7,8-	oral_csf	150000	0
40321-76-4	PentaCDD, 1,2,3,7,8-	inhalation_urf	43	0
40321-76-4	PentaCDD, 1,2,3,7,8-	inhalation_csf	150000	75000
460-19-5	Ethanedinitrile	cas_number	460-19-5	N/A
460-19-5	Ethanedinitrile	copc_name	Ethanedinitrile	N/A
460-19-5	Ethanedinitrile	mw	52.0	N/A
460-19-5	Ethanedinitrile	t_m	2.45E+2	N/A
460-19-5	Ethanedinitrile	v_p	4.3E+3	N/A
460-19-5	Ethanedinitrile	s	8.5E+3	N/A
460-19-5	Ethanedinitrile	h	4.96E-3	N/A
460-19-5	Ethanedinitrile	d_a	2.04E-1	N/A
460-19-5	Ethanedinitrile	dw	1.37E-5	N/A
460-19-5	Ethanedinitrile	k_ow	1.17	N/A
460-19-5	Ethanedinitrile	k_oc	5.22	N/A
460-19-5	Ethanedinitrile	kd_s	5.22E-2	N/A
460-19-5	Ethanedinitrile	kd_sw	3.92E-1	N/A

COPC

CAS No.	COPC Name	Symbol	Current	Original
460-19-5	Ethanedinitrile	kd_bs	2.09E-1	N/A
460-19-5	Ethanedinitrile	k_sg	0	N/A
460-19-5	Ethanedinitrile	f_v	1	N/A
460-19-5	Ethanedinitrile	rcf	8.54E-1	N/A
460-19-5	Ethanedinitrile	br_root_veg	1.63E+1	N/A
460-19-5	Ethanedinitrile	br_leafy_veg	3.53E+1	N/A
460-19-5	Ethanedinitrile	br_forage	3.53E+1	N/A
460-19-5	Ethanedinitrile	bv_leafy_veg	1.34E-3	N/A
460-19-5	Ethanedinitrile	bv_forage	1.34E-3	N/A
460-19-5	Ethanedinitrile	ba_milk	1.31E-05	N/A
460-19-5	Ethanedinitrile	ba_beef	6.21E-05	N/A
460-19-5	Ethanedinitrile	ba_pork	7.52E-05	N/A
460-19-5	Ethanedinitrile	bcf_egg	9.33E-6	N/A
460-19-5	Ethanedinitrile	bcf_chicken	0	N/A
460-19-5	Ethanedinitrile	bcf_fish	3.16	N/A
460-19-5	Ethanedinitrile	baf_fish	0	N/A
460-19-5	Ethanedinitrile	bsaf_fish	0	N/A
460-19-5	Ethanedinitrile	rfd	4E-2	N/A
460-19-5	Ethanedinitrile	oral_csf	0	N/A
460-19-5	Ethanedinitrile	rfc	0	N/A
460-19-5	Ethanedinitrile	inhalation_urf	0	N/A
460-19-5	Ethanedinitrile	inhalation_csf	0	N/A
460-19-5	Ethanedinitrile	chemical_type	O	N/A
460-19-5	Ethanedinitrile	chemical_subtyp		N/A
460-19-5	Ethanedinitrile	br_grain	3.53E+1	N/A
460-19-5	Ethanedinitrile	ba_egg	2.62E-05	N/A
460-19-5	Ethanedinitrile	ba_chicken	4.58E-05	N/A
460-19-5	Ethanedinitrile	inhalation_rfd	0	N/A
460-19-5	Ethanedinitrile	tef	0	N/A
479-45-8	Tetryl	cas_number	479-45-8	N/A
479-45-8	Tetryl	copc_name	Tetryl	N/A
479-45-8	Tetryl	mw	287.2	N/A
479-45-8	Tetryl	t_m	404	N/A
479-45-8	Tetryl	v_p	1	N/A
479-45-8	Tetryl	s	75	N/A
479-45-8	Tetryl	h	1.89E-3	N/A
479-45-8	Tetryl	d_a	4.37E-2	N/A
479-45-8	Tetryl	dw	5.05E-6	N/A
479-45-8	Tetryl	k_ow	109	N/A
479-45-8	Tetryl	k_oc	1.74	N/A
479-45-8	Tetryl	kd_s	.0174	N/A
479-45-8	Tetryl	kd_sw	.131	N/A
479-45-8	Tetryl	kd_bs	6.96E-2	N/A
479-45-8	Tetryl	k_sg	0	N/A
479-45-8	Tetryl	f_v	1	N/A
479-45-8	Tetryl	rcf	1.94	N/A

COPC

CAS No.	COPC Name	Symbol	Current	Original
479-45-8	Tetryl	br_root_veg	1.11E2	N/A
479-45-8	Tetryl	br_leafy_veg	2.57	N/A
479-45-8	Tetryl	br_forage	2.57	N/A
479-45-8	Tetryl	bv_leafy_veg	4.37E-1	N/A
479-45-8	Tetryl	bv_forage	4.37E-1	N/A
479-45-8	Tetryl	ba_milk	8.66E-7	N/A
479-45-8	Tetryl	ba_beef	2.74E-6	N/A
479-45-8	Tetryl	ba_pork	3.29E-6	N/A
479-45-8	Tetryl	bcf_egg	8.66E-4	N/A
479-45-8	Tetryl	bcf_chicken	0	N/A
479-45-8	Tetryl	bcf_fish	2.08E+1	N/A
479-45-8	Tetryl	baf_fish	0	N/A
479-45-8	Tetryl	bsaf_fish	0	N/A
479-45-8	Tetryl	rfd	4E-3	N/A
479-45-8	Tetryl	oral_csf	0	N/A
479-45-8	Tetryl	rfc	0	N/A
479-45-8	Tetryl	inhalation_urf	0	N/A
479-45-8	Tetryl	inhalation_csf	0	N/A
479-45-8	Tetryl	chemical_type	O	N/A
479-45-8	Tetryl	chemical_subtyp		N/A
479-45-8	Tetryl	br_grain	2.57	N/A
479-45-8	Tetryl	ba_egg	8.66E-4	N/A
479-45-8	Tetryl	ba_chicken	2.19E-6	N/A
479-45-8	Tetryl	inhalation_rfd	0	N/A
479-45-8	Tetryl	tef	0	N/A
51207-31-9	TetraCDF, 2,3,7,8-	oral_csf	15000	0
51207-31-9	TetraCDF, 2,3,7,8-	inhalation_urf	4.3	0
55-63-0	Nitroglycerine	cas_number	55-63-0	N/A
55-63-0	Nitroglycerine	copc_name	Nitroglycerine	N/A
55-63-0	Nitroglycerine	mw	227.09	N/A
55-63-0	Nitroglycerine	t_m	2.86E+2	N/A
55-63-0	Nitroglycerine	v_p	4.73E-6	N/A
55-63-0	Nitroglycerine	s	1.38E+3	N/A
55-63-0	Nitroglycerine	h	7.78E-7	N/A
55-63-0	Nitroglycerine	d_a	5.1E-2	N/A
55-63-0	Nitroglycerine	dw	5.91E-6	N/A
55-63-0	Nitroglycerine	k_ow	4.43	N/A
55-63-0	Nitroglycerine	k_oc	4.32	N/A
55-63-0	Nitroglycerine	kd_s	6.55E-3	N/A
55-63-0	Nitroglycerine	kd_sw	4.91E-2	N/A
55-63-0	Nitroglycerine	kd_bs	2.62E-2	N/A
55-63-0	Nitroglycerine	k_sg	5.5E+2	N/A
55-63-0	Nitroglycerine	f_v	1	N/A
55-63-0	Nitroglycerine	rcf	9.15E-1	N/A
55-63-0	Nitroglycerine	br_root_veg	1.4E+2	N/A
55-63-0	Nitroglycerine	br_leafy_veg	1.64E+1	N/A

COPC

CAS No.	COPC Name	Symbol	Current	Original
55-63-0	Nitroglycerine	br_forage	1.64E+1	N/A
55-63-0	Nitroglycerine	bv_leafy_veg	3.5E+1	N/A
55-63-0	Nitroglycerine	bv_forage	3.5E+1	N/A
55-63-0	Nitroglycerine	ba_milk	4.92E-05	N/A
55-63-0	Nitroglycerine	ba_beef	2.34E-04	N/A
55-63-0	Nitroglycerine	ba_pork	2.83E-04	N/A
55-63-0	Nitroglycerine	bcf_egg	3.52E-5	N/A
55-63-0	Nitroglycerine	bcf_chicken	0	N/A
55-63-0	Nitroglycerine	bcf_fish	3.16	N/A
55-63-0	Nitroglycerine	baf_fish	0	N/A
55-63-0	Nitroglycerine	bsaf_fish	0	N/A
55-63-0	Nitroglycerine	rfd	1E-04	N/A
55-63-0	Nitroglycerine	oral_csf	1.7E-2	N/A
55-63-0	Nitroglycerine	rfc	0	N/A
55-63-0	Nitroglycerine	inhalation_urf	0	N/A
55-63-0	Nitroglycerine	inhalation_csf	0	N/A
55-63-0	Nitroglycerine	chemical_type	O	N/A
55-63-0	Nitroglycerine	chemical_subtyp		N/A
55-63-0	Nitroglycerine	br_grain	1.64E+1	N/A
55-63-0	Nitroglycerine	ba_egg	9.85E-05	N/A
55-63-0	Nitroglycerine	ba_chicken	1.72E-04	N/A
55-63-0	Nitroglycerine	inhalation_rfd	0	N/A
55-63-0	Nitroglycerine	tef	0	N/A
55673-89-7	HeptaCDF, 1,2,3,4,7,8,9-	oral_csf	1500	0
55673-89-7	HeptaCDF, 1,2,3,4,7,8,9-	inhalation_urf	0.43	0
57117-31-4	PentaCDF, 2,3,4,7,8-	oral_csf	450000	0
57117-31-4	PentaCDF, 2,3,4,7,8-	inhalation_urf	13	0
57117-31-4	PentaCDF, 2,3,4,7,8-	inhalation_csf	45000	75000
57117-31-4	PentaCDF, 2,3,4,7,8-	tef	0.3	0.5
57117-41-6	PentaCDF, 1,2,3,7,8-	oral_csf	4500	0
57117-41-6	PentaCDF, 1,2,3,7,8-	inhalation_urf	1.3	0
57117-41-6	PentaCDF, 1,2,3,7,8-	inhalation_csf	4500	7500
57117-41-6	PentaCDF, 1,2,3,7,8-	tef	0.03	0.05
57117-44-9	HexaCDF, 1,2,3,6,7,8-	oral_csf	15000	0
57117-44-9	HexaCDF, 1,2,3,6,7,8-	inhalation_urf	4.3	0
57653-85-7	HexaCDD, 1,2,3,6,7,8-	oral_csf	15000	0.0062
57653-85-7	HexaCDD, 1,2,3,6,7,8-	inhalation_urf	4.3	1.3
60-29-7	Diethyl Ether	cas_number	60-29-7	N/A
60-29-7	Diethyl Ether	copc_name	Diethyl Ether	N/A
60-29-7	Diethyl Ether	mw	74.1	N/A
60-29-7	Diethyl Ether	t_m	1.57E+2	N/A
60-29-7	Diethyl Ether	v_p	5.38E+2	N/A
60-29-7	Diethyl Ether	s	5.68E+4	N/A
60-29-7	Diethyl Ether	h	6.8E-4	N/A
60-29-7	Diethyl Ether	d_a	7.4E-2	N/A
60-29-7	Diethyl Ether	dw	9.3E-6	N/A

COPC

CAS No.	COPC Name	Symbol	Current	Original
60-29-7	Diethyl Ether	k_ow	7.76	N/A
60-29-7	Diethyl Ether	k_oc	2.38E+1	N/A
60-29-7	Diethyl Ether	kd_s	2.38E-1	N/A
60-29-7	Diethyl Ether	kd_sw	1.78	N/A
60-29-7	Diethyl Ether	kd_bs	9.52E-1	N/A
60-29-7	Diethyl Ether	k_sg	0	N/A
60-29-7	Diethyl Ether	f_v	1	N/A
60-29-7	Diethyl Ether	rcf	0.966	N/A
60-29-7	Diethyl Ether	br_root_veg	4.06	N/A
60-29-7	Diethyl Ether	br_leafy_veg	1.18E+1	N/A
60-29-7	Diethyl Ether	br_forage	1.18E+1	N/A
60-29-7	Diethyl Ether	bv_leafy_veg	7.29E-2	N/A
60-29-7	Diethyl Ether	bv_forage	7.29E-2	N/A
60-29-7	Diethyl Ether	ba_milk	8.24E-05	N/A
60-29-7	Diethyl Ether	ba_beef	3.91E-04	N/A
60-29-7	Diethyl Ether	ba_pork	4.74E-04	N/A
60-29-7	Diethyl Ether	bcf_egg	6.17E-5	N/A
60-29-7	Diethyl Ether	bcf_chicken	0	N/A
60-29-7	Diethyl Ether	bcf_fish	3.16	N/A
60-29-7	Diethyl Ether	baf_fish	0	N/A
60-29-7	Diethyl Ether	bsaf_fish	0	N/A
60-29-7	Diethyl Ether	rfd	2E-1	N/A
60-29-7	Diethyl Ether	oral_csf	0	N/A
60-29-7	Diethyl Ether	rfc	0	N/A
60-29-7	Diethyl Ether	inhalation_urf	0	N/A
60-29-7	Diethyl Ether	inhalation_csf	0	N/A
60-29-7	Diethyl Ether	chemical_type	O	N/A
60-29-7	Diethyl Ether	chemical_subtyp		N/A
60-29-7	Diethyl Ether	br_grain	1.18E+1	N/A
60-29-7	Diethyl Ether	ba_egg	1.65E-04	N/A
60-29-7	Diethyl Ether	ba_chicken	2.88E-04	N/A
60-29-7	Diethyl Ether	inhalation_rfd	0	N/A
60-29-7	Diethyl Ether	tef	0	N/A
60851-34-5	HexaCDF, 2,3,4,6,7,8-	oral_csf	15000	0
60851-34-5	HexaCDF, 2,3,4,6,7,8-	inhalation_urf	4.3	0
67562-39-4	HeptaCDF, 1,2,3,4,6,7,8-	oral_csf	1500	0
67562-39-4	HeptaCDF, 1,2,3,4,6,7,8-	inhalation_urf	0.43	0
70648-26-9	HexaCDF, 1,2,3,4,7,8-	oral_csf	15000	0
70648-26-9	HexaCDF, 1,2,3,4,7,8-	inhalation_urf	4.3	0
71-36-3	Butanol, 1-	cas_number	71-36-3	N/A
71-36-3	Butanol, 1-	copc_name	Butanol, 1-	N/A
71-36-3	Butanol, 1-	mw	74.1	N/A
71-36-3	Butanol, 1-	t_m	1.83E+2	N/A
71-36-3	Butanol, 1-	v_p	6.7	N/A
71-36-3	Butanol, 1-	s	7.4E+4	N/A
71-36-3	Butanol, 1-	h	8.8E-6	N/A

COPC

CAS No.	COPC Name	Symbol	Current	Original
71-36-3	Butanol, 1-	d_a	8E-2	N/A
71-36-3	Butanol, 1-	dw	9.3E-6	N/A
71-36-3	Butanol, 1-	k_ow	7.59	N/A
71-36-3	Butanol, 1-	k_oc	6.92	N/A
71-36-3	Butanol, 1-	kd_s	6.92E-2	N/A
71-36-3	Butanol, 1-	kd_sw	5.19E-1	N/A
71-36-3	Butanol, 1-	kd_bs	2.77E-1	N/A
71-36-3	Butanol, 1-	k_sg	0	N/A
71-36-3	Butanol, 1-	f_v	1	N/A
71-36-3	Butanol, 1-	rcf	9.64E-1	N/A
71-36-3	Butanol, 1-	br_root_veg	1.39E+1	N/A
71-36-3	Butanol, 1-	br_leafy_veg	1.2E+1	N/A
71-36-3	Butanol, 1-	br_forage	1.2E+1	N/A
71-36-3	Butanol, 1-	bv_leafy_veg	5.49	N/A
71-36-3	Butanol, 1-	bv_forage	5.49	N/A
71-36-3	Butanol, 1-	ba_milk	8.07E-05	N/A
71-36-3	Butanol, 1-	ba_beef	3.83E-04	N/A
71-36-3	Butanol, 1-	ba_pork	4.64E-04	N/A
71-36-3	Butanol, 1-	bcf_egg	6.03E-5	N/A
71-36-3	Butanol, 1-	bcf_chicken	0	N/A
71-36-3	Butanol, 1-	bcf_fish	3.16	N/A
71-36-3	Butanol, 1-	baf_fish	0	N/A
71-36-3	Butanol, 1-	bsaf_fish	0	N/A
71-36-3	Butanol, 1-	rfd	1E-1	N/A
71-36-3	Butanol, 1-	oral_csf	0	N/A
71-36-3	Butanol, 1-	rfc	0	N/A
71-36-3	Butanol, 1-	inhalation_urf	0	N/A
71-36-3	Butanol, 1-	inhalation_csf	0	N/A
71-36-3	Butanol, 1-	chemical_type	O	N/A
71-36-3	Butanol, 1-	chemical_subtyp		N/A
71-36-3	Butanol, 1-	br_grain	1.2E+1	N/A
71-36-3	Butanol, 1-	ba_egg	1.61E-04	N/A
71-36-3	Butanol, 1-	ba_chicken	2.83E-04	N/A
71-36-3	Butanol, 1-	inhalation_rfd	0	N/A
71-36-3	Butanol, 1-	tef	0	N/A
71-55-6	Trichloroethane, 1,1,1-	rfd	0.28	0.02
72918-21-9	HexaCDF, 1,2,3,7,8,9-	oral_csf	15000	0
72918-21-9	HexaCDF, 1,2,3,7,8,9-	inhalation_urf	4.3	0
74-90-8	Hydrogen Cyanide	cas_number	74-90-8	N/A
74-90-8	Hydrogen Cyanide	copc_name	Hydrogen Cyanide	N/A
74-90-8	Hydrogen Cyanide	mw	27.03	N/A
74-90-8	Hydrogen Cyanide	t_m	2.6E+2	N/A
74-90-8	Hydrogen Cyanide	v_p	9.76E-1	N/A
74-90-8	Hydrogen Cyanide	s	1E+6	N/A
74-90-8	Hydrogen Cyanide	h	2.64E-5	N/A
74-90-8	Hydrogen Cyanide	d_a	2.11E-1	N/A

COPC

CAS No.	COPC Name	Symbol	Current	Original
74-90-8	Hydrogen Cyanide	dw	2.44E-5	N/A
74-90-8	Hydrogen Cyanide	k_ow	0	N/A
74-90-8	Hydrogen Cyanide	k_oc	0	N/A
74-90-8	Hydrogen Cyanide	kd_s	0	N/A
74-90-8	Hydrogen Cyanide	kd_sw	0	N/A
74-90-8	Hydrogen Cyanide	kd_bs	0	N/A
74-90-8	Hydrogen Cyanide	k_sg	2.14E+1	N/A
74-90-8	Hydrogen Cyanide	f_v	1	N/A
74-90-8	Hydrogen Cyanide	rcf	0	N/A
74-90-8	Hydrogen Cyanide	br_root_veg	0	N/A
74-90-8	Hydrogen Cyanide	br_leafy_veg	0	N/A
74-90-8	Hydrogen Cyanide	br_forage	0	N/A
74-90-8	Hydrogen Cyanide	bv_leafy_veg	0	N/A
74-90-8	Hydrogen Cyanide	bv_forage	0	N/A
74-90-8	Hydrogen Cyanide	ba_milk	0	N/A
74-90-8	Hydrogen Cyanide	ba_beef	0	N/A
74-90-8	Hydrogen Cyanide	ba_pork	0	N/A
74-90-8	Hydrogen Cyanide	bcf_egg	0	N/A
74-90-8	Hydrogen Cyanide	bcf_chicken	0	N/A
74-90-8	Hydrogen Cyanide	bcf_fish	0	N/A
74-90-8	Hydrogen Cyanide	baf_fish	0	N/A
74-90-8	Hydrogen Cyanide	bsaf_fish	0	N/A
74-90-8	Hydrogen Cyanide	rfd	2E-2	N/A
74-90-8	Hydrogen Cyanide	oral_csf	0	N/A
74-90-8	Hydrogen Cyanide	rfc	3E-3	N/A
74-90-8	Hydrogen Cyanide	inhalation_urf	0	N/A
74-90-8	Hydrogen Cyanide	inhalation_csf	0	N/A
74-90-8	Hydrogen Cyanide	chemical_type	O	N/A
74-90-8	Hydrogen Cyanide	chemical_subtyp		N/A
74-90-8	Hydrogen Cyanide	br_grain	0	N/A
74-90-8	Hydrogen Cyanide	ba_egg	0	N/A
74-90-8	Hydrogen Cyanide	ba_chicken	0	N/A
74-90-8	Hydrogen Cyanide	inhalation_rfd	8.6E-4	N/A
74-90-8	Hydrogen Cyanide	tef	0	N/A
7429-90-5	Aluminum	cas_number	7429-90-5	N/A
7429-90-5	Aluminum	copc_name	Aluminum	N/A
7429-90-5	Aluminum	mw	26.98	N/A
7429-90-5	Aluminum	t_m	9.33E+2	N/A
7429-90-5	Aluminum	v_p	0	N/A
7429-90-5	Aluminum	s	0	N/A
7429-90-5	Aluminum	h	0	N/A
7429-90-5	Aluminum	d_a	2.11E-1	N/A
7429-90-5	Aluminum	dw	2.45E-5	N/A
7429-90-5	Aluminum	k_ow	0	N/A
7429-90-5	Aluminum	k_oc	0	N/A
7429-90-5	Aluminum	kd_s	0	N/A

COPC

CAS No.	COPC Name	Symbol	Current	Original
7429-90-5	Aluminum	kd_sw	0	N/A
7429-90-5	Aluminum	kd_bs	0	N/A
7429-90-5	Aluminum	k_sg	0	N/A
7429-90-5	Aluminum	f_v	0	N/A
7429-90-5	Aluminum	rcf	0	N/A
7429-90-5	Aluminum	br_root_veg	0	N/A
7429-90-5	Aluminum	br_leafy_veg	0	N/A
7429-90-5	Aluminum	br_forage	0	N/A
7429-90-5	Aluminum	bv_leafy_veg	0	N/A
7429-90-5	Aluminum	bv_forage	0	N/A
7429-90-5	Aluminum	ba_milk	0	N/A
7429-90-5	Aluminum	ba_beef	0	N/A
7429-90-5	Aluminum	ba_pork	0	N/A
7429-90-5	Aluminum	bcf_egg	0	N/A
7429-90-5	Aluminum	bcf_chicken	0	N/A
7429-90-5	Aluminum	bcf_fish	0	N/A
7429-90-5	Aluminum	baf_fish	0	N/A
7429-90-5	Aluminum	bsaf_fish	0	N/A
7429-90-5	Aluminum	rfd	1	N/A
7429-90-5	Aluminum	oral_csf	0	N/A
7429-90-5	Aluminum	rfc	3.5E-3	N/A
7429-90-5	Aluminum	inhalation_urf	0	N/A
7429-90-5	Aluminum	inhalation_csf	0	N/A
7429-90-5	Aluminum	chemical_type	I	N/A
7429-90-5	Aluminum	chemical_subtyp	Metal	N/A
7429-90-5	Aluminum	br_grain	0	N/A
7429-90-5	Aluminum	ba_egg	0	N/A
7429-90-5	Aluminum	ba_chicken	0	N/A
7429-90-5	Aluminum	inhalation_rfd	1E-3	N/A
7429-90-5	Aluminum	tef	0	N/A
7439-89-6	Iron	cas_number	7439-89-6	N/A
7439-89-6	Iron	copc_name	Iron	N/A
7439-89-6	Iron	mw	55.85	N/A
7439-89-6	Iron	t_m	1.81E+3	N/A
7439-89-6	Iron	v_p	0	N/A
7439-89-6	Iron	s	0	N/A
7439-89-6	Iron	h	0	N/A
7439-89-6	Iron	d_a	1.3E-1	N/A
7439-89-6	Iron	dw	1.51E-5	N/A
7439-89-6	Iron	k_ow	0	N/A
7439-89-6	Iron	k_oc	0	N/A
7439-89-6	Iron	kd_s	0	N/A
7439-89-6	Iron	kd_sw	0	N/A
7439-89-6	Iron	kd_bs	0	N/A
7439-89-6	Iron	k_sg	0	N/A
7439-89-6	Iron	f_v	0	N/A

COPC

CAS No.	COPC Name	Symbol	Current	Original
7439-89-6	Iron	rcf	0	N/A
7439-89-6	Iron	br_root_veg	0	N/A
7439-89-6	Iron	br_leafy_veg	0	N/A
7439-89-6	Iron	br_forage	0	N/A
7439-89-6	Iron	bv_leafy_veg	0	N/A
7439-89-6	Iron	bv_forage	0	N/A
7439-89-6	Iron	ba_milk	0	N/A
7439-89-6	Iron	ba_beef	0	N/A
7439-89-6	Iron	ba_pork	0	N/A
7439-89-6	Iron	bcf_egg	0	N/A
7439-89-6	Iron	bcf_chicken	0	N/A
7439-89-6	Iron	bcf_fish	0	N/A
7439-89-6	Iron	baf_fish	0	N/A
7439-89-6	Iron	bsaf_fish	0	N/A
7439-89-6	Iron	rfd	7E-01	N/A
7439-89-6	Iron	oral_csf	0	N/A
7439-89-6	Iron	rfc	0	N/A
7439-89-6	Iron	inhalation_urf	0	N/A
7439-89-6	Iron	inhalation_csf	0	N/A
7439-89-6	Iron	chemical_type	I	N/A
7439-89-6	Iron	chemical_subtyp	Metal	N/A
7439-89-6	Iron	br_grain	0	N/A
7439-89-6	Iron	ba_egg	0	N/A
7439-89-6	Iron	ba_chicken	0	N/A
7439-89-6	Iron	inhalation_rfd	0	N/A
7439-89-6	Iron	tef	0	N/A
7439-96-5	Manganese	cas_number	7439-96-5	N/A
7439-96-5	Manganese	copc_name	Manganese	N/A
7439-96-5	Manganese	mw	54.9	N/A
7439-96-5	Manganese	t_m	1.52E+3	N/A
7439-96-5	Manganese	v_p	0	N/A
7439-96-5	Manganese	s	0	N/A
7439-96-5	Manganese	h	1	N/A
7439-96-5	Manganese	d_a	1.31E-1	N/A
7439-96-5	Manganese	dw	1.52E-5	N/A
7439-96-5	Manganese	k_ow	0	N/A
7439-96-5	Manganese	k_oc	0	N/A
7439-96-5	Manganese	kd_s	0	N/A
7439-96-5	Manganese	kd_sw	0	N/A
7439-96-5	Manganese	kd_bs	0	N/A
7439-96-5	Manganese	k_sg	0	N/A
7439-96-5	Manganese	f_v	0	N/A
7439-96-5	Manganese	rcf	0	N/A
7439-96-5	Manganese	br_root_veg	0	N/A
7439-96-5	Manganese	br_leafy_veg	0	N/A
7439-96-5	Manganese	br_forage	0	N/A

COPC

CAS No.	COPC Name	Symbol	Current	Original
7439-96-5	Manganese	bv_leafy_veg	0	N/A
7439-96-5	Manganese	bv_forage	0	N/A
7439-96-5	Manganese	ba_milk	0	N/A
7439-96-5	Manganese	ba_beef	0	N/A
7439-96-5	Manganese	ba_pork	0	N/A
7439-96-5	Manganese	bcf_egg	0	N/A
7439-96-5	Manganese	bcf_chicken	0	N/A
7439-96-5	Manganese	bcf_fish	0	N/A
7439-96-5	Manganese	baf_fish	0	N/A
7439-96-5	Manganese	bsaf_fish	0	N/A
7439-96-5	Manganese	rfd	2E-2	N/A
7439-96-5	Manganese	oral_csf	0	N/A
7439-96-5	Manganese	rfc	5E-5	N/A
7439-96-5	Manganese	inhalation_urf	0	N/A
7439-96-5	Manganese	inhalation_csf	0	N/A
7439-96-5	Manganese	chemical_type	I	N/A
7439-96-5	Manganese	chemical_subtyp	Metal	N/A
7439-96-5	Manganese	br_grain	0	N/A
7439-96-5	Manganese	ba_egg	0	N/A
7439-96-5	Manganese	ba_chicken	0	N/A
7439-96-5	Manganese	inhalation_rfd	1.43E-5	N/A
7439-96-5	Manganese	tef	0	N/A
7439-98-7	Molybdenum	cas_number	7439-98-7	N/A
7439-98-7	Molybdenum	copc_name	Molybdenum	N/A
7439-98-7	Molybdenum	mw	95.9	N/A
7439-98-7	Molybdenum	t_m	2.9E+3	N/A
7439-98-7	Molybdenum	v_p	0	N/A
7439-98-7	Molybdenum	s	7.66E+4	N/A
7439-98-7	Molybdenum	h	1	N/A
7439-98-7	Molybdenum	d_a	9.07E-2	N/A
7439-98-7	Molybdenum	dw	1.05E-5	N/A
7439-98-7	Molybdenum	k_ow	1.7	N/A
7439-98-7	Molybdenum	k_oc	1.68	N/A
7439-98-7	Molybdenum	kd_s	3.3E-3	N/A
7439-98-7	Molybdenum	kd_sw	2.48E-2	N/A
7439-98-7	Molybdenum	kd_bs	1.32E-2	N/A
7439-98-7	Molybdenum	k_sg	0	N/A
7439-98-7	Molybdenum	f_v	0	N/A
7439-98-7	Molybdenum	rcf	8.65E-1	N/A
7439-98-7	Molybdenum	br_root_veg	2.62E+2	N/A
7439-98-7	Molybdenum	br_leafy_veg	2.85E+1	N/A
7439-98-7	Molybdenum	br_forage	2.85E+1	N/A
7439-98-7	Molybdenum	bv_leafy_veg	9.83E-6	N/A
7439-98-7	Molybdenum	bv_forage	9.83E-6	N/A
7439-98-7	Molybdenum	ba_milk	1.92E-05	N/A
7439-98-7	Molybdenum	ba_beef	9.11E-05	N/A

COPC

CAS No.	COPC Name	Symbol	Current	Original
7439-98-7	Molybdenum	ba_pork	1.1E-04	N/A
7439-98-7	Molybdenum	bcf_egg	1.35E-5	N/A
7439-98-7	Molybdenum	bcf_chicken	0	N/A
7439-98-7	Molybdenum	bcf_fish	3.16	N/A
7439-98-7	Molybdenum	baf_fish	0	N/A
7439-98-7	Molybdenum	bsaf_fish	0	N/A
7439-98-7	Molybdenum	rfd	5E-3	N/A
7439-98-7	Molybdenum	oral_csf	0	N/A
7439-98-7	Molybdenum	rfc	0	N/A
7439-98-7	Molybdenum	inhalation_urf	0	N/A
7439-98-7	Molybdenum	inhalation_csf	0	N/A
7439-98-7	Molybdenum	chemical_type	O	N/A
7439-98-7	Molybdenum	chemical_subtyp		N/A
7439-98-7	Molybdenum	br_grain	2.85E+1	N/A
7439-98-7	Molybdenum	ba_egg	3.84E-05	N/A
7439-98-7	Molybdenum	ba_chicken	6.71E-05	N/A
7439-98-7	Molybdenum	inhalation_rfd	0	N/A
7439-98-7	Molybdenum	tef	0	N/A
7440-24-6	Strontium	cas_number	7440-24-6	N/A
7440-24-6	Strontium	copc_name	Strontium	N/A
7440-24-6	Strontium	mw	87.62	N/A
7440-24-6	Strontium	t_m	1.05E+3	N/A
7440-24-6	Strontium	v_p	0	N/A
7440-24-6	Strontium	s	0	N/A
7440-24-6	Strontium	h	0	N/A
7440-24-6	Strontium	d_a	9.63E-2	N/A
7440-24-6	Strontium	dw	1.12E-5	N/A
7440-24-6	Strontium	k_ow	0	N/A
7440-24-6	Strontium	k_oc	0	N/A
7440-24-6	Strontium	kd_s	0	N/A
7440-24-6	Strontium	kd_sw	0	N/A
7440-24-6	Strontium	kd_bs	0	N/A
7440-24-6	Strontium	k_sg	0	N/A
7440-24-6	Strontium	f_v	0	N/A
7440-24-6	Strontium	rcf	0	N/A
7440-24-6	Strontium	br_root_veg	0	N/A
7440-24-6	Strontium	br_leafy_veg	0	N/A
7440-24-6	Strontium	br_forage	0	N/A
7440-24-6	Strontium	bv_leafy_veg	0	N/A
7440-24-6	Strontium	bv_forage	0	N/A
7440-24-6	Strontium	ba_milk	0	N/A
7440-24-6	Strontium	ba_beef	0	N/A
7440-24-6	Strontium	ba_pork	0	N/A
7440-24-6	Strontium	bcf_egg	0	N/A
7440-24-6	Strontium	bcf_chicken	0	N/A
7440-24-6	Strontium	bcf_fish	0	N/A

COPC

CAS No.	COPC Name	Symbol	Current	Original
7440-24-6	Strontium	baf_fish	0	N/A
7440-24-6	Strontium	bsaf_fish	0	N/A
7440-24-6	Strontium	rfd	6E-1	N/A
7440-24-6	Strontium	oral_csf	0	N/A
7440-24-6	Strontium	rfc	0	N/A
7440-24-6	Strontium	inhalation_urf	0	N/A
7440-24-6	Strontium	inhalation_csf	0	N/A
7440-24-6	Strontium	chemical_type	I	N/A
7440-24-6	Strontium	chemical_subtyp		N/A
7440-24-6	Strontium	br_grain	0	N/A
7440-24-6	Strontium	ba_egg	0	N/A
7440-24-6	Strontium	ba_chicken	0	N/A
7440-24-6	Strontium	inhalation_rfd	0	N/A
7440-24-6	Strontium	tef	0	N/A
7440-31-5	Tin	cas_number	7440-31-5	N/A
7440-31-5	Tin	copc_name	Tin	N/A
7440-31-5	Tin	mw	118.69	N/A
7440-31-5	Tin	t_m	5.05E+2	N/A
7440-31-5	Tin	v_p	0	N/A
7440-31-5	Tin	s	0	N/A
7440-31-5	Tin	h	0	N/A
7440-31-5	Tin	d_a	7.87E-2	N/A
7440-31-5	Tin	dw	9.11E-6	N/A
7440-31-5	Tin	k_ow	0	N/A
7440-31-5	Tin	k_oc	0	N/A
7440-31-5	Tin	kd_s	0	N/A
7440-31-5	Tin	kd_sw	0	N/A
7440-31-5	Tin	kd_bs	0	N/A
7440-31-5	Tin	k_sg	0	N/A
7440-31-5	Tin	f_v	0	N/A
7440-31-5	Tin	rcf	0	N/A
7440-31-5	Tin	br_root_veg	0	N/A
7440-31-5	Tin	br_leafy_veg	0	N/A
7440-31-5	Tin	br_forage	0	N/A
7440-31-5	Tin	bv_leafy_veg	0	N/A
7440-31-5	Tin	bv_forage	0	N/A
7440-31-5	Tin	ba_milk	0	N/A
7440-31-5	Tin	ba_beef	0	N/A
7440-31-5	Tin	ba_pork	0	N/A
7440-31-5	Tin	bcf_egg	0	N/A
7440-31-5	Tin	bcf_chicken	0	N/A
7440-31-5	Tin	bcf_fish	0	N/A
7440-31-5	Tin	baf_fish	0	N/A
7440-31-5	Tin	bsaf_fish	0	N/A
7440-31-5	Tin	rfd	6E-1	N/A
7440-31-5	Tin	oral_csf	0	N/A

COPC

CAS No.	COPC Name	Symbol	Current	Original
7440-31-5	Tin	rfc	0	N/A
7440-31-5	Tin	inhalation_urf	0	N/A
7440-31-5	Tin	inhalation_csf	0	N/A
7440-31-5	Tin	chemical_type	I	N/A
7440-31-5	Tin	chemical_subtyp	Metal	N/A
7440-31-5	Tin	br_grain	0	N/A
7440-31-5	Tin	ba_egg	0	N/A
7440-31-5	Tin	ba_chicken	0	N/A
7440-31-5	Tin	inhalation_rfd	0	N/A
7440-31-5	Tin	tef	0	N/A
7440-32-6	Titanium	cas_number	7440-32-6	N/A
7440-32-6	Titanium	copc_name	Titanium	N/A
7440-32-6	Titanium	mw	47.9	N/A
7440-32-6	Titanium	t_m	1.93E+3	N/A
7440-32-6	Titanium	v_p	0	N/A
7440-32-6	Titanium	s	0	N/A
7440-32-6	Titanium	h	0	N/A
7440-32-6	Titanium	d_a	1.44E-1	N/A
7440-32-6	Titanium	dw	1.67E-5	N/A
7440-32-6	Titanium	k_ow	0	N/A
7440-32-6	Titanium	k_oc	0	N/A
7440-32-6	Titanium	kd_s	0	N/A
7440-32-6	Titanium	kd_sw	0	N/A
7440-32-6	Titanium	kd_bs	0	N/A
7440-32-6	Titanium	k_sg	0	N/A
7440-32-6	Titanium	f_v	0	N/A
7440-32-6	Titanium	rcf	0	N/A
7440-32-6	Titanium	br_root_veg	0	N/A
7440-32-6	Titanium	br_leafy_veg	0	N/A
7440-32-6	Titanium	br_forage	0	N/A
7440-32-6	Titanium	bv_leafy_veg	0	N/A
7440-32-6	Titanium	bv_forage	0	N/A
7440-32-6	Titanium	ba_milk	0	N/A
7440-32-6	Titanium	ba_beef	0	N/A
7440-32-6	Titanium	ba_pork	0	N/A
7440-32-6	Titanium	bcf_egg	0	N/A
7440-32-6	Titanium	bcf_chicken	0	N/A
7440-32-6	Titanium	bcf_fish	0	N/A
7440-32-6	Titanium	baf_fish	0	N/A
7440-32-6	Titanium	bsaf_fish	0	N/A
7440-32-6	Titanium	rfd	0	N/A
7440-32-6	Titanium	oral_csf	0	N/A
7440-32-6	Titanium	rfc	0	N/A
7440-32-6	Titanium	inhalation_urf	0	N/A
7440-32-6	Titanium	inhalation_csf	0	N/A
7440-32-6	Titanium	chemical_type	I	N/A

COPC

CAS No.	COPC Name	Symbol	Current	Original
7440-32-6	Titanium	chemical_subtyp	Metal	N/A
7440-32-6	Titanium	br_grain	0	N/A
7440-32-6	Titanium	ba_egg	0	N/A
7440-32-6	Titanium	ba_chicken	0	N/A
7440-32-6	Titanium	inhalation_rfd	8.6E-3	N/A
7440-32-6	Titanium	tef	0	N/A
7440-39-3	Barium	rfd	0.2	0.07
7440-42-8	Boron	cas_number	7440-42-8	N/A
7440-42-8	Boron	copc_name	Boron	N/A
7440-42-8	Boron	mw	10.81	N/A
7440-42-8	Boron	t_m	2.57E+3	N/A
7440-42-8	Boron	v_p	0	N/A
7440-42-8	Boron	s	0	N/A
7440-42-8	Boron	h	0	N/A
7440-42-8	Boron	d_a	3.89E-1	N/A
7440-42-8	Boron	dw	4.5E-5	N/A
7440-42-8	Boron	k_ow	0	N/A
7440-42-8	Boron	k_oc	0	N/A
7440-42-8	Boron	kd_s	0	N/A
7440-42-8	Boron	kd_sw	0	N/A
7440-42-8	Boron	kd_bs	0	N/A
7440-42-8	Boron	k_sg	0	N/A
7440-42-8	Boron	f_v	0	N/A
7440-42-8	Boron	rcf	0	N/A
7440-42-8	Boron	br_root_veg	0	N/A
7440-42-8	Boron	br_leafy_veg	0	N/A
7440-42-8	Boron	br_forage	0	N/A
7440-42-8	Boron	bv_leafy_veg	0	N/A
7440-42-8	Boron	bv_forage	0	N/A
7440-42-8	Boron	ba_milk	0	N/A
7440-42-8	Boron	ba_beef	0	N/A
7440-42-8	Boron	ba_pork	0	N/A
7440-42-8	Boron	bcf_egg	0	N/A
7440-42-8	Boron	bcf_chicken	0	N/A
7440-42-8	Boron	bcf_fish	0	N/A
7440-42-8	Boron	baf_fish	0	N/A
7440-42-8	Boron	bsaf_fish	0	N/A
7440-42-8	Boron	rfd	2E-1	N/A
7440-42-8	Boron	oral_csf	0	N/A
7440-42-8	Boron	rfc	2E-2	N/A
7440-42-8	Boron	inhalation_urf	0	N/A
7440-42-8	Boron	inhalation_csf	0	N/A
7440-42-8	Boron	chemical_type	I	N/A
7440-42-8	Boron	chemical_subtyp	Metal	N/A
7440-42-8	Boron	br_grain	0	N/A
7440-42-8	Boron	ba_egg	0	N/A

COPC

CAS No.	COPC Name	Symbol	Current	Original
7440-42-8	Boron	ba_chicken	0	N/A
7440-42-8	Boron	inhalation_rfd	5.7E-3	N/A
7440-42-8	Boron	tef	0	N/A
7440-48-4	Cobalt	cas_number	7440-48-4	N/A
7440-48-4	Cobalt	copc_name	Cobalt	N/A
7440-48-4	Cobalt	mw	58.93	N/A
7440-48-4	Cobalt	t_m	1.77E+3	N/A
7440-48-4	Cobalt	v_p	0	N/A
7440-48-4	Cobalt	s	0	N/A
7440-48-4	Cobalt	h	0	N/A
7440-48-4	Cobalt	d_a	1.25E-1	N/A
7440-48-4	Cobalt	dw	1.45E-5	N/A
7440-48-4	Cobalt	k_ow	0	N/A
7440-48-4	Cobalt	k_oc	0	N/A
7440-48-4	Cobalt	kd_s	0	N/A
7440-48-4	Cobalt	kd_sw	0	N/A
7440-48-4	Cobalt	kd_bs	0	N/A
7440-48-4	Cobalt	k_sg	0	N/A
7440-48-4	Cobalt	f_v	0	N/A
7440-48-4	Cobalt	rcf	0	N/A
7440-48-4	Cobalt	br_root_veg	0	N/A
7440-48-4	Cobalt	br_leafy_veg	0	N/A
7440-48-4	Cobalt	br_forage	0	N/A
7440-48-4	Cobalt	bv_leafy_veg	0	N/A
7440-48-4	Cobalt	bv_forage	0	N/A
7440-48-4	Cobalt	ba_milk	0	N/A
7440-48-4	Cobalt	ba_beef	0	N/A
7440-48-4	Cobalt	ba_pork	0	N/A
7440-48-4	Cobalt	bcf_egg	0	N/A
7440-48-4	Cobalt	bcf_chicken	0	N/A
7440-48-4	Cobalt	bcf_fish	0	N/A
7440-48-4	Cobalt	baf_fish	0	N/A
7440-48-4	Cobalt	bsaf_fish	0	N/A
7440-48-4	Cobalt	rfd	0	N/A
7440-48-4	Cobalt	oral_csf	0	N/A
7440-48-4	Cobalt	rfc	0	N/A
7440-48-4	Cobalt	inhalation_urf	0	N/A
7440-48-4	Cobalt	inhalation_csf	0	N/A
7440-48-4	Cobalt	chemical_type	I	N/A
7440-48-4	Cobalt	chemical_subtyp	Metal	N/A
7440-48-4	Cobalt	br_grain	0	N/A
7440-48-4	Cobalt	ba_egg	0	N/A
7440-48-4	Cobalt	ba_chicken	0	N/A
7440-48-4	Cobalt	inhalation_rfd	5.7E-6	N/A
7440-48-4	Cobalt	tef	0	N/A
7440-50-8	Copper	cas_number	7440-50-8	N/A

COPC

CAS No.	COPC Name	Symbol	Current	Original
7440-50-8	Copper	copc_name	Copper	N/A
7440-50-8	Copper	mw	63.55	N/A
7440-50-8	Copper	t_m	1.36E+3	N/A
7440-50-8	Copper	v_p	0	N/A
7440-50-8	Copper	s	0	N/A
7440-50-8	Copper	h	0	N/A
7440-50-8	Copper	d_a	1.19E-1	N/A
7440-50-8	Copper	dw	1.38E-5	N/A
7440-50-8	Copper	k_ow	0	N/A
7440-50-8	Copper	k_oc	0	N/A
7440-50-8	Copper	kd_s	0	N/A
7440-50-8	Copper	kd_sw	0	N/A
7440-50-8	Copper	kd_bs	0	N/A
7440-50-8	Copper	k_sg	0	N/A
7440-50-8	Copper	f_v	0	N/A
7440-50-8	Copper	rcf	0	N/A
7440-50-8	Copper	br_root_veg	0	N/A
7440-50-8	Copper	br_leafy_veg	0	N/A
7440-50-8	Copper	br_forage	0	N/A
7440-50-8	Copper	bv_leafy_veg	0	N/A
7440-50-8	Copper	bv_forage	0	N/A
7440-50-8	Copper	ba_milk	0	N/A
7440-50-8	Copper	ba_beef	0	N/A
7440-50-8	Copper	ba_pork	0	N/A
7440-50-8	Copper	bcf_egg	0	N/A
7440-50-8	Copper	bcf_chicken	0	N/A
7440-50-8	Copper	bcf_fish	0	N/A
7440-50-8	Copper	baf_fish	0	N/A
7440-50-8	Copper	bsaf_fish	0	N/A
7440-50-8	Copper	rfd	4E-2	N/A
7440-50-8	Copper	oral_csf	0	N/A
7440-50-8	Copper	rfc	0	N/A
7440-50-8	Copper	inhalation_urf	0	N/A
7440-50-8	Copper	inhalation_csf	0	N/A
7440-50-8	Copper	chemical_type	I	N/A
7440-50-8	Copper	chemical_subtyp	Metal	N/A
7440-50-8	Copper	br_grain	0	N/A
7440-50-8	Copper	ba_egg	0	N/A
7440-50-8	Copper	ba_chicken	0	N/A
7440-50-8	Copper	inhalation_rfd	0	N/A
7440-50-8	Copper	tef	0	N/A
7440-62-2	Vanadium	cas_number	7440-62-2	N/A
7440-62-2	Vanadium	copc_name	Vanadium	N/A
7440-62-2	Vanadium	mw	50.9	N/A
7440-62-2	Vanadium	t_m	4.62E+2	N/A
7440-62-2	Vanadium	v_p	0	N/A

COPC

CAS No.	COPC Name	Symbol	Current	Original
7440-62-2	Vanadium	s	0	N/A
7440-62-2	Vanadium	h	1	N/A
7440-62-2	Vanadium	d_a	1.38E-1	N/A
7440-62-2	Vanadium	dw	1.6E-5	N/A
7440-62-2	Vanadium	k_ow	0	N/A
7440-62-2	Vanadium	k_oc	0	N/A
7440-62-2	Vanadium	kd_s	0	N/A
7440-62-2	Vanadium	kd_sw	0	N/A
7440-62-2	Vanadium	kd_bs	0	N/A
7440-62-2	Vanadium	k_sg	0	N/A
7440-62-2	Vanadium	f_v	0	N/A
7440-62-2	Vanadium	rcf	0	N/A
7440-62-2	Vanadium	br_root_veg	0	N/A
7440-62-2	Vanadium	br_leafy_veg	0	N/A
7440-62-2	Vanadium	br_forage	0	N/A
7440-62-2	Vanadium	bv_leafy_veg	0	N/A
7440-62-2	Vanadium	bv_forage	0	N/A
7440-62-2	Vanadium	ba_milk	0	N/A
7440-62-2	Vanadium	ba_beef	0	N/A
7440-62-2	Vanadium	ba_pork	0	N/A
7440-62-2	Vanadium	bcf_egg	0	N/A
7440-62-2	Vanadium	bcf_chicken	0	N/A
7440-62-2	Vanadium	bcf_fish	0	N/A
7440-62-2	Vanadium	baf_fish	0	N/A
7440-62-2	Vanadium	bsaf_fish	0	N/A
7440-62-2	Vanadium	rfd	1E-3	N/A
7440-62-2	Vanadium	oral_csf	0	N/A
7440-62-2	Vanadium	rfc	0	N/A
7440-62-2	Vanadium	inhalation_urf	0	N/A
7440-62-2	Vanadium	inhalation_csf	0	N/A
7440-62-2	Vanadium	chemical_type	I	N/A
7440-62-2	Vanadium	chemical_subtyp	Metal	N/A
7440-62-2	Vanadium	br_grain	0	N/A
7440-62-2	Vanadium	ba_egg	0	N/A
7440-62-2	Vanadium	ba_chicken	0	N/A
7440-62-2	Vanadium	inhalation_rfd	0	N/A
7440-62-2	Vanadium	tef	0	N/A
76-13-1	Freon 113	cas_number	76-13-1	N/A
76-13-1	Freon 113	copc_name	Freon 113	N/A
76-13-1	Freon 113	mw	187.4	N/A
76-13-1	Freon 113	t_m	2.38E+2	N/A
76-13-1	Freon 113	v_p	3.63E+2	N/A
76-13-1	Freon 113	s	1.7E+2	N/A
76-13-1	Freon 113	h	3.92E-1	N/A
76-13-1	Freon 113	d_a	2.88E-2	N/A
76-13-1	Freon 113	dw	8.07E-6	N/A

COPC

CAS No.	COPC Name	Symbol	Current	Original
76-13-1	Freon 113	k_ow	1.45E+3	N/A
76-13-1	Freon 113	k_oc	3.89E+2	N/A
76-13-1	Freon 113	kd_s	3.89	N/A
76-13-1	Freon 113	kd_sw	2.92E+1	N/A
76-13-1	Freon 113	kd_bs	1.56E+1	N/A
76-13-1	Freon 113	k_sg	0	N/A
76-13-1	Freon 113	f_v	1	N/A
76-13-1	Freon 113	rcf	8.19	N/A
76-13-1	Freon 113	br_root_veg	2.32	N/A
76-13-1	Freon 113	br_leafy_veg	5.77E-1	N/A
76-13-1	Freon 113	br_forage	5.77E-1	N/A
76-13-1	Freon 113	bv_leafy_veg	3.31E-2	N/A
76-13-1	Freon 113	bv_forage	3.31E-2	N/A
76-13-1	Freon 113	ba_milk	2.72E-03	N/A
76-13-1	Freon 113	ba_beef	1.29E-02	N/A
76-13-1	Freon 113	ba_pork	1.56E-02	N/A
76-13-1	Freon 113	bcf_egg	1.15E-2	N/A
76-13-1	Freon 113	bcf_chicken	0	N/A
76-13-1	Freon 113	bcf_fish	54.1	N/A
76-13-1	Freon 113	baf_fish	0	N/A
76-13-1	Freon 113	bsaf_fish	0	N/A
76-13-1	Freon 113	rfd	3E+1	N/A
76-13-1	Freon 113	oral_csf	0	N/A
76-13-1	Freon 113	rfc	3E+1	N/A
76-13-1	Freon 113	inhalation_urf	0	N/A
76-13-1	Freon 113	inhalation_csf	0	N/A
76-13-1	Freon 113	chemical_type	O	N/A
76-13-1	Freon 113	chemical_subtyp		N/A
76-13-1	Freon 113	br_grain	5.77E-1	N/A
76-13-1	Freon 113	ba_egg	5.44E-03	N/A
76-13-1	Freon 113	ba_chicken	9.52E-03	N/A
76-13-1	Freon 113	inhalation_rfd	8.6	N/A
76-13-1	Freon 113	tef	0	N/A
7664-41-7	Ammonia	cas_number	7664-41-7	N/A
7664-41-7	Ammonia	copc_name	Ammonia	N/A
7664-41-7	Ammonia	mw	17.0	N/A
7664-41-7	Ammonia	t_m	2.77E+2	N/A
7664-41-7	Ammonia	v_p	0	N/A
7664-41-7	Ammonia	s	0	N/A
7664-41-7	Ammonia	h	1.41E-4	N/A
7664-41-7	Ammonia	d_a	2.87E-1	N/A
7664-41-7	Ammonia	dw	3.32E-5	N/A
7664-41-7	Ammonia	k_ow	0	N/A
7664-41-7	Ammonia	k_oc	0	N/A
7664-41-7	Ammonia	kd_s	0	N/A
7664-41-7	Ammonia	kd_sw	0	N/A

COPC

CAS No.	COPC Name	Symbol	Current	Original
7664-41-7	Ammonia	kd_bs	0	N/A
7664-41-7	Ammonia	k_sg	0	N/A
7664-41-7	Ammonia	f_v	1	N/A
7664-41-7	Ammonia	rcf	0	N/A
7664-41-7	Ammonia	br_root_veg	0	N/A
7664-41-7	Ammonia	br_leafy_veg	0	N/A
7664-41-7	Ammonia	br_forage	0	N/A
7664-41-7	Ammonia	bv_leafy_veg	0	N/A
7664-41-7	Ammonia	bv_forage	0	N/A
7664-41-7	Ammonia	ba_milk	0	N/A
7664-41-7	Ammonia	ba_beef	0	N/A
7664-41-7	Ammonia	ba_pork	0	N/A
7664-41-7	Ammonia	bcf_egg	0	N/A
7664-41-7	Ammonia	bcf_chicken	0	N/A
7664-41-7	Ammonia	bcf_fish	0	N/A
7664-41-7	Ammonia	baf_fish	0	N/A
7664-41-7	Ammonia	bsaf_fish	0	N/A
7664-41-7	Ammonia	rfd	0	N/A
7664-41-7	Ammonia	oral_csf	0	N/A
7664-41-7	Ammonia	rfc	1E-1	N/A
7664-41-7	Ammonia	inhalation_urf	0	N/A
7664-41-7	Ammonia	inhalation_csf	0	N/A
7664-41-7	Ammonia	chemical_type	I	N/A
7664-41-7	Ammonia	chemical_subtyp		N/A
7664-41-7	Ammonia	br_grain	0	N/A
7664-41-7	Ammonia	ba_egg	0	N/A
7664-41-7	Ammonia	ba_chicken	0	N/A
7664-41-7	Ammonia	inhalation_rfd	2.86E-2	N/A
7664-41-7	Ammonia	tef	0	N/A
79-46-9	Nitropropane, 2-	cas_number	79-46-9	N/A
79-46-9	Nitropropane, 2-	copc_name	Nitropropane, 2-	N/A
79-46-9	Nitropropane, 2-	mw	110.0	N/A
79-46-9	Nitropropane, 2-	t_m	1.82E+2	N/A
79-46-9	Nitropropane, 2-	v_p	1.72E+1	N/A
79-46-9	Nitropropane, 2-	s	1.7E+4	N/A
79-46-9	Nitropropane, 2-	h	1.19E-4	N/A
79-46-9	Nitropropane, 2-	d_a	9.23E-2	N/A
79-46-9	Nitropropane, 2-	dw	1.01E-5	N/A
79-46-9	Nitropropane, 2-	k_ow	8.51	N/A
79-46-9	Nitropropane, 2-	k_oc	4.37E+1	N/A
79-46-9	Nitropropane, 2-	kd_s	4.37E-1	N/A
79-46-9	Nitropropane, 2-	kd_sw	3.27	N/A
79-46-9	Nitropropane, 2-	kd_bs	1.75	N/A
79-46-9	Nitropropane, 2-	k_sg	0	N/A
79-46-9	Nitropropane, 2-	f_v	1	N/A
79-46-9	Nitropropane, 2-	rcf	0.977	N/A

COPC

CAS No.	COPC Name	Symbol	Current	Original
79-46-9	Nitropropane, 2-	br_root_veg	2.24	N/A
79-46-9	Nitropropane, 2-	br_leafy_veg	1.12E+1	N/A
79-46-9	Nitropropane, 2-	br_forage	1.12E+1	N/A
79-46-9	Nitropropane, 2-	bv_leafy_veg	4.6E-1	N/A
79-46-9	Nitropropane, 2-	bv_forage	4.6E-1	N/A
79-46-9	Nitropropane, 2-	ba_milk	8.94E-05	N/A
79-46-9	Nitropropane, 2-	ba_beef	4.25E-04	N/A
79-46-9	Nitropropane, 2-	ba_pork	5.14E-04	N/A
79-46-9	Nitropropane, 2-	bcf_egg	6.76E-5	N/A
79-46-9	Nitropropane, 2-	bcf_chicken	0	N/A
79-46-9	Nitropropane, 2-	bcf_fish	3.16	N/A
79-46-9	Nitropropane, 2-	baf_fish	0	N/A
79-46-9	Nitropropane, 2-	bsaf_fish	0	N/A
79-46-9	Nitropropane, 2-	rfd	0	N/A
79-46-9	Nitropropane, 2-	oral_csf	0	N/A
79-46-9	Nitropropane, 2-	rfc	2E-2	N/A
79-46-9	Nitropropane, 2-	inhalation_urf	2.69E-3	N/A
79-46-9	Nitropropane, 2-	inhalation_csf	9.4	N/A
79-46-9	Nitropropane, 2-	chemical_type	O	N/A
79-46-9	Nitropropane, 2-	chemical_subtyp		N/A
79-46-9	Nitropropane, 2-	br_grain	1.12E+1	N/A
79-46-9	Nitropropane, 2-	ba_egg	1.79E-04	N/A
79-46-9	Nitropropane, 2-	ba_chicken	3.13E-04	N/A
79-46-9	Nitropropane, 2-	inhalation_rfd	5.7E-3	N/A
79-46-9	Nitropropane, 2-	tef	0	N/A
80-62-6	Methyl Methacrylate	cas_number	80-62-6	N/A
80-62-6	Methyl Methacrylate	copc_name	Methyl Methacrylate	N/A
80-62-6	Methyl Methacrylate	mw	100.1	N/A
80-62-6	Methyl Methacrylate	t_m	2.25E+2	N/A
80-62-6	Methyl Methacrylate	v_p	3.85E+1	N/A
80-62-6	Methyl Methacrylate	s	1.5E+4	N/A
80-62-6	Methyl Methacrylate	h	1.41E-4	N/A
80-62-6	Methyl Methacrylate	d_a	7.7E-2	N/A
80-62-6	Methyl Methacrylate	dw	8.6E-6	N/A
80-62-6	Methyl Methacrylate	k_ow	2.4E+1	N/A
80-62-6	Methyl Methacrylate	k_oc	1.27E+1	N/A
80-62-6	Methyl Methacrylate	kd_s	1.27E-1	N/A
80-62-6	Methyl Methacrylate	kd_sw	9.54E-1	N/A
80-62-6	Methyl Methacrylate	kd_bs	5.09E-1	N/A
80-62-6	Methyl Methacrylate	k_sg	0	N/A
80-62-6	Methyl Methacrylate	f_v	1	N/A
80-62-6	Methyl Methacrylate	rcf	1.17	N/A
80-62-6	Methyl Methacrylate	br_root_veg	9.19	N/A
80-62-6	Methyl Methacrylate	br_leafy_veg	6.17	N/A
80-62-6	Methyl Methacrylate	br_forage	6.17	N/A
80-62-6	Methyl Methacrylate	bv_leafy_veg	1.17	N/A

COPC

CAS No.	COPC Name	Symbol	Current	Original
80-62-6	Methyl Methacrylate	bv_forage	1.17	N/A
80-62-6	Methyl Methacrylate	ba_milk	2.14E-04	N/A
80-62-6	Methyl Methacrylate	ba_beef	1.02E-03	N/A
80-62-6	Methyl Methacrylate	ba_pork	1.23E-03	N/A
80-62-6	Methyl Methacrylate	bcf_egg	1.91E-4	N/A
80-62-6	Methyl Methacrylate	bcf_chicken	0	N/A
80-62-6	Methyl Methacrylate	bcf_fish	2.3	N/A
80-62-6	Methyl Methacrylate	baf_fish	0	N/A
80-62-6	Methyl Methacrylate	bsaf_fish	0	N/A
80-62-6	Methyl Methacrylate	rfd	1.4	N/A
80-62-6	Methyl Methacrylate	oral_csf	0	N/A
80-62-6	Methyl Methacrylate	rfc	7E-1	N/A
80-62-6	Methyl Methacrylate	inhalation_urf	0	N/A
80-62-6	Methyl Methacrylate	inhalation_csf	0	N/A
80-62-6	Methyl Methacrylate	chemical_type	O	N/A
80-62-6	Methyl Methacrylate	chemical_subtyp		N/A
80-62-6	Methyl Methacrylate	br_grain	6.17	N/A
80-62-6	Methyl Methacrylate	ba_egg	4.28E-04	N/A
80-62-6	Methyl Methacrylate	ba_chicken	7.49E-04	N/A
80-62-6	Methyl Methacrylate	inhalation_rfd	2E-1	N/A
80-62-6	Methyl Methacrylate	tef	0	N/A
86-74-8	Carbazole	cas_number	86-74-8	N/A
86-74-8	Carbazole	copc_name	Carbazole	N/A
86-74-8	Carbazole	mw	167.2	N/A
86-74-8	Carbazole	t_m	5.19E+2	N/A
86-74-8	Carbazole	v_p	7.5E-7	N/A
86-74-8	Carbazole	s	7.48	N/A
86-74-8	Carbazole	h	1.53E-8	N/A
86-74-8	Carbazole	d_a	3.9E-2	N/A
86-74-8	Carbazole	dw	7.03E-6	N/A
86-74-8	Carbazole	k_ow	5.25E+3	N/A
86-74-8	Carbazole	k_oc	3.39E+3	N/A
86-74-8	Carbazole	kd_s	3.39E+1	N/A
86-74-8	Carbazole	kd_sw	2.54E+2	N/A
86-74-8	Carbazole	kd_bs	1.36E+2	N/A
86-74-8	Carbazole	k_sg	0	N/A
86-74-8	Carbazole	f_v	0.998	N/A
86-74-8	Carbazole	rcf	2.21E+1	N/A
86-74-8	Carbazole	br_root_veg	6.76E-1	N/A
86-74-8	Carbazole	br_leafy_veg	2.74E-1	N/A
86-74-8	Carbazole	br_forage	2.74E-1	N/A
86-74-8	Carbazole	bv_leafy_veg	3.35E+6	N/A
86-74-8	Carbazole	bv_forage	3.35E+6	N/A
86-74-8	Carbazole	ba_milk	4.49E-03	N/A
86-74-8	Carbazole	ba_beef	2.13E-02	N/A
86-74-8	Carbazole	ba_pork	2.58E-02	N/A

COPC

CAS No.	COPC Name	Symbol	Current	Original
86-74-8	Carbazole	bcf_egg	4.17E-2	N/A
86-74-8	Carbazole	bcf_chicken	0	N/A
86-74-8	Carbazole	bcf_fish	146	N/A
86-74-8	Carbazole	baf_fish	0	N/A
86-74-8	Carbazole	bsaf_fish	0	N/A
86-74-8	Carbazole	rfd	0	N/A
86-74-8	Carbazole	oral_csf	2E-2	N/A
86-74-8	Carbazole	rfc	0	N/A
86-74-8	Carbazole	inhalation_urf	0	N/A
86-74-8	Carbazole	inhalation_csf	0	N/A
86-74-8	Carbazole	chemical_type	O	N/A
86-74-8	Carbazole	chemical_subtyp		N/A
86-74-8	Carbazole	br_grain	2.74E-1	N/A
86-74-8	Carbazole	ba_egg	8.98E-03	N/A
86-74-8	Carbazole	ba_chicken	1.57E-02	N/A
86-74-8	Carbazole	inhalation_rfd	0	N/A
86-74-8	Carbazole	tef	0	N/A
88-72-2	Nitrotoluene, 2-	cas_number	88-72-2	N/A
88-72-2	Nitrotoluene, 2-	copc_name	Nitrotoluene, 2-	N/A
88-72-2	Nitrotoluene, 2-	mw	137.1	N/A
88-72-2	Nitrotoluene, 2-	t_m	2.7E+2	N/A
88-72-2	Nitrotoluene, 2-	v_p	1.32E-3	N/A
88-72-2	Nitrotoluene, 2-	s	6.52E+2	N/A
88-72-2	Nitrotoluene, 2-	h	8.79E-5	N/A
88-72-2	Nitrotoluene, 2-	d_a	4.75E-2	N/A
88-72-2	Nitrotoluene, 2-	dw	8.67E-6	N/A
88-72-2	Nitrotoluene, 2-	k_ow	2E+2	N/A
88-72-2	Nitrotoluene, 2-	k_oc	1.05E+2	N/A
88-72-2	Nitrotoluene, 2-	kd_s	1.05	N/A
88-72-2	Nitrotoluene, 2-	kd_sw	7.9	N/A
88-72-2	Nitrotoluene, 2-	kd_bs	4.21	N/A
88-72-2	Nitrotoluene, 2-	k_sg	3.95	N/A
88-72-2	Nitrotoluene, 2-	f_v	1	N/A
88-72-2	Nitrotoluene, 2-	rcf	1.78	N/A
88-72-2	Nitrotoluene, 2-	br_root_veg	2.47	N/A
88-72-2	Nitrotoluene, 2-	br_leafy_veg	1.81	N/A
88-72-2	Nitrotoluene, 2-	br_forage	1.81	N/A
88-72-2	Nitrotoluene, 2-	bv_leafy_veg	1.79E+1	N/A
88-72-2	Nitrotoluene, 2-	bv_forage	1.79E+1	N/A
88-72-2	Nitrotoluene, 2-	ba_milk	9.53E-04	N/A
88-72-2	Nitrotoluene, 2-	ba_beef	4.53E-03	N/A
88-72-2	Nitrotoluene, 2-	ba_pork	5.48E-03	N/A
88-72-2	Nitrotoluene, 2-	bcf_egg	1.58E-3	N/A
88-72-2	Nitrotoluene, 2-	bcf_chicken	0	N/A
88-72-2	Nitrotoluene, 2-	bcf_fish	11.8	N/A
88-72-2	Nitrotoluene, 2-	baf_fish	0	N/A

COPC

CAS No.	COPC Name	Symbol	Current	Original
88-72-2	Nitrotoluene, 2-	bsaf_fish	0	N/A
88-72-2	Nitrotoluene, 2-	rfd	1E-2	N/A
88-72-2	Nitrotoluene, 2-	oral_csf	0	N/A
88-72-2	Nitrotoluene, 2-	rfc	0	N/A
88-72-2	Nitrotoluene, 2-	inhalation_urf	0	N/A
88-72-2	Nitrotoluene, 2-	inhalation_csf	0	N/A
88-72-2	Nitrotoluene, 2-	chemical_type	O	N/A
88-72-2	Nitrotoluene, 2-	chemical_subtyp		N/A
88-72-2	Nitrotoluene, 2-	br_grain	1.81	N/A
88-72-2	Nitrotoluene, 2-	ba_egg	1.91E-03	N/A
88-72-2	Nitrotoluene, 2-	ba_chicken	3.34E-03	N/A
88-72-2	Nitrotoluene, 2-	inhalation_rfd	0	N/A
88-72-2	Nitrotoluene, 2-	tef	0	N/A
91-57-6	Methylnaphthalene, 2-	cas_number	91-57-6	N/A
91-57-6	Methylnaphthalene, 2-	copc_name	Methylnaphthalene, 2	N/A
91-57-6	Methylnaphthalene, 2-	mw	142.2	N/A
91-57-6	Methylnaphthalene, 2-	t_m	3.08E+2	N/A
91-57-6	Methylnaphthalene, 2-	v_p	5.5E-2	N/A
91-57-6	Methylnaphthalene, 2-	s	2.46E+1	N/A
91-57-6	Methylnaphthalene, 2-	h	5.8E-5	N/A
91-57-6	Methylnaphthalene, 2-	d_a	4.8E-2	N/A
91-57-6	Methylnaphthalene, 2-	dw	7.84E-6	N/A
91-57-6	Methylnaphthalene, 2-	k_ow	7.24E+3	N/A
91-57-6	Methylnaphthalene, 2-	k_oc	2.24E+3	N/A
91-57-6	Methylnaphthalene, 2-	kd_s	2.24E+1	N/A
91-57-6	Methylnaphthalene, 2-	kd_sw	1.68E+2	N/A
91-57-6	Methylnaphthalene, 2-	kd_bs	8.97E+1	N/A
91-57-6	Methylnaphthalene, 2-	k_sg	0	N/A
91-57-6	Methylnaphthalene, 2-	f_v	1	N/A
91-57-6	Methylnaphthalene, 2-	rcf	2.83E+01	N/A
91-57-6	Methylnaphthalene, 2-	br_root_veg	1.3	N/A
91-57-6	Methylnaphthalene, 2-	br_leafy_veg	2.27E-1	N/A
91-57-6	Methylnaphthalene, 2-	br_forage	2.27E-1	N/A
91-57-6	Methylnaphthalene, 2-	bv_leafy_veg	1.24E+3	N/A
91-57-6	Methylnaphthalene, 2-	bv_forage	1.24E+3	N/A
91-57-6	Methylnaphthalene, 2-	ba_milk	4.98E-03	N/A
91-57-6	Methylnaphthalene, 2-	ba_beef	2.37E-02	N/A
91-57-6	Methylnaphthalene, 2-	ba_pork	2.86E-02	N/A
91-57-6	Methylnaphthalene, 2-	bcf_egg	5.75E-2	N/A
91-57-6	Methylnaphthalene, 2-	bcf_chicken	0	N/A
91-57-6	Methylnaphthalene, 2-	bcf_fish	1.87E+02	N/A
91-57-6	Methylnaphthalene, 2-	baf_fish	0	N/A
91-57-6	Methylnaphthalene, 2-	bsaf_fish	0	N/A
91-57-6	Methylnaphthalene, 2-	rfd	4E-03	N/A
91-57-6	Methylnaphthalene, 2-	oral_csf	0	N/A
91-57-6	Methylnaphthalene, 2-	rfc	0	N/A

COPC

CAS No.	COPC Name	Symbol	Current	Original
91-57-6	Methylnaphthalene, 2-	inhalation_urf	0	N/A
91-57-6	Methylnaphthalene, 2-	inhalation_csf	0	N/A
91-57-6	Methylnaphthalene, 2-	chemical_type	O	N/A
91-57-6	Methylnaphthalene, 2-	chemical_subtyp		N/A
91-57-6	Methylnaphthalene, 2-	br_grain	2.27E-1	N/A
91-57-6	Methylnaphthalene, 2-	ba_egg	9.96E-03	N/A
91-57-6	Methylnaphthalene, 2-	ba_chicken	1.74E-02	N/A
91-57-6	Methylnaphthalene, 2-	inhalation_rfd	0	N/A
91-57-6	Methylnaphthalene, 2-	tef	0	N/A
92-52-4	Biphenyl	cas_number	92-52-4	N/A
92-52-4	Biphenyl	copc_name	Biphenyl	N/A
92-52-4	Biphenyl	mw	154.2	N/A
92-52-4	Biphenyl	t_m	3.42E+2	N/A
92-52-4	Biphenyl	v_p	8.93E-3	N/A
92-52-4	Biphenyl	s	6.03	N/A
92-52-4	Biphenyl	h	4.08E-4	N/A
92-52-4	Biphenyl	d_a	4.04E-2	N/A
92-52-4	Biphenyl	dw	8.15E-6	N/A
92-52-4	Biphenyl	k_ow	9.55E+3	N/A
92-52-4	Biphenyl	k_oc	1.56E+4	N/A
92-52-4	Biphenyl	kd_s	1.56E+2	N/A
92-52-4	Biphenyl	kd_sw	1.17E+3	N/A
92-52-4	Biphenyl	kd_bs	6.25E+2	N/A
92-52-4	Biphenyl	k_sg	0	N/A
92-52-4	Biphenyl	f_v	1	N/A
92-52-4	Biphenyl	rcf	35	N/A
92-52-4	Biphenyl	br_root_veg	2.29E-1	N/A
92-52-4	Biphenyl	br_leafy_veg	1.94E-1	N/A
92-52-4	Biphenyl	br_forage	1.94E-1	N/A
92-52-4	Biphenyl	bv_leafy_veg	2.37E+2	N/A
92-52-4	Biphenyl	bv_forage	2.37E+2	N/A
92-52-4	Biphenyl	ba_milk	5.40E-03	N/A
92-52-4	Biphenyl	ba_beef	2.57E-02	N/A
92-52-4	Biphenyl	ba_pork	3.11E-02	N/A
92-52-4	Biphenyl	bcf_egg	7.59E-2	N/A
92-52-4	Biphenyl	bcf_chicken	0	N/A
92-52-4	Biphenyl	bcf_fish	232	N/A
92-52-4	Biphenyl	baf_fish	0	N/A
92-52-4	Biphenyl	bsaf_fish	0	N/A
92-52-4	Biphenyl	rfd	5E-2	N/A
92-52-4	Biphenyl	oral_csf	0	N/A
92-52-4	Biphenyl	rfc	0	N/A
92-52-4	Biphenyl	inhalation_urf	0	N/A
92-52-4	Biphenyl	inhalation_csf	0	N/A
92-52-4	Biphenyl	chemical_type	O	N/A
92-52-4	Biphenyl	chemical_subtyp		N/A

COPC

CAS No.	COPC Name	Symbol	Current	Original
92-52-4	Biphenyl	br_grain	1.94E-1	N/A
92-52-4	Biphenyl	ba_egg	1.08E-02	N/A
92-52-4	Biphenyl	ba_chicken	1.89E-02	N/A
92-52-4	Biphenyl	inhalation_rfd	0	N/A
92-52-4	Biphenyl	tef	0	N/A
92-87-5	Benzidine	cas_number	92-87-5	N/A
92-87-5	Benzidine	copc_name	Benzidine	N/A
92-87-5	Benzidine	mw	184.2	N/A
92-87-5	Benzidine	t_m	3.93E+2	N/A
92-87-5	Benzidine	v_p	8.98E-7	N/A
92-87-5	Benzidine	s	5E+2	N/A
92-87-5	Benzidine	h	2.88E-9	N/A
92-87-5	Benzidine	d_a	3.4E-2	N/A
92-87-5	Benzidine	dw	1.5E-5	N/A
92-87-5	Benzidine	k_ow	2.19E+1	N/A
92-87-5	Benzidine	k_oc	1.55E+2	N/A
92-87-5	Benzidine	kd_s	1.55	N/A
92-87-5	Benzidine	kd_sw	1.16E+1	N/A
92-87-5	Benzidine	kd_bs	6.2	N/A
92-87-5	Benzidine	k_sg	0	N/A
92-87-5	Benzidine	f_v	0.998	N/A
92-87-5	Benzidine	rcf	1.14	N/A
92-87-5	Benzidine	br_root_veg	7.39E-1	N/A
92-87-5	Benzidine	br_leafy_veg	6.51	N/A
92-87-5	Benzidine	br_forage	6.51	N/A
92-87-5	Benzidine	bv_leafy_veg	5.19E+4	N/A
92-87-5	Benzidine	bv_forage	5.19E+4	N/A
92-87-5	Benzidine	ba_milk	1.99E-04	N/A
92-87-5	Benzidine	ba_beef	9.44E-04	N/A
92-87-5	Benzidine	ba_pork	1.14E-03	N/A
92-87-5	Benzidine	bcf_egg	1.74E-4	N/A
92-87-5	Benzidine	bcf_chicken	0	N/A
92-87-5	Benzidine	bcf_fish	2.15	N/A
92-87-5	Benzidine	baf_fish	0	N/A
92-87-5	Benzidine	bsaf_fish	0	N/A
92-87-5	Benzidine	rfd	3E-3	N/A
92-87-5	Benzidine	oral_csf	2.3E+2	N/A
92-87-5	Benzidine	rfc	0	N/A
92-87-5	Benzidine	inhalation_urf	6.57E-2	N/A
92-87-5	Benzidine	inhalation_csf	2.3E+2	N/A
92-87-5	Benzidine	chemical_type	O	N/A
92-87-5	Benzidine	chemical_subtyp		N/A
92-87-5	Benzidine	br_grain	6.51	N/A
92-87-5	Benzidine	ba_egg	3.97E-04	N/A
92-87-5	Benzidine	ba_chicken	6.95E-04	N/A
92-87-5	Benzidine	inhalation_rfd	0	N/A

COPC

CAS No.	COPC Name	Symbol	Current	Original
92-87-5	Benzidine	tef	0	N/A
95-63-6	Trimethylbenzene, 1,2,4-	cas_number	95-63-6	N/A
95-63-6	Trimethylbenzene, 1,2,4-	copc_name	Trimethylbenzene, 1,	N/A
95-63-6	Trimethylbenzene, 1,2,4-	mw	120.2	N/A
95-63-6	Trimethylbenzene, 1,2,4-	t_m	2.29E+2	N/A
95-63-6	Trimethylbenzene, 1,2,4-	v_p	2.1	N/A
95-63-6	Trimethylbenzene, 1,2,4-	s	5.7E+1	N/A
95-63-6	Trimethylbenzene, 1,2,4-	h	6.16E-3	N/A
95-63-6	Trimethylbenzene, 1,2,4-	d_a	6.44E-2	N/A
95-63-6	Trimethylbenzene, 1,2,4-	dw	7.92E-6	N/A
95-63-6	Trimethylbenzene, 1,2,4-	k_ow	4.27E+3	N/A
95-63-6	Trimethylbenzene, 1,2,4-	k_oc	3.72E+3	N/A
95-63-6	Trimethylbenzene, 1,2,4-	kd_s	3.72E+1	N/A
95-63-6	Trimethylbenzene, 1,2,4-	kd_sw	2.79E+2	N/A
95-63-6	Trimethylbenzene, 1,2,4-	kd_bs	1.49E+2	N/A
95-63-6	Trimethylbenzene, 1,2,4-	k_sg	0	N/A
95-63-6	Trimethylbenzene, 1,2,4-	f_v	1	N/A
95-63-6	Trimethylbenzene, 1,2,4-	rcf	18.8	N/A
95-63-6	Trimethylbenzene, 1,2,4-	br_root_veg	5.29E-1	N/A
95-63-6	Trimethylbenzene, 1,2,4-	br_leafy_veg	3.09E-1	N/A
95-63-6	Trimethylbenzene, 1,2,4-	br_forage	3.09E-1	N/A
95-63-6	Trimethylbenzene, 1,2,4-	bv_leafy_veg	6.67	N/A
95-63-6	Trimethylbenzene, 1,2,4-	bv_forage	6.67	N/A
95-63-6	Trimethylbenzene, 1,2,4-	ba_milk	4.18E-03	N/A
95-63-6	Trimethylbenzene, 1,2,4-	ba_beef	1.99E-02	N/A
95-63-6	Trimethylbenzene, 1,2,4-	ba_pork	2.41E-02	N/A
95-63-6	Trimethylbenzene, 1,2,4-	bcf_egg	3.39E-2	N/A
95-63-6	Trimethylbenzene, 1,2,4-	bcf_chicken	0	N/A
95-63-6	Trimethylbenzene, 1,2,4-	bcf_fish	1.24E+02	N/A
95-63-6	Trimethylbenzene, 1,2,4-	baf_fish	0	N/A
95-63-6	Trimethylbenzene, 1,2,4-	bsaf_fish	0	N/A
95-63-6	Trimethylbenzene, 1,2,4-	rfd	0	N/A
95-63-6	Trimethylbenzene, 1,2,4-	oral_csf	0	N/A
95-63-6	Trimethylbenzene, 1,2,4-	rfc	0	N/A
95-63-6	Trimethylbenzene, 1,2,4-	inhalation_urf	0	N/A
95-63-6	Trimethylbenzene, 1,2,4-	inhalation_csf	0	N/A
95-63-6	Trimethylbenzene, 1,2,4-	chemical_type	O	N/A
95-63-6	Trimethylbenzene, 1,2,4-	chemical_subtyp		N/A
95-63-6	Trimethylbenzene, 1,2,4-	br_grain	3.09E-1	N/A
95-63-6	Trimethylbenzene, 1,2,4-	ba_egg	8.37E-03	N/A
95-63-6	Trimethylbenzene, 1,2,4-	ba_chicken	1.46E-02	N/A
95-63-6	Trimethylbenzene, 1,2,4-	inhalation_rfd	1.7E-3	N/A
95-63-6	Trimethylbenzene, 1,2,4-	tef	0	N/A
98-83-9	Alpha Methyl Styrene	cas_number	98-83-9	N/A
98-83-9	Alpha Methyl Styrene	copc_name	Alpha Methyl Styrene	N/A
98-83-9	Alpha Methyl Styrene	mw	118.2	N/A

COPC

CAS No.	COPC Name	Symbol	Current	Original
98-83-9	Alpha Methyl Styrene	t_m	2.5E+2	N/A
98-83-9	Alpha Methyl Styrene	v_p	1.5	N/A
98-83-9	Alpha Methyl Styrene	s	8.9E+1	N/A
98-83-9	Alpha Methyl Styrene	h	1.04E-1	N/A
98-83-9	Alpha Methyl Styrene	d_a	7.89E-2	N/A
98-83-9	Alpha Methyl Styrene	dw	9.14E-6	N/A
98-83-9	Alpha Methyl Styrene	k_ow	3.02E+3	N/A
98-83-9	Alpha Methyl Styrene	k_oc	2.64E+03	N/A
98-83-9	Alpha Methyl Styrene	kd_s	2.87E-2	N/A
98-83-9	Alpha Methyl Styrene	kd_sw	2.15E-1	N/A
98-83-9	Alpha Methyl Styrene	kd_bs	1.15E-1	N/A
98-83-9	Alpha Methyl Styrene	k_sg	0	N/A
98-83-9	Alpha Methyl Styrene	f_v	1	N/A
98-83-9	Alpha Methyl Styrene	rcf	1.44E+01	N/A
98-83-9	Alpha Methyl Styrene	br_root_veg	5.33E+2	N/A
98-83-9	Alpha Methyl Styrene	br_leafy_veg	3.77E-1	N/A
98-83-9	Alpha Methyl Styrene	br_forage	3.77E-1	N/A
98-83-9	Alpha Methyl Styrene	bv_leafy_veg	2.73E-1	N/A
98-83-9	Alpha Methyl Styrene	bv_forage	2.73E-1	N/A
98-83-9	Alpha Methyl Styrene	ba_milk	3.69E-03	N/A
98-83-9	Alpha Methyl Styrene	ba_beef	1.75E-02	N/A
98-83-9	Alpha Methyl Styrene	ba_pork	2.12E-05	N/A
98-83-9	Alpha Methyl Styrene	bcf_egg	2.4E-2	N/A
98-83-9	Alpha Methyl Styrene	bcf_chicken	0	N/A
98-83-9	Alpha Methyl Styrene	bcf_fish	95.4	N/A
98-83-9	Alpha Methyl Styrene	baf_fish	0	N/A
98-83-9	Alpha Methyl Styrene	bsaf_fish	0	N/A
98-83-9	Alpha Methyl Styrene	rfd	7E-2	N/A
98-83-9	Alpha Methyl Styrene	oral_csf	0	N/A
98-83-9	Alpha Methyl Styrene	rfc	0	N/A
98-83-9	Alpha Methyl Styrene	inhalation_urf	0	N/A
98-83-9	Alpha Methyl Styrene	inhalation_csf	0	N/A
98-83-9	Alpha Methyl Styrene	chemical_type	O	N/A
98-83-9	Alpha Methyl Styrene	chemical_subtyp		N/A
98-83-9	Alpha Methyl Styrene	br_grain	3.77E-1	N/A
98-83-9	Alpha Methyl Styrene	ba_egg	7.37E-03	N/A
98-83-9	Alpha Methyl Styrene	ba_chicken	1.29E-02	N/A
98-83-9	Alpha Methyl Styrene	inhalation_rfd	0	N/A
98-83-9	Alpha Methyl Styrene	tef	0	N/A
99-08-1	Nitrotoluene, 3-	cas_number	99-08-1	N/A
99-08-1	Nitrotoluene, 3-	copc_name	Nitrotoluene, 3-	N/A
99-08-1	Nitrotoluene, 3-	mw	137.1	N/A
99-08-1	Nitrotoluene, 3-	t_m	289	N/A
99-08-1	Nitrotoluene, 3-	v_p	2.72E-4	N/A
99-08-1	Nitrotoluene, 3-	s	498	N/A
99-08-1	Nitrotoluene, 3-	h	6.84E-5	N/A

COPC

CAS No.	COPC Name	Symbol	Current	Original
99-08-1	Nitrotoluene, 3-	d_a	4.95E-2	N/A
99-08-1	Nitrotoluene, 3-	dw	8.22E-6	N/A
99-08-1	Nitrotoluene, 3-	k_ow	282	N/A
99-08-1	Nitrotoluene, 3-	k_oc	105	N/A
99-08-1	Nitrotoluene, 3-	kd_s	1.05	N/A
99-08-1	Nitrotoluene, 3-	kd_sw	1.9	N/A
99-08-1	Nitrotoluene, 3-	kd_bs	4.21	N/A
99-08-1	Nitrotoluene, 3-	k_sg	395	N/A
99-08-1	Nitrotoluene, 3-	f_v	1	N/A
99-08-1	Nitrotoluene, 3-	rcf	3.15	N/A
99-08-1	Nitrotoluene, 3-	br_root_veg	2.99	N/A
99-08-1	Nitrotoluene, 3-	br_leafy_veg	1.49	N/A
99-08-1	Nitrotoluene, 3-	br_forage	1.49	N/A
99-08-1	Nitrotoluene, 3-	bv_leafy_veg	33.2	N/A
99-08-1	Nitrotoluene, 3-	bv_forage	33.2	N/A
99-08-1	Nitrotoluene, 3-	ba_milk	2.24E-6	N/A
99-08-1	Nitrotoluene, 3-	ba_beef	7.08E-6	N/A
99-08-1	Nitrotoluene, 3-	ba_pork	8.49E-6	N/A
99-08-1	Nitrotoluene, 3-	bcf_egg	2.24E-3	N/A
99-08-1	Nitrotoluene, 3-	bcf_chicken	0	N/A
99-08-1	Nitrotoluene, 3-	bcf_fish	42.9	N/A
99-08-1	Nitrotoluene, 3-	baf_fish	0	N/A
99-08-1	Nitrotoluene, 3-	bsaf_fish	0	N/A
99-08-1	Nitrotoluene, 3-	rfd	2E-2	N/A
99-08-1	Nitrotoluene, 3-	oral_csf	0	N/A
99-08-1	Nitrotoluene, 3-	rfc	0	N/A
99-08-1	Nitrotoluene, 3-	inhalation_urf	0	N/A
99-08-1	Nitrotoluene, 3-	inhalation_csf	0	N/A
99-08-1	Nitrotoluene, 3-	chemical_type	O	N/A
99-08-1	Nitrotoluene, 3-	chemical_subtyp		N/A
99-08-1	Nitrotoluene, 3-	br_grain	1.49	N/A
99-08-1	Nitrotoluene, 3-	ba_egg	2.24E-3	N/A
99-08-1	Nitrotoluene, 3-	ba_chicken	5.66E-6	N/A
99-08-1	Nitrotoluene, 3-	inhalation_rfd	0	N/A
99-08-1	Nitrotoluene, 3-	tef	0	N/A
99-99-0	Nitrotoluene, 4-	cas_number	99-99-0	N/A
99-99-0	Nitrotoluene, 4-	copc_name	Nitrotoluene, 4-	N/A
99-99-0	Nitrotoluene, 4-	mw	137.1	N/A
99-99-0	Nitrotoluene, 4-	t_m	3.27E+2	N/A
99-99-0	Nitrotoluene, 4-	v_p	1.32E-4	N/A
99-99-0	Nitrotoluene, 4-	s	9.36E+1	N/A
99-99-0	Nitrotoluene, 4-	h	4.08E-4	N/A
99-99-0	Nitrotoluene, 4-	d_a	4.78E-2	N/A
99-99-0	Nitrotoluene, 4-	dw	8.61E-6	N/A
99-99-0	Nitrotoluene, 4-	k_ow	2.34E+2	N/A
99-99-0	Nitrotoluene, 4-	k_oc	1.05E+2	N/A

COPC

CAS No.	COPC Name	Symbol	Current	Original
99-99-0	Nitrotoluene, 4-	kd_s	1.05	N/A
99-99-0	Nitrotoluene, 4-	kd_sw	7.9	N/A
99-99-0	Nitrotoluene, 4-	kd_bs	4.21	N/A
99-99-0	Nitrotoluene, 4-	k_sg	3.95	N/A
99-99-0	Nitrotoluene, 4-	f_v	1	N/A
99-99-0	Nitrotoluene, 4-	rcf	2.02	N/A
99-99-0	Nitrotoluene, 4-	br_root_veg	2.69	N/A
99-99-0	Nitrotoluene, 4-	br_leafy_veg	1.65	N/A
99-99-0	Nitrotoluene, 4-	br_forage	1.65	N/A
99-99-0	Nitrotoluene, 4-	bv_leafy_veg	4.58	N/A
99-99-0	Nitrotoluene, 4-	bv_forage	4.58	N/A
99-99-0	Nitrotoluene, 4-	ba_milk	1.05E-03	N/A
99-99-0	Nitrotoluene, 4-	ba_beef	5E-03	N/A
99-99-0	Nitrotoluene, 4-	ba_pork	6.05E-03	N/A
99-99-0	Nitrotoluene, 4-	bcf_egg	1.86E-3	N/A
99-99-0	Nitrotoluene, 4-	bcf_chicken	0	N/A
99-99-0	Nitrotoluene, 4-	bcf_fish	13.3	N/A
99-99-0	Nitrotoluene, 4-	baf_fish	0	N/A
99-99-0	Nitrotoluene, 4-	bsaf_fish	0	N/A
99-99-0	Nitrotoluene, 4-	rfd	0	N/A
99-99-0	Nitrotoluene, 4-	oral_csf	0	N/A
99-99-0	Nitrotoluene, 4-	rfc	0	N/A
99-99-0	Nitrotoluene, 4-	inhalation_urf	0	N/A
99-99-0	Nitrotoluene, 4-	inhalation_csf	0	N/A
99-99-0	Nitrotoluene, 4-	chemical_type	O	N/A
99-99-0	Nitrotoluene, 4-	chemical_subtyp		N/A
99-99-0	Nitrotoluene, 4-	br_grain	1.65	N/A
99-99-0	Nitrotoluene, 4-	ba_egg	2.10E-03	N/A
99-99-0	Nitrotoluene, 4-	ba_chicken	3.68E-03	N/A
99-99-0	Nitrotoluene, 4-	inhalation_rfd	0	N/A
99-99-0	Nitrotoluene, 4-	tef	0	N/A

Appendix C

Supplement AIHQ Values

TABLE C SUPPLMENTAL ACUTE INHALATION EXPOSURE CRITERIA

CAS No.	Chemical	TEEL-1
106-99-0	Butadiene, 1,3-	22
107-05-1	Ally Chloride	10
108-60-1	Bis(2-chloro-1-methylethyl) ether	70
108-87-2	Methylcyclohexane	4900
108-94-1	Cyclohexanone	200
110-00-9	Furan	1.6
110-54-3	Hexane, n-	540
110-82-7	Cyclohexane	3150
111-76-2	Ethanol, 2-Butoxy-	245
119-93-7	Dimethylbenzidine, 3,3'-	0.3
121-82-4	RDX	3
122-39-4	Diphenylamine	30
132-64-9	Dibenzofuran	30
1330-20-7	Xylenes	660
16065-83-1	Chromium III	1
1634-04-4	Methyl Tert-butyl Ether	550
191-24-2	Benzo(g,h,i)perylene	30
208-96-8	Acenaphthylene	0.2
2691-41-0	HMX	0.15
460-19-5	Ethanedinitrile	20
479-45-8	Tetryl	4.5
55-63-0	Nitroglycerine	0.1
60-29-7	Diethyl Ether	1500
71-36-3	Butanol, 1-	150
74-90-8	Hydrogen Cyanide	5.3
7429-90-5	Aluminum	30
7439-89-6	Iron	30
7439-96-5	Manganese	30
7439-98-7	Molybdenum	30
7440-24-6	Strontium	30
7440-31-5	Tin	6
7440-32-6	Titanium	30
7440-42-8	Boron	7.5
7440-48-4	Cobalt	0.1
7440-50-8	Copper	3
7440-62-2	Vanadium	0.075
76-13-1	Freon 113	9700
7664-41-7	Ammonia	17
79-46-9	Nitropropane, 2-	135
80-62-6	Methyl Methacrylate	400
86-74-8	Carbazole	2.5
88-72-2	Nitrotoluene, 2-	30
91-57-6	Methylnaphthalene, 2-	20
92-52-4	Biphenyl	3.9
92-87-5	Benzidine	0.5
95-63-6	Trimethylbenzene, 1,2,4-	180
99-99-0	Nitrotoluene, 4-	30

Source: U.S. Department of Energy Internet site at:
http://www.hss.energy.gov/HealthSafety/WSHP/chem_safety/teel.html

Appendix D

IRAP-h Input/Output Files (Stand-Alone CD)

Appendix E

Hazard Indices and Cancer Risks by Exposure Pathway

RECEPTOR NAME	SCENARIO	PATHWAY	TOTAL CANCER RISK	TOTAL HAZARD QUOTIENT
Firing Control Point	resident_adult	air_crisk_inhale	3.7777E-008	2.0927E-002
Firing Control Point	resident_adult	intake_crisk_ag	0.0000E+000	0.0000E+000
Firing Control Point	resident_adult	intake_crisk_beef	0.0000E+000	0.0000E+000
Firing Control Point	resident_adult	intake_crisk_chick	0.0000E+000	0.0000E+000
Firing Control Point	resident_adult	intake_crisk_dw	0.0000E+000	0.0000E+000
Firing Control Point	resident_adult	intake_crisk_eggs	0.0000E+000	0.0000E+000
Firing Control Point	resident_adult	intake_crisk_fish	0.0000E+000	0.0000E+000
Firing Control Point	resident_adult	intake_crisk_milk	0.0000E+000	0.0000E+000
Firing Control Point	resident_adult	intake_crisk_pork	0.0000E+000	0.0000E+000
Firing Control Point	resident_adult	intake_crisk_soil	0.0000E+000	0.0000E+000
		Total	3.7777E-008	2.0927E-002
Grantsville - ANN	farmer_adult	air_crisk_inhale	3.3793E-008	2.4325E-003
Grantsville - ANN	farmer_adult	intake_crisk_ag	1.9082E-007	3.2117E-002
Grantsville - ANN	farmer_adult	intake_crisk_beef	4.7233E-008	2.9623E-003
Grantsville - ANN	farmer_adult	intake_crisk_chick	4.8563E-012	1.6431E-008
Grantsville - ANN	farmer_adult	intake_crisk_dw	6.7538E-009	1.2070E-002
Grantsville - ANN	farmer_adult	intake_crisk_eggs	2.2662E-012	4.6485E-010
Grantsville - ANN	farmer_adult	intake_crisk_fish	0.0000E+000	0.0000E+000
Grantsville - ANN	farmer_adult	intake_crisk_milk	2.1178E-007	3.6712E-002
Grantsville - ANN	farmer_adult	intake_crisk_pork	1.5708E-009	1.7886E-005
Grantsville - ANN	farmer_adult	intake_crisk_soil	2.1402E-011	3.0911E-006
		Total	4.9198E-007	8.6315E-002
Grantsville - ANN	farmer_child	air_crisk_inhale	2.0276E-008	9.7299E-003
Grantsville - ANN	farmer_child	intake_crisk_ag	6.8816E-008	7.7217E-002
Grantsville - ANN	farmer_child	intake_crisk_beef	4.3555E-009	1.8211E-003
Grantsville - ANN	farmer_child	intake_crisk_chick	4.9666E-013	1.1203E-008
Grantsville - ANN	farmer_child	intake_crisk_dw	2.2625E-009	2.6956E-002
Grantsville - ANN	farmer_child	intake_crisk_eggs	2.4475E-013	3.3469E-010
Grantsville - ANN	farmer_child	intake_crisk_fish	0.0000E+000	0.0000E+000
Grantsville - ANN	farmer_child	intake_crisk_milk	5.2706E-008	6.0909E-002
Grantsville - ANN	farmer_child	intake_crisk_pork	1.7993E-010	1.3658E-005
Grantsville - ANN	farmer_child	intake_crisk_soil	2.9963E-011	2.8850E-005
		Total	1.4863E-007	1.7668E-001
Grantsville - ANN	fisher_adult	air_crisk_inhale	3.3793E-008	3.2433E-003
Grantsville - ANN	fisher_adult	intake_crisk_ag	9.7467E-008	2.1873E-002
Grantsville - ANN	fisher_adult	intake_crisk_beef	0.0000E+000	0.0000E+000

RECEPTOR NAME	SCENARIO	PATHWAY	TOTAL CANCER RISK	TOTAL HAZARD QUOTIENT
Grantsville - ANN	fisher_adult	intake_crisk_chick	0.0000E+000	0.0000E+000
Grantsville - ANN	fisher_adult	intake_crisk_dw	5.0653E-009	1.2070E-002
Grantsville - ANN	fisher_adult	intake_crisk_eggs	0.0000E+000	0.0000E+000
Grantsville - ANN	fisher_adult	intake_crisk_fish	1.5894E-008	1.4890E-004
Grantsville - ANN	fisher_adult	intake_crisk_milk	0.0000E+000	0.0000E+000
Grantsville - ANN	fisher_adult	intake_crisk_pork	0.0000E+000	0.0000E+000
Grantsville - ANN	fisher_adult	intake_crisk_soil	1.6052E-011	3.0911E-006
		Total	1.5224E-007	3.7338E-002
Grantsville - ANN	fisher_child	air_crisk_inhale	2.0276E-008	9.7299E-003
Grantsville - ANN	fisher_child	intake_crisk_ag	4.6906E-008	5.2631E-002
Grantsville - ANN	fisher_child	intake_crisk_beef	0.0000E+000	0.0000E+000
Grantsville - ANN	fisher_child	intake_crisk_chick	0.0000E+000	0.0000E+000
Grantsville - ANN	fisher_child	intake_crisk_dw	2.2625E-009	2.6956E-002
Grantsville - ANN	fisher_child	intake_crisk_eggs	0.0000E+000	0.0000E+000
Grantsville - ANN	fisher_child	intake_crisk_fish	3.1788E-009	1.4890E-004
Grantsville - ANN	fisher_child	intake_crisk_milk	0.0000E+000	0.0000E+000
Grantsville - ANN	fisher_child	intake_crisk_pork	0.0000E+000	0.0000E+000
Grantsville - ANN	fisher_child	intake_crisk_soil	2.9963E-011	2.8850E-005
		Total	7.2653E-008	8.9495E-002
Grantsville - ANN	resident_adult	air_crisk_inhale	3.3793E-008	3.2433E-003
Grantsville - ANN	resident_adult	intake_crisk_ag	9.7467E-008	2.1873E-002
Grantsville - ANN	resident_adult	intake_crisk_beef	0.0000E+000	0.0000E+000
Grantsville - ANN	resident_adult	intake_crisk_chick	0.0000E+000	0.0000E+000
Grantsville - ANN	resident_adult	intake_crisk_dw	5.0653E-009	1.2070E-002
Grantsville - ANN	resident_adult	intake_crisk_eggs	0.0000E+000	0.0000E+000
Grantsville - ANN	resident_adult	intake_crisk_fish	0.0000E+000	0.0000E+000
Grantsville - ANN	resident_adult	intake_crisk_milk	0.0000E+000	0.0000E+000
Grantsville - ANN	resident_adult	intake_crisk_pork	0.0000E+000	0.0000E+000
Grantsville - ANN	resident_adult	intake_crisk_soil	1.6052E-011	3.0911E-006
		Total	1.3634E-007	3.7189E-002
Grantsville - ANN	resident_child	air_crisk_inhale	2.0276E-008	9.7299E-003
Grantsville - ANN	resident_child	intake_crisk_ag	4.6906E-008	5.2631E-002
Grantsville - ANN	resident_child	intake_crisk_beef	0.0000E+000	0.0000E+000
Grantsville - ANN	resident_child	intake_crisk_chick	0.0000E+000	0.0000E+000
Grantsville - ANN	resident_child	intake_crisk_dw	2.2625E-009	2.6956E-002
Grantsville - ANN	resident_child	intake_crisk_eggs	0.0000E+000	0.0000E+000

RECEPTOR NAME	SCENARIO	PATHWAY	TOTAL CANCER RISK	TOTAL HAZARD QUOTIENT
Grantsville - ANN	resident_child	intake_crisk_fish	0.0000E+000	0.0000E+000
Grantsville - ANN	resident_child	intake_crisk_milk	0.0000E+000	0.0000E+000
Grantsville - ANN	resident_child	intake_crisk_pork	0.0000E+000	0.0000E+000
Grantsville - ANN	resident_child	intake_crisk_soil	2.9963E-011	2.8850E-005
		Total	6.9474E-008	8.9346E-002
Grantsville Rsvr	fisher_adult	air_crisk_inhale	0.0000E+000	0.0000E+000
Grantsville Rsvr	fisher_adult	intake_crisk_ag	0.0000E+000	0.0000E+000
Grantsville Rsvr	fisher_adult	intake_crisk_beef	0.0000E+000	0.0000E+000
Grantsville Rsvr	fisher_adult	intake_crisk_chick	0.0000E+000	0.0000E+000
Grantsville Rsvr	fisher_adult	intake_crisk_dw	0.0000E+000	0.0000E+000
Grantsville Rsvr	fisher_adult	intake_crisk_eggs	0.0000E+000	0.0000E+000
Grantsville Rsvr	fisher_adult	intake_crisk_fish	1.5894E-008	1.4890E-004
Grantsville Rsvr	fisher_adult	intake_crisk_milk	0.0000E+000	0.0000E+000
Grantsville Rsvr	fisher_adult	intake_crisk_pork	0.0000E+000	0.0000E+000
Grantsville Rsvr	fisher_adult	intake_crisk_soil	0.0000E+000	0.0000E+000
		Total	1.5894E-008	1.4890E-004
Grantsville Rsvr	fisher_child	air_crisk_inhale	0.0000E+000	0.0000E+000
Grantsville Rsvr	fisher_child	intake_crisk_ag	0.0000E+000	0.0000E+000
Grantsville Rsvr	fisher_child	intake_crisk_beef	0.0000E+000	0.0000E+000
Grantsville Rsvr	fisher_child	intake_crisk_chick	0.0000E+000	0.0000E+000
Grantsville Rsvr	fisher_child	intake_crisk_dw	0.0000E+000	0.0000E+000
Grantsville Rsvr	fisher_child	intake_crisk_eggs	0.0000E+000	0.0000E+000
Grantsville Rsvr	fisher_child	intake_crisk_fish	3.1788E-009	1.4890E-004
Grantsville Rsvr	fisher_child	intake_crisk_milk	0.0000E+000	0.0000E+000
Grantsville Rsvr	fisher_child	intake_crisk_pork	0.0000E+000	0.0000E+000
Grantsville Rsvr	fisher_child	intake_crisk_soil	0.0000E+000	0.0000E+000
		Total	3.1788E-009	1.4890E-004
Guard Shack	resident_adult	air_crisk_inhale	9.1178E-008	2.6770E-002
Guard Shack	resident_adult	intake_crisk_ag	0.0000E+000	0.0000E+000
Guard Shack	resident_adult	intake_crisk_beef	0.0000E+000	0.0000E+000
Guard Shack	resident_adult	intake_crisk_chick	0.0000E+000	0.0000E+000
Guard Shack	resident_adult	intake_crisk_dw	0.0000E+000	0.0000E+000
Guard Shack	resident_adult	intake_crisk_eggs	0.0000E+000	0.0000E+000
Guard Shack	resident_adult	intake_crisk_fish	0.0000E+000	0.0000E+000
Guard Shack	resident_adult	intake_crisk_milk	0.0000E+000	0.0000E+000
Guard Shack	resident_adult	intake_crisk_pork	0.0000E+000	0.0000E+000

RECEPTOR NAME	SCENARIO	PATHWAY	TOTAL CANCER RISK	TOTAL HAZARD QUOTIENT
Guard Shack	resident_adult	intake_crisk_soil	0.0000E+000	0.0000E+000
		Total	9.1178E-008	2.6770E-002
NE OB/OB ANN	resident_adult	air_crisk_inhale	5.3677E-007	1.4297E-001
NE OB/OB ANN	resident_adult	intake_crisk_ag	0.0000E+000	0.0000E+000
NE OB/OB ANN	resident_adult	intake_crisk_beef	0.0000E+000	0.0000E+000
NE OB/OB ANN	resident_adult	intake_crisk_chick	0.0000E+000	0.0000E+000
NE OB/OB ANN	resident_adult	intake_crisk_dw	0.0000E+000	0.0000E+000
NE OB/OB ANN	resident_adult	intake_crisk_eggs	0.0000E+000	0.0000E+000
NE OB/OB ANN	resident_adult	intake_crisk_fish	0.0000E+000	0.0000E+000
NE OB/OB ANN	resident_adult	intake_crisk_milk	0.0000E+000	0.0000E+000
NE OB/OB ANN	resident_adult	intake_crisk_pork	0.0000E+000	0.0000E+000
NE OB/OB ANN	resident_adult	intake_crisk_soil	0.0000E+000	0.0000E+000
		Total	5.3677E-007	1.4297E-001
Rush Lake	fisher_adult	air_crisk_inhale	0.0000E+000	0.0000E+000
Rush Lake	fisher_adult	intake_crisk_ag	0.0000E+000	0.0000E+000
Rush Lake	fisher_adult	intake_crisk_beef	0.0000E+000	0.0000E+000
Rush Lake	fisher_adult	intake_crisk_chick	0.0000E+000	0.0000E+000
Rush Lake	fisher_adult	intake_crisk_dw	0.0000E+000	0.0000E+000
Rush Lake	fisher_adult	intake_crisk_eggs	0.0000E+000	0.0000E+000
Rush Lake	fisher_adult	intake_crisk_fish	2.1309E-008	2.1001E-004
Rush Lake	fisher_adult	intake_crisk_milk	0.0000E+000	0.0000E+000
Rush Lake	fisher_adult	intake_crisk_pork	0.0000E+000	0.0000E+000
Rush Lake	fisher_adult	intake_crisk_soil	0.0000E+000	0.0000E+000
		Total	2.1309E-008	2.1001E-004
Rush Lake	fisher_child	air_crisk_inhale	0.0000E+000	0.0000E+000
Rush Lake	fisher_child	intake_crisk_ag	0.0000E+000	0.0000E+000
Rush Lake	fisher_child	intake_crisk_beef	0.0000E+000	0.0000E+000
Rush Lake	fisher_child	intake_crisk_chick	0.0000E+000	0.0000E+000
Rush Lake	fisher_child	intake_crisk_dw	0.0000E+000	0.0000E+000
Rush Lake	fisher_child	intake_crisk_eggs	0.0000E+000	0.0000E+000
Rush Lake	fisher_child	intake_crisk_fish	4.2618E-009	2.1001E-004
Rush Lake	fisher_child	intake_crisk_milk	0.0000E+000	0.0000E+000
Rush Lake	fisher_child	intake_crisk_pork	0.0000E+000	0.0000E+000
Rush Lake	fisher_child	intake_crisk_soil	0.0000E+000	0.0000E+000
		Total	4.2618E-009	2.1001E-004
SW OB/OB/TEAD ANN	farmer_adult	air_crisk_inhale	5.7399E-007	6.1949E-002

RECEPTOR NAME	SCENARIO	PATHWAY	TOTAL CANCER RISK	TOTAL HAZARD QUOTIENT
SW OB/OB/TEAD ANN	farmer_adult	intake_crisk_ag	6.0679E-006	1.5664E+000
SW OB/OB/TEAD ANN	farmer_adult	intake_crisk_beef	9.7646E-007	1.3377E-001
SW OB/OB/TEAD ANN	farmer_adult	intake_crisk_chick	1.1003E-010	3.7227E-007
SW OB/OB/TEAD ANN	farmer_adult	intake_crisk_dw	6.7538E-009	1.2070E-002
SW OB/OB/TEAD ANN	farmer_adult	intake_crisk_eggs	5.1344E-011	1.0532E-008
SW OB/OB/TEAD ANN	farmer_adult	intake_crisk_fish	0.0000E+000	0.0000E+000
SW OB/OB/TEAD ANN	farmer_adult	intake_crisk_milk	5.9938E-006	1.8050E+000
SW OB/OB/TEAD ANN	farmer_adult	intake_crisk_pork	2.6501E-008	2.8591E-004
SW OB/OB/TEAD ANN	farmer_adult	intake_crisk_soil	6.5661E-010	1.5252E-004
		Total	1.3646E-005	3.5797E+000
SW OB/OB/TEAD ANN	farmer_child	air_crisk_inhale	3.4439E-007	2.4780E-001
SW OB/OB/TEAD ANN	farmer_child	intake_crisk_ag	2.1883E-006	3.7660E+000
SW OB/OB/TEAD ANN	farmer_child	intake_crisk_beef	9.0042E-008	8.2236E-002
SW OB/OB/TEAD ANN	farmer_child	intake_crisk_chick	1.1253E-011	2.5382E-007
SW OB/OB/TEAD ANN	farmer_child	intake_crisk_dw	2.2625E-009	2.6956E-002
SW OB/OB/TEAD ANN	farmer_child	intake_crisk_eggs	5.5451E-012	7.5830E-009
SW OB/OB/TEAD ANN	farmer_child	intake_crisk_fish	0.0000E+000	0.0000E+000
SW OB/OB/TEAD ANN	farmer_child	intake_crisk_milk	1.4917E-006	2.9947E+000
SW OB/OB/TEAD ANN	farmer_child	intake_crisk_pork	3.0355E-009	2.1833E-004
SW OB/OB/TEAD ANN	farmer_child	intake_crisk_soil	9.1926E-010	1.4235E-003
		Total	4.1206E-006	7.1194E+000
SW OB/OB/TEAD ANN	fisher_adult	air_crisk_inhale	5.7399E-007	8.2598E-002
SW OB/OB/TEAD ANN	fisher_adult	intake_crisk_ag	3.0993E-006	1.0668E+000
SW OB/OB/TEAD ANN	fisher_adult	intake_crisk_beef	0.0000E+000	0.0000E+000
SW OB/OB/TEAD ANN	fisher_adult	intake_crisk_chick	0.0000E+000	0.0000E+000
SW OB/OB/TEAD ANN	fisher_adult	intake_crisk_dw	5.0653E-009	1.2070E-002
SW OB/OB/TEAD ANN	fisher_adult	intake_crisk_eggs	0.0000E+000	0.0000E+000
SW OB/OB/TEAD ANN	fisher_adult	intake_crisk_fish	1.5894E-008	1.4890E-004
SW OB/OB/TEAD ANN	fisher_adult	intake_crisk_milk	0.0000E+000	0.0000E+000
SW OB/OB/TEAD ANN	fisher_adult	intake_crisk_pork	0.0000E+000	0.0000E+000
SW OB/OB/TEAD ANN	fisher_adult	intake_crisk_soil	4.9246E-010	1.5252E-004
		Total	3.6948E-006	1.1618E+000
SW OB/OB/TEAD ANN	fisher_child	air_crisk_inhale	3.4439E-007	2.4780E-001
SW OB/OB/TEAD ANN	fisher_child	intake_crisk_ag	1.4915E-006	2.5669E+000
SW OB/OB/TEAD ANN	fisher_child	intake_crisk_beef	0.0000E+000	0.0000E+000
SW OB/OB/TEAD ANN	fisher_child	intake_crisk_chick	0.0000E+000	0.0000E+000

RECEPTOR NAME	SCENARIO	PATHWAY	TOTAL CANCER RISK	TOTAL HAZARD QUOTIENT
SW OB/OB/TEAD ANN	fisher_child	intake_crisk_dw	2.2625E-009	2.6956E-002
SW OB/OB/TEAD ANN	fisher_child	intake_crisk_eggs	0.0000E+000	0.0000E+000
SW OB/OB/TEAD ANN	fisher_child	intake_crisk_fish	3.1788E-009	1.4890E-004
SW OB/OB/TEAD ANN	fisher_child	intake_crisk_milk	0.0000E+000	0.0000E+000
SW OB/OB/TEAD ANN	fisher_child	intake_crisk_pork	0.0000E+000	0.0000E+000
SW OB/OB/TEAD ANN	fisher_child	intake_crisk_soil	9.1926E-010	1.4235E-003
		Total	1.8423E-006	2.8432E+000
SW OB/OB/TEAD ANN	resident_adult	air_crisk_inhale	5.7399E-007	8.2598E-002
SW OB/OB/TEAD ANN	resident_adult	intake_crisk_ag	3.0993E-006	1.0668E+000
SW OB/OB/TEAD ANN	resident_adult	intake_crisk_beef	0.0000E+000	0.0000E+000
SW OB/OB/TEAD ANN	resident_adult	intake_crisk_chick	0.0000E+000	0.0000E+000
SW OB/OB/TEAD ANN	resident_adult	intake_crisk_dw	5.0653E-009	1.2070E-002
SW OB/OB/TEAD ANN	resident_adult	intake_crisk_eggs	0.0000E+000	0.0000E+000
SW OB/OB/TEAD ANN	resident_adult	intake_crisk_fish	0.0000E+000	0.0000E+000
SW OB/OB/TEAD ANN	resident_adult	intake_crisk_milk	0.0000E+000	0.0000E+000
SW OB/OB/TEAD ANN	resident_adult	intake_crisk_pork	0.0000E+000	0.0000E+000
SW OB/OB/TEAD ANN	resident_adult	intake_crisk_soil	4.9246E-010	1.5252E-004
		Total	3.6789E-006	1.1616E+000
SW OB/OB/TEAD ANN	resident_child	air_crisk_inhale	3.4439E-007	2.4780E-001
SW OB/OB/TEAD ANN	resident_child	intake_crisk_ag	1.4915E-006	2.5669E+000
SW OB/OB/TEAD ANN	resident_child	intake_crisk_beef	0.0000E+000	0.0000E+000
SW OB/OB/TEAD ANN	resident_child	intake_crisk_chick	0.0000E+000	0.0000E+000
SW OB/OB/TEAD ANN	resident_child	intake_crisk_dw	2.2625E-009	2.6956E-002
SW OB/OB/TEAD ANN	resident_child	intake_crisk_eggs	0.0000E+000	0.0000E+000
SW OB/OB/TEAD ANN	resident_child	intake_crisk_fish	0.0000E+000	0.0000E+000
SW OB/OB/TEAD ANN	resident_child	intake_crisk_milk	0.0000E+000	0.0000E+000
SW OB/OB/TEAD ANN	resident_child	intake_crisk_pork	0.0000E+000	0.0000E+000
SW OB/OB/TEAD ANN	resident_child	intake_crisk_soil	9.1926E-010	1.4235E-003
		Total	1.8391E-006	2.8431E+000
Stockton - ANN	farmer_adult	air_crisk_inhale	1.5127E-008	1.0851E-003
Stockton - ANN	farmer_adult	intake_crisk_ag	8.3945E-008	1.4902E-002
Stockton - ANN	farmer_adult	intake_crisk_beef	2.0943E-008	1.3712E-003
Stockton - ANN	farmer_adult	intake_crisk_chick	2.0730E-012	7.0138E-009
Stockton - ANN	farmer_adult	intake_crisk_dw	6.7538E-009	1.2070E-002
Stockton - ANN	farmer_adult	intake_crisk_eggs	9.6735E-013	1.9843E-010
Stockton - ANN	farmer_adult	intake_crisk_fish	0.0000E+000	0.0000E+000

RECEPTOR NAME	SCENARIO	PATHWAY	TOTAL CANCER RISK	TOTAL HAZARD QUOTIENT
Stockton - ANN	farmer_adult	intake_crisk_milk	9.5373E-008	1.7097E-002
Stockton - ANN	farmer_adult	intake_crisk_pork	6.9236E-010	7.9213E-006
Stockton - ANN	farmer_adult	intake_crisk_soil	9.3799E-012	1.4367E-006
		Total	2.2285E-007	4.6535E-002
Stockton - ANN	farmer_child	air_crisk_inhale	9.0763E-009	4.3402E-003
Stockton - ANN	farmer_child	intake_crisk_ag	3.0274E-008	3.5827E-002
Stockton - ANN	farmer_child	intake_crisk_beef	1.9312E-009	8.4297E-004
Stockton - ANN	farmer_child	intake_crisk_chick	2.1201E-013	4.7822E-009
Stockton - ANN	farmer_child	intake_crisk_dw	2.2625E-009	2.6956E-002
Stockton - ANN	farmer_child	intake_crisk_eggs	1.0447E-013	1.4287E-010
Stockton - ANN	farmer_child	intake_crisk_fish	0.0000E+000	0.0000E+000
Stockton - ANN	farmer_child	intake_crisk_milk	2.3735E-008	2.8366E-002
Stockton - ANN	farmer_child	intake_crisk_pork	7.9306E-011	6.0490E-006
Stockton - ANN	farmer_child	intake_crisk_soil	1.3132E-011	1.3409E-005
		Total	6.7372E-008	9.6352E-002
Stockton - ANN	fisher_adult	air_crisk_inhale	1.5127E-008	1.4467E-003
Stockton - ANN	fisher_adult	intake_crisk_ag	4.2878E-008	1.0149E-002
Stockton - ANN	fisher_adult	intake_crisk_beef	0.0000E+000	0.0000E+000
Stockton - ANN	fisher_adult	intake_crisk_chick	0.0000E+000	0.0000E+000
Stockton - ANN	fisher_adult	intake_crisk_dw	5.0653E-009	1.2070E-002
Stockton - ANN	fisher_adult	intake_crisk_eggs	0.0000E+000	0.0000E+000
Stockton - ANN	fisher_adult	intake_crisk_fish	1.5894E-008	1.4890E-004
Stockton - ANN	fisher_adult	intake_crisk_milk	0.0000E+000	0.0000E+000
Stockton - ANN	fisher_adult	intake_crisk_pork	0.0000E+000	0.0000E+000
Stockton - ANN	fisher_adult	intake_crisk_soil	7.0349E-012	1.4367E-006
		Total	7.8971E-008	2.3816E-002
Stockton - ANN	fisher_child	air_crisk_inhale	9.0763E-009	4.3402E-003
Stockton - ANN	fisher_child	intake_crisk_ag	2.0635E-008	2.4420E-002
Stockton - ANN	fisher_child	intake_crisk_beef	0.0000E+000	0.0000E+000
Stockton - ANN	fisher_child	intake_crisk_chick	0.0000E+000	0.0000E+000
Stockton - ANN	fisher_child	intake_crisk_dw	2.2625E-009	2.6956E-002
Stockton - ANN	fisher_child	intake_crisk_eggs	0.0000E+000	0.0000E+000
Stockton - ANN	fisher_child	intake_crisk_fish	3.1788E-009	1.4890E-004
Stockton - ANN	fisher_child	intake_crisk_milk	0.0000E+000	0.0000E+000
Stockton - ANN	fisher_child	intake_crisk_pork	0.0000E+000	0.0000E+000
Stockton - ANN	fisher_child	intake_crisk_soil	1.3132E-011	1.3409E-005

RECEPTOR NAME	SCENARIO	PATHWAY	TOTAL CANCER RISK	TOTAL HAZARD QUOTIENT
		Total	3.5165E-008	5.5879E-002
Stockton - ANN	resident_adult	air_crisk_inhale	1.5127E-008	1.4467E-003
Stockton - ANN	resident_adult	intake_crisk_ag	4.2878E-008	1.0149E-002
Stockton - ANN	resident_adult	intake_crisk_beef	0.0000E+000	0.0000E+000
Stockton - ANN	resident_adult	intake_crisk_chick	0.0000E+000	0.0000E+000
Stockton - ANN	resident_adult	intake_crisk_dw	5.0653E-009	1.2070E-002
Stockton - ANN	resident_adult	intake_crisk_eggs	0.0000E+000	0.0000E+000
Stockton - ANN	resident_adult	intake_crisk_fish	0.0000E+000	0.0000E+000
Stockton - ANN	resident_adult	intake_crisk_milk	0.0000E+000	0.0000E+000
Stockton - ANN	resident_adult	intake_crisk_pork	0.0000E+000	0.0000E+000
Stockton - ANN	resident_adult	intake_crisk_soil	7.0349E-012	1.4367E-006
		Total	6.3077E-008	2.3667E-002
Stockton - ANN	resident_child	air_crisk_inhale	9.0763E-009	4.3402E-003
Stockton - ANN	resident_child	intake_crisk_ag	2.0635E-008	2.4420E-002
Stockton - ANN	resident_child	intake_crisk_beef	0.0000E+000	0.0000E+000
Stockton - ANN	resident_child	intake_crisk_chick	0.0000E+000	0.0000E+000
Stockton - ANN	resident_child	intake_crisk_dw	2.2625E-009	2.6956E-002
Stockton - ANN	resident_child	intake_crisk_eggs	0.0000E+000	0.0000E+000
Stockton - ANN	resident_child	intake_crisk_fish	0.0000E+000	0.0000E+000
Stockton - ANN	resident_child	intake_crisk_milk	0.0000E+000	0.0000E+000
Stockton - ANN	resident_child	intake_crisk_pork	0.0000E+000	0.0000E+000
Stockton - ANN	resident_child	intake_crisk_soil	1.3132E-011	1.3409E-005
		Total	3.1987E-008	5.5730E-002
Tooele - ANN	farmer_adult	air_crisk_inhale	5.0417E-009	3.8114E-004
Tooele - ANN	farmer_adult	intake_crisk_ag	2.6176E-008	4.8026E-003
Tooele - ANN	farmer_adult	intake_crisk_beef	6.8457E-009	4.4500E-004
Tooele - ANN	farmer_adult	intake_crisk_chick	6.3349E-013	2.1434E-009
Tooele - ANN	farmer_adult	intake_crisk_dw	6.7538E-009	1.2070E-002
Tooele - ANN	farmer_adult	intake_crisk_eggs	2.9562E-013	6.0638E-011
Tooele - ANN	farmer_adult	intake_crisk_fish	0.0000E+000	0.0000E+000
Tooele - ANN	farmer_adult	intake_crisk_milk	3.1194E-008	5.5355E-003
Tooele - ANN	farmer_adult	intake_crisk_pork	2.2688E-010	2.6216E-006
Tooele - ANN	farmer_adult	intake_crisk_soil	2.9173E-012	4.6350E-007
		Total	7.6243E-008	2.3237E-002
Tooele - ANN	farmer_child	air_crisk_inhale	3.0250E-009	1.5246E-003
Tooele - ANN	farmer_child	intake_crisk_ag	9.4401E-009	1.1547E-002

RECEPTOR NAME	SCENARIO	PATHWAY	TOTAL CANCER RISK	TOTAL HAZARD QUOTIENT
Tooele - ANN	farmer_child	intake_crisk_beef	6.3126E-010	2.7357E-004
Tooele - ANN	farmer_child	intake_crisk_chick	6.4789E-014	1.4614E-009
Tooele - ANN	farmer_child	intake_crisk_dw	2.2625E-009	2.6956E-002
Tooele - ANN	farmer_child	intake_crisk_eggs	3.1926E-014	4.3660E-011
Tooele - ANN	farmer_child	intake_crisk_fish	0.0000E+000	0.0000E+000
Tooele - ANN	farmer_child	intake_crisk_milk	7.7632E-009	9.1840E-003
Tooele - ANN	farmer_child	intake_crisk_pork	2.5988E-011	2.0019E-006
Tooele - ANN	farmer_child	intake_crisk_soil	4.0842E-012	4.3260E-006
		Total	2.3152E-008	4.9491E-002
Tooele - ANN	fisher_adult	air_crisk_inhale	5.0417E-009	5.0819E-004
Tooele - ANN	fisher_adult	intake_crisk_ag	1.3370E-008	3.2708E-003
Tooele - ANN	fisher_adult	intake_crisk_beef	0.0000E+000	0.0000E+000
Tooele - ANN	fisher_adult	intake_crisk_chick	0.0000E+000	0.0000E+000
Tooele - ANN	fisher_adult	intake_crisk_dw	5.0653E-009	1.2070E-002
Tooele - ANN	fisher_adult	intake_crisk_eggs	0.0000E+000	0.0000E+000
Tooele - ANN	fisher_adult	intake_crisk_fish	1.5894E-008	1.4890E-004
Tooele - ANN	fisher_adult	intake_crisk_milk	0.0000E+000	0.0000E+000
Tooele - ANN	fisher_adult	intake_crisk_pork	0.0000E+000	0.0000E+000
Tooele - ANN	fisher_adult	intake_crisk_soil	2.1880E-012	4.6350E-007
		Total	3.9373E-008	1.5998E-002
Tooele - ANN	fisher_child	air_crisk_inhale	3.0250E-009	1.5246E-003
Tooele - ANN	fisher_child	intake_crisk_ag	6.4344E-009	7.8701E-003
Tooele - ANN	fisher_child	intake_crisk_beef	0.0000E+000	0.0000E+000
Tooele - ANN	fisher_child	intake_crisk_chick	0.0000E+000	0.0000E+000
Tooele - ANN	fisher_child	intake_crisk_dw	2.2625E-009	2.6956E-002
Tooele - ANN	fisher_child	intake_crisk_eggs	0.0000E+000	0.0000E+000
Tooele - ANN	fisher_child	intake_crisk_fish	3.1788E-009	1.4890E-004
Tooele - ANN	fisher_child	intake_crisk_milk	0.0000E+000	0.0000E+000
Tooele - ANN	fisher_child	intake_crisk_pork	0.0000E+000	0.0000E+000
Tooele - ANN	fisher_child	intake_crisk_soil	4.0842E-012	4.3260E-006
		Total	1.4905E-008	3.6504E-002
Tooele - ANN	resident_adult	air_crisk_inhale	5.0417E-009	5.0819E-004
Tooele - ANN	resident_adult	intake_crisk_ag	1.3370E-008	3.2708E-003
Tooele - ANN	resident_adult	intake_crisk_beef	0.0000E+000	0.0000E+000
Tooele - ANN	resident_adult	intake_crisk_chick	0.0000E+000	0.0000E+000
Tooele - ANN	resident_adult	intake_crisk_dw	5.0653E-009	1.2070E-002

RECEPTOR NAME	SCENARIO	PATHWAY	TOTAL CANCER RISK	TOTAL HAZARD QUOTIENT
Tooele - ANN	resident_adult	intake_crisk_eggs	0.0000E+000	0.0000E+000
Tooele - ANN	resident_adult	intake_crisk_fish	0.0000E+000	0.0000E+000
Tooele - ANN	resident_adult	intake_crisk_milk	0.0000E+000	0.0000E+000
Tooele - ANN	resident_adult	intake_crisk_pork	0.0000E+000	0.0000E+000
Tooele - ANN	resident_adult	intake_crisk_soil	2.1880E-012	4.6350E-007
		Total	2.3480E-008	1.5849E-002
Tooele - ANN	resident_child	air_crisk_inhale	3.0250E-009	1.5246E-003
Tooele - ANN	resident_child	intake_crisk_ag	6.4344E-009	7.8701E-003
Tooele - ANN	resident_child	intake_crisk_beef	0.0000E+000	0.0000E+000
Tooele - ANN	resident_child	intake_crisk_chick	0.0000E+000	0.0000E+000
Tooele - ANN	resident_child	intake_crisk_dw	2.2625E-009	2.6956E-002
Tooele - ANN	resident_child	intake_crisk_eggs	0.0000E+000	0.0000E+000
Tooele - ANN	resident_child	intake_crisk_fish	0.0000E+000	0.0000E+000
Tooele - ANN	resident_child	intake_crisk_milk	0.0000E+000	0.0000E+000
Tooele - ANN	resident_child	intake_crisk_pork	0.0000E+000	0.0000E+000
Tooele - ANN	resident_child	intake_crisk_soil	4.0842E-012	4.3260E-006
		Total	1.1726E-008	3.6355E-002

Appendix F

Hazard Indices by Target Organ

TABLE F-1
HAZARD INDICES BY TARGET ORGAN
ADULT FARMER

Source	Chemical	Organ	HI
OD Unit	Cumene (Isopropylbenzene)	Adrenal	2.5E-10
OD Unit	Nitrobenzene	Adrenal	2.7E-09
OD Unit	Trichlorobenzene, 1,2,4-	Adrenal	3.7E-09
		Total	6.7E-09
OB Unit	Benzene	Blood	4.0E-07
OD Unit	Antimony	Blood	1.5E-05
OD Unit	Barium	Blood	2.3E-03
OD Unit	Benzene	Blood	4.0E-06
OD Unit	Fluoranthene	Blood	2.6E-07
OD Unit	Fluorene	Blood	2.6E-09
OD Unit	Nitrobenzene	Blood	2.7E-09
OD Unit	Styrene	Blood	5.7E-08
OD Unit	Trinitrobenzene, 1,3,5 (sym-)	Blood	2.1E-07
OD Unit	Zinc	Blood	6.6E-04
SF Unit	Benzene	Blood	1.9E-06
		Total	3.0E-03
OB Unit	Naphthalene	Body Weight	1.2E-07
OD Unit	Cresol, o-	Body Weight	3.4E-10
OD Unit	Dichlorodifluoromethane	Body Weight	3.8E-10
OD Unit	Diethyl phthalate	Body Weight	2.0E-08
OD Unit	Formaldehyde	Body Weight	4.5E-06
OD Unit	Naphthalene	Body Weight	1.4E-05
OD Unit	Nickel	Body Weight	2.8E-04
OD Unit	Phenol	Body Weight	1.7E-09
OD Unit	Tetrachloroethylene (Perchloroethylene)	Body Weight	5.0E-09
OD Unit	Xylene, m-	Body Weight	5.7E-08
OD Unit	Xylene, o-	Body Weight	1.6E-08
SF Unit	Naphthalene	Body Weight	1.6E-07
		Total	3.0E-04
OD Unit	Arsenic	Cardiovascular	1.7E-07
OD Unit	Phenol	Cardiovascular	1.7E-09
OD Unit	Trichlorofluoromethane (Freon 11)	Cardiovascular	5.2E-11
		Total	1.8E-07
OB Unit	Carbon tetrachloride	Developmental	2.9E-09
OB Unit	Ethylbenzene	Developmental	9.4E-11
OD Unit	Arsenic	Developmental	1.7E-07
OD Unit	Carbon tetrachloride	Developmental	7.0E-09
OD Unit	Chloroethane	Developmental	1.9E-12
OD Unit	Ethylbenzene	Developmental	3.3E-09
OD Unit	Methyl ethyl ketone (2-Butanone)	Developmental	1.1E-10
		Total	1.9E-07

TABLE F-1
HAZARD INDICES BY TARGET ORGAN
ADULT FARMER

Source	Chemical	Organ	HI
OB Unit	Dinitrotoluene, 2,4-	Gastrointestinal	1.4E-09
OD Unit	Benzaldehyde	Gastrointestinal	2.0E-08
OD Unit	Dinitrotoluene, 2,4-	Gastrointestinal	3.0E-07
OD Unit	Methyl bromide (Bromomethane)	Gastrointestinal	1.9E-07
		Total	5.2E-07
OD Unit	Acetophenone	General	1.2E-09
OD Unit	Acrolein	General	6.0E-04
OD Unit	Di-n-butyl phthalate	General	5.6E-07
OD Unit	Trichlorofluoromethane (Freon 11)	General	5.2E-11
OD Unit	Xylene, m-	General	5.7E-08
OD Unit	Xylene, o-	General	1.6E-08
		Total	6.0E-04
OB Unit	Ethylbenzene	Kidney	9.4E-11
OB Unit	Toluene	Kidney	1.0E-10
OD Unit	Acetone	Kidney	6.8E-08
OD Unit	Barium	Kidney	2.3E-03
OD Unit	Benzaldehyde	Kidney	2.0E-08
OD Unit	Benzo(g,h,i)perylene	Kidney	3.0E-02
OD Unit	Cadmium	Kidney	3.8E-02
OD Unit	Cumene (Isopropylbenzene)	Kidney	2.5E-10
OD Unit	Ethylbenzene	Kidney	3.3E-09
OD Unit	Fluoranthene	Kidney	2.6E-07
OD Unit	Nitrobenzene	Kidney	2.7E-09
OD Unit	Phenol	Kidney	1.7E-09
OD Unit	Pyrene	Kidney	2.5E-07
OD Unit	Toluene	Kidney	3.7E-09
OD Unit	Trichlorofluoromethane (Freon 11)	Kidney	5.2E-11
OD Unit	Vinyl Acetate	Kidney	3.3E-10
		Total	7.0E-02
OB Unit	Carbon tetrachloride	Liver	2.9E-09
OB Unit	Chloroform (Trichloromethane)	Liver	1.3E-07
OB Unit	Ethylbenzene	Liver	9.4E-11
OB Unit	Methylene chloride	Liver	6.8E-10
OB Unit	Toluene	Liver	1.0E-10
OB Unit	Vinyl Chloride	Liver	1.5E-09
OD Unit	Acenaphthene	Liver	5.2E-10
OD Unit	Acenaphthylene	Liver	1.1E-06
OD Unit	Butylbenzylphthalate	Liver	6.4E-07
OD Unit	Carbon tetrachloride	Liver	7.0E-09
OD Unit	Chlorobenzene	Liver	7.3E-08
OD Unit	Chloroform (Trichloromethane)	Liver	6.9E-08
OD Unit	Dichlorodifluoromethane	Liver	3.8E-10
OD Unit	Dichloroethane, 1,2- (Ethylene Dichloride)	Liver	5.4E-10
OD Unit	Ethylbenzene	Liver	3.3E-09
OD Unit	Ethylhexyl phthalate, bis-2-	Liver	3.7E-06
OD Unit	Fluoranthene	Liver	2.6E-07
OD Unit	Hexachlorobenzene	Liver	2.2E-06

TABLE F-1
HAZARD INDICES BY TARGET ORGAN
ADULT FARMER

Source	Chemical	Organ	HI
OD Unit	Methylene chloride	Liver	3.2E-08
OD Unit	Nitrobenzene	Liver	2.7E-09
OD Unit	Styrene	Liver	5.7E-08
OD Unit	Tetrachloroethylene (Perchloroethylene)	Liver	5.0E-09
OD Unit	Toluene	Liver	3.7E-09
OD Unit	Trichloroethane, 1,1,1-	Liver	4.0E-14
OD Unit	Trinitrotoluene, 2,4,6-	Liver	1.4E-05
OD Unit	Vinyl Chloride	Liver	1.7E-08
		Total	2.2E-05
OB Unit	Carbon tetrachloride	Nervous System	2.9E-09
OB Unit	Dinitrotoluene, 2,4-	Nervous System	1.4E-09
OB Unit	Methyl chloride (Chloromethane)	Nervous System	1.2E-09
OB Unit	Toluene	Nervous System	1.0E-10
OD Unit	Arsenic	Nervous System	1.7E-07
OD Unit	Carbon disulfide	Nervous System	2.7E-09
OD Unit	Carbon tetrachloride	Nervous System	7.0E-09
OD Unit	Cresol, o-	Nervous System	3.4E-10
OD Unit	Dinitrotoluene, 2,4-	Nervous System	3.0E-07
OD Unit	Methyl chloride (Chloromethane)	Nervous System	6.0E-09
OD Unit	Phenol	Nervous System	1.7E-09
OD Unit	Styrene	Nervous System	5.7E-08
OD Unit	Toluene	Nervous System	3.7E-09
OD Unit	Trichloroethane, 1,1,1-	Nervous System	4.0E-14
OD Unit	Xylene, m-	Nervous System	5.7E-08
OD Unit	Xylene, o-	Nervous System	1.6E-08
		Total	6.3E-07
OB Unit	Chlorine	No Effect	3.1E-02
OD Unit	Acetaldehyde	No Effect	2.0E-06
OD Unit	Anthracene	No Effect	7.4E-10
OD Unit	Barium	No Effect	2.3E-03
OD Unit	Benzoic acid	No Effect	1.2E-10
OD Unit	Chromium	No Effect	6.0E-06
OD Unit	Chromium, hexavalent	No Effect	1.8E-04
		Total	3.3E-02
OD Unit	Diethyl phthalate	Organ (weight)	2.0E-08
OD Unit	Nickel	Organ (weight)	2.8E-04
		Total	2.8E-04
OD Unit	Acrylonitrile	Reproductive System	1.8E-06
OD Unit	Carbon disulfide	Reproductive System	2.7E-09
OD Unit	Methyl ethyl ketone (2-Butanone)	Reproductive System	1.1E-10
		Total	1.8E-06

TABLE F-1
HAZARD INDICES BY TARGET ORGAN
ADULT FARMER

Source	Chemical	Organ	HI
OB Unit	Chlorine	Respiratory Tract	3.1E-02
OB Unit	Hydrogen chloride	Respiratory Tract	9.4E-03
OB Unit	Naphthalene	Respiratory Tract	1.2E-07
OB Unit	Toluene	Respiratory Tract	1.6E-13
OB Unit	Toluene	Respiratory Tract	1.0E-10
OD Unit	Acetaldehyde	Respiratory Tract	2.0E-06
OD Unit	Acrolein	Respiratory Tract	6.0E-04
OD Unit	Acrylonitrile	Respiratory Tract	1.8E-06
OD Unit	Chromium, hexavalent	Respiratory Tract	1.8E-04
OD Unit	Formaldehyde	Respiratory Tract	4.5E-06
OD Unit	Hydrogen chloride	Respiratory Tract	2.9E-05
OD Unit	Methyl bromide (Bromomethane)	Respiratory Tract	1.9E-07
OD Unit	Naphthalene	Respiratory Tract	1.4E-05
OD Unit	Nickel	Respiratory Tract	2.8E-04
OD Unit	Selenium	Respiratory Tract	3.6E-05
OD Unit	Toluene	Respiratory Tract	3.7E-09
OD Unit	Trichlorofluoromethane (Freon 11)	Respiratory Tract	5.2E-11
OD Unit	Vinyl Acetate	Respiratory Tract	3.3E-10
SF Unit	Naphthalene	Respiratory Tract	1.6E-07
		Total	4.1E-02
OD Unit	Arsenic	Skin	1.7E-07
OD Unit	Silver	Skin	2.8E-03
		Total	2.8E-03
OD Unit	Trichlorobenzene, 1,2,4-	Urinary	3.7E-09
		Total	3.7E-09
OD Unit	Acetonitrile	Whole Body	1.2E-07
OD Unit	Vinyl Acetate	Whole Body	3.3E-10
		Total	1.2E-07

TABLE F-2
HAZARD INDICES BY TARGET ORGAN
CHILD FARMER

Source	Chemical	Organ	HI
OD Unit	Cumene (Isopropylbenzene)	Adrenal	9.9E-10
OD Unit	Nitrobenzene	Adrenal	6.0E-09
OD Unit	Trichlorobenzene, 1,2,4-	Adrenal	6.2E-09
		Total	1.3E-08
OB Unit	Benzene	Blood	1.6E-06
OD Unit	Antimony	Blood	6.0E-05
OD Unit	Barium	Blood	8.2E-03
OD Unit	Benzene	Blood	1.6E-05
OD Unit	Fluoranthene	Blood	4.0E-07
OD Unit	Fluorene	Blood	8.0E-09
OD Unit	Nitrobenzene	Blood	6.0E-09
OD Unit	Styrene	Blood	2.3E-07
OD Unit	Trinitrobenzene, 1,3,5 (sym-)	Blood	5.0E-07
OD Unit	Zinc	Blood	1.5E-03
SF Unit	Benzene	Blood	7.6E-06
		Total	9.8E-03
OB Unit	Naphthalene	Body Weight	4.8E-07
OD Unit	Cresol, o-	Body Weight	1.2E-09
OD Unit	Dichlorodifluoromethane	Body Weight	1.5E-09
OD Unit	Diethyl phthalate	Body Weight	4.0E-08
OD Unit	Formaldehyde	Body Weight	1.8E-05
OD Unit	Naphthalene	Body Weight	5.6E-05
OD Unit	Nickel	Body Weight	6.3E-04
OD Unit	Phenol	Body Weight	6.6E-09
OD Unit	Tetrachloroethylene (Perchloroethylene)	Body Weight	2.0E-08
OD Unit	Xylene, m-	Body Weight	2.3E-07
OD Unit	Xylene, o-	Body Weight	6.4E-08
SF Unit	Naphthalene	Body Weight	6.4E-07
		Total	7.1E-04
OD Unit	Arsenic	Cardiovascular	3.6E-07
OD Unit	Phenol	Cardiovascular	6.6E-09
OD Unit	Trichlorofluoromethane (Freon 11)	Cardiovascular	2.1E-10
		Total	3.7E-07
OB Unit	Carbon tetrachloride	Developmental	1.2E-08
OB Unit	Ethylbenzene	Developmental	3.8E-10
OD Unit	Arsenic	Developmental	3.6E-07
OD Unit	Carbon tetrachloride	Developmental	2.8E-08
OD Unit	Chloroethane	Developmental	7.5E-12
OD Unit	Ethylbenzene	Developmental	1.3E-08
OD Unit	Methyl ethyl ketone (2-Butanone)	Developmental	4.5E-10
		Total	4.2E-07

TABLE F-2
HAZARD INDICES BY TARGET ORGAN
CHILD FARMER

Source	Chemical	Organ	HI
OB Unit	Dinitrotoluene, 2,4-	Gastrointestinal	3.0E-09
OD Unit	Benzaldehyde	Gastrointestinal	8.1E-08
OD Unit	Dinitrotoluene, 2,4-	Gastrointestinal	6.6E-07
OD Unit	Methyl bromide (Bromomethane)	Gastrointestinal	7.8E-07
		Total	1.5E-06
OD Unit	Acetophenone	General	4.6E-09
OD Unit	Acrolein	General	2.4E-03
OD Unit	Di-n-butyl phthalate	General	8.2E-07
OD Unit	Trichlorofluoromethane (Freon 11)	General	2.1E-10
OD Unit	Xylene, m-	General	2.3E-07
OD Unit	Xylene, o-	General	6.4E-08
		Total	2.4E-03
OB Unit	Ethylbenzene	Kidney	3.8E-10
OB Unit	Toluene	Kidney	4.2E-10
OD Unit	Acetone	Kidney	2.7E-07
OD Unit	Barium	Kidney	8.2E-03
OD Unit	Benzaldehyde	Kidney	8.1E-08
OD Unit	Benzo(g,h,i)perylene	Kidney	4.3E-02
OD Unit	Cadmium	Kidney	9.1E-02
OD Unit	Cumene (Isopropylbenzene)	Kidney	9.9E-10
OD Unit	Ethylbenzene	Kidney	1.3E-08
OD Unit	Fluoranthene	Kidney	4.0E-07
OD Unit	Nitrobenzene	Kidney	6.0E-09
OD Unit	Phenol	Kidney	6.6E-09
OD Unit	Pyrene	Kidney	3.9E-07
OD Unit	Toluene	Kidney	1.5E-08
OD Unit	Trichlorofluoromethane (Freon 11)	Kidney	2.1E-10
OD Unit	Vinyl Acetate	Kidney	1.3E-09
		Total	1.4E-01
OB Unit	Carbon tetrachloride	Liver	1.2E-08
OB Unit	Chloroform (Trichloromethane)	Liver	5.0E-07
OB Unit	Ethylbenzene	Liver	3.8E-10
OB Unit	Methylene chloride	Liver	2.7E-09
OB Unit	Toluene	Liver	4.2E-10
OB Unit	Vinyl Chloride	Liver	6.1E-09
OD Unit	Acenaphthene	Liver	2.0E-09
OD Unit	Acenaphthylene	Liver	2.0E-06
OD Unit	Butylbenzylphthalate	Liver	9.2E-07
OD Unit	Carbon tetrachloride	Liver	2.8E-08
OD Unit	Chlorobenzene	Liver	2.9E-07
OD Unit	Chloroform (Trichloromethane)	Liver	2.8E-07
OD Unit	Dichlorodifluoromethane	Liver	1.5E-09
OD Unit	Dichloroethane, 1,2- (Ethylene Dichloride)	Liver	2.2E-09
OD Unit	Ethylbenzene	Liver	1.3E-08
OD Unit	Ethylhexyl phthalate, bis-2-	Liver	5.9E-06
OD Unit	Fluoranthene	Liver	4.0E-07
OD Unit	Hexachlorobenzene	Liver	3.1E-06

TABLE F-2
HAZARD INDICES BY TARGET ORGAN
CHILD FARMER

Source	Chemical	Organ	HI
OD Unit	Methylene chloride	Liver	1.3E-07
OD Unit	Nitrobenzene	Liver	6.0E-09
OD Unit	Styrene	Liver	2.3E-07
OD Unit	Tetrachloroethylene (Perchloroethylene)	Liver	2.0E-08
OD Unit	Toluene	Liver	1.5E-08
OD Unit	Trichloroethane, 1,1,1-	Liver	8.5E-14
OD Unit	Trinitrotoluene, 2,4,6-	Liver	3.7E-05
OD Unit	Vinyl Chloride	Liver	6.7E-08
		Total	5.1E-05
OB Unit	Carbon tetrachloride	Nervous System	1.2E-08
OB Unit	Dinitrotoluene, 2,4-	Nervous System	3.0E-09
OB Unit	Methyl chloride (Chloromethane)	Nervous System	4.6E-09
OB Unit	Toluene	Nervous System	4.2E-10
OD Unit	Arsenic	Nervous System	3.6E-07
OD Unit	Carbon disulfide	Nervous System	1.1E-08
OD Unit	Carbon tetrachloride	Nervous System	2.8E-08
OD Unit	Cresol, o-	Nervous System	1.2E-09
OD Unit	Dinitrotoluene, 2,4-	Nervous System	6.6E-07
OD Unit	Methyl chloride (Chloromethane)	Nervous System	2.4E-08
OD Unit	Phenol	Nervous System	6.6E-09
OD Unit	Styrene	Nervous System	2.3E-07
OD Unit	Toluene	Nervous System	1.5E-08
OD Unit	Trichloroethane, 1,1,1-	Nervous System	8.5E-14
OD Unit	Xylene, m-	Nervous System	2.3E-07
OD Unit	Xylene, o-	Nervous System	6.4E-08
		Total	1.6E-06
OB Unit	Chlorine	No Effect	1.2E-01
OD Unit	Acetaldehyde	No Effect	7.9E-06
OD Unit	Anthracene	No Effect	2.0E-09
OD Unit	Barium	No Effect	8.2E-03
OD Unit	Benzoic acid	No Effect	4.9E-10
OD Unit	Chromium	No Effect	9.5E-06
OD Unit	Chromium, hexavalent	No Effect	5.3E-04
		Total	1.3E-01
OD Unit	Diethyl phthalate	Organ (weight)	4.0E-08
OD Unit	Nickel	Organ (weight)	6.3E-04
		Total	6.3E-04
OD Unit	Acrylonitrile	Reproductive System	7.2E-06
OD Unit	Carbon disulfide	Reproductive System	1.1E-08
OD Unit	Methyl ethyl ketone (2-Butanone)	Reproductive System	4.5E-10
		Total	7.2E-06

TABLE F-2
HAZARD INDICES BY TARGET ORGAN
CHILD FARMER

Source	Chemical	Organ	HI
OB Unit	Chlorine	Respiratory Tract	1.2E-01
OB Unit	Hydrogen chloride	Respiratory Tract	3.8E-02
OB Unit	Naphthalene	Respiratory Tract	4.8E-07
OB Unit	Toluene	Respiratory Tract	3.1E-13
OB Unit	Toluene	Respiratory Tract	4.2E-10
OD Unit	Acetaldehyde	Respiratory Tract	7.9E-06
OD Unit	Acrolein	Respiratory Tract	2.4E-03
OD Unit	Acrylonitrile	Respiratory Tract	7.2E-06
OD Unit	Chromium, hexavalent	Respiratory Tract	5.3E-04
OD Unit	Formaldehyde	Respiratory Tract	1.8E-05
OD Unit	Hydrogen chloride	Respiratory Tract	1.2E-04
OD Unit	Methyl bromide (Bromomethane)	Respiratory Tract	7.8E-07
OD Unit	Naphthalene	Respiratory Tract	5.6E-05
OD Unit	Nickel	Respiratory Tract	6.3E-04
OD Unit	Selenium	Respiratory Tract	5.8E-05
OD Unit	Toluene	Respiratory Tract	1.5E-08
OD Unit	Trichlorofluoromethane (Freon 11)	Respiratory Tract	2.1E-10
OD Unit	Vinyl Acetate	Respiratory Tract	1.3E-09
SF Unit	Naphthalene	Respiratory Tract	6.4E-07
		Total	1.6E-01
OD Unit	Arsenic	Skin	3.6E-07
OD Unit	Silver	Skin	4.6E-03
		Total	4.6E-03
OD Unit	Trichlorobenzene, 1,2,4-	Urinary	6.2E-09
		Total	6.2E-09
OD Unit	Acetonitrile	Whole Body	4.8E-07
OD Unit	Vinyl Acetate	Whole Body	1.3E-09
		Total	4.8E-07

TABLE F-3
HAZARD INDICES BY TARGET ORGAN
ADULT RECREATIONAL FISHER

Source	Chemical	Organ	HI
OD Unit	Cumene (Isopropylbenzene)	Adrenal	3.3E-10
OD Unit	Nitrobenzene	Adrenal	2.5E-09
OD Unit	Trichlorobenzene, 1,2,4-	Adrenal	6.5E-10
		Total	3.5E-09
OB Unit	Benzene	Blood	5.4E-07
OD Unit	Antimony	Blood	2.0E-05
OD Unit	Barium	Blood	2.6E-03
OD Unit	Benzene	Blood	5.3E-06
OD Unit	Fluoranthene	Blood	1.8E-08
OD Unit	Fluorene	Blood	2.3E-09
OD Unit	Nitrobenzene	Blood	2.5E-09
OD Unit	Styrene	Blood	7.5E-08
OD Unit	Trinitrobenzene, 1,3,5 (sym-)	Blood	1.4E-07
OD Unit	Zinc	Blood	3.9E-04
SF Unit	Benzene	Blood	2.5E-06
		Total	3.0E-03
OB Unit	Naphthalene	Body Weight	1.6E-07
OD Unit	Cresol, o-	Body Weight	4.3E-10
OD Unit	Dichlorodifluoromethane	Body Weight	5.1E-10
OD Unit	Diethyl phthalate	Body Weight	8.6E-09
OD Unit	Formaldehyde	Body Weight	6.0E-06
OD Unit	Naphthalene	Body Weight	1.9E-05
OD Unit	Nickel	Body Weight	1.3E-04
OD Unit	Phenol	Body Weight	2.2E-09
OD Unit	Tetrachloroethylene (Perchloroethylene)	Body Weight	6.6E-09
OD Unit	Xylene, m-	Body Weight	7.5E-08
OD Unit	Xylene, o-	Body Weight	2.1E-08
SF Unit	Naphthalene	Body Weight	2.1E-07
		Total	1.6E-04
OD Unit	Arsenic	Cardiovascular	9.0E-08
OD Unit	Phenol	Cardiovascular	2.2E-09
OD Unit	Trichlorofluoromethane (Freon 11)	Cardiovascular	7.0E-11
		Total	9.2E-08
OB Unit	Carbon tetrachloride	Developmental	3.9E-09
OB Unit	Ethylbenzene	Developmental	1.3E-10
OD Unit	Arsenic	Developmental	9.0E-08
OD Unit	Carbon tetrachloride	Developmental	9.3E-09
OD Unit	Chloroethane	Developmental	2.5E-12
OD Unit	Ethylbenzene	Developmental	4.4E-09
OD Unit	Methyl ethyl ketone (2-Butanone)	Developmental	1.5E-10
		Total	1.1E-07

TABLE F-3
HAZARD INDICES BY TARGET ORGAN
ADULT RECREATIONAL FISHER

Source	Chemical	Organ	HI
OB Unit	Dinitrotoluene, 2,4-	Gastrointestinal	9.8E-10
OD Unit	Benzaldehyde	Gastrointestinal	2.7E-08
OD Unit	Dinitrotoluene, 2,4-	Gastrointestinal	2.4E-07
OD Unit	Methyl bromide (Bromomethane)	Gastrointestinal	2.6E-07
		Total	5.3E-07
OD Unit	Acetophenone	General	1.5E-09
OD Unit	Acrolein	General	7.9E-04
OD Unit	Di-n-butyl phthalate	General	1.4E-08
OD Unit	Trichlorofluoromethane (Freon 11)	General	7.0E-11
OD Unit	Xylene, m-	General	7.5E-08
OD Unit	Xylene, o-	General	2.1E-08
		Total	7.9E-04
OB Unit	Ethylbenzene	Kidney	1.3E-10
OB Unit	Toluene	Kidney	1.4E-10
OD Unit	Acetone	Kidney	9.1E-08
OD Unit	Barium	Kidney	2.6E-03
OD Unit	Benzaldehyde	Kidney	2.7E-08
OD Unit	Benzo(g,h,i)perylene	Kidney	5.9E-05
OD Unit	Cadmium	Kidney	2.6E-02
OD Unit	Cumene (Isopropylbenzene)	Kidney	3.3E-10
OD Unit	Ethylbenzene	Kidney	4.4E-09
OD Unit	Fluoranthene	Kidney	1.8E-08
OD Unit	Nitrobenzene	Kidney	2.5E-09
OD Unit	Phenol	Kidney	2.2E-09
OD Unit	Pyrene	Kidney	1.5E-08
OD Unit	Toluene	Kidney	4.9E-09
OD Unit	Trichlorofluoromethane (Freon 11)	Kidney	7.0E-11
OD Unit	Vinyl Acetate	Kidney	4.4E-10
		Total	2.8E-02
OB Unit	Carbon tetrachloride	Liver	3.9E-09
OB Unit	Chloroform (Trichloromethane)	Liver	1.7E-07
OB Unit	Ethylbenzene	Liver	1.3E-10
OB Unit	Methylene chloride	Liver	9.1E-10
OB Unit	Toluene	Liver	1.4E-10
OB Unit	Vinyl Chloride	Liver	2.0E-09
OD Unit	Acenaphthene	Liver	6.4E-10
OD Unit	Acenaphthylene	Liver	2.6E-07
OD Unit	Butylbenzylphthalate	Liver	6.2E-09
OD Unit	Carbon tetrachloride	Liver	9.3E-09
OD Unit	Chlorobenzene	Liver	9.8E-08
OD Unit	Chloroform (Trichloromethane)	Liver	9.3E-08
OD Unit	Dichlorodifluoromethane	Liver	5.1E-10
OD Unit	Dichloroethane, 1,2- (Ethylene Dichloride)	Liver	7.2E-10
OD Unit	Ethylbenzene	Liver	4.4E-09
OD Unit	Ethylhexyl phthalate, bis-2-	Liver	4.4E-07
OD Unit	Fluoranthene	Liver	1.8E-08
OD Unit	Hexachlorobenzene	Liver	1.8E-08

TABLE F-3
HAZARD INDICES BY TARGET ORGAN
ADULT RECREATIONAL FISHER

Source	Chemical	Organ	HI
OD Unit	Methylene chloride	Liver	4.3E-08
OD Unit	Nitrobenzene	Liver	2.5E-09
OD Unit	Styrene	Liver	7.5E-08
OD Unit	Tetrachloroethylene (Perchloroethylene)	Liver	6.6E-09
OD Unit	Toluene	Liver	4.9E-09
OD Unit	Trichloroethane, 1,1,1-	Liver	2.8E-14
OD Unit	Trinitrotoluene, 2,4,6-	Liver	1.0E-05
OD Unit	Vinyl Chloride	Liver	2.2E-08
		Total	1.2E-05
OB Unit	Carbon tetrachloride	Nervous System	3.9E-09
OB Unit	Dinitrotoluene, 2,4-	Nervous System	9.8E-10
OB Unit	Methyl chloride (Chloromethane)	Nervous System	1.5E-09
OB Unit	Toluene	Nervous System	1.4E-10
OD Unit	Arsenic	Nervous System	9.0E-08
OD Unit	Carbon disulfide	Nervous System	3.6E-09
OD Unit	Carbon tetrachloride	Nervous System	9.3E-09
OD Unit	Cresol, o-	Nervous System	4.3E-10
OD Unit	Dinitrotoluene, 2,4-	Nervous System	2.4E-07
OD Unit	Methyl chloride (Chloromethane)	Nervous System	7.9E-09
OD Unit	Phenol	Nervous System	2.2E-09
OD Unit	Styrene	Nervous System	7.5E-08
OD Unit	Toluene	Nervous System	4.9E-09
OD Unit	Trichloroethane, 1,1,1-	Nervous System	2.8E-14
OD Unit	Xylene, m-	Nervous System	7.5E-08
OD Unit	Xylene, o-	Nervous System	2.1E-08
		Total	5.4E-07
OB Unit	Chlorine	No Effect	4.1E-02
OD Unit	Acetaldehyde	No Effect	2.6E-06
OD Unit	Anthracene	No Effect	4.7E-10
OD Unit	Barium	No Effect	2.6E-03
OD Unit	Benzoic acid	No Effect	1.6E-10
OD Unit	Chromium	No Effect	4.5E-07
OD Unit	Chromium, hexavalent	No Effect	1.4E-04
		Total	4.4E-02
OD Unit	Diethyl phthalate	Organ (weight)	8.6E-09
OD Unit	Nickel	Organ (weight)	1.3E-04
		Total	1.3E-04
OD Unit	Acrylonitrile	Reproductive System	2.4E-06
OD Unit	Carbon disulfide	Reproductive System	3.6E-09
OD Unit	Methyl ethyl ketone (2-Butanone)	Reproductive System	1.5E-10
		Total	2.4E-06

TABLE F-3
HAZARD INDICES BY TARGET ORGAN
ADULT RECREATIONAL FISHER

Source	Chemical	Organ	HI
OB Unit	Chlorine	Respiratory Tract	4.1E-02
OB Unit	Hydrogen chloride	Respiratory Tract	1.3E-02
OB Unit	Naphthalene	Respiratory Tract	1.6E-07
OB Unit	Toluene	Respiratory Tract	7.8E-14
OB Unit	Toluene	Respiratory Tract	1.4E-10
OD Unit	Acetaldehyde	Respiratory Tract	2.6E-06
OD Unit	Acrolein	Respiratory Tract	7.9E-04
OD Unit	Acrylonitrile	Respiratory Tract	2.4E-06
OD Unit	Chromium, hexavalent	Respiratory Tract	1.4E-04
OD Unit	Formaldehyde	Respiratory Tract	6.0E-06
OD Unit	Hydrogen chloride	Respiratory Tract	3.9E-05
OD Unit	Methyl bromide (Bromomethane)	Respiratory Tract	2.6E-07
OD Unit	Naphthalene	Respiratory Tract	1.9E-05
OD Unit	Nickel	Respiratory Tract	1.3E-04
OD Unit	Selenium	Respiratory Tract	8.2E-07
OD Unit	Toluene	Respiratory Tract	4.9E-09
OD Unit	Trichlorofluoromethane (Freon 11)	Respiratory Tract	7.0E-11
OD Unit	Vinyl Acetate	Respiratory Tract	4.4E-10
SF Unit	Naphthalene	Respiratory Tract	2.1E-07
		Total	5.5E-02
OD Unit	Arsenic	Skin	9.0E-08
OD Unit	Silver	Skin	2.8E-05
		Total	2.8E-05
OD Unit	Trichlorobenzene, 1,2,4-	Urinary	6.5E-10
		Total	6.5E-10
OD Unit	Acetonitrile	Whole Body	1.6E-07
OD Unit	Vinyl Acetate	Whole Body	4.4E-10
		Total	1.6E-07

TABLE F-4
HAZARD INDICES BY TARGET ORGAN
CHILD RECREATIONAL FISHER

Source	Chemical	Organ	HI
OD Unit	Cumene (Isopropylbenzene)	Adrenal	9.9E-10
OD Unit	Nitrobenzene	Adrenal	5.7E-09
OD Unit	Trichlorobenzene, 1,2,4-	Adrenal	1.5E-09
		Total	8.2E-09
OB Unit	Benzene	Blood	1.6E-06
OD Unit	Antimony	Blood	6.0E-05
OD Unit	Barium	Blood	7.7E-03
OD Unit	Benzene	Blood	1.6E-05
OD Unit	Fluoranthene	Blood	5.3E-08
OD Unit	Fluorene	Blood	6.8E-09
OD Unit	Nitrobenzene	Blood	5.7E-09
OD Unit	Styrene	Blood	2.3E-07
OD Unit	Trinitrobenzene, 1,3,5 (sym-)	Blood	3.4E-07
OD Unit	Zinc	Blood	9.2E-04
SF Unit	Benzene	Blood	7.6E-06
		Total	8.7E-03
OB Unit	Naphthalene	Body Weight	4.8E-07
OD Unit	Cresol, o-	Body Weight	1.2E-09
OD Unit	Dichlorodifluoromethane	Body Weight	1.5E-09
OD Unit	Diethyl phthalate	Body Weight	2.0E-08
OD Unit	Formaldehyde	Body Weight	1.8E-05
OD Unit	Naphthalene	Body Weight	5.6E-05
OD Unit	Nickel	Body Weight	3.8E-04
OD Unit	Phenol	Body Weight	6.6E-09
OD Unit	Tetrachloroethylene (Perchloroethylene)	Body Weight	2.0E-08
OD Unit	Xylene, m-	Body Weight	2.3E-07
OD Unit	Xylene, o-	Body Weight	6.4E-08
SF Unit	Naphthalene	Body Weight	6.4E-07
		Total	4.6E-04
OD Unit	Arsenic	Cardiovascular	2.4E-07
OD Unit	Phenol	Cardiovascular	6.6E-09
OD Unit	Trichlorofluoromethane (Freon 11)	Cardiovascular	2.1E-10
		Total	2.4E-07
OB Unit	Carbon tetrachloride	Developmental	1.2E-08
OB Unit	Ethylbenzene	Developmental	3.8E-10
OD Unit	Arsenic	Developmental	2.4E-07
OD Unit	Carbon tetrachloride	Developmental	2.8E-08
OD Unit	Chloroethane	Developmental	7.5E-12
OD Unit	Ethylbenzene	Developmental	1.3E-08
OD Unit	Methyl ethyl ketone (2-Butanone)	Developmental	4.5E-10
		Total	2.9E-07

TABLE F-4
HAZARD INDICES BY TARGET ORGAN
CHILD RECREATIONAL FISHER

Source	Chemical	Organ	HI
OB Unit	Dinitrotoluene, 2,4-	Gastrointestinal	2.3E-09
OD Unit	Benzaldehyde	Gastrointestinal	8.1E-08
OD Unit	Dinitrotoluene, 2,4-	Gastrointestinal	5.5E-07
OD Unit	Methyl bromide (Bromomethane)	Gastrointestinal	7.8E-07
		Total	1.4E-06
OD Unit	Acetophenone	General	4.6E-09
OD Unit	Acrolein	General	2.4E-03
OD Unit	Di-n-butyl phthalate	General	3.5E-08
OD Unit	Trichlorofluoromethane (Freon 11)	General	2.1E-10
OD Unit	Xylene, m-	General	2.3E-07
OD Unit	Xylene, o-	General	6.4E-08
		Total	2.4E-03
OB Unit	Ethylbenzene	Kidney	3.8E-10
OB Unit	Toluene	Kidney	4.2E-10
OD Unit	Acetone	Kidney	2.7E-07
OD Unit	Barium	Kidney	7.7E-03
OD Unit	Benzaldehyde	Kidney	8.1E-08
OD Unit	Benzo(g,h,i)perylene	Kidney	1.4E-04
OD Unit	Cadmium	Kidney	6.3E-02
OD Unit	Cumene (Isopropylbenzene)	Kidney	9.9E-10
OD Unit	Ethylbenzene	Kidney	1.3E-08
OD Unit	Fluoranthene	Kidney	5.3E-08
OD Unit	Nitrobenzene	Kidney	5.7E-09
OD Unit	Phenol	Kidney	6.6E-09
OD Unit	Pyrene	Kidney	4.5E-08
OD Unit	Toluene	Kidney	1.5E-08
OD Unit	Trichlorofluoromethane (Freon 11)	Kidney	2.1E-10
OD Unit	Vinyl Acetate	Kidney	1.3E-09
		Total	7.1E-02
OB Unit	Carbon tetrachloride	Liver	1.2E-08
OB Unit	Chloroform (Trichloromethane)	Liver	5.0E-07
OB Unit	Ethylbenzene	Liver	3.8E-10
OB Unit	Methylene chloride	Liver	2.7E-09
OB Unit	Toluene	Liver	4.2E-10
OB Unit	Vinyl Chloride	Liver	6.1E-09
OD Unit	Acenaphthene	Liver	1.9E-09
OD Unit	Acenaphthylene	Liver	6.7E-07
OD Unit	Butylbenzylphthalate	Liver	1.7E-08
OD Unit	Carbon tetrachloride	Liver	2.8E-08
OD Unit	Chlorobenzene	Liver	2.9E-07
OD Unit	Chloroform (Trichloromethane)	Liver	2.8E-07
OD Unit	Dichlorodifluoromethane	Liver	1.5E-09
OD Unit	Dichloroethane, 1,2- (Ethylene Dichloride)	Liver	2.2E-09
OD Unit	Ethylbenzene	Liver	1.3E-08
OD Unit	Ethylhexyl phthalate, bis-2-	Liver	1.1E-06
OD Unit	Fluoranthene	Liver	5.3E-08
OD Unit	Hexachlorobenzene	Liver	2.4E-08

TABLE F-4
HAZARD INDICES BY TARGET ORGAN
CHILD RECREATIONAL FISHER

Source	Chemical	Organ	HI
OD Unit	Methylene chloride	Liver	1.3E-07
OD Unit	Nitrobenzene	Liver	5.7E-09
OD Unit	Styrene	Liver	2.3E-07
OD Unit	Tetrachloroethylene (Perchloroethylene)	Liver	2.0E-08
OD Unit	Toluene	Liver	1.5E-08
OD Unit	Trichloroethane, 1,1,1-	Liver	6.4E-14
OD Unit	Trinitrotoluene, 2,4,6-	Liver	2.7E-05
OD Unit	Vinyl Chloride	Liver	6.7E-08
		Total	3.1E-05
OB Unit	Carbon tetrachloride	Nervous System	1.2E-08
OB Unit	Dinitrotoluene, 2,4-	Nervous System	2.3E-09
OB Unit	Methyl chloride (Chloromethane)	Nervous System	4.6E-09
OB Unit	Toluene	Nervous System	4.2E-10
OD Unit	Arsenic	Nervous System	2.4E-07
OD Unit	Carbon disulfide	Nervous System	1.1E-08
OD Unit	Carbon tetrachloride	Nervous System	2.8E-08
OD Unit	Cresol, o-	Nervous System	1.2E-09
OD Unit	Dinitrotoluene, 2,4-	Nervous System	5.5E-07
OD Unit	Methyl chloride (Chloromethane)	Nervous System	2.4E-08
OD Unit	Phenol	Nervous System	6.6E-09
OD Unit	Styrene	Nervous System	2.3E-07
OD Unit	Toluene	Nervous System	1.5E-08
OD Unit	Trichloroethane, 1,1,1-	Nervous System	6.4E-14
OD Unit	Xylene, m-	Nervous System	2.3E-07
OD Unit	Xylene, o-	Nervous System	6.4E-08
		Total	1.4E-06
OB Unit	Chlorine	No Effect	1.2E-01
OD Unit	Acetaldehyde	No Effect	7.9E-06
OD Unit	Anthracene	No Effect	1.4E-09
OD Unit	Barium	No Effect	7.7E-03
OD Unit	Benzoic acid	No Effect	4.9E-10
OD Unit	Chromium	No Effect	1.1E-06
OD Unit	Chromium, hexavalent	No Effect	4.1E-04
		Total	1.3E-01
OD Unit	Diethyl phthalate	Organ (weight)	2.0E-08
OD Unit	Nickel	Organ (weight)	3.8E-04
		Total	3.8E-04
OD Unit	Acrylonitrile	Reproductive System	7.2E-06
OD Unit	Carbon disulfide	Reproductive System	1.1E-08
OD Unit	Methyl ethyl ketone (2-Butanone)	Reproductive System	4.5E-10
		Total	7.2E-06

TABLE F-4
HAZARD INDICES BY TARGET ORGAN
CHILD RECREATIONAL FISHER

Source	Chemical	Organ	HI
OB Unit	Chlorine	Respiratory Tract	1.2E-01
OB Unit	Hydrogen chloride	Respiratory Tract	1.1E-06
OB Unit	Naphthalene	Respiratory Tract	4.8E-07
OB Unit	Toluene	Respiratory Tract	4.2E-10
OB Unit	Toluene	Respiratory Tract	1.8E-13
OD Unit	Acetaldehyde	Respiratory Tract	7.9E-06
OD Unit	Acrolein	Respiratory Tract	2.4E-03
OD Unit	Acrylonitrile	Respiratory Tract	7.2E-06
OD Unit	Chromium, hexavalent	Respiratory Tract	4.1E-04
OD Unit	Formaldehyde	Respiratory Tract	1.8E-05
OD Unit	Hydrogen chloride	Respiratory Tract	1.2E-04
OD Unit	Methyl bromide (Bromomethane)	Respiratory Tract	7.8E-07
OD Unit	Naphthalene	Respiratory Tract	5.6E-05
OD Unit	Nickel	Respiratory Tract	3.8E-04
OD Unit	Selenium	Respiratory Tract	2.0E-06
OD Unit	Toluene	Respiratory Tract	1.5E-08
OD Unit	Trichlorofluoromethane (Freon 11)	Respiratory Tract	2.1E-10
OD Unit	Vinyl Acetate	Respiratory Tract	1.3E-09
SF Unit	Naphthalene	Respiratory Tract	6.4E-07
		Total	1.3E-01
OD Unit	Arsenic	Skin	2.4E-07
OD Unit	Silver	Skin	6.8E-05
		Total	6.8E-05
OD Unit	Trichlorobenzene, 1,2,4-	Urinary	1.5E-09
		Total	1.5E-09
OD Unit	Acetonitrile	Whole Body	4.8E-07
OD Unit	Vinyl Acetate	Whole Body	1.3E-09
		Total	4.8E-07

TABLE F-5
HAZARD INDICES BY TARGET ORGAN
ADULT RESIDENT

Source	Chemical	Organ	HI
OD Unit	Cumene (Isopropylbenzene)	Adrenal	3.3E-10
OD Unit	Nitrobenzene	Adrenal	2.5E-09
OD Unit	Trichlorobenzene, 1,2,4-	Adrenal	6.5E-10
		Total	3.5E-09
OB Unit	Benzene	Blood	5.4E-07
OD Unit	Antimony	Blood	2.0E-05
OD Unit	Barium	Blood	2.6E-03
OD Unit	Benzene	Blood	5.3E-06
OD Unit	Fluoranthene	Blood	1.7E-08
OD Unit	Fluorene	Blood	2.3E-09
OD Unit	Nitrobenzene	Blood	2.5E-09
OD Unit	Styrene	Blood	7.5E-08
OD Unit	Trinitrobenzene, 1,3,5 (sym-)	Blood	1.4E-07
OD Unit	Zinc	Blood	3.8E-04
SF Unit	Benzene	Blood	2.5E-06
		Total	3.0E-03
OB Unit	Naphthalene	Body Weight	1.6E-07
OD Unit	Cresol, o-	Body Weight	4.2E-10
OD Unit	Dichlorodifluoromethane	Body Weight	5.1E-10
OD Unit	Diethyl phthalate	Body Weight	8.6E-09
OD Unit	Formaldehyde	Body Weight	6.0E-06
OD Unit	Naphthalene	Body Weight	1.9E-05
OD Unit	Nickel	Body Weight	1.3E-04
OD Unit	Phenol	Body Weight	2.2E-09
OD Unit	Tetrachloroethylene (Perchloroethylene)	Body Weight	6.6E-09
OD Unit	Xylene, m-	Body Weight	7.5E-08
OD Unit	Xylene, o-	Body Weight	2.1E-08
SF Unit	Naphthalene	Body Weight	2.1E-07
		Total	1.6E-04
OD Unit	Arsenic	Cardiovascular	8.9E-08
OD Unit	Phenol	Cardiovascular	2.2E-09
OD Unit	Trichlorofluoromethane (Freon 11)	Cardiovascular	7.0E-11
		Total	9.2E-08
OB Unit	Carbon tetrachloride	Developmental	3.9E-09
OB Unit	Ethylbenzene	Developmental	1.3E-10
OD Unit	Arsenic	Developmental	8.9E-08
OD Unit	Carbon tetrachloride	Developmental	9.3E-09
OD Unit	Chloroethane	Developmental	2.5E-12
OD Unit	Ethylbenzene	Developmental	4.4E-09
OD Unit	Methyl ethyl ketone (2-Butanone)	Developmental	1.5E-10
		Total	1.1E-07

TABLE F-5
HAZARD INDICES BY TARGET ORGAN
ADULT RESIDENT

Source	Chemical	Organ	HI
OB Unit	Dinitrotoluene, 2,4-	Gastrointestinal	9.7E-10
OD Unit	Benzaldehyde	Gastrointestinal	2.7E-08
OD Unit	Dinitrotoluene, 2,4-	Gastrointestinal	2.4E-07
OD Unit	Methyl bromide (Bromomethane)	Gastrointestinal	2.6E-07
		Total	5.3E-07
OD Unit	Acetophenone	General	1.5E-09
OD Unit	Acrolein	General	7.9E-04
OD Unit	Di-n-butyl phthalate	General	1.1E-08
OD Unit	Trichlorofluoromethane (Freon 11)	General	7.0E-11
OD Unit	Xylene, m-	General	7.5E-08
OD Unit	Xylene, o-	General	2.1E-08
		Total	7.9E-04
OB Unit	Ethylbenzene	Kidney	1.3E-10
OB Unit	Toluene	Kidney	1.4E-10
OD Unit	Acetone	Kidney	9.1E-08
OD Unit	Barium	Kidney	2.6E-03
OD Unit	Benzaldehyde	Kidney	2.7E-08
OD Unit	Benzo(g,h,i)perylene	Kidney	5.9E-05
OD Unit	Cadmium	Kidney	2.6E-02
OD Unit	Cumene (Isopropylbenzene)	Kidney	3.3E-10
OD Unit	Ethylbenzene	Kidney	4.4E-09
OD Unit	Fluoranthene	Kidney	1.7E-08
OD Unit	Nitrobenzene	Kidney	2.5E-09
OD Unit	Phenol	Kidney	2.2E-09
OD Unit	Pyrene	Kidney	1.5E-08
OD Unit	Toluene	Kidney	4.9E-09
OD Unit	Trichlorofluoromethane (Freon 11)	Kidney	7.0E-11
OD Unit	Vinyl Acetate	Kidney	4.4E-10
		Total	2.8E-02
OB Unit	Carbon tetrachloride	Liver	3.9E-09
OB Unit	Chloroform (Trichloromethane)	Liver	1.7E-07
OB Unit	Ethylbenzene	Liver	1.3E-10
OB Unit	Methylene chloride	Liver	9.1E-10
OB Unit	Toluene	Liver	1.4E-10
OB Unit	Vinyl Chloride	Liver	2.0E-09
OD Unit	Acenaphthene	Liver	6.4E-10
OD Unit	Acenaphthylene	Liver	2.6E-07
OD Unit	Butylbenzylphthalate	Liver	5.7E-09
OD Unit	Carbon tetrachloride	Liver	9.3E-09
OD Unit	Chlorobenzene	Liver	9.8E-08
OD Unit	Chloroform (Trichloromethane)	Liver	9.3E-08
OD Unit	Dichlorodifluoromethane	Liver	5.1E-10
OD Unit	Dichloroethane, 1,2- (Ethylene Dichloride)	Liver	7.2E-10
OD Unit	Ethylbenzene	Liver	4.4E-09
OD Unit	Ethylhexyl phthalate, bis-2-	Liver	4.4E-07
OD Unit	Fluoranthene	Liver	1.7E-08
OD Unit	Hexachlorobenzene	Liver	3.7E-09

TABLE F-5
HAZARD INDICES BY TARGET ORGAN
ADULT RESIDENT

Source	Chemical	Organ	HI
OD Unit	Methylene chloride	Liver	4.3E-08
OD Unit	Nitrobenzene	Liver	2.5E-09
OD Unit	Styrene	Liver	7.5E-08
OD Unit	Tetrachloroethylene (Perchloroethylene)	Liver	6.6E-09
OD Unit	Toluene	Liver	4.9E-09
OD Unit	Trichloroethane, 1,1,1-	Liver	2.8E-14
OD Unit	Trinitrotoluene, 2,4,6-	Liver	1.0E-05
OD Unit	Vinyl Chloride	Liver	2.2E-08
		Total	1.2E-05
OB Unit	Carbon tetrachloride	Nervous System	3.9E-09
OB Unit	Dinitrotoluene, 2,4-	Nervous System	9.7E-10
OB Unit	Methyl chloride (Chloromethane)	Nervous System	1.5E-09
OB Unit	Toluene	Nervous System	1.4E-10
OD Unit	Arsenic	Nervous System	8.9E-08
OD Unit	Carbon disulfide	Nervous System	3.6E-09
OD Unit	Carbon tetrachloride	Nervous System	9.3E-09
OD Unit	Cresol, o-	Nervous System	4.2E-10
OD Unit	Dinitrotoluene, 2,4-	Nervous System	2.4E-07
OD Unit	Methyl chloride (Chloromethane)	Nervous System	7.9E-09
OD Unit	Phenol	Nervous System	2.2E-09
OD Unit	Styrene	Nervous System	7.5E-08
OD Unit	Toluene	Nervous System	4.9E-09
OD Unit	Trichloroethane, 1,1,1-	Nervous System	2.8E-14
OD Unit	Xylene, m-	Nervous System	7.5E-08
OD Unit	Xylene, o-	Nervous System	2.1E-08
		Total	5.4E-07
OB Unit	Chlorine	No Effect	4.1E-02
OD Unit	Acetaldehyde	No Effect	2.6E-06
OD Unit	Anthracene	No Effect	4.6E-10
OD Unit	Barium	No Effect	2.6E-03
OD Unit	Benzoic acid	No Effect	1.6E-10
OD Unit	Chromium	No Effect	4.5E-07
OD Unit	Chromium, hexavalent	No Effect	1.4E-04
		Total	4.4E-02
OD Unit	Diethyl phthalate	Organ (weight)	8.6E-09
OD Unit	Nickel	Organ (weight)	1.3E-04
		Total	1.3E-04
OD Unit	Acrylonitrile	Reproductive System	2.4E-06
OD Unit	Carbon disulfide	Reproductive System	3.6E-09
OD Unit	Methyl ethyl ketone (2-Butanone)	Reproductive System	1.5E-10
		Total	2.4E-06

TABLE F-5
HAZARD INDICES BY TARGET ORGAN
ADULT RESIDENT

Source	Chemical	Organ	HI
OB Unit	Chlorine	Respiratory Tract	4.1E-02
OB Unit	Hydrogen chloride	Respiratory Tract	1.3E-02
OB Unit	Naphthalene	Respiratory Tract	1.6E-07
OB Unit	Toluene	Respiratory Tract	7.7E-14
OB Unit	Toluene	Respiratory Tract	1.4E-10
OD Unit	Acetaldehyde	Respiratory Tract	2.6E-06
OD Unit	Acrolein	Respiratory Tract	7.9E-04
OD Unit	Acrylonitrile	Respiratory Tract	2.4E-06
OD Unit	Chromium, hexavalent	Respiratory Tract	1.4E-04
OD Unit	Formaldehyde	Respiratory Tract	6.0E-06
OD Unit	Hydrogen chloride	Respiratory Tract	3.9E-05
OD Unit	Methyl bromide (Bromomethane)	Respiratory Tract	2.6E-07
OD Unit	Naphthalene	Respiratory Tract	1.9E-05
OD Unit	Nickel	Respiratory Tract	1.3E-04
OD Unit	Selenium	Respiratory Tract	8.2E-07
OD Unit	Toluene	Respiratory Tract	4.9E-09
OD Unit	Trichlorofluoromethane (Freon 11)	Respiratory Tract	7.0E-11
OD Unit	Vinyl Acetate	Respiratory Tract	4.4E-10
SF Unit	Naphthalene	Respiratory Tract	2.1E-07
		Total	5.5E-02
OD Unit	Arsenic	Skin	8.9E-08
OD Unit	Silver	Skin	2.8E-05
		Total	2.8E-05
OD Unit	Trichlorobenzene, 1,2,4-	Urinary	6.5E-10
		Total	6.5E-10
OD Unit	Acetonitrile	Whole Body	1.6E-07
OD Unit	Vinyl Acetate	Whole Body	4.4E-10
		Total	1.6E-07

TABLE F-6
HAZARD INDICES BY TARGET ORGAN
CHILD RESIDENT

Source	Chemical	Organ	HI
OD Unit	Cumene (Isopropylbenzene)	Adrenal	9.9E-10
OD Unit	Nitrobenzene	Adrenal	5.7E-09
OD Unit	Trichlorobenzene, 1,2,4-	Adrenal	1.5E-09
		Total	8.2E-09
OB Unit	Benzene	Blood	1.6E-06
OD Unit	Antimony	Blood	6.0E-05
OD Unit	Barium	Blood	7.7E-03
OD Unit	Benzene	Blood	1.6E-05
OD Unit	Fluoranthene	Blood	5.2E-08
OD Unit	Fluorene	Blood	6.8E-09
OD Unit	Nitrobenzene	Blood	5.7E-09
OD Unit	Styrene	Blood	2.3E-07
OD Unit	Trinitrobenzene, 1,3,5 (sym-)	Blood	3.4E-07
OD Unit	Zinc	Blood	9.2E-04
SF Unit	Benzene	Blood	7.6E-06
		Total	8.7E-03
OB Unit	Naphthalene	Body Weight	4.8E-07
OD Unit	Cresol, o-	Body Weight	1.2E-09
OD Unit	Dichlorodifluoromethane	Body Weight	1.5E-09
OD Unit	Diethyl phthalate	Body Weight	2.0E-08
OD Unit	Formaldehyde	Body Weight	1.8E-05
OD Unit	Naphthalene	Body Weight	5.6E-05
OD Unit	Nickel	Body Weight	3.8E-04
OD Unit	Phenol	Body Weight	6.6E-09
OD Unit	Tetrachloroethylene (Perchloroethylene)	Body Weight	2.0E-08
OD Unit	Xylene, m-	Body Weight	2.3E-07
OD Unit	Xylene, o-	Body Weight	6.4E-08
SF Unit	Naphthalene	Body Weight	6.4E-07
		Total	4.6E-04
OD Unit	Arsenic	Cardiovascular	2.4E-07
OD Unit	Phenol	Cardiovascular	6.6E-09
OD Unit	Trichlorofluoromethane (Freon 11)	Cardiovascular	2.1E-10
		Total	2.4E-07
OB Unit	Carbon tetrachloride	Developmental	1.2E-08
OB Unit	Ethylbenzene	Developmental	3.8E-10
OD Unit	Arsenic	Developmental	2.4E-07
OD Unit	Carbon tetrachloride	Developmental	2.8E-08
OD Unit	Chloroethane	Developmental	7.5E-12
OD Unit	Ethylbenzene	Developmental	1.3E-08
OD Unit	Methyl ethyl ketone (2-Butanone)	Developmental	4.5E-10
		Total	2.9E-07

TABLE F-6
HAZARD INDICES BY TARGET ORGAN
CHILD RESIDENT

Source	Chemical	Organ	HI
OB Unit	Dinitrotoluene, 2,4-	Gastrointestinal	2.2E-09
OD Unit	Benzaldehyde	Gastrointestinal	8.1E-08
OD Unit	Dinitrotoluene, 2,4-	Gastrointestinal	5.5E-07
OD Unit	Methyl bromide (Bromomethane)	Gastrointestinal	7.8E-07
		Total	1.4E-06
OD Unit	Acetophenone	General	4.6E-09
OD Unit	Acrolein	General	2.4E-03
OD Unit	Di-n-butyl phthalate	General	3.3E-08
OD Unit	Trichlorofluoromethane (Freon 11)	General	2.1E-10
OD Unit	Xylene, m-	General	2.3E-07
OD Unit	Xylene, o-	General	6.4E-08
		Total	2.4E-03
OB Unit	Ethylbenzene	Kidney	3.8E-10
OB Unit	Toluene	Kidney	4.2E-10
OD Unit	Acetone	Kidney	2.7E-07
OD Unit	Barium	Kidney	7.7E-03
OD Unit	Benzaldehyde	Kidney	8.1E-08
OD Unit	Benzo(g,h,i)perylene	Kidney	1.4E-04
OD Unit	Cadmium	Kidney	6.3E-02
OD Unit	Cumene (Isopropylbenzene)	Kidney	9.9E-10
OD Unit	Ethylbenzene	Kidney	1.3E-08
OD Unit	Fluoranthene	Kidney	5.2E-08
OD Unit	Nitrobenzene	Kidney	5.7E-09
OD Unit	Phenol	Kidney	6.6E-09
OD Unit	Pyrene	Kidney	4.4E-08
OD Unit	Toluene	Kidney	1.5E-08
OD Unit	Trichlorofluoromethane (Freon 11)	Kidney	2.1E-10
OD Unit	Vinyl Acetate	Kidney	1.3E-09
		Total	7.1E-02
OB Unit	Carbon tetrachloride	Liver	1.2E-08
OB Unit	Chloroform (Trichloromethane)	Liver	5.0E-07
OB Unit	Ethylbenzene	Liver	3.8E-10
OB Unit	Methylene chloride	Liver	2.7E-09
OB Unit	Toluene	Liver	4.2E-10
OB Unit	Vinyl Chloride	Liver	6.1E-09
OD Unit	Acenaphthene	Liver	1.9E-09
OD Unit	Acenaphthylene	Liver	6.7E-07
OD Unit	Butylbenzylphthalate	Liver	1.6E-08
OD Unit	Carbon tetrachloride	Liver	2.8E-08
OD Unit	Chlorobenzene	Liver	2.9E-07
OD Unit	Chloroform (Trichloromethane)	Liver	2.8E-07
OD Unit	Dichlorodifluoromethane	Liver	1.5E-09
OD Unit	Dichloroethane, 1,2- (Ethylene Dichloride)	Liver	2.2E-09
OD Unit	Ethylbenzene	Liver	1.3E-08
OD Unit	Ethylhexyl phthalate, bis-2-	Liver	1.1E-06
OD Unit	Fluoranthene	Liver	5.2E-08
OD Unit	Hexachlorobenzene	Liver	8.8E-09

TABLE F-6
HAZARD INDICES BY TARGET ORGAN
CHILD RESIDENT

Source	Chemical	Organ	HI
OD Unit	Methylene chloride	Liver	1.3E-07
OD Unit	Nitrobenzene	Liver	5.7E-09
OD Unit	Styrene	Liver	2.3E-07
OD Unit	Tetrachloroethylene (Perchloroethylene)	Liver	2.0E-08
OD Unit	Toluene	Liver	1.5E-08
OD Unit	Trichloroethane, 1,1,1-	Liver	6.4E-14
OD Unit	Trinitrotoluene, 2,4,6-	Liver	2.7E-05
OD Unit	Vinyl Chloride	Liver	6.7E-08
		Total	3.1E-05
OB Unit	Carbon tetrachloride	Nervous System	1.2E-08
OB Unit	Dinitrotoluene, 2,4-	Nervous System	2.2E-09
OB Unit	Methyl chloride (Chloromethane)	Nervous System	4.6E-09
OB Unit	Toluene	Nervous System	4.2E-10
OD Unit	Arsenic	Nervous System	2.4E-07
OD Unit	Carbon disulfide	Nervous System	1.1E-08
OD Unit	Carbon tetrachloride	Nervous System	2.8E-08
OD Unit	Cresol, o-	Nervous System	1.2E-09
OD Unit	Dinitrotoluene, 2,4-	Nervous System	5.5E-07
OD Unit	Methyl chloride (Chloromethane)	Nervous System	2.4E-08
OD Unit	Phenol	Nervous System	6.6E-09
OD Unit	Styrene	Nervous System	2.3E-07
OD Unit	Toluene	Nervous System	1.5E-08
OD Unit	Trichloroethane, 1,1,1-	Nervous System	6.4E-14
OD Unit	Xylene, m-	Nervous System	2.3E-07
OD Unit	Xylene, o-	Nervous System	6.4E-08
		Total	1.4E-06
OB Unit	Chlorine	No Effect	1.2E-01
OD Unit	Acetaldehyde	No Effect	7.9E-06
OD Unit	Anthracene	No Effect	1.4E-09
OD Unit	Barium	No Effect	7.7E-03
OD Unit	Benzoic acid	No Effect	4.9E-10
OD Unit	Chromium	No Effect	1.1E-06
OD Unit	Chromium, hexavalent	No Effect	4.1E-04
		Total	1.3E-01
OD Unit	Diethyl phthalate	Organ (weight)	2.0E-08
OD Unit	Nickel	Organ (weight)	3.8E-04
		Total	3.8E-04
OD Unit	Acrylonitrile	Reproductive System	7.2E-06
OD Unit	Carbon disulfide	Reproductive System	1.1E-08
OD Unit	Methyl ethyl ketone (2-Butanone)	Reproductive System	4.5E-10
		Total	7.2E-06

TABLE F-6
HAZARD INDICES BY TARGET ORGAN
CHILD RESIDENT

Source	Chemical	Organ	HI
OB Unit	Chlorine	Respiratory Tract	1.2E-01
OB Unit	Hydrogen chloride	Respiratory Tract	3.8E-02
OB Unit	Naphthalene	Respiratory Tract	4.8E-07
OB Unit	Toluene	Respiratory Tract	1.8E-13
OB Unit	Toluene	Respiratory Tract	4.2E-10
OD Unit	Acetaldehyde	Respiratory Tract	7.9E-06
OD Unit	Acrolein	Respiratory Tract	2.4E-03
OD Unit	Acrylonitrile	Respiratory Tract	7.2E-06
OD Unit	Chromium, hexavalent	Respiratory Tract	4.1E-04
OD Unit	Formaldehyde	Respiratory Tract	1.8E-05
OD Unit	Hydrogen chloride	Respiratory Tract	1.2E-04
OD Unit	Methyl bromide (Bromomethane)	Respiratory Tract	7.8E-07
OD Unit	Naphthalene	Respiratory Tract	5.6E-05
OD Unit	Nickel	Respiratory Tract	3.8E-04
OD Unit	Selenium	Respiratory Tract	2.0E-06
OD Unit	Toluene	Respiratory Tract	1.5E-08
OD Unit	Trichlorofluoromethane (Freon 11)	Respiratory Tract	2.1E-10
OD Unit	Vinyl Acetate	Respiratory Tract	1.3E-09
SF Unit	Naphthalene	Respiratory Tract	6.4E-07
		Total	1.6E-01
OD Unit	Arsenic	Skin	2.4E-07
OD Unit	Silver	Skin	6.8E-05
		Total	6.8E-05
OD Unit	Trichlorobenzene, 1,2,4-	Urinary	1.5E-09
		Total	1.5E-09
OD Unit	Acetonitrile	Whole Body	4.8E-07
OD Unit	Vinyl Acetate	Whole Body	1.3E-09
		Total	4.8E-07

Appendix G

Acute Hazard Quotients

RECEPTOR NAME	SCENARIO	SOURCE	COPC	ACUTE INHALATION HAZARD QUOTIENT
Firing Control Point	**resident_adult**	**OB_UNIT**	Ethylbenzene	1.6912E-009
			Toluene	1.2284E-007
			Hexane, n-	2.7404E-008
			Dinitrotoluene, 2,4-	1.4255E-007
			RDX	2.3258E-010
			Diphenylamine	3.8757E-009
			HMX	1.6207E-006
			Nitroglycerine	1.9026E-006
			Carbon tetrachloride	5.5632E-007
			Dinitrotoluene, 2,6-	1.3565E-007
			Chloroform (Trichloromethane)	2.2549E-006
			Benzene	8.1308E-005
			Methyl chloride (Chloromethane)	4.7036E-009
			Aluminum	1.6560E-003
			Lead	4.9327E-001
			Vinyl Chloride	7.6339E-009
			Methylene chloride	1.3590E-006
			Hydrogen chloride	8.0533E-001
			Chlorine	2.6173E-001
			Naphthalene	4.3689E-008
			Total	1.5621E+000
		OD_UNIT	Nitrophenol, 4-	1.6893E-007
			Ethylbenzene	2.1463E-008
			Styrene	8.5171E-006
			Benzyl chloride	7.7235E-007
			Benzyl alcohol	3.2520E-009
			Benzaldehyde	1.4959E-006
			Dichlorobenzene,1,4-	2.9810E-009
			Butadiene, 1,3-	6.0605E-007
			Acrolein	2.0539E-001
			Ally Chloride	5.2032E-007
			Dichloroethane, 1,2- (Ethylene Dich	1.9319E-008
			Acrylonitrile	5.1736E-007
			Vinyl Acetate	8.9568E-009
			Xylene, m-	8.2778E-007
			Trimethylbenzene, 1,3,5-	4.4227E-009

RECEPTOR NAME	SCENARIO	SOURCE	COPC	ACUTE INHALATION HAZARD QUOTIENT
			Methylcyclohexane	6.5040E-010
			Toluene	1.5821E-006
			Chlorobenzene	9.3658E-008
			Cyclohexanone	7.6422E-010
			Phenol	1.7381E-007
			Tetrahydrofuran	2.1680E-009
			Furan	1.4024E-007
			Hexane, n-	4.8178E-008
			Cyclohexane	3.7166E-010
			Ethanol, 2-Butoxy-	5.7076E-009
			Ethylhexyl phthalate, bis-2-	1.7040E-006
			Di-n-octylphthalate	3.6019E-009
			Hexachlorobenzene	5.9620E-003
			Trinitrotoluene, 2,4,6-	1.1209E-005
			Anthracene	1.8391E-007
			Trichlorobenzene, 1,2,4-	7.1544E-007
			Dinitrotoluene, 2,4-	8.1219E-006
			RDX	7.1555E-007
			Tetrachloroethylene (Perchloroethyl	3.0894E-007
			Pyrene	2.5860E-007
			Dibenzofuran	1.0732E-008
			Xylenes	6.8982E-009
			Methyl Tert-butyl Ether	8.8691E-010
			TetraCDD, 2,3,7,8-	1.7275E-008
			Chromium, hexavalent	0.0000E+000
			Benzo(g,h,i)perylene	3.8790E-008
			Indeno(1,2,3-cd) pyrene	4.3577E-006
			Amino-2,6-Dinitrotoluene, 4-	0.0000E+000
			HexaCDD, 1,2,3,7,8,9-	3.8157E-012
			Benzo(b)fluoranthene	5.7593E-006
			Fluoranthene	3.6561E-004
			Benzo(k)fluoranthene	2.0715E-006
			Acenaphthylene	2.1138E-004
			Chrysene	1.5323E-006
			HMX	1.6043E-007
			OctaCDD, 1,2,3,4,6,7,8,9-	1.3008E-011

RECEPTOR NAME	SCENARIO	SOURCE	COPC	ACUTE INHALATION HAZARD QUOTIENT
			Amino-4,6-Dinitrotoluene, 2-	0.0000E+000
			HeptaCDD, 1,2,3,4,6,7,8-	2.1138E-013
			OctaCDF, 1,2,3,4,6,7,8,9-	3.2954E-011
			HexaCDD, 1,2,3,4,7,8-	2.1853E-011
			PentaCDD, 1,2,3,7,8-	2.8917E-010
			Ethanedinitrile	3.4146E-006
			Tetryl	4.6251E-009
			Formaldehyde	1.4876E-003
			Benzo(a)pyrene	5.7365E-007
			TetraCDF, 2,3,7,8-	5.6341E-009
			Dibenz(a,h)anthracene	3.9024E-009
			Nitroglycerine	2.6666E-007
			HeptaCDF, 1,2,3,4,7,8,9-	4.1522E-012
			Carbon tetrachloride	4.6213E-007
			Benzo(a)anthracene	1.5184E-006
			PentaCDF, 2,3,4,7,8-	2.2040E-008
			PentaCDF, 1,2,3,7,8-	1.9755E-010
			HexaCDF, 1,2,3,6,7,8-	1.0146E-010
			HexaCDD, 1,2,3,6,7,8-	5.1555E-012
			Dinitrotoluene, 2,6-	1.2466E-008
			HexaCDF, 2,3,4,6,7,8-	2.8618E-010
			Benzoic acid	4.1626E-007
			Acetone	1.5747E-007
			Chloroform (Trichloromethane)	4.3360E-007
			HeptaCDF, 1,2,3,4,6,7,8-	2.8184E-012
			HexaCDF, 1,2,3,4,7,8-	8.7110E-011
			Butanol, 1-	1.7778E-008
			Benzene	3.0018E-004
			Trichloroethane, 1,1,1-	6.2171E-008
			HexaCDF, 1,2,3,7,8,9-	6.5560E-013
			Methyl bromide (Bromomethane)	8.0049E-007
			Methyl chloride (Chloromethane)	8.4552E-009
			Hydrogen Cyanide	1.7180E-004
			Aluminum	6.5040E-004
			Iron	8.3468E-007
			Lead	1.2574E-002

RECEPTOR NAME	SCENARIO	SOURCE	COPC	ACUTE INHALATION HAZARD QUOTIENT
			Manganese	9.2140E-006
			Nickel	8.6720E-003
			Silver	4.5528E-005
			Strontium	9.9728E-004
			Thallium (l)	1.0515E-003
			Titanium	6.1788E-007
			Antimony	4.3360E-005
			Arsenic	1.3008E-005
			Barium	1.9512E-003
			Cadmium	4.5528E-002
			Chromium	6.2872E-005
			Cobalt	6.5040E-005
			Copper	2.9268E-003
			Vanadium	1.9946E-002
			Zinc	5.6368E-004
			Chloroethane	2.4715E-011
			Vinyl Chloride	3.0713E-008
			Acetonitrile	1.0582E-006
			Acetaldehyde	7.2222E-007
			Methylene chloride	2.1835E-005
			Carbon disulfide	9.4413E-007
			Trichlorofluoromethane (Freon 11)	4.6829E-011
			Dichlorodifluoromethane	1.6260E-011
			Freon 113	1.6092E-009
			Hydrogen chloride	8.9817E-004
			Ammonia	4.3998E-005
			Selenium	3.9820E-007
			Methyl ethyl ketone (2-Butanone)	1.3758E-007
			Methyl Methacrylate	7.8048E-011
			Acenaphthene	2.4765E-007
			Diethyl phthalate	2.0596E-005
			Di-n-butyl phthalate	5.3875E-007
			Phenanthrene	6.1726E-006
			Butylbenzylphthalate	5.1382E-007
			Fluorene	6.4702E-008
			Nitrophenol, 2-	7.8048E-008

RECEPTOR NAME	SCENARIO	SOURCE	COPC	ACUTE INHALATION HAZARD QUOTIENT
			Naphthalene	1.7778E-006
			Xylene, o-	2.3651E-007
			Cresol, o-	8.1300E-009
			Trimethylbenzene, 1,2,4-	1.2647E-008
			Cumene (Isopropylbenzene)	1.2955E-009
			Alpha Methyl Styrene	0.0000E+000
			Acetophenone	4.2276E-008
			Nitrobenzene	8.8888E-008
			Nitrotoluene, 3-	2.1680E-009
			Trinitrobenzene, 1,3,5 (sym-)	1.1829E-007
			Nitrotoluene, 4-	1.6260E-007
			Total	3.1005E-001
		SF_UNIT	Nitroglycerine	2.2469E-006
			Benzene	3.4567E-004
			Lead	4.6240E-001
			Naphthalene	4.9496E-008
			Total	4.6275E-001
Grantsville 1HR	**resident_adult**	**OB_UNIT**	Ethylbenzene	5.4720E-010
			Toluene	3.9746E-008
			Hexane, n-	8.8667E-009
			Dinitrotoluene, 2,4-	4.6124E-008
			RDX	7.5251E-011
			Diphenylamine	1.2540E-009
			HMX	5.2440E-007
			Nitroglycerine	6.1560E-007
			Carbon tetrachloride	1.8000E-007
			Dinitrotoluene, 2,6-	4.3890E-008
			Chloroform (Trichloromethane)	7.2960E-007
			Benzene	2.6308E-005
			Methyl chloride (Chloromethane)	1.5219E-009
			Aluminum	5.3580E-004
			Lead	1.5960E-001
			Vinyl Chloride	2.4700E-009
			Methylene chloride	4.3971E-007
			Hydrogen chloride	2.6057E-001
			Chlorine	8.4686E-002

RECEPTOR NAME	SCENARIO	SOURCE	COPC	ACUTE INHALATION HAZARD QUOTIENT
			Naphthalene	1.4136E-008
			Total	5.0542E-001
		OD_UNIT	Nitrophenol, 4-	1.6499E-007
			Ethylbenzene	2.0962E-008
			Styrene	8.3181E-006
			Benzyl chloride	7.5430E-007
			Benzyl alcohol	3.1760E-009
			Benzaldehyde	1.4610E-006
			Dichlorobenzene,1,4-	2.9113E-009
			Butadiene, 1,3-	5.9189E-007
			Acrolein	2.0059E-001
			Ally Chloride	5.0816E-007
			Dichloroethane, 1,2- (Ethylene Dich	1.8867E-008
			Acrylonitrile	5.0527E-007
			Vinyl Acetate	8.7475E-009
			Xylene, m-	8.0844E-007
			Trimethylbenzene, 1,3,5-	4.3194E-009
			Methylcyclohexane	6.3520E-010
			Toluene	1.5451E-006
			Chlorobenzene	9.1469E-008
			Cyclohexanone	7.4636E-010
			Phenol	1.6975E-007
			Tetrahydrofuran	2.1173E-009
			Furan	1.3696E-007
			Hexane, n-	4.7052E-008
			Cyclohexane	3.6297E-010
			Ethanol, 2-Butoxy-	5.5742E-009
			Ethylhexyl phthalate, bis-2-	1.6642E-006
			Di-n-octylphthalate	3.5177E-009
			Hexachlorobenzene	5.8227E-003
			Trinitrotoluene, 2,4,6-	1.0947E-005
			Anthracene	1.7961E-007
			Trichlorobenzene, 1,2,4-	6.9872E-007
			Dinitrotoluene, 2,4-	7.9321E-006
			RDX	6.9883E-007
			Tetrachloroethylene (Perchloroethyl	3.0172E-007

RECEPTOR NAME	SCENARIO	SOURCE	COPC	ACUTE INHALATION HAZARD QUOTIENT
			Pyrene	2.5256E-007
			Dibenzofuran	1.0481E-008
			Xylenes	6.7370E-009
			Methyl Tert-butyl Ether	8.6618E-010
			TetraCDD, 2,3,7,8-	1.6871E-008
			Chromium, hexavalent	0.0000E+000
			Benzo(g,h,i)perylene	3.7883E-008
			Indeno(1,2,3-cd) pyrene	4.2558E-006
			Amino-2,6-Dinitrotoluene, 4-	0.0000E+000
			HexaCDD, 1,2,3,7,8,9-	3.7265E-012
			Benzo(b)fluoranthene	5.6247E-006
			Fluoranthene	3.5707E-004
			Benzo(k)fluoranthene	2.0231E-006
			Acenaphthylene	2.0644E-004
			Chrysene	1.4965E-006
			HMX	1.5668E-007
			OctaCDD, 1,2,3,4,6,7,8,9-	1.2704E-011
			Amino-4,6-Dinitrotoluene, 2-	0.0000E+000
			HeptaCDD, 1,2,3,4,6,7,8-	2.0644E-013
			OctaCDF, 1,2,3,4,6,7,8,9-	3.2183E-011
			HexaCDD, 1,2,3,4,7,8-	2.1343E-011
			PentaCDD, 1,2,3,7,8-	2.8241E-010
			Ethanedinitrile	3.3348E-006
			Tetryl	4.5170E-009
			Formaldehyde	1.4529E-003
			Benzo(a)pyrene	5.6025E-007
			TetraCDF, 2,3,7,8-	5.5024E-009
			Dibenz(a,h)anthracene	3.8112E-009
			Nitroglycerine	2.6043E-007
			HeptaCDF, 1,2,3,4,7,8,9-	4.0551E-012
			Carbon tetrachloride	4.5133E-007
			Benzo(a)anthracene	1.4829E-006
			PentaCDF, 2,3,4,7,8-	2.1525E-008
			PentaCDF, 1,2,3,7,8-	1.9293E-010
			HexaCDF, 1,2,3,6,7,8-	9.9091E-011
			HexaCDD, 1,2,3,6,7,8-	5.0350E-012

RECEPTOR NAME	SCENARIO	SOURCE	COPC	ACUTE INHALATION HAZARD QUOTIENT
			Dinitrotoluene, 2,6-	1.2175E-008
			HexaCDF, 2,3,4,6,7,8-	2.7949E-010
			Benzoic acid	4.0653E-007
			Acetone	1.5379E-007
			Chloroform (Trichloromethane)	4.2347E-007
			HeptaCDF, 1,2,3,4,6,7,8-	2.7525E-012
			HexaCDF, 1,2,3,4,7,8-	8.5074E-011
			Butanol, 1-	1.7362E-008
			Benzene	2.9317E-004
			Trichloroethane, 1,1,1-	6.0718E-008
			HexaCDF, 1,2,3,7,8,9-	6.4028E-013
			Methyl bromide (Bromomethane)	7.8178E-007
			Methyl chloride (Chloromethane)	8.2576E-009
			Hydrogen Cyanide	1.6779E-004
			Aluminum	6.3520E-004
			Iron	8.1517E-007
			Lead	1.2281E-002
			Manganese	8.9987E-006
			Nickel	8.4693E-003
			Silver	4.4464E-005
			Strontium	9.7397E-004
			Thallium (l)	1.0269E-003
			Titanium	6.0344E-007
			Antimony	4.2347E-005
			Arsenic	1.2704E-005
			Barium	1.9056E-003
			Cadmium	4.4464E-002
			Chromium	6.1403E-005
			Cobalt	6.3520E-005
			Copper	2.8584E-003
			Vanadium	1.9479E-002
			Zinc	5.5051E-004
			Chloroethane	2.4138E-011
			Vinyl Chloride	2.9996E-008
			Acetonitrile	1.0334E-006
			Acetaldehyde	7.0534E-007

RECEPTOR NAME	SCENARIO	SOURCE	COPC	ACUTE INHALATION HAZARD QUOTIENT
			Methylene chloride	2.1325E-005
			Carbon disulfide	9.2206E-007
			Trichlorofluoromethane (Freon 11)	4.5734E-011
			Dichlorodifluoromethane	1.5880E-011
			Freon 113	1.5716E-009
			Hydrogen chloride	8.7718E-004
			Ammonia	4.2969E-005
			Selenium	3.8890E-007
			Methyl ethyl ketone (2-Butanone)	1.3437E-007
			Methyl Methacrylate	7.6224E-011
			Acenaphthene	2.4186E-007
			Diethyl phthalate	2.0115E-005
			Di-n-butyl phthalate	5.2616E-007
			Phenanthrene	6.0284E-006
			Butylbenzylphthalate	5.0181E-007
			Fluorene	6.3190E-008
			Nitrophenol, 2-	7.6224E-008
			Naphthalene	1.7362E-006
			Xylene, o-	2.3098E-007
			Cresol, o-	7.9400E-009
			Trimethylbenzene, 1,2,4-	1.2351E-008
			Cumene (Isopropylbenzene)	1.2652E-009
			Alpha Methyl Styrene	0.0000E+000
			Acetophenone	4.1288E-008
			Nitrobenzene	8.6811E-008
			Nitrotoluene, 3-	2.1173E-009
			Trinitrobenzene, 1,3,5 (sym-)	1.1552E-007
			Nitrotoluene, 4-	1.5880E-007
			Total	3.0280E-001
		SF_UNIT	Nitroglycerine	7.6935E-007
			Benzene	1.1836E-004
			Lead	1.5833E-001
			Naphthalene	1.6948E-008
			Total	1.5845E-001
Grantsville Rsvr	**resident_adult**	**OB_UNIT**	Ethylbenzene	4.0960E-010
			Toluene	2.9751E-008

RECEPTOR NAME	SCENARIO	SOURCE	COPC	ACUTE INHALATION HAZARD QUOTIENT
			Hexane, n-	6.6370E-009
			Dinitrotoluene, 2,4-	3.4525E-008
			RDX	5.6329E-011
			Diphenylamine	9.3867E-010
			HMX	3.9253E-007
			Nitroglycerine	4.6080E-007
			Carbon tetrachloride	1.3474E-007
			Dinitrotoluene, 2,6-	3.2853E-008
			Chloroform (Trichloromethane)	5.4613E-007
			Benzene	1.9692E-005
			Methyl chloride (Chloromethane)	1.1392E-009
			Aluminum	4.0107E-004
			Lead	1.1947E-001
			Vinyl Chloride	1.8489E-009
			Methylene chloride	3.2914E-007
			Hydrogen chloride	1.9505E-001
			Chlorine	6.3390E-002
			Naphthalene	1.0581E-008
			Total	3.7833E-001
		OD_UNIT	Nitrophenol, 4-	2.0493E-007
			Ethylbenzene	2.6037E-008
			Styrene	1.0332E-005
			Benzyl chloride	9.3694E-007
			Benzyl alcohol	3.9450E-009
			Benzaldehyde	1.8147E-006
			Dichlorobenzene,1,4-	3.6163E-009
			Butadiene, 1,3-	7.3520E-007
			Acrolein	2.4916E-001
			Ally Chloride	6.3120E-007
			Dichloroethane, 1,2- (Ethylene Dich	2.3436E-008
			Acrylonitrile	6.2761E-007
			Vinyl Acetate	1.0865E-008
			Xylene, m-	1.0042E-006
			Trimethylbenzene, 1,3,5-	5.3652E-009
			Methylcyclohexane	7.8900E-010
			Toluene	1.9192E-006

RECEPTOR NAME	SCENARIO	SOURCE	COPC	ACUTE INHALATION HAZARD QUOTIENT
			Chlorobenzene	1.1362E-007
			Cyclohexanone	9.2707E-010
			Phenol	2.1085E-007
			Tetrahydrofuran	2.6300E-009
			Furan	1.7013E-007
			Hexane, n-	5.8444E-008
			Cyclohexane	4.5086E-010
			Ethanol, 2-Butoxy-	6.9239E-009
			Ethylhexyl phthalate, bis-2-	2.0672E-006
			Di-n-octylphthalate	4.3695E-009
			Hexachlorobenzene	7.2325E-003
			Trinitrotoluene, 2,4,6-	1.3597E-005
			Anthracene	2.2310E-007
			Trichlorobenzene, 1,2,4-	8.6790E-007
			Dinitrotoluene, 2,4-	9.8526E-006
			RDX	8.6803E-007
			Tetrachloroethylene (Perchloroethyl	3.7478E-007
			Pyrene	3.1371E-007
			Dibenzofuran	1.3018E-008
			Xylenes	8.3682E-009
			Methyl Tert-butyl Ether	1.0759E-009
			TetraCDD, 2,3,7,8-	2.0956E-008
			Chromium, hexavalent	0.0000E+000
			Benzo(g,h,i)perylene	4.7056E-008
			Indeno(1,2,3-cd) pyrene	5.2863E-006
			Amino-2,6-Dinitrotoluene, 4-	0.0000E+000
			HexaCDD, 1,2,3,7,8,9-	4.6288E-012
			Benzo(b)fluoranthene	6.9866E-006
			Fluoranthene	4.4352E-004
			Benzo(k)fluoranthene	2.5130E-006
			Acenaphthylene	2.5642E-004
			Chrysene	1.8589E-006
			HMX	1.9462E-007
			OctaCDD, 1,2,3,4,6,7,8,9-	1.5780E-011
			Amino-4,6-Dinitrotoluene, 2-	0.0000E+000
			HeptaCDD, 1,2,3,4,6,7,8-	2.5643E-013

RECEPTOR NAME	SCENARIO	SOURCE	COPC	ACUTE INHALATION HAZARD QUOTIENT
			OctaCDF, 1,2,3,4,6,7,8,9-	3.9976E-011
			HexaCDD, 1,2,3,4,7,8-	2.6510E-011
			PentaCDD, 1,2,3,7,8-	3.5079E-010
			Ethanedinitrile	4.1423E-006
			Tetryl	5.6107E-009
			Formaldehyde	1.8046E-003
			Benzo(a)pyrene	6.9590E-007
			TetraCDF, 2,3,7,8-	6.8347E-009
			Dibenz(a,h)anthracene	4.7340E-009
			Nitroglycerine	3.2349E-007
			HeptaCDF, 1,2,3,4,7,8,9-	5.0370E-012
			Carbon tetrachloride	5.6061E-007
			Benzo(a)anthracene	1.8419E-006
			PentaCDF, 2,3,4,7,8-	2.6737E-008
			PentaCDF, 1,2,3,7,8-	2.3965E-010
			HexaCDF, 1,2,3,6,7,8-	1.2308E-010
			HexaCDD, 1,2,3,6,7,8-	6.2541E-012
			Dinitrotoluene, 2,6-	1.5123E-008
			HexaCDF, 2,3,4,6,7,8-	3.4716E-010
			Benzoic acid	5.0496E-007
			Acetone	1.9102E-007
			Chloroform (Trichloromethane)	5.2600E-007
			HeptaCDF, 1,2,3,4,6,7,8-	3.4190E-012
			HexaCDF, 1,2,3,4,7,8-	1.0567E-010
			Butanol, 1-	2.1566E-008
			Benzene	3.6415E-004
			Trichloroethane, 1,1,1-	7.5419E-008
			HexaCDF, 1,2,3,7,8,9-	7.9531E-013
			Methyl bromide (Bromomethane)	9.7108E-007
			Methyl chloride (Chloromethane)	1.0257E-008
			Hydrogen Cyanide	2.0842E-004
			Aluminum	7.8900E-004
			Iron	1.0126E-006
			Lead	1.5254E-002
			Manganese	1.1177E-005
			Nickel	1.0520E-002

RECEPTOR NAME	SCENARIO	SOURCE	COPC	ACUTE INHALATION HAZARD QUOTIENT
			Silver	5.5230E-005
			Strontium	1.2098E-003
			Thallium (l)	1.2756E-003
			Titanium	7.4955E-007
			Antimony	5.2600E-005
			Arsenic	1.5780E-005
			Barium	2.3670E-003
			Cadmium	5.5230E-002
			Chromium	7.6270E-005
			Cobalt	7.8900E-005
			Copper	3.5505E-003
			Vanadium	2.4196E-002
			Zinc	6.8380E-004
			Chloroethane	2.9982E-011
			Vinyl Chloride	3.7258E-008
			Acetonitrile	1.2837E-006
			Acetaldehyde	8.7613E-007
			Methylene chloride	2.6488E-005
			Carbon disulfide	1.1453E-006
			Trichlorofluoromethane (Freon 11)	5.6808E-011
			Dichlorodifluoromethane	1.9725E-011
			Freon 113	1.9522E-009
			Hydrogen chloride	1.0896E-003
			Ammonia	5.3374E-005
			Selenium	4.8306E-007
			Methyl ethyl ketone (2-Butanone)	1.6690E-007
			Methyl Methacrylate	9.4680E-011
			Acenaphthene	3.0043E-007
			Diethyl phthalate	2.4985E-005
			Di-n-butyl phthalate	6.5356E-007
			Phenanthrene	7.4880E-006
			Butylbenzylphthalate	6.2331E-007
			Fluorene	7.8490E-008
			Nitrophenol, 2-	9.4680E-008
			Naphthalene	2.1566E-006
			Xylene, o-	2.8691E-007

RECEPTOR NAME	SCENARIO	SOURCE	COPC	ACUTE INHALATION HAZARD QUOTIENT
			Cresol, o-	9.8625E-009
			Trimethylbenzene, 1,2,4-	1.5342E-008
			Cumene (Isopropylbenzene)	1.5716E-009
			Alpha Methyl Styrene	0.0000E+000
			Acetophenone	5.1285E-008
			Nitrobenzene	1.0783E-007
			Nitrotoluene, 3-	2.6300E-009
			Trinitrobenzene, 1,3,5 (sym-)	1.4349E-007
			Nitrotoluene, 4-	1.9725E-007
			Total	3.7612E-001
		SF_UNIT	Nitroglycerine	1.0357E-006
			Benzene	1.5934E-004
			Lead	2.1314E-001
			Naphthalene	2.2815E-008
			Total	2.1330E-001
Guard Shack	**resident_adult**	**OB_UNIT**	Ethylbenzene	9.4080E-010
			Toluene	6.8335E-008
			Hexane, n-	1.5244E-008
			Dinitrotoluene, 2,4-	7.9301E-008
			RDX	1.2938E-010
			Diphenylamine	2.1560E-009
			HMX	9.0160E-007
			Nitroglycerine	1.0584E-006
			Carbon tetrachloride	3.0947E-007
			Dinitrotoluene, 2,6-	7.5460E-008
			Chloroform (Trichloromethane)	1.2544E-006
			Benzene	4.5231E-005
			Methyl chloride (Chloromethane)	2.6166E-009
			Aluminum	9.2120E-004
			Lead	2.7440E-001
			Vinyl Chloride	4.2467E-009
			Methylene chloride	7.5600E-007
			Hydrogen chloride	4.4800E-001
			Chlorine	1.4560E-001
			Naphthalene	2.4304E-008
			Total	8.6897E-001

RECEPTOR NAME	SCENARIO	SOURCE	COPC	ACUTE INHALATION HAZARD QUOTIENT
		OD_UNIT	Nitrophenol, 4-	2.9569E-007
			Ethylbenzene	3.7567E-008
			Styrene	1.4908E-005
			Benzyl chloride	1.3519E-006
			Benzyl alcohol	5.6920E-009
			Benzaldehyde	2.6183E-006
			Dichlorobenzene,1,4-	5.2177E-009
			Butadiene, 1,3-	1.0608E-006
			Acrolein	3.5949E-001
			Ally Chloride	9.1072E-007
			Dichloroethane, 1,2- (Ethylene Dich	3.3814E-008
			Acrylonitrile	9.0555E-007
			Vinyl Acetate	1.5677E-008
			Xylene, m-	1.4489E-006
			Trimethylbenzene, 1,3,5-	7.7411E-009
			Methylcyclohexane	1.1384E-009
			Toluene	2.7691E-006
			Chlorobenzene	1.6393E-007
			Cyclohexanone	1.3376E-009
			Phenol	3.0423E-007
			Tetrahydrofuran	3.7947E-009
			Furan	2.4547E-007
			Hexane, n-	8.4326E-008
			Cyclohexane	6.5051E-010
			Ethanol, 2-Butoxy-	9.9900E-009
			Ethylhexyl phthalate, bis-2-	2.9826E-006
			Di-n-octylphthalate	6.3045E-009
			Hexachlorobenzene	1.0435E-002
			Trinitrotoluene, 2,4,6-	1.9618E-005
			Anthracene	3.2190E-007
			Trichlorobenzene, 1,2,4-	1.2522E-006
			Dinitrotoluene, 2,4-	1.4216E-005
			RDX	1.2524E-006
			Tetrachloroethylene (Perchloroethyl	5.4074E-007
			Pyrene	4.5263E-007
			Dibenzofuran	1.8784E-008

RECEPTOR NAME	SCENARIO	SOURCE	COPC	ACUTE INHALATION HAZARD QUOTIENT
			Xylenes	1.2074E-008
			Methyl Tert-butyl Ether	1.5524E-009
			TetraCDD, 2,3,7,8-	3.0236E-008
			Chromium, hexavalent	0.0000E+000
			Benzo(g,h,i)perylene	6.7894E-008
			Indeno(1,2,3-cd) pyrene	7.6273E-006
			Amino-2,6-Dinitrotoluene, 4-	0.0000E+000
			HexaCDD, 1,2,3,7,8,9-	6.6786E-012
			Benzo(b)fluoranthene	1.0081E-005
			Fluoranthene	6.3993E-004
			Benzo(k)fluoranthene	3.6258E-006
			Acenaphthylene	3.6998E-004
			Chrysene	2.6821E-006
			HMX	2.8081E-007
			OctaCDD, 1,2,3,4,6,7,8,9-	2.2768E-011
			Amino-4,6-Dinitrotoluene, 2-	0.0000E+000
			HeptaCDD, 1,2,3,4,6,7,8-	3.6998E-013
			OctaCDF, 1,2,3,4,6,7,8,9-	5.7679E-011
			HexaCDD, 1,2,3,4,7,8-	3.8250E-011
			PentaCDD, 1,2,3,7,8-	5.0613E-010
			Ethanedinitrile	5.9766E-006
			Tetryl	8.0953E-009
			Formaldehyde	2.6038E-003
			Benzo(a)pyrene	1.0041E-006
			TetraCDF, 2,3,7,8-	9.8614E-009
			Dibenz(a,h)anthracene	6.8304E-009
			Nitroglycerine	4.6674E-007
			HeptaCDF, 1,2,3,4,7,8,9-	7.2675E-012
			Carbon tetrachloride	8.0886E-007
			Benzo(a)anthracene	2.6576E-006
			PentaCDF, 2,3,4,7,8-	3.8577E-008
			PentaCDF, 1,2,3,7,8-	3.4577E-010
			HexaCDF, 1,2,3,6,7,8-	1.7759E-010
			HexaCDD, 1,2,3,6,7,8-	9.0237E-012
			Dinitrotoluene, 2,6-	2.1819E-008
			HexaCDF, 2,3,4,6,7,8-	5.0090E-010

RECEPTOR NAME	SCENARIO	SOURCE	COPC	ACUTE INHALATION HAZARD QUOTIENT
			Benzoic acid	7.2858E-007
			Acetone	2.7561E-007
			Chloroform (Trichloromethane)	7.5893E-007
			HeptaCDF, 1,2,3,4,6,7,8-	4.9331E-012
			HexaCDF, 1,2,3,4,7,8-	1.5247E-010
			Butanol, 1-	3.1116E-008
			Benzene	5.2542E-004
			Trichloroethane, 1,1,1-	1.0882E-007
			HexaCDF, 1,2,3,7,8,9-	1.1475E-012
			Methyl bromide (Bromomethane)	1.4011E-006
			Methyl chloride (Chloromethane)	1.4799E-008
			Hydrogen Cyanide	3.0071E-004
			Aluminum	1.1384E-003
			Iron	1.4609E-006
			Lead	2.2009E-002
			Manganese	1.6127E-005
			Nickel	1.5179E-002
			Silver	7.9688E-005
			Strontium	1.7455E-003
			Thallium (l)	1.8404E-003
			Titanium	1.0815E-006
			Antimony	7.5893E-005
			Arsenic	2.2768E-005
			Barium	3.4152E-003
			Cadmium	7.9688E-002
			Chromium	1.1005E-004
			Cobalt	1.1384E-004
			Copper	5.1228E-003
			Vanadium	3.4911E-002
			Zinc	9.8661E-004
			Chloroethane	4.3259E-011
			Vinyl Chloride	5.3758E-008
			Acetonitrile	1.8521E-006
			Acetaldehyde	1.2641E-006
			Methylene chloride	3.8218E-005
			Carbon disulfide	1.6525E-006

RECEPTOR NAME	SCENARIO	SOURCE	COPC	ACUTE INHALATION HAZARD QUOTIENT
			Trichlorofluoromethane (Freon 11)	8.1965E-011
			Dichlorodifluoromethane	2.8460E-011
			Freon 113	2.8167E-009
			Hydrogen chloride	1.5721E-003
			Ammonia	7.7009E-005
			Selenium	6.9698E-007
			Methyl ethyl ketone (2-Butanone)	2.4082E-007
			Methyl Methacrylate	1.3661E-010
			Acenaphthene	4.3347E-007
			Diethyl phthalate	3.6049E-005
			Di-n-butyl phthalate	9.4297E-007
			Phenanthrene	1.0804E-005
			Butylbenzylphthalate	8.9934E-007
			Fluorene	1.1325E-007
			Nitrophenol, 2-	1.3661E-007
			Naphthalene	3.1116E-006
			Xylene, o-	4.1396E-007
			Cresol, o-	1.4230E-008
			Trimethylbenzene, 1,2,4-	2.2136E-008
			Cumene (Isopropylbenzene)	2.2675E-009
			Alpha Methyl Styrene	0.0000E+000
			Acetophenone	7.3996E-008
			Nitrobenzene	1.5558E-007
			Nitrotoluene, 3-	3.7947E-009
			Trinitrobenzene, 1,3,5 (sym-)	2.0704E-007
			Nitrotoluene, 4-	2.8460E-007
			Total	5.4268E-001
		SF_UNIT	Nitroglycerine	1.4485E-006
			Benzene	2.2285E-004
			Lead	2.9811E-001
			Naphthalene	3.1910E-008
			Total	2.9833E-001
NE OB/OD - 1HR	**resident_adult**	**OB_UNIT**	Ethylbenzene	1.8464E-009
			Toluene	1.3411E-007
			Hexane, n-	2.9919E-008
			Dinitrotoluene, 2,4-	1.5563E-007

RECEPTOR NAME	SCENARIO	SOURCE	COPC	ACUTE INHALATION HAZARD QUOTIENT
			RDX	2.5392E-010
			Diphenylamine	4.2313E-009
			HMX	1.7695E-006
			Nitroglycerine	2.0772E-006
			Carbon tetrachloride	6.0737E-007
			Dinitrotoluene, 2,6-	1.4810E-007
			Chloroform (Trichloromethane)	2.4619E-006
			Benzene	8.8769E-005
			Methyl chloride (Chloromethane)	5.1353E-009
			Aluminum	1.8079E-003
			Lead	5.3853E-001
			Vinyl Chloride	8.3344E-009
			Methylene chloride	1.4837E-006
			Hydrogen chloride	8.7924E-001
			Chlorine	2.8575E-001
			Naphthalene	4.7699E-008
			Total	1.7054E+000
		OD_UNIT	Nitrophenol, 4-	6.4338E-007
			Ethylbenzene	8.1741E-008
			Styrene	3.2437E-005
			Benzyl chloride	2.9414E-006
			Benzyl alcohol	1.2385E-008
			Benzaldehyde	5.6971E-006
			Dichlorobenzene,1,4-	1.1353E-008
			Butadiene, 1,3-	2.3081E-006
			Acrolein	7.8221E-001
			Ally Chloride	1.9816E-006
			Dichloroethane, 1,2- (Ethylene Dich	7.3574E-008
			Acrylonitrile	1.9703E-006
			Vinyl Acetate	3.4111E-008
			Xylene, m-	3.1525E-006
			Trimethylbenzene, 1,3,5-	1.6844E-008
			Methylcyclohexane	2.4770E-009
			Toluene	6.0251E-006
			Chlorobenzene	3.5669E-007
			Cyclohexanone	2.9105E-009

RECEPTOR NAME	SCENARIO	SOURCE	COPC	ACUTE INHALATION HAZARD QUOTIENT
			Phenol	6.6196E-007
			Tetrahydrofuran	8.2567E-009
			Furan	5.3410E-007
			Hexane, n-	1.8348E-007
			Cyclohexane	1.4154E-009
			Ethanol, 2-Butoxy-	2.1737E-008
			Ethylhexyl phthalate, bis-2-	6.4897E-006
			Di-n-octylphthalate	1.3718E-008
			Hexachlorobenzene	2.2706E-002
			Trinitrotoluene, 2,4,6-	4.2687E-005
			Anthracene	7.0041E-007
			Trichlorobenzene, 1,2,4-	2.7247E-006
			Dinitrotoluene, 2,4-	3.0932E-005
			RDX	2.7251E-006
			Tetrachloroethylene (Perchloroethyl	1.1766E-006
			Pyrene	9.8486E-007
			Dibenzofuran	4.0870E-008
			Xylenes	2.6271E-008
			Methyl Tert-butyl Ether	3.3777E-009
			TetraCDD, 2,3,7,8-	6.5789E-008
			Chromium, hexavalent	0.0000E+000
			Benzo(g,h,i)perylene	1.4773E-007
			Indeno(1,2,3-cd) pyrene	1.6596E-005
			Amino-2,6-Dinitrotoluene, 4-	0.0000E+000
			HexaCDD, 1,2,3,7,8,9-	1.4532E-011
			Benzo(b)fluoranthene	2.1934E-005
			Fluoranthene	1.3924E-003
			Benzo(k)fluoranthene	7.8892E-006
			Acenaphthylene	8.0502E-004
			Chrysene	5.8358E-006
			HMX	6.1099E-007
			OctaCDD, 1,2,3,4,6,7,8,9-	4.9540E-011
			Amino-4,6-Dinitrotoluene, 2-	0.0000E+000
			HeptaCDD, 1,2,3,4,6,7,8-	8.0503E-013
			OctaCDF, 1,2,3,4,6,7,8,9-	1.2550E-010
			HexaCDD, 1,2,3,4,7,8-	8.3227E-011

RECEPTOR NAME	SCENARIO	SOURCE	COPC	ACUTE INHALATION HAZARD QUOTIENT
			PentaCDD, 1,2,3,7,8-	1.1013E-009
			Ethanedinitrile	1.3004E-005
			Tetryl	1.7614E-008
			Formaldehyde	5.6655E-003
			Benzo(a)pyrene	2.1847E-006
			TetraCDF, 2,3,7,8-	2.1457E-008
			Dibenz(a,h)anthracene	1.4862E-008
			Nitroglycerine	1.0156E-006
			HeptaCDF, 1,2,3,4,7,8,9-	1.5813E-011
			Carbon tetrachloride	1.7600E-006
			Benzo(a)anthracene	5.7826E-006
			PentaCDF, 2,3,4,7,8-	8.3937E-008
			PentaCDF, 1,2,3,7,8-	7.5235E-010
			HexaCDF, 1,2,3,6,7,8-	3.8641E-010
			HexaCDD, 1,2,3,6,7,8-	1.9634E-011
			Dinitrotoluene, 2,6-	4.7476E-008
			HexaCDF, 2,3,4,6,7,8-	1.0899E-009
			Benzoic acid	1.5853E-006
			Acetone	5.9969E-007
			Chloroform (Trichloromethane)	1.6513E-006
			HeptaCDF, 1,2,3,4,6,7,8-	1.0734E-011
			HexaCDF, 1,2,3,4,7,8-	3.3175E-010
			Butanol, 1-	6.7705E-008
			Benzene	1.1432E-003
			Trichloroethane, 1,1,1-	2.3677E-007
			HexaCDF, 1,2,3,7,8,9-	2.4968E-012
			Methyl bromide (Bromomethane)	3.0486E-006
			Methyl chloride (Chloromethane)	3.2201E-008
			Hydrogen Cyanide	6.5430E-004
			Aluminum	2.4770E-003
			Iron	3.1788E-006
			Lead	4.7889E-002
			Manganese	3.5091E-005
			Nickel	3.3027E-002
			Silver	1.7339E-004
			Strontium	3.7981E-003

RECEPTOR NAME	SCENARIO	SOURCE	COPC	ACUTE INHALATION HAZARD QUOTIENT
			Thallium (l)	4.0045E-003
			Titanium	2.3532E-006
			Antimony	1.6513E-004
			Arsenic	4.9540E-005
			Barium	7.4310E-003
			Cadmium	1.7339E-001
			Chromium	2.3944E-004
			Cobalt	2.4770E-004
			Copper	1.1147E-002
			Vanadium	7.5961E-002
			Zinc	2.1467E-003
			Chloroethane	9.4126E-011
			Vinyl Chloride	1.1697E-007
			Acetonitrile	4.0299E-006
			Acetaldehyde	2.7505E-006
			Methylene chloride	8.3156E-005
			Carbon disulfide	3.5956E-006
			Trichlorofluoromethane (Freon 11)	1.7834E-010
			Dichlorodifluoromethane	6.1925E-011
			Freon 113	6.1287E-009
			Hydrogen chloride	3.4206E-003
			Ammonia	1.6756E-004
			Selenium	1.5165E-006
			Methyl ethyl ketone (2-Butanone)	5.2398E-007
			Methyl Methacrylate	2.9724E-010
			Acenaphthene	9.4317E-007
			Diethyl phthalate	7.8438E-005
			Di-n-butyl phthalate	2.0518E-006
			Phenanthrene	2.3508E-005
			Butylbenzylphthalate	1.9568E-006
			Fluorene	2.4641E-007
			Nitrophenol, 2-	2.9724E-007
			Naphthalene	6.7705E-006
			Xylene, o-	9.0073E-007
			Cresol, o-	3.0963E-008
			Trimethylbenzene, 1,2,4-	4.8164E-008

RECEPTOR NAME	SCENARIO	SOURCE	COPC	ACUTE INHALATION HAZARD QUOTIENT
			Cumene (Isopropylbenzene)	4.9339E-009
			Alpha Methyl Styrene	0.0000E+000
			Acetophenone	1.6101E-007
			Nitrobenzene	3.3852E-007
			Nitrotoluene, 3-	8.2567E-009
			Trinitrobenzene, 1,3,5 (sym-)	4.5048E-007
			Nitrotoluene, 4-	6.1925E-007
			Total	1.1808E+000
		SF_UNIT	Nitroglycerine	3.1434E-006
			Benzene	4.8360E-004
			Lead	6.4690E-001
			Naphthalene	6.9246E-008
			Total	6.4739E-001
Rush Lake	**resident_adult**	**OB_UNIT**	Ethylbenzene	4.1440E-010
			Toluene	3.0100E-008
			Hexane, n-	6.7148E-009
			Dinitrotoluene, 2,4-	3.4930E-008
			RDX	5.6989E-011
			Diphenylamine	9.4967E-010
			HMX	3.9713E-007
			Nitroglycerine	4.6620E-007
			Carbon tetrachloride	1.3632E-007
			Dinitrotoluene, 2,6-	3.3238E-008
			Chloroform (Trichloromethane)	5.5253E-007
			Benzene	1.9923E-005
			Methyl chloride (Chloromethane)	1.1525E-009
			Aluminum	4.0577E-004
			Lead	1.2087E-001
			Vinyl Chloride	1.8706E-009
			Methylene chloride	3.3300E-007
			Hydrogen chloride	1.9733E-001
			Chlorine	6.4133E-002
			Naphthalene	1.0705E-008
			Total	3.8276E-001
		OD_UNIT	Nitrophenol, 4-	1.4281E-007
			Ethylbenzene	1.8143E-008

RECEPTOR NAME	SCENARIO	SOURCE	COPC	ACUTE INHALATION HAZARD QUOTIENT
			Styrene	7.1998E-006
			Benzyl chloride	6.5289E-007
			Benzyl alcohol	2.7490E-009
			Benzaldehyde	1.2645E-006
			Dichlorobenzene,1,4-	2.5199E-009
			Butadiene, 1,3-	5.1231E-007
			Acrolein	1.7362E-001
			Ally Chloride	4.3984E-007
			Dichloroethane, 1,2- (Ethylene Dich	1.6331E-008
			Acrylonitrile	4.3734E-007
			Vinyl Acetate	7.5714E-009
			Xylene, m-	6.9975E-007
			Trimethylbenzene, 1,3,5-	3.7386E-009
			Methylcyclohexane	5.4980E-010
			Toluene	1.3374E-006
			Chlorobenzene	7.9171E-008
			Cyclohexanone	6.4602E-010
			Phenol	1.4693E-007
			Tetrahydrofuran	1.8327E-009
			Furan	1.1855E-007
			Hexane, n-	4.0726E-008
			Cyclohexane	3.1417E-010
			Ethanol, 2-Butoxy-	4.8248E-009
			Ethylhexyl phthalate, bis-2-	1.4405E-006
			Di-n-octylphthalate	3.0448E-009
			Hexachlorobenzene	5.0398E-003
			Trinitrotoluene, 2,4,6-	9.4749E-006
			Anthracene	1.5547E-007
			Trichlorobenzene, 1,2,4-	6.0478E-007
			Dinitrotoluene, 2,4-	6.8656E-006
			RDX	6.0487E-007
			Tetrachloroethylene (Perchloroethyl	2.6116E-007
			Pyrene	2.1860E-007
			Dibenzofuran	9.0717E-009
			Xylenes	5.8312E-009
			Methyl Tert-butyl Ether	7.4973E-010

RECEPTOR NAME	SCENARIO	SOURCE	COPC	ACUTE INHALATION HAZARD QUOTIENT
			TetraCDD, 2,3,7,8-	1.4603E-008
			Chromium, hexavalent	0.0000E+000
			Benzo(g,h,i)perylene	3.2790E-008
			Indeno(1,2,3-cd) pyrene	3.6837E-006
			Amino-2,6-Dinitrotoluene, 4-	0.0000E+000
			HexaCDD, 1,2,3,7,8,9-	3.2255E-012
			Benzo(b)fluoranthene	4.8685E-006
			Fluoranthene	3.0906E-004
			Benzo(k)fluoranthene	1.7511E-006
			Acenaphthylene	1.7869E-004
			Chrysene	1.2953E-006
			HMX	1.3562E-007
			OctaCDD, 1,2,3,4,6,7,8,9-	1.0996E-011
			Amino-4,6-Dinitrotoluene, 2-	0.0000E+000
			HeptaCDD, 1,2,3,4,6,7,8-	1.7869E-013
			OctaCDF, 1,2,3,4,6,7,8,9-	2.7857E-011
			HexaCDD, 1,2,3,4,7,8-	1.8473E-011
			PentaCDD, 1,2,3,7,8-	2.4444E-010
			Ethanedinitrile	2.8865E-006
			Tetryl	3.9097E-009
			Formaldehyde	1.2575E-003
			Benzo(a)pyrene	4.8492E-007
			TetraCDF, 2,3,7,8-	4.7626E-009
			Dibenz(a,h)anthracene	3.2988E-009
			Nitroglycerine	2.2542E-007
			HeptaCDF, 1,2,3,4,7,8,9-	3.5099E-012
			Carbon tetrachloride	3.9065E-007
			Benzo(a)anthracene	1.2835E-006
			PentaCDF, 2,3,4,7,8-	1.8631E-008
			PentaCDF, 1,2,3,7,8-	1.6699E-010
			HexaCDF, 1,2,3,6,7,8-	8.5769E-011
			HexaCDD, 1,2,3,6,7,8-	4.3581E-012
			Dinitrotoluene, 2,6-	1.0538E-008
			HexaCDF, 2,3,4,6,7,8-	2.4191E-010
			Benzoic acid	3.5187E-007
			Acetone	1.3311E-007

RECEPTOR NAME	SCENARIO	SOURCE	COPC	ACUTE INHALATION HAZARD QUOTIENT
			Chloroform (Trichloromethane)	3.6653E-007
			HeptaCDF, 1,2,3,4,6,7,8-	2.3825E-012
			HexaCDF, 1,2,3,4,7,8-	7.3637E-011
			Butanol, 1-	1.5028E-008
			Benzene	2.5375E-004
			Trichloroethane, 1,1,1-	5.2554E-008
			HexaCDF, 1,2,3,7,8,9-	5.5420E-013
			Methyl bromide (Bromomethane)	6.7668E-007
			Methyl chloride (Chloromethane)	7.1474E-009
			Hydrogen Cyanide	1.4523E-004
			Aluminum	5.4980E-004
			Iron	7.0558E-007
			Lead	1.0629E-002
			Manganese	7.7888E-006
			Nickel	7.3307E-003
			Silver	3.8486E-005
			Strontium	8.4303E-004
			Thallium (l)	8.8884E-004
			Titanium	5.2231E-007
			Antimony	3.6653E-005
			Arsenic	1.0996E-005
			Barium	1.6494E-003
			Cadmium	3.8486E-002
			Chromium	5.3147E-005
			Cobalt	5.4980E-005
			Copper	2.4741E-003
			Vanadium	1.6861E-002
			Zinc	4.7649E-004
			Chloroethane	2.0892E-011
			Vinyl Chloride	2.5963E-008
			Acetonitrile	8.9450E-007
			Acetaldehyde	6.1051E-007
			Methylene chloride	1.8458E-005
			Carbon disulfide	7.9810E-007
			Trichlorofluoromethane (Freon 11)	3.9586E-011
			Dichlorodifluoromethane	1.3745E-011

RECEPTOR NAME	SCENARIO	SOURCE	COPC	ACUTE INHALATION HAZARD QUOTIENT
			Freon 113	1.3603E-009
			Hydrogen chloride	7.5925E-004
			Ammonia	3.7192E-005
			Selenium	3.3661E-007
			Methyl ethyl ketone (2-Butanone)	1.1630E-007
			Methyl Methacrylate	6.5976E-011
			Acenaphthene	2.0935E-007
			Diethyl phthalate	1.7410E-005
			Di-n-butyl phthalate	4.5542E-007
			Phenanthrene	5.2179E-006
			Butylbenzylphthalate	4.3434E-007
			Fluorene	5.4695E-008
			Nitrophenol, 2-	6.5976E-008
			Naphthalene	1.5028E-006
			Xylene, o-	1.9993E-007
			Cresol, o-	6.8725E-009
			Trimethylbenzene, 1,2,4-	1.0691E-008
			Cumene (Isopropylbenzene)	1.0951E-009
			Alpha Methyl Styrene	0.0000E+000
			Acetophenone	3.5737E-008
			Nitrobenzene	7.5139E-008
			Nitrotoluene, 3-	1.8327E-009
			Trinitrobenzene, 1,3,5 (sym-)	9.9990E-008
			Nitrotoluene, 4-	1.3745E-007
			Total	2.6209E-001
		SF_UNIT	Nitroglycerine	6.5320E-007
			Benzene	1.0049E-004
			Lead	1.3443E-001
			Naphthalene	1.4389E-008
			Total	1.3453E-001
SW OB/OD/TEAD - 1HR	**resident_adult**	**OB_UNIT**	Ethylbenzene	2.1712E-009
			Toluene	1.5771E-007
			Hexane, n-	3.5181E-008
			Dinitrotoluene, 2,4-	1.8301E-007
			RDX	2.9859E-010
			Diphenylamine	4.9757E-009

RECEPTOR NAME	SCENARIO	SOURCE	COPC	ACUTE INHALATION HAZARD QUOTIENT
			HMX	2.0807E-006
			Nitroglycerine	2.4426E-006
			Carbon tetrachloride	7.1421E-007
			Dinitrotoluene, 2,6-	1.7415E-007
			Chloroform (Trichloromethane)	2.8949E-006
			Benzene	1.0438E-004
			Methyl chloride (Chloromethane)	6.0387E-009
			Aluminum	2.1260E-003
			Lead	6.3327E-001
			Vinyl Chloride	9.8006E-009
			Methylene chloride	1.7447E-006
			Hydrogen chloride	1.0339E+000
			Chlorine	3.3602E-001
			Naphthalene	5.6089E-008
			Total	2.0054E+000
		OD_UNIT	Nitrophenol, 4-	5.5564E-007
			Ethylbenzene	7.0594E-008
			Styrene	2.8013E-005
			Benzyl chloride	2.5403E-006
			Benzyl alcohol	1.0696E-008
			Benzaldehyde	4.9202E-006
			Dichlorobenzene,1,4-	9.8047E-009
			Butadiene, 1,3-	1.9933E-006
			Acrolein	6.7554E-001
			Ally Chloride	1.7114E-006
			Dichloroethane, 1,2- (Ethylene Dich	6.3541E-008
			Acrylonitrile	1.7016E-006
			Vinyl Acetate	2.9459E-008
			Xylene, m-	2.7226E-006
			Trimethylbenzene, 1,3,5-	1.4547E-008
			Methylcyclohexane	2.1392E-009
			Toluene	5.2035E-006
			Chlorobenzene	3.0804E-007
			Cyclohexanone	2.5136E-009
			Phenol	5.7168E-007
			Tetrahydrofuran	7.1307E-009

RECEPTOR NAME	SCENARIO	SOURCE	COPC	ACUTE INHALATION HAZARD QUOTIENT
			Furan	4.6127E-007
			Hexane, n-	1.5846E-007
			Cyclohexane	1.2224E-009
			Ethanol, 2-Butoxy-	1.8773E-008
			Ethylhexyl phthalate, bis-2-	5.6047E-006
			Di-n-octylphthalate	1.1847E-008
			Hexachlorobenzene	1.9609E-002
			Trinitrotoluene, 2,4,6-	3.6866E-005
			Anthracene	6.0489E-007
			Trichlorobenzene, 1,2,4-	2.3531E-006
			Dinitrotoluene, 2,4-	2.6713E-005
			RDX	2.3535E-006
			Tetrachloroethylene (Perchloroethyl	1.0161E-006
			Pyrene	8.5055E-007
			Dibenzofuran	3.5297E-008
			Xylenes	2.2688E-008
			Methyl Tert-butyl Ether	2.9171E-009
			TetraCDD, 2,3,7,8-	5.6817E-008
			Chromium, hexavalent	0.0000E+000
			Benzo(g,h,i)perylene	1.2758E-007
			Indeno(1,2,3-cd) pyrene	1.4333E-005
			Amino-2,6-Dinitrotoluene, 4-	0.0000E+000
			HexaCDD, 1,2,3,7,8,9-	1.2550E-011
			Benzo(b)fluoranthene	1.8943E-005
			Fluoranthene	1.2025E-003
			Benzo(k)fluoranthene	6.8134E-006
			Acenaphthylene	6.9524E-004
			Chrysene	5.0400E-006
			HMX	5.2767E-007
			OctaCDD, 1,2,3,4,6,7,8,9-	4.2784E-011
			Amino-4,6-Dinitrotoluene, 2-	0.0000E+000
			HeptaCDD, 1,2,3,4,6,7,8-	6.9524E-013
			OctaCDF, 1,2,3,4,6,7,8,9-	1.0839E-010
			HexaCDD, 1,2,3,4,7,8-	7.1877E-011
			PentaCDD, 1,2,3,7,8-	9.5109E-010
			Ethanedinitrile	1.1231E-005

RECEPTOR NAME	SCENARIO	SOURCE	COPC	ACUTE INHALATION HAZARD QUOTIENT
			Tetryl	1.5212E-008
			Formaldehyde	4.8929E-003
			Benzo(a)pyrene	1.8868E-006
			TetraCDF, 2,3,7,8-	1.8531E-008
			Dibenz(a,h)anthracene	1.2835E-008
			Nitroglycerine	8.7707E-007
			HeptaCDF, 1,2,3,4,7,8,9-	1.3657E-011
			Carbon tetrachloride	1.5200E-006
			Benzo(a)anthracene	4.9940E-006
			PentaCDF, 2,3,4,7,8-	7.2490E-008
			PentaCDF, 1,2,3,7,8-	6.4975E-010
			HexaCDF, 1,2,3,6,7,8-	3.3372E-010
			HexaCDD, 1,2,3,6,7,8-	1.6957E-011
			Dinitrotoluene, 2,6-	4.1001E-008
			HexaCDF, 2,3,4,6,7,8-	9.4125E-010
			Benzoic acid	1.3691E-006
			Acetone	5.1791E-007
			Chloroform (Trichloromethane)	1.4261E-006
			HeptaCDF, 1,2,3,4,6,7,8-	9.2699E-012
			HexaCDF, 1,2,3,4,7,8-	2.8651E-010
			Butanol, 1-	5.8471E-008
			Benzene	9.8732E-004
			Trichloroethane, 1,1,1-	2.0448E-007
			HexaCDF, 1,2,3,7,8,9-	2.1563E-012
			Methyl bromide (Bromomethane)	2.6329E-006
			Methyl chloride (Chloromethane)	2.7810E-008
			Hydrogen Cyanide	5.6507E-004
			Aluminum	2.1392E-003
			Iron	2.7453E-006
			Lead	4.1358E-002
			Manganese	3.0305E-005
			Nickel	2.8523E-002
			Silver	1.4974E-004
			Strontium	3.2801E-003
			Thallium (l)	3.4584E-003
			Titanium	2.0322E-006

RECEPTOR NAME	SCENARIO	SOURCE	COPC	ACUTE INHALATION HAZARD QUOTIENT
			Antimony	1.4261E-004
			Arsenic	4.2784E-005
			Barium	6.4176E-003
			Cadmium	1.4974E-001
			Chromium	2.0679E-004
			Cobalt	2.1392E-004
			Copper	9.6264E-003
			Vanadium	6.5602E-002
			Zinc	1.8540E-003
			Chloroethane	8.1290E-011
			Vinyl Chloride	1.0102E-007
			Acetonitrile	3.4804E-006
			Acetaldehyde	2.3754E-006
			Methylene chloride	7.1816E-005
			Carbon disulfide	3.1053E-006
			Trichlorofluoromethane (Freon 11)	1.5402E-010
			Dichlorodifluoromethane	5.3480E-011
			Freon 113	5.2929E-009
			Hydrogen chloride	2.9541E-003
			Ammonia	1.4471E-004
			Selenium	1.3097E-006
			Methyl ethyl ketone (2-Butanone)	4.5252E-007
			Methyl Methacrylate	2.5670E-010
			Acenaphthene	8.1454E-007
			Diethyl phthalate	6.7741E-005
			Di-n-butyl phthalate	1.7720E-006
			Phenanthrene	2.0302E-005
			Butylbenzylphthalate	1.6900E-006
			Fluorene	2.1281E-007
			Nitrophenol, 2-	2.5670E-007
			Naphthalene	5.8471E-006
			Xylene, o-	7.7789E-007
			Cresol, o-	2.6740E-008
			Trimethylbenzene, 1,2,4-	4.1596E-008
			Cumene (Isopropylbenzene)	4.2610E-009
			Alpha Methyl Styrene	0.0000E+000

RECEPTOR NAME	SCENARIO	SOURCE	COPC	ACUTE INHALATION HAZARD QUOTIENT
			Acetophenone	1.3905E-007
			Nitrobenzene	2.9236E-007
			Nitrotoluene, 3-	7.1307E-009
			Trinitrobenzene, 1,3,5 (sym-)	3.8905E-007
			Nitrotoluene, 4-	5.3480E-007
			Total	1.0198E+000
		SF_UNIT	Nitroglycerine	2.8497E-006
			Benzene	4.3842E-004
			Lead	5.8646E-001
			Naphthalene	6.2776E-008
			Total	5.8690E-001
Stockton - 1HR	**resident_adult**	**OB_UNIT**	Ethylbenzene	4.1920E-010
			Toluene	3.0449E-008
			Hexane, n-	6.7926E-009
			Dinitrotoluene, 2,4-	3.5335E-008
			RDX	5.7649E-011
			Diphenylamine	9.6067E-010
			HMX	4.0173E-007
			Nitroglycerine	4.7160E-007
			Carbon tetrachloride	1.3789E-007
			Dinitrotoluene, 2,6-	3.3623E-008
			Chloroform (Trichloromethane)	5.5893E-007
			Benzene	2.0154E-005
			Methyl chloride (Chloromethane)	1.1659E-009
			Aluminum	4.1047E-004
			Lead	1.2227E-001
			Vinyl Chloride	1.8922E-009
			Methylene chloride	3.3686E-007
			Hydrogen chloride	1.9962E-001
			Chlorine	6.4876E-002
			Naphthalene	1.0829E-008
			Total	3.8719E-001
		OD_UNIT	Nitrophenol, 4-	1.3719E-007
			Ethylbenzene	1.7431E-008
			Styrene	6.9169E-006
			Benzyl chloride	6.2724E-007

RECEPTOR NAME	SCENARIO	SOURCE	COPC	ACUTE INHALATION HAZARD QUOTIENT
			Benzyl alcohol	2.6410E-009
			Benzaldehyde	1.2149E-006
			Dichlorobenzene,1,4-	2.4209E-009
			Butadiene, 1,3-	4.9219E-007
			Acrolein	1.6680E-001
			Ally Chloride	4.2256E-007
			Dichloroethane, 1,2- (Ethylene Dich	1.5689E-008
			Acrylonitrile	4.2016E-007
			Vinyl Acetate	7.2739E-009
			Xylene, m-	6.7225E-007
			Trimethylbenzene, 1,3,5-	3.5918E-009
			Methylcyclohexane	5.2820E-010
			Toluene	1.2848E-006
			Chlorobenzene	7.6061E-008
			Cyclohexanone	6.2064E-010
			Phenol	1.4116E-007
			Tetrahydrofuran	1.7607E-009
			Furan	1.1389E-007
			Hexane, n-	3.9126E-008
			Cyclohexane	3.0183E-010
			Ethanol, 2-Butoxy-	4.6352E-009
			Ethylhexyl phthalate, bis-2-	1.3839E-006
			Di-n-octylphthalate	2.9252E-009
			Hexachlorobenzene	4.8418E-003
			Trinitrotoluene, 2,4,6-	9.1026E-006
			Anthracene	1.4936E-007
			Trichlorobenzene, 1,2,4-	5.8102E-007
			Dinitrotoluene, 2,4-	6.5959E-006
			RDX	5.8111E-007
			Tetrachloroethylene (Perchloroethyl	2.5089E-007
			Pyrene	2.1001E-007
			Dibenzofuran	8.7153E-009
			Xylenes	5.6021E-009
			Methyl Tert-butyl Ether	7.2027E-010
			TetraCDD, 2,3,7,8-	1.4029E-008
			Chromium, hexavalent	0.0000E+000

RECEPTOR NAME	SCENARIO	SOURCE	COPC	ACUTE INHALATION HAZARD QUOTIENT
			Benzo(g,h,i)perylene	3.1502E-008
			Indeno(1,2,3-cd) pyrene	3.5389E-006
			Amino-2,6-Dinitrotoluene, 4-	0.0000E+000
			HexaCDD, 1,2,3,7,8,9-	3.0988E-012
			Benzo(b)fluoranthene	4.6772E-006
			Fluoranthene	2.9692E-004
			Benzo(k)fluoranthene	1.6823E-006
			Acenaphthylene	1.7166E-004
			Chrysene	1.2444E-006
			HMX	1.3029E-007
			OctaCDD, 1,2,3,4,6,7,8,9-	1.0564E-011
			Amino-4,6-Dinitrotoluene, 2-	0.0000E+000
			HeptaCDD, 1,2,3,4,6,7,8-	1.7167E-013
			OctaCDF, 1,2,3,4,6,7,8,9-	2.6762E-011
			HexaCDD, 1,2,3,4,7,8-	1.7748E-011
			PentaCDD, 1,2,3,7,8-	2.3484E-010
			Ethanedinitrile	2.7731E-006
			Tetryl	3.7561E-009
			Formaldehyde	1.2081E-003
			Benzo(a)pyrene	4.6587E-007
			TetraCDF, 2,3,7,8-	4.5755E-009
			Dibenz(a,h)anthracene	3.1692E-009
			Nitroglycerine	2.1656E-007
			HeptaCDF, 1,2,3,4,7,8,9-	3.3720E-012
			Carbon tetrachloride	3.7530E-007
			Benzo(a)anthracene	1.2331E-006
			PentaCDF, 2,3,4,7,8-	1.7899E-008
			PentaCDF, 1,2,3,7,8-	1.6043E-010
			HexaCDF, 1,2,3,6,7,8-	8.2399E-011
			HexaCDD, 1,2,3,6,7,8-	4.1869E-012
			Dinitrotoluene, 2,6-	1.0124E-008
			HexaCDF, 2,3,4,6,7,8-	2.3241E-010
			Benzoic acid	3.3805E-007
			Acetone	1.2788E-007
			Chloroform (Trichloromethane)	3.5213E-007
			HeptaCDF, 1,2,3,4,6,7,8-	2.2889E-012

RECEPTOR NAME	SCENARIO	SOURCE	COPC	ACUTE INHALATION HAZARD QUOTIENT
			HexaCDF, 1,2,3,4,7,8-	7.0744E-011
			Butanol, 1-	1.4437E-008
			Benzene	2.4378E-004
			Trichloroethane, 1,1,1-	5.0490E-008
			HexaCDF, 1,2,3,7,8,9-	5.3243E-013
			Methyl bromide (Bromomethane)	6.5009E-007
			Methyl chloride (Chloromethane)	6.8666E-009
			Hydrogen Cyanide	1.3952E-004
			Aluminum	5.2820E-004
			Iron	6.7786E-007
			Lead	1.0212E-002
			Manganese	7.4828E-006
			Nickel	7.0427E-003
			Silver	3.6974E-005
			Strontium	8.0991E-004
			Thallium (l)	8.5392E-004
			Titanium	5.0179E-007
			Antimony	3.5213E-005
			Arsenic	1.0564E-005
			Barium	1.5846E-003
			Cadmium	3.6974E-002
			Chromium	5.1059E-005
			Cobalt	5.2820E-005
			Copper	2.3769E-003
			Vanadium	1.6198E-002
			Zinc	4.5777E-004
			Chloroethane	2.0072E-011
			Vinyl Chloride	2.4943E-008
			Acetonitrile	8.5935E-007
			Acetaldehyde	5.8653E-007
			Methylene chloride	1.7732E-005
			Carbon disulfide	7.6674E-007
			Trichlorofluoromethane (Freon 11)	3.8030E-011
			Dichlorodifluoromethane	1.3205E-011
			Freon 113	1.3069E-009
			Hydrogen chloride	7.2942E-004

RECEPTOR NAME	SCENARIO	SOURCE	COPC	ACUTE INHALATION HAZARD QUOTIENT
			Ammonia	3.5731E-005
			Selenium	3.2339E-007
			Methyl ethyl ketone (2-Butanone)	1.1173E-007
			Methyl Methacrylate	6.3384E-011
			Acenaphthene	2.0112E-007
			Diethyl phthalate	1.6726E-005
			Di-n-butyl phthalate	4.3753E-007
			Phenanthrene	5.0129E-006
			Butylbenzylphthalate	4.1728E-007
			Fluorene	5.2546E-008
			Nitrophenol, 2-	6.3384E-008
			Naphthalene	1.4437E-006
			Xylene, o-	1.9207E-007
			Cresol, o-	6.6025E-009
			Trimethylbenzene, 1,2,4-	1.0271E-008
			Cumene (Isopropylbenzene)	1.0521E-009
			Alpha Methyl Styrene	0.0000E+000
			Acetophenone	3.4333E-008
			Nitrobenzene	7.2187E-008
			Nitrotoluene, 3-	1.7607E-009
			Trinitrobenzene, 1,3,5 (sym-)	9.6062E-008
			Nitrotoluene, 4-	1.3205E-007
			Total	2.5180E-001
		SF_UNIT	Nitroglycerine	6.1778E-007
			Benzene	9.5043E-005
			Lead	1.2714E-001
			Naphthalene	1.3609E-008
			Total	1.2723E-001
Tooele - 1HR	**resident_adult**	**OB_UNIT**	Ethylbenzene	3.0240E-010
			Toluene	2.1965E-008
			Hexane, n-	4.9000E-009
			Dinitrotoluene, 2,4-	2.5489E-008
			RDX	4.1586E-011
			Diphenylamine	6.9300E-010
			HMX	2.8980E-007
			Nitroglycerine	3.4020E-007

RECEPTOR NAME	SCENARIO	SOURCE	COPC	ACUTE INHALATION HAZARD QUOTIENT
			Carbon tetrachloride	9.9474E-008
			Dinitrotoluene, 2,6-	2.4255E-008
			Chloroform (Trichloromethane)	4.0320E-007
			Benzene	1.4538E-005
			Methyl chloride (Chloromethane)	8.4105E-010
			Aluminum	2.9610E-004
			Lead	8.8200E-002
			Vinyl Chloride	1.3650E-009
			Methylene chloride	2.4300E-007
			Hydrogen chloride	1.4400E-001
			Chlorine	4.6800E-002
			Naphthalene	7.8120E-009
			Total	2.7931E-001
		OD_UNIT	Nitrophenol, 4-	1.0603E-007
			Ethylbenzene	1.3471E-008
			Styrene	5.3455E-006
			Benzyl chloride	4.8474E-007
			Benzyl alcohol	2.0410E-009
			Benzaldehyde	9.3886E-007
			Dichlorobenzene,1,4-	1.8709E-009
			Butadiene, 1,3-	3.8037E-007
			Acrolein	1.2891E-001
			Ally Chloride	3.2656E-007
			Dichloroethane, 1,2- (Ethylene Dich	1.2125E-008
			Acrylonitrile	3.2470E-007
			Vinyl Acetate	5.6214E-009
			Xylene, m-	5.1953E-007
			Trimethylbenzene, 1,3,5-	2.7758E-009
			Methylcyclohexane	4.0820E-010
			Toluene	9.9292E-007
			Chlorobenzene	5.8781E-008
			Cyclohexanone	4.7963E-010
			Phenol	1.0909E-007
			Tetrahydrofuran	1.3607E-009
			Furan	8.8018E-008
			Hexane, n-	3.0237E-008

RECEPTOR NAME	SCENARIO	SOURCE	COPC	ACUTE INHALATION HAZARD QUOTIENT
			Cyclohexane	2.3326E-010
			Ethanol, 2-Butoxy-	3.5822E-009
			Ethylhexyl phthalate, bis-2-	1.0695E-006
			Di-n-octylphthalate	2.2606E-009
			Hexachlorobenzene	3.7418E-003
			Trinitrotoluene, 2,4,6-	7.0346E-006
			Anthracene	1.1543E-007
			Trichlorobenzene, 1,2,4-	4.4902E-007
			Dinitrotoluene, 2,4-	5.0974E-006
			RDX	4.4909E-007
			Tetrachloroethylene (Perchloroethyl	1.9389E-007
			Pyrene	1.6230E-007
			Dibenzofuran	6.7353E-009
			Xylenes	4.3294E-009
			Methyl Tert-butyl Ether	5.5664E-010
			TetraCDD, 2,3,7,8-	1.0842E-008
			Chromium, hexavalent	0.0000E+000
			Benzo(g,h,i)perylene	2.4345E-008
			Indeno(1,2,3-cd) pyrene	2.7349E-006
			Amino-2,6-Dinitrotoluene, 4-	0.0000E+000
			HexaCDD, 1,2,3,7,8,9-	2.3948E-012
			Benzo(b)fluoranthene	3.6146E-006
			Fluoranthene	2.2946E-004
			Benzo(k)fluoranthene	1.3001E-006
			Acenaphthylene	1.3266E-004
			Chrysene	9.6172E-007
			HMX	1.0069E-007
			OctaCDD, 1,2,3,4,6,7,8,9-	8.1640E-012
			Amino-4,6-Dinitrotoluene, 2-	0.0000E+000
			HeptaCDD, 1,2,3,4,6,7,8-	1.3267E-013
			OctaCDF, 1,2,3,4,6,7,8,9-	2.0682E-011
			HexaCDD, 1,2,3,4,7,8-	1.3716E-011
			PentaCDD, 1,2,3,7,8-	1.8149E-010
			Ethanedinitrile	2.1431E-006
			Tetryl	2.9028E-009
			Formaldehyde	9.3365E-004

RECEPTOR NAME	SCENARIO	SOURCE	COPC	ACUTE INHALATION HAZARD QUOTIENT
			Benzo(a)pyrene	3.6003E-007
			TetraCDF, 2,3,7,8-	3.5360E-009
			Dibenz(a,h)anthracene	2.4492E-009
			Nitroglycerine	1.6736E-007
			HeptaCDF, 1,2,3,4,7,8,9-	2.6059E-012
			Carbon tetrachloride	2.9004E-007
			Benzo(a)anthracene	9.5294E-007
			PentaCDF, 2,3,4,7,8-	1.3833E-008
			PentaCDF, 1,2,3,7,8-	1.2398E-010
			HexaCDF, 1,2,3,6,7,8-	6.3679E-011
			HexaCDD, 1,2,3,6,7,8-	3.2357E-012
			Dinitrotoluene, 2,6-	7.8238E-009
			HexaCDF, 2,3,4,6,7,8-	1.7961E-010
			Benzoic acid	2.6125E-007
			Acetone	9.8827E-008
			Chloroform (Trichloromethane)	2.7213E-007
			HeptaCDF, 1,2,3,4,6,7,8-	1.7689E-012
			HexaCDF, 1,2,3,4,7,8-	5.4672E-011
			Butanol, 1-	1.1157E-008
			Benzene	1.8840E-004
			Trichloroethane, 1,1,1-	3.9019E-008
			HexaCDF, 1,2,3,7,8,9-	4.1147E-013
			Methyl bromide (Bromomethane)	5.0240E-007
			Methyl chloride (Chloromethane)	5.3066E-009
			Hydrogen Cyanide	1.0783E-004
			Aluminum	4.0820E-004
			Iron	5.2386E-007
			Lead	7.8919E-003
			Manganese	5.7828E-006
			Nickel	5.4427E-003
			Silver	2.8574E-005
			Strontium	6.2591E-004
			Thallium (l)	6.5992E-004
			Titanium	3.8779E-007
			Antimony	2.7213E-005
			Arsenic	8.1640E-006

RECEPTOR NAME	SCENARIO	SOURCE	COPC	ACUTE INHALATION HAZARD QUOTIENT
			Barium	1.2246E-003
			Cadmium	2.8574E-002
			Chromium	3.9459E-005
			Cobalt	4.0820E-005
			Copper	1.8369E-003
			Vanadium	1.2518E-002
			Zinc	3.5377E-004
			Chloroethane	1.5512E-011
			Vinyl Chloride	1.9276E-008
			Acetonitrile	6.6412E-007
			Acetaldehyde	4.5328E-007
			Methylene chloride	1.3704E-005
			Carbon disulfide	5.9255E-007
			Trichlorofluoromethane (Freon 11)	2.9390E-011
			Dichlorodifluoromethane	1.0205E-011
			Freon 113	1.0100E-009
			Hydrogen chloride	5.6370E-004
			Ammonia	2.7614E-005
			Selenium	2.4992E-007
			Methyl ethyl ketone (2-Butanone)	8.6350E-008
			Methyl Methacrylate	4.8984E-011
			Acenaphthene	1.5543E-007
			Diethyl phthalate	1.2926E-005
			Di-n-butyl phthalate	3.3813E-007
			Phenanthrene	3.8740E-006
			Butylbenzylphthalate	3.2248E-007
			Fluorene	4.0608E-008
			Nitrophenol, 2-	4.8984E-008
			Naphthalene	1.1157E-006
			Xylene, o-	1.4844E-007
			Cresol, o-	5.1025E-009
			Trimethylbenzene, 1,2,4-	7.9372E-009
			Cumene (Isopropylbenzene)	8.1308E-010
			Alpha Methyl Styrene	0.0000E+000
			Acetophenone	2.6533E-008
			Nitrobenzene	5.5787E-008

RECEPTOR NAME	SCENARIO	SOURCE	COPC	ACUTE INHALATION HAZARD QUOTIENT
			Nitrotoluene, 3-	1.3607E-009
			Trinitrobenzene, 1,3,5 (sym-)	7.4238E-008
			Nitrotoluene, 4-	1.0205E-007
			Total	1.9459E-001
		SF_UNIT	Nitroglycerine	4.8806E-007
			Benzene	7.5086E-005
			Lead	1.0044E-001
			Naphthalene	1.0751E-008
			Total	1.0052E-001

Appendix H

RAGS Part D Spreadsheet for On-Site OB/OD Workers

RAGS PART D TABLE 3
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY

Table No.	Reasonable Maximum/Central Tendency Exposures
3.1.RME	OB Unit - 2006 Surface Soil Samples
3.2.RME	OD Unit - 2006 Surface Soil Samples
3.3.RME	SF Unit - 2006 Surface Soil Samples
3.4.RME	Entire Site - 2006 Surface Soil Samples
3.5.RME	OB Unit - 2007 Surface Soil Samples
3.6.RME	OD Unit - 2007 Surface Soil Samples
3.7.RME	Entire Site - 2007 Surface Soil Samples
3.8.RME	OB Unit - 2009 Surface Soil Samples
3.9.RME	OD Unit - 2009 Surface Soil Samples
3.10.RME	SF Unit - 2009 Surface Soil Samples
3.11.RME	Entire Site - 2009 Surface Soil Samples
3.12.RME	OB Unit - 2014 Surface Soil Samples
3.13.RME	OD Unit - 2014 Surface Soil Samples
3.14.RME	SF Unit - 2014 Surface Soil Samples
3.15.RME	Entire Site - 2014 Surface Soil Samples

TABLE 3.1.RME
EXPOSURE POINT CONCENTRATION SUMMARY - 2006 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURE
TOOELE ARMY DEPOT, TOOELE, UTAH

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

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
OB Unit	1,3,5-Trinitrobenzene	mg/kg	0.006	0.015 (NP)	0.0246 J	0.015	mg/kg	95% KM (t) UCL	ProUCL 4.00.05
	2,4-Dinitrotoluene	mg/kg	0.184	0.50 (G)	0.695 J	0.5	mg/kg	95% Approximate Gamma UCL	ProUCL 4.00.05
	2-Amino-4,6-Dinitrotoluene	mg/kg	0.027	NA(1)	0.0635 J	0.0635	mg/kg	Maximum Detected Concentration	(1)
	4-Amino-2,6-Dinitrotoluene	mg/kg	0.028	NA(1)	0.0508 J	0.0508	mg/kg	Maximum Detected Concentration	(1)
	HMX	mg/kg	0.216	0.30 (N)	0.364 J	0.3	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Nitroglycerin	mg/kg	8.25	56.5 (NP)	76.9 J	85	mg/kg	97.5 % Chebyshev(Mean, Sd) UCL	ProUCL 4.00.05
	RDX	mg/kg	0.541	0.86 (N)	1.08 J	0.86	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Perchlorate	mg/kg	0.006	0.008 (N)	0.009 J	0.008	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Aluminum	mg/kg	7477	8653 (N)	9390	8653	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Arsenic	mg/kg	6.25	6.8 (N)	7.19	6.8	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Barium	mg/kg	178	200 (N)	199	200	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Beryllium	mg/kg	0.488	0.57 (N)	0.62	0.57	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Cadmium	mg/kg	1.78	2.2 (N)	2.34 J	2.2	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Chromium	mg/kg	10.7	11.7 (N)	12.2	11.7	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Copper	mg/kg	112	147 (N)	175 J	147	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Iron	mg/kg	9014	9983 (N)	10700	9983	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Lead	mg/kg	917	1314 (N)	1620 J	917	mg/kg	Arithmetic Mean Concentration	(2)
	Manganese	mg/kg	319	360 (N)	383	360	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Mercury	mg/kg	0.056	0.115 (N)	0.154	0.115	mg/kg	95% KM (t) UCL	ProUCL 4.00.05
	Nickel	mg/kg	10.4	11.3 (N)	11.7	11.3	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Selenium	mg/kg	0.412	0.519 (NP)	0.572	0.519	mg/kg	95% KM (BCA)	ProUCL 4.00.05
	Silver	mg/kg	0.295	NA(1)	0.539	0.539	mg/kg	Maximum Detected Concentration	(1)
	Vanadium	mg/kg	11.1	12.5 (N)	13.6	12.5	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Zinc	mg/kg	101	115 (N)	124 J	115	mg/kg	95% Student's-t UCL	ProUCL 4.00.05

For non-detects, 1/2 sample quantitation limit was used as a proxy concentration; for duplicate sample results, the average value was used in the calculation.
N = Normal
NP = Non-parametric
1 - Too few detects to calculate a meaningful UCL.
2 - Mean concentration is used as exposure point concentration for evaluating exposures to lead.
U.S. EPA, 1994:Guidance Manual for the Integrated Exposure Uptake Biokinetic Model for lead in Children.

TABLE 3.2.RME
EXPOSURE POINT CONCENTRATION SUMMARY - 2006 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURE
TOOELE ARMY DEPOT, TOOELE, UTAH

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

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
OD Unit	1,3,5-Trinitrobenzene	mg/kg	0.119	0.155 (N)	0.216	0.155	mg/kg	95% KM (t) UCL	ProUCL 4.00.05
	2,4,6-Trinitrotoluene	mg/kg	1.07	6.6 (NP)	13.4	6.6	mg/kg	97.5% KM (Chebyshev) UCL	ProUCL 4.00.05
	2-Amino-4,6-Dinitrotoluene	mg/kg	0.142	0.342 (NP)	0.767	0.342	mg/kg	97.5% KM (Chebyshev) UCL	ProUCL 4.00.05
	4-Amino-2,6-Dinitrotoluene	mg/kg	0.104	0.197 (NP)	0.383	0.197	mg/kg	97.5% KM (Chebyshev) UCL	ProUCL 4.00.05
	HMX	mg/kg	1.04	2.73 (NP)	6.36	2.73	mg/kg	95% Chebyshev(Mean, Sd) UCL	ProUCL 4.00.05
	RDX	mg/kg	8.47	33.0 (NP)	87	33	mg/kg	95% Chebyshev(Mean, Sd) UCL	ProUCL 4.00.05
	Tetryl	mg/kg	0.068	0.2 (N)	0.379	0.2	mg/kg	95% KM (t) UCL	ProUCL 4.00.05
	Perchlorate	mg/kg	7.68	18.8 G)	46.7	18.8	mg/kg	95% Adjusted Gamma UCL	ProUCL 4.00.05
	Aluminum	mg/kg	1772	1961 (N)	2480 J	1961	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Arsenic	mg/kg	3.05	3.6 (G)	5.83	3.6	mg/kg	95% Approximate Gamma UCL	ProUCL 4.00.05
	Barium	mg/kg	52.3	58.2 (NP)	86.9	58.2	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Beryllium	mg/kg	0.146	0.20 (G)	0.376	0.2	mg/kg	95% Approximate Gamma UCL	ProUCL 4.00.05
	Cadmium	mg/kg	3.74	4.3 (N)	5.96 J	4.3	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Chromium	mg/kg	5.26	6.0 (N)	8.62	6	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Copper	mg/kg	92.3	245 (NP)	579 J	245	mg/kg	95% Chebyshev(Mean, Sd) UCL	ProUCL 4.00.05
	Iron	mg/kg	4765	9927 (NP)	20900	9927	mg/kg	95% Chebyshev(Mean, Sd) UCL	ProUCL 4.00.05
	Lead	mg/kg	16.7	21.1 (NP)	47.6 J	16.7	mg/kg	Arithmetic Mean Concentration	(2)
	Manganese	mg/kg	77.9	98.4 (NP)	232 J	98.4	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Mercury	mg/kg	0.062	0.078 (NP)	0.185	0.078	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Nickel	mg/kg	3.95	4.46 (N)	6.69	4.46	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Vanadium	mg/kg	4.56	5.06 (N)	6.51	5.06	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Zinc	mg/kg	84.2	91.0 (N)	111 J	91	mg/kg	95% Student's-t UCL	ProUCL 4.00.05

For non-detects, 1/2 sample quantitation limit was used as a proxy concentration; for duplicate sample results, the average value was used in the calculation.
G = Gamma
N = Normal
NP = Non-parametric
1 - Too few detects to calculate a meaningful UCL.
2 - Mean concentration is used as exposure point concentration for evaluating exposures to lead.
U.S. EPA, 1994:Guidance Manual for the Integrated Exposure Uptake Biokinetic Model for lead in Children.

TABLE 3.3.RME
EXPOSURE POINT CONCENTRATION SUMMARY - 2006 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURE
TOOELE ARMY DEPOT, TOOELE, UTAH

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

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Static Firing Rocket Silos	1,3,5-Trinitrobenzene	mg/kg	0.063	0.13 (N)	0.147	0.13	mg/kg	95% KM (t) UCL	ProUCL 4.00.05
	2,4,6-Trinitrotoluene	mg/kg	0.039	NA(1)	0.123 J	0.123	mg/kg	Maximum Detected Concentration	(1)
	2,4-Dinitrotoluene	mg/kg	0.167	0.30 (L)	0.397	0.3	mg/kg	95% KM (t) UCL	ProUCL 4.00.05
	2-Amino-4,6-Dinitrotoluene	mg/kg	0.069	0.21 (NP)	0.229	0.21	mg/kg	95% KM (Chebyshev) UCL	ProUCL 4.00.05
	4-Amino-2,6-Dinitrotoluene	mg/kg	0.087	0.22 (NP)	0.238	0.22	mg/kg	95% Chebyshev(Mean, Sd) UCL	ProUCL 4.00.05
	HMX	mg/kg	0.201	0.28 (N)	0.375	0.28	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Nitroglycerin	mg/kg	8.23	26.4 (G)	28.9 J	26.4	mg/kg	95% Approximate Gamma UCL	ProUCL 4.00.05
	PETN	mg/kg	1.00	NA(1)	5.42	5.42	mg/kg	Maximum Detected Concentration	(1)
	RDX	mg/kg	0.286	0.33 (N)	0.349	0.33	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Perchlorate	mg/kg	0.141	285 (G)	0.356	285	mg/kg	95% Approximate Gamma UCL	ProUCL 4.00.05
	2,3,7,8-TCDD Equivalents	mg/kg	0.00003	NA(1)	0.00005	0.00005	mg/kg	Maximum Detected Concentration	(1)
	Aluminum	mg/kg	2358	3684 (G)	4890	3684	mg/kg	95% Approximate Gamma UCL	ProUCL 4.00.05
	Arsenic	mg/kg	3.54	4.61 (N)	5.96	4.61	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Barium	mg/kg	79.3	103 (N)	124	103	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Beryllium	mg/kg	0.138	0.22 (G)	0.281 J	0.22	mg/kg	95% Approximate Gamma UCL	ProUCL 4.00.05
	Cadmium	mg/kg	11.5	14.5 (N)	17.7 J	14.5	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Chromium	mg/kg	10.5	14.6 (N)	18.9	14.6	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Copper	mg/kg	150	212 (N)	245 J	212	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Iron	mg/kg	6150	15236 (NP)	16500	15236	mg/kg	95% Chebyshev(Mean, Sd) UCL	ProUCL 4.00.05
	Lead	mg/kg	60.8	83.5 (N)	105 J	60.8	mg/kg	Arithmetic Mean Concentration	(2)
	Manganese	mg/kg	108	148 (N)	201	148	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Mercury	mg/kg	0.038	0.04 (N)	0.0433	0.04	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Nickel	mg/kg	14.6	NA	61.9	61.9	mg/kg	Maximum Detected Concentration	(1)
	Selenium	mg/kg	0.261	0.37 (N)	0.396	0.37	mg/kg	95% KM (t) UCL	ProUCL 4.00.05
	Vanadium	mg/kg	4.52	6.36 (NP)	9.02	6.36	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Zinc	mg/kg	197	234 (N)	269 J	234	mg/kg	95% Student's-t UCL	ProUCL 4.00.05

For non-detects, 1/2 sample quantitation limit was used as a proxy concentration; for duplicate sample results, the average value was used in the calculation.
G = Gamma
L = Lognormal
N = Normal
NP = Non-parametric
1 - Too few detects to calculate a meaningful UCL.
2 - Mean concentration is used as exposure point concentration for evaluating exposures to lead.
U.S. EPA, 1994:Guidance Manual for the Integrated Exposure Uptake Biokinetic Model for lead in Children.

TABLE 3.4.RME
EXPOSURE POINT CONCENTRATION SUMMARY - 2006 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURE
TOOELE ARMY DEPOT, TOOELE, UTAH

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

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
All Soil Samples	1,3,5-Trinitrobenzene	mg/kg	0.084	0.11 (N)	0.11	0.11	mg/kg	95% KM (t) UCL	ProUCL 4.00.05
	2,4,6-Trinitrotoluene	mg/kg	0.629	3.9 (NP)	13.4	3.9	mg/kg	97.5% KM (Chebyshev) UCL	ProUCL 4.00.05
	2,4-Dinitrotoluene	mg/kg	0.085	0.15 (N)	0.695 J	0.15	mg/kg	95% KM (t) UCL	ProUCL 4.00.05
	2-Amino-4,6-Dinitrotoluene	mg/kg	0.103	0.16 (NP)	0.767	0.16	mg/kg	95% KM (BCA) UCL	ProUCL 4.00.05
	4-Amino-2,6-Dinitrotoluene	mg/kg	0.085	0.15 (NP)	0.383	0.15	mg/kg	95% KM (Chebyshev) UCL	ProUCL 4.00.05
	HMX	mg/kg	0.690	1.0 (G)	6.36	1	mg/kg	95% Approximate Gamma UCL	ProUCL 4.00.05
	Nitroglycerin	mg/kg	3.70	15.2 (NP)	76.9 J	15.2	mg/kg	97.5% KM (Chebyshev) UCL	ProUCL 4.00.05
	PETN	mg/kg	0.32	NA(1)	5.42	5.42	mg/kg	Maximum Detected Concentration	(1)
	RDX	mg/kg	5.06	19.4 (NP)	87	19.4	mg/kg	95% Chebyshev(Mean, Sd) UCL	ProUCL 4.00.05
	Tetryl	mg/kg	0.044	0.18 (N)	0.379	0.18	mg/kg	95% KM (t) UCL	ProUCL 4.00.05
	Perchlorate	mg/kg	4.46	10.1 (G)	46.7	10.1	mg/kg	95% Adjusted Gamma UCL	ProUCL 4.00.05
	2,3,7,8-TCDD Equivalents	mg/kg	0.00003	0.00005 (N)	0.00005	0.00005	mg/kg	95% KM (t) UCL	ProUCL 4.00.05
	Aluminum	mg/kg	3005	5042 (NP)	9390	5042	mg/kg	95% Chebyshev(Mean, Sd) UCL	ProUCL 4.00.05
	Arsenic	mg/kg	3.78	4.33 (NP)	7.19	4.33	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Barium	mg/kg	82.6	127 (NP)	199	127	mg/kg	95% Chebyshev(Mean, Sd) UCL	ProUCL 4.00.05
	Beryllium	mg/kg	0.210	0.28 (L)	0.62	0.28	mg/kg	95% KM (t) UCL	ProUCL 4.00.05
	Cadmium	mg/kg	5.16	6.6 (G)	17.7 J	6.6	mg/kg	95% Approximate Gamma UCL	ProUCL 4.00.05
	Chromium	mg/kg	7.50	8.9 (G)	18.9	8.9	mg/kg	95% Approximate Gamma UCL	ProUCL 4.00.05
	Copper	mg/kg	109	204 (NP)	579 J	204	mg/kg	95% Chebyshev(Mean, Sd) UCL	ProUCL 4.00.05
	Iron	mg/kg	5902	7393 (L)	20900	7393	mg/kg	95% H-UCL	ProUCL 4.00.05
	Lead	mg/kg	200	537 (NP)	1620 J	200	mg/kg	Arithmetic Mean Concentration	(2)
	Manganese	mg/kg	131	220 (NP)	383	220	mg/kg	95% Chebyshev(Mean, Sd) UCL	ProUCL 4.00.05
	Mercury	mg/kg	0.055	0.067 (L)	0.185	0.067	mg/kg	95% H-UCL	ProUCL 4.00.05
	Nickel	mg/kg	7.64	17.4 (NP)	61.9	17.4	mg/kg	95% Chebyshev(Mean, Sd) UCL	ProUCL 4.00.05
	Selenium	mg/kg	0.228	0.38 (N)	0.572	0.38	mg/kg	95% KM (t) UCL	ProUCL 4.00.05
	Silver	mg/kg	0.261	NA(1)	0.539	0.539	mg/kg	Maximum Detected Concentration	(1)
	Vanadium	mg/kg	5.81	6.8 (NP)	13.6	6.8	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Zinc	mg/kg	113	131 (NP)	269 J	131	mg/kg	95% Student's-t UCL	ProUCL 4.00.05

For non-detects, 1/2 sample quantitation limit was used as a proxy concentration; for duplicate sample results, the average value was used in the calculation.
G = Gamma
L = Lognormal
N = Normal
NP = Non-parametric
1 - Too few detects to calculate a meaningful UCL.
2 - Mean concentration is used as exposure point concentration for evaluating exposures to lead.
U.S. EPA, 1994:Guidance Manual for the Integrated Exposure Uptake Biokinetic Model for lead in Children.

TABLE 3.5.RME
EXPOSURE POINT CONCENTRATION SUMMARY - 2007 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURE
TOOELE ARMY DEPOT, TOOELE, UTAH

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

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
OB Unit	2,4,6-Trinitrotoluene	mg/kg	0.160	0.27 (N)	0.34	0.27	mg/kg	95% KM (t) UCL	ProUCL 4.00.05
	2,4-Dinitrotoluene	mg/kg	11.6	21.5 (N)	22	21.5	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	2,6-Dinitrotoluene	mg/kg	0.513	0.84(NP)	0.89	0.84	mg/kg	95% KM (t) UCL	ProUCL 4.00.05
	4-Amino-2,6-Dinitrotoluene	mg/kg	0.083	0.09 (NP)	0.091 J	0.09	mg/kg	95% KM (t) UCL	ProUCL 4.00.05
	HMX	mg/kg	0.235	0.31 (N)	0.46 J	0.31	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	RDX	mg/kg	0.794	1.44 (N)	1.9	1.44	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	2,3,7,8-TCDD Equivalents	mg/kg	0.000009	0.00004 (L)	0.000034	0.00004	mg/kg	95% KM (Chebyshev) UCL	ProUCL 4.00.05
	Perchlorate	mg/kg	0.155	0.55 (G)	0.496	0.496	mg/kg	Maximum Detected Concentration	(1)
	Aluminum	mg/kg	10515	13497 (N)	15800	13497	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Arsenic	mg/kg	6.14	7.0 (N)	7.3	7	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Barium	mg/kg	228	282 (N)	297	282	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Beryllium	mg/kg	0.535	0.60 (N)	0.62	0.6	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Cadmium	mg/kg	11.3	18.8 (N)	21 J	18.8	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Chromium	mg/kg	30.7	52.0 (N)	69	52	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Copper	mg/kg	226	486 (G)	506 J	486	mg/kg	95% Approximate Gamma UCL	ProUCL 4.00.05
	Iron	mg/kg	12658	14000 (N)	14200	14000	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Lead	mg/kg	4524	7692 (N)	8840 J	4524	mg/kg	Arithmetic Mean Concentration	(2)
	Manganese	mg/kg	445	821 (G)	925	821	mg/kg	95% Approximate Gamma UCL	ProUCL 4.00.05
	Mercury	mg/kg	0.037	0.05 (N)	0.055	0.05	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Nickel	mg/kg	13.7	18.8 (NP)	23.3 J	18.8	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Silver	mg/kg	0.675	0.97 (NP)	1.3	0.97	mg/kg	95% KM (t) UCL	ProUCL 4.00.05
	Vanadium	mg/kg	20.1	22.7 (N)	23.5	22.7	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Zinc	mg/kg	189	256 (N)	289	256	mg/kg	95% Student's-t UCL	ProUCL 4.00.05

For non-detects, 1/2 sample quantitation limit was used as a proxy concentration; for duplicate sample results, the average value was used in the calculation.
G = Gamma
L = Lognormal
N = Normal
NP = Non-parametric
1 - Recommended UCL is greater than maximum detected concentration therefore the maximum detected concentration is used as the exposure point concentration.
2 - Mean concentration is used as exposure point concentration for evaluating exposures to lead.
U.S. EPA, 1994:Guidance Manual for the Integrated Exposure Uptake Biokinetic Model for lead in Children.

TABLE 3.6.RME
EXPOSURE POINT CONCENTRATION SUMMARY - 2007 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURE
TOOELE ARMY DEPOT, TOOELE, UTAH

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

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
OD Unit	1,3,5-Trinitrobenzene	mg/kg	0.104	0.25 (NP)	0.25 J	0.25	mg/kg	95% KM (% Bootstrap) UCL	ProUCL 4.00.05
	1,3-Dinitrobenzene	mg/kg	0.098	NA(1)	0.059 J	0.059	mg/kg	Maximum Detected Concentration	(1)
	2,4,6-Trinitrotoluene	mg/kg	1.61	4.04 (NP)	8.4	4.04	mg/kg	95% Chebyshev (Mean, Sd) UCL	ProUCL 4.00.05
	2,4-Dinitrotoluene	mg/kg	0.097	0.08 (NP)	0.081 J	0.08	mg/kg	95% KM (t) UCL	ProUCL 4.00.05
	2-Amino-4,6-Dinitrotoluene	mg/kg	0.156	0.26 (NP)	1.1	0.26	mg/kg	95% KM (BCA) UCL	ProUCL 4.00.05
	4-Amino-2,6-Dinitrotoluene	mg/kg	0.108	0.13 (G)	0.33	0.13	mg/kg	95% KM (Percentile Bootstrap) UCL	ProUCL 4.00.05
	HMX	mg/kg	0.568	0.71 (N)	1.6	0.71	mg/kg	95% KM (t) UCL	ProUCL 4.00.05
	Nitroglycerin	mg/kg	1.52	2.7 (NP)	5.6	2.7	mg/kg	95% KM (t) UCL	ProUCL 4.00.05
	RDX	mg/kg	2.97	6.5 (G)	16	6.5	mg/kg	95% KM (Chebyshev) UCL	ProUCL 4.00.05
	Tetryl	mg/kg	1.72	11.7 (NP)	18	11.7	mg/kg	99% KM (Chebyshev) UCL	ProUCL 4.00.05
	Perchlorate	mg/kg	2.84	22.4 (L)	40.1	22.4	mg/kg	99% Chebyshev (Mean, Sd) UCL	ProUCL 4.00.05
	Aluminum	mg/kg	2933	3188 (N)	4380	3188	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Arsenic	mg/kg	3.63	3.9 (G)	6.1	3.9	mg/kg	95% Approximate Gamma UCL	ProUCL 4.00.05
	Barium	mg/kg	77.7	85 (N)	172 J	85	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Beryllium	mg/kg	0.194	0.20 (N)	0.24	0.2	mg/kg	95% KM (% Bootstrap) UCL	ProUCL 4.00.05
	Cadmium	mg/kg	4.87	6.1 (G)	13.2 J	6.1	mg/kg	95% Approximate Gamma UCL	ProUCL 4.00.05
	Chromium	mg/kg	15.7	45.5 (NP)	132	45.5	mg/kg	95% Chebyshev (Mean, Sd) UCL	ProUCL 4.00.05
	Copper	mg/kg	89.9	114 (G)	269 J	114	mg/kg	95% Approximate Gamma UCL	ProUCL 4.00.05
	Iron	mg/kg	6411	6981 (G)	11600	6981	mg/kg	95% Approximate Gamma UCL	ProUCL 4.00.05
	Lead	mg/kg	19.0	24 (NP)	63.8	19	mg/kg	Arithmetic Mean Concentration	(2)
	Manganese	mg/kg	97.9	107 (N)	145	104	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Mercury	mg/kg	0.068	0.08 (L)	0.19	0.08	mg/kg	95% Modified-t UCL	ProUCL 4.00.05
	Nickel	mg/kg	8.91	22.1 (NP)	61.1 J	22.1	mg/kg	95% Chebyshev (Mean, Sd) UCL	ProUCL 4.00.05
	Silver	mg/kg	1.97	2.4 (NP)	2.4 J	2.4	mg/kg	95% KM (% Bootstrap) UCL	ProUCL 4.00.05
	Vanadium	mg/kg	8.73	9.5 (N)	2.4 J	9.5	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Zinc	mg/kg	265	736 (NP)	2110	736	mg/kg	95% Student's-t UCL	ProUCL 4.00.05

For non-detects, 1/2 sample quantitation limit was used as a proxy concentration; for duplicate sample results, the average value was used in the calculation.
G = Gamma
L = Lognormal
N = Normal
NP = Non-parametric
1 - Too few detects to calculate a meaningful UCL.
2 - Mean concentration is used as exposure point concentration for evaluating exposures to lead.
U.S. EPA, 1994:Guidance Manual for the Integrated Exposure Uptake Biokinetic Model for lead in Children.

TABLE 3.7.RME
EXPOSURE POINT CONCENTRATION SUMMARY - 2007 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURE
TOOELE ARMY DEPOT, TOOELE, UTAH

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

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
All Soil Samples	1,3,5-Trinitrobenzene	mg/kg	0.104	0.25 (NP)	0.25 J	0.25	mg/kg	95% KM (% Bootstrap) UCL	ProUCL 4.00.05
	1,3-Dinitrobenzene	mg/kg	0.098	0.11 (N)	0.1 J	0.11	mg/kg	95% KM (t) UCL	ProUCL 4.00.05
	2,4,6-Trinitrotoluene	mg/kg	1.31	4.2 (NP)	8.4	4.2	mg/kg	97.5% KM (Chebyshev) UCL	ProUCL 4.00.05
	2,4-Dinitrotoluene	mg/kg	2.49	4.9 (G)	22	4.9	mg/kg	95% KM (t) UCL	ProUCL 4.00.05
	2,6-Dinitrotoluene	mg/kg	0.186	0.86 (N)	0.89	0.86	mg/kg	95% KM (Percentile Bootstrap) UCL	ProUCL 4.00.05
	2-Amino-4,6-Dinitrotoluene	mg/kg	0.144	0.22 (NP)	1.1	0.22	mg/kg	95% KM (% Bootstrap) UCL	ProUCL 4.00.05
	4-Amino-2,6-Dinitrotoluene	mg/kg	0.103	0.12 (G)	0.33	0.12	mg/kg	95% KM (Percentile Bootstrap) UCL	ProUCL 4.00.05
	HMX	mg/kg	0.498	0.82 (G)	1.6	0.82	mg/kg	95% KM (Chebyshev) UCL	ProUCL 4.00.05
	Nitroglycerin	mg/kg	1.47	2.6 (NP)	5.6	2.6	mg/kg	95% KM (t) UCL	ProUCL 4.00.05
	RDX	mg/kg	2.52	5.4 (G)	16	5.4	mg/kg	95% KM (Chebyshev) UCL	ProUCL 4.00.05
	Tetryl	mg/kg	1.38	9.4 (NP)	18	9.4	mg/kg	99% KM (Chebyshev) UCL	ProUCL 4.00.05
	2,3,7,8-TCDD Equivalents	mg/kg	0.000009	0.000037 (G)	0.000034	0.000037	mg/kg	95% KM (Chebyshev) UCL	ProUCL 4.00.05
	Perchlorate	mg/kg	2.28	9.1 (L)	40.1	9.1	mg/kg	95% Chebyshev (Mean, Sd) UCL	ProUCL 4.00.05
	Aluminum	mg/kg	4513	7584 (NP)	15800	7584	mg/kg	95% Chebyshev (Mean, Sd) UCL	ProUCL 4.00.05
	Arsenic	mg/kg	4.15	4.6 (NP)	7.3	4.6	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Barium	mg/kg	109	170 (NP)	297	170	mg/kg	95% Chebyshev (Mean, Sd) UCL	ProUCL 4.00.05
	Beryllium	mg/kg	0.205	0.29 (G)	0.62	0.29	mg/kg	95% KM (t) UCL	ProUCL 4.00.05
	Cadmium	mg/kg	6.20	8.4 (L)	21 J	8.4	mg/kg	95% H-UCL	ProUCL 4.00.05
	Chromium	mg/kg	18.8	44.3 (NP)	132	44.3	mg/kg	95% Chebyshev (Mean, Sd) UCL	ProUCL 4.00.05
	Copper	mg/kg	118	153 (G)	506 J	153	mg/kg	95% Approximate Gamma UCL	ProUCL 4.00.05
	Iron	mg/kg	7713	8748 (NP)	14200	8748	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Lead	mg/kg	958	3923 (NP)	8840 J	958	mg/kg	Arithmetic Mean Concentration	(1)
	Manganese	mg/kg	170	334 (NP)	925	334	mg/kg	95% Chebyshev (Mean, Sd) UCL	ProUCL 4.00.05
	Mercury	mg/kg	0.061	0.07 (G)	0.19	0.07	mg/kg	95% Approximate Gamma UCL	ProUCL 4.00.05
	Nickel	mg/kg	9.91	20.6 (NP)	61.1 J	20.6	mg/kg	95% Chebyshev (Mean, Sd) UCL	ProUCL 4.00.05
	Silver	mg/kg	0.714	1.2 (G)	2.4 J	1.2	mg/kg	95% KM (t) UCL	ProUCL 4.00.05
	Vanadium	mg/kg	11.1	12.9 (L)	23.5	12.9	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Zinc	mg/kg	249	622 (NP)	2110	622	mg/kg	95% Chebyshev (Mean, Sd) UCL	ProUCL 4.00.05

For non-detects, 1/2 sample quantitation limit was used as a proxy concentration; for duplicate sample results, the average value was used in the calculation.
G = Gamma
L = Lognormal
N = Normal
NP = Non-parametric
1 - Mean concentration is used as exposure point concentration for evaluating exposures to lead.
U.S. EPA, 1994:Guidance Manual for the Integrated Exposure Uptake Biokinetic Model for lead in Children.

TABLE 3.8.RME
EXPOSURE POINT CONCENTRATION SUMMARY - 2009 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURE
TOOELE ARMY DEPOT, TOOELE, UTAH

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

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
OB Unit	1,3,5-Trinitrobenzene	mg/kg	0.012	NA(1)	0.027 J	0.027	mg/kg	Maximum Detected Concentration	(1)
	2,4,6-Trinitrotoluene	mg/kg	0.080	NA(1)	0.22 J	0.22	mg/kg	Maximum Detected Concentration	(1)
	2,4-Dinitrotoluene	mg/kg	0.283	0.47 (N)	0.61 J	0.47	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	4-Amino-2,6-Dinitrotoluene	mg/kg	0.035	NA(1)	0.047 J	0.047	mg/kg	Maximum Detected Concentration	(1)
	HMX	mg/kg	0.238	0.39 (N)	0.46 J	0.39	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Nitroglycerin	mg/kg	0.219	0.35 (N)	0.45 J	0.35	mg/kg	95% KM (t) UCL	ProUCL 4.00.05
	RDX	mg/kg	0.551	1.03 (N)	1.2	1.03	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Tetryl	mg/kg	0.011	NA(1)	0.022 J	0.022	mg/kg	Maximum Detected Concentration	(1)
	2,3,7,8-TCDD Equivalents	mg/kg	0.00007	0.00008 (N)	0.000084	0.00008	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Perchlorate	mg/kg	0.328	0.66 (G)	0.71	0.66	mg/kg	95% Approximate Gamma UCL	ProUCL 4.00.05
	Aluminum	mg/kg	7523	10205 (N)	12200	10205	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Arsenic	mg/kg	4.61	5.3 (N)	5.6	5.3	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Barium	mg/kg	138	165 (N)	169 J	165	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Beryllium	mg/kg	0.461	0.60 (N)	0.69	0.6	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Cadmium	mg/kg	5.68	9.5 (N)	11.5 J	9.5	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Chromium	mg/kg	11.7	13.5 (N)	14.3	13.5	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Copper	mg/kg	109	153 (N)	178 J	153	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Iron	mg/kg	9761	11847 (N)	13200	11847	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Lead	mg/kg	9031	19465 (N)	27000 J	9031	mg/kg	Arithmetic Mean Concentration	(2)
	Manganese	mg/kg	265	336 (N)	382	336	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Mercury	mg/kg	0.033	0.05 (G)	0.059	0.05	mg/kg	95% Approximate Gamma UCL	ProUCL 4.00.05
	Nickel	mg/kg	9.76	11.9 (N)	13.5	11.9	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Silver	mg/kg	0.802	1.38 (N)	1.7	1.38	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Vanadium	mg/kg	13.6	17.1 (N)	19.9	17.1	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Zinc	mg/kg	117	143 (N)	158 J	143	mg/kg	95% Student's-t UCL	ProUCL 4.00.05

For non-detects, 1/2 sample quantitation limit was used as a proxy concentration; for duplicate sample results, the average value was used in the calculation.
N = Normal
G = Gamma
1 - Too few detects to calculate a meaningful UCL.
2 - Mean concentration is used as exposure point concentration for evaluating exposures to lead.
U.S. EPA, 1994:Guidance Manual for the Integrated Exposure Uptake Biokinetic Model for lead in Children.

TABLE 3.9.RME
EXPOSURE POINT CONCENTRATION SUMMARY - 2009 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURE
TOOELE ARMY DEPOT, TOOELE, UTAH

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

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
OD Unit	1,3,5-Trinitrobenzene	mg/kg	0.037	0.04 (N)	0.055 J	0.04	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	1,3-Dinitrobenzene	mg/kg	0.007	0.03 (N)	0.032 J	0.03	mg/kg	95% KM (Percentile Bootstrap) UCL	ProUCL 4.00.05
	2,4,6-Trinitrotoluene	mg/kg	2.21	2.7 (N)	4.2	2.7	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	2,4-Dinitrotoluene	mg/kg	0.081	0.12 (G)	0.26 J	0.12	mg/kg	95% Approximate Gamma UCL	ProUCL 4.00.05
	2,6-Dinitrotoluene	mg/kg	0.007	0.019 (NP)	0.019 J	0.019	mg/kg	95% KM (% Bootstrap) UCL	ProUCL 4.00.05
	2-Amino-4,6-Dinitrotoluene	mg/kg	0.200	0.23 (N)	0.33 J	0.23	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	3-Nitrotoluene	mg/kg	0.013	0.032 (N)	0.039 J	0.032	mg/kg	95% KM (t) UCL	ProUCL 4.00.05
	4-Amino-2,6-Dinitrotoluene	mg/kg	0.182	0.22 (N)	0.49 J	0.22	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	HMX	mg/kg	1.98	2.20 (N)	2.8 J	2.2	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	RDX	mg/kg	20.4	24.5 (N)	36	24.5	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Tetryl	mg/kg	0.106	0.20 (NP)	1.4 J	0.2	mg/kg	95% KM (BCA) UCL	ProUCL 4.00.05
	Perchlorate	mg/kg	23.8	41.8 (G)	83	41.8	mg/kg	95% Approximate Gamma UCL	ProUCL 4.00.05
	Aluminum	mg/kg	1942	2037 (N)	2400	2037	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Arsenic	mg/kg	2.93	3.3 (NP)	5.7	3.3	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Barium	mg/kg	54.4	59.6 (N)	80.3	59.6	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Beryllium	mg/kg	0.110	0.12 (L)	0.16	0.12	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Cadmium	mg/kg	4.63	5.2 (N)	6.5	5.2	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Chromium	mg/kg	6.16	7.2 (NP)	13.3 J	7.2	mg/kg	95% Modified-t UCL	ProUCL 4.00.05
	Copper	mg/kg	76.0	85.8 (G)	144 J	85.8	mg/kg	95% Approximate Gamma UCL	ProUCL 4.00.05
	Iron	mg/kg	6102	6623 (N)	9280	6623	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Lead	mg/kg	17.3	18.9 (N)	27	17.3	mg/kg	Arithmetic Mean Concentration	(1)
	Manganese	mg/kg	75.4	79.1 (N)	86.7	79.1	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Mercury	mg/kg	0.060	0.067 (N)	0.091	0.067	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Nickel	mg/kg	4.91	5.4 (NP)	8.5 J	5.4	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Silver	mg/kg	0.527	0.73 (G)	1.3	0.73	mg/kg	95% Approximate Gamma UCL	ProUCL 4.00.05
	Vanadium	mg/kg	5.36	5.56 (N)	6.3	5.56	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Zinc	mg/kg	170	197 (G)	306 J	197	mg/kg	95% Approximate Gamma UCL	ProUCL 4.00.05

For non-detects, 1/2 sample quantitation limit was used as a proxy concentration; for duplicate sample results, the average value was used in the calculation.
G = Gamma
L = Lognormal
N = Normal
NP = Nonparametric
1 - Mean concentration is used as exposure point concentration for evaluating exposures to lead.
U.S. EPA, 1994:Guidance Manual for the Integrated Exposure Uptake Biokinetic Model for lead in Children.

TABLE 3.10.RME
EXPOSURE POINT CONCENTRATION SUMMARY - 2009 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURE
TOOELE ARMY DEPOT, TOOELE, UTAH

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

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Static Firing Rocket Silos	1,3,5-Trinitrobenzene	mg/kg	0.008	NA[(1)]	0.025 J	0.025	mg/kg	Maximum Detected Concentration	(1)
	2,4,6-Trinitrotoluene	mg/kg	0.137	0.18 (N)	0.24	0.18	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	2,4-Dinitrotoluene	mg/kg	5.75	9.1 (N)	12	9.1	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	2,6-Dinitrotoluene	mg/kg	0.360	0.56 (N)	0.71	0.56	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	2-Amino-4,6-Dinitrotoluene	mg/kg	0.085	0.089 (N)	0.092 J	0.089	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	4-Amino-2,6-Dinitrotoluene	mg/kg	0.084	0.088 (N)	0.088 J	0.088	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	HMX	mg/kg	0.317	0.36 (N)	0.38	0.36	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Nitroglycerin	mg/kg	2.09	5.0 G)	6.1 J	5	mg/kg	95% Approximate Gamma UCL	ProUCL 4.00.05
	RDX	mg/kg	1.16	1.5 (N)	1.8	1.5	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	2,3,7,8-TCDD Equivalents	mg/kg	0.0002	0.0002 (N)	0.0002	0.0002	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Perchlorate	mg/kg	2.03	2.6 (N)	2.7	2.6	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Aluminum	mg/kg	6002	7185 (N)	8550	7185	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Arsenic	mg/kg	2.63	2.9 (N)	3	2.9	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Barium	mg/kg	89.8	103 (N)	111 J	103	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Beryllium	mg/kg	0.215	0.24 (N)	0.27	0.24	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Cadmium	mg/kg	10.2	12.3 (N)	15.1 J	12.3	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Chromium	mg/kg	24.9	35.1 (N)	44.4	35.1	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Copper	mg/kg	160	206 (N)	251 J	206	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Iron	mg/kg	8463	11864 (NP)	16200	11864	mg/kg	95% Modified-t UCL	ProUCL 4.00.05
	Lead	mg/kg	126	231 (G)	280 J	126	mg/kg	Arithmetic Mean Concentration	(2)
	Manganese	mg/kg	148	171 (N)	201	171	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Mercury	mg/kg	0.029	0.03 (N)	0.038 J	0.03	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Nickel	mg/kg	13.5	20.3 (N)	26.9	20.3	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Silver	mg/kg	0.382	0.54 (N)	0.7 J	0.54	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Vanadium	mg/kg	7.15	7.5 (N)	7.6	7.5	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Zinc	mg/kg	329	428 (N)	510 J	428	mg/kg	95% Student's-t UCL	ProUCL 4.00.05

For non-detects, 1/2 sample quantitation limit was used as a proxy concentration; for duplicate sample results, the average value was used in the calculation.
G = Gamma
N = Normal
NP = Nonparametric
1 - Too few detects to calculate a meaningful UCL.
2 - Mean concentration is used as exposure point concentration for evaluating exposures to lead.
U.S. EPA, 1994:Guidance Manual for the Integrated Exposure Uptake Biokinetic Model for lead in Children.

TABLE 3.11.RME
EXPOSURE POINT CONCENTRATION SUMMARY - 2009 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURE
TOOELE ARMY DEPOT, TOOELE, UTAH

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

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
All Soil Samples	1,3,5-Trinitrobenzene	mg/kg	0.027	0.036 (N)	0.055 J	0.036	mg/kg	95% KM (t) UCL	ProUCL 4.00.05
	1,3-Dinitrobenzene	mg/kg	0.005	0.032 (N)	0.032 J	0.032	mg/kg	95% KM (Percentile Bootstrap) UCL	ProUCL 4.00.05
	2,4,6-Trinitrotoluene	mg/kg	1.43	2.6 (G)	4.2	2.6	mg/kg	95% KM (Chebyshev) UCL	ProUCL 4.00.05
	2,4-Dinitrotoluene	mg/kg	1.43	4.0 (NP)	12	4	mg/kg	95% Chebyshev (Mean,Sd) UCL	ProUCL 4.00.05
	2,6-Dinitrotoluene	mg/kg	0.098	0.20 (N)	0.71	0.2	mg/kg	95% KM (Percentile Bootstrap) UCL	ProUCL 4.00.05
	2-Amino-4,6-Dinitrotoluene	mg/kg	0.153	0.20 (G)	0.33 J	0.2	mg/kg	95% KM (BCA) UCL	ProUCL 4.00.05
	3-Nitrotoluene	mg/kg	0.011	0.03 (N)	0.039 J	0.03	mg/kg	95% KM (t) UCL	ProUCL 4.00.05
	4-Amino-2,6-Dinitrotoluene	mg/kg	0.144	0.17 (N)	0.49 J	0.17	mg/kg	95% KM (t) UCL	ProUCL 4.00.05
	HMX	mg/kg	1.26	2.1 (NP)	2.8 J	2.1	mg/kg	95% Chebyshev (Mean,Sd) UCL	ProUCL 4.00.05
	Nitroglycerin	mg/kg	1.15	2.2 (G)	6.1 J	2.2	mg/kg	95% KM (Chebyshev) UCL	ProUCL 4.00.05
	RDX	mg/kg	12.2	22.4 (NP)	36	22.4	mg/kg	95% Chebyshev (Mean,Sd) UCL	ProUCL 4.00.05
	Tetryl	mg/kg	0.069	0.14 (NP)	1.4 J	0.14	mg/kg	95% KM (% Bootstrap) UCL	ProUCL 4.00.05
	2,3,7,8-TCDD Equivalents	mg/kg	0.0001	0.00017 (N)	0.0003	0.00017	mg/kg	95% KM (t) UCL	ProUCL 4.00.05
	Perchlorate	mg/kg	14.3	31.5 (L)	83	31.5	mg/kg	95% Chebyshev (Mean,Sd) UCL	ProUCL 4.00.05
	Aluminum	mg/kg	3952	6322 (NP)	12200	6322	mg/kg	95% Chebyshev (Mean,Sd) UCL	ProUCL 4.00.05
	Arsenic	mg/kg	3.18	3.5 (NP)	5.7	3.5	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Barium	mg/kg	78.6	91.1 (G)	169 J	91.1	mg/kg	95% Approximate Gamma UCL	ProUCL 4.00.05
	Beryllium	mg/kg	0.202	0.33 (NP)	0.69	0.33	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Cadmium	mg/kg	6.11	7.2 (N)	15.1 J	7.2	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Chromium	mg/kg	11.6	20 (NP)	44.4	20	mg/kg	95% Chebyshev (Mean,Sd) UCL	ProUCL 4.00.05
	Copper	mg/kg	102	118 (L)	251 J	118	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Iron	mg/kg	7350	8184 (G)	16200	8184	mg/kg	95% Approximate Gamma UCL	ProUCL 4.00.05
	Lead	mg/kg	1776	8726 (NP)	27000 J	1776	mg/kg	Arithmetic Mean Concentration	(1)
	Manganese	mg/kg	129	198 (NP)	382	198	mg/kg	95% Chebyshev (Mean,Sd) UCL	ProUCL 4.00.05
	Mercury	mg/kg	0.048	0.055 (N)	0.091	0.055	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Nickel	mg/kg	7.82	12.4 (L)	26.9	12.4	mg/kg	95% Chebyshev (Mean,Sd) UCL	ProUCL 4.00.05
	Silver	mg/kg	0.547	0.70 (G)	1.7	0.7	mg/kg	95% Approximate Gamma UCL	ProUCL 4.00.05
	Vanadium	mg/kg	7.35	8.5 (NP)	19.9	8.5	mg/kg	95% Student's-t UCL	ProUCL 4.00.05
	Zinc	mg/kg	196	232 (NP)	510 J	232	mg/kg	95% Modified-t UCL	ProUCL 4.00.05

For non-detects, 1/2 sample quantitation limit was used as a proxy concentration; for duplicate sample results, the average value was used in the calculation.
G = Gamma
L = Lognormal
N = Normal
NP = Nonparametric
1 - Too few detects to calculate a meaningful UCL.
2 - Mean concentration is used as exposure point concentration for evaluating exposures to lead.
U.S. EPA, 1994:Guidance Manual for the Integrated Exposure Uptake Biokinetic Model for lead in Children.

TABLE 3.12.RME
EXPOSURE POINT CONCENTRATION SUMMARY - 2014 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURE
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current
Medium: Surface Soil
Exposure Medium: Surface Soil

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
OB Unit	1,3,5-Trinitrobenzene	mg/kg	0.06	0.18	0.17 J	0.18	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	1,3-Dinitrobenzene	mg/kg	0.04	0.085	0.076 J	0.085	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	2,4,6-Trinitrotoluene	mg/kg	0.1	0.044	0.41	0.044	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	2,4-Dinitrotoluene	mg/kg	6	19.4	18	19.4	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	2,6-Dinitrotoluene	mg/kg	0.03	0.06	0.035 J	0.060	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	2-Amino-4,6-Dinitrotoluene	mg/kg	0.03	0.073	0.051 J	0.073	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	2-Nitrotoluene	mg/kg	0.02	0.064	0.024 J	0.064	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	4-Amino-2,6-Dinitrotoluene	mg/kg	0.03	0.066	0.068 J	0.066	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	4-Nitrotoluene	mg/kg	0.06	0.13	0.11 J	0.13	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	HMX	mg/kg	0.3	0.98	1.4 J	0.98	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	Nitroglycerin	mg/kg	7	16.3	12	16.3	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	RDX	mg/kg	2	8.88	14 J	8.88	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	Tetryl	mg/kg	0.04	0.084	0.08 J	0.084	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	Perchlorate	mg/kg	0.01	0.02	0.019	0.020	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	2,3,7,8-TCDD Equivalents	mg/kg	0.00001	0.000016	0.000014	0.000016	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	Aluminum	mg/kg	10,440	13,680	13,000 J	13,680	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	Antimony	mg/kg	2	4.94	4.5 J	4.94	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	Arsenic	mg/kg	6	7.24	7	7.24	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	Barium	mg/kg	153	169	160	169	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	Beryllium	mg/kg	0.5	0.07	0.61	0.07	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	Cadmium	mg/kg	2	2.84	2.3	2.84	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	Chromium	mg/kg	15	17.2	17	17.2	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	Cobalt	mg/kg	4	5.47	5	5.47	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	Copper	mg/kg	82	121	100 J	121	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	Iron	mg/kg	12,400	15,015	14,000	15,015	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	Lead	mg/kg	5,880	5,880	11,000 J	5,880	mg/kg	Arithmetic Mean Concentration	(2)
	Manganese	mg/kg	360	464	420	464	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	Mercury	mg/kg	0.03	0.044	0.043	0.044	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	Nickel	mg/kg	12	15.2	14	15.2	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	Selenium	mg/kg	0.2	0.28	0.25 J	0.28	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	Silver	mg/kg	0.3	0.53	0.45	0.53	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	Thallium	mg/kg	0.2	0.19	0.18	0.19	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	Vanadium	mg/kg	20	24.6	23	24.6	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	Zinc	mg/kg	78	91.7	89 J	91.7	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)

1 - As recommended by the ISM guidance (2012) the 95% Chebsyhev(Mean, Sd) UCL was selected as the exposure point concentration based on the variability of the data.
2 - Mean concentration is used as exposure point concentration for evaluating exposures to lead.
U.S. EPA, 1994:Guidance Manual for the Integrated Exposure Uptake Biokinetic Model for lead in Children.

TABLE 3.13.RME
EXPOSURE POINT CONCENTRATION SUMMARY - 2014 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURE
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current
Medium: Surface Soil
Exposure Medium: Surface Soil

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
OD Unit	1,3,5-Trinitrobenzene	mg/kg	0.121	0.2	0.21 J	0.20	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	1,3-Dinitrobenzene	mg/kg	0.045	0.14	0.3	0.14	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	2,4,6-Trinitrotoluene	mg/kg	4.33	9	16	9.0	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	2,4-Dinitrotoluene	mg/kg	0.046	0.06	0.17 J	0.06	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	2-Amino-4,6-Dinitrotoluene	mg/kg	0.186	0.31	0.41	0.31	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	4-Amino-2,6-Dinitrotoluene	mg/kg	0.266	0.41	0.45	0.41	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	HMX	mg/kg	1.80	3	4.8	3.0	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	Nitroglycerin	mg/kg	0.999	1.9	3	1.9	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	PETN	mg/kg	0.166	0.41	0.69 J	0.41	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	RDX	mg/kg	9.33	17.5	27	17.5	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	Tetryl	mg/kg	0.773	1.4	2	1.4	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	Perchlorate	mg/kg	1.27	2.8	4.5	2.8	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	Aluminum	mg/kg	3,150	3,364	3,500	3,364	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	Antimony	mg/kg	1.24	1.6	1.8	1.6	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	Arsenic	mg/kg	3.43	4.4	6.1	4.4	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	Barium	mg/kg	79.6	114	170	114	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	Beryllium	mg/kg	0.125	0.17	0.25	0.17	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	Cadmium	mg/kg	5.96	7.5	10	7.5	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	Chromium	mg/kg	26.8	79	190 J	79	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	Cobalt	mg/kg	1.97	2.5	3.1	2.5	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	Copper	mg/kg	270	484	770	484	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	Iron	mg/kg	7,197	7,933	8,100	7,933	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	Lead	mg/kg	39.9	39.9	67	39.9	mg/kg	Arithmetic Mean Concentration	(2)
	Manganese	mg/kg	97.0	132	200	132	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	Mercury	mg/kg	0.069	0.09	0.12 J	0.09	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	Nickel	mg/kg	17.2	43	97 J	43	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	Selenium	mg/kg	0.101	0.22	0.11 J	0.22	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	Silver	mg/kg	1.41	2.1	3	2.1	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	Thallium	mg/kg	0.051	0.11	0.07 J	0.11	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	Vanadium	mg/kg	8.50	10.9	16	10.9	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	Zinc	mg/kg	182	234	320	234	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)

1 - As recommended by the ISM guidance (2012) the 95% Chebsyhev(Mean, Sd) UCL was selected as the exposure point concentration based on the variability of the data.
2 - Mean concentration is used as exposure point concentration for evaluating exposures to lead.
U.S. EPA, 1994:Guidance Manual for the Integrated Exposure Uptake Biokinetic Model for lead in Children.

TABLE 3.14.RME
EXPOSURE POINT CONCENTRATION SUMMARY - 2014 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURE
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current
Medium: Surface Soil
Exposure Medium: Surface Soil

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
SF Unit	1,3,5-Trinitrobenzene	mg/kg	0.070	0.26	0.28	0.26	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	2,4,6-Trinitrotoluene	mg/kg	3.33	13.7	15	13.7	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	2,4-Dinitrotoluene	mg/kg	0.444	1.4	1.5	1.4	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	2,6-Dinitrotoluene	mg/kg	0.035	0.083	0.087 J	0.083	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	2-Amino-4,6-Dinitrotoluene	mg/kg	0.133	0.44	0.47	0.44	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	4-Amino-2,6-Dinitrotoluene	mg/kg	0.168	0.54	0.58 J	0.54	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	HMX	mg/kg	2.39	10.1	11	10.1	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	Nitroglycerin	mg/kg	1.49	4.3	4.3	4.3	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	RDX	mg/kg	21.5	91.6	100	91.6	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	Tetryl	mg/kg	0.035	0.08	0.084 J	0.080	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	Perchlorate	mg/kg	0.632	2.9	3.2	2.9	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	2,3,7,8-TCDD Equivalents	mg/kg	0.0001	0.00015	0.00013	0.00015	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	Aluminum	mg/kg	6,883	9,371	9,200	9,371	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	Antimony	mg/kg	1.65	2.7	2.7 J	2.7	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	Arsenic	mg/kg	3.45	4.2	4	4.2	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	Barium	mg/kg	120	140	140	140	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	Beryllium	mg/kg	0.218	0.29	0.28	0.29	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	Cadmium	mg/kg	13.5	22.2	19	22.2	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	Chromium	mg/kg	24.5	33.3	32	33.3	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	Cobalt	mg/kg	2.53	3	2.9	3.0	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	Copper	mg/kg	412	1,450	1,600 J	1,450	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	Iron	mg/kg	11,083	14,661	15,000	14,661	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	Lead	mg/kg	360	360	480	360	mg/kg	Arithmetic Mean Concentration	(2)
	Manganese	mg/kg	208	239	230	239	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	Mercury	mg/kg	0.021	0.032	0.033	0.032	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	Nickel	mg/kg	9.53	11.1	11	11.1	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	Selenium	mg/kg	0.100	0.25	0.1 J	0.25	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	Silver	mg/kg	0.403	0.64	0.63	0.64	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	Thallium	mg/kg	0.064	0.087	0.087 J	0.087	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	Vanadium	mg/kg	10.5	12	12	12	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	Zinc	mg/kg	267	383	340	383	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)

1 - As recommended by the ISM guidance (2012) the 95% Chebsyhev(Mean, Sd) UCL was selected as the exposure point concentration based on the variability of the data.
2 - Mean concentration is used as exposure point concentration for evaluating exposures to lead.
U.S. EPA, 1994:Guidance Manual for the Integrated Exposure Uptake Biokinetic Model for lead in Children.

TABLE 3.15.RME
EXPOSURE POINT CONCENTRATION SUMMARY - 2014 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURE
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current
Medium: Surface Soil
Exposure Medium: Surface Soil

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
All Units	1,3,5-Trinitrobenzene	mg/kg	0.097	0.17	0.28	0.17	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	1,3-Dinitrobenzene	mg/kg	0.039	0.1	0.3	0.1	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	2,4,6-Trinitrotoluene	mg/kg	3.29	7	16	7.0	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	2,4-Dinitrotoluene	mg/kg	1.32	4.45	18	4.45	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	2,6-Dinitrotoluene	mg/kg	0.028	0.058	0.087 J	0.058	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	2-Amino-4,6-Dinitrotoluene	mg/kg	0.143	0.26	0.47	0.26	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	2-Nitrotoluene	mg/kg	0.025	0.055	0.024 J	0.055	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	4-Amino-2,6-Dinitrotoluene	mg/kg	0.199	0.34	0.58	0.34	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	4-Nitrotoluene	mg/kg	0.031	0.064	0.11 J	0.064	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	HMX	mg/kg	1.65	3.55	11	3.55	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	Nitroglycerin	mg/kg	2.22	4.91	12	4.91	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	PETN	mg/kg	0.148	0.34	0.69 J	0.34	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	RDX	mg/kg	10.7	27.5	100	27.5	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	Tetryl	mg/kg	0.463	0.95	2	0.95	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	Perchlorate	mg/kg	0.882	1.98	4.5	1.98	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	2,3,7,8-TCDD Equivalents	mg/kg	0.00006	0.00012	0.00013	0.00012	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	Aluminum	mg/kg	5,413	8,048	13,000 J	8,048	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	Antimony	mg/kg	1.57	2.24	4.5 J	2.24	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	Arsenic	mg/kg	3.93	4.97	7	4.97	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	Barium	mg/kg	103	136	170	136	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	Beryllium	mg/kg	0.219	0.35	0.61	0.35	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	Cadmium	mg/kg	6.85	10.9	19	10.9	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	Chromium	mg/kg	23.9	54	190 J	54	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	Cobalt	mg/kg	2.56	3.42	5	3.42	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	Copper	mg/kg	266	537	1,600 J	537	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	Iron	mg/kg	9,094	11,286	15,000	11,286	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	Lead	mg/kg	1,237	1,237	11,000 J	1,237	mg/kg	Arithmetic Mean Concentration	(2)
	Manganese	mg/kg	173	266	420	266	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	Mercury	mg/kg	0.050	0.073	0.12 J	0.073	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	Nickel	mg/kg	14.4	29.4	97 J	29.4	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	Selenium	mg/kg	0.123	0.22	0.25 J	0.22	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	Silver	mg/kg	0.968	1.58	3	1.58	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	Thallium	mg/kg	0.074	0.13	0.18	0.13	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	Vanadium	mg/kg	11.1	15.3	23	15.3	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)
	Zinc	mg/kg	182	247	340	247	mg/kg	95% Chebyshev(Mean, Sd) UCL	(1)

1 - As recommended by the ISM guidance (2012) the 95% Chebsyhev(Mean, Sd) UCL was selected as the exposure point concentration based on the variability of the data.
2 - Mean concentration is used as exposure point concentration for evaluating exposures to lead.
U.S. EPA, 1994:Guidance Manual for the Integrated Exposure Uptake Biokinetic Model for lead in Children.

LIST OF TABLES
RAGS PART D TABLE 4
VALUES USED FOR DAILY INTAKE CALCULATIONS

Table No.	Reasonable Maximum Exposures
4.1.RME	Unprotected Worker - OB Unit
4.2.RME	Unprotected Worker - OD Unit
4.3.RME	Unprotected Worker - SF Unit
4.4.RME	Unprotected Worker - OB/OD/SF Units
4.5.RME	Protected Worker - OB Unit
4.6.RME	Protected Worker - OD Unit
4.7.RME	Protected Worker - SF Unit
4.8.RME	Protected Worker - OB/OD/SF Units
4.9.RME	Future Outdoor Worker - OB Unit
4.10.RME	Future Outdoor Worker - OD Unit
4.11.RME	Future Outdoor Worker - SF Unit
4.12.RME	Future Outdoor Worker - OB/OD/SF Units

TABLE 4.1.RME
VALUES USED FOR DAILY INTAKE CALCULATIONS
REASONABLE MAXIMUM EXPOSURE
TOOELE ARMY DEPOT, TOOELE, UTAH

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

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Ingestion	Unprotected OB Worker	Adult	OB Unit	CS	Chemical concentration in soil	Max or 95% UCL	mg/kg	U.S. EPA, 2002	Intake (mg/kg/day) =
				IR-S	Ingestion Rate	100	mg/day	U.S. EPA, 2014	
				CF3	Conversion Factor 3	0.000001	kg/mg	--	CS x IRS x CF3 x FI x EF x ED
				FI	Fraction Ingested	1	unitless	U.S. EPA, 2014	BW x AT
				EF	Exposure Frequency	60	days/year	(1)	
				ED	Exposure Duration	25	years	U.S. EPA, 2014	
				BW	Body Weight	80	kg	U.S. EPA, 2014	
				AT-C	Averaging Time (Cancer)	25550	days	U.S. EPA, 2014	
				AT-N	Averaging Time (Non-Cancer)	9125	days	U.S. EPA, 2014	
Dermal	Unprotected OB Worker	Adult	OB Unit	CS	Chemical concentration in soil	Max or 95% UCL	mg/kg	U.S. EPA, 2002	Dermally Absorbed Dose (mg/kg/day) =
				CF3	Conversion Factor 3	0.000001	kg/mg	--	
				SA	Skin Surface Available for Contact	3,527	cm2	U.S. EPA, 2014	CS x CF3 x SA x SSAF x DABS x EF x ED
				SSAF	Soil to Skin Adherence Factor	0.12	mg/cm2/event	U.S. EPA, 2014	BW x AT
				DABS	Absorption Factor	Chemical Specific	unitless	U.S. EPA, 2004	
				EF	Exposure Frequency	60	days/year	(1)	
				ED	Exposure Duration	25	years	U.S. EPA, 2014	
				BW	Body Weight	80	kg	U.S. EPA, 2014	
				AT-C	Averaging Time (Cancer)	25550	days	U.S. EPA, 2014	
				AT-N	Averaging Time (Non-Cancer)	9125	days	U.S. EPA, 2014	

Notes

1 - OB Unit operates only 60 days a year.

Sources:

U.S. EPA, 2002: Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites. OSWER 9285.6-10.

U.S. EPA, 2004: Risk Assessment Guidance for Superfund (Part E, Supplemental Guidance for Dermal Risk Assessment) Final. EPA/540/R/99/005.

USEPA, 2014: Human Health Evaluation Manual, Supplemental Guidance: Update of Standard Default Exposure Factors. OSWER 9200.1-120.

TABLE 4.2.RME
VALUES USED FOR DAILY INTAKE CALCULATIONS
REASONABLE MAXIMUM EXPOSURE
TOOELE ARMY DEPOT, TOOELE, UTAH

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

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Ingestion	Unprotected OD Worker	Adult	OD Unit	CS	Chemical concentration in soil	Max or 95% UCL	mg/kg	U.S. EPA, 2002	Intake (mg/kg/day) =
				IR-S	Ingestion Rate	100	mg/day	U.S. EPA, 2014	
				CF3	Conversion Factor 3	0.000001	kg/mg	--	CS x IRS x CF3 x FI x EF x ED
				FI	Fraction Ingested	1	unitless	U.S. EPA, 2014	BW x AT
				EF	Exposure Frequency	120	days/year	(1)	
				ED	Exposure Duration	25	years	U.S. EPA, 2014	
				BW	Body Weight	80	kg	U.S. EPA, 2014	
				AT-C	Averaging Time (Cancer)	25550	days	U.S. EPA, 2014	
				AT-N	Averaging Time (Non-Cancer)	9125	days	U.S. EPA, 2014	
Dermal	Unprotected OD Worker	Adult	OD Unit	CS	Chemical concentration in soil	Max or 95% UCL	mg/kg	U.S. EPA, 2002	Dermally Absorbed Dose (mg/kg/day) =
				CF3	Conversion Factor 3	0.000001	kg/mg	--	
				SA	Skin Surface Available for Contact	3,527	cm2	U.S. EPA, 2014	CS x CF3 x SA x SSAF x DABS x EF x ED
				SSAF	Soil to Skin Adherence Factor	0.12	mg/cm2/event	U.S. EPA, 2014	BW x AT
				DABS	Absorption Factor	Chemical Specific	unitless	U.S. EPA, 2004	
				EF	Exposure Frequency	120	days/year	(1)	
				ED	Exposure Duration	25	years	U.S. EPA, 2014	
				BW	Body Weight	80	kg	U.S. EPA, 2014	
				AT-C	Averaging Time (Cancer)	25550	days	U.S. EPA, 2014	
				AT-N	Averaging Time (Non-Cancer)	9125	days	U.S. EPA, 2014	

Notes:

1 - OD Unit operates only 120 days a year.

Sources:

U.S. EPA, 2002: Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites. OSWER 9285.6-10.

U.S. EPA, 2004: Risk Assessment Guidance for Superfund (Part E, Supplemental Guidance for Dermal Risk Assessment) Final. EPA/540/R/99/005.

USEPA, 2014: Human Health Evaluation Manual, Supplemental Guidance: Update of Standard Default Exposure Factors. OSWER 9200.1-120.

TABLE 4.3.RME
VALUES USED FOR DAILY INTAKE CALCULATIONS
REASONABLE MAXIMUM EXPOSURE
TOOELE ARMY DEPOT, TOOELE, UTAH

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

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Ingestion	Unprotected SF Worker	Adult	SF Unit	CS	Chemical concentration in soil	Max or 95% UCL	mg/kg	U.S. EPA, 2002	Intake (mg/kg/day) =
				IR-S	Ingestion Rate	100	mg/day	U.S. EPA, 2014	
				CF3	Conversion Factor 3	0.000001	kg/mg	--	CS x IRS x CF3 x FI x EF x ED
				FI	Fraction Ingested	1	unitless	U.S. EPA, 2014	BW x AT
				EF	Exposure Frequency	60	days/year	(1)	
				ED	Exposure Duration	25	years	U.S. EPA, 2014	
				BW	Body Weight	80	kg	U.S. EPA, 2014	
				AT-C	Averaging Time (Cancer)	25550	days	U.S. EPA, 2014	
				AT-N	Averaging Time (Non-Cancer)	9125	days	U.S. EPA, 2014	
Dermal	Unprotected SF Worker	Adult	SF Unit	CS	Chemical concentration in soil	Max or 95% UCL	mg/kg	U.S. EPA, 2002	Dermally Absorbed Dose (mg/kg/day) =
				CF3	Conversion Factor 3	0.000001	kg/mg	--	
				SA	Skin Surface Available for Contact	3,527	cm2	U.S. EPA, 2014	CS x CF3 x SA x SSAF x DABS x EF x ED
				SSAF	Soil to Skin Adherence Factor	0.12	mg/cm2/event	U.S. EPA, 2014	BW x AT
				DABS	Absorption Factor	Chemical Specific	unitless	U.S. EPA, 2004	
				EF	Exposure Frequency	60	days/year	(1)	
				ED	Exposure Duration	25	years	U.S. EPA, 2014	
				BW	Body Weight	80	kg	U.S. EPA, 2014	
				AT-C	Averaging Time (Cancer)	25550	days	U.S. EPA, 2014	
				AT-N	Averaging Time (Non-Cancer)	9125	days	U.S. EPA, 2014	

Notes:

1 - SF Unit operates only 60 days a year.

Sources:

U.S. EPA, 2002: Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites. OSWER 9285.6-10.

U.S. EPA, 2004: Risk Assessment Guidance for Superfund (Part E, Supplemental Guidance for Dermal Risk Assessment) Final. EPA/540/R/99/005.

USEPA, 2014: Human Health Evaluation Manual, Supplemental Guidance: Update of Standard Default Exposure Factors. OSWER 9200.1-120.

TABLE 4.4.RME

VALUES USED FOR DAILY INTAKE CALCULATIONS

REASONABLE MAXIMUM EXPOSURE

TOOELE ARMY DEPOT, TOOELE, UTAH

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

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Ingestion	Unprotected OB/OD/SF Worker	Adult	All Units	CS	Chemical concentration in soil	Max or 95% UCL	mg/kg	U.S. EPA, 2002	Intake (mg/kg/day) =
				IR-S	Ingestion Rate	100	mg/day	U.S. EPA, 2014	
				CF3	Conversion Factor 3	0.000001	kg/mg	--	CS x IRS x CF3 x FI x EF x ED
				FI	Fraction Ingested	1	unitless	U.S. EPA, 2014	BW x AT
				EF	Exposure Frequency	210	days/year	(1)	
				ED	Exposure Duration	25	years	U.S. EPA, 2014	
				BW	Body Weight	80	kg	U.S. EPA, 2014	
				AT-C	Averaging Time (Cancer)	25550	days	U.S. EPA, 2014	
				AT-N	Averaging Time (Non-Cancer)	9125	days	U.S. EPA, 2014	
Dermal	Unprotected OB/OD/SF Worker	Adult	All Units	CS	Chemical concentration in soil	Max or 95% UCL	mg/kg	U.S. EPA, 2002	Dermally Absorbed Dose (mg/kg/day) =
				CF3	Conversion Factor 3	0.000001	kg/mg	--	
				SA	Skin Surface Available for Contact	3,527	cm2	U.S. EPA, 2014	CS x CF3 x SA x SSAF x DABS x EF x ED
				SSAF	Soil to Skin Adherence Factor	0.12	mg/cm2/event	U.S. EPA, 2014	BW x AT
				DABS	Absorption Factor	Chemical Specific	unitless	U.S. EPA, 2004	
				EF	Exposure Frequency	210	days/year	(1)	
				ED	Exposure Duration	25	years	U.S. EPA, 2014	
				BW	Body Weight	80	kg	U.S. EPA, 2014	
				AT-C	Averaging Time (Cancer)	25550	days	U.S. EPA, 2014	
				AT-N	Averaging Time (Non-Cancer)	9125	days	U.S. EPA, 2014	

Notes:

1 - The OB, OD, and SF Units operates at a combine total of 210 days a year.

Sources:

U.S. EPA, 2002: Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites. OSWER 9285.6-10.

U.S. EPA, 2004: Risk Assessment Guidance for Superfund (Part E, Supplemental Guidance for Dermal Risk Assessment) Final. EPA/540/R/99/005.

USEPA, 2014: Human Health Evaluation Manual, Supplemental Guidance: Update of Standard Default Exposure Factors. OSWER 9200.1-120.

TABLE 4.5.RME
VALUES USED FOR DAILY INTAKE CALCULATIONS
REASONABLE MAXIMUM EXPOSURE
TOOELE ARMY DEPOT, TOOELE, UTAH

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

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Ingestion	Protected OB Worker	Adult	OB Unit	CS	Chemical concentration in soil	Max or 95% UCL	mg/kg	U.S. EPA, 2002	Intake (mg/kg/day) =
				IR-S	Ingestion Rate	100	mg/day	U.S. EPA, 2014	
				CF3	Conversion Factor 3	0.000001	kg/mg	--	CS x IRS x CF3 x FI x EF x ED
				FI	Fraction Ingested	1	unitless	U.S. EPA, 2014	BW x AT
				EF	Exposure Frequency	60	days/year	(1)	
				ED	Exposure Duration	25	years	U.S. EPA, 2014	
				BW	Body Weight	80	kg	U.S. EPA, 2014	
				AT-C	Averaging Time (Cancer)	25550	days	U.S. EPA, 2014	
				AT-N	Averaging Time (Non-Cancer)	9125	days	U.S. EPA, 2014	
Dermal	Protected OB Worker	Adult	OB Unit	CS	Chemical concentration in soil	Max or 95% UCL	mg/kg	U.S. EPA, 2002	Dermally Absorbed Dose (mg/kg/day) =
				CF3	Conversion Factor 3	0.000001	kg/mg	--	
				SA	Skin Surface Available for Contact	1,250	cm2	U.S. EPA, 2011	CS x CF3 x SA x SSAF x DABS x EF x ED
				SSAF	Soil to Skin Adherence Factor	0.12	mg/cm2/event	U.S. EPA, 2014	BW x AT
				DABS	Absorption Factor	Chemical Specific	unitless	U.S. EPA, 2004	
				EF	Exposure Frequency	60	days/year	(1)	
				ED	Exposure Duration	25	years	U.S. EPA, 2014	
				BW	Body Weight	80	kg	U.S. EPA, 2014	
				AT-C	Averaging Time (Cancer)	25550	days	U.S. EPA, 2014	
				AT-N	Averaging Time (Non-Cancer)	9125	days	U.S. EPA, 2014	

Notes

1 - OB Unit operates only 60 days a year.

Sources:

U.S. EPA, 2002: Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites. OSWER 9285.6-10.

U.S. EPA, 2004: Risk Assessment Guidance for Superfund (Part E, Supplemental Guidance for Dermal Risk Assessment) Final. EPA/540/R/99/005.

USEPA, 2011: Exposure Factors Handbook: 2011 Edition.

USEPA, 2014: Human Health Evaluation Manual, Supplemental Guidance: Update of Standard Default Exposure Factors. OSWER 9200.1-120.

TABLE 4.6.RME
VALUES USED FOR DAILY INTAKE CALCULATIONS
REASONABLE MAXIMUM EXPOSURE
TOOELE ARMY DEPOT, TOOELE, UTAH

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

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Ingestion	Protected OD Worker	Adult	OD Unit	CS	Chemical concentration in soil	Max or 95% UCL	mg/kg	U.S. EPA, 2002	Intake (mg/kg/day) =
				IR-S	Ingestion Rate	100	mg/day	U.S. EPA, 2014	
				CF3	Conversion Factor 3	0.000001	kg/mg	--	CS x IRS x CF3 x FI x EF x ED
				FI	Fraction Ingested	1	unitless	U.S. EPA, 2014	BW x AT
				EF	Exposure Frequency	120	days/year	(1)	
				ED	Exposure Duration	25	years	U.S. EPA, 2014	
				BW	Body Weight	80	kg	U.S. EPA, 2014	
				AT-C	Averaging Time (Cancer)	25550	days	U.S. EPA, 2014	
				AT-N	Averaging Time (Non-Cancer)	9125	days	U.S. EPA, 2014	
Dermal	Protected OD Worker	Adult	OD Unit	CS	Chemical concentration in soil	Max or 95% UCL	mg/kg	U.S. EPA, 2002	Dermally Absorbed Dose (mg/kg/day) =
				CF3	Conversion Factor 3	0.000001	kg/mg	--	
				SA	Skin Surface Available for Contact	1,250	cm2	U.S. EPA, 2011	CS x CF3 x SA x SSAF x DABS x EF x ED
				SSAF	Soil to Skin Adherence Factor	0.12	mg/cm2/event	U.S. EPA, 2014	BW x AT
				DABS	Absorption Factor	Chemical Specific	unitless	U.S. EPA, 2004	
				EF	Exposure Frequency	120	days/year	(1)	
				ED	Exposure Duration	25	years	U.S. EPA, 2014	
				BW	Body Weight	80	kg	U.S. EPA, 2014	
				AT-C	Averaging Time (Cancer)	25550	days	U.S. EPA, 2014	
				AT-N	Averaging Time (Non-Cancer)	9125	days	U.S. EPA, 2014	

Notes:

1 - OD Unit operates only 120 days a year.

Sources:

U.S. EPA, 2002: Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites. OSWER 9285.6-10.

U.S. EPA, 2004: Risk Assessment Guidance for Superfund (Part E, Supplemental Guidance for Dermal Risk Assessment) Final. EPA/540/R/99/005.

USEPA, 2011: Exposure Factors Handbook: 2011 Edition.

USEPA, 2014: Human Health Evaluation Manual, Supplemental Guidance: Update of Standard Default Exposure Factors. OSWER 9200.1-120.

TABLE 4.7.RME
VALUES USED FOR DAILY INTAKE CALCULATIONS
REASONABLE MAXIMUM EXPOSURE
TOOELE ARMY DEPOT, TOOELE, UTAH

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

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Ingestion	Protected SF Worker	Adult	SF Unit	CS	Chemical concentration in soil	Max or 95% UCL	mg/kg	U.S. EPA, 2002	Intake (mg/kg/day) =
				IR-S	Ingestion Rate	100	mg/day	U.S. EPA, 2014	
				CF3	Conversion Factor 3	0.000001	kg/mg	--	CS x IRS x CF3 x FI x EF x ED
				FI	Fraction Ingested	1	unitless	U.S. EPA, 2014	BW x AT
				EF	Exposure Frequency	60	days/year	(1)	
				ED	Exposure Duration	25	years	U.S. EPA, 2014	
				BW	Body Weight	70	kg	U.S. EPA, 2014	
				AT-C	Averaging Time (Cancer)	25550	days	U.S. EPA, 2014	
				AT-N	Averaging Time (Non-Cancer)	9125	days	U.S. EPA, 2014	
Dermal	Protected SF Worker	Adult	SF Unit	CS	Chemical concentration in soil	Max or 95% UCL	mg/kg	U.S. EPA, 2002	Dermally Absorbed Dose (mg/kg/day) =
				CF3	Conversion Factor 3	0.000001	kg/mg	--	
				SA	Skin Surface Available for Contact	1,250	cm2	U.S. EPA, 2011	CS x CF3 x SA x SSAF x DABS x EF x ED
				SSAF	Soil to Skin Adherence Factor	0.12	mg/cm2/event	U.S. EPA, 2014	BW x AT
				DABS	Absorption Factor	Chemical Specific	unitless	U.S. EPA, 2004	
				EF	Exposure Frequency	60	days/year	(1)	
				ED	Exposure Duration	25	years	U.S. EPA, 2014	
				BW	Body Weight	70	kg	U.S. EPA, 2014	
				AT-C	Averaging Time (Cancer)	25550	days	U.S. EPA, 2014	
				AT-N	Averaging Time (Non-Cancer)	9125	days	U.S. EPA, 2014	

Notes:

1 - SF Unit operates only 60 days a year.

Sources:

U.S. EPA, 2002: Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites. OSWER 9285.6-10.

U.S. EPA, 2004: Risk Assessment Guidance for Superfund (Part E, Supplemental Guidance for Dermal Risk Assessment) Final. EPA/540/R/99/005.

USEPA, 2011: Exposure Factors Handbook: 2011 Edition.

USEPA, 2014: Human Health Evaluation Manual, Supplemental Guidance: Update of Standard Default Exposure Factors. OSWER 9200.1-120.

TABLE 4.8.RME
VALUES USED FOR DAILY INTAKE CALCULATIONS
REASONABLE MAXIMUM EXPOSURE
TOOELE ARMY DEPOT, TOOELE, UTAH

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

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Ingestion	Protected OB/OD/SF Worker	Adult	All Units	CS	Chemical concentration in soil	Max or 95% UCL	mg/kg	U.S. EPA, 2002	Intake (mg/kg/day) =
				IR-S	Ingestion Rate	100	mg/day	U.S. EPA, 2014	
				CF3	Conversion Factor 3	0.000001	kg/mg	--	CS x IRS x CF3 x FI x EF x ED
				FI	Fraction Ingested	1	unitless	U.S. EPA, 2014	BW x AT
				EF	Exposure Frequency	210	days/year	(1)	
				ED	Exposure Duration	25	years	U.S. EPA, 2014	
				BW	Body Weight	80	kg	U.S. EPA, 2014	
				AT-C	Averaging Time (Cancer)	25550	days	U.S. EPA, 2014	
				AT-N	Averaging Time (Non-Cancer)	9125	days	U.S. EPA, 2014	
Dermal	Protected OB/OD/SF Worker	Adult	All Units	CS	Chemical concentration in soil	Max or 95% UCL	mg/kg	U.S. EPA, 2002	Dermally Absorbed Dose (mg/kg/day) =
				CF3	Conversion Factor 3	0.000001	kg/mg	--	
				SA	Skin Surface Available for Contact	1250	cm2	U.S. EPA, 2011	CS x CF3 x SA x SSAF x DABS x EF x ED
				SSAF	Soil to Skin Adherence Factor	0.12	mg/cm2/event	U.S. EPA, 2014	BW x AT
				DABS	Absorption Factor	Chemical Specific	unitless	U.S. EPA, 2004	
				EF	Exposure Frequency	210	days/year	(1)	
				ED	Exposure Duration	25	years	U.S. EPA, 2014	
				BW	Body Weight	80	kg	U.S. EPA, 2014	
				AT-C	Averaging Time (Cancer)	25550	days	U.S. EPA, 2014	
				AT-N	Averaging Time (Non-Cancer)	9125	days	U.S. EPA, 2014	

Notes:

1 - The OB, OD, and SF Units operates at a combine total of 210 days a year.

Sources:

U.S. EPA, 2002: Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites. OSWER 9285.6-10.

U.S. EPA, 2004: Risk Assessment Guidance for Superfund (Part E, Supplemental Guidance for Dermal Risk Assessment) Final. EPA/540/R/99/005.

USEPA, 2011: Exposure Factors Handbook: 2011 Edition.

USEPA, 2014: Human Health Evaluation Manual, Supplemental Guidance: Update of Standard Default Exposure Factors. OSWER 9200.1-120.

TABLE 4.9.RME
VALUES USED FOR DAILY INTAKE CALCULATIONS
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Future
Medium: Surface Soil
Exposure Medium: Surface Soil

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Ingestion	Outdoor Worker	Adult	OB Unit	CS	Chemical concentration in soil	Max or 95% UCL	mg/kg	U.S. EPA, 2002	Intake (mg/kg/day) =
				IR-S	Ingestion Rate	100	mg/day	U.S. EPA, 2014	
				CF3	Conversion Factor 3	0.000001	kg/mg	--	Cs x IRS x CF3 x FI x EF x ED
				FI	Fraction Ingested	1	unitless	U.S. EPA, 2014	BW x AT
				EF	Exposure Frequency	250	days/year	U.S. EPA, 2014	
				ED1	Exposure Duration	25	years	U.S. EPA, 2014	
				BW	Body Weight	80	kg	U.S. EPA, 2014	
				AT-C	Averaging Time (Cancer)	25,550	days	U.S. EPA, 2014	
				AT-N	Averaging Time (Non-Cancer)	9,125	days	U.S. EPA, 2014	
Dermal	Outdoor Worker	Adult	OB Unit	CS	Chemical concentration in soil	Max or 95% UCL	mg/kg	U.S. EPA, 2002	Dermally Absorbed Dose (mg/kg/day) =
				CF3	Conversion Factor 3	0.000001	kg/mg	--	
				SA	Skin Surface Available for Contact	3,527	cm2	U.S. EPA, 2014	CS x CF3 x SA x SSAF x DABS x EV x EF x ED
				SSAF	Soil to Skin Adherence Factor	0.12	mg/cm2/event	U.S. EPA, 2014	BW x AT
				DABS	Absorption Factor	Chemical Specific	unitless	U.S. EPA, 2004	
				EV	Events Frequency	1	events/day	USEPA, 2004	
				EF	Exposure Frequency	250	days/year	U.S. EPA, 2014	
				ED1	Exposure Duration	25	years	U.S. EPA, 2014	
				BW	Body Weight	80	kg	U.S. EPA, 2014	
				AT-C	Averaging Time (Cancer)	25,550	days	U.S. EPA, 2014	
				AT-N	Averaging Time (Non-Cancer)	9,125	days	U.S. EPA, 2014	

Sources:

U.S. EPA, 2002: Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites. OSWER 9285.6-10.

U.S. EPA, 2004: Risk Assessment Guidance for Superfund (Part E, Supplemental Guidance for Dermal Risk Assessment) Final. EPA/540/R/99/005.

USEPA, 2014: Human Health Evaluation Manual, Supplemental Guidance: Update of Standard Default Exposure Factors. OSWER 9200.1-120.

TABLE 4.10.RME
VALUES USED FOR DAILY INTAKE CALCULATIONS
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Future
Medium: Surface Soil
Exposure Medium: Surface Soil

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Ingestion	Outdoor Worker	Adult	OD Unit	CS	Chemical concentration in soil	Max or 95% UCL	mg/kg	U.S. EPA, 2002	Intake (mg/kg/day) =
				IR-S	Ingestion Rate	100	mg/day	U.S. EPA, 2014	
				CF3	Conversion Factor 3	0.000001	kg/mg	--	Cs x IRS x CF3 x FI x EF x ED
				FI	Fraction Ingested	1	unitless	U.S. EPA, 2014	BW x AT
				EF	Exposure Frequency	250	days/year	U.S. EPA, 2014	
				ED1	Exposure Duration	25	years	U.S. EPA, 2014	
				BW	Body Weight	80	kg	U.S. EPA, 2014	
				AT-C	Averaging Time (Cancer)	25,550	days	U.S. EPA, 2014	
				AT-N	Averaging Time (Non-Cancer)	9,125	days	U.S. EPA, 2014	
Dermal	Outdoor Worker	Adult	OD Unit	CS	Chemical concentration in soil	Max or 95% UCL	mg/kg	U.S. EPA, 2002	Dermally Absorbed Dose (mg/kg/day) =
				CF3	Conversion Factor 3	0.000001	kg/mg	--	
				SA	Skin Surface Available for Contact	3,527	cm2	U.S. EPA, 2014	CS x CF3 x SA x SSAF x DABS x EV x EF x ED
				SSAF	Soil to Skin Adherence Factor	0.12	mg/cm2/event	U.S. EPA, 2014	BW x AT
				DABS	Absorption Factor	Chemical Specific	unitless	U.S. EPA, 2004	
				EV	Events Frequency	1	events/day	USEPA, 2004	
				EF	Exposure Frequency	250	days/year	U.S. EPA, 2014	
				ED1	Exposure Duration	25	years	U.S. EPA, 2014	
				BW	Body Weight	80	kg	U.S. EPA, 2014	
				AT-C	Averaging Time (Cancer)	25,550	days	U.S. EPA, 2014	
				AT-N	Averaging Time (Non-Cancer)	9,125	days	U.S. EPA, 2014	

Sources:

U.S. EPA, 2002: Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites. OSWER 9285.6-10.

U.S. EPA, 2004: Risk Assessment Guidance for Superfund (Part E, Supplemental Guidance for Dermal Risk Assessment) Final. EPA/540/R/99/005.

USEPA, 2014: Human Health Evaluation Manual, Supplemental Guidance: Update of Standard Default Exposure Factors. OSWER 9200.1-120.

TABLE 4.11.RME
VALUES USED FOR DAILY INTAKE CALCULATIONS
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Future
Medium: Surface Soil
Exposure Medium: Surface Soil

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Ingestion	Outdoor Worker	Adult	SF Unit	CS	Chemical concentration in soil	Max or 95% UCL	mg/kg	U.S. EPA, 2002	Intake (mg/kg/day) =
				IR-S	Ingestion Rate	100	mg/day	U.S. EPA, 2014	
				CF3	Conversion Factor 3	0.000001	kg/mg	--	Cs x IRS x CF3 x FI x EF x ED
				FI	Fraction Ingested	1	unitless	U.S. EPA, 2014	BW x AT
				EF	Exposure Frequency	250	days/year	U.S. EPA, 2014	
				ED1	Exposure Duration	25	years	U.S. EPA, 2014	
				BW	Body Weight	80	kg	U.S. EPA, 2014	
				AT-C	Averaging Time (Cancer)	25,550	days	U.S. EPA, 2014	
				AT-N	Averaging Time (Non-Cancer)	9,125	days	U.S. EPA, 2014	
Dermal	Outdoor Worker	Adult	SF Unit	CS	Chemical concentration in soil	Max or 95% UCL	mg/kg	U.S. EPA, 2002	Dermally Absorbed Dose (mg/kg/day) =
				CF3	Conversion Factor 3	0.000001	kg/mg	--	
				SA	Skin Surface Available for Contact	3,527	cm2	U.S. EPA, 2014	CS x CF3 x SA x SSAF x DABS x EV x EF x ED
				SSAF	Soil to Skin Adherence Factor	0.12	mg/cm2/event	U.S. EPA, 2014	BW x AT
				DABS	Absorption Factor	Chemical Specific	unitless	U.S. EPA, 2004	
				EV	Events Frequency	1	events/day	USEPA, 2004	
				EF	Exposure Frequency	250	days/year	U.S. EPA, 2014	
				ED1	Exposure Duration	25	years	U.S. EPA, 2014	
				BW	Body Weight	80	kg	U.S. EPA, 2014	
				AT-C	Averaging Time (Cancer)	25,550	days	U.S. EPA, 2014	
				AT-N	Averaging Time (Non-Cancer)	9,125	days	U.S. EPA, 2014	

Sources:

U.S. EPA, 2002: Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites. OSWER 9285.6-10.

U.S. EPA, 2004: Risk Assessment Guidance for Superfund (Part E, Supplemental Guidance for Dermal Risk Assessment) Final. EPA/540/R/99/005.

USEPA, 2014: Human Health Evaluation Manual, Supplemental Guidance: Update of Standard Default Exposure Factors. OSWER 9200.1-120.

TABLE 4.12.RME
VALUES USED FOR DAILY INTAKE CALCULATIONS
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Future
Medium: Surface Soil
Exposure Medium: Surface Soil

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Ingestion	Outdoor Worker	Adult	All Units	CS	Chemical concentration in soil	Max or 95% UCL	mg/kg	U.S. EPA, 2002	Intake (mg/kg/day) =
				IR-S	Ingestion Rate	100	mg/day	U.S. EPA, 2014	
				CF3	Conversion Factor 3	0.000001	kg/mg	--	Cs x IRS x CF3 x FI x EF x ED
				FI	Fraction Ingested	1	unitless	U.S. EPA, 2014	BW x AT
				EF	Exposure Frequency	250	days/year	U.S. EPA, 2014	
				ED1	Exposure Duration	25	years	U.S. EPA, 2014	
				BW	Body Weight	80	kg	U.S. EPA, 2014	
				AT-C	Averaging Time (Cancer)	25,550	days	U.S. EPA, 2014	
				AT-N	Averaging Time (Non-Cancer)	9,125	days	U.S. EPA, 2014	
Dermal	Outdoor Worker	Adult	All Units	CS	Chemical concentration in soil	Max or 95% UCL	mg/kg	U.S. EPA, 2002	Dermally Absorbed Dose (mg/kg/day) =
				CF3	Conversion Factor 3	0.000001	kg/mg	--	
				SA	Skin Surface Available for Contact	3,527	cm2	U.S. EPA, 2014	CS x CF3 x SA x SSAF x DABS x EV x EF x ED
				SSAF	Soil to Skin Adherence Factor	0.12	mg/cm2/event	U.S. EPA, 2014	BW x AT
				DABS	Absorption Factor	Chemical Specific	unitless	U.S. EPA, 2004	
				EV	Events Frequency	1	events/day	USEPA, 2004	
				EF	Exposure Frequency	250	days/year	U.S. EPA, 2014	
				ED1	Exposure Duration	25	years	U.S. EPA, 2014	
				BW	Body Weight	80	kg	U.S. EPA, 2014	
				AT-C	Averaging Time (Cancer)	25,550	days	U.S. EPA, 2014	
				AT-N	Averaging Time (Non-Cancer)	9,125	days	U.S. EPA, 2014	

Sources:

U.S. EPA, 2002: Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites. OSWER 9285.6-10.

U.S. EPA, 2004: Risk Assessment Guidance for Superfund (Part E, Supplemental Guidance for Dermal Risk Assessment) Final. EPA/540/R/99/005.

USEPA, 2014: Human Health Evaluation Manual, Supplemental Guidance: Update of Standard Default Exposure Factors. OSWER 9200.1-120.

LIST OF TABLES
RAGS PART D TABLE 5
NON-CANCER TOXICITY DATA

Table No.

5-1 Non-Cancer Toxicity Data - Oral/Dermal

TABLE 5.1
NON-CANCER TOXICITY DATA -- ORAL/DERMAL
TOOELE ARMY DEPOT, TOOELE, UTAH

Chemical of Potential Concern	Chronic/ Subchronic	Oral RfD		Oral Absorption Efficiency for Dermal[1]	Absorbed RfD for Dermal[2]		Primary Target Organ(s)	Combined Uncertainty/Modifying Factors	RfD:Target Organ(s)	
		Value	Units		Value	Units			Source(s)	Date(s) (MM/DD/YYYY)
Explosives										
1,3,5-Trinitrobenzene	Chronic	3.0E-02	mg/kg/day	1	3.0E-02	mg/kg/day	Blood, Spleen	100	IRIS	6/3/2015
1,3-Dinitrobenzene	Chronic	1.0E-04	mg/kg/day	1	1.0E-04	mg/kg/day	Spleen	3000	IRIS	6/3/2015
2,4,6-Trinitrotoluene	Chronic	5.0E-04	mg/kg/day	1	5.0E-04	mg/kg/day	Liver	1000	IRIS	6/3/2015
2,4-Dinitrotoluene	Chronic	2.0E-03	mg/kg/day	1	2.0E-03	mg/kg/day	Central Nervous System, Liver	100	IRIS	6/3/2015
2,6-Dinitrotoluene	Chronic	3.0E-04	mg/kg/day	1	3.0E-04	mg/kg/day	Spleen	10000	PPRTV	4/10/2013
2-Amino-4,6-Dinitrotoluene[3]	Chronic	2.0E-03	mg/kg/day	1	2.0E-03	mg/kg/day	Central Nervous System, Liver	100	IRIS	6/3/2015
2-Nitrotoluene	Chronic	9.0E-04	mg/kg/day	1	9.0E-04	mg/kg/day	Bone	1000	PPRTV	8/15/2008
4-Amino-2,6-Dinitrotoluene[3]	Chronic	2.0E-03	mg/kg/day	1	2.0E-03	mg/kg/day	Central Nervous System, Liver	100	IRIS	6/3/2015
4-Nitrotoluene	Chronic	4.0E-03	mg/kg/day	1	4.0E-03	mg/kg/day	Spleen	300	PPRTV	9/28/2007
HMX	Chronic	5.0E-02	mg/kg/day	1	5.0E-02	mg/kg/day	Liver	1000	IRIS	6/3/2015
Nitroglycerin	Chronic	1.0E-04	mg/kg/day	1	1.0E-04	mg/kg/day	Blood	300	PPRTV	8/22/2006
PETN	Chronic	2.0E-03	mg/kg/day	1	2.0E-03	mg/kg/day	Whole Body	300	PPRTV	9/20/2010
Perchlorate	Chronic	7.0E-04	mg/kg/day	1	7.0E-04	mg/kg/day	Thyroid	10/1	IRIS	6/3/2015
RDX	Chronic	3.0E-03	mg/kg/day	1	3.0E-03	mg/kg/day	Prostate	100	IRIS	6/3/2015
Tetryl	Chronic	2.0E-03	mg/kg/day	1	2.0E-03	mg/kg/day	Blood	3000	PPRTV	8/28/2013
Dioxins/Furans										
2,3,7,8-TCDD Equivalents	Chronic	7.0E-10	mg/kg/day	1	7.0E-10	mg/kg/day	Reproductive	30	IRIS	6/3/2015
Inorganics										
Aluminum	Chronic	1.0E+00	mg/kg/day	1	1.0E+00	mg/kg/day	Central Nervous System	100	PPRTV	10/23/206
Antimony	Chronic	4.0E-04	mg/kg/day	0.15	6.0E-05	mg/kg/day	Blood	1000	IRIS	6/3/2015
Arsenic	Chronic	3.0E-04	mg/kg/day	1	3.0E-04	mg/kg/day	Skin, Cardiovascular System	3	IRIS	6/3/2015
Barium	Chronic	2.0E-01	mg/kg/day	0.07	1.4E-02	mg/kg/day	Kidney	300	IRIS	6/3/2015
Beryllium	Chronic	2.0E-03	mg/kg/day	0.007	1.4E-05	mg/kg/day	Gastrointestinal	300	IRIS	6/3/2015
Cadmium	Chronic	5.0E-04	mg/kg/day	0.05	2.5E-05	mg/kg/day	Kidney	10	IRIS	6/3/2015
Chromium[4]	Chronic	1.5E+00	mg/kg/day	0.013	2.0E-02	mg/kg/day	None Specified	100	IRIS	6/3/2015
Cobalt	Chronic	3.0E-04	mg/kg/day	1	3.0E-04	mg/kg/day	Thyroid	3000	PPRTV	8/25/2008
Copper	Chronic	4.0E-02	mg/kg/day	1	4.0E-02	mg/kg/day	Gastrointestinal System	NA	HEAST	7/1997
Iron	Chronic	7.0E-01	mg/kg/day	1	7.0E-01	mg/kg/day	Gastrointestinal System	1.5	PPRTV	9/11/2006
Lead	Chronic	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese[5]	Chronic	2.4E-02	mg/kg/day	0.04	9.6E-04	mg/kg/day	Central Nervous System	1	IRIS	6/3/2015
Mercury[6]	Chronic	3.0E-04	mg/kg/day	0.07	2.1E-05	mg/kg/day	Immune System	1000	IRIS	6/3/2015
Nickel	Chronic	2.0E-02	mg/kg/day	0.04	8.0E-04	mg/kg/day	Body Weight	300	IRIS	6/3/2015
Selenium	Chronic	5.0E-03	mg/kg/day	1	5.0E-03	mg/kg/day	Whole Body	3	IRIS	6/3/2015
Silver	Chronic	5.0E-03	mg/kg/day	1	5.0E-03	mg/kg/day	Skin	3	IRIS	6/3/2015
Thallium	Chronic	1.0E-05	mg/kg/day	1	1.0E-05	mg/kg/day	Skin	3000	PPRTV	9/17/2012
Vanadium	Chronic	5.0E-03	mg/kg/day	0.026	1.3E-04	mg/kg/day	Kidney	NA	EPA RSL	1/2015
Zinc	Chronic	3.0E-01	mg/kg/day	1	3.0E-01	mg/kg/day	Blood	3	IRIS	6/3/2015
Miscellaneous Compounds										
Perchlorate	Chronic	7.0E-04	mg/kg/day	1	7.0E-04	mg/kg/day	Thyroid	10	IRIS	6/3/2015

Notes:
1 - U.S. EPA, 2004: Risk Assessment Guidance for Superfund (Part E, Supplemental Guidance for Dermal Risk Assessment) Interim. EPA/540/R/99/005.
2 - Adjusted dermal RfD = Oral RfD x Oral Absorption Efficiency for Dermal.
3 - The oral reference dose for 2,4-Dintrotoluene is used as a surrogate for 2-Amino-4,6-Dinitrotoluene and 4-Amino-2,6-Dinitrotoluene.
4 - Values are for trivalent chromium.
5 - Adjusted IRIS value in accordance with IRIS.
6 - Values are for mercuric chlordie.

Definitions:
EPA RSL - EPA Regional Screening Level Table, January 2015.
HEAST = Health Effects Assessment Summary Tables
IRIS = Integrated Risk Information System
NA = Not Available.
PPRTV = Provisional Peer Reviewed Toxicity Value.

LIST OF TABLES
RAGS PART D TABLE 6
CANCER TOXICITY DATA

Table No.

6-1 Cancer Toxicity Data - Oral/Dermal

TABLE 6.1
CANCER TOXICITY DATA -- ORAL/DERMAL
TOOELE ARMY DEPOT, TOOELE, UTAH

Chemical of Potential Concern	Oral Cancer Slope Factor		Oral Absorption Efficiency for Dermal[1]	Absorbed Cancer Slope Factor for Dermal[2]		Weight of Evidence/ Cancer Guideline Description	Oral CSF	
	Value	Units		Value	Units		Source(s)	Date(s) (MM/DD/YYYY)
Explosives								
1,3,5-Trinitrobenzene	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dinitrobenzene	NA	NA	NA	NA	NA	D (Not classifiable as to human carcinogenicity)	IRIS	6/3/2015
2,4,6-Trinitrotoluene	3.0E-02	$(mg/kg/day)^{-1}$	1	3.0E-02	$(mg/kg/day)^{-1}$	C (Possible human carcinogen)	IRIS	6/3/2015
2,4-Dinitrotoluene	3.1E-01	$(mg/kg/day)^{-1}$	1	3.1E-01	$(mg/kg/day)^{-1}$	NA	Cal EPA	6/1/2009
2,6-Dinitrotoluene	1.5E+00	$(mg/kg/day)^{-1}$	1	1.5E+00	$(mg/kg/day)^{-1}$	NA	PPRTV	4/10/2013
2-Amino-4,6-Dinitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrotoluene	2.2E-01	$(mg/kg/day)^{-1}$	1	2.2E-01	$(mg/kg/day)^{-1}$	NA	PPRTV	8/15/2008
4-Amino-2,6-Dinitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrotoluene	1.6E-02	$(mg/kg/day)^{-1}$	1	1.6E-02	$(mg/kg/day)^{-1}$	NA	PPRTV	9/28/2007
HMX	NA	NA	NA	NA	NA	D (Not classifiable as to human carcinogenicity)	IRIS	6/3/2015
Nitroglycerin	1.7E-02	$(mg/kg/day)^{-1}$	1	1.7E-02	$(mg/kg/day)^{-1}$	NA	PPRTV	8/22/2006
PETN	4.0E-03	$(mg/kg/day)^{-1}$	1	4.0E-03	$(mg/kg/day)^{-1}$	NA	PPRTV	9/20/2010
Perchlorate	NA	NA	NA	NA	NA	NA	NA	NA
RDX	1.1E-01	$(mg/kg/day)^{-1}$	1	1.1E-01	$(mg/kg/day)^{-1}$	C (Possible human carcinogen)	IRIS	6/3/2015
Tetryl	NA	NA	NA	NA	NA	NA	NA	NA
Dioxins/Furans								
2,3,7,8-TCDD Equivalents	1.3E+05	$(mg/kg/day)^{-1}$	1	1.3E+05	$(mg/kg/day)^{-1}$	B2 (Probable human carcinogen)	Cal EPA	9/2009
Inorganics								
Aluminum	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	1.5E+00	$(mg/kg/day)^{-1}$	1	1.5E+00	$(mg/kg/day)^{-1}$	A (Human carcinogen)	IRIS	6/3/2015
Barium	NA	NA	NA	NA	NA	Not likely to be carcinogenic to humans	IRIS	6/3/2015
Beryllium	NA	NA	NA	NA	NA	Carcinogenic potential cannot be determined	IRIS	6/3/2015
Cadmium	NA	NA	NA	NA	NA	B1 (Probable human carcinogen)	IRIS	6/3/2015
Chromium	NA	NA	NA	NA	NA	Carcinogenic potential cannot be determined	IRIS	6/3/2015
Cobalt	NA	NA	NA	NA	NA	NA	NA	NA
Copper	NA	NA	NA	NA	NA	NA	NA	NA
Iron	NA	NA	NA	NA	NA	NA	NA	NA
Lead	NA	NA	NA	NA	NA	B2 (Probable human carcinogen)	IRIS	6/3/2015
Manganese	NA	NA	NA	NA	NA	D (Not classifiable as to human carcinogenicity)	IRIS	6/3/2015
Mercury	NA	NA	NA	NA	NA	C (Possible human carcinogen)	IRIS	6/3/2015
Nickel	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	NA	NA	NA	NA	NA	D (Not classifiable as to human carcinogenicity)	IRIS	6/3/2015

TABLE 6.1
CANCER TOXICITY DATA -- ORAL/DERMAL
TOOELE ARMY DEPOT, TOOELE, UTAH

Chemical of Potential Concern	Oral Cancer Slope Factor		Oral Absorption Efficiency for Dermal[1]	Absorbed Cancer Slope Factor for Dermal[2]		Weight of Evidence/ Cancer Guideline Description	Oral CSF	
	Value	Units		Value	Units		Source(s)	Date(s) (MM/DD/YYYY)
Silver	NA	NA	NA	NA	NA	D (Not classifiable as to human carcinogenicity)	IRIS	6/3/2015
Thallium	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	NA	NA	NA	NA	NA	D (Not classifiable as to human carcinogenicity)	IRIS	6/3/2015
Miscellaneous Compounds								
Perchlorate	NA	NA	NA	NA	NA	Not likely to be carcinogenic to humans	IRIS	6/3/2015

Notes:
1 - USEPA, 2004: Risk Assessment Guidance for Superfund (Part E, Supplemental Guidance for Dermal Risk Assessment) Interim. EPA/540/R/99/005.
2 - Adjusted cancer slope factor for dermal = Oral cancer slope factor / Oral absorption efficiency for dermal.
Cal EPA = California Environmental Protection Agency, Technical Support Document for Describing Available Cancer Slope Factors, June 2009.
IRIS = Integrated Risk Information System.
NA = Not Available.
PPRTV = Provisional Peer Reviewed Toxicity Value.

LIST OF TABLES
RAGS PART D TABLE 7
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Table No.	REASONABLE MAXIMUM EXPOSURES
7.1.RME	Unprotected Worker - OB Unit - 2006 Surface Soil Samples
7.2.RME	Unprotected Worker - OD Unit - 2006 Surface Soil Samples
7.3.RME	Unprotected Worker - SF Unit - 2006 Surface Soil Samples
7.4.RME	Unprotected Worker - All Units - 2006 Surface Soil Samples
7.5.RME	Protected Worker - OB Unit - 2006 Surface Soil Samples
7.6.RME	Protected Worker - OD Unit - 2006 Surface Soil Samples
7.7.RME	Protected Worker - SF Unit - 2006 Surface Soil Samples
7.8.RME	Protected Worker - All Units - 2006 Surface Soil Samples
7.9.RME	Outdoor Worker - OB Unit - 2006 Surface Soil Samples
7.10.RME	Outdoor Worker - OD Unit - 2006 Surface Soil Samples
7.11.RME	Outdoor Worker - SF Unit - 2006 Surface Soil Samples
7.12.RME	Outdoor Worker - All Units - 2006 Surface Soil Samples
7.13.RME	Unprotected Worker - OB Unit - 2007 Surface Soil Samples
7.14.RME	Unprotected Worker - OD Unit - 2007 Surface Soil Samples
7.15.RME	Unprotected Worker - All Units - 2007 Surface Soil Samples
7.16.RME	Protected Worker - OB Unit - 2007 Surface Soil Samples
7.17.RME	Protected Worker - OD Unit - 2007 Surface Soil Samples
7.18.RME	Protected Worker - All Units - 2007 Surface Soil Samples
7.19.RME	Outdoor Worker - OB Unit - 2007 Surface Soil Samples
7.20.RME	Outdoor Worker - OD Unit - 2007 Surface Soil Samples
7.21.RME	Outdoor Worker - All Units - 2007 Surface Soil Samples
7.22.RME	Unprotected Worker - OB Unit - 2009 Surface Soil Samples
7.23.RME	Unprotected Worker - OD Unit - 2009 Surface Soil Samples
7.24.RME	Unprotected Worker - SF Unit - 2009 Surface Soil Samples
7.25.RME	Unprotected Worker - All Units - 2009 Surface Soil Samples
7.26.RME	Protected Worker - OB Unit - 2009 Surface Soil Samples
7.27.RME	Protected Worker - OD Unit - 2009 Surface Soil Samples
7.28.RME	Protected Worker - SF Unit - 2009 Surface Soil Samples
7.29.RME	Protected Worker - All Units - 2009 Surface Soil Samples
7.30.RME	Outdoor Worker - OB Unit - 2009 Surface Soil Samples
7.31.RME	Outdoor Worker - OD Unit - 2009 Surface Soil Samples
7.32.RME	Outdoor Worker - SF Unit - 2009 Surface Soil Samples
7.33.RME	Outdoor Worker - All Units - 2009 Surface Soil Samples
7.34.RME	Unprotected Worker - OB Unit - 2014 Surface Soil Samples
7.35.RME	Unprotected Worker - OD Unit - 2014 Surface Soil Samples
7.36.RME	Unprotected Worker - SF Unit - 2014 Surface Soil Samples
7.37.RME	Unprotected Worker - All Units - 2014 Surface Soil Samples
7.38.RME	Protected Worker - OB Unit - 2014 Surface Soil Samples
7.39.RME	Protected Worker - OD Unit - 2014 Surface Soil Samples
7.40.RME	Protected Worker - SF Unit - 2014 Surface Soil Samples
7.41.RME	Protected Worker - All Units - 2014 Surface Soil Samples
7.42.RME	Outdoor Worker - OB Unit - 2014 Surface Soil Samples
7.43.RME	Outdoor Worker - OD Unit - 2014 Surface Soil Samples
7.44.RME	Outdoor Worker - SF Unit - 2014 Surface Soil Samples
7.45.RME	Outdoor Worker - All Units - 2014 Surface Soil Samples

2006 SURFACE SOIL SAMPLES

TABLE 7.1.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2006 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Unprotected OB Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	OB Unit	Ingestion	1,3,5-Trinitrobenzene	0.015	mg/kg	1.1E-09	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	3.1E-09	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.0000001
				2,4-Dinitrotoluene	0.500	mg/kg	3.7E-08	(mg/kg/day)	3.1E-01	$(mg/kg/day)^{-1}$	1.1E-08	1.0E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00005
				2-Amino-4,6-Dinitrotoluene	0.064	mg/kg	4.7E-09	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.3E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000007
				4-Amino-2,6-Dinitrotoluene	0.051	mg/kg	3.7E-09	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.0E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000005
				HMX	0.300	mg/kg	2.2E-08	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	6.2E-08	(mg/kg/day)	5.0E-02	(mg/kg/day)	0.000001
				Nitroglycerin	85.0	mg/kg	6.2E-06	(mg/kg/day)	1.7E-02	$(mg/kg/day)^{-1}$	1.1E-07	1.7E-05	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.2
				RDX	0.86	mg/kg	6.3E-08	(mg/kg/day)	1.1E-01	$(mg/kg/day)^{-1}$	6.9E-09	1.8E-07	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.00006
				Perchlorate	0.008	mg/kg	5.9E-10	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.6E-09	(mg/kg/day)	7.0E-04	(mg/kg/day)	0.000002
				Aluminum	8,653	mg/kg	6.4E-04	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.8E-03	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.002
				Arsenic	6.80	mg/kg	5.0E-07	(mg/kg/day)	1.5E+00	$(mg/kg/day)^{-1}$	7.5E-07	1.4E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.005
				Barium	200	mg/kg	1.5E-05	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	4.1E-05	(mg/kg/day)	2.0E-01	(mg/kg/day)	0.0002
				Beryllium	0.570	mg/kg	4.2E-08	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.2E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00006
				Cadmium	2.20	mg/kg	1.6E-07	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	4.5E-07	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.0009
				Chromium	11.7	mg/kg	8.6E-07	(mg/kg/day)	5.0E-01	$(mg/kg/day)^{-1}$	4.3E-07	2.4E-06	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.0008
				Copper	147	mg/kg	1.1E-05	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	3.0E-05	(mg/kg/day)	4.0E-02	(mg/kg/day)	0.0008
				Iron	9,983	mg/kg	7.3E-04	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	2.1E-03	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.003
				Lead	917	mg/kg	6.7E-05	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.9E-04	(mg/kg/day)	NA	(mg/kg/day)	--
				Manganese	360	mg/kg	2.6E-05	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	7.4E-05	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.003
				Mercury	0.115	mg/kg	8.4E-09	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	2.4E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.00008
				Nickel	11.3	mg/kg	8.3E-07	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	2.3E-06	(mg/kg/day)	2.0E-02	(mg/kg/day)	0.0001
				Selenium	0.519	mg/kg	3.8E-08	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.1E-07	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.00002
				Silver	0.539	mg/kg	4.0E-08	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.1E-07	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.00002
				Vanadium	12.5	mg/kg	9.2E-07	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	2.6E-06	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.0005
				Zinc	115	mg/kg	8.4E-06	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	2.4E-05	(mg/kg/day)	3.0E-01	(mg/kg/day)	0.00008
			Exp. Route Total								1.3E-06					0.2
			Dermal	1,3,5-Trinitrobenzene	0.015	mg/kg	8.9E-11	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	2.5E-10	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.00000001
				2,4-Dinitrotoluene	0.500	mg/kg	1.6E-08	(mg/kg/day)	3.1E-01	$(mg/kg/day)^{-1}$	4.9E-09	4.4E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00002
				2-Amino-4,6-Dinitrotoluene	0.064	mg/kg	1.2E-10	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	3.3E-10	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0000002
				4-Amino-2,6-Dinitrotoluene	0.051	mg/kg	1.4E-10	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	4.0E-10	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0000002
				HMX	0.300	mg/kg	5.6E-10	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.6E-09	(mg/kg/day)	5.0E-02	(mg/kg/day)	0.00000003
				Nitroglycerin	85.0	mg/kg	2.6E-06	(mg/kg/day)	1.7E-02	$(mg/kg/day)^{-1}$	4.5E-08	7.4E-06	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.07
				RDX	0.86	mg/kg	4.0E-09	(mg/kg/day)	1.1E-01	$(mg/kg/day)^{-1}$	4.4E-10	1.1E-08	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.000004
				Perchlorate	0.008	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-04	(mg/kg/day)	--
				Aluminum	8,653	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Arsenic	6.80	mg/kg	6.3E-08	(mg/kg/day)	1.5E+00	$(mg/kg/day)^{-1}$	9.5E-08	1.8E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0006
				Barium	200	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-02	(mg/kg/day)	--
				Beryllium	0.570	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-05	(mg/kg/day)	--
				Cadmium	2.20	mg/kg	6.8E-10	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.9E-09	(mg/kg/day)	2.5E-05	(mg/kg/day)	0.00008
				Chromium	11.7	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--
				Copper	147	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	4.0E-02	(mg/kg/day)	--
				Iron	9,983	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Lead	917	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)	--
				Manganese	360	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
				Mercury	0.115	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Nickel	11.3	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	8.0E-04	(mg/kg/day)	--
				Selenium	0.519	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	5.0E-03	(mg/kg/day)	--
				Silver	0.539	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	2.0E-04	(mg/kg/day)	--
				Vanadium	12.5	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.3E-04	(mg/kg/day)	--
				Zinc	115	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-01	(mg/kg/day)	--
			Exp. Route Total								1.5E-07					0.07
		Exposure Point Total									1.4E-06					0.3
	Exposure Medium Total										1.4E-06					0.3
Medium Total											1.4E-06					0.3
										Total of Receptor Risks Across All Media	1.4E-06				Total of Receptor Hazards Across All Media	0.3

TABLE 7.2.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2006 SURFACE SOIL SAMPLES

REASONABLE MAXIMUM EXPOSURES

TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Unprotected OD Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	OD Unit	Ingestion	1,3,5-Trinitrobenzene	0.155	mg/kg	2.3E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	6.4E-08	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.000002
				2,4,6-Trinitrotoluene	6.60	mg/kg	9.7E-07	(mg/kg/day)	3.0E-02	(mg/kg/day)$^{-1}$	2.9E-08	2.7E-06	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.005
				2-Amino-4,6-Dinitrotoluene	0.342	mg/kg	5.0E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.4E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00007
				4-Amino-2,6-Dinitrotoluene	0.197	mg/kg	2.9E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	8.1E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00004
				HMX	2.73	mg/kg	4.0E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.1E-06	(mg/kg/day)	5.0E-02	(mg/kg/day)	0.00002
				RDX	33.00	mg/kg	4.8E-06	(mg/kg/day)	1.1E-01	(mg/kg/day)$^{-1}$	5.3E-07	1.4E-05	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.005
				Tetryl	0.2	mg/kg	2.9E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	8.2E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00004
				Perchlorate	18.800	mg/kg	2.8E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	7.7E-06	(mg/kg/day)	7.0E-04	(mg/kg/day)	0.01
				Aluminum	1961.0	mg/kg	2.9E-04	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	8.1E-04	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.0008
				Arsenic	4	mg/kg	5.3E-07	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	7.9E-07	1.5E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.005
				Barium	58.20	mg/kg	8.5E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.4E-05	(mg/kg/day)	2.0E-01	(mg/kg/day)	0.0001
				Beryllium	0.2	mg/kg	2.9E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	8.2E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00004
				Cadmium	4.300	mg/kg	6.3E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.8E-06	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.004
				Chromium	6.00	mg/kg	8.8E-07	(mg/kg/day)	5.0E-01	(mg/kg/day)$^{-1}$	4.4E-07	2.5E-06	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.0008
				Copper	245.00	mg/kg	3.6E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.0E-04	(mg/kg/day)	4.0E-02	(mg/kg/day)	0.003
				Iron	9927	mg/kg	1.5E-03	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.1E-03	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.006
				Lead	17	mg/kg	2.5E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	6.9E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Manganese	98.4	mg/kg	1.4E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.0E-05	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.002
				Mercury	0.1	mg/kg	1.1E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.2E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0001
				Nickel	4.460	mg/kg	6.5E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.8E-06	(mg/kg/day)	2.0E-02	(mg/kg/day)	0.00009
				Vanadium	5.06	mg/kg	7.4E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.1E-06	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.0004
				Zinc	91.00	mg/kg	1.3E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.7E-05	(mg/kg/day)	3.0E-01	(mg/kg/day)	0.0001
			Exp. Route Total								1.8E-06					0.04
			Dermal	1,3,5-Trinitrobenzene	0.155	mg/kg	1.8E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	5.1E-09	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.0000002
				2,4,6-Trinitrotoluene	6.60	mg/kg	1.3E-07	(mg/kg/day)	3.0E-02	(mg/kg/day)$^{-1}$	3.9E-09	3.7E-07	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.0007
				2-Amino-4,6-Dinitrotoluene	0.342	mg/kg	1.3E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.6E-09	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000002
				4-Amino-2,6-Dinitrotoluene	0.197	mg/kg	1.1E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.1E-09	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000002
				HMX	2.73	mg/kg	1.0E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.8E-08	(mg/kg/day)	5.0E-02	(mg/kg/day)	0.0000006
				RDX	33.00	mg/kg	3.1E-07	(mg/kg/day)	1.1E-01	(mg/kg/day)$^{-1}$	3.4E-08	8.6E-07	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.0003
				Tetryl	0.2	mg/kg	1.2E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.5E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00002
				Perchlorate	18.800	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-04	(mg/kg/day)	--
				Aluminum	1961.0	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Arsenic	4	mg/kg	6.7E-08	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	1.0E-07	1.9E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0006
				Barium	58.20	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-02	(mg/kg/day)	--
				Beryllium	0.2	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-05	(mg/kg/day)	--
				Cadmium	4.300	mg/kg	2.7E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	7.5E-09	(mg/kg/day)	2.5E-05	(mg/kg/day)	0.0003
				Chromium	6.00	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--
				Copper	245.00	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	4.0E-02	(mg/kg/day)	--
				Iron	9927	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Lead	17	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)	--
				Manganese	98.4	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
				Mercury	0.1	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Nickel	4.460	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	8.0E-04	(mg/kg/day)	--
				Vanadium	5.06	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.3E-04	(mg/kg/day)	--
				Zinc	91.00	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-01	(mg/kg/day)	--
			Exp. Route Total								1.4E-07					0.002
		Exposure Point Total									1.9E-06					0.04
	Exposure Medium Total										1.9E-06					0.04
Medium Total											1.9E-06					0.04
										Total of Receptor Risks Across All Media	1.9E-06				Total of Receptor Hazards Across All Media	0.04

TABLE 7.3.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2006 SURFACE SOIL SAMPLES

REASONABLE MAXIMUM EXPOSURES

TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Unprotected SF Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Static Firing Rocket Silos	Ingestion	1,3,5-Trinitrobenzene	0.130	mg/kg	9.5E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.7E-08	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.0000009
				2,4,6-Trinitrotoluene	0.123	mg/kg	9.0E-09	(mg/kg/day)	3.0E-02	(mg/kg/day)$^{-1}$	2.7E-10	2.5E-08	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.00005
				2,4-Dinitrotoluene	0.300	mg/kg	2.2E-08	(mg/kg/day)	3.1E-01	(mg/kg/day)$^{-1}$	6.8E-09	6.2E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00003
				2-Amino-4,6-Dinitrotoluene	0.210	mg/kg	1.5E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.3E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00002
				4-Amino-2,6-Dinitrotoluene	0.220	mg/kg	1.6E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.5E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00002
				HMX	0.280	mg/kg	2.1E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	5.8E-08	(mg/kg/day)	5.0E-02	(mg/kg/day)	0.000001
				Nitroglycerin	26.4	mg/kg	1.9E-06	(mg/kg/day)	1.7E-02	(mg/kg/day)$^{-1}$	3.3E-08	5.4E-06	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.05
				PETN	5.42	mg/kg	4.0E-07	(mg/kg/day)	4.0E-03	(mg/kg/day)$^{-1}$	1.6E-09	1.1E-06	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0006
				RDX	0.330	mg/kg	2.4E-08	(mg/kg/day)	1.1E-01	(mg/kg/day)$^{-1}$	2.7E-09	6.8E-08	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.00002
				Perchlorate	285.000	mg/kg	2.1E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	5.9E-05	(mg/kg/day)	7.0E-04	(mg/kg/day)	0.08
				2,3,7,8-TCDD Equivalents	5.0E-5	mg/kg	3.7E-12	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	4.8E-07	1.0E-11	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.01
				Aluminum	3,684	mg/kg	2.7E-04	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	7.6E-04	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.0008
				Arsenic	4.61	mg/kg	3.4E-07	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	5.1E-07	9.5E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.003
				Barium	103	mg/kg	7.6E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.1E-05	(mg/kg/day)	2.0E-01	(mg/kg/day)	0.0001
				Beryllium	0.220	mg/kg	1.6E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.5E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00002
				Cadmium	14.5	mg/kg	1.1E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.0E-06	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.006
				Chromium	14.6	mg/kg	1.1E-06	(mg/kg/day)	5.0E-01	(mg/kg/day)$^{-1}$	5.4E-07	3.0E-06	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.001
				Copper	212	mg/kg	1.6E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.4E-05	(mg/kg/day)	4.0E-02	(mg/kg/day)	0.001
				Iron	15,236	mg/kg	1.1E-03	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.1E-03	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.004
				Lead	60.8	mg/kg	4.5E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.2E-05	(mg/kg/day)	NA	(mg/kg/day)	--
				Manganese	148	mg/kg	1.1E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.0E-05	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.001
				Mercury	0.040	mg/kg	2.9E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	8.2E-09	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.00003
				Nickel	61.9	mg/kg	4.5E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.3E-05	(mg/kg/day)	2.0E-02	(mg/kg/day)	0.0006
				Selenium	0.370	mg/kg	2.7E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	7.6E-08	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.00002
				Vanadium	6.36	mg/kg	4.7E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.3E-06	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.0003
				Zinc	234	mg/kg	1.7E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.8E-05	(mg/kg/day)	3.0E-01	(mg/kg/day)	0.0002
			Exp. Route Total								1.6E-06					0.2
			Dermal	1,3,5-Trinitrobenzene	0.130	mg/kg	7.7E-10	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.1E-09	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.00000007
				2,4,6-Trinitrotoluene	0.123	mg/kg	1.2E-09	(mg/kg/day)	3.0E-02	(mg/kg/day)$^{-1}$	3.7E-11	3.4E-09	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.000007
				2,4-Dinitrotoluene	0.300	mg/kg	9.5E-09	(mg/kg/day)	3.1E-01	(mg/kg/day)$^{-1}$	2.9E-09	2.7E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00001
				2-Amino-4,6-Dinitrotoluene	0.210	mg/kg	3.9E-10	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.1E-09	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0000005
				4-Amino-2,6-Dinitrotoluene	0.220	mg/kg	6.1E-10	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.7E-09	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0000009
				HMX	0.280	mg/kg	5.2E-10	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.5E-09	(mg/kg/day)	5.0E-02	(mg/kg/day)	0.00000003
				Nitroglycerin	26.4	mg/kg	8.2E-07	(mg/kg/day)	1.7E-02	(mg/kg/day)$^{-1}$	1.4E-08	2.3E-06	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.02
				PETN	5.42	mg/kg	1.7E-07	(mg/kg/day)	4.0E-03	(mg/kg/day)$^{-1}$	6.7E-10	4.7E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0002
				RDX	0.330	mg/kg	1.5E-09	(mg/kg/day)	1.1E-01	(mg/kg/day)$^{-1}$	1.7E-10	4.3E-09	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.000001
				Perchlorate	285.000	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-04	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	5.0E-5	mg/kg	4.7E-13	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	6.1E-08	1.3E-12	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.002
				Aluminum	3,684	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Arsenic	4.61	mg/kg	4.3E-08	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	6.4E-08	1.2E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0004
				Barium	103	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-02	(mg/kg/day)	--
				Beryllium	0.220	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-05	(mg/kg/day)	--
				Cadmium	14.5	mg/kg	4.5E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.3E-08	(mg/kg/day)	2.5E-05	(mg/kg/day)	0.0005
				Chromium	14.6	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--
				Copper	212	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	4.0E-02	(mg/kg/day)	--
				Iron	15,236	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Lead	60.8	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)	--

TABLE 7.3.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2006 SURFACE SOIL SAMPLES

REASONABLE MAXIMUM EXPOSURES

TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Unprotected SF Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Static Firing Rocket Silos	Dermal	Manganese	148	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
				Mercury	0.040	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Nickel	61.9	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	8.0E-04	(mg/kg/day)	--
				Selenium	0.370	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	5.0E-03	(mg/kg/day)	--
				Vanadium	6.36	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.3E-04	(mg/kg/day)	--
				Zinc	234	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-01	(mg/kg/day)	--
			Exp. Route Total								1.4E-07					0.03
		Exposure Point Total									1.7E-06					0.2
	Exposure Medium Total										1.7E-06					0.2
Medium Total											1.7E-06					0.2
Total of Receptor Risks Across All Media											1.7E-06	Total of Receptor Hazards Across All Media				0.2

TABLE 7.4.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2006 SURFACE SOIL SAMPLES

REASONABLE MAXIMUM EXPOSURES

TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Unprotected OB/OD/SF Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	All Soil Samples	Ingestion	1,3,5-Trinitrobenzene	0.110	mg/kg	2.8E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	7.9E-08	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.000003
				2,4,6-Trinitrotoluene	3.90	mg/kg	1.0E-06	(mg/kg/day)	3.0E-02	(mg/kg/day)$^{-1}$	3.0E-08	2.8E-06	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.006
				2,4-Dinitrotoluene	0.150	mg/kg	3.9E-08	(mg/kg/day)	3.1E-01	(mg/kg/day)$^{-1}$	1.2E-08	1.1E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00005
				2-Amino-4,6-Dinitrotoluene	0.160	mg/kg	4.1E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.2E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00006
				4-Amino-2,6-Dinitrotoluene	0.150	mg/kg	3.9E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.1E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00005
				HMX	1.000	mg/kg	2.6E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	7.2E-07	(mg/kg/day)	5.0E-02	(mg/kg/day)	0.00001
				Nitroglycerin	15.2	mg/kg	3.9E-06	(mg/kg/day)	1.7E-02	(mg/kg/day)$^{-1}$	6.6E-08	1.1E-05	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.1
				PETN	5.42	mg/kg	1.4E-06	(mg/kg/day)	4.0E-03	(mg/kg/day)$^{-1}$	5.6E-09	3.9E-06	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.002
				RDX	19.4	mg/kg	5.0E-06	(mg/kg/day)	1.1E-01	(mg/kg/day)$^{-1}$	5.5E-07	1.4E-05	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.005
				Tetryl	0.180	mg/kg	4.6E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.3E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00006
				Perchlorate	10.1	mg/kg	2.6E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	7.3E-06	(mg/kg/day)	7.0E-04	(mg/kg/day)	0.01
				2,3,7,8-TCDD Equivalents	5.0E-5	mg/kg	1.3E-11	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	1.7E-06	3.6E-11	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.05
				Aluminum	5,042	mg/kg	1.3E-03	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.6E-03	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.004
				Arsenic	4.33	mg/kg	1.1E-06	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	1.7E-06	3.1E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.01
				Barium	127	mg/kg	3.3E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	9.1E-05	(mg/kg/day)	2.0E-01	(mg/kg/day)	0.0005
				Beryllium	0.280	mg/kg	7.2E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.0E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0001
				Cadmium	6.6	mg/kg	1.7E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.7E-06	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.009
				Chromium	8.90	mg/kg	2.3E-06	(mg/kg/day)	5.0E-01	(mg/kg/day)$^{-1}$	1.1E-06	6.4E-06	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.002
				Copper	204	mg/kg	5.2E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.5E-04	(mg/kg/day)	4.0E-02	(mg/kg/day)	0.004
				Iron	7,393	mg/kg	1.9E-03	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	5.3E-03	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.008
				Lead	200	mg/kg	5.1E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.4E-04	(mg/kg/day)	NA	(mg/kg/day)	--
				Manganese	220	mg/kg	5.7E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.6E-04	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.007
				Mercury	0.067	mg/kg	1.7E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.8E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0002
				Nickel	17.4	mg/kg	4.5E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.3E-05	(mg/kg/day)	2.0E-02	(mg/kg/day)	0.0006
				Selenium	0.380	mg/kg	9.8E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.7E-07	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.00005
				Silver	0.539	mg/kg	1.4E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.9E-07	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.00008
				Vanadium	6.8	mg/kg	1.7E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.9E-06	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.0010
				Zinc	131	mg/kg	3.4E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	9.4E-05	(mg/kg/day)	3.0E-01	(mg/kg/day)	0.0003
			Exp. Route Total								5.1E-06					0.2
			Dermal	1,3,5-Trinitrobenzene	0.110	mg/kg	2.3E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	6.4E-09	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.0000002
				2,4,6-Trinitrotoluene	3.90	mg/kg	1.4E-07	(mg/kg/day)	3.0E-02	(mg/kg/day)$^{-1}$	4.1E-09	3.8E-07	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.0008
				2,4-Dinitrotoluene	0.150	mg/kg	1.7E-08	(mg/kg/day)	3.1E-01	(mg/kg/day)$^{-1}$	5.2E-09	4.7E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00002
				2-Amino-4,6-Dinitrotoluene	0.160	mg/kg	1.0E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.9E-09	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000001
				4-Amino-2,6-Dinitrotoluene	0.150	mg/kg	1.5E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.1E-09	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000002
				HMX	1.000	mg/kg	6.5E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.8E-08	(mg/kg/day)	5.0E-02	(mg/kg/day)	0.0000004
				Nitroglycerin	15.2	mg/kg	1.7E-06	(mg/kg/day)	1.7E-02	(mg/kg/day)$^{-1}$	2.8E-08	4.6E-06	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.05
				PETN	5.42	mg/kg	5.9E-07	(mg/kg/day)	4.0E-03	(mg/kg/day)$^{-1}$	2.4E-09	1.6E-06	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0008
				RDX	19.4	mg/kg	3.2E-07	(mg/kg/day)	1.1E-01	(mg/kg/day)$^{-1}$	3.5E-08	8.9E-07	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.0003
				Tetryl	0.180	mg/kg	2.0E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	5.5E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00003
				Perchlorate	10.1	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-04	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	5.0E-5	mg/kg	1.6E-12	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	2.1E-07	4.6E-12	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.007
				Aluminum	5,042	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Arsenic	4.33	mg/kg	1.4E-07	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	2.1E-07	4.0E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.001
				Barium	127	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-02	(mg/kg/day)	--
				Beryllium	0.280	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-05	(mg/kg/day)	--
				Cadmium	6.6	mg/kg	7.2E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.0E-08	(mg/kg/day)	2.5E-05	(mg/kg/day)	0.0008
				Chromium	8.90	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--

TABLE 7.4.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2006 SURFACE SOIL SAMPLES

REASONABLE MAXIMUM EXPOSURES

TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Unprotected OB/OD/SF Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	All Soil Samples	Dermal	Copper	204	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	4.0E-02	(mg/kg/day)	--
				Iron	7,393	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Lead	200	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)	--
				Manganese	220	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
				Mercury	0.067	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Nickel	17.4	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	8.0E-04	(mg/kg/day)	--
				Selenium	0.380	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	5.0E-03	(mg/kg/day)	--
				Silver	0.539	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	2.0E-04	(mg/kg/day)	--
				Vanadium	6.8	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.3E-04	(mg/kg/day)	--
				Zinc	131	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-01	(mg/kg/day)	--
			Exp. Route Total								5.0E-07					0.06
		Exposure Point Total									5.6E-06					0.3
	Exposure Medium Total										5.6E-06					0.3
Medium Total											5.6E-06					0.3
Total of Receptor Risks Across All Media											5.6E-06	Total of Receptor Hazards Across All Media				0.3

TABLE 7.5.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2006 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Protected OB Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	OB Unit	Ingestion	1,3,5-Trinitrobenzene	0.015	mg/kg	1.1E-09	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	3.1E-09	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.0000001
				2,4-Dinitrotoluene	0.500	mg/kg	3.7E-08	(mg/kg/day)	3.1E-01	$(mg/kg/day)^{-1}$	1.1E-08	1.0E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00005
				2-Amino-4,6-Dinitrotoluene	0.064	mg/kg	4.7E-09	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.3E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000007
				4-Amino-2,6-Dinitrotoluene	0.051	mg/kg	3.7E-09	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.0E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000005
				HMX	0.300	mg/kg	2.2E-08	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	6.2E-08	(mg/kg/day)	5.0E-02	(mg/kg/day)	0.000001
				Nitroglycerin	85.0	mg/kg	6.2E-06	(mg/kg/day)	1.7E-02	$(mg/kg/day)^{-1}$	1.1E-07	1.7E-05	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.2
				RDX	0.86	mg/kg	6.3E-08	(mg/kg/day)	1.1E-01	$(mg/kg/day)^{-1}$	6.9E-09	1.8E-07	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.00006
				Perchlorate	0.008	mg/kg	5.9E-10	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.6E-09	(mg/kg/day)	7.0E-04	(mg/kg/day)	0.000002
				Aluminum	8,653	mg/kg	6.4E-04	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.8E-03	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.002
				Arsenic	6.80	mg/kg	5.0E-07	(mg/kg/day)	1.5E+00	$(mg/kg/day)^{-1}$	7.5E-07	1.4E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.005
				Barium	200	mg/kg	1.5E-05	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	4.1E-05	(mg/kg/day)	2.0E-01	(mg/kg/day)	0.0002
				Beryllium	0.570	mg/kg	4.2E-08	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.2E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00006
				Cadmium	2.20	mg/kg	1.6E-07	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	4.5E-07	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.0009
				Chromium	11.7	mg/kg	8.6E-07	(mg/kg/day)	5.0E-01	$(mg/kg/day)^{-1}$	4.3E-07	2.4E-06	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.0008
				Copper	147	mg/kg	1.1E-05	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	3.0E-05	(mg/kg/day)	4.0E-02	(mg/kg/day)	0.0008
				Iron	9,983	mg/kg	7.3E-04	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	2.1E-03	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.003
				Lead	917	mg/kg	6.7E-05	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.9E-04	(mg/kg/day)	NA	(mg/kg/day)	--
				Manganese	360	mg/kg	2.6E-05	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	7.4E-05	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.003
				Mercury	0.115	mg/kg	8.4E-09	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	2.4E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.00008
				Nickel	11.3	mg/kg	8.3E-07	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	2.3E-06	(mg/kg/day)	2.0E-02	(mg/kg/day)	0.0001
				Selenium	0.519	mg/kg	3.8E-08	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.1E-07	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.00002
				Silver	0.539	mg/kg	4.0E-08	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.1E-07	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.00002
				Vanadium	12.5	mg/kg	9.2E-07	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	2.6E-06	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.0005
				Zinc	115	mg/kg	8.4E-06	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	2.4E-05	(mg/kg/day)	3.0E-01	(mg/kg/day)	0.00008
			Exp. Route Total								1.3E-06					0.2
			Dermal	1,3,5-Trinitrobenzene	0.015	mg/kg	3.1E-11	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	8.8E-11	(mg/kg/day)	3.0E-02	(mg/kg/day)	2.92808E-09
				2,4-Dinitrotoluene	0.500	mg/kg	5.6E-09	(mg/kg/day)	3.1E-01	$(mg/kg/day)^{-1}$	1.7E-09	1.6E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000008
				2-Amino-4,6-Dinitrotoluene	0.064	mg/kg	4.2E-11	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.2E-10	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00000006
				4-Amino-2,6-Dinitrotoluene	0.051	mg/kg	5.0E-11	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.4E-10	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00000007
				HMX	0.300	mg/kg	2.0E-10	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	5.5E-10	(mg/kg/day)	5.0E-02	(mg/kg/day)	0.00000001
				Nitroglycerin	85.0	mg/kg	9.4E-07	(mg/kg/day)	1.7E-02	$(mg/kg/day)^{-1}$	1.6E-08	2.6E-06	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.03
				RDX	0.86	mg/kg	1.4E-09	(mg/kg/day)	1.1E-01	$(mg/kg/day)^{-1}$	1.6E-10	4.0E-09	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.000001
				Perchlorate	0.008	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-04	(mg/kg/day)	--
				Aluminum	8,653	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Arsenic	6.80	mg/kg	2.2E-08	(mg/kg/day)	1.5E+00	$(mg/kg/day)^{-1}$	3.4E-08	6.3E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0002
				Barium	200	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-02	(mg/kg/day)	--
				Beryllium	0.570	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-05	(mg/kg/day)	--
				Cadmium	2.20	mg/kg	2.4E-10	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	6.8E-10	(mg/kg/day)	2.5E-05	(mg/kg/day)	0.00003
				Chromium	11.7	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--
				Copper	147	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	4.0E-02	(mg/kg/day)	--
				Iron	9,983	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Lead	917	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)	--
				Manganese	360	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
				Mercury	0.115	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Nickel	11.3	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	8.0E-04	(mg/kg/day)	--
				Selenium	0.519	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	5.0E-03	(mg/kg/day)	--
				Silver	0.539	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	2.0E-04	(mg/kg/day)	--
				Vanadium	12.5	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.3E-04	(mg/kg/day)	--
				Zinc	115	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-01	(mg/kg/day)	--
			Exp. Route Total								5.1E-08					0.03
		Exposure Point Total									1.4E-06					0.2
	Exposure Medium Total										1.4E-06					0.2
Medium Total											1.4E-06					0.2
										Total of Receptor Risks Across All Media	1.4E-06				Total of Receptor Hazards Across All Media	0.2

TABLE 7.6.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2006 SURFACE SOIL SAMPLES

REASONABLE MAXIMUM EXPOSURES

TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Protected OD Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	OD Unit	Ingestion	1,3,5-Trinitrobenzene	0.155	mg/kg	2.3E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	6.4E-08	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.000002
				2,4,6-Trinitrotoluene	6.60	mg/kg	9.7E-07	(mg/kg/day)	3.0E-02	(mg/kg/day)$^{-1}$	2.9E-08	2.7E-06	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.005
				2-Amino-4,6-Dinitrotoluene	0.342	mg/kg	5.0E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.4E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00007
				4-Amino-2,6-Dinitrotoluene	0.197	mg/kg	2.9E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	8.1E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00004
				HMX	2.73	mg/kg	4.0E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.1E-06	(mg/kg/day)	5.0E-02	(mg/kg/day)	0.00002
				RDX	33.00	mg/kg	4.8E-06	(mg/kg/day)	1.1E-01	(mg/kg/day)$^{-1}$	5.3E-07	1.4E-05	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.005
				Tetryl	0.2	mg/kg	2.9E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	8.2E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00004
				Perchlorate	18.800	mg/kg	2.8E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	7.7E-06	(mg/kg/day)	7.0E-04	(mg/kg/day)	0.01
				Aluminum	1961.0	mg/kg	2.9E-04	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	8.1E-04	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.0008
				Arsenic	4	mg/kg	5.3E-07	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	7.9E-07	1.5E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.005
				Barium	58.20	mg/kg	8.5E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.4E-05	(mg/kg/day)	2.0E-01	(mg/kg/day)	0.0001
				Beryllium	0.2	mg/kg	2.9E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	8.2E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00004
				Cadmium	4.300	mg/kg	6.3E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.8E-06	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.004
				Chromium	6.00	mg/kg	8.8E-07	(mg/kg/day)	5.0E-01	(mg/kg/day)$^{-1}$	4.4E-07	2.5E-06	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.0008
				Copper	245.00	mg/kg	3.6E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.0E-04	(mg/kg/day)	4.0E-02	(mg/kg/day)	0.003
				Iron	9927	mg/kg	1.5E-03	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.1E-03	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.006
				Lead	17	mg/kg	2.5E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	6.9E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Manganese	98.4	mg/kg	1.4E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.0E-05	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.002
				Mercury	0.1	mg/kg	1.1E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.2E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0001
				Nickel	4.460	mg/kg	6.5E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.8E-06	(mg/kg/day)	2.0E-02	(mg/kg/day)	0.00009
				Vanadium	5.06	mg/kg	7.4E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.1E-06	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.0004
				Zinc	91.00	mg/kg	1.3E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.7E-05	(mg/kg/day)	3.0E-01	(mg/kg/day)	0.0001
			Exp. Route Total								1.8E-06					0.04
			Dermal	1,3,5-Trinitrobenzene	0.155	mg/kg	6.5E-10	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.8E-09	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.00000006
				2,4,6-Trinitrotoluene	6.60	mg/kg	4.6E-08	(mg/kg/day)	3.0E-02	(mg/kg/day)$^{-1}$	1.4E-09	1.3E-07	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.0003
				2-Amino-4,6-Dinitrotoluene	0.342	mg/kg	4.5E-10	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.3E-09	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0000006
				4-Amino-2,6-Dinitrotoluene	0.197	mg/kg	3.9E-10	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.1E-09	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0000005
				HMX	2.73	mg/kg	3.6E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.0E-08	(mg/kg/day)	5.0E-02	(mg/kg/day)	0.0000002
				RDX	33.00	mg/kg	1.1E-07	(mg/kg/day)	1.1E-01	(mg/kg/day)$^{-1}$	1.2E-08	3.1E-07	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.0001
				Tetryl	0.2	mg/kg	4.4E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.2E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000006
				Perchlorate	18.800	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-04	(mg/kg/day)	--
				Aluminum	1961.0	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Arsenic	4	mg/kg	2.4E-08	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	3.6E-08	6.7E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0002
				Barium	58.20	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-02	(mg/kg/day)	--
				Beryllium	0.2	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-05	(mg/kg/day)	--
				Cadmium	4.300	mg/kg	9.5E-10	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.7E-09	(mg/kg/day)	2.5E-05	(mg/kg/day)	0.0001
				Chromium	6.00	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--
				Copper	245.00	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	4.0E-02	(mg/kg/day)	--
				Iron	9927	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Lead	17	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)	--
				Manganese	98.4	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
				Mercury	0.1	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Nickel	4.460	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	8.0E-04	(mg/kg/day)	--
				Vanadium	5.06	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.3E-04	(mg/kg/day)	--
				Zinc	91.00	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-01	(mg/kg/day)	--
			Exp. Route Total								4.9E-08					0.0007
		Exposure Point Total									1.8E-06					0.04
	Exposure Medium Total										1.8E-06					0.04
Medium Total											1.8E-06					0.04
										Total of Receptor Risks Across All Media	1.8E-06				Total of Receptor Hazards Across All Media	0.04

TABLE 7.7.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2006 SURFACE SOIL SAMPLES

REASONABLE MAXIMUM EXPOSURES

TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Protected SF Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Static Firing Rocket Silos	Ingestion	1,3,5-Trinitrobenzene	0.130	mg/kg	9.5E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.7E-08	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.0000009
				2,4,6-Trinitrotoluene	0.123	mg/kg	9.0E-09	(mg/kg/day)	3.0E-02	(mg/kg/day)$^{-1}$	2.7E-10	2.5E-08	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.00005
				2,4-Dinitrotoluene	0.300	mg/kg	2.2E-08	(mg/kg/day)	3.1E-01	(mg/kg/day)$^{-1}$	6.8E-09	6.2E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00003
				2-Amino-4,6-Dinitrotoluene	0.210	mg/kg	1.5E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.3E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00002
				4-Amino-2,6-Dinitrotoluene	0.220	mg/kg	1.6E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.5E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00002
				HMX	0.280	mg/kg	2.1E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	5.8E-08	(mg/kg/day)	5.0E-02	(mg/kg/day)	0.000001
				Nitroglycerin	26.4	mg/kg	1.9E-06	(mg/kg/day)	1.7E-02	(mg/kg/day)$^{-1}$	3.3E-08	5.4E-06	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.05
				PETN	5.42	mg/kg	4.0E-07	(mg/kg/day)	4.0E-03	(mg/kg/day)$^{-1}$	1.6E-09	1.1E-06	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0006
				RDX	0.330	mg/kg	2.4E-08	(mg/kg/day)	1.1E-01	(mg/kg/day)$^{-1}$	2.7E-09	6.8E-08	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.00002
				Perchlorate	285.000	mg/kg	2.1E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	5.9E-05	(mg/kg/day)	7.0E-04	(mg/kg/day)	0.08
				2,3,7,8-TCDD Equivalents	5.0E-5	mg/kg	3.7E-12	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	4.8E-07	1.0E-11	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.01
				Aluminum	3,684	mg/kg	2.7E-04	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	7.6E-04	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.0008
				Arsenic	4.61	mg/kg	3.4E-07	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	5.1E-07	9.5E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.003
				Barium	103	mg/kg	7.6E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.1E-05	(mg/kg/day)	2.0E-01	(mg/kg/day)	0.0001
				Beryllium	0.220	mg/kg	1.6E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.5E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00002
				Cadmium	14.5	mg/kg	1.1E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.0E-06	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.006
				Chromium	14.6	mg/kg	1.1E-06	(mg/kg/day)	5.0E-01	(mg/kg/day)$^{-1}$	5.4E-07	3.0E-06	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.001
				Copper	212	mg/kg	1.6E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.4E-05	(mg/kg/day)	4.0E-02	(mg/kg/day)	0.001
				Iron	15,236	mg/kg	1.1E-03	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.1E-03	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.004
				Lead	60.8	mg/kg	4.5E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.2E-05	(mg/kg/day)	NA	(mg/kg/day)	--
				Manganese	148	mg/kg	1.1E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.0E-05	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.001
				Mercury	0.040	mg/kg	2.9E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	8.2E-09	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.00003
				Nickel	61.9	mg/kg	4.5E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.3E-05	(mg/kg/day)	2.0E-02	(mg/kg/day)	0.0006
				Selenium	0.370	mg/kg	2.7E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	7.6E-08	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.00002
				Vanadium	6.36	mg/kg	4.7E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.3E-06	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.0003
				Zinc	234	mg/kg	1.7E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.8E-05	(mg/kg/day)	3.0E-01	(mg/kg/day)	0.0002
			Exp. Route Total								1.6E-06					0.2
			Dermal	1,3,5-Trinitrobenzene	0.130	mg/kg	2.7E-10	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	7.6E-10	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.00000003
				2,4,6-Trinitrotoluene	0.123	mg/kg	4.3E-10	(mg/kg/day)	3.0E-02	(mg/kg/day)$^{-1}$	1.3E-11	1.2E-09	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.000002
				2,4-Dinitrotoluene	0.300	mg/kg	3.4E-09	(mg/kg/day)	3.1E-01	(mg/kg/day)$^{-1}$	1.0E-09	9.4E-09	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000005
				2-Amino-4,6-Dinitrotoluene	0.210	mg/kg	1.4E-10	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.9E-10	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0000002
				4-Amino-2,6-Dinitrotoluene	0.220	mg/kg	2.2E-10	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	6.1E-10	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0000003
				HMX	0.280	mg/kg	1.8E-10	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	5.2E-10	(mg/kg/day)	5.0E-02	(mg/kg/day)	0.00000001
				Nitroglycerin	26.4	mg/kg	2.9E-07	(mg/kg/day)	1.7E-02	(mg/kg/day)$^{-1}$	4.9E-09	8.1E-07	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.008
				PETN	5.42	mg/kg	6.0E-08	(mg/kg/day)	4.0E-03	(mg/kg/day)$^{-1}$	2.4E-10	1.7E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00008
				RDX	0.330	mg/kg	5.4E-10	(mg/kg/day)	1.1E-01	(mg/kg/day)$^{-1}$	6.0E-11	1.5E-09	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.0000005
				Perchlorate	285.000	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-04	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	5.0E-5	mg/kg	1.7E-13	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	2.1E-08	4.6E-13	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.0007
				Aluminum	3,684	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Arsenic	4.61	mg/kg	1.5E-08	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	2.3E-08	4.3E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0001
				Barium	103	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-02	(mg/kg/day)	--
				Beryllium	0.220	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-05	(mg/kg/day)	--
				Cadmium	14.5	mg/kg	1.6E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.5E-09	(mg/kg/day)	2.5E-05	(mg/kg/day)	0.0002
				Chromium	14.6	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--
				Copper	212	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	4.0E-02	(mg/kg/day)	--
				Iron	15,236	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Lead	60.8	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)	--

TABLE 7.7.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2006 SURFACE SOIL SAMPLES

REASONABLE MAXIMUM EXPOSURES

TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Protected SF Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Static Firing Rocket Silos	Dermal	Manganese	148	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
				Mercury	0.040	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Nickel	61.9	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	8.0E-04	(mg/kg/day)	--
				Selenium	0.370	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	5.0E-03	(mg/kg/day)	--
				Vanadium	6.36	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.3E-04	(mg/kg/day)	--
				Zinc	234	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-01	(mg/kg/day)	--
			Exp. Route Total								5.1E-08					0.009
		Exposure Point Total									1.6E-06					0.2
	Exposure Medium Total										1.6E-06					0.2
Medium Total											1.6E-06					0.2
Total of Receptor Risks Across All Media											1.6E-06	Total of Receptor Hazards Across All Media				0.2

TABLE 7.8.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2006 SURFACE SOIL SAMPLES

REASONABLE MAXIMUM EXPOSURES

TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Protected OB/OD/SF Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	All Soil Samples	Ingestion	1,3,5-Trinitrobenzene	0.110	mg/kg	2.8E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	7.9E-08	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.000003
				2,4,6-Trinitrotoluene	3.90	mg/kg	1.0E-06	(mg/kg/day)	3.0E-02	(mg/kg/day)$^{-1}$	3.0E-08	2.8E-06	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.006
				2,4-Dinitrotoluene	0.150	mg/kg	3.9E-08	(mg/kg/day)	3.1E-01	(mg/kg/day)$^{-1}$	1.2E-08	1.1E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00005
				2-Amino-4,6-Dinitrotoluene	0.160	mg/kg	4.1E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.2E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00006
				4-Amino-2,6-Dinitrotoluene	0.150	mg/kg	3.9E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.1E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00005
				HMX	1.000	mg/kg	2.6E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	7.2E-07	(mg/kg/day)	5.0E-02	(mg/kg/day)	0.00001
				Nitroglycerin	15.2	mg/kg	3.9E-06	(mg/kg/day)	1.7E-02	(mg/kg/day)$^{-1}$	6.6E-08	1.1E-05	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.1
				PETN	5.42	mg/kg	1.4E-06	(mg/kg/day)	4.0E-03	(mg/kg/day)$^{-1}$	5.6E-09	3.9E-06	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.002
				RDX	19.4	mg/kg	5.0E-06	(mg/kg/day)	1.1E-01	(mg/kg/day)$^{-1}$	5.5E-07	1.4E-05	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.005
				Tetryl	0.180	mg/kg	4.6E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.3E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00006
				Perchlorate	10.1	mg/kg	2.6E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	7.3E-06	(mg/kg/day)	7.0E-04	(mg/kg/day)	0.01
				2,3,7,8-TCDD Equivalents	5.0E-5	mg/kg	1.3E-11	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	1.7E-06	3.6E-11	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.05
				Aluminum	5,042	mg/kg	1.3E-03	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.6E-03	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.004
				Arsenic	4.33	mg/kg	1.1E-06	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	1.7E-06	3.1E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.01
				Barium	127	mg/kg	3.3E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	9.1E-05	(mg/kg/day)	2.0E-01	(mg/kg/day)	0.0005
				Beryllium	0.280	mg/kg	7.2E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.0E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0001
				Cadmium	6.6	mg/kg	1.7E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.7E-06	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.009
				Chromium	8.90	mg/kg	2.3E-06	(mg/kg/day)	5.0E-01	(mg/kg/day)$^{-1}$	1.1E-06	6.4E-06	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.002
				Copper	204	mg/kg	5.2E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.5E-04	(mg/kg/day)	4.0E-02	(mg/kg/day)	0.004
				Iron	7,393	mg/kg	1.9E-03	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	5.3E-03	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.008
				Lead	200	mg/kg	5.1E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.4E-04	(mg/kg/day)	NA	(mg/kg/day)	--
				Manganese	220	mg/kg	5.7E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.6E-04	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.007
				Mercury	0.067	mg/kg	1.7E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.8E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0002
				Nickel	17.4	mg/kg	4.5E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.3E-05	(mg/kg/day)	2.0E-02	(mg/kg/day)	0.0006
				Selenium	0.380	mg/kg	9.8E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.7E-07	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.00005
				Silver	0.539	mg/kg	1.4E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.9E-07	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.00008
				Vanadium	6.8	mg/kg	1.7E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.9E-06	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.0010
				Zinc	131	mg/kg	3.4E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	9.4E-05	(mg/kg/day)	3.0E-01	(mg/kg/day)	0.0003
			Exp. Route Total								5.1E-06					0.2
			Dermal	1,3,5-Trinitrobenzene	0.110	mg/kg	8.1E-10	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.3E-09	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.00000008
				2,4,6-Trinitrotoluene	3.90	mg/kg	4.8E-08	(mg/kg/day)	3.0E-02	(mg/kg/day)$^{-1}$	1.4E-09	1.3E-07	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.0003
				2,4-Dinitrotoluene	0.150	mg/kg	5.9E-09	(mg/kg/day)	3.1E-01	(mg/kg/day)$^{-1}$	1.8E-09	1.7E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000008
				2-Amino-4,6-Dinitrotoluene	0.160	mg/kg	3.7E-10	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.0E-09	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0000005
				4-Amino-2,6-Dinitrotoluene	0.150	mg/kg	5.2E-10	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.5E-09	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0000007
				HMX	1.000	mg/kg	2.3E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	6.5E-09	(mg/kg/day)	5.0E-02	(mg/kg/day)	0.0000001
				Nitroglycerin	15.2	mg/kg	5.9E-07	(mg/kg/day)	1.7E-02	(mg/kg/day)$^{-1}$	1.0E-08	1.6E-06	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.02
				PETN	5.42	mg/kg	2.1E-07	(mg/kg/day)	4.0E-03	(mg/kg/day)$^{-1}$	8.4E-10	5.8E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0003
				RDX	19.4	mg/kg	1.1E-07	(mg/kg/day)	1.1E-01	(mg/kg/day)$^{-1}$	1.2E-08	3.1E-07	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.0001
				Tetryl	0.180	mg/kg	6.9E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.9E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000010
				Perchlorate	10.1	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-04	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	5.0E-5	mg/kg	5.8E-13	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	7.5E-08	1.6E-12	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.002
				Aluminum	5,042	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Arsenic	4.33	mg/kg	5.0E-08	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	7.5E-08	1.4E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0005
				Barium	127	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-02	(mg/kg/day)	--
				Beryllium	0.280	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-05	(mg/kg/day)	--
				Cadmium	6.6	mg/kg	2.5E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	7.1E-09	(mg/kg/day)	2.5E-05	(mg/kg/day)	0.0003
				Chromium	8.90	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--

TABLE 7.8.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2006 SURFACE SOIL SAMPLES

REASONABLE MAXIMUM EXPOSURES

TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Protected OB/OD/SF Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	All Soil Samples	Dermal	Copper	204	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	4.0E-02	(mg/kg/day)	--
				Iron	7,393	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Lead	200	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)	--
				Manganese	220	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
				Mercury	0.067	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Nickel	17.4	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	8.0E-04	(mg/kg/day)	--
				Selenium	0.380	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	5.0E-03	(mg/kg/day)	--
				Silver	0.539	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	2.0E-04	(mg/kg/day)	--
				Vanadium	6.8	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.3E-04	(mg/kg/day)	--
				Zinc	131	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-01	(mg/kg/day)	--
			Exp. Route Total								1.8E-07					0.02
		Exposure Point Total									5.3E-06					0.2
	Exposure Medium Total										5.3E-06					0.2
Medium Total											5.3E-06					0.2
Total of Receptor Risks Across All Media											5.3E-06	Total of Receptor Hazards Across All Media				0.2

TABLE 7.9.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2006 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Outdoor Worker - OB Unit
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	OB Unit	Ingestion	1,3,5-Trinitrobenzene	0.015	mg/kg	4.6E-09	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.3E-08	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.0000004
				2,4-Dinitrotoluene	0.500	mg/kg	1.5E-07	(mg/kg/day)	3.1E-01	$(mg/kg/day)^{-1}$	4.7E-08	4.3E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0002
				2-Amino-4,6-Dinitrotoluene	0.064	mg/kg	1.9E-08	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	5.4E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00003
				4-Amino-2,6-Dinitrotoluene	0.051	mg/kg	1.6E-08	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	4.3E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00002
				HMX	0.300	mg/kg	9.2E-08	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	2.6E-07	(mg/kg/day)	5.0E-02	(mg/kg/day)	0.000005
				Nitroglycerin	85.0	mg/kg	2.6E-05	(mg/kg/day)	1.7E-02	$(mg/kg/day)^{-1}$	4.4E-07	7.3E-05	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.7
				RDX	0.86	mg/kg	2.6E-07	(mg/kg/day)	1.1E-01	$(mg/kg/day)^{-1}$	2.9E-08	7.4E-07	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.0002
				Perchlorate	0.008	mg/kg	2.4E-09	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	6.8E-09	(mg/kg/day)	7.0E-04	(mg/kg/day)	0.000010
				Aluminum	8,653	mg/kg	2.6E-03	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	7.4E-03	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.007
				Arsenic	6.80	mg/kg	2.1E-06	(mg/kg/day)	1.5E+00	$(mg/kg/day)^{-1}$	3.1E-06	5.8E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.02
				Barium	200	mg/kg	6.1E-05	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.7E-04	(mg/kg/day)	2.0E-01	(mg/kg/day)	0.0009
				Beryllium	0.570	mg/kg	1.7E-07	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	4.9E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0002
				Cadmium	2.20	mg/kg	6.7E-07	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.9E-06	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.004
				Chromium	11.7	mg/kg	3.6E-06	(mg/kg/day)	5.0E-01	$(mg/kg/day)^{-1}$	1.8E-06	1.0E-05	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.003
				Copper	147	mg/kg	4.5E-05	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.3E-04	(mg/kg/day)	4.0E-02	(mg/kg/day)	0.003
				Iron	9,983	mg/kg	3.1E-03	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	8.5E-03	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.01
				Lead	917	mg/kg	2.8E-04	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	7.9E-04	(mg/kg/day)	NA	(mg/kg/day)	--
				Manganese	360	mg/kg	1.1E-04	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	3.1E-04	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.01
				Mercury	0.115	mg/kg	3.5E-08	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	9.8E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0003
				Nickel	11.3	mg/kg	3.5E-06	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	9.7E-06	(mg/kg/day)	2.0E-02	(mg/kg/day)	0.0005
				Selenium	0.519	mg/kg	1.6E-07	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	4.4E-07	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.00009
				Silver	0.539	mg/kg	1.6E-07	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	4.6E-07	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.00009
				Vanadium	12.5	mg/kg	3.8E-06	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.1E-05	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.002
				Zinc	115	mg/kg	3.5E-05	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	9.8E-05	(mg/kg/day)	3.0E-01	(mg/kg/day)	0.0003
			Exp. Route Total								5.4E-06					0.8
			Dermal	1,3,5-Trinitrobenzene	0.015	mg/kg	3.7E-10	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.0E-09	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.00000003
				2,4-Dinitrotoluene	0.500	mg/kg	6.6E-08	(mg/kg/day)	3.1E-01	$(mg/kg/day)^{-1}$	2.0E-08	1.8E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00009
				2-Amino-4,6-Dinitrotoluene	0.064	mg/kg	4.9E-10	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.4E-09	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0000007
				4-Amino-2,6-Dinitrotoluene	0.051	mg/kg	5.9E-10	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.7E-09	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0000008
				HMX	0.300	mg/kg	2.3E-09	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	6.5E-09	(mg/kg/day)	5.0E-02	(mg/kg/day)	0.0000001
				Nitroglycerin	85.0	mg/kg	1.1E-05	(mg/kg/day)	1.7E-02	$(mg/kg/day)^{-1}$	1.9E-07	3.1E-05	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.3
				RDX	0.86	mg/kg	1.7E-08	(mg/kg/day)	1.1E-01	$(mg/kg/day)^{-1}$	1.8E-09	4.7E-08	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.00002
				Perchlorate	0.008	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-04	(mg/kg/day)	--
				Aluminum	8,653	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Arsenic	6.80	mg/kg	2.6E-07	(mg/kg/day)	1.5E+00	$(mg/kg/day)^{-1}$	4.0E-07	7.4E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.002
				Barium	200	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-02	(mg/kg/day)	--
				Beryllium	0.570	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-05	(mg/kg/day)	--
				Cadmium	2.20	mg/kg	2.8E-09	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	8.0E-09	(mg/kg/day)	2.5E-05	(mg/kg/day)	0.0003
				Chromium	11.7	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--
				Copper	147	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	4.0E-02	(mg/kg/day)	--
				Iron	9,983	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Lead	917	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)	--
				Manganese	360	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
				Mercury	0.115	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Nickel	11.3	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	8.0E-04	(mg/kg/day)	--
				Selenium	0.519	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	5.0E-03	(mg/kg/day)	--
				Silver	0.539	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	2.0E-04	(mg/kg/day)	--
				Vanadium	12.5	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.3E-04	(mg/kg/day)	--
				Zinc	115	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-01	(mg/kg/day)	--
			Exp. Route Total								6.1E-07					0.3
		Exposure Point Total									6.0E-06					1.1
	Exposure Medium Total										6.0E-06					1.1
Medium Total											6.0E-06					1.1
										Total of Receptor Risks Across All Media	6.0E-06				Total of Receptor Hazards Across All Media	1.1

TABLE 7.10.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2006 SURFACE SOIL SAMPLES

REASONABLE MAXIMUM EXPOSURES

TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Outdoor Worker - OD Unit
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	OD Unit	Ingestion	1,3,5-Trinitrobenzene	0.155	mg/kg	4.7E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.3E-07	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.000004
				2,4,6-Trinitrotoluene	6.60	mg/kg	2.0E-06	(mg/kg/day)	3.0E-02	(mg/kg/day)$^{-1}$	6.1E-08	5.7E-06	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.01
				2-Amino-4,6-Dinitrotoluene	0.342	mg/kg	1.0E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.9E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0001
				4-Amino-2,6-Dinitrotoluene	0.197	mg/kg	6.0E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.7E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00008
				HMX	2.73	mg/kg	8.3E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.3E-06	(mg/kg/day)	5.0E-02	(mg/kg/day)	0.00005
				RDX	33.00	mg/kg	1.0E-05	(mg/kg/day)	1.1E-01	(mg/kg/day)$^{-1}$	1.1E-06	2.8E-05	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.009
				Tetryl	0.2	mg/kg	6.1E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.7E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00009
				Perchlorate	18.800	mg/kg	5.7E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.6E-05	(mg/kg/day)	7.0E-04	(mg/kg/day)	0.02
				Aluminum	1961.0	mg/kg	6.0E-04	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.7E-03	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.002
				Arsenic	4	mg/kg	1.1E-06	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	1.7E-06	3.1E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.01
				Barium	58.20	mg/kg	1.8E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	5.0E-05	(mg/kg/day)	2.0E-01	(mg/kg/day)	0.0002
				Beryllium	0.2	mg/kg	6.1E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.7E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00009
				Cadmium	4.300	mg/kg	1.3E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.7E-06	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.007
				Chromium	6.00	mg/kg	1.8E-06	(mg/kg/day)	5.0E-01	(mg/kg/day)$^{-1}$	9.2E-07	5.1E-06	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.002
				Copper	245.00	mg/kg	7.5E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.1E-04	(mg/kg/day)	4.0E-02	(mg/kg/day)	0.005
				Iron	9927	mg/kg	3.0E-03	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	8.5E-03	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.01
				Lead	17	mg/kg	5.1E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.4E-05	(mg/kg/day)	NA	(mg/kg/day)	--
				Manganese	98.4	mg/kg	3.0E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	8.4E-05	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.004
				Mercury	0.1	mg/kg	2.4E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	6.7E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0002
				Nickel	4.460	mg/kg	1.4E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.8E-06	(mg/kg/day)	2.0E-02	(mg/kg/day)	0.0002
				Vanadium	5.06	mg/kg	1.5E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.3E-06	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.0009
				Zinc	91.00	mg/kg	2.8E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	7.8E-05	(mg/kg/day)	3.0E-01	(mg/kg/day)	0.0003
			Exp. Route Total								3.7E-06					0.09
			Dermal	1,3,5-Trinitrobenzene	0.155	mg/kg	3.8E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.1E-08	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.0000004
				2,4,6-Trinitrotoluene	6.60	mg/kg	2.7E-07	(mg/kg/day)	3.0E-02	(mg/kg/day)$^{-1}$	8.2E-09	7.7E-07	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.002
				2-Amino-4,6-Dinitrotoluene	0.342	mg/kg	2.7E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	7.4E-09	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000004
				4-Amino-2,6-Dinitrotoluene	0.197	mg/kg	2.3E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	6.4E-09	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000003
				HMX	2.73	mg/kg	2.1E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	5.9E-08	(mg/kg/day)	5.0E-02	(mg/kg/day)	0.000001
				RDX	33.00	mg/kg	6.4E-07	(mg/kg/day)	1.1E-01	(mg/kg/day)$^{-1}$	7.0E-08	1.8E-06	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.0006
				Tetryl	0.2	mg/kg	2.6E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	7.2E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00004
				Perchlorate	18.800	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-04	(mg/kg/day)	--
				Aluminum	1961.0	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Arsenic	4	mg/kg	1.4E-07	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	2.1E-07	3.9E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.001
				Barium	58.20	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-02	(mg/kg/day)	--
				Beryllium	0.2	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-05	(mg/kg/day)	--
				Cadmium	4.300	mg/kg	5.6E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.6E-08	(mg/kg/day)	2.5E-05	(mg/kg/day)	0.0006
				Chromium	6.00	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--
				Copper	245.00	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	4.0E-02	(mg/kg/day)	--
				Iron	9927	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Lead	17	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)	--
				Manganese	98.4	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
				Mercury	0.1	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Nickel	4.460	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	8.0E-04	(mg/kg/day)	--
				Vanadium	5.06	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.3E-04	(mg/kg/day)	--
				Zinc	91.00	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-01	(mg/kg/day)	--
			Exp. Route Total								2.9E-07					0.004
		Exposure Point Total									4.0E-06					0.09
	Exposure Medium Total										4.0E-06					0.09
Medium Total											4.0E-06					0.09
										Total of Receptor Risks Across All Media	4.0E-06				Total of Receptor Hazards Across All Media	0.09

TABLE 7.11.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2006 SURFACE SOIL SAMPLES

REASONABLE MAXIMUM EXPOSURES

TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Outdoor Worker - SF Unit
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Static Firing Rocket Silos	Ingestion	1,3,5-Trinitrobenzene	0.130	mg/kg	4.0E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.1E-07	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.000004
				2,4,6-Trinitrotoluene	0.123	mg/kg	3.8E-08	(mg/kg/day)	3.0E-02	(mg/kg/day)$^{-1}$	1.1E-09	1.1E-07	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.0002
				2,4-Dinitrotoluene	0.300	mg/kg	9.2E-08	(mg/kg/day)	3.1E-01	(mg/kg/day)$^{-1}$	2.8E-08	2.6E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0001
				2-Amino-4,6-Dinitrotoluene	0.210	mg/kg	6.4E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.8E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00009
				4-Amino-2,6-Dinitrotoluene	0.220	mg/kg	6.7E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.9E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00009
				HMX	0.280	mg/kg	8.6E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.4E-07	(mg/kg/day)	5.0E-02	(mg/kg/day)	0.000005
				Nitroglycerin	26.4	mg/kg	8.1E-06	(mg/kg/day)	1.7E-02	(mg/kg/day)$^{-1}$	1.4E-07	2.3E-05	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.2
				PETN	5.42	mg/kg	1.7E-06	(mg/kg/day)	4.0E-03	(mg/kg/day)$^{-1}$	6.6E-09	4.6E-06	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.002
				RDX	0.330	mg/kg	1.0E-07	(mg/kg/day)	1.1E-01	(mg/kg/day)$^{-1}$	1.1E-08	2.8E-07	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.00009
				Perchlorate	285.000	mg/kg	8.7E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.4E-04	(mg/kg/day)	7.0E-04	(mg/kg/day)	0.3
				2,3,7,8-TCDD Equivalents	5.0E-5	mg/kg	1.5E-11	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	2.0E-06	4.3E-11	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.06
				Aluminum	3,684	mg/kg	1.1E-03	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.2E-03	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.003
				Arsenic	4.61	mg/kg	1.4E-06	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	2.1E-06	3.9E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.01
				Barium	103	mg/kg	3.1E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	8.8E-05	(mg/kg/day)	2.0E-01	(mg/kg/day)	0.0004
				Beryllium	0.220	mg/kg	6.7E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.9E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00009
				Cadmium	14.5	mg/kg	4.4E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.2E-05	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.02
				Chromium	14.6	mg/kg	4.5E-06	(mg/kg/day)	5.0E-01	(mg/kg/day)$^{-1}$	2.2E-06	1.3E-05	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.004
				Copper	212	mg/kg	6.5E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.8E-04	(mg/kg/day)	4.0E-02	(mg/kg/day)	0.005
				Iron	15,236	mg/kg	4.7E-03	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.3E-02	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.02
				Lead	60.8	mg/kg	1.9E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	5.2E-05	(mg/kg/day)	NA	(mg/kg/day)	--
				Manganese	148	mg/kg	4.5E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.3E-04	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.005
				Mercury	0.040	mg/kg	1.2E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.4E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0001
				Nickel	61.9	mg/kg	1.9E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	5.3E-05	(mg/kg/day)	2.0E-02	(mg/kg/day)	0.003
				Selenium	0.370	mg/kg	1.1E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.2E-07	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.00006
				Vanadium	6.36	mg/kg	1.9E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	5.4E-06	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.001
				Zinc	234	mg/kg	7.2E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.0E-04	(mg/kg/day)	3.0E-01	(mg/kg/day)	0.0007
			Exp. Route Total								6.5E-06					0.7
			Dermal	1,3,5-Trinitrobenzene	0.130	mg/kg	3.2E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	9.0E-09	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.0000003
				2,4,6-Trinitrotoluene	0.123	mg/kg	5.1E-09	(mg/kg/day)	3.0E-02	(mg/kg/day)$^{-1}$	1.5E-10	1.4E-08	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.00003
				2,4-Dinitrotoluene	0.300	mg/kg	4.0E-08	(mg/kg/day)	3.1E-01	(mg/kg/day)$^{-1}$	1.2E-08	1.1E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00006
				2-Amino-4,6-Dinitrotoluene	0.210	mg/kg	1.6E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.6E-09	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000002
				4-Amino-2,6-Dinitrotoluene	0.220	mg/kg	2.6E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	7.2E-09	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000004
				HMX	0.280	mg/kg	2.2E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	6.1E-09	(mg/kg/day)	5.0E-02	(mg/kg/day)	0.0000001
				Nitroglycerin	26.4	mg/kg	3.4E-06	(mg/kg/day)	1.7E-02	(mg/kg/day)$^{-1}$	5.8E-08	9.6E-06	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.10
				PETN	5.42	mg/kg	7.0E-07	(mg/kg/day)	4.0E-03	(mg/kg/day)$^{-1}$	2.8E-09	2.0E-06	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0010
				RDX	0.330	mg/kg	6.4E-09	(mg/kg/day)	1.1E-01	(mg/kg/day)$^{-1}$	7.0E-10	1.8E-08	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.000006
				Perchlorate	285.000	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-04	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	5.0E-5	mg/kg	1.9E-12	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	2.5E-07	5.4E-12	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.008
				Aluminum	3,684	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Arsenic	4.61	mg/kg	1.8E-07	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	2.7E-07	5.0E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.002
				Barium	103	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-02	(mg/kg/day)	--
				Beryllium	0.220	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-05	(mg/kg/day)	--
				Cadmium	14.5	mg/kg	1.9E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	5.3E-08	(mg/kg/day)	2.5E-05	(mg/kg/day)	0.002
				Chromium	14.6	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--
				Copper	212	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	4.0E-02	(mg/kg/day)	--
				Iron	15,236	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Lead	60.8	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)	--

TABLE 7.11.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2006 SURFACE SOIL SAMPLES

REASONABLE MAXIMUM EXPOSURES

TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Outdoor Worker - SF Unit
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Static Firing Rocket Silos	Dermal	Manganese	148	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
				Mercury	0.040	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Nickel	61.9	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	8.0E-04	(mg/kg/day)	--
				Selenium	0.370	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	5.0E-03	(mg/kg/day)	--
				Vanadium	6.36	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.3E-04	(mg/kg/day)	--
				Zinc	234	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-01	(mg/kg/day)	--
			Exp. Route Total								5.9E-07					0.1
		Exposure Point Total									7.1E-06					0.8
	Exposure Medium Total										7.1E-06					0.8
Medium Total											7.1E-06					0.8
										Total of Receptor Risks Across All Media	7.1E-06				Total of Receptor Hazards Across All Media	0.8

TABLE 7.12.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2006 SURFACE SOIL SAMPLES

REASONABLE MAXIMUM EXPOSURES

TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Outdoor Worker - Entire Site
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	All Soil Samples	Ingestion	1,3,5-Trinitrobenzene	0.110	mg/kg	3.4E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	9.4E-08	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.000003
				2,4,6-Trinitrotoluene	3.90	mg/kg	1.2E-06	(mg/kg/day)	3.0E-02	(mg/kg/day)$^{-1}$	3.6E-08	3.3E-06	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.007
				2,4-Dinitrotoluene	0.150	mg/kg	4.6E-08	(mg/kg/day)	3.1E-01	(mg/kg/day)$^{-1}$	1.4E-08	1.3E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00006
				2-Amino-4,6-Dinitrotoluene	0.160	mg/kg	4.9E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.4E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00007
				4-Amino-2,6-Dinitrotoluene	0.150	mg/kg	4.6E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.3E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00006
				HMX	1.00	mg/kg	3.1E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	8.6E-07	(mg/kg/day)	5.0E-02	(mg/kg/day)	0.00002
				Nitroglycerin	15.2	mg/kg	4.6E-06	(mg/kg/day)	1.7E-02	(mg/kg/day)$^{-1}$	7.9E-08	1.3E-05	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.1
				PETN	5.42	mg/kg	1.7E-06	(mg/kg/day)	4.0E-03	(mg/kg/day)$^{-1}$	6.6E-09	4.6E-06	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.002
				RDX	19.4	mg/kg	5.9E-06	(mg/kg/day)	1.1E-01	(mg/kg/day)$^{-1}$	6.5E-07	1.7E-05	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.006
				Tetryl	0.180	mg/kg	5.5E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.5E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00008
				Perchlorate	10.1	mg/kg	3.1E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	8.6E-06	(mg/kg/day)	7.0E-04	(mg/kg/day)	0.01
				2,3,7,8-TCDD Equivalents	5.0E-5	mg/kg	1.5E-11	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	2.0E-06	4.3E-11	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.06
				Aluminum	5,042	mg/kg	1.5E-03	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.3E-03	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.004
				Arsenic	4.33	mg/kg	1.3E-06	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	2.0E-06	3.7E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.01
				Barium	127	mg/kg	3.9E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.1E-04	(mg/kg/day)	2.0E-01	(mg/kg/day)	0.0005
				Beryllium	0.280	mg/kg	8.6E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.4E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0001
				Cadmium	6.60	mg/kg	2.0E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	5.7E-06	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.01
				Chromium	8.90	mg/kg	2.7E-06	(mg/kg/day)	5.0E-01	(mg/kg/day)$^{-1}$	1.4E-06	7.6E-06	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.003
				Copper	204	mg/kg	6.2E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.7E-04	(mg/kg/day)	4.0E-02	(mg/kg/day)	0.004
				Iron	7,393	mg/kg	2.3E-03	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	6.3E-03	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.009
				Lead	200	mg/kg	6.1E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.7E-04	(mg/kg/day)	NA	(mg/kg/day)	--
				Manganese	220	mg/kg	6.7E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.9E-04	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.008
				Mercury	0.067	mg/kg	2.0E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	5.7E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0002
				Nickel	17.4	mg/kg	5.3E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.5E-05	(mg/kg/day)	2.0E-02	(mg/kg/day)	0.0007
				Selenium	0.380	mg/kg	1.2E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.3E-07	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.00007
				Silver	0.539	mg/kg	1.6E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.6E-07	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.00009
				Vanadium	6.80	mg/kg	2.1E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	5.8E-06	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.001
				Zinc	131	mg/kg	4.0E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.1E-04	(mg/kg/day)	3.0E-01	(mg/kg/day)	0.0004
			Exp. Route Total								6.1E-06					0.3
			Dermal	1,3,5-Trinitrobenzene	0.110	mg/kg	2.7E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	7.6E-09	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.0000003
				2,4,6-Trinitrotoluene	3.90	mg/kg	1.6E-07	(mg/kg/day)	3.0E-02	(mg/kg/day)$^{-1}$	4.8E-09	4.5E-07	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.0009
				2,4-Dinitrotoluene	0.150	mg/kg	2.0E-08	(mg/kg/day)	3.1E-01	(mg/kg/day)$^{-1}$	6.1E-09	5.5E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00003
				2-Amino-4,6-Dinitrotoluene	0.160	mg/kg	1.2E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.5E-09	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000002
				4-Amino-2,6-Dinitrotoluene	0.150	mg/kg	1.7E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.9E-09	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000002
				HMX	1.00	mg/kg	7.8E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.2E-08	(mg/kg/day)	5.0E-02	(mg/kg/day)	0.0000004
				Nitroglycerin	15.2	mg/kg	2.0E-06	(mg/kg/day)	1.7E-02	(mg/kg/day)$^{-1}$	3.3E-08	5.5E-06	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.06
				PETN	5.42	mg/kg	7.0E-07	(mg/kg/day)	4.0E-03	(mg/kg/day)$^{-1}$	2.8E-09	2.0E-06	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0010
				RDX	19.4	mg/kg	3.8E-07	(mg/kg/day)	1.1E-01	(mg/kg/day)$^{-1}$	4.1E-08	1.1E-06	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.0004
				Tetryl	0.180	mg/kg	2.3E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	6.5E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00003
				Perchlorate	10.1	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-04	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	5.0E-5	mg/kg	1.9E-12	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	2.5E-07	5.4E-12	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.008
				Aluminum	5,042	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Arsenic	4.33	mg/kg	1.7E-07	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	2.5E-07	4.7E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.002
				Barium	127	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-02	(mg/kg/day)	--
				Beryllium	0.280	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-05	(mg/kg/day)	--
				Cadmium	6.60	mg/kg	8.5E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.4E-08	(mg/kg/day)	2.5E-05	(mg/kg/day)	0.0010
				Chromium	8.90	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--

TABLE 7.12.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2006 SURFACE SOIL SAMPLES

REASONABLE MAXIMUM EXPOSURES

TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Outdoor Worker - Entire Site
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	All Soil Samples	Dermal	Copper	204	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	4.0E-02	(mg/kg/day)	--
				Iron	7,393	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Lead	200	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)	--
				Manganese	220	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
				Mercury	0.067	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Nickel	17.4	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	8.0E-04	(mg/kg/day)	--
				Selenium	0.380	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	5.0E-03	(mg/kg/day)	--
				Silver	0.539	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	2.0E-04	(mg/kg/day)	--
				Vanadium	6.80	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.3E-04	(mg/kg/day)	--
				Zinc	131	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-01	(mg/kg/day)	--
			Exp. Route Total								5.9E-07					0.07
		Exposure Point Total									6.7E-06					0.3
	Exposure Medium Total										6.7E-06					0.3
Medium Total											6.7E-06					0.3
Total of Receptor Risks Across All Media											6.7E-06	Total of Receptor Hazards Across All Media				0.3

2007 SURFACE SOIL SAMPLES

TABLE 7.13.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2007 SURFACE SOIL SAMPLES

REASONABLE MAXIMUM EXPOSURES

TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Unprotected OB Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	OB Unit	Ingestion	2,4,6-Trinitrotoluene	0.270	mg/kg	2.0E-08	(mg/kg/day)	3.0E-02	$(mg/kg/day)^{-1}$	5.9E-10	5.5E-08	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.0001
				2,4-Dinitrotoluene	21.5	mg/kg	1.6E-06	(mg/kg/day)	3.1E-01	$(mg/kg/day)^{-1}$	4.9E-07	4.4E-06	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.002
				2,6-Dinitrotoluene	0.840	mg/kg	6.2E-08	(mg/kg/day)	1.5E+00	$(mg/kg/day)^{-1}$	9.2E-08	1.7E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0006
				4-Amino-2,6-Dinitrotoluene	0.090	mg/kg	6.6E-09	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.8E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000009
				HMX	0.310	mg/kg	2.3E-08	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	6.4E-08	(mg/kg/day)	5.0E-02	(mg/kg/day)	0.000001
				RDX	1.44	mg/kg	1.1E-07	(mg/kg/day)	1.1E-01	$(mg/kg/day)^{-1}$	1.2E-08	3.0E-07	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.00010
				2,3,7,8-TCDD Equivalents	4.0E-5	mg/kg	2.9E-12	(mg/kg/day)	1.3E+05	$(mg/kg/day)^{-1}$	3.8E-07	8.2E-12	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.01
				Perchlorate	0.496	mg/kg	3.6E-08	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.0E-07	(mg/kg/day)	7.0E-04	(mg/kg/day)	0.0001
				Aluminum	13,497	mg/kg	9.9E-04	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	2.8E-03	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.003
				Arsenic	7.00	mg/kg	5.1E-07	(mg/kg/day)	1.5E+00	$(mg/kg/day)^{-1}$	7.7E-07	1.4E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.005
				Barium	282	mg/kg	2.1E-05	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	5.8E-05	(mg/kg/day)	2.0E-01	(mg/kg/day)	0.0003
				Beryllium	0.600	mg/kg	4.4E-08	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.2E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00006
				Cadmium	18.8	mg/kg	1.4E-06	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	3.9E-06	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.008
				Chromium	52.0	mg/kg	3.8E-06	(mg/kg/day)	5.0E-01	$(mg/kg/day)^{-1}$	1.9E-06	1.1E-05	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.004
				Copper	486	mg/kg	3.6E-05	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.0E-04	(mg/kg/day)	4.0E-02	(mg/kg/day)	0.002
				Iron	14,000	mg/kg	1.0E-03	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	2.9E-03	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.004
				Lead	4,524	mg/kg	3.3E-04	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	9.3E-04	(mg/kg/day)	NA	(mg/kg/day)	--
				Manganese	821	mg/kg	6.0E-05	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.7E-04	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.007
				Mercury	0.050	mg/kg	3.7E-09	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.0E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.00003
				Nickel	18.8	mg/kg	1.4E-06	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	3.9E-06	(mg/kg/day)	2.0E-02	(mg/kg/day)	0.0002
				Silver	0.970	mg/kg	7.1E-08	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	2.0E-07	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.00004
				Vanadium	22.7	mg/kg	1.7E-06	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	4.7E-06	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.0009
				Zinc	256	mg/kg	1.9E-05	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	5.3E-05	(mg/kg/day)	3.0E-01	(mg/kg/day)	0.0002
			Exp. Route Total								3.7E-06					0.05
			Dermal	2,4,6-Trinitrotoluene	0.270	mg/kg	2.7E-09	(mg/kg/day)	3.0E-02	$(mg/kg/day)^{-1}$	8.1E-11	7.5E-09	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.00002
				2,4-Dinitrotoluene	21.5	mg/kg	6.8E-07	(mg/kg/day)	3.1E-01	$(mg/kg/day)^{-1}$	2.1E-07	1.9E-06	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0010
				2,6-Dinitrotoluene	0.840	mg/kg	2.6E-08	(mg/kg/day)	1.5E+00	$(mg/kg/day)^{-1}$	3.9E-08	7.2E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0002
				4-Amino-2,6-Dinitrotoluene	0.090	mg/kg	2.5E-10	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	7.0E-10	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0000004
				HMX	0.310	mg/kg	5.8E-10	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.6E-09	(mg/kg/day)	5.0E-02	(mg/kg/day)	0.00000003
				RDX	1.44	mg/kg	6.7E-09	(mg/kg/day)	1.1E-01	$(mg/kg/day)^{-1}$	7.4E-10	1.9E-08	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.000006
				2,3,7,8-TCDD Equivalents	4.0E-5	mg/kg	3.7E-13	(mg/kg/day)	1.3E+05	$(mg/kg/day)^{-1}$	4.8E-08	1.0E-12	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.001
				Perchlorate	0.496	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-04	(mg/kg/day)	--
				Aluminum	13,497	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Arsenic	7.00	mg/kg	6.5E-08	(mg/kg/day)	1.5E+00	$(mg/kg/day)^{-1}$	9.8E-08	1.8E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0006
				Barium	282	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-02	(mg/kg/day)	--
				Beryllium	0.600	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-05	(mg/kg/day)	--
				Cadmium	18.8	mg/kg	5.8E-09	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.6E-08	(mg/kg/day)	2.5E-05	(mg/kg/day)	0.0007
				Chromium	52.0	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--
				Copper	486	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	4.0E-02	(mg/kg/day)	--
				Iron	14,000	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Lead	4,524	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)	--
				Manganese	821	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
				Mercury	0.050	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Nickel	18.8	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	8.0E-04	(mg/kg/day)	--
				Silver	0.970	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	2.0E-04	(mg/kg/day)	--
				Vanadium	22.7	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.3E-04	(mg/kg/day)	--
				Zinc	256	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-01	(mg/kg/day)	--
			Exp. Route Total								4.0E-07					0.004
		Exposure Point Total									4.1E-06					0.05
	Exposure Medium Total										4.1E-06					0.05
Medium Total											4.1E-06					0.05
										Total of Receptor Risks Across All Media	4.1E-06				Total of Receptor Hazards Across All Media	0.05

TABLE 7.14.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2007 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Unprotected OD Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	OD Unit	Ingestion	1,3,5-Trinitrobenzene	0.250	mg/kg	3.7E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.0E-07	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.000003
				1,3-Dinitrobenzene	0.059	mg/kg	8.7E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.4E-08	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.0002
				2,4,6-Trinitrotoluene	4.04	mg/kg	5.9E-07	(mg/kg/day)	3.0E-02	(mg/kg/day)$^{-1}$	1.8E-08	1.7E-06	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.003
				2,4-Dinitrotoluene	0.080	mg/kg	1.2E-08	(mg/kg/day)	3.1E-01	(mg/kg/day)$^{-1}$	3.6E-09	3.3E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00002
				2-Amino-4,6-Dinitrotoluene	0.260	mg/kg	3.8E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.1E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00005
				4-Amino-2,6-Dinitrotoluene	0.130	mg/kg	1.9E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	5.3E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00003
				HMX	0.710	mg/kg	1.0E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.9E-07	(mg/kg/day)	5.0E-02	(mg/kg/day)	0.000006
				Nitroglycerin	2.70	mg/kg	4.0E-07	(mg/kg/day)	1.7E-02	(mg/kg/day)$^{-1}$	6.7E-09	1.1E-06	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.01
				RDX	6.50	mg/kg	9.5E-07	(mg/kg/day)	1.1E-01	(mg/kg/day)$^{-1}$	1.0E-07	2.7E-06	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.0009
				Tetryl	11.7	mg/kg	1.7E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.8E-06	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.002
				Perchlorate	22.4	mg/kg	3.3E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	9.2E-06	(mg/kg/day)	7.0E-04	(mg/kg/day)	0.01
				Aluminum	3,188	mg/kg	4.7E-04	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.3E-03	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.001
				Arsenic	3.90	mg/kg	5.7E-07	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	8.6E-07	1.6E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.005
				Barium	85.0	mg/kg	1.2E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.5E-05	(mg/kg/day)	2.0E-01	(mg/kg/day)	0.0002
				Beryllium	0.200	mg/kg	2.9E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	8.2E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00004
				Cadmium	6.10	mg/kg	9.0E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.5E-06	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.005
				Chromium	45.5	mg/kg	6.7E-06	(mg/kg/day)	5.0E-01	(mg/kg/day)$^{-1}$	3.3E-06	1.9E-05	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.006
				Copper	114	mg/kg	1.7E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.7E-05	(mg/kg/day)	4.0E-02	(mg/kg/day)	0.001
				Iron	6,981	mg/kg	1.0E-03	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.9E-03	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.004
				Lead	19.0	mg/kg	2.8E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	7.8E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Manganese	104	mg/kg	1.5E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.3E-05	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.002
				Mercury	0.080	mg/kg	1.2E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.3E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0001
				Nickel	22.1	mg/kg	3.2E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	9.1E-06	(mg/kg/day)	2.0E-02	(mg/kg/day)	0.0005
				Silver	2.40	mg/kg	3.5E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	9.9E-07	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.0002
				Vanadium	9.50	mg/kg	1.4E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.9E-06	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.0008
				Zinc	736	mg/kg	1.1E-04	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.0E-04	(mg/kg/day)	3.0E-01	(mg/kg/day)	0.001
			Exp. Route Total								4.3E-06					0.06
			Dermal	1,3,5-Trinitrobenzene	0.250	mg/kg	3.0E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	8.3E-09	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.0000003
				1,3-Dinitrobenzene	0.059	mg/kg	3.7E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.0E-08	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.0001
				2,4,6-Trinitrotoluene	4.04	mg/kg	8.0E-08	(mg/kg/day)	3.0E-02	(mg/kg/day)$^{-1}$	2.4E-09	2.2E-07	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.0004
				2,4-Dinitrotoluene	0.080	mg/kg	5.1E-09	(mg/kg/day)	3.1E-01	(mg/kg/day)$^{-1}$	1.6E-09	1.4E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000007
				2-Amino-4,6-Dinitrotoluene	0.260	mg/kg	9.7E-10	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.7E-09	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000001
				4-Amino-2,6-Dinitrotoluene	0.130	mg/kg	7.3E-10	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.0E-09	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000001
				HMX	0.710	mg/kg	2.6E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	7.4E-09	(mg/kg/day)	5.0E-02	(mg/kg/day)	0.0000001
				Nitroglycerin	2.70	mg/kg	1.7E-07	(mg/kg/day)	1.7E-02	(mg/kg/day)$^{-1}$	2.9E-09	4.7E-07	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.005
				RDX	6.50	mg/kg	6.1E-08	(mg/kg/day)	1.1E-01	(mg/kg/day)$^{-1}$	6.7E-09	1.7E-07	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.00006
				Tetryl	11.7	mg/kg	7.3E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.0E-06	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.001
				Perchlorate	22.4	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-04	(mg/kg/day)	--
				Aluminum	3,188	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Arsenic	3.90	mg/kg	7.3E-08	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	1.1E-07	2.0E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0007
				Barium	85.0	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-02	(mg/kg/day)	--
				Beryllium	0.200	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-05	(mg/kg/day)	--
				Cadmium	6.10	mg/kg	3.8E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.1E-08	(mg/kg/day)	2.5E-05	(mg/kg/day)	0.0004
				Chromium	45.5	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--
				Copper	114	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	4.0E-02	(mg/kg/day)	--
				Iron	6,981	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Lead	19.0	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)	--
				Manganese	104	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
				Mercury	0.080	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Nickel	22.1	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	8.0E-04	(mg/kg/day)	--
				Silver	2.40	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	2.0E-04	(mg/kg/day)	--
				Vanadium	9.50	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.3E-04	(mg/kg/day)	--
				Zinc	736	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-01	(mg/kg/day)	--
			Exp. Route Total								1.2E-07					0.007
		Exposure Point Total									4.5E-06					0.07
	Exposure Medium Total										4.5E-06					0.07
Medium Total											4.5E-06					0.07
										Total of Receptor Risks Across All Media	4.5E-06				Total of Receptor Hazards Across All Media	0.07

TABLE 7.15.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2007 SURFACE SOIL SAMPLES

REASONABLE MAXIMUM EXPOSURES

TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Unprotected OB/OD/SF Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	All Soil Samples	Ingestion	1,3,5-Trinitrobenzene	0.250	mg/kg	6.4E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.8E-07	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.000006
				1,3-Dinitrobenzene	0.110	mg/kg	2.8E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	7.9E-08	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.0008
				2,4,6-Trinitrotoluene	4.20	mg/kg	1.1E-06	(mg/kg/day)	3.0E-02	(mg/kg/day)$^{-1}$	3.2E-08	3.0E-06	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.006
				2,4-Dinitrotoluene	4.90	mg/kg	1.3E-06	(mg/kg/day)	3.1E-01	(mg/kg/day)$^{-1}$	3.9E-07	3.5E-06	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.002
				2,6-Dinitrotoluene	0.860	mg/kg	2.2E-07	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	3.3E-07	6.2E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.002
				2-Amino-4,6-Dinitrotoluene	0.220	mg/kg	5.7E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.6E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00008
				4-Amino-2,6-Dinitrotoluene	0.120	mg/kg	3.1E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	8.6E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00004
				HMX	0.820	mg/kg	2.1E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	5.9E-07	(mg/kg/day)	5.0E-02	(mg/kg/day)	0.00001
				Nitroglycerin	2.60	mg/kg	6.7E-07	(mg/kg/day)	1.7E-02	(mg/kg/day)$^{-1}$	1.1E-08	1.9E-06	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.02
				RDX	5.40	mg/kg	1.4E-06	(mg/kg/day)	1.1E-01	(mg/kg/day)$^{-1}$	1.5E-07	3.9E-06	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.001
				Tetryl	9.40	mg/kg	2.4E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	6.8E-06	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.003
				2,3,7,8-TCDD Equivalents	3.7E-5	mg/kg	9.5E-12	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	1.2E-06	2.7E-11	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.04
				Perchlorate	9.10	mg/kg	2.3E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	6.5E-06	(mg/kg/day)	7.0E-04	(mg/kg/day)	0.009
				Aluminum	7,584	mg/kg	1.9E-03	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	5.5E-03	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.005
				Arsenic	4.60	mg/kg	1.2E-06	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	1.8E-06	3.3E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.01
				Barium	170	mg/kg	4.4E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.2E-04	(mg/kg/day)	2.0E-01	(mg/kg/day)	0.0006
				Beryllium	0.290	mg/kg	7.4E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.1E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0001
				Cadmium	8.40	mg/kg	2.2E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	6.0E-06	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.01
				Chromium	44.3	mg/kg	1.1E-05	(mg/kg/day)	5.0E-01	(mg/kg/day)$^{-1}$	5.7E-06	3.2E-05	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.01
				Copper	153	mg/kg	3.9E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.1E-04	(mg/kg/day)	4.0E-02	(mg/kg/day)	0.003
				Iron	8,748	mg/kg	2.2E-03	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	6.3E-03	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.009
				Lead	958	mg/kg	2.5E-04	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	6.9E-04	(mg/kg/day)	NA	(mg/kg/day)	--
				Manganese	334	mg/kg	8.6E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.4E-04	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.01
				Mercury	0.070	mg/kg	1.8E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	5.0E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0002
				Nickel	20.6	mg/kg	5.3E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.5E-05	(mg/kg/day)	2.0E-02	(mg/kg/day)	0.0007
				Silver	1.20	mg/kg	3.1E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	8.6E-07	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.0002
				Vanadium	12.9	mg/kg	3.3E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	9.3E-06	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.002
				Zinc	622	mg/kg	1.6E-04	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.5E-04	(mg/kg/day)	3.0E-01	(mg/kg/day)	0.001
			Exp. Route Total								9.6E-06					0.1
			Dermal	1,3,5-Trinitrobenzene	0.250	mg/kg	5.2E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.4E-08	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.0000005
				1,3-Dinitrobenzene	0.110	mg/kg	1.2E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.3E-08	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.0003
				2,4,6-Trinitrotoluene	4.20	mg/kg	1.5E-07	(mg/kg/day)	3.0E-02	(mg/kg/day)$^{-1}$	4.4E-09	4.1E-07	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.0008
				2,4-Dinitrotoluene	4.90	mg/kg	5.4E-07	(mg/kg/day)	3.1E-01	(mg/kg/day)$^{-1}$	1.7E-07	1.5E-06	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0008
				2,6-Dinitrotoluene	0.860	mg/kg	9.3E-08	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	1.4E-07	2.6E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0009
				2-Amino-4,6-Dinitrotoluene	0.220	mg/kg	1.4E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.0E-09	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000002
				4-Amino-2,6-Dinitrotoluene	0.120	mg/kg	1.2E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.3E-09	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000002
				HMX	0.820	mg/kg	5.3E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.5E-08	(mg/kg/day)	5.0E-02	(mg/kg/day)	0.0000003
				Nitroglycerin	2.60	mg/kg	2.8E-07	(mg/kg/day)	1.7E-02	(mg/kg/day)$^{-1}$	4.8E-09	7.9E-07	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.008
				RDX	5.40	mg/kg	8.8E-08	(mg/kg/day)	1.1E-01	(mg/kg/day)$^{-1}$	9.7E-09	2.5E-07	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.00008
				Tetryl	9.40	mg/kg	1.0E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.9E-06	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.001
				2,3,7,8-TCDD Equivalents	3.7E-5	mg/kg	1.2E-12	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	1.6E-07	3.4E-12	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.005
				Perchlorate	9.10	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-04	(mg/kg/day)	--
				Aluminum	7,584	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Arsenic	4.60	mg/kg	1.5E-07	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	2.3E-07	4.2E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.001
				Barium	170	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-02	(mg/kg/day)	--
				Beryllium	0.290	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-05	(mg/kg/day)	--
				Cadmium	8.40	mg/kg	9.1E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.6E-08	(mg/kg/day)	2.5E-05	(mg/kg/day)	0.001

TABLE 7.15.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2007 SURFACE SOIL SAMPLES

REASONABLE MAXIMUM EXPOSURES

TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Unprotected OB/OD/SF Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	All Soil Samples	Dermal	Chromium	44.3	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--
				Copper	153	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	4.0E-02	(mg/kg/day)	--
				Iron	8,748	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Lead	958	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)	--
				Manganese	334	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
				Mercury	0.070	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Nickel	20.6	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	8.0E-04	(mg/kg/day)	--
				Silver	1.20	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	2.0E-04	(mg/kg/day)	--
				Vanadium	12.9	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.3E-04	(mg/kg/day)	--
				Zinc	622	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-01	(mg/kg/day)	--
			Exp. Route Total								7.1E-07					0.02
		Exposure Point Total									1.0E-05					0.2
	Exposure Medium Total										1.0E-05					0.2
Medium Total											1.0E-05					0.2
Total of Receptor Risks Across All Media											1.0E-05	Total of Receptor Hazards Across All Media				0.2

TABLE 7.16.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2007 SURFACE SOIL SAMPLES

REASONABLE MAXIMUM EXPOSURES

TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Protected OB Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	OB Unit	Ingestion	2,4,6-Trinitrotoluene	0.270	mg/kg	2.0E-08	(mg/kg/day)	3.0E-02	$(mg/kg/day)^{-1}$	5.9E-10	5.5E-08	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.0001
				2,4-Dinitrotoluene	21.5	mg/kg	1.6E-06	(mg/kg/day)	3.1E-01	$(mg/kg/day)^{-1}$	4.9E-07	4.4E-06	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.002
				2,6-Dinitrotoluene	0.840	mg/kg	6.2E-08	(mg/kg/day)	1.5E+00	$(mg/kg/day)^{-1}$	9.2E-08	1.7E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0006
				4-Amino-2,6-Dinitrotoluene	0.090	mg/kg	6.6E-09	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.8E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00001
				HMX	0.310	mg/kg	2.3E-08	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	6.4E-08	(mg/kg/day)	5.0E-02	(mg/kg/day)	0.000001
				RDX	1.44	mg/kg	1.1E-07	(mg/kg/day)	1.1E-01	$(mg/kg/day)^{-1}$	1.2E-08	3.0E-07	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.0001
				2,3,7,8-TCDD Equivalents	4.0E-5	mg/kg	2.9E-12	(mg/kg/day)	1.3E+05	$(mg/kg/day)^{-1}$	3.8E-07	8.2E-12	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.01
				Perchlorate	0.496	mg/kg	3.6E-08	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.0E-07	(mg/kg/day)	7.0E-04	(mg/kg/day)	0.0001
				Aluminum	13,497	mg/kg	9.9E-04	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	2.8E-03	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.003
				Arsenic	7.00	mg/kg	5.1E-07	(mg/kg/day)	1.5E+00	$(mg/kg/day)^{-1}$	7.7E-07	1.4E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.005
				Barium	282	mg/kg	2.1E-05	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	5.8E-05	(mg/kg/day)	2.0E-01	(mg/kg/day)	0.0003
				Beryllium	0.600	mg/kg	4.4E-08	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.2E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00006
				Cadmium	18.8	mg/kg	1.4E-06	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	3.9E-06	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.008
				Chromium	52.0	mg/kg	3.8E-06	(mg/kg/day)	5.0E-01	$(mg/kg/day)^{-1}$	1.9E-06	1.1E-05	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.004
				Copper	486	mg/kg	3.6E-05	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.0E-04	(mg/kg/day)	4.0E-02	(mg/kg/day)	0.002
				Iron	14,000	mg/kg	1.0E-03	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	2.9E-03	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.004
				Lead	4,524	mg/kg	3.3E-04	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	9.3E-04	(mg/kg/day)	NA	(mg/kg/day)	--
				Manganese	821	mg/kg	6.0E-05	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.7E-04	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.007
				Mercury	0.050	mg/kg	3.7E-09	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.0E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.00003
				Nickel	18.8	mg/kg	1.4E-06	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	3.9E-06	(mg/kg/day)	2.0E-02	(mg/kg/day)	0.0002
				Silver	0.970	mg/kg	7.1E-08	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	2.0E-07	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.00004
				Vanadium	22.7	mg/kg	1.7E-06	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	4.7E-06	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.001
				Zinc	256	mg/kg	1.9E-05	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	5.3E-05	(mg/kg/day)	3.0E-01	(mg/kg/day)	0.0002
			Exp. Route Total								3.7E-06					0.05
			Dermal	2,4,6-Trinitrotoluene	0.270	mg/kg	9.5E-10	(mg/kg/day)	3.0E-02	$(mg/kg/day)^{-1}$	2.9E-11	2.7E-09	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.000005
				2,4-Dinitrotoluene	21.5	mg/kg	2.4E-07	(mg/kg/day)	3.1E-01	$(mg/kg/day)^{-1}$	7.5E-08	6.8E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0003
				2,6-Dinitrotoluene	0.840	mg/kg	9.2E-09	(mg/kg/day)	1.5E+00	$(mg/kg/day)^{-1}$	1.4E-08	2.6E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.00009
				4-Amino-2,6-Dinitrotoluene	0.090	mg/kg	8.9E-11	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	2.5E-10	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0000001
				HMX	0.310	mg/kg	2.0E-10	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	5.7E-10	(mg/kg/day)	5.0E-02	(mg/kg/day)	0.00000001
				RDX	1.44	mg/kg	2.4E-09	(mg/kg/day)	1.1E-01	$(mg/kg/day)^{-1}$	2.6E-10	6.7E-09	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.000002
				2,3,7,8-TCDD Equivalents	4.0E-5	mg/kg	1.3E-13	(mg/kg/day)	1.3E+05	$(mg/kg/day)^{-1}$	1.7E-08	3.7E-13	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.0005
				Perchlorate	0.496	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-04	(mg/kg/day)	--
				Aluminum	13,497	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Arsenic	7.00	mg/kg	2.3E-08	(mg/kg/day)	1.5E+00	$(mg/kg/day)^{-1}$	3.5E-08	6.5E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0002
				Barium	282	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-02	(mg/kg/day)	--
				Beryllium	0.600	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-05	(mg/kg/day)	--
				Cadmium	18.8	mg/kg	2.1E-09	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	5.8E-09	(mg/kg/day)	2.5E-05	(mg/kg/day)	0.0002
				Chromium	52.0	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--
				Copper	486	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	4.0E-02	(mg/kg/day)	--
				Iron	14,000	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Lead	4,524	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)	--
				Manganese	821	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
				Mercury	0.050	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Nickel	18.8	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	8.0E-04	(mg/kg/day)	--
				Silver	0.970	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	2.0E-04	(mg/kg/day)	--
				Vanadium	22.7	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.3E-04	(mg/kg/day)	--
				Zinc	256	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-01	(mg/kg/day)	--
			Exp. Route Total								1.4E-07					0.001
		Exposure Point Total									3.8E-06					0.05
	Exposure Medium Total										3.8E-06					0.05
Medium Total											3.8E-06					0.05
										Total of Receptor Risks Across All Media	3.8E-06			Total of Receptor Hazards Across All Media		0.05

TABLE 7.17.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2007 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Protected OD Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	OD Unit	Ingestion	1,3,5-Trinitrobenzene	0.250	mg/kg	3.7E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.0E-07	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.000003
				1,3-Dinitrobenzene	0.059	mg/kg	8.7E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.4E-08	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.0002
				2,4,6-Trinitrotoluene	4.04	mg/kg	5.9E-07	(mg/kg/day)	3.0E-02	(mg/kg/day)$^{-1}$	1.8E-08	1.7E-06	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.003
				2,4-Dinitrotoluene	0.080	mg/kg	1.2E-08	(mg/kg/day)	3.1E-01	(mg/kg/day)$^{-1}$	3.6E-09	3.3E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00002
				2-Amino-4,6-Dinitrotoluene	0.260	mg/kg	3.8E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.1E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00005
				4-Amino-2,6-Dinitrotoluene	0.130	mg/kg	1.9E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	5.3E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00003
				HMX	0.710	mg/kg	1.0E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.9E-07	(mg/kg/day)	5.0E-02	(mg/kg/day)	0.000006
				Nitroglycerin	2.70	mg/kg	4.0E-07	(mg/kg/day)	1.7E-02	(mg/kg/day)$^{-1}$	6.7E-09	1.1E-06	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.01
				RDX	6.50	mg/kg	9.5E-07	(mg/kg/day)	1.1E-01	(mg/kg/day)$^{-1}$	1.0E-07	2.7E-06	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.0009
				Tetryl	11.7	mg/kg	1.7E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.8E-06	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.002
				Perchlorate	22.4	mg/kg	3.3E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	9.2E-06	(mg/kg/day)	7.0E-04	(mg/kg/day)	0.01
				Aluminum	3,188	mg/kg	4.7E-04	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.3E-03	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.001
				Arsenic	3.90	mg/kg	5.7E-07	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	8.6E-07	1.6E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.005
				Barium	85.0	mg/kg	1.2E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.5E-05	(mg/kg/day)	2.0E-01	(mg/kg/day)	0.0002
				Beryllium	0.200	mg/kg	2.9E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	8.2E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00004
				Cadmium	6.10	mg/kg	9.0E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.5E-06	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.005
				Chromium	45.5	mg/kg	6.7E-06	(mg/kg/day)	5.0E-01	(mg/kg/day)$^{-1}$	3.3E-06	1.9E-05	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.006
				Copper	114	mg/kg	1.7E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.7E-05	(mg/kg/day)	4.0E-02	(mg/kg/day)	0.001
				Iron	6,981	mg/kg	1.0E-03	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.9E-03	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.004
				Lead	19.0	mg/kg	2.8E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	7.8E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Manganese	104	mg/kg	1.5E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.3E-05	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.002
				Mercury	0.080	mg/kg	1.2E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.3E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0001
				Nickel	22.1	mg/kg	3.2E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	9.1E-06	(mg/kg/day)	2.0E-02	(mg/kg/day)	0.0005
				Silver	2.40	mg/kg	3.5E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	9.9E-07	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.0002
				Vanadium	9.50	mg/kg	1.4E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.9E-06	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.0008
				Zinc	736	mg/kg	1.1E-04	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.0E-04	(mg/kg/day)	3.0E-01	(mg/kg/day)	0.001
			Exp. Route Total								4.3E-06					0.06
			Dermal	1,3,5-Trinitrobenzene	0.250	mg/kg	1.0E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.9E-09	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.00000010
				1,3-Dinitrobenzene	0.059	mg/kg	1.3E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.6E-09	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.00004
				2,4,6-Trinitrotoluene	4.04	mg/kg	2.8E-08	(mg/kg/day)	3.0E-02	(mg/kg/day)$^{-1}$	8.5E-10	8.0E-08	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.0002
				2,4-Dinitrotoluene	0.080	mg/kg	1.8E-09	(mg/kg/day)	3.1E-01	(mg/kg/day)$^{-1}$	5.6E-10	5.0E-09	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000003
				2-Amino-4,6-Dinitrotoluene	0.260	mg/kg	3.4E-10	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	9.6E-10	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0000005
				4-Amino-2,6-Dinitrotoluene	0.130	mg/kg	2.6E-10	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	7.2E-10	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0000004
				HMX	0.710	mg/kg	9.4E-10	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.6E-09	(mg/kg/day)	5.0E-02	(mg/kg/day)	0.00000005
				Nitroglycerin	2.70	mg/kg	5.9E-08	(mg/kg/day)	1.7E-02	(mg/kg/day)$^{-1}$	1.0E-09	1.7E-07	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.002
				RDX	6.50	mg/kg	2.1E-08	(mg/kg/day)	1.1E-01	(mg/kg/day)$^{-1}$	2.4E-09	6.0E-08	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.00002
				Tetryl	11.7	mg/kg	2.6E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	7.2E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0004
				Perchlorate	22.4	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-04	(mg/kg/day)	--
				Aluminum	3,188	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Arsenic	3.90	mg/kg	2.6E-08	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	3.9E-08	7.2E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0002
				Barium	85.0	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-02	(mg/kg/day)	--
				Beryllium	0.200	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-05	(mg/kg/day)	--
				Cadmium	6.10	mg/kg	1.3E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.8E-09	(mg/kg/day)	2.5E-05	(mg/kg/day)	0.0002
				Chromium	45.5	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--
				Copper	114	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	4.0E-02	(mg/kg/day)	--
				Iron	6,981	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Lead	19.0	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)	--
				Manganese	104	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
				Mercury	0.080	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Nickel	22.1	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	8.0E-04	(mg/kg/day)	--
				Silver	2.40	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	2.0E-04	(mg/kg/day)	--
				Vanadium	9.50	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.3E-04	(mg/kg/day)	--
				Zinc	736	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-01	(mg/kg/day)	--
			Exp. Route Total								4.3E-08					0.003
		Exposure Point Total									4.4E-06					0.06
	Exposure Medium Total										4.4E-06					0.06
Medium Total											4.4E-06					0.06
									Total of Receptor Risks Across All Media		4.4E-06			Total of Receptor Hazards Across All Media		0.06

TABLE 7.18.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2007 SURFACE SOIL SAMPLES

REASONABLE MAXIMUM EXPOSURES

TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Protected OB/OD/SF Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	All Soil Samples	Ingestion	1,3,5-Trinitrobenzene	0.250	mg/kg	6.4E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.8E-07	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.000006
				1,3-Dinitrobenzene	0.110	mg/kg	2.8E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	7.9E-08	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.0008
				2,4,6-Trinitrotoluene	4.20	mg/kg	1.1E-06	(mg/kg/day)	3.0E-02	(mg/kg/day)$^{-1}$	3.2E-08	3.0E-06	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.006
				2,4-Dinitrotoluene	4.90	mg/kg	1.3E-06	(mg/kg/day)	3.1E-01	(mg/kg/day)$^{-1}$	3.9E-07	3.5E-06	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.002
				2,6-Dinitrotoluene	0.860	mg/kg	2.2E-07	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	3.3E-07	6.2E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.002
				2-Amino-4,6-Dinitrotoluene	0.220	mg/kg	5.7E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.6E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00008
				4-Amino-2,6-Dinitrotoluene	0.120	mg/kg	3.1E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	8.6E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00004
				HMX	0.820	mg/kg	2.1E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	5.9E-07	(mg/kg/day)	5.0E-02	(mg/kg/day)	0.00001
				Nitroglycerin	2.60	mg/kg	6.7E-07	(mg/kg/day)	1.7E-02	(mg/kg/day)$^{-1}$	1.1E-08	1.9E-06	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.02
				RDX	5.40	mg/kg	1.4E-06	(mg/kg/day)	1.1E-01	(mg/kg/day)$^{-1}$	1.5E-07	3.9E-06	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.001
				Tetryl	9.40	mg/kg	2.4E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	6.8E-06	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.003
				2,3,7,8-TCDD Equivalents	3.7E-5	mg/kg	9.5E-12	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	1.2E-06	2.7E-11	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.04
				Perchlorate	9.10	mg/kg	2.3E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	6.5E-06	(mg/kg/day)	7.0E-04	(mg/kg/day)	0.009
				Aluminum	7,584	mg/kg	1.9E-03	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	5.5E-03	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.005
				Arsenic	4.60	mg/kg	1.2E-06	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	1.8E-06	3.3E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.01
				Barium	170	mg/kg	4.4E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.2E-04	(mg/kg/day)	2.0E-01	(mg/kg/day)	0.0006
				Beryllium	0.290	mg/kg	7.4E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.1E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0001
				Cadmium	8.40	mg/kg	2.2E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	6.0E-06	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.01
				Chromium	44.3	mg/kg	1.1E-05	(mg/kg/day)	5.0E-01	(mg/kg/day)$^{-1}$	5.7E-06	3.2E-05	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.01
				Copper	153	mg/kg	3.9E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.1E-04	(mg/kg/day)	4.0E-02	(mg/kg/day)	0.003
				Iron	8,748	mg/kg	2.2E-03	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	6.3E-03	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.009
				Lead	958	mg/kg	2.5E-04	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	6.9E-04	(mg/kg/day)	NA	(mg/kg/day)	--
				Manganese	334	mg/kg	8.6E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.4E-04	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.01
				Mercury	0.070	mg/kg	1.8E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	5.0E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0002
				Nickel	20.6	mg/kg	5.3E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.5E-05	(mg/kg/day)	2.0E-02	(mg/kg/day)	0.0007
				Silver	1.20	mg/kg	3.1E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	8.6E-07	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.0002
				Vanadium	12.9	mg/kg	3.3E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	9.3E-06	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.002
				Zinc	622	mg/kg	1.6E-04	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.5E-04	(mg/kg/day)	3.0E-01	(mg/kg/day)	0.001
			Exp. Route Total								9.6E-06					0.1
			Dermal	1,3,5-Trinitrobenzene	0.250	mg/kg	1.8E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	5.1E-09	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.0000002
				1,3-Dinitrobenzene	0.110	mg/kg	4.2E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.2E-08	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.0001
				2,4,6-Trinitrotoluene	4.20	mg/kg	5.2E-08	(mg/kg/day)	3.0E-02	(mg/kg/day)$^{-1}$	1.6E-09	1.4E-07	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.0003
				2,4-Dinitrotoluene	4.90	mg/kg	1.9E-07	(mg/kg/day)	3.1E-01	(mg/kg/day)$^{-1}$	6.0E-08	5.4E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0003
				2,6-Dinitrotoluene	0.860	mg/kg	3.3E-08	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	4.9E-08	9.2E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0003
				2-Amino-4,6-Dinitrotoluene	0.220	mg/kg	5.1E-10	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.4E-09	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0000007
				4-Amino-2,6-Dinitrotoluene	0.120	mg/kg	4.2E-10	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.2E-09	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0000006
				HMX	0.820	mg/kg	1.9E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	5.3E-09	(mg/kg/day)	5.0E-02	(mg/kg/day)	0.0000001
				Nitroglycerin	2.60	mg/kg	1.0E-07	(mg/kg/day)	1.7E-02	(mg/kg/day)$^{-1}$	1.7E-09	2.8E-07	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.003
				RDX	5.40	mg/kg	3.1E-08	(mg/kg/day)	1.1E-01	(mg/kg/day)$^{-1}$	3.4E-09	8.7E-08	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.00003
				Tetryl	9.40	mg/kg	3.6E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.0E-06	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0005
				2,3,7,8-TCDD Equivalents	3.7E-5	mg/kg	4.3E-13	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	5.6E-08	1.2E-12	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.002
				Perchlorate	9.10	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-04	(mg/kg/day)	--
				Aluminum	7,584	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Arsenic	4.60	mg/kg	5.3E-08	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	8.0E-08	1.5E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0005
				Barium	170	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-02	(mg/kg/day)	--
				Beryllium	0.290	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-05	(mg/kg/day)	--
				Cadmium	8.40	mg/kg	3.2E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	9.1E-09	(mg/kg/day)	2.5E-05	(mg/kg/day)	0.0004

TABLE 7.18.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2007 SURFACE SOIL SAMPLES

REASONABLE MAXIMUM EXPOSURES

TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Protected OB/OD/SF Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	All Soil Samples	Dermal	Chromium	44.3	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--
				Copper	153	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	4.0E-02	(mg/kg/day)	--
				Iron	8,748	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Lead	958	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)	--
				Manganese	334	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
				Mercury	0.070	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Nickel	20.6	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	8.0E-04	(mg/kg/day)	--
				Silver	1.20	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	2.0E-04	(mg/kg/day)	--
				Vanadium	12.9	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.3E-04	(mg/kg/day)	--
				Zinc	622	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-01	(mg/kg/day)	--
			Exp. Route Total								2.5E-07					0.007
		Exposure Point Total									9.9E-06					0.2
	Exposure Medium Total										9.9E-06					0.2
Medium Total											9.9E-06					0.2
Total of Receptor Risks Across All Media											9.9E-06	Total of Receptor Hazards Across All Media				0.2

TABLE 7.19.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2007 SURFACE SOIL SAMPLES

REASONABLE MAXIMUM EXPOSURES

TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Outdoor Worker - OB Unit
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	OB Unit	Ingestion	2,4,6-Trinitrotoluene	0.270	mg/kg	8.3E-08	(mg/kg/day)	3.0E-02	$(mg/kg/day)^{-1}$	2.5E-09	2.3E-07	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.0005
				2,4-Dinitrotoluene	21.5	mg/kg	6.6E-06	(mg/kg/day)	3.1E-01	$(mg/kg/day)^{-1}$	2.0E-06	1.8E-05	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.009
				2,6-Dinitrotoluene	0.840	mg/kg	2.6E-07	(mg/kg/day)	1.5E+00	$(mg/kg/day)^{-1}$	3.9E-07	7.2E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.002
				4-Amino-2,6-Dinitrotoluene	0.090	mg/kg	2.8E-08	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	7.7E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00004
				HMX	0.310	mg/kg	9.5E-08	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	2.7E-07	(mg/kg/day)	5.0E-02	(mg/kg/day)	0.000005
				RDX	1.44	mg/kg	4.4E-07	(mg/kg/day)	1.1E-01	$(mg/kg/day)^{-1}$	4.8E-08	1.2E-06	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.0004
				2,3,7,8-TCDD Equivalents	4.0E-5	mg/kg	1.2E-11	(mg/kg/day)	1.3E+05	$(mg/kg/day)^{-1}$	1.6E-06	3.4E-11	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.05
				Perchlorate	0.496	mg/kg	1.5E-07	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	4.2E-07	(mg/kg/day)	7.0E-04	(mg/kg/day)	0.0006
				Aluminum	13,497	mg/kg	4.1E-03	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.2E-02	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.01
				Arsenic	7.00	mg/kg	2.1E-06	(mg/kg/day)	1.5E+00	$(mg/kg/day)^{-1}$	3.2E-06	6.0E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.02
				Barium	282	mg/kg	8.6E-05	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	2.4E-04	(mg/kg/day)	2.0E-01	(mg/kg/day)	0.001
				Beryllium	0.600	mg/kg	1.8E-07	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	5.1E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0003
				Cadmium	18.8	mg/kg	5.7E-06	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.6E-05	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.03
				Chromium	52.0	mg/kg	1.6E-05	(mg/kg/day)	5.0E-01	$(mg/kg/day)^{-1}$	8.0E-06	4.5E-05	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.01
				Copper	486	mg/kg	1.5E-04	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	4.2E-04	(mg/kg/day)	4.0E-02	(mg/kg/day)	0.01
				Iron	14,000	mg/kg	4.3E-03	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.2E-02	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.02
				Lead	4,524	mg/kg	1.4E-03	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	3.9E-03	(mg/kg/day)	NA	(mg/kg/day)	--
				Manganese	821	mg/kg	2.5E-04	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	7.0E-04	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.03
				Mercury	0.050	mg/kg	1.5E-08	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	4.3E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0001
				Nickel	18.8	mg/kg	5.7E-06	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.6E-05	(mg/kg/day)	2.0E-02	(mg/kg/day)	0.0008
				Silver	0.970	mg/kg	3.0E-07	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	8.3E-07	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.0002
				Vanadium	22.7	mg/kg	6.9E-06	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.9E-05	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.004
				Zinc	256	mg/kg	7.8E-05	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	2.2E-04	(mg/kg/day)	3.0E-01	(mg/kg/day)	0.0007
			Exp. Route Total								1.5E-05					0.2
			Dermal	2,4,6-Trinitrotoluene	0.270	mg/kg	1.1E-08	(mg/kg/day)	3.0E-02	$(mg/kg/day)^{-1}$	3.4E-10	3.1E-08	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.00006
				2,4-Dinitrotoluene	21.5	mg/kg	2.8E-06	(mg/kg/day)	3.1E-01	$(mg/kg/day)^{-1}$	8.8E-07	7.9E-06	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.004
				2,6-Dinitrotoluene	0.840	mg/kg	1.1E-07	(mg/kg/day)	1.5E+00	$(mg/kg/day)^{-1}$	1.6E-07	3.0E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.001
				4-Amino-2,6-Dinitrotoluene	0.090	mg/kg	1.0E-09	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	2.9E-09	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000001
				HMX	0.310	mg/kg	2.4E-09	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	6.7E-09	(mg/kg/day)	5.0E-02	(mg/kg/day)	0.0000001
				RDX	1.44	mg/kg	2.8E-08	(mg/kg/day)	1.1E-01	$(mg/kg/day)^{-1}$	3.1E-09	7.8E-08	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.00003
				2,3,7,8-TCDD Equivalents	4.0E-5	mg/kg	1.6E-12	(mg/kg/day)	1.3E+05	$(mg/kg/day)^{-1}$	2.0E-07	4.3E-12	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.006
				Perchlorate	0.496	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-04	(mg/kg/day)	--
				Aluminum	13,497	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Arsenic	7.00	mg/kg	2.7E-07	(mg/kg/day)	1.5E+00	$(mg/kg/day)^{-1}$	4.1E-07	7.6E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.003
				Barium	282	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-02	(mg/kg/day)	--
				Beryllium	0.600	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-05	(mg/kg/day)	--
				Cadmium	18.8	mg/kg	2.4E-08	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	6.8E-08	(mg/kg/day)	2.5E-05	(mg/kg/day)	0.003
				Chromium	52.0	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--
				Copper	486	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	4.0E-02	(mg/kg/day)	--
				Iron	14,000	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Lead	4,524	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)	--
				Manganese	821	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
				Mercury	0.050	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Nickel	18.8	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	8.0E-04	(mg/kg/day)	--
				Silver	0.970	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	2.0E-04	(mg/kg/day)	--
				Vanadium	22.7	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.3E-04	(mg/kg/day)	--
				Zinc	256	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-01	(mg/kg/day)	--
			Exp. Route Total								1.7E-06					0.02
		Exposure Point Total									1.7E-05					0.2
	Exposure Medium Total										1.7E-05					0.2
Medium Total											1.7E-05					0.2
										Total of Receptor Risks Across All Media	1.7E-05				Total of Receptor Hazards Across All Media	0.2

TABLE 7.20.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2007 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Outdoor Worker - OD Unit
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	OD Unit	Ingestion	1,3,5-Trinitrobenzene	0.250	mg/kg	7.6E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.1E-07	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.000007
				1,3-Dinitrobenzene	0.059	mg/kg	1.8E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	5.1E-08	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.0005
				2,4,6-Trinitrotoluene	4.04	mg/kg	1.2E-06	(mg/kg/day)	3.0E-02	(mg/kg/day)$^{-1}$	3.7E-08	3.5E-06	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.007
				2,4-Dinitrotoluene	0.080	mg/kg	2.4E-08	(mg/kg/day)	3.1E-01	(mg/kg/day)$^{-1}$	7.6E-09	6.8E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00003
				2-Amino-4,6-Dinitrotoluene	0.260	mg/kg	8.0E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.2E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0001
				4-Amino-2,6-Dinitrotoluene	0.130	mg/kg	4.0E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.1E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00006
				HMX	0.710	mg/kg	2.2E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	6.1E-07	(mg/kg/day)	5.0E-02	(mg/kg/day)	0.00001
				Nitroglycerin	2.70	mg/kg	8.3E-07	(mg/kg/day)	1.7E-02	(mg/kg/day)$^{-1}$	1.4E-08	2.3E-06	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.02
				RDX	6.50	mg/kg	2.0E-06	(mg/kg/day)	1.1E-01	(mg/kg/day)$^{-1}$	2.2E-07	5.6E-06	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.002
				Tetryl	11.7	mg/kg	3.6E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.0E-05	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.005
				Perchlorate	22.4	mg/kg	6.8E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.9E-05	(mg/kg/day)	7.0E-04	(mg/kg/day)	0.03
				Aluminum	3,188	mg/kg	9.7E-04	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.7E-03	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.003
				Arsenic	3.90	mg/kg	1.2E-06	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	1.8E-06	3.3E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.01
				Barium	85.0	mg/kg	2.6E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	7.3E-05	(mg/kg/day)	2.0E-01	(mg/kg/day)	0.0004
				Beryllium	0.200	mg/kg	6.1E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.7E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00009
				Cadmium	6.10	mg/kg	1.9E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	5.2E-06	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.01
				Chromium	45.5	mg/kg	1.4E-05	(mg/kg/day)	5.0E-01	(mg/kg/day)$^{-1}$	7.0E-06	3.9E-05	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.01
				Copper	114	mg/kg	3.5E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	9.8E-05	(mg/kg/day)	4.0E-02	(mg/kg/day)	0.002
				Iron	6,981	mg/kg	2.1E-03	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	6.0E-03	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.009
				Lead	19.0	mg/kg	5.8E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.6E-05	(mg/kg/day)	NA	(mg/kg/day)	--
				Manganese	104	mg/kg	3.2E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	8.9E-05	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.004
				Mercury	0.080	mg/kg	2.4E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	6.8E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0002
				Nickel	22.1	mg/kg	6.8E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.9E-05	(mg/kg/day)	2.0E-02	(mg/kg/day)	0.0009
				Silver	2.40	mg/kg	7.3E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.1E-06	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.0004
				Vanadium	9.50	mg/kg	2.9E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	8.1E-06	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.002
				Zinc	736	mg/kg	2.3E-04	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	6.3E-04	(mg/kg/day)	3.0E-01	(mg/kg/day)	0.002
			Exp. Route Total								9.0E-06					0.1
			Dermal	1,3,5-Trinitrobenzene	0.250	mg/kg	6.1E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.7E-08	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.0000006
				1,3-Dinitrobenzene	0.059	mg/kg	7.6E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.1E-08	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.0002
				2,4,6-Trinitrotoluene	4.04	mg/kg	1.7E-07	(mg/kg/day)	3.0E-02	(mg/kg/day)$^{-1}$	5.0E-09	4.7E-07	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.0009
				2,4-Dinitrotoluene	0.080	mg/kg	1.1E-08	(mg/kg/day)	3.1E-01	(mg/kg/day)$^{-1}$	3.3E-09	3.0E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00001
				2-Amino-4,6-Dinitrotoluene	0.260	mg/kg	2.0E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	5.7E-09	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000003
				4-Amino-2,6-Dinitrotoluene	0.130	mg/kg	1.5E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.2E-09	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000002
				HMX	0.710	mg/kg	5.5E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.5E-08	(mg/kg/day)	5.0E-02	(mg/kg/day)	0.0000003
				Nitroglycerin	2.70	mg/kg	3.5E-07	(mg/kg/day)	1.7E-02	(mg/kg/day)$^{-1}$	5.9E-09	9.8E-07	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.010
				RDX	6.50	mg/kg	1.3E-07	(mg/kg/day)	1.1E-01	(mg/kg/day)$^{-1}$	1.4E-08	3.5E-07	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.0001
				Tetryl	11.7	mg/kg	1.5E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.2E-06	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.002
				Perchlorate	22.4	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-04	(mg/kg/day)	--
				Aluminum	3,188	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Arsenic	3.90	mg/kg	1.5E-07	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	2.3E-07	4.2E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.001
				Barium	85.0	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-02	(mg/kg/day)	--
				Beryllium	0.200	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-05	(mg/kg/day)	--
				Cadmium	6.10	mg/kg	7.9E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.2E-08	(mg/kg/day)	2.5E-05	(mg/kg/day)	0.0009
				Chromium	45.5	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--
				Copper	114	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	4.0E-02	(mg/kg/day)	--
				Iron	6,981	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Lead	19.0	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)	--
				Manganese	104	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
				Mercury	0.080	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Nickel	22.1	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	8.0E-04	(mg/kg/day)	--
				Silver	2.40	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	2.0E-04	(mg/kg/day)	--
				Vanadium	9.50	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.3E-04	(mg/kg/day)	--
				Zinc	736	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-01	(mg/kg/day)	--
			Exp. Route Total								2.6E-07					0.02
		Exposure Point Total									9.3E-06					0.1
	Exposure Medium Total										9.3E-06					0.1
Medium Total											9.3E-06					0.1
									Total of Receptor Risks Across All Media		9.3E-06			Total of Receptor Hazards Across All Media		0.1

TABLE 7.21.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2007 SURFACE SOIL SAMPLES

REASONABLE MAXIMUM EXPOSURES

TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Outdoor Worker - Entire Site
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	All Soil Samples	Ingestion	1,3,5-Trinitrobenzene	0.250	mg/kg	7.6E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.1E-07	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.000007
				1,3-Dinitrobenzene	0.110	mg/kg	3.4E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	9.4E-08	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.0009
				2,4,6-Trinitrotoluene	4.20	mg/kg	1.3E-06	(mg/kg/day)	3.0E-02	(mg/kg/day)$^{-1}$	3.9E-08	3.6E-06	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.007
				2,4-Dinitrotoluene	4.90	mg/kg	1.5E-06	(mg/kg/day)	3.1E-01	(mg/kg/day)$^{-1}$	4.6E-07	4.2E-06	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.002
				2,6-Dinitrotoluene	0.860	mg/kg	2.6E-07	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	3.9E-07	7.4E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.002
				2-Amino-4,6-Dinitrotoluene	0.220	mg/kg	6.7E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.9E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00009
				4-Amino-2,6-Dinitrotoluene	0.120	mg/kg	3.7E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.0E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00005
				HMX	0.820	mg/kg	2.5E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	7.0E-07	(mg/kg/day)	5.0E-02	(mg/kg/day)	0.00001
				Nitroglycerin	2.60	mg/kg	8.0E-07	(mg/kg/day)	1.7E-02	(mg/kg/day)$^{-1}$	1.4E-08	2.2E-06	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.02
				RDX	5.40	mg/kg	1.7E-06	(mg/kg/day)	1.1E-01	(mg/kg/day)$^{-1}$	1.8E-07	4.6E-06	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.002
				Tetryl	9.40	mg/kg	2.9E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	8.0E-06	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.004
				2,3,7,8-TCDD Equivalents	3.7E-5	mg/kg	1.1E-11	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	1.5E-06	3.2E-11	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.05
				Perchlorate	9.10	mg/kg	2.8E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	7.8E-06	(mg/kg/day)	7.0E-04	(mg/kg/day)	0.01
				Aluminum	7,584	mg/kg	2.3E-03	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	6.5E-03	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.006
				Arsenic	4.60	mg/kg	1.4E-06	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	2.1E-06	3.9E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.01
				Barium	170	mg/kg	5.2E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.5E-04	(mg/kg/day)	2.0E-01	(mg/kg/day)	0.0007
				Beryllium	0.290	mg/kg	8.9E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.5E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0001
				Cadmium	8.40	mg/kg	2.6E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	7.2E-06	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.01
				Chromium	44.3	mg/kg	1.4E-05	(mg/kg/day)	5.0E-01	(mg/kg/day)$^{-1}$	6.8E-06	3.8E-05	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.01
				Copper	153	mg/kg	4.7E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.3E-04	(mg/kg/day)	4.0E-02	(mg/kg/day)	0.003
				Iron	8,748	mg/kg	2.7E-03	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	7.5E-03	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.01
				Lead	958	mg/kg	2.9E-04	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	8.2E-04	(mg/kg/day)	NA	(mg/kg/day)	--
				Manganese	334	mg/kg	1.0E-04	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.9E-04	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.01
				Mercury	0.070	mg/kg	2.1E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	6.0E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0002
				Nickel	20.6	mg/kg	6.3E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.8E-05	(mg/kg/day)	2.0E-02	(mg/kg/day)	0.0009
				Silver	1.20	mg/kg	3.7E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.0E-06	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.0002
				Vanadium	12.9	mg/kg	3.9E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.1E-05	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.002
				Zinc	622	mg/kg	1.9E-04	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	5.3E-04	(mg/kg/day)	3.0E-01	(mg/kg/day)	0.002
			Exp. Route Total								1.1E-05					0.2
			Dermal	1,3,5-Trinitrobenzene	0.250	mg/kg	6.1E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.7E-08	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.0000006
				1,3-Dinitrobenzene	0.110	mg/kg	1.4E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.0E-08	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.0004
				2,4,6-Trinitrotoluene	4.20	mg/kg	1.7E-07	(mg/kg/day)	3.0E-02	(mg/kg/day)$^{-1}$	5.2E-09	4.9E-07	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.0010
				2,4-Dinitrotoluene	4.90	mg/kg	6.5E-07	(mg/kg/day)	3.1E-01	(mg/kg/day)$^{-1}$	2.0E-07	1.8E-06	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0009
				2,6-Dinitrotoluene	0.860	mg/kg	1.1E-07	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	1.7E-07	3.1E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.001
				2-Amino-4,6-Dinitrotoluene	0.220	mg/kg	1.7E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.8E-09	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000002
				4-Amino-2,6-Dinitrotoluene	0.120	mg/kg	1.4E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.9E-09	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000002
				HMX	0.820	mg/kg	6.4E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.8E-08	(mg/kg/day)	5.0E-02	(mg/kg/day)	0.0000004
				Nitroglycerin	2.60	mg/kg	3.4E-07	(mg/kg/day)	1.7E-02	(mg/kg/day)$^{-1}$	5.7E-09	9.4E-07	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.009
				RDX	5.40	mg/kg	1.0E-07	(mg/kg/day)	1.1E-01	(mg/kg/day)$^{-1}$	1.2E-08	2.9E-07	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.00010
				Tetryl	9.40	mg/kg	1.2E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.4E-06	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.002
				2,3,7,8-TCDD Equivalents	3.7E-5	mg/kg	1.4E-12	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	1.9E-07	4.0E-12	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.006
				Perchlorate	9.10	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-04	(mg/kg/day)	--
				Aluminum	7,584	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Arsenic	4.60	mg/kg	1.8E-07	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	2.7E-07	5.0E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.002
				Barium	170	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-02	(mg/kg/day)	--
				Beryllium	0.290	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-05	(mg/kg/day)	--
				Cadmium	8.40	mg/kg	1.1E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.0E-08	(mg/kg/day)	2.5E-05	(mg/kg/day)	0.001

TABLE 7.21.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2007 SURFACE SOIL SAMPLES

REASONABLE MAXIMUM EXPOSURES

TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Outdoor Worker - Entire Site
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	All Soil Samples	Dermal	Chromium	44.3	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--
				Copper	153	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	4.0E-02	(mg/kg/day)	--
				Iron	8,748	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Lead	958	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)	--
				Manganese	334	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
				Mercury	0.070	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Nickel	20.6	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	8.0E-04	(mg/kg/day)	--
				Silver	1.20	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	2.0E-04	(mg/kg/day)	--
				Vanadium	12.9	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.3E-04	(mg/kg/day)	--
				Zinc	622	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-01	(mg/kg/day)	--
			Exp. Route Total								8.4E-07					0.02
		Exposure Point Total									1.2E-05					0.2
	Exposure Medium Total										1.2E-05					0.2
Medium Total											1.2E-05					0.2
Total of Receptor Risks Across All Media											1.2E-05	Total of Receptor Hazards Across All Media				0.2

2009 SURFACE SOIL SAMPLES

TABLE 7.22.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2009 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Unprotected OB Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	OB Unit	Ingestion	1,3,5-Trinitrobenzene	0.027	mg/kg	2.0E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	5.5E-09	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.0000002
				2,4,6-Trinitrotoluene	0.220	mg/kg	1.6E-08	(mg/kg/day)	3.0E-02	(mg/kg/day)$^{-1}$	4.8E-10	4.5E-08	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.00009
				2,4-Dinitrotoluene	0.470	mg/kg	3.4E-08	(mg/kg/day)	3.1E-01	(mg/kg/day)$^{-1}$	1.1E-08	9.7E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00005
				4-Amino-2,6-Dinitrotoluene	0.047	mg/kg	3.4E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	9.7E-09	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000005
				HMX	0.390	mg/kg	2.9E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	8.0E-08	(mg/kg/day)	5.0E-02	(mg/kg/day)	0.000002
				Nitroglycerin	0.350	mg/kg	2.6E-08	(mg/kg/day)	1.7E-02	(mg/kg/day)$^{-1}$	4.4E-10	7.2E-08	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.0007
				RDX	1.03	mg/kg	7.6E-08	(mg/kg/day)	1.1E-01	(mg/kg/day)$^{-1}$	8.3E-09	2.1E-07	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.00007
				Tetryl	0.022	mg/kg	1.6E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.5E-09	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000002
				2,3,7,8-TCDD Equivalents	8.0E-5	mg/kg	5.9E-12	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	7.6E-07	1.6E-11	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.02
				Perchlorate	0.660	mg/kg	4.8E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.4E-07	(mg/kg/day)	7.0E-04	(mg/kg/day)	0.0002
				Aluminum	10,205	mg/kg	7.5E-04	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.1E-03	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.002
				Arsenic	5.30	mg/kg	3.9E-07	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	5.8E-07	1.1E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.004
				Barium	165	mg/kg	1.2E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.4E-05	(mg/kg/day)	2.0E-01	(mg/kg/day)	0.0002
				Beryllium	0.600	mg/kg	4.4E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.2E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00006
				Cadmium	9.50	mg/kg	7.0E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.0E-06	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.004
				Chromium	13.5	mg/kg	9.9E-07	(mg/kg/day)	5.0E-01	(mg/kg/day)$^{-1}$	5.0E-07	2.8E-06	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.0009
				Copper	153	mg/kg	1.1E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.1E-05	(mg/kg/day)	4.0E-02	(mg/kg/day)	0.0008
				Iron	11,847	mg/kg	8.7E-04	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.4E-03	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.003
				Lead	9,031	mg/kg	6.6E-04	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.9E-03	(mg/kg/day)	NA	(mg/kg/day)	--
				Manganese	336	mg/kg	2.5E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	6.9E-05	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.003
				Mercury	0.050	mg/kg	3.7E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.0E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.00003
				Nickel	11.9	mg/kg	8.7E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.4E-06	(mg/kg/day)	2.0E-02	(mg/kg/day)	0.0001
				Silver	1.38	mg/kg	1.0E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.8E-07	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.00006
				Vanadium	17.1	mg/kg	1.3E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.5E-06	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.0007
				Zinc	143	mg/kg	1.0E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.9E-05	(mg/kg/day)	3.0E-01	(mg/kg/day)	0.00010
			Exp. Route Total								1.9E-06					0.04
			Dermal	1,3,5-Trinitrobenzene	0.027	mg/kg	1.6E-10	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.5E-10	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.00000001
				2,4,6-Trinitrotoluene	0.220	mg/kg	2.2E-09	(mg/kg/day)	3.0E-02	(mg/kg/day)$^{-1}$	6.6E-11	6.1E-09	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.00001
				2,4-Dinitrotoluene	0.470	mg/kg	1.5E-08	(mg/kg/day)	3.1E-01	(mg/kg/day)$^{-1}$	4.6E-09	4.2E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00002
				4-Amino-2,6-Dinitrotoluene	0.047	mg/kg	1.3E-10	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.7E-10	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0000002
				HMX	0.390	mg/kg	7.3E-10	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.0E-09	(mg/kg/day)	5.0E-02	(mg/kg/day)	0.00000004
				Nitroglycerin	0.350	mg/kg	1.1E-08	(mg/kg/day)	1.7E-02	(mg/kg/day)$^{-1}$	1.8E-10	3.0E-08	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.0003
				RDX	1.03	mg/kg	4.8E-09	(mg/kg/day)	1.1E-01	(mg/kg/day)$^{-1}$	5.3E-10	1.3E-08	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.000004
				Tetryl	0.022	mg/kg	6.8E-10	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.9E-09	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0000010
				2,3,7,8-TCDD Equivalents	8.0E-5	mg/kg	7.5E-13	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	9.7E-08	2.1E-12	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.003
				Perchlorate	0.660	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-04	(mg/kg/day)	--
				Aluminum	10,205	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Arsenic	5.30	mg/kg	4.9E-08	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	7.4E-08	1.4E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0005
				Barium	165	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-02	(mg/kg/day)	--
				Beryllium	0.600	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-05	(mg/kg/day)	--
				Cadmium	9.50	mg/kg	3.0E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	8.3E-09	(mg/kg/day)	2.5E-05	(mg/kg/day)	0.0003
				Chromium	13.5	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--
				Copper	153	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	4.0E-02	(mg/kg/day)	--
				Iron	11,847	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Lead	9,031	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)	--
				Manganese	336	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
				Mercury	0.050	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Nickel	11.9	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	8.0E-04	(mg/kg/day)	--
				Silver	1.38	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	2.0E-04	(mg/kg/day)	--
				Vanadium	17.1	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.3E-04	(mg/kg/day)	--
				Zinc	143	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-01	(mg/kg/day)	--
			Exp. Route Total								1.8E-07					0.004
		Exposure Point Total									2.0E-06					0.05
	Exposure Medium Total										2.0E-06					0.05
Medium Total											2.0E-06					0.05
									Total of Receptor Risks Across All Media		2.0E-06			Total of Receptor Hazards Across All Media		0.05

TABLE 7.23.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2009 SURFACE SOIL SAMPLES

REASONABLE MAXIMUM EXPOSURES

TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Unprotected OD Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	OD Unit	Ingestion	1,3,5-Trinitrobenzene	0.040	mg/kg	5.9E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.6E-08	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.0000005
				1,3-Dinitrobenzene	0.030	mg/kg	4.4E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.2E-08	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.0001
				2,4,6-Trinitrotoluene	2.70	mg/kg	4.0E-07	(mg/kg/day)	3.0E-02	(mg/kg/day)$^{-1}$	1.2E-08	1.1E-06	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.002
				2,4-Dinitrotoluene	0.120	mg/kg	1.8E-08	(mg/kg/day)	3.1E-01	(mg/kg/day)$^{-1}$	5.5E-09	4.9E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00002
				2,6-Dinitrotoluene	0.019	mg/kg	2.8E-09	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	4.2E-09	7.8E-09	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.00003
				2-Amino-4,6-Dinitrotoluene	0.230	mg/kg	3.4E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	9.5E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00005
				3-Nitrotoluene	0.032	mg/kg	4.7E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.3E-08	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.0001
				4-Amino-2,6-Dinitrotoluene	0.220	mg/kg	3.2E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	9.0E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00005
				HMX	2.20	mg/kg	3.2E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	9.0E-07	(mg/kg/day)	5.0E-02	(mg/kg/day)	0.00002
				RDX	24.5	mg/kg	3.6E-06	(mg/kg/day)	1.1E-01	(mg/kg/day)$^{-1}$	4.0E-07	1.0E-05	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.003
				Tetryl	0.200	mg/kg	2.9E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	8.2E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00004
				Perchlorate	41.8	mg/kg	6.1E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.7E-05	(mg/kg/day)	7.0E-04	(mg/kg/day)	0.02
				Aluminum	2,037	mg/kg	3.0E-04	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	8.4E-04	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.0008
				Arsenic	3.30	mg/kg	4.8E-07	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	7.3E-07	1.4E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.005
				Barium	59.6	mg/kg	8.7E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.4E-05	(mg/kg/day)	2.0E-01	(mg/kg/day)	0.0001
				Beryllium	0.120	mg/kg	1.8E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.9E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00002
				Cadmium	5.20	mg/kg	7.6E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.1E-06	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.004
				Chromium	7.20	mg/kg	1.1E-06	(mg/kg/day)	5.0E-01	(mg/kg/day)$^{-1}$	5.3E-07	3.0E-06	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.0010
				Copper	85.8	mg/kg	1.3E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.5E-05	(mg/kg/day)	4.0E-02	(mg/kg/day)	0.0009
				Iron	6,623	mg/kg	9.7E-04	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.7E-03	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.004
				Lead	17.3	mg/kg	2.5E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	7.1E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Manganese	79.1	mg/kg	1.2E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.3E-05	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.001
				Mercury	0.067	mg/kg	9.8E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.8E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.00009
				Nickel	5.40	mg/kg	7.9E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.2E-06	(mg/kg/day)	2.0E-02	(mg/kg/day)	0.0001
				Silver	0.730	mg/kg	1.1E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.0E-07	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.00006
				Vanadium	5.56	mg/kg	8.2E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.3E-06	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.0005
				Zinc	197	mg/kg	2.9E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	8.1E-05	(mg/kg/day)	3.0E-01	(mg/kg/day)	0.0003
			Exp. Route Total								1.7E-06					0.05
			Dermal	1,3,5-Trinitrobenzene	0.040	mg/kg	4.7E-10	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.3E-09	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.00000004
				1,3-Dinitrobenzene	0.030	mg/kg	1.9E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	5.2E-09	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.00005
				2,4,6-Trinitrotoluene	2.70	mg/kg	5.4E-08	(mg/kg/day)	3.0E-02	(mg/kg/day)$^{-1}$	1.6E-09	1.5E-07	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.0003
				2,4-Dinitrotoluene	0.120	mg/kg	7.6E-09	(mg/kg/day)	3.1E-01	(mg/kg/day)$^{-1}$	2.4E-09	2.1E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00001
				2,6-Dinitrotoluene	0.019	mg/kg	1.2E-09	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	1.8E-09	3.3E-09	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.00001
				2-Amino-4,6-Dinitrotoluene	0.230	mg/kg	8.6E-10	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.4E-09	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000001
				3-Nitrotoluene	0.032	mg/kg	2.0E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	5.6E-09	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.00006
				4-Amino-2,6-Dinitrotoluene	0.220	mg/kg	1.2E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.4E-09	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000002
				HMX	2.20	mg/kg	8.2E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.3E-08	(mg/kg/day)	5.0E-02	(mg/kg/day)	0.0000005
				RDX	24.5	mg/kg	2.3E-07	(mg/kg/day)	1.1E-01	(mg/kg/day)$^{-1}$	2.5E-08	6.4E-07	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.0002
				Tetryl	0.200	mg/kg	1.2E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.5E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00002
				Perchlorate	41.8	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-04	(mg/kg/day)	--
				Aluminum	2,037	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Arsenic	3.30	mg/kg	6.1E-08	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	9.2E-08	1.7E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0006
				Barium	59.6	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-02	(mg/kg/day)	--
				Beryllium	0.120	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-05	(mg/kg/day)	--
				Cadmium	5.20	mg/kg	3.2E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	9.0E-09	(mg/kg/day)	2.5E-05	(mg/kg/day)	0.0004
				Chromium	7.20	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--
				Copper	85.8	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	4.0E-02	(mg/kg/day)	--

TABLE 7.23.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2009 SURFACE SOIL SAMPLES

REASONABLE MAXIMUM EXPOSURES

TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Unprotected OD Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	OD Unit	Dermal	Iron	6,623	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Lead	17.3	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)	--
				Manganese	79.1	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
				Mercury	0.067	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Nickel	5.40	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	8.0E-04	(mg/kg/day)	--
				Silver	0.730	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	2.0E-04	(mg/kg/day)	--
				Vanadium	5.56	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.3E-04	(mg/kg/day)	--
				Zinc	197	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-01	(mg/kg/day)	--
			Exp. Route Total								1.2E-07					0.002
		Exposure Point Total									1.8E-06					0.05
	Exposure Medium Total										1.8E-06					0.05
Medium Total											1.8E-06					0.05
										Total of Receptor Risks Across All Media	1.8E-06				Total of Receptor Hazards Across All Media	0.05

TABLE 7.24.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2009 SURFACE SOIL SAMPLES

REASONABLE MAXIMUM EXPOSURES

TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Unprotected SF Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Static Firing Rocket Silos	Ingestion	1,3,5-Trinitrobenzene	0.025	mg/kg	1.8E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	5.1E-09	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.0000002
				2,4,6-Trinitrotoluene	0.180	mg/kg	1.3E-08	(mg/kg/day)	3.0E-02	(mg/kg/day)$^{-1}$	4.0E-10	3.7E-08	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.00007
				2,4-Dinitrotoluene	9.10	mg/kg	6.7E-07	(mg/kg/day)	3.1E-01	(mg/kg/day)$^{-1}$	2.1E-07	1.9E-06	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0009
				2,6-Dinitrotoluene	0.560	mg/kg	4.1E-08	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	6.2E-08	1.2E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0004
				2-Amino-4,6-Dinitrotoluene	0.089	mg/kg	6.5E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.8E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000009
				4-Amino-2,6-Dinitrotoluene	0.088	mg/kg	6.5E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.8E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000009
				HMX	0.360	mg/kg	2.6E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	7.4E-08	(mg/kg/day)	5.0E-02	(mg/kg/day)	0.000001
				Nitroglycerin	5.00	mg/kg	3.7E-07	(mg/kg/day)	1.7E-02	(mg/kg/day)$^{-1}$	6.2E-09	1.0E-06	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.01
				RDX	1.50	mg/kg	1.1E-07	(mg/kg/day)	1.1E-01	(mg/kg/day)$^{-1}$	1.2E-08	3.1E-07	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.0001
				2,3,7,8-TCDD Equivalents	2.0E-4	mg/kg	1.5E-11	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	1.9E-06	4.1E-11	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.06
				Perchlorate	3	mg/kg	1.9E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	5.3E-07	(mg/kg/day)	7.0E-04	(mg/kg/day)	0.0008
				Aluminum	7,185	mg/kg	5.3E-04	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.5E-03	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.001
				Arsenic	2.90	mg/kg	2.1E-07	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	3.2E-07	6.0E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.002
				Barium	103	mg/kg	7.6E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.1E-05	(mg/kg/day)	2.0E-01	(mg/kg/day)	0.0001
				Beryllium	0.240	mg/kg	1.8E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.9E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00002
				Cadmium	12.3	mg/kg	9.0E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.5E-06	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.005
				Chromium	35.1	mg/kg	2.6E-06	(mg/kg/day)	5.0E-01	(mg/kg/day)$^{-1}$	1.3E-06	7.2E-06	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.002
				Copper	206	mg/kg	1.5E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.2E-05	(mg/kg/day)	4.0E-02	(mg/kg/day)	0.001
				Iron	11,864	mg/kg	8.7E-04	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.4E-03	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.003
				Lead	126	mg/kg	9.2E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.6E-05	(mg/kg/day)	NA	(mg/kg/day)	--
				Manganese	171	mg/kg	1.3E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.5E-05	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.001
				Mercury	0.030	mg/kg	2.2E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	6.2E-09	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.00002
				Nickel	20.3	mg/kg	1.5E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.2E-06	(mg/kg/day)	2.0E-02	(mg/kg/day)	0.0002
				Silver	0.540	mg/kg	4.0E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.1E-07	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.00002
				Vanadium	7.50	mg/kg	5.5E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.5E-06	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.0003
				Zinc	428	mg/kg	3.1E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	8.8E-05	(mg/kg/day)	3.0E-01	(mg/kg/day)	0.0003
			Exp. Route Total								3.8E-06					0.09
			Dermal	1,3,5-Trinitrobenzene	0.025	mg/kg	1.5E-10	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.1E-10	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.00000001
				2,4,6-Trinitrotoluene	0.180	mg/kg	1.8E-09	(mg/kg/day)	3.0E-02	(mg/kg/day)$^{-1}$	5.4E-11	5.0E-09	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.00001
				2,4-Dinitrotoluene	9.10	mg/kg	2.9E-07	(mg/kg/day)	3.1E-01	(mg/kg/day)$^{-1}$	8.9E-08	8.1E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0004
				2,6-Dinitrotoluene	0.560	mg/kg	1.7E-08	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	2.6E-08	4.8E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0002
				2-Amino-4,6-Dinitrotoluene	0.089	mg/kg	1.7E-10	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.6E-10	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0000002
				4-Amino-2,6-Dinitrotoluene	0.088	mg/kg	2.5E-10	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	6.9E-10	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0000003
				HMX	0.360	mg/kg	6.7E-10	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.9E-09	(mg/kg/day)	5.0E-02	(mg/kg/day)	0.00000004
				Nitroglycerin	5.00	mg/kg	1.6E-07	(mg/kg/day)	1.7E-02	(mg/kg/day)$^{-1}$	2.6E-09	4.3E-07	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.004
				RDX	1.50	mg/kg	7.0E-09	(mg/kg/day)	1.1E-01	(mg/kg/day)$^{-1}$	7.7E-10	2.0E-08	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.000007
				2,3,7,8-TCDD Equivalents	2.0E-4	mg/kg	1.9E-12	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	2.4E-07	5.2E-12	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.007
				Perchlorate	3	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-04	(mg/kg/day)	--
				Aluminum	7,185	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Arsenic	2.90	mg/kg	2.7E-08	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	4.1E-08	7.6E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0003
				Barium	103	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-02	(mg/kg/day)	--
				Beryllium	0.240	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-05	(mg/kg/day)	--
				Cadmium	12.3	mg/kg	3.8E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.1E-08	(mg/kg/day)	2.5E-05	(mg/kg/day)	0.0004
				Chromium	35.1	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--
				Copper	206	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	4.0E-02	(mg/kg/day)	--
				Iron	11,864	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Lead	126	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)	--

TABLE 7.24.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2009 SURFACE SOIL SAMPLES

REASONABLE MAXIMUM EXPOSURES

TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Unprotected SF Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Static Firing Rocket Silos	Dermal	Manganese	171	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
				Mercury	0.030	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Nickel	20.3	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	8.0E-04	(mg/kg/day)	--
				Silver	0.540	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	2.0E-04	(mg/kg/day)	--
				Vanadium	7.50	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.3E-04	(mg/kg/day)	--
				Zinc	428	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-01	(mg/kg/day)	--
			Exp. Route Total								4.0E-07					0.01
		Exposure Point Total									4.2E-06					0.1
	Exposure Medium Total										4.2E-06					0.1
Medium Total											4.2E-06					0.1
Total of Receptor Risks Across All Media											4.2E-06	Total of Receptor Hazards Across All Media				0.1

TABLE 7.25.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2009 SURFACE SOIL SAMPLES

REASONABLE MAXIMUM EXPOSURES

TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Unprotected OB/OD/SF Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	All Soil Samples	Ingestion	1,3,5-Trinitrobenzene	0.036	mg/kg	9.2E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.6E-08	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.0000009
				1,3-Dinitrobenzene	0.032	mg/kg	8.2E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.3E-08	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.0002
				2,4,6-Trinitrotoluene	2.60	mg/kg	6.7E-07	(mg/kg/day)	3.0E-02	(mg/kg/day)$^{-1}$	2.0E-08	1.9E-06	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.004
				2,4-Dinitrotoluene	4.00	mg/kg	1.0E-06	(mg/kg/day)	3.1E-01	(mg/kg/day)$^{-1}$	3.2E-07	2.9E-06	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.001
				2,6-Dinitrotoluene	0.200	mg/kg	5.1E-08	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	7.7E-08	1.4E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0005
				2-Amino-4,6-Dinitrotoluene	0.200	mg/kg	5.1E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.4E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00007
				3-Nitrotoluene	0.030	mg/kg	7.7E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.2E-08	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.0002
				4-Amino-2,6-Dinitrotoluene	0.170	mg/kg	4.4E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.2E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00006
				HMX	2.10	mg/kg	5.4E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.5E-06	(mg/kg/day)	5.0E-02	(mg/kg/day)	0.00003
				Nitroglycerin	2.20	mg/kg	5.7E-07	(mg/kg/day)	1.7E-02	(mg/kg/day)$^{-1}$	9.6E-09	1.6E-06	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.02
				RDX	22.4	mg/kg	5.8E-06	(mg/kg/day)	1.1E-01	(mg/kg/day)$^{-1}$	6.3E-07	1.6E-05	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.005
				Tetryl	0.140	mg/kg	3.6E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.0E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00005
				2,3,7,8-TCDD Equivalents	1.7E-4	mg/kg	4.4E-11	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	5.7E-06	1.2E-10	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.2
				Perchlorate	31.5	mg/kg	8.1E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.3E-05	(mg/kg/day)	7.0E-04	(mg/kg/day)	0.03
				Aluminum	6,322	mg/kg	1.6E-03	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.5E-03	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.005
				Arsenic	3.50	mg/kg	9.0E-07	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	1.3E-06	2.5E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.008
				Barium	91.1	mg/kg	2.3E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	6.6E-05	(mg/kg/day)	2.0E-01	(mg/kg/day)	0.0003
				Beryllium	0.330	mg/kg	8.5E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.4E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0001
				Cadmium	7.20	mg/kg	1.8E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	5.2E-06	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.01
				Chromium	20.0	mg/kg	5.1E-06	(mg/kg/day)	5.0E-01	(mg/kg/day)$^{-1}$	2.6E-06	1.4E-05	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.005
				Copper	118	mg/kg	3.0E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	8.5E-05	(mg/kg/day)	4.0E-02	(mg/kg/day)	0.002
				Iron	8,184	mg/kg	2.1E-03	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	5.9E-03	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.008
				Lead	1,776	mg/kg	4.6E-04	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.3E-03	(mg/kg/day)	NA	(mg/kg/day)	--
				Manganese	198	mg/kg	5.1E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.4E-04	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.006
				Mercury	0.055	mg/kg	1.4E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.0E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0001
				Nickel	12.4	mg/kg	3.2E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	8.9E-06	(mg/kg/day)	2.0E-02	(mg/kg/day)	0.0004
				Silver	0.700	mg/kg	1.8E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	5.0E-07	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.0001
				Vanadium	8.50	mg/kg	2.2E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	6.1E-06	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.001
				Zinc	232	mg/kg	6.0E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.7E-04	(mg/kg/day)	3.0E-01	(mg/kg/day)	0.0006
			Exp. Route Total								1.1E-05					0.3
			Dermal	1,3,5-Trinitrobenzene	0.036	mg/kg	7.4E-10	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.1E-09	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.00000007
				1,3-Dinitrobenzene	0.032	mg/kg	3.5E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	9.7E-09	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.00010
				2,4,6-Trinitrotoluene	2.60	mg/kg	9.0E-08	(mg/kg/day)	3.0E-02	(mg/kg/day)$^{-1}$	2.7E-09	2.5E-07	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.0005
				2,4-Dinitrotoluene	4.00	mg/kg	4.4E-07	(mg/kg/day)	3.1E-01	(mg/kg/day)$^{-1}$	1.4E-07	1.2E-06	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0006
				2,6-Dinitrotoluene	0.200	mg/kg	2.2E-08	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	3.2E-08	6.0E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0002
				2-Amino-4,6-Dinitrotoluene	0.200	mg/kg	1.3E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.7E-09	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000002
				3-Nitrotoluene	0.030	mg/kg	3.3E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	9.1E-09	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.00009
				4-Amino-2,6-Dinitrotoluene	0.170	mg/kg	1.7E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.7E-09	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000002
				HMX	2.10	mg/kg	1.4E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.8E-08	(mg/kg/day)	5.0E-02	(mg/kg/day)	0.0000008
				Nitroglycerin	2.20	mg/kg	2.4E-07	(mg/kg/day)	1.7E-02	(mg/kg/day)$^{-1}$	4.1E-09	6.7E-07	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.007
				RDX	22.4	mg/kg	3.7E-07	(mg/kg/day)	1.1E-01	(mg/kg/day)$^{-1}$	4.0E-08	1.0E-06	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.0003
				Tetryl	0.140	mg/kg	1.5E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.3E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00002
				2,3,7,8-TCDD Equivalents	1.7E-4	mg/kg	5.5E-12	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	7.2E-07	1.6E-11	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.02
				Perchlorate	31.5	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-04	(mg/kg/day)	--
				Aluminum	6,322	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Arsenic	3.50	mg/kg	1.1E-07	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	1.7E-07	3.2E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.001
				Barium	91.1	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-02	(mg/kg/day)	--

TABLE 7.25.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2009 SURFACE SOIL SAMPLES

REASONABLE MAXIMUM EXPOSURES

TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Unprotected OB/OD/SF Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	All Soil Samples	Dermal	Beryllium	0.330	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-05	(mg/kg/day)	--
				Cadmium	7.20	mg/kg	7.8E-09	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	2.2E-08	(mg/kg/day)	2.5E-05	(mg/kg/day)	0.0009
				Chromium	20.0	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--
				Copper	118	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	4.0E-02	(mg/kg/day)	--
				Iron	8,184	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Lead	1,776	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)	--
				Manganese	198	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
				Mercury	0.055	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Nickel	12.4	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	8.0E-04	(mg/kg/day)	--
				Silver	0.700	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	2.0E-04	(mg/kg/day)	--
				Vanadium	8.50	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.3E-04	(mg/kg/day)	--
				Zinc	232	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-01	(mg/kg/day)	--
			Exp. Route Total								1.1E-06					0.03
		Exposure Point Total									1.2E-05					0.3
	Exposure Medium Total										1.2E-05					0.3
Medium Total											1.2E-05					0.3
Total of Receptor Risks Across All Media											1.2E-05	Total of Receptor Hazards Across All Media				0.3

TABLE 7.26.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2009 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Protected OB Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	OB Unit	Ingestion	1,3,5-Trinitrobenzene	0.027	mg/kg	2.0E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	5.5E-09	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.0000002
				2,4,6-Trinitrotoluene	0.220	mg/kg	1.6E-08	(mg/kg/day)	3.0E-02	(mg/kg/day)$^{-1}$	4.8E-10	4.5E-08	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.00009
				2,4-Dinitrotoluene	0.470	mg/kg	3.4E-08	(mg/kg/day)	3.1E-01	(mg/kg/day)$^{-1}$	1.1E-08	9.7E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00005
				4-Amino-2,6-Dinitrotoluene	0.047	mg/kg	3.4E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	9.7E-09	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000005
				HMX	0.390	mg/kg	2.9E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	8.0E-08	(mg/kg/day)	5.0E-02	(mg/kg/day)	0.000002
				Nitroglycerin	0.350	mg/kg	2.6E-08	(mg/kg/day)	1.7E-02	(mg/kg/day)$^{-1}$	4.4E-10	7.2E-08	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.0007
				RDX	1.03	mg/kg	7.6E-08	(mg/kg/day)	1.1E-01	(mg/kg/day)$^{-1}$	8.3E-09	2.1E-07	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.00007
				Tetryl	0.022	mg/kg	1.6E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.5E-09	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000002
				2,3,7,8-TCDD Equivalents	8.0E-5	mg/kg	5.9E-12	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	7.6E-07	1.6E-11	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.02
				Perchlorate	0.660	mg/kg	4.8E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.4E-07	(mg/kg/day)	7.0E-04	(mg/kg/day)	0.0002
				Aluminum	10,205	mg/kg	7.5E-04	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.1E-03	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.002
				Arsenic	5.30	mg/kg	3.9E-07	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	5.8E-07	1.1E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.004
				Barium	165	mg/kg	1.2E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.4E-05	(mg/kg/day)	2.0E-01	(mg/kg/day)	0.0002
				Beryllium	0.600	mg/kg	4.4E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.2E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00006
				Cadmium	9.50	mg/kg	7.0E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.0E-06	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.004
				Chromium	13.5	mg/kg	9.9E-07	(mg/kg/day)	5.0E-01	(mg/kg/day)$^{-1}$	5.0E-07	2.8E-06	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.0009
				Copper	153	mg/kg	1.1E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.1E-05	(mg/kg/day)	4.0E-02	(mg/kg/day)	0.0008
				Iron	11,847	mg/kg	8.7E-04	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.4E-03	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.003
				Lead	9,031	mg/kg	6.6E-04	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.9E-03	(mg/kg/day)	NA	(mg/kg/day)	--
				Manganese	336	mg/kg	2.5E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	6.9E-05	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.003
				Mercury	0.050	mg/kg	3.7E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.0E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.00003
				Nickel	11.9	mg/kg	8.7E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.4E-06	(mg/kg/day)	2.0E-02	(mg/kg/day)	0.0001
				Silver	1.38	mg/kg	1.0E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.8E-07	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.00006
				Vanadium	17.1	mg/kg	1.3E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.5E-06	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.0007
				Zinc	143	mg/kg	1.0E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.9E-05	(mg/kg/day)	3.0E-01	(mg/kg/day)	0.00010
			Exp. Route Total								1.9E-06					0.04
			Dermal	1,3,5-Trinitrobenzene	0.027	mg/kg	5.6E-11	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.6E-10	(mg/kg/day)	3.0E-02	(mg/kg/day)	5.27055E-09
				2,4,6-Trinitrotoluene	0.220	mg/kg	7.7E-10	(mg/kg/day)	3.0E-02	(mg/kg/day)$^{-1}$	2.3E-11	2.2E-09	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.000004
				2,4-Dinitrotoluene	0.470	mg/kg	5.3E-09	(mg/kg/day)	3.1E-01	(mg/kg/day)$^{-1}$	1.6E-09	1.5E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000007
				4-Amino-2,6-Dinitrotoluene	0.047	mg/kg	4.7E-11	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.3E-10	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00000007
				HMX	0.390	mg/kg	2.6E-10	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	7.2E-10	(mg/kg/day)	5.0E-02	(mg/kg/day)	0.00000001
				Nitroglycerin	0.350	mg/kg	3.9E-09	(mg/kg/day)	1.7E-02	(mg/kg/day)$^{-1}$	6.5E-11	1.1E-08	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.0001
				RDX	1.03	mg/kg	1.7E-09	(mg/kg/day)	1.1E-01	(mg/kg/day)$^{-1}$	1.9E-10	4.8E-09	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.000002
				Tetryl	0.022	mg/kg	2.4E-10	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	6.8E-10	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0000003
				2,3,7,8-TCDD Equivalents	8.0E-5	mg/kg	2.6E-13	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	3.4E-08	7.4E-13	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.001
				Perchlorate	0.660	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-04	(mg/kg/day)	--
				Aluminum	10,205	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Arsenic	5.30	mg/kg	1.8E-08	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	2.6E-08	4.9E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0002
				Barium	165	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-02	(mg/kg/day)	--
				Beryllium	0.600	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-05	(mg/kg/day)	--
				Cadmium	9.50	mg/kg	1.0E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.9E-09	(mg/kg/day)	2.5E-05	(mg/kg/day)	0.0001
				Chromium	13.5	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--
				Copper	153	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	4.0E-02	(mg/kg/day)	--
				Iron	11,847	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Lead	9,031	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)	--
				Manganese	336	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
				Mercury	0.050	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Nickel	11.9	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	8.0E-04	(mg/kg/day)	--
				Silver	1.38	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	2.0E-04	(mg/kg/day)	--
				Vanadium	17.1	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.3E-04	(mg/kg/day)	--
				Zinc	143	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-01	(mg/kg/day)	--
			Exp. Route Total								6.3E-08					0.001
		Exposure Point Total									1.9E-06					0.05
	Exposure Medium Total										1.9E-06					0.05
Medium Total											1.9E-06					0.05
										Total of Receptor Risks Across All Media	1.9E-06				Total of Receptor Hazards Across All Media	0.05

TABLE 7.27.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2009 SURFACE SOIL SAMPLES

REASONABLE MAXIMUM EXPOSURES

TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Protected OD Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	OD Unit	Ingestion	1,3,5-Trinitrobenzene	0.040	mg/kg	5.9E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.6E-08	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.0000005
				1,3-Dinitrobenzene	0.030	mg/kg	4.4E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.2E-08	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.0001
				2,4,6-Trinitrotoluene	2.70	mg/kg	4.0E-07	(mg/kg/day)	3.0E-02	(mg/kg/day)$^{-1}$	1.2E-08	1.1E-06	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.002
				2,4-Dinitrotoluene	0.120	mg/kg	1.8E-08	(mg/kg/day)	3.1E-01	(mg/kg/day)$^{-1}$	5.5E-09	4.9E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00002
				2,6-Dinitrotoluene	0.019	mg/kg	2.8E-09	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	4.2E-09	7.8E-09	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.00003
				2-Amino-4,6-Dinitrotoluene	0.230	mg/kg	3.4E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	9.5E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00005
				3-Nitrotoluene	0.032	mg/kg	4.7E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.3E-08	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.0001
				4-Amino-2,6-Dinitrotoluene	0.220	mg/kg	3.2E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	9.0E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00005
				HMX	2.20	mg/kg	3.2E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	9.0E-07	(mg/kg/day)	5.0E-02	(mg/kg/day)	0.00002
				RDX	24.5	mg/kg	3.6E-06	(mg/kg/day)	1.1E-01	(mg/kg/day)$^{-1}$	4.0E-07	1.0E-05	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.003
				Tetryl	0.200	mg/kg	2.9E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	8.2E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00004
				Perchlorate	41.8	mg/kg	6.1E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.7E-05	(mg/kg/day)	7.0E-04	(mg/kg/day)	0.02
				Aluminum	2,037	mg/kg	3.0E-04	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	8.4E-04	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.0008
				Arsenic	3.30	mg/kg	4.8E-07	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	7.3E-07	1.4E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.005
				Barium	59.6	mg/kg	8.7E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.4E-05	(mg/kg/day)	2.0E-01	(mg/kg/day)	0.0001
				Beryllium	0.120	mg/kg	1.8E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.9E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00002
				Cadmium	5.20	mg/kg	7.6E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.1E-06	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.004
				Chromium	7.20	mg/kg	1.1E-06	(mg/kg/day)	5.0E-01	(mg/kg/day)$^{-1}$	5.3E-07	3.0E-06	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.0010
				Copper	85.8	mg/kg	1.3E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.5E-05	(mg/kg/day)	4.0E-02	(mg/kg/day)	0.0009
				Iron	6,623	mg/kg	9.7E-04	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.7E-03	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.004
				Lead	17.3	mg/kg	2.5E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	7.1E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Manganese	79.1	mg/kg	1.2E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.3E-05	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.001
				Mercury	0.067	mg/kg	9.8E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.8E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.00009
				Nickel	5.40	mg/kg	7.9E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.2E-06	(mg/kg/day)	2.0E-02	(mg/kg/day)	0.0001
				Silver	0.730	mg/kg	1.1E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.0E-07	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.00006
				Vanadium	5.56	mg/kg	8.2E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.3E-06	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.0005
				Zinc	197	mg/kg	2.9E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	8.1E-05	(mg/kg/day)	3.0E-01	(mg/kg/day)	0.0003
			Exp. Route Total								1.7E-06					0.05
			Dermal	1,3,5-Trinitrobenzene	0.040	mg/kg	1.7E-10	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.7E-10	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.00000002
				1,3-Dinitrobenzene	0.030	mg/kg	6.6E-10	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.8E-09	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.00002
				2,4,6-Trinitrotoluene	2.70	mg/kg	1.9E-08	(mg/kg/day)	3.0E-02	(mg/kg/day)$^{-1}$	5.7E-10	5.3E-08	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.0001
				2,4-Dinitrotoluene	0.120	mg/kg	2.7E-09	(mg/kg/day)	3.1E-01	(mg/kg/day)$^{-1}$	8.4E-10	7.5E-09	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000004
				2,6-Dinitrotoluene	0.019	mg/kg	4.1E-10	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	6.2E-10	1.2E-09	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.000004
				2-Amino-4,6-Dinitrotoluene	0.230	mg/kg	3.0E-10	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	8.5E-10	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0000004
				3-Nitrotoluene	0.032	mg/kg	7.0E-10	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.0E-09	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.00002
				4-Amino-2,6-Dinitrotoluene	0.220	mg/kg	4.4E-10	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.2E-09	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0000006
				HMX	2.20	mg/kg	2.9E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	8.1E-09	(mg/kg/day)	5.0E-02	(mg/kg/day)	0.0000002
				RDX	24.5	mg/kg	8.1E-08	(mg/kg/day)	1.1E-01	(mg/kg/day)$^{-1}$	8.9E-09	2.3E-07	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.00008
				Tetryl	0.200	mg/kg	4.4E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.2E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000006
				Perchlorate	41.8	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-04	(mg/kg/day)	--
				Aluminum	2,037	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Arsenic	3.30	mg/kg	2.2E-08	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	3.3E-08	6.1E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0002
				Barium	59.6	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-02	(mg/kg/day)	--
				Beryllium	0.120	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-05	(mg/kg/day)	--
				Cadmium	5.20	mg/kg	1.1E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.2E-09	(mg/kg/day)	2.5E-05	(mg/kg/day)	0.0001
				Chromium	7.20	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--
				Copper	85.8	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	4.0E-02	(mg/kg/day)	--

TABLE 7.27.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2009 SURFACE SOIL SAMPLES

REASONABLE MAXIMUM EXPOSURES

TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Protected OD Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	OD Unit	Dermal	Iron	6,623	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Lead	17.3	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)	--
				Manganese	79.1	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
				Mercury	0.067	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Nickel	5.40	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	8.0E-04	(mg/kg/day)	--
				Silver	0.730	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	2.0E-04	(mg/kg/day)	--
				Vanadium	5.56	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.3E-04	(mg/kg/day)	--
				Zinc	197	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-01	(mg/kg/day)	--
			Exp. Route Total								4.4E-08					0.0006
		Exposure Point Total									1.7E-06					0.05
	Exposure Medium Total										1.7E-06					0.05
Medium Total											1.7E-06					0.05
										Total of Receptor Risks Across All Media	1.7E-06				Total of Receptor Hazards Across All Media	0.05

TABLE 7.28.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2009 SURFACE SOIL SAMPLES

REASONABLE MAXIMUM EXPOSURES

TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Protected SF Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Static Firing Rocket Silos	Ingestion	1,3,5-Trinitrobenzene	0.025	mg/kg	1.8E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	5.1E-09	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.0000002
				2,4,6-Trinitrotoluene	0.180	mg/kg	1.3E-08	(mg/kg/day)	3.0E-02	(mg/kg/day)$^{-1}$	4.0E-10	3.7E-08	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.00007
				2,4-Dinitrotoluene	9.10	mg/kg	6.7E-07	(mg/kg/day)	3.1E-01	(mg/kg/day)$^{-1}$	2.1E-07	1.9E-06	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0009
				2,6-Dinitrotoluene	0.560	mg/kg	4.1E-08	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	6.2E-08	1.2E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0004
				2-Amino-4,6-Dinitrotoluene	0.089	mg/kg	6.5E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.8E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000009
				4-Amino-2,6-Dinitrotoluene	0.088	mg/kg	6.5E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.8E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000009
				HMX	0.360	mg/kg	2.6E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	7.4E-08	(mg/kg/day)	5.0E-02	(mg/kg/day)	0.000001
				Nitroglycerin	5.00	mg/kg	3.7E-07	(mg/kg/day)	1.7E-02	(mg/kg/day)$^{-1}$	6.2E-09	1.0E-06	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.01
				RDX	1.50	mg/kg	1.1E-07	(mg/kg/day)	1.1E-01	(mg/kg/day)$^{-1}$	1.2E-08	3.1E-07	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.0001
				2,3,7,8-TCDD Equivalents	2.0E-4	mg/kg	1.5E-11	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	1.9E-06	4.1E-11	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.06
				Perchlorate	3	mg/kg	1.9E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	5.3E-07	(mg/kg/day)	7.0E-04	(mg/kg/day)	0.0008
				Aluminum	7,185	mg/kg	5.3E-04	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.5E-03	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.001
				Arsenic	2.90	mg/kg	2.1E-07	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	3.2E-07	6.0E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.002
				Barium	103	mg/kg	7.6E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.1E-05	(mg/kg/day)	2.0E-01	(mg/kg/day)	0.0001
				Beryllium	0.240	mg/kg	1.8E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.9E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00002
				Cadmium	12.3	mg/kg	9.0E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.5E-06	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.005
				Chromium	35.1	mg/kg	2.6E-06	(mg/kg/day)	5.0E-01	(mg/kg/day)$^{-1}$	1.3E-06	7.2E-06	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.002
				Copper	206	mg/kg	1.5E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.2E-05	(mg/kg/day)	4.0E-02	(mg/kg/day)	0.001
				Iron	11,864	mg/kg	8.7E-04	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.4E-03	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.003
				Lead	126	mg/kg	9.2E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.6E-05	(mg/kg/day)	NA	(mg/kg/day)	--
				Manganese	171	mg/kg	1.3E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.5E-05	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.001
				Mercury	0.030	mg/kg	2.2E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	6.2E-09	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.00002
				Nickel	20.3	mg/kg	1.5E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.2E-06	(mg/kg/day)	2.0E-02	(mg/kg/day)	0.0002
				Silver	0.540	mg/kg	4.0E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.1E-07	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.00002
				Vanadium	7.50	mg/kg	5.5E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.5E-06	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.0003
				Zinc	428	mg/kg	3.1E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	8.8E-05	(mg/kg/day)	3.0E-01	(mg/kg/day)	0.0003
			Exp. Route Total								3.8E-06					0.09
			Dermal	1,3,5-Trinitrobenzene	0.025	mg/kg	5.2E-11	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.5E-10	(mg/kg/day)	3.0E-02	(mg/kg/day)	4.88014E-09
				2,4,6-Trinitrotoluene	0.180	mg/kg	6.3E-10	(mg/kg/day)	3.0E-02	(mg/kg/day)$^{-1}$	1.9E-11	1.8E-09	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.000004
				2,4-Dinitrotoluene	9.10	mg/kg	1.0E-07	(mg/kg/day)	3.1E-01	(mg/kg/day)$^{-1}$	3.2E-08	2.9E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0001
				2,6-Dinitrotoluene	0.560	mg/kg	6.1E-09	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	9.2E-09	1.7E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.00006
				2-Amino-4,6-Dinitrotoluene	0.089	mg/kg	5.9E-11	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.6E-10	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00000008
				4-Amino-2,6-Dinitrotoluene	0.088	mg/kg	8.7E-11	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.4E-10	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0000001
				HMX	0.360	mg/kg	2.4E-10	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	6.7E-10	(mg/kg/day)	5.0E-02	(mg/kg/day)	0.00000001
				Nitroglycerin	5.00	mg/kg	5.5E-08	(mg/kg/day)	1.7E-02	(mg/kg/day)$^{-1}$	9.4E-10	1.5E-07	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.002
				RDX	1.50	mg/kg	2.5E-09	(mg/kg/day)	1.1E-01	(mg/kg/day)$^{-1}$	2.7E-10	6.9E-09	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.000002
				2,3,7,8-TCDD Equivalents	2.0E-4	mg/kg	6.6E-13	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	8.6E-08	1.8E-12	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.003
				Perchlorate	3	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-04	(mg/kg/day)	--
				Aluminum	7,185	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Arsenic	2.90	mg/kg	9.6E-09	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	1.4E-08	2.7E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.00009
				Barium	103	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-02	(mg/kg/day)	--
				Beryllium	0.240	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-05	(mg/kg/day)	--
				Cadmium	12.3	mg/kg	1.4E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.8E-09	(mg/kg/day)	2.5E-05	(mg/kg/day)	0.0002
				Chromium	35.1	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--
				Copper	206	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	4.0E-02	(mg/kg/day)	--
				Iron	11,864	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Lead	126	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)	--

TABLE 7.28.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2009 SURFACE SOIL SAMPLES

REASONABLE MAXIMUM EXPOSURES

TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Protected SF Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Static Firing Rocket Silos	Dermal	Manganese	171	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
				Mercury	0.030	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Nickel	20.3	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	8.0E-04	(mg/kg/day)	--
				Silver	0.540	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	2.0E-04	(mg/kg/day)	--
				Vanadium	7.50	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.3E-04	(mg/kg/day)	--
				Zinc	428	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-01	(mg/kg/day)	--
			Exp. Route Total								1.4E-07					0.005
		Exposure Point Total									3.9E-06					0.09
	Exposure Medium Total										3.9E-06					0.09
Medium Total											3.9E-06					0.09
Total of Receptor Risks Across All Media											3.9E-06	Total of Receptor Hazards Across All Media				0.09

TABLE 7.29.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2009 SURFACE SOIL SAMPLES

REASONABLE MAXIMUM EXPOSURES

TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Unprotected OB/OD/SF Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	All Soil Samples	Ingestion	1,3,5-Trinitrobenzene	0.036	mg/kg	9.2E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.6E-08	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.0000009
				1,3-Dinitrobenzene	0.032	mg/kg	8.2E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.3E-08	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.0002
				2,4,6-Trinitrotoluene	2.60	mg/kg	6.7E-07	(mg/kg/day)	3.0E-02	(mg/kg/day)$^{-1}$	2.0E-08	1.9E-06	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.004
				2,4-Dinitrotoluene	4.00	mg/kg	1.0E-06	(mg/kg/day)	3.1E-01	(mg/kg/day)$^{-1}$	3.2E-07	2.9E-06	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.001
				2,6-Dinitrotoluene	0.200	mg/kg	5.1E-08	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	7.7E-08	1.4E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0005
				2-Amino-4,6-Dinitrotoluene	0.200	mg/kg	5.1E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.4E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00007
				3-Nitrotoluene	0.030	mg/kg	7.7E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.2E-08	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.0002
				4-Amino-2,6-Dinitrotoluene	0.170	mg/kg	4.4E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.2E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00006
				HMX	2.10	mg/kg	5.4E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.5E-06	(mg/kg/day)	5.0E-02	(mg/kg/day)	0.00003
				Nitroglycerin	2.20	mg/kg	5.7E-07	(mg/kg/day)	1.7E-02	(mg/kg/day)$^{-1}$	9.6E-09	1.6E-06	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.02
				RDX	22.4	mg/kg	5.8E-06	(mg/kg/day)	1.1E-01	(mg/kg/day)$^{-1}$	6.3E-07	1.6E-05	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.005
				Tetryl	0.140	mg/kg	3.6E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.0E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00005
				2,3,7,8-TCDD Equivalents	1.7E-4	mg/kg	4.4E-11	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	5.7E-06	1.2E-10	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.2
				Perchlorate	31.5	mg/kg	8.1E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.3E-05	(mg/kg/day)	7.0E-04	(mg/kg/day)	0.03
				Aluminum	6,322	mg/kg	1.6E-03	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.5E-03	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.005
				Arsenic	3.50	mg/kg	9.0E-07	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	1.3E-06	2.5E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.008
				Barium	91.1	mg/kg	2.3E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	6.6E-05	(mg/kg/day)	2.0E-01	(mg/kg/day)	0.0003
				Beryllium	0.330	mg/kg	8.5E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.4E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0001
				Cadmium	7.20	mg/kg	1.8E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	5.2E-06	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.01
				Chromium	20.0	mg/kg	5.1E-06	(mg/kg/day)	5.0E-01	(mg/kg/day)$^{-1}$	2.6E-06	1.4E-05	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.005
				Copper	118	mg/kg	3.0E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	8.5E-05	(mg/kg/day)	4.0E-02	(mg/kg/day)	0.002
				Iron	8,184	mg/kg	2.1E-03	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	5.9E-03	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.008
				Lead	1,776	mg/kg	4.6E-04	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.3E-03	(mg/kg/day)	NA	(mg/kg/day)	--
				Manganese	198	mg/kg	5.1E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.4E-04	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.006
				Mercury	0.055	mg/kg	1.4E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.0E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0001
				Nickel	12.4	mg/kg	3.2E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	8.9E-06	(mg/kg/day)	2.0E-02	(mg/kg/day)	0.0004
				Silver	0.700	mg/kg	1.8E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	5.0E-07	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.0001
				Vanadium	8.50	mg/kg	2.2E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	6.1E-06	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.001
				Zinc	232	mg/kg	6.0E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.7E-04	(mg/kg/day)	3.0E-01	(mg/kg/day)	0.0006
			Exp. Route Total								1.1E-05					0.3
			Dermal	1,3,5-Trinitrobenzene	0.036	mg/kg	2.6E-10	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	7.4E-10	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.00000002
				1,3-Dinitrobenzene	0.032	mg/kg	1.2E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.5E-09	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.00003
				2,4,6-Trinitrotoluene	2.60	mg/kg	3.2E-08	(mg/kg/day)	3.0E-02	(mg/kg/day)$^{-1}$	9.6E-10	9.0E-08	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.0002
				2,4-Dinitrotoluene	4.00	mg/kg	1.6E-07	(mg/kg/day)	3.1E-01	(mg/kg/day)$^{-1}$	4.9E-08	4.4E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0002
				2,6-Dinitrotoluene	0.200	mg/kg	7.6E-09	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	1.1E-08	2.1E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.00007
				2-Amino-4,6-Dinitrotoluene	0.200	mg/kg	4.6E-10	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.3E-09	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0000006
				3-Nitrotoluene	0.030	mg/kg	1.2E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.2E-09	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.00003
				4-Amino-2,6-Dinitrotoluene	0.170	mg/kg	5.9E-10	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.7E-09	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0000008
				HMX	2.10	mg/kg	4.9E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.4E-08	(mg/kg/day)	5.0E-02	(mg/kg/day)	0.0000003
				Nitroglycerin	2.20	mg/kg	8.5E-08	(mg/kg/day)	1.7E-02	(mg/kg/day)$^{-1}$	1.4E-09	2.4E-07	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.002
				RDX	22.4	mg/kg	1.3E-07	(mg/kg/day)	1.1E-01	(mg/kg/day)$^{-1}$	1.4E-08	3.6E-07	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.0001
				Tetryl	0.140	mg/kg	5.4E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.5E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000008
				2,3,7,8-TCDD Equivalents	1.7E-4	mg/kg	2.0E-12	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	2.6E-07	5.5E-12	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.008
				Perchlorate	31.5	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-04	(mg/kg/day)	--
				Aluminum	6,322	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Arsenic	3.50	mg/kg	4.0E-08	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	6.1E-08	1.1E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0004
				Barium	91.1	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-02	(mg/kg/day)	--

TABLE 7.29.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2009 SURFACE SOIL SAMPLES

REASONABLE MAXIMUM EXPOSURES

TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Unprotected OB/OD/SF Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	All Soil Samples	Dermal	Beryllium	0.330	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-05	(mg/kg/day)	--
				Cadmium	7.20	mg/kg	2.8E-09	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	7.8E-09	(mg/kg/day)	2.5E-05	(mg/kg/day)	0.0003
				Chromium	20.0	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--
				Copper	118	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	4.0E-02	(mg/kg/day)	--
				Iron	8,184	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Lead	1,776	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)	--
				Manganese	198	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
				Mercury	0.055	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Nickel	12.4	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	8.0E-04	(mg/kg/day)	--
				Silver	0.700	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	2.0E-04	(mg/kg/day)	--
				Vanadium	8.50	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.3E-04	(mg/kg/day)	--
				Zinc	232	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-01	(mg/kg/day)	--
			Exp. Route Total								3.9E-07					0.01
		Exposure Point Total									1.1E-05					0.3
	Exposure Medium Total										1.1E-05					0.3
Medium Total											1.1E-05					0.3
Total of Receptor Risks Across All Media											1.1E-05	Total of Receptor Hazards Across All Media				0.3

TABLE 7.30.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2009 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Outdoor Worker - OB Unit
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	OB Unit	Ingestion	1,3,5-Trinitrobenzene	0.027	mg/kg	8.3E-09	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	2.3E-08	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.0000008
				2,4,6-Trinitrotoluene	0.220	mg/kg	6.7E-08	(mg/kg/day)	3.0E-02	$(mg/kg/day)^{-1}$	2.0E-09	1.9E-07	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.0004
				2,4-Dinitrotoluene	0.470	mg/kg	1.4E-07	(mg/kg/day)	3.1E-01	$(mg/kg/day)^{-1}$	4.5E-08	4.0E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0002
				4-Amino-2,6-Dinitrotoluene	0.047	mg/kg	1.4E-08	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	4.0E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00002
				HMX	0.390	mg/kg	1.2E-07	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	3.3E-07	(mg/kg/day)	5.0E-02	(mg/kg/day)	0.000007
				Nitroglycerin	0.4	mg/kg	1.1E-07	(mg/kg/day)	1.7E-02	$(mg/kg/day)^{-1}$	1.8E-09	3.0E-07	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.003
				RDX	1.03	mg/kg	3.1E-07	(mg/kg/day)	1.1E-01	$(mg/kg/day)^{-1}$	3.5E-08	8.8E-07	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.0003
				Tetryl	0.022	mg/kg	6.7E-09	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.9E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000009
				2,3,7,8-TCDD Equivalents	0	mg/kg	2.4E-11	(mg/kg/day)	1.3E+05	$(mg/kg/day)^{-1}$	3.2E-06	6.8E-11	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.10
				Perchlorate	0.66	mg/kg	2.0E-07	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	5.7E-07	(mg/kg/day)	7.0E-04	(mg/kg/day)	0.0008
				Aluminum	10205	mg/kg	3.1E-03	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	8.7E-03	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.009
				Arsenic	5.300	mg/kg	1.6E-06	(mg/kg/day)	1.5E+00	$(mg/kg/day)^{-1}$	2.4E-06	4.5E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.02
				Barium	165.00	mg/kg	5.0E-05	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.4E-04	(mg/kg/day)	2.0E-01	(mg/kg/day)	0.0007
				Beryllium	0.6	mg/kg	1.8E-07	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	5.1E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0003
				Cadmium	10	mg/kg	2.9E-06	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	8.1E-06	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.02
				Chromium	14	mg/kg	4.1E-06	(mg/kg/day)	5.0E-01	$(mg/kg/day)^{-1}$	2.1E-06	1.2E-05	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.004
				Copper	153	mg/kg	4.7E-05	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.3E-04	(mg/kg/day)	4.0E-02	(mg/kg/day)	0.003
				Iron	11847	mg/kg	3.6E-03	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.0E-02	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.01
				Lead	9031.000	mg/kg	2.8E-03	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	7.7E-03	(mg/kg/day)	NA	(mg/kg/day)	--
				Manganese	336.0	mg/kg	1.0E-04	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	2.9E-04	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.01
				Mercury	0.050	mg/kg	1.5E-08	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	4.3E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0001
				Nickel	11.900	mg/kg	3.6E-06	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.0E-05	(mg/kg/day)	2.0E-02	(mg/kg/day)	0.0005
				Silver	1.4	mg/kg	4.2E-07	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.2E-06	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.0002
				Vanadium	17	mg/kg	5.2E-06	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.5E-05	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.003
			Exp. Route Total								7.8E-06					0.2
			Dermal	1,3,5-Trinitrobenzene	0.027	mg/kg	6.6E-10	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.9E-09	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.00000006
				2,4,6-Trinitrotoluene	0.220	mg/kg	9.1E-09	(mg/kg/day)	3.0E-02	$(mg/kg/day)^{-1}$	2.7E-10	2.6E-08	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.00005
				2,4-Dinitrotoluene	0.470	mg/kg	6.2E-08	(mg/kg/day)	3.1E-01	$(mg/kg/day)^{-1}$	1.9E-08	1.7E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00009
				4-Amino-2,6-Dinitrotoluene	0.047	mg/kg	5.5E-10	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.5E-09	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0000008
				HMX	0.390	mg/kg	3.0E-09	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	8.5E-09	(mg/kg/day)	5.0E-02	(mg/kg/day)	0.0000002
				Nitroglycerin	0.4	mg/kg	4.5E-08	(mg/kg/day)	1.7E-02	$(mg/kg/day)^{-1}$	7.7E-10	1.3E-07	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.001
				RDX	1.03	mg/kg	2.0E-08	(mg/kg/day)	1.1E-01	$(mg/kg/day)^{-1}$	2.2E-09	5.6E-08	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.00002
				Tetryl	0.022	mg/kg	2.8E-09	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	8.0E-09	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000004
				2,3,7,8-TCDD Equivalents	0	mg/kg	3.1E-12	(mg/kg/day)	1.3E+05	$(mg/kg/day)^{-1}$	4.0E-07	8.7E-12	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.01
				Perchlorate	0.66	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-04	(mg/kg/day)	--
				Aluminum	10205	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Arsenic	5.300	mg/kg	2.1E-07	(mg/kg/day)	1.5E+00	$(mg/kg/day)^{-1}$	3.1E-07	5.8E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.002
				Barium	165.00	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-02	(mg/kg/day)	--
				Beryllium	0.6	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-05	(mg/kg/day)	--
				Cadmium	10	mg/kg	1.2E-08	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	3.4E-08	(mg/kg/day)	2.5E-05	(mg/kg/day)	0.001
				Chromium	14	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--
				Copper	153	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	4.0E-02	(mg/kg/day)	--
				Iron	11847	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Lead	9031.000	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)	--
				Manganese	336.0	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
				Mercury	0.050	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Nickel	11.900	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	8.0E-04	(mg/kg/day)	--
				Silver	1.4	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	2.0E-04	(mg/kg/day)	--
				Vanadium	17	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.3E-04	(mg/kg/day)	--
			Exp. Route Total								7.3E-07					0.02
		Exposure Point Total									8.5E-06					0.2
	Exposure Medium Total										8.5E-06					0.2
Medium Total											8.5E-06					0.2
										Total of Receptor Risks Across All Media	8.5E-06				Total of Receptor Hazards Across All Media	0.2

TABLE 7.31.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2009 SURFACE SOIL SAMPLES

REASONABLE MAXIMUM EXPOSURES

TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Outdoor Worker - OD Unit
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	OD Unit	Ingestion	1,3,5-Trinitrobenzene	0.040	mg/kg	1.2E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.4E-08	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.000001
				1,3-Dinitrobenzene	0.030	mg/kg	9.2E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.6E-08	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.0003
				2,4,6-Trinitrotoluene	2.70	mg/kg	8.3E-07	(mg/kg/day)	3.0E-02	(mg/kg/day)$^{-1}$	2.5E-08	2.3E-06	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.005
				2,4-Dinitrotoluene	0.120	mg/kg	3.7E-08	(mg/kg/day)	3.1E-01	(mg/kg/day)$^{-1}$	1.1E-08	1.0E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00005
				2,6-Dinitrotoluene	0.019	mg/kg	5.8E-09	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	8.7E-09	1.6E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.00005
				2-Amino-4,6-Dinitrotoluene	0.230	mg/kg	7.0E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.0E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00010
				3-Nitrotoluene	0.032	mg/kg	9.8E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.7E-08	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.0003
				4-Amino-2,6-Dinitrotoluene	0.220	mg/kg	6.7E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.9E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00009
				HMX	2.20	mg/kg	6.7E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.9E-06	(mg/kg/day)	5.0E-02	(mg/kg/day)	0.00004
				RDX	24.5	mg/kg	7.5E-06	(mg/kg/day)	1.1E-01	(mg/kg/day)$^{-1}$	8.2E-07	2.1E-05	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.007
				Tetryl	0.200	mg/kg	6.1E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.7E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00009
				Perchlorate	41.8	mg/kg	1.3E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.6E-05	(mg/kg/day)	7.0E-04	(mg/kg/day)	0.05
				Aluminum	2,037	mg/kg	6.2E-04	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.7E-03	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.002
				Arsenic	3.30	mg/kg	1.0E-06	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	1.5E-06	2.8E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.009
				Barium	59.6	mg/kg	1.8E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	5.1E-05	(mg/kg/day)	2.0E-01	(mg/kg/day)	0.0003
				Beryllium	0.120	mg/kg	3.7E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.0E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00005
				Cadmium	5.20	mg/kg	1.6E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.5E-06	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.009
				Chromium	7.20	mg/kg	2.2E-06	(mg/kg/day)	5.0E-01	(mg/kg/day)$^{-1}$	1.1E-06	6.2E-06	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.002
				Copper	85.8	mg/kg	2.6E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	7.3E-05	(mg/kg/day)	4.0E-02	(mg/kg/day)	0.002
				Iron	6,623	mg/kg	2.0E-03	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	5.7E-03	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.008
				Lead	17.3	mg/kg	5.3E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.5E-05	(mg/kg/day)	NA	(mg/kg/day)	--
				Manganese	79.1	mg/kg	2.4E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	6.8E-05	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.003
				Mercury	0.067	mg/kg	2.0E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	5.7E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0002
				Nickel	5.40	mg/kg	1.7E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.6E-06	(mg/kg/day)	2.0E-02	(mg/kg/day)	0.0002
				Silver	0.730	mg/kg	2.2E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	6.3E-07	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.0001
				Vanadium	5.56	mg/kg	1.7E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.8E-06	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.0010
				Zinc	197	mg/kg	6.0E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.7E-04	(mg/kg/day)	3.0E-01	(mg/kg/day)	0.0006
			Exp. Route Total								3.5E-06					0.1
			Dermal	1,3,5-Trinitrobenzene	0.040	mg/kg	9.8E-10	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.8E-09	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.00000009
				1,3-Dinitrobenzene	0.030	mg/kg	3.9E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.1E-08	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.0001
				2,4,6-Trinitrotoluene	2.70	mg/kg	1.1E-07	(mg/kg/day)	3.0E-02	(mg/kg/day)$^{-1}$	3.4E-09	3.1E-07	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.0006
				2,4-Dinitrotoluene	0.120	mg/kg	1.6E-08	(mg/kg/day)	3.1E-01	(mg/kg/day)$^{-1}$	4.9E-09	4.4E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00002
				2,6-Dinitrotoluene	0.019	mg/kg	2.4E-09	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	3.7E-09	6.8E-09	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.00002
				2-Amino-4,6-Dinitrotoluene	0.230	mg/kg	1.8E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	5.0E-09	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000003
				3-Nitrotoluene	0.032	mg/kg	4.1E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.2E-08	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.0001
				4-Amino-2,6-Dinitrotoluene	0.220	mg/kg	2.6E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	7.2E-09	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000004
				HMX	2.20	mg/kg	1.7E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.8E-08	(mg/kg/day)	5.0E-02	(mg/kg/day)	0.0000010
				RDX	24.5	mg/kg	4.8E-07	(mg/kg/day)	1.1E-01	(mg/kg/day)$^{-1}$	5.2E-08	1.3E-06	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.0004
				Tetryl	0.200	mg/kg	2.6E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	7.2E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00004
				Perchlorate	41.8	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-04	(mg/kg/day)	--
				Aluminum	2,037	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Arsenic	3.30	mg/kg	1.3E-07	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	1.9E-07	3.6E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.001
				Barium	59.6	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-02	(mg/kg/day)	--
				Beryllium	0.120	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-05	(mg/kg/day)	--
				Cadmium	5.20	mg/kg	6.7E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.9E-08	(mg/kg/day)	2.5E-05	(mg/kg/day)	0.0008
				Chromium	7.20	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--
				Copper	85.8	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	4.0E-02	(mg/kg/day)	--

TABLE 7.31.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2009 SURFACE SOIL SAMPLES

REASONABLE MAXIMUM EXPOSURES

TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Outdoor Worker - OD Unit
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	OD Unit	Dermal	Iron	6,623	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Lead	17.3	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)	--
				Manganese	79.1	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
				Mercury	0.067	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Nickel	5.40	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	8.0E-04	(mg/kg/day)	--
				Silver	0.730	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	2.0E-04	(mg/kg/day)	--
				Vanadium	5.56	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.3E-04	(mg/kg/day)	--
				Zinc	197	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-01	(mg/kg/day)	--
			Exp. Route Total								2.6E-07					0.003
		Exposure Point Total									3.7E-06					0.1
	Exposure Medium Total										3.7E-06					0.1
Medium Total											3.7E-06					0.1
										Total of Receptor Risks Across All Media	3.7E-06				Total of Receptor Hazards Across All Media	0.1

TABLE 7.32.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2009 SURFACE SOIL SAMPLES

REASONABLE MAXIMUM EXPOSURES

TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Outdoor Worker - SF Unit
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Static Firing Rocket Silos	Ingestion	1,3,5-Trinitrobenzene	0.025	mg/kg	7.6E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.1E-08	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.0000007
				2,4,6-Trinitrotoluene	0.180	mg/kg	5.5E-08	(mg/kg/day)	3.0E-02	(mg/kg/day)$^{-1}$	1.7E-09	1.5E-07	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.0003
				2,4-Dinitrotoluene	9.10	mg/kg	2.8E-06	(mg/kg/day)	3.1E-01	(mg/kg/day)$^{-1}$	8.6E-07	7.8E-06	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.004
				2,6-Dinitrotoluene	0.560	mg/kg	1.7E-07	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	2.6E-07	4.8E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.002
				2-Amino-4,6-Dinitrotoluene	0.089	mg/kg	2.7E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	7.6E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00004
				4-Amino-2,6-Dinitrotoluene	0.088	mg/kg	2.7E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	7.5E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00004
				HMX	0.360	mg/kg	1.1E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.1E-07	(mg/kg/day)	5.0E-02	(mg/kg/day)	0.000006
				Nitroglycerin	5.00	mg/kg	1.5E-06	(mg/kg/day)	1.7E-02	(mg/kg/day)$^{-1}$	2.6E-08	4.3E-06	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.04
				RDX	1.50	mg/kg	4.6E-07	(mg/kg/day)	1.1E-01	(mg/kg/day)$^{-1}$	5.0E-08	1.3E-06	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.0004
				2,3,7,8-TCDD Equivalents	2.0E-4	mg/kg	6.1E-11	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	8.0E-06	1.7E-10	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.2
				Perchlorate	3	mg/kg	8.0E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.2E-06	(mg/kg/day)	7.0E-04	(mg/kg/day)	0.003
				Aluminum	7,185	mg/kg	2.2E-03	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	6.2E-03	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.006
				Arsenic	2.90	mg/kg	8.9E-07	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	1.3E-06	2.5E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.008
				Barium	103	mg/kg	3.1E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	8.8E-05	(mg/kg/day)	2.0E-01	(mg/kg/day)	0.0004
				Beryllium	0.240	mg/kg	7.3E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.1E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0001
				Cadmium	12.3	mg/kg	3.8E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.1E-05	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.02
				Chromium	35.1	mg/kg	1.1E-05	(mg/kg/day)	5.0E-01	(mg/kg/day)$^{-1}$	5.4E-06	3.0E-05	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.01
				Copper	206	mg/kg	6.3E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.8E-04	(mg/kg/day)	4.0E-02	(mg/kg/day)	0.004
				Iron	11,864	mg/kg	3.6E-03	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.0E-02	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.01
				Lead	126	mg/kg	3.9E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.1E-04	(mg/kg/day)	NA	(mg/kg/day)	--
				Manganese	171	mg/kg	5.2E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.5E-04	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.006
				Mercury	0.030	mg/kg	9.2E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.6E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.00009
				Nickel	20.3	mg/kg	6.2E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.7E-05	(mg/kg/day)	2.0E-02	(mg/kg/day)	0.0009
				Silver	0.540	mg/kg	1.7E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.6E-07	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.00009
				Vanadium	7.50	mg/kg	2.3E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	6.4E-06	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.001
				Zinc	428	mg/kg	1.3E-04	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.7E-04	(mg/kg/day)	3.0E-01	(mg/kg/day)	0.001
			Exp. Route Total								1.6E-05					0.4
			Dermal	1,3,5-Trinitrobenzene	0.025	mg/kg	6.1E-10	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.7E-09	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.00000006
				2,4,6-Trinitrotoluene	0.180	mg/kg	7.5E-09	(mg/kg/day)	3.0E-02	(mg/kg/day)$^{-1}$	2.2E-10	2.1E-08	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.00004
				2,4-Dinitrotoluene	9.10	mg/kg	1.2E-06	(mg/kg/day)	3.1E-01	(mg/kg/day)$^{-1}$	3.7E-07	3.4E-06	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.002
				2,6-Dinitrotoluene	0.560	mg/kg	7.2E-08	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	1.1E-07	2.0E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0007
				2-Amino-4,6-Dinitrotoluene	0.089	mg/kg	6.9E-10	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.9E-09	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0000010
				4-Amino-2,6-Dinitrotoluene	0.088	mg/kg	1.0E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.9E-09	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000001
				HMX	0.360	mg/kg	2.8E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	7.8E-09	(mg/kg/day)	5.0E-02	(mg/kg/day)	0.0000002
				Nitroglycerin	5.00	mg/kg	6.5E-07	(mg/kg/day)	1.7E-02	(mg/kg/day)$^{-1}$	1.1E-08	1.8E-06	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.02
				RDX	1.50	mg/kg	2.9E-08	(mg/kg/day)	1.1E-01	(mg/kg/day)$^{-1}$	3.2E-09	8.2E-08	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.00003
				2,3,7,8-TCDD Equivalents	2.0E-4	mg/kg	7.8E-12	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	1.0E-06	2.2E-11	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.03
				Perchlorate	3	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-04	(mg/kg/day)	--
				Aluminum	7,185	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Arsenic	2.90	mg/kg	1.1E-07	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	1.7E-07	3.2E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.001
				Barium	103	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-02	(mg/kg/day)	--
				Beryllium	0.240	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-05	(mg/kg/day)	--
				Cadmium	12.3	mg/kg	1.6E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.5E-08	(mg/kg/day)	2.5E-05	(mg/kg/day)	0.002
				Chromium	35.1	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--
				Copper	206	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	4.0E-02	(mg/kg/day)	--
				Iron	11,864	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Lead	126	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)	--

TABLE 7.32.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2009 SURFACE SOIL SAMPLES

REASONABLE MAXIMUM EXPOSURES

TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Outdoor Worker - SF Unit
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Static Firing Rocket Silos	Dermal	Manganese	171	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
				Mercury	0.030	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Nickel	20.3	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	8.0E-04	(mg/kg/day)	--
				Silver	0.540	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	2.0E-04	(mg/kg/day)	--
				Vanadium	7.50	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.3E-04	(mg/kg/day)	--
				Zinc	428	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-01	(mg/kg/day)	--
			Exp. Route Total								1.7E-06					0.05
		Exposure Point Total									1.8E-05					0.4
	Exposure Medium Total										1.8E-05					0.4
Medium Total											1.8E-05					0.4
Total of Receptor Risks Across All Media											1.8E-05	Total of Receptor Hazards Across All Media				0.4

TABLE 7.33.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2009 SURFACE SOIL SAMPLES

REASONABLE MAXIMUM EXPOSURES

TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Outdoor Worker - Entire Site
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	All Soil Samples	Ingestion	1,3,5-Trinitrobenzene	0.036	mg/kg	1.1E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.1E-08	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.000001
				1,3-Dinitrobenzene	0.032	mg/kg	9.8E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.7E-08	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.0003
				2,4,6-Trinitrotoluene	2.60	mg/kg	8.0E-07	(mg/kg/day)	3.0E-02	(mg/kg/day)$^{-1}$	2.4E-08	2.2E-06	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.004
				2,4-Dinitrotoluene	4.00	mg/kg	1.2E-06	(mg/kg/day)	3.1E-01	(mg/kg/day)$^{-1}$	3.8E-07	3.4E-06	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.002
				2,6-Dinitrotoluene	0.200	mg/kg	6.1E-08	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	9.2E-08	1.7E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0006
				2-Amino-4,6-Dinitrotoluene	0.200	mg/kg	6.1E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.7E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00009
				3-Nitrotoluene	0.030	mg/kg	9.2E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.6E-08	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.0003
				4-Amino-2,6-Dinitrotoluene	0.170	mg/kg	5.2E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.5E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00007
				HMX	2.10	mg/kg	6.4E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.8E-06	(mg/kg/day)	5.0E-02	(mg/kg/day)	0.00004
				Nitroglycerin	2.20	mg/kg	6.7E-07	(mg/kg/day)	1.7E-02	(mg/kg/day)$^{-1}$	1.1E-08	1.9E-06	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.02
				RDX	22.4	mg/kg	6.8E-06	(mg/kg/day)	1.1E-01	(mg/kg/day)$^{-1}$	7.5E-07	1.9E-05	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.006
				Tetryl	0.140	mg/kg	4.3E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.2E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00006
				2,3,7,8-TCDD Equivalents	1.7E-4	mg/kg	5.2E-11	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	6.8E-06	1.5E-10	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.2
				Perchlorate	31.5	mg/kg	9.6E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.7E-05	(mg/kg/day)	7.0E-04	(mg/kg/day)	0.04
				Aluminum	6,322	mg/kg	1.9E-03	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	5.4E-03	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.005
				Arsenic	3.50	mg/kg	1.1E-06	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	1.6E-06	3.0E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.010
				Barium	91.1	mg/kg	2.8E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	7.8E-05	(mg/kg/day)	2.0E-01	(mg/kg/day)	0.0004
				Beryllium	0.330	mg/kg	1.0E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.8E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0001
				Cadmium	7.20	mg/kg	2.2E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	6.2E-06	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.01
				Chromium	20.0	mg/kg	6.1E-06	(mg/kg/day)	5.0E-01	(mg/kg/day)$^{-1}$	3.1E-06	1.7E-05	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.006
				Copper	118	mg/kg	3.6E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.0E-04	(mg/kg/day)	4.0E-02	(mg/kg/day)	0.003
				Iron	8,184	mg/kg	2.5E-03	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	7.0E-03	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.01
				Lead	1,776	mg/kg	5.4E-04	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.5E-03	(mg/kg/day)	NA	(mg/kg/day)	--
				Manganese	198	mg/kg	6.1E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.7E-04	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.007
				Mercury	0.055	mg/kg	1.7E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.7E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0002
				Nickel	12.4	mg/kg	3.8E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.1E-05	(mg/kg/day)	2.0E-02	(mg/kg/day)	0.0005
				Silver	0.700	mg/kg	2.1E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	6.0E-07	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.0001
				Vanadium	8.50	mg/kg	2.6E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	7.3E-06	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.001
				Zinc	232	mg/kg	7.1E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.0E-04	(mg/kg/day)	3.0E-01	(mg/kg/day)	0.0007
			Exp. Route Total								1.3E-05					0.3
			Dermal	1,3,5-Trinitrobenzene	0.036	mg/kg	8.9E-10	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.5E-09	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.00000008
				1,3-Dinitrobenzene	0.032	mg/kg	4.1E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.2E-08	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.0001
				2,4,6-Trinitrotoluene	2.60	mg/kg	1.1E-07	(mg/kg/day)	3.0E-02	(mg/kg/day)$^{-1}$	3.2E-09	3.0E-07	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.0006
				2,4-Dinitrotoluene	4.00	mg/kg	5.3E-07	(mg/kg/day)	3.1E-01	(mg/kg/day)$^{-1}$	1.6E-07	1.5E-06	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0007
				2,6-Dinitrotoluene	0.200	mg/kg	2.6E-08	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	3.8E-08	7.2E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0002
				2-Amino-4,6-Dinitrotoluene	0.200	mg/kg	1.6E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.3E-09	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000002
				3-Nitrotoluene	0.030	mg/kg	3.9E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.1E-08	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.0001
				4-Amino-2,6-Dinitrotoluene	0.170	mg/kg	2.0E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	5.5E-09	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000003
				HMX	2.10	mg/kg	1.6E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.6E-08	(mg/kg/day)	5.0E-02	(mg/kg/day)	0.0000009
				Nitroglycerin	2.20	mg/kg	2.8E-07	(mg/kg/day)	1.7E-02	(mg/kg/day)$^{-1}$	4.8E-09	8.0E-07	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.008
				RDX	22.4	mg/kg	4.3E-07	(mg/kg/day)	1.1E-01	(mg/kg/day)$^{-1}$	4.8E-08	1.2E-06	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.0004
				Tetryl	0.140	mg/kg	1.8E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	5.1E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00003
				2,3,7,8-TCDD Equivalents	1.7E-4	mg/kg	6.6E-12	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	8.6E-07	1.8E-11	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.03
				Perchlorate	31.5	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-04	(mg/kg/day)	--
				Aluminum	6,322	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Arsenic	3.50	mg/kg	1.4E-07	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	2.0E-07	3.8E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.001
				Barium	91.1	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-02	(mg/kg/day)	--

TABLE 7.33.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2009 SURFACE SOIL SAMPLES

REASONABLE MAXIMUM EXPOSURES

TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Outdoor Worker - Entire Site
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	All Soil Samples	Dermal	Beryllium	0.330	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-05	(mg/kg/day)	--
				Cadmium	7.20	mg/kg	9.3E-09	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	2.6E-08	(mg/kg/day)	2.5E-05	(mg/kg/day)	0.001
				Chromium	20.0	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--
				Copper	118	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	4.0E-02	(mg/kg/day)	--
				Iron	8,184	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Lead	1,776	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)	--
				Manganese	198	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
				Mercury	0.055	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Nickel	12.4	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	8.0E-04	(mg/kg/day)	--
				Silver	0.700	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	2.0E-04	(mg/kg/day)	--
				Vanadium	8.50	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.3E-04	(mg/kg/day)	--
				Zinc	232	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-01	(mg/kg/day)	--
			Exp. Route Total								1.3E-06					0.04
		Exposure Point Total									1.4E-05					0.4
	Exposure Medium Total										1.4E-05					0.4
Medium Total											1.4E-05					0.4
Total of Receptor Risks Across All Media											1.4E-05	Total of Receptor Hazards Across All Media				0.4

2014 SURFACE SOIL SAMPLES

TABLE 7.34.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2014 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Unprotected OB Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	OB Unit	Ingestion	1,3,5-Trinitrobenzene	0.18	mg/kg	1.3E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.7E-08	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.000001
				1,3-Dinitrobenzene	0.085	mg/kg	6.2E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.7E-08	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.0002
				2,4,6-Trinitrotoluene	0.044	mg/kg	3.2E-09	(mg/kg/day)	3.0E-02	(mg/kg/day)$^{-1}$	9.7E-11	9.0E-09	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.00002
				2,4-Dinitrotoluene	19.4	mg/kg	1.4E-06	(mg/kg/day)	3.1E-01	(mg/kg/day)$^{-1}$	4.4E-07	4.0E-06	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.002
				2,6-Dinitrotoluene	0.06	mg/kg	4.4E-09	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	6.6E-09	1.2E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.00004
				2-Amino-4,6-Dinitrotoluene	0.073	mg/kg	5.4E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.5E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000008
				2-Nitrotoluene	0.064	mg/kg	4.7E-09	(mg/kg/day)	2.2E-01	(mg/kg/day)$^{-1}$	1.0E-09	1.3E-08	(mg/kg/day)	9.0E-04	(mg/kg/day)	0.00001
				4-Amino-2,6-Dinitrotoluene	0.066	mg/kg	4.8E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.4E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000007
				4-Nitrotoluene	0.13	mg/kg	9.5E-09	(mg/kg/day)	1.6E-02	(mg/kg/day)$^{-1}$	1.5E-10	2.7E-08	(mg/kg/day)	4.0E-03	(mg/kg/day)	0.000007
				HMX	0.98	mg/kg	7.2E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.0E-07	(mg/kg/day)	5.0E-02	(mg/kg/day)	0.000004
				Nitroglycerin	16.3	mg/kg	1.2E-06	(mg/kg/day)	1.7E-02	(mg/kg/day)$^{-1}$	2.0E-08	3.3E-06	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.03
				RDX	8.88	mg/kg	6.5E-07	(mg/kg/day)	1.1E-01	(mg/kg/day)$^{-1}$	7.2E-08	1.8E-06	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.0006
				Tetryl	0.084	mg/kg	6.2E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.7E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000009
				Perchlorate	0.02	mg/kg	1.5E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.1E-09	(mg/kg/day)	7.0E-04	(mg/kg/day)	0.000006
				2,3,7,8-TCDD Equivalents	0.000016	mg/kg	1.2E-12	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	1.5E-07	3.3E-12	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.005
				Aluminum	13680	mg/kg	1.0E-03	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.8E-03	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.003
				Antimony	4.94	mg/kg	3.6E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.0E-06	(mg/kg/day)	4.0E-04	(mg/kg/day)	0.003
				Arsenic	7.24	mg/kg	3.2E-07	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	4.8E-07	8.9E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.003
				Barium	169	mg/kg	1.2E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.5E-05	(mg/kg/day)	2.0E-01	(mg/kg/day)	0.0002
				Beryllium	0.07	mg/kg	5.1E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.4E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000007
				Cadmium	2.84	mg/kg	2.1E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	5.8E-07	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.001
				Chromium	17.2	mg/kg	1.3E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.5E-06	(mg/kg/day)	1.5E+00	(mg/kg/day)	0.000002
				Cobalt	5.47	mg/kg	4.0E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.1E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.004
				Copper	121	mg/kg	8.9E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.5E-05	(mg/kg/day)	4.0E-02	(mg/kg/day)	0.0006
				Iron	15015	mg/kg	1.1E-03	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.1E-03	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.004
				Lead	5880	mg/kg	4.3E-04	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.2E-03	(mg/kg/day)	NA	(mg/kg/day)	--
				Manganese	464	mg/kg	3.4E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	9.5E-05	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.004
				Mercury	0.044	mg/kg	3.2E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	9.0E-09	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.00003
				Nickel	15.2	mg/kg	1.1E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.1E-06	(mg/kg/day)	2.0E-02	(mg/kg/day)	0.0002
				Selenium	0.28	mg/kg	2.1E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	5.8E-08	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.00001
				Silver	0.53	mg/kg	3.9E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.1E-07	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.00002
				Thallium	0.19	mg/kg	1.4E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.9E-08	(mg/kg/day)	1.0E-05	(mg/kg/day)	0.004
				Vanadium	24.6	mg/kg	1.8E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	5.1E-06	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.001
				Zinc	91.7	mg/kg	6.7E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.9E-05	(mg/kg/day)	3.0E-01	(mg/kg/day)	0.00006
			Exp. Route Total								1.2E-06					0.07
			Dermal	1,3,5-Trinitrobenzene	0.18	mg/kg	1.1E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.0E-09	(mg/kg/day)	3.0E-02	(mg/kg/day)	9.9E-8
				1,3-Dinitrobenzene	0.085	mg/kg	2.6E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	7.4E-09	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.00007
				2,4,6-Trinitrotoluene	0.044	mg/kg	4.4E-10	(mg/kg/day)	3.0E-02	(mg/kg/day)$^{-1}$	1.3E-11	1.2E-09	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.000002
				2,4-Dinitrotoluene	19.4	mg/kg	6.1E-07	(mg/kg/day)	3.1E-01	(mg/kg/day)$^{-1}$	1.9E-07	1.7E-06	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0009
				2,6-Dinitrotoluene	0.06	mg/kg	1.8E-09	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	2.8E-09	5.2E-09	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.00002
				2-Amino-4,6-Dinitrotoluene	0.073	mg/kg	1.4E-10	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.8E-10	(mg/kg/day)	2.0E-03	(mg/kg/day)	1.9E-7
				2-Nitrotoluene	0.064	mg/kg	2.0E-09	(mg/kg/day)	2.2E-01	(mg/kg/day)$^{-1}$	4.4E-10	5.6E-09	(mg/kg/day)	9.0E-04	(mg/kg/day)	0.000006
				4-Amino-2,6-Dinitrotoluene	0.066	mg/kg	1.8E-10	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	5.2E-10	(mg/kg/day)	2.0E-03	(mg/kg/day)	2.6E-7
				4-Nitrotoluene	0.13	mg/kg	4.0E-09	(mg/kg/day)	1.6E-02	(mg/kg/day)$^{-1}$	6.5E-11	1.1E-08	(mg/kg/day)	4.0E-03	(mg/kg/day)	0.000003
				HMX	0.98	mg/kg	1.8E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	5.1E-09	(mg/kg/day)	5.0E-02	(mg/kg/day)	1.0E-7
				Nitroglycerin	16.3	mg/kg	5.1E-07	(mg/kg/day)	1.7E-02	(mg/kg/day)$^{-1}$	8.6E-09	1.4E-06	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.01
				RDX	8.88	mg/kg	4.1E-08	(mg/kg/day)	1.1E-01	(mg/kg/day)$^{-1}$	4.6E-09	1.2E-07	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.00004
				Tetryl	0.084	mg/kg	2.6E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	7.3E-09	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000004
				Perchlorate	0.02	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-04	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.000016	mg/kg	1.5E-13	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	1.9E-08	4.2E-13	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.0006
				Aluminum	13680	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Antimony	4.94	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	6.0E-05	(mg/kg/day)	--
				Arsenic	7.24	mg/kg	6.7E-08	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	1.0E-07	1.9E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0006
				Barium	169	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-02	(mg/kg/day)	--
				Beryllium	0.07	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-05	(mg/kg/day)	--
				Cadmium	2.84	mg/kg	8.8E-10	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.5E-09	(mg/kg/day)	2.5E-05	(mg/kg/day)	0.00010
				Chromium	17.2	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	2.0E-02	(mg/kg/day)	--

TABLE 7.34.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2014 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Unprotected OB Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	OB Unit	Dermal	Cobalt	5.47	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Copper	121	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	4.0E-02	(mg/kg/day)	--
				Iron	15015	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Lead	5880	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)	--
				Manganese	464	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
				Mercury	0.044	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Nickel	15.2	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	8.0E-04	(mg/kg/day)	--
				Selenium	0.28	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	5.0E-03	(mg/kg/day)	--
				Silver	0.53	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	2.0E-04	(mg/kg/day)	--
				Thallium	0.19	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.0E-05	(mg/kg/day)	--
				Vanadium	24.6	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.3E-04	(mg/kg/day)	--
				Zinc	91.7	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-01	(mg/kg/day)	--
			Exp. Route Total								3.3E-07					0.02
		Exposure Point Total									1.5E-06					0.09
	Exposure Medium Total										1.5E-06					0.09
	Air	OB Unit	Inhalation	1,3,5-Trinitrobenzene	1.3E-10	mg/m^3	2.6E-12	(mg/m^3)	NA	(ug/m^3)$^{-1}$	- -	7.3E-12	(mg/m^3)	NA	(mg/m^3)	--
				1,3-Dinitrobenzene	6.3E-11	mg/m^3	1.2E-12	(mg/m^3)	NA	(ug/m^3)$^{-1}$	- -	3.4E-12	(mg/m^3)	NA	(mg/m^3)	--
				2,4,6-Trinitrotoluene	3.2E-11	mg/m^3	6.3E-13	(mg/m^3)	NA	(ug/m^3)$^{-1}$	- -	1.8E-12	(mg/m^3)	NA	(mg/m^3)	--
				2,4-Dinitrotoluene	1.4E-08	mg/m^3	2.8E-10	(mg/m^3)	8.9E-05	(ug/m^3)$^{-1}$	2.5E-11	7.8E-10	(mg/m^3)	NA	(mg/m^3)	--
				2,6-Dinitrotoluene	4.4E-11	mg/m^3	8.6E-13	(mg/m^3)	NA	(ug/m^3)$^{-1}$	- -	2.4E-12	(mg/m^3)	NA	(mg/m^3)	--
				2-Amino-4,6-Dinitrotoluene	5.4E-11	mg/m^3	1.1E-12	(mg/m^3)	NA	(ug/m^3)$^{-1}$	- -	2.9E-12	(mg/m^3)	NA	(mg/m^3)	--
				2-Nitrotoluene	4.7E-07	mg/m^3	9.2E-09	(mg/m^3)	NA	(ug/m^3)$^{-1}$	- -	2.6E-08	(mg/m^3)	NA	(mg/m^3)	--
				4-Amino-2,6-Dinitrotoluene	4.9E-11	mg/m^3	9.5E-13	(mg/m^3)	NA	(ug/m^3)$^{-1}$	- -	2.7E-12	(mg/m^3)	NA	(mg/m^3)	--
				4-Nitrotoluene	9.6E-11	mg/m^3	1.9E-12	(mg/m^3)	NA	(ug/m^3)$^{-1}$	- -	5.2E-12	(mg/m^3)	NA	(mg/m^3)	--
				HMX	7.2E-10	mg/m^3	1.4E-11	(mg/m^3)	NA	(ug/m^3)$^{-1}$	- -	3.9E-11	(mg/m^3)	NA	(mg/m^3)	--
				Nitroglycerin	1.2E-08	mg/m^3	2.3E-10	(mg/m^3)	NA	(ug/m^3)$^{-1}$	- -	6.6E-10	(mg/m^3)	NA	(mg/m^3)	--
				RDX	6.5E-09	mg/m^3	1.3E-10	(mg/m^3)	NA	(ug/m^3)$^{-1}$	- -	3.6E-10	(mg/m^3)	NA	(mg/m^3)	--
				Tetryl	6.2E-11	mg/m^3	1.2E-12	(mg/m^3)	NA	(ug/m^3)$^{-1}$	- -	3.4E-12	(mg/m^3)	NA	(mg/m^3)	--
				Perchlorate	1.5E-11	mg/m^3	2.9E-13	(mg/m^3)	NA	(ug/m^3)$^{-1}$	- -	8.1E-13	(mg/m^3)	NA	(mg/m^3)	--
				2,3,7,8-TCDD Equivalents	1.2E-14	mg/m^3	2.3E-16	(mg/m^3)	3.8E+01	(ug/m^3)$^{-1}$	8.7E-12	6.4E-16	(mg/m^3)	4.0E-08	(mg/m^3)	1.6E-8
				Aluminum	1.0E-05	mg/m^3	2.0E-07	(mg/m^3)	NA	(ug/m^3)$^{-1}$	- -	5.5E-07	(mg/m^3)	5.0E-03	(mg/m^3)	0.0001
				Antimony	3.6E-09	mg/m^3	7.1E-11	(mg/m^3)	NA	(ug/m^3)$^{-1}$	- -	2.0E-10	(mg/m^3)	NA	(mg/m^3)	--
				Arsenic	5.3E-09	mg/m^3	1.0E-10	(mg/m^3)	4.3E-03	(ug/m^3)$^{-1}$	4.5E-10	2.9E-10	(mg/m^3)	1.5E-05	(mg/m^3)	0.00002
				Barium	1.2E-07	mg/m^3	2.4E-09	(mg/m^3)	NA	(ug/m^3)$^{-1}$	- -	6.8E-09	(mg/m^3)	5.0E-04	(mg/m^3)	0.00001
				Beryllium	5.1E-11	mg/m^3	1.0E-12	(mg/m^3)	2.4E-03	(ug/m^3)$^{-1}$	2.4E-12	2.8E-12	(mg/m^3)	2.0E-05	(mg/m^3)	1.4E-7
				Cadmium	2.1E-09	mg/m^3	4.1E-11	(mg/m^3)	1.8E-03	(ug/m^3)$^{-1}$	7.4E-11	1.1E-10	(mg/m^3)	1.0E-05	(mg/m^3)	0.00001
				Chromium	1.3E-08	mg/m^3	2.5E-10	(mg/m^3)	NA	(ug/m^3)$^{-1}$	- -	6.9E-10	(mg/m^3)	NA	(mg/m^3)	--
				Cobalt	4.0E-09	mg/m^3	7.9E-11	(mg/m^3)	9.0E-03	(ug/m^3)$^{-1}$	7.1E-10	2.2E-10	(mg/m^3)	6.0E-06	(mg/m^3)	0.00004
				Copper	8.9E-08	mg/m^3	1.7E-09	(mg/m^3)	NA	(ug/m^3)$^{-1}$	- -	4.9E-09	(mg/m^3)	NA	(mg/m^3)	--
				Iron	1.1E-05	mg/m^3	2.2E-07	(mg/m^3)	NA	(ug/m^3)$^{-1}$	- -	6.0E-07	(mg/m^3)	NA	(mg/m^3)	--
				Lead	4.3E-06	mg/m^3	8.5E-08	(mg/m^3)	NA	(ug/m^3)$^{-1}$	- -	2.4E-07	(mg/m^3)	NA	(mg/m^3)	--
				Manganese	3.4E-07	mg/m^3	6.7E-09	(mg/m^3)	NA	(ug/m^3)$^{-1}$	- -	1.9E-08	(mg/m^3)	5.0E-05	(mg/m^3)	0.0004
				Mercury	1.5E-06	mg/m^3	2.9E-08	(mg/m^3)	NA	(ug/m^3)$^{-1}$	- -	8.0E-08	(mg/m^3)	3.0E-04	(mg/m^3)	0.0003
				Nickel	1.1E-08	mg/m^3	2.2E-10	(mg/m^3)	2.6E-04	(ug/m^3)$^{-1}$	5.7E-11	6.1E-10	(mg/m^3)	9.0E-05	(mg/m^3)	0.000007
				Selenium	2.1E-10	mg/m^3	4.0E-12	(mg/m^3)	NA	(ug/m^3)$^{-1}$	- -	1.1E-11	(mg/m^3)	2.0E-02	(mg/m^3)	5.6E-10
				Silver	3.9E-10	mg/m^3	7.6E-12	(mg/m^3)	NA	(ug/m^3)$^{-1}$	- -	2.1E-11	(mg/m^3)	NA	(mg/m^3)	--
				Thallium	1.4E-10	mg/m^3	2.7E-12	(mg/m^3)	NA	(ug/m^3)$^{-1}$	- -	7.7E-12	(mg/m^3)	NA	(mg/m^3)	--
				Vanadium	1.8E-08	mg/m^3	3.5E-10	(mg/m^3)	NA	(ug/m^3)$^{-1}$	- -	9.9E-10	(mg/m^3)	1.0E-04	(mg/m^3)	0.000010
				Zinc	6.7E-08	mg/m^3	1.3E-09	(mg/m^3)	NA	(ug/m^3)$^{-1}$	- -	3.7E-09	(mg/m^3)	NA	(mg/m^3)	--
			Exp. Route Total								1.3E-09					0.0008
		Exposure Point Total									1.3E-09					0.0008
	Exposure Medium Total										1.3E-09					0.0008
Medium Total											1.5E-06					0.09
										Total of Receptor Risks Across All Media	1.5E-06				Total of Receptor Hazards Across All Media	0.09

TABLE 7.35.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2014 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Unprotected OD Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	OD Unit	Ingestion	1,3,5-Trinitrobenzene	0.2	mg/kg	2.2E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	6.2E-08	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.000002
				1,3-Dinitrobenzene	0.14	mg/kg	1.5E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.3E-08	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.0004
				2,4,6-Trinitrotoluene	9	mg/kg	9.9E-07	(mg/kg/day)	3.0E-02	(mg/kg/day)$^{-1}$	3.0E-08	2.8E-06	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.006
				2,4-Dinitrotoluene	0.06	mg/kg	6.6E-09	(mg/kg/day)	3.1E-01	(mg/kg/day)$^{-1}$	2.0E-09	1.8E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000009
				2-Amino-4,6-Dinitrotoluene	0.31	mg/kg	3.4E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	9.6E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00005
				4-Amino-2,6-Dinitrotoluene	0.41	mg/kg	4.5E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.3E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00006
				HMX	3	mg/kg	3.3E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	9.2E-07	(mg/kg/day)	5.0E-02	(mg/kg/day)	0.00002
				Nitroglycerin	1.9	mg/kg	2.1E-07	(mg/kg/day)	1.7E-02	(mg/kg/day)$^{-1}$	3.6E-09	5.9E-07	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.006
				PETN	0.41	mg/kg	4.5E-08	(mg/kg/day)	4.0E-03	(mg/kg/day)$^{-1}$	1.8E-10	1.3E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00006
				RDX	17.5	mg/kg	1.9E-06	(mg/kg/day)	1.1E-01	(mg/kg/day)$^{-1}$	2.1E-07	5.4E-06	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.002
				Tetryl	1.4	mg/kg	1.5E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.3E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0002
				Perchlorate	2.8	mg/kg	3.1E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	8.6E-07	(mg/kg/day)	7.0E-04	(mg/kg/day)	0.001
				Aluminum	3364	mg/kg	3.7E-04	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.0E-03	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.001
				Antimony	1.6	mg/kg	1.8E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.9E-07	(mg/kg/day)	4.0E-04	(mg/kg/day)	0.001
				Arsenic	4.4	mg/kg	2.9E-07	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	4.4E-07	8.1E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.003
				Barium	114	mg/kg	1.3E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.5E-05	(mg/kg/day)	2.0E-01	(mg/kg/day)	0.0002
				Beryllium	0.17	mg/kg	1.9E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	5.2E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00003
				Cadmium	7.5	mg/kg	8.3E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.3E-06	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.005
				Chromium	79	mg/kg	8.7E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.4E-05	(mg/kg/day)	1.5E+00	(mg/kg/day)	0.00002
				Cobalt	2.5	mg/kg	2.8E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	7.7E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.003
				Copper	484	mg/kg	5.3E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.5E-04	(mg/kg/day)	4.0E-02	(mg/kg/day)	0.004
				Iron	7933	mg/kg	8.7E-04	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.4E-03	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.003
				Lead	39.9	mg/kg	4.4E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.2E-05	(mg/kg/day)	NA	(mg/kg/day)	--
				Manganese	132	mg/kg	1.5E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.1E-05	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.002
				Mercury	0.09	mg/kg	9.9E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.8E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.00009
				Nickel	43	mg/kg	4.7E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.3E-05	(mg/kg/day)	2.0E-02	(mg/kg/day)	0.0007
				Selenium	0.22	mg/kg	2.4E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	6.8E-08	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.00001
				Silver	2.1	mg/kg	2.3E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	6.5E-07	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.0001
				Thallium	0.11	mg/kg	1.2E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.4E-08	(mg/kg/day)	1.0E-05	(mg/kg/day)	0.003
				Vanadium	10.9	mg/kg	1.2E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.4E-06	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.0007
				Zinc	234	mg/kg	2.6E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	7.2E-05	(mg/kg/day)	3.0E-01	(mg/kg/day)	0.0002
			Exp. Route Total								6.8E-07					0.04
			Dermal	1,3,5-Trinitrobenzene	0.2	mg/kg	1.8E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	5.0E-09	(mg/kg/day)	3.0E-02	(mg/kg/day)	1.7E-7
				1,3-Dinitrobenzene	0.14	mg/kg	6.5E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.8E-08	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.0002
				2,4,6-Trinitrotoluene	9	mg/kg	1.3E-07	(mg/kg/day)	3.0E-02	(mg/kg/day)$^{-1}$	4.0E-09	3.8E-07	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.0008
				2,4-Dinitrotoluene	0.06	mg/kg	2.9E-09	(mg/kg/day)	3.1E-01	(mg/kg/day)$^{-1}$	8.8E-10	8.0E-09	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000004
				2-Amino-4,6-Dinitrotoluene	0.31	mg/kg	8.7E-10	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.4E-09	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000001
				4-Amino-2,6-Dinitrotoluene	0.41	mg/kg	1.7E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.8E-09	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000002
				HMX	3	mg/kg	8.4E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.3E-08	(mg/kg/day)	5.0E-02	(mg/kg/day)	4.7E-7
				Nitroglycerin	1.9	mg/kg	8.9E-08	(mg/kg/day)	1.7E-02	(mg/kg/day)$^{-1}$	1.5E-09	2.5E-07	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.002
				PETN	0.41	mg/kg	1.9E-08	(mg/kg/day)	4.0E-03	(mg/kg/day)$^{-1}$	7.6E-11	5.3E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00003
				RDX	17.5	mg/kg	1.2E-07	(mg/kg/day)	1.1E-01	(mg/kg/day)$^{-1}$	1.3E-08	3.4E-07	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.0001
				Tetryl	1.4	mg/kg	6.5E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.8E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00009
				Perchlorate	2.8	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-04	(mg/kg/day)	--
				Aluminum	3364	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Antimony	1.6	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	6.0E-05	(mg/kg/day)	--
				Arsenic	4.4	mg/kg	6.1E-08	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	9.2E-08	1.7E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0006
				Barium	114	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-02	(mg/kg/day)	--
				Beryllium	0.17	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-05	(mg/kg/day)	--
				Cadmium	7.5	mg/kg	3.5E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	9.8E-09	(mg/kg/day)	2.5E-05	(mg/kg/day)	0.0004
				Chromium	79	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	2.0E-02	(mg/kg/day)	--
				Cobalt	2.5	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Copper	484	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	4.0E-02	(mg/kg/day)	--
				Iron	7933	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Lead	39.9	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)	--

TABLE 7.35.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2014 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Unprotected OD Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	OD Unit	Dermal	Manganese	132	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
				Mercury	0.09	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Nickel	43	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	8.0E-04	(mg/kg/day)	--
				Selenium	0.22	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	5.0E-03	(mg/kg/day)	--
				Silver	2.1	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	2.0E-04	(mg/kg/day)	--
				Thallium	0.11	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.0E-05	(mg/kg/day)	--
				Vanadium	10.9	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.3E-04	(mg/kg/day)	--
				Zinc	234	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-01	(mg/kg/day)	--
			Exp. Route Total								1.1E-07					0.005
		Exposure Point Total									8.0E-07					0.05
	Exposure Medium Total										8.0E-07					0.05
	Air	OD Unit	Inhalation	1,3,5-Trinitrobenzene	1.5E-10	mg/m^3	4.3E-12	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.2E-11	(mg/m^3)	NA	(mg/m^3)	--
				1,3-Dinitrobenzene	1.0E-10	mg/m^3	3.0E-12	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	8.5E-12	(mg/m^3)	NA	(mg/m^3)	--
				2,4,6-Trinitrotoluene	6.6E-09	mg/m^3	1.9E-10	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	5.4E-10	(mg/m^3)	NA	(mg/m^3)	--
				2,4-Dinitrotoluene	4.4E-11	mg/m^3	1.3E-12	(mg/m^3)	8.9E-05	$(ug/m^3)^{-1}$	1.2E-13	3.6E-12	(mg/m^3)	NA	(mg/m^3)	--
				2-Amino-4,6-Dinitrotoluene	2.3E-10	mg/m^3	6.7E-12	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.9E-11	(mg/m^3)	NA	(mg/m^3)	--
				4-Amino-2,6-Dinitrotoluene	3.0E-10	mg/m^3	8.8E-12	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	2.5E-11	(mg/m^3)	NA	(mg/m^3)	--
				HMX	2.2E-09	mg/m^3	6.5E-11	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.8E-10	(mg/m^3)	NA	(mg/m^3)	--
				Nitroglycerin	1.4E-09	mg/m^3	4.1E-11	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.1E-10	(mg/m^3)	NA	(mg/m^3)	--
				PETN	3.0E-10	mg/m^3	8.8E-12	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	2.5E-11	(mg/m^3)	NA	(mg/m^3)	--
				RDX	1.3E-08	mg/m^3	3.8E-10	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.1E-09	(mg/m^3)	NA	(mg/m^3)	--
				Tetryl	1.0E-09	mg/m^3	3.0E-11	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	8.5E-11	(mg/m^3)	NA	(mg/m^3)	--
				Perchlorate	2.1E-09	mg/m^3	6.0E-11	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.7E-10	(mg/m^3)	NA	(mg/m^3)	--
				Aluminum	2.5E-06	mg/m^3	7.3E-08	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	2.0E-07	(mg/m^3)	5.0E-03	(mg/m^3)	0.00004
				Antimony	1.2E-09	mg/m^3	3.5E-11	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	9.7E-11	(mg/m^3)	NA	(mg/m^3)	--
				Arsenic	3.2E-09	mg/m^3	9.5E-11	(mg/m^3)	4.3E-03	$(ug/m^3)^{-1}$	4.1E-10	2.7E-10	(mg/m^3)	1.5E-05	(mg/m^3)	0.00002
				Barium	8.4E-08	mg/m^3	2.5E-09	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	6.9E-09	(mg/m^3)	5.0E-04	(mg/m^3)	0.00001
				Beryllium	1.3E-10	mg/m^3	3.7E-12	(mg/m^3)	2.4E-03	$(ug/m^3)^{-1}$	8.8E-12	1.0E-11	(mg/m^3)	2.0E-05	(mg/m^3)	5.1E-7
				Cadmium	5.5E-09	mg/m^3	1.6E-10	(mg/m^3)	1.8E-03	$(ug/m^3)^{-1}$	2.9E-10	4.5E-10	(mg/m^3)	1.0E-05	(mg/m^3)	0.00005
				Chromium	5.8E-08	mg/m^3	1.7E-09	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	4.8E-09	(mg/m^3)	NA	(mg/m^3)	--
				Cobalt	1.8E-09	mg/m^3	5.4E-11	(mg/m^3)	9.0E-03	$(ug/m^3)^{-1}$	4.9E-10	1.5E-10	(mg/m^3)	6.0E-06	(mg/m^3)	0.00003
				Copper	3.6E-07	mg/m^3	1.0E-08	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	2.9E-08	(mg/m^3)	NA	(mg/m^3)	--
				Iron	5.8E-06	mg/m^3	1.7E-07	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	4.8E-07	(mg/m^3)	NA	(mg/m^3)	--
				Lead	2.9E-08	mg/m^3	8.6E-10	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	2.4E-09	(mg/m^3)	NA	(mg/m^3)	--
				Manganese	9.7E-08	mg/m^3	2.8E-09	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	8.0E-09	(mg/m^3)	5.0E-05	(mg/m^3)	0.0002
				Mercury	3.0E-06	mg/m^3	8.8E-08	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	2.5E-07	(mg/m^3)	3.0E-04	(mg/m^3)	0.0008
				Nickel	3.2E-08	mg/m^3	9.3E-10	(mg/m^3)	2.6E-04	$(ug/m^3)^{-1}$	2.4E-10	2.6E-09	(mg/m^3)	9.0E-05	(mg/m^3)	0.00003
				Selenium	1.6E-10	mg/m^3	4.7E-12	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.3E-11	(mg/m^3)	2.0E-02	(mg/m^3)	6.6E-10
				Silver	1.5E-09	mg/m^3	4.5E-11	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.3E-10	(mg/m^3)	NA	(mg/m^3)	--
				Thallium	8.1E-11	mg/m^3	2.4E-12	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	6.6E-12	(mg/m^3)	NA	(mg/m^3)	--
				Vanadium	8.0E-09	mg/m^3	2.4E-10	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	6.6E-10	(mg/m^3)	1.0E-04	(mg/m^3)	0.000007
				Zinc	1.7E-07	mg/m^3	5.1E-09	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.4E-08	(mg/m^3)	NA	(mg/m^3)	--
			Exp. Route Total								1.4E-09					0.001
		Exposure Point Total									1.4E-09					0.001
	Exposure Medium Total										1.4E-09					0.001
Medium Total											8.0E-07					0.05
										Total of Receptor Risks Across All Media	8.0E-07				Total of Receptor Hazards Across All Media	0.05

TABLE 7.36.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2014 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Unprotected SF Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Static Firing Rocket Silos	Ingestion	1,3,5-Trinitrobenzene	0.26	mg/kg	1.9E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	5.3E-08	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.000002
				2,4,6-Trinitrotoluene	13.7	mg/kg	1.0E-06	(mg/kg/day)	3.0E-02	(mg/kg/day)$^{-1}$	3.0E-08	2.8E-06	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.006
				2,4-Dinitrotoluene	1.4	mg/kg	1.0E-07	(mg/kg/day)	3.1E-01	(mg/kg/day)$^{-1}$	3.2E-08	2.9E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0001
				2,6-Dinitrotoluene	0.083	mg/kg	6.1E-09	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	9.1E-09	1.7E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.00006
				2-Amino-4,6-Dinitrotoluene	0.44	mg/kg	3.2E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	9.0E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00005
				4-Amino-2,6-Dinitrotoluene	0.54	mg/kg	4.0E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.1E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00006
				HMX	10.1	mg/kg	7.4E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.1E-06	(mg/kg/day)	5.0E-02	(mg/kg/day)	0.00004
				Nitroglycerin	4.3	mg/kg	3.2E-07	(mg/kg/day)	1.7E-02	(mg/kg/day)$^{-1}$	5.4E-09	8.8E-07	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.009
				RDX	91.6	mg/kg	6.7E-06	(mg/kg/day)	1.1E-01	(mg/kg/day)$^{-1}$	7.4E-07	1.9E-05	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.006
				Tetryl	0.08	mg/kg	5.9E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.6E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000008
				Perchlorate	2.9	mg/kg	2.1E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	6.0E-07	(mg/kg/day)	7.0E-04	(mg/kg/day)	0.0009
				2,3,7,8-TCDD Equivalents	0.00015	mg/kg	1.1E-11	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	1.4E-06	3.1E-11	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.04
				Aluminum	9371	mg/kg	6.9E-04	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.9E-03	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.002
				Antimony	2.7	mg/kg	2.0E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	5.5E-07	(mg/kg/day)	4.0E-04	(mg/kg/day)	0.001
				Arsenic	4.2	mg/kg	1.8E-07	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	2.8E-07	5.2E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.002
				Barium	140	mg/kg	1.0E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.9E-05	(mg/kg/day)	2.0E-01	(mg/kg/day)	0.0001
				Beryllium	0.29	mg/kg	2.1E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	6.0E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00003
				Cadmium	22.2	mg/kg	1.6E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.6E-06	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.009
				Chromium	33.3	mg/kg	2.4E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	6.8E-06	(mg/kg/day)	1.5E+00	(mg/kg/day)	0.000005
				Cobalt	3	mg/kg	2.2E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	6.2E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.002
				Copper	1450	mg/kg	1.1E-04	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.0E-04	(mg/kg/day)	4.0E-02	(mg/kg/day)	0.007
				Iron	14661	mg/kg	1.1E-03	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.0E-03	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.004
				Lead	360	mg/kg	2.6E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	7.4E-05	(mg/kg/day)	NA	(mg/kg/day)	--
				Manganese	239	mg/kg	1.8E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.9E-05	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.002
				Mercury	0.032	mg/kg	2.3E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	6.6E-09	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.00002
				Nickel	11.1	mg/kg	8.1E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.3E-06	(mg/kg/day)	2.0E-02	(mg/kg/day)	0.0001
				Selenium	0.25	mg/kg	1.8E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	5.1E-08	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.00001
				Silver	0.64	mg/kg	4.7E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.3E-07	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.00003
				Thallium	0.087	mg/kg	6.4E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.8E-08	(mg/kg/day)	1.0E-05	(mg/kg/day)	0.002
				Vanadium	12	mg/kg	8.8E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.5E-06	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.0005
				Zinc	383	mg/kg	2.8E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	7.9E-05	(mg/kg/day)	3.0E-01	(mg/kg/day)	0.0003
			Exp. Route Total								2.5E-06					0.10
			Dermal	1,3,5-Trinitrobenzene	0.26	mg/kg	1.5E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.3E-09	(mg/kg/day)	3.0E-02	(mg/kg/day)	1.4E-7
				2,4,6-Trinitrotoluene	13.7	mg/kg	1.4E-07	(mg/kg/day)	3.0E-02	(mg/kg/day)$^{-1}$	4.1E-09	3.8E-07	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.0008
				2,4-Dinitrotoluene	1.4	mg/kg	4.4E-08	(mg/kg/day)	3.1E-01	(mg/kg/day)$^{-1}$	1.4E-08	1.2E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00006
				2,6-Dinitrotoluene	0.083	mg/kg	2.6E-09	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	3.8E-09	7.1E-09	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.00002
				2-Amino-4,6-Dinitrotoluene	0.44	mg/kg	8.2E-10	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.3E-09	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000001
				4-Amino-2,6-Dinitrotoluene	0.54	mg/kg	1.5E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.2E-09	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000002
				HMX	10.1	mg/kg	1.9E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	5.3E-08	(mg/kg/day)	5.0E-02	(mg/kg/day)	0.000001
				Nitroglycerin	4.3	mg/kg	1.3E-07	(mg/kg/day)	1.7E-02	(mg/kg/day)$^{-1}$	2.3E-09	3.7E-07	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.004
				RDX	91.6	mg/kg	4.3E-07	(mg/kg/day)	1.1E-01	(mg/kg/day)$^{-1}$	4.7E-08	1.2E-06	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.0004
				Tetryl	0.08	mg/kg	2.5E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	7.0E-09	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000003
				Perchlorate	2.9	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-04	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.00015	mg/kg	1.4E-12	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	1.8E-07	3.9E-12	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.006
				Aluminum	9371	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Antimony	2.7	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	6.0E-05	(mg/kg/day)	--
				Arsenic	4.2	mg/kg	3.9E-08	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	5.9E-08	1.1E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0004
				Barium	140	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-02	(mg/kg/day)	--
				Beryllium	0.29	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-05	(mg/kg/day)	--
				Cadmium	22.2	mg/kg	6.9E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.9E-08	(mg/kg/day)	2.5E-05	(mg/kg/day)	0.0008
				Chromium	33.3	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	2.0E-02	(mg/kg/day)	--
				Cobalt	3	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Copper	1450	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	4.0E-02	(mg/kg/day)	--
				Iron	14661	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Lead	360	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)	--

TABLE 7.36.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2014 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Unprotected SF Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Static Firing Rocket Silos	Dermal	Manganese	239	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
				Mercury	0.032	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Nickel	11.1	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	8.0E-04	(mg/kg/day)	--
				Selenium	0.25	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	5.0E-03	(mg/kg/day)	--
				Silver	0.64	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	2.0E-04	(mg/kg/day)	--
				Thallium	0.087	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.0E-05	(mg/kg/day)	--
				Vanadium	12	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.3E-04	(mg/kg/day)	--
				Zinc	383	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-01	(mg/kg/day)	--
			Exp. Route Total								3.1E-07					0.01
		Exposure Point Total									2.8E-06					0.1
	Exposure Medium Total										2.8E-06					0.1
	Air	SF Unit	Inhalation	1,3,5-Trinitrobenzene	1.9E-10	mg/m^3	3.7E-12	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.0E-11	(mg/m^3)	NA	(mg/m^3)	--
				2,4,6-Trinitrotoluene	1.0E-08	mg/m^3	2.0E-10	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	5.5E-10	(mg/m^3)	NA	(mg/m^3)	--
				2,4-Dinitrotoluene	1.0E-09	mg/m^3	2.0E-11	(mg/m^3)	8.9E-05	$(ug/m^3)^{-1}$	1.8E-12	5.6E-11	(mg/m^3)	NA	(mg/m^3)	--
				2,6-Dinitrotoluene	6.1E-11	mg/m^3	1.2E-12	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	3.3E-12	(mg/m^3)	NA	(mg/m^3)	--
				2-Amino-4,6-Dinitrotoluene	3.2E-10	mg/m^3	6.3E-12	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.8E-11	(mg/m^3)	NA	(mg/m^3)	--
				4-Amino-2,6-Dinitrotoluene	4.0E-10	mg/m^3	7.8E-12	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	2.2E-11	(mg/m^3)	NA	(mg/m^3)	--
				HMX	7.4E-09	mg/m^3	1.5E-10	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	4.1E-10	(mg/m^3)	NA	(mg/m^3)	--
				Nitroglycerin	3.2E-09	mg/m^3	6.2E-11	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.7E-10	(mg/m^3)	NA	(mg/m^3)	--
				RDX	6.7E-08	mg/m^3	1.3E-09	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	3.7E-09	(mg/m^3)	NA	(mg/m^3)	--
				Tetryl	5.9E-11	mg/m^3	1.2E-12	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	3.2E-12	(mg/m^3)	NA	(mg/m^3)	--
				Perchlorate	2.1E-09	mg/m^3	4.2E-11	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.2E-10	(mg/m^3)	NA	(mg/m^3)	--
				2,3,7,8-TCDD Equivalents	1.1E-13	mg/m^3	2.2E-15	(mg/m^3)	3.8E+01	$(ug/m^3)^{-1}$	8.2E-11	6.0E-15	(mg/m^3)	4.0E-08	(mg/m^3)	1.5E-7
				Aluminum	6.9E-06	mg/m^3	1.3E-07	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	3.8E-07	(mg/m^3)	5.0E-03	(mg/m^3)	0.00008
				Antimony	2.0E-09	mg/m^3	3.9E-11	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.1E-10	(mg/m^3)	NA	(mg/m^3)	--
				Arsenic	3.1E-09	mg/m^3	6.0E-11	(mg/m^3)	4.3E-03	$(ug/m^3)^{-1}$	2.6E-10	1.7E-10	(mg/m^3)	1.5E-05	(mg/m^3)	0.00001
				Barium	1.0E-07	mg/m^3	2.0E-09	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	5.6E-09	(mg/m^3)	5.0E-04	(mg/m^3)	0.00001
				Beryllium	2.1E-10	mg/m^3	4.2E-12	(mg/m^3)	2.4E-03	$(ug/m^3)^{-1}$	1.0E-11	1.2E-11	(mg/m^3)	2.0E-05	(mg/m^3)	5.8E-7
				Cadmium	1.6E-08	mg/m^3	3.2E-10	(mg/m^3)	1.8E-03	$(ug/m^3)^{-1}$	5.7E-10	8.9E-10	(mg/m^3)	1.0E-05	(mg/m^3)	0.00009
				Chromium	2.4E-08	mg/m^3	4.8E-10	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.3E-09	(mg/m^3)	NA	(mg/m^3)	--
				Cobalt	2.2E-09	mg/m^3	4.3E-11	(mg/m^3)	9.0E-03	$(ug/m^3)^{-1}$	3.9E-10	1.2E-10	(mg/m^3)	6.0E-06	(mg/m^3)	0.00002
				Copper	1.1E-06	mg/m^3	2.1E-08	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	5.8E-08	(mg/m^3)	NA	(mg/m^3)	--
				Iron	1.1E-05	mg/m^3	2.1E-07	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	5.9E-07	(mg/m^3)	NA	(mg/m^3)	--
				Lead	2.6E-07	mg/m^3	5.2E-09	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.5E-08	(mg/m^3)	NA	(mg/m^3)	--
				Manganese	1.8E-07	mg/m^3	3.4E-09	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	9.6E-09	(mg/m^3)	5.0E-05	(mg/m^3)	0.0002
				Mercury	1.1E-06	mg/m^3	2.1E-08	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	5.8E-08	(mg/m^3)	3.0E-04	(mg/m^3)	0.0002
				Nickel	8.2E-09	mg/m^3	1.6E-10	(mg/m^3)	2.6E-04	$(ug/m^3)^{-1}$	4.2E-11	4.5E-10	(mg/m^3)	9.0E-05	(mg/m^3)	0.000005
				Selenium	1.8E-10	mg/m^3	3.6E-12	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.0E-11	(mg/m^3)	2.0E-02	(mg/m^3)	5.0E-10
				Silver	4.7E-10	mg/m^3	9.2E-12	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	2.6E-11	(mg/m^3)	NA	(mg/m^3)	--
				Thallium	6.4E-11	mg/m^3	1.3E-12	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	3.5E-12	(mg/m^3)	NA	(mg/m^3)	--
				Vanadium	8.8E-09	mg/m^3	1.7E-10	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	4.8E-10	(mg/m^3)	1.0E-04	(mg/m^3)	0.000005
				Zinc	2.8E-07	mg/m^3	5.5E-09	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.5E-08	(mg/m^3)	NA	(mg/m^3)	--
			Exp. Route Total								1.4E-09					0.0006
		Exposure Point Total									1.4E-09					0.0006
	Exposure Medium Total										1.4E-09					0.0006
Medium Total											2.8E-06					0.1
										Total of Receptor Risks Across All Media	2.8E-06				Total of Receptor Hazards Across All Media	0.1

TABLE 7.37.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2014 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Unprotected OB/OD/SF Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	All Soil Samples	Ingestion	1,3,5-Trinitrobenzene	0.17	mg/kg	4.4E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.2E-07	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.000004
				1,3-Dinitrobenzene	0.1	mg/kg	2.6E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	7.2E-08	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.0007
				2,4,6-Trinitrotoluene	7	mg/kg	1.8E-06	(mg/kg/day)	3.0E-02	(mg/kg/day)$^{-1}$	5.4E-08	5.0E-06	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.01
				2,4-Dinitrotoluene	4.45	mg/kg	1.1E-06	(mg/kg/day)	3.1E-01	(mg/kg/day)$^{-1}$	3.5E-07	3.2E-06	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.002
				2,6-Dinitrotoluene	0.058	mg/kg	1.5E-08	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	2.2E-08	4.2E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0001
				2-Amino-4,6-Dinitrotoluene	0.26	mg/kg	6.7E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.9E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00009
				2-Nitrotoluene	0.055	mg/kg	1.4E-08	(mg/kg/day)	2.2E-01	(mg/kg/day)$^{-1}$	3.1E-09	4.0E-08	(mg/kg/day)	9.0E-04	(mg/kg/day)	0.00004
				4-Amino-2,6-Dinitrotoluene	0.34	mg/kg	8.7E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.4E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0001
				4-Nitrotoluene	0.064	mg/kg	1.6E-08	(mg/kg/day)	1.6E-02	(mg/kg/day)$^{-1}$	2.6E-10	4.6E-08	(mg/kg/day)	4.0E-03	(mg/kg/day)	0.00001
				HMX	3.55	mg/kg	9.1E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.6E-06	(mg/kg/day)	5.0E-02	(mg/kg/day)	0.00005
				Nitroglycerin	4.91	mg/kg	1.3E-06	(mg/kg/day)	1.7E-02	(mg/kg/day)$^{-1}$	2.1E-08	3.5E-06	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.04
				PETN	0.34	mg/kg	8.7E-08	(mg/kg/day)	4.0E-03	(mg/kg/day)$^{-1}$	3.5E-10	2.4E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0001
				RDX	27.5	mg/kg	7.1E-06	(mg/kg/day)	1.1E-01	(mg/kg/day)$^{-1}$	7.8E-07	2.0E-05	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.007
				Tetryl	0.95	mg/kg	2.4E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	6.8E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0003
				Perchlorate	1.98	mg/kg	5.1E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.4E-06	(mg/kg/day)	7.0E-04	(mg/kg/day)	0.002
				2,3,7,8-TCDD Equivalents	0.00012	mg/kg	3.1E-11	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	4.0E-06	8.6E-11	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.1
				Aluminum	8048	mg/kg	2.1E-03	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	5.8E-03	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.006
				Antimony	2.24	mg/kg	5.8E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.6E-06	(mg/kg/day)	4.0E-04	(mg/kg/day)	0.004
				Arsenic	4.97	mg/kg	7.7E-07	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	1.1E-06	2.1E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.007
				Barium	136	mg/kg	3.5E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	9.8E-05	(mg/kg/day)	2.0E-01	(mg/kg/day)	0.0005
				Beryllium	0.35	mg/kg	9.0E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.5E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0001
				Cadmium	10.9	mg/kg	2.8E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	7.8E-06	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.02
				Chromium	54	mg/kg	1.4E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.9E-05	(mg/kg/day)	1.5E+00	(mg/kg/day)	0.00003
				Cobalt	3.42	mg/kg	8.8E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.5E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.008
				Copper	537	mg/kg	1.4E-04	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.9E-04	(mg/kg/day)	4.0E-02	(mg/kg/day)	0.010
				Iron	11286	mg/kg	2.9E-03	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	8.1E-03	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.01
				Lead	1237	mg/kg	3.2E-04	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	8.9E-04	(mg/kg/day)	NA	(mg/kg/day)	--
				Manganese	266	mg/kg	6.8E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.9E-04	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.008
				Mercury	0.073	mg/kg	1.9E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	5.3E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0002
				Nickel	29.4	mg/kg	7.6E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.1E-05	(mg/kg/day)	2.0E-02	(mg/kg/day)	0.001
				Selenium	0.22	mg/kg	5.7E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.6E-07	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.00003
				Silver	1.58	mg/kg	4.1E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.1E-06	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.0002
				Thallium	0.13	mg/kg	3.3E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	9.3E-08	(mg/kg/day)	1.0E-05	(mg/kg/day)	0.009
				Vanadium	15.3	mg/kg	3.9E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.1E-05	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.002
				Zinc	247	mg/kg	6.3E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.8E-04	(mg/kg/day)	3.0E-01	(mg/kg/day)	0.0006
			Exp. Route Total								6.4E-06					0.3
			Dermal	1,3,5-Trinitrobenzene	0.17	mg/kg	3.5E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	9.8E-09	(mg/kg/day)	3.0E-02	(mg/kg/day)	3.3E-7
				1,3-Dinitrobenzene	0.1	mg/kg	1.1E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.0E-08	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.0003
				2,4,6-Trinitrotoluene	7	mg/kg	2.4E-07	(mg/kg/day)	3.0E-02	(mg/kg/day)$^{-1}$	7.3E-09	6.8E-07	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.001
				2,4-Dinitrotoluene	4.45	mg/kg	4.9E-07	(mg/kg/day)	3.1E-01	(mg/kg/day)$^{-1}$	1.5E-07	1.4E-06	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0007
				2,6-Dinitrotoluene	0.058	mg/kg	6.2E-09	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	9.4E-09	1.7E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.00006
				2-Amino-4,6-Dinitrotoluene	0.26	mg/kg	1.7E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.7E-09	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000002
				2-Nitrotoluene	0.055	mg/kg	6.0E-09	(mg/kg/day)	2.2E-01	(mg/kg/day)$^{-1}$	1.3E-09	1.7E-08	(mg/kg/day)	9.0E-04	(mg/kg/day)	0.00002
				4-Amino-2,6-Dinitrotoluene	0.34	mg/kg	3.3E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	9.3E-09	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000005
				4-Nitrotoluene	0.064	mg/kg	7.0E-09	(mg/kg/day)	1.6E-02	(mg/kg/day)$^{-1}$	1.1E-10	1.9E-08	(mg/kg/day)	4.0E-03	(mg/kg/day)	0.000005
				HMX	3.55	mg/kg	2.3E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	6.5E-08	(mg/kg/day)	5.0E-02	(mg/kg/day)	0.000001
				Nitroglycerin	4.91	mg/kg	5.3E-07	(mg/kg/day)	1.7E-02	(mg/kg/day)$^{-1}$	9.1E-09	1.5E-06	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.01
				PETN	0.34	mg/kg	3.7E-08	(mg/kg/day)	4.0E-03	(mg/kg/day)$^{-1}$	1.5E-10	1.0E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00005
				RDX	27.5	mg/kg	4.5E-07	(mg/kg/day)	1.1E-01	(mg/kg/day)$^{-1}$	4.9E-08	1.3E-06	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.0004
				Tetryl	0.95	mg/kg	1.0E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.9E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0001
				Perchlorate	1.98	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-04	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.00012	mg/kg	3.9E-12	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	5.1E-07	1.1E-11	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.02
				Aluminum	8048	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Antimony	2.24	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	6.0E-05	(mg/kg/day)	--
				Arsenic	4.97	mg/kg	1.6E-07	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	2.4E-07	4.5E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.002
				Barium	136	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-02	(mg/kg/day)	--
				Beryllium	0.35	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-05	(mg/kg/day)	--

TABLE 7.37.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2014 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Unprotected OB/OD/SF Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	All Soil Samples	Dermal	Cadmium	10.9	mg/kg	1.2E-08	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	3.3E-08	(mg/kg/day)	2.5E-05	(mg/kg/day)	0.001
				Chromium	54	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	2.0E-02	(mg/kg/day)	--
				Cobalt	3.42	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Copper	537	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	4.0E-02	(mg/kg/day)	--
				Iron	11286	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Lead	1237	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)	--
				Manganese	266	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
				Mercury	0.073	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Nickel	29.4	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	8.0E-04	(mg/kg/day)	--
				Selenium	0.22	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	5.0E-03	(mg/kg/day)	--
				Silver	1.58	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	2.0E-04	(mg/kg/day)	--
				Thallium	0.13	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.0E-05	(mg/kg/day)	--
				Vanadium	15.3	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.3E-04	(mg/kg/day)	--
				Zinc	247	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-01	(mg/kg/day)	--
			Exp. Route Total								9.8E-07					0.04
		Exposure Point Total									7.4E-06					0.3
	Exposure Medium Total										7.4E-06					0.3
	Air	OB/OD/SF Units	Inhalation	1,3,5-Trinitrobenzene	1.3E-10	mg/m^3	8.6E-12	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	2.4E-11	(mg/m^3)	NA	(mg/m^3)	--
				1,3-Dinitrobenzene	7.4E-11	mg/m^3	5.0E-12	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.4E-11	(mg/m^3)	NA	(mg/m^3)	--
				2,4,6-Trinitrotoluene	5.1E-09	mg/m^3	3.5E-10	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	9.9E-10	(mg/m^3)	NA	(mg/m^3)	--
				2,4-Dinitrotoluene	3.3E-09	mg/m^3	2.2E-10	(mg/m^3)	8.9E-05	$(ug/m^3)^{-1}$	2.0E-11	6.3E-10	(mg/m^3)	NA	(mg/m^3)	--
				2,6-Dinitrotoluene	4.3E-11	mg/m^3	2.9E-12	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	8.2E-12	(mg/m^3)	NA	(mg/m^3)	--
				2-Amino-4,6-Dinitrotoluene	1.9E-10	mg/m^3	1.3E-11	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	3.7E-11	(mg/m^3)	NA	(mg/m^3)	--
				2-Nitrotoluene	4.0E-07	mg/m^3	2.8E-08	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	7.7E-08	(mg/m^3)	NA	(mg/m^3)	--
				4-Amino-2,6-Dinitrotoluene	2.5E-10	mg/m^3	1.7E-11	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	4.8E-11	(mg/m^3)	NA	(mg/m^3)	--
				4-Nitrotoluene	4.7E-11	mg/m^3	3.2E-12	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	9.0E-12	(mg/m^3)	NA	(mg/m^3)	--
				HMX	2.6E-09	mg/m^3	1.8E-10	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	5.0E-10	(mg/m^3)	NA	(mg/m^3)	--
				Nitroglycerin	3.6E-09	mg/m^3	2.5E-10	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	6.9E-10	(mg/m^3)	NA	(mg/m^3)	--
				PETN	2.5E-10	mg/m^3	1.7E-11	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	4.8E-11	(mg/m^3)	NA	(mg/m^3)	--
				RDX	2.0E-08	mg/m^3	1.4E-09	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	3.9E-09	(mg/m^3)	NA	(mg/m^3)	--
				Tetryl	7.0E-10	mg/m^3	4.8E-11	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.3E-10	(mg/m^3)	NA	(mg/m^3)	--
				Perchlorate	1.5E-09	mg/m^3	1.0E-10	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	2.8E-10	(mg/m^3)	NA	(mg/m^3)	--
				2,3,7,8-TCDD Equivalents	8.8E-14	mg/m^3	6.0E-15	(mg/m^3)	3.8E+01	$(ug/m^3)^{-1}$	2.3E-10	1.7E-14	(mg/m^3)	4.0E-08	(mg/m^3)	4.2E-7
				Aluminum	5.9E-06	mg/m^3	4.1E-07	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.1E-06	(mg/m^3)	5.0E-03	(mg/m^3)	0.0002
				Antimony	1.6E-09	mg/m^3	1.1E-10	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	3.2E-10	(mg/m^3)	NA	(mg/m^3)	--
				Arsenic	3.7E-09	mg/m^3	2.5E-10	(mg/m^3)	4.3E-03	$(ug/m^3)^{-1}$	1.1E-09	7.0E-10	(mg/m^3)	1.5E-05	(mg/m^3)	0.00005
				Barium	1.0E-07	mg/m^3	6.8E-09	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.9E-08	(mg/m^3)	5.0E-04	(mg/m^3)	0.00004
				Beryllium	2.6E-10	mg/m^3	1.8E-11	(mg/m^3)	2.4E-03	$(ug/m^3)^{-1}$	4.2E-11	4.9E-11	(mg/m^3)	2.0E-05	(mg/m^3)	0.000002
				Cadmium	8.0E-09	mg/m^3	5.5E-10	(mg/m^3)	1.8E-03	$(ug/m^3)^{-1}$	9.9E-10	1.5E-09	(mg/m^3)	1.0E-05	(mg/m^3)	0.0002
				Chromium	4.0E-08	mg/m^3	2.7E-09	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	7.6E-09	(mg/m^3)	NA	(mg/m^3)	--
				Cobalt	2.5E-09	mg/m^3	1.7E-10	(mg/m^3)	9.0E-03	$(ug/m^3)^{-1}$	1.6E-09	4.8E-10	(mg/m^3)	6.0E-06	(mg/m^3)	0.00008
				Copper	3.9E-07	mg/m^3	2.7E-08	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	7.6E-08	(mg/m^3)	NA	(mg/m^3)	--
				Iron	8.3E-06	mg/m^3	5.7E-07	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.6E-06	(mg/m^3)	NA	(mg/m^3)	--
				Lead	9.1E-07	mg/m^3	6.2E-08	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.7E-07	(mg/m^3)	NA	(mg/m^3)	--
				Manganese	2.0E-07	mg/m^3	1.3E-08	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	3.8E-08	(mg/m^3)	5.0E-05	(mg/m^3)	0.0008
				Mercury	2.4E-06	mg/m^3	1.7E-07	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	4.6E-07	(mg/m^3)	3.0E-04	(mg/m^3)	0.002
				Nickel	2.2E-08	mg/m^3	1.5E-09	(mg/m^3)	2.6E-04	$(ug/m^3)^{-1}$	3.8E-10	4.1E-09	(mg/m^3)	9.0E-05	(mg/m^3)	0.00005
				Selenium	1.6E-10	mg/m^3	1.1E-11	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	3.1E-11	(mg/m^3)	2.0E-02	(mg/m^3)	1.6E-9
				Silver	1.2E-09	mg/m^3	8.0E-11	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	2.2E-10	(mg/m^3)	NA	(mg/m^3)	--
				Thallium	9.6E-11	mg/m^3	6.5E-12	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.8E-11	(mg/m^3)	NA	(mg/m^3)	--
				Vanadium	1.1E-08	mg/m^3	7.7E-10	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	2.2E-09	(mg/m^3)	1.0E-04	(mg/m^3)	0.00002
				Zinc	1.8E-07	mg/m^3	1.2E-08	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	3.5E-08	(mg/m^3)	NA	(mg/m^3)	--
			Exp. Route Total								4.3E-09					0.003
		Exposure Point Total									4.3E-09					0.003
	Exposure Medium Total										4.3E-09					0.003
Medium Total											7.4E-06					0.3
										Total of Receptor Risks Across All Media	7.4E-06				Total of Receptor Hazards Across All Media	0.3

TABLE 7.38.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2014 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Protected OB Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	OB Unit	Ingestion	1,3,5-Trinitrobenzene	0.18	mg/kg	1.3E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.7E-08	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.000001
				1,3-Dinitrobenzene	0.085	mg/kg	6.2E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.7E-08	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.0002
				2,4,6-Trinitrotoluene	0.044	mg/kg	3.2E-09	(mg/kg/day)	3.0E-02	(mg/kg/day)$^{-1}$	9.7E-11	9.0E-09	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.00002
				2,4-Dinitrotoluene	19.4	mg/kg	1.4E-06	(mg/kg/day)	3.1E-01	(mg/kg/day)$^{-1}$	4.4E-07	4.0E-06	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.002
				2,6-Dinitrotoluene	0.06	mg/kg	4.4E-09	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	6.6E-09	1.2E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.00004
				2-Amino-4,6-Dinitrotoluene	0.073	mg/kg	5.4E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.5E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000008
				2-Nitrotoluene	0.064	mg/kg	4.7E-09	(mg/kg/day)	2.2E-01	(mg/kg/day)$^{-1}$	1.0E-09	1.3E-08	(mg/kg/day)	9.0E-04	(mg/kg/day)	0.00001
				4-Amino-2,6-Dinitrotoluene	0.066	mg/kg	4.8E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.4E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000007
				4-Nitrotoluene	0.13	mg/kg	9.5E-09	(mg/kg/day)	1.6E-02	(mg/kg/day)$^{-1}$	1.5E-10	2.7E-08	(mg/kg/day)	4.0E-03	(mg/kg/day)	0.000007
				HMX	0.98	mg/kg	7.2E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.0E-07	(mg/kg/day)	5.0E-02	(mg/kg/day)	0.000004
				Nitroglycerin	16.3	mg/kg	1.2E-06	(mg/kg/day)	1.7E-02	(mg/kg/day)$^{-1}$	2.0E-08	3.3E-06	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.03
				RDX	8.88	mg/kg	6.5E-07	(mg/kg/day)	1.1E-01	(mg/kg/day)$^{-1}$	7.2E-08	1.8E-06	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.0006
				Tetryl	0.084	mg/kg	6.2E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.7E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000009
				Perchlorate	0.02	mg/kg	1.5E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.1E-09	(mg/kg/day)	7.0E-04	(mg/kg/day)	0.000006
				2,3,7,8-TCDD Equivalents	0.000016	mg/kg	1.2E-12	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	1.5E-07	3.3E-12	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.005
				Aluminum	13680	mg/kg	1.0E-03	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.8E-03	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.003
				Antimony	4.94	mg/kg	3.6E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.0E-06	(mg/kg/day)	4.0E-04	(mg/kg/day)	0.003
				Arsenic	7.24	mg/kg	3.2E-07	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	4.8E-07	8.9E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.003
				Barium	169	mg/kg	1.2E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.5E-05	(mg/kg/day)	2.0E-01	(mg/kg/day)	0.0002
				Beryllium	0.07	mg/kg	5.1E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.4E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000007
				Cadmium	2.84	mg/kg	2.1E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	5.8E-07	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.001
				Chromium	17.2	mg/kg	1.3E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.5E-06	(mg/kg/day)	1.5E+00	(mg/kg/day)	0.000002
				Cobalt	5.47	mg/kg	4.0E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.1E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.004
				Copper	121	mg/kg	8.9E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.5E-05	(mg/kg/day)	4.0E-02	(mg/kg/day)	0.0006
				Iron	15015	mg/kg	1.1E-03	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.1E-03	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.004
				Lead	5880	mg/kg	4.3E-04	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.2E-03	(mg/kg/day)	NA	(mg/kg/day)	--
				Manganese	464	mg/kg	3.4E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	9.5E-05	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.004
				Mercury	0.044	mg/kg	3.2E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	9.0E-09	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.00003
				Nickel	15.2	mg/kg	1.1E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.1E-06	(mg/kg/day)	2.0E-02	(mg/kg/day)	0.0002
				Selenium	0.28	mg/kg	2.1E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	5.8E-08	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.00001
				Silver	0.53	mg/kg	3.9E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.1E-07	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.00002
				Thallium	0.19	mg/kg	1.4E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.9E-08	(mg/kg/day)	1.0E-05	(mg/kg/day)	0.004
				Vanadium	24.6	mg/kg	1.8E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	5.1E-06	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.001
				Zinc	91.7	mg/kg	6.7E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.9E-05	(mg/kg/day)	3.0E-01	(mg/kg/day)	0.00006
			Exp. Route Total								1.2E-06					0.07
			Dermal	1,3,5-Trinitrobenzene	0.18	mg/kg	3.8E-10	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.1E-09	(mg/kg/day)	3.0E-02	(mg/kg/day)	3.5E-8
				1,3-Dinitrobenzene	0.085	mg/kg	9.4E-10	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.6E-09	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.00003
				2,4,6-Trinitrotoluene	0.044	mg/kg	1.5E-10	(mg/kg/day)	3.0E-02	(mg/kg/day)$^{-1}$	4.6E-12	4.3E-10	(mg/kg/day)	5.0E-04	(mg/kg/day)	8.7E-7
				2,4-Dinitrotoluene	19.4	mg/kg	2.2E-07	(mg/kg/day)	3.1E-01	(mg/kg/day)$^{-1}$	6.8E-08	6.1E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0003
				2,6-Dinitrotoluene	0.06	mg/kg	6.5E-10	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	9.8E-10	1.8E-09	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.000006
				2-Amino-4,6-Dinitrotoluene	0.073	mg/kg	4.8E-11	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.4E-10	(mg/kg/day)	2.0E-03	(mg/kg/day)	6.8E-8
				2-Nitrotoluene	0.064	mg/kg	7.0E-10	(mg/kg/day)	2.2E-01	(mg/kg/day)$^{-1}$	1.5E-10	2.0E-09	(mg/kg/day)	9.0E-04	(mg/kg/day)	0.000002
				4-Amino-2,6-Dinitrotoluene	0.066	mg/kg	6.5E-11	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.8E-10	(mg/kg/day)	2.0E-03	(mg/kg/day)	9.2E-8
				4-Nitrotoluene	0.13	mg/kg	1.4E-09	(mg/kg/day)	1.6E-02	(mg/kg/day)$^{-1}$	2.3E-11	4.0E-09	(mg/kg/day)	4.0E-03	(mg/kg/day)	0.000001
				HMX	0.98	mg/kg	6.5E-10	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.8E-09	(mg/kg/day)	5.0E-02	(mg/kg/day)	3.6E-8
				Nitroglycerin	16.3	mg/kg	1.8E-07	(mg/kg/day)	1.7E-02	(mg/kg/day)$^{-1}$	3.1E-09	5.0E-07	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.005
				RDX	8.88	mg/kg	1.5E-08	(mg/kg/day)	1.1E-01	(mg/kg/day)$^{-1}$	1.6E-09	4.1E-08	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.00001
				Tetryl	0.084	mg/kg	9.2E-10	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.6E-09	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000001
				Perchlorate	0.02	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-04	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.000016	mg/kg	5.3E-14	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	6.9E-09	1.5E-13	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.0002
				Aluminum	13680	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Antimony	4.94	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	6.0E-05	(mg/kg/day)	--
				Arsenic	7.24	mg/kg	2.4E-08	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	3.6E-08	6.7E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0002
				Barium	169	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-02	(mg/kg/day)	--
				Beryllium	0.07	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-05	(mg/kg/day)	--
				Cadmium	2.84	mg/kg	3.1E-10	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	8.8E-10	(mg/kg/day)	2.5E-05	(mg/kg/day)	0.00004
				Chromium	17.2	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	2.0E-02	(mg/kg/day)	--

TABLE 7.38.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2014 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Protected OB Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	OB Unit	Dermal	Cobalt	5.47	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Copper	121	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	4.0E-02	(mg/kg/day)	--
				Iron	15015	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Lead	5880	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)	--
				Manganese	464	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
				Mercury	0.044	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Nickel	15.2	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	8.0E-04	(mg/kg/day)	--
				Selenium	0.28	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	5.0E-03	(mg/kg/day)	--
				Silver	0.53	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	2.0E-04	(mg/kg/day)	--
				Thallium	0.19	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.0E-05	(mg/kg/day)	--
				Vanadium	24.6	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.3E-04	(mg/kg/day)	--
				Zinc	91.7	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-01	(mg/kg/day)	--
			Exp. Route Total								1.2E-07					0.006
		Exposure Point Total									1.3E-06					0.07
	Exposure Medium Total										1.3E-06					0.07
	Air	OB Unit	Inhalation	1,3,5-Trinitrobenzene	1.3E-10	mg/m^3	2.6E-12	(mg/m^3)	NA	(ug/m^3)$^{-1}$	- -	7.3E-12	(mg/m^3)	NA	(mg/m^3)	--
				1,3-Dinitrobenzene	6.3E-11	mg/m^3	1.2E-12	(mg/m^3)	NA	(ug/m^3)$^{-1}$	- -	3.4E-12	(mg/m^3)	NA	(mg/m^3)	--
				2,4,6-Trinitrotoluene	3.2E-11	mg/m^3	6.3E-13	(mg/m^3)	NA	(ug/m^3)$^{-1}$	- -	1.8E-12	(mg/m^3)	NA	(mg/m^3)	--
				2,4-Dinitrotoluene	1.4E-08	mg/m^3	2.8E-10	(mg/m^3)	8.9E-05	(ug/m^3)$^{-1}$	2.5E-11	7.8E-10	(mg/m^3)	NA	(mg/m^3)	--
				2,6-Dinitrotoluene	4.4E-11	mg/m^3	8.6E-13	(mg/m^3)	NA	(ug/m^3)$^{-1}$	- -	2.4E-12	(mg/m^3)	NA	(mg/m^3)	--
				2-Amino-4,6-Dinitrotoluene	5.4E-11	mg/m^3	1.1E-12	(mg/m^3)	NA	(ug/m^3)$^{-1}$	- -	2.9E-12	(mg/m^3)	NA	(mg/m^3)	--
				2-Nitrotoluene	4.7E-07	mg/m^3	9.2E-09	(mg/m^3)	NA	(ug/m^3)$^{-1}$	- -	2.6E-08	(mg/m^3)	NA	(mg/m^3)	--
				4-Amino-2,6-Dinitrotoluene	4.9E-11	mg/m^3	9.5E-13	(mg/m^3)	NA	(ug/m^3)$^{-1}$	- -	2.7E-12	(mg/m^3)	NA	(mg/m^3)	--
				4-Nitrotoluene	9.6E-11	mg/m^3	1.9E-12	(mg/m^3)	NA	(ug/m^3)$^{-1}$	- -	5.2E-12	(mg/m^3)	NA	(mg/m^3)	--
				HMX	7.2E-10	mg/m^3	1.4E-11	(mg/m^3)	NA	(ug/m^3)$^{-1}$	- -	3.9E-11	(mg/m^3)	NA	(mg/m^3)	--
				Nitroglycerin	1.2E-08	mg/m^3	2.3E-10	(mg/m^3)	NA	(ug/m^3)$^{-1}$	- -	6.6E-10	(mg/m^3)	NA	(mg/m^3)	--
				RDX	6.5E-09	mg/m^3	1.3E-10	(mg/m^3)	NA	(ug/m^3)$^{-1}$	- -	3.6E-10	(mg/m^3)	NA	(mg/m^3)	--
				Tetryl	6.2E-11	mg/m^3	1.2E-12	(mg/m^3)	NA	(ug/m^3)$^{-1}$	- -	3.4E-12	(mg/m^3)	NA	(mg/m^3)	--
				Perchlorate	1.5E-11	mg/m^3	2.9E-13	(mg/m^3)	NA	(ug/m^3)$^{-1}$	- -	8.1E-13	(mg/m^3)	NA	(mg/m^3)	--
				2,3,7,8-TCDD Equivalents	1.2E-14	mg/m^3	2.3E-16	(mg/m^3)	3.8E+01	(ug/m^3)$^{-1}$	8.7E-12	6.4E-16	(mg/m^3)	4.0E-08	(mg/m^3)	1.6E-8
				Aluminum	1.0E-05	mg/m^3	2.0E-07	(mg/m^3)	NA	(ug/m^3)$^{-1}$	- -	5.5E-07	(mg/m^3)	5.0E-03	(mg/m^3)	0.0001
				Antimony	3.6E-09	mg/m^3	7.1E-11	(mg/m^3)	NA	(ug/m^3)$^{-1}$	- -	2.0E-10	(mg/m^3)	NA	(mg/m^3)	--
				Arsenic	5.3E-09	mg/m^3	1.0E-10	(mg/m^3)	4.3E-03	(ug/m^3)$^{-1}$	4.5E-10	2.9E-10	(mg/m^3)	1.5E-05	(mg/m^3)	0.00002
				Barium	1.2E-07	mg/m^3	2.4E-09	(mg/m^3)	NA	(ug/m^3)$^{-1}$	- -	6.8E-09	(mg/m^3)	5.0E-04	(mg/m^3)	0.00001
				Beryllium	5.1E-11	mg/m^3	1.0E-12	(mg/m^3)	2.4E-03	(ug/m^3)$^{-1}$	2.4E-12	2.8E-12	(mg/m^3)	2.0E-05	(mg/m^3)	1.4E-7
				Cadmium	2.1E-09	mg/m^3	4.1E-11	(mg/m^3)	1.8E-03	(ug/m^3)$^{-1}$	7.4E-11	1.1E-10	(mg/m^3)	1.0E-05	(mg/m^3)	0.00001
				Chromium	1.3E-08	mg/m^3	2.5E-10	(mg/m^3)	NA	(ug/m^3)$^{-1}$	- -	6.9E-10	(mg/m^3)	NA	(mg/m^3)	--
				Cobalt	4.0E-09	mg/m^3	7.9E-11	(mg/m^3)	9.0E-03	(ug/m^3)$^{-1}$	7.1E-10	2.2E-10	(mg/m^3)	6.0E-06	(mg/m^3)	0.00004
				Copper	8.9E-08	mg/m^3	1.7E-09	(mg/m^3)	NA	(ug/m^3)$^{-1}$	- -	4.9E-09	(mg/m^3)	NA	(mg/m^3)	--
				Iron	1.1E-05	mg/m^3	2.2E-07	(mg/m^3)	NA	(ug/m^3)$^{-1}$	- -	6.0E-07	(mg/m^3)	NA	(mg/m^3)	--
				Lead	4.3E-06	mg/m^3	8.5E-08	(mg/m^3)	NA	(ug/m^3)$^{-1}$	- -	2.4E-07	(mg/m^3)	NA	(mg/m^3)	--
				Manganese	3.4E-07	mg/m^3	6.7E-09	(mg/m^3)	NA	(ug/m^3)$^{-1}$	- -	1.9E-08	(mg/m^3)	5.0E-05	(mg/m^3)	0.0004
				Mercury	1.5E-06	mg/m^3	2.9E-08	(mg/m^3)	NA	(ug/m^3)$^{-1}$	- -	8.0E-08	(mg/m^3)	3.0E-04	(mg/m^3)	0.0003
				Nickel	1.1E-08	mg/m^3	2.2E-10	(mg/m^3)	2.6E-04	(ug/m^3)$^{-1}$	5.7E-11	6.1E-10	(mg/m^3)	9.0E-05	(mg/m^3)	0.000007
				Selenium	2.1E-10	mg/m^3	4.0E-12	(mg/m^3)	NA	(ug/m^3)$^{-1}$	- -	1.1E-11	(mg/m^3)	2.0E-02	(mg/m^3)	5.6E-10
				Silver	3.9E-10	mg/m^3	7.6E-12	(mg/m^3)	NA	(ug/m^3)$^{-1}$	- -	2.1E-11	(mg/m^3)	NA	(mg/m^3)	--
				Thallium	1.4E-10	mg/m^3	2.7E-12	(mg/m^3)	NA	(ug/m^3)$^{-1}$	- -	7.7E-12	(mg/m^3)	NA	(mg/m^3)	--
				Vanadium	1.8E-08	mg/m^3	3.5E-10	(mg/m^3)	NA	(ug/m^3)$^{-1}$	- -	9.9E-10	(mg/m^3)	1.0E-04	(mg/m^3)	0.000010
				Zinc	6.7E-08	mg/m^3	1.3E-09	(mg/m^3)	NA	(ug/m^3)$^{-1}$	- -	3.7E-09	(mg/m^3)	NA	(mg/m^3)	--
			Exp. Route Total								1.3E-09					0.0008
		Exposure Point Total									1.3E-09					0.0008
	Exposure Medium Total										1.3E-09					0.0008
Medium Total											1.3E-06					0.08
										Total of Receptor Risks Across All Media	1.3E-06				Total of Receptor Hazards Across All Media	0.08

TABLE 7.39.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2014 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Protected OD Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	OD Unit	Ingestion	1,3,5-Trinitrobenzene	0.2	mg/kg	2.2E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	6.2E-08	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.000002
				1,3-Dinitrobenzene	0.14	mg/kg	1.5E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.3E-08	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.0004
				2,4,6-Trinitrotoluene	9	mg/kg	9.9E-07	(mg/kg/day)	3.0E-02	(mg/kg/day)$^{-1}$	3.0E-08	2.8E-06	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.006
				2,4-Dinitrotoluene	0.06	mg/kg	6.6E-09	(mg/kg/day)	3.1E-01	(mg/kg/day)$^{-1}$	2.0E-09	1.8E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000009
				2-Amino-4,6-Dinitrotoluene	0.31	mg/kg	3.4E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	9.6E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00005
				4-Amino-2,6-Dinitrotoluene	0.41	mg/kg	4.5E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.3E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00006
				HMX	3	mg/kg	3.3E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	9.2E-07	(mg/kg/day)	5.0E-02	(mg/kg/day)	0.00002
				Nitroglycerin	1.9	mg/kg	2.1E-07	(mg/kg/day)	1.7E-02	(mg/kg/day)$^{-1}$	3.6E-09	5.9E-07	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.006
				PETN	0.41	mg/kg	4.5E-08	(mg/kg/day)	4.0E-03	(mg/kg/day)$^{-1}$	1.8E-10	1.3E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00006
				RDX	17.5	mg/kg	1.9E-06	(mg/kg/day)	1.1E-01	(mg/kg/day)$^{-1}$	2.1E-07	5.4E-06	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.002
				Tetryl	1.4	mg/kg	1.5E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.3E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0002
				Perchlorate	2.8	mg/kg	3.1E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	8.6E-07	(mg/kg/day)	7.0E-04	(mg/kg/day)	0.001
				Aluminum	3364	mg/kg	3.7E-04	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.0E-03	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.001
				Antimony	1.6	mg/kg	1.8E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.9E-07	(mg/kg/day)	4.0E-04	(mg/kg/day)	0.001
				Arsenic	4.4	mg/kg	2.9E-07	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	4.4E-07	8.1E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.003
				Barium	114	mg/kg	1.3E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.5E-05	(mg/kg/day)	2.0E-01	(mg/kg/day)	0.0002
				Beryllium	0.17	mg/kg	1.9E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	5.2E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00003
				Cadmium	7.5	mg/kg	8.3E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.3E-06	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.005
				Chromium	79	mg/kg	8.7E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.4E-05	(mg/kg/day)	1.5E+00	(mg/kg/day)	0.00002
				Cobalt	2.5	mg/kg	2.8E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	7.7E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.003
				Copper	484	mg/kg	5.3E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.5E-04	(mg/kg/day)	4.0E-02	(mg/kg/day)	0.004
				Iron	7933	mg/kg	8.7E-04	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.4E-03	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.003
				Lead	39.9	mg/kg	4.4E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.2E-05	(mg/kg/day)	NA	(mg/kg/day)	--
				Manganese	132	mg/kg	1.5E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.1E-05	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.002
				Mercury	0.09	mg/kg	9.9E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.8E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.00009
				Nickel	43	mg/kg	4.7E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.3E-05	(mg/kg/day)	2.0E-02	(mg/kg/day)	0.0007
				Selenium	0.22	mg/kg	2.4E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	6.8E-08	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.00001
				Silver	2.1	mg/kg	2.3E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	6.5E-07	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.0001
				Thallium	0.11	mg/kg	1.2E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.4E-08	(mg/kg/day)	1.0E-05	(mg/kg/day)	0.003
				Vanadium	10.9	mg/kg	1.2E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.4E-06	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.0007
				Zinc	234	mg/kg	2.6E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	7.2E-05	(mg/kg/day)	3.0E-01	(mg/kg/day)	0.0002
			Exp. Route Total								6.8E-07					0.04
			Dermal	1,3,5-Trinitrobenzene	0.2	mg/kg	6.3E-10	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.8E-09	(mg/kg/day)	3.0E-02	(mg/kg/day)	5.9E-8
				1,3-Dinitrobenzene	0.14	mg/kg	2.3E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	6.5E-09	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.00006
				2,4,6-Trinitrotoluene	9	mg/kg	4.8E-08	(mg/kg/day)	3.0E-02	(mg/kg/day)$^{-1}$	1.4E-09	1.3E-07	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.0003
				2,4-Dinitrotoluene	0.06	mg/kg	1.0E-09	(mg/kg/day)	3.1E-01	(mg/kg/day)$^{-1}$	3.1E-10	2.8E-09	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000001
				2-Amino-4,6-Dinitrotoluene	0.31	mg/kg	3.1E-10	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	8.6E-10	(mg/kg/day)	2.0E-03	(mg/kg/day)	4.3E-7
				4-Amino-2,6-Dinitrotoluene	0.41	mg/kg	6.1E-10	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.7E-09	(mg/kg/day)	2.0E-03	(mg/kg/day)	8.5E-7
				HMX	3	mg/kg	3.0E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	8.3E-09	(mg/kg/day)	5.0E-02	(mg/kg/day)	1.7E-7
				Nitroglycerin	1.9	mg/kg	3.1E-08	(mg/kg/day)	1.7E-02	(mg/kg/day)$^{-1}$	5.3E-10	8.8E-08	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.0009
				PETN	0.41	mg/kg	6.8E-09	(mg/kg/day)	4.0E-03	(mg/kg/day)$^{-1}$	2.7E-11	1.9E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000009
				RDX	17.5	mg/kg	4.3E-08	(mg/kg/day)	1.1E-01	(mg/kg/day)$^{-1}$	4.8E-09	1.2E-07	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.00004
				Tetryl	1.4	mg/kg	2.3E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	6.5E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00003
				Perchlorate	2.8	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-04	(mg/kg/day)	--
				Aluminum	3364	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Antimony	1.6	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	6.0E-05	(mg/kg/day)	--
				Arsenic	4.4	mg/kg	2.2E-08	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	3.3E-08	6.1E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0002
				Barium	114	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-02	(mg/kg/day)	--
				Beryllium	0.17	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-05	(mg/kg/day)	--
				Cadmium	7.5	mg/kg	1.2E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.5E-09	(mg/kg/day)	2.5E-05	(mg/kg/day)	0.0001
				Chromium	79	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	2.0E-02	(mg/kg/day)	--
				Cobalt	2.5	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Copper	484	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	4.0E-02	(mg/kg/day)	--
				Iron	7933	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Lead	39.9	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)	--

TABLE 7.39.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2014 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Protected OD Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	OD Unit	Dermal	Manganese	132	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
				Mercury	0.09	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Nickel	43	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	8.0E-04	(mg/kg/day)	--
				Selenium	0.22	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	5.0E-03	(mg/kg/day)	--
				Silver	2.1	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	2.0E-04	(mg/kg/day)	--
				Thallium	0.11	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.0E-05	(mg/kg/day)	--
				Vanadium	10.9	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.3E-04	(mg/kg/day)	--
				Zinc	234	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-01	(mg/kg/day)	--
			Exp. Route Total								4.0E-08					0.002
		Exposure Point Total									7.2E-07					0.04
	Exposure Medium Total										7.2E-07					0.04
	Air	OD Unit	Inhalation	1,3,5-Trinitrobenzene	1.5E-10	mg/m^3	4.3E-12	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.2E-11	(mg/m^3)	NA	(mg/m^3)	--
				1,3-Dinitrobenzene	1.0E-10	mg/m^3	3.0E-12	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	8.5E-12	(mg/m^3)	NA	(mg/m^3)	--
				2,4,6-Trinitrotoluene	6.6E-09	mg/m^3	1.9E-10	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	5.4E-10	(mg/m^3)	NA	(mg/m^3)	--
				2,4-Dinitrotoluene	4.4E-11	mg/m^3	1.3E-12	(mg/m^3)	8.9E-05	$(ug/m^3)^{-1}$	1.2E-13	3.6E-12	(mg/m^3)	NA	(mg/m^3)	--
				2-Amino-4,6-Dinitrotoluene	2.3E-10	mg/m^3	6.7E-12	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.9E-11	(mg/m^3)	NA	(mg/m^3)	--
				4-Amino-2,6-Dinitrotoluene	3.0E-10	mg/m^3	8.8E-12	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	2.5E-11	(mg/m^3)	NA	(mg/m^3)	--
				HMX	2.2E-09	mg/m^3	6.5E-11	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.8E-10	(mg/m^3)	NA	(mg/m^3)	--
				Nitroglycerin	1.4E-09	mg/m^3	4.1E-11	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.1E-10	(mg/m^3)	NA	(mg/m^3)	--
				PETN	3.0E-10	mg/m^3	8.8E-12	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	2.5E-11	(mg/m^3)	NA	(mg/m^3)	--
				RDX	1.3E-08	mg/m^3	3.8E-10	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.1E-09	(mg/m^3)	NA	(mg/m^3)	--
				Tetryl	1.0E-09	mg/m^3	3.0E-11	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	8.5E-11	(mg/m^3)	NA	(mg/m^3)	--
				Perchlorate	2.1E-09	mg/m^3	6.0E-11	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.7E-10	(mg/m^3)	NA	(mg/m^3)	--
				Aluminum	2.5E-06	mg/m^3	7.3E-08	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	2.0E-07	(mg/m^3)	5.0E-03	(mg/m^3)	0.00004
				Antimony	1.2E-09	mg/m^3	3.5E-11	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	9.7E-11	(mg/m^3)	NA	(mg/m^3)	--
				Arsenic	3.2E-09	mg/m^3	9.5E-11	(mg/m^3)	4.3E-03	$(ug/m^3)^{-1}$	4.1E-10	2.7E-10	(mg/m^3)	1.5E-05	(mg/m^3)	0.00002
				Barium	8.4E-08	mg/m^3	2.5E-09	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	6.9E-09	(mg/m^3)	5.0E-04	(mg/m^3)	0.00001
				Beryllium	1.3E-10	mg/m^3	3.7E-12	(mg/m^3)	2.4E-03	$(ug/m^3)^{-1}$	8.8E-12	1.0E-11	(mg/m^3)	2.0E-05	(mg/m^3)	5.1E-7
				Cadmium	5.5E-09	mg/m^3	1.6E-10	(mg/m^3)	1.8E-03	$(ug/m^3)^{-1}$	2.9E-10	4.5E-10	(mg/m^3)	1.0E-05	(mg/m^3)	0.00005
				Chromium	5.8E-08	mg/m^3	1.7E-09	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	4.8E-09	(mg/m^3)	NA	(mg/m^3)	--
				Cobalt	1.8E-09	mg/m^3	5.4E-11	(mg/m^3)	9.0E-03	$(ug/m^3)^{-1}$	4.9E-10	1.5E-10	(mg/m^3)	6.0E-06	(mg/m^3)	0.00003
				Copper	3.6E-07	mg/m^3	1.0E-08	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	2.9E-08	(mg/m^3)	NA	(mg/m^3)	--
				Iron	5.8E-06	mg/m^3	1.7E-07	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	4.8E-07	(mg/m^3)	NA	(mg/m^3)	--
				Lead	2.9E-08	mg/m^3	8.6E-10	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	2.4E-09	(mg/m^3)	NA	(mg/m^3)	--
				Manganese	9.7E-08	mg/m^3	2.8E-09	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	8.0E-09	(mg/m^3)	5.0E-05	(mg/m^3)	0.0002
				Mercury	3.0E-06	mg/m^3	8.8E-08	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	2.5E-07	(mg/m^3)	3.0E-04	(mg/m^3)	0.0008
				Nickel	3.2E-08	mg/m^3	9.3E-10	(mg/m^3)	2.6E-04	$(ug/m^3)^{-1}$	2.4E-10	2.6E-09	(mg/m^3)	9.0E-05	(mg/m^3)	0.00003
				Selenium	1.6E-10	mg/m^3	4.7E-12	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.3E-11	(mg/m^3)	2.0E-02	(mg/m^3)	6.6E-10
				Silver	1.5E-09	mg/m^3	4.5E-11	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.3E-10	(mg/m^3)	NA	(mg/m^3)	--
				Thallium	8.1E-11	mg/m^3	2.4E-12	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	6.6E-12	(mg/m^3)	NA	(mg/m^3)	--
				Vanadium	8.0E-09	mg/m^3	2.4E-10	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	6.6E-10	(mg/m^3)	1.0E-04	(mg/m^3)	0.000007
				Zinc	1.7E-07	mg/m^3	5.1E-09	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.4E-08	(mg/m^3)	NA	(mg/m^3)	--
			Exp. Route Total								1.4E-09					0.001
		Exposure Point Total									1.4E-09					0.001
	Exposure Medium Total										1.4E-09					0.001
Medium Total											7.2E-07					0.04
										Total of Receptor Risks Across All Media	7.2E-07				Total of Receptor Hazards Across All Media	0.04

TABLE 7.40.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2014 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Protected SF Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Static Firing Rocket Silos	Ingestion	1,3,5-Trinitrobenzene	0.26	mg/kg	1.9E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	5.3E-08	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.000002
				2,4,6-Trinitrotoluene	13.7	mg/kg	1.0E-06	(mg/kg/day)	3.0E-02	(mg/kg/day)$^{-1}$	3.0E-08	2.8E-06	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.006
				2,4-Dinitrotoluene	1.4	mg/kg	1.0E-07	(mg/kg/day)	3.1E-01	(mg/kg/day)$^{-1}$	3.2E-08	2.9E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0001
				2,6-Dinitrotoluene	0.083	mg/kg	6.1E-09	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	9.1E-09	1.7E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.00006
				2-Amino-4,6-Dinitrotoluene	0.44	mg/kg	3.2E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	9.0E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00005
				4-Amino-2,6-Dinitrotoluene	0.54	mg/kg	4.0E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.1E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00006
				HMX	10.1	mg/kg	7.4E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.1E-06	(mg/kg/day)	5.0E-02	(mg/kg/day)	0.00004
				Nitroglycerin	4.3	mg/kg	3.2E-07	(mg/kg/day)	1.7E-02	(mg/kg/day)$^{-1}$	5.4E-09	8.8E-07	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.009
				RDX	91.6	mg/kg	6.7E-06	(mg/kg/day)	1.1E-01	(mg/kg/day)$^{-1}$	7.4E-07	1.9E-05	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.006
				Tetryl	0.08	mg/kg	5.9E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.6E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000008
				Perchlorate	2.9	mg/kg	2.1E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	6.0E-07	(mg/kg/day)	7.0E-04	(mg/kg/day)	0.0009
				2,3,7,8-TCDD Equivalents	0.00015	mg/kg	1.1E-11	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	1.4E-06	3.1E-11	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.04
				Aluminum	9371	mg/kg	6.9E-04	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.9E-03	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.002
				Antimony	2.7	mg/kg	2.0E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	5.5E-07	(mg/kg/day)	4.0E-04	(mg/kg/day)	0.001
				Arsenic	4.2	mg/kg	1.8E-07	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	2.8E-07	5.2E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.002
				Barium	140	mg/kg	1.0E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.9E-05	(mg/kg/day)	2.0E-01	(mg/kg/day)	0.0001
				Beryllium	0.29	mg/kg	2.1E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	6.0E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00003
				Cadmium	22.2	mg/kg	1.6E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.6E-06	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.009
				Chromium	33.3	mg/kg	2.4E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	6.8E-06	(mg/kg/day)	1.5E+00	(mg/kg/day)	0.000005
				Cobalt	3	mg/kg	2.2E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	6.2E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.002
				Copper	1450	mg/kg	1.1E-04	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.0E-04	(mg/kg/day)	4.0E-02	(mg/kg/day)	0.007
				Iron	14661	mg/kg	1.1E-03	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.0E-03	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.004
				Lead	360	mg/kg	2.6E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	7.4E-05	(mg/kg/day)	NA	(mg/kg/day)	--
				Manganese	239	mg/kg	1.8E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.9E-05	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.002
				Mercury	0.032	mg/kg	2.3E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	6.6E-09	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.00002
				Nickel	11.1	mg/kg	8.1E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.3E-06	(mg/kg/day)	2.0E-02	(mg/kg/day)	0.0001
				Selenium	0.25	mg/kg	1.8E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	5.1E-08	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.00001
				Silver	0.64	mg/kg	4.7E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.3E-07	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.00003
				Thallium	0.087	mg/kg	6.4E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.8E-08	(mg/kg/day)	1.0E-05	(mg/kg/day)	0.002
				Vanadium	12	mg/kg	8.8E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.5E-06	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.0005
				Zinc	383	mg/kg	2.8E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	7.9E-05	(mg/kg/day)	3.0E-01	(mg/kg/day)	0.0003
			Exp. Route Total								2.5E-06					0.10
			Dermal	1,3,5-Trinitrobenzene	0.26	mg/kg	5.4E-10	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.5E-09	(mg/kg/day)	3.0E-02	(mg/kg/day)	5.1E-8
				2,4,6-Trinitrotoluene	13.7	mg/kg	4.8E-08	(mg/kg/day)	3.0E-02	(mg/kg/day)$^{-1}$	1.4E-09	1.4E-07	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.0003
				2,4-Dinitrotoluene	1.4	mg/kg	1.6E-08	(mg/kg/day)	3.1E-01	(mg/kg/day)$^{-1}$	4.9E-09	4.4E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00002
				2,6-Dinitrotoluene	0.083	mg/kg	9.0E-10	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	1.4E-09	2.5E-09	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.000008
				2-Amino-4,6-Dinitrotoluene	0.44	mg/kg	2.9E-10	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	8.1E-10	(mg/kg/day)	2.0E-03	(mg/kg/day)	4.1E-7
				4-Amino-2,6-Dinitrotoluene	0.54	mg/kg	5.3E-10	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.5E-09	(mg/kg/day)	2.0E-03	(mg/kg/day)	7.5E-7
				HMX	10.1	mg/kg	6.7E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.9E-08	(mg/kg/day)	5.0E-02	(mg/kg/day)	3.7E-7
				Nitroglycerin	4.3	mg/kg	4.7E-08	(mg/kg/day)	1.7E-02	(mg/kg/day)$^{-1}$	8.0E-10	1.3E-07	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.001
				RDX	91.6	mg/kg	1.5E-07	(mg/kg/day)	1.1E-01	(mg/kg/day)$^{-1}$	1.7E-08	4.2E-07	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.0001
				Tetryl	0.08	mg/kg	8.8E-10	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.5E-09	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000001
				Perchlorate	2.9	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-04	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.00015	mg/kg	5.0E-13	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	6.4E-08	1.4E-12	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.002
				Aluminum	9371	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Antimony	2.7	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	6.0E-05	(mg/kg/day)	--
				Arsenic	4.2	mg/kg	1.4E-08	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	2.1E-08	3.9E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0001
				Barium	140	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-02	(mg/kg/day)	--
				Beryllium	0.29	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-05	(mg/kg/day)	--
				Cadmium	22.2	mg/kg	2.4E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	6.8E-09	(mg/kg/day)	2.5E-05	(mg/kg/day)	0.0003
				Chromium	33.3	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	2.0E-02	(mg/kg/day)	--
				Cobalt	3	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Copper	1450	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	4.0E-02	(mg/kg/day)	--
				Iron	14661	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Lead	360	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)	--

TABLE 7.40.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2014 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Protected SF Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Static Firing Rocket Silos	Dermal	Manganese	239	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
				Mercury	0.032	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Nickel	11.1	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	8.0E-04	(mg/kg/day)	--
				Selenium	0.25	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	5.0E-03	(mg/kg/day)	--
				Silver	0.64	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	2.0E-04	(mg/kg/day)	--
				Thallium	0.087	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.0E-05	(mg/kg/day)	--
				Vanadium	12	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.3E-04	(mg/kg/day)	--
				Zinc	383	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-01	(mg/kg/day)	--
			Exp. Route Total								1.1E-07					0.004
		Exposure Point Total									2.6E-06					0.1
	Exposure Medium Total										2.6E-06					0.1
	Air	SF Unit	Inhalation	1,3,5-Trinitrobenzene	1.9E-10	mg/m^3	3.7E-12	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.0E-11	(mg/m^3)	NA	(mg/m^3)	--
				2,4,6-Trinitrotoluene	1.0E-08	mg/m^3	2.0E-10	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	5.5E-10	(mg/m^3)	NA	(mg/m^3)	--
				2,4-Dinitrotoluene	1.0E-09	mg/m^3	2.0E-11	(mg/m^3)	8.9E-05	$(ug/m^3)^{-1}$	1.8E-12	5.6E-11	(mg/m^3)	NA	(mg/m^3)	--
				2,6-Dinitrotoluene	6.1E-11	mg/m^3	1.2E-12	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	3.3E-12	(mg/m^3)	NA	(mg/m^3)	--
				2-Amino-4,6-Dinitrotoluene	3.2E-10	mg/m^3	6.3E-12	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.8E-11	(mg/m^3)	NA	(mg/m^3)	--
				4-Amino-2,6-Dinitrotoluene	4.0E-10	mg/m^3	7.8E-12	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	2.2E-11	(mg/m^3)	NA	(mg/m^3)	--
				HMX	7.4E-09	mg/m^3	1.5E-10	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	4.1E-10	(mg/m^3)	NA	(mg/m^3)	--
				Nitroglycerin	3.2E-09	mg/m^3	6.2E-11	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.7E-10	(mg/m^3)	NA	(mg/m^3)	--
				RDX	6.7E-08	mg/m^3	1.3E-09	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	3.7E-09	(mg/m^3)	NA	(mg/m^3)	--
				Tetryl	5.9E-11	mg/m^3	1.2E-12	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	3.2E-12	(mg/m^3)	NA	(mg/m^3)	--
				Perchlorate	2.1E-09	mg/m^3	4.2E-11	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.2E-10	(mg/m^3)	NA	(mg/m^3)	--
				2,3,7,8-TCDD Equivalents	1.1E-13	mg/m^3	2.2E-15	(mg/m^3)	3.8E+01	$(ug/m^3)^{-1}$	8.2E-11	6.0E-15	(mg/m^3)	4.0E-08	(mg/m^3)	1.5E-7
				Aluminum	6.9E-06	mg/m^3	1.3E-07	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	3.8E-07	(mg/m^3)	5.0E-03	(mg/m^3)	0.00008
				Antimony	2.0E-09	mg/m^3	3.9E-11	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.1E-10	(mg/m^3)	NA	(mg/m^3)	--
				Arsenic	3.1E-09	mg/m^3	6.0E-11	(mg/m^3)	4.3E-03	$(ug/m^3)^{-1}$	2.6E-10	1.7E-10	(mg/m^3)	1.5E-05	(mg/m^3)	0.00001
				Barium	1.0E-07	mg/m^3	2.0E-09	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	5.6E-09	(mg/m^3)	5.0E-04	(mg/m^3)	0.00001
				Beryllium	2.1E-10	mg/m^3	4.2E-12	(mg/m^3)	2.4E-03	$(ug/m^3)^{-1}$	1.0E-11	1.2E-11	(mg/m^3)	2.0E-05	(mg/m^3)	5.8E-7
				Cadmium	1.6E-08	mg/m^3	3.2E-10	(mg/m^3)	1.8E-03	$(ug/m^3)^{-1}$	5.7E-10	8.9E-10	(mg/m^3)	1.0E-05	(mg/m^3)	0.00009
				Chromium	2.4E-08	mg/m^3	4.8E-10	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.3E-09	(mg/m^3)	NA	(mg/m^3)	--
				Cobalt	2.2E-09	mg/m^3	4.3E-11	(mg/m^3)	9.0E-03	$(ug/m^3)^{-1}$	3.9E-10	1.2E-10	(mg/m^3)	6.0E-06	(mg/m^3)	0.00002
				Copper	1.1E-06	mg/m^3	2.1E-08	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	5.8E-08	(mg/m^3)	NA	(mg/m^3)	--
				Iron	1.1E-05	mg/m^3	2.1E-07	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	5.9E-07	(mg/m^3)	NA	(mg/m^3)	--
				Lead	2.6E-07	mg/m^3	5.2E-09	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.5E-08	(mg/m^3)	NA	(mg/m^3)	--
				Manganese	1.8E-07	mg/m^3	3.4E-09	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	9.6E-09	(mg/m^3)	5.0E-05	(mg/m^3)	0.0002
				Mercury	1.1E-06	mg/m^3	2.1E-08	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	5.8E-08	(mg/m^3)	3.0E-04	(mg/m^3)	0.0002
				Nickel	8.2E-09	mg/m^3	1.6E-10	(mg/m^3)	2.6E-04	$(ug/m^3)^{-1}$	4.2E-11	4.5E-10	(mg/m^3)	9.0E-05	(mg/m^3)	0.000005
				Selenium	1.8E-10	mg/m^3	3.6E-12	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.0E-11	(mg/m^3)	2.0E-02	(mg/m^3)	5.0E-10
				Silver	4.7E-10	mg/m^3	9.2E-12	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	2.6E-11	(mg/m^3)	NA	(mg/m^3)	--
				Thallium	6.4E-11	mg/m^3	1.3E-12	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	3.5E-12	(mg/m^3)	NA	(mg/m^3)	--
				Vanadium	8.8E-09	mg/m^3	1.7E-10	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	4.8E-10	(mg/m^3)	1.0E-04	(mg/m^3)	0.000005
				Zinc	2.8E-07	mg/m^3	5.5E-09	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.5E-08	(mg/m^3)	NA	(mg/m^3)	--
			Exp. Route Total								1.4E-09					0.0006
		Exposure Point Total									1.4E-09					0.0006
	Exposure Medium Total										1.4E-09					0.0006
Medium Total											2.6E-06					0.1
										Total of Receptor Risks Across All Media	2.6E-06				Total of Receptor Hazards Across All Media	0.1

TABLE 7.41.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2014 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Protected OB/OD/SF Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	All Soil Samples	Ingestion	1,3,5-Trinitrobenzene	0.17	mg/kg	4.4E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.2E-07	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.000004
				1,3-Dinitrobenzene	0.1	mg/kg	2.6E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	7.2E-08	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.0007
				2,4,6-Trinitrotoluene	7	mg/kg	1.8E-06	(mg/kg/day)	3.0E-02	(mg/kg/day)$^{-1}$	5.4E-08	5.0E-06	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.01
				2,4-Dinitrotoluene	4.45	mg/kg	1.1E-06	(mg/kg/day)	3.1E-01	(mg/kg/day)$^{-1}$	3.5E-07	3.2E-06	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.002
				2,6-Dinitrotoluene	0.058	mg/kg	1.5E-08	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	2.2E-08	4.2E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0001
				2-Amino-4,6-Dinitrotoluene	0.26	mg/kg	6.7E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.9E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00009
				2-Nitrotoluene	0.055	mg/kg	1.4E-08	(mg/kg/day)	2.2E-01	(mg/kg/day)$^{-1}$	3.1E-09	4.0E-08	(mg/kg/day)	9.0E-04	(mg/kg/day)	0.00004
				4-Amino-2,6-Dinitrotoluene	0.34	mg/kg	8.7E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.4E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0001
				4-Nitrotoluene	0.064	mg/kg	1.6E-08	(mg/kg/day)	1.6E-02	(mg/kg/day)$^{-1}$	2.6E-10	4.6E-08	(mg/kg/day)	4.0E-03	(mg/kg/day)	0.00001
				HMX	3.55	mg/kg	9.1E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.6E-06	(mg/kg/day)	5.0E-02	(mg/kg/day)	0.00005
				Nitroglycerin	4.91	mg/kg	1.3E-06	(mg/kg/day)	1.7E-02	(mg/kg/day)$^{-1}$	2.1E-08	3.5E-06	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.04
				PETN	0.34	mg/kg	8.7E-08	(mg/kg/day)	4.0E-03	(mg/kg/day)$^{-1}$	3.5E-10	2.4E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0001
				RDX	27.5	mg/kg	7.1E-06	(mg/kg/day)	1.1E-01	(mg/kg/day)$^{-1}$	7.8E-07	2.0E-05	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.007
				Tetryl	0.95	mg/kg	2.4E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	6.8E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0003
				Perchlorate	1.98	mg/kg	5.1E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.4E-06	(mg/kg/day)	7.0E-04	(mg/kg/day)	0.002
				2,3,7,8-TCDD Equivalents	0.00012	mg/kg	3.1E-11	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	4.0E-06	8.6E-11	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.1
				Aluminum	8048	mg/kg	2.1E-03	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	5.8E-03	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.006
				Antimony	2.24	mg/kg	5.8E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.6E-06	(mg/kg/day)	4.0E-04	(mg/kg/day)	0.004
				Arsenic	4.97	mg/kg	7.7E-07	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	1.1E-06	2.1E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.007
				Barium	136	mg/kg	3.5E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	9.8E-05	(mg/kg/day)	2.0E-01	(mg/kg/day)	0.0005
				Beryllium	0.35	mg/kg	9.0E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.5E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0001
				Cadmium	10.9	mg/kg	2.8E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	7.8E-06	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.02
				Chromium	54	mg/kg	1.4E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.9E-05	(mg/kg/day)	1.5E+00	(mg/kg/day)	0.00003
				Cobalt	3.42	mg/kg	8.8E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.5E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.008
				Copper	537	mg/kg	1.4E-04	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.9E-04	(mg/kg/day)	4.0E-02	(mg/kg/day)	0.010
				Iron	11286	mg/kg	2.9E-03	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	8.1E-03	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.01
				Lead	1237	mg/kg	3.2E-04	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	8.9E-04	(mg/kg/day)	NA	(mg/kg/day)	--
				Manganese	266	mg/kg	6.8E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.9E-04	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.008
				Mercury	0.073	mg/kg	1.9E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	5.3E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0002
				Nickel	29.4	mg/kg	7.6E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.1E-05	(mg/kg/day)	2.0E-02	(mg/kg/day)	0.001
				Selenium	0.22	mg/kg	5.7E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.6E-07	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.00003
				Silver	1.58	mg/kg	4.1E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.1E-06	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.0002
				Thallium	0.13	mg/kg	3.3E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	9.3E-08	(mg/kg/day)	1.0E-05	(mg/kg/day)	0.009
				Vanadium	15.3	mg/kg	3.9E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.1E-05	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.002
				Zinc	247	mg/kg	6.3E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.8E-04	(mg/kg/day)	3.0E-01	(mg/kg/day)	0.0006
			Exp. Route Total								6.4E-06					0.3
			Dermal	1,3,5-Trinitrobenzene	0.17	mg/kg	1.2E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.5E-09	(mg/kg/day)	3.0E-02	(mg/kg/day)	1.2E-7
				1,3-Dinitrobenzene	0.1	mg/kg	3.9E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.1E-08	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.0001
				2,4,6-Trinitrotoluene	7	mg/kg	8.6E-08	(mg/kg/day)	3.0E-02	(mg/kg/day)$^{-1}$	2.6E-09	2.4E-07	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.0005
				2,4-Dinitrotoluene	4.45	mg/kg	1.7E-07	(mg/kg/day)	3.1E-01	(mg/kg/day)$^{-1}$	5.4E-08	4.9E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0002
				2,6-Dinitrotoluene	0.058	mg/kg	2.2E-09	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	3.3E-09	6.2E-09	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.00002
				2-Amino-4,6-Dinitrotoluene	0.26	mg/kg	6.0E-10	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.7E-09	(mg/kg/day)	2.0E-03	(mg/kg/day)	8.4E-7
				2-Nitrotoluene	0.055	mg/kg	2.1E-09	(mg/kg/day)	2.2E-01	(mg/kg/day)$^{-1}$	4.7E-10	5.9E-09	(mg/kg/day)	9.0E-04	(mg/kg/day)	0.000007
				4-Amino-2,6-Dinitrotoluene	0.34	mg/kg	1.2E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.3E-09	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000002
				4-Nitrotoluene	0.064	mg/kg	2.5E-09	(mg/kg/day)	1.6E-02	(mg/kg/day)$^{-1}$	3.9E-11	6.9E-09	(mg/kg/day)	4.0E-03	(mg/kg/day)	0.000002
				HMX	3.55	mg/kg	8.2E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.3E-08	(mg/kg/day)	5.0E-02	(mg/kg/day)	4.6E-7
				Nitroglycerin	4.91	mg/kg	1.9E-07	(mg/kg/day)	1.7E-02	(mg/kg/day)$^{-1}$	3.2E-09	5.3E-07	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.005
				PETN	0.34	mg/kg	1.3E-08	(mg/kg/day)	4.0E-03	(mg/kg/day)$^{-1}$	5.2E-11	3.7E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00002
				RDX	27.5	mg/kg	1.6E-07	(mg/kg/day)	1.1E-01	(mg/kg/day)$^{-1}$	1.7E-08	4.4E-07	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.0001
				Tetryl	0.95	mg/kg	3.7E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.0E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00005
				Perchlorate	1.98	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-04	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.00012	mg/kg	1.4E-12	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	1.8E-07	3.9E-12	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.006
				Aluminum	8048	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Antimony	2.24	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	6.0E-05	(mg/kg/day)	--
				Arsenic	4.97	mg/kg	5.7E-08	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	8.6E-08	1.6E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0005
				Barium	136	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-02	(mg/kg/day)	--
				Beryllium	0.35	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-05	(mg/kg/day)	--

TABLE 7.41.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2014 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Protected OB/OD/SF Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	OB/OD/SF Units	Dermal	Cadmium	10.9	mg/kg	4.2E-09	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.2E-08	(mg/kg/day)	2.5E-05	(mg/kg/day)	0.0005
				Chromium	54	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	2.0E-02	(mg/kg/day)	--
				Cobalt	3.42	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Copper	537	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	4.0E-02	(mg/kg/day)	--
				Iron	11286	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Lead	1237	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)	--
				Manganese	266	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
				Mercury	0.073	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Nickel	29.4	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	8.0E-04	(mg/kg/day)	--
				Selenium	0.22	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	5.0E-03	(mg/kg/day)	--
				Silver	1.58	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	2.0E-04	(mg/kg/day)	--
				Thallium	0.13	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.0E-05	(mg/kg/day)	--
				Vanadium	15.3	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.3E-04	(mg/kg/day)	--
				Zinc	247	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-01	(mg/kg/day)	--
			Exp. Route Total								3.5E-07					0.01
		Exposure Point Total									6.7E-06					0.3
	Exposure Medium Total										6.7E-06					0.3
	Air	OB/OD/SF Units	Inhalation	1,3,5-Trinitrobenzene	1.3E-10	mg/m^3	8.6E-12	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	2.4E-11	(mg/m^3)	NA	(mg/m^3)	--
				1,3-Dinitrobenzene	7.4E-11	mg/m^3	5.0E-12	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.4E-11	(mg/m^3)	NA	(mg/m^3)	--
				2,4,6-Trinitrotoluene	5.1E-09	mg/m^3	3.5E-10	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	9.9E-10	(mg/m^3)	NA	(mg/m^3)	--
				2,4-Dinitrotoluene	3.3E-09	mg/m^3	2.2E-10	(mg/m^3)	8.9E-05	$(ug/m^3)^{-1}$	2.0E-11	6.3E-10	(mg/m^3)	NA	(mg/m^3)	--
				2,6-Dinitrotoluene	4.3E-11	mg/m^3	2.9E-12	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	8.2E-12	(mg/m^3)	NA	(mg/m^3)	--
				2-Amino-4,6-Dinitrotoluene	1.9E-10	mg/m^3	1.3E-11	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	3.7E-11	(mg/m^3)	NA	(mg/m^3)	--
				2-Nitrotoluene	4.0E-07	mg/m^3	2.8E-08	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	7.7E-08	(mg/m^3)	NA	(mg/m^3)	--
				4-Amino-2,6-Dinitrotoluene	2.5E-10	mg/m^3	1.7E-11	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	4.8E-11	(mg/m^3)	NA	(mg/m^3)	--
				4-Nitrotoluene	4.7E-11	mg/m^3	3.2E-12	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	9.0E-12	(mg/m^3)	NA	(mg/m^3)	--
				HMX	2.6E-09	mg/m^3	1.8E-10	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	5.0E-10	(mg/m^3)	NA	(mg/m^3)	--
				Nitroglycerin	3.6E-09	mg/m^3	2.5E-10	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	6.9E-10	(mg/m^3)	NA	(mg/m^3)	--
				PETN	2.5E-10	mg/m^3	1.7E-11	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	4.8E-11	(mg/m^3)	NA	(mg/m^3)	--
				RDX	2.0E-08	mg/m^3	1.4E-09	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	3.9E-09	(mg/m^3)	NA	(mg/m^3)	--
				Tetryl	7.0E-10	mg/m^3	4.8E-11	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.3E-10	(mg/m^3)	NA	(mg/m^3)	--
				Perchlorate	1.5E-09	mg/m^3	1.0E-10	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	2.8E-10	(mg/m^3)	NA	(mg/m^3)	--
				2,3,7,8-TCDD Equivalents	8.8E-14	mg/m^3	6.0E-15	(mg/m^3)	3.8E+01	$(ug/m^3)^{-1}$	2.3E-10	1.7E-14	(mg/m^3)	4.0E-08	(mg/m^3)	4.2E-7
				Aluminum	5.9E-06	mg/m^3	4.1E-07	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.1E-06	(mg/m^3)	5.0E-03	(mg/m^3)	0.0002
				Antimony	1.6E-09	mg/m^3	1.1E-10	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	3.2E-10	(mg/m^3)	NA	(mg/m^3)	--
				Arsenic	3.7E-09	mg/m^3	2.5E-10	(mg/m^3)	4.3E-03	$(ug/m^3)^{-1}$	1.1E-09	7.0E-10	(mg/m^3)	1.5E-05	(mg/m^3)	0.00005
				Barium	1.0E-07	mg/m^3	6.8E-09	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.9E-08	(mg/m^3)	5.0E-04	(mg/m^3)	0.00004
				Beryllium	2.6E-10	mg/m^3	1.8E-11	(mg/m^3)	2.4E-03	$(ug/m^3)^{-1}$	4.2E-11	4.9E-11	(mg/m^3)	2.0E-05	(mg/m^3)	0.000002
				Cadmium	8.0E-09	mg/m^3	5.5E-10	(mg/m^3)	1.8E-03	$(ug/m^3)^{-1}$	9.9E-10	1.5E-09	(mg/m^3)	1.0E-05	(mg/m^3)	0.0002
				Chromium	4.0E-08	mg/m^3	2.7E-09	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	7.6E-09	(mg/m^3)	NA	(mg/m^3)	--
				Cobalt	2.5E-09	mg/m^3	1.7E-10	(mg/m^3)	9.0E-03	$(ug/m^3)^{-1}$	1.6E-09	4.8E-10	(mg/m^3)	6.0E-06	(mg/m^3)	0.00008
				Copper	3.9E-07	mg/m^3	2.7E-08	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	7.6E-08	(mg/m^3)	NA	(mg/m^3)	--
				Iron	8.3E-06	mg/m^3	5.7E-07	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.6E-06	(mg/m^3)	NA	(mg/m^3)	--
				Lead	9.1E-07	mg/m^3	6.2E-08	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.7E-07	(mg/m^3)	NA	(mg/m^3)	--
				Manganese	2.0E-07	mg/m^3	1.3E-08	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	3.8E-08	(mg/m^3)	5.0E-05	(mg/m^3)	0.0008
				Mercury	2.4E-06	mg/m^3	1.7E-07	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	4.6E-07	(mg/m^3)	3.0E-04	(mg/m^3)	0.002
				Nickel	2.2E-08	mg/m^3	1.5E-09	(mg/m^3)	2.6E-04	$(ug/m^3)^{-1}$	3.8E-10	4.1E-09	(mg/m^3)	9.0E-05	(mg/m^3)	0.00005
				Selenium	1.6E-10	mg/m^3	1.1E-11	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	3.1E-11	(mg/m^3)	2.0E-02	(mg/m^3)	1.6E-9
				Silver	1.2E-09	mg/m^3	8.0E-11	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	2.2E-10	(mg/m^3)	NA	(mg/m^3)	--
				Thallium	9.6E-11	mg/m^3	6.5E-12	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.8E-11	(mg/m^3)	NA	(mg/m^3)	--
				Vanadium	1.1E-08	mg/m^3	7.7E-10	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	2.2E-09	(mg/m^3)	1.0E-04	(mg/m^3)	0.00002
				Zinc	1.8E-07	mg/m^3	1.2E-08	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	3.5E-08	(mg/m^3)	NA	(mg/m^3)	--
			Exp. Route Total								4.3E-09					0.003
		Exposure Point Total									4.3E-09					0.003
	Exposure Medium Total										4.3E-09					0.003
Medium Total											6.7E-06					0.3
										Total of Receptor Risks Across All Media	6.7E-06				Total of Receptor Hazards Across All Media	0.3

TABLE 7.42.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2014 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Future
Receptor Population: Outdoor Worker - Entire Site
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	OB Unit	Ingestion	1,3,5-Trinitrobenzene	0.18	mg/kg	5.5E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.5E-07	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.000005
				1,3-Dinitrobenzene	0.085	mg/kg	2.6E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	7.3E-08	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.0007
				2,4,6-Trinitrotoluene	0.044	mg/kg	1.3E-08	(mg/kg/day)	3.0E-02	(mg/kg/day)$^{-1}$	4.0E-10	3.8E-08	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.00008
				2,4-Dinitrotoluene	19.4	mg/kg	5.9E-06	(mg/kg/day)	3.1E-01	(mg/kg/day)$^{-1}$	1.8E-06	1.7E-05	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.008
				2,6-Dinitrotoluene	0.06	mg/kg	1.8E-08	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	2.8E-08	5.1E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0002
				2-Amino-4,6-Dinitrotoluene	0.073	mg/kg	2.2E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	6.3E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00003
				2-Nitrotoluene	0.064	mg/kg	2.0E-08	(mg/kg/day)	2.2E-01	(mg/kg/day)$^{-1}$	4.3E-09	5.5E-08	(mg/kg/day)	9.0E-04	(mg/kg/day)	0.00006
				4-Amino-2,6-Dinitrotoluene	0.066	mg/kg	2.0E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	5.7E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00003
				4-Nitrotoluene	0.13	mg/kg	4.0E-08	(mg/kg/day)	1.6E-02	(mg/kg/day)$^{-1}$	6.4E-10	1.1E-07	(mg/kg/day)	4.0E-03	(mg/kg/day)	0.00003
				HMX	0.98	mg/kg	3.0E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	8.4E-07	(mg/kg/day)	5.0E-02	(mg/kg/day)	0.00002
				Nitroglycerin	16.3	mg/kg	5.0E-06	(mg/kg/day)	1.7E-02	(mg/kg/day)$^{-1}$	8.5E-08	1.4E-05	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.1
				RDX	8.88	mg/kg	2.7E-06	(mg/kg/day)	1.1E-01	(mg/kg/day)$^{-1}$	3.0E-07	7.6E-06	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.003
				Tetryl	0.084	mg/kg	2.6E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	7.2E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00004
				Perchlorate	0.02	mg/kg	6.1E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.7E-08	(mg/kg/day)	7.0E-04	(mg/kg/day)	0.00002
				2,3,7,8-TCDD Equivalents	0.000016	mg/kg	4.9E-12	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	6.4E-07	1.4E-11	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.02
				Aluminum	13680	mg/kg	4.2E-03	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.2E-02	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.01
				Antimony	4.94	mg/kg	1.5E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.2E-06	(mg/kg/day)	4.0E-04	(mg/kg/day)	0.01
				Arsenic	7.24	mg/kg	1.3E-06	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	2.0E-06	3.7E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.01
				Barium	169	mg/kg	5.2E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.4E-04	(mg/kg/day)	2.0E-01	(mg/kg/day)	0.0007
				Beryllium	0.07	mg/kg	2.1E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	6.0E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00003
				Cadmium	2.84	mg/kg	8.7E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.4E-06	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.005
				Chromium	17.2	mg/kg	5.3E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.5E-05	(mg/kg/day)	1.5E+00	(mg/kg/day)	0.000010
				Cobalt	5.47	mg/kg	1.7E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.7E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.02
				Copper	121	mg/kg	3.7E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.0E-04	(mg/kg/day)	4.0E-02	(mg/kg/day)	0.003
				Iron	15015	mg/kg	4.6E-03	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.3E-02	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.02
				Lead	5880	mg/kg	1.8E-03	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	5.0E-03	(mg/kg/day)	NA	(mg/kg/day)	--
				Manganese	464	mg/kg	1.4E-04	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.0E-04	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.02
				Mercury	0.044	mg/kg	1.3E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.8E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0001
				Nickel	15.2	mg/kg	4.6E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.3E-05	(mg/kg/day)	2.0E-02	(mg/kg/day)	0.0007
				Selenium	0.28	mg/kg	8.6E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.4E-07	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.00005
				Silver	0.53	mg/kg	1.6E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.5E-07	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.00009
				Thallium	0.19	mg/kg	5.8E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.6E-07	(mg/kg/day)	1.0E-05	(mg/kg/day)	0.02
				Vanadium	24.6	mg/kg	7.5E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.1E-05	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.004
				Zinc	91.7	mg/kg	2.8E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	7.9E-05	(mg/kg/day)	3.0E-01	(mg/kg/day)	0.0003
			Exp. Route Total								4.9E-06					0.3
			Dermal	1,3,5-Trinitrobenzene	0.18	mg/kg	4.4E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.2E-08	(mg/kg/day)	3.0E-02	(mg/kg/day)	4.1E-7
				1,3-Dinitrobenzene	0.085	mg/kg	1.1E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.0E-08	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.0003
				2,4,6-Trinitrotoluene	0.044	mg/kg	1.8E-09	(mg/kg/day)	3.0E-02	(mg/kg/day)$^{-1}$	5.4E-11	5.0E-09	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.00001
				2,4-Dinitrotoluene	19.4	mg/kg	2.5E-06	(mg/kg/day)	3.1E-01	(mg/kg/day)$^{-1}$	7.8E-07	7.1E-06	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.004
				2,6-Dinitrotoluene	0.06	mg/kg	7.6E-09	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	1.1E-08	2.1E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.00007
				2-Amino-4,6-Dinitrotoluene	0.073	mg/kg	5.6E-10	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.6E-09	(mg/kg/day)	2.0E-03	(mg/kg/day)	7.8E-7
				2-Nitrotoluene	0.064	mg/kg	8.1E-09	(mg/kg/day)	2.2E-01	(mg/kg/day)$^{-1}$	1.8E-09	2.3E-08	(mg/kg/day)	9.0E-04	(mg/kg/day)	0.00003
				4-Amino-2,6-Dinitrotoluene	0.066	mg/kg	7.6E-10	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.1E-09	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000001
				4-Nitrotoluene	0.13	mg/kg	1.7E-08	(mg/kg/day)	1.6E-02	(mg/kg/day)$^{-1}$	2.6E-10	4.6E-08	(mg/kg/day)	4.0E-03	(mg/kg/day)	0.00001
				HMX	0.98	mg/kg	7.5E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.1E-08	(mg/kg/day)	5.0E-02	(mg/kg/day)	4.2E-7
				Nitroglycerin	16.3	mg/kg	2.1E-06	(mg/kg/day)	1.7E-02	(mg/kg/day)$^{-1}$	3.5E-08	5.8E-06	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.06
				RDX	8.88	mg/kg	1.7E-07	(mg/kg/day)	1.1E-01	(mg/kg/day)$^{-1}$	1.9E-08	4.7E-07	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.0002
				Tetryl	0.084	mg/kg	1.1E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.0E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00001
				Perchlorate	0.02	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-04	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.000016	mg/kg	6.1E-13	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	7.9E-08	1.7E-12	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.002
				Aluminum	13680	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Antimony	4.94	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	6.0E-05	(mg/kg/day)	--
				Arsenic	7.24	mg/kg	2.8E-07	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	4.1E-07	7.7E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.003
				Barium	169	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-02	(mg/kg/day)	--
				Beryllium	0.07	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-05	(mg/kg/day)	--
				Cadmium	2.84	mg/kg	3.6E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.0E-08	(mg/kg/day)	2.5E-05	(mg/kg/day)	0.0004
				Chromium	17.2	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	2.0E-02	(mg/kg/day)	--

TABLE 7.42.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2014 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Future
Receptor Population: Outdoor Worker - Entire Site
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	OB Unit	Dermal	Cobalt	5.47	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Copper	121	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	4.0E-02	(mg/kg/day)	--
				Iron	15015	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Lead	5880	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)	--
				Manganese	464	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
				Mercury	0.044	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Nickel	15.2	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	8.0E-04	(mg/kg/day)	--
				Selenium	0.28	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	5.0E-03	(mg/kg/day)	--
				Silver	0.53	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	2.0E-04	(mg/kg/day)	--
				Thallium	0.19	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.0E-05	(mg/kg/day)	--
				Vanadium	24.6	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.3E-04	(mg/kg/day)	--
				Zinc	91.7	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-01	(mg/kg/day)	--
			Exp. Route Total								1.3E-06					0.07
		Exposure Point Total									6.2E-06					0.4
	Exposure Medium Total										6.2E-06					0.4
	Air	OB Unit	Inhalation	1,3,5-Trinitrobenzene	1.3E-10	mg/m^3	1.1E-11	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	3.0E-11	(mg/m^3)	NA	(mg/m^3)	--
				1,3-Dinitrobenzene	6.3E-11	mg/m^3	5.1E-12	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.4E-11	(mg/m^3)	NA	(mg/m^3)	--
				2,4,6-Trinitrotoluene	3.2E-11	mg/m^3	2.6E-12	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	7.4E-12	(mg/m^3)	NA	(mg/m^3)	--
				2,4-Dinitrotoluene	1.4E-08	mg/m^3	1.2E-09	(mg/m^3)	8.9E-05	$(ug/m^3)^{-1}$	1.0E-10	3.3E-09	(mg/m^3)	NA	(mg/m^3)	--
				2,6-Dinitrotoluene	4.4E-11	mg/m^3	3.6E-12	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.0E-11	(mg/m^3)	NA	(mg/m^3)	--
				2-Amino-4,6-Dinitrotoluene	5.4E-11	mg/m^3	4.4E-12	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.2E-11	(mg/m^3)	NA	(mg/m^3)	--
				2-Nitrotoluene	4.7E-07	mg/m^3	3.8E-08	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.1E-07	(mg/m^3)	NA	(mg/m^3)	--
				4-Amino-2,6-Dinitrotoluene	4.9E-11	mg/m^3	4.0E-12	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.1E-11	(mg/m^3)	NA	(mg/m^3)	--
				4-Nitrotoluene	9.6E-11	mg/m^3	7.8E-12	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	2.2E-11	(mg/m^3)	NA	(mg/m^3)	--
				HMX	7.2E-10	mg/m^3	5.9E-11	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.6E-10	(mg/m^3)	NA	(mg/m^3)	--
				Nitroglycerin	1.2E-08	mg/m^3	9.8E-10	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	2.7E-09	(mg/m^3)	NA	(mg/m^3)	--
				RDX	6.5E-09	mg/m^3	5.3E-10	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.5E-09	(mg/m^3)	NA	(mg/m^3)	--
				Tetryl	6.2E-11	mg/m^3	5.0E-12	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.4E-11	(mg/m^3)	NA	(mg/m^3)	--
				Perchlorate	1.5E-11	mg/m^3	1.2E-12	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	3.4E-12	(mg/m^3)	NA	(mg/m^3)	--
				2,3,7,8-TCDD Equivalents	1.2E-14	mg/m^3	9.6E-16	(mg/m^3)	3.8E+01	$(ug/m^3)^{-1}$	3.6E-11	2.7E-15	(mg/m^3)	4.0E-08	(mg/m^3)	6.7E-8
				Aluminum	1.0E-05	mg/m^3	8.2E-07	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	2.3E-06	(mg/m^3)	5.0E-03	(mg/m^3)	0.0005
				Antimony	3.6E-09	mg/m^3	3.0E-10	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	8.3E-10	(mg/m^3)	NA	(mg/m^3)	--
				Arsenic	5.3E-09	mg/m^3	4.3E-10	(mg/m^3)	4.3E-03	$(ug/m^3)^{-1}$	1.9E-09	1.2E-09	(mg/m^3)	1.5E-05	(mg/m^3)	0.00008
				Barium	1.2E-07	mg/m^3	1.0E-08	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	2.8E-08	(mg/m^3)	5.0E-04	(mg/m^3)	0.00006
				Beryllium	5.1E-11	mg/m^3	4.2E-12	(mg/m^3)	2.4E-03	$(ug/m^3)^{-1}$	1.0E-11	1.2E-11	(mg/m^3)	2.0E-05	(mg/m^3)	5.9E-7
				Cadmium	2.1E-09	mg/m^3	1.7E-10	(mg/m^3)	1.8E-03	$(ug/m^3)^{-1}$	3.1E-10	4.8E-10	(mg/m^3)	1.0E-05	(mg/m^3)	0.00005
				Chromium	1.3E-08	mg/m^3	1.0E-09	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	2.9E-09	(mg/m^3)	NA	(mg/m^3)	--
				Cobalt	4.0E-09	mg/m^3	3.3E-10	(mg/m^3)	9.0E-03	$(ug/m^3)^{-1}$	3.0E-09	9.2E-10	(mg/m^3)	6.0E-06	(mg/m^3)	0.0002
				Copper	8.9E-08	mg/m^3	7.3E-09	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	2.0E-08	(mg/m^3)	NA	(mg/m^3)	--
				Iron	1.1E-05	mg/m^3	9.0E-07	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	2.5E-06	(mg/m^3)	NA	(mg/m^3)	--
				Lead	4.3E-06	mg/m^3	3.5E-07	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	9.9E-07	(mg/m^3)	NA	(mg/m^3)	--
				Manganese	3.4E-07	mg/m^3	2.8E-08	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	7.8E-08	(mg/m^3)	5.0E-05	(mg/m^3)	0.002
				Mercury	1.5E-06	mg/m^3	1.2E-07	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	3.3E-07	(mg/m^3)	3.0E-04	(mg/m^3)	0.001
				Nickel	1.1E-08	mg/m^3	9.1E-10	(mg/m^3)	2.6E-04	$(ug/m^3)^{-1}$	2.4E-10	2.6E-09	(mg/m^3)	9.0E-05	(mg/m^3)	0.00003
				Selenium	2.1E-10	mg/m^3	1.7E-11	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	4.7E-11	(mg/m^3)	2.0E-02	(mg/m^3)	2.4E-9
				Silver	3.9E-10	mg/m^3	3.2E-11	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	8.9E-11	(mg/m^3)	NA	(mg/m^3)	--
				Thallium	1.4E-10	mg/m^3	1.1E-11	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	3.2E-11	(mg/m^3)	NA	(mg/m^3)	--
				Vanadium	1.8E-08	mg/m^3	1.5E-09	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	4.1E-09	(mg/m^3)	1.0E-04	(mg/m^3)	0.00004
				Zinc	6.7E-08	mg/m^3	5.5E-09	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.5E-08	(mg/m^3)	NA	(mg/m^3)	--
			Exp. Route Total								5.5E-09					0.004
		Exposure Point Total									5.5E-09					0.004
	Exposure Medium Total										5.5E-09					0.004
Medium Total											6.2E-06					0.4
										Total of Receptor Risks Across All Media	6.2E-06				Total of Receptor Hazards Across All Media	0.4

TABLE 7.43.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2014 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Future
Receptor Population: Outdoor Worker - Entire Site
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	OD Unit	Ingestion	1,3,5-Trinitrobenzene	0.2	mg/kg	6.1E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.7E-07	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.000006
				1,3-Dinitrobenzene	0.14	mg/kg	4.3E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.2E-07	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.001
				2,4,6-Trinitrotoluene	9	mg/kg	2.8E-06	(mg/kg/day)	3.0E-02	(mg/kg/day)$^{-1}$	8.3E-08	7.7E-06	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.02
				2,4-Dinitrotoluene	0.06	mg/kg	1.8E-08	(mg/kg/day)	3.1E-01	(mg/kg/day)$^{-1}$	5.7E-09	5.1E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00003
				2-Amino-4,6-Dinitrotoluene	0.31	mg/kg	9.5E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.7E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0001
				4-Amino-2,6-Dinitrotoluene	0.41	mg/kg	1.3E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.5E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0002
				HMX	3	mg/kg	9.2E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.6E-06	(mg/kg/day)	5.0E-02	(mg/kg/day)	0.00005
				Nitroglycerin	1.9	mg/kg	5.8E-07	(mg/kg/day)	1.7E-02	(mg/kg/day)$^{-1}$	9.9E-09	1.6E-06	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.02
				PETN	0.41	mg/kg	1.3E-07	(mg/kg/day)	4.0E-03	(mg/kg/day)$^{-1}$	5.0E-10	3.5E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0002
				RDX	17.5	mg/kg	5.4E-06	(mg/kg/day)	1.1E-01	(mg/kg/day)$^{-1}$	5.9E-07	1.5E-05	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.005
				Tetryl	1.4	mg/kg	4.3E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.2E-06	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0006
				Perchlorate	2.8	mg/kg	8.6E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.4E-06	(mg/kg/day)	7.0E-04	(mg/kg/day)	0.003
				Aluminum	3364	mg/kg	1.0E-03	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.9E-03	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.003
				Antimony	1.6	mg/kg	4.9E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.4E-06	(mg/kg/day)	4.0E-04	(mg/kg/day)	0.003
				Arsenic	4.4	mg/kg	8.1E-07	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	1.2E-06	2.3E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.008
				Barium	114	mg/kg	3.5E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	9.8E-05	(mg/kg/day)	2.0E-01	(mg/kg/day)	0.0005
				Beryllium	0.17	mg/kg	5.2E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.5E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00007
				Cadmium	7.5	mg/kg	2.3E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	6.4E-06	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.01
				Chromium	79	mg/kg	2.4E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	6.8E-05	(mg/kg/day)	1.5E+00	(mg/kg/day)	0.00005
				Cobalt	2.5	mg/kg	7.6E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.1E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.007
				Copper	484	mg/kg	1.5E-04	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.1E-04	(mg/kg/day)	4.0E-02	(mg/kg/day)	0.01
				Iron	7933	mg/kg	2.4E-03	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	6.8E-03	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.010
				Lead	39.9	mg/kg	1.2E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.4E-05	(mg/kg/day)	NA	(mg/kg/day)	--
				Manganese	132	mg/kg	4.0E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.1E-04	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.005
				Mercury	0.09	mg/kg	2.8E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	7.7E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0003
				Nickel	43	mg/kg	1.3E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.7E-05	(mg/kg/day)	2.0E-02	(mg/kg/day)	0.002
				Selenium	0.22	mg/kg	6.7E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.9E-07	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.00004
				Silver	2.1	mg/kg	6.4E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.8E-06	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.0004
				Thallium	0.11	mg/kg	3.4E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	9.4E-08	(mg/kg/day)	1.0E-05	(mg/kg/day)	0.009
				Vanadium	10.9	mg/kg	3.3E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	9.3E-06	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.002
				Zinc	234	mg/kg	7.2E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.0E-04	(mg/kg/day)	3.0E-01	(mg/kg/day)	0.0007
			Exp. Route Total								1.9E-06					0.1
			Dermal	1,3,5-Trinitrobenzene	0.2	mg/kg	4.8E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.4E-08	(mg/kg/day)	3.0E-02	(mg/kg/day)	4.5E-7
				1,3-Dinitrobenzene	0.14	mg/kg	1.8E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	5.0E-08	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.0005
				2,4,6-Trinitrotoluene	9	mg/kg	3.7E-07	(mg/kg/day)	3.0E-02	(mg/kg/day)$^{-1}$	1.1E-08	1.0E-06	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.002
				2,4-Dinitrotoluene	0.06	mg/kg	7.8E-09	(mg/kg/day)	3.1E-01	(mg/kg/day)$^{-1}$	2.4E-09	2.2E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00001
				2-Amino-4,6-Dinitrotoluene	0.31	mg/kg	2.4E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	6.6E-09	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000003
				4-Amino-2,6-Dinitrotoluene	0.41	mg/kg	4.7E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.3E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000007
				HMX	3	mg/kg	2.3E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	6.4E-08	(mg/kg/day)	5.0E-02	(mg/kg/day)	0.000001
				Nitroglycerin	1.9	mg/kg	2.4E-07	(mg/kg/day)	1.7E-02	(mg/kg/day)$^{-1}$	4.1E-09	6.8E-07	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.007
				PETN	0.41	mg/kg	5.2E-08	(mg/kg/day)	4.0E-03	(mg/kg/day)$^{-1}$	2.1E-10	1.5E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00007
				RDX	17.5	mg/kg	3.3E-07	(mg/kg/day)	1.1E-01	(mg/kg/day)$^{-1}$	3.7E-08	9.4E-07	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.0003
				Tetryl	1.4	mg/kg	1.8E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	5.0E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0002
				Perchlorate	2.8	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-04	(mg/kg/day)	--
				Aluminum	3364	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Antimony	1.6	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	6.0E-05	(mg/kg/day)	--
				Arsenic	4.4	mg/kg	1.7E-07	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	2.5E-07	4.7E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.002
				Barium	114	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-02	(mg/kg/day)	--
				Beryllium	0.17	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-05	(mg/kg/day)	--
				Cadmium	7.5	mg/kg	9.5E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.7E-08	(mg/kg/day)	2.5E-05	(mg/kg/day)	0.001
				Chromium	79	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	2.0E-02	(mg/kg/day)	--
				Cobalt	2.5	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Copper	484	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	4.0E-02	(mg/kg/day)	--
				Iron	7933	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Lead	39.9	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)	--

TABLE 7.43.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2014 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Future
Receptor Population: Outdoor Worker - Entire Site
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	OD Unit	Dermal	Manganese	132	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
				Mercury	0.09	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Nickel	43	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	8.0E-04	(mg/kg/day)	--
				Selenium	0.22	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	5.0E-03	(mg/kg/day)	--
				Silver	2.1	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	2.0E-04	(mg/kg/day)	--
				Thallium	0.11	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.0E-05	(mg/kg/day)	--
				Vanadium	10.9	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.3E-04	(mg/kg/day)	--
				Zinc	234	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-01	(mg/kg/day)	--
			Exp. Route Total								3.1E-07					0.01
		Exposure Point Total									2.2E-06					0.1
	Exposure Medium Total										2.2E-06					0.1
	Air	OD Unit	Inhalation	1,3,5-Trinitrobenzene	1.5E-10	mg/m^3	1.2E-11	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	3.4E-11	(mg/m^3)	NA	(mg/m^3)	--
				1,3-Dinitrobenzene	1.0E-10	mg/m^3	8.4E-12	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	2.4E-11	(mg/m^3)	NA	(mg/m^3)	--
				2,4,6-Trinitrotoluene	6.6E-09	mg/m^3	5.4E-10	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.5E-09	(mg/m^3)	NA	(mg/m^3)	--
				2,4-Dinitrotoluene	4.4E-11	mg/m^3	3.6E-12	(mg/m^3)	8.9E-05	$(ug/m^3)^{-1}$	3.2E-13	1.0E-11	(mg/m^3)	NA	(mg/m^3)	--
				2-Amino-4,6-Dinitrotoluene	2.3E-10	mg/m^3	1.9E-11	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	5.2E-11	(mg/m^3)	NA	(mg/m^3)	--
				4-Amino-2,6-Dinitrotoluene	3.0E-10	mg/m^3	2.5E-11	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	6.9E-11	(mg/m^3)	NA	(mg/m^3)	--
				HMX	2.2E-09	mg/m^3	1.8E-10	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	5.0E-10	(mg/m^3)	NA	(mg/m^3)	--
				Nitroglycerin	1.4E-09	mg/m^3	1.1E-10	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	3.2E-10	(mg/m^3)	NA	(mg/m^3)	--
				PETN	3.0E-10	mg/m^3	2.5E-11	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	6.9E-11	(mg/m^3)	NA	(mg/m^3)	--
				RDX	1.3E-08	mg/m^3	1.0E-09	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	2.9E-09	(mg/m^3)	NA	(mg/m^3)	--
				Tetryl	1.0E-09	mg/m^3	8.4E-11	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	2.4E-10	(mg/m^3)	NA	(mg/m^3)	--
				Perchlorate	2.1E-09	mg/m^3	1.7E-10	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	4.7E-10	(mg/m^3)	NA	(mg/m^3)	--
				Aluminum	2.5E-06	mg/m^3	2.0E-07	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	5.6E-07	(mg/m^3)	5.0E-03	(mg/m^3)	0.0001
				Antimony	1.2E-09	mg/m^3	9.6E-11	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	2.7E-10	(mg/m^3)	NA	(mg/m^3)	--
				Arsenic	3.2E-09	mg/m^3	2.6E-10	(mg/m^3)	4.3E-03	$(ug/m^3)^{-1}$	1.1E-09	7.4E-10	(mg/m^3)	1.5E-05	(mg/m^3)	0.00005
				Barium	8.4E-08	mg/m^3	6.8E-09	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.9E-08	(mg/m^3)	5.0E-04	(mg/m^3)	0.00004
				Beryllium	1.3E-10	mg/m^3	1.0E-11	(mg/m^3)	2.4E-03	$(ug/m^3)^{-1}$	2.4E-11	2.9E-11	(mg/m^3)	2.0E-05	(mg/m^3)	0.000001
				Cadmium	5.5E-09	mg/m^3	4.5E-10	(mg/m^3)	1.8E-03	$(ug/m^3)^{-1}$	8.1E-10	1.3E-09	(mg/m^3)	1.0E-05	(mg/m^3)	0.0001
				Chromium	5.8E-08	mg/m^3	4.7E-09	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.3E-08	(mg/m^3)	NA	(mg/m^3)	--
				Cobalt	1.8E-09	mg/m^3	1.5E-10	(mg/m^3)	9.0E-03	$(ug/m^3)^{-1}$	1.3E-09	4.2E-10	(mg/m^3)	6.0E-06	(mg/m^3)	0.00007
				Copper	3.6E-07	mg/m^3	2.9E-08	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	8.1E-08	(mg/m^3)	NA	(mg/m^3)	--
				Iron	5.8E-06	mg/m^3	4.8E-07	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.3E-06	(mg/m^3)	NA	(mg/m^3)	--
				Lead	2.9E-08	mg/m^3	2.4E-09	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	6.7E-09	(mg/m^3)	NA	(mg/m^3)	--
				Manganese	9.7E-08	mg/m^3	7.9E-09	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	2.2E-08	(mg/m^3)	5.0E-05	(mg/m^3)	0.0004
				Mercury	3.0E-06	mg/m^3	2.4E-07	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	6.8E-07	(mg/m^3)	3.0E-04	(mg/m^3)	0.002
				Nickel	3.2E-08	mg/m^3	2.6E-09	(mg/m^3)	2.6E-04	$(ug/m^3)^{-1}$	6.7E-10	7.2E-09	(mg/m^3)	9.0E-05	(mg/m^3)	0.00008
				Selenium	1.6E-10	mg/m^3	1.3E-11	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	3.7E-11	(mg/m^3)	2.0E-02	(mg/m^3)	1.8E-9
				Silver	1.5E-09	mg/m^3	1.3E-10	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	3.5E-10	(mg/m^3)	NA	(mg/m^3)	--
				Thallium	8.1E-11	mg/m^3	6.6E-12	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.8E-11	(mg/m^3)	NA	(mg/m^3)	--
				Vanadium	8.0E-09	mg/m^3	6.5E-10	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.8E-09	(mg/m^3)	1.0E-04	(mg/m^3)	0.00002
				Zinc	1.7E-07	mg/m^3	1.4E-08	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	3.9E-08	(mg/m^3)	NA	(mg/m^3)	--
			Exp. Route Total								4.0E-09					0.003
		Exposure Point Total									4.0E-09					0.003
	Exposure Medium Total										4.0E-09					0.003
Medium Total											2.2E-06					0.1
										Total of Receptor Risks Across All Media	2.2E-06				Total of Receptor Hazards Across All Media	0.1

TABLE 7.44.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2014 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Future
Receptor Population: Outdoor Worker - Entire Site
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Static Firing Rocket Silos	Ingestion	1,3,5-Trinitrobenzene	0.26	mg/kg	8.0E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.2E-07	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.000007
				2,4,6-Trinitrotoluene	13.7	mg/kg	4.2E-06	(mg/kg/day)	3.0E-02	(mg/kg/day)$^{-1}$	1.3E-07	1.2E-05	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.02
				2,4-Dinitrotoluene	1.4	mg/kg	4.3E-07	(mg/kg/day)	3.1E-01	(mg/kg/day)$^{-1}$	1.3E-07	1.2E-06	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0006
				2,6-Dinitrotoluene	0.083	mg/kg	2.5E-08	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	3.8E-08	7.1E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0002
				2-Amino-4,6-Dinitrotoluene	0.44	mg/kg	1.3E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.8E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0002
				4-Amino-2,6-Dinitrotoluene	0.54	mg/kg	1.7E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.6E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0002
				HMX	10.1	mg/kg	3.1E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	8.6E-06	(mg/kg/day)	5.0E-02	(mg/kg/day)	0.0002
				Nitroglycerin	4.3	mg/kg	1.3E-06	(mg/kg/day)	1.7E-02	(mg/kg/day)$^{-1}$	2.2E-08	3.7E-06	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.04
				RDX	91.6	mg/kg	2.8E-05	(mg/kg/day)	1.1E-01	(mg/kg/day)$^{-1}$	3.1E-06	7.8E-05	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.03
				Tetryl	0.08	mg/kg	2.4E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	6.8E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00003
				Perchlorate	2.9	mg/kg	8.9E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.5E-06	(mg/kg/day)	7.0E-04	(mg/kg/day)	0.004
				2,3,7,8-TCDD Equivalents	0.00015	mg/kg	4.6E-11	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	6.0E-06	1.3E-10	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.2
				Aluminum	9371	mg/kg	2.9E-03	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	8.0E-03	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.008
				Antimony	2.7	mg/kg	8.3E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.3E-06	(mg/kg/day)	4.0E-04	(mg/kg/day)	0.006
				Arsenic	4.2	mg/kg	7.7E-07	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	1.2E-06	2.2E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.007
				Barium	140	mg/kg	4.3E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.2E-04	(mg/kg/day)	2.0E-01	(mg/kg/day)	0.0006
				Beryllium	0.29	mg/kg	8.9E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.5E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0001
				Cadmium	22.2	mg/kg	6.8E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.9E-05	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.04
				Chromium	33.3	mg/kg	1.0E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.9E-05	(mg/kg/day)	1.5E+00	(mg/kg/day)	0.00002
				Cobalt	3	mg/kg	9.2E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.6E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.009
				Copper	1450	mg/kg	4.4E-04	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.2E-03	(mg/kg/day)	4.0E-02	(mg/kg/day)	0.03
				Iron	14661	mg/kg	4.5E-03	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.3E-02	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.02
				Lead	360	mg/kg	1.1E-04	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.1E-04	(mg/kg/day)	NA	(mg/kg/day)	--
				Manganese	239	mg/kg	7.3E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.0E-04	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.009
				Mercury	0.032	mg/kg	9.8E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.7E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.00009
				Nickel	11.1	mg/kg	3.4E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	9.5E-06	(mg/kg/day)	2.0E-02	(mg/kg/day)	0.0005
				Selenium	0.25	mg/kg	7.6E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.1E-07	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.00004
				Silver	0.64	mg/kg	2.0E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	5.5E-07	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.0001
				Thallium	0.087	mg/kg	2.7E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	7.4E-08	(mg/kg/day)	1.0E-05	(mg/kg/day)	0.007
				Vanadium	12	mg/kg	3.7E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.0E-05	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.002
				Zinc	383	mg/kg	1.2E-04	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.3E-04	(mg/kg/day)	3.0E-01	(mg/kg/day)	0.001
			Exp. Route Total								1.1E-05					0.4
			Dermal	1,3,5-Trinitrobenzene	0.26	mg/kg	6.3E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.8E-08	(mg/kg/day)	3.0E-02	(mg/kg/day)	5.9E-7
				2,4,6-Trinitrotoluene	13.7	mg/kg	5.6E-07	(mg/kg/day)	3.0E-02	(mg/kg/day)$^{-1}$	1.7E-08	1.6E-06	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.003
				2,4-Dinitrotoluene	1.4	mg/kg	1.8E-07	(mg/kg/day)	3.1E-01	(mg/kg/day)$^{-1}$	5.6E-08	5.1E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0003
				2,6-Dinitrotoluene	0.083	mg/kg	1.0E-08	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	1.6E-08	2.9E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.00010
				2-Amino-4,6-Dinitrotoluene	0.44	mg/kg	3.4E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	9.4E-09	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000005
				4-Amino-2,6-Dinitrotoluene	0.54	mg/kg	6.2E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.7E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000009
				HMX	10.1	mg/kg	7.7E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.2E-07	(mg/kg/day)	5.0E-02	(mg/kg/day)	0.000004
				Nitroglycerin	4.3	mg/kg	5.5E-07	(mg/kg/day)	1.7E-02	(mg/kg/day)$^{-1}$	9.3E-09	1.5E-06	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.02
				RDX	91.6	mg/kg	1.7E-06	(mg/kg/day)	1.1E-01	(mg/kg/day)$^{-1}$	1.9E-07	4.9E-06	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.002
				Tetryl	0.08	mg/kg	1.0E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.9E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00001
				Perchlorate	2.9	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-04	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.00015	mg/kg	5.7E-12	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	7.4E-07	1.6E-11	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.02
				Aluminum	9371	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Antimony	2.7	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	6.0E-05	(mg/kg/day)	--
				Arsenic	4.2	mg/kg	1.6E-07	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	2.4E-07	4.5E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.001
				Barium	140	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-02	(mg/kg/day)	--
				Beryllium	0.29	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-05	(mg/kg/day)	--
				Cadmium	22.2	mg/kg	2.8E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	7.9E-08	(mg/kg/day)	2.5E-05	(mg/kg/day)	0.003
				Chromium	33.3	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	2.0E-02	(mg/kg/day)	--
				Cobalt	3	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Copper	1450	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	4.0E-02	(mg/kg/day)	--
				Iron	14661	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Lead	360	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)	--

TABLE 7.44.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2014 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Future
Receptor Population: Outdoor Worker - Entire Site
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Static Firing Rocket Silos	Dermal	Manganese	239	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
				Mercury	0.032	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Nickel	11.1	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	8.0E-04	(mg/kg/day)	--
				Selenium	0.25	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	5.0E-03	(mg/kg/day)	--
				Silver	0.64	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	2.0E-04	(mg/kg/day)	--
				Thallium	0.087	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.0E-05	(mg/kg/day)	--
				Vanadium	12	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.3E-04	(mg/kg/day)	--
				Zinc	383	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-01	(mg/kg/day)	--
			Exp. Route Total								1.3E-06					0.05
		Exposure Point Total									1.2E-05					0.5
	Exposure Medium Total										1.2E-05					0.5
	Air	SF Unit	Inhalation	1,3,5-Trinitrobenzene	1.9E-10	mg/m^3	1.6E-11	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	4.4E-11	(mg/m^3)	NA	(mg/m^3)	--
				2,4,6-Trinitrotoluene	1.0E-08	mg/m^3	8.2E-10	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	2.3E-09	(mg/m^3)	NA	(mg/m^3)	--
				2,4-Dinitrotoluene	1.0E-09	mg/m^3	8.4E-11	(mg/m^3)	8.9E-05	$(ug/m^3)^{-1}$	7.5E-12	2.4E-10	(mg/m^3)	NA	(mg/m^3)	--
				2,6-Dinitrotoluene	6.1E-11	mg/m^3	5.0E-12	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.4E-11	(mg/m^3)	NA	(mg/m^3)	--
				2-Amino-4,6-Dinitrotoluene	3.2E-10	mg/m^3	2.6E-11	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	7.4E-11	(mg/m^3)	NA	(mg/m^3)	--
				4-Amino-2,6-Dinitrotoluene	4.0E-10	mg/m^3	3.2E-11	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	9.1E-11	(mg/m^3)	NA	(mg/m^3)	--
				HMX	7.4E-09	mg/m^3	6.1E-10	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.7E-09	(mg/m^3)	NA	(mg/m^3)	--
				Nitroglycerin	3.2E-09	mg/m^3	2.6E-10	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	7.2E-10	(mg/m^3)	NA	(mg/m^3)	--
				RDX	6.7E-08	mg/m^3	5.5E-09	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.5E-08	(mg/m^3)	NA	(mg/m^3)	--
				Tetryl	5.9E-11	mg/m^3	4.8E-12	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.3E-11	(mg/m^3)	NA	(mg/m^3)	--
				Perchlorate	2.1E-09	mg/m^3	1.7E-10	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	4.9E-10	(mg/m^3)	NA	(mg/m^3)	--
				2,3,7,8-TCDD Equivalents	1.1E-13	mg/m^3	9.0E-15	(mg/m^3)	3.8E+01	$(ug/m^3)^{-1}$	3.4E-10	2.5E-14	(mg/m^3)	4.0E-08	(mg/m^3)	6.3E-7
				Aluminum	6.9E-06	mg/m^3	5.6E-07	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.6E-06	(mg/m^3)	5.0E-03	(mg/m^3)	0.0003
				Antimony	2.0E-09	mg/m^3	1.6E-10	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	4.5E-10	(mg/m^3)	NA	(mg/m^3)	--
				Arsenic	3.1E-09	mg/m^3	2.5E-10	(mg/m^3)	4.3E-03	$(ug/m^3)^{-1}$	1.1E-09	7.1E-10	(mg/m^3)	1.5E-05	(mg/m^3)	0.00005
				Barium	1.0E-07	mg/m^3	8.4E-09	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	2.4E-08	(mg/m^3)	5.0E-04	(mg/m^3)	0.00005
				Beryllium	2.1E-10	mg/m^3	1.7E-11	(mg/m^3)	2.4E-03	$(ug/m^3)^{-1}$	4.2E-11	4.9E-11	(mg/m^3)	2.0E-05	(mg/m^3)	0.000002
				Cadmium	1.6E-08	mg/m^3	1.3E-09	(mg/m^3)	1.8E-03	$(ug/m^3)^{-1}$	2.4E-09	3.7E-09	(mg/m^3)	1.0E-05	(mg/m^3)	0.0004
				Chromium	2.4E-08	mg/m^3	2.0E-09	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	5.6E-09	(mg/m^3)	NA	(mg/m^3)	--
				Cobalt	2.2E-09	mg/m^3	1.8E-10	(mg/m^3)	9.0E-03	$(ug/m^3)^{-1}$	1.6E-09	5.0E-10	(mg/m^3)	6.0E-06	(mg/m^3)	0.00008
				Copper	1.1E-06	mg/m^3	8.7E-08	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	2.4E-07	(mg/m^3)	NA	(mg/m^3)	--
				Iron	1.1E-05	mg/m^3	8.8E-07	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	2.5E-06	(mg/m^3)	NA	(mg/m^3)	--
				Lead	2.6E-07	mg/m^3	2.2E-08	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	6.0E-08	(mg/m^3)	NA	(mg/m^3)	--
				Manganese	1.8E-07	mg/m^3	1.4E-08	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	4.0E-08	(mg/m^3)	5.0E-05	(mg/m^3)	0.0008
				Mercury	1.1E-06	mg/m^3	8.7E-08	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	2.4E-07	(mg/m^3)	3.0E-04	(mg/m^3)	0.0008
				Nickel	8.2E-09	mg/m^3	6.7E-10	(mg/m^3)	2.6E-04	$(ug/m^3)^{-1}$	1.7E-10	1.9E-09	(mg/m^3)	9.0E-05	(mg/m^3)	0.00002
				Selenium	1.8E-10	mg/m^3	1.5E-11	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	4.2E-11	(mg/m^3)	2.0E-02	(mg/m^3)	2.1E-9
				Silver	4.7E-10	mg/m^3	3.8E-11	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.1E-10	(mg/m^3)	NA	(mg/m^3)	--
				Thallium	6.4E-11	mg/m^3	5.2E-12	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.5E-11	(mg/m^3)	NA	(mg/m^3)	--
				Vanadium	8.8E-09	mg/m^3	7.2E-10	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	2.0E-09	(mg/m^3)	1.0E-04	(mg/m^3)	0.00002
				Zinc	2.8E-07	mg/m^3	2.3E-08	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	6.4E-08	(mg/m^3)	NA	(mg/m^3)	--
			Exp. Route Total								5.7E-09					0.003
		Exposure Point Total									5.7E-09					0.003
	Exposure Medium Total										5.7E-09					0.003
Medium Total											1.2E-05					0.5
										Total of Receptor Risks Across All Media	1.2E-05				Total of Receptor Hazards Across All Media	0.5

TABLE 7.45.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2014 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Future
Receptor Population: Outdoor Worker - Entire Site
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	All Soil Samples	Ingestion	1,3,5-Trinitrobenzene	0.17	mg/kg	5.2E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.5E-07	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.000005
				1,3-Dinitrobenzene	0.1	mg/kg	3.1E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	8.6E-08	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.0009
				2,4,6-Trinitrotoluene	7	mg/kg	2.1E-06	(mg/kg/day)	3.0E-02	(mg/kg/day)$^{-1}$	6.4E-08	6.0E-06	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.01
				2,4-Dinitrotoluene	4.45	mg/kg	1.4E-06	(mg/kg/day)	3.1E-01	(mg/kg/day)$^{-1}$	4.2E-07	3.8E-06	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.002
				2,6-Dinitrotoluene	0.058	mg/kg	1.8E-08	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	2.7E-08	5.0E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0002
				2-Amino-4,6-Dinitrotoluene	0.26	mg/kg	8.0E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.2E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0001
				2-Nitrotoluene	0.055	mg/kg	1.7E-08	(mg/kg/day)	2.2E-01	(mg/kg/day)$^{-1}$	3.7E-09	4.7E-08	(mg/kg/day)	9.0E-04	(mg/kg/day)	0.00005
				4-Amino-2,6-Dinitrotoluene	0.34	mg/kg	1.0E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.9E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0001
				4-Nitrotoluene	0.064	mg/kg	2.0E-08	(mg/kg/day)	1.6E-02	(mg/kg/day)$^{-1}$	3.1E-10	5.5E-08	(mg/kg/day)	4.0E-03	(mg/kg/day)	0.00001
				HMX	3.55	mg/kg	1.1E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.0E-06	(mg/kg/day)	5.0E-02	(mg/kg/day)	0.00006
				Nitroglycerin	4.91	mg/kg	1.5E-06	(mg/kg/day)	1.7E-02	(mg/kg/day)$^{-1}$	2.6E-08	4.2E-06	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.04
				PETN	0.34	mg/kg	1.0E-07	(mg/kg/day)	4.0E-03	(mg/kg/day)$^{-1}$	4.2E-10	2.9E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0001
				RDX	27.5	mg/kg	8.4E-06	(mg/kg/day)	1.1E-01	(mg/kg/day)$^{-1}$	9.2E-07	2.4E-05	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.008
				Tetryl	0.95	mg/kg	2.9E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	8.1E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0004
				Perchlorate	1.98	mg/kg	6.1E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.7E-06	(mg/kg/day)	7.0E-04	(mg/kg/day)	0.002
				2,3,7,8-TCDD Equivalents	0.00012	mg/kg	3.7E-11	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	4.8E-06	1.0E-10	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.1
				Aluminum	8048	mg/kg	2.5E-03	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	6.9E-03	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.007
				Antimony	2.24	mg/kg	6.8E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.9E-06	(mg/kg/day)	4.0E-04	(mg/kg/day)	0.005
				Arsenic	4.97	mg/kg	9.1E-07	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	1.4E-06	2.6E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.009
				Barium	136	mg/kg	4.2E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.2E-04	(mg/kg/day)	2.0E-01	(mg/kg/day)	0.0006
				Beryllium	0.35	mg/kg	1.1E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.0E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0001
				Cadmium	10.9	mg/kg	3.3E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	9.3E-06	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.02
				Chromium	54	mg/kg	1.7E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.6E-05	(mg/kg/day)	1.5E+00	(mg/kg/day)	0.00003
				Cobalt	3.42	mg/kg	1.0E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.9E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.010
				Copper	537	mg/kg	1.6E-04	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	4.6E-04	(mg/kg/day)	4.0E-02	(mg/kg/day)	0.01
				Iron	11286	mg/kg	3.5E-03	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	9.7E-03	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.01
				Lead	1237	mg/kg	3.8E-04	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.1E-03	(mg/kg/day)	NA	(mg/kg/day)	--
				Manganese	266	mg/kg	8.1E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.3E-04	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.009
				Mercury	0.073	mg/kg	2.2E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	6.3E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0002
				Nickel	29.4	mg/kg	9.0E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.5E-05	(mg/kg/day)	2.0E-02	(mg/kg/day)	0.001
				Selenium	0.22	mg/kg	6.7E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.9E-07	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.00004
				Silver	1.58	mg/kg	4.8E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.4E-06	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.0003
				Thallium	0.13	mg/kg	4.0E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.1E-07	(mg/kg/day)	1.0E-05	(mg/kg/day)	0.01
				Vanadium	15.3	mg/kg	4.7E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.3E-05	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.003
				Zinc	247	mg/kg	7.6E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	2.1E-04	(mg/kg/day)	3.0E-01	(mg/kg/day)	0.0007
			Exp. Route Total								7.6E-06					0.3
			Dermal	1,3,5-Trinitrobenzene	0.17	mg/kg	4.1E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.2E-08	(mg/kg/day)	3.0E-02	(mg/kg/day)	3.8E-7
				1,3-Dinitrobenzene	0.1	mg/kg	1.3E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.6E-08	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.0004
				2,4,6-Trinitrotoluene	7	mg/kg	2.9E-07	(mg/kg/day)	3.0E-02	(mg/kg/day)$^{-1}$	8.6E-09	8.0E-07	(mg/kg/day)	5.0E-04	(mg/kg/day)	0.002
				2,4-Dinitrotoluene	4.45	mg/kg	5.8E-07	(mg/kg/day)	3.1E-01	(mg/kg/day)$^{-1}$	1.8E-07	1.6E-06	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0008
				2,6-Dinitrotoluene	0.058	mg/kg	7.3E-09	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	1.1E-08	2.0E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.00007
				2-Amino-4,6-Dinitrotoluene	0.26	mg/kg	2.0E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	5.6E-09	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000003
				2-Nitrotoluene	0.055	mg/kg	7.0E-09	(mg/kg/day)	2.2E-01	(mg/kg/day)$^{-1}$	1.5E-09	2.0E-08	(mg/kg/day)	9.0E-04	(mg/kg/day)	0.00002
				4-Amino-2,6-Dinitrotoluene	0.34	mg/kg	3.9E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	1.1E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000005
				4-Nitrotoluene	0.064	mg/kg	8.1E-09	(mg/kg/day)	1.6E-02	(mg/kg/day)$^{-1}$	1.3E-10	2.3E-08	(mg/kg/day)	4.0E-03	(mg/kg/day)	0.000006
				HMX	3.55	mg/kg	2.7E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	7.6E-08	(mg/kg/day)	5.0E-02	(mg/kg/day)	0.000002
				Nitroglycerin	4.91	mg/kg	6.3E-07	(mg/kg/day)	1.7E-02	(mg/kg/day)$^{-1}$	1.1E-08	1.8E-06	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.02
				PETN	0.34	mg/kg	4.3E-08	(mg/kg/day)	4.0E-03	(mg/kg/day)$^{-1}$	1.7E-10	1.2E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00006
				RDX	27.5	mg/kg	5.3E-07	(mg/kg/day)	1.1E-01	(mg/kg/day)$^{-1}$	5.8E-08	1.5E-06	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.0005
				Tetryl	0.95	mg/kg	1.2E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	3.4E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0002
				Perchlorate	1.98	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-04	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.00012	mg/kg	4.6E-12	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	6.0E-07	1.3E-11	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.02
				Aluminum	8048	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Antimony	2.24	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	6.0E-05	(mg/kg/day)	--
				Arsenic	4.97	mg/kg	1.9E-07	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	2.8E-07	5.3E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.002
				Barium	136	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-02	(mg/kg/day)	--
				Beryllium	0.35	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	- -	0.0E+00	(mg/kg/day)	1.4E-05	(mg/kg/day)	--

TABLE 7.45.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2014 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Future
Receptor Population: Outdoor Worker - Entire Site
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	All Soil Samples	Dermal	Cadmium	10.9	mg/kg	1.4E-08	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	3.9E-08	(mg/kg/day)	2.5E-05	(mg/kg/day)	0.002
				Chromium	54	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	2.0E-02	(mg/kg/day)	--
				Cobalt	3.42	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Copper	537	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	4.0E-02	(mg/kg/day)	--
				Iron	11286	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Lead	1237	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)	--
				Manganese	266	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
				Mercury	0.073	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Nickel	29.4	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	8.0E-04	(mg/kg/day)	--
				Selenium	0.22	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	5.0E-03	(mg/kg/day)	--
				Silver	1.58	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	2.0E-04	(mg/kg/day)	--
				Thallium	0.13	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.0E-05	(mg/kg/day)	--
				Vanadium	15.3	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.3E-04	(mg/kg/day)	--
				Zinc	247	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-01	(mg/kg/day)	--
			Exp. Route Total								1.1E-06					0.04
		Exposure Point Total									8.8E-06					0.4
	Exposure Medium Total										8.8E-06					0.4
	Air	OB/OD/SF Units	Inhalation	1,3,5-Trinitrobenzene	1.3E-10	mg/m^3	1.0E-11	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	2.9E-11	(mg/m^3)	NA	(mg/m^3)	--
				1,3-Dinitrobenzene	7.4E-11	mg/m^3	6.0E-12	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.7E-11	(mg/m^3)	NA	(mg/m^3)	--
				2,4,6-Trinitrotoluene	5.1E-09	mg/m^3	4.2E-10	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.2E-09	(mg/m^3)	NA	(mg/m^3)	--
				2,4-Dinitrotoluene	3.3E-09	mg/m^3	2.7E-10	(mg/m^3)	8.9E-05	$(ug/m^3)^{-1}$	2.4E-11	7.5E-10	(mg/m^3)	NA	(mg/m^3)	--
				2,6-Dinitrotoluene	4.3E-11	mg/m^3	3.5E-12	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	9.7E-12	(mg/m^3)	NA	(mg/m^3)	--
				2-Amino-4,6-Dinitrotoluene	1.9E-10	mg/m^3	1.6E-11	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	4.4E-11	(mg/m^3)	NA	(mg/m^3)	--
				2-Nitrotoluene	4.0E-07	mg/m^3	3.3E-08	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	9.2E-08	(mg/m^3)	NA	(mg/m^3)	--
				4-Amino-2,6-Dinitrotoluene	2.5E-10	mg/m^3	2.0E-11	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	5.7E-11	(mg/m^3)	NA	(mg/m^3)	--
				4-Nitrotoluene	4.7E-11	mg/m^3	3.8E-12	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.1E-11	(mg/m^3)	NA	(mg/m^3)	--
				HMX	2.6E-09	mg/m^3	2.1E-10	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	6.0E-10	(mg/m^3)	NA	(mg/m^3)	--
				Nitroglycerin	3.6E-09	mg/m^3	2.9E-10	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	8.2E-10	(mg/m^3)	NA	(mg/m^3)	--
				PETN	2.5E-10	mg/m^3	2.0E-11	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	5.7E-11	(mg/m^3)	NA	(mg/m^3)	--
				RDX	2.0E-08	mg/m^3	1.6E-09	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	4.6E-09	(mg/m^3)	NA	(mg/m^3)	--
				Tetryl	7.0E-10	mg/m^3	5.7E-11	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.6E-10	(mg/m^3)	NA	(mg/m^3)	--
				Perchlorate	1.5E-09	mg/m^3	1.2E-10	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	3.3E-10	(mg/m^3)	NA	(mg/m^3)	--
				2,3,7,8-TCDD Equivalents	8.8E-14	mg/m^3	7.2E-15	(mg/m^3)	3.8E+01	$(ug/m^3)^{-1}$	2.7E-10	2.0E-14	(mg/m^3)	4.0E-08	(mg/m^3)	5.0E-7
				Aluminum	5.9E-06	mg/m^3	4.8E-07	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.4E-06	(mg/m^3)	5.0E-03	(mg/m^3)	0.0003
				Antimony	1.6E-09	mg/m^3	1.3E-10	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	3.8E-10	(mg/m^3)	NA	(mg/m^3)	--
				Arsenic	3.7E-09	mg/m^3	3.0E-10	(mg/m^3)	4.3E-03	$(ug/m^3)^{-1}$	1.3E-09	8.3E-10	(mg/m^3)	1.5E-05	(mg/m^3)	0.00006
				Barium	1.0E-07	mg/m^3	8.2E-09	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	2.3E-08	(mg/m^3)	5.0E-04	(mg/m^3)	0.00005
				Beryllium	2.6E-10	mg/m^3	2.1E-11	(mg/m^3)	2.4E-03	$(ug/m^3)^{-1}$	5.0E-11	5.9E-11	(mg/m^3)	2.0E-05	(mg/m^3)	0.000003
				Cadmium	8.0E-09	mg/m^3	6.5E-10	(mg/m^3)	1.8E-03	$(ug/m^3)^{-1}$	1.2E-09	1.8E-09	(mg/m^3)	1.0E-05	(mg/m^3)	0.0002
				Chromium	4.0E-08	mg/m^3	3.2E-09	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	9.1E-09	(mg/m^3)	NA	(mg/m^3)	--
				Cobalt	2.5E-09	mg/m^3	2.1E-10	(mg/m^3)	9.0E-03	$(ug/m^3)^{-1}$	1.8E-09	5.7E-10	(mg/m^3)	6.0E-06	(mg/m^3)	0.00010
				Copper	3.9E-07	mg/m^3	3.2E-08	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	9.0E-08	(mg/m^3)	NA	(mg/m^3)	--
				Iron	8.3E-06	mg/m^3	6.8E-07	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.9E-06	(mg/m^3)	NA	(mg/m^3)	--
				Lead	9.1E-07	mg/m^3	7.4E-08	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	2.1E-07	(mg/m^3)	NA	(mg/m^3)	--
				Manganese	2.0E-07	mg/m^3	1.6E-08	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	4.5E-08	(mg/m^3)	5.0E-05	(mg/m^3)	0.0009
				Mercury	2.4E-06	mg/m^3	2.0E-07	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	5.5E-07	(mg/m^3)	3.0E-04	(mg/m^3)	0.002
				Nickel	2.2E-08	mg/m^3	1.8E-09	(mg/m^3)	2.6E-04	$(ug/m^3)^{-1}$	4.6E-10	4.9E-09	(mg/m^3)	9.0E-05	(mg/m^3)	0.00005
				Selenium	1.6E-10	mg/m^3	1.3E-11	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	3.7E-11	(mg/m^3)	2.0E-02	(mg/m^3)	1.8E-9
				Silver	1.2E-09	mg/m^3	9.5E-11	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	2.7E-10	(mg/m^3)	NA	(mg/m^3)	--
				Thallium	9.6E-11	mg/m^3	7.8E-12	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	2.2E-11	(mg/m^3)	NA	(mg/m^3)	--
				Vanadium	1.1E-08	mg/m^3	9.2E-10	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	2.6E-09	(mg/m^3)	1.0E-04	(mg/m^3)	0.00003
				Zinc	1.8E-07	mg/m^3	1.5E-08	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	4.1E-08	(mg/m^3)	NA	(mg/m^3)	--
			Exp. Route Total								5.1E-09					0.003
		Exposure Point Total									5.1E-09					0.003
	Exposure Medium Total										5.1E-09					0.003
Medium Total											8.8E-06					0.4
										Total of Receptor Risks Across All Media	8.8E-06				Total of Receptor Hazards Across All Media	0.4

LIST OF TABLES
RAGS PART D TABLE 9
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

Table No.	REASONABLE MAXIMUM EXPOSURES
9.1.RME	Unprotected Worker - OB Unit - 2006 Surface Soil Samples
9.2.RME	Unprotected Worker - OD Unit - 2006 Surface Soil Samples
9.3.RME	Unprotected Worker - SF Unit - 2006 Surface Soil Samples
9.4.RME	Unprotected Worker - All Units - 2006 Surface Soil Samples
9.5.RME	Protected Worker - OB Unit - 2006 Surface Soil Samples
9.6.RME	Protected Worker - OD Unit - 2006 Surface Soil Samples
9.7.RME	Protected Worker - SF Unit - 2006 Surface Soil Samples
9.8.RME	Protected Worker - All Units - 2006 Surface Soil Samples
9.9.RME	Outdoor Worker - OB Unit - 2006 Surface Soil Samples
9.10.RME	Outdoor Worker - OD Unit - 2006 Surface Soil Samples
9.11.RME	Outdoor Worker - SF Unit - 2006 Surface Soil Samples
9.12.RME	Outdoor Worker - All Units - 2006 Surface Soil Samples
9.13.RME	Unprotected Worker - OB Unit - 2007 Surface Soil Samples
9.14.RME	Unprotected Worker - OD Unit - 2007 Surface Soil Samples
9.15.RME	Unprotected Worker - All Units - 2007 Surface Soil Samples
9.16.RME	Protected Worker - OB Unit - 2007 Surface Soil Samples
9.17.RME	Protected Worker - OD Unit - 2007 Surface Soil Samples
9.18.RME	Protected Worker - All Units - 2007 Surface Soil Samples
9.19.RME	Outdoor Worker - OB Unit - 2007 Surface Soil Samples
9.20.RME	Outdoor Worker - OD Unit - 2007 Surface Soil Samples
9.21.RME	Outdoor Worker - All Units - 2007 Surface Soil Samples
9.22.RME	Unprotected Worker - OB Unit - 2009 Surface Soil Samples
9.23.RME	Unprotected Worker - OD Unit - 2009 Surface Soil Samples
9.24.RME	Unprotected Worker - SF Unit - 2009 Surface Soil Samples
9.25.RME	Unprotected Worker - All Units - 2009 Surface Soil Samples
9.26.RME	Protected Worker - OB Unit - 2009 Surface Soil Samples
9.27.RME	Protected Worker - OD Unit - 2009 Surface Soil Samples
9.28.RME	Protected Worker - SF Unit - 2009 Surface Soil Samples
9.29.RME	Protected Worker - All Units - 2009 Surface Soil Samples
9.30.RME	Outdoor Worker - OB Unit - 2009 Surface Soil Samples
9.31.RME	Outdoor Worker - OD Unit - 2009 Surface Soil Samples
9.32.RME	Outdoor Worker - SF Unit - 2009 Surface Soil Samples
9.33.RME	Outdoor Worker - All Units - 2009 Surface Soil Samples
9.34.RME	Unprotected Worker - OB Unit - 2014 Surface Soil Samples
9.35.RME	Unprotected Worker - OD Unit - 2014 Surface Soil Samples
9.36.RME	Unprotected Worker - SF Unit - 2014 Surface Soil Samples
9.39.RME	Unprotected Worker - All Units - 2014 Surface Soil Samples
9.38.RME	Protected Worker - OB Unit - 2014 Surface Soil Samples
9.39.RME	Protected Worker - OD Unit - 2014 Surface Soil Samples
9.40.RME	Protected Worker - SF Unit - 2014 Surface Soil Samples
9.41.RME	Protected Worker - All Units - 2014 Surface Soil Samples
9.42.RME	Outdoor Worker - OB Unit - 2014 Surface Soil Samples
9.43.RME	Outdoor Worker - OD Unit - 2014 Surface Soil Samples
9.44.RME	Outdoor Worker - SF Unit - 2014 Surface Soil Samples
9.45.RME	Outdoor Worker - All Units - 2014 Surface Soil Samples

2006 SURFACE SOIL SAMPLES

TABLE 9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - 2006 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Unprotected OB Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	OB Unit	1,3,5-Trinitrobenzene	- -	--	- -	--	- -	Spleen	0.0000001	- -	0.00000001	0.0000001
			2,4-Dinitrotoluene	1E-08	--	5E-09	--	2E-08	CNS, Liver	0.00005	- -	0.00002	0.00007
			2-Amino-4,6-Dinitrotoluene	- -	--	- -	--	- -	CNS, Liver	0.000007	- -	0.0000002	0.000007
			4-Amino-2,6-Dinitrotoluene	- -	--	- -	--	- -	CNS, Liver	0.000005	- -	0.0000002	0.000005
			HMX	- -	--	- -	--	- -	Liver	0.000001	- -	0.00000003	0.000001
			Nitroglycerin	1E-07	--	4E-08	--	2E-07	Blood	0.2	- -	0.07	0.2
			RDX	7E-09	--	4E-10	--	7E-09	Prostrate	0.00006	- -	0.000004	0.00006
			Perchlorate	- -	--	- -	--	- -	Thyroid	0.000002	- -	--	0.000002
			Aluminum	- -	--	- -	--	- -	CNS	0.002	- -	--	0.002
			Arsenic	7E-07	--	1E-07	--	8E-07	Skin, CVS	0.005	- -	0.0006	0.005
			Barium	- -	--	- -	--	- -	Kidney	0.0002	- -	--	0.0002
			Beryllium	- -	--	- -	--	- -	GS	0.00006	- -	--	0.00006
			Cadmium	- -	--	- -	--	- -	Kidney	0.0009	- -	0.00008	0.0010
			Chromium	4E-07	--	- -	--	4E-07	None Specified	0.0008	- -	--	0.0008
			Copper	- -	--	- -	--	- -	GS	0.0008	- -	--	0.0008
			Iron	- -	--	- -	--	- -	GS	0.003	- -	--	0.003
			Lead	- -	--	- -	--	- -	NA	--	- -	--	--
			Manganese	- -	--	- -	--	- -	CNS	0.003	- -	--	0.003
			Mercury	- -	--	- -	--	- -	Immune System	0.00008	- -	--	0.00008
			Nickel	- -	--	- -	--	- -	Body Weight	0.0001	- -	--	0.0001
			Selenium	- -	--	- -	--	- -	Skin, CNS	0.00002	- -	--	0.00002
			Silver	- -	--	- -	--	- -	Skin	0.00002	- -	--	0.00002
			Vanadium	- -	--	- -	--	- -	Kidney	0.0005	- -	--	0.0005
			Zinc	- -	--	- -	--	- -	Blood	0.00008	- -	--	0.00008
			Chemical Total	1E-06	--	1E-07	--	1E-06		0.2	--	0.07	0.3
		Exposure Point Total						1E-06					0.3
	Exposure Medium Total							1E-06					0.3
Medium Total								1E-06					0.3
Receptor Total							Receptor Risk Total	1E-06				Receptor HI Total	0.3

TABLE 9.2.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - 2006 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Unprotected OD Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	OD Unit	1,3,5-Trinitrobenzene	- -	--	- -	--	- -	Spleen	0.000002	- -	0.0000002	0.000002
			2,4,6-Trinitrotoluene	3E-08	--	4E-09	--	3E-08	Liver	0.005	- -	0.0007	0.006
			2-Amino-4,6-Dinitrotoluene	- -	--	- -	--	- -	CNS, Liver	0.00007	- -	0.000002	0.00007
			4-Amino-2,6-Dinitrotoluene	- -	--	- -	--	- -	CNS, Liver	0.00004	- -	0.000002	0.00004
			HMX	- -	--	- -	--	- -	Liver	0.00002	- -	0.0000006	0.00002
			RDX	5E-07	--	3E-08	--	6E-07	Prostrate	0.005	- -	0.0003	0.005
			Tetryl	- -	--	- -	--	- -	Blood	0.00004	- -	0.00002	0.00006
			Perchlorate	- -	--	- -	--	- -	Thyroid	0.01	- -	--	0.01
			Aluminum	- -	--	- -	--	- -	CNS	0.0008	- -	--	0.0008
			Arsenic	8E-07	--	1E-07	--	9E-07	Skin, CVS	0.005	- -	0.0006	0.006
			Barium	- -	--	- -	--	- -	Kidney	0.0001	- -	--	0.0001
			Beryllium	- -	--	- -	--	- -	GS	0.00004	- -	--	0.00004
			Cadmium	- -	--	- -	--	- -	Kidney	0.004	- -	0.0003	0.004
			Chromium	4E-07	--	- -	--	4E-07	None Specified	0.0008	- -	--	0.0008
			Copper	- -	--	- -	--	- -	GS	0.003	- -	--	0.003
			Iron	- -	--	- -	--	- -	GS	0.006	- -	--	0.006
			Lead	- -	--	- -	--	- -	NA	--	- -	--	--
			Manganese	- -	--	- -	--	- -	CNS	0.002	- -	--	0.002
			Mercury	- -	--	- -	--	- -	Immune System	0.0001	- -	--	0.0001
			Nickel	- -	--	- -	--	- -	Body Weight	0.00009	- -	--	0.00009
			Vanadium	- -	--	- -	--	- -	Kidney	0.0004	- -	--	0.0004
			Zinc	- -	--	- -	--	- -	Blood	0.0001	- -	--	0.0001
			Chemical Total	2E-06	--	1E-07	--	2E-06		0.04	--	0.002	0.04
		Exposure Point Total						2E-06					0.04
	Exposure Medium Total							2E-06					0.04
Medium Total								2E-06					0.04
Receptor Total							Receptor Risk Total	2E-06				Receptor HI Total	0.04

TABLE 9.3.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - 2006 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Unprotected SF Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Static Firing Rocket Silos	1,3,5-Trinitrobenzene	- -	--	- -	--	- -	Spleen	0.0000009	- -	0.00000007	0.0000010
			2,4,6-Trinitrotoluene	3E-10	--	4E-11	--	3E-10	Liver	0.00005	- -	0.000007	0.00006
			2,4-Dinitrotoluene	7E-09	--	3E-09	--	1E-08	CNS, Liver	0.00003	- -	0.00001	0.00004
			2-Amino-4,6-Dinitrotoluene	- -	--	- -	--	- -	CNS, Liver	0.00002	- -	0.0000005	0.00002
			4-Amino-2,6-Dinitrotoluene	- -	--	- -	--	- -	CNS, Liver	0.00002	- -	0.0000009	0.00002
			HMX	- -	--	- -	--	- -	Liver	0.000001	- -	0.00000003	0.000001
			Nitroglycerin	3E-08	--	1E-08	--	5E-08	Blood	0.05	- -	0.02	0.08
			PETN	2E-09	--	7E-10	--	2E-09	Whole Body	0.0006	- -	0.0002	0.0008
			RDX	3E-09	--	2E-10	--	3E-09	Prostrate	0.00002	- -	0.000001	0.00002
			Perchlorate	- -	--	- -	--	- -	Thyroid	0.08	- -	--	0.08
			2,3,7,8-TCDD Equivalents	5E-07	--	6E-08	--	5E-07	Reproductive	0.01	- -	0.002	0.02
			Aluminum	- -	--	- -	--	- -	CNS	0.0008	- -	--	0.0008
			Arsenic	5E-07	--	6E-08	--	6E-07	Skin, CVS	0.003	- -	0.0004	0.004
			Barium	- -	--	- -	--	- -	Kidney	0.0001	- -	--	0.0001
			Beryllium	- -	--	- -	--	- -	GS	0.00002	- -	--	0.00002
			Cadmium	- -	--	- -	--	- -	Kidney	0.006	- -	0.0005	0.006
			Chromium	5E-07	--	- -	--	5E-07	None Specified	0.001	- -	--	0.001
			Copper	- -	--	- -	--	- -	GS	0.001	- -	--	0.001
			Iron	- -	--	- -	--	- -	GS	0.004	- -	--	0.004
			Lead	- -	--	- -	--	- -	NA	--	- -	--	--
			Manganese	- -	--	- -	--	- -	CNS	0.001	- -	--	0.001
			Mercury	- -	--	- -	--	- -	Immune System	0.00003	- -	--	0.00003
			Nickel	- -	--	- -	--	- -	Body Weight	0.0006	- -	--	0.0006
			Selenium	- -	--	- -	--	- -	Skin, CNS	0.00002	- -	--	0.00002
			Vanadium	- -	--	- -	--	- -	Kidney	0.0003	- -	--	0.0003
			Zinc	- -	--	- -	--	- -	Blood	0.0002	- -	--	0.0002
			Chemical Total	2E-06	--	1E-07	--	2E-06		0.2	--	0.03	0.2
		Exposure Point Total						2E-06					0.2
	Exposure Medium Total							2E-06					0.2
Medium Total								2E-06					0.2
Receptor Total							Receptor Risk Total	2E-06				Receptor HI Total	0.2

TABLE 9.4.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - 2006 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Unprotected OB/OD/SF Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	All Soil Samples	1,3,5-Trinitrobenzene	- -	--	- -	--	- -	Spleen	0.000003	- -	0.0000002	0.000003
			2,4,6-Trinitrotoluene	3E-08	--	4E-09	--	3E-08	Liver	0.006	- -	0.0008	0.006
			2,4-Dinitrotoluene	1E-08	--	5E-09	--	2E-08	CNS, Liver	0.00005	- -	0.00002	0.00008
			2-Amino-4,6-Dinitrotoluene	- -	--	- -	--	- -	CNS, Liver	0.00006	- -	0.000001	0.00006
			4-Amino-2,6-Dinitrotoluene	- -	--	- -	--	- -	CNS, Liver	0.00005	- -	0.000002	0.00006
			HMX	- -	--	- -	--	- -	Liver	0.00001	- -	0.0000004	0.00001
			Nitroglycerin	7E-08	--	3E-08	--	9E-08	Blood	0.1	- -	0.05	0.2
			PETN	6E-09	--	2E-09	--	8E-09	Whole Body	0.002	- -	0.0008	0.003
			RDX	5E-07	--	3E-08	--	6E-07	Prostrate	0.005	- -	0.0003	0.005
			Tetryl	- -	--	- -	--	- -	Blood	0.00006	- -	0.00003	0.00009
			Perchlorate	- -	--	- -	--	- -	Thyroid	0.01	- -	--	0.01
			2,3,7,8-TCDD Equivalents	2E-06	--	2E-07	--	2E-06	Reproductive	0.05	- -	0.007	0.06
			Aluminum	- -	--	- -	--	- -	CNS	0.004	- -	--	0.004
			Arsenic	2E-06	--	2E-07	--	2E-06	Skin, CVS	0.01	- -	0.001	0.01
			Barium	- -	--	- -	--	- -	Kidney	0.0005	- -	--	0.0005
			Beryllium	- -	--	- -	--	- -	GS	0.0001	- -	--	0.0001
			Cadmium	- -	--	- -	--	- -	Kidney	0.009	- -	0.0008	0.01
			Chromium	1E-06	--	- -	--	1E-06	None Specified	0.002	- -	--	0.002
			Copper	- -	--	- -	--	- -	GS	0.004	- -	--	0.004
			Iron	- -	--	- -	--	- -	GS	0.008	- -	--	0.008
			Lead	- -	--	- -	--	- -	NA	--	- -	--	--
			Manganese	- -	--	- -	--	- -	CNS	0.007	- -	--	0.007
			Mercury	- -	--	- -	--	- -	Immune System	0.0002	- -	--	0.0002
			Nickel	- -	--	- -	--	- -	Body Weight	0.0006	- -	--	0.0006
			Selenium	- -	--	- -	--	- -	Skin, CNS	0.00005	- -	--	0.00005
			Silver	- -	--	- -	--	- -	Skin	0.00008	- -	--	0.00008
			Vanadium	- -	--	- -	--	- -	Kidney	0.0010	- -	--	0.0010
			Zinc	- -	--	- -	--	- -	Blood	0.0003	- -	--	0.0003
			Chemical Total	5E-06	--	5E-07	--	6E-06		0.2	--	0.06	0.3
		Exposure Point Total						6E-06					0.3
	Exposure Medium Total							6E-06					0.3
Medium Total								6E-06					0.3
Receptor Total							Receptor Risk Total	6E-06				Receptor HI Total	0.3

TABLE 9.5.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - 2006 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Protected OB Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	OB Unit	1,3,5-Trinitrobenzene	- -	--	- -	--	- -	Spleen	0.0000001	- -	0.00000000	0.0000001
			2,4-Dinitrotoluene	1E-08	--	2E-09	--	1E-08	CNS, Liver	0.00005	- -	0.000008	0.00006
			2-Amino-4,6-Dinitrotoluene	- -	--	- -	--	- -	CNS, Liver	0.000007	- -	0.00000006	0.000007
			4-Amino-2,6-Dinitrotoluene	- -	--	- -	--	- -	CNS, Liver	0.000005	- -	0.00000007	0.000005
			HMX	- -	--	- -	--	- -	Liver	0.000001	- -	0.00000001	0.000001
			Nitroglycerin	1E-07	--	2E-08	--	1E-07	Blood	0.2	- -	0.03	0.2
			RDX	7E-09	--	2E-10	--	7E-09	Prostrate	0.00006	- -	0.000001	0.00006
			Perchlorate	- -	--	- -	--	- -	Thyroid	0.000002	- -	--	0.000002
			Aluminum	- -	--	- -	--	- -	CNS	0.002	- -	--	0.002
			Arsenic	7E-07	--	3E-08	--	8E-07	Skin, CVS	0.005	- -	0.0002	0.005
			Barium	- -	--	- -	--	- -	Kidney	0.0002	- -	--	0.0002
			Beryllium	- -	--	- -	--	- -	GS	0.00006	- -	--	0.00006
			Cadmium	- -	--	- -	--	- -	Kidney	0.0009	- -	0.00003	0.0009
			Chromium	4E-07	--	- -	--	4E-07	None Specified	0.0008	- -	--	0.0008
			Copper	- -	--	- -	--	- -	GS	0.0008	- -	--	0.0008
			Iron	- -	--	- -	--	- -	GS	0.003	- -	--	0.003
			Lead	- -	--	- -	--	- -	NA	--	- -	--	--
			Manganese	- -	--	- -	--	- -	CNS	0.003	- -	--	0.003
			Mercury	- -	--	- -	--	- -	Immune System	0.00008	- -	--	0.00008
			Nickel	- -	--	- -	--	- -	Body Weight	0.0001	- -	--	0.0001
			Selenium	- -	--	- -	--	- -	Skin, CNS	0.00002	- -	--	0.00002
			Silver	- -	--	- -	--	- -	Skin	0.00002	- -	--	0.00002
			Vanadium	- -	--	- -	--	- -	Kidney	0.0005	- -	--	0.0005
			Zinc	- -	--	- -	--	- -	Blood	0.00008	- -	--	0.00008
			Chemical Total	1E-06	--	5E-08	--	1E-06		0.2	--	0.03	0.2
		Exposure Point Total						1E-06					0.2
	Exposure Medium Total							1E-06					0.2
Medium Total								1E-06					0.2
Receptor Total							Receptor Risk Total	1E-06				Receptor HI Total	0.2

TABLE 9.6.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - 2006 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Protected OD Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	OD Unit	1,3,5-Trinitrobenzene	- -	--	- -	--	- -	Spleen	0.000002	- -	0.00000006	0.000002
			2,4,6-Trinitrotoluene	3E-08	--	1E-09	--	3E-08	Liver	0.005	- -	0.0003	0.006
			2-Amino-4,6-Dinitrotoluene	- -	--	- -	--	- -	CNS, Liver	0.00007	- -	0.0000006	0.00007
			4-Amino-2,6-Dinitrotoluene	- -	--	- -	--	- -	CNS, Liver	0.00004	- -	0.0000005	0.00004
			HMX	- -	--	- -	--	- -	Liver	0.00002	- -	0.0000002	0.00002
			RDX	5E-07	--	1E-08	--	5E-07	Prostrate	0.005	- -	0.0001	0.005
			Tetryl	- -	--	- -	--	- -	Blood	0.00004	- -	0.000006	0.00005
			Perchlorate	- -	--	- -	--	- -	Thyroid	0.01	- -	--	0.01
			Aluminum	- -	--	- -	--	- -	CNS	0.0008	- -	--	0.0008
			Arsenic	8E-07	--	4E-08	--	8E-07	Skin, CVS	0.005	- -	0.0002	0.005
			Barium	- -	--	- -	--	- -	Kidney	0.0001	- -	--	0.0001
			Beryllium	- -	--	- -	--	- -	GS	0.00004	- -	--	0.00004
			Cadmium	- -	--	- -	--	- -	Kidney	0.004	- -	0.0001	0.004
			Chromium	4E-07	--	- -	--	4E-07	None Specified	0.0008	- -	--	0.0008
			Copper	- -	--	- -	--	- -	GS	0.003	- -	--	0.003
			Iron	- -	--	- -	--	- -	GS	0.006	- -	--	0.006
			Lead	- -	--	- -	--	- -	NA	--	- -	--	--
			Manganese	- -	--	- -	--	- -	CNS	0.002	- -	--	0.002
			Mercury	- -	--	- -	--	- -	Immune System	0.0001	- -	--	0.0001
			Nickel	- -	--	- -	--	- -	Body Weight	0.00009	- -	--	0.00009
			Vanadium	- -	--	- -	--	- -	Kidney	0.0004	- -	--	0.0004
			Zinc	- -	--	- -	--	- -	Blood	0.0001	- -	--	0.0001
			Chemical Total	2E-06	--	5E-08	--	2E-06		0.04	--	0.0007	0.04
		Exposure Point Total						2E-06					0.04
	Exposure Medium Total							2E-06					0.04
Medium Total								2E-06					0.04
Receptor Total							Receptor Risk Total	2E-06				Receptor HI Total	0.04

TABLE 9.7.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - 2006 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Protected SF Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Static Firing Rocket Silos	1,3,5-Trinitrobenzene	- -	--	- -	--	- -	Spleen	0.0000009	- -	0.00000003	0.0000009
			2,4,6-Trinitrotoluene	3E-10	--	1E-11	--	3E-10	Liver	0.00005	- -	0.000002	0.00005
			2,4-Dinitrotoluene	7E-09	--	1E-09	--	8E-09	CNS, Liver	0.00003	- -	0.000005	0.00004
			2-Amino-4,6-Dinitrotoluene	- -	--	- -	--	- -	CNS, Liver	0.00002	- -	0.0000002	0.00002
			4-Amino-2,6-Dinitrotoluene	- -	--	- -	--	- -	CNS, Liver	0.00002	- -	0.0000003	0.00002
			HMX	- -	--	- -	--	- -	Liver	0.000001	- -	0.00000001	0.000001
			Nitroglycerin	3E-08	--	5E-09	--	4E-08	Blood	0.05	- -	0.008	0.06
			PETN	2E-09	--	2E-10	--	2E-09	Whole Body	0.0006	- -	0.00008	0.0006
			RDX	3E-09	--	6E-11	--	3E-09	Prostrate	0.00002	- -	0.0000005	0.00002
			Perchlorate	- -	--	- -	--	- -	Thyroid	0.08	- -	--	0.08
			2,3,7,8-TCDD Equivalents	5E-07	--	2E-08	--	5E-07	Reproductive	0.01	- -	0.0007	0.02
			Aluminum	- -	--	- -	--	- -	CNS	0.0008	- -	--	0.0008
			Arsenic	5E-07	--	2E-08	--	5E-07	Skin, CVS	0.003	- -	0.0001	0.003
			Barium	- -	--	- -	--	- -	Kidney	0.0001	- -	--	0.0001
			Beryllium	- -	--	- -	--	- -	GS	0.00002	- -	--	0.00002
			Cadmium	- -	--	- -	--	- -	Kidney	0.006	- -	0.0002	0.006
			Chromium	5E-07	--	- -	--	5E-07	None Specified	0.001	- -	--	0.001
			Copper	- -	--	- -	--	- -	GS	0.001	- -	--	0.001
			Iron	- -	--	- -	--	- -	GS	0.004	- -	--	0.004
			Lead	- -	--	- -	--	- -	NA	--	- -	--	--
			Manganese	- -	--	- -	--	- -	CNS	0.001	- -	--	0.001
			Mercury	- -	--	- -	--	- -	Immune System	0.00003	- -	--	0.00003
			Nickel	- -	--	- -	--	- -	Body Weight	0.0006	- -	--	0.0006
			Selenium	- -	--	- -	--	- -	Skin, CNS	0.00002	- -	--	0.00002
			Vanadium	- -	--	- -	--	- -	Kidney	0.0003	- -	--	0.0003
			Zinc	- -	--	- -	--	- -	Blood	0.0002	- -	--	0.0002
			Chemical Total	2E-06	--	5E-08	--	2E-06		0.2	--	0.009	0.2
		Exposure Point Total						2E-06					0.2
	Exposure Medium Total							2E-06					0.2
Medium Total								2E-06					0.2
Receptor Total							Receptor Risk Total	2E-06				Receptor HI Total	0.2

TABLE 9.8.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - 2006 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Protected OB/OD/SF Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	All Soil Samples	1,3,5-Trinitrobenzene	- -	--	- -	--	- -	Spleen	0.000003	- -	0.00000008	0.000003
			2,4,6-Trinitrotoluene	3E-08	--	1E-09	--	3E-08	Liver	0.006	- -	0.0003	0.006
			2,4-Dinitrotoluene	1E-08	--	2E-09	--	1E-08	CNS, Liver	0.00005	- -	0.000008	0.00006
			2-Amino-4,6-Dinitrotoluene	- -	--	- -	--	- -	CNS, Liver	0.00006	- -	0.0000005	0.00006
			4-Amino-2,6-Dinitrotoluene	- -	--	- -	--	- -	CNS, Liver	0.00005	- -	0.0000007	0.00005
			HMX	- -	--	- -	--	- -	Liver	0.00001	- -	0.0000001	0.00001
			Nitroglycerin	7E-08	--	1E-08	--	8E-08	Blood	0.1	- -	0.02	0.1
			PETN	6E-09	--	8E-10	--	6E-09	Whole Body	0.002	- -	0.0003	0.002
			RDX	5E-07	--	1E-08	--	6E-07	Prostrate	0.005	- -	0.0001	0.005
			Tetryl	- -	--	- -	--	- -	Blood	0.00006	- -	0.000010	0.00007
			Perchlorate	- -	--	- -	--	- -	Thyroid	0.01	- -	--	0.01
			2,3,7,8-TCDD Equivalents	2E-06	--	8E-08	--	2E-06	Reproductive	0.05	- -	0.002	0.05
			Aluminum	- -	--	- -	--	- -	CNS	0.004	- -	--	0.004
			Arsenic	2E-06	--	8E-08	--	2E-06	Skin, CVS	0.01	- -	0.0005	0.01
			Barium	- -	--	- -	--	- -	Kidney	0.0005	- -	--	0.0005
			Beryllium	- -	--	- -	--	- -	GS	0.0001	- -	--	0.0001
			Cadmium	- -	--	- -	--	- -	Kidney	0.009	- -	0.0003	0.010
			Chromium	1E-06	--	- -	--	1E-06	None Specified	0.002	- -	--	0.002
			Copper	- -	--	- -	--	- -	GS	0.004	- -	--	0.004
			Iron	- -	--	- -	--	- -	GS	0.008	- -	--	0.008
			Lead	- -	--	- -	--	- -	NA	--	- -	--	--
			Manganese	- -	--	- -	--	- -	CNS	0.007	- -	--	0.007
			Mercury	- -	--	- -	--	- -	Immune System	0.0002	- -	--	0.0002
			Nickel	- -	--	- -	--	- -	Body Weight	0.0006	- -	--	0.0006
			Selenium	- -	--	- -	--	- -	Skin, CNS	0.00005	- -	--	0.00005
			Silver	- -	--	- -	--	- -	Skin	0.00008	- -	--	0.00008
			Vanadium	- -	--	- -	--	- -	Kidney	0.0010	- -	--	0.0010
			Zinc	- -	--	- -	--	- -	Blood	0.0003	- -	--	0.0003
			Chemical Total	5E-06	--	2E-07	--	5E-06		0.2	--	0.02	0.2
		Exposure Point Total						5E-06					0.2
	Exposure Medium Total							5E-06					0.2
Medium Total								5E-06					0.2
Receptor Total							Receptor Risk Total	5E-06				Receptor HI Total	0.2

TABLE 9.9.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - 2006 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Outdoor Worker - OB Unit
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	OB Unit	1,3,5-Trinitrobenzene	- -	--	- -	--	- -	Spleen	0.0000004	- -	0.00000003	0.0000005
			2,4-Dinitrotoluene	5E-08	--	2E-08	--	7E-08	CNS, Liver	0.0002	- -	0.00009	0.0003
			2-Amino-4,6-Dinitrotoluene	- -	--	- -	--	- -	CNS, Liver	0.00003	- -	0.0000007	0.00003
			4-Amino-2,6-Dinitrotoluene	- -	--	- -	--	- -	CNS, Liver	0.00002	- -	0.0000008	0.00002
			HMX	- -	--	- -	--	- -	Liver	0.000005	- -	0.0000001	0.000005
			Nitroglycerin	4E-07	--	2E-07	--	6E-07	Blood	0.7	- -	0.3	1
			RDX	3E-08	--	2E-09	--	3E-08	Prostrate	0.0002	- -	0.00002	0.0003
			Perchlorate	- -	--	- -	--	- -	Thyroid	0.000010	- -	--	0.000010
			Aluminum	- -	--	- -	--	- -	CNS	0.007	- -	--	0.007
			Arsenic	3E-06	--	4E-07	--	4E-06	Skin, CVS	0.02	- -	0.002	0.02
			Barium	- -	--	- -	--	- -	Kidney	0.0009	- -	--	0.0009
			Beryllium	- -	--	- -	--	- -	GS	0.0002	- -	--	0.0002
			Cadmium	- -	--	- -	--	- -	Kidney	0.004	- -	0.0003	0.004
			Chromium	2E-06	--	- -	--	2E-06	None Specified	0.003	- -	--	0.003
			Copper	- -	--	- -	--	- -	GS	0.003	- -	--	0.003
			Iron	- -	--	- -	--	- -	GS	0.01	- -	--	0.01
			Lead	- -	--	- -	--	- -	NA	--	- -	--	--
			Manganese	- -	--	- -	--	- -	CNS	0.01	- -	--	0.01
			Mercury	- -	--	- -	--	- -	Immune System	0.0003	- -	--	0.0003
			Nickel	- -	--	- -	--	- -	Body Weight	0.0005	- -	--	0.0005
			Selenium	- -	--	- -	--	- -	Skin, CNS	0.00009	- -	--	0.00009
			Silver	- -	--	- -	--	- -	Skin	0.00009	- -	--	0.00009
			Vanadium	- -	--	- -	--	- -	Kidney	0.002	- -	--	0.002
			Zinc	- -	--	- -	--	- -	Blood	0.0003	- -	--	0.0003
			Chemical Total	5E-06	--	6E-07	--	6E-06		0.8	--	0.3	1
		Exposure Point Total						6E-06					1
	Exposure Medium Total							6E-06					1
Medium Total								6E-06					1
Receptor Total							Receptor Risk Total	6E-06				Receptor HI Total	1

TABLE 9.10.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - 2006 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Outdoor Worker - OD Unit
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	OD Unit	1,3,5-Trinitrobenzene	- -	--	- -	--	- -	Spleen	0.000004	- -	0.0000004	0.000005
			2,4,6-Trinitrotoluene	6E-08	--	8E-09	--	7E-08	Liver	0.01	- -	0.002	0.01
			2-Amino-4,6-Dinitrotoluene	- -	--	- -	--	- -	CNS, Liver	0.0001	- -	0.000004	0.0002
			4-Amino-2,6-Dinitrotoluene	- -	--	- -	--	- -	CNS, Liver	0.00008	- -	0.000003	0.00009
			HMX	- -	--	- -	--	- -	Liver	0.00005	- -	0.000001	0.00005
			RDX	1E-06	--	7E-08	--	1E-06	Prostrate	0.009	- -	0.0006	0.01
			Tetryl	- -	--	- -	--	- -	Blood	0.00009	- -	0.00004	0.0001
			Perchlorate	- -	--	- -	--	- -	Thyroid	0.02	- -	--	0.02
			Aluminum	- -	--	- -	--	- -	CNS	0.002	- -	--	0.002
			Arsenic	2E-06	--	2E-07	--	2E-06	Skin, CVS	0.01	- -	0.001	0.01
			Barium	- -	--	- -	--	- -	Kidney	0.0002	- -	--	0.0002
			Beryllium	- -	--	- -	--	- -	GS	0.00009	- -	--	0.00009
			Cadmium	- -	--	- -	--	- -	Kidney	0.007	- -	0.0006	0.008
			Chromium	9E-07	--	- -	--	9E-07	None Specified	0.002	- -	--	0.002
			Copper	- -	--	- -	--	- -	GS	0.005	- -	--	0.005
			Iron	- -	--	- -	--	- -	GS	0.01	- -	--	0.01
			Lead	- -	--	- -	--	- -	NA	--	- -	--	--
			Manganese	- -	--	- -	--	- -	CNS	0.004	- -	--	0.004
			Mercury	- -	--	- -	--	- -	Immune System	0.0002	- -	--	0.0002
			Nickel	- -	--	- -	--	- -	Body Weight	0.0002	- -	--	0.0002
			Vanadium	- -	--	- -	--	- -	Kidney	0.0009	- -	--	0.0009
			Zinc	- -	--	- -	--	- -	Blood	0.0003	- -	--	0.0003
			Chemical Total	4E-06	--	3E-07	--	4E-06		0.09	--	0.004	0.09
		Exposure Point Total						4E-06					0.09
	Exposure Medium Total							4E-06					0.09
Medium Total								4E-06					0.09
Receptor Total							Receptor Risk Total	4E-06				Receptor HI Total	0.09

TABLE 9.11.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - 2006 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Outdoor Worker - SF Unit
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Static Firing Rocket Silos	1,3,5-Trinitrobenzene	- -	--	- -	--	- -	Spleen	0.000004	- -	0.0000003	0.000004
			2,4,6-Trinitrotoluene	1E-09	--	2E-10	--	1E-09	Liver	0.0002	- -	0.00003	0.0002
			2,4-Dinitrotoluene	3E-08	--	1E-08	--	4E-08	CNS, Liver	0.0001	- -	0.00006	0.0002
			2-Amino-4,6-Dinitrotoluene	- -	--	- -	--	- -	CNS, Liver	0.00009	- -	0.000002	0.00009
			4-Amino-2,6-Dinitrotoluene	- -	--	- -	--	- -	CNS, Liver	0.00009	- -	0.000004	0.00010
			HMX	- -	--	- -	--	- -	Liver	0.000005	- -	0.0000001	0.000005
			Nitroglycerin	1E-07	--	6E-08	--	2E-07	Blood	0.2	- -	0.10	0.3
			PETN	7E-09	--	3E-09	--	9E-09	Whole Body	0.002	- -	0.0010	0.003
			RDX	1E-08	--	7E-10	--	1E-08	Prostrate	0.00009	- -	0.000006	0.0001
			Perchlorate	- -	--	- -	--	- -	Thyroid	0.3	- -	--	0.3
			2,3,7,8-TCDD Equivalents	2E-06	--	3E-07	--	2E-06	Reproductive	0.06	- -	0.008	0.07
			Aluminum	- -	--	- -	--	- -	CNS	0.003	- -	--	0.003
			Arsenic	2E-06	--	3E-07	--	2E-06	Skin, CVS	0.01	- -	0.002	0.01
			Barium	- -	--	- -	--	- -	Kidney	0.0004	- -	--	0.0004
			Beryllium	- -	--	- -	--	- -	GS	0.00009	- -	--	0.00009
			Cadmium	- -	--	- -	--	- -	Kidney	0.02	- -	0.002	0.03
			Chromium	2E-06	--	- -	--	2E-06	None Specified	0.004	- -	--	0.004
			Copper	- -	--	- -	--	- -	GS	0.005	- -	--	0.005
			Iron	- -	--	- -	--	- -	GS	0.02	- -	--	0.02
			Lead	- -	--	- -	--	- -	NA	--	- -	--	--
			Manganese	- -	--	- -	--	- -	CNS	0.005	- -	--	0.005
			Mercury	- -	--	- -	--	- -	Immune System	0.0001	- -	--	0.0001
			Nickel	- -	--	- -	--	- -	Body Weight	0.003	- -	--	0.003
			Selenium	- -	--	- -	--	- -	Skin, CNS	0.00006	- -	--	0.00006
			Vanadium	- -	--	- -	--	- -	Kidney	0.001	- -	--	0.001
			Zinc	- -	--	- -	--	- -	Blood	0.0007	- -	--	0.0007
			Chemical Total	7E-06	--	6E-07	--	7E-06		0.7	--	0.1	0.8
		Exposure Point Total						7E-06					0.8
	Exposure Medium Total							7E-06					0.8
Medium Total								7E-06					0.8
Receptor Total							Receptor Risk Total	7E-06				Receptor HI Total	0.8

TABLE 9.12.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - 2006 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Outdoor Worker - Entire Site
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	All Soil Samples	1,3,5-Trinitrobenzene	- -	--	- -	--	- -	Spleen	0.000003	- -	0.0000003	0.000003
			2,4,6-Trinitrotoluene	4E-08	--	5E-09	--	4E-08	Liver	0.007	- -	0.0009	0.008
			2,4-Dinitrotoluene	1E-08	--	6E-09	--	2E-08	CNS, Liver	0.00006	- -	0.00003	0.00009
			2-Amino-4,6-Dinitrotoluene	- -	--	- -	--	- -	CNS, Liver	0.00007	- -	0.000002	0.00007
			4-Amino-2,6-Dinitrotoluene	- -	--	- -	--	- -	CNS, Liver	0.00006	- -	0.000002	0.00007
			HMX	- -	--	- -	--	- -	Liver	0.00002	- -	0.0000004	0.00002
			Nitroglycerin	8E-08	--	3E-08	--	1E-07	Blood	0.1	- -	0.06	0.2
			PETN	7E-09	--	3E-09	--	9E-09	Whole Body	0.002	- -	0.0010	0.003
			RDX	7E-07	--	4E-08	--	7E-07	Prostrate	0.006	- -	0.0004	0.006
			Tetryl	- -	--	- -	--	- -	Blood	0.00008	- -	0.00003	0.0001
			Perchlorate	- -	--	- -	--	- -	Thyroid	0.01	- -	--	0.01
			2,3,7,8-TCDD Equivalents	2E-06	--	3E-07	--	2E-06	Reproductive	0.06	- -	0.008	0.07
			Aluminum	- -	--	- -	--	- -	CNS	0.004	- -	--	0.004
			Arsenic	2E-06	--	3E-07	--	2E-06	Skin, CVS	0.01	- -	0.002	0.01
			Barium	- -	--	- -	--	- -	Kidney	0.0005	- -	--	0.0005
			Beryllium	- -	--	- -	--	- -	GS	0.0001	- -	--	0.0001
			Cadmium	- -	--	- -	--	- -	Kidney	0.01	- -	0.0010	0.01
			Chromium	1E-06	--	- -	--	1E-06	None Specified	0.003	- -	--	0.003
			Copper	- -	--	- -	--	- -	GS	0.004	- -	--	0.004
			Iron	- -	--	- -	--	- -	GS	0.009	- -	--	0.009
			Lead	- -	--	- -	--	- -	NA	--	- -	--	--
			Manganese	- -	--	- -	--	- -	CNS	0.008	- -	--	0.008
			Mercury	- -	--	- -	--	- -	Immune System	0.0002	- -	--	0.0002
			Nickel	- -	--	- -	--	- -	Body Weight	0.0007	- -	--	0.0007
			Selenium	- -	--	- -	--	- -	Skin, CNS	0.00007	- -	--	0.00007
			Silver	- -	--	- -	--	- -	Skin	0.00009	- -	--	0.00009
			Vanadium	- -	--	- -	--	- -	Kidney	0.001	- -	--	0.001
			Zinc	- -	--	- -	--	- -	Blood	0.0004	- -	--	0.0004
			Chemical Total	6E-06	--	6E-07	--	7E-06		0.3	--	0.07	0.3
		Exposure Point Total						7E-06					0.3
	Exposure Medium Total							7E-06					0.3
Medium Total								7E-06					0.3
Receptor Total							Receptor Risk Total	7E-06				Receptor HI Total	0.3

2007 SURFACE SOIL SAMPLES

TABLE 9.13.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - 2007 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Unprotected OB Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	OB Unit	2,4,6-Trinitrotoluene	6E-10	--	8E-11	--	7E-10	Liver	0.0001	- -	0.00002	0.0001
			2,4-Dinitrotoluene	5E-07	--	2E-07	--	7E-07	CNS, Liver	0.002	- -	0.0010	0.003
			2,6-Dinitrotoluene	9E-08	--	4E-08	--	1E-07	Spleen	0.0006	- -	0.0002	0.0008
			4-Amino-2,6-Dinitrotoluene	- -	--	- -	--	- -	CNS, Liver	0.000009	- -	0.0000004	0.000010
			HMX	- -	--	- -	--	- -	Liver	0.000001	- -	0.00000003	0.000001
			RDX	1E-08	--	7E-10	--	1E-08	Prostrate	0.00010	- -	0.000006	0.0001
			2,3,7,8-TCDD Equivalents	4E-07	--	5E-08	--	4E-07	Reproductive	0.01	- -	0.001	0.01
			Perchlorate	- -	--	- -	--	- -	Thyroid	0.0001	- -	--	0.0001
			Aluminum	- -	--	- -	--	- -	CNS	0.003	- -	--	0.003
			Arsenic	8E-07	--	1E-07	--	9E-07	Skin, CVS	0.005	- -	0.0006	0.005
			Barium	- -	--	- -	--	- -	Kidney	0.0003	- -	--	0.0003
			Beryllium	- -	--	- -	--	- -	GS	0.00006	- -	--	0.00006
			Cadmium	- -	--	- -	--	- -	Kidney	0.008	- -	0.0007	0.008
			Chromium	2E-06	--	- -	--	2E-06	None Specified	0.004	- -	--	0.004
			Copper	- -	--	- -	--	- -	GS	0.002	- -	--	0.002
			Iron	- -	--	- -	--	- -	GS	0.004	- -	--	0.004
			Lead	- -	--	- -	--	- -	NA	--	- -	--	--
			Manganese	- -	--	- -	--	- -	CNS	0.007	- -	--	0.007
			Mercury	- -	--	- -	--	- -	Immune System	0.00003	- -	--	0.00003
			Nickel	- -	--	- -	--	- -	Body Weight	0.0002	- -	--	0.0002
			Silver	- -	--	- -	--	- -	Skin	0.00004	- -	--	0.00004
			Vanadium	- -	--	- -	--	- -	Kidney	0.0009	- -	--	0.0009
			Zinc	- -	--	- -	--	- -	Blood	0.0002	- -	--	0.0002
			Chemical Total	4E-06	--	4E-07	--	4E-06		0.05	--	0.004	0.05
		Exposure Point Total						4E-06					0.05
	Exposure Medium Total							4E-06					0.05
Medium Total								4E-06					0.05
Receptor Total							Receptor Risk Total	4E-06				Receptor HI Total	0.05

TABLE 9.14.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - 2007 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Unprotected OD Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	OD Unit	1,3,5-Trinitrobenzene	- -	--	- -	--	- -	Spleen	0.000003	- -	0.0000003	0.000004
			1,3-Dinitrobenzene	- -	--	- -	--	- -	Spleen	0.0002	- -	0.0001	0.0003
			2,4,6-Trinitrotoluene	2E-08	--	2E-09	--	2E-08	Liver	0.003	- -	0.0004	0.004
			2,4-Dinitrotoluene	4E-09	--	2E-09	--	5E-09	CNS, Liver	0.00002	- -	0.000007	0.00002
			2-Amino-4,6-Dinitrotoluene	- -	--	- -	--	- -	CNS, Liver	0.00005	- -	0.000001	0.00005
			4-Amino-2,6-Dinitrotoluene	- -	--	- -	--	- -	CNS, Liver	0.00003	- -	0.000001	0.00003
			HMX	- -	--	- -	--	- -	Liver	0.000006	- -	0.0000001	0.000006
			Nitroglycerin	7E-09	--	3E-09	--	1E-08	Blood	0.01	- -	0.005	0.02
			RDX	1E-07	--	7E-09	--	1E-07	Prostrate	0.0009	- -	0.00006	0.0009
			Tetryl	- -	--	- -	--	- -	Blood	0.002	- -	0.001	0.003
			Perchlorate	- -	--	- -	--	- -	Thyroid	0.01	- -	--	0.01
			Aluminum	- -	--	- -	--	- -	CNS	0.001	- -	--	0.001
			Arsenic	9E-07	--	1E-07	--	1E-06	Skin, CVS	0.005	- -	0.0007	0.006
			Barium	- -	--	- -	--	- -	Kidney	0.0002	- -	--	0.0002
			Beryllium	- -	--	- -	--	- -	GS	0.00004	- -	--	0.00004
			Cadmium	- -	--	- -	--	- -	Kidney	0.005	- -	0.0004	0.005
			Chromium	3E-06	--	- -	--	3E-06	None Specified	0.006	- -	--	0.006
			Copper	- -	--	- -	--	- -	GS	0.001	- -	--	0.001
			Iron	- -	--	- -	--	- -	GS	0.004	- -	--	0.004
			Lead	- -	--	- -	--	- -	NA	--	- -	--	--
			Manganese	- -	--	- -	--	- -	CNS	0.002	- -	--	0.002
			Mercury	- -	--	- -	--	- -	Immune System	0.0001	- -	--	0.0001
			Nickel	- -	--	- -	--	- -	Body Weight	0.0005	- -	--	0.0005
			Silver	- -	--	- -	--	- -	Skin	0.0002	- -	--	0.0002
			Vanadium	- -	--	- -	--	- -	Kidney	0.0008	- -	--	0.0008
			Zinc	- -	--	- -	--	- -	Blood	0.001	- -	--	0.001
			Chemical Total	4E-06	--	1E-07	--	4E-06		0.06	--	0.007	0.07
		Exposure Point Total						4E-06					0.07
	Exposure Medium Total							4E-06					0.07
Medium Total								4E-06					0.07
Receptor Total							Receptor Risk Total	4E-06				Receptor HI Total	0.07

TABLE 9.15.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - 2007 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Unprotected OB/OD/SF Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	All Soil Samples	1,3,5-Trinitrobenzene	- -	--	- -	--	- -	Spleen	0.000006	- -	0.0000005	0.000006
			1,3-Dinitrobenzene	- -	--	- -	--	- -	Spleen	0.0008	- -	0.0003	0.001
			2,4,6-Trinitrotoluene	3E-08	--	4E-09	--	4E-08	Liver	0.006	- -	0.0008	0.007
			2,4-Dinitrotoluene	4E-07	--	2E-07	--	6E-07	CNS, Liver	0.002	- -	0.0008	0.003
			2,6-Dinitrotoluene	3E-07	--	1E-07	--	5E-07	Spleen	0.002	- -	0.0009	0.003
			2-Amino-4,6-Dinitrotoluene	- -	--	- -	--	- -	CNS, Liver	0.00008	- -	0.000002	0.00008
			4-Amino-2,6-Dinitrotoluene	- -	--	- -	--	- -	CNS, Liver	0.00004	- -	0.000002	0.00004
			HMX	- -	--	- -	--	- -	Liver	0.00001	- -	0.0000003	0.00001
			Nitroglycerin	1E-08	--	5E-09	--	2E-08	Blood	0.02	- -	0.008	0.03
			RDX	2E-07	--	1E-08	--	2E-07	Prostrate	0.001	- -	0.00008	0.001
			Tetryl	- -	--	- -	--	- -	Blood	0.003	- -	0.001	0.005
			2,3,7,8-TCDD Equivalents	1E-06	--	2E-07	--	1E-06	Reproductive	0.04	- -	0.005	0.04
			Perchlorate	- -	--	- -	--	- -	Thyroid	0.009	- -	--	0.009
			Aluminum	- -	--	- -	--	- -	CNS	0.005	- -	--	0.005
			Arsenic	2E-06	--	2E-07	--	2E-06	Skin, CVS	0.01	- -	0.001	0.01
			Barium	- -	--	- -	--	- -	Kidney	0.0006	- -	--	0.0006
			Beryllium	- -	--	- -	--	- -	GS	0.0001	- -	--	0.0001
			Cadmium	- -	--	- -	--	- -	Kidney	0.01	- -	0.001	0.01
			Chromium	6E-06	--	- -	--	6E-06	None Specified	0.01	- -	--	0.01
			Copper	- -	--	- -	--	- -	GS	0.003	- -	--	0.003
			Iron	- -	--	- -	--	- -	GS	0.009	- -	--	0.009
			Lead	- -	--	- -	--	- -	NA	--	- -	--	--
			Manganese	- -	--	- -	--	- -	CNS	0.01	- -	--	0.01
			Mercury	- -	--	- -	--	- -	Immune System	0.0002	- -	--	0.0002
			Nickel	- -	--	- -	--	- -	Body Weight	0.0007	- -	--	0.0007
			Silver	- -	--	- -	--	- -	Skin	0.0002	- -	--	0.0002
			Vanadium	- -	--	- -	--	- -	Kidney	0.002	- -	--	0.002
			Zinc	- -	--	- -	--	- -	Blood	0.001	- -	--	0.001
			Chemical Total	1E-05	--	7E-07	--	1E-05		0.1	--	0.02	0.2
		Exposure Point Total						1E-05					0.2
	Exposure Medium Total							1E-05					0.2
Medium Total								1E-05					0.2
Receptor Total							Receptor Risk Total	1E-05				Receptor HI Total	0.2

TABLE 9.16.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - 2007 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Protected OB Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	OB Unit	2,4,6-Trinitrotoluene	6E-10	--	3E-11	--	6E-10	Liver	0.0001	- -	0.000005	0.0001
			2,4-Dinitrotoluene	5E-07	--	7E-08	--	6E-07	CNS, Liver	0.002	- -	0.0003	0.003
			2,6-Dinitrotoluene	9E-08	--	1E-08	--	1E-07	Spleen	0.0006	- -	0.00009	0.0007
			4-Amino-2,6-Dinitrotoluene	- -	--	- -	--	- -	CNS, Liver	0.00001	- -	0.0000001	0.00001
			HMX	- -	--	- -	--	- -	Liver	0.000001	- -	0.00000001	0.000001
			RDX	1E-08	--	3E-10	--	1E-08	Prostrate	0.0001	- -	0.000002	0.0001
			2,3,7,8-TCDD Equivalents	4E-07	--	2E-08	--	4E-07	Reproductive	0.01	- -	0.0005	0.01
			Perchlorate	- -	--	- -	--	- -	Thyroid	0.0001	- -	--	0.0001
			Aluminum	- -	--	- -	--	- -	CNS	0.003	- -	--	0.003
			Arsenic	8E-07	--	3E-08	--	8E-07	Skin, CVS	0.005	- -	0.0002	0.005
			Barium	- -	--	- -	--	- -	Kidney	0.0003	- -	--	0.0003
			Beryllium	- -	--	- -	--	- -	GS	0.00006	- -	--	0.00006
			Cadmium	- -	--	- -	--	- -	Kidney	0.008	- -	0.0002	0.008
			Chromium	2E-06	--	- -	--	2E-06	None Specified	0.004	- -	--	0.004
			Copper	- -	--	- -	--	- -	GS	0.002	- -	--	0.002
			Iron	- -	--	- -	--	- -	GS	0.004	- -	--	0.004
			Lead	- -	--	- -	--	- -	NA	--	- -	--	--
			Manganese	- -	--	- -	--	- -	CNS	0.007	- -	--	0.007
			Mercury	- -	--	- -	--	- -	Immune System	0.00003	- -	--	0.00003
			Nickel	- -	--	- -	--	- -	Body Weight	0.0002	- -	--	0.0002
			Silver	- -	--	- -	--	- -	Skin	0.00004	- -	--	0.00004
			Vanadium	- -	--	- -	--	- -	Kidney	0.001	- -	--	0.001
			Zinc	- -	--	- -	--	- -	Blood	0.0002	- -	--	0.0002
			Chemical Total	4E-06	--	1E-07	--	4E-06		0.05	--	0.001	0.05
		Exposure Point Total						4E-06					0.05
	Exposure Medium Total							4E-06					0.05
Medium Total								4E-06					0.05
Receptor Total							Receptor Risk Total	4E-06				Receptor HI Total	0.05

TABLE 9.17.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - 2007 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Protected OD Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	OD Unit	1,3,5-Trinitrobenzene	- -	--	- -	--	- -	Spleen	0.000003	- -	0.00000010	0.000004
			1,3-Dinitrobenzene	- -	--	- -	--	- -	Spleen	0.0002	- -	0.00004	0.0003
			2,4,6-Trinitrotoluene	2E-08	--	9E-10	--	2E-08	Liver	0.003	- -	0.0002	0.003
			2,4-Dinitrotoluene	4E-09	--	6E-10	--	4E-09	CNS, Liver	0.00002	- -	0.000003	0.00002
			2-Amino-4,6-Dinitrotoluene	- -	--	- -	--	- -	CNS, Liver	0.00005	- -	0.0000005	0.00005
			4-Amino-2,6-Dinitrotoluene	- -	--	- -	--	- -	CNS, Liver	0.00003	- -	0.0000004	0.00003
			HMX	- -	--	- -	--	- -	Liver	0.000006	- -	0.00000005	0.000006
			Nitroglycerin	7E-09	--	1E-09	--	8E-09	Blood	0.01	- -	0.002	0.01
			RDX	1E-07	--	2E-09	--	1E-07	Prostrate	0.0009	- -	0.00002	0.0009
			Tetryl	- -	--	- -	--	- -	Blood	0.002	- -	0.0004	0.003
			Perchlorate	- -	--	- -	--	- -	Thyroid	0.01	- -	--	0.01
			Aluminum	- -	--	- -	--	- -	CNS	0.001	- -	--	0.001
			Arsenic	9E-07	--	4E-08	--	9E-07	Skin, CVS	0.005	- -	0.0002	0.006
			Barium	- -	--	- -	--	- -	Kidney	0.0002	- -	--	0.0002
			Beryllium	- -	--	- -	--	- -	GS	0.00004	- -	--	0.00004
			Cadmium	- -	--	- -	--	- -	Kidney	0.005	- -	0.0002	0.005
			Chromium	3E-06	--	- -	--	3E-06	None Specified	0.006	- -	--	0.006
			Copper	- -	--	- -	--	- -	GS	0.001	- -	--	0.001
			Iron	- -	--	- -	--	- -	GS	0.004	- -	--	0.004
			Lead	- -	--	- -	--	- -	NA	--	- -	--	--
			Manganese	- -	--	- -	--	- -	CNS	0.002	- -	--	0.002
			Mercury	- -	--	- -	--	- -	Immune System	0.0001	- -	--	0.0001
			Nickel	- -	--	- -	--	- -	Body Weight	0.0005	- -	--	0.0005
			Silver	- -	--	- -	--	- -	Skin	0.0002	- -	--	0.0002
			Vanadium	- -	--	- -	--	- -	Kidney	0.0008	- -	--	0.0008
			Zinc	- -	--	- -	--	- -	Blood	0.001	- -	--	0.001
			Chemical Total	4E-06	--	4E-08	--	4E-06		0.06	--	0.003	0.06
		Exposure Point Total						4E-06					0.06
	Exposure Medium Total							4E-06					0.06
Medium Total								4E-06					0.06
Receptor Total							Receptor Risk Total	4E-06				Receptor HI Total	0.06

TABLE 9.18.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - 2007 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Protected OB/OD/SF Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	All Soil Samples	1,3,5-Trinitrobenzene	- -	--	- -	--	- -	Spleen	0.000006	- -	0.0000002	0.000006
			1,3-Dinitrobenzene	- -	--	- -	--	- -	Spleen	0.0008	- -	0.0001	0.0009
			2,4,6-Trinitrotoluene	3E-08	--	2E-09	--	3E-08	Liver	0.006	- -	0.0003	0.006
			2,4-Dinitrotoluene	4E-07	--	6E-08	--	4E-07	CNS, Liver	0.002	- -	0.0003	0.002
			2,6-Dinitrotoluene	3E-07	--	5E-08	--	4E-07	Spleen	0.002	- -	0.0003	0.002
			2-Amino-4,6-Dinitrotoluene	- -	--	- -	--	- -	CNS, Liver	0.00008	- -	0.0000007	0.00008
			4-Amino-2,6-Dinitrotoluene	- -	--	- -	--	- -	CNS, Liver	0.00004	- -	0.0000006	0.00004
			HMX	- -	--	- -	--	- -	Liver	0.00001	- -	0.0000001	0.00001
			Nitroglycerin	1E-08	--	2E-09	--	1E-08	Blood	0.02	- -	0.003	0.02
			RDX	2E-07	--	3E-09	--	2E-07	Prostrate	0.001	- -	0.00003	0.001
			Tetryl	- -	--	- -	--	- -	Blood	0.003	- -	0.0005	0.004
			2,3,7,8-TCDD Equivalents	1E-06	--	6E-08	--	1E-06	Reproductive	0.04	- -	0.002	0.04
			Perchlorate	- -	--	- -	--	- -	Thyroid	0.009	- -	--	0.009
			Aluminum	- -	--	- -	--	- -	CNS	0.005	- -	--	0.005
			Arsenic	2E-06	--	8E-08	--	2E-06	Skin, CVS	0.01	- -	0.0005	0.01
			Barium	- -	--	- -	--	- -	Kidney	0.0006	- -	--	0.0006
			Beryllium	- -	--	- -	--	- -	GS	0.0001	- -	--	0.0001
			Cadmium	- -	--	- -	--	- -	Kidney	0.01	- -	0.0004	0.01
			Chromium	6E-06	--	- -	--	6E-06	None Specified	0.01	- -	--	0.01
			Copper	- -	--	- -	--	- -	GS	0.003	- -	--	0.003
			Iron	- -	--	- -	--	- -	GS	0.009	- -	--	0.009
			Lead	- -	--	- -	--	- -	NA	--	- -	--	--
			Manganese	- -	--	- -	--	- -	CNS	0.01	- -	--	0.01
			Mercury	- -	--	- -	--	- -	Immune System	0.0002	- -	--	0.0002
			Nickel	- -	--	- -	--	- -	Body Weight	0.0007	- -	--	0.0007
			Silver	- -	--	- -	--	- -	Skin	0.0002	- -	--	0.0002
			Vanadium	- -	--	- -	--	- -	Kidney	0.002	- -	--	0.002
			Zinc	- -	--	- -	--	- -	Blood	0.001	- -	--	0.001
			Chemical Total	1E-05	--	3E-07	--	1E-05		0.1	--	0.007	0.2
		Exposure Point Total						1E-05					0.2
	Exposure Medium Total							1E-05					0.2
Medium Total								1E-05					0.2
Receptor Total							Receptor Risk Total	1E-05				Receptor HI Total	0.2

TABLE 9.19.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - 2007 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Outdoor Worker - OB Unit
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	OB Unit	2,4,6-Trinitrotoluene	2E-09	--	3E-10	--	3E-09	Liver	0.0005	- -	0.00006	0.0005
			2,4-Dinitrotoluene	2E-06	--	9E-07	--	3E-06	CNS, Liver	0.009	- -	0.004	0.01
			2,6-Dinitrotoluene	4E-07	--	2E-07	--	5E-07	Spleen	0.002	- -	0.001	0.003
			4-Amino-2,6-Dinitrotoluene	- -	--	- -	--	- -	CNS, Liver	0.00004	- -	0.000001	0.00004
			HMX	- -	--	- -	--	- -	Liver	0.000005	- -	0.0000001	0.000005
			RDX	5E-08	--	3E-09	--	5E-08	Prostrate	0.0004	- -	0.00003	0.0004
			2,3,7,8-TCDD Equivalents	2E-06	--	2E-07	--	2E-06	Reproductive	0.05	- -	0.006	0.06
			Perchlorate	- -	--	- -	--	- -	Thyroid	0.0006	- -	--	0.0006
			Aluminum	- -	--	- -	--	- -	CNS	0.01	- -	--	0.01
			Arsenic	3E-06	--	4E-07	--	4E-06	Skin, CVS	0.02	- -	0.003	0.02
			Barium	- -	--	- -	--	- -	Kidney	0.001	- -	--	0.001
			Beryllium	- -	--	- -	--	- -	GS	0.0003	- -	--	0.0003
			Cadmium	- -	--	- -	--	- -	Kidney	0.03	- -	0.003	0.03
			Chromium	8E-06	--	- -	--	8E-06	None Specified	0.01	- -	--	0.01
			Copper	- -	--	- -	--	- -	GS	0.01	- -	--	0.01
			Iron	- -	--	- -	--	- -	GS	0.02	- -	--	0.02
			Lead	- -	--	- -	--	- -	NA	--	- -	--	--
			Manganese	- -	--	- -	--	- -	CNS	0.03	- -	--	0.03
			Mercury	- -	--	- -	--	- -	Immune System	0.0001	- -	--	0.0001
			Nickel	- -	--	- -	--	- -	Body Weight	0.0008	- -	--	0.0008
			Silver	- -	--	- -	--	- -	Skin	0.0002	- -	--	0.0002
			Vanadium	- -	--	- -	--	- -	Kidney	0.004	- -	--	0.004
			Zinc	- -	--	- -	--	- -	Blood	0.0007	- -	--	0.0007
			Chemical Total	2E-05	--	2E-06	--	2E-05		0.2	--	0.02	0.2
		Exposure Point Total						2E-05					0.2
	Exposure Medium Total							2E-05					0.2
Medium Total								2E-05					0.2
Receptor Total							Receptor Risk Total	2E-05				Receptor HI Total	0.2

TABLE 9.20.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - 2007 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Outdoor Worker - OD Unit
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	OD Unit	1,3,5-Trinitrobenzene	- -	--	- -	--	- -	Spleen	0.000007	- -	0.0000006	0.000008
			1,3-Dinitrobenzene	- -	--	- -	--	- -	Spleen	0.0005	- -	0.0002	0.0007
			2,4,6-Trinitrotoluene	4E-08	--	5E-09	--	4E-08	Liver	0.007	- -	0.0009	0.008
			2,4-Dinitrotoluene	8E-09	--	3E-09	--	1E-08	CNS, Liver	0.00003	- -	0.00001	0.00005
			2-Amino-4,6-Dinitrotoluene	- -	--	- -	--	- -	CNS, Liver	0.0001	- -	0.000003	0.0001
			4-Amino-2,6-Dinitrotoluene	- -	--	- -	--	- -	CNS, Liver	0.00006	- -	0.000002	0.00006
			HMX	- -	--	- -	--	- -	Liver	0.00001	- -	0.0000003	0.00001
			Nitroglycerin	1E-08	--	6E-09	--	2E-08	Blood	0.02	- -	0.010	0.03
			RDX	2E-07	--	1E-08	--	2E-07	Prostrate	0.002	- -	0.0001	0.002
			Tetryl	- -	--	- -	--	- -	Blood	0.005	- -	0.002	0.007
			Perchlorate	- -	--	- -	--	- -	Thyroid	0.03	- -	--	0.03
			Aluminum	- -	--	- -	--	- -	CNS	0.003	- -	--	0.003
			Arsenic	2E-06	--	2E-07	--	2E-06	Skin, CVS	0.01	- -	0.001	0.01
			Barium	- -	--	- -	--	- -	Kidney	0.0004	- -	--	0.0004
			Beryllium	- -	--	- -	--	- -	GS	0.00009	- -	--	0.00009
			Cadmium	- -	--	- -	--	- -	Kidney	0.01	- -	0.0009	0.01
			Chromium	7E-06	--	- -	--	7E-06	None Specified	0.01	- -	--	0.01
			Copper	- -	--	- -	--	- -	GS	0.002	- -	--	0.002
			Iron	- -	--	- -	--	- -	GS	0.009	- -	--	0.009
			Lead	- -	--	- -	--	- -	NA	--	- -	--	--
			Manganese	- -	--	- -	--	- -	CNS	0.004	- -	--	0.004
			Mercury	- -	--	- -	--	- -	Immune System	0.0002	- -	--	0.0002
			Nickel	- -	--	- -	--	- -	Body Weight	0.0009	- -	--	0.0009
			Silver	- -	--	- -	--	- -	Skin	0.0004	- -	--	0.0004
			Vanadium	- -	--	- -	--	- -	Kidney	0.002	- -	--	0.002
			Zinc	- -	--	- -	--	- -	Blood	0.002	- -	--	0.002
			Chemical Total	9E-06	--	3E-07	--	9E-06		0.1	--	0.02	0.1
		Exposure Point Total						9E-06					0.1
	Exposure Medium Total							9E-06					0.1
Medium Total								9E-06					0.1
Receptor Total							Receptor Risk Total	9E-06				Receptor HI Total	0.1

TABLE 9.21.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - 2007 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Outdoor Worker - Entire Site
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	All Soil Samples	1,3,5-Trinitrobenzene	- -	--	- -	--	- -	Spleen	0.000007	- -	0.0000006	0.000008
			1,3-Dinitrobenzene	- -	--	- -	--	- -	Spleen	0.0009	- -	0.0004	0.001
			2,4,6-Trinitrotoluene	4E-08	--	5E-09	--	4E-08	Liver	0.007	- -	0.0010	0.008
			2,4-Dinitrotoluene	5E-07	--	2E-07	--	7E-07	CNS, Liver	0.002	- -	0.0009	0.003
			2,6-Dinitrotoluene	4E-07	--	2E-07	--	6E-07	Spleen	0.002	- -	0.001	0.003
			2-Amino-4,6-Dinitrotoluene	- -	--	- -	--	- -	CNS, Liver	0.00009	- -	0.000002	0.00010
			4-Amino-2,6-Dinitrotoluene	- -	--	- -	--	- -	CNS, Liver	0.00005	- -	0.000002	0.00005
			HMX	- -	--	- -	--	- -	Liver	0.00001	- -	0.0000004	0.00001
			Nitroglycerin	1E-08	--	6E-09	--	2E-08	Blood	0.02	- -	0.009	0.03
			RDX	2E-07	--	1E-08	--	2E-07	Prostrate	0.002	- -	0.00010	0.002
			Tetryl	- -	--	- -	--	- -	Blood	0.004	- -	0.002	0.006
			2,3,7,8-TCDD Equivalents	1E-06	--	2E-07	--	2E-06	Reproductive	0.05	- -	0.006	0.05
			Perchlorate	- -	--	- -	--	- -	Thyroid	0.01	- -	--	0.01
			Aluminum	- -	--	- -	--	- -	CNS	0.006	- -	--	0.006
			Arsenic	2E-06	--	3E-07	--	2E-06	Skin, CVS	0.01	- -	0.002	0.01
			Barium	- -	--	- -	--	- -	Kidney	0.0007	- -	--	0.0007
			Beryllium	- -	--	- -	--	- -	GS	0.0001	- -	--	0.0001
			Cadmium	- -	--	- -	--	- -	Kidney	0.01	- -	0.001	0.02
			Chromium	7E-06	--	- -	--	7E-06	None Specified	0.01	- -	--	0.01
			Copper	- -	--	- -	--	- -	GS	0.003	- -	--	0.003
			Iron	- -	--	- -	--	- -	GS	0.01	- -	--	0.01
			Lead	- -	--	- -	--	- -	NA	--	- -	--	--
			Manganese	- -	--	- -	--	- -	CNS	0.01	- -	--	0.01
			Mercury	- -	--	- -	--	- -	Immune System	0.0002	- -	--	0.0002
			Nickel	- -	--	- -	--	- -	Body Weight	0.0009	- -	--	0.0009
			Silver	- -	--	- -	--	- -	Skin	0.0002	- -	--	0.0002
			Vanadium	- -	--	- -	--	- -	Kidney	0.002	- -	--	0.002
			Zinc	- -	--	- -	--	- -	Blood	0.002	- -	--	0.002
			Chemical Total	1E-05	--	8E-07	--	1E-05		0.2	--	0.02	0.2
		Exposure Point Total						1E-05					0.2
	Exposure Medium Total							1E-05					0.2
Medium Total								1E-05					0.2
Receptor Total							Receptor Risk Total	1E-05				Receptor HI Total	0.2

2009 SURFACE SOIL SAMPLES

TABLE 9.22.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - 2009 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Unprotected OB Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	OB Unit	1,3,5-Trinitrobenzene	- -	--	- -	--	- -	Spleen	0.0000002	- -	0.00000001	0.0000002
			2,4,6-Trinitrotoluene	5E-10	--	7E-11	--	5E-10	Liver	0.00009	- -	0.00001	0.0001
			2,4-Dinitrotoluene	1E-08	--	5E-09	--	2E-08	CNS, Liver	0.00005	- -	0.00002	0.00007
			4-Amino-2,6-Dinitrotoluene	- -	--	- -	--	- -	CNS, Liver	0.000005	- -	0.0000002	0.000005
			HMX	- -	--	- -	--	- -	Liver	0.000002	- -	0.00000004	0.000002
			Nitroglycerin	4E-10	--	2E-10	--	6E-10	Blood	0.0007	- -	0.0003	0.001
			RDX	8E-09	--	5E-10	--	9E-09	Prostrate	0.00007	- -	0.000004	0.00008
			Tetryl	- -	--	- -	--	- -	Blood	0.000002	- -	0.0000010	0.000003
			2,3,7,8-TCDD Equivalents	8E-07	--	1E-07	--	9E-07	Reproductive	0.02	- -	0.003	0.03
			Perchlorate	- -	--	- -	--	- -	Thyroid	0.0002	- -	--	0.0002
			Aluminum	- -	--	- -	--	- -	CNS	0.002	- -	--	0.002
			Arsenic	6E-07	--	7E-08	--	7E-07	Skin, CVS	0.004	- -	0.0005	0.004
			Barium	- -	--	- -	--	- -	Kidney	0.0002	- -	--	0.0002
			Beryllium	- -	--	- -	--	- -	GS	0.00006	- -	--	0.00006
			Cadmium	- -	--	- -	--	- -	Kidney	0.004	- -	0.0003	0.004
			Chromium	5E-07	--	- -	--	5E-07	None Specified	0.0009	- -	--	0.0009
			Copper	- -	--	- -	--	- -	GS	0.0008	- -	--	0.0008
			Iron	- -	--	- -	--	- -	GS	0.003	- -	--	0.003
			Lead	- -	--	- -	--	- -	NA	--	- -	--	--
			Manganese	- -	--	- -	--	- -	CNS	0.003	- -	--	0.003
			Mercury	- -	--	- -	--	- -	Immune System	0.00003	- -	--	0.00003
			Nickel	- -	--	- -	--	- -	Body Weight	0.0001	- -	--	0.0001
			Silver	- -	--	- -	--	- -	Skin	0.00006	- -	--	0.00006
			Vanadium	- -	--	- -	--	- -	Kidney	0.0007	- -	--	0.0007
			Zinc	- -	--	- -	--	- -	Blood	0.00010	- -	--	0.00010
			Chemical Total	2E-06	--	2E-07	--	2E-06		0.04	--	0.004	0.05
		Exposure Point Total						2E-06					0.05
	Exposure Medium Total							2E-06					0.05
Medium Total								2E-06					0.05
Receptor Total							Receptor Risk Total	2E-06				Receptor HI Total	0.05

TABLE 9.23.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - 2009 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Unprotected OD Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	OD Unit	1,3,5-Trinitrobenzene	- -	--	- -	--	- -	Spleen	0.0000005	- -	0.00000004	0.0000006
			1,3-Dinitrobenzene	- -	--	- -	--	- -	Spleen	0.0001	- -	0.00005	0.0002
			2,4,6-Trinitrotoluene	1E-08	--	2E-09	--	1E-08	Liver	0.002	- -	0.0003	0.003
			2,4-Dinitrotoluene	5E-09	--	2E-09	--	8E-09	CNS, Liver	0.00002	- -	0.00001	0.00004
			2,6-Dinitrotoluene	4E-09	--	2E-09	--	6E-09	Spleen	0.00003	- -	0.00001	0.00004
			2-Amino-4,6-Dinitrotoluene	- -	--	- -	--	- -	CNS, Liver	0.00005	- -	0.000001	0.00005
			3-Nitrotoluene	- -	--	- -	--	- -	Spleen	0.0001	- -	0.00006	0.0002
			4-Amino-2,6-Dinitrotoluene	- -	--	- -	--	- -	CNS, Liver	0.00005	- -	0.000002	0.00005
			HMX	- -	--	- -	--	- -	Liver	0.00002	- -	0.0000005	0.00002
			RDX	4E-07	--	3E-08	--	4E-07	Prostrate	0.003	- -	0.0002	0.004
			Tetryl	- -	--	- -	--	- -	Blood	0.00004	- -	0.00002	0.00006
			Perchlorate	- -	--	- -	--	- -	Thyroid	0.02	- -	--	0.02
			Aluminum	- -	--	- -	--	- -	CNS	0.0008	- -	--	0.0008
			Arsenic	7E-07	--	9E-08	--	8E-07	Skin, CVS	0.005	- -	0.0006	0.005
			Barium	- -	--	- -	--	- -	Kidney	0.0001	- -	--	0.0001
			Beryllium	- -	--	- -	--	- -	GS	0.00002	- -	--	0.00002
			Cadmium	- -	--	- -	--	- -	Kidney	0.004	- -	0.0004	0.005
			Chromium	5E-07	--	- -	--	5E-07	None Specified	0.0010	- -	--	0.0010
			Copper	- -	--	- -	--	- -	GS	0.0009	- -	--	0.0009
			Iron	- -	--	- -	--	- -	GS	0.004	- -	--	0.004
			Lead	- -	--	- -	--	- -	NA	--	- -	--	--
			Manganese	- -	--	- -	--	- -	CNS	0.001	- -	--	0.001
			Mercury	- -	--	- -	--	- -	Immune System	0.00009	- -	--	0.00009
			Nickel	- -	--	- -	--	- -	Body Weight	0.0001	- -	--	0.0001
			Silver	- -	--	- -	--	- -	Skin	0.00006	- -	--	0.00006
			Vanadium	- -	--	- -	--	- -	Kidney	0.0005	- -	--	0.0005
			Zinc	- -	--	- -	--	- -	Blood	0.0003	- -	--	0.0003
			Chemical Total	2E-06	--	1E-07	--	2E-06		0.05	--	0.002	0.05
		Exposure Point Total						2E-06					0.05
	Exposure Medium Total							2E-06					0.05
Medium Total								2E-06					0.05
Receptor Total							Receptor Risk Total	2E-06				Receptor HI Total	0.05

TABLE 9.24.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - 2009 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Unprotected SF Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Static Firing Rocket Silos	1,3,5-Trinitrobenzene	- -	--	- -	--	- -	Spleen	0.0000002	- -	0.00000001	0.0000002
			2,4,6-Trinitrotoluene	4E-10	--	5E-11	--	4E-10	Liver	0.00007	- -	0.00001	0.00008
			2,4-Dinitrotoluene	2E-07	--	9E-08	--	3E-07	CNS, Liver	0.0009	- -	0.0004	0.001
			2,6-Dinitrotoluene	6E-08	--	3E-08	--	9E-08	Spleen	0.0004	- -	0.0002	0.0005
			2-Amino-4,6-Dinitrotoluene	- -	--	- -	--	- -	CNS, Liver	0.000009	- -	0.0000002	0.000009
			4-Amino-2,6-Dinitrotoluene	- -	--	- -	--	- -	CNS, Liver	0.000009	- -	0.0000003	0.000009
			HMX	- -	--	- -	--	- -	Liver	0.000001	- -	0.00000004	0.000002
			Nitroglycerin	6E-09	--	3E-09	--	9E-09	Blood	0.01	- -	0.004	0.01
			RDX	1E-08	--	8E-10	--	1E-08	Prostrate	0.0001	- -	0.000007	0.0001
			2,3,7,8-TCDD Equivalents	2E-06	--	2E-07	--	2E-06	Reproductive	0.06	- -	0.007	0.07
			Perchlorate	- -	--	- -	--	- -	Thyroid	0.0008	- -	--	0.0008
			Aluminum	- -	--	- -	--	- -	CNS	0.001	- -	--	0.001
			Arsenic	3E-07	--	4E-08	--	4E-07	Skin, CVS	0.002	- -	0.0003	0.002
			Barium	- -	--	- -	--	- -	Kidney	0.0001	- -	--	0.0001
			Beryllium	- -	--	- -	--	- -	GS	0.00002	- -	--	0.00002
			Cadmium	- -	--	- -	--	- -	Kidney	0.005	- -	0.0004	0.005
			Chromium	1E-06	--	- -	--	1E-06	None Specified	0.002	- -	--	0.002
			Copper	- -	--	- -	--	- -	GS	0.001	- -	--	0.001
			Iron	- -	--	- -	--	- -	GS	0.003	- -	--	0.003
			Lead	- -	--	- -	--	- -	NA	--	- -	--	--
			Manganese	- -	--	- -	--	- -	CNS	0.001	- -	--	0.001
			Mercury	- -	--	- -	--	- -	Immune System	0.00002	- -	--	0.00002
			Nickel	- -	--	- -	--	- -	Body Weight	0.0002	- -	--	0.0002
			Silver	- -	--	- -	--	- -	Skin	0.00002	- -	--	0.00002
			Vanadium	- -	--	- -	--	- -	Kidney	0.0003	- -	--	0.0003
			Zinc	- -	--	- -	--	- -	Blood	0.0003	- -	--	0.0003
			Chemical Total	4E-06	--	4E-07	--	4E-06		0.09	--	0.01	0.1
		Exposure Point Total						4E-06					0.1
	Exposure Medium Total							4E-06					0.1
Medium Total								4E-06					0.1
Receptor Total							Receptor Risk Total	4E-06				Receptor HI Total	0.1

TABLE 9.25.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - 2009 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Unprotected OB/OD/SF Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	All Soil Samples	1,3,5-Trinitrobenzene	- -	--	- -	--	- -	Spleen	0.0000009	- -	0.00000007	0.0000009
			1,3-Dinitrobenzene	- -	--	- -	--	- -	Spleen	0.0002	- -	0.00010	0.0003
			2,4,6-Trinitrotoluene	2E-08	--	3E-09	--	2E-08	Liver	0.004	- -	0.0005	0.004
			2,4-Dinitrotoluene	3E-07	--	1E-07	--	5E-07	CNS, Liver	0.001	- -	0.0006	0.002
			2,6-Dinitrotoluene	8E-08	--	3E-08	--	1E-07	Spleen	0.0005	- -	0.0002	0.0007
			2-Amino-4,6-Dinitrotoluene	- -	--	- -	--	- -	CNS, Liver	0.00007	- -	0.000002	0.00007
			3-Nitrotoluene	- -	--	- -	--	- -	Spleen	0.0002	- -	0.00009	0.0003
			4-Amino-2,6-Dinitrotoluene	- -	--	- -	--	- -	CNS, Liver	0.00006	- -	0.000002	0.00006
			HMX	- -	--	- -	--	- -	Liver	0.00003	- -	0.0000008	0.00003
			Nitroglycerin	1E-08	--	4E-09	--	1E-08	Blood	0.02	- -	0.007	0.02
			RDX	6E-07	--	4E-08	--	7E-07	Prostrate	0.005	- -	0.0003	0.006
			Tetryl	- -	--	- -	--	- -	Blood	0.00005	- -	0.00002	0.00007
			2,3,7,8-TCDD Equivalents	6E-06	--	7E-07	--	6E-06	Reproductive	0.2	- -	0.02	0.2
			Perchlorate	- -	--	- -	--	- -	Thyroid	0.03	- -	--	0.03
			Aluminum	- -	--	- -	--	- -	CNS	0.005	- -	--	0.005
			Arsenic	1E-06	--	2E-07	--	2E-06	Skin, CVS	0.008	- -	0.001	0.009
			Barium	- -	--	- -	--	- -	Kidney	0.0003	- -	--	0.0003
			Beryllium	- -	--	- -	--	- -	GS	0.0001	- -	--	0.0001
			Cadmium	- -	--	- -	--	- -	Kidney	0.01	- -	0.0009	0.01
			Chromium	3E-06	--	- -	--	3E-06	None Specified	0.005	- -	--	0.005
			Copper	- -	--	- -	--	- -	GS	0.002	- -	--	0.002
			Iron	- -	--	- -	--	- -	GS	0.008	- -	--	0.008
			Lead	- -	--	- -	--	- -	NA	--	- -	--	--
			Manganese	- -	--	- -	--	- -	CNS	0.006	- -	--	0.006
			Mercury	- -	--	- -	--	- -	Immune System	0.0001	- -	--	0.0001
			Nickel	- -	--	- -	--	- -	Body Weight	0.0004	- -	--	0.0004
			Silver	- -	--	- -	--	- -	Skin	0.0001	- -	--	0.0001
			Vanadium	- -	--	- -	--	- -	Kidney	0.001	- -	--	0.001
			Zinc	- -	--	- -	--	- -	Blood	0.0006	- -	--	0.0006
			Chemical Total	1E-05	--	1E-06	--	1E-05		0.3	--	0.03	0.3
		Exposure Point Total						1E-05					0.3
	Exposure Medium Total							1E-05					0.3
Medium Total								1E-05					0.3
Receptor Total							Receptor Risk Total	1E-05				Receptor HI Total	0.3

TABLE 9.26.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - 2009 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Protected OB Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	OB Unit	1,3,5-Trinitrobenzene	- -	--	- -	--	- -	Spleen	0.0000002	- -	5.27055E-09	0.0000002
			2,4,6-Trinitrotoluene	5E-10	--	2E-11	--	5E-10	Liver	0.00009	- -	0.000004	0.00009
			2,4-Dinitrotoluene	1E-08	--	2E-09	--	1E-08	CNS, Liver	0.00005	- -	0.000007	0.00006
			4-Amino-2,6-Dinitrotoluene	- -	--	- -	--	- -	CNS, Liver	0.000005	- -	0.00000007	0.000005
			HMX	- -	--	- -	--	- -	Liver	0.000002	- -	0.00000001	0.000002
			Nitroglycerin	4E-10	--	7E-11	--	5E-10	Blood	0.0007	- -	0.0001	0.0008
			RDX	8E-09	--	2E-10	--	9E-09	Prostrate	0.00007	- -	0.000002	0.00007
			Tetryl	- -	--	- -	--	- -	Blood	0.000002	- -	0.0000003	0.000003
			2,3,7,8-TCDD Equivalents	8E-07	--	3E-08	--	8E-07	Reproductive	0.02	- -	0.001	0.02
			Perchlorate	- -	--	- -	--	- -	Thyroid	0.0002	- -	--	0.0002
			Aluminum	- -	--	- -	--	- -	CNS	0.002	- -	--	0.002
			Arsenic	6E-07	--	3E-08	--	6E-07	Skin, CVS	0.004	- -	0.0002	0.004
			Barium	- -	--	- -	--	- -	Kidney	0.0002	- -	--	0.0002
			Beryllium	- -	--	- -	--	- -	GS	0.00006	- -	--	0.00006
			Cadmium	- -	--	- -	--	- -	Kidney	0.004	- -	0.0001	0.004
			Chromium	5E-07	--	- -	--	5E-07	None Specified	0.0009	- -	--	0.0009
			Copper	- -	--	- -	--	- -	GS	0.0008	- -	--	0.0008
			Iron	- -	--	- -	--	- -	GS	0.003	- -	--	0.003
			Lead	- -	--	- -	--	- -	NA	--	- -	--	--
			Manganese	- -	--	- -	--	- -	CNS	0.003	- -	--	0.003
			Mercury	- -	--	- -	--	- -	Immune System	0.00003	- -	--	0.00003
			Nickel	- -	--	- -	--	- -	Body Weight	0.0001	- -	--	0.0001
			Silver	- -	--	- -	--	- -	Skin	0.00006	- -	--	0.00006
			Vanadium	- -	--	- -	--	- -	Kidney	0.0007	- -	--	0.0007
			Zinc	- -	--	- -	--	- -	Blood	0.00010	- -	--	0.00010
			Chemical Total	2E-06	--	6E-08	--	2E-06		0.04	--	0.001	0.05
		Exposure Point Total						2E-06					0.05
	Exposure Medium Total							2E-06					0.05
Medium Total								2E-06					0.05
Receptor Total							Receptor Risk Total	2E-06				Receptor HI Total	0.05

TABLE 9.27.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - 2009 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Protected OD Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	OD Unit	1,3,5-Trinitrobenzene	- -	--	- -	--	- -	Spleen	0.0000005	- -	0.00000002	0.0000006
			1,3-Dinitrobenzene	- -	--	- -	--	- -	Spleen	0.0001	- -	0.00002	0.0001
			2,4,6-Trinitrotoluene	1E-08	--	6E-10	--	1E-08	Liver	0.002	- -	0.0001	0.002
			2,4-Dinitrotoluene	5E-09	--	8E-10	--	6E-09	CNS, Liver	0.00002	- -	0.000004	0.00003
			2,6-Dinitrotoluene	4E-09	--	6E-10	--	5E-09	Spleen	0.00003	- -	0.000004	0.00003
			2-Amino-4,6-Dinitrotoluene	- -	--	- -	--	- -	CNS, Liver	0.00005	- -	0.0000004	0.00005
			3-Nitrotoluene	- -	--	- -	--	- -	Spleen	0.0001	- -	0.00002	0.0002
			4-Amino-2,6-Dinitrotoluene	- -	--	- -	--	- -	CNS, Liver	0.00005	- -	0.0000006	0.00005
			HMX	- -	--	- -	--	- -	Liver	0.00002	- -	0.0000002	0.00002
			RDX	4E-07	--	9E-09	--	4E-07	Prostrate	0.003	- -	0.00008	0.003
			Tetryl	- -	--	- -	--	- -	Blood	0.00004	- -	0.000006	0.00005
			Perchlorate	- -	--	- -	--	- -	Thyroid	0.02	- -	--	0.02
			Aluminum	- -	--	- -	--	- -	CNS	0.0008	- -	--	0.0008
			Arsenic	7E-07	--	3E-08	--	8E-07	Skin, CVS	0.005	- -	0.0002	0.005
			Barium	- -	--	- -	--	- -	Kidney	0.0001	- -	--	0.0001
			Beryllium	- -	--	- -	--	- -	GS	0.00002	- -	--	0.00002
			Cadmium	- -	--	- -	--	- -	Kidney	0.004	- -	0.0001	0.004
			Chromium	5E-07	--	- -	--	5E-07	None Specified	0.0010	- -	--	0.0010
			Copper	- -	--	- -	--	- -	GS	0.0009	- -	--	0.0009
			Iron	- -	--	- -	--	- -	GS	0.004	- -	--	0.004
			Lead	- -	--	- -	--	- -	NA	--	- -	--	--
			Manganese	- -	--	- -	--	- -	CNS	0.001	- -	--	0.001
			Mercury	- -	--	- -	--	- -	Immune System	0.00009	- -	--	0.00009
			Nickel	- -	--	- -	--	- -	Body Weight	0.0001	- -	--	0.0001
			Silver	- -	--	- -	--	- -	Skin	0.00006	- -	--	0.00006
			Vanadium	- -	--	- -	--	- -	Kidney	0.0005	- -	--	0.0005
			Zinc	- -	--	- -	--	- -	Blood	0.0003	- -	--	0.0003
			Chemical Total	2E-06	--	4E-08	--	2E-06		0.05	--	0.0006	0.05
		Exposure Point Total						2E-06					0.05
	Exposure Medium Total							2E-06					0.05
Medium Total								2E-06					0.05
Receptor Total							Receptor Risk Total	2E-06				Receptor HI Total	0.05

TABLE 9.28.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - 2009 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Protected SF Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Static Firing Rocket Silos	1,3,5-Trinitrobenzene	- -	--	- -	--	- -	Spleen	0.0000002	- -	4.88014E-09	0.0000002
			2,4,6-Trinitrotoluene	4E-10	--	2E-11	--	4E-10	Liver	0.00007	- -	0.000004	0.00008
			2,4-Dinitrotoluene	2E-07	--	3E-08	--	2E-07	CNS, Liver	0.0009	- -	0.0001	0.001
			2,6-Dinitrotoluene	6E-08	--	9E-09	--	7E-08	Spleen	0.0004	- -	0.00006	0.0004
			2-Amino-4,6-Dinitrotoluene	- -	--	- -	--	- -	CNS, Liver	0.000009	- -	0.00000008	0.000009
			4-Amino-2,6-Dinitrotoluene	- -	--	- -	--	- -	CNS, Liver	0.000009	- -	0.0000001	0.000009
			HMX	- -	--	- -	--	- -	Liver	0.000001	- -	0.00000001	0.000001
			Nitroglycerin	6E-09	--	9E-10	--	7E-09	Blood	0.01	- -	0.002	0.01
			RDX	1E-08	--	3E-10	--	1E-08	Prostrate	0.0001	- -	0.000002	0.0001
			2,3,7,8-TCDD Equivalents	2E-06	--	9E-08	--	2E-06	Reproductive	0.06	- -	0.003	0.06
			Perchlorate	- -	--	- -	--	- -	Thyroid	0.0008	- -	--	0.0008
			Aluminum	- -	--	- -	--	- -	CNS	0.001	- -	--	0.001
			Arsenic	3E-07	--	1E-08	--	3E-07	Skin, CVS	0.002	- -	0.00009	0.002
			Barium	- -	--	- -	--	- -	Kidney	0.0001	- -	--	0.0001
			Beryllium	- -	--	- -	--	- -	GS	0.00002	- -	--	0.00002
			Cadmium	- -	--	- -	--	- -	Kidney	0.005	- -	0.0002	0.005
			Chromium	1E-06	--	- -	--	1E-06	None Specified	0.002	- -	--	0.002
			Copper	- -	--	- -	--	- -	GS	0.001	- -	--	0.001
			Iron	- -	--	- -	--	- -	GS	0.003	- -	--	0.003
			Lead	- -	--	- -	--	- -	NA	--	- -	--	--
			Manganese	- -	--	- -	--	- -	CNS	0.001	- -	--	0.001
			Mercury	- -	--	- -	--	- -	Immune System	0.00002	- -	--	0.00002
			Nickel	- -	--	- -	--	- -	Body Weight	0.0002	- -	--	0.0002
			Silver	- -	--	- -	--	- -	Skin	0.00002	- -	--	0.00002
			Vanadium	- -	--	- -	--	- -	Kidney	0.0003	- -	--	0.0003
			Zinc	- -	--	- -	--	- -	Blood	0.0003	- -	--	0.0003
			Chemical Total	4E-06	--	1E-07	--	4E-06		0.09	--	0.005	0.09
		Exposure Point Total						4E-06					0.09
	Exposure Medium Total							4E-06					0.09
Medium Total								4E-06					0.09
Receptor Total							Receptor Risk Total	4E-06				Receptor HI Total	0.09

TABLE 9.29.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - 2009 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Unprotected OB/OD/SF Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	All Soil Samples	1,3,5-Trinitrobenzene	- -	--	- -	--	- -	Spleen	0.0000009	- -	0.00000002	0.0000009
			1,3-Dinitrobenzene	- -	--	- -	--	- -	Spleen	0.0002	- -	0.00003	0.0003
			2,4,6-Trinitrotoluene	2E-08	--	1E-09	--	2E-08	Liver	0.004	- -	0.0002	0.004
			2,4-Dinitrotoluene	3E-07	--	5E-08	--	4E-07	CNS, Liver	0.001	- -	0.0002	0.002
			2,6-Dinitrotoluene	8E-08	--	1E-08	--	9E-08	Spleen	0.0005	- -	0.00007	0.0006
			2-Amino-4,6-Dinitrotoluene	- -	--	- -	--	- -	CNS, Liver	0.00007	- -	0.0000006	0.00007
			3-Nitrotoluene	- -	--	- -	--	- -	Spleen	0.0002	- -	0.00003	0.0002
			4-Amino-2,6-Dinitrotoluene	- -	--	- -	--	- -	CNS, Liver	0.00006	- -	0.0000008	0.00006
			HMX	- -	--	- -	--	- -	Liver	0.00003	- -	0.0000003	0.00003
			Nitroglycerin	1E-08	--	1E-09	--	1E-08	Blood	0.02	- -	0.002	0.02
			RDX	6E-07	--	1E-08	--	6E-07	Prostrate	0.005	- -	0.0001	0.005
			Tetryl	- -	--	- -	--	- -	Blood	0.00005	- -	0.000008	0.00006
			2,3,7,8-TCDD Equivalents	6E-06	--	3E-07	--	6E-06	Reproductive	0.2	- -	0.008	0.2
			Perchlorate	- -	--	- -	--	- -	Thyroid	0.03	- -	--	0.03
			Aluminum	- -	--	- -	--	- -	CNS	0.005	- -	--	0.005
			Arsenic	1E-06	--	6E-08	--	1E-06	Skin, CVS	0.008	- -	0.0004	0.009
			Barium	- -	--	- -	--	- -	Kidney	0.0003	- -	--	0.0003
			Beryllium	- -	--	- -	--	- -	GS	0.0001	- -	--	0.0001
			Cadmium	- -	--	- -	--	- -	Kidney	0.01	- -	0.0003	0.01
			Chromium	3E-06	--	- -	--	3E-06	None Specified	0.005	- -	--	0.005
			Copper	- -	--	- -	--	- -	GS	0.002	- -	--	0.002
			Iron	- -	--	- -	--	- -	GS	0.008	- -	--	0.008
			Lead	- -	--	- -	--	- -	NA	--	- -	--	--
			Manganese	- -	--	- -	--	- -	CNS	0.006	- -	--	0.006
			Mercury	- -	--	- -	--	- -	Immune System	0.0001	- -	--	0.0001
			Nickel	- -	--	- -	--	- -	Body Weight	0.0004	- -	--	0.0004
			Silver	- -	--	- -	--	- -	Skin	0.0001	- -	--	0.0001
			Vanadium	- -	--	- -	--	- -	Kidney	0.001	- -	--	0.001
			Zinc	- -	--	- -	--	- -	Blood	0.0006	- -	--	0.0006
			Chemical Total	1E-05	--	4E-07	--	1E-05		0.3	--	0.01	0.3
		Exposure Point Total						1E-05					0.3
	Exposure Medium Total							1E-05					0.3
Medium Total								1E-05					0.3
Receptor Total							Receptor Risk Total	1E-05				Receptor HI Total	0.3

TABLE 9.30.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - 2009 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Outdoor Worker - OB Unit
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	OB Unit	1,3,5-Trinitrobenzene	- -	--	- -	--	- -	Spleen	0.0000008	- -	0.00000006	0.0000008
			2,4,6-Trinitrotoluene	2E-09	--	3E-10	--	2E-09	Liver	0.0004	- -	0.00005	0.0004
			2,4-Dinitrotoluene	4E-08	--	2E-08	--	6E-08	CNS, Liver	0.0002	- -	0.00009	0.0003
			4-Amino-2,6-Dinitrotoluene	- -	--	- -	--	- -	CNS, Liver	0.00002	- -	0.0000008	0.00002
			HMX	- -	--	- -	--	- -	Liver	0.000007	- -	0.0000002	0.000007
			Nitroglycerin	2E-09	--	8E-10	--	3E-09	Blood	0.003	- -	0.001	0.004
			RDX	3E-08	--	2E-09	--	4E-08	Prostrate	0.0003	- -	0.00002	0.0003
			Tetryl	- -	--	- -	--	- -	Blood	0.000009	- -	0.000004	0.00001
			2,3,7,8-TCDD Equivalents	3E-06	--	4E-07	--	4E-06	Reproductive	0.10	- -	0.01	0.1
			Perchlorate	- -	--	- -	--	- -	Thyroid	0.0008	- -	--	0.0008
			Aluminum	- -	--	- -	--	- -	CNS	0.009	- -	--	0.009
			Arsenic	2E-06	--	3E-07	--	3E-06	Skin, CVS	0.02	- -	0.002	0.02
			Barium	- -	--	- -	--	- -	Kidney	0.0007	- -	--	0.0007
			Beryllium	- -	--	- -	--	- -	GS	0.0003	- -	--	0.0003
			Cadmium	- -	--	- -	--	- -	Kidney	0.02	- -	0.001	0.02
			Chromium	2E-06	--	- -	--	2E-06	None Specified	0.004	- -	--	0.004
			Copper	- -	--	- -	--	- -	GS	0.003	- -	--	0.003
			Iron	- -	--	- -	--	- -	GS	0.01	- -	--	0.01
			Lead	- -	--	- -	--	- -	NA	--	- -	--	--
			Manganese	- -	--	- -	--	- -	CNS	0.01	- -	--	0.01
			Mercury	- -	--	- -	--	- -	Immune System	0.0001	- -	--	0.0001
			Nickel	- -	--	- -	--	- -	Body Weight	0.0005	- -	--	0.0005
			Silver	- -	--	- -	--	- -	Skin	0.0002	- -	--	0.0002
			Vanadium	- -	--	- -	--	- -	Kidney	0.003	- -	--	0.003
			Chemical Total	8E-06	--	7E-07	--	8E-06		0.2	--	0.02	0.2
		Exposure Point Total						8E-06					0.2
	Exposure Medium Total							8E-06					0.2
Medium Total								8E-06					0.2
Receptor Total							Receptor Risk Total	8E-06				Receptor HI Total	0.2

TABLE 9.31.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - 2009 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Outdoor Worker - OD Unit
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	OD Unit	1,3,5-Trinitrobenzene	- -	--	- -	--	- -	Spleen	0.000001	- -	0.00000009	0.000001
			1,3-Dinitrobenzene	- -	--	- -	--	- -	Spleen	0.0003	- -	0.0001	0.0004
			2,4,6-Trinitrotoluene	2E-08	--	3E-09	--	3E-08	Liver	0.005	- -	0.0006	0.005
			2,4-Dinitrotoluene	1E-08	--	5E-09	--	2E-08	CNS, Liver	0.00005	- -	0.00002	0.00007
			2,6-Dinitrotoluene	9E-09	--	4E-09	--	1E-08	Spleen	0.00005	- -	0.00002	0.00008
			2-Amino-4,6-Dinitrotoluene	- -	--	- -	--	- -	CNS, Liver	0.00010	- -	0.000003	0.0001
			3-Nitrotoluene	- -	--	- -	--	- -	Spleen	0.0003	- -	0.0001	0.0004
			4-Amino-2,6-Dinitrotoluene	- -	--	- -	--	- -	CNS, Liver	0.00009	- -	0.000004	0.00010
			HMX	- -	--	- -	--	- -	Liver	0.00004	- -	0.0000010	0.00004
			RDX	8E-07	--	5E-08	--	9E-07	Prostrate	0.007	- -	0.0004	0.007
			Tetryl	- -	--	- -	--	- -	Blood	0.00009	- -	0.00004	0.0001
			Perchlorate	- -	--	- -	--	- -	Thyroid	0.05	- -	--	0.05
			Aluminum	- -	--	- -	--	- -	CNS	0.002	- -	--	0.002
			Arsenic	2E-06	--	2E-07	--	2E-06	Skin, CVS	0.009	- -	0.001	0.01
			Barium	- -	--	- -	--	- -	Kidney	0.0003	- -	--	0.0003
			Beryllium	- -	--	- -	--	- -	GS	0.00005	- -	--	0.00005
			Cadmium	- -	--	- -	--	- -	Kidney	0.009	- -	0.0008	0.010
			Chromium	1E-06	--	- -	--	1E-06	None Specified	0.002	- -	--	0.002
			Copper	- -	--	- -	--	- -	GS	0.002	- -	--	0.002
			Iron	- -	--	- -	--	- -	GS	0.008	- -	--	0.008
			Lead	- -	--	- -	--	- -	NA	--	- -	--	--
			Manganese	- -	--	- -	--	- -	CNS	0.003	- -	--	0.003
			Mercury	- -	--	- -	--	- -	Immune System	0.0002	- -	--	0.0002
			Nickel	- -	--	- -	--	- -	Body Weight	0.0002	- -	--	0.0002
			Silver	- -	--	- -	--	- -	Skin	0.0001	- -	--	0.0001
			Vanadium	- -	--	- -	--	- -	Kidney	0.0010	- -	--	0.0010
			Zinc	- -	--	- -	--	- -	Blood	0.0006	- -	--	0.0006
			Chemical Total	3E-06	--	3E-07	--	4E-06		0.1	--	0.003	0.1
		Exposure Point Total						4E-06					0.1
	Exposure Medium Total							4E-06					0.1
Medium Total								4E-06					0.1
Receptor Total							Receptor Risk Total	4E-06				Receptor HI Total	0.1

TABLE 9.32.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - 2009 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Outdoor Worker - SF Unit
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Static Firing Rocket Silos	1,3,5-Trinitrobenzene	- -	--	- -	--	- -	Spleen	0.0000007	- -	0.00000006	0.0000008
			2,4,6-Trinitrotoluene	2E-09	--	2E-10	--	2E-09	Liver	0.0003	- -	0.00004	0.0003
			2,4-Dinitrotoluene	9E-07	--	4E-07	--	1E-06	CNS, Liver	0.004	- -	0.002	0.006
			2,6-Dinitrotoluene	3E-07	--	1E-07	--	4E-07	Spleen	0.002	- -	0.0007	0.002
			2-Amino-4,6-Dinitrotoluene	- -	--	- -	--	- -	CNS, Liver	0.00004	- -	0.0000010	0.00004
			4-Amino-2,6-Dinitrotoluene	- -	--	- -	--	- -	CNS, Liver	0.00004	- -	0.000001	0.00004
			HMX	- -	--	- -	--	- -	Liver	0.000006	- -	0.0000002	0.000006
			Nitroglycerin	3E-08	--	1E-08	--	4E-08	Blood	0.04	- -	0.02	0.06
			RDX	5E-08	--	3E-09	--	5E-08	Prostrate	0.0004	- -	0.00003	0.0005
			2,3,7,8-TCDD Equivalents	8E-06	--	1E-06	--	9E-06	Reproductive	0.2	- -	0.03	0.3
			Perchlorate	- -	--	- -	--	- -	Thyroid	0.003	- -	--	0.003
			Aluminum	- -	--	- -	--	- -	CNS	0.006	- -	--	0.006
			Arsenic	1E-06	--	2E-07	--	1E-06	Skin, CVS	0.008	- -	0.001	0.009
			Barium	- -	--	- -	--	- -	Kidney	0.0004	- -	--	0.0004
			Beryllium	- -	--	- -	--	- -	GS	0.0001	- -	--	0.0001
			Cadmium	- -	--	- -	--	- -	Kidney	0.02	- -	0.002	0.02
			Chromium	5E-06	--	- -	--	5E-06	None Specified	0.01	- -	--	0.01
			Copper	- -	--	- -	--	- -	GS	0.004	- -	--	0.004
			Iron	- -	--	- -	--	- -	GS	0.01	- -	--	0.01
			Lead	- -	--	- -	--	- -	NA	--	- -	--	--
			Manganese	- -	--	- -	--	- -	CNS	0.006	- -	--	0.006
			Mercury	- -	--	- -	--	- -	Immune System	0.00009	- -	--	0.00009
			Nickel	- -	--	- -	--	- -	Body Weight	0.0009	- -	--	0.0009
			Silver	- -	--	- -	--	- -	Skin	0.00009	- -	--	0.00009
			Vanadium	- -	--	- -	--	- -	Kidney	0.001	- -	--	0.001
			Zinc	- -	--	- -	--	- -	Blood	0.001	- -	--	0.001
			Chemical Total	2E-05	--	2E-06	--	2E-05		0.4	--	0.05	0.4
		Exposure Point Total						2E-05					0.4
	Exposure Medium Total							2E-05					0.4
Medium Total								2E-05					0.4
Receptor Total							Receptor Risk Total	2E-05				Receptor HI Total	0.4

TABLE 9.33.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - 2009 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Outdoor Worker - Entire Site
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	All Soil Samples	1,3,5-Trinitrobenzene	- -	--	- -	--	- -	Spleen	0.000001	- -	0.00000008	0.000001
			1,3-Dinitrobenzene	- -	--	- -	--	- -	Spleen	0.0003	- -	0.0001	0.0004
			2,4,6-Trinitrotoluene	2E-08	--	3E-09	--	3E-08	Liver	0.004	- -	0.0006	0.005
			2,4-Dinitrotoluene	4E-07	--	2E-07	--	5E-07	CNS, Liver	0.002	- -	0.0007	0.002
			2,6-Dinitrotoluene	9E-08	--	4E-08	--	1E-07	Spleen	0.0006	- -	0.0002	0.0008
			2-Amino-4,6-Dinitrotoluene	- -	--	- -	--	- -	CNS, Liver	0.00009	- -	0.000002	0.00009
			3-Nitrotoluene	- -	--	- -	--	- -	Spleen	0.0003	- -	0.0001	0.0004
			4-Amino-2,6-Dinitrotoluene	- -	--	- -	--	- -	CNS, Liver	0.00007	- -	0.000003	0.00008
			HMX	- -	--	- -	--	- -	Liver	0.00004	- -	0.0000009	0.00004
			Nitroglycerin	1E-08	--	5E-09	--	2E-08	Blood	0.02	- -	0.008	0.03
			RDX	8E-07	--	5E-08	--	8E-07	Prostrate	0.006	- -	0.0004	0.007
			Tetryl	- -	--	- -	--	- -	Blood	0.00006	- -	0.00003	0.00009
			2,3,7,8-TCDD Equivalents	7E-06	--	9E-07	--	8E-06	Reproductive	0.2	- -	0.03	0.2
			Perchlorate	- -	--	- -	--	- -	Thyroid	0.04	- -	--	0.04
			Aluminum	- -	--	- -	--	- -	CNS	0.005	- -	--	0.005
			Arsenic	2E-06	--	2E-07	--	2E-06	Skin, CVS	0.010	- -	0.001	0.01
			Barium	- -	--	- -	--	- -	Kidney	0.0004	- -	--	0.0004
			Beryllium	- -	--	- -	--	- -	GS	0.0001	- -	--	0.0001
			Cadmium	- -	--	- -	--	- -	Kidney	0.01	- -	0.001	0.01
			Chromium	3E-06	--	- -	--	3E-06	None Specified	0.006	- -	--	0.006
			Copper	- -	--	- -	--	- -	GS	0.003	- -	--	0.003
			Iron	- -	--	- -	--	- -	GS	0.01	- -	--	0.01
			Lead	- -	--	- -	--	- -	NA	--	- -	--	--
			Manganese	- -	--	- -	--	- -	CNS	0.007	- -	--	0.007
			Mercury	- -	--	- -	--	- -	Immune System	0.0002	- -	--	0.0002
			Nickel	- -	--	- -	--	- -	Body Weight	0.0005	- -	--	0.0005
			Silver	- -	--	- -	--	- -	Skin	0.0001	- -	--	0.0001
			Vanadium	- -	--	- -	--	- -	Kidney	0.001	- -	--	0.001
			Zinc	- -	--	- -	--	- -	Blood	0.0007	- -	--	0.0007
			Chemical Total	1E-05	--	1E-06	--	1E-05		0.3	--	0.04	0.4
		Exposure Point Total						1E-05					0.4
	Exposure Medium Total							1E-05					0.4
Medium Total								1E-05					0.4
Receptor Total							Receptor Risk Total	1E-05				Receptor HI Total	0.4

2014 SURFACE SOIL SAMPLES

TABLE 9.34.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - 2014 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Unprotected OB Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	OB Unit	1,3,5-Trinitrobenzene	- -	--	- -	--	- -	Spleen	0.000001	--	1E-7	0.000001
			1,3-Dinitrobenzene	- -	--	- -	--	- -	Spleen	0.0002	--	0.00007	0.0002
			2,4,6-Trinitrotoluene	1E-10	--	1E-11	--	1E-10	Liver	0.00002	--	0.000002	0.00002
			2,4-Dinitrotoluene	4E-07	--	2E-07	--	6E-07	CNS, Liver	0.002	--	0.0009	0.003
			2,6-Dinitrotoluene	7E-09	--	3E-09	--	9E-09	Spleen	0.00004	--	0.00002	0.00006
			2-Amino-4,6-Dinitrotoluene	- -	--	- -	--	- -	CNS, Liver	0.000008	--	0.0000002	0.000008
			2-Nitrotoluene	1E-09	--	4E-10	--	1E-09	Bone	0.00001	--	0.000006	0.00002
			4-Amino-2,6-Dinitrotoluene	- -	--	- -	--	- -	CNS, Liver	0.000007	--	0.0000003	0.000007
			4-Nitrotoluene	2E-10	--	6E-11	--	2E-10	Spleen	0.000007	--	0.000003	0.000010
			HMX	- -	--	- -	--	- -	Liver	0.000004	--	0.0000001	0.000004
			Nitroglycerin	2E-08	--	9E-09	--	3E-08	Blood	0.03	--	0.01	0.05
			RDX	7E-08	--	5E-09	--	8E-08	Prostrate	0.0006	--	0.00004	0.0006
			Tetryl	- -	--	- -	--	- -	Blood	0.000009	--	0.000004	0.00001
			Perchlorate	- -	--	- -	--	- -	Thyroid	0.000006	--	--	0.000006
			2,3,7,8-TCDD Equivalents	2E-07	--	2E-08	--	2E-07	Reproductive	0.005	--	0.0006	0.005
			Aluminum	- -	--	- -	--	- -	CNS	0.003	--	--	0.003
			Antimony	- -	--	- -	--	- -	Blood	0.003	--	--	0.003
			Arsenic	5E-07	--	1E-07	--	6E-07	Skin, CVS	0.003	--	0.0006	0.004
			Barium	- -	--	- -	--	- -	Kidney	0.0002	--	--	0.0002
			Beryllium	- -	--	- -	--	- -	GS	0.000007	--	--	0.000007
			Cadmium	- -	--	- -	--	- -	Kidney	0.001	--	0.00010	0.001
			Chromium	- -	--	- -	--	- -	None Specified	0.000002	--	--	0.000002
			Cobalt	- -	--	- -	--	- -	Thyroid	0.004	--	--	0.004
			Copper	- -	--	- -	--	- -	GS	0.0006	--	--	0.0006
			Iron	- -	--	- -	--	- -	GS	0.004	--	--	0.004
			Lead	- -	--	- -	--	- -	NA	--	--	--	--
			Manganese	- -	--	- -	--	- -	CNS	0.004	--	--	0.004
			Mercury	- -	--	- -	--	- -	Immune System	0.00003	--	--	0.00003
			Nickel	- -	--	- -	--	- -	Body Weight	0.0002	--	--	0.0002
			Selenium	- -	--	- -	--	- -	Skin, CNS	0.00001	--	--	0.00001
			Silver	- -	--	- -	--	- -	Skin	0.00002	--	--	0.00002
			Thallium	- -	--	- -	--	- -	Skin	0.004	--	--	0.004
			Vanadium	- -	--	- -	--	- -	Kidney	0.001	--	--	0.001
			Zinc	- -	--	- -	--	- -	Blood	0.00006	--	--	0.00006
			Chemical Total	1E-06	--	3E-07	--	1E-06		0.07	--	0.02	0.09
		Exposure Point Total						1E-06					0.09
	Exposure Medium Total							1E-06					0.09
	Air	OB Unit	1,3,5-Trinitrobenzene	--	- -	--	--	- -	NA	--	--	--	--
			1,3-Dinitrobenzene	--	- -	--	--	- -	NA	--	--	--	--
			2,4,6-Trinitrotoluene	--	- -	--	--	- -	NA	--	--	--	--
			2,4-Dinitrotoluene	--	2E-11	--	--	2E-11	NA	--	--	--	--
			2,6-Dinitrotoluene	--	- -	--	--	- -	NA	--	--	--	--
			2-Amino-4,6-Dinitrotoluene	--	- -	--	--	- -	NA	--	--	--	--
			2-Nitrotoluene	--	- -	--	--	- -	NA	--	--	--	--
			4-Amino-2,6-Dinitrotoluene	--	- -	--	--	- -	NA	--	--	--	--
			4-Nitrotoluene	--	- -	--	--	- -	NA	--	--	--	--
			HMX	--	- -	--	--	- -	NA	--	--	--	--
			Nitroglycerin	--	- -	--	--	- -	NA	--	--	--	--
			RDX	--	- -	--	--	- -	NA	--	--	--	--
			Tetryl	--	- -	--	--	- -	NA	--	--	--	--
			Perchlorate	--	- -	--	--	- -	NA	--	--	--	--
			2,3,7,8-TCDD Equivalents	--	9E-12	--	--	9E-12	Liver, Reproductive, Respiratory	--	2E-8	--	2E-8
			Aluminum	--	- -	--	--	- -	CNS	--	0.0001	--	0.0001
			Antimony	--	- -	--	--	- -	NA	--	--	--	--
			Arsenic	--	4E-10	--	--	4E-10	NA	--	0.00002	--	0.00002
			Barium	--	- -	--	--	- -	CVS	--	0.00001	--	0.00001
			Beryllium	--	2E-12	--	--	2E-12	Respiratory	--	0.0000001	--	0.0000001
			Cadmium	--	7E-11	--	--	7E-11	Kidney, Respiratory	--	0.00001	--	0.00001
			Chromium	--	- -	--	--	- -	NA	--	--	--	--
			Cobalt	--	7E-10	--	--	7E-10	Respiratory	--	0.00004	--	0.00004
			Copper	--	- -	--	--	- -	NA	--	--	--	--
			Iron	--	- -	--	--	- -	NA	--	--	--	--
			Lead	--	- -	--	--	- -	NA	--	--	--	--
			Manganese	--	- -	--	--	- -	CNS	--	0.0004	--	0.0004
			Mercury	--	- -	--	--	- -	CNS	--	0.0003	--	0.0003
			Nickel	--	6E-11	--	--	6E-11	Respiratory	--	0.000007	--	0.000007
			Selenium	--	- -	--	--	- -	CVS, CNS	--	6E-10	--	6E-10
			Silver	--	- -	--	--	- -	NA	--	--	--	--
			Thallium	--	- -	--	--	- -	NA	--	--	--	--
			Vanadium	--	- -	--	--	- -	NA	--	0.000010	--	0.000010
			Zinc	--	- -	--	--	- -	NA	--	--	--	--
			Chemical Total	--	1E-09	--	--	1E-09		- -	0.0008	- -	0.0008
		Exposure Point Total						1E-09					0.0008
	Exposure Medium Total							1E-09					0.0008
Medium Total								2E-06					0.09
Receptor Total							Receptor Risk Total	2E-06				Receptor HI Total	0.09

TABLE 9.35.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - 2014 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Unprotected OD Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	OD Unit	1,3,5-Trinitrobenzene	- -	--	- -	--	- -	Spleen	0.000002	--	0.0000002	0.000002
			1,3-Dinitrobenzene	- -	--	- -	--	- -	Spleen	0.0004	--	0.0002	0.0006
			2,4,6-Trinitrotoluene	3E-08	--	4E-09	--	3E-08	Liver	0.006	--	0.0008	0.006
			2,4-Dinitrotoluene	2E-09	--	9E-10	--	3E-09	CNS, Liver	0.000009	--	0.000004	0.00001
			2-Amino-4,6-Dinitrotoluene	- -	--	- -	--	- -	CNS, Liver	0.00005	--	0.000001	0.00005
			4-Amino-2,6-Dinitrotoluene	- -	--	- -	--	- -	CNS, Liver	0.00006	--	0.000002	0.00007
			HMX	- -	--	- -	--	- -	Liver	0.00002	--	0.0000005	0.00002
			Nitroglycerin	4E-09	--	2E-09	--	5E-09	Blood	0.006	--	0.002	0.008
			PETN	2E-10	--	8E-11	--	3E-10	Whole Body	0.00006	--	0.00003	0.00009
			RDX	2E-07	--	1E-08	--	2E-07	Prostrate	0.002	--	0.0001	0.002
			Tetryl	- -	--	- -	--	- -	Blood	0.0002	--	0.00009	0.0003
			Perchlorate	- -	--	- -	--	- -	Thyroid	0.001	--	--	0.001
			Aluminum	- -	--	- -	--	- -	CNS	0.001	--	--	0.001
			Antimony	- -	--	- -	--	- -	Blood	0.001	--	--	0.001
			Arsenic	4E-07	--	9E-08	--	5E-07	Skin, CVS	0.003	--	0.0006	0.003
			Barium	- -	--	- -	--	- -	Kidney	0.0002	--	--	0.0002
			Beryllium	- -	--	- -	--	- -	GS	0.00003	--	--	0.00003
			Cadmium	- -	--	- -	--	- -	Kidney	0.005	--	0.0004	0.005
			Chromium	- -	--	- -	--	- -	None Specified	0.00002	--	--	0.00002
			Cobalt	- -	--	- -	--	- -	Thyroid	0.003	--	--	0.003
			Copper	- -	--	- -	--	- -	GS	0.004	--	--	0.004
			Iron	- -	--	- -	--	- -	GS	0.003	--	--	0.003
			Lead	- -	--	- -	--	- -	NA	--	--	--	--
			Manganese	- -	--	- -	--	- -	CNS	0.002	--	--	0.002
			Mercury	- -	--	- -	--	- -	Immune System	0.00009	--	--	0.00009
			Nickel	- -	--	- -	--	- -	Body Weight	0.0007	--	--	0.0007
			Selenium	- -	--	- -	--	- -	Skin, CNS	0.00001	--	--	0.00001
			Silver	- -	--	- -	--	- -	Skin	0.0001	--	--	0.0001
			Thallium	- -	--	- -	--	- -	Skin	0.003	--	--	0.003
			Vanadium	- -	--	- -	--	- -	Kidney	0.0007	--	--	0.0007
			Zinc	- -	--	- -	--	- -	Blood	0.0002	--	--	0.0002
			Chemical Total	7E-07	--	1E-07	--	8E-07		0.04	--	0.005	0.05
		Exposure Point Total						8E-07					0.05
	Exposure Medium Total							8E-07					0.05
	Air	OD Unit	1,3,5-Trinitrobenzene	--	- -	--	--	- -	NA	--	--	--	--
			1,3-Dinitrobenzene	--	- -	--	--	- -	NA	--	--	--	--
			2,4,6-Trinitrotoluene	--	- -	--	--	- -	NA	--	--	--	--
			2,4-Dinitrotoluene	--	1E-13	--	--	1E-13	NA	--	--	--	--
			2-Amino-4,6-Dinitrotoluene	--	- -	--	--	- -	NA	--	--	--	--
			4-Amino-2,6-Dinitrotoluene	--	- -	--	--	- -	NA	--	--	--	--
			HMX	--	- -	--	--	- -	NA	--	--	--	--
			Nitroglycerin	--	- -	--	--	- -	NA	--	--	--	--
			PETN	--	- -	--	--	- -	NA	--	--	--	--
			RDX	--	- -	--	--	- -	NA	--	--	--	--
			Tetryl	--	- -	--	--	- -	NA	--	--	--	--
			Perchlorate	--	- -	--	--	- -	NA	--	--	--	--
			Aluminum	--	- -	--	--	- -	CNS	--	0.00004	--	0.00004
			Antimony	--	- -	--	--	- -	NA	--	--	--	--
			Arsenic	--	4E-10	--	--	4E-10	NA	--	0.00002	--	0.00002
			Barium	--	- -	--	--	- -	CVS	--	0.00001	--	0.00001
			Beryllium	--	9E-12	--	--	9E-12	Respiratory	--	0.0000005	--	0.0000005
			Cadmium	--	3E-10	--	--	3E-10	Kidney, Respiratory	--	0.00005	--	0.00005
			Chromium	--	- -	--	--	- -	NA	--	--	--	--
			Cobalt	--	5E-10	--	--	5E-10	Respiratory	--	0.00003	--	0.00003
			Copper	--	- -	--	--	- -	NA	--	--	--	--
			Iron	--	- -	--	--	- -	NA	--	--	--	--
			Lead	--	- -	--	--	- -	NA	--	--	--	--
			Manganese	--	- -	--	--	- -	CNS	--	0.0002	--	0.0002
			Mercury	--	- -	--	--	- -	CNS	--	0.0008	--	0.0008
			Nickel	--	2E-10	--	--	2E-10	Respiratory	--	0.00003	--	0.00003
			Selenium	--	- -	--	--	- -	CVS, CNS	--	7E-10	--	7E-10
			Silver	--	- -	--	--	- -	NA	--	--	--	--
			Thallium	--	- -	--	--	- -	NA	--	--	--	--
			Vanadium	--	- -	--	--	- -	NA	--	0.000007	--	0.000007
			Zinc	--	- -	--	--	- -	NA	--	--	--	--
			Chemical Total	--	1E-09	--	--	1E-09		- -	0.001	- -	0.001
		Exposure Point Total						1E-09					0.001
	Exposure Medium Total							1E-09					0.001
Medium Total								8E-07					0.05
Receptor Total							Receptor Risk Total	8E-07				Receptor HI Total	0.05

TABLE 9.36.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - 2014 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Unprotected SF Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Static Firing Rocket Silos	1,3,5-Trinitrobenzene	- -	--	- -	--	- -	Spleen	0.000002	--	0.0000001	0.000002
			2,4,6-Trinitrotoluene	3E-08	--	4E-09	--	3E-08	Liver	0.006	--	0.0008	0.006
			2,4-Dinitrotoluene	3E-08	--	1E-08	--	5E-08	CNS, Liver	0.0001	--	0.00006	0.0002
			2,6-Dinitrotoluene	9E-09	--	4E-09	--	1E-08	Spleen	0.00006	--	0.00002	0.00008
			2-Amino-4,6-Dinitrotoluene	- -	--	- -	--	- -	CNS, Liver	0.00005	--	0.000001	0.00005
			4-Amino-2,6-Dinitrotoluene	- -	--	- -	--	- -	CNS, Liver	0.00006	--	0.000002	0.00006
			HMX	- -	--	- -	--	- -	Liver	0.00004	--	0.000001	0.00004
			Nitroglycerin	5E-09	--	2E-09	--	8E-09	Blood	0.009	--	0.004	0.01
			RDX	7E-07	--	5E-08	--	8E-07	Prostrate	0.006	--	0.0004	0.007
			Tetryl	- -	--	- -	--	- -	Blood	0.000008	--	0.000003	0.00001
			Perchlorate	- -	--	- -	--	- -	Thyroid	0.0009	--	--	0.0009
			2,3,7,8-TCDD Equivalents	1E-06	--	2E-07	--	2E-06	Reproductive	0.04	--	0.006	0.05
			Aluminum	- -	--	- -	--	- -	CNS	0.002	--	--	0.002
			Antimony	- -	--	- -	--	- -	Blood	0.001	--	--	0.001
			Arsenic	3E-07	--	6E-08	--	3E-07	Skin, CVS	0.002	--	0.0004	0.002
			Barium	- -	--	- -	--	- -	Kidney	0.0001	--	--	0.0001
			Beryllium	- -	--	- -	--	- -	GS	0.00003	--	--	0.00003
			Cadmium	- -	--	- -	--	- -	Kidney	0.009	--	0.0008	0.010
			Chromium	- -	--	- -	--	- -	None Specified	0.000005	--	--	0.000005
			Cobalt	- -	--	- -	--	- -	Thyroid	0.002	--	--	0.002
			Copper	- -	--	- -	--	- -	GS	0.007	--	--	0.007
			Iron	- -	--	- -	--	- -	GS	0.004	--	--	0.004
			Lead	- -	--	- -	--	- -	NA	--	--	--	--
			Manganese	- -	--	- -	--	- -	CNS	0.002	--	--	0.002
			Mercury	- -	--	- -	--	- -	Immune System	0.00002	--	--	0.00002
			Nickel	- -	--	- -	--	- -	Body Weight	0.0001	--	--	0.0001
			Selenium	- -	--	- -	--	- -	Skin, CNS	0.00001	--	--	0.00001
			Silver	- -	--	- -	--	- -	Skin	0.00003	--	--	0.00003
			Thallium	- -	--	- -	--	- -	Skin	0.002	--	--	0.002
			Vanadium	- -	--	- -	--	- -	Kidney	0.0005	--	--	0.0005
			Zinc	- -	--	- -	--	- -	Blood	0.0003	--	--	0.0003
			Chemical Total	3E-06	--	3E-07	--	3E-06		0.10	--	0.01	0.1
		Exposure Point Total						3E-06					0.1
	Exposure Medium Total							3E-06					0.1
	Air	SF Unit	1,3,5-Trinitrobenzene	--	- -	--	--	- -	NA	--	--	--	--
			2,4,6-Trinitrotoluene	--	- -	--	--	- -	NA	--	--	--	--
			2,4-Dinitrotoluene	--	2E-12	--	--	2E-12	NA	--	--	--	--
			2,6-Dinitrotoluene	--	- -	--	--	- -	NA	--	--	--	--
			2-Amino-4,6-Dinitrotoluene	--	- -	--	--	- -	NA	--	--	--	--
			4-Amino-2,6-Dinitrotoluene	--	- -	--	--	- -	NA	--	--	--	--
			HMX	--	- -	--	--	- -	NA	--	--	--	--
			Nitroglycerin	--	- -	--	--	- -	NA	--	--	--	--
			RDX	--	- -	--	--	- -	NA	--	--	--	--
			Tetryl	--	- -	--	--	- -	NA	--	--	--	--
			Perchlorate	--	- -	--	--	- -	NA	--	--	--	--
			2,3,7,8-TCDD Equivalents	--	8E-11	--	--	8E-11	Liver, Reproductive, Respiratory	--	0.0000002	--	0.0000002
			Aluminum	--	- -	--	--	- -	CNS	--	0.00008	--	0.00008
			Antimony	--	- -	--	--	- -	NA	--	--	--	--
			Arsenic	--	3E-10	--	--	3E-10	NA	--	0.00001	--	0.00001
			Barium	--	- -	--	--	- -	CVS	--	0.00001	--	0.00001
			Beryllium	--	1E-11	--	--	1E-11	Respiratory	--	0.0000006	--	0.0000006
			Cadmium	--	6E-10	--	--	6E-10	Kidney, Respiratory	--	0.00009	--	0.00009
			Chromium	--	- -	--	--	- -	NA	--	--	--	--
			Cobalt	--	4E-10	--	--	4E-10	Respiratory	--	0.00002	--	0.00002
			Copper	--	- -	--	--	- -	NA	--	--	--	--
			Iron	--	- -	--	--	- -	NA	--	--	--	--
			Lead	--	- -	--	--	- -	NA	--	--	--	--
			Manganese	--	- -	--	--	- -	CNS	--	0.0002	--	0.0002
			Mercury	--	- -	--	--	- -	CNS	--	0.0002	--	0.0002
			Nickel	--	4E-11	--	--	4E-11	Respiratory	--	0.000005	--	0.000005
			Selenium	--	- -	--	--	- -	CVS, CNS	--	5E-10	--	5E-10
			Silver	--	- -	--	--	- -	NA	--	--	--	--
			Thallium	--	- -	--	--	- -	NA	--	--	--	--
			Vanadium	--	- -	--	--	- -	NA	--	0.000005	--	0.000005
			Zinc	--	- -	--	--	- -	NA	--	--	--	--
			Chemical Total	--	1E-09	--	--	1E-09		- -	0.0006	- -	0.0006
		Exposure Point Total						1E-09					0.0006
	Exposure Medium Total							1E-09					0.0006
Medium Total								3E-06					0.1
Receptor Total							Receptor Risk Total	3E-06				Receptor HI Total	0.1

TABLE 9.37.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - 2014 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Unprotected OB/OD/SF Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	All Soil Samples	1,3,5-Trinitrobenzene	- -	--	- -	--	- -	Spleen	0.000004	--	0.0000003	0.000004
			1,3-Dinitrobenzene	- -	--	- -	--	- -	Spleen	0.0007	--	0.0003	0.001
			2,4,6-Trinitrotoluene	5E-08	--	7E-09	--	6E-08	Liver	0.01	--	0.001	0.01
			2,4-Dinitrotoluene	4E-07	--	2E-07	--	5E-07	CNS, Liver	0.002	--	0.0007	0.002
			2,6-Dinitrotoluene	2E-08	--	9E-09	--	3E-08	Spleen	0.0001	--	0.00006	0.0002
			2-Amino-4,6-Dinitrotoluene	- -	--	- -	--	- -	CNS, Liver	0.00009	--	0.000002	0.00010
			2-Nitrotoluene	3E-09	--	1E-09	--	4E-09	Bone	0.00004	--	0.00002	0.00006
			4-Amino-2,6-Dinitrotoluene	- -	--	- -	--	- -	CNS, Liver	0.0001	--	0.000005	0.0001
			4-Nitrotoluene	3E-10	--	1E-10	--	4E-10	Spleen	0.00001	--	0.000005	0.00002
			HMX	- -	--	- -	--	- -	Liver	0.00005	--	0.000001	0.00005
			Nitroglycerin	2E-08	--	9E-09	--	3E-08	Blood	0.04	--	0.01	0.05
			PETN	3E-10	--	1E-10	--	5E-10	Whole Body	0.0001	--	0.00005	0.0002
			RDX	8E-07	--	5E-08	--	8E-07	Prostrate	0.007	--	0.0004	0.007
			Tetryl	- -	--	- -	--	- -	Blood	0.0003	--	0.0001	0.0005
			Perchlorate	- -	--	- -	--	- -	Thyroid	0.002	--	--	0.002
			2,3,7,8-TCDD Equivalents	4E-06	--	5E-07	--	5E-06	Reproductive	0.1	--	0.02	0.1
			Aluminum	- -	--	- -	--	- -	CNS	0.006	--	--	0.006
			Antimony	- -	--	- -	--	- -	Blood	0.004	--	--	0.004
			Arsenic	1E-06	--	2E-07	--	1E-06	Skin, CVS	0.007	--	0.002	0.009
			Barium	- -	--	- -	--	- -	Kidney	0.0005	--	--	0.0005
			Beryllium	- -	--	- -	--	- -	GS	0.0001	--	--	0.0001
			Cadmium	- -	--	- -	--	- -	Kidney	0.02	--	0.001	0.02
			Chromium	- -	--	- -	--	- -	None Specified	0.00003	--	--	0.00003
			Cobalt	- -	--	- -	--	- -	Thyroid	0.008	--	--	0.008
			Copper	- -	--	- -	--	- -	GS	0.010	--	--	0.010
			Iron	- -	--	- -	--	- -	GS	0.01	--	--	0.01
			Lead	- -	--	- -	--	- -	NA	--	--	--	--
			Manganese	- -	--	- -	--	- -	CNS	0.008	--	--	0.008
			Mercury	- -	--	- -	--	- -	Immune System	0.0002	--	--	0.0002
			Nickel	- -	--	- -	--	- -	Body Weight	0.001	--	--	0.001
			Selenium	- -	--	- -	--	- -	Skin, CNS	0.00003	--	--	0.00003
			Silver	- -	--	- -	--	- -	Skin	0.0002	--	--	0.0002
			Thallium	- -	--	- -	--	- -	Skin	0.009	--	--	0.009
			Vanadium	- -	--	- -	--	- -	Kidney	0.002	--	--	0.002
			Zinc	- -	--	- -	--	- -	Blood	0.0006	--	--	0.0006
			Chemical Total	6E-06	--	1E-06	--	7E-06		0.3	--	0.04	0.3
		Exposure Point Total						7E-06					0.3
	Exposure Medium Total							7E-06					0.3
	Air	OB/OD/SF Units	1,3,5-Trinitrobenzene	--	- -	--	--	- -	NA	--	--	--	--
			1,3-Dinitrobenzene	--	- -	--	--	- -	NA	--	--	--	--
			2,4,6-Trinitrotoluene	--	- -	--	--	- -	NA	--	--	--	--
			2,4-Dinitrotoluene	--	2E-11	--	--	2E-11	NA	--	--	--	--
			2,6-Dinitrotoluene	--	- -	--	--	- -	NA	--	--	--	--
			2-Amino-4,6-Dinitrotoluene	--	- -	--	--	- -	NA	--	--	--	--
			2-Nitrotoluene	--	- -	--	--	- -	NA	--	--	--	--
			4-Amino-2,6-Dinitrotoluene	--	- -	--	--	- -	NA	--	--	--	--
			4-Nitrotoluene	--	- -	--	--	- -	NA	--	--	--	--
			HMX	--	- -	--	--	- -	NA	--	--	--	--
			Nitroglycerin	--	- -	--	--	- -	NA	--	--	--	--
			PETN	--	- -	--	--	- -	NA	--	--	--	--
			RDX	--	- -	--	--	- -	NA	--	--	--	--
			Tetryl	--	- -	--	--	- -	NA	--	--	--	--
			Perchlorate	--	- -	--	--	- -	NA	--	--	--	--
			2,3,7,8-TCDD Equivalents	--	2E-10	--	--	2E-10	Liver, Reproductive, Respiratory	--	0.0000004	--	0.0000004
			Aluminum	--	- -	--	--	- -	CNS	--	0.0002	--	0.0002
			Antimony	--	- -	--	--	- -	NA	--	--	--	--
			Arsenic	--	1E-09	--	--	1E-09	NA	--	0.00005	--	0.00005
			Barium	--	- -	--	--	- -	CVS	--	0.00004	--	0.00004
			Beryllium	--	4E-11	--	--	4E-11	Respiratory	--	0.000002	--	0.000002
			Cadmium	--	1E-09	--	--	1E-09	Kidney, Respiratory	--	0.0002	--	0.0002
			Chromium	--	- -	--	--	- -	NA	--	--	--	--
			Cobalt	--	2E-09	--	--	2E-09	Respiratory	--	0.00008	--	0.00008
			Copper	--	- -	--	--	- -	NA	--	--	--	--
			Iron	--	- -	--	--	- -	NA	--	--	--	--
			Lead	--	- -	--	--	- -	NA	--	--	--	--
			Manganese	--	- -	--	--	- -	CNS	--	0.0008	--	0.0008
			Mercury	--	- -	--	--	- -	CNS	--	0.002	--	0.002
			Nickel	--	4E-10	--	--	4E-10	Respiratory	--	0.00005	--	0.00005
			Selenium	--	- -	--	--	- -	CVS, CNS	--	2E-9	--	2E-9
			Silver	--	- -	--	--	- -	NA	--	--	--	--
			Thallium	--	- -	--	--	- -	NA	--	--	--	--
			Vanadium	--	- -	--	--	- -	NA	--	0.00002	--	0.00002
			Zinc	--	- -	--	--	- -	NA	--	--	--	--
			Chemical Total	--	4E-09	--	--	4E-09		- -	0.003	- -	0.003
		Exposure Point Total						4E-09					0.003
	Exposure Medium Total							4E-09					0.003
Medium Total								7E-06					0.3

TABLE 9.38.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - 2014 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Protected OB Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	OB Unit	1,3,5-Trinitrobenzene	- -	--	- -	--	- -	Spleen	0.000001	--	4E-8	0.000001
			1,3-Dinitrobenzene	- -	--	- -	--	- -	Spleen	0.0002	--	0.00003	0.0002
			2,4,6-Trinitrotoluene	1E-10	--	5E-12	--	1E-10	Liver	0.00002	--	0.0000009	0.00002
			2,4-Dinitrotoluene	4E-07	--	7E-08	--	5E-07	CNS, Liver	0.002	--	0.0003	0.002
			2,6-Dinitrotoluene	7E-09	--	1E-09	--	8E-09	Spleen	0.00004	--	0.000006	0.00005
			2-Amino-4,6-Dinitrotoluene	- -	--	- -	--	- -	CNS, Liver	0.000008	--	7E-8	0.000008
			2-Nitrotoluene	1E-09	--	2E-10	--	1E-09	Bone	0.00001	--	0.000002	0.00002
			4-Amino-2,6-Dinitrotoluene	- -	--	- -	--	- -	CNS, Liver	0.000007	--	9E-8	0.000007
			4-Nitrotoluene	2E-10	--	2E-11	--	2E-10	Spleen	0.000007	--	0.000001	0.000008
			HMX	- -	--	- -	--	- -	Liver	0.000004	--	4E-8	0.000004
			Nitroglycerin	2E-08	--	3E-09	--	2E-08	Blood	0.03	--	0.005	0.04
			RDX	7E-08	--	2E-09	--	7E-08	Prostrate	0.0006	--	0.00001	0.0006
			Tetryl	- -	--	- -	--	- -	Blood	0.000009	--	0.000001	0.000010
			Perchlorate	- -	--	- -	--	- -	Thyroid	0.000006	--	--	0.000006
			2,3,7,8-TCDD Equivalents	2E-07	--	7E-09	--	2E-07	Reproductive	0.005	--	0.0002	0.005
			Aluminum	- -	--	- -	--	- -	CNS	0.003	--	--	0.003
			Antimony	- -	--	- -	--	- -	Blood	0.003	--	--	0.003
			Arsenic	5E-07	--	4E-08	--	5E-07	Skin, CVS	0.003	--	0.0002	0.003
			Barium	- -	--	- -	--	- -	Kidney	0.0002	--	--	0.0002
			Beryllium	- -	--	- -	--	- -	GS	0.000007	--	--	0.000007
			Cadmium	- -	--	- -	--	- -	Kidney	0.001	--	0.00004	0.001
			Chromium	- -	--	- -	--	- -	None Specified	0.000002	--	--	0.000002
			Cobalt	- -	--	- -	--	- -	Thyroid	0.004	--	--	0.004
			Copper	- -	--	- -	--	- -	GS	0.0006	--	--	0.0006
			Iron	- -	--	- -	--	- -	GS	0.004	--	--	0.004
			Lead	- -	--	- -	--	- -	NA	--	--	--	--
			Manganese	- -	--	- -	--	- -	CNS	0.004	--	--	0.004
			Mercury	- -	--	- -	--	- -	Immune System	0.00003	--	--	0.00003
			Nickel	- -	--	- -	--	- -	Body Weight	0.0002	--	--	0.0002
			Selenium	- -	--	- -	--	- -	Skin, CNS	0.00001	--	--	0.00001
			Silver	- -	--	- -	--	- -	Skin	0.00002	--	--	0.00002
			Thallium	- -	--	- -	--	- -	Skin	0.004	--	--	0.004
			Vanadium	- -	--	- -	--	- -	Kidney	0.001	--	--	0.001
			Zinc	- -	--	- -	--	- -	Blood	0.00006	--	--	0.00006
			Chemical Total	1E-06	--	1E-07	--	1E-06		0.07	--	0.006	0.07
		Exposure Point Total						1E-06					0.07
	Exposure Medium Total							1E-06					0.07
	Air	OB Unit	1,3,5-Trinitrobenzene	--	- -	--	--	- -	NA	--	--	--	--
			1,3-Dinitrobenzene	--	- -	--	--	- -	NA	--	--	--	--
			2,4,6-Trinitrotoluene	--	- -	--	--	- -	NA	--	--	--	--
			2,4-Dinitrotoluene	--	2E-11	--	--	2E-11	NA	--	--	--	--
			2,6-Dinitrotoluene	--	- -	--	--	- -	NA	--	--	--	--
			2-Amino-4,6-Dinitrotoluene	--	- -	--	--	- -	NA	--	--	--	--
			2-Nitrotoluene	--	- -	--	--	- -	NA	--	--	--	--
			4-Amino-2,6-Dinitrotoluene	--	- -	--	--	- -	NA	--	--	--	--
			4-Nitrotoluene	--	- -	--	--	- -	NA	--	--	--	--
			HMX	--	- -	--	--	- -	NA	--	--	--	--
			Nitroglycerin	--	- -	--	--	- -	NA	--	--	--	--
			RDX	--	- -	--	--	- -	NA	--	--	--	--
			Tetryl	--	- -	--	--	- -	NA	--	--	--	--
			Perchlorate	--	- -	--	--	- -	NA	--	--	--	--
			2,3,7,8-TCDD Equivalents	--	9E-12	--	--	9E-12	Liver, Reproductive, Respiratory	--	2E-8	--	2E-8
			Aluminum	--	- -	--	--	- -	CNS	--	0.0001	--	0.0001
			Antimony	--	- -	--	--	- -	NA	--	--	--	--
			Arsenic	--	4E-10	--	--	4E-10	NA	--	0.00002	--	0.00002
			Barium	--	- -	--	--	- -	CVS	--	0.00001	--	0.00001
			Beryllium	--	2E-12	--	--	2E-12	Respiratory	--	0.0000001	--	0.0000001
			Cadmium	--	7E-11	--	--	7E-11	Kidney, Respiratory	--	0.00001	--	0.00001
			Chromium	--	- -	--	--	- -	NA	--	--	--	--
			Cobalt	--	7E-10	--	--	7E-10	Respiratory	--	0.00004	--	0.00004
			Copper	--	- -	--	--	- -	NA	--	--	--	--
			Iron	--	- -	--	--	- -	NA	--	--	--	--
			Lead	--	- -	--	--	- -	NA	--	--	--	--
			Manganese	--	- -	--	--	- -	CNS	--	0.0004	--	0.0004
			Mercury	--	- -	--	--	- -	CNS	--	0.0003	--	0.0003
			Nickel	--	6E-11	--	--	6E-11	Respiratory	--	0.000007	--	0.000007
			Selenium	--	- -	--	--	- -	CVS, CNS	--	6E-10	--	6E-10
			Silver	--	- -	--	--	- -	NA	--	--	--	--
			Thallium	--	- -	--	--	- -	NA	--	--	--	--
			Vanadium	--	- -	--	--	- -	NA	--	0.000010	--	0.000010
			Zinc	--	- -	--	--	- -	NA	--	--	--	--
			Chemical Total	--	1E-09	--	--	1E-09		- -	0.0008	- -	0.0008
		Exposure Point Total						1E-09					0.0008
	Exposure Medium Total							1E-09					0.0008
Medium Total								1E-06					0.08
Receptor Total							Receptor Risk Total	1E-06				Receptor HI Total	0.08

TABLE 9.39.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - 2014 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Protected OD Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	OD Unit	1,3,5-Trinitrobenzene	- -	--	- -	--	- -	Spleen	0.000002	--	6E-8	0.000002
			1,3-Dinitrobenzene	- -	--	- -	--	- -	Spleen	0.0004	--	0.00006	0.0005
			2,4,6-Trinitrotoluene	3E-08	--	1E-09	--	3E-08	Liver	0.006	--	0.0003	0.006
			2,4-Dinitrotoluene	2E-09	--	3E-10	--	2E-09	CNS, Liver	0.000009	--	0.000001	0.00001
			2-Amino-4,6-Dinitrotoluene	- -	--	- -	--	- -	CNS, Liver	0.00005	--	0.0000004	0.00005
			4-Amino-2,6-Dinitrotoluene	- -	--	- -	--	- -	CNS, Liver	0.00006	--	0.0000009	0.00006
			HMX	- -	--	- -	--	- -	Liver	0.00002	--	0.0000002	0.00002
			Nitroglycerin	4E-09	--	5E-10	--	4E-09	Blood	0.006	--	0.0009	0.007
			PETN	2E-10	--	3E-11	--	2E-10	Whole Body	0.00006	--	0.000009	0.00007
			RDX	2E-07	--	5E-09	--	2E-07	Prostrate	0.002	--	0.00004	0.002
			Tetryl	- -	--	- -	--	- -	Blood	0.0002	--	0.00003	0.0002
			Perchlorate	- -	--	- -	--	- -	Thyroid	0.001	--	--	0.001
			Aluminum	- -	--	- -	--	- -	CNS	0.001	--	--	0.001
			Antimony	- -	--	- -	--	- -	Blood	0.001	--	--	0.001
			Arsenic	4E-07	--	3E-08	--	5E-07	Skin, CVS	0.003	--	0.0002	0.003
			Barium	- -	--	- -	--	- -	Kidney	0.0002	--	--	0.0002
			Beryllium	- -	--	- -	--	- -	GS	0.00003	--	--	0.00003
			Cadmium	- -	--	- -	--	- -	Kidney	0.005	--	0.0001	0.005
			Chromium	- -	--	- -	--	- -	None Specified	0.00002	--	--	0.00002
			Cobalt	- -	--	- -	--	- -	Thyroid	0.003	--	--	0.003
			Copper	- -	--	- -	--	- -	GS	0.004	--	--	0.004
			Iron	- -	--	- -	--	- -	GS	0.003	--	--	0.003
			Lead	- -	--	- -	--	- -	NA	--	--	--	--
			Manganese	- -	--	- -	--	- -	CNS	0.002	--	--	0.002
			Mercury	- -	--	- -	--	- -	Immune System	0.00009	--	--	0.00009
			Nickel	- -	--	- -	--	- -	Body Weight	0.0007	--	--	0.0007
			Selenium	- -	--	- -	--	- -	Skin, CNS	0.00001	--	--	0.00001
			Silver	- -	--	- -	--	- -	Skin	0.0001	--	--	0.0001
			Thallium	- -	--	- -	--	- -	Skin	0.003	--	--	0.003
			Vanadium	- -	--	- -	--	- -	Kidney	0.0007	--	--	0.0007
			Zinc	- -	--	- -	--	- -	Blood	0.0002	--	--	0.0002
			Chemical Total	7E-07	--	4E-08	--	7E-07		0.04	--	0.002	0.04
		Exposure Point Total						7E-07					0.04
	Exposure Medium Total							7E-07					0.04
	Air	OD Unit	1,3,5-Trinitrobenzene	--	- -	--	--	- -	NA	--	--	--	--
			1,3-Dinitrobenzene	--	- -	--	--	- -	NA	--	--	--	--
			2,4,6-Trinitrotoluene	--	- -	--	--	- -	NA	--	--	--	--
			2,4-Dinitrotoluene	--	1E-13	--	--	1E-13	NA	--	--	--	--
			2-Amino-4,6-Dinitrotoluene	--	- -	--	--	- -	NA	--	--	--	--
			4-Amino-2,6-Dinitrotoluene	--	- -	--	--	- -	NA	--	--	--	--
			HMX	--	- -	--	--	- -	NA	--	--	--	--
			Nitroglycerin	--	- -	--	--	- -	NA	--	--	--	--
			PETN	--	- -	--	--	- -	NA	--	--	--	--
			RDX	--	- -	--	--	- -	NA	--	--	--	--
			Tetryl	--	- -	--	--	- -	NA	--	--	--	--
			Perchlorate	--	- -	--	--	- -	NA	--	--	--	--
			Aluminum	--	- -	--	--	- -	CNS	--	0.00004	--	0.00004
			Antimony	--	- -	--	--	- -	NA	--	--	--	--
			Arsenic	--	4E-10	--	--	4E-10	NA	--	0.00002	--	0.00002
			Barium	--	- -	--	--	- -	CVS	--	0.00001	--	0.00001
			Beryllium	--	9E-12	--	--	9E-12	Respiratory	--	0.0000005	--	0.0000005
			Cadmium	--	3E-10	--	--	3E-10	Kidney, Respiratory	--	0.00005	--	0.00005
			Chromium	--	- -	--	--	- -	NA	--	--	--	--
			Cobalt	--	5E-10	--	--	5E-10	Respiratory	--	0.00003	--	0.00003
			Copper	--	- -	--	--	- -	NA	--	--	--	--
			Iron	--	- -	--	--	- -	NA	--	--	--	--
			Lead	--	- -	--	--	- -	NA	--	--	--	--
			Manganese	--	- -	--	--	- -	CNS	--	0.0002	--	0.0002
			Mercury	--	- -	--	--	- -	CNS	--	0.0008	--	0.0008
			Nickel	--	2E-10	--	--	2E-10	Respiratory	--	0.00003	--	0.00003
			Selenium	--	- -	--	--	- -	CVS, CNS	--	7E-10	--	7E-10
			Silver	--	- -	--	--	- -	NA	--	--	--	--
			Thallium	--	- -	--	--	- -	NA	--	--	--	--
			Vanadium	--	- -	--	--	- -	NA	--	0.000007	--	0.000007
			Zinc	--	- -	--	--	- -	NA	--	--	--	--
			Chemical Total	--	1E-09	--	--	1E-09		- -	0.001	- -	0.001
		Exposure Point Total						1E-09					0.001
	Exposure Medium Total							1E-09					0.001
Medium Total								7E-07					0.04
Receptor Total							Receptor Risk Total	7E-07				Receptor HI Total	0.04

TABLE 9.40.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - 2014 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Protected SF Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Static Firing Rocket Silos	1,3,5-Trinitrobenzene	- -	--	- -	--	- -	Spleen	0.000002	--	5E-8	0.000002
			2,4,6-Trinitrotoluene	3E-08	--	1E-09	--	3E-08	Liver	0.006	--	0.0003	0.006
			2,4-Dinitrotoluene	3E-08	--	5E-09	--	4E-08	CNS, Liver	0.0001	--	0.00002	0.0002
			2,6-Dinitrotoluene	9E-09	--	1E-09	--	1E-08	Spleen	0.00006	--	0.000008	0.00007
			2-Amino-4,6-Dinitrotoluene	- -	--	- -	--	- -	CNS, Liver	0.00005	--	0.0000004	0.00005
			4-Amino-2,6-Dinitrotoluene	- -	--	- -	--	- -	CNS, Liver	0.00006	--	0.0000007	0.00006
			HMX	- -	--	- -	--	- -	Liver	0.00004	--	0.0000004	0.00004
			Nitroglycerin	5E-09	--	8E-10	--	6E-09	Blood	0.009	--	0.001	0.01
			RDX	7E-07	--	2E-08	--	8E-07	Prostrate	0.006	--	0.0001	0.006
			Tetryl	- -	--	- -	--	- -	Blood	0.000008	--	0.000001	0.000009
			Perchlorate	- -	--	- -	--	- -	Thyroid	0.0009	--	--	0.0009
			2,3,7,8-TCDD Equivalents	1E-06	--	6E-08	--	1E-06	Reproductive	0.04	--	0.002	0.05
			Aluminum	- -	--	- -	--	- -	CNS	0.002	--	--	0.002
			Antimony	- -	--	- -	--	- -	Blood	0.001	--	--	0.001
			Arsenic	3E-07	--	2E-08	--	3E-07	Skin, CVS	0.002	--	0.0001	0.002
			Barium	- -	--	- -	--	- -	Kidney	0.0001	--	--	0.0001
			Beryllium	- -	--	- -	--	- -	GS	0.00003	--	--	0.00003
			Cadmium	- -	--	- -	--	- -	Kidney	0.009	--	0.0003	0.009
			Chromium	- -	--	- -	--	- -	None Specified	0.000005	--	--	0.000005
			Cobalt	- -	--	- -	--	- -	Thyroid	0.002	--	--	0.002
			Copper	- -	--	- -	--	- -	GS	0.007	--	--	0.007
			Iron	- -	--	- -	--	- -	GS	0.004	--	--	0.004
			Lead	- -	--	- -	--	- -	NA	--	--	--	--
			Manganese	- -	--	- -	--	- -	CNS	0.002	--	--	0.002
			Mercury	- -	--	- -	--	- -	Immune System	0.00002	--	--	0.00002
			Nickel	- -	--	- -	--	- -	Body Weight	0.0001	--	--	0.0001
			Selenium	- -	--	- -	--	- -	Skin, CNS	0.00001	--	--	0.00001
			Silver	- -	--	- -	--	- -	Skin	0.00003	--	--	0.00003
			Thallium	- -	--	- -	--	- -	Skin	0.002	--	--	0.002
			Vanadium	- -	--	- -	--	- -	Kidney	0.0005	--	--	0.0005
			Zinc	- -	--	- -	--	- -	Blood	0.0003	--	--	0.0003
			Chemical Total	3E-06	--	1E-07	--	3E-06		0.10	--	0.004	0.1
		Exposure Point Total						3E-06					0.1
	Exposure Medium Total							3E-06					0.1
	Air	SF Unit	1,3,5-Trinitrobenzene	--	- -	--	--	- -	NA	--	--	--	--
			2,4,6-Trinitrotoluene	--	- -	--	--	- -	NA	--	--	--	--
			2,4-Dinitrotoluene	--	2E-12	--	--	2E-12	NA	--	--	--	--
			2,6-Dinitrotoluene	--	- -	--	--	- -	NA	--	--	--	--
			2-Amino-4,6-Dinitrotoluene	--	- -	--	--	- -	NA	--	--	--	--
			4-Amino-2,6-Dinitrotoluene	--	- -	--	--	- -	NA	--	--	--	--
			HMX	--	- -	--	--	- -	NA	--	--	--	--
			Nitroglycerin	--	- -	--	--	- -	NA	--	--	--	--
			RDX	--	- -	--	--	- -	NA	--	--	--	--
			Tetryl	--	- -	--	--	- -	NA	--	--	--	--
			Perchlorate	--	- -	--	--	- -	NA	--	--	--	--
			2,3,7,8-TCDD Equivalents	--	8E-11	--	--	8E-11	Liver, Reproductive, Respiratory	--	0.0000002	--	0.0000002
			Aluminum	--	- -	--	--	- -	CNS	--	0.00008	--	0.00008
			Antimony	--	- -	--	--	- -	NA	--	--	--	--
			Arsenic	--	3E-10	--	--	3E-10	NA	--	0.00001	--	0.00001
			Barium	--	- -	--	--	- -	CVS	--	0.00001	--	0.00001
			Beryllium	--	1E-11	--	--	1E-11	Respiratory	--	0.0000006	--	0.0000006
			Cadmium	--	6E-10	--	--	6E-10	Kidney, Respiratory	--	0.00009	--	0.00009
			Chromium	--	- -	--	--	- -	NA	--	--	--	--
			Cobalt	--	4E-10	--	--	4E-10	Respiratory	--	0.00002	--	0.00002
			Copper	--	- -	--	--	- -	NA	--	--	--	--
			Iron	--	- -	--	--	- -	NA	--	--	--	--
			Lead	--	- -	--	--	- -	NA	--	--	--	--
			Manganese	--	- -	--	--	- -	CNS	--	0.0002	--	0.0002
			Mercury	--	- -	--	--	- -	CNS	--	0.0002	--	0.0002
			Nickel	--	4E-11	--	--	4E-11	Respiratory	--	0.000005	--	0.000005
			Selenium	--	- -	--	--	- -	CVS, CNS	--	5E-10	--	5E-10
			Silver	--	- -	--	--	- -	NA	--	--	--	--
			Thallium	--	- -	--	--	- -	NA	--	--	--	--
			Vanadium	--	- -	--	--	- -	NA	--	0.000005	--	0.000005
			Zinc	--	- -	--	--	- -	NA	--	--	--	--
			Chemical Total	--	1E-09	--	--	1E-09		- -	0.0006	- -	0.0006
		Exposure Point Total						1E-09					0.0006
	Exposure Medium Total							1E-09					0.0006
Medium Total								3E-06					0.1
Receptor Total							Receptor Risk Total	3E-06				Receptor HI Total	0.1

TABLE 9.41.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - 2014 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Protected OB/OD/SF Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	All Soil Samples	1,3,5-Trinitrobenzene	- -	--	- -	--	- -	Spleen	0.000004	--	0.0000001	0.000004
			1,3-Dinitrobenzene	- -	--	- -	--	- -	Spleen	0.0007	--	0.0001	0.0008
			2,4,6-Trinitrotoluene	5E-08	--	3E-09	--	6E-08	Liver	0.01	--	0.0005	0.01
			2,4-Dinitrotoluene	4E-07	--	5E-08	--	4E-07	CNS, Liver	0.002	--	0.0002	0.002
			2,6-Dinitrotoluene	2E-08	--	3E-09	--	3E-08	Spleen	0.0001	--	0.00002	0.0002
			2-Amino-4,6-Dinitrotoluene	- -	--	- -	--	- -	CNS, Liver	0.00009	--	0.0000008	0.00009
			2-Nitrotoluene	3E-09	--	5E-10	--	4E-09	Bone	0.00004	--	0.000007	0.00005
			4-Amino-2,6-Dinitrotoluene	- -	--	- -	--	- -	CNS, Liver	0.0001	--	0.000002	0.0001
			4-Nitrotoluene	3E-10	--	4E-11	--	3E-10	Spleen	0.00001	--	0.000002	0.00001
			HMX	- -	--	- -	--	- -	Liver	0.00005	--	0.0000005	0.00005
			Nitroglycerin	2E-08	--	3E-09	--	2E-08	Blood	0.04	--	0.005	0.04
			PETN	3E-10	--	5E-11	--	4E-10	Whole Body	0.0001	--	0.00002	0.0001
			RDX	8E-07	--	2E-08	--	8E-07	Prostrate	0.007	--	0.0001	0.007
			Tetryl	- -	--	- -	--	- -	Blood	0.0003	--	0.00005	0.0004
			Perchlorate	- -	--	- -	--	- -	Thyroid	0.002	--	--	0.002
			2,3,7,8-TCDD Equivalents	4E-06	--	2E-07	--	4E-06	Reproductive	0.1	--	0.006	0.1
			Aluminum	- -	--	- -	--	- -	CNS	0.006	--	--	0.006
			Antimony	- -	--	- -	--	- -	Blood	0.004	--	--	0.004
			Arsenic	1E-06	--	9E-08	--	1E-06	Skin, CVS	0.007	--	0.0005	0.008
			Barium	- -	--	- -	--	- -	Kidney	0.0005	--	--	0.0005
			Beryllium	- -	--	- -	--	- -	GS	0.0001	--	--	0.0001
			Cadmium	- -	--	- -	--	- -	Kidney	0.02	--	0.0005	0.02
			Chromium	- -	--	- -	--	- -	None Specified	0.00003	--	--	0.00003
			Cobalt	- -	--	- -	--	- -	Thyroid	0.008	--	--	0.008
			Copper	- -	--	- -	--	- -	GS	0.010	--	--	0.010
			Iron	- -	--	- -	--	- -	GS	0.01	--	--	0.01
			Lead	- -	--	- -	--	- -	NA	--	--	--	--
			Manganese	- -	--	- -	--	- -	CNS	0.008	--	--	0.008
			Mercury	- -	--	- -	--	- -	Immune System	0.0002	--	--	0.0002
			Nickel	- -	--	- -	--	- -	Body Weight	0.001	--	--	0.001
			Selenium	- -	--	- -	--	- -	Skin, CNS	0.00003	--	--	0.00003
			Silver	- -	--	- -	--	- -	Skin	0.0002	--	--	0.0002
			Thallium	- -	--	- -	--	- -	Skin	0.009	--	--	0.009
			Vanadium	- -	--	- -	--	- -	Kidney	0.002	--	--	0.002
			Zinc	- -	--	- -	--	- -	Blood	0.0006	--	--	0.0006
			Chemical Total	6E-06	--	3E-07	--	7E-06		0.3	--	0.01	0.3
		Exposure Point Total						7E-06					0.3
	Exposure Medium Total							7E-06					0.3
	Air	OB/OD/SF Units	1,3,5-Trinitrobenzene	--	- -	--	--	- -	NA	--	--	--	--
			1,3-Dinitrobenzene	--	- -	--	--	- -	NA	--	--	--	--
			2,4,6-Trinitrotoluene	--	- -	--	--	- -	NA	--	--	--	--
			2,4-Dinitrotoluene	--	2E-11	--	--	2E-11	NA	--	--	--	--
			2,6-Dinitrotoluene	--	- -	--	--	- -	NA	--	--	--	--
			2-Amino-4,6-Dinitrotoluene	--	- -	--	--	- -	NA	--	--	--	--
			2-Nitrotoluene	--	- -	--	--	- -	NA	--	--	--	--
			4-Amino-2,6-Dinitrotoluene	--	- -	--	--	- -	NA	--	--	--	--
			4-Nitrotoluene	--	- -	--	--	- -	NA	--	--	--	--
			HMX	--	- -	--	--	- -	NA	--	--	--	--
			Nitroglycerin	--	- -	--	--	- -	NA	--	--	--	--
			PETN	--	- -	--	--	- -	NA	--	--	--	--
			RDX	--	- -	--	--	- -	NA	--	--	--	--
			Tetryl	--	- -	--	--	- -	NA	--	--	--	--
			Perchlorate	--	- -	--	--	- -	NA	--	--	--	--
			2,3,7,8-TCDD Equivalents	--	2E-10	--	--	2E-10	Liver, Reproductive, Respiratory	--	0.0000004	--	0.0000004
			Aluminum	--	- -	--	--	- -	CNS	--	0.0002	--	0.0002
			Antimony	--	- -	--	--	- -	NA	--	--	--	--
			Arsenic	--	1E-09	--	--	1E-09	NA	--	0.00005	--	0.00005
			Barium	--	- -	--	--	- -	CVS	--	0.00004	--	0.00004
			Beryllium	--	4E-11	--	--	4E-11	Respiratory	--	0.000002	--	0.000002
			Cadmium	--	1E-09	--	--	1E-09	Kidney, Respiratory	--	0.0002	--	0.0002
			Chromium	--	- -	--	--	- -	NA	--	--	--	--
			Cobalt	--	2E-09	--	--	2E-09	Respiratory	--	0.00008	--	0.00008
			Copper	--	- -	--	--	- -	NA	--	--	--	--
			Iron	--	- -	--	--	- -	NA	--	--	--	--
			Lead	--	- -	--	--	- -	NA	--	--	--	--
			Manganese	--	- -	--	--	- -	CNS	--	0.0008	--	0.0008
			Mercury	--	- -	--	--	- -	CNS	--	0.002	--	0.002
			Nickel	--	4E-10	--	--	4E-10	Respiratory	--	0.00005	--	0.00005
			Selenium	--	- -	--	--	- -	CVS, CNS	--	2E-9	--	2E-9
			Silver	--	- -	--	--	- -	NA	--	--	--	--
			Thallium	--	- -	--	--	- -	NA	--	--	--	--
			Vanadium	--	- -	--	--	- -	NA	--	0.00002	--	0.00002
			Zinc	--	- -	--	--	- -	NA	--	--	--	--
			Chemical Total	--	4E-09	--	--	4E-09		- -	0.003	- -	0.003
		Exposure Point Total						4E-09					0.003
	Exposure Medium Total							4E-09					0.003
Medium Total								7E-06					0.3
Receptor Total							Receptor Risk Total	7E-06				Receptor HI Total	0.3

TABLE 9.42.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - 2014 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Future
Receptor Population: Outdoor Worker - OB Unit
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	OB Unit	1,3,5-Trinitrobenzene	- -	--	- -	--	- -	Spleen	0.000005	--	0.0000004	0.000006
			1,3-Dinitrobenzene	- -	--	- -	--	- -	Spleen	0.0007	--	0.0003	0.001
			2,4,6-Trinitrotoluene	4E-10	--	5E-11	--	5E-10	Liver	0.00008	--	0.00001	0.00009
			2,4-Dinitrotoluene	2E-06	--	8E-07	--	3E-06	CNS, Liver	0.008	--	0.004	0.01
			2,6-Dinitrotoluene	3E-08	--	1E-08	--	4E-08	Spleen	0.0002	--	0.00007	0.0002
			2-Amino-4,6-Dinitrotoluene	- -	--	- -	--	- -	CNS, Liver	0.00003	--	0.0000008	0.00003
			2-Nitrotoluene	4E-09	--	2E-09	--	6E-09	Bone	0.00006	--	0.00003	0.00009
			4-Amino-2,6-Dinitrotoluene	- -	--	- -	--	- -	CNS, Liver	0.00003	--	0.000001	0.00003
			4-Nitrotoluene	6E-10	--	3E-10	--	9E-10	Spleen	0.00003	--	0.00001	0.00004
			HMX	- -	--	- -	--	- -	Liver	0.00002	--	0.0000004	0.00002
			Nitroglycerin	8E-08	--	4E-08	--	1E-07	Blood	0.1	--	0.06	0.2
			RDX	3E-07	--	2E-08	--	3E-07	Prostrate	0.003	--	0.0002	0.003
			Tetryl	- -	--	- -	--	- -	Blood	0.00004	--	0.00001	0.00005
			Perchlorate	- -	--	- -	--	- -	Thyroid	0.00002	--	--	0.00002
			2,3,7,8-TCDD Equivalents	6E-07	--	8E-08	--	7E-07	Reproductive	0.02	--	0.002	0.02
			Aluminum	- -	--	- -	--	- -	CNS	0.01	--	--	0.01
			Antimony	- -	--	- -	--	- -	Blood	0.01	--	--	0.01
			Arsenic	2E-06	--	4E-07	--	2E-06	Skin, CVS	0.01	--	0.003	0.01
			Barium	- -	--	- -	--	- -	Kidney	0.0007	--	--	0.0007
			Beryllium	- -	--	- -	--	- -	GS	0.00003	--	--	0.00003
			Cadmium	- -	--	- -	--	- -	Kidney	0.005	--	0.0004	0.005
			Chromium	- -	--	- -	--	- -	None Specified	0.000010	--	--	0.000010
			Cobalt	- -	--	- -	--	- -	Thyroid	0.02	--	--	0.02
			Copper	- -	--	- -	--	- -	GS	0.003	--	--	0.003
			Iron	- -	--	- -	--	- -	GS	0.02	--	--	0.02
			Lead	- -	--	- -	--	- -	NA	--	--	--	--
			Manganese	- -	--	- -	--	- -	CNS	0.02	--	--	0.02
			Mercury	- -	--	- -	--	- -	Immune System	0.0001	--	--	0.0001
			Nickel	- -	--	- -	--	- -	Body Weight	0.0007	--	--	0.0007
			Selenium	- -	--	- -	--	- -	Skin, CNS	0.00005	--	--	0.00005
			Silver	- -	--	- -	--	- -	Skin	0.00009	--	--	0.00009
			Thallium	- -	--	- -	--	- -	Skin	0.02	--	--	0.02
			Vanadium	- -	--	- -	--	- -	Kidney	0.004	--	--	0.004
			Zinc	- -	--	- -	--	- -	Blood	0.0003	--	--	0.0003
			Chemical Total	5E-06	--	1E-06	--	6E-06		0.3	--	0.07	0.4
		Exposure Point Total						6E-06					0.4
	Exposure Medium Total							6E-06					0.4
	Air	OB Unit	1,3,5-Trinitrobenzene	--	- -	--	--	- -	NA	--	--	--	--
			1,3-Dinitrobenzene	--	- -	--	--	- -	NA	--	--	--	--
			2,4,6-Trinitrotoluene	--	- -	--	--	- -	NA	--	--	--	--
			2,4-Dinitrotoluene	--	1E-10	--	--	1E-10	NA	--	--	--	--
			2,6-Dinitrotoluene	--	- -	--	--	- -	NA	--	--	--	--
			2-Amino-4,6-Dinitrotoluene	--	- -	--	--	- -	NA	--	--	--	--
			2-Nitrotoluene	--	- -	--	--	- -	NA	--	--	--	--
			4-Amino-2,6-Dinitrotoluene	--	- -	--	--	- -	NA	--	--	--	--
			4-Nitrotoluene	--	- -	--	--	- -	NA	--	--	--	--
			HMX	--	- -	--	--	- -	NA	--	--	--	--
			Nitroglycerin	--	- -	--	--	- -	NA	--	--	--	--
			RDX	--	- -	--	--	- -	NA	--	--	--	--
			Tetryl	--	- -	--	--	- -	NA	--	--	--	--
			Perchlorate	--	- -	--	--	- -	NA	--	--	--	--
			2,3,7,8-TCDD Equivalents	--	4E-11	--	--	4E-11	Liver, Reproductive, Respiratory	--	7E-8	--	7E-8
			Aluminum	--	- -	--	--	- -	CNS	--	0.0005	--	0.0005
			Antimony	--	- -	--	--	- -	NA	--	--	--	--
			Arsenic	--	2E-09	--	--	2E-09	NA	--	0.00008	--	0.00008
			Barium	--	- -	--	--	- -	CVS	--	0.00006	--	0.00006
			Beryllium	--	1E-11	--	--	1E-11	Respiratory	--	0.0000006	--	0.0000006
			Cadmium	--	3E-10	--	--	3E-10	Kidney, Respiratory	--	0.00005	--	0.00005
			Chromium	--	- -	--	--	- -	NA	--	--	--	--
			Cobalt	--	3E-09	--	--	3E-09	Respiratory	--	0.0002	--	0.0002
			Copper	--	- -	--	--	- -	NA	--	--	--	--
			Iron	--	- -	--	--	- -	NA	--	--	--	--
			Lead	--	- -	--	--	- -	NA	--	--	--	--
			Manganese	--	- -	--	--	- -	CNS	--	0.002	--	0.002
			Mercury	--	- -	--	--	- -	CNS	--	0.001	--	0.001
			Nickel	--	2E-10	--	--	2E-10	Respiratory	--	0.00003	--	0.00003
			Selenium	--	- -	--	--	- -	CVS, CNS	--	2E-9	--	2E-9
			Silver	--	- -	--	--	- -	NA	--	--	--	--
			Thallium	--	- -	--	--	- -	NA	--	--	--	--
			Vanadium	--	- -	--	--	- -	NA	--	0.00004	--	0.00004
			Zinc	--	- -	--	--	- -	NA	--	--	--	--
			Chemical Total	--	6E-09	--	--	6E-09		- -	0.004	- -	0.004
		Exposure Point Total						6E-09					0.004
	Exposure Medium Total							6E-09					0.004
Medium Total								6E-06					0.4
Receptor Total							Receptor Risk Total	6E-06				Receptor HI Total	0.4

TABLE 9.43.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - 2014 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Future
Receptor Population: Outdoor Worker - OD Unit
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	OD Unit	1,3,5-Trinitrobenzene	- -	--	- -	--	- -	Spleen	0.000006	--	0.0000005	0.000006
			1,3-Dinitrobenzene	- -	--	- -	--	- -	Spleen	0.001	--	0.0005	0.002
			2,4,6-Trinitrotoluene	8E-08	--	1E-08	--	9E-08	Liver	0.02	--	0.002	0.02
			2,4-Dinitrotoluene	6E-09	--	2E-09	--	8E-09	CNS, Liver	0.00003	--	0.00001	0.00004
			2-Amino-4,6-Dinitrotoluene	- -	--	- -	--	- -	CNS, Liver	0.0001	--	0.000003	0.0001
			4-Amino-2,6-Dinitrotoluene	- -	--	- -	--	- -	CNS, Liver	0.0002	--	0.000007	0.0002
			HMX	- -	--	- -	--	- -	Liver	0.00005	--	0.000001	0.00005
			Nitroglycerin	1E-08	--	4E-09	--	1E-08	Blood	0.02	--	0.007	0.02
			PETN	5E-10	--	2E-10	--	7E-10	Whole Body	0.0002	--	0.00007	0.0002
			RDX	6E-07	--	4E-08	--	6E-07	Prostrate	0.005	--	0.0003	0.005
			Tetryl	- -	--	- -	--	- -	Blood	0.0006	--	0.0002	0.0008
			Perchlorate	- -	--	- -	--	- -	Thyroid	0.003	--	--	0.003
			Aluminum	- -	--	- -	--	- -	CNS	0.003	--	--	0.003
			Antimony	- -	--	- -	--	- -	Blood	0.003	--	--	0.003
			Arsenic	1E-06	--	3E-07	--	1E-06	Skin, CVS	0.008	--	0.002	0.009
			Barium	- -	--	- -	--	- -	Kidney	0.0005	--	--	0.0005
			Beryllium	- -	--	- -	--	- -	GS	0.00007	--	--	0.00007
			Cadmium	- -	--	- -	--	- -	Kidney	0.01	--	0.001	0.01
			Chromium	- -	--	- -	--	- -	None Specified	0.00005	--	--	0.00005
			Cobalt	- -	--	- -	--	- -	Thyroid	0.007	--	--	0.007
			Copper	- -	--	- -	--	- -	GS	0.01	--	--	0.01
			Iron	- -	--	- -	--	- -	GS	0.010	--	--	0.010
			Lead	- -	--	- -	--	- -	NA	--	--	--	--
			Manganese	- -	--	- -	--	- -	CNS	0.005	--	--	0.005
			Mercury	- -	--	- -	--	- -	Immune System	0.0003	--	--	0.0003
			Nickel	- -	--	- -	--	- -	Body Weight	0.002	--	--	0.002
			Selenium	- -	--	- -	--	- -	Skin, CNS	0.00004	--	--	0.00004
			Silver	- -	--	- -	--	- -	Skin	0.0004	--	--	0.0004
			Thallium	- -	--	- -	--	- -	Skin	0.009	--	--	0.009
			Vanadium	- -	--	- -	--	- -	Kidney	0.002	--	--	0.002
			Zinc	- -	--	- -	--	- -	Blood	0.0007	--	--	0.0007
			Chemical Total	2E-06	--	3E-07	--	2E-06		0.1	--	0.01	0.1
		Exposure Point Total						2E-06					0.1
	Exposure Medium Total							2E-06					0.1
	Air	OD Unit	1,3,5-Trinitrobenzene	--	- -	--	--	- -	NA	--	--	--	--
			1,3-Dinitrobenzene	--	- -	--	--	- -	NA	--	--	--	--
			2,4,6-Trinitrotoluene	--	- -	--	--	- -	NA	--	--	--	--
			2,4-Dinitrotoluene	--	3E-13	--	--	3E-13	NA	--	--	--	--
			2-Amino-4,6-Dinitrotoluene	--	- -	--	--	- -	NA	--	--	--	--
			4-Amino-2,6-Dinitrotoluene	--	- -	--	--	- -	NA	--	--	--	--
			HMX	--	- -	--	--	- -	NA	--	--	--	--
			Nitroglycerin	--	- -	--	--	- -	NA	--	--	--	--
			PETN	--	- -	--	--	- -	NA	--	--	--	--
			RDX	--	- -	--	--	- -	NA	--	--	--	--
			Tetryl	--	- -	--	--	- -	NA	--	--	--	--
			Perchlorate	--	- -	--	--	- -	NA	--	--	--	--
			Aluminum	--	- -	--	--	- -	CNS	--	0.0001	--	0.0001
			Antimony	--	- -	--	--	- -	NA	--	--	--	--
			Arsenic	--	1E-09	--	--	1E-09	NA	--	0.00005	--	0.00005
			Barium	--	- -	--	--	- -	CVS	--	0.00004	--	0.00004
			Beryllium	--	2E-11	--	--	2E-11	Respiratory	--	0.000001	--	0.000001
			Cadmium	--	8E-10	--	--	8E-10	Kidney, Respiratory	--	0.0001	--	0.0001
			Chromium	--	- -	--	--	- -	NA	--	--	--	--
			Cobalt	--	1E-09	--	--	1E-09	Respiratory	--	0.00007	--	0.00007
			Copper	--	- -	--	--	- -	NA	--	--	--	--
			Iron	--	- -	--	--	- -	NA	--	--	--	--
			Lead	--	- -	--	--	- -	NA	--	--	--	--
			Manganese	--	- -	--	--	- -	CNS	--	0.0004	--	0.0004
			Mercury	--	- -	--	--	- -	CNS	--	0.002	--	0.002
			Nickel	--	7E-10	--	--	7E-10	Respiratory	--	0.00008	--	0.00008
			Selenium	--	- -	--	--	- -	CVS, CNS	--	2E-9	--	2E-9
			Silver	--	- -	--	--	- -	NA	--	--	--	--
			Thallium	--	- -	--	--	- -	NA	--	--	--	--
			Vanadium	--	- -	--	--	- -	NA	--	0.00002	--	0.00002
			Zinc	--	- -	--	--	- -	NA	--	--	--	--
			Chemical Total	--	4E-09	--	--	4E-09		- -	0.003	- -	0.003
		Exposure Point Total						4E-09					0.003
	Exposure Medium Total							4E-09					0.003
Medium Total								2E-06					0.1
Receptor Total							Receptor Risk Total	2E-06				Receptor HI Total	0.1

TABLE 9.44.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - 2014 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Future
Receptor Population: Outdoor Worker - SF Unit
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Static Firing Rocket Silos	1,3,5-Trinitrobenzene	- -	--	- -	--	- -	Spleen	0.000007	--	0.0000006	0.000008
			2,4,6-Trinitrotoluene	1E-07	--	2E-08	--	1E-07	Liver	0.02	--	0.003	0.03
			2,4-Dinitrotoluene	1E-07	--	6E-08	--	2E-07	CNS, Liver	0.0006	--	0.0003	0.0009
			2,6-Dinitrotoluene	4E-08	--	2E-08	--	5E-08	Spleen	0.0002	--	0.00010	0.0003
			2-Amino-4,6-Dinitrotoluene	- -	--	- -	--	- -	CNS, Liver	0.0002	--	0.000005	0.0002
			4-Amino-2,6-Dinitrotoluene	- -	--	- -	--	- -	CNS, Liver	0.0002	--	0.000009	0.0002
			HMX	- -	--	- -	--	- -	Liver	0.0002	--	0.000004	0.0002
			Nitroglycerin	2E-08	--	9E-09	--	3E-08	Blood	0.04	--	0.02	0.05
			RDX	3E-06	--	2E-07	--	3E-06	Prostrate	0.03	--	0.002	0.03
			Tetryl	- -	--	- -	--	- -	Blood	0.00003	--	0.00001	0.00005
			Perchlorate	- -	--	- -	--	- -	Thyroid	0.004	--	--	0.004
			2,3,7,8-TCDD Equivalents	6E-06	--	7E-07	--	7E-06	Reproductive	0.2	--	0.02	0.2
			Aluminum	- -	--	- -	--	- -	CNS	0.008	--	--	0.008
			Antimony	- -	--	- -	--	- -	Blood	0.006	--	--	0.006
			Arsenic	1E-06	--	2E-07	--	1E-06	Skin, CVS	0.007	--	0.001	0.009
			Barium	- -	--	- -	--	- -	Kidney	0.0006	--	--	0.0006
			Beryllium	- -	--	- -	--	- -	GS	0.0001	--	--	0.0001
			Cadmium	- -	--	- -	--	- -	Kidney	0.04	--	0.003	0.04
			Chromium	- -	--	- -	--	- -	None Specified	0.00002	--	--	0.00002
			Cobalt	- -	--	- -	--	- -	Thyroid	0.009	--	--	0.009
			Copper	- -	--	- -	--	- -	GS	0.03	--	--	0.03
			Iron	- -	--	- -	--	- -	GS	0.02	--	--	0.02
			Lead	- -	--	- -	--	- -	NA	--	--	--	--
			Manganese	- -	--	- -	--	- -	CNS	0.009	--	--	0.009
			Mercury	- -	--	- -	--	- -	Immune System	0.00009	--	--	0.00009
			Nickel	- -	--	- -	--	- -	Body Weight	0.0005	--	--	0.0005
			Selenium	- -	--	- -	--	- -	Skin, CNS	0.00004	--	--	0.00004
			Silver	- -	--	- -	--	- -	Skin	0.0001	--	--	0.0001
			Thallium	- -	--	- -	--	- -	Skin	0.007	--	--	0.007
			Vanadium	- -	--	- -	--	- -	Kidney	0.002	--	--	0.002
			Zinc	- -	--	- -	--	- -	Blood	0.001	--	--	0.001
			Chemical Total	1E-05	--	1E-06	--	1E-05		0.4	--	0.05	0.5
		Exposure Point Total						1E-05					0.5
	Exposure Medium Total							1E-05					0.5
	Air	SF Unit	1,3,5-Trinitrobenzene	--	- -	--	--	- -	NA	--	--	--	--
			2,4,6-Trinitrotoluene	--	- -	--	--	- -	NA	--	--	--	--
			2,4-Dinitrotoluene	--	7E-12	--	--	7E-12	NA	--	--	--	--
			2,6-Dinitrotoluene	--	- -	--	--	- -	NA	--	--	--	--
			2-Amino-4,6-Dinitrotoluene	--	- -	--	--	- -	NA	--	--	--	--
			4-Amino-2,6-Dinitrotoluene	--	- -	--	--	- -	NA	--	--	--	--
			HMX	--	- -	--	--	- -	NA	--	--	--	--
			Nitroglycerin	--	- -	--	--	- -	NA	--	--	--	--
			RDX	--	- -	--	--	- -	NA	--	--	--	--
			Tetryl	--	- -	--	--	- -	NA	--	--	--	--
			Perchlorate	--	- -	--	--	- -	NA	--	--	--	--
			2,3,7,8-TCDD Equivalents	--	3E-10	--	--	3E-10	Liver, Reproductive, Respiratory	--	0.0000006	--	0.0000006
			Aluminum	--	- -	--	--	- -	CNS	--	0.0003	--	0.0003
			Antimony	--	- -	--	--	- -	NA	--	--	--	--
			Arsenic	--	1E-09	--	--	1E-09	NA	--	0.00005	--	0.00005
			Barium	--	- -	--	--	- -	CVS	--	0.00005	--	0.00005
			Beryllium	--	4E-11	--	--	4E-11	Respiratory	--	0.000002	--	0.000002
			Cadmium	--	2E-09	--	--	2E-09	Kidney, Respiratory	--	0.0004	--	0.0004
			Chromium	--	- -	--	--	- -	NA	--	--	--	--
			Cobalt	--	2E-09	--	--	2E-09	Respiratory	--	0.00008	--	0.00008
			Copper	--	- -	--	--	- -	NA	--	--	--	--
			Iron	--	- -	--	--	- -	NA	--	--	--	--
			Lead	--	- -	--	--	- -	NA	--	--	--	--
			Manganese	--	- -	--	--	- -	CNS	--	0.0008	--	0.0008
			Mercury	--	- -	--	--	- -	CNS	--	0.0008	--	0.0008
			Nickel	--	2E-10	--	--	2E-10	Respiratory	--	0.00002	--	0.00002
			Selenium	--	- -	--	--	- -	CVS, CNS	--	2E-9	--	2E-9
			Silver	--	- -	--	--	- -	NA	--	--	--	--
			Thallium	--	- -	--	--	- -	NA	--	--	--	--
			Vanadium	--	- -	--	--	- -	NA	--	0.00002	--	0.00002
			Zinc	--	- -	--	--	- -	NA	--	--	--	--
			Chemical Total	--	6E-09	--	--	6E-09		- -	0.003	- -	0.003
		Exposure Point Total						6E-09					0.003
	Exposure Medium Total							6E-09					0.003
Medium Total								1E-05					0.5
Receptor Total							Receptor Risk Total	1E-05				Receptor HI Total	0.5

TABLE 9.45.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - 2014 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Future
Receptor Population: Outdoor Worker - Entire Site
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	All Soil Samples	1,3,5-Trinitrobenzene	- -	--	- -	--	- -	Spleen	0.000005	--	0.0000004	0.000005
			1,3-Dinitrobenzene	- -	--	- -	--	- -	Spleen	0.0009	--	0.0004	0.001
			2,4,6-Trinitrotoluene	6E-08	--	9E-09	--	7E-08	Liver	0.01	--	0.002	0.01
			2,4-Dinitrotoluene	4E-07	--	2E-07	--	6E-07	CNS, Liver	0.002	--	0.0008	0.003
			2,6-Dinitrotoluene	3E-08	--	1E-08	--	4E-08	Spleen	0.0002	--	0.00007	0.0002
			2-Amino-4,6-Dinitrotoluene	- -	--	- -	--	- -	CNS, Liver	0.0001	--	0.000003	0.0001
			2-Nitrotoluene	4E-09	--	2E-09	--	5E-09	Bone	0.00005	--	0.00002	0.00007
			4-Amino-2,6-Dinitrotoluene	- -	--	- -	--	- -	CNS, Liver	0.0001	--	0.000005	0.0002
			4-Nitrotoluene	3E-10	--	1E-10	--	4E-10	Spleen	0.00001	--	0.000006	0.00002
			HMX	- -	--	- -	--	- -	Liver	0.00006	--	0.000002	0.00006
			Nitroglycerin	3E-08	--	1E-08	--	4E-08	Blood	0.04	--	0.02	0.06
			PETN	4E-10	--	2E-10	--	6E-10	Whole Body	0.0001	--	0.00006	0.0002
			RDX	9E-07	--	6E-08	--	1E-06	Prostrate	0.008	--	0.0005	0.008
			Tetryl	- -	--	- -	--	- -	Blood	0.0004	--	0.0002	0.0006
			Perchlorate	- -	--	- -	--	- -	Thyroid	0.002	--	--	0.002
			2,3,7,8-TCDD Equivalents	5E-06	--	6E-07	--	5E-06	Reproductive	0.1	--	0.02	0.2
			Aluminum	- -	--	- -	--	- -	CNS	0.007	--	--	0.007
			Antimony	- -	--	- -	--	- -	Blood	0.005	--	--	0.005
			Arsenic	1E-06	--	3E-07	--	2E-06	Skin, CVS	0.009	--	0.002	0.01
			Barium	- -	--	- -	--	- -	Kidney	0.0006	--	--	0.0006
			Beryllium	- -	--	- -	--	- -	GS	0.0001	--	--	0.0001
			Cadmium	- -	--	- -	--	- -	Kidney	0.02	--	0.002	0.02
			Chromium	- -	--	- -	--	- -	None Specified	0.00003	--	--	0.00003
			Cobalt	- -	--	- -	--	- -	Thyroid	0.010	--	--	0.010
			Copper	- -	--	- -	--	- -	GS	0.01	--	--	0.01
			Iron	- -	--	- -	--	- -	GS	0.01	--	--	0.01
			Lead	- -	--	- -	--	- -	NA	--	--	--	--
			Manganese	- -	--	- -	--	- -	CNS	0.009	--	--	0.009
			Mercury	- -	--	- -	--	- -	Immune System	0.0002	--	--	0.0002
			Nickel	- -	--	- -	--	- -	Body Weight	0.001	--	--	0.001
			Selenium	- -	--	- -	--	- -	Skin, CNS	0.00004	--	--	0.00004
			Silver	- -	--	- -	--	- -	Skin	0.0003	--	--	0.0003
			Thallium	- -	--	- -	--	- -	Skin	0.01	--	--	0.01
			Vanadium	- -	--	- -	--	- -	Kidney	0.003	--	--	0.003
			Zinc	- -	--	- -	--	- -	Blood	0.0007	--	--	0.0007
			Chemical Total	8E-06	--	1E-06	--	9E-06		0.3	--	0.04	0.4
		Exposure Point Total						9E-06					0.4
	Exposure Medium Total							9E-06					0.4
	Air	OB/OD/SF Units	1,3,5-Trinitrobenzene	--	- -	--	--	- -	NA	--	--	--	--
			1,3-Dinitrobenzene	--	- -	--	--	- -	NA	--	--	--	--
			2,4,6-Trinitrotoluene	--	- -	--	--	- -	NA	--	--	--	--
			2,4-Dinitrotoluene	--	2E-11	--	--	2E-11	NA	--	--	--	--
			2,6-Dinitrotoluene	--	- -	--	--	- -	NA	--	--	--	--
			2-Amino-4,6-Dinitrotoluene	--	- -	--	--	- -	NA	--	--	--	--
			2-Nitrotoluene	--	- -	--	--	- -	NA	--	--	--	--
			4-Amino-2,6-Dinitrotoluene	--	- -	--	--	- -	NA	--	--	--	--
			4-Nitrotoluene	--	- -	--	--	- -	NA	--	--	--	--
			HMX	--	- -	--	--	- -	NA	--	--	--	--
			Nitroglycerin	--	- -	--	--	- -	NA	--	--	--	--
			PETN	--	- -	--	--	- -	NA	--	--	--	--
			RDX	--	- -	--	--	- -	NA	--	--	--	--
			Tetryl	--	- -	--	--	- -	NA	--	--	--	--
			Perchlorate	--	- -	--	--	- -	NA	--	--	--	--
			2,3,7,8-TCDD Equivalents	--	3E-10	--	--	3E-10	Liver, Reproductive, Respiratory	--	0.0000005	--	0.0000005
			Aluminum	--	- -	--	--	- -	CNS	--	0.0003	--	0.0003
			Antimony	--	- -	--	--	- -	NA	--	--	--	--
			Arsenic	--	1E-09	--	--	1E-09	NA	--	0.00006	--	0.00006
			Barium	--	- -	--	--	- -	CVS	--	0.00005	--	0.00005
			Beryllium	--	5E-11	--	--	5E-11	Respiratory	--	0.000003	--	0.000003
			Cadmium	--	1E-09	--	--	1E-09	Kidney, Respiratory	--	0.0002	--	0.0002
			Chromium	--	- -	--	--	- -	NA	--	--	--	--
			Cobalt	--	2E-09	--	--	2E-09	Respiratory	--	0.00010	--	0.00010
			Copper	--	- -	--	--	- -	NA	--	--	--	--
			Iron	--	- -	--	--	- -	NA	--	--	--	--
			Lead	--	- -	--	--	- -	NA	--	--	--	--
			Manganese	--	- -	--	--	- -	CNS	--	0.0009	--	0.0009
			Mercury	--	- -	--	--	- -	CNS	--	0.002	--	0.002
			Nickel	--	5E-10	--	--	5E-10	Respiratory	--	0.00005	--	0.00005
			Selenium	--	- -	--	--	- -	CVS, CNS	--	2E-9	--	2E-9
			Silver	--	- -	--	--	- -	NA	--	--	--	--
			Thallium	--	- -	--	--	- -	NA	--	--	--	--
			Vanadium	--	- -	--	--	- -	NA	--	0.00003	--	0.00003
			Zinc	--	- -	--	--	- -	NA	--	--	--	--
			Chemical Total	--	5E-09	--	--	5E-09		- -	0.003	- -	0.003
		Exposure Point Total						5E-09					0.003
	Exposure Medium Total							5E-09					0.003
Medium Total								9E-06					0.4
Receptor Total							Receptor Risk Total	9E-06				Receptor HI Total	0.4

Appendix I

Adult Lead Model Results

SITE NAME: OB UNIT
LOCATION: TOOELE ARMY DEPOT, TOOELE, UTAH
RECEPTOR: OB WORKERS
MEDIA: SURFACE SOIL - 2006 SAMPLING RESULTS

Calculations of Blood Lead Concentrations (PbBs)

U.S. EPA Technical Review Workgroup for Lead, Adult Lead Committee
Version date 6/21/09

Variable	Description of Variable	Units	GSDi and PbBo from Analysis of NHANES 1999-2004
PbS	Soil lead concentration	ug/g or ppm	917
$R_{fetal/maternal}$	Fetal/maternal PbB ratio	--	0.9
BKSF	Biokinetic Slope Factor	ug/dL per ug/day	0.4
GSD_i	Geometric standard deviation PbB	--	1.8
PbB_0	Baseline PbB	ug/dL	1.0
IR_S	Soil ingestion rate (including soil-derived indoor dust)	g/day	0.050
IR_{S+D}	Total ingestion rate of outdoor soil and indoor dust	g/day	--
W_S	Weighting factor; fraction of IR_{S+D} ingested as outdoor soil	--	--
K_{SD}	Mass fraction of soil in dust	--	--
$AF_{S, D}$	Absorption fraction (same for soil and dust)	--	0.12
$EF_{S, D}$	Exposure frequency (same for soil and dust)	days/yr	60
$AT_{S, D}$	Averaging time (same for soil and dust)	days/yr	365
PbB_{adult}	**PbB of adult worker, geometric mean**	**ug/dL**	**1.4**
$PbB_{fetal, 0.95}$	95th percentile PbB among fetuses of adult workers	ug/dL	3.2
PbB_t	Target PbB level of concern (e.g., 10 ug/dL)	ug/dL	**10.0**
$P(PbB_{fetal} > PbB_t)$	**Probability that fetal PbB > PbB_t, assuming lognormal distribution**	**%**	**0.02%**

Source: U.S. EPA (1996). Recommendations of the Technical Review Workgroup for Lead for an Interim Approach to Assessing Risks Associated with Adult Exposures to Lead in Soil

SITE NAME: ALL UNITS
LOCATION: TOOELE ARMY DEPOT, TOOELE, UTAH
RECEPTOR: OB/OD/SF WORKERS
MEDIA: SURFACE SOIL - 2006 SAMPLING RESULTS

Calculations of Blood Lead Concentrations (PbBs)

U.S. EPA Technical Review Workgroup for Lead, Adult Lead Committee
Version date 6/21/09

Variable	Description of Variable	Units	GSDi and PbBo from Analysis of NHANES 1999-2004
PbS	Soil lead concentration	ug/g or ppm	958
$R_{fetal/maternal}$	Fetal/maternal PbB ratio	--	0.9
BKSF	Biokinetic Slope Factor	ug/dL per ug/day	0.4
GSD_i	Geometric standard deviation PbB	--	1.8
PbB_0	Baseline PbB	ug/dL	1.0
IR_S	Soil ingestion rate (including soil-derived indoor dust)	g/day	0.050
IR_{S+D}	Total ingestion rate of outdoor soil and indoor dust	g/day	--
W_S	Weighting factor; fraction of IR_{S+D} ingested as outdoor soil	--	--
K_{SD}	Mass fraction of soil in dust	--	--
$AF_{S, D}$	Absorption fraction (same for soil and dust)	--	0.12
$EF_{S, D}$	Exposure frequency (same for soil and dust)	days/yr	210
$AT_{S, D}$	Averaging time (same for soil and dust)	days/yr	365
PbB_{adult}	**PbB of adult worker, geometric mean**	**ug/dL**	**2.3**
$PbB_{fetal, 0.95}$	95th percentile PbB among fetuses of adult workers	ug/dL	5.5
PbB_t	Target PbB level of concern (e.g., 10 ug/dL)	ug/dL	**10.0**
$P(PbB_{fetal} > PbB_t)$	**Probability that fetal PbB > PbB_t, assuming lognormal distribution**	**%**	**0.4%**

Source: U.S. EPA (1996). Recommendations of the Technical Review Workgroup for Lead for an Interim Approach to Assessing Risks Associated with Adult Exposures to Lead in Soil

SITE NAME: OB UNIT
LOCATION: TOOELE ARMY DEPOT, TOOELE, UTAH
RECEPTOR: OUTDOOR WORKERS
MEDIA: SURFACE SOIL - 2006 SAMPLING RESULTS

Calculations of Blood Lead Concentrations (PbBs)

U.S. EPA Technical Review Workgroup for Lead, Adult Lead Committee
Version date 6/21/09

Variable	Description of Variable	Units	GSDi and PbBo from Analysis of NHANES 1999-2004
PbS	Soil lead concentration	ug/g or ppm	917
$R_{fetal/maternal}$	Fetal/maternal PbB ratio	--	0.9
BKSF	Biokinetic Slope Factor	ug/dL per ug/day	0.4
GSD_i	Geometric standard deviation PbB	--	1.8
PbB_0	Baseline PbB	ug/dL	1.0
IR_S	Soil ingestion rate (including soil-derived indoor dust)	g/day	0.050
IR_{S+D}	Total ingestion rate of outdoor soil and indoor dust	g/day	--
W_S	Weighting factor; fraction of IR_{S+D} ingested as outdoor soil	--	--
K_{SD}	Mass fraction of soil in dust	--	--
$AF_{S, D}$	Absorption fraction (same for soil and dust)	--	0.12
$EF_{S, D}$	Exposure frequency (same for soil and dust)	days/yr	219
$AT_{S, D}$	Averaging time (same for soil and dust)	days/yr	365
PbB_{adult}	**PbB of adult worker, geometric mean**	**ug/dL**	**2.3**
$PbB_{fetal, 0.95}$	95th percentile PbB among fetuses of adult workers	ug/dL	5.5
PbB_t	Target PbB level of concern (e.g., 10 ug/dL)	ug/dL	**10.0**
$P(PbB_{fetal} > PbB_t)$	**Probability that fetal PbB > PbB_t, assuming lognormal distribution**	**%**	**0.4%**

Source: U.S. EPA (1996). Recommendations of the Technical Review Workgroup for Lead for an Interim Approach to Assessing Risks Associated with Adult Exposures to Lead in Soil

SITE NAME: ALL UNITS
LOCATION: TOOELE ARMY DEPOT, TOOELE, UTAH
RECEPTOR: OUTDOOR WORKERS
MEDIA: SURFACE SOIL - 2006 SAMPLING RESULTS

Calculations of Blood Lead Concentrations (PbBs)

U.S. EPA Technical Review Workgroup for Lead, Adult Lead Committee
Version date 6/21/09

Variable	Description of Variable	Units	GSDi and PbBo from Analysis of NHANES 1999-2004
PbS	Soil lead concentration	ug/g or ppm	958
$R_{fetal/maternal}$	Fetal/maternal PbB ratio	--	0.9
BKSF	Biokinetic Slope Factor	ug/dL per ug/day	0.4
GSD_i	Geometric standard deviation PbB	--	1.8
PbB_0	Baseline PbB	ug/dL	1.0
IR_S	Soil ingestion rate (including soil-derived indoor dust)	g/day	0.050
IR_{S+D}	Total ingestion rate of outdoor soil and indoor dust	g/day	--
W_S	Weighting factor; fraction of IR_{S+D} ingested as outdoor soil	--	--
K_{SD}	Mass fraction of soil in dust	--	--
$AF_{S, D}$	Absorption fraction (same for soil and dust)	--	0.12
$EF_{S, D}$	Exposure frequency (same for soil and dust)	days/yr	219
$AT_{S, D}$	Averaging time (same for soil and dust)	days/yr	365
PbB_{adult}	**PbB of adult worker, geometric mean**	**ug/dL**	**2.4**
$PbB_{fetal, 0.95}$	95th percentile PbB among fetuses of adult workers	ug/dL	5.6
PbB_t	Target PbB level of concern (e.g., 10 ug/dL)	ug/dL	**10.0**
$P(PbB_{fetal} > PbB_t)$	**Probability that fetal PbB > PbB_t, assuming lognormal distribution**	**%**	**0.4%**

Source: U.S. EPA (1996). Recommendations of the Technical Review Workgroup for Lead for an Interim Approach to Assessing Risks Associated with Adult Exposures to Lead in Soil

SITE NAME: OB UNIT
LOCATION: TOOELE ARMY DEPOT, TOOELE, UTAH
RECEPTOR: OB WORKERS
MEDIA: SURFACE SOIL - 2007 SAMPLING RESULTS

Calculations of Blood Lead Concentrations (PbBs)

U.S. EPA Technical Review Workgroup for Lead, Adult Lead Committee
Version date 6/21/09

Variable	Description of Variable	Units	GSDi and PbBo from Analysis of NHANES 1999-2004
PbS	Soil lead concentration	ug/g or ppm	4524
$R_{fetal/maternal}$	Fetal/maternal PbB ratio	--	0.9
BKSF	Biokinetic Slope Factor	ug/dL per ug/day	0.4
GSD_i	Geometric standard deviation PbB	--	1.8
PbB_0	Baseline PbB	ug/dL	1.0
IR_S	Soil ingestion rate (including soil-derived indoor dust)	g/day	0.050
IR_{S+D}	Total ingestion rate of outdoor soil and indoor dust	g/day	--
W_S	Weighting factor; fraction of IR_{S+D} ingested as outdoor soil	--	--
K_{SD}	Mass fraction of soil in dust	--	--
$AF_{S, D}$	Absorption fraction (same for soil and dust)	--	0.12
$EF_{S, D}$	Exposure frequency (same for soil and dust)	days/yr	60
$AT_{S, D}$	Averaging time (same for soil and dust)	days/yr	365
PbB_{adult}	**PbB of adult worker, geometric mean**	**ug/dL**	**2.8**
$PbB_{fetal, 0.95}$	95th percentile PbB among fetuses of adult workers	ug/dL	6.6
PbB_t	Target PbB level of concern (e.g., 10 ug/dL)	ug/dL	**10.0**
$P(PbB_{fetal} > PbB_t)$	**Probability that fetal PbB > PbB_t, assuming lognormal distribution**	**%**	**0.9%**

Source: U.S. EPA (1996). Recommendations of the Technical Review Workgroup for Lead for an Interim Approach to Assessing Risks Associated with Adult Exposures to Lead in Soil

SITE NAME: OB UNIT
LOCATION: TOOELE ARMY DEPOT, TOOELE, UTAH
RECEPTOR: OUTDOOR WORKERS
MEDIA: SURFACE SOIL - 2007 SAMPLING RESULTS

Calculations of Blood Lead Concentrations (PbBs)

U.S. EPA Technical Review Workgroup for Lead, Adult Lead Committee
Version date 6/21/09

Variable	Description of Variable	Units	GSDi and PbBo from Analysis of NHANES 1999-2004
PbS	Soil lead concentration	ug/g or ppm	4524
$R_{fetal/maternal}$	Fetal/maternal PbB ratio	--	0.9
BKSF	Biokinetic Slope Factor	ug/dL per ug/day	0.4
GSD_i	Geometric standard deviation PbB	--	1.8
PbB_0	Baseline PbB	ug/dL	1.0
IR_S	Soil ingestion rate (including soil-derived indoor dust)	g/day	0.050
IR_{S+D}	Total ingestion rate of outdoor soil and indoor dust	g/day	--
W_S	Weighting factor; fraction of IR_{S+D} ingested as outdoor soil	--	--
K_{SD}	Mass fraction of soil in dust	--	--
$AF_{S, D}$	Absorption fraction (same for soil and dust)	--	0.12
$EF_{S, D}$	Exposure frequency (same for soil and dust)	days/yr	219
$AT_{S, D}$	Averaging time (same for soil and dust)	days/yr	365
PbB_{adult}	**PbB of adult worker, geometric mean**	**ug/dL**	**7.5**
$PbB_{fetal, 0.95}$	95th percentile PbB among fetuses of adult workers	ug/dL	17.8
PbB_t	Target PbB level of concern (e.g., 10 ug/dL)	ug/dL	**10.0**
$P(PbB_{fetal} > PbB_t)$	**Probability that fetal PbB > PbB_t, assuming lognormal distribution**	**%**	**25%**

Source: U.S. EPA (1996). Recommendations of the Technical Review Workgroup for Lead for an Interim Approach to Assessing Risks Associated with Adult Exposures to Lead in Soil

SITE NAME: All UNITS
LOCATION: TOOELE ARMY DEPOT, TOOELE, UTAH
RECEPTOR: OB/OD/SF WORKERS
MEDIA: SURFACE SOIL - 2007 SAMPLING RESULTS

Calculations of Blood Lead Concentrations (PbBs)

U.S. EPA Technical Review Workgroup for Lead, Adult Lead Committee
Version date 6/21/09

Variable	Description of Variable	Units	GSDi and PbBo from Analysis of NHANES 1999-2004
PbS	Soil lead concentration	ug/g or ppm	958
$R_{fetal/maternal}$	Fetal/maternal PbB ratio	--	0.9
BKSF	Biokinetic Slope Factor	ug/dL per ug/day	0.4
GSD_i	Geometric standard deviation PbB	--	1.8
PbB_0	Baseline PbB	ug/dL	1.0
IR_S	Soil ingestion rate (including soil-derived indoor dust)	g/day	0.050
IR_{S+D}	Total ingestion rate of outdoor soil and indoor dust	g/day	--
W_S	Weighting factor; fraction of IR_{S+D} ingested as outdoor soil	--	--
K_{SD}	Mass fraction of soil in dust	--	--
$AF_{S, D}$	Absorption fraction (same for soil and dust)	--	0.12
$EF_{S, D}$	Exposure frequency (same for soil and dust)	days/yr	210
$AT_{S, D}$	Averaging time (same for soil and dust)	days/yr	365
PbB_{adult}	**PbB of adult worker, geometric mean**	**ug/dL**	**2.3**
$PbB_{fetal, 0.95}$	95th percentile PbB among fetuses of adult workers	ug/dL	5.5
PbB_t	Target PbB level of concern (e.g., 10 ug/dL)	ug/dL	**10.0**
$P(PbB_{fetal} > PbB_t)$	**Probability that fetal PbB > PbB_t, assuming lognormal distribution**	**%**	**0.4%**

Source: U.S. EPA (1996). Recommendations of the Technical Review Workgroup for Lead for an Interim Approach to Assessing Risks Associated with Adult Exposures to Lead in Soil

SITE NAME: All UNITS
LOCATION: TOOELE ARMY DEPOT, TOOELE, UTAH
RECEPTOR: OUTDOOR WORKERS
MEDIA: SURFACE SOIL - 2007 SAMPLING RESULTS

Calculations of Blood Lead Concentrations (PbBs)

U.S. EPA Technical Review Workgroup for Lead, Adult Lead Committee
Version date 6/21/09

Variable	Description of Variable	Units	GSDi and PbBo from Analysis of NHANES 1999-2004
PbS	Soil lead concentration	ug/g or ppm	958
$R_{fetal/maternal}$	Fetal/maternal PbB ratio	--	0.9
BKSF	Biokinetic Slope Factor	ug/dL per ug/day	0.4
GSD_i	Geometric standard deviation PbB	--	1.8
PbB_0	Baseline PbB	ug/dL	1.0
IR_S	Soil ingestion rate (including soil-derived indoor dust)	g/day	0.050
IR_{S+D}	Total ingestion rate of outdoor soil and indoor dust	g/day	--
W_S	Weighting factor; fraction of IR_{S+D} ingested as outdoor soil	--	--
K_{SD}	Mass fraction of soil in dust	--	--
$AF_{S, D}$	Absorption fraction (same for soil and dust)	--	0.12
$EF_{S, D}$	Exposure frequency (same for soil and dust)	days/yr	219
$AT_{S, D}$	Averaging time (same for soil and dust)	days/yr	365
PbB_{adult}	**PbB of adult worker, geometric mean**	**ug/dL**	**2.4**
$PbB_{fetal, 0.95}$	95th percentile PbB among fetuses of adult workers	ug/dL	5.6
PbB_t	Target PbB level of concern (e.g., 10 ug/dL)	ug/dL	**10.0**
$P(PbB_{fetal} > PbB_t)$	**Probability that fetal PbB > PbB_t, assuming lognormal distribution**	**%**	**0.4%**

Source: U.S. EPA (1996). Recommendations of the Technical Review Workgroup for Lead for an Interim Approach to Assessing Risks Associated with Adult Exposures to Lead in Soil

SITE NAME: OB UNIT
LOCATION: TOOELE ARMY DEPOT, TOOELE, UTAH
RECEPTOR: OB WORKERS
MEDIA: SURFACE SOIL - 2009 SAMPLING RESULTS

Calculations of Blood Lead Concentrations (PbBs)

U.S. EPA Technical Review Workgroup for Lead, Adult Lead Committee
Version date 6/21/09

Variable	Description of Variable	Units	GSDi and PbBo from Analysis of NHANES 1999-2004
PbS	Soil lead concentration	ug/g or ppm	9031
$R_{fetal/maternal}$	Fetal/maternal PbB ratio	--	0.9
BKSF	Biokinetic Slope Factor	ug/dL per ug/day	0.4
GSD_i	Geometric standard deviation PbB	--	1.8
PbB_0	Baseline PbB	ug/dL	1.0
IR_S	Soil ingestion rate (including soil-derived indoor dust)	g/day	0.050
IR_{S+D}	Total ingestion rate of outdoor soil and indoor dust	g/day	--
W_S	Weighting factor; fraction of IR_{S+D} ingested as outdoor soil	--	--
K_{SD}	Mass fraction of soil in dust	--	--
$AF_{S, D}$	Absorption fraction (same for soil and dust)	--	0.12
$EF_{S, D}$	Exposure frequency (same for soil and dust)	days/yr	60
$AT_{S, D}$	Averaging time (same for soil and dust)	days/yr	365
PbB_{adult}	**PbB of adult worker, geometric mean**	**ug/dL**	**4.6**
$PbB_{fetal, 0.95}$	95th percentile PbB among fetuses of adult workers	ug/dL	10.8
PbB_t	Target PbB level of concern (e.g., 10 ug/dL)	ug/dL	**10.0**
$P(PbB_{fetal} > PbB_t)$	**Probability that fetal PbB > PbB_t, assuming lognormal distribution**	**%**	**6.5%**

Source: U.S. EPA (1996). Recommendations of the Technical Review Workgroup for Lead for an Interim Approach to Assessing Risks Associated with Adult Exposures to Lead in Soil

SITE NAME: OB UNIT
LOCATION: TOOELE ARMY DEPOT, TOOELE, UTAH
RECEPTOR: OUTDOOR WORKERS
MEDIA: SURFACE SOIL - 2009 SAMPLING RESULTS

Calculations of Blood Lead Concentrations (PbBs)

U.S. EPA Technical Review Workgroup for Lead, Adult Lead Committee
Version date 6/21/09

Variable	Description of Variable	Units	GSDi and PbBo from Analysis of NHANES 1999-2004
PbS	Soil lead concentration	ug/g or ppm	9031
$R_{fetal/maternal}$	Fetal/maternal PbB ratio	--	0.9
BKSF	Biokinetic Slope Factor	ug/dL per ug/day	0.4
GSD_i	Geometric standard deviation PbB	--	1.8
PbB_0	Baseline PbB	ug/dL	1.0
IR_S	Soil ingestion rate (including soil-derived indoor dust)	g/day	0.050
IR_{S+D}	Total ingestion rate of outdoor soil and indoor dust	g/day	--
W_S	Weighting factor; fraction of IR_{S+D} ingested as outdoor soil	--	--
K_{SD}	Mass fraction of soil in dust	--	--
$AF_{S, D}$	Absorption fraction (same for soil and dust)	--	0.12
$EF_{S, D}$	Exposure frequency (same for soil and dust)	days/yr	219
$AT_{S, D}$	Averaging time (same for soil and dust)	days/yr	365
PbB_{adult}	**PbB of adult worker, geometric mean**	**ug/dL**	**14.0**
$PbB_{fetal, 0.95}$	95th percentile PbB among fetuses of adult workers	ug/dL	33.1
PbB_t	Target PbB level of concern (e.g., 10 ug/dL)	ug/dL	**10.0**
$P(PbB_{fetal} > PbB_t)$	**Probability that fetal PbB > PbB_t, assuming lognormal distribution**	**%**	**65%**

Source: U.S. EPA (1996). Recommendations of the Technical Review Workgroup for Lead for an Interim Approach to Assessing Risks Associated with Adult Exposures to Lead in Soil

SITE NAME: ALL UNITS
LOCATION: TOOELE ARMY DEPOT, TOOELE, UTAH
RECEPTOR: OB/OD/SF WORKERS
MEDIA: SURFACE SOIL - 2009 SAMPLING RESULTS

Calculations of Blood Lead Concentrations (PbBs)

U.S. EPA Technical Review Workgroup for Lead, Adult Lead Committee
Version date 6/21/09

Variable	Description of Variable	Units	GSDi and PbBo from Analysis of NHANES 1999-2004
PbS	Soil lead concentration	ug/g or ppm	1776
$R_{fetal/maternal}$	Fetal/maternal PbB ratio	--	0.9
BKSF	Biokinetic Slope Factor	ug/dL per ug/day	0.4
GSD_i	Geometric standard deviation PbB	--	1.8
PbB_0	Baseline PbB	ug/dL	1.0
IR_S	Soil ingestion rate (including soil-derived indoor dust)	g/day	0.050
IR_{S+D}	Total ingestion rate of outdoor soil and indoor dust	g/day	--
W_S	Weighting factor; fraction of IR_{S+D} ingested as outdoor soil	--	--
K_{SD}	Mass fraction of soil in dust	--	--
$AF_{S, D}$	Absorption fraction (same for soil and dust)	--	0.12
$EF_{S, D}$	Exposure frequency (same for soil and dust)	days/yr	210
$AT_{S, D}$	Averaging time (same for soil and dust)	days/yr	365
PbB_{adult}	**PbB of adult worker, geometric mean**	**ug/dL**	**3.5**
$PbB_{fetal, 0.95}$	95th percentile PbB among fetuses of adult workers	ug/dL	8.2
PbB_t	Target PbB level of concern (e.g., 10 ug/dL)	ug/dL	**10.0**
$P(PbB_{fetal} > PbB_t)$	**Probability that fetal PbB > PbB_t, assuming lognormal distribution**	**%**	**2.3%**

Source: U.S. EPA (1996). Recommendations of the Technical Review Workgroup for Lead for an Interim Approach to Assessing Risks Associated with Adult Exposures to Lead in Soil

SITE NAME: ALL UNITS
LOCATION: TOOELE ARMY DEPOT, TOOELE, UTAH
RECEPTOR: OUTDOOR WORKERS
MEDIA: SURFACE SOIL - 2009 SAMPLING RESULTS

Calculations of Blood Lead Concentrations (PbBs)

U.S. EPA Technical Review Workgroup for Lead, Adult Lead Committee
Version date 6/21/09

Variable	Description of Variable	Units	GSDi and PbBo from Analysis of NHANES 1999-2004
PbS	Soil lead concentration	ug/g or ppm	1776
$R_{fetal/maternal}$	Fetal/maternal PbB ratio	--	0.9
BKSF	Biokinetic Slope Factor	ug/dL per ug/day	0.4
GSD_i	Geometric standard deviation PbB	--	1.8
PbB_0	Baseline PbB	ug/dL	1.0
IR_S	Soil ingestion rate (including soil-derived indoor dust)	g/day	0.050
IR_{S+D}	Total ingestion rate of outdoor soil and indoor dust	g/day	--
W_S	Weighting factor; fraction of IR_{S+D} ingested as outdoor soil	--	--
K_{SD}	Mass fraction of soil in dust	--	--
$AF_{S, D}$	Absorption fraction (same for soil and dust)	--	0.12
$EF_{S, D}$	Exposure frequency (same for soil and dust)	days/yr	219
$AT_{S, D}$	Averaging time (same for soil and dust)	days/yr	365
PbB_{adult}	**PbB of adult worker, geometric mean**	**ug/dL**	**3.6**
$PbB_{fetal, 0.95}$	95th percentile PbB among fetuses of adult workers	ug/dL	8.4
PbB_t	Target PbB level of concern (e.g., 10 ug/dL)	ug/dL	**10.0**
$P(PbB_{fetal} > PbB_t)$	**Probability that fetal PbB > PbB_t, assuming lognormal distribution**	**%**	**2.6%**

Source: U.S. EPA (1996). Recommendations of the Technical Review Workgroup for Lead for an Interim Approach to Assessing Risks Associated with Adult Exposures to Lead in Soil

SITE NAME: OB UNIT
LOCATION: TOOELE ARMY DEPOT, TOOELE, UTAH
RECEPTOR: OB WORKERS
MEDIA: SURFACE SOIL - 2014 SAMPLING RESULTS

Calculations of Blood Lead Concentrations (PbBs)

U.S. EPA Technical Review Workgroup for Lead, Adult Lead Committee
Version date 6/21/09

Variable	Description of Variable	Units	GSDi and PbBo from Analysis of NHANES 1999-2004
PbS	Soil lead concentration	ug/g or ppm	5880
$R_{fetal/maternal}$	Fetal/maternal PbB ratio	--	0.9
BKSF	Biokinetic Slope Factor	ug/dL per ug/day	0.4
GSD_i	Geometric standard deviation PbB	--	1.8
PbB_0	Baseline PbB	ug/dL	1.0
IR_S	Soil ingestion rate (including soil-derived indoor dust)	g/day	0.050
IR_{S+D}	Total ingestion rate of outdoor soil and indoor dust	g/day	--
W_S	Weighting factor; fraction of IR_{S+D} ingested as outdoor soil	--	--
K_{SD}	Mass fraction of soil in dust	--	--
$AF_{S, D}$	Absorption fraction (same for soil and dust)	--	0.12
$EF_{S, D}$	Exposure frequency (same for soil and dust)	days/yr	60
$AT_{S, D}$	Averaging time (same for soil and dust)	days/yr	365
PbB_{adult}	**PbB of adult worker, geometric mean**	**ug/dL**	**3.3**
$PbB_{fetal, 0.95}$	95th percentile PbB among fetuses of adult workers	ug/dL	7.9
PbB_t	Target PbB level of concern (e.g., 10 ug/dL)	ug/dL	**10.0**
$P(PbB_{fetal} > PbB_t)$	**Probability that fetal PbB > PbB_t, assuming lognormal distribution**	**%**	**1.99%**

Source: U.S. EPA (1996). Recommendations of the Technical Review Workgroup for Lead for an Interim Approach to Assessing Risks Associated with Adult Exposures to Lead in Soil

SITE NAME: SF UNIT
LOCATION: TOOELE ARMY DEPOT, TOOELE, UTAH
RECEPTOR: SF WORKERS
MEDIA: SURFACE SOIL - 2014 SAMPLING RESULTS

Calculations of Blood Lead Concentrations (PbBs)

U.S. EPA Technical Review Workgroup for Lead, Adult Lead Committee
Version date 6/21/09

Variable	Description of Variable	Units	GSDi and PbBo from Analysis of NHANES 1999-2004
PbS	Soil lead concentration	ug/g or ppm	360
$R_{fetal/maternal}$	Fetal/maternal PbB ratio	--	0.9
BKSF	Biokinetic Slope Factor	ug/dL per ug/day	0.4
GSD_i	Geometric standard deviation PbB	--	1.8
PbB_0	Baseline PbB	ug/dL	1.0
IR_S	Soil ingestion rate (including soil-derived indoor dust)	g/day	0.050
IR_{S+D}	Total ingestion rate of outdoor soil and indoor dust	g/day	--
W_S	Weighting factor; fraction of IR_{S+D} ingested as outdoor soil	--	--
K_{SD}	Mass fraction of soil in dust	--	--
$AF_{S, D}$	Absorption fraction (same for soil and dust)	--	0.12
$EF_{S, D}$	Exposure frequency (same for soil and dust)	days/yr	60
$AT_{S, D}$	Averaging time (same for soil and dust)	days/yr	365
PbB_{adult}	**PbB of adult worker, geometric mean**	**ug/dL**	**1.1**
$PbB_{fetal, 0.95}$	95th percentile PbB among fetuses of adult workers	ug/dL	2.7
PbB_t	Target PbB level of concern (e.g., 10 ug/dL)	ug/dL	**10.0**
$P(PbB_{fetal} > PbB_t)$	**Probability that fetal PbB > PbB_t, assuming lognormal distribution**	**%**	**0.01%**

Source: U.S. EPA (1996). Recommendations of the Technical Review Workgroup for Lead for an Interim Approach to Assessing Risks Associated with Adult Exposures to Lead in Soil

SITE NAME: ALL UNITS
LOCATION: TOOELE ARMY DEPOT, TOOELE, UTAH
RECEPTOR: OB/OD/SF WORKERS
MEDIA: SURFACE SOIL - 2014 SAMPLING RESULTS

Calculations of Blood Lead Concentrations (PbBs)

U.S. EPA Technical Review Workgroup for Lead, Adult Lead Committee
Version date 6/21/09

Variable	Description of Variable	Units	GSDi and PbBo from Analysis of NHANES 1999-2004
PbS	Soil lead concentration	ug/g or ppm	1237
$R_{fetal/maternal}$	Fetal/maternal PbB ratio	--	0.9
BKSF	Biokinetic Slope Factor	ug/dL per ug/day	0.4
GSD_i	Geometric standard deviation PbB	--	1.8
PbB_0	Baseline PbB	ug/dL	1.0
IR_S	Soil ingestion rate (including soil-derived indoor dust)	g/day	0.050
IR_{S+D}	Total ingestion rate of outdoor soil and indoor dust	g/day	--
W_S	Weighting factor; fraction of IR_{S+D} ingested as outdoor soil	--	--
K_{SD}	Mass fraction of soil in dust	--	--
$AF_{S, D}$	Absorption fraction (same for soil and dust)	--	0.12
$EF_{S, D}$	Exposure frequency (same for soil and dust)	days/yr	210
$AT_{S, D}$	Averaging time (same for soil and dust)	days/yr	365
PbB_{adult}	**PbB of adult worker, geometric mean**	**ug/dL**	**2.7**
$PbB_{fetal, 0.95}$	95th percentile PbB among fetuses of adult workers	ug/dL	6.4
PbB_t	Target PbB level of concern (e.g., 10 ug/dL)	ug/dL	**10.0**
$P(PbB_{fetal} > PbB_t)$	**Probability that fetal PbB > PbB_t, assuming lognormal distribution**	**%**	**0.82%**

Source: U.S. EPA (1996). Recommendations of the Technical Review Workgroup for Lead for an Interim Approach to Assessing Risks Associated with Adult Exposures to Lead in Soil

SITE NAME: OB UNIT
LOCATION: TOOELE ARMY DEPOT, TOOELE, UTAH
RECEPTOR: OUTDOOR WORKERS
MEDIA: SURFACE SOIL - 2014 SAMPLING RESULTS

Calculations of Blood Lead Concentrations (PbBs)

U.S. EPA Technical Review Workgroup for Lead, Adult Lead Committee
Version date 6/21/09

Variable	Description of Variable	Units	GSDi and PbBo from Analysis of NHANES 1999-2004
PbS	Soil lead concentration	ug/g or ppm	5880
$R_{fetal/maternal}$	Fetal/maternal PbB ratio	--	0.9
BKSF	Biokinetic Slope Factor	ug/dL per ug/day	0.4
GSD_i	Geometric standard deviation PbB	--	1.8
PbB_0	Baseline PbB	ug/dL	1.0
IR_S	Soil ingestion rate (including soil-derived indoor dust)	g/day	0.050
IR_{S+D}	Total ingestion rate of outdoor soil and indoor dust	g/day	--
W_S	Weighting factor; fraction of IR_{S+D} ingested as outdoor soil	--	--
K_{SD}	Mass fraction of soil in dust	--	--
$AF_{S, D}$	Absorption fraction (same for soil and dust)	--	0.12
$EF_{S, D}$	Exposure frequency (same for soil and dust)	days/yr	219
$AT_{S, D}$	Averaging time (same for soil and dust)	days/yr	365
PbB_{adult}	**PbB of adult worker, geometric mean**	**ug/dL**	**9.5**
$PbB_{fetal, 0.95}$	95th percentile PbB among fetuses of adult workers	ug/dL	22.4
PbB_t	Target PbB level of concern (e.g., 10 ug/dL)	ug/dL	**10.0**
$P(PbB_{fetal} > PbB_t)$	**Probability that fetal PbB > PbB_t, assuming lognormal distribution**	**%**	**39.27%**

Source: U.S. EPA (1996). Recommendations of the Technical Review Workgroup for Lead for an Interim Approach to Assessing Risks Associated with Adult Exposures to Lead in Soil

SITE NAME: SF UNIT
LOCATION: TOOELE ARMY DEPOT, TOOELE, UTAH
RECEPTOR: OUTDOOR WORKERS
MEDIA: SURFACE SOIL - 2014 SAMPLING RESULTS

Calculations of Blood Lead Concentrations (PbBs)

U.S. EPA Technical Review Workgroup for Lead, Adult Lead Committee
Version date 6/21/09

Variable	Description of Variable	Units	GSDi and PbBo from Analysis of NHANES 1999-2004
PbS	Soil lead concentration	ug/g or ppm	360
$R_{fetal/maternal}$	Fetal/maternal PbB ratio	--	0.9
BKSF	Biokinetic Slope Factor	ug/dL per ug/day	0.4
GSD_i	Geometric standard deviation PbB	--	1.8
PbB_0	Baseline PbB	ug/dL	1.0
IR_S	Soil ingestion rate (including soil-derived indoor dust)	g/day	0.050
IR_{S+D}	Total ingestion rate of outdoor soil and indoor dust	g/day	--
W_S	Weighting factor; fraction of IR_{S+D} ingested as outdoor soil	--	--
K_{SD}	Mass fraction of soil in dust	--	--
$AF_{S, D}$	Absorption fraction (same for soil and dust)	--	0.12
$EF_{S, D}$	Exposure frequency (same for soil and dust)	days/yr	219
$AT_{S, D}$	Averaging time (same for soil and dust)	days/yr	365
PbB_{adult}	**PbB of adult worker, geometric mean**	**ug/dL**	**1.5**
$PbB_{fetal, 0.95}$	95th percentile PbB among fetuses of adult workers	ug/dL	3.6
PbB_t	Target PbB level of concern (e.g., 10 ug/dL)	ug/dL	**10.0**
$P(PbB_{fetal} > PbB_t)$	**Probability that fetal PbB > PbB_t, assuming lognormal distribution**	**%**	**0.035%**

Source: U.S. EPA (1996). Recommendations of the Technical Review Workgroup for Lead for an Interim Approach to Assessing Risks Associated with Adult Exposures to Lead in Soil

SITE NAME: ALL UNITS
LOCATION: TOOELE ARMY DEPOT, TOOELE, UTAH
RECEPTOR: OUTDOOR WORKERS
MEDIA: SURFACE SOIL - 2014 SAMPLING RESULTS

Calculations of Blood Lead Concentrations (PbBs)

U.S. EPA Technical Review Workgroup for Lead, Adult Lead Committee
Version date 6/21/09

Variable	Description of Variable	Units	GSDi and PbBo from Analysis of NHANES 1999-2004
PbS	Soil lead concentration	ug/g or ppm	1237
$R_{fetal/maternal}$	Fetal/maternal PbB ratio	--	0.9
BKSF	Biokinetic Slope Factor	ug/dL per ug/day	0.4
GSD_i	Geometric standard deviation PbB	--	1.8
PbB_0	Baseline PbB	ug/dL	1.0
IR_S	Soil ingestion rate (including soil-derived indoor dust)	g/day	0.050
IR_{S+D}	Total ingestion rate of outdoor soil and indoor dust	g/day	--
W_S	Weighting factor; fraction of IR_{S+D} ingested as outdoor soil	--	--
K_{SD}	Mass fraction of soil in dust	--	--
$AF_{S, D}$	Absorption fraction (same for soil and dust)	--	0.12
$EF_{S, D}$	Exposure frequency (same for soil and dust)	days/yr	219
$AT_{S, D}$	Averaging time (same for soil and dust)	days/yr	365
PbB_{adult}	**PbB of adult worker, geometric mean**	**ug/dL**	**2.8**
$PbB_{fetal, 0.95}$	95th percentile PbB among fetuses of adult workers	ug/dL	6.6
PbB_t	Target PbB level of concern (e.g., 10 ug/dL)	ug/dL	**10.0**
$P(PbB_{fetal} > PbB_t)$	**Probability that fetal PbB > PbB_t, assuming lognormal distribution**	**%**	**0.92%**

Source: U.S. EPA (1996). Recommendations of the Technical Review Workgroup for Lead for an Interim Approach to Assessing Risks Associated with Adult Exposures to Lead in Soil

Appendix J

RAGS Part D Spreadsheets for Evaluation of Non-Detected Chemicals

LIST OF TABLES
RAGS PART D TABLE 7
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Table No.	REASONABLE MAXIMUM EXPOSURES
7.1.RME	Unprotected Worker - All Units - 2006 Surface Soil Samples
7.2.RME	Protected Worker - All Units - 2006 Surface Soil Samples
7.3.RME	Outdoor Worker - All Units - 2006 Surface Soil Samples
7.4.RME	Unprotected Worker - All Units - 2007 Surface Soil Samples
7.5.RME	Protected Worker - All Units - 2007 Surface Soil Samples
7.6.RME	Outdoor Worker - All Units - 2007 Surface Soil Samples
7.7.RME	Unprotected Worker - All Units - 2009 Surface Soil Samples
7.8.RME	Protected Worker - All Units - 2009 Surface Soil Samples
7.9.RME	Outdoor Worker - All Units - 2009 Surface Soil Samples
7.10.RME	Unprotected Worker - All Units - 2014 Surface Soil Samples
7.11.RME	Protected Worker - All Units - 2014 Surface Soil Samples
7.12.RME	Outdoor Worker - All Units - 2014 Surface Soil Samples

TABLE 7.1.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2006 SURFACE SOIL SAMPLES

REASONABLE MAXIMUM EXPOSURES

TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Unprotected OB/OD/SF Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	All Soil - Nondetects	Ingestion	Thallium	0.491	mg/kg	1.3E-07	(mg/kg/day)	NA	(mg/kg/day)-1	- -	3.5E-07	(mg/kg/day)	1.0E-05	(mg/kg/day)	0.04
				1,3-Dinitrobenzene	0.020	mg/kg	5.1E-09	(mg/kg/day)	NA	(mg/kg/day)-1	- -	1.4E-08	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.0001
				2,6-Dinitrotoluene	0.070	mg/kg	1.8E-08	(mg/kg/day)	1.5E+00	(mg/kg/day)-1	2.7E-08	5.0E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0002
				2-Nitrotoluene	0.064	mg/kg	1.6E-08	(mg/kg/day)	2.2E-01	(mg/kg/day)-1	3.6E-09	4.6E-08	(mg/kg/day)	9.0E-04	(mg/kg/day)	0.00005
				3-Nitrotoluene	0.089	mg/kg	2.3E-08	(mg/kg/day)	NA	(mg/kg/day)-1	- -	6.4E-08	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.0006
				4-Nitrotoluene	0.064	mg/kg	1.7E-08	(mg/kg/day)	1.6E-02	(mg/kg/day)-1	2.6E-10	4.6E-08	(mg/kg/day)	4.0E-03	(mg/kg/day)	0.00001
				Nitrobenzene	0.031	mg/kg	8.0E-09	(mg/kg/day)	NA	(mg/kg/day)-1	- -	2.2E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00001
			Exp. Route Total								3.1E-08					0.04
			Dermal	Thallium	0.491	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)-1	- -	0.0E+00	(mg/kg/day)	1.0E-05	(mg/kg/day)	--
				1,3-Dinitrobenzene	0.020	mg/kg	2.2E-09	(mg/kg/day)	NA	(mg/kg/day)-1	- -	6.0E-09	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.00006
				2,6-Dinitrotoluene	0.070	mg/kg	7.5E-09	(mg/kg/day)	1.5E+00	(mg/kg/day)-1	1.1E-08	2.1E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.00007
				2-Nitrotoluene	0.064	mg/kg	6.9E-09	(mg/kg/day)	2.2E-01	(mg/kg/day)-1	1.5E-09	1.9E-08	(mg/kg/day)	9.0E-04	(mg/kg/day)	0.00002
				3-Nitrotoluene	0.089	mg/kg	9.7E-09	(mg/kg/day)	NA	(mg/kg/day)-1	- -	2.7E-08	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.0003
				4-Nitrotoluene	0.064	mg/kg	7.0E-09	(mg/kg/day)	1.6E-02	(mg/kg/day)-1	1.1E-10	2.0E-08	(mg/kg/day)	4.0E-03	(mg/kg/day)	0.000005
				Nitrobenzene	0.031	mg/kg	3.4E-09	(mg/kg/day)	NA	(mg/kg/day)-1	- -	9.4E-09	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000005
			Exp. Route Total								1.3E-08					0.0004
		Exposure Point Total									4.4E-08					0.04
	Exposure Medium Total										4.4E-08					0.04
Medium Total											4.4E-08					0.04
Total of Receptor Risks Across All Media											4.4E-08	Total of Receptor Hazards Across All Media				0.04

TABLE 7.2.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2006 SURFACE SOIL SAMPLES

REASONABLE MAXIMUM EXPOSURES

TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Protected OB/OD/SF Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	All Soil - Nondetects	Ingestion	Thallium	0.491	mg/kg	1.3E-07	(mg/kg/day)	NA	(mg/kg/day)-1	- -	3.5E-07	(mg/kg/day)	1.0E-05	(mg/kg/day)	0.04
				1,3-Dinitrobenzene	0.020	mg/kg	5.1E-09	(mg/kg/day)	NA	(mg/kg/day)-1	- -	1.4E-08	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.0001
				2,6-Dinitrotoluene	0.070	mg/kg	1.8E-08	(mg/kg/day)	1.5E+00	(mg/kg/day)-1	2.7E-08	5.0E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0002
				2-Nitrotoluene	0.064	mg/kg	1.6E-08	(mg/kg/day)	2.2E-01	(mg/kg/day)-1	3.6E-09	4.6E-08	(mg/kg/day)	9.0E-04	(mg/kg/day)	0.00005
				3-Nitrotoluene	0.089	mg/kg	2.3E-08	(mg/kg/day)	NA	(mg/kg/day)-1	- -	6.4E-08	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.0006
				4-Nitrotoluene	0.064	mg/kg	1.7E-08	(mg/kg/day)	1.6E-02	(mg/kg/day)-1	2.6E-10	4.6E-08	(mg/kg/day)	4.0E-03	(mg/kg/day)	0.00001
				Nitrobenzene	0.031	mg/kg	8.0E-09	(mg/kg/day)	NA	(mg/kg/day)-1	- -	2.2E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00001
			Exp. Route Total								3.1E-08					0.04
			Dermal	Thallium	0.491	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)-1	- -	0.0E+00	(mg/kg/day)	1.0E-05	(mg/kg/day)	--
				1,3-Dinitrobenzene	0.020	mg/kg	7.6E-10	(mg/kg/day)	NA	(mg/kg/day)-1	- -	2.1E-09	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.00002
				2,6-Dinitrotoluene	0.070	mg/kg	2.7E-09	(mg/kg/day)	1.5E+00	(mg/kg/day)-1	4.0E-09	7.4E-09	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.00002
				2-Nitrotoluene	0.064	mg/kg	2.4E-09	(mg/kg/day)	2.2E-01	(mg/kg/day)-1	5.4E-10	6.9E-09	(mg/kg/day)	9.0E-04	(mg/kg/day)	0.000008
				3-Nitrotoluene	0.089	mg/kg	3.4E-09	(mg/kg/day)	NA	(mg/kg/day)-1	- -	9.6E-09	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.00010
				4-Nitrotoluene	0.064	mg/kg	2.5E-09	(mg/kg/day)	1.6E-02	(mg/kg/day)-1	4.0E-11	6.9E-09	(mg/kg/day)	4.0E-03	(mg/kg/day)	0.000002
				Nitrobenzene	0.031	mg/kg	1.2E-09	(mg/kg/day)	NA	(mg/kg/day)-1	- -	3.3E-09	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000002
			Exp. Route Total								4.6E-09					0.0002
		Exposure Point Total									3.5E-08					0.04
	Exposure Medium Total										3.5E-08					0.04
Medium Total											3.5E-08					0.04
Total of Receptor Risks Across All Media											3.5E-08	Total of Receptor Hazards Across All Media				0.04

TABLE 7.3.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2006 SURFACE SOIL SAMPLES

REASONABLE MAXIMUM EXPOSURES

TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Future
Receptor Population: Outdoor Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	All Soil - Nondetects	Ingestion	Thallium	0.491	mg/kg	1.5E-07	(mg/kg/day)	NA	(mg/kg/day)-1	- -	4.2E-07	(mg/kg/day)	1.0E-05	(mg/kg/day)	0.04
				1,3-Dinitrobenzene	0.020	mg/kg	6.1E-09	(mg/kg/day)	NA	(mg/kg/day)-1	- -	1.7E-08	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.0002
				2,6-Dinitrotoluene	0.070	mg/kg	2.1E-08	(mg/kg/day)	1.5E+00	(mg/kg/day)-1	3.2E-08	6.0E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0002
				2-Nitrotoluene	0.064	mg/kg	1.9E-08	(mg/kg/day)	2.2E-01	(mg/kg/day)-1	4.3E-09	5.4E-08	(mg/kg/day)	9.0E-04	(mg/kg/day)	0.00006
				3-Nitrotoluene	0.089	mg/kg	2.7E-08	(mg/kg/day)	NA	(mg/kg/day)-1	- -	7.6E-08	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.0008
				4-Nitrotoluene	0.064	mg/kg	2.0E-08	(mg/kg/day)	1.6E-02	(mg/kg/day)-1	3.2E-10	5.5E-08	(mg/kg/day)	4.0E-03	(mg/kg/day)	0.00001
				Nitrobenzene	0.031	mg/kg	9.5E-09	(mg/kg/day)	NA	(mg/kg/day)-1	- -	2.7E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00001
			Exp. Route Total								3.7E-08					0.04
			Dermal	Thallium	0.491	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)-1	- -	0.0E+00	(mg/kg/day)	1.0E-05	(mg/kg/day)	--
				1,3-Dinitrobenzene	0.020	mg/kg	2.6E-09	(mg/kg/day)	NA	(mg/kg/day)-1	- -	7.2E-09	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.00007
				2,6-Dinitrotoluene	0.070	mg/kg	8.9E-09	(mg/kg/day)	1.5E+00	(mg/kg/day)-1	1.3E-08	2.5E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.00008
				2-Nitrotoluene	0.064	mg/kg	8.2E-09	(mg/kg/day)	2.2E-01	(mg/kg/day)-1	1.8E-09	2.3E-08	(mg/kg/day)	9.0E-04	(mg/kg/day)	0.00003
				3-Nitrotoluene	0.089	mg/kg	1.2E-08	(mg/kg/day)	NA	(mg/kg/day)-1	- -	3.2E-08	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.0003
				4-Nitrotoluene	0.064	mg/kg	8.3E-09	(mg/kg/day)	1.6E-02	(mg/kg/day)-1	1.3E-10	2.3E-08	(mg/kg/day)	4.0E-03	(mg/kg/day)	0.000006
				Nitrobenzene	0.031	mg/kg	4.0E-09	(mg/kg/day)	NA	(mg/kg/day)-1	- -	1.1E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000006
			Exp. Route Total								1.5E-08					0.0005
		Exposure Point Total									5.2E-08					0.04
	Exposure Medium Total										5.2E-08					0.04
Medium Total											5.2E-08					0.04
										Total of Receptor Risks Across All Media	5.2E-08				Total of Receptor Hazards Across All Media	0.04

TABLE 7.4.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2007 SURFACE SOIL SAMPLES

REASONABLE MAXIMUM EXPOSURES

TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Unprotected OB/OD/SF Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	All Soil - Nondetects	Ingestion	Selenium	0.510	mg/kg	1.3E-07	(mg/kg/day)	NA	(mg/kg/day)-1	- -	3.7E-07	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.00007
				Thallium	0.970	mg/kg	2.5E-07	(mg/kg/day)	NA	(mg/kg/day)-1	- -	7.0E-07	(mg/kg/day)	1.0E-05	(mg/kg/day)	0.07
				2-Nitrotoluene	0.250	mg/kg	6.4E-08	(mg/kg/day)	2.2E-01	(mg/kg/day)-1	1.4E-08	1.8E-07	(mg/kg/day)	9.0E-04	(mg/kg/day)	0.0002
				3-Nitrotoluene	0.300	mg/kg	7.7E-08	(mg/kg/day)	NA	(mg/kg/day)-1	- -	2.2E-07	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.002
				4-Nitrotoluene	0.250	mg/kg	6.4E-08	(mg/kg/day)	1.6E-02	(mg/kg/day)-1	1.0E-09	1.8E-07	(mg/kg/day)	4.0E-03	(mg/kg/day)	0.00004
				Nitrobenzene	0.200	mg/kg	5.1E-08	(mg/kg/day)	NA	(mg/kg/day)-1	- -	1.4E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00007
				PETN	2.50	mg/kg	6.4E-07	(mg/kg/day)	4.0E-03	(mg/kg/day)-1	2.6E-09	1.8E-06	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0009
			Exp. Route Total								1.8E-08					0.07
			Dermal	Selenium	0.510	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)-1	- -	0.0E+00	(mg/kg/day)	5.0E-03	(mg/kg/day)	--
				Thallium	0.970	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)-1	- -	0.0E+00	(mg/kg/day)	1.0E-05	(mg/kg/day)	--
				2-Nitrotoluene	0.250	mg/kg	2.7E-08	(mg/kg/day)	2.2E-01	(mg/kg/day)-1	6.0E-09	7.6E-08	(mg/kg/day)	9.0E-04	(mg/kg/day)	0.00008
				3-Nitrotoluene	0.300	mg/kg	3.3E-08	(mg/kg/day)	NA	(mg/kg/day)-1	- -	9.1E-08	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.0009
				4-Nitrotoluene	0.250	mg/kg	2.7E-08	(mg/kg/day)	1.6E-02	(mg/kg/day)-1	4.3E-10	7.6E-08	(mg/kg/day)	4.0E-03	(mg/kg/day)	0.00002
				Nitrobenzene	0.200	mg/kg	2.2E-08	(mg/kg/day)	NA	(mg/kg/day)-1	- -	6.1E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00003
				PETN	2.50	mg/kg	2.7E-07	(mg/kg/day)	4.0E-03	(mg/kg/day)-1	1.1E-09	7.6E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0004
			Exp. Route Total								7.5E-09					0.001
		Exposure Point Total									2.5E-08					0.07
	Exposure Medium Total										2.5E-08					0.07
Medium Total											2.5E-08					0.07
										Total of Receptor Risks Across All Media	2.5E-08				Total of Receptor Hazards Across All Media	0.07

TABLE 7.5.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2007 SURFACE SOIL SAMPLES

REASONABLE MAXIMUM EXPOSURES

TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Protected OB/OD/SF Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	All Soil - Nondetects	Ingestion	Selenium	0.510	mg/kg	1.3E-07	(mg/kg/day)	NA	(mg/kg/day)-1	- -	3.7E-07	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.00007
				Thallium	0.970	mg/kg	2.5E-07	(mg/kg/day)	NA	(mg/kg/day)-1	- -	7.0E-07	(mg/kg/day)	1.0E-05	(mg/kg/day)	0.07
				2-Nitrotoluene	0.250	mg/kg	6.4E-08	(mg/kg/day)	2.2E-01	(mg/kg/day)-1	1.4E-08	1.8E-07	(mg/kg/day)	9.0E-04	(mg/kg/day)	0.0002
				3-Nitrotoluene	0.300	mg/kg	7.7E-08	(mg/kg/day)	NA	(mg/kg/day)-1	- -	2.2E-07	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.002
				4-Nitrotoluene	0.250	mg/kg	6.4E-08	(mg/kg/day)	1.6E-02	(mg/kg/day)-1	1.0E-09	1.8E-07	(mg/kg/day)	4.0E-03	(mg/kg/day)	0.00004
				Nitrobenzene	0.200	mg/kg	5.1E-08	(mg/kg/day)	NA	(mg/kg/day)-1	- -	1.4E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00007
				PETN	2.50	mg/kg	6.4E-07	(mg/kg/day)	4.0E-03	(mg/kg/day)-1	2.6E-09	1.8E-06	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0009
			Exp. Route Total								1.8E-08					0.07
			Dermal	Selenium	0.510	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)-1	- -	0.0E+00	(mg/kg/day)	5.0E-03	(mg/kg/day)	--
				Thallium	0.970	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)-1	- -	0.0E+00	(mg/kg/day)	1.0E-05	(mg/kg/day)	--
				2-Nitrotoluene	0.250	mg/kg	9.6E-09	(mg/kg/day)	2.2E-01	(mg/kg/day)-1	2.1E-09	2.7E-08	(mg/kg/day)	9.0E-04	(mg/kg/day)	0.00003
				3-Nitrotoluene	0.300	mg/kg	1.2E-08	(mg/kg/day)	NA	(mg/kg/day)-1	- -	3.2E-08	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.0003
				4-Nitrotoluene	0.250	mg/kg	9.6E-09	(mg/kg/day)	1.6E-02	(mg/kg/day)-1	1.5E-10	2.7E-08	(mg/kg/day)	4.0E-03	(mg/kg/day)	0.000007
				Nitrobenzene	0.200	mg/kg	7.7E-09	(mg/kg/day)	NA	(mg/kg/day)-1	- -	2.2E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00001
				PETN	2.50	mg/kg	9.6E-08	(mg/kg/day)	4.0E-03	(mg/kg/day)-1	3.9E-10	2.7E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0001
			Exp. Route Total								2.7E-09					0.0005
		Exposure Point Total									2.0E-08					0.07
	Exposure Medium Total										2.0E-08					0.07
Medium Total											2.0E-08					0.07
										Total of Receptor Risks Across All Media	2.0E-08				Total of Receptor Hazards Across All Media	0.07

TABLE 7.6.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2007 SURFACE SOIL SAMPLES

REASONABLE MAXIMUM EXPOSURES

TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Future
Receptor Population: Outdoor Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	All Soil - Nondetects	Ingestion	Selenium	0.510	mg/kg	1.6E-07	(mg/kg/day)	NA	(mg/kg/day)-1	- -	4.4E-07	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.00009
				Thallium	0.970	mg/kg	3.0E-07	(mg/kg/day)	NA	(mg/kg/day)-1	- -	8.3E-07	(mg/kg/day)	1.0E-05	(mg/kg/day)	0.08
				2-Nitrotoluene	0.250	mg/kg	7.6E-08	(mg/kg/day)	2.2E-01	(mg/kg/day)-1	1.7E-08	2.1E-07	(mg/kg/day)	9.0E-04	(mg/kg/day)	0.0002
				3-Nitrotoluene	0.300	mg/kg	9.2E-08	(mg/kg/day)	NA	(mg/kg/day)-1	- -	2.6E-07	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.003
				4-Nitrotoluene	0.250	mg/kg	7.6E-08	(mg/kg/day)	1.6E-02	(mg/kg/day)-1	1.2E-09	2.1E-07	(mg/kg/day)	4.0E-03	(mg/kg/day)	0.00005
				Nitrobenzene	0.200	mg/kg	6.1E-08	(mg/kg/day)	NA	(mg/kg/day)-1	- -	1.7E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00009
				PETN	2.50	mg/kg	7.6E-07	(mg/kg/day)	4.0E-03	(mg/kg/day)-1	3.1E-09	2.1E-06	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.001
			Exp. Route Total								2.1E-08					0.09
			Dermal	Selenium	0.510	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)-1	- -	0.0E+00	(mg/kg/day)	5.0E-03	(mg/kg/day)	--
				Thallium	0.970	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)-1	- -	0.0E+00	(mg/kg/day)	1.0E-05	(mg/kg/day)	--
				2-Nitrotoluene	0.250	mg/kg	3.2E-08	(mg/kg/day)	2.2E-01	(mg/kg/day)-1	7.1E-09	9.1E-08	(mg/kg/day)	9.0E-04	(mg/kg/day)	0.0001
				3-Nitrotoluene	0.300	mg/kg	3.9E-08	(mg/kg/day)	NA	(mg/kg/day)-1	- -	1.1E-07	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.001
				4-Nitrotoluene	0.250	mg/kg	3.2E-08	(mg/kg/day)	1.6E-02	(mg/kg/day)-1	5.2E-10	9.1E-08	(mg/kg/day)	4.0E-03	(mg/kg/day)	0.00002
				Nitrobenzene	0.200	mg/kg	2.6E-08	(mg/kg/day)	NA	(mg/kg/day)-1	- -	7.2E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00004
				PETN	2.50	mg/kg	3.2E-07	(mg/kg/day)	4.0E-03	(mg/kg/day)-1	1.3E-09	9.1E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0005
			Exp. Route Total								8.9E-09					0.002
		Exposure Point Total									3.0E-08					0.09
	Exposure Medium Total										3.0E-08					0.09
Medium Total											3.0E-08					0.09
										Total of Receptor Risks Across All Media	3.0E-08				Total of Receptor Hazards Across All Media	0.09

TABLE 7.7.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2009 SURFACE SOIL SAMPLES

REASONABLE MAXIMUM EXPOSURES

TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Unprotected OB/OD/SF Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	All Soil - Nondetects	Ingestion	Selenium	1.40	mg/kg	3.6E-07	(mg/kg/day)	NA	(mg/kg/day)-1	- -	1.0E-06	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.0002
				Thallium	4.20	mg/kg	1.1E-06	(mg/kg/day)	NA	(mg/kg/day)-1	- -	3.0E-06	(mg/kg/day)	1.0E-05	(mg/kg/day)	0.3
				2-Nitrotoluene	0.014	mg/kg	3.6E-09	(mg/kg/day)	2.2E-01	(mg/kg/day)-1	7.9E-10	1.0E-08	(mg/kg/day)	9.0E-04	(mg/kg/day)	0.00001
				4-Nitrotoluene	0.019	mg/kg	4.9E-09	(mg/kg/day)	1.6E-02	(mg/kg/day)-1	7.8E-11	1.4E-08	(mg/kg/day)	4.0E-03	(mg/kg/day)	0.000003
				Nitrobenzene	0.018	mg/kg	4.6E-09	(mg/kg/day)	NA	(mg/kg/day)-1	- -	1.3E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000006
				PETN	0.026	mg/kg	6.7E-09	(mg/kg/day)	4.0E-03	(mg/kg/day)-1	2.7E-11	1.9E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000009
			Exp. Route Total								9.0E-10					0.3
			Dermal	Selenium	1.40	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)-1	- -	0.0E+00	(mg/kg/day)	5.0E-03	(mg/kg/day)	--
				Thallium	4.20	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)-1	- -	0.0E+00	(mg/kg/day)	1.0E-05	(mg/kg/day)	--
				2-Nitrotoluene	0.014	mg/kg	1.5E-09	(mg/kg/day)	2.2E-01	(mg/kg/day)-1	3.3E-10	4.3E-09	(mg/kg/day)	9.0E-04	(mg/kg/day)	0.000005
				4-Nitrotoluene	0.019	mg/kg	2.1E-09	(mg/kg/day)	1.6E-02	(mg/kg/day)-1	3.3E-11	5.8E-09	(mg/kg/day)	4.0E-03	(mg/kg/day)	0.000001
				Nitrobenzene	0.018	mg/kg	2.0E-09	(mg/kg/day)	NA	(mg/kg/day)-1	- -	5.5E-09	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000003
				PETN	0.026	mg/kg	2.8E-09	(mg/kg/day)	4.0E-03	(mg/kg/day)-1	1.1E-11	7.9E-09	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000004
			Exp. Route Total								3.8E-10					0.00001
		Exposure Point Total									1.3E-09					0.3
	Exposure Medium Total										1.3E-09					0.3
Medium Total											1.3E-09					0.3
										Total of Receptor Risks Across All Media	1.3E-09				Total of Receptor Hazards Across All Media	0.3

TABLE 7.8.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2009 SURFACE SOIL SAMPLES

REASONABLE MAXIMUM EXPOSURES

TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Protected OB/OD/SF Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	All Soil - Nondetects	Ingestion	Selenium	1.40	mg/kg	3.6E-07	(mg/kg/day)	NA	(mg/kg/day)-1	- -	1.0E-06	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.0002
				Thallium	4.20	mg/kg	1.1E-06	(mg/kg/day)	NA	(mg/kg/day)-1	- -	3.0E-06	(mg/kg/day)	1.0E-05	(mg/kg/day)	0.3
				2-Nitrotoluene	0.014	mg/kg	3.6E-09	(mg/kg/day)	2.2E-01	(mg/kg/day)-1	7.9E-10	1.0E-08	(mg/kg/day)	9.0E-04	(mg/kg/day)	0.00001
				4-Nitrotoluene	0.019	mg/kg	4.9E-09	(mg/kg/day)	1.6E-02	(mg/kg/day)-1	7.8E-11	1.4E-08	(mg/kg/day)	4.0E-03	(mg/kg/day)	0.000003
				Nitrobenzene	0.018	mg/kg	4.6E-09	(mg/kg/day)	NA	(mg/kg/day)-1	- -	1.3E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000006
				PETN	0.026	mg/kg	6.7E-09	(mg/kg/day)	4.0E-03	(mg/kg/day)-1	2.7E-11	1.9E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000009
			Exp. Route Total								9.0E-10					0.3
			Dermal	Selenium	1.40	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)-1	- -	0.0E+00	(mg/kg/day)	5.0E-03	(mg/kg/day)	--
				Thallium	4.20	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)-1	- -	0.0E+00	(mg/kg/day)	1.0E-05	(mg/kg/day)	--
				2-Nitrotoluene	0.014	mg/kg	5.4E-10	(mg/kg/day)	2.2E-01	(mg/kg/day)-1	1.2E-10	1.5E-09	(mg/kg/day)	9.0E-04	(mg/kg/day)	0.000002
				4-Nitrotoluene	0.019	mg/kg	7.3E-10	(mg/kg/day)	1.6E-02	(mg/kg/day)-1	1.2E-11	2.0E-09	(mg/kg/day)	4.0E-03	(mg/kg/day)	0.0000005
				Nitrobenzene	0.018	mg/kg	6.9E-10	(mg/kg/day)	NA	(mg/kg/day)-1	- -	1.9E-09	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0000010
				PETN	0.026	mg/kg	1.0E-09	(mg/kg/day)	4.0E-03	(mg/kg/day)-1	4.0E-12	2.8E-09	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000001
			Exp. Route Total								1.3E-10					0.000005
		Exposure Point Total									1.0E-09					0.3
	Exposure Medium Total										1.0E-09					0.3
Medium Total											1.0E-09					0.3
										Total of Receptor Risks Across All Media	1.0E-09				Total of Receptor Hazards Across All Media	0.3

TABLE 7.9.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2009 SURFACE SOIL SAMPLES

REASONABLE MAXIMUM EXPOSURES

TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Future
Receptor Population: Outdoor Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	All Soil - Nondetects	Ingestion	Selenium	1.40	mg/kg	4.3E-07	(mg/kg/day)	NA	(mg/kg/day)-1	- -	1.2E-06	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.0002
				Thallium	4.20	mg/kg	1.3E-06	(mg/kg/day)	NA	(mg/kg/day)-1	- -	3.6E-06	(mg/kg/day)	1.0E-05	(mg/kg/day)	0.4
				2-Nitrotoluene	0.014	mg/kg	4.3E-09	(mg/kg/day)	2.2E-01	(mg/kg/day)-1	9.4E-10	1.2E-08	(mg/kg/day)	9.0E-04	(mg/kg/day)	0.00001
				4-Nitrotoluene	0.019	mg/kg	5.8E-09	(mg/kg/day)	1.6E-02	(mg/kg/day)-1	9.3E-11	1.6E-08	(mg/kg/day)	4.0E-03	(mg/kg/day)	0.000004
				Nitrobenzene	0.018	mg/kg	5.5E-09	(mg/kg/day)	NA	(mg/kg/day)-1	- -	1.5E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000008
				PETN	0.026	mg/kg	8.0E-09	(mg/kg/day)	4.0E-03	(mg/kg/day)-1	3.2E-11	2.2E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00001
			Exp. Route Total								1.1E-09					0.4
			Dermal	Selenium	1.40	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)-1	- -	0.0E+00	(mg/kg/day)	5.0E-03	(mg/kg/day)	--
				Thallium	4.20	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)-1	- -	0.0E+00	(mg/kg/day)	1.0E-05	(mg/kg/day)	--
				2-Nitrotoluene	0.014	mg/kg	1.8E-09	(mg/kg/day)	2.2E-01	(mg/kg/day)-1	4.0E-10	5.1E-09	(mg/kg/day)	9.0E-04	(mg/kg/day)	0.000006
				4-Nitrotoluene	0.019	mg/kg	2.5E-09	(mg/kg/day)	1.6E-02	(mg/kg/day)-1	3.9E-11	6.9E-09	(mg/kg/day)	4.0E-03	(mg/kg/day)	0.000002
				Nitrobenzene	0.018	mg/kg	2.3E-09	(mg/kg/day)	NA	(mg/kg/day)-1	- -	6.5E-09	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000003
				PETN	0.026	mg/kg	3.4E-09	(mg/kg/day)	4.0E-03	(mg/kg/day)-1	1.3E-11	9.4E-09	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000005
			Exp. Route Total								4.5E-10					0.00002
		Exposure Point Total									1.5E-09					0.4
	Exposure Medium Total										1.5E-09					0.4
Medium Total											1.5E-09					0.4
										Total of Receptor Risks Across All Media	1.5E-09				Total of Receptor Hazards Across All Media	0.4

TABLE 7.10.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2014 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Unprotected OB/OD/SF Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	OB/OD/SF Units - Nondetects	Ingestion	3-Nitrotoluene	0.05	mg/kg	1.3E-08	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	3.6E-08	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.0004
				Nitrobenzene	0.05	mg/kg	1.3E-08	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	3.6E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00002
			Exp. Route Total								- -					0.0004
			Dermal	3-Nitrotoluene	0.05	mg/kg	5.4E-09	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.5E-08	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.0002
				Nitrobenzene	0.05	mg/kg	5.4E-09	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.5E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000008
			Exp. Route Total								- -					0.0002
		Exposure Point Total									- -					0.0005
	Exposure Medium Total										- -					0.0005
	Air	OB/OD/SF Units - Nondetects	Inhalation	3-Nitrotoluene	3.7E-11	mg/m^3	2.5E-12	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	7.1E-12	(mg/m^3)	NA	(mg/m^3)	--
				Nitrobenzene	6.8E-07	mg/m^3	4.7E-08	(mg/m^3)	4.0E-05	$(ug/m^3)^{-1}$	1.9E-09	1.3E-07	(mg/m^3)	9.0E-03	(mg/m^3)	0.00001
			Exp. Route Total								1.9E-09					0.00001
		Exposure Point Total									1.9E-09					0.00001
	Exposure Medium Total										1.9E-09					0.00001
Medium Total											1.9E-09					0.0006
										Total of Receptor Risks Across All Media	1.9E-09				Total of Receptor Hazards Across All Media	0.0006

TABLE 7.11.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2014 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Protected OB/OD/SF Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	OB/OD/SF Units - Nondetects	Ingestion	3-Nitrotoluene	0.05	mg/kg	1.3E-08	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	3.6E-08	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.0004
				Nitrobenzene	0.05	mg/kg	1.3E-08	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	3.6E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00002
			Exp. Route Total								- -					0.0004
			Dermal	3-Nitrotoluene	0.05	mg/kg	1.9E-09	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	5.4E-09	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.00005
				Nitrobenzene	0.05	mg/kg	1.9E-09	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	5.4E-09	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000003
			Exp. Route Total								- -					0.00006
		Exposure Point Total									- -					0.0004
	Exposure Medium Total										- -					0.0004
	Air	OB/OD/SF Units - Nondetects	Inhalation	3-Nitrotoluene	3.7E-11	mg/m^3	2.5E-12	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	7.1E-12	(mg/m^3)	NA	(mg/m^3)	--
				Nitrobenzene	6.8E-07	mg/m^3	4.7E-08	(mg/m^3)	4.0E-05	$(ug/m^3)^{-1}$	1.9E-09	1.3E-07	(mg/m^3)	9.0E-03	(mg/m^3)	0.00001
			Exp. Route Total								1.9E-09					0.00001
		Exposure Point Total									1.9E-09					0.00001
	Exposure Medium Total										1.9E-09					0.00001
Medium Total											1.9E-09					0.0004
										Total of Receptor Risks Across All Media	1.9E-09				Total of Receptor Hazards Across All Media	0.0004

TABLE 7.12.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2014 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Outdoor Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	OB/OD/SF Units - Nondetects	Ingestion	3-Nitrotoluene	0.05	mg/kg	1.5E-08	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	4.3E-08	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.0004
				Nitrobenzene	0.05	mg/kg	1.5E-08	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	4.3E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00002
			Exp. Route Total								- -					0.0004
			Dermal	3-Nitrotoluene	0.05	mg/kg	6.4E-09	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.8E-08	(mg/kg/day)	1.0E-04	(mg/kg/day)	0.0002
				Nitrobenzene	0.05	mg/kg	6.4E-09	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.8E-08	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.000009
			Exp. Route Total								- -					0.0002
		Exposure Point Total									- -					0.0006
	Exposure Medium Total										- -					0.0006
	Air	OB/OD/SF Units - Nondetects	Inhalation	3-Nitrotoluene	3.7E-11	mg/m^3	3.0E-12	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	8.4E-12	(mg/m^3)	NA	(mg/m^3)	--
				Nitrobenzene	6.8E-07	mg/m^3	5.6E-08	(mg/m^3)	4.0E-05	$(ug/m^3)^{-1}$	2.2E-09	1.6E-07	(mg/m^3)	9.0E-03	(mg/m^3)	0.00002
			Exp. Route Total								2.2E-09					0.00002
		Exposure Point Total									2.2E-09					0.00002
	Exposure Medium Total										2.2E-09					0.00002
Medium Total											2.2E-09					0.0007
										Total of Receptor Risks Across All Media	2.2E-09				Total of Receptor Hazards Across All Media	0.0007

LIST OF TABLES
RAGS PART D TABLE 9
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

Table No.	REASONABLE MAXIMUM EXPOSURES
9.1.RME	Unprotected Worker - All Units - 2006 Surface Soil Samples
9.2.RME	Protected Worker - All Units - 2006 Surface Soil Samples
9.3.RME	Outdoor Worker - All Units - 2006 Surface Soil Samples
9.4.RME	Unprotected Worker - All Units - 2006 Surface Soil Samples
9.5.RME	Protected Worker - All Units - 2006 Surface Soil Samples
9.6.RME	Outdoor Worker - All Units - 2006 Surface Soil Samples
9.7.RME	Unprotected Worker - All Units - 2006 Surface Soil Samples
9.8.RME	Protected Worker - All Units - 2006 Surface Soil Samples
9.9.RME	Outdoor Worker - All Units - 2006 Surface Soil Samples
9.10.RME	Unprotected Worker - All Units - 2014 Surface Soil Samples
9.11.RME	Protected Worker - All Units - 2014 Surface Soil Samples
9.12.RME	Outdoor Worker - All Units - 2014 Surface Soil Samples

TABLE 9.1.RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - 2006 SURFACE SOIL SAMPLES

REASONABLE MAXIMUM EXPOSURES

TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Unprotected OB/OD/SF Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	All Soil - Nondetects	Thallium	- -	--	- -	--	- -	Skin	0.04	- -	--	0.04
			1,3-Dinitrobenzene	- -	--	- -	--	- -	Spleen	0.0001	- -	0.00006	0.0002
			2,6-Dinitrotoluene	3E-08	--	1E-08	--	4E-08	Spleen	0.0002	- -	0.00007	0.0002
			2-Nitrotoluene	4E-09	--	2E-09	--	5E-09	Bone	0.00005	- -	0.00002	0.00007
			3-Nitrotoluene	- -	--	- -	--	- -	Spleen	0.0006	- -	0.0003	0.0009
			4-Nitrotoluene	3E-10	--	1E-10	--	4E-10	Spleen	0.00001	- -	0.000005	0.00002
			Nitrobenzene	- -	--	- -	--	- -	Blood	0.00001	- -	0.000005	0.00002
			Chemical Total	3E-08	--	1E-08	--	4E-08		0.04	--	0.0004	0.04
		Exposure Point Total						4E-08					0.04
	Exposure Medium Total							4E-08					0.04
Medium Total								4E-08					0.04
Receptor Total							Receptor Risk Total	4E-08				Receptor HI Total	0.04

TABLE 9.2.RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - 2006 SURFACE SOIL SAMPLES

REASONABLE MAXIMUM EXPOSURES

TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Protected OB/OD/SF Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	All Soil - Nondetects	Thallium	- -	--	- -	--	- -	Skin	0.04	- -	--	0.04
			1,3-Dinitrobenzene	- -	--	- -	--	- -	Spleen	0.0001	- -	0.00002	0.0002
			2,6-Dinitrotoluene	3E-08	--	4E-09	--	3E-08	Spleen	0.0002	- -	0.00002	0.0002
			2-Nitrotoluene	4E-09	--	5E-10	--	4E-09	Bone	0.00005	- -	0.000008	0.00006
			3-Nitrotoluene	- -	--	- -	--	- -	Spleen	0.0006	- -	0.00010	0.0007
			4-Nitrotoluene	3E-10	--	4E-11	--	3E-10	Spleen	0.00001	- -	0.000002	0.00001
			Nitrobenzene	- -	--	- -	--	- -	Blood	0.00001	- -	0.000002	0.00001
			Chemical Total	3E-08	--	5E-09	--	4E-08		0.04	--	0.0002	0.04
		Exposure Point Total						4E-08					0.04
	Exposure Medium Total							4E-08					0.04
Medium Total								4E-08					0.04
Receptor Total							Receptor Risk Total	4E-08				Receptor HI Total	0.04

TABLE 9.3.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - 2006 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Future
Receptor Population: Outdoor Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	All Soil - Nondetects	Thallium	- -	--	- -	--	- -	Skin	0.04	- -	--	0.04
			1,3-Dinitrobenzene	- -	--	- -	--	- -	Spleen	0.0002	- -	0.00007	0.0002
			2,6-Dinitrotoluene	3E-08	--	1E-08	--	5E-08	Spleen	0.0002	- -	0.00008	0.0003
			2-Nitrotoluene	4E-09	--	2E-09	--	6E-09	Bone	0.00006	- -	0.00003	0.00009
			3-Nitrotoluene	- -	--	- -	--	- -	Spleen	0.0008	- -	0.0003	0.001
			4-Nitrotoluene	3E-10	--	1E-10	--	4E-10	Spleen	0.00001	- -	0.000006	0.00002
			Nitrobenzene	- -	--	- -	--	- -	Blood	0.00001	- -	0.000006	0.00002
			Chemical Total	4E-08	--	2E-08	--	5E-08		0.04	--	0.0005	0.04
		Exposure Point Total						5E-08					0.04
	Exposure Medium Total							5E-08					0.04
Medium Total								5E-08					0.04
Receptor Total							Receptor Risk Total	5E-08				Receptor HI Total	0.04

TABLE 9.4.RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - 2007 SURFACE SOIL SAMPLES

REASONABLE MAXIMUM EXPOSURES

TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Unprotected OB/OD/SF Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	All Soil - Nondetects	Selenium	- -	--	- -	--	- -	Skin, CNS	0.00007	- -	--	0.00007
			Thallium	- -	--	- -	--	- -	Skin	0.07	- -	--	0.07
			2-Nitrotoluene	1E-08	--	6E-09	--	2E-08	Bone	0.0002	- -	0.00008	0.0003
			3-Nitrotoluene	- -	--	- -	--	- -	Spleen	0.002	- -	0.0009	0.003
			4-Nitrotoluene	1E-09	--	4E-10	--	1E-09	Spleen	0.00004	- -	0.00002	0.00006
			Nitrobenzene	- -	--	- -	--	- -	Blood	0.00007	- -	0.00003	0.0001
			PETN	3E-09	--	1E-09	--	4E-09	Whole Body	0.0009	- -	0.0004	0.001
			Chemical Total	2E-08	--	8E-09	--	3E-08		0.07	--	0.001	0.07
		Exposure Point Total						3E-08					0.07
	Exposure Medium Total							3E-08					0.07
Medium Total								3E-08					0.07
Receptor Total							Receptor Risk Total	3E-08				Receptor HI Total	0.07

TABLE 9.5.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - 2007 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Protected OB/OD/SF Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	All Soil - Nondetects	Selenium	- -	--	- -	--	- -	Skin, CNS	0.00007	- -	--	0.00007
			Thallium	- -	--	- -	--	- -	Skin	0.07	- -	--	0.07
			2-Nitrotoluene	1E-08	--	2E-09	--	2E-08	Bone	0.0002	- -	0.00003	0.0002
			3-Nitrotoluene	- -	--	- -	--	- -	Spleen	0.002	- -	0.0003	0.002
			4-Nitrotoluene	1E-09	--	2E-10	--	1E-09	Spleen	0.00004	- -	0.000007	0.00005
			Nitrobenzene	- -	--	- -	--	- -	Blood	0.00007	- -	0.00001	0.00008
			PETN	3E-09	--	4E-10	--	3E-09	Whole Body	0.0009	- -	0.0001	0.001
			Chemical Total	2E-08	--	3E-09	--	2E-08		0.07	--	0.0005	0.07
		Exposure Point Total						2E-08					0.07
	Exposure Medium Total							2E-08					0.07
Medium Total								2E-08					0.07
Receptor Total							Receptor Risk Total	2E-08				Receptor HI Total	0.07

TABLE 9.6.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - 2007 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Future
Receptor Population: Outdoor Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	All Soil - Nondetects	Selenium	- -	--	- -	--	- -	Skin, CNS	0.00009	- -	--	0.00009
			Thallium	- -	--	- -	--	- -	Skin	0.08	- -	--	0.08
			2-Nitrotoluene	2E-08	--	7E-09	--	2E-08	Bone	0.0002	- -	0.0001	0.0003
			3-Nitrotoluene	- -	--	- -	--	- -	Spleen	0.003	- -	0.001	0.004
			4-Nitrotoluene	1E-09	--	5E-10	--	2E-09	Spleen	0.00005	- -	0.00002	0.00008
			Nitrobenzene	- -	--	- -	--	- -	Blood	0.00009	- -	0.00004	0.0001
			PETN	3E-09	--	1E-09	--	4E-09	Whole Body	0.001	- -	0.0005	0.002
			Chemical Total	2E-08	--	9E-09	--	3E-08		0.09	--	0.002	0.09
		Exposure Point Total						3E-08					0.09
	Exposure Medium Total							3E-08					0.09
Medium Total								3E-08					0.09
Receptor Total							Receptor Risk Total	3E-08				Receptor HI Total	0.09

TABLE 9.7.RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - 2009 SURFACE SOIL SAMPLES

REASONABLE MAXIMUM EXPOSURES

TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Unprotected OB/OD/SF Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	All Soil - Nondetects	Selenium	- -	--	- -	--	- -	Skin, CNS	0.0002	- -	--	0.0002
			Thallium	- -	--	- -	--	- -	Skin	0.3	- -	--	0.3
			2-Nitrotoluene	8E-10	--	3E-10	--	1E-09	Bone	0.00001	- -	0.000005	0.00002
			4-Nitrotoluene	8E-11	--	3E-11	--	1E-10	Spleen	0.000003	- -	0.000001	0.000005
			Nitrobenzene	- -	--	- -	--	- -	Blood	0.000006	- -	0.000003	0.000009
			PETN	3E-11	--	1E-11	--	4E-11	Whole Body	0.000009	- -	0.000004	0.00001
			Chemical Total	9E-10	--	4E-10	--	1E-09		0.3	--	0.00001	0.3
		Exposure Point Total						1E-09					0.3
	Exposure Medium Total							1E-09					0.3
Medium Total								1E-09					0.3
Receptor Total							Receptor Risk Total	1E-09				Receptor HI Total	0.3

TABLE 9.8.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - 2009 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Protected OB/OD/SF Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	All Soil - Nondetects	Selenium	- -	--	- -	--	- -	Skin, CNS	0.0002	- -	--	0.0002
			Thallium	- -	--	- -	--	- -	Skin	0.3	- -	--	0.3
			2-Nitrotoluene	8E-10	--	1E-10	--	9E-10	Bone	0.00001	- -	0.000002	0.00001
			4-Nitrotoluene	8E-11	--	1E-11	--	9E-11	Spleen	0.000003	- -	0.0000005	0.000004
			Nitrobenzene	- -	--	- -	--	- -	Blood	0.000006	- -	0.0000010	0.000007
			PETN	3E-11	--	4E-12	--	3E-11	Whole Body	0.000009	- -	0.000001	0.00001
			Chemical Total	9E-10	--	1E-10	--	1E-09		0.3	--	0.000005	0.3
		Exposure Point Total						1E-09					0.3
	Exposure Medium Total							1E-09					0.3
Medium Total								1E-09					0.3
Receptor Total							Receptor Risk Total	1E-09				Receptor HI Total	0.3

TABLE 9.9.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - 2009 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Future
Receptor Population: Outdoor Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	All Soil - Nondetects	Selenium	- -	--	- -	--	- -	Skin, CNS	0.0002	- -	--	0.0002
			Thallium	- -	--	- -	--	- -	Skin	0.4	- -	--	0.4
			2-Nitrotoluene	9E-10	--	4E-10	--	1E-09	Bone	0.00001	- -	0.000006	0.00002
			4-Nitrotoluene	9E-11	--	4E-11	--	1E-10	Spleen	0.000004	- -	0.000002	0.000006
			Nitrobenzene	- -	--	- -	--	- -	Blood	0.000008	- -	0.000003	0.00001
			PETN	3E-11	--	1E-11	--	5E-11	Whole Body	0.00001	- -	0.000005	0.00002
			Chemical Total	1E-09	--	5E-10	--	2E-09		0.4	--	0.00002	0.4
		Exposure Point Total						2E-09					0.4
	Exposure Medium Total							2E-09					0.4
Medium Total								2E-09					0.4
Receptor Total							Receptor Risk Total	2E-09				Receptor HI Total	0.4

TABLE 9.10.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2014 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Unprotected OB/OD/SF Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	OB/OD/SF Units - Nondetects	3-Nitrotoluene	- -	--	- -	--	- -	Spleen	0.0004	--	0.0002	0.0005
			Nitrobenzene	- -	--	- -	--	- -	Blood	0.00002	--	0.000008	0.00003
			Chemical Total	- -	--	- -	--	- -		0.0004	--	0.0002	0.0005
		Exposure Point Total						- -					0.0005
	Exposure Medium Total							- -					0.0005
	Air	OB/OD/SF Units - Nondetects	3-Nitrotoluene	--	- -	--	--	- -	NA	--	--	--	--
			Nitrobenzene	--	2E-09	--	--	2E-09	Respiratory	--	0.00001	--	0.00001
			Chemical Total	--	2E-09	--	--	2E-09		- -	0.00001	- -	0.00001
		Exposure Point Total						2E-09					0.00001
	Exposure Medium Total							2E-09					0.00001
Medium Total								2E-09					0.0006
Receptor Total							Receptor Risk Total	2E-09				Receptor HI Total	0.0006

TABLE 9.11.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2014 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Protected OB/OD/SF Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	OB/OD/SF Units - Nondetects	3-Nitrotoluene	- -	--	- -	--	- -	Spleen	0.0004	--	0.00005	0.0004
			Nitrobenzene	- -	--	- -	--	- -	Blood	0.00002	--	0.000003	0.00002
			Chemical Total	- -	--	- -	--	- -		0.0004	--	0.00006	0.0004
		Exposure Point Total						- -					0.0004
	Exposure Medium Total							- -					0.0004
	Air	OB/OD/SF Units - Nondetects	3-Nitrotoluene	--	- -	--	--	- -	NA	--	--	--	--
			Nitrobenzene	--	2E-09	--	--	2E-09	Respiratory	--	0.00001	--	0.00001
			Chemical Total	--	2E-09	--	--	2E-09		- -	0.00001	- -	0.00001
		Exposure Point Total						2E-09					0.00001
	Exposure Medium Total							2E-09					0.00001
Medium Total								2E-09					0.0004
Receptor Total							Receptor Risk Total	2E-09				Receptor HI Total	0.0004

TABLE 9.12.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - 2014 SURFACE SOIL SAMPLES
REASONABLE MAXIMUM EXPOSURES
TOOELE ARMY DEPOT, TOOELE, UTAH

Scenario Timeframe: Current/Future
Receptor Population: Outdoor Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	OB/OD/SF Units - Nondetects	3-Nitrotoluene	- -	--	- -	--	- -	Spleen	0.0004	--	0.0002	0.0006
			Nitrobenzene	- -	--	- -	--	- -	Blood	0.00002	--	0.000009	0.00003
			Chemical Total	- -	--	- -	--	- -		0.0004	--	0.0002	0.0006
		Exposure Point Total						- -					0.0006
	Exposure Medium Total							- -					0.0006
	Air	OB/OD/SF Units - Nondetects	3-Nitrotoluene	--	- -	--	--	- -	NA	--	--	--	--
			Nitrobenzene	--	2E-09	--	--	2E-09	Respiratory	--	0.00002	--	0.00002
			Chemical Total	--	2E-09	--	--	2E-09		- -	0.00002	- -	0.00002
		Exposure Point Total						2E-09					0.00002
	Exposure Medium Total							2E-09					0.00002
Medium Total								2E-09					0.0007
Receptor Total							Receptor Risk Total	2E-09				Receptor HI Total	0.0007