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TABLE 8.31-1

SUMMARY OF DOSE-RESPONSE INFORMATION - NONCARCINOGENIC EFFECTS - ORAL
Central Landfill - OU2
Johnston, Rhode Island

Contaminant	Oral Subchronic Reference Dose (mg/kg-day)		Oral Chronic Reference Dose (mg/kg-day)		Chronic Oral RfD UF X MF	Target Organ/System	Critical Effect	Study Animal	Study Method
Volatile Organic Compounds									
1,4-Dichlorobenzene									
Benzene	1.0E-03	d	1.0E-03	f	3000	blood	leukemia	rat	oral-gavage
Carbon Tetrachloride	7.0E-03	c	7.0E-04	a	1000 x 1	liver	lesions	rat	oral-gavage
Chlorobenzene	2.0E-01	c	2.0E-02	a	1000 x 1	liver	histopathologic changes	dog	oral-capsule
Chloroform	1.0E-02	b,d	1.0E-02	a	1000 x 1	liver	fatty cyst formation	dog	oral-capsule
Tetrachloroethene	1.0E-01	b	1.0E-02	a	1000 x 1	liver	hepatotoxicity, increased organ weights	mouse/rat	oral-gavage
Trichloroethene	2.0E-02	c	2.0E-03	c					
Vinyl Chloride	3.0E-03	d	3.0E-03	a	30 x 1	liver	liver cell polymorphism	rat	oral
Semivolatile Organic Compounds									
Benzo(a)anthracene	3.0E-01	j	3.0E-02	j					
Benzo(a)pyrene	3.0E-01	j	3.0E-02	j					
Benzo(b)fluoranthene	3.0E-01	j	3.0E-02	j					
Benzo(g,h,i)perylene	3.0E-01	j	3.0E-02	j					
bis(2-Ethylhexyl)phthalate	2.0E-02	d	2.0E-02	a	1000 x 1	liver	increased weight	guinea pig	oral-diet
Phenanthrene	3.0E-01	j	3.0E-02	j					
Pesticides/PCBs									
Aldrin	3.0E-05	b, d	3.0E-05	a	1000 x 1	liver	toxicity	rat	oral-diet
Dieldrin	5.0E-05	b, d	5.0E-05	a	100 x 1	liver	lesions	rat	feeding

TABLE 8.31-1

SUMMARY OF DOSE-RESPONSE INFORMATION - NONCARCINOGENIC EFFECTS - ORAL
Central Landfill - OU2
Johnston, Rhode Island

Contaminant	Oral Subchronic Reference Dose (mg/kg-day)		Oral Chronic Reference Dose (mg/kg-day)		Chronic Oral RfD UF X MF	Target Organ/System	Critical Effect	Study Animal	Study Method
Metals									
Aluminum, total	1.0E+00	d	1.0E+00	g					
Arsenic, total	3.0E-04	b, d	3.0E-04	a	3 x 1	skin	hyperpigmentation, keratosis, and possible vascular complications	human	oral-diet
Barium, total	7.0E-02	b, d	7.0E-02	a	3 x 1	CV	increased blood pressure	human	oral-drinking water
Beryllium, total	5.0E-03	b, d	2.0E-03	a	300 x 1	small intestine	lesions	dog	oral-diet
Cadmium, total	5E-4 water/1E-3 food	d	5E-4 water/1E-3 food	a	10 x 1	kidney	proteinuria	human	oral-drinking water
Copper, total	3.7E-02	b	3.7E-02	b		G.I.	irritation	human	oral-drinking water
Iron, total									
Lead, total		i		i					
Manganese, total	7.0E-2 oral, dermal soil; 1.4E-1 food ingestion; 2.4E-2 oral water	d	7.0E-2 oral, dermal soil; 1.4E-1 food ingestion; 2.4E-2 oral water	k	1 x 1	CNS	effects	human	oral-diet
Mercury, total	3.0E-04	c	3.0E-04	c					
Nickel, total	2.0E-02	b, h	2.0E-02	a, h	300 x 1	whole body	decreased body and organ weight	rat	oral-diet
Thallium, total	2.0E-01	e	2.0E-01	e					
Vanadium, total	7.0E-03	b	7.0E-03	b	100	NA	NA	rat	oral-drinking water
Zinc, total	3.0E-01	b, d	3.0E-01	a	3 x 1	liver	decrease in enzymes	human	oral-diet

NOTES:

1. Sources:
   a. US EPA Integrated Risk Information System (IRIS), National Library of Medicine, TOXNET Computer Communications Service, May 2001.
   b. US EPA, Health Effects Assessment Summary Tables (HEAST), Office of Solid Waste and Emergency Response/Office of Emergency and Remedial Response, FY-1997 Update.
   c. MA DEP derived values from "Documentation for the Risk Assessment ShortForm", MA DEP ORS, October 1992.
   d. To be conservative, in the absence of an agency approved subchronic RfD, the chronic value was used.
   e. RfD based on the molecular weight ratio of thallium chloride to thallium (240/204.4) for conversion. US EPA Integrated Risk Information System. July, 1997.
   f. US EPA Risk Assessment Issue Paper for: Derivation of a Provisional RfD for Benzene (93-27/06-09-93)
   g. EPA-NCEA Provisional Value.
   h. Since there is no information on inorganic nickel, the values presented are the values for nickel, soluble salts.
   i. As per EPA guidance, there was no quantitative evaluation of lead. Lead EPCs were compared to relevant EPA and Rhode Island guidelines.
   j. In lieu of toxicity information on this compound the RfD for pyrene was used.
   k. As per EPA guidance, the manganese RfD of 0.14 mg/kg/day was modified to reflect both the dietary intake of manganese (5 mg/day) and a modifying factor of 3 for oral exposures to water, resulting in an adjusted RfD of 0.024 mg/kg/day.
   Based on the absence of neonates (children < 12 months), the RfD was not modified for other routes of exposure.

   A blank space indicates no data found.

2. CNS=Central nervous system; CV=Cardiovascular system; RBC=Red blood cell; MF= Modifying Factor; PNS= Peripheral nervous system; UF= Uncertainty Factor; NA= Not Applicable; NQE = Not Quantitatively Evaluated; RfD = Reference Dose.

3. Unless otherwise stated, values presented for metals are for the elemental form of metals.

TABLE 8.31-2

SUMMARY OF DOSE-RESPONSE INFORMATION - NONCARCINOGENIC EFFECTS - INHALATION
Central Landfill - OU2
Johnston, Rhode Island

Contaminant	Inhalation Subchronic Reference Concentration (mg/m^3)		Inhalation Chronic Reference Concentration (mg/m^3)		Chronic Inhalation RfC UF x MF	Target Organ/System	Critical Effect	Study Animal	Study Method
Volatile Organic Compounds									
1,4-Dichlorobenzene	2.5E+00	b, e	8.0E-01	a	100 x 1	liver	increased organ weight	rat	inhalation
Benzene	9.0E-03	d	9.0E-03	h		body chemistry	impaired immune and lymphatic responses		
Carbon Tetrachloride	4.3E-01	c	4.3E-01	c					
Chlorobenzene	2.0E-01	c	2.0E-02	b	10000	liver, kidney	effect	rat	inhalation
Chloroform	6.6E-01	c	6.6E-01	c					
Tetrachloroethene	6.0E-01	d	6.0E-01	i					
Trichloroethene	1.8E-01	c	1.8E-01	c					
Vinyl Chloride	1.0E-01	d	1.0E-01	a	30 x 1	liver	liver cell polymorphism	rat	oral
Semivolatile Organic Compounds									
Benzo(a)anthracene									
Benzo(a)pyrene									
Benzo(b)fluoranthene									
Benzo(g,h,i)perylene									
bis(2-Ethylhexyl)phthalate	2.0E-01	f							
Phenanthrene									
Pesticides/PCBs									
Aldrin									
Dieldrin									

TABLE 8.31-2

SUMMARY OF DOSE-RESPONSE INFORMATION - NONCARCINOGENIC EFFECTS - INHALATION
Central Landfill - OU2
Johnston, Rhode Island

Contaminant	Inhalation Subchronic Reference Concentration (mg/m³)		Inhalation Chronic Reference Concentration (mg/m³)		Chronic Inhalation RfC UF x MF	Target Organ/System	Critical Effect	Study Animal	Study Method
Metals									
Aluminum, total									
Arsenic, total									
Barium, total	5.0E-03	b	5.0E-04	b	1000	fetus	fetotoxicity	rat	inhalation
Beryllium, total	2.0E-05	d	2.0E-05	a	10 x 1	lung	beryllium sensitization	human	inhalation, occupational
Cadmium, total									
Copper, total									
Iron, total									
Lead, total		g		g					
Manganese, total	5.0E-05	d	5.0E-05	a	1000 x 1	CNS	impairment of neurobehavioral function	human	inhalation, occupational
Mercury, total	3.0E-04	b	3.0E-04	a	30 x 1	CNS	neurotoxicity	human	inhalation, occupational
Nickel, total									
Thallium, total									
Vanadium, total									
Zinc, total									

NOTES:

Sources:

a. US EPA Integrated Risk Information System (IRIS), National Library of Medicine, TOXNET Computer Communications Service, May 2001.
b. US EPA, Health Effects Assessment Summary Tables (HEAST), Office of Solid Waste and Emergency Response/Office of Emergency and Remedial Response, FY-1997 Update.
c. MADEP Documentation for the Risk Assessment Shortform Residential Scenario, October 1992.
d. To be conservative, in the absence of an agency approved subchronic RfC, the chronic value was used.
e. The chronic inhalation RfC was modified to estimate the subchronic RfC.
f. US EPA Provisional Subchronic RfC for Di(2-ethylhexyl)phthalate, December 1993.
g. As per EPA guidance, there was no quantitative evaluation of lead. Lead EPCs were compared to relevant EPA and Rhode Island guidelines.
h. US EPA Risk Assessment Issue Paper for Derivation of a Provisional 30 Day Acute Inhalation Criterion (AIC) for Benzene (using subchronic value).
i. The Risk Assessment Program has contacted Superfund and been given provisional values which should be used for DOE-ORR projects. This value should be clearly documented as provisional. For other projects, Superfund Health Risk Technical Support Center should be contacted directly (513)569-7300.

A blank space indicates no data found.

2. CNS= Central nervous system; MF= Modifying Factor; PNS= Peripheral nervous system; BUN=Blood urea nitrogen; UF= Uncertainty Factor; RfC = Reference Concentration.

3. Unless otherwise stated, values presented for metals are for the elemental form of metals.

TABLE 8.32-1

SUMMARY OF DOSE-RESPONSE INFORMATION - CARCINOGENIC EFFECTS
Central Landfill - OU2
Johnston, Rhode Island

Contaminant	Weight of Evidence Class	Relative Potency Factor	Oral Cancer Slope Factor (CSF) (mg/kg/day)$^{-1}$	Adjusted Oral CSF	Target Organ/System (oral)	Study Animal	Study Method	Inhalation Unit Risk (µg/m³)$^{-1}$	Target Organ/System (Inhalation)	Study Animal	Study Method
Volatile Organic Compounds											
1,4-Dichlorobenzene	C b		2.4E-02 b		liver	mouse	oral-gavage				
Benzene	A a		2.9E-02 a		leukemia	human	occupational inhalation	7.8E-06 a	leukemia	human	occupational inhalation
Carbon Tetrachloride	B2 a		1.3E-01 a		liver	rodents	oral-gavage	1.5E-05 a	liver	rodents	oral-gavage
Chlorobenzene	D a										
Chloroform	B2 a		6.1E-03 a		kidney	rat	drinking water	2.3E-05 a	liver	mouse	oral-gavage
Tetrachloroethene	C-B2 c		5.2E-02 d					5.8E-07 d			
Trichloroethene	C-B2 d		1.1E-02 d					1.7E-06 d			
Vinyl Chloride	A b		1.4E+00 a		liver, lung	rat	oral-diet	8.8E-06 a	liver	rat	inhalation
Semivolatile Organic Compounds											
Benzo(a)anthracene	B2 a	0.1	7.3E+00 c	7.3E-01							
Benzo(a)pyrene	B2 a	1	7.3E+00 a	7.3E+00	forestomach, squamous cell cancers	mouse	oral-diet	8.8E-04 g			
Benzo(b)fluoranthene	B2 a	0.1	7.3E+00 c	7.3E-01							
Benzo(g,h,i)perylene	D a										
bis(2-Ethylhexyl)phthalate	B2 a		1.4E-02 a		liver	mouse	oral-diet				
Phenanthrene	D a										
Pesticides/PCBs											
Aldrin	B2 a		1.7E+01 a		liver	mouse	oral-diet	4.9E-03 a	liver	mouse	oral-diet
Dieldrin	B2 a		1.6E+01 a		liver	mouse	oral-diet	4.6E-03 a	liver	mouse	oral-diet

TABLE 8.32-1

SUMMARY OF DOSE-RESPONSE INFORMATION - CARCINOGENIC EFFECTS
Central Landfill - OU2
Johnston, Rhode Island

Contaminant	Weight of Evidence Class	Relative Potency Factor	Oral Cancer Slope Factor (CSF) $(mg/kg/day)^{-1}$	Adjusted Oral CSF	Target Organ/System (oral)	Study Animal	Study Method	Inhalation Unit Risk $(\mu g/m^3)^{-1}$	Target Organ/System (Inhalation)	Study Animal	Study Method
Metals											
Aluminum, total											
Arsenic, total	A a		1.5E+00 a		skin	human	drinking water	4.3E-03 a	lung	human	inhalation, occupational
Barium, total	D a										
Beryllium, total	B1 a		4.3E+00 h		all sites	rat	drinking water	2.4E-03 a	lung	human	inhalation, occupational
Cadmium, total	B1 a							1.8E-03 a	lung	human	inhalation, occupational
Copper, total	D a										
Iron, total											
Lead, total	B2 a										
Manganese, total	D a										
Mercury, total	D a										
Nickel, total	A a							2.4E-04 a, e	lung, nasal	human	inhalation, occupational
Thallium, total	D a, f										
Vanadium, total											
Zinc, total	D a										

Notes:

1. Sources:
   a. US EPA, Integrated Risk Information System (IRIS), National Library of Medicine TOXNET Computer Communication Service, May 2001.
   b. US EPA, Health Effects Assessment Summary Tables (HEAST), Office of Solid Waste and Emergency Response/Office of Emergency and Remedial Response, FY-1997 Update.
   c. MADEP Documentation for the Risk Assessment Shortform Residential Scenario, October 1992.
   d. U.S. EPA Script for Carcinogenicity Questions on PCE and TCE, June 1992.
   e. Since there is no information on inorganic nickel, the value for nickel, refinery dust was used.
   f. There is no information on inorganic thallium, however, all thallium-based compounds on IRIS were noncarcinogens. Thus, thallium is assumed to be noncarcinogenic.
   g. Provisional inhalation toxicity values have been developed by the National Center for Environmental Assessment (NCEA). RAGS: Region 4 Bulletins, Human Health Risk Assessment (Interim Guidance) (November 1995).
   h. This value has been withdrawn from IRIS or HEAST.
2. Weight of evidence classification:
   A: Human carcinogen
   B: Probable human carcinogen
      B1: Limited evidence of carcinogenicity in humans from epidemiological studies
      B2: Sufficient evidence of carcinogenicity in animals, inadequate evidence in humans
   C: Possible human carcinogen
   D: Not classified
   E: No evidence of carcinogenicity
3. Inhalation unit risk is defined as the risk per concentration unit in air, e.g. risk per $\mu g/m^3$.
4. Unless otherwise stated, values presented for metals are for the elemental form of metals.

TABLE 8.43-1

SUMMARY OF CUMULATIVE HAZARD INDICES AND RISK ESTIMATES
Central Landfill - OU2
Johnston, Rhode Island

RECEPTOR	AREA	EXPOSURE MEDIA/ROUTE	RISK TABLE REFERENCE	NONCARCINOGENIC HAZARD INDEX				INCREMENTAL LIFETIME CANCER RISK ESTIMATE		
					Total	Site Related	Background	Total	Site Related	Background
Resident (Current) High End Exposure	Denney Residence	Ingestion of Groundwater	TABLE 8.44-1	Total:	8.5E-01	7.0E-01	1.5E-01	4E-04	NC	4E-04
				EPA Risk Limits/Range:	1.0	1.0	1.0	1E-04 - 1E-06	1E-04 - 1E-06	1E-04 - 1E-06
				Below/Within EPA Limits/Range?	YES	YES	YES	NO	YES	NO
Resident (Current) Central Tendency Exposure	Denney Residence	Ingestion of Groundwater	TABLE 8.44-2	Total:	4.7E-01	3.9E-01	8.1E-02	9E-05	NC	9E-05
				EPA Risk Limits/Range:	1.0	1.0	1.0	1E-04 - 1E-06	1E-04 - 1E-06	1E-04 - 1E-06
				Below/Within EPA Limits/Range?	YES	YES	YES	YES	YES	YES
Local Resident [1] (Recreator/Trespasser) Current Conditions	Almy Reservoir	Dermal Contact with Sediment	TABLE 8.44-12	Subtotal:	1.0E-01	5.3E-02	5.2E-02	2E-05	1E-06	2E-05
		Incidental Ingestion of Sediment	TABLE 8.44-13	Subtotal:	3.3E-01	2.3E-01	1.0E-01	2E-05	1E-07	2E-05
		Dermal Contact with Surface Water Current Conditions	TABLE 8.44-14	Subtotal:	5.9E-04	5.8E-04	9.7E-06	1E-07	8E-08	3E-08
		Incidental Ingestion of Surface Water Current Conditions	TABLE 8.44-15	Subtotal:	4.5E-03	4.4E-03	6.7E-05	4E-07	3E-07	9E-08
	On-Site	Dermal Contact with Surface Soil	TABLE 8.44-3	Subtotal:	7.0E-03	6.3E-03	7.8E-04	7E-07	6E-07	8E-08
		Incidental Ingestion of Surficial Soil	TABLE 8.44-4	Subtotal:	2.4E-03	1.6E-03	8.6E-04	2E-07	8E-08	9E-08
		Inhalation of Fugitive Dust	TABLE 8.44-5	Subtotal:	9.0E-05	8.8E-05	1.3E-06	6E-11	5E-11	8E-12
	Sedimentation Pond	Dermal Contact with Sediment	TABLE 8.44-6	Subtotal:	8.6E-03	1.2E-03	7.4E-03	1E-06	9E-07	5E-07
		Incidental Ingestion of Sediment	TABLE 8.44-7	Subtotal:	4.4E-03	1.1E-03	3.2E-03	3E-07	8E-08	2E-07
		Dermal Contact with Surface Water	TABLE 8.44-8	Subtotal:	6.1E-04	5.9E-04	1.3E-05	2E-08	1E-08	1E-08
	Cedar Swamp Brook and Quarry Stream	Dermal Contact with Sediment	TABLE 8.44-9	Subtotal:	1.0E-02	1.1E-03	9.0E-03	9E-07	3E-07	5E-07
		Incidental Ingestion of Sediment	TABLE 8.44-10	Subtotal:	4.4E-03	1.1E-03	3.3E-03	2E-07	3E-08	2E-07
		Dermal Contact with Surface Water	TABLE 8.44-11	Subtotal:	6.3E-03	6.3E-03	1.9E-05	3E-08	6E-09	2E-08
		Total for Local Resident (Recreator/Trespasser) - Current:			4.9E-01	3.1E-01	1.8E-01	5E-05	4E-06	4E-05
		EPA Risk Limits/Range:			1.0	1.0	1.0	1E-04 - 1E-06	1E-04 - 1E-06	1E-04 - 1E-06
		Below/Within EPA Limits/Range?			YES	YES	YES	YES	YES	YES

TABLE 8.43-1

SUMMARY OF CUMULATIVE HAZARD INDICES AND RISK ESTIMATES
Central Landfill - OU2
Johnston, Rhode Island

RECEPTOR	AREA	EXPOSURE MEDIA/ROUTE	RISK TABLE REFERENCE	NONCARCINOGENIC HAZARD INDEX				INCREMENTAL LIFETIME CANCER RISK ESTIMATE		
					Total	Site Related	Background	Total	Site Related	Background
Local Resident [1] (Recreator/Trespasser) Future Conditions	Almy Reservoir	Dermal Contact with Sediment	TABLE 8.44-12	Subtotal:	1.0E-01	5.3E-02	5.2E-02	2E-05	1E-06	2E-05
		Incidental Ingestion of Sediment	TABLE 8.44-13	Subtotal:	3.3E-01	2.3E-01	1.0E-01	2E-05	1E-07	2E-05
		Dermal Contact with Surface Water Future Conditions	TABLE 8.44-16	Subtotal:	6.5E-05	6.2E-05	3.5E-06	1E-08	5E-09	9E-09
		Incidental Ingestion of Surface Water Future Conditions	TABLE 8.44-17	Subtotal:	3.3E-04	3.0E-04	2.4E-05	3E-08	9E-10	3E-08
	On-Site	Dermal Contact with Surface Soil	TABLE 8.44-3	Subtotal:	7.0E-03	6.3E-03	7.8E-04	7E-07	6E-07	8E-08
		Incidental Ingestion of Surficial Soil	TABLE 8.44-4	Subtotal:	2.4E-03	1.6E-03	8.6E-04	2E-07	8E-08	9E-08
		Inhalation of Fugitive Dust	TABLE 8.44-5	Subtotal:	9.0E-05	8.8E-05	1.3E-06	6E-11	5E-11	8E-12
	Sedimentation Pond	Dermal Contact with Sediment	TABLE 8.44-6	Subtotal:	8.6E-03	1.2E-03	7.4E-03	1E-06	9E-07	5E-07
		Incidental Ingestion of Sediment	TABLE 8.44-7	Subtotal:	4.4E-03	1.1E-03	3.2E-03	3E-07	8E-08	2E-07
		Dermal Contact with Surface Water	TABLE 8.44-8	Subtotal:	6.1E-04	5.9E-04	1.3E-05	2E-08	1E-08	1E-08
	Cedar Swamp Brook and Quarry Stream	Dermal Contact with Sediment	TABLE 8.44-9	Subtotal:	1.0E-02	1.1E-03	9.0E-03	9E-07	3E-07	5E-07
		Incidental Ingestion of Sediment	TABLE 8.44-10	Subtotal:	4.4E-03	1.1E-03	3.3E-03	2E-07	3E-08	2E-07
		Dermal Contact with Surface Water	TABLE 8.44-11	Subtotal:	6.3E-03	6.3E-03	1.9E-05	3E-08	6E-09	2E-08
		Total for Local Resident (Recreator/Trespasser) - Future:			**4.8E-01**	**3.0E-01**	**1.8E-01**	**5E-05**	**3E-06**	**4E-05**
		EPA Risk Limits/Range:			**1.0**	**1.0**	**1.0**	**1E-04 - 1E-06**	**1E-04 - 1E-06**	**1E-04 - 1E-06**
		Below/Within EPA Limits/Range?			**YES**	**YES**	**YES**	**YES**	**YES**	**YES**

TABLE 8.43-1

SUMMARY OF CUMULATIVE HAZARD INDICES AND RISK ESTIMATES
Central Landfill - OU2
Johnston, Rhode Island

RECEPTOR	AREA	EXPOSURE MEDIA/ROUTE	RISK TABLE REFERENCE	NONCARCINOGENIC HAZARD INDEX				INCREMENTAL LIFETIME CANCER RISK ESTIMATE		
					Total	Site Related	Background	Total	Site Related	Background
Local Resident [1] (Recreator/Trespasser) Current Conditions	Upper Simmons Reservoir	Dermal Contact with Sediment	TABLE 8.44-18	Subtotal:	7.5E-02	4.5E-03	7.1E-02	2E-05	8E-06	2E-05
		Incidental Ingestion of Sediment	TABLE 8.44-19	Subtotal:	1.1E-01	1.7E-02	9.8E-02	2E-05	1E-06	2E-05
		Dermal Contact with Surface Water Current Conditions	TABLE 8.44-20	Subtotal:	9.0E-03	9.0E-03	3.6E-05	4E-07	3E-07	9E-08
		Incidental Ingestion of Surface Water Current Conditions	TABLE 8.44-21	Subtotal:	1.4E-01	1.4E-01	2.5E-04	5E-07	2E-07	3E-07
		Fish Consumption	TABLE 8.44-30	Subtotal:	2.6E-02	2.6E-02	NC	1E-05	1E-05	NC
	On-Site	Dermal Contact with Surface Soil	TABLE 8.44-3	Subtotal:	7.0E-03	6.3E-03	7.8E-04	7E-07	6E-07	8E-08
		Incidental Ingestion of Surficial Soil	TABLE 8.44-4	Subtotal:	2.4E-03	1.6E-03	8.6E-04	2E-07	8E-08	9E-08
		Inhalation of Fugitive Dust	TABLE 8.44-5	Subtotal:	9.0E-05	8.8E-05	1.3E-06	6E-11	5E-11	8E-12
	Sedimentation Pond	Dermal Contact with Sediment	TABLE 8.44-6	Subtotal:	8.6E-03	1.2E-03	7.4E-03	1E-06	9E-07	5E-07
		Incidental Ingestion of Sediment	TABLE 8.44-7	Subtotal:	4.4E-03	1.1E-03	3.2E-03	3E-07	8E-08	2E-07
		Dermal Contact with Surface Water	TABLE 8.44-8	Subtotal:	6.1E-04	5.9E-04	1.3E-05	2E-08	1E-08	1E-08
	Cedar Swamp Brook and Quarry Stream	Dermal Contact with Sediment	TABLE 8.44-9	Subtotal:	1.0E-02	1.1E-03	9.0E-03	9E-07	3E-07	5E-07
		Incidental Ingestion of Sediment	TABLE 8.44-10	Subtotal:	4.4E-03	1.1E-03	3.3E-03	2E-07	3E-08	2E-07
		Dermal Contact with Surface Water	TABLE 8.44-11	Subtotal:	6.3E-03	6.3E-03	1.9E-05	3E-08	6E-09	2E-08
		Total for Local Resident (Recreator/Trespasser) - Current:			**4.1E-01**	**2.2E-01**	**1.9E-01**	**6E-05**	**2E-05**	**4E-05**
		EPA Risk Limits/Range:			**1.0**	**1.0**	**1.0**	**1E-04 - 1E-06**	**1E-04 - 1E-06**	**1E-04 - 1E-06**
		Below/Within EPA Limits/Range?			**YES**	**YES**	**YES**	**YES**	**YES**	**YES**

TABLE 8.43-1

SUMMARY OF CUMULATIVE HAZARD INDICES AND RISK ESTIMATES
Central Landfill - OU2
Johnston, Rhode Island

RECEPTOR	AREA	EXPOSURE MEDIA/ROUTE	RISK TABLE REFERENCE	NONCARCINOGENIC HAZARD INDEX				INCREMENTAL LIFETIME CANCER RISK ESTIMATE		
					Total	Site Related	Background	Total	Site Related	Background
Local Resident [1] (Recreator/Trespasser) Future Conditions	Upper Simmons Reservoir	Dermal Contact with Sediment	TABLE 8.44-18	Subtotal:	7.5E-02	4.5E-03	7.1E-02	2E-05	8E-06	2E-05
		Incidental Ingestion of Sediment	TABLE 8.44-19	Subtotal:	1.1E-01	1.7E-02	9.8E-02	2E-05	1E-06	2E-05
		Dermal Contact with Surface Water Future Conditions	TABLE 8.44-22	Subtotal:	5.1E-04	5.0E-04	4.6E-06	5E-08	4E-08	1E-08
		Incidental Ingestion of Surface Water Future Conditions	TABLE 8.44-23	Subtotal:	3.8E-03	3.7E-03	3.2E-05	8E-08	4E-08	4E-08
	On-Site	Dermal Contact with Surface Soil	TABLE 8.44-3	Subtotal:	7.0E-03	6.3E-03	7.8E-04	7E-07	6E-07	8E-08
		Incidental Ingestion of Surficial Soil	TABLE 8.44-4	Subtotal:	2.4E-03	1.6E-03	8.6E-04	2E-07	8E-08	9E-08
		Inhalation of Fugitive Dust	TABLE 8.44-5	Subtotal:	9.0E-05	8.8E-05	1.3E-06	6E-11	5E-11	8E-12
	Sedimentation Pond	Dermal Contact with Sediment	TABLE 8.44-6	Subtotal:	8.6E-03	1.2E-03	7.4E-03	1E-06	9E-07	5E-07
		Incidental Ingestion of Sediment	TABLE 8.44-7	Subtotal:	4.4E-03	1.1E-03	3.2E-03	3E-07	8E-08	2E-07
		Dermal Contact with Surface Water	TABLE 8.44-8	Subtotal:	6.1E-04	5.9E-04	1.3E-05	2E-08	1E-08	1E-08
	Cedar Swamp Brook and Quarry Stream	Dermal Contact with Sediment	TABLE 8.44-9	Subtotal:	1.0E-02	1.1E-03	9.0E-03	9E-07	3E-07	5E-07
		Incidental Ingestion of Sediment	TABLE 8.44-10	Subtotal:	4.4E-03	1.1E-03	3.3E-03	2E-07	3E-08	2E-07
		Dermal Contact with Surface Water	TABLE 8.44-11	Subtotal:	6.3E-03	6.3E-03	1.9E-05	3E-08	6E-09	2E-08
		Total for Local Resident (Recreator/Trespasser) - Future:			**2.4E-01**	**4.5E-02**	**1.9E-01**	**5E-05**	**1E-05**	**4E-05**
		EPA Risk Limits/Range:			**1.0**	**1.0**	**1.0**	**1E-04 - 1E-06**	**1E-04 - 1E-06**	**1E-04 - 1E-06**
		Below/Within EPA Limits/Range?			**YES**	**YES**	**YES**	**YES**	**YES**	**YES**

TABLE 8.43-1

SUMMARY OF CUMULATIVE HAZARD INDICES AND RISK ESTIMATES
Central Landfill - OU2
Johnston, Rhode Island

RECEPTOR	AREA	EXPOSURE MEDIA/ROUTE	RISK TABLE REFERENCE	NONCARCINOGENIC HAZARD INDEX				INCREMENTAL LIFETIME CANCER RISK ESTIMATE		
					Total	Site Related	Background	Total	Site Related	Background
Facility Worker	Cedar Swamp Brook and Quarry Stream	Dermal Contact with Sediment	TABLE 8.44-24	Subtotal:	1.7E-05	1.8E-06	1.6E-05	4E-09	2E-09	3E-09
		Incidental Ingestion of Sediment	TABLE 8.44-25	Subtotal:	4.9E-04	1.2E-04	3.6E-04	7E-08	8E-09	6E-08
		Dermal Contact with Surface Water	TABLE 8.44-26	Subtotal:	9.8E-04	9.8E-04	2.9E-06	1E-08	3E-09	9E-09
	Sedimentation Pond	Dermal Contact with Sediment	TABLE 8.44-27	Subtotal:	1.8E-05	2.4E-06	1.5E-05	8E-09	5E-09	3E-09
		Incidental Ingestion of Sediment	TABLE 8.44-28	Subtotal:	8.0E-04	2.1E-04	6.0E-04	2E-07	4E-08	1E-07
		Dermal Contact with Surface Water	TABLE 8.44-29	Subtotal:	6.2E-05	5.9E-05	1.3E-06	7E-09	3E-09	4E-09
		Total for Facility Worker :			**2.4E-03**	**1.4E-03**	**1.0E-03**	**3E-07**	**6E-08**	**2E-07**
		EPA Risk Limits/Range:			**1.0**	**1.0**	**1.0**	**1E-04 - 1E-06**	**1E-04 - 1E-06**	**1E-04 - 1E-06**
		Below/Within EPA Limits/Range?			**YES**	**YES**	**YES**	**YES**	**YES**	**YES**

1. It was assumed that recreators that are present either at the Almy Reservoir or Upper Simmons Reservoir may also trespass onto the site. Thus, risks for the current recreator at the Almy Reservoir, the future recreator at the Almy Reservoir, the current recreator at the Upper Simmons Reservoir, and the future recreator at the Upper Simmons Reservoir, were summed with risks for the trespasser.

2. The Denney residence is the only residential with VOC's (based on modeling not on sampled) in accordance with EPA Guidance, risks via inhalation of volatiles in GW is considered to be approximately equal to risks via ingestion.

TABLE 8.43-2

RELATIVE CONTRIBUTION OF EXPOSURE PATHWAYS AND KEY CONSTITUENTS TO CUMULATIVE RISK
Central Landfill - OU2
Johnston, Rhode Island

RECEPTOR	AREA	EXPOSURE MEDIA/ROUTE	NONCARCINOGENIC HAZARD INDEX Site Related	Pathway Percent Contribution to HI	COCs Contributing Most to the HI, the HI, and Exposure Point Concentration (in applicable units)			INCREMENTAL LIFETIME CANCER RISK ESTIMATE Site Related	Pathway Percent Contribution to Risk	COCs Contributing Most to the ELCR and Exposure Point Concentration (in applicable units)		
					Contributing COCs	HI	EPC			Contributing COCs	ELCR	EPC
Resident (Current) High End Exposure	Denney Residence	Ingestion of Groundwater	**Total: 7.0E-01**	100%	Manganese	7.0E-01	3.0E-01 mg/l	NC	NC	Beryllium	4.E-04	5.2E-03 mg/l
Resident (Current) Central Tendency Exposure	Denney Residence	Ingestion of Groundwater	**Total: 3.9E-01**	100%	Manganese	3.9E-01	3.0E-01 mg/l	NC	NC	Beryllium	9.E-05	5.2E-03 mg/l
Local Resident (Recreator/Trespasser) Current Conditions	Almy Reservoir	Dermal Contact with Sediment	Subtotal: 5.3E-02	17%	Manganese	5.3E-02	8.7E+03 mg/kg	1E-06	30%	Benzo(a)pyrene Benzo(b)fluoranthene Benzo(a)anthracene	9.E-07 1.E-07 7.E-08	8.4E-02 mg/kg 1.2E-01 mg/kg 6.6E-02 mg/kg
		Incidental Ingestion of Sediment	Subtotal: 2.3E-01	75%	Manganese	2.3E-01	8.7E+03 mg/kg	1E-07	4%	Benzo(a)pyrene Benzo(b)fluoranthene Benzo(a)anthracene	1.E-07 2.E-08 9.E-09	8.4E-02 mg/kg 1.2E-01 mg/kg 6.6E-02 mg/kg
		Dermal Contact with Surface Water Current Conditions	Subtotal: 5.8E-04	0%	Manganese Arsenic	3.3E-05 5.5E-04	3.0E-02 mg/l 2.1E-03 mg/l	8E-08	2%	Arsenic	8.E-08	2.1E-03 mg/l
		Incidental Ingestion of Surface Water Current Conditions	Subtotal: 4.4E-03	1%	Arsenic Manganese	3.8E-03 6.6E-04	2.1E-03 mg/l 3.0E-02 mg/l	3E-07	7%	Arsenic	3.E-07	2.1E-03 mg/l
	On-Site	Dermal Contact with Surface Soil	Subtotal: 6.3E-03	2%	Arsenic	5.2E-03	5.5E+00 mg/kg	6E-07	16%	Arsenic Benzo(a)pyrene	3.E-07 3.E-07	5.5E+00 mg/kg 2.2E-01 mg/kg
		Incidental Ingestion of Surficial Soil	Subtotal: 1.6E-03	1%	Arsenic Manganese	9.1E-04 3.8E-04	5.5E+00 mg/kg 2.6E+02 mg/kg	8E-08	2%	Arsenic Benzo(a)pyrene	5.E-08 2.E-08	5.5E+00 mg/kg 2.2E-01 mg/kg
		Inhalation of Fugitive Dust	Subtotal: 8.8E-05	0%	Manganese	8.7E-05	1.2E-06 mg/m³	5E-11	0%	Arsenic	5.E-11	2.6E-05 mg/m³
	Sedimentation Pond	Dermal Contact with Sediment	Subtotal: 1.2E-03	0%	Manganese	1.0E-03	7.5E+02 mg/kg	9E-07	26%	Benzo(a)pyrene Benzo(b)fluoranthene Benzo(a)anthracene	7.E-07 1.E-07 1.E-07	6.2E-01 mg/kg 1.2E+00 mg/kg 9.2E-01 mg/kg
		Incidental Ingestion of Sediment	Subtotal: 1.1E-03	0%	Manganese	1.1E-03	7.5E+02 mg/kg	8E-08	2%	Benzo(a)pyrene Benzo(b)fluoranthene Benzo(a)anthracene	2.E-06 4.E-06 3.E-06	6.2E-01 mg/kg 1.2E+00 mg/kg 9.2E-01 mg/kg
		Dermal Contact with Surface Water	Subtotal: 5.9E-04	0%	Manganese	4.0E-04	1.9E+00 mg/l	1E-08	0%	Arsenic	1.E-08	3.5E-03 mg/l
	Cedar Swamp Brook and Quarry Stream	Dermal Contact with Sediment	Subtotal: 1.1E-03	0%	Manganese	1.0E-03	7.6E+02 mg/kg	3E-07	9%	Benzo(a)pyrene Benzo(b)fluoranthene Benzo(a)anthracene	3.E-07 4.E-08 3.E-08	2.2E-01 mg/kg 3.1E-01 mg/kg 2.5E-01 mg/kg
		Incidental Ingestion of Sediment	Subtotal: 1.1E-03	0%	Manganese	1.1E-03	7.6E+02 mg/kg	3E-08	1%	Benzo(a)pyrene Benzo(b)fluoranthene Benzo(a)anthracene	2.E-08 3.E-09 2.E-09	2.2E-01 mg/kg 3.1E-01 mg/kg 2.5E-01 mg/kg
		Dermal Contact with Surface Water	Subtotal: 6.3E-03	2%	Manganese	6.2E-03	3.0E+01 mg/kg	6E-09	0%	Arsenic	6.E-09	2.2E-03 mg/l
		Total for Local Resident (Recreator/Trespasser) - Current:	**3.1E-01**	100%				**4E-06**	100%			

TABLE 8.43-2

RELATIVE CONTRIBUTION OF EXPOSURE PATHWAYS AND KEY CONSTITUENTS TO CUMULATIVE RISK
Central Landfill - OU2
Johnston, Rhode Island

RECEPTOR	AREA	EXPOSURE MEDIA/ROUTE	NONCARCINOGENIC HAZARD INDEX Site Related	Pathway Percent Contribution to HI	COCs Contributing Most to the HI, the HI, and Exposure Point Concentration (in applicable units)			INCREMENTAL LIFETIME CANCER RISK ESTIMATE Site Related	Pathway Percent Contribution to Risk	COCs Contributing Most to the ELCR and Exposure Point Concentration (in applicable units)		
					Contributing COCs	HI	EPC			Contributing COCs	ELCR	EPC
Local Resident (Recreator/Trespasser) Future Conditions	Almy Reservoir	Dermal Contact with Sediment	Subtotal: 5.3E-02	17%	Manganese	5.3E-02	8.7E+03 mg/kg	1E-06	33%	Benzo(a)pyrene Benzo(b)fluoranthene Benzo(a)anthracene	9.E-07 1.E-07 7.E-08	8.4E-02 mg/kg 1.2E-01 mg/kg 6.6E-02 mg/kg
		Incidental Ingestion of Sediment	Subtotal: 2.3E-01	76%	Manganese	2.3E-01	8.7E+03 mg/kg	1E-07	5%	Benzo(a)pyrene Benzo(b)fluoranthene Benzo(a)anthracene	1.E-07 2.E-08 9.E-09	8.4E-02 mg/kg 1.2E-01 mg/kg 6.6E-02 mg/kg
		Dermal Contact with Surface Water Future Conditions	Subtotal: 6.2E-05	0%	Manganese Cadmium Mercury	6.5E-06 3.1E-06 1.3E-05	5.8E-03 mg/l 4.0E-05 mg/l 5.0E-05 mg/l	5E-09	0%	bis(2-Ethylhexyl)phthalate	2.E-09	1.7E-04 mg/l
		Incidental Ingestion of Surface Water Future Conditions	Subtotal: 3.0E-04	0%	Mercury Manganese Cadmium	9.0E-05 1.3E-04 4.3E-05	4.0E-05 mg/l 5.8E-03 mg/l 2.2E-02 mg/l	9E-10	0%	bis(2-Ethylhexyl)phthalate	2.E-10	1.7E-04 mg/l
	On-Site	Dermal Contact with Surface Soil	Subtotal: 6.3E-03	2%	Arsenic	5.2E-03	5.5E+00 mg/kg	6E-07	18%	Arsenic Benzo(a)pyrene	3.E-07 3.E-07	5.5E+00 mg/kg 2.2E-01 mg/kg
		Incidental Ingestion of Surficial Soil	Subtotal: 1.6E-03	1%	Arsenic Manganese	9.1E-04 3.8E-04	5.5E+00 mg/kg 2.6E+02 mg/kg	8E-08	2%	Arsenic Benzo(a)pyrene	5.E-08 2.E-08	5.5E+00 mg/kg 2.2E-01 mg/kg
		Inhalation of Fugitive Dust	Subtotal: 8.8E-05	0%	Manganese	8.7E-05	1.2E-06 mg/m³	5E-11	0%	Arsenic	5.E-11	2.6E-05 mg/m³
	Sedimentation Pond	Dermal Contact with Sediment	Subtotal: 1.2E-03	0%	Manganese	1.0E-03	7.5E+02 mg/kg	9E-07	29%	Benzo(a)pyrene Benzo(b)fluoranthene Benzo(a)anthracene	7.E-07 1.E-07 1.E-07	6.2E-01 mg/kg 1.2E+00 mg/kg 9.2E-01 mg/kg
		Incidental Ingestion of Sediment	Subtotal: 1.1E-03	0%	Manganese	1.1E-03	7.5E+02 mg/kg	8E-08	2%	Benzo(a)pyrene Benzo(b)fluoranthene Benzo(a)anthracene	6.E-08 1.E-08 9.E-09	6.2E-01 mg/kg 1.2E+00 mg/kg 9.2E-01 mg/kg
		Dermal Contact with Surface Water	Subtotal: 5.9E-04	0%	Manganese	4.0E-04	1.9E+00 mg/l	1E-08	0%	Arsenic	1.E-08	3.5E-03 mg/l
	Cedar Swamp Brook and Quarry Stream	Dermal Contact with Sediment	Subtotal: 1.1E-03	0%	Manganese	1.0E-03	7.6E+02 mg/kg	3E-07	10%	Benzo(a)pyrene Benzo(b)fluoranthene Benzo(a)anthracene	3.E-07 4.E-08 3.E-08	2.2E-01 mg/kg 3.1E-01 mg/kg 2.5E-01 mg/kg
		Incidental Ingestion of Sediment	Subtotal: 1.1E-03	0%	Manganese	1.1E-03	7.6E+02 mg/kg	3E-08	1%	Benzo(a)pyrene Benzo(b)fluoranthene Benzo(a)anthracene	2.E-08 3.E-09 2.E-09	2.2E-01 mg/kg 3.1E-01 mg/kg 2.5E-01 mg/kg
		Dermal Contact with Surface Water	Subtotal: 6.3E-03	2%	Manganese	6.2E-03	3.0E+01 mg/kg	6E-09	0%	Arsenic	6.E-09	2.2E-03 mg/l
		Total for Local Resident (Recreator/Trespasser) - Future:	**3.0E-01**	100%				**3E-06**	100%			

TABLE 8.43-2

RELATIVE CONTRIBUTION OF EXPOSURE PATHWAYS AND KEY CONSTITUENTS TO CUMULATIVE RISK
Central Landfill - OU2
Johnston, Rhode Island

RECEPTOR	AREA	EXPOSURE MEDIA/ROUTE	NONCARCINOGENIC HAZARD INDEX Site Related	Pathway Percent Contribution to HI	COCs Contributing Most to the HI, the HI, and Exposure Point Concentration (in applicable units)			INCREMENTAL LIFETIME CANCER RISK ESTIMATE Site Related	Pathway Percent Contribution to Risk	COCs Contributing Most to the ELCR and Exposure Point Concentration (in applicable units)		
					Contributing COCs	HI	EPC			Contributing COCs	ELCR	EPC
Local Resident (Recreator/Trespasser) Current Conditions	Upper Simmons Reservoir	Dermal Contact with Sediment	Subtotal: 4.5E-03	2.1%	Manganese	3.9E-03	6.4E+02 mg/kg	8E-06	34%	Benzo(a)pyrene Benzo(b)fluoranthene Benzo(a)anthracene	1.E-06 NC 6.E-06	1.1E+00 mg/kg 2.1E-01 mg/kg 5.7E-01 mg/kg
		Incidental Ingestion of Sediment	Subtotal: 1.7E-02	8%	Manganese	1.7E-02	6.4E+02 mg/kg	1E-06	4.6%	Benzo(a)pyrene Benzo(b)fluoranthene Benzo(a)anthracene	1.E-07 8.E-07 NC	7.8E-01 mg/kg 5.7E-01 mg/kg NCC mg/kg
		Dermal Contact with Surface Water Current Conditions	Subtotal: 9.0E-03	4%	Manganese	7.0E-03	6.3E+00 mg/l	3E-07	1.3%	Tetrachloroethene Arsenic	3.E-07 5.E-08	5.5E-04 mg/l 1.3E-03 mg/l
		Incidental Ingestion of Surface Water Current Conditions	Subtotal: 1.4E-01	65%	Manganese	1.4E-01	6.3E+00 mg/l	2E-07	0.7%	Arsenic	2.E-07	1.3E-03 mg/l
		Fish Consumption	Subtotal: 2.6E-02	12%	Arsenic Mercury	1.2E-02 9.9E-03	5.1E-02 mg/kg 4.1E-02 mg/kg	1E-05	51%	Benzo(a)pyrene Arsenic	9.E-06 1.E-06	6.1E-02 mg/kg 5.1E-02 mg/kg
	On-Site	Dermal Contact with Surface Soil	Subtotal: 6.3E-03	3%	Arsenic	5.2E-03	5.5E+00 mg/kg	6E-07	2.5%	Arsenic Benzo(a)pyrene	3.E-07 3.E-07	5.5E+00 mg/kg 2.2E-01 mg/kg
		Incidental Ingestion of Surficial Soil	Subtotal: 1.6E-03	0.7%	Arsenic Manganese	9.1E-04 3.8E-04	5.5E+00 mg/kg 2.6E+02 mg/kg	8E-08	0.3%	Arsenic Benzo(a)pyrene	5.E-08 2.E-08	5.5E+00 mg/kg 2.2E-01 mg/kg
		Inhalation of Fugitive Dust	Subtotal: 8.8E-05	0.04%	Manganese	8.7E-05	1.2E-06 mg/m³	5E-11	0.0002%	Arsenic	5.E-11	2.6E-05 mg/m³
	Sedimentation Pond	Dermal Contact with Sediment	Subtotal: 1.2E-03	0.5%	Manganese	1.0E-03	7.5E+02 mg/kg	9E-07	4%	Benzo(a)pyrene Benzo(b)fluoranthene Benzo(a)anthracene	7.E-07 1.E-07 1.E-07	6.2E-01 mg/kg 1.2E+00 mg/kg 9.2E-01 mg/kg
		Incidental Ingestion of Sediment	Subtotal: 1.1E-03	0.5%	Manganese	1.1E-03	7.5E+02 mg/kg	8E-08	0.3%	Benzo(a)pyrene Benzo(b)fluoranthene Benzo(a)anthracene	6.E-08 1.E-08 9.E-09	6.2E-01 mg/kg 1.2E+00 mg/kg 9.2E-01 mg/kg
		Dermal Contact with Surface Water	Subtotal: 5.9E-04	0.3%	Manganese	4.0E-04	1.9E+00 mg/l	1E-08	0.04%	Arsenic	1.E-08	3.5E-03 mg/l
	Cedar Swamp Brook and Quarry Stream	Dermal Contact with Sediment	Subtotal: 1.1E-03	0.5%	Manganese	1.0E-03	7.6E+02 mg/kg	3E-07	1.4%	Benzo(a)pyrene Benzo(b)fluoranthene Benzo(a)anthracene	3.E-07 4.E-08 3.E-08	2.2E-01 mg/kg 3.1E-01 mg/kg 2.5E-01 mg/kg
		Incidental Ingestion of Sediment	Subtotal: 1.1E-03	0.5%	Manganese	1.1E-03	7.6E+02 mg/kg	3E-08	0.12%	Benzo(a)pyrene Benzo(b)fluoranthene Benzo(a)anthracene	2.E-09 3.E-09 2.E-09	2.2E-01 mg/kg 3.1E-01 mg/kg 2.5E-01 mg/kg
		Dermal Contact with Surface Water	Subtotal: 6.3E-03	2.9%	Manganese	6.2E-03	3.0E+01 mg/kg	6E-09	0.03%	Arsenic	6.E-09	2.2E-03 mg/l
		Total for Local Resident (Recreator/Trespasser) - Current:	**2.2E-01**	100%				**2E-05**	100%			

TABLE 8.43-2

RELATIVE CONTRIBUTION OF EXPOSURE PATHWAYS AND KEY CONSTITUENTS TO CUMULATIVE RISK
Central Landfill - OU2
Johnston, Rhode Island

RECEPTOR	AREA	EXPOSURE MEDIA/ROUTE	NONCARCINOGENIC HAZARD INDEX Site Related	Pathway Percent Contribution to HI	COCs Contributing Most to the HI, the HI, and Exposure Point Concentration (in applicable units)			INCREMENTAL LIFETIME CANCER RISK ESTIMATE Site Related	Pathway Percent Contribution to Risk	COCs Contributing Most to the ELCR and Exposure Point Concentration (in applicable units)		
					Contributing COCs	HI	EPC			Contributing COCs	ELCR	EPC
Local Resident (Recreator/Trespasser) Future Conditions	Upper Simmons Reservoir	Dermal Contact with Sediment	Subtotal: 4.5E-03	10%	Manganese	3.9E-03	6.4E+02 mg/kg	8E-06	71%	Benzo(a)pyrene Benzo(b)fluoranthene Benzo(a)anthracene	1.E-06 NC 6.E-06	1.1E+00 mg/kg 2.1E-01 mg/kg 5.7E-01 mg/kg
		Incidental Ingestion of Sediment	Subtotal: 1.7E-02	38%	Manganese	1.7E-02	6.4E+02 mg/kg	1E-06	10%	Benzo(a)pyrene Benzo(b)fluoranthene Benzo(a)anthracene	1.E-07 8.E-07 NC	7.8E-01 mg/kg 5.7E-01 mg/kg NCC mg/kg
		Dermal Contact with Surface Water Future Conditions	Subtotal: 5.0E-04	1%	Manganese	1.3E-04	1.2E-01 mg/l	4E-08	0%	bis(2-Ethylhexyl)phthalate Arsenic	2.E-08 1.E-08	1.4E-03 mg/l 2.9E-04 mg/l
		Incidental Ingestion of Surface Water Future Conditions	Subtotal: 3.7E-03	8%	Manganese Arsenic	2.6E-03 5.3E-04	1.2E-01 mg/l 2.9E-04 mg/l	4E-08	0%	Arsenic	4.E-08	2.9E-04 mg/l
	On-Site	Dermal Contact with Surface Soil	Subtotal: 6.3E-03	14%	Arsenic	5.2E-03	5.5E+00 mg/kg	6E-07	5%	Arsenic Benzo(a)pyrene	6.E+00 3.E-07	3.0E-07 mg/kg 2.2E-01 mg/kg
		Incidental Ingestion of Surficial Soil	Subtotal: 1.6E-03	3%	Arsenic Manganese	9.1E-04 3.8E-04	5.5E+00 mg/kg 2.6E+02 mg/kg	8E-08	1%	Arsenic Benzo(a)pyrene	5.E-08 2.E-08	5.5E+00 mg/kg 2.2E-01 mg/kg
		Inhalation of Fugitive Dust	Subtotal: 8.8E-05	0%	Manganese	8.7E-05	1.2E-06 mg/m³	5E-11	0%	Arsenic	5.E-11	2.6E-05 mg/m³
	Sedimentation Pond	Dermal Contact with Sediment	Subtotal: 1.2E-03	3%	Manganese	1.0E-03	7.5E+02 mg/kg	9E-07	9%	Benzo(a)pyrene Benzo(b)fluoranthene Benzo(a)anthracene	7.E-07 1.E-07 1.E-07	6.2E-01 mg/kg 1.2E+00 mg/kg 9.2E-01 mg/kg
		Incidental Ingestion of Sediment	Subtotal: 1.1E-03	2%	Manganese	1.1E-03	7.5E+02 mg/kg	8E-08	1%	Benzo(a)pyrene Benzo(b)fluoranthene Benzo(a)anthracene	6.E-08 1.E-08 9.E-09	6.2E-01 mg/kg 1.2E+00 mg/kg 9.2E-01 mg/kg
		Dermal Contact with Surface Water	Subtotal: 5.9E-04	1%	Manganese	4.0E-04	1.9E+00 mg/l	1E-08	0%	Arsenic	1.E-08	3.5E-03 mg/l
	Cedar Swamp Brook and Quarry Stream	Dermal Contact with Sediment	Subtotal: 1.1E-03	2%	Manganese	1.0E-03	7.6E+02 mg/kg	3E-07	3%	Benzo(a)pyrene Benzo(b)fluoranthene Benzo(a)anthracene	3.E-07 4.E-08 3.E-08	2.2E-01 mg/kg 3.1E-01 mg/kg 2.5E-01 mg/kg
		Incidental Ingestion of Sediment	Subtotal: 1.1E-03	2%	Manganese	1.1E-03	7.6E+02 mg/kg	3E-08	0%	Benzo(a)pyrene Benzo(b)fluoranthene Benzo(a)anthracene	2.E-08 3.E-09 2.E-09	2.2E-01 mg/kg 3.1E-01 mg/kg 2.5E-01 mg/kg
		Dermal Contact with Surface Water	Subtotal: 6.3E-03	14%	Manganese	6.2E-03	3.0E+01 mg/kg	6E-09	0%	Arsenic	6.E-09	2.2E-03 mg/l
		Total for Local Resident (Recreator/Trespasser) - Future:	**4.5E-02**	100%				**1E-05**	100%			

TABLE 8.43-2

RELATIVE CONTRIBUTION OF EXPOSURE PATHWAYS AND KEY CONSTITUENTS TO CUMULATIVE RISK
Central Landfill - OU2
Johnston, Rhode Island

RECEPTOR	AREA	EXPOSURE MEDIA/ROUTE	NONCARCINOGENIC HAZARD INDEX Site Related	Pathway Percent Contribution to HI	COCs Contributing Most to the HI, the HI, and Exposure Point Concentration (in applicable units)			INCREMENTAL LIFETIME CANCER RISK ESTIMATE Site Related	Pathway Percent Contribution to Risk	COCs Contributing Most to the ELCR and Exposure Point Concentration (in applicable units)		
					Contributing COCs	HI	EPC			Contributing COCs	ELCR	EPC
Facility Worker	Cedar Swamp Brook and Quarry Stream	Dermal Contact with Sediment	Subtotal: 1.8E-06	0%	Manganese	1.8E-06	7.6E+02 mg/kg	2E-09	2%	Benzo(a)pyrene Benzo(b)fluoranthene Benzo(a)anthracene	1.E-09 2.E-10 1.E-10	2.2E-01 mg/kg 3.1E-01 mg/kg 2.5E-01 mg/kg
		Incidental Ingestion of Sediment	Subtotal: 1.2E-04	9%	Manganese	1.2E-04	7.6E+02 mg/kg	8E-09	13%	Benzo(a)pyrene Benzo(b)fluoranthene Benzo(a)anthracene	7.E-09 9.E-10 7.E-10	2.2E-01 mg/kg 3.1E-01 mg/kg 2.5E-01 mg/kg
		Dermal Contact with Surface Water	Subtotal: 9.8E-04	71%	Manganese	9.5E-04	3.0E+01 mg/l	3E-09	4%	Arsenic	3.E-09	2.2E-03 mg/l
	Sedimentation Ponds	Dermal Contact with Sediment	Subtotal: 2.4E-06	0%	Manganese	2.1E-06	7.5E+02 mg/kg	5E-09	9%	Benzo(a)pyrene Benzo(b)fluoranthene Benzo(a)anthracene	4.E-09 7.E-10 6.E-10	6.2E-01 mg/kg 1.2E+00 mg/kg 9.2E-01 mg/kg
		Incidental Ingestion of Sediment	Subtotal: 2.1E-04	15%	Manganese	2.0E-04	7.5E+02 mg/kg	4E-08	67%	Benzo(a)pyrene Benzo(b)fluoranthene Benzo(a)anthracene	3.E-08 6.E-09 5.E-09	6.2E-01 mg/kg 1.2E+00 mg/kg 9.2E-01 mg/kg
		Dermal Contact with Surface Water	Subtotal: 5.9E-05	4%	Manganese	4.0E-05	1.9E+00 mg/l	3E-09	4%	Arsenic	3.E-09	3.5E-03 mg/l
		Total for Facility Worker :	**1.4E-03**	100%				**6E-08**	100%			

Notes:

1. The Denney residence is the only residential with VOC's (based on modeling not on sampled) in accordance with EPA Guidance, risks via inhalation of volatiles in GW is considered to be approximately equal to risks via ingestion.

TABLE 8.44-1

CALCULATION OF AVERAGE DAILY DOSES AND RISK ESTIMATES
FOR INGESTION OF GROUNDWATER (DENNEY RESIDENCE)
HIGH END EXPOSURE

RECEPTOR: Resident - Current
CHRONIC NONCARCINOGENIC EFFECTS

Contaminants	Exposure Point Concentration (mg/l)	Oral x Absorption x Adjustment Factor	Receptor-Specific Exposure Factor (l/kg-day)	= Chronic Average Daily Dose (mg/kg-day)	/ Oral Chronic Reference Dose (mg/kg-day)	= Hazard Index
Volatile Organic Compounds						
1,4-Dichlorobenzene	ND	1.00	5.6E-02	NC	NA	NC
Benzene	ND	1.00	5.6E-02	NC	1.0E-03	NC
Carbon Tetrachloride	ND	1.00	5.6E-02	NC	7.0E-04	NC
Chlorobenzene	ND	1.00	5.6E-02	NC	2.0E-02	NC
Chloroform	ND	1.00	5.6E-02	NC	1.0E-02	NC
Tetrachloroethene	ND	1.00	5.6E-02	NC	1.0E-02	NC
Trichloroethene	ND	1.00	5.6E-02	NC	2.0E-03	NC
Vinyl Chloride	ND	1.00	5.6E-02	NC	3.0E-03	NC
Semivolatile Organic Compounds						
Benzo(a)anthracene	ND	1.00	5.6E-02	NC	3.0E-02	NC
Benzo(a)pyrene	ND	1.00	5.6E-02	NC	3.0E-02	NC
Benzo(b)fluoranthene	ND	1.00	5.6E-02	NC	3.0E-02	NC
Benzo(g,h,i)perylene	ND	1.00	5.6E-02	NC	3.0E-02	NC
bis(2-Ethylhexyl)phthalate	ND	1.00	5.6E-02	NC	2.0E-02	NC
Phenanthrene	ND	1.00	5.6E-02	NC	3.0E-02	NC
Pesticides/PCBs						
Aldrin	ND	1.00	5.6E-02	NC	3.0E-05	NC
Dieldrin	ND	1.00	5.6E-02	NC	5.0E-05	NC
Metals						
Aluminum, total	**ND**	**1.00**	**5.6E-02**	**NC**	**1.0E+00**	**NC**
Arsenic, total	ND	1.00	5.6E-02	NC	3.0E-04	NC
Barium, total	**ND**	**1.00**	**5.6E-02**	**NC**	**7.0E-02**	**NC**
Beryllium, total	**5.2E-03**	**1.00**	**5.6E-02**	**2.9E-04**	**2.0E-03**	**1.5E-01**
Cadmium, total	ND	1.00	5.6E-02	NC	5.0E-04	NC
Copper, total	**ND**	**1.00**	**5.6E-02**	**NC**	**3.7E-02**	**NC**
Iron, total	ND	1.00	5.6E-02	NC	NA	NC
Lead, total	ND	1.00	5.6E-02	NC	NA	NC
Manganese, total	3.0E-01	1.00	5.6E-02	1.7E-02	2.4E-02	7.0E-01
Mercury, total	ND	1.00	5.6E-02	NC	3.0E-04	NC
Nickel, total	ND	1.00	5.6E-02	NC	2.0E-02	NC
Thallium, total	ND	1.00	5.6E-02	NC	2.0E-01	NC
Vanadium, total	ND	1.00	5.6E-02	NC	7.0E-03	NC
Zinc, total	ND	1.00	5.6E-02	NC	3.0E-01	NC
					SUBTOTAL:	**8.5E-01**
					SITE RELATED RISK:	**7.0E-01**
					BACKGROUND RISK:	**1.5E-01**

TABLE 8.44-1 (CONT'D)

CALCULATION OF AVERAGE DAILY DOSES AND RISK ESTIMATES
FOR INGESTION OF GROUNDWATER (DENNEY RESIDENCE)
HIGH END EXPOSURE

RECEPTOR: Resident - Current
CARCINOGENIC EFFECTS

Contaminants	Exposure Point Concentration (mg/l)	Oral x Absorption x Adjustment Factor	Receptor-Specific Exposure Factor (l-hr/cm-kg-day)	= Lifetime Average Daily Dose (mg/kg-day)	x Cancer Slope Factor (mg/kg-day)-1	= Incremental Lifetime Cancer Risk Estimate
Volatile Organic Compounds						
1,4-Dichlorobenzene	ND	1.00	1.6E-02	NC	2.4E-02	NA
Benzene	ND	1.00	1.6E-02	NC	2.9E-02	NA
Carbon Tetrachloride	ND	1.00	1.6E-02	NC	1.3E-01	NA
Chlorobenzene	ND	1.00	1.6E-02	NC	NA	NA
Chloroform	ND	1.00	1.6E-02	NC	6.1E-03	NA
Tetrachloroethene	ND	1.00	1.6E-02	NC	5.2E-02	NA
Trichloroethene	ND	1.00	1.6E-02	NC	1.1E-02	NA
Vinyl Chloride	ND	1.00	1.6E-02	NC	1.4E+00	NA
Semivolatile Organic Compounds						
Benzo(a)anthracene	ND	1.00	1.6E-02	NC	7.3E-01	NA
Benzo(a)pyrene	ND	1.00	1.6E-02	NC	7.3E+00	NA
Benzo(b)fluoranthene	ND	1.00	1.6E-02	NC	7.3E-01	NA
Benzo(g,h,i)perylene	ND	1.00	1.6E-02	NC	NA	NA
bis(2-Ethylhexyl)phthalate	ND	1.00	1.6E-02	NC	1.4E-02	NA
Phenanthrene	ND	1.00	1.6E-02	NC	NA	NA
Pesticides/PCBs						
Aldrin	ND	1.00	1.6E-02	NC	1.7E+01	NA
Dieldrin	ND	1.00	1.6E-02	NC	1.6E+01	NA
Metals						
Aluminum, total	**ND**	**1.00**	**1.6E-02**	**NC**	**NA**	**NA**
Arsenic, total	ND	1.00	1.6E-02	NC	1.5E+00	NA
Barium, total	**ND**	**1.00**	**1.6E-02**	**NC**	**NA**	**NA**
Beryllium, total	**5.2E-03**	**1.00**	**1.6E-02**	**8.4E-05**	**4.3E+00**	**3.6E-04**
Cadmium, total	ND	1.00	1.6E-02	NC	NA	NA
Copper, total	**ND**	**1.00**	**1.6E-02**	**NC**	**NA**	**NA**
Iron, total	ND	1.00	1.6E-02	NC	NA	NA
Lead, total	ND	1.00	1.6E-02	NC	NA	NA
Manganese, total	3.0E-01	1.00	1.6E-02	4.8E-03	NA	NA
Mercury, total	ND	1.00	1.6E-02	NC	NA	NA
Nickel, total	ND	1.00	1.6E-02	NC	NA	NA
Thallium, total	ND	1.00	1.6E-02	NC	NA	NA
Vanadium, total	ND	1.00	1.6E-02	NC	NA	NA
Zinc, total	ND	1.00	1.6E-02	NC	NA	NA
					SUBTOTAL:	**3.6E-04**
					SITE RELATED RISK:	**NC**
					BACKGROUND RISK:	**3.6E-04**

Notes:

1. NA = Not Analyzed/Not Applicable; NC = Not Calculated; NSCC = Not a Study Chemical of Concern.
2. For constituents without an AAF value, a default value of 1.00 was used.

TABLE 8.44-2

CALCULATION OF AVERAGE DAILY DOSES AND RISK ESTIMATES
FOR INGESTION OF GROUNDWATER (DENNEY RESIDENCE)
CENTRAL TENDENCY EXPOSURE

RECEPTOR: Resident - Current
CHRONIC NONCARCINOGENIC EFFECTS

Contaminants	Exposure Point Concentration (mg/l)	Oral x Absorption x Adjustment Factor	Receptor-Specific Exposure Factor (l/kg-day)	= Chronic Average Daily Dose (mg/kg-day)	/ Oral Chronic Reference Dose (mg/kg-day)	= Hazard Index
Volatile Organic Compounds						
1,4-Dichlorobenzene	ND	1.00	3.1E-02	NC	NA	NC
Benzene	ND	1.00	3.1E-02	NC	1.0E-03	NC
Carbon Tetrachloride	ND	1.00	3.1E-02	NC	7.0E-04	NC
Chlorobenzene	ND	1.00	3.1E-02	NC	2.0E-02	NC
Chloroform	ND	1.00	3.1E-02	NC	1.0E-02	NC
Tetrachloroethene	ND	1.00	3.1E-02	NC	1.0E-02	NC
Trichloroethene	ND	1.00	3.1E-02	NC	2.0E-03	NC
Vinyl Chloride	ND	1.00	3.1E-02	NC	3.0E-03	NC
Semivolatile Organic Compounds						
Benzo(a)anthracene	ND	1.00	3.1E-02	NC	3.0E-02	NC
Benzo(a)pyrene	ND	1.00	3.1E-02	NC	3.0E-02	NC
Benzo(b)fluoranthene	ND	1.00	3.1E-02	NC	3.0E-02	NC
Benzo(g,h,i)perylene	ND	1.00	3.1E-02	NC	3.0E-02	NC
bis(2-Ethylhexyl)phthalate	ND	1.00	3.1E-02	NC	2.0E-02	NC
Phenanthrene	ND	1.00	3.1E-02	NC	3.0E-02	NC
Pesticides/PCBs						
Aldrin	ND	1.00	3.1E-02	NC	3.0E-05	NC
Dieldrin	ND	1.00	3.1E-02	NC	5.0E-05	NC
Metals						
Aluminum, total	ND	1.00	3.1E-02	NC	1.0E+00	NC
Arsenic, total	ND	1.00	3.1E-02	NC	3.0E-04	NC
Barium, total	ND	1.00	3.1E-02	NC	7.0E-02	NC
Beryllium, total	5.2E-03	1.00	3.1E-02	1.6E-04	2.0E-03	8.1E-02
Cadmium, total	ND	1.00	3.1E-02	NC	5.0E-04	NC
Copper, total	ND	1.00	3.1E-02	NC	3.7E-02	NC
Iron, total	ND	1.00	3.1E-02	NC	NA	NC
Lead, total	ND	1.00	3.1E-02	NC	NA	NC
Manganese, total	3.0E-01	1.00	3.1E-02	9.3E-03	2.4E-02	3.9E-01
Mercury, total	ND	1.00	3.1E-02	NC	3.0E-04	NC
Nickel, total	ND	1.00	3.1E-02	NC	2.0E-02	NC
Thallium, total	ND	1.00	3.1E-02	NC	2.0E-01	NC
Vanadium, total	ND	1.00	3.1E-02	NC	7.0E-03	NC
Zinc, total	ND	1.00	3.1E-02	NC	3.0E-01	NC
					SUBTOTAL:	4.7E-01
					SITE RELATED RISK:	3.9E-01
					BACKGROUND RISK:	8.1E-02

TABLE 8.44-2 (CONT'D)

CALCULATION OF AVERAGE DAILY DOSES AND RISK ESTIMATES
FOR INGESTION OF GROUNDWATER (DENNEY RESIDENCE)
CENTRAL TENDENCY EXPOSURE

RECEPTOR: Resident - Current
CARCINOGENIC EFFECTS

Contaminants	Exposure Point Concentration (mg/l)	Oral x Absorption x Adjustment Factor	Receptor-Specific Exposure Factor (l-hr/cm-kg-day)	=	Lifetime Average Daily Dose (mg/kg-day)	x	Cancer Slope Factor (mg/kg-day)-¹	=	Incremental Lifetime Cancer Risk Estimate
Volatile Organic Compounds									
1,4-Dichlorobenzene	ND	1.00	4.0E-03		NC		2.4E-02		NA
Benzene	ND	1.00	4.0E-03		NC		2.9E-02		NA
Carbon Tetrachloride	ND	1.00	4.0E-03		NC		1.3E-01		NA
Chlorobenzene	ND	1.00	4.0E-03		NC		NA		NA
Chloroform	ND	1.00	4.0E-03		NC		6.1E-03		NA
Tetrachloroethene	ND	1.00	4.0E-03		NC		5.2E-02		NA
Trichloroethene	ND	1.00	4.0E-03		NC		1.1E-02		NA
Vinyl Chloride	ND	1.00	4.0E-03		NC		1.4E+00		NA
Semivolatile Organic Compounds									
Benzo(a)anthracene	ND	1.00	4.0E-03		NC		7.3E-01		NA
Benzo(a)pyrene	ND	1.00	4.0E-03		NC		7.3E+00		NA
Benzo(b)fluoranthene	ND	1.00	4.0E-03		NC		7.3E-01		NA
Benzo(g,h,i)perylene	ND	1.00	4.0E-03		NC		NA		NA
bis(2-Ethylhexyl)phthalate	ND	1.00	4.0E-03		NC		1.4E-02		NA
Phenanthrene	ND	1.00	4.0E-03		NC		NA		NA
Pesticides/PCBs									
Aldrin	ND	1.00	4.0E-03		NC		1.7E+01		NA
Dieldrin	ND	1.00	4.0E-03		NC		1.6E+01		NA
Metals									
Aluminum, total	ND	1.00	4.0E-03		NC		NA		NA
Arsenic, total	ND	1.00	4.0E-03		NC		1.5E+00		NA
Barium, total	ND	1.00	4.0E-03		NC		NA		NA
Beryllium, total	5.2E-03	1.00	4.0E-03		2.1E-05		4.3E+00		9.0E-05
Cadmium, total	ND	1.00	4.0E-03		NC		NA		NA
Copper, total	ND	1.00	4.0E-03		NC		NA		NA
Iron, total	ND	1.00	4.0E-03		NC		NA		NA
Lead, total	ND	1.00	4.0E-03		NC		NA		NA
Manganese, total	3.0E-01	1.00	4.0E-03		1.2E-03		NA		NA
Mercury, total	ND	1.00	4.0E-03		NC		NA		NA
Nickel, total	ND	1.00	4.0E-03		NC		NA		NA
Thallium, total	ND	1.00	4.0E-03		NC		NA		NA
Vanadium, total	ND	1.00	4.0E-03		NC		NA		NA
Zinc, total	ND	1.00	4.0E-03		NC		NA		NA
							SUBTOTAL:		9.0E-05
							SITE RELATED RISK:		NC
							BACKGROUND RISK:		9.0E-05

Notes:

1. NA = Not Analyzed/Not Applicable; NC = Not Calculated; NSCC = Not a Study Chemical of Concern.
2. For constituents without an AAF value, a default value of 1.00 was used.

TABLE 8.44-3

CALCULATION OF AVERAGE DAILY DOSES AND RISK ESTIMATES
FOR DERMAL CONTACT WITH SURFICIAL SOIL

RECEPTOR: Local Resident (Trespassers)
CHRONIC NONCARCINOGENIC EFFECTS

Contaminants	Exposure Point Concentration (mg/kg)	x Dermal Absorption x Adjustment Factor	Receptor-Specific Exposure Factor (kg/kg-day)	= Chronic Average Daily Dose (mg/kg-day)	/ Oral Chronic Reference Dose (mg/kg-day)	= Hazard Index
Volatile Organic Compounds						
1,4-Dichlorobenzene	NCC	NA	9.4E-06	NC	NA	NC
Benzene	NCC	NA	9.4E-06	NC	1.0E-03	NC
Carbon Tetrachloride	NCC	NA	9.4E-06	NC	7.0E-04	NC
Chlorobenzene	NCC	NA	9.4E-06	NC	2.0E-02	NC
Chloroform	NCC	NA	9.4E-06	NC	1.0E-02	NC
Tetrachloroethene	NCC	NA	9.4E-06	NC	1.0E-02	NC
Trichloroethene	NCC	NA	9.4E-06	NC	2.0E-03	NC
Vinyl Chloride	NCC	NA	9.4E-06	NC	3.0E-03	NC
Semivolatile Organic Compounds						
Benzo(a)anthracene	NCC	0.13	9.4E-06	NC	3.0E-02	NC
Benzo(a)pyrene	2.2E-01	0.13	9.4E-06	2.7E-07	3.0E-02	9.0E-06
Benzo(b)fluoranthene	NCC	0.13	9.4E-06	NC	3.0E-02	NC
Benzo(g,h,i)perylene	1.5E-01	0.10	9.4E-06	1.4E-07	3.0E-02	4.7E-06
bis(2-Ethylhexyl)phthalate	1.1E+01	0.10	9.4E-06	1.0E-05	2.0E-02	5.2E-04
Phenanthrene	2.4E-01	0.10	9.4E-06	2.3E-07	3.0E-02	7.5E-06
Pesticides/PCBs						
Aldrin	NCC	NA	9.4E-06	NC	3.0E-05	NC
Dieldrin	NCC	0.25	9.4E-06	NC	5.0E-05	NC
Metals						
Aluminum, total	**7.6E+03**	**0.01**	**9.4E-06**	**7.1E-04**	**1.0E+00**	**7.1E-04**
Arsenic, total	5.5E+00	0.03	9.4E-06	1.6E-06	3.0E-04	5.2E-03
Barium, total	4.0E+01	0.01	9.4E-06	3.7E-06	7.0E-02	5.3E-05
Beryllium, total	**1.5E+00**	**0.01**	**9.4E-06**	**1.4E-07**	**2.0E-03**	**7.2E-05**
Cadmium, total	NCC	0.001	9.4E-06	NC	1.0E-03	NC
Copper, total	NCC	0.017	9.4E-06	NC	3.7E-02	NC
Iron, total	NCC	0.01	9.4E-06	NC	NA	NC
Lead, total	8.5E+01	1.00	9.4E-06	8.0E-04	NA	NC
Manganese, total	2.6E+02	0.01	9.4E-06	2.4E-05	7.0E-02	3.5E-04
Mercury, total	NCC	0.01	9.4E-06	NC	3.0E-04	NC
Nickel, total	NCC	0.01	9.4E-06	NC	2.0E-02	NC
Thallium, total	NCC	0.01	9.4E-06	NC	2.0E-01	NC
Vanadium, total	NCC	0.01	9.4E-06	NC	7.0E-03	NC
Zinc, total	4.2E+02	0.01	9.4E-06	4.0E-05	3.0E-01	1.3E-04
					SUBTOTAL:	**7.0E-03**
					SITE RELATED RISK:	**6.3E-03**
					BACKGROUND RISK:	**7.8E-04**

TABLE 8.44-3 (CONT'D)

CALCULATION OF AVERAGE DAILY DOSES AND RISK ESTIMATES
FOR DERMAL CONTACT WITH SURFICIAL SOIL

RECEPTOR: Local Resident (Trespassers)
CARCINOGENIC EFFECTS

Contaminants	Exposure Point Concentration (mg/kg)	x Dermal Absorption x Adjustment Factor	Receptor-Specific Exposure Factor (kg/kg-day)	= Lifetime Average Daily Dose (mg/kg-day)	x Oral Cancer Slope Factor (mg/kg-day)-1	= Incremental Lifetime Cancer Risk Estimate
Volatile Organic Compounds						
1,4-Dichlorobenzene	NCC	NA	1.2E-06	NC	2.4E-02	NC
Benzene	NCC	NA	1.2E-06	NC	2.9E-02	NC
Carbon Tetrachloride	NCC	NA	1.2E-06	NC	1.3E-01	NC
Chlorobenzene	NCC	NA	1.2E-06	NC	NA	NC
Chloroform	NCC	NA	1.2E-06	NC	6.1E-03	NC
Tetrachloroethene	NCC	NA	1.2E-06	NC	5.2E-02	NC
Trichloroethene	NCC	NA	1.2E-06	NC	1.1E-02	NC
Vinyl Chloride	NCC	NA	1.2E-06	NC	1.4E+00	NC
Semivolatile Organic Compounds						
Benzo(a)anthracene	NCC	0.13	1.2E-06	NC	7.3E-01	NC
Benzo(a)pyrene	2.2E-01	0.13	1.2E-06	3.5E-08	7.3E+00	2.5E-07
Benzo(b)fluoranthene	NCC	0.13	1.2E-06	NC	7.3E-01	NC
Benzo(g,h,i)perylene	1.5E-01	NA	1.2E-06	NC	NA	NC
bis(2-Ethylhexyl)phthalate	1.1E+01	0.10	1.2E-06	1.3E-06	1.4E-02	1.9E-08
Phenanthrene	2.4E-01	NA	1.2E-06	NC	NA	NC
Pesticides/PCBs						
Aldrin	NCC	NA	1.2E-06	NC	1.7E+01	NC
Dieldrin						
Metals						
Aluminum, total	7.6E+03	NA	1.2E-06	NC	NA	NC
Arsenic, total	5.5E+00	0.03	1.2E-06	2.0E-07	1.5E+00	3.0E-07
Barium, total	4.0E+01	NA	1.2E-06	NC	NA	NC
Beryllium, total	1.5E+00	0.01	1.2E-06	1.8E-08	4.3E+00	7.9E-08
Cadmium, total	NCC	1.00	1.2E-06	NC	NA	NC
Copper, total	NCC	1.00	1.2E-06	NC	NA	NC
Iron, total	NCC	NA	1.2E-06	NC	NA	NC
Lead, total	8.5E+01	NA	1.2E-06	NC	NA	NC
Manganese, total	2.6E+02	NA	1.2E-06	NC	NA	NC
Mercury, total	NCC	NA	1.2E-06	NC	NA	NC
Nickel, total	NCC	NA	1.2E-06	NC	NA	NC
Thallium, total	NCC	NA	1.2E-06	NC	NA	NC
Vanadium, total	NCC	NA	1.2E-06	NC	NA	NC
Zinc, total		NA	1.2E-06	NC	NA	NC
					SUBTOTAL:	6.5E-07
					SITE RELATED RISK:	5.7E-07
					BACKGROUND RISK:	7.9E-08

Notes:

1. NA = Not Analyzed/Not Applicable; NC = Not Calculated; NSCC = Not a Study Chemical of Concern.
2. For constituents without an AAF value, a default value of 1.00 was used.

TABLE 8.44-4

CALCULATION OF AVERAGE DAILY DOSES AND RISK ESTIMATES
FOR INCIDENTAL INGESTION OF SURFICIAL SOIL

RECEPTOR: Local Resident (Trespassers)
CHRONIC NONCARCINOGENIC EFFECTS

Contaminants	Exposure Point Concentration (mg/kg)	x Oral Absorption x Adjustment Factor	Receptor-Specific Exposure Factor (kg/kg-day)	= Chronic Average Daily Dose (mg/kg-day)	/ Oral Chronic Reference Dose (mg/kg-day)	= Hazard Index
Volatile Organic Compounds						
1,4-Dichlorobenzene	NCC	1.00	1.0E-07	NC	NA	NC
Benzene	NCC	1.00	1.0E-07	NC	1.0E-03	NC
Carbon Tetrachloride	NCC	1.00	1.0E-07	NC	7.0E-04	NC
Chlorobenzene	NCC	1.00	1.0E-07	NC	2.0E-02	NC
Chloroform	NCC	1.00	1.0E-07	NC	1.0E-02	NC
Tetrachloroethene	NCC	1.00	1.0E-07	NC	1.0E-02	NC
Trichloroethene	NCC	1.00	1.0E-07	NC	2.0E-03	NC
Vinyl Chloride	NCC	1.00	1.0E-07	NC	3.0E-03	NC
Semivolatile Organic Compounds						
Benzo(a)anthracene	NCC	1.00	1.0E-07	NC	3.0E-02	NC
Benzo(a)pyrene	2.2E-01	1.00	1.0E-07	2.3E-08	3.0E-02	7.6E-07
Benzo(b)fluoranthene	NCC	1.00	1.0E-07	NC	3.0E-02	NC
Benzo(g,h,i)perylene	1.5E-01	1.00	1.0E-07	1.6E-08	3.0E-02	5.2E-07
bis(2-Ethylhexyl)phthalate	1.1E+01	1.00	1.0E-07	1.1E-06	2.0E-02	5.7E-05
Phenanthrene	2.4E-01	1.00	1.0E-07	2.5E-08	3.0E-02	8.3E-07
Pesticides/PCBs						
Aldrin	NCC	1.00	1.0E-07	NC	3.0E-05	NC
Dieldrin	NCC	1.00	1.0E-07	NC	5.0E-05	NC
Metals						
Aluminum, total	**7.6E+03**	**1.00**	**1.0E-07**	**7.8E-04**	**1.0E+00**	**7.8E-04**
Arsenic, total	5.5E+00	0.48	1.0E-07	2.7E-07	3.0E-04	9.1E-04
Barium, total	4.0E+01	1.00	1.0E-07	4.1E-06	7.0E-02	5.9E-05
Beryllium, total	**1.5E+00**	**1.00**	**1.0E-07**	**1.6E-07**	**2.0E-03**	**7.9E-05**
Cadmium, total	NCC	1.00	1.0E-07	NC	1.0E-03	NC
Copper, total	NCC	1.00	1.0E-07	NC	3.7E-02	NC
Iron, total	NCC	1.00	1.0E-07	NC	NA	NC
Lead, total	8.5E+01	1.00	1.0E-07	8.8E-06	NA	NC
Manganese, total	2.6E+02	1.00	1.0E-07	2.7E-05	7.0E-02	3.8E-04
Mercury, total	NCC	0.50	1.0E-07	NC	3.0E-04	NC
Nickel, total	NCC	1.00	1.0E-07	NC	2.0E-02	NC
Thallium, total	NCC	1.00	1.0E-07	NC	2.0E-01	NC
Vanadium, total	NCC	1.00	1.0E-07	NC	7.0E-03	NC
Zinc, total	4.2E+02	1.00	1.0E-07	4.4E-05	3.0E-01	1.5E-04
					SUBTOTAL:	**2.4E-03**
					SITE RELATED RISK:	**1.6E-03**
					BACKGROUND RISK:	**8.6E-04**

TABLE 8.44-4 (CONT'D)

CALCULATION OF AVERAGE DAILY DOSES AND RISK ESTIMATES
FOR INCIDENTAL INGESTION OF SURFICIAL SOIL

RECEPTOR: Local Resident (Trespassers)
CARCINOGENIC EFFECTS

Contaminants	Exposure Point Concentration (mg/kg)	x Oral Absorption Adjustment Factor	x Receptor-Specific Exposure Factor (kg/kg-day)	= Lifetime Average Daily Dose (mg/kg-day)	x Oral Cancer Slope Factor (mg/kg-day)$^{-1}$	= Incremental Lifetime Cancer Risk Estimate
Volatile Organic Compounds						
1,4-Dichlorobenzene	NCC	1.00	1.3E-08	NC	2.4E-02	NC
Benzene	NCC	1.00	1.3E-08	NC	2.9E-02	NC
Carbon Tetrachloride	NCC	1.00	1.3E-08	NC	1.3E-01	NC
Chlorobenzene	NCC	1.00	1.3E-08	NC	NA	NC
Chloroform	NCC	1.00	1.3E-08	NC	6.1E-03	NC
Tetrachloroethene	NCC	1.00	1.3E-08	NC	5.2E-02	NC
Trichloroethene	NCC	1.00	1.3E-08	NC	1.1E-02	NC
Vinyl Chloride	NCC	1.00	1.3E-08	NC	1.4E+00	NC
Semivolatile Organic Compounds						
Benzo(a)anthracene	NCC	1.00	1.3E-08	NC	7.3E-01	NC
Benzo(a)pyrene	2.2E-01	1.00	1.3E-08	2.9E-09	7.3E+00	2.1E-08
Benzo(b)fluoranthene	NCC	1.00	1.3E-08	NC	7.3E-01	NC
Benzo(g,h,i)perylene	1.5E-01	1.00	1.3E-08	2.0E-09	NA	NC
bis(2-Ethylhexyl)phthalate	1.1E+01	1.00	1.3E-08	1.5E-07	1.4E-02	2.0E-09
Phenanthrene	2.4E-01	1.00	1.3E-08	3.2E-09	NA	NC
Pesticides/PCBs						
Aldrin	NCC	1.00	1.3E-08	NC	1.7E+01	NC
Dieldrin	NCC	1.00	1.3E-08	NC	1.6E+01	NC
Metals						
Aluminum, total	**7.6E+03**	**1.00**	**1.3E-08**	**1.0E-04**	**NA**	**NC**
Arsenic, total	5.5E+00	0.48	1.3E-08	3.5E-08	1.5E+00	5.3E-08
Barium, total	4.0E+01	1.00	1.3E-08	5.3E-07	NA	NC
Beryllium, total	**1.5E+00**	**1.00**	**1.3E-08**	**2.0E-08**	**4.3E+00**	**8.7E-08**
Cadmium, total	NCC	1.00	1.3E-08	NC	NA	NC
Copper, total	NCC	1.00	1.3E-08	NC	NA	NC
Iron, total	NCC	1.00	1.3E-08	NC	NA	NC
Lead, total	8.5E+01	1.00	1.3E-08	1.1E-06	NA	NC
Manganese, total	2.6E+02	1.00	1.3E-08	3.4E-06	NA	NC
Mercury, total	NCC	1.00	1.3E-08	NC	NA	NC
Nickel, total	NCC	1.00	1.3E-08	NC	NA	NC
Thallium, total	NCC	1.00	1.3E-08	NC	NA	NC
Vanadium, total	NCC	1.00	1.3E-08	NC	NA	NC
Zinc, total	4.2E+02	1.00	1.3E-08	5.6E-06	NA	NC
					SUBTOTAL:	**1.6E-07**
					SITE RELATED RISK:	**7.6E-08**
					BACKGROUND RISK:	**8.7E-08**

Notes:

1. NA = Not Analyzed/Not Applicable; NC = Not Calculated; NSCC = Not a Study Chemical of Concern.
2. For constituents without an AAF value, a default value of 1.00 was used.

TABLE 8.44-5

CALCULATION OF AVERAGE DAILY DOSES AND RISK ESTIMATES
FOR INHALATION OF FUGITIVE DUST

RECEPTOR: Local Resident (Trespassers)
CHRONIC NONCARCINOGENIC EFFECTS

Contaminant	Exposure Point Concentration (mg/m³)	x	Receptor-Specific Exposure Factor (unitless)	=	Chronic Average Daily Exposure (mg/m³)	/	Inhalation Chronic Reference Concentration (mg/m³)	=	Hazard Index
Volatile Organic Compounds									
1,4-Dichlorobenzene	NCC		3.5E-03		NC		8.0E-01		NC
Benzene	NCC		3.5E-03		NC		9.0E-03		NC
Carbon Tetrachloride	NCC		3.5E-03		NC		4.3E-01		NC
Chlorobenzene	NCC		3.5E-03		NC		2.0E-02		NC
Chloroform	NCC		3.5E-03		NC		6.6E-01		NC
Tetrachloroethene	NCC		3.5E-03		NC		6.0E-01		NC
Trichloroethene	NCC		3.5E-03		NC		1.8E-01		NC
Vinyl Chloride	NCC		3.5E-03		NC		1.0E-01		NC
Semivolatile Organic Compounds									
Benzo(a)anthracene	NCC		3.5E-03		NC		NA		NC
Benzo(a)pyrene	1.1E-09		3.5E-03		3.7E-12		NA		NC
Benzo(b)fluoranthene	NCC		3.5E-03		NC		NA		NC
Benzo(g,h,i)perylene	7.2E-10		3.5E-03		2.5E-12		NA		NC
bis(2-Ethylhexyl)phthalate	5.2E-08		3.5E-03		1.8E-10		NA		NC
Phenanthrene	1.1E-09		3.5E-03		4.0E-12		NA		NC
Pesticides/PCBs									
Aldrin	NCC		3.5E-03		NC		NA		NC
Dieldrin	NCC		3.5E-03		NC		NA		NC
Metals									
Aluminum, total	3.6E-05		3.5E-03		1.3E-07		NA		NC
Arsenic, total	2.6E-08		3.5E-03		9.3E-11		NA		NC
Barium, total	1.9E-07		3.5E-03		6.7E-10		5.0E-04		1.3E-06
Beryllium, total	7.3E-09		3.5E-03		2.6E-11		2.0E-05		1.3E-06
Cadmium, total	NCC		3.5E-03		NC		NA		NC
Copper, total	NCC		3.5E-03		NC		NA		NC
Iron, total	NCC		3.5E-03		NC		NA		NC
Lead, total	4.0E-07		3.5E-03		1.4E-09		NA		NC
Manganese, total	1.2E-06		3.5E-03		4.4E-09		5.0E-05		8.7E-05
Mercury, total	NCC		3.5E-03		NC		3.0E-04		NC
Nickel, total	NCC		3.5E-03		NC		NA		NC
Thallium, total	NCC		3.5E-03		NC		NA		NC
Vanadium, total	NCC		3.5E-03		NC		NA		NC
Zinc, total	2.0E-06		3.5E-03		7.1E-09		NA		NC
							SUBTOTAL:		**9.0E-05**
							SITE RELATED RISK:		**8.8E-05**
							BACKGROUND RISK:		**1.3E-06**

TABLE 8.44-5 (CONT'D)

CALCULATION OF AVERAGE DAILY DOSES AND RISK ESTIMATES
FOR INHALATION OF FUGITIVE DUST

RECEPTOR: Local Resident (Trespassers)
CARCINOGENIC EFFECTS

Contaminant	Exposure Point Concentration (ug/m³)	x	Receptor-Specific Exposure Factor (unitless)	=	Lifetime Average Daily Dose (ug/m³)	x	Inhalation Unit Risk (ug/m³)-¹	=	Incremental Lifetime Cancer Risk Estimate
Volatile Organic Compounds									
1,4-Dichlorobenzene	NCC		4.5E-04		NC		NA		NC
Benzene	NCC		4.5E-04		NC		7.8E-06		NC
Carbon Tetrachloride	NCC		4.5E-04		NC		1.5E-05		NC
Chlorobenzene	NCC		4.5E-04		NC		NA		NC
Chloroform	NCC		4.5E-04		NC		2.3E-05		NC
Tetrachloroethene	NCC		4.5E-04		NC		5.8E-07		NC
Trichloroethene	NCC		4.5E-04		NC		1.7E-06		NC
Vinyl Chloride	NCC		4.5E-04		NC		8.8E-06		NC
Semivolatile Organic Compounds									
Benzo(a)anthracene	NCC		4.5E-04		NC		NA		NC
Benzo(a)pyrene	1.1E-06		4.5E-04		4.8E-10		8.8E-04		4.2E-13
Benzo(b)fluoranthene	NCC		4.5E-04		NC		NA		NC
Benzo(g,h,i)perylene	7.2E-07		4.5E-04		3.3E-10		NA		NC
bis(2-Ethylhexyl)phthalate	5.2E-05		4.5E-04		2.4E-08		NA		NC
Phenanthrene	1.1E-06		4.5E-04		5.2E-10		NA		NC
Pesticides/PCBs									
Aldrin	NCC		4.5E-04		NC		4.9E-03		NC
Dieldrin	NCC		4.5E-04		NC		4.6E-03		NC
Metals									
Aluminum, total	**3.6E-02**		**4.5E-04**		**1.6E-05**		**NA**		**NC**
Arsenic, total	2.6E-05		4.5E-04		1.2E-08		4.3E-03		5.1E-11
Barium, total	1.9E-04		4.5E-04		8.6E-08		NA		NC
Beryllium, total	**7.3E-06**		**4.5E-04**		**3.3E-09**		**2.4E-03**		**7.9E-12**
Cadmium, total	NCC		4.5E-04		NC		1.8E-03		NC
Copper, total	NCC		4.5E-04		NC		NA		NC
Iron, total	NCC		4.5E-04		NC		NA		NC
Lead, total	4.0E-04		4.5E-04		1.8E-07		NA		NC
Manganese, total	1.2E-03		4.5E-04		5.6E-07		NA		NC
Mercury, total	NCC		4.5E-04		NC		NA		NC
Nickel, total	NCC		4.5E-04		NC		2.4E-04		NC
Thallium, total	NCC		4.5E-04		NC		NA		NC
Vanadium, total	NCC		4.5E-04		NC		NA		NC
Zinc, total	2.0E-03		4.5E-04		9.2E-07		NA		NC
							SUBTOTAL:		**6.0E-11**
							SITE RELATED RISK:		**5.2E-11**
							BACKGROUND RISK:		**7.9E-12**

Notes:

1. NA = Not Analyzed/Not Applicable; NC = Not Calculated; NSCC = Not a Study Chemical of Concern.

TABLE 8.44-6

CALCULATION OF AVERAGE DAILY DOSES AND RISK ESTIMATES
FOR DERMAL CONTACT WITH SEDIMENT - SEDIMENTATION PONDS

RECEPTOR: Local Resident (Trespassers)
CHRONIC NONCARCINOGENIC EFFECTS

Contaminants	Exposure Point Concentration (mg/kg)	x Dermal Absorption x Adjustment Factor	Receptor-Specific Exposure Factor (kg/kg-day)	= Chronic Average Daily Dose (mg/kg-day)	/ Oral Chronic Reference Dose (mg/kg-day)	= Hazard Index
Volatile Organic Compounds						
1,4-Dichlorobenzene	NCC	NA	9.4E-06	NC	NA	NC
Benzene	NCC	NA	9.4E-06	NC	1.0E-03	NC
Carbon Tetrachloride	NCC	NA	9.4E-06	NC	7.0E-04	NC
Chlorobenzene	NCC	NA	9.4E-06	NC	2.0E-02	NC
Chloroform	NCC	NA	9.4E-06	NC	1.0E-02	NC
Tetrachloroethene	NCC	NA	9.4E-06	NC	1.0E-02	NC
Trichloroethene	NCC	NA	9.4E-06	NC	2.0E-03	NC
Vinyl Chloride	NCC	NA	9.4E-06	NC	3.0E-03	NC
Semivolatile Organic Compounds						
Benzo(a)anthracene	9.2E-01	0.13	9.4E-06	1.1E-06	3.0E-02	3.7E-05
Benzo(a)pyrene	6.2E-01	0.13	9.4E-06	7.5E-07	3.0E-02	2.5E-05
Benzo(b)fluoranthene	1.2E+00	0.13	9.4E-06	1.4E-06	3.0E-02	4.7E-05
Benzo(g,h,i)perylene	2.5E-01	0.10	9.4E-06	2.3E-07	3.0E-02	7.8E-06
bis(2-Ethylhexyl)phthalate	NCC	0.10	9.4E-06	NC	2.0E-02	NC
Phenanthrene	9.2E-01	0.10	9.4E-06	8.6E-07	3.0E-02	2.9E-05
Pesticides/PCBs						
Aldrin	NCC	NA	9.4E-06	NC	3.0E-05	NC
Dieldrin	NCC	0.25	9.4E-06	NC	5.0E-05	NC
Metals						
Aluminum, total	**1.6E+04**	**0.01**	**9.4E-06**	**1.5E-03**	**1.0E+00**	**1.5E-03**
Arsenic, total	**5.8E+00**	**0.03**	**9.4E-06**	**1.6E-06**	**3.0E-04**	**5.4E-03**
Barium, total	NCC	0.01	9.4E-06	NC	7.0E-02	NC
Beryllium, total	**2.8E+00**	**0.01**	**9.4E-06**	**2.6E-07**	**2.0E-03**	**1.3E-04**
Cadmium, total	**8.9E-01**	**0.001**	**9.4E-06**	**8.3E-09**	**1.0E-03**	**8.3E-06**
Copper, total	NCC	0.017	9.4E-06	NC	3.7E-02	NC
Iron, total	NCC	0.01	9.4E-06	NC	NA	NC
Lead, total	**1.1E+02**	**1.00**	**9.4E-06**	**1.0E-03**	**NA**	**NC**
Manganese, total	7.5E+02	0.01	9.4E-06	7.0E-05	7.0E-02	1.0E-03
Mercury, total	NCC	0.01	9.4E-06	NC	3.0E-04	NC
Nickel, total	NCC	0.01	9.4E-06	NC	2.0E-02	NC
Thallium, total	NCC	0.01	9.4E-06	NC	2.0E-01	NC
Vanadium, total	**2.8E+01**	**0.01**	**9.4E-06**	**2.7E-06**	**7.0E-03**	**3.8E-04**
Zinc, total	NCC	0.01	9.4E-06	NC	3.0E-01	NC
					SUBTOTAL:	**8.6E-03**
					SITE RELATED RISK:	**1.2E-03**
					BACKGROUND RISK:	**7.4E-03**

TABLE 8.44-6 (CONT'D)

CALCULATION OF AVERAGE DAILY DOSES AND RISK ESTIMATES
FOR DERMAL CONTACT WITH SEDIMENT - SEDIMENTATION PONDS

RECEPTOR: Local Resident (Trespassers)
CARCINOGENIC EFFECTS

Contaminants	Exposure Point Concentration (mg/kg)	x Dermal Absorption Adjustment Factor	x Receptor-Specific Exposure Factor (kg/kg-day)	= Lifetime Average Daily Dose (mg/kg-day)	x Oral Cancer Slope Factor (mg/kg-day)$^{-1}$	= Incremental Lifetime Cancer Risk Estimate
Volatile Organic Compounds						
1,4-Dichlorobenzene	NCC	NA	1.2E-06	NC	2.4E-02	NC
Benzene	NCC	NA	1.2E-06	NC	2.9E-02	NC
Carbon Tetrachloride	NCC	NA	1.2E-06	NC	1.3E-01	NC
Chlorobenzene	NCC	NA	1.2E-06	NC	NA	NC
Chloroform	NCC	NA	1.2E-06	NC	6.1E-03	NC
Tetrachloroethene	NCC	NA	1.2E-06	NC	5.2E-02	NC
Trichloroethene	NCC	NA	1.2E-06	NC	1.1E-02	NC
Vinyl Chloride	NCC	NA	1.2E-06	NC	1.4E+00	NC
Semivolatile Organic Compounds						
Benzo(a)anthracene	9.2E-01	0.13	1.2E-06	1.4E-07	7.3E-01	1.1E-07
Benzo(a)pyrene	6.2E-01	0.13	1.2E-06	9.7E-08	7.3E+00	7.1E-07
Benzo(b)fluoranthene	1.2E+00	0.13	1.2E-06	1.8E-07	7.3E-01	1.3E-07
Benzo(g,h,i)perylene	2.5E-01	NA	1.2E-06	NC	NA	NC
bis(2-Ethylhexyl)phthalate	NCC	0.10	1.2E-06	NC	1.4E-02	NC
Phenanthrene	9.2E-01	NA	1.2E-06	NC	NA	NC
Pesticides/PCBs						
Aldrin	NCC	NA	1.2E-06	NC	1.7E+01	NC
Dieldrin	NCC	0.25	1.2E-06	NC	1.6E+01	NC
Metals						
Aluminum, total	**1.6E+04**	**NA**	**1.2E-06**	**NC**	**NA**	**NC**
Arsenic, total	**5.8E+00**	**0.03**	**1.2E-06**	**2.1E-07**	**1.5E+00**	**3.1E-07**
Barium, total	NCC	NA	1.2E-06	NC	NA	NC
Beryllium, total	**2.8E+00**	**0.01**	**1.2E-06**	**3.4E-08**	**4.3E+00**	**1.5E-07**
Cadmium, total	**8.9E-01**	**1.00**	**1.2E-06**	**1.1E-06**	**NA**	**NC**
Copper, total	NCC	1.00	1.2E-06	NC	NA	NC
Iron, total	NCC	NA	1.2E-06	NC	NA	NC
Lead, total	**1.1E+02**	**NA**	**1.2E-06**	**NC**	**NA**	**NC**
Manganese, total	7.5E+02	NA	1.2E-06	NC	NA	NC
Mercury, total	NCC	NA	1.2E-06	NC	NA	NC
Nickel, total	NCC	NA	1.2E-06	NC	NA	NC
Thallium, total	NCC	NA	1.2E-06	NC	NA	NC
Vanadium, total	**2.8E+01**	**NA**	**1.2E-06**	**NC**	**NA**	**NC**
Zinc, total	NCC	NA	1.2E-06	NC	NA	NC
					SUBTOTAL:	**1.4E-06**
					SITE RELATED RISK:	**9.4E-07**
					BACKGROUND RISK:	**4.6E-07**

Notes:

1. NA = Not Analyzed/Not Applicable; NC = Not Calculated; NSCC = Not a Study Chemical of Concern.
2. For constituents without an AAF value, a default value of 1.00 was used.

TABLE 8.44-7

CALCULATION OF AVERAGE DAILY DOSES AND RISK ESTIMATES
FOR INCIDENTAL INGESTION OF SEDIMENT - SEDIMENTATION PONDS

RECEPTOR: Local Resident (Trespassers)
CHRONIC NONCARCINOGENIC EFFECTS

Contaminants	Exposure Point Concentration (mg/kg)	x Oral Absorption Adjustment Factor	x Receptor-Specific Exposure Factor (kg/kg-day)	= Chronic Average Daily Dose (mg/kg-day)	/ Oral Chronic Reference Dose (mg/kg-day)	= Hazard Index
Volatile Organic Compounds						
1,4-Dichlorobenzene	NCC	1.00	1.0E-07	NC	NA	NC
Benzene	NCC	1.00	1.0E-07	NC	1.0E-03	NC
Carbon Tetrachloride	NCC	1.00	1.0E-07	NC	7.0E-04	NC
Chlorobenzene	NCC	1.00	1.0E-07	NC	2.0E-02	NC
Chloroform	NCC	1.00	1.0E-07	NC	1.0E-02	NC
Tetrachloroethene	NCC	1.00	1.0E-07	NC	1.0E-02	NC
Trichloroethene	NCC	1.00	1.0E-07	NC	2.0E-03	NC
Vinyl Chloride	NCC	1.00	1.0E-07	NC	3.0E-03	NC
Semivolatile Organic Compounds						
Benzo(a)anthracene	9.2E-01	1.00	1.0E-07	9.5E-08	3.0E-02	3.2E-06
Benzo(a)pyrene	6.2E-01	1.00	1.0E-07	6.4E-08	3.0E-02	2.1E-06
Benzo(b)fluoranthene	1.2E+00	1.00	1.0E-07	1.2E-07	3.0E-02	4.0E-06
Benzo(g,h,i)perylene	2.5E-01	1.00	1.0E-07	2.6E-08	3.0E-02	8.6E-07
bis(2-Ethylhexyl)phthalate	NCC	1.00	1.0E-07	NC	2.0E-02	NC
Phenanthrene	9.2E-01	1.00	1.0E-07	9.5E-08	3.0E-02	3.2E-06
Pesticides/PCBs						
Aldrin	NCC	1.00	1.0E-07	NC	3.0E-05	NC
Dieldrin	NCC	1.00	1.0E-07	NC	5.0E-05	NC
Metals						
Aluminum, total	**1.6E+04**	**1.00**	**1.0E-07**	**1.6E-03**	**1.0E+00**	**1.6E-03**
Arsenic, total	**5.8E+00**	**0.48**	**1.0E-07**	**2.9E-07**	**3.0E-04**	**9.5E-04**
Barium, total	NCC	1.00	1.0E-07	NC	7.0E-02	NC
Beryllium, total	**2.8E+00**	**1.00**	**1.0E-07**	**2.9E-07**	**2.0E-03**	**1.5E-04**
Cadmium, total	**8.9E-01**	**1.00**	**1.0E-07**	**9.2E-08**	**1.0E-03**	**9.2E-05**
Copper, total	NCC	1.00	1.0E-07	NC	3.7E-02	NC
Iron, total	NCC	1.00	1.0E-07	NC	NA	NC
Lead, total	**1.1E+02**	**1.00**	**1.0E-07**	**1.1E-05**	**NA**	**NC**
Manganese, total	7.5E+02	1.00	1.0E-07	7.7E-05	7.0E-02	1.1E-03
Mercury, total	NCC	0.50	1.0E-07	NC	3.0E-04	NC
Nickel, total	NCC	1.00	1.0E-07	NC	2.0E-02	NC
Thallium, total	NCC	1.00	1.0E-07	NC	2.0E-01	NC
Vanadium, total	**2.8E+01**	**1.00**	**1.0E-07**	**2.9E-06**	**7.0E-03**	**4.2E-04**
Zinc, total	NCC	1.00	1.0E-07	NC	3.0E-01	NC
					SUBTOTAL:	**4.4E-03**
					SITE RELATED RISK:	**1.1E-03**
					BACKGROUND RISK:	**3.2E-03**

TABLE 8.44-7 (CONT'D)

CALCULATION OF AVERAGE DAILY DOSES AND RISK ESTIMATES
FOR INCIDENTAL INGESTION OF SEDIMENT - SEDIMENTATION PONDS

RECEPTOR: Local Resident (Trespassers)
CARCINOGENIC EFFECTS

Contaminants	Exposure Point Concentration (mg/kg)	x Oral Absorption Adjustment Factor	x Receptor-Specific Exposure Factor (kg/kg-day)	= Lifetime Average Daily Dose (mg/kg-day)	x Oral Cancer Slope Factor (mg/kg-day)-¹	= Incremental Lifetime Cancer Risk Estimate
Volatile Organic Compounds						
1,4-Dichlorobenzene	NCC	1.00	1.3E-08	NC	2.4E-02	NC
Benzene	NCC	1.00	1.3E-08	NC	2.9E-02	NC
Carbon Tetrachloride	NCC	1.00	1.3E-08	NC	1.3E-01	NC
Chlorobenzene	NCC	1.00	1.3E-08	NC	NA	NC
Chloroform	NCC	1.00	1.3E-08	NC	6.1E-03	NC
Tetrachloroethene	NCC	1.00	1.3E-08	NC	5.2E-02	NC
Trichloroethene	NCC	1.00	1.3E-08	NC	1.1E-02	NC
Vinyl Chloride	NCC	1.00	1.3E-08	NC	1.4E+00	NC
Semivolatile Organic Compounds						
Benzo(a)anthracene	9.2E-01	1.00	1.3E-08	1.2E-08	7.3E-01	8.9E-09
Benzo(a)pyrene	6.2E-01	1.00	1.3E-08	8.2E-09	7.3E+00	6.0E-08
Benzo(b)fluoranthene	1.2E+00	1.00	1.3E-08	1.5E-08	7.3E-01	1.1E-08
Benzo(g,h,i)perylene	2.5E-01	1.00	1.3E-08	3.3E-09	NA	NC
bis(2-Ethylhexyl)phthalate	NCC	1.00	1.3E-08	NC	1.4E-02	NC
Phenanthrene	9.2E-01	1.00	1.3E-08	1.2E-08	NA	NC
Pesticides/PCBs						
Aldrin	NCC	1.00	1.3E-08	NC	1.7E+01	NC
Dieldrin	NCC	1.00	1.3E-08	NC	1.6E+01	NC
Metals						
Aluminum, total	1.6E+04	1.00	1.3E-08	2.1E-04	NA	NC
Arsenic, total	5.8E+00	0.48	1.3E-08	3.7E-08	1.5E+00	5.5E-08
Barium, total	NCC	1.00	1.3E-08	NC	NA	NC
Beryllium, total	2.8E+00	1.00	1.3E-08	3.7E-08	4.3E+00	1.6E-07
Cadmium, total	8.9E-01	1.00	1.3E-08	1.2E-08	NA	NC
Copper, total	NCC	1.00	1.3E-08	NC	NA	NC
Iron, total	NCC	1.00	1.3E-08	NC	NA	NC
Lead, total	1.1E+02	1.00	1.3E-08	1.4E-06	NA	NC
Manganese, total	7.5E+02	1.00	1.3E-08	1.0E-05	NA	NC
Mercury, total	NCC	1.00	1.3E-08	NC	NA	NC
Nickel, total	NCC	1.00	1.3E-08	NC	NA	NC
Thallium, total	NCC	1.00	1.3E-08	NC	NA	NC
Vanadium, total	2.8E+01	1.00	1.3E-08	3.8E-07	NA	NC
Zinc, total	NCC	1.00	1.3E-08	NC	NA	NC
					SUBTOTAL:	**3.0E-07**
					SITE RELATED RISK:	**8.0E-08**
					BACKGROUND RISK:	**2.2E-07**

Notes:

1. NA = Not Analyzed/Not Applicable; NC = Not Calculated; NSCC = Not a Study Chemical of Concern.
2. For constituents without an AAF value, a default value of 1.00 was used.

TABLE 8.44-8

CALCULATION OF AVERAGE DAILY DOSES AND RISK ESTIMATES
FOR DERMAL CONTACT WITH SURFACE WATER - SEDIMENTATION PONDS

RECEPTOR: Local Resident (Trespassers)
CHRONIC NONCARCINOGENIC EFFECTS

Contaminants	Exposure Point Concentration (mg/l)	x Dermal Absorption Adjustment Factor	x Permeability Coefficient (cm/hr)	Receptor-Specific Exposure Factor (l-hr/cm-kg-day)	= Chronic Average Daily Dose (mg/kg-day)	/ Oral Chronic Reference Dose (mg/kg-day)	= Hazard Index
Volatile Organic Compounds							
1,4-Dichlorobenzene	NCC	1.00	6.2E-02	1.5E-02	NC	NA	NC
Benzene	NCC	1.00	1.1E-01	1.5E-02	NC	1.0E-03	NC
Carbon Tetrachloride	NCC	1.00	2.2E-02	1.5E-02	NC	7.0E-04	NC
Chlorobenzene	NCC	1.00	4.1E-02	1.5E-02	NC	2.0E-02	NC
Chloroform	NCC	1.00	1.3E-01	1.5E-02	NC	1.0E-02	NC
Tetrachloroethene	NCC	1.00	3.7E-01	1.5E-02	NC	1.0E-02	NC
Trichloroethene	NCC	1.00	2.3E-01	1.5E-02	NC	2.0E-03	NC
Vinyl Chloride	NCC	1.00	7.3E-03	1.5E-02	NC	3.0E-03	NC
Semivolatile Organic Compounds							
Benzo(a)anthracene	NCC	1.00	8.1E-01	1.5E-02	NC	3.0E-02	NC
Benzo(a)pyrene	NCC	1.00	1.2E+00	1.5E-02	NC	3.0E-02	NC
Benzo(b)fluoranthene	NCC	1.00	1.2E+00	1.5E-02	NC	3.0E-02	NC
Benzo(g,h,i)perylene	NCC	1.00	1.7E+00	1.5E-02	NC	3.0E-02	NC
bis(2-Ethylhexyl)phthalate	NCC	1.00	3.3E-02	1.5E-02	NC	2.0E-02	NC
Phenanthrene	NCC	1.00	2.3E-01	1.5E-02	NC	3.0E-02	NC
Pesticides/PCBs							
Aldrin	1.8E-05	1.00	1.6E-03	1.5E-02	4.2E-10	3.0E-05	1.4E-05
Dieldrin	NCC	1.00	1.6E-02	1.5E-02	NC	5.0E-05	NC
Metals							
Aluminum, total	NCC	1.00	1.0E-03	1.5E-02	NC	1.0E+00	NC
Arsenic, total	3.5E-03	1.00	1.0E-03	1.5E-02	5.1E-08	3.0E-04	1.7E-04
Barium, total	NCC	1.00	1.0E-03	1.5E-02	NC	7.0E-02	NC
Beryllium, total	**1.7E-03**	**1.00**	**1.0E-03**	**1.5E-02**	**2.5E-08**	**2.0E-03**	**1.3E-05**
Cadmium, total	NCC	1.00	1.0E-03	1.5E-02	NC	1.0E-03	NC
Copper, total	NCC	1.00	1.0E-03	1.5E-02	NC	3.7E-02	NC
Iron, total	NCC	1.00	1.0E-03	1.5E-02	NC	NA	NC
Lead, total	3.5E-03	1.00	1.0E-03	1.5E-02	5.1E-08	NA	NC
Manganese, total	1.9E+00	1.00	1.0E-03	1.5E-02	2.8E-05	7.0E-02	4.0E-04
Mercury, total	4.3E-04	1.00	1.0E-03	1.5E-02	6.2E-09	3.0E-04	2.1E-05
Nickel, total	NCC	1.00	1.0E-03	1.5E-02	NC	2.0E-02	NC
Thallium, total	NCC	1.00	1.0E-03	1.5E-02	NC	2.0E-01	NC
Vanadium, total	NCC	1.00	1.0E-03	1.5E-02	NC	7.0E-03	NC
Zinc, total	NCC	1.00	1.0E-03	1.5E-02	NC	3.0E-01	NC
						SUBTOTAL:	**6.1E-04**
						SITE RELATED RISK:	**5.9E-04**
						BACKGROUND RISK:	**1.3E-05**

TABLE 8.44-8 (CONT'D)

CALCULATION OF AVERAGE DAILY DOSES AND RISK ESTIMATES
FOR DERMAL CONTACT WITH SURFACE WATER - SEDIMENTATION PONDS

RECEPTOR: Local Resident (Trespassers)
CARCINOGENIC EFFECTS

Contaminants	Exposure Point Concentration (mg/l)	x	Dermal Absorption Adjustment Factor	x	Permeability Coefficient (cm/hr)	Receptor-Specific Exposure Factor (l-hr/cm-kg-day)	=	Lifetime Average Daily Dose (mg/kg-day)	x	Oral Cancer Slope Factor (mg/kg-day)$^{-1}$	=	Incremental Lifetime Cancer Risk Estimate
Volatile Organic Compounds												
1,4-Dichlorobenzene	NCC		1.00		6.2E-02	1.9E-03		NC		2.4E-02		NC
Benzene	NCC		1.00		1.1E-01	1.9E-03		NC		2.9E-02		NC
Carbon Tetrachloride	NCC		1.00		2.2E-02	1.9E-03		NC		1.3E-01		NC
Chlorobenzene	NCC		1.00		4.1E-02	1.9E-03		NC		NA		NC
Chloroform	NCC		1.00		1.3E-01	1.9E-03		NC		6.1E-03		NC
Tetrachloroethene	NCC		1.00		3.7E-01	1.9E-03		NC		5.2E-02		NC
Trichloroethene	NCC		1.00		2.3E-01	1.9E-03		NC		1.1E-02		NC
Vinyl Chloride	NCC		1.00		7.3E-03	1.9E-03		NC		1.4E+00		NC
Semivolatile Organic Compounds												
Benzo(a)anthracene	NCC		1.00		8.1E-01	1.9E-03		NC		7.3E-01		NC
Benzo(a)pyrene	NCC		1.00		1.2E+00	1.9E-03		NC		7.3E+00		NC
Benzo(b)fluoranthene	NCC		1.00		1.2E+00	1.9E-03		NC		7.3E-01		NC
Benzo(g,h,i)perylene	NCC		1.00		1.7E+00	1.9E-03		NC		NA		NC
bis(2-Ethylhexyl)phthalate	NCC		1.00		3.3E-02	1.9E-03		NC		1.4E-02		NC
Phenanthrene	NCC		1.00		2.3E-01	1.9E-03		NC		NA		NC
Pesticides/PCBs												
Aldrin	1.8E-05		1.00		1.6E-03	1.9E-03		5.4E-11		1.7E+01		9.2E-10
Dieldrin	NCC		1.00		1.6E-02	1.9E-03		NC		1.6E+01		NC
Metals												
Aluminum, total	NCC		1.00		1.0E-03	1.9E-03		NC		NA		NC
Arsenic, total	3.5E-03		1.00		1.0E-03	1.9E-03		6.6E-09		1.5E+00		9.9E-09
Barium, total	NCC		1.00		1.0E-03	1.9E-03		NC		NA		NC
Beryllium, total	1.7E-03		1.00		1.0E-03	1.9E-03		3.3E-09		4.3E+00		1.4E-08
Cadmium, total	NCC		1.00		1.0E-03	1.9E-03		NC		NA		NC
Copper, total	NCC		1.00		1.0E-03	1.9E-03		NC		NA		NC
Iron, total	NCC		1.00		1.0E-03	1.9E-03		NC		NA		NC
Lead, total	3.5E-03		1.00		1.0E-03	1.9E-03		6.6E-09		NA		NC
Manganese, total	1.9E+00		1.00		1.0E-03	1.9E-03		3.6E-06		NA		NC
Mercury, total	4.3E-04		1.00		1.0E-03	1.9E-03		8.0E-10		NA		NC
Nickel, total	NCC		1.00		1.0E-03	1.9E-03		NC		NA		NC
Thallium, total	NCC		1.00		1.0E-03	1.9E-03		NC		NA		NC
Vanadium, total	NCC		1.00		1.0E-03	1.9E-03		NC		NA		NC
Zinc, total	NCC		1.00		1.0E-03	1.9E-03		NC		NA		NC
											SUBTOTAL:	2.5E-08
											SITE RELATED RISK:	9.9E-09
											BACKGROUND RISK:	1.4E-08

Notes:

1. NA = Not Analyzed/Not Applicable; NC = Not Calculated; NSCC = Not a Study Chemical of Concern.
2. For constituents without an AAF value, a default value of 1.00 was used.

TABLE 8.44-9

CALCULATION OF AVERAGE DAILY DOSES AND RISK ESTIMATES
FOR DERMAL CONTACT WITH SEDIMENT - CEDAR SWAMP BROOK AND QUARRY STREAM

RECEPTOR: Local Resident (Trespassers)
CHRONIC NONCARCINOGENIC EFFECTS

Contaminants	Exposure Point Concentration (mg/kg)	x Dermal Absorption x Adjustment Factor	Receptor-Specific Exposure Factor (kg/kg-day)	= Chronic Average Daily Dose (mg/kg-day)	/ Oral Chronic Reference Dose (mg/kg-day)	= Hazard Index
Volatile Organic Compounds						
1,4-Dichlorobenzene	NCC	NA	9.4E-06	NC	NA	NC
Benzene	NCC	NA	9.4E-06	NC	1.0E-03	NC
Carbon Tetrachloride	NCC	NA	9.4E-06	NC	7.0E-04	NC
Chlorobenzene	NCC	NA	9.4E-06	NC	2.0E-02	NC
Chloroform	NCC	NA	9.4E-06	NC	1.0E-02	NC
Tetrachloroethene	NCC	NA	9.4E-06	NC	1.0E-02	NC
Trichloroethene	NCC	NA	9.4E-06	NC	2.0E-03	NC
Vinyl Chloride	NCC	NA	9.4E-06	NC	3.0E-03	NC
Semivolatile Organic Compounds						
Benzo(a)anthracene	2.5E-01	0.13	9.4E-06	3.0E-07	3.0E-02	1.0E-05
Benzo(a)pyrene	2.2E-01	0.13	9.4E-06	2.7E-07	3.0E-02	9.0E-06
Benzo(b)fluoranthene	3.1E-01	0.13	9.4E-06	3.8E-07	3.0E-02	1.3E-05
Benzo(g,h,i)perylene	7.9E-02	0.10	9.4E-06	7.4E-08	3.0E-02	2.5E-06
bis(2-Ethylhexyl)phthalate	NCC	0.10	9.4E-06	NC	2.0E-02	NC
Phenanthrene	2.8E-01	0.10	9.4E-06	2.7E-07	3.0E-02	8.8E-06
Pesticides/PCBs						
Aldrin	NCC	NA	9.4E-06	NC	3.0E-05	NC
Dieldrin	NCC	0.25	9.4E-06	NC	5.0E-05	NC
Metals						
Aluminum, total	**1.2E+04**	**0.01**	**9.4E-06**	**1.2E-03**	**1.0E+00**	**1.2E-03**
Arsenic, total	**7.7E+00**	**0.03**	**9.4E-06**	**2.1E-06**	**3.0E-04**	**7.2E-03**
Barium, total	NCC	0.01	9.4E-06	NC	7.0E-02	NC
Beryllium, total	**2.4E+00**	**0.01**	**9.4E-06**	**2.3E-07**	**2.0E-03**	**1.1E-04**
Cadmium, total	**1.4E-01**	**0.001**	**9.4E-06**	**1.3E-09**	**1.0E-03**	**1.3E-06**
Copper, total	NCC	0.02	9.4E-06	NC	3.7E-02	NC
Iron, total	NCC	0.01	9.4E-06	NC	NA	NC
Lead, total	**3.7E+01**	**1.00**	**9.4E-06**	**3.5E-04**	**NA**	**NC**
Manganese, total	7.6E+02	0.01	9.4E-06	7.1E-05	7.0E-02	1.0E-03
Mercury, total	NCC	0.01	9.4E-06	NC	3.0E-04	NC
Nickel, total	NCC	0.01	9.4E-06	NC	2.0E-02	NC
Thallium, total	NCC	0.01	9.4E-06	NC	2.0E-01	NC
Vanadium, total	**4.2E+01**	**0.01**	**9.4E-06**	**3.9E-06**	**7.0E-03**	**5.6E-04**
Zinc, total	NCC	0.01	9.4E-06	NC	3.0E-01	NC
					SUBTOTAL:	**1.0E-02**
					SITE RELATED RISK:	**1.1E-03**
					BACKGROUND RISK:	**9.0E-03**

TABLE 8.44-9 (CONT'D)

CALCULATION OF AVERAGE DAILY DOSES AND RISK ESTIMATES
FOR DERMAL CONTACT WITH SEDIMENT - CEDAR SWAMP BROOK AND QUARRY STREAM

RECEPTOR: Local Resident (Trespassers)
CARCINOGENIC EFFECTS

Contaminants	Exposure Point Concentration (mg/kg)	x Dermal Absorption Adjustment Factor	x Receptor-Specific Exposure Factor (kg/kg-day)	= Lifetime Average Daily Dose (mg/kg-day)	x Oral Cancer Slope Factor (mg/kg-day)-1	= Incremental Lifetime Cancer Risk Estimate
Volatile Organic Compounds						
1,4-Dichlorobenzene	NCC	NA	1.2E-06	NC	2.4E-02	NC
Benzene	NCC	NA	1.2E-06	NC	2.9E-02	NC
Carbon Tetrachloride	NCC	NA	1.2E-06	NC	1.3E-01	NC
Chlorobenzene	NCC	NA	1.2E-06	NC	NA	NC
Chloroform	NCC	NA	1.2E-06	NC	6.1E-03	NC
Tetrachloroethene	NCC	NA	1.2E-06	NC	5.2E-02	NC
Trichloroethene	NCC	NA	1.2E-06	NC	1.1E-02	NC
Vinyl Chloride	NCC	NA	1.2E-06	NC	1.4E+00	NC
Semivolatile Organic Compounds						
Benzo(a)anthracene	2.5E-01	0.13	1.2E-06	3.8E-08	7.3E-01	2.8E-08
Benzo(a)pyrene	2.2E-01	0.13	1.2E-06	3.5E-08	7.3E+00	2.5E-07
Benzo(b)fluoranthene	3.1E-01	0.13	1.2E-06	4.9E-08	7.3E-01	3.6E-08
Benzo(g,h,i)perylene	7.9E-02	NA	1.2E-06	NC	NA	NC
bis(2-Ethylhexyl)phthalate	NCC	0.10	1.2E-06	NC	1.4E-02	NC
Phenanthrene	2.8E-01	NA	1.2E-06	NC	NA	NC
Pesticides/PCBs						
Aldrin	NCC	NA	1.2E-06	NC	1.7E+01	NC
Dieldrin	NCC	0.25	1.2E-06	NC	1.6E+01	NC
Metals						
Aluminum, total	1.2E+04	NA	1.2E-06	NC	NA	NC
Arsenic, total	7.7E+00	0.03	1.2E-06	2.8E-07	1.5E+00	4.1E-07
Barium, total	NCC	NA	1.2E-06	NC	NA	NC
Beryllium, total	2.4E+00	0.01	1.2E-06	2.9E-08	4.3E+00	1.2E-07
Cadmium, total	1.4E-01	1.00	1.2E-06	1.7E-07	NA	NC
Copper, total	NCC	NA	1.2E-06	NC	NA	NC
Iron, total	NCC	NA	1.2E-06	NC	NA	NC
Lead, total	3.7E+01	NA	1.2E-06	NC	NA	NC
Manganese, total	7.6E+02	NA	1.2E-06	NC	NA	NC
Mercury, total	NCC	NA	1.2E-06	NC	NA	NC
Nickel, total	NCC	NA	1.2E-06	NC	NA	NC
Thallium, total	NCC	NA	1.2E-06	NC	NA	NC
Vanadium, total	4.2E+01	NA	1.2E-06	NC	NA	NC
Zinc, total	NCC	NA	1.2E-06	NC	NA	NC
					SUBTOTAL:	8.6E-07
					SITE RELATED RISK:	3.2E-07
					BACKGROUND RISK:	5.4E-07

Notes:

1. NA = Not Analyzed/Not Applicable; NC = Not Calculated; NSCC = Not a Study Chemical of Concern.
2. For constituents without an AAF value, a default value of 1.00 was used.

TABLE 8.44-10

CALCULATION OF AVERAGE DAILY DOSES AND RISK ESTIMATES
FOR INCIDENTAL INGESTION OF SEDIMENT - CEDAR SWAMP BROOK AND QUARRY STREAM

RECEPTOR: Local Resident (Trespassers)
CHRONIC NONCARCINOGENIC EFFECTS

Contaminants	Exposure Point Concentration (mg/kg)	x Oral Absorption x Adjustment Factor	Receptor-Specific Exposure Factor (kg/kg-day)	= Chronic Average Daily Dose (mg/kg-day)	/ Oral Chronic Reference Dose (mg/kg-day)	= Hazard Index
Volatile Organic Compounds						
1,4-Dichlorobenzene	NCC	1.00	1.0E-07	NC	NA	NC
Benzene	NCC	1.00	1.0E-07	NC	1.0E-03	NC
Carbon Tetrachloride	NCC	1.00	1.0E-07	NC	7.0E-04	NC
Chlorobenzene	NCC	1.00	1.0E-07	NC	2.0E-02	NC
Chloroform	NCC	1.00	1.0E-07	NC	1.0E-02	NC
Tetrachloroethene	NCC	1.00	1.0E-07	NC	1.0E-02	NC
Trichloroethene	NCC	1.00	1.0E-07	NC	2.0E-03	NC
Vinyl Chloride	NCC	1.00	1.0E-07	NC	3.0E-03	NC
Semivolatile Organic Compounds						
Benzo(a)anthracene	2.5E-01	1.00	1.0E-07	2.5E-08	3.0E-02	8.4E-07
Benzo(a)pyrene	2.2E-01	1.00	1.0E-07	2.3E-08	3.0E-02	7.6E-07
Benzo(b)fluoranthene	3.1E-01	1.00	1.0E-07	3.2E-08	3.0E-02	1.1E-06
Benzo(g,h,i)perylene	7.9E-02	1.00	1.0E-07	8.1E-09	3.0E-02	2.7E-07
bis(2-Ethylhexyl)phthalate	NCC	1.00	1.0E-07	NC	2.0E-02	NC
Phenanthrene	2.8E-01	1.00	1.0E-07	2.9E-08	3.0E-02	9.7E-07
Pesticides/PCBs						
Aldrin	NCC	1.00	1.0E-07	NC	3.0E-05	NC
Dieldrin	NCC	1.00	1.0E-07	NC	5.0E-05	NC
Metals						
Aluminum, total	**1.2E+04**	**1.00**	**1.0E-07**	**1.3E-03**	**1.0E+00**	**1.3E-03**
Arsenic, total	**7.7E+00**	**0.48**	**1.0E-07**	**3.8E-07**	**3.0E-04**	**1.3E-03**
Barium, total	NCC	1.00	1.0E-07	NC	7.0E-02	NC
Beryllium, total	**2.4E+00**	**1.00**	**1.0E-07**	**2.5E-07**	**2.0E-03**	**1.2E-04**
Cadmium, total	**1.4E-01**	**1.00**	**1.0E-07**	**1.4E-08**	**1.0E-03**	**1.4E-05**
Copper, total	NCC	1.00	1.0E-07	NC	3.7E-02	NC
Iron, total	NCC	1.00	1.0E-07	NC	NA	NC
Lead, total	**3.7E+01**	**1.00**	**1.0E-07**	**3.8E-06**	**NA**	**NC**
Manganese, total	7.6E+02	1.00	1.0E-07	7.8E-05	7.0E-02	1.1E-03
Mercury, total	NCC	0.50	1.0E-07	NC	3.0E-04	NC
Nickel, total	NCC	1.00	1.0E-07	NC	2.0E-02	NC
Thallium, total	NCC	1.00	1.0E-07	NC	2.0E-01	NC
Vanadium, total	4.2E+01	1.00	1.0E-07	4.3E-06	7.0E-03	6.2E-04
Zinc, total	NCC	1.00	1.0E-07	NC	3.0E-01	NC
					SUBTOTAL:	**4.4E-03**
					SITE RELATED RISK:	**1.1E-03**
					BACKGROUND RISK:	**3.3E-03**

TABLE 8.44-10 (CONT'D)

CALCULATION OF AVERAGE DAILY DOSES AND RISK ESTIMATES
FOR INCIDENTAL INGESTION OF SEDIMENT - CEDAR SWAMP BROOK AND QUARRY STREAM

RECEPTOR: Local Resident (Trespassers)
CARCINOGENIC EFFECTS

Contaminants	Exposure Point Concentration (mg/kg)	x Oral Absorption Adjustment Factor	x Receptor-Specific Exposure Factor (kg/kg-day)	= Lifetime Average Daily Dose (mg/kg-day)	x Oral Cancer Slope Factor (mg/kg-day)-1	= Incremental Lifetime Cancer Risk Estimate
Volatile Organic Compounds						
1,4-Dichlorobenzene	NCC	1.00	1.3E-08	NC	2.4E-02	NC
Benzene	NCC	1.00	1.3E-08	NC	2.9E-02	NC
Carbon Tetrachloride	NCC	1.00	1.3E-08	NC	1.3E-01	NC
Chlorobenzene	NCC	1.00	1.3E-08	NC	NA	NC
Chloroform	NCC	1.00	1.3E-08	NC	6.1E-03	NC
Tetrachloroethene	NCC	1.00	1.3E-08	NC	5.2E-02	NC
Trichloroethene	NCC	1.00	1.3E-08	NC	1.1E-02	NC
Vinyl Chloride	NCC	1.00	1.3E-08	NC	1.4E+00	NC
Semivolatile Organic Compounds						
Benzo(a)anthracene	2.5E-01	1.00	1.3E-08	3.2E-09	7.3E-01	2.4E-09
Benzo(a)pyrene	2.2E-01	1.00	1.3E-08	2.9E-09	7.3E+00	2.1E-08
Benzo(b)fluoranthene	3.1E-01	1.00	1.3E-08	4.1E-09	7.3E-01	3.0E-09
Benzo(g,h,i)perylene	7.9E-02	1.00	1.3E-08	1.0E-09	NA	NC
bis(2-Ethylhexyl)phthalate	NCC	1.00	1.3E-08	NC	1.4E-02	NC
Phenanthrene	2.8E-01	1.00	1.3E-08	3.8E-09	NA	NC
Pesticides/PCBs						
Aldrin	NCC	1.00	1.3E-08	NC	1.7E+01	NC
Dieldrin	NCC	1.00	1.3E-08	NC	1.6E+01	NC
Metals						
Aluminum, total	**1.2E+04**	**1.00**	**1.3E-08**	**1.6E-04**	**NA**	**NC**
Arsenic, total	**7.7E+00**	**0.48**	**1.3E-08**	**4.9E-08**	**1.5E+00**	**7.3E-08**
Barium, total	NCC	1.00	1.3E-08	NC	NA	NC
Beryllium, total	**2.4E+00**	**1.00**	**1.3E-08**	**3.2E-08**	**4.3E+00**	**1.4E-07**
Cadmium, total	**1.4E-01**	**1.00**	**1.3E-08**	**1.9E-09**	**NA**	**NC**
Copper, total	NCC	1.00	1.3E-08	NC	NA	NC
Iron, total	NCC	1.00	1.3E-08	NC	NA	NC
Lead, total	**3.7E+01**	**1.00**	**1.3E-08**	**4.9E-07**	**NA**	**NC**
Manganese, total	7.6E+02	1.00	1.3E-08	1.0E-05	NA	NC
Mercury, total	NCC	1.00	1.3E-08	NC	NA	NC
Nickel, total	NCC	1.00	1.3E-08	NC	NA	NC
Thallium, total	NCC	1.00	1.3E-08	NC	NA	NC
Vanadium, total	**4.2E+01**	**1.00**	**1.3E-08**	**5.6E-07**	**NA**	**NC**
Zinc, total	NCC	1.00	1.3E-08	NC	NA	NC
					SUBTOTAL:	**2.4E-07**
					SITE RELATED RISK:	**2.7E-08**
					BACKGROUND RISK:	**2.1E-07**

Notes:

1. NA = Not Analyzed/Not Applicable; NC = Not Calculated; NSCC = Not a Study Chemical of Concern.
2. For constituents without an AAF value, a default value of 1.00 was used.

TABLE 8.44-11

CALCULATION OF AVERAGE DAILY DOSES AND RISK ESTIMATES
FOR DERMAL CONTACT WITH SURFACE WATER - CEDAR SWAMP BROOK AND QUARRY STREAM

RECEPTOR: Local Resident (Trespassers)
CHRONIC NONCARCINOGENIC EFFECTS

Contaminants	Exposure Point Concentration (mg/l)	x Dermal Absorption Adjustment Factor	x Permeability Coefficient (cm/hr)	Receptor-Specific Exposure Factor (l-hr/cm-kg-day)	= Chronic Average Daily Dose (mg/kg-day)	/ Oral Chronic Reference Dose (mg/kg-day)	= Hazard Index
Volatile Organic Compounds							
1,4-Dichlorobenzene	NCC	1.00	6.2E-02	1.5E-02	NC	NA	NC
Benzene	NCC	1.00	1.1E-01	1.5E-02	NC	1.0E-03	NC
Carbon Tetrachloride	NCC	1.00	2.2E-02	1.5E-02	NC	7.0E-04	NC
Chlorobenzene	NCC	1.00	4.1E-02	1.5E-02	NC	2.0E-02	NC
Chloroform	NCC	1.00	1.3E-01	1.5E-02	NC	1.0E-02	NC
Tetrachloroethene	NCC	1.00	3.7E-01	1.5E-02	NC	1.0E-02	NC
Trichloroethene	NCC	1.00	2.3E-01	1.5E-02	NC	2.0E-03	NC
Vinyl Chloride	NCC	1.00	7.3E-03	1.5E-02	NC	3.0E-03	NC
Semivolatile Organic Compounds							
Benzo(a)anthracene	NCC	1.00	8.1E-01	1.5E-02	NC	3.0E-02	NC
Benzo(a)pyrene	NCC	1.00	1.2E+00	1.5E-02	NC	3.0E-02	NC
Benzo(b)fluoranthene	NCC	1.00	1.2E+00	1.5E-02	NC	3.0E-02	NC
Benzo(g,h,i)perylene	NCC	1.00	1.7E+00	1.5E-02	NC	3.0E-02	NC
bis(2-Ethylhexyl)phthalate	NCC	1.00	3.3E-02	1.5E-02	NC	2.0E-02	NC
Phenanthrene	NCC	1.00	2.3E-01	1.5E-02	NC	3.0E-02	NC
Pesticides/PCBs							
Aldrin	NCC	1.00	1.6E-03	1.5E-02	NC	3.0E-05	NC
Dieldrin	NCC	1.00	1.6E-02	1.5E-02	NC	5.0E-05	NC
Metals							
Aluminum, total	NCC	1.00	1.0E-03	1.5E-02	NC	1.0E+00	NC
Arsenic, total	2.2E-03	1.00	1.0E-03	1.5E-02	3.2E-08	3.0E-04	1.1E-04
Barium, total	NCC	1.00	1.0E-03	1.5E-02	NC	7.0E-02	NC
Beryllium, total	**2.5E-03**	**1.00**	**1.0E-03**	**1.5E-02**	**3.7E-08**	**2.0E-03**	**1.9E-05**
Cadmium, total	NCC	1.00	1.0E-03	1.5E-02	NC	1.0E-03	NC
Copper, total	NCC	1.00	1.0E-03	1.5E-02	NC	3.7E-02	NC
Iron, total	NCC	1.00	1.0E-03	1.5E-02	NC	NA	NC
Lead, total	6.0E-03	1.00	1.0E-03	1.5E-02	8.8E-08	NA	NC
Manganese, total	3.0E+01	1.00	1.0E-03	1.5E-02	4.3E-04	7.0E-02	6.2E-03
Mercury, total	9.8E-04	1.00	1.0E-03	1.5E-02	1.4E-08	3.0E-04	4.8E-05
Nickel, total	NCC	1.00	1.0E-03	1.5E-02	NC	2.0E-02	NC
Thallium, total	1.1E-02	1.00	1.0E-03	1.5E-02	1.6E-07	2.0E-01	7.9E-07
Vanadium, total	NCC	1.00	1.0E-03	1.5E-02	NC	7.0E-03	NC
Zinc, total	NCC	1.00	1.0E-03	1.5E-02	NC	3.0E-01	NC
						SUBTOTAL:	**6.3E-03**
						SITE RELATED RISK:	**6.3E-03**
						BACKGROUND RISK:	**1.9E-05**

TABLE 8.44-11 (CONT'D)

CALCULATION OF AVERAGE DAILY DOSES AND RISK ESTIMATES
FOR DERMAL CONTACT WITH SURFACE WATER - CEDAR SWAMP BROOK AND QUARRY STREAM

RECEPTOR: Local Resident (Trespassers)
CARCINOGENIC EFFECTS

Contaminants	Exposure Point Concentration (mg/l)	x Dermal Absorption Adjustment Factor	x Permeability Coefficient (cm/hr)	Receptor-Specific Exposure Factor (l-hr/cm-kg-day)	= Lifetime Average Daily Dose (mg/kg-day)	x Oral Cancer Slope Factor (mg/kg-day)-1	= Incremental Lifetime Cancer Risk Estimate
Volatile Organic Compounds							
1,4-Dichlorobenzene	NCC	1.00	6.2E-02	1.9E-03	NC	2.4E-02	NC
Benzene	NCC	1.00	1.1E-01	1.9E-03	NC	2.9E-02	NC
Carbon Tetrachloride	NCC	1.00	2.2E-02	1.9E-03	NC	1.3E-01	NC
Chlorobenzene	NCC	1.00	4.1E-02	1.9E-03	NC	NA	NC
Chloroform	NCC	1.00	1.3E-01	1.9E-03	NC	6.1E-03	NC
Tetrachloroethene	NCC	1.00	3.7E-01	1.9E-03	NC	5.2E-02	NC
Trichloroethene	NCC	1.00	2.3E-01	1.9E-03	NC	1.1E-02	NC
Vinyl Chloride	NCC	1.00	7.3E-03	1.9E-03	NC	1.4E+00	NC
Semivolatile Organic Compounds							
Benzo(a)anthracene	NCC	1.00	8.1E-01	1.9E-03	NC	7.3E-01	NC
Benzo(a)pyrene	NCC	1.00	1.2E+00	1.9E-03	NC	7.3E+00	NC
Benzo(b)fluoranthene	NCC	1.00	1.2E+00	1.9E-03	NC	7.3E-01	NC
Benzo(g,h,i)perylene	NCC	1.00	1.7E+00	1.9E-03	NC	NA	NC
bis(2-Ethylhexyl)phthalate	NCC	1.00	3.3E-02	1.9E-03	NC	1.4E-02	NC
Phenanthrene	NCC	1.00	2.3E-01	1.9E-03	NC	NA	NC
Pesticides/PCBs							
Aldrin	NCC	1.00	1.6E-03	1.9E-03	NC	1.7E+01	NC
Dieldrin	NCC	1.00	1.6E-02	1.9E-03	NC	1.6E+01	NC
Metals							
Aluminum, total	NCC	1.00	1.0E-03	1.9E-03	NC	NA	NC
Arsenic, total	2.2E-03	1.00	1.0E-03	1.9E-03	4.1E-09	1.5E+00	6.1E-09
Barium, total	NCC	1.00	1.0E-03	1.9E-03	NC	NA	NC
Beryllium, total	**2.5E-03**	**1.00**	**1.0E-03**	**1.9E-03**	**4.8E-09**	**4.3E+00**	**2.1E-08**
Cadmium, total	NCC	1.00	1.0E-03	1.9E-03	NC	NA	NC
Copper, total	NCC	1.00	1.0E-03	1.9E-03	NC	NA	NC
Iron, total	NCC	1.00	1.0E-03	1.9E-03	NC	NA	NC
Lead, total	6.0E-03	1.00	1.0E-03	1.9E-03	1.1E-08	NA	NC
Manganese, total	3.0E+01	1.00	1.0E-03	1.9E-03	5.5E-05	NA	NC
Mercury, total	9.8E-04	1.00	1.0E-03	1.9E-03	1.8E-09	NA	NC
Nickel, total	NCC	1.00	1.0E-03	1.9E-03	NC	NA	NC
Thallium, total	1.1E-02	1.00	1.0E-03	1.9E-03	2.0E-08	NA	NC
Vanadium, total	NCC	1.00	1.0E-03	1.9E-03	NC	NA	NC
Zinc, total	NCC	1.00	1.0E-03	1.9E-03	NC	NA	NC
						SUBTOTAL:	**2.7E-08**
						SITE RELATED RISK:	**6.1E-09**
						BACKGROUND RISK:	**2.1E-08**

Notes:

1. NA = Not Analyzed/Not Applicable; NC = Not Calculated; NSCC = Not a Study Chemical of Concern.
2. For constituents without an AAF value, a default value of 1.00 was used.

TABLE 8.44-12

CALCULATION OF AVERAGE DAILY DOSES AND RISK ESTIMATES
FOR DERMAL CONTACT WITH SEDIMENT - ALMY RESERVOIR

RECEPTOR: Local Resident (Recreators)
CHRONIC NONCARCINOGENIC EFFECTS

Contaminants	Exposure Point Concentration (mg/kg)	x Dermal Absorption Adjustment Factor	x Receptor-Specific Exposure Factor (kg/kg-day)	= Chronic Average Daily Dose (mg/kg-day)	/ Oral Chronic Reference Dose (mg/kg-day)	= Hazard Index
Volatile Organic Compounds						
1,4-Dichlorobenzene	NCC	NA	4.3E-05	NC	NA	NC
Benzene	NCC	NA	4.3E-05	NC	1.0E-03	NC
Carbon Tetrachloride	NCC	NA	4.3E-05	NC	7.0E-04	NC
Chlorobenzene	NCC	NA	4.3E-05	NC	2.0E-02	NC
Chloroform	NCC	NA	4.3E-05	NC	1.0E-02	NC
Tetrachloroethene	NCC	NA	4.3E-05	NC	1.0E-02	NC
Trichloroethene	NCC	NA	4.3E-05	NC	2.0E-03	NC
Vinyl Chloride	NCC	NA	4.3E-05	NC	3.0E-03	NC
Semivolatile Organic Compounds						
Benzo(a)anthracene	6.6E-02	0.13	4.3E-05	3.6E-07	3.0E-02	1.2E-05
Benzo(a)pyrene	8.4E-02	0.13	4.3E-05	4.6E-07	3.0E-02	1.5E-05
Benzo(b)fluoranthene	1.2E-01	0.13	4.3E-05	6.6E-07	3.0E-02	2.2E-05
Benzo(g,h,i)perylene	8.7E-02	0.10	4.3E-05	3.7E-07	3.0E-02	1.2E-05
bis(2-Ethylhexyl)phthalate	NCC	0.10	4.3E-05	NC	2.0E-02	NC
Phenanthrene	6.7E-02	0.10	4.3E-05	2.8E-07	3.0E-02	9.5E-06
Pesticides/PCBs						
Aldrin	NCC	NA	4.3E-05	NC	3.0E-05	NC
Dieldrin	NCC	0.25	4.3E-05	NC	5.0E-05	NC
Metals						
Aluminum, total	**1.7E+04**	**0.01**	**4.3E-05**	**7.4E-03**	**1.0E+00**	**7.4E-03**
Arsenic, total	**8.5E+00**	**0.03**	**4.3E-05**	**1.1E-05**	**3.0E-04**	**3.6E-02**
Barium, total	NCC	0.01	4.3E-05	NC	7.0E-02	NC
Beryllium, total	**2.8E+01**	**0.01**	**4.3E-05**	**1.2E-05**	**2.0E-03**	**5.9E-03**
Cadmium, total	**4.9E+00**	**0.001**	**4.3E-05**	**2.1E-07**	**1.0E-03**	**2.1E-04**
Copper, total	NCC	0.02	4.3E-05	NC	3.7E-02	NC
Iron, total	NCC	0.01	4.3E-05	NC	NA	NC
Lead, total	**1.9E+02**	**1.00**	**4.3E-05**	**8.3E-03**	**NA**	**NC**
Manganese, total	8.7E+03	0.01	4.3E-05	3.7E-03	7.0E-02	5.3E-02
Mercury, total	NCC	0.01	4.3E-05	NC	3.0E-04	NC
Nickel, total	NCC	0.01	4.3E-05	NC	2.0E-02	NC
Thallium, total	1.2E+01	0.01	4.3E-05	5.0E-06	2.0E-01	2.5E-05
Vanadium, total	**4.2E+01**	**0.01**	**4.3E-05**	**1.8E-05**	**7.0E-03**	**2.6E-03**
Zinc, total	NCC	0.01	4.3E-05	NC	3.0E-01	NC
					SUBTOTAL:	**1.0E-01**
					SITE RELATED RISK:	**5.3E-02**
					BACKGROUND RISK:	**5.2E-02**

TABLE 8.44-12 (CONT'D)

CALCULATION OF AVERAGE DAILY DOSES AND RISK ESTIMATES FOR DERMAL CONTACT WITH SEDIMENT - ALMY RESERVOIR

RECEPTOR: Local Resident (Recreators)
CARCINOGENIC EFFECTS

Contaminants	Exposure Point Concentration (mg/kg)	x Dermal Absorption Adjustment Factor	x Receptor-Specific Exposure Factor (kg/kg-day)	= Lifetime Average Daily Dose (mg/kg-day)	x Oral Cancer Slope Factor (mg/kg-day)-1	= Incremental Lifetime Cancer Risk Estimate
Volatile Organic Compounds						
1,4-Dichlorobenzene	NCC	NA	1.1E-05	NC	2.4E-02	NC
Benzene	NCC	NA	1.1E-05	NC	2.9E-02	NC
Carbon Tetrachloride	NCC	NA	1.1E-05	NC	1.3E-01	NC
Chlorobenzene	NCC	NA	1.1E-05	NC	NA	NC
Chloroform	NCC	NA	1.1E-05	NC	6.1E-03	NC
Tetrachloroethene	NCC	NA	1.1E-05	NC	5.2E-02	NC
Trichloroethene	NCC	NA	1.1E-05	NC	1.1E-02	NC
Vinyl Chloride	NCC	NA	1.1E-05	NC	1.4E+00	NC
Semivolatile Organic Compounds						
Benzo(a)anthracene	6.6E-02	0.13	1.1E-05	9.3E-08	7.3E-01	6.8E-08
Benzo(a)pyrene	8.4E-02	0.13	1.1E-05	1.2E-07	7.3E+00	8.6E-07
Benzo(b)fluoranthene	1.2E-01	0.13	1.1E-05	1.7E-07	7.3E-01	1.2E-07
Benzo(g,h,i)perylene	8.7E-02	NA	1.1E-05	NC	NA	NC
bis(2-Ethylhexyl)phthalate	NCC	0.10	1.1E-05	NC	1.4E-02	NC
Phenanthrene	6.7E-02	NA	1.1E-05	NC	NA	NC
Pesticides/PCBs						
Aldrin	NCC	NA	1.1E-05	NC	1.7E+01	NC
Dieldrin	NCC	0.25	1.1E-05	NC	1.6E+01	NC
Metals						
Aluminum, total	1.7E+04	NA	1.1E-05	NC	NA	NC
Arsenic, total	8.5E+00	0.03	1.1E-05	2.7E-06	1.5E+00	4.1E-06
Barium, total	NCC	NA	1.1E-05	NC	NA	NC
Beryllium, total	2.8E+01	0.01	1.1E-05	3.0E-06	4.3E+00	1.3E-05
Cadmium, total	4.9E+00	1.00	1.1E-05	5.3E-05	NA	NC
Copper, total	NCC	NA	1.1E-05	NC	NA	NC
Iron, total	NCC	NA	1.1E-05	NC	NA	NC
Lead, total	1.9E+02	NA	1.1E-05	NC	NA	NC
Manganese, total	8.7E+03	NA	1.1E-05	NC	NA	NC
Mercury, total	NCC	NA	1.1E-05	NC	NA	NC
Nickel, total	NCC	NA	1.1E-05	NC	NA	NC
Thallium, total	1.2E+01	NA	1.1E-05	NC	NA	NC
Vanadium, total	4.2E+01	NA	1.1E-05	NC	NA	NC
Zinc, total	NCC	NA	1.1E-05	NC	NA	NC
					SUBTOTAL:	1.8E-05
					SITE RELATED RISK:	1.1E-06
					BACKGROUND RISK:	1.7E-05

Notes:

1. NA = Not Analyzed/Not Applicable; NC = Not Calculated; NSCC = Not a Study Chemical of Concern.
2. For constituents without an AAF value, a default value of 1.00 was used.

TABLE 8.44-13

CALCULATION OF AVERAGE DAILY DOSES AND RISK ESTIMATES
FOR INCIDENTAL INGESTION OF SEDIMENT - ALMY RESERVOIR

RECEPTOR: Local Resident (Recreators)
CHRONIC NONCARCINOGENIC EFFECTS

Contaminants	Exposure Point Concentration (mg/kg)	x Oral Absorption Adjustment Factor	x Receptor-Specific Exposure Factor (kg/kg-day)	= Chronic Average Daily Dose (mg/kg-day)	/ Oral Chronic Reference Dose (mg/kg-day)	= Hazard Index
Volatile Organic Compounds						
1,4-Dichlorobenzene	NCC	1.00	1.9E-06	NC	NA	NC
Benzene	NCC	1.00	1.9E-06	NC	1.0E-03	NC
Carbon Tetrachloride	NCC	1.00	1.9E-06	NC	7.0E-04	NC
Chlorobenzene	NCC	1.00	1.9E-06	NC	2.0E-02	NC
Chloroform	NCC	1.00	1.9E-06	NC	1.0E-02	NC
Tetrachloroethene	NCC	1.00	1.9E-06	NC	1.0E-02	NC
Trichloroethene	NCC	1.00	1.9E-06	NC	2.0E-03	NC
Vinyl Chloride	NCC	1.00	1.9E-06	NC	3.0E-03	NC
Semivolatile Organic Compounds						
Benzo(a)anthracene	6.6E-02	1.00	1.9E-06	1.2E-07	3.0E-02	4.1E-06
Benzo(a)pyrene	8.4E-02	1.00	1.9E-06	1.6E-07	3.0E-02	5.2E-06
Benzo(b)fluoranthene	1.2E-01	1.00	1.9E-06	2.2E-07	3.0E-02	7.4E-06
Benzo(g,h,i)perylene	8.7E-02	1.00	1.9E-06	1.6E-07	3.0E-02	5.4E-06
bis(2-Ethylhexyl)phthalate	NCC	1.00	1.9E-06	NC	2.0E-02	NC
Phenanthrene	6.7E-02	1.00	1.9E-06	1.2E-07	3.0E-02	4.1E-06
Pesticides/PCBs						
Aldrin	NCC	1.00	1.9E-06	NC	3.0E-05	NC
Dieldrin	NCC	1.00	1.9E-06	NC	5.0E-05	NC
Metals						
Aluminum, total	**1.7E+04**	**1.00**	**1.9E-06**	**3.2E-02**	**1.0E+00**	**3.2E-02**
Arsenic, total	**8.5E+00**	**0.48**	**1.9E-06**	**7.5E-06**	**3.0E-04**	**2.5E-02**
Barium, total	NCC	1.00	1.9E-06	NC	7.0E-02	NC
Beryllium, total	**2.8E+01**	**1.00**	**1.9E-06**	**5.2E-05**	**2.0E-03**	**2.6E-02**
Cadmium, total	**4.9E+00**	**1.00**	**1.9E-06**	**9.0E-06**	**1.0E-03**	**9.0E-03**
Copper, total	NCC	1.00	1.9E-06	NC	3.7E-02	NC
Iron, total	NCC	1.00	1.9E-06	NC	NA	NC
Lead, total	**1.9E+02**	**1.00**	**1.9E-06**	**3.6E-04**	**NA**	**NC**
Manganese, total	8.7E+03	1.00	1.9E-06	1.6E-02	7.0E-02	2.3E-01
Mercury, total	NCC	0.50	1.9E-06	NC	3.0E-04	NC
Nickel, total	NCC	1.00	1.9E-06	NC	2.0E-02	NC
Thallium, total	1.2E+01	1.00	1.9E-06	2.2E-05	2.0E-01	1.1E-04
Vanadium, total	**4.2E+01**	**1.00**	**1.9E-06**	**7.8E-05**	**7.0E-03**	**1.1E-02**
Zinc, total	NCC	1.00	1.9E-06	NC	3.0E-01	NC
					SUBTOTAL:	**3.3E-01**
					SITE RELATED RISK:	**2.3E-01**
					BACKGROUND RISK:	**1.0E-01**

TABLE 8.44-13 (CONT'D)

CALCULATION OF AVERAGE DAILY DOSES AND RISK ESTIMATES
FOR INCIDENTAL INGESTION OF SEDIMENT - ALMY RESERVOIR

RECEPTOR: Local Resident (Recreators)
CARCINOGENIC EFFECTS

Contaminants	Exposure Point Concentration (mg/kg)	x Oral Absorption Adjustment Factor	x Receptor-Specific Exposure Factor (kg/kg-day)	= Lifetime Average Daily Dose (mg/kg-day)	x Oral Cancer Slope Factor (mg/kg-day)-1	= Incremental Lifetime Cancer Risk Estimate
Volatile Organic Compounds						
1,4-Dichlorobenzene	NCC	1.00	1.9E-07	NC	2.4E-02	NC
Benzene	NCC	1.00	1.9E-07	NC	2.9E-02	NC
Carbon Tetrachloride	NCC	1.00	1.9E-07	NC	1.3E-01	NC
Chlorobenzene	NCC	1.00	1.9E-07	NC	NA	NC
Chloroform	NCC	1.00	1.9E-07	NC	6.1E-03	NC
Tetrachloroethene	NCC	1.00	1.9E-07	NC	5.2E-02	NC
Trichloroethene	NCC	1.00	1.9E-07	NC	1.1E-02	NC
Vinyl Chloride	NCC	1.00	1.9E-07	NC	1.4E+00	NC
Semivolatile Organic Compounds						
Benzo(a)anthracene	6.6E-02	1.00	1.9E-07	1.3E-08	7.3E-01	9.4E-09
Benzo(a)pyrene	8.4E-02	1.00	1.9E-07	1.6E-08	7.3E+00	1.2E-07
Benzo(b)fluoranthene	1.2E-01	1.00	1.9E-07	2.3E-08	7.3E-01	1.7E-08
Benzo(g,h,i)perylene	8.7E-02	1.00	1.9E-07	1.7E-08	NA	NC
bis(2-Ethylhexyl)phthalate	NCC	1.00	1.9E-07	NC	1.4E-02	NC
Phenanthrene	6.7E-02	1.00	1.9E-07	1.3E-08	NA	NC
Pesticides/PCBs						
Aldrin	NCC	1.00	1.9E-07	NC	1.7E+01	NC
Dieldrin	NCC	1.00	1.9E-07	NC	1.6E+01	NC
Metals						
Aluminum, total	1.7E+04	1.00	1.9E-07	3.4E-03	NA	NC
Arsenic, total	8.5E+00	0.48	1.9E-07	7.9E-07	1.5E+00	1.2E-06
Barium, total	NCC	1.00	1.9E-07	NC	NA	NC
Beryllium, total	2.8E+01	1.00	1.9E-07	5.4E-06	4.3E+00	2.3E-05
Cadmium, total	4.9E+00	1.00	1.9E-07	9.5E-07	NA	NC
Copper, total	NCC	1.00	1.9E-07	NC	NA	NC
Iron, total	NCC	1.00	1.9E-07	NC	NA	NC
Lead, total	1.9E+02	1.00	1.9E-07	3.8E-05	NA	NC
Manganese, total	8.7E+03	1.00	1.9E-07	1.7E-03	NA	NC
Mercury, total	NCC	1.00	1.9E-07	NC	NA	NC
Nickel, total	NCC	1.00	1.9E-07	NC	NA	NC
Thallium, total	1.2E+01	1.00	1.9E-07	2.3E-06	NA	NC
Vanadium, total	4.2E+01	1.00	1.9E-07	8.2E-06	NA	NC
Zinc, total	NCC	1.00	1.9E-07	NC	NA	NC
					SUBTOTAL:	**2.5E-05**
					SITE RELATED RISK:	**1.5E-07**
					BACKGROUND RISK:	**2.5E-05**

Notes:

1. NA = Not Analyzed/Not Applicable; NC = Not Calculated; NSCC = Not a Study Chemical of Concern.
2. For constituents without an AAF value, a default value of 1.00 was used.

TABLE 8.44-14

CALCULATION OF AVERAGE DAILY DOSES AND RISK ESTIMATES
FOR DERMAL CONTACT WITH SURFACE WATER - ALMY RESERVOIR
CURRENT CONDITIONS

RECEPTOR: Local Resident (Recreators)
CHRONIC NONCARCINOGENIC EFFECTS

Contaminants	Exposure Point Concentration (mg/l)	Dermal x Absorption x Adjustment Factor	Permeability Coefficient x (cm/hr)	Receptor-Specific Exposure Factor (l-hr/cm-kg-day)	= Chronic Average Daily Dose (mg/kg-day)	/ Oral Chronic Reference Dose (mg/kg-day)	= Hazard Index
Volatile Organic Compounds							
1,4-Dichlorobenzene	NCC	1.00	6.2E-02	7.8E-02	NC	NA	NC
Benzene	NCC	1.00	1.1E-01	7.8E-02	NC	1.0E-03	NC
Carbon Tetrachloride	NCC	1.00	2.2E-02	7.8E-02	NC	7.0E-04	NC
Chlorobenzene	NCC	1.00	4.1E-02	7.8E-02	NC	2.0E-02	NC
Chloroform	NCC	1.00	1.3E-01	7.8E-02	NC	1.0E-02	NC
Tetrachloroethene	NCC	1.00	3.7E-01	7.8E-02	NC	1.0E-02	NC
Trichloroethene	NCC	1.00	2.3E-01	7.8E-02	NC	2.0E-03	NC
Vinyl Chloride	NCC	1.00	7.3E-03	7.8E-02	NC	3.0E-03	NC
Semivolatile Organic Compounds							
Benzo(a)anthracene	NCC	1.00	8.1E-01	7.8E-02	NC	3.0E-02	NC
Benzo(a)pyrene	NCC	1.00	1.2E+00	7.8E-02	NC	3.0E-02	NC
Benzo(b)fluoranthene	NCC	1.00	1.2E+00	7.8E-02	NC	3.0E-02	NC
Benzo(g,h,i)perylene	NCC	1.00	1.7E+00	7.8E-02	NC	3.0E-02	NC
bis(2-Ethylhexyl)phthalate	NCC	1.00	3.3E-02	7.8E-02	NC	2.0E-02	NC
Phenanthrene	NCC	1.00	2.3E-01	7.8E-02	NC	3.0E-02	NC
Pesticides/PCBs							
Aldrin	NCC	1.00	1.6E-03	7.8E-02	NC	3.0E-05	NC
Dieldrin	NCC	1.00	1.6E-02	7.8E-02	NC	5.0E-05	NC
Metals							
Aluminum, total	NCC	1.00	1.0E-03	7.8E-02	NC	1.0E+00	NC
Arsenic, total	2.1E-03	1.00	1.0E-03	7.8E-02	1.6E-07	3.0E-04	5.5E-04
Barium, total	NCC	1.00	1.0E-03	7.8E-02	NC	7.0E-02	NC
Beryllium, total	2.5E-04	1.00	1.0E-03	7.8E-02	1.9E-08	2.0E-03	9.7E-06
Cadmium, total	NCC	1.00	1.0E-03	7.8E-02	NC	1.0E-03	NC
Copper, total	NCC	1.00	1.0E-03	7.8E-02	NC	3.7E-02	NC
Iron, total	NCC	1.00	1.0E-03	7.8E-02	NC	NA	NC
Lead, total	NCC	1.00	1.0E-03	7.8E-02	NC	NA	NC
Manganese, total	3.0E-02	1.00	1.0E-03	7.8E-02	2.3E-06	7.0E-02	3.3E-05
Mercury, total	NCC	1.00	1.0E-03	7.8E-02	NC	3.0E-04	NC
Nickel, total	NCC	1.00	1.0E-03	7.8E-02	NC	2.0E-02	NC
Thallium, total	NCC	1.00	1.0E-03	7.8E-02	NC	2.0E-01	NC
Vanadium, total	NCC	1.00	1.0E-03	7.8E-02	NC	7.0E-03	NC
Zinc, total	NCC	1.00	1.0E-03	7.8E-02	NC	3.0E-01	NC
						SUBTOTAL:	5.9E-04
						SITE RELATED RISK:	5.8E-04
						BACKGROUND RISK:	9.7E-06

TABLE 8.44-14 (CONT'D)

CALCULATION OF AVERAGE DAILY DOSES AND RISK ESTIMATES
FOR DERMAL CONTACT WITH SURFACE WATER - ALMY RESERVOIR
CURRENT CONDITIONS

RECEPTOR: Local Resident (Recreators)
CARCINOGENIC EFFECTS

Contaminants	Exposure Point Concentration (mg/l)	x Dermal Absorption Adjustment Factor	x Permeability Coefficient (cm/hr)	Receptor-Specific Exposure Factor (l-hr/cm-kg-day)	= Lifetime Average Daily Dose (mg/kg-day)	x Oral Cancer Slope Factor (mg/kg-day)-¹	= Incremental Lifetime Cancer Risk Estimate
Volatile Organic Compounds							
1,4-Dichlorobenzene	NCC	1.00	6.2E-02	2.4E-02	NC	2.4E-02	NC
Benzene	NCC	1.00	1.1E-01	2.4E-02	NC	2.9E-02	NC
Carbon Tetrachloride	NCC	1.00	2.2E-02	2.4E-02	NC	1.3E-01	NC
Chlorobenzene	NCC	1.00	4.1E-02	2.4E-02	NC	NA	NC
Chloroform	NCC	1.00	1.3E-01	2.4E-02	NC	6.1E-03	NC
Tetrachloroethene	NCC	1.00	3.7E-01	2.4E-02	NC	5.2E-02	NC
Trichloroethene	NCC	1.00	2.3E-01	2.4E-02	NC	1.1E-02	NC
Vinyl Chloride	NCC	1.00	7.3E-03	2.4E-02	NC	1.4E+00	NC
Semivolatile Organic Compounds							
Benzo(a)anthracene	NCC	1.00	8.1E-01	2.4E-02	NC	7.3E-01	NC
Benzo(a)pyrene	NCC	1.00	1.2E+00	2.4E-02	NC	7.3E+00	NC
Benzo(b)fluoranthene	NCC	1.00	1.2E+00	2.4E-02	NC	7.3E-01	NC
Benzo(g,h,i)perylene	NCC	1.00	1.7E+00	2.4E-02	NC	NA	NC
bis(2-Ethylhexyl)phthalate	NCC	1.00	3.3E-02	2.4E-02	NC	1.4E-02	NC
Phenanthrene	NCC	1.00	2.3E-01	2.4E-02	NC	NA	NC
Pesticides/PCBs							
Aldrin	NCC	1.00	1.6E-03	2.4E-02	NC	1.7E+01	NC
Dieldrin	NCC	1.00	1.6E-02	2.4E-02	NC	1.6E+01	NC
Metals							
Aluminum, total	NCC	1.00	1.0E-03	2.4E-02	NC	NA	NC
Arsenic, total	2.1E-03	1.00	1.0E-03	2.4E-02	5.0E-08	1.5E+00	7.6E-08
Barium, total	NCC	1.00	1.0E-03	2.4E-02	NC	NA	NC
Beryllium, total	2.5E-04	1.00	1.0E-03	2.4E-02	6.0E-09	4.3E+00	2.6E-08
Cadmium, total	NCC	1.00	1.0E-03	2.4E-02	NC	NA	NC
Copper, total	NCC	1.00	1.0E-03	2.4E-02	NC	NA	NC
Iron, total	NCC	1.00	1.0E-03	2.4E-02	NC	NA	NC
Lead, total	NCC	1.00	1.0E-03	2.4E-02	NC	NA	NC
Manganese, total	3.0E-02	1.00	1.0E-03	2.4E-02	7.1E-07	NA	NC
Mercury, total	NCC	1.00	1.0E-03	2.4E-02	NC	NA	NC
Nickel, total	NCC	1.00	1.0E-03	2.4E-02	NC	NA	NC
Thallium, total	NCC	1.00	1.0E-03	2.4E-02	NC	NA	NC
Vanadium, total	NCC	1.00	1.0E-03	2.4E-02	NC	NA	NC
Zinc, total	NCC	1.00	1.0E-03	2.4E-02	NC	NA	NC
						SUBTOTAL:	1.0E-07
						SITE RELATED RISK:	7.6E-08
						BACKGROUND RISK:	2.6E-08

Notes:

1. NA = Not Analyzed/Not Applicable; NC = Not Calculated; NSCC = Not a Study Chemical of Concern.
2. For constituents without an AAF value, a default value of 1.00 was used.

TABLE 8.44-15

CALCULATION OF AVERAGE DAILY DOSES AND RISK ESTIMATES
FOR INCIDENTAL INGESTION OF SURFACE WATER - ALMY RESERVOIR
CURRENT CONDITIONS

RECEPTOR: Local Resident (Recreators)
CHRONIC NONCARCINOGENIC EFFECTS

Contaminants	Exposure Point Concentration (mg/l)	Oral x Absorption x Adjustment Factor	Receptor-Specific Exposure Factor (l/kg-day)	= Chronic Average Daily Dose (mg/kg-day)	/ Oral Chronic Reference Dose (mg/kg-day)	= Hazard Index
Volatile Organic Compounds						
1,4-Dichlorobenzene	NCC	1.00	5.4E-04	NC	NA	NC
Benzene	NCC	1.00	5.4E-04	NC	1.0E-03	NC
Carbon Tetrachloride	NCC	1.00	5.4E-04	NC	7.0E-04	NC
Chlorobenzene	NCC	1.00	5.4E-04	NC	2.0E-02	NC
Chloroform	NCC	1.00	5.4E-04	NC	1.0E-02	NC
Tetrachloroethene	NCC	1.00	5.4E-04	NC	1.0E-02	NC
Trichloroethene	NCC	1.00	5.4E-04	NC	2.0E-03	NC
Vinyl Chloride	NCC	1.00	5.4E-04	NC	3.0E-03	NC
Semivolatile Organic Compounds						
Benzo(a)anthracene	NCC	1.00	5.4E-04	NC	3.0E-02	NC
Benzo(a)pyrene	NCC	1.00	5.4E-04	NC	3.0E-02	NC
Benzo(b)fluoranthene	NCC	1.00	5.4E-04	NC	3.0E-02	NC
Benzo(g,h,i)perylene	NCC	1.00	5.4E-04	NC	3.0E-02	NC
bis(2-Ethylhexyl)phthalate	NCC	1.00	5.4E-04	NC	2.0E-02	NC
Phenanthrene	NCC	1.00	5.4E-04	NC	3.0E-02	NC
Pesticides/PCBs						
Aldrin	NCC	1.00	5.4E-04	NC	3.0E-05	NC
Dieldrin	NCC	1.00	5.4E-04	NC	5.0E-05	NC
Metals						
Aluminum, total	NCC	1.00	5.4E-04	NC	1.0E+00	NC
Arsenic, total	2.1E-03	1.00	5.4E-04	1.1E-06	3.0E-04	3.8E-03
Barium, total	NCC	1.00	5.4E-04	NC	7.0E-02	NC
Beryllium, total	**2.5E-04**	**1.00**	**5.4E-04**	**1.3E-07**	**2.0E-03**	**6.7E-05**
Cadmium, total	NCC	1.00	5.4E-04	NC	5.0E-04	NC
Copper, total	NCC	1.00	5.4E-04	NC	3.7E-02	NC
Iron, total	NCC	1.00	5.4E-04	NC	NA	NC
Lead, total	NCC	1.00	5.4E-04	NC	NA	NC
Manganese, total	3.0E-02	1.00	5.4E-04	1.6E-05	2.4E-02	6.6E-04
Mercury, total	NCC	1.00	5.4E-04	NC	3.0E-04	NC
Nickel, total	NCC	1.00	5.4E-04	NC	2.0E-02	NC
Thallium, total	NCC	1.00	5.4E-04	NC	2.0E-01	NC
Vanadium, total	NCC	1.00	5.4E-04	NC	7.0E-03	NC
Zinc, total	NCC	1.00	5.4E-04	NC	3.0E-01	NC
					SUBTOTAL:	**4.5E-03**
					SITE RELATED RISK:	**4.4E-03**
					BACKGROUND RISK:	**6.7E-05**

TABLE 8.44-15 (CONT'D)

CALCULATION OF AVERAGE DAILY DOSES AND RISK ESTIMATES
FOR INCIDENTAL INGESTION OF SURFACE WATER - ALMY RESERVOIR
CURRENT CONDITIONS

RECEPTOR: Local Resident (Recreators)
CARCINOGENIC EFFECTS

Contaminants	Exposure Point Concentration (mg/l)	Oral x Absorption x Adjustment Factor	Receptor-Specific Exposure Factor (l-hr/cm-kg-day)	=	Lifetime Average Daily Dose (mg/kg-day)	x	Cancer Slope Factor (mg/kg-day)-¹	=	Incremental Lifetime Cancer Risk Estimate
Volatile Organic Compounds									
1,4-Dichlorobenzene	NCC	1.00	8.3E-05		NC		2.4E-02		NC
Benzene	NCC	1.00	8.3E-05		NC		2.9E-02		NC
Carbon Tetrachloride	NCC	1.00	8.3E-05		NC		1.3E-01		NC
Chlorobenzene	NCC	1.00	8.3E-05		NC		NA		NC
Chloroform	NCC	1.00	8.3E-05		NC		6.1E-03		NC
Tetrachloroethene	NCC	1.00	8.3E-05		NC		5.2E-02		NC
Trichloroethene	NCC	1.00	8.3E-05		NC		1.1E-02		NC
Vinyl Chloride	NCC	1.00	8.3E-05		NC		1.4E+00		NC
Semivolatile Organic Compounds									
Benzo(a)anthracene	NCC	1.00	8.3E-05		NC		7.3E-01		NC
Benzo(a)pyrene	NCC	1.00	8.3E-05		NC		7.3E+00		NC
Benzo(b)fluoranthene	NCC	1.00	8.3E-05		NC		7.3E-01		NC
Benzo(g,h,i)perylene	NCC	1.00	8.3E-05		NC		NA		NC
bis(2-Ethylhexyl)phthalate	NCC	1.00	8.3E-05		NC		1.4E-02		NC
Phenanthrene	NCC	1.00	8.3E-05		NC		NA		NC
Pesticides/PCBs									
Aldrin	NCC	1.00	8.3E-05		NC		1.7E+01		NC
Dieldrin	NCC	1.00	8.3E-05		NC		1.6E+01		NC
Metals									
Aluminum, total	NCC	1.00	8.3E-05		NC		NA		NC
Arsenic, total	2.1E-03	1.00	8.3E-05		1.8E-07		1.5E+00		2.6E-07
Barium, total	NCC	1.00	8.3E-05		NC		NA		NC
Beryllium, total	**2.5E-04**	**1.00**	**8.3E-05**		**2.1E-08**		**4.3E+00**		**8.9E-08**
Cadmium, total	NCC	1.00	8.3E-05		NC		NA		NC
Copper, total	NCC	1.00	8.3E-05		NC		NA		NC
Iron, total	NCC	1.00	8.3E-05		NC		NA		NC
Lead, total	NCC	1.00	8.3E-05		NC		NA		NC
Manganese, total	3.0E-02	1.00	8.3E-05		2.5E-06		NA		NC
Mercury, total	NCC	1.00	8.3E-05		NC		NA		NC
Nickel, total	NCC	1.00	8.3E-05		NC		NA		NC
Thallium, total	NCC	1.00	8.3E-05		NC		NA		NC
Vanadium, total	NCC	1.00	8.3E-05		NC		NA		NC
Zinc, total	NCC	1.00	8.3E-05		NC		NA		NC
							SUBTOTAL:		**3.5E-07**
							SITE RELATED RISK:		**2.6E-07**
							BACKGROUND RISK:		**8.9E-08**

Notes:

1. NA = Not Analyzed/Not Applicable; NC = Not Calculated; NSCC = Not a Study Chemical of Concern.
2. For constituents without an AAF value, a default value of 1.00 was used.

TABLE 8.44-16

CALCULATION OF AVERAGE DAILY DOSES AND RISK ESTIMATES
FOR DERMAL CONTACT WITH SURFACE WATER - ALMY RESERVOIR
FUTURE CONDITIONS

RECEPTOR: Local Resident (Recreators)
CHRONIC NONCARCINOGENIC EFFECTS

Contaminants	Exposure Point Concentration (mg/l)	x Dermal Absorption Adjustment Factor	x Permeability Coefficient (cm/hr)	Receptor-Specific Exposure Factor (l-hr/cm-kg-day)	= Chronic Average Daily Dose (mg/kg-day)	/ Oral Chronic Reference Dose (mg/kg-day)	= Hazard Index
Volatile Organic Compounds							
1,4-Dichlorobenzene	NCC	1.00	6.2E-02	7.8E-02	NC	NA	NC
Benzene	NCC	1.00	1.1E-01	7.8E-02	NC	1.0E-03	NC
Carbon Tetrachloride	NCC	1.00	2.2E-02	7.8E-02	NC	7.0E-04	NC
Chlorobenzene	NCC	1.00	4.1E-02	7.8E-02	NC	2.0E-02	NC
Chloroform	NCC	1.00	1.3E-01	7.8E-02	NC	1.0E-02	NC
Tetrachloroethene	NCC	1.00	3.7E-01	7.8E-02	NC	1.0E-02	NC
Trichloroethene	NCC	1.00	2.3E-01	7.8E-02	NC	2.0E-03	NC
Vinyl Chloride	NCC	1.00	7.3E-03	7.8E-02	NC	3.0E-03	NC
Semivolatile Organic Compounds							
Benzo(a)anthracene	NCC	1.00	8.1E-01	7.8E-02	NC	3.0E-02	NC
Benzo(a)pyrene	NCC	1.00	1.2E+00	7.8E-02	NC	3.0E-02	NC
Benzo(b)fluoranthene	NCC	1.00	1.2E+00	7.8E-02	NC	3.0E-02	NC
Benzo(g,h,i)perylene	NCC	1.00	1.7E+00	7.8E-02	NC	3.0E-02	NC
bis(2-Ethylhexyl)phthalate	1.7E-04	1.00	3.3E-02	7.8E-02	4.4E-07	2.0E-02	2.2E-05
Phenanthrene	NCC	1.00	2.3E-01	7.8E-02	NC	3.0E-02	NC
Pesticides/PCBs							
Aldrin	NCC	1.00	1.6E-03	7.8E-02	NC	3.0E-05	NC
Dieldrin	5.1E-07	1.00	1.6E-02	7.8E-02	6.4E-10	5.0E-05	1.3E-05
Metals							
Aluminum, total	2.2E-02	1.00	1.0E-03	7.8E-02	1.7E-06	1.0E+00	1.7E-06
Arsenic, total	NCC	1.00	1.0E-03	7.8E-02	NC	3.0E-04	NC
Barium, total	1.4E-03	1.00	1.0E-03	7.8E-02	1.1E-07	7.0E-02	1.6E-06
Beryllium, total	9.0E-05	1.00	1.0E-03	7.8E-02	7.0E-09	2.0E-03	3.5E-06
Cadmium, total	4.0E-05	1.00	1.0E-03	7.8E-02	3.1E-09	1.0E-03	3.1E-06
Copper, total	1.3E-04	1.00	1.0E-03	7.8E-02	1.0E-08	3.7E-02	2.7E-07
Iron, total	1.4E-01	1.00	1.0E-03	7.8E-02	1.1E-05	NA	NC
Lead, total	2.6E-04	1.00	1.0E-03	7.8E-02	2.0E-08	NA	NC
Manganese, total	5.8E-03	1.00	1.0E-03	7.8E-02	4.5E-07	7.0E-02	6.5E-06
Mercury, total	5.0E-05	1.00	1.0E-03	7.8E-02	3.9E-09	3.0E-04	1.3E-05
Nickel, total	2.0E-04	1.00	1.0E-03	7.8E-02	1.6E-08	2.0E-02	7.8E-07
Thallium, total	NCC	1.00	1.0E-03	7.8E-02	NC	2.0E-01	NC
Vanadium, total	NCC	1.00	1.0E-03	7.8E-02	NC	7.0E-03	NC
Zinc, total	NCC	1.00	1.0E-03	7.8E-02	NC	3.0E-01	NC
						SUBTOTAL:	6.5E-05
						SITE RELATED RISK:	6.2E-05
						BACKGROUND RISK:	3.5E-06

TABLE 8.44-16 (CONT'D)

CALCULATION OF AVERAGE DAILY DOSES AND RISK ESTIMATES
FOR DERMAL CONTACT WITH SURFACE WATER - ALMY RESERVOIR
FUTURE CONDITIONS

RECEPTOR: Local Resident (Recreators)
CARCINOGENIC EFFECTS

Contaminants	Exposure Point Concentration (mg/l)	x Dermal Absorption Adjustment Factor	x Permeability Coefficient (cm/hr)	Receptor-Specific Exposure Factor (l-hr/cm-kg-day)	= Lifetime Average Daily Dose (mg/kg-day)	x Oral Cancer Slope Factor (mg/kg-day)-1	= Incremental Lifetime Cancer Risk Estimate
Volatile Organic Compounds							
1,4-Dichlorobenzene	NCC	1.00	6.2E-02	2.4E-02	NC	2.4E-02	NC
Benzene	NCC	1.00	1.1E-01	2.4E-02	NC	2.9E-02	NC
Carbon Tetrachloride	NCC	1.00	2.2E-02	2.4E-02	NC	1.3E-01	NC
Chlorobenzene	NCC	1.00	4.1E-02	2.4E-02	NC	NA	NC
Chloroform	NCC	1.00	1.3E-01	2.4E-02	NC	6.1E-03	NC
Tetrachloroethene	NCC	1.00	3.7E-01	2.4E-02	NC	5.2E-02	NC
Trichloroethene	NCC	1.00	2.3E-01	2.4E-02	NC	1.1E-02	NC
Vinyl Chloride	NCC	1.00	7.3E-03	2.4E-02	NC	1.4E+00	NC
Semivolatile Organic Compounds							
Benzo(a)anthracene	NCC	1.00	8.1E-01	2.4E-02	NC	7.3E-01	NC
Benzo(a)pyrene	NCC	1.00	1.2E+00	2.4E-02	NC	7.3E+00	NC
Benzo(b)fluoranthene	NCC	1.00	1.2E+00	2.4E-02	NC	7.3E-01	NC
Benzo(g,h,i)perylene	NCC	1.00	1.7E+00	2.4E-02	NC	NA	NC
bis(2-Ethylhexyl)phthalate	1.7E-04	1.00	3.3E-02	2.4E-02	1.3E-07	1.4E-02	1.9E-09
Phenanthrene	NCC	1.00	2.3E-01	2.4E-02	NC	NA	NC
Pesticides/PCBs							
Aldrin	NCC	1.00	1.6E-03	2.4E-02	NC	1.7E+01	NC
Dieldrin	5.1E-07	1.00	1.6E-02	2.4E-02	2.0E-10	1.6E+01	3.1E-09
Metals							
Aluminum, total	2.2E-02	1.00	1.0E-03	2.4E-02	5.2E-07	NA	NC
Arsenic, total	NCC	1.00	1.0E-03	2.4E-02	NC	1.5E+00	NC
Barium, total	1.4E-03	1.00	1.0E-03	2.4E-02	3.4E-08	NA	NC
Beryllium, total	9.0E-05	1.00	1.0E-03	2.4E-02	2.2E-09	4.3E+00	9.3E-09
Cadmium, total	4.0E-05	1.00	1.0E-03	2.4E-02	9.6E-10	NA	NC
Copper, total	1.3E-04	1.00	1.0E-03	2.4E-02	3.1E-09	NA	NC
Iron, total	1.4E-01	1.00	1.0E-03	2.4E-02	3.3E-06	NA	NC
Lead, total	2.6E-04	1.00	1.0E-03	2.4E-02	6.2E-09	NA	NC
Manganese, total	5.8E-03	1.00	1.0E-03	2.4E-02	1.4E-07	NA	NC
Mercury, total	5.0E-05	1.00	1.0E-03	2.4E-02	1.2E-09	NA	NC
Nickel, total	2.0E-04	1.00	1.0E-03	2.4E-02	4.8E-09	NA	NC
Thallium, total	NCC	1.00	1.0E-03	2.4E-02	NC	NA	NC
Vanadium, total	NCC	1.00	1.0E-03	2.4E-02	NC	NA	NC
Zinc, total	NCC	1.00	1.0E-03	2.4E-02	NC	NA	NC
						SUBTOTAL:	1.4E-08
						SITE RELATED RISK:	5.0E-09
						BACKGROUND RISK:	9.3E-09

Notes:

1. NA = Not Analyzed/Not Applicable; NC = Not Calculated; NSCC = Not a Study Chemical of Concern.
2. For constituents without an AAF value, a default value of 1.00 was used.

TABLE 8.44-17

CALCULATION OF AVERAGE DAILY DOSES AND RISK ESTIMATES
FOR INCIDENTAL INGESTION OF SURFACE WATER - ALMY RESERVOIR
FUTURE CONDITIONS

RECEPTOR: Local Resident (Recreators)
CHRONIC NONCARCINOGENIC EFFECTS

Contaminants	Exposure Point Concentration (mg/l)	Oral x Absorption x Adjustment Factor	Receptor-Specific Exposure Factor (l/kg-day)	= Chronic Average Daily Dose (mg/kg-day)	/ Oral Chronic Reference Dose (mg/kg-day)	= Hazard Index
Volatile Organic Compounds						
1,4-Dichlorobenzene	NCC	1.00	5.4E-04	NC	NA	NC
Benzene	NCC	1.00	5.4E-04	NC	1.0E-03	NC
Carbon Tetrachloride	NCC	1.00	5.4E-04	NC	7.0E-04	NC
Chlorobenzene	NCC	1.00	5.4E-04	NC	2.0E-02	NC
Chloroform	NCC	1.00	5.4E-04	NC	1.0E-02	NC
Tetrachloroethene	NCC	1.00	5.4E-04	NC	1.0E-02	NC
Trichloroethene	NCC	1.00	5.4E-04	NC	2.0E-03	NC
Vinyl Chloride	NCC	1.00	5.4E-04	NC	3.0E-03	NC
Semivolatile Organic Compounds						
Benzo(a)anthracene	NCC	1.00	5.4E-04	NC	3.0E-02	NC
Benzo(a)pyrene	NCC	1.00	5.4E-04	NC	3.0E-02	NC
Benzo(b)fluoranthene	NCC	1.00	5.4E-04	NC	3.0E-02	NC
Benzo(g,h,i)perylene	NCC	1.00	5.4E-04	NC	3.0E-02	NC
bis(2-Ethylhexyl)phthalate	1.7E-04	1.00	5.4E-04	9.2E-08	2.0E-02	4.6E-06
Phenanthrene	NCC	1.00	5.4E-04	NC	3.0E-02	NC
Pesticides/PCBs						
Aldrin	NCC	1.00	5.4E-04	NC	3.0E-05	NC
Dieldrin	5.1E-07	1.00	5.4E-04	2.8E-10	5.0E-05	5.5E-06
Metals						
Aluminum, total	2.2E-02	1.00	5.4E-04	1.2E-05	1.0E+00	1.2E-05
Arsenic, total	NCC	1.00	5.4E-04	NC	3.0E-04	NC
Barium, total	1.4E-03	1.00	5.4E-04	7.6E-07	7.0E-02	1.1E-05
Beryllium, total	**9.0E-05**	**1.00**	**5.4E-04**	**4.9E-08**	**2.0E-03**	**2.4E-05**
Cadmium, total	4.0E-05	1.00	5.4E-04	2.2E-08	5.0E-04	4.3E-05
Copper, total	1.3E-04	1.00	5.4E-04	7.0E-08	3.7E-02	1.9E-06
Iron, total	1.4E-01	1.00	5.4E-04	7.4E-05	NA	NC
Lead, total	2.6E-04	1.00	5.4E-04	1.4E-07	NA	NC
Manganese, total	5.8E-03	1.00	5.4E-04	3.1E-06	2.4E-02	1.3E-04
Mercury, total	5.0E-05	1.00	5.4E-04	2.7E-08	3.0E-04	9.0E-05
Nickel, total	2.0E-04	1.00	5.4E-04	1.1E-07	2.0E-02	5.4E-06
Thallium, total	NCC	1.00	5.4E-04	NC	2.0E-01	NC
Vanadium, total	NCC	1.00	5.4E-04	NC	7.0E-03	NC
Zinc, total	NCC	1.00	5.4E-04	NC	3.0E-01	NC
					SUBTOTAL:	**3.3E-04**
					SITE RELATED RISK:	**3.0E-04**
					BACKGROUND RISK:	**2.4E-05**

TABLE 8.44-17 (CONT'D)

CALCULATION OF AVERAGE DAILY DOSES AND RISK ESTIMATES
FOR INCIDENTAL INGESTION OF SURFACE WATER - ALMY RESERVOIR
FUTURE CONDITIONS

RECEPTOR: Local Resident (Recreators)
CARCINOGENIC EFFECTS

Contaminants	Exposure Point Concentration (mg/l)	Oral x Absorption x Adjustment Factor	Receptor-Specific Exposure Factor (l-hr/cm-kg-day)	=	Lifetime Average Daily Dose (mg/kg-day)	x	Cancer Slope Factor (mg/kg-day)-1	=	Incremental Lifetime Cancer Risk Estimate
Volatile Organic Compounds									
1,4-Dichlorobenzene	NCC	1.00	8.3E-05		NC		2.4E-02		NC
Benzene	NCC	1.00	8.3E-05		NC		2.9E-02		NC
Carbon Tetrachloride	NCC	1.00	8.3E-05		NC		1.3E-01		NC
Chlorobenzene	NCC	1.00	8.3E-05		NC		NA		NC
Chloroform	NCC	1.00	8.3E-05		NC		6.1E-03		NC
Tetrachloroethene	NCC	1.00	8.3E-05		NC		5.2E-02		NC
Trichloroethene	NCC	1.00	8.3E-05		NC		1.1E-02		NC
Vinyl Chloride	NCC	1.00	8.3E-05		NC		1.4E+00		NC
Semivolatile Organic Compounds									
Benzo(a)anthracene	NCC	1.00	8.3E-05		NC		7.3E-01		NC
Benzo(a)pyrene	NCC	1.00	8.3E-05		NC		7.3E+00		NC
Benzo(b)fluoranthene	NCC	1.00	8.3E-05		NC		7.3E-01		NC
Benzo(g,h,i)perylene	NCC	1.00	8.3E-05		NC		NA		NC
bis(2-Ethylhexyl)phthalate	1.7E-04	1.00	8.3E-05		1.4E-08		1.4E-02		2.0E-10
Phenanthrene	NCC	1.00	8.3E-05		NC		NA		NC
Pesticides/PCBs									
Aldrin	NCC	1.00	8.3E-05		NC		1.7E+01		NC
Dieldrin	5.1E-07	1.00	8.3E-05		4.3E-11		1.6E+01		6.8E-10
Metals									
Aluminum, total	2.2E-02	1.00	8.3E-05		1.8E-06		NA		NC
Arsenic, total	NCC	1.00	8.3E-05		NC		1.5E+00		NC
Barium, total	1.4E-03	1.00	8.3E-05		1.2E-07		NA		NC
Beryllium, total	**9.0E-05**	**1.00**	**8.3E-05**		**7.5E-09**		**4.3E+00**		**3.2E-08**
Cadmium, total	4.0E-05	1.00	8.3E-05		3.3E-09		NA		NC
Copper, total	1.3E-04	1.00	8.3E-05		1.1E-08		NA		NC
Iron, total	1.4E-01	1.00	8.3E-05		1.1E-05		NA		NC
Lead, total	2.6E-04	1.00	8.3E-05		2.2E-08		NA		NC
Manganese, total	5.8E-03	1.00	8.3E-05		4.8E-07		NA		NC
Mercury, total	5.0E-05	1.00	8.3E-05		4.2E-09		NA		NC
Nickel, total	2.0E-04	1.00	8.3E-05		1.7E-08		NA		NC
Thallium, total	NCC	1.00	8.3E-05		NC		NA		NC
Vanadium, total	NCC	1.00	8.3E-05		NC		NA		NC
Zinc, total	NCC	1.00	8.3E-05		NC		NA		NC
							SUBTOTAL:		**3.3E-08**
							SITE RELATED RISK:		**8.8E-10**
							BACKGROUND RISK:		**3.2E-08**

Notes:

1. NA = Not Analyzed/Not Applicable; NC = Not Calculated; NSCC = Not a Study Chemical of Concern.
2. For constituents without an AAF value, a default value of 1.00 was used.

TABLE 8.44-18

CALCULATION OF AVERAGE DAILY DOSES AND RISK ESTIMATES
FOR DERMAL CONTACT WITH SEDIMENT - UPPER SIMMONS

RECEPTOR: Local Resident (Recreators)
CHRONIC NONCARCINOGENIC EFFECTS

Contaminants	Exposure Point Concentration (mg/kg)	x Dermal Absorption x Adjustment Factor	Receptor-Specific Exposure Factor (kg/kg-day)	= Chronic Average Daily Dose (mg/kg-day)	/ Oral Chronic Reference Dose (mg/kg-day)	= Hazard Index
Volatile Organic Compounds						
1,4-Dichlorobenzene	NCC	NA	4.3E-05	NC	NA	NC
Benzene	NCC	NA	4.3E-05	NC	1.0E-03	NC
Carbon Tetrachloride	NCC	NA	4.3E-05	NC	7.0E-04	NC
Chlorobenzene	NCC	NA	4.3E-05	NC	2.0E-02	NC
Chloroform	NCC	NA	4.3E-05	NC	1.0E-02	NC
Tetrachloroethene	NCC	NA	4.3E-05	NC	1.0E-02	NC
Trichloroethene	NCC	NA	4.3E-05	NC	2.0E-03	NC
Vinyl Chloride	NCC	NA	4.3E-05	NC	3.0E-03	NC
Semivolatile Organic Compounds						
Benzo(a)anthracene	7.8E-01	0.13	4.3E-05	4.3E-06	3.0E-02	1.4E-04
Benzo(a)pyrene	5.7E-01	0.13	4.3E-05	3.2E-06	3.0E-02	1.1E-04
Benzo(b)fluoranthene	1.1E+00	0.13	4.3E-05	6.1E-06	3.0E-02	2.0E-04
Benzo(g,h,i)perylene	2.1E-01	0.10	4.3E-05	8.9E-07	3.0E-02	3.0E-05
bis(2-Ethylhexyl)phthalate	NCC	0.10	4.3E-05	NC	2.0E-02	NC
Phenanthrene	1.0E+00	0.10	4.3E-05	4.3E-06	3.0E-02	1.4E-04
Pesticides/PCBs						
Aldrin	NCC	NA	4.3E-05	NC	3.0E-05	NC
Dieldrin	NCC	0.25	4.3E-05	NC	5.0E-05	NC
Metals						
Aluminum, total	**1.4E+04**	**0.01**	**4.3E-05**	**6.0E-03**	**1.0E+00**	**6.0E-03**
Arsenic, total	**1.4E+01**	**0.03**	**4.3E-05**	**1.8E-05**	**3.0E-04**	**5.9E-02**
Barium, total	NCC	0.01	4.3E-05	NC	7.0E-02	NC
Beryllium, total	**1.9E+01**	**0.01**	**4.3E-05**	**8.2E-06**	**2.0E-03**	**4.1E-03**
Cadmium, total	**2.6E+00**	**0.001**	**4.3E-05**	**1.1E-07**	**1.0E-03**	**1.1E-04**
Copper, total	NCC	0.02	4.3E-05	NC	3.7E-02	NC
Iron, total	NCC	0.01	4.3E-05	NC	NA	NC
Lead, total	**5.3E+01**	**1.00**	**4.3E-05**	**2.2E-03**	NA	NC
Manganese, total	6.4E+02	0.01	4.3E-05	2.7E-04	7.0E-02	3.9E-03
Mercury, total	NCC	0.01	4.3E-05	NC	3.0E-04	NC
Nickel, total	NCC	0.01	4.3E-05	NC	2.0E-02	NC
Thallium, total	NCC	0.01	4.3E-05	NC	2.0E-01	NC
Vanadium, total	**2.9E+01**	**0.01**	**4.3E-05**	**1.2E-05**	**7.0E-03**	**1.8E-03**
Zinc, total	NCC	0.01	4.3E-05	NC	3.0E-01	NC
					SUBTOTAL:	**7.5E-02**
					SITE RELATED RISK:	**4.5E-03**
					BACKGROUND RISK:	**7.1E-02**

TABLE 8.44-18 (CONT'D)

CALCULATION OF AVERAGE DAILY DOSES AND RISK ESTIMATES
FOR DERMAL CONTACT WITH SEDIMENT - UPPER SIMMONS

RECEPTOR: Local Resident (Recreators)
CARCINOGENIC EFFECTS

Contaminants	Exposure Point Concentration (mg/kg)	x Dermal Absorption Adjustment Factor	x Receptor-Specific Exposure Factor (kg/kg-day)	= Lifetime Average Daily Dose (mg/kg-day)	x Oral Cancer Slope Factor (mg/kg-day)-1	= Incremental Lifetime Cancer Risk Estimate
Volatile Organic Compounds						
1,4-Dichlorobenzene	NCC	NA	1.1E-05	NC	2.4E-02	NC
Benzene	NCC	NA	1.1E-05	NC	2.9E-02	NC
Carbon Tetrachloride	NCC	NA	1.1E-05	NC	1.3E-01	NC
Chlorobenzene	NCC	NA	1.1E-05	NC	NA	NC
Chloroform	NCC	NA	1.1E-05	NC	6.1E-03	NC
Tetrachloroethene	NCC	NA	1.1E-05	NC	5.2E-02	NC
Trichloroethene	NCC	NA	1.1E-05	NC	1.1E-02	NC
Vinyl Chloride	NCC	NA	1.1E-05	NC	1.4E+00	NC
Semivolatile Organic Compounds						
Benzo(a)anthracene	7.8E-01	0.13	1.1E-05	1.1E-06	7.3E-01	8.0E-07
Benzo(a)pyrene	5.7E-01	0.13	1.1E-05	8.0E-07	7.3E+00	5.9E-06
Benzo(b)fluoranthene	1.1E+00	0.13	1.1E-05	1.6E-06	7.3E-01	1.1E-06
Benzo(g,h,i)perylene	2.1E-01	NA	1.1E-05	NC	NA	NC
bis(2-Ethylhexyl)phthalate	NCC	0.10	1.1E-05	NC	1.4E-02	NC
Phenanthrene	1.0E+00	NA	1.1E-05	NC	NA	NC
Pesticides/PCBs						
Aldrin	NCC	NA	1.1E-05	NC	1.7E+01	NC
Dieldrin	NCC	0.25	1.1E-05	NC	1.6E+01	NC
Metals						
Aluminum, total	1.4E+04	NA	1.1E-05	NC	NA	NC
Arsenic, total	1.4E+01	0.03	1.1E-05	4.5E-06	1.5E+00	6.7E-06
Barium, total	NCC	NA	1.1E-05	NC	NA	NC
Beryllium, total	1.9E+01	0.01	1.1E-05	2.1E-06	4.3E+00	9.0E-06
Cadmium, total	2.6E+00	1.00	1.1E-05	2.8E-05	NA	NC
Copper, total	NCC	NA	1.1E-05	NC	NA	NC
Iron, total	NCC	NA	1.1E-05	NC	NA	NC
Lead, total	5.3E+01	NA	1.1E-05	NC	NA	NC
Manganese, total	6.4E+02	NA	1.1E-05	NC	NA	NC
Mercury, total	NCC	NA	1.1E-05	NC	NA	NC
Nickel, total	NCC	NA	1.1E-05	NC	NA	NC
Thallium, total	NCC	NA	1.1E-05	NC	NA	NC
Vanadium, total	2.9E+01	NA	1.1E-05	NC	NA	NC
Zinc, total	NCC	NA	1.1E-05	NC	NA	NC
					SUBTOTAL:	2.4E-05
					SITE RELATED RISK:	7.8E-06
					BACKGROUND RISK:	1.6E-05

Notes:

1. NA = Not Analyzed/Not Applicable; NC = Not Calculated; NSCC = Not a Study Chemical of Concern.
2. For constituents without an AAF value, a default value of 1.00 was used.

TABLE 8.44-19

CALCULATION OF AVERAGE DAILY DOSES AND RISK ESTIMATES
FOR INCIDENTAL INGESTION OF SEDIMENT - UPPER SIMMONS

RECEPTOR: Local Resident (Recreators)
CHRONIC NONCARCINOGENIC EFFECTS

Contaminants	Exposure Point Concentration (mg/kg)	x Oral Absorption Adjustment Factor	x Receptor-Specific Exposure Factor (kg/kg-day)	= Chronic Average Daily Dose (mg/kg-day)	/ Oral Chronic Reference Dose (mg/kg-day)	= Hazard Index
Volatile Organic Compounds						
1,4-Dichlorobenzene	NCC	1.00	1.9E-06	NC	NA	NC
Benzene	NCC	1.00	1.9E-06	NC	1.0E-03	NC
Carbon Tetrachloride	NCC	1.00	1.9E-06	NC	7.0E-04	NC
Chlorobenzene	NCC	1.00	1.9E-06	NC	2.0E-02	NC
Chloroform	NCC	1.00	1.9E-06	NC	1.0E-02	NC
Tetrachloroethene	NCC	1.00	1.9E-06	NC	1.0E-02	NC
Trichloroethene	NCC	1.00	1.9E-06	NC	2.0E-03	NC
Vinyl Chloride	NCC	1.00	1.9E-06	NC	3.0E-03	NC
Semivolatile Organic Compounds						
Benzo(a)anthracene	7.8E-01	1.00	1.9E-06	1.4E-06	3.0E-02	4.8E-05
Benzo(a)pyrene	5.7E-01	1.00	1.9E-06	1.1E-06	3.0E-02	3.5E-05
Benzo(b)fluoranthene	1.1E+00	1.00	1.9E-06	2.0E-06	3.0E-02	6.8E-05
Benzo(g,h,i)perylene	2.1E-01	1.00	1.9E-06	3.9E-07	3.0E-02	1.3E-05
bis(2-Ethylhexyl)phthalate	NCC	1.00	1.9E-06	NC	2.0E-02	NC
Phenanthrene	1.0E+00	1.00	1.9E-06	1.9E-06	3.0E-02	6.2E-05
Pesticides/PCBs						
Aldrin	NCC	1.00	1.9E-06	NC	3.0E-05	NC
Dieldrin	NCC	1.00	1.9E-06	NC	5.0E-05	NC
Metals						
Aluminum, total	**1.4E+04**	**1.00**	**1.9E-06**	**2.6E-02**	**1.0E+00**	**2.6E-02**
Arsenic, total	**1.4E+01**	**0.48**	**1.9E-06**	**1.2E-05**	**3.0E-04**	**4.1E-02**
Barium, total	NCC	1.00	1.9E-06	NC	7.0E-02	NC
Beryllium, total	**1.9E+01**	**1.00**	**1.9E-06**	**3.6E-05**	**2.0E-03**	**1.8E-02**
Cadmium, total	**2.6E+00**	**1.00**	**1.9E-06**	**4.8E-06**	**1.0E-03**	**4.8E-03**
Copper, total	NCC	1.00	1.9E-06	NC	3.7E-02	NC
Iron, total	NCC	1.00	1.9E-06	NC	NA	NC
Lead, total	**5.3E+01**	**1.00**	**1.9E-06**	**9.7E-05**	**NA**	**NC**
Manganese, total	6.4E+02	1.00	1.9E-06	1.2E-03	7.0E-02	1.7E-02
Mercury, total	NCC	0.50	1.9E-06	NC	3.0E-04	NC
Nickel, total	NCC	1.00	1.9E-06	NC	2.0E-02	NC
Thallium, total	NCC	1.00	1.9E-06	NC	2.0E-01	NC
Vanadium, total	**2.9E+01**	**1.00**	**1.9E-06**	**5.4E-05**	**7.0E-03**	**7.8E-03**
Zinc, total	NCC	1.00	1.9E-06	NC	3.0E-01	NC
					SUBTOTAL:	**1.1E-01**
					SITE RELATED RISK:	**1.7E-02**
					BACKGROUND RISK:	**9.8E-02**

TABLE 8.44-19 (CONT'D)

CALCULATION OF AVERAGE DAILY DOSES AND RISK ESTIMATES
FOR INCIDENTAL INGESTION OF SEDIMENT - UPPER SIMMONS

RECEPTOR: Local Resident (Recreators)
CARCINOGENIC EFFECTS

Contaminants	Exposure Point Concentration (mg/kg)	x Oral Absorption Adjustment Factor	x Receptor-Specific Exposure Factor (kg/kg-day)	= Lifetime Average Daily Dose (mg/kg-day)	x Oral Cancer Slope Factor (mg/kg-day)-1	= Incremental Lifetime Cancer Risk Estimate
Volatile Organic Compounds						
1,4-Dichlorobenzene	NCC	1.00	1.9E-07	NC	2.4E-02	NC
Benzene	NCC	1.00	1.9E-07	NC	2.9E-02	NC
Carbon Tetrachloride	NCC	1.00	1.9E-07	NC	1.3E-01	NC
Chlorobenzene	NCC	1.00	1.9E-07	NC	NA	NC
Chloroform	NCC	1.00	1.9E-07	NC	6.1E-03	NC
Tetrachloroethene	NCC	1.00	1.9E-07	NC	5.2E-02	NC
Trichloroethene	NCC	1.00	1.9E-07	NC	1.1E-02	NC
Vinyl Chloride	NCC	1.00	1.9E-07	NC	1.4E+00	NC
Semivolatile Organic Compounds						
Benzo(a)anthracene	7.8E-01	1.00	1.9E-07	1.5E-07	7.3E-01	1.1E-07
Benzo(a)pyrene	5.7E-01	1.00	1.9E-07	1.1E-07	7.3E+00	8.1E-07
Benzo(b)fluoranthene	1.1E+00	1.00	1.9E-07	2.1E-07	7.3E-01	1.6E-07
Benzo(g,h,i)perylene	2.1E-01	1.00	1.9E-07	4.1E-08	NA	NC
bis(2-Ethylhexyl)phthalate	NCC	1.00	1.9E-07	NC	1.4E-02	NC
Phenanthrene	1.0E+00	1.00	1.9E-07	1.9E-07	NA	NC
Pesticides/PCBs						
Aldrin	NCC	1.00	1.9E-07	NC	1.7E+01	NC
Dieldrin	NCC	1.00	1.9E-07	NC	1.6E+01	NC
Metals						
Aluminum, total	1.4E+04	1.00	1.9E-07	2.8E-03	NA	NC
Arsenic, total	1.4E+01	0.48	1.9E-07	1.3E-06	1.5E+00	1.9E-06
Barium, total	NCC	1.00	1.9E-07	NC	NA	NC
Beryllium, total	1.9E+01	1.00	1.9E-07	3.8E-06	4.3E+00	1.6E-05
Cadmium, total	2.6E+00	1.00	1.9E-07	5.0E-07	NA	NC
Copper, total	NCC	1.00	1.9E-07	NC	NA	NC
Iron, total	NCC	1.00	1.9E-07	NC	NA	NC
Lead, total	5.3E+01	1.00	1.9E-07	1.0E-05	NA	NC
Manganese, total	6.4E+02	1.00	1.9E-07	1.3E-04	NA	NC
Mercury, total	NCC	1.00	1.9E-07	NC	NA	NC
Nickel, total	NCC	1.00	1.9E-07	NC	NA	NC
Thallium, total	NCC	1.00	1.9E-07	NC	NA	NC
Vanadium, total	2.9E+01	1.00	1.9E-07	5.7E-06	NA	NC
Zinc, total	NCC	1.00	1.9E-07	NC	NA	NC
					SUBTOTAL:	1.9E-05
					SITE RELATED RISK:	1.1E-06
					BACKGROUND RISK:	1.8E-05

Notes:

1. NA = Not Analyzed/Not Applicable; NC = Not Calculated; NSCC = Not a Study Chemical of Concern.
2. For constituents without an AAF value, a default value of 1.00 was used.

TABLE 8.44-20

CALCULATION OF AVERAGE DAILY DOSES AND RISK ESTIMATES
FOR DERMAL CONTACT WITH SURFACE WATER - UPPER SIMMONS
CURRENT CONDITIONS

RECEPTOR: Local Resident (Recreators)
CHRONIC NONCARCINOGENIC EFFECTS

Contaminants	Exposure Point Concentration (mg/l)	x Dermal Absorption Adjustment Factor	x Permeability Coefficient (cm/hr)	x Receptor-Specific Exposure Factor (l-hr/cm-kg-day)	= Chronic Average Daily Dose (mg/kg-day)	/ Oral Chronic Reference Dose (mg/kg-day)	= Hazard Index
Volatile Organic Compounds							
1,4-Dichlorobenzene	NCC	1.00	6.2E-02	7.8E-02	NC	NA	NC
Benzene	NCC	1.00	1.1E-01	7.8E-02	NC	1.0E-03	NC
Carbon Tetrachloride	NCC	1.00	2.2E-02	7.8E-02	NC	7.0E-04	NC
Chlorobenzene	NCC	1.00	4.1E-02	7.8E-02	NC	2.0E-02	NC
Chloroform	NCC	1.00	1.3E-01	7.8E-02	NC	1.0E-02	NC
Tetrachloroethene	5.5E-04	1.00	3.7E-01	7.8E-02	1.6E-05	1.0E-02	1.6E-03
Trichloroethene	NCC	1.00	2.3E-01	7.8E-02	NC	2.0E-03	NC
Vinyl Chloride	NCC	1.00	7.3E-03	7.8E-02	NC	3.0E-03	NC
Semivolatile Organic Compounds							
Benzo(a)anthracene	NCC	1.00	8.1E-01	7.8E-02	NC	3.0E-02	NC
Benzo(a)pyrene	NCC	1.00	1.2E+00	7.8E-02	NC	3.0E-02	NC
Benzo(b)fluoranthene	NCC	1.00	1.2E+00	7.8E-02	NC	3.0E-02	NC
Benzo(g,h,i)perylene	NCC	1.00	1.7E+00	7.8E-02	NC	3.0E-02	NC
bis(2-Ethylhexyl)phthalate	NCC	1.00	3.3E-02	7.8E-02	NC	2.0E-02	NC
Phenanthrene	NCC	1.00	2.3E-01	7.8E-02	NC	3.0E-02	NC
Pesticides/PCBs							
Aldrin	NCC	1.00	1.6E-03	7.8E-02	NC	3.0E-05	NC
Dieldrin	NCC	1.00	1.6E-02	7.8E-02	NC	5.0E-05	NC
Metals							
Aluminum, total	NCC	1.00	1.0E-03	7.8E-02	NC	1.0E+00	NC
Arsenic, total	1.3E-03	1.00	1.0E-03	7.8E-02	1.0E-07	3.0E-04	3.5E-04
Barium, total	NCC	1.00	1.0E-03	7.8E-02	NC	7.0E-02	NC
Beryllium, total	9.1E-04	1.00	1.0E-03	7.8E-02	7.1E-08	2.0E-03	3.6E-05
Cadmium, total	NCC	1.00	1.0E-03	7.8E-02	NC	1.0E-03	NC
Copper, total	NCC	1.00	1.0E-03	7.8E-02	NC	3.7E-02	NC
Iron, total	NCC	1.00	1.0E-03	7.8E-02	NC	NA	NC
Lead, total	NCC	1.00	1.0E-03	7.8E-02	NC	NA	NC
Manganese, total	6.3E+00	1.00	1.0E-03	7.8E-02	4.9E-04	7.0E-02	7.0E-03
Mercury, total	NCC	1.00	1.0E-03	7.8E-02	NC	3.0E-04	NC
Nickel, total	NCC	1.00	1.0E-03	7.8E-02	NC	2.0E-02	NC
Thallium, total	1.1E-02	1.00	1.0E-03	7.8E-02	8.4E-07	2.0E-01	4.2E-06
Vanadium, total	NCC	1.00	1.0E-03	7.8E-02	NC	7.0E-03	NC
Zinc, total	NCC	1.00	1.0E-03	7.8E-02	NC	3.0E-01	NC
						SUBTOTAL:	9.0E-03
						SITE RELATED RISK:	9.0E-03
						BACKGROUND RISK:	3.6E-05

TABLE 8.44-20 (CONT'D)

CALCULATION OF AVERAGE DAILY DOSES AND RISK ESTIMATES
FOR DERMAL CONTACT WITH SURFACE WATER - UPPER SIMMONS
CURRENT CONDITIONS

RECEPTOR: Local Resident (Recreators)
CARCINOGENIC EFFECTS

Contaminants	Exposure Point Concentration (mg/l)	x Dermal Absorption Adjustment Factor	x Permeability Coefficient (cm/hr)	x Receptor-Specific Exposure Factor (l-hr/cm-kg-day)	= Lifetime Average Daily Dose (mg/kg-day)	x Oral Cancer Slope Factor (mg/kg-day)-[1]	= Incremental Lifetime Cancer Risk Estimate
Volatile Organic Compounds							
1,4-Dichlorobenzene	NCC	1.00	6.2E-02	2.4E-02	NC	2.4E-02	NC
Benzene	NCC	1.00	1.1E-01	2.4E-02	NC	2.9E-02	NC
Carbon Tetrachloride	NCC	1.00	2.2E-02	2.4E-02	NC	1.3E-01	NC
Chlorobenzene	NCC	1.00	4.1E-02	2.4E-02	NC	NA	NC
Chloroform	NCC	1.00	1.3E-01	2.4E-02	NC	6.1E-03	NC
Tetrachloroethene	5.5E-04	1.00	3.7E-01	2.4E-02	4.9E-06	5.2E-02	2.5E-07
Trichloroethene	NCC	1.00	2.3E-01	2.4E-02	NC	1.1E-02	NC
Vinyl Chloride	NCC	1.00	7.3E-03	2.4E-02	NC	1.4E+00	NC
Semivolatile Organic Compounds							
Benzo(a)anthracene	NCC	1.00	8.1E-01	2.4E-02	NC	7.3E-01	NC
Benzo(a)pyrene	NCC	1.00	1.2E+00	2.4E-02	NC	7.3E+00	NC
Benzo(b)fluoranthene	NCC	1.00	1.2E+00	2.4E-02	NC	7.3E-01	NC
Benzo(g,h,i)perylene	NCC	1.00	1.7E+00	2.4E-02	NC	NA	NC
bis(2-Ethylhexyl)phthalate	NCC	1.00	3.3E-02	2.4E-02	NC	1.4E-02	NC
Phenanthrene	NCC	1.00	2.3E-01	2.4E-02	NC	NA	NC
Pesticides/PCBs							
Aldrin	NCC	1.00	1.6E-03	2.4E-02	NC	1.7E+01	NC
Dieldrin	NCC	1.00	1.6E-02	2.4E-02	NC	1.6E+01	NC
Metals							
Aluminum, total	NCC	1.00	1.0E-03	2.4E-02	NC	NA	NC
Arsenic, total	1.3E-03	1.00	1.0E-03	2.4E-02	3.2E-08	1.5E+00	4.8E-08
Barium, total	NCC	1.00	1.0E-03	2.4E-02	NC	NA	NC
Beryllium, total	**9.1E-04**	**1.00**	**1.0E-03**	**2.4E-02**	**2.2E-08**	**4.3E+00**	**9.4E-08**
Cadmium, total	NCC	1.00	1.0E-03	2.4E-02	NC	NA	NC
Copper, total	NCC	1.00	1.0E-03	2.4E-02	NC	NA	NC
Iron, total	NCC	1.00	1.0E-03	2.4E-02	NC	NA	NC
Lead, total	NCC	1.00	1.0E-03	2.4E-02	NC	NA	NC
Manganese, total	6.3E+00	1.00	1.0E-03	2.4E-02	1.5E-04	NA	NC
Mercury, total	NCC	1.00	1.0E-03	2.4E-02	NC	NA	NC
Nickel, total	NCC	1.00	1.0E-03	2.4E-02	NC	NA	NC
Thallium, total	1.1E-02	1.00	1.0E-03	2.4E-02	2.6E-07	NA	NC
Vanadium, total	NCC	1.00	1.0E-03	2.4E-02	NC	NA	NC
Zinc, total	NCC	1.00	1.0E-03	2.4E-02	NC	NA	NC
						SUBTOTAL:	**4.0E-07**
						SITE RELATED RISK:	**3.0E-07**
						BACKGROUND RISK:	**9.4E-08**

Notes:

1. NA = Not Analyzed/Not Applicable; NC = Not Calculated; NSCC = Not a Study Chemical of Concern.
2. For constituents without an AAF value, a default value of 1.00 was used.

TABLE 8.44-21

CALCULATION OF AVERAGE DAILY DOSES AND RISK ESTIMATES
FOR INCIDENTAL INGESTION OF SURFACE WATER - UPPER SIMMONS
CURRENT CONDITIONS

RECEPTOR: Local Resident (Recreators)
CHRONIC NONCARCINOGENIC EFFECTS

Contaminants	Exposure Point Concentration (mg/l)	Oral x Absorption x Adjustment Factor	Receptor-Specific Exposure Factor (l/kg-day)	= Chronic Average Daily Dose (mg/kg-day)	/ Oral Chronic Reference Dose (mg/kg-day)	= Hazard Index
Volatile Organic Compounds						
1,4-Dichlorobenzene	NCC	1.00	5.4E-04	NC	NA	NC
Benzene	NCC	1.00	5.4E-04	NC	1.0E-03	NC
Carbon Tetrachloride	NCC	1.00	5.4E-04	NC	7.0E-04	NC
Chlorobenzene	NCC	1.00	5.4E-04	NC	2.0E-02	NC
Chloroform	NCC	1.00	5.4E-04	NC	1.0E-02	NC
Tetrachloroethene	5.5E-04	1.00	5.4E-04	3.0E-07	1.0E-02	3.0E-05
Trichloroethene	NCC	1.00	5.4E-04	NC	2.0E-03	NC
Vinyl Chloride	NCC	1.00	5.4E-04	NC	3.0E-03	NC
Semivolatile Organic Compounds						
Benzo(a)anthracene	NCC	1.00	5.4E-04	NC	3.0E-02	NC
Benzo(a)pyrene	NCC	1.00	5.4E-04	NC	3.0E-02	NC
Benzo(b)fluoranthene	NCC	1.00	5.4E-04	NC	3.0E-02	NC
Benzo(g,h,i)perylene	NCC	1.00	5.4E-04	NC	3.0E-02	NC
bis(2-Ethylhexyl)phthalate	NCC	1.00	5.4E-04	NC	2.0E-02	NC
Phenanthrene	NCC	1.00	5.4E-04	NC	3.0E-02	NC
Pesticides/PCBs						
Aldrin	NCC	1.00	5.4E-04	NC	3.0E-05	NC
Dieldrin	NCC	1.00	5.4E-04	NC	5.0E-05	NC
Metals						
Aluminum, total	NCC	1.00	5.4E-04	NC	1.0E+00	NC
Arsenic, total	1.3E-03	1.00	5.4E-04	7.2E-07	3.0E-04	2.4E-03
Barium, total	NCC	1.00	5.4E-04	NC	7.0E-02	NC
Beryllium, total	**9.1E-04**	**1.00**	**5.4E-04**	**4.9E-07**	**2.0E-03**	**2.5E-04**
Cadmium, total	NCC	1.00	5.4E-04	NC	5.0E-04	NC
Copper, total	NCC	1.00	5.4E-04	NC	3.7E-02	NC
Iron, total	NCC	1.00	5.4E-04	NC	NA	NC
Lead, total	NCC	1.00	5.4E-04	NC	NA	NC
Manganese, total	6.3E+00	1.00	5.4E-04	3.4E-03	2.4E-02	1.4E-01
Mercury, total	NCC	1.00	5.4E-04	NC	3.0E-04	NC
Nickel, total	NCC	1.00	5.4E-04	NC	2.0E-02	NC
Thallium, total	1.1E-02	1.00	5.4E-04	5.8E-06	2.0E-01	2.9E-05
Vanadium, total	NCC	1.00	5.4E-04	NC	7.0E-03	NC
Zinc, total	NCC	1.00	5.4E-04	NC	3.0E-01	NC
					SUBTOTAL:	**1.4E-01**
					SITE RELATED RISK:	**1.4E-01**
					BACKGROUND RISK:	**2.5E-04**

TABLE 8.44-21 (CONT'D)

CALCULATION OF AVERAGE DAILY DOSES AND RISK ESTIMATES
FOR INCIDENTAL INGESTION OF SURFACE WATER - UPPER SIMMONS
CURRENT CONDITIONS

RECEPTOR: Local Resident (Recreators)
CARCINOGENIC EFFECTS

Contaminants	Exposure Point Concentration (mg/l)	Oral x Absorption x Adjustment Factor	Receptor-Specific Exposure Factor (l-hr/cm-kg-day)	=	Lifetime Average Daily Dose (mg/kg-day)	x	Cancer Slope Factor (mg/kg-day)-¹	=	Incremental Lifetime Cancer Risk Estimate
Volatile Organic Compounds									
1,4-Dichlorobenzene	NCC	1.00	8.3E-05		NC		2.4E-02		NC
Benzene	NCC	1.00	8.3E-05		NC		2.9E-02		NC
Carbon Tetrachloride	NCC	1.00	8.3E-05		NC		1.3E-01		NC
Chlorobenzene	NCC	1.00	8.3E-05		NC		NA		NC
Chloroform	NCC	1.00	8.3E-05		NC		6.1E-03		NC
Tetrachloroethene	5.5E-04	1.00	8.3E-05		4.6E-08		5.2E-02		2.4E-09
Trichloroethene	NCC	1.00	8.3E-05		NC		1.1E-02		NC
Vinyl Chloride	NCC	1.00	8.3E-05		NC		1.4E+00		NC
Semivolatile Organic Compounds									
Benzo(a)anthracene	NCC	1.00	8.3E-05		NC		7.3E-01		NC
Benzo(a)pyrene	NCC	1.00	8.3E-05		NC		7.3E+00		NC
Benzo(b)fluoranthene	NCC	1.00	8.3E-05		NC		7.3E-01		NC
Benzo(g,h,i)perylene	NCC	1.00	8.3E-05		NC		NA		NC
bis(2-Ethylhexyl)phthalate	NCC	1.00	8.3E-05		NC		1.4E-02		NC
Phenanthrene	NCC	1.00	8.3E-05		NC		NA		NC
Pesticides/PCBs									
Aldrin	NCC	1.00	8.3E-05		NC		1.7E+01		NC
Dieldrin	NCC	1.00	8.3E-05		NC		1.6E+01		NC
Metals									
Aluminum, total	NCC	1.00	8.3E-05		NC		NA		NC
Arsenic, total	1.3E-03	1.00	8.3E-05		1.1E-07		1.5E+00		1.7E-07
Barium, total	NCC	1.00	8.3E-05		NC		NA		NC
Beryllium, total	**9.1E-04**	**1.00**	**8.3E-05**		**7.6E-08**		**4.3E+00**		**3.3E-07**
Cadmium, total	NCC	1.00	8.3E-05		NC		NA		NC
Copper, total	NCC	1.00	8.3E-05		NC		NA		NC
Iron, total	NCC	1.00	8.3E-05		NC		NA		NC
Lead, total	NCC	1.00	8.3E-05		NC		NA		NC
Manganese, total	6.3E+00	1.00	8.3E-05		5.2E-04		NA		NC
Mercury, total	NCC	1.00	8.3E-05		NC		NA		NC
Nickel, total	NCC	1.00	8.3E-05		NC		NA		NC
Thallium, total	1.1E-02	1.00	8.3E-05		9.0E-07		NA		NC
Vanadium, total	NCC	1.00	8.3E-05		NC		NA		NC
Zinc, total	NCC	1.00	8.3E-05		NC		NA		NC
							SUBTOTAL:		**5.0E-07**
							SITE RELATED RISK:		**1.7E-07**
							BACKGROUND RISK:		**3.3E-07**

Notes:

1. NA = Not Analyzed/Not Applicable; NC = Not Calculated; NSCC = Not a Study Chemical of Concern.
2. For constituents without an AAF value, a default value of 1.00 was used.

TABLE 8.44-22

CALCULATION OF AVERAGE DAILY DOSES AND RISK ESTIMATES
FOR DERMAL CONTACT WITH SURFACE WATER - UPPER SIMMONS
FUTURE CONDITIONS

RECEPTOR: Local Resident (Recreators)
CHRONIC NONCARCINOGENIC EFFECTS

Contaminants	Exposure Point Concentration (mg/l)	x Dermal Absorption Adjustment Factor	x Permeability Coefficient (cm/hr)	x Receptor-Specific Exposure Factor (l-hr/cm-kg-day)	= Chronic Average Daily Dose (mg/kg-day)	/ Oral Chronic Reference Dose (mg/kg-day)	= Hazard Index
Volatile Organic Compounds							
1,4-Dichlorobenzene	NCC	1.00	6.2E-02	7.8E-02	NC	NA	NC
Benzene	NCC	1.00	1.1E-01	7.8E-02	NC	1.0E-03	NC
Carbon Tetrachloride	NCC	1.00	2.2E-02	7.8E-02	NC	7.0E-04	NC
Chlorobenzene	NCC	1.00	4.1E-02	7.8E-02	NC	2.0E-02	NC
Chloroform	NCC	1.00	1.3E-01	7.8E-02	NC	1.0E-02	NC
Tetrachloroethene	NCC	1.00	3.7E-01	7.8E-02	NC	1.0E-02	NC
Trichloroethene	NCC	1.00	2.3E-01	7.8E-02	NC	2.0E-03	NC
Vinyl Chloride	NCC	1.00	7.3E-03	7.8E-02	NC	3.0E-03	NC
Semivolatile Organic Compounds							
Benzo(a)anthracene	NCC	1.00	8.1E-01	7.8E-02	NC	3.0E-02	NC
Benzo(a)pyrene	NCC	1.00	1.2E+00	7.8E-02	NC	3.0E-02	NC
Benzo(b)fluoranthene	NCC	1.00	1.2E+00	7.8E-02	NC	3.0E-02	NC
Benzo(g,h,i)perylene	NCC	1.00	1.7E+00	7.8E-02	NC	3.0E-02	NC
bis(2-Ethylhexyl)phthalate	1.4E-03	1.00	3.3E-02	7.8E-02	3.5E-06	2.0E-02	1.8E-04
Phenanthrene	NCC	1.00	2.3E-01	7.8E-02	NC	3.0E-02	NC
Pesticides/PCBs							
Aldrin	9.4E-07	1.00	1.6E-03	7.8E-02	1.2E-10	3.0E-05	3.9E-06
Dieldrin	1.9E-06	1.00	1.6E-02	7.8E-02	2.4E-09	5.0E-05	4.7E-05
Metals							
Aluminum, total	4.9E-02	1.00	1.0E-03	7.8E-02	3.8E-06	1.0E+00	3.8E-06
Arsenic, total	2.9E-04	1.00	1.0E-03	7.8E-02	2.3E-08	3.0E-04	7.7E-05
Barium, total	1.8E-02	1.00	1.0E-03	7.8E-02	1.4E-06	7.0E-02	2.0E-05
Beryllium, total	**1.2E-04**	**1.00**	**1.0E-03**	**7.8E-02**	**9.2E-09**	**2.0E-03**	**4.6E-06**
Cadmium, total	1.2E-04	1.00	1.0E-03	7.8E-02	9.2E-09	1.0E-03	9.2E-06
Copper, total	NCC	1.00	1.0E-03	7.8E-02	NC	3.7E-02	NC
Iron, total	5.5E-01	1.00	1.0E-03	7.8E-02	4.3E-05	NA	NC
Lead, total	8.2E-04	1.00	1.0E-03	7.8E-02	6.4E-08	NA	NC
Manganese, total	1.2E-01	1.00	1.0E-03	7.8E-02	9.1E-06	7.0E-02	1.3E-04
Mercury, total	1.2E-05	1.00	1.0E-03	7.8E-02	9.2E-10	3.0E-04	3.1E-06
Nickel, total	3.3E-03	1.00	1.0E-03	7.8E-02	2.6E-07	2.0E-02	1.3E-05
Thallium, total	5.7E-03	1.00	1.0E-03	7.8E-02	4.5E-07	2.0E-01	2.2E-06
Vanadium, total	1.5E-03	1.00	1.0E-03	7.8E-02	1.1E-07	7.0E-03	1.6E-05
Zinc, total	NCC	1.00	1.0E-03	7.8E-02	NC	3.0E-01	NC
						SUBTOTAL:	**5.1E-04**
						SITE RELATED RISK:	**5.0E-04**
						BACKGROUND RISK:	**4.6E-06**

TABLE 8.44-22 (CONT'D)

CALCULATION OF AVERAGE DAILY DOSES AND RISK ESTIMATES
FOR DERMAL CONTACT WITH SURFACE WATER - UPPER SIMMONS
FUTURE CONDITIONS

RECEPTOR: Local Resident (Recreators)
CARCINOGENIC EFFECTS

Contaminants	Exposure Point Concentration (mg/l)	x Dermal Absorption Adjustment Factor	x Permeability Coefficient (cm/hr)	x Receptor-Specific Exposure Factor (l-hr/cm-kg-day)	= Lifetime Average Daily Dose (mg/kg-day)	x Oral Cancer Slope Factor (mg/kg-day)-1	= Incremental Lifetime Cancer Risk Estimate
Volatile Organic Compounds							
1,4-Dichlorobenzene	NCC	1.00	6.2E-02	2.4E-02	NC	2.4E-02	NC
Benzene	NCC	1.00	1.1E-01	2.4E-02	NC	2.9E-02	NC
Carbon Tetrachloride	NCC	1.00	2.2E-02	2.4E-02	NC	1.3E-01	NC
Chlorobenzene	NCC	1.00	4.1E-02	2.4E-02	NC	NA	NC
Chloroform	NCC	1.00	1.3E-01	2.4E-02	NC	6.1E-03	NC
Tetrachloroethene	NCC	1.00	3.7E-01	2.4E-02	NC	5.2E-02	NC
Trichloroethene	NCC	1.00	2.3E-01	2.4E-02	NC	1.1E-02	NC
Vinyl Chloride	NCC	1.00	7.3E-03	2.4E-02	NC	1.4E+00	NC
Semivolatile Organic Compounds							
Benzo(a)anthracene	NCC	1.00	8.1E-01	2.4E-02	NC	7.3E-01	NC
Benzo(a)pyrene	NCC	1.00	1.2E+00	2.4E-02	NC	7.3E+00	NC
Benzo(b)fluoranthene	NCC	1.00	1.2E+00	2.4E-02	NC	7.3E-01	NC
Benzo(g,h,i)perylene	NCC	1.00	1.7E+00	2.4E-02	NC	NA	NC
bis(2-Ethylhexyl)phthalate	1.4E-03	1.00	3.3E-02	2.4E-02	1.1E-06	1.4E-02	1.5E-08
Phenanthrene	NCC	1.00	2.3E-01	2.4E-02	NC	NA	NC
Pesticides/PCBs							
Aldrin	9.4E-07	1.00	1.6E-03	2.4E-02	3.6E-11	1.7E+01	6.2E-10
Dieldrin	1.9E-06	1.00	1.6E-02	2.4E-02	7.2E-10	1.6E+01	1.2E-08
Metals							
Aluminum, total	4.9E-02	1.00	1.0E-03	2.4E-02	1.2E-06	NA	NC
Arsenic, total	2.9E-04	1.00	1.0E-03	2.4E-02	7.1E-09	1.5E+00	1.1E-08
Barium, total	1.8E-02	1.00	1.0E-03	2.4E-02	4.3E-07	NA	NC
Beryllium, total	**1.2E-04**	**1.00**	**1.0E-03**	**2.4E-02**	**2.8E-09**	**4.3E+00**	**1.2E-08**
Cadmium, total	1.2E-04	1.00	1.0E-03	2.4E-02	2.8E-09	NA	NC
Copper, total	NCC	1.00	1.0E-03	2.4E-02	NC	NA	NC
Iron, total	5.5E-01	1.00	1.0E-03	2.4E-02	1.3E-05	NA	NC
Lead, total	8.2E-04	1.00	1.0E-03	2.4E-02	2.0E-08	NA	NC
Manganese, total	1.2E-01	1.00	1.0E-03	2.4E-02	2.8E-06	NA	NC
Mercury, total	1.2E-05	1.00	1.0E-03	2.4E-02	2.8E-10	NA	NC
Nickel, total	3.3E-03	1.00	1.0E-03	2.4E-02	7.9E-08	NA	NC
Thallium, total	5.7E-03	1.00	1.0E-03	2.4E-02	1.4E-07	NA	NC
Vanadium, total	1.5E-03	1.00	1.0E-03	2.4E-02	3.5E-08	NA	NC
Zinc, total	NCC	1.00	1.0E-03	2.4E-02	NC	NA	NC
						SUBTOTAL:	**5.0E-08**
						SITE RELATED RISK:	**3.7E-08**
						BACKGROUND RISK:	**1.2E-08**

Notes:

1. NA = Not Analyzed/Not Applicable; NC = Not Calculated; NSCC = Not a Study Chemical of Concern.
2. For constituents without an AAF value, a default value of 1.00 was used.

TABLE 8.44-23

CALCULATION OF AVERAGE DAILY DOSES AND RISK ESTIMATES
FOR INCIDENTAL INGESTION OF SURFACE WATER - UPPER SIMMONS
FUTURE CONDITIONS

RECEPTOR: Local Resident (Recreators)
CHRONIC NONCARCINOGENIC EFFECTS

Contaminants	Exposure Point Concentration (mg/l)	Oral x Absorption x Adjustment Factor	Receptor-Specific Exposure Factor (l/kg-day)	= Chronic Average Daily Dose (mg/kg-day)	/ Oral Chronic Reference Dose (mg/kg-day)	= Hazard Index
Volatile Organic Compounds						
1,4-Dichlorobenzene	NCC	1.00	5.4E-04	NC	NA	NC
Benzene	NCC	1.00	5.4E-04	NC	1.0E-03	NC
Carbon Tetrachloride	NCC	1.00	5.4E-04	NC	7.0E-04	NC
Chlorobenzene	NCC	1.00	5.4E-04	NC	2.0E-02	NC
Chloroform	NCC	1.00	5.4E-04	NC	1.0E-02	NC
Tetrachloroethene	NCC	1.00	5.4E-04	NC	1.0E-02	NC
Trichloroethene	NCC	1.00	5.4E-04	NC	2.0E-03	NC
Vinyl Chloride	NCC	1.00	5.4E-04	NC	3.0E-03	NC
Semivolatile Organic Compounds						
Benzo(a)anthracene	NCC	1.00	5.4E-04	NC	3.0E-02	NC
Benzo(a)pyrene	NCC	1.00	5.4E-04	NC	3.0E-02	NC
Benzo(b)fluoranthene	NCC	1.00	5.4E-04	NC	3.0E-02	NC
Benzo(g,h,i)perylene	NCC	1.00	5.4E-04	NC	3.0E-02	NC
bis(2-Ethylhexyl)phthalate	1.4E-03	1.00	5.4E-04	7.3E-07	2.0E-02	3.7E-05
Phenanthrene	NCC	1.00	5.4E-04	NC	3.0E-02	NC
Pesticides/PCBs						
Aldrin	9.4E-07	1.00	5.4E-04	5.1E-10	3.0E-05	1.7E-05
Dieldrin	1.9E-06	1.00	5.4E-04	1.0E-09	5.0E-05	2.0E-05
Metals						
Aluminum, total	4.9E-02	1.00	5.4E-04	2.6E-05	1.0E+00	2.6E-05
Arsenic, total	2.9E-04	1.00	5.4E-04	1.6E-07	3.0E-04	5.3E-04
Barium, total	1.8E-02	1.00	5.4E-04	9.6E-06	7.0E-02	1.4E-04
Beryllium, total	**1.2E-04**	**1.00**	**5.4E-04**	**6.4E-08**	**2.0E-03**	**3.2E-05**
Cadmium, total	1.2E-04	1.00	5.4E-04	6.4E-08	5.0E-04	1.3E-04
Copper, total	NCC	1.00	5.4E-04	NC	3.7E-02	NC
Iron, total	5.5E-01	1.00	5.4E-04	3.0E-04	NA	NC
Lead, total	8.2E-04	1.00	5.4E-04	4.4E-07	NA	NC
Manganese, total	1.2E-01	1.00	5.4E-04	6.3E-05	2.4E-02	2.6E-03
Mercury, total	1.2E-05	1.00	5.4E-04	6.4E-09	3.0E-04	2.1E-05
Nickel, total	3.3E-03	1.00	5.4E-04	1.8E-06	2.0E-02	8.9E-05
Thallium, total	5.7E-03	1.00	5.4E-04	3.1E-06	2.0E-01	1.5E-05
Vanadium, total	1.5E-03	1.00	5.4E-04	7.9E-07	7.0E-03	1.1E-04
Zinc, total	NCC	1.00	5.4E-04	NC	3.0E-01	NC
					SUBTOTAL:	**3.8E-03**
					SITE RELATED RISK:	**3.7E-03**
					BACKGROUND RISK:	**3.2E-05**

TABLE 8.44-23 (CONT'D)

CALCULATION OF AVERAGE DAILY DOSES AND RISK ESTIMATES
FOR INCIDENTAL INGESTION OF SURFACE WATER - UPPER SIMMONS
FUTURE CONDITIONS

RECEPTOR: Local Resident (Recreators)
CARCINOGENIC EFFECTS

Contaminants	Exposure Point Concentration (mg/l)	Oral x Absorption x Adjustment Factor	Receptor-Specific Exposure Factor (l-hr/cm-kg-day)	=	Lifetime Average Daily Dose (mg/kg-day)	x	Cancer Slope Factor (mg/kg-day)-1	=	Incremental Lifetime Cancer Risk Estimate
Volatile Organic Compounds									
1,4-Dichlorobenzene	NCC	1.00	8.3E-05		NC		2.4E-02		NC
Benzene	NCC	1.00	8.3E-05		NC		2.9E-02		NC
Carbon Tetrachloride	NCC	1.00	8.3E-05		NC		1.3E-01		NC
Chlorobenzene	NCC	1.00	8.3E-05		NC		NA		NC
Chloroform	NCC	1.00	8.3E-05		NC		6.1E-03		NC
Tetrachloroethene	NCC	1.00	8.3E-05		NC		5.2E-02		NC
Trichloroethene	NCC	1.00	8.3E-05		NC		1.1E-02		NC
Vinyl Chloride	NCC	1.00	8.3E-05		NC		1.4E+00		NC
Semivolatile Organic Compounds									
Benzo(a)anthracene	NCC	1.00	8.3E-05		NC		7.3E-01		NC
Benzo(a)pyrene	NCC	1.00	8.3E-05		NC		7.3E+00		NC
Benzo(b)fluoranthene	NCC	1.00	8.3E-05		NC		7.3E-01		NC
Benzo(g,h,i)perylene	NCC	1.00	8.3E-05		NC		NA		NC
bis(2-Ethylhexyl)phthalate	1.4E-03	1.00	8.3E-05		1.1E-07		1.4E-02		1.6E-09
Phenanthrene	NCC	1.00	8.3E-05		NC		NA		NC
Pesticides/PCBs									
Aldrin	9.4E-07	1.00	8.3E-05		7.8E-11		1.7E+01		1.3E-09
Dieldrin	1.9E-06	1.00	8.3E-05		1.6E-10		1.6E+01		2.5E-09
Metals									
Aluminum, total	4.9E-02	1.00	8.3E-05		4.0E-06		NA		NC
Arsenic, total	2.9E-04	1.00	8.3E-05		2.5E-08		1.5E+00		3.7E-08
Barium, total	1.8E-02	1.00	8.3E-05		1.5E-06		NA		NC
Beryllium, total	**1.2E-04**	**1.00**	**8.3E-05**		**9.8E-09**		**4.3E+00**		**4.2E-08**
Cadmium, total	1.2E-04	1.00	8.3E-05		9.8E-09		NA		NC
Copper, total	NCC	1.00	8.3E-05		NC		NA		NC
Iron, total	5.5E-01	1.00	8.3E-05		4.6E-05		NA		NC
Lead, total	8.2E-04	1.00	8.3E-05		6.9E-08		NA		NC
Manganese, total	1.2E-01	1.00	8.3E-05		9.7E-06		NA		NC
Mercury, total	1.2E-05	1.00	8.3E-05		9.8E-10		NA		NC
Nickel, total	3.3E-03	1.00	8.3E-05		2.7E-07		NA		NC
Thallium, total	5.7E-03	1.00	8.3E-05		4.8E-07		NA		NC
Vanadium, total	1.5E-03	1.00	8.3E-05		1.2E-07		NA		NC
Zinc, total	NCC	1.00	8.3E-05		NC		NA		NC
							SUBTOTAL:		**8.4E-08**
							SITE RELATED RISK:		**4.1E-08**
							BACKGROUND RISK:		**4.2E-08**

Notes:

1. NA = Not Analyzed/Not Applicable; NC = Not Calculated; NSCC = Not a Study Chemical of Concern.
2. For constituents without an AAF value, a default value of 1.00 was used.

TABLE 8.44-24

CALCULATION OF AVERAGE DAILY DOSES AND RISK ESTIMATES
FOR DERMAL CONTACT WITH SEDIMENT - CEDAR SWAMP BROOK AND QUARRY STREAM

RECEPTOR: Adult Facilty Worker
CHRONIC NONCARCINOGENIC EFFECTS

Contaminants	Exposure Point Concentration (mg/kg)	x Dermal Absorption x Adjustment Factor	Receptor-Specific Exposure Factor (kg/kg-day)	= Chronic Average Daily Dose (mg/kg-day)	/ Oral Chronic Reference Dose (mg/kg-day)	= Hazard Index
Volatile Organic Compounds						
1,4-Dichlorobenzene	NCC	NA	1.6E-08	NC	NA	NC
Benzene	NCC	NA	1.6E-08	NC	1.0E-03	NC
Carbon Tetrachloride	NCC	NA	1.6E-08	NC	7.0E-04	NC
Chlorobenzene	NCC	NA	1.6E-08	NC	2.0E-02	NC
Chloroform	NCC	NA	1.6E-08	NC	1.0E-02	NC
Tetrachloroethene	NCC	NA	1.6E-08	NC	1.0E-02	NC
Trichloroethene	NCC	NA	1.6E-08	NC	2.0E-03	NC
Vinyl Chloride	NCC	NA	1.6E-08	NC	3.0E-03	NC
Semivolatile Organic Compounds						
Benzo(a)anthracene	2.5E-01	0.13	1.6E-08	5.2E-10	3.0E-02	1.7E-08
Benzo(a)pyrene	2.2E-01	0.13	1.6E-08	4.7E-10	3.0E-02	1.6E-08
Benzo(b)fluoranthene	3.1E-01	0.13	1.6E-08	6.6E-10	3.0E-02	2.2E-08
Benzo(g,h,i)perylene	7.9E-02	0.10	1.6E-08	1.3E-10	3.0E-02	4.3E-09
bis(2-Ethylhexyl)phthalate	NCC	0.10	1.6E-08	NC	2.0E-02	NC
Phenanthrene	2.8E-01	0.10	1.6E-08	4.6E-10	3.0E-02	1.5E-08
Pesticides/PCBs						
Aldrin	NCC	NA	1.6E-08	NC	3.0E-05	NC
Dieldrin	NCC	0.25	1.6E-08	NC	5.0E-05	NC
Metals						
Aluminum, total	1.2E+04	0.01	1.6E-08	2.0E-06	1.0E+00	2.0E-06
Arsenic, total	7.7E+00	0.03	1.6E-08	3.7E-09	3.0E-04	1.2E-05
Barium, total	NCC	0.01	1.6E-08	NC	7.0E-02	NC
Beryllium, total	2.4E+00	0.01	1.6E-08	3.9E-10	2.0E-03	2.0E-07
Cadmium, total	1.4E-01	0.001	1.6E-08	2.3E-12	1.0E-03	2.3E-09
Copper, total	NCC	0.02	1.6E-08	NC	3.7E-02	NC
Iron, total	NCC	0.01	1.6E-08	NC	NA	NC
Lead, total	3.7E+01	1.000	1.6E-08	6.0E-07	NA	NC
Manganese, total	7.6E+02	0.01	1.6E-08	1.2E-07	7.0E-02	1.8E-06
Mercury, total	NCC	0.01	1.6E-08	NC	3.0E-04	NC
Nickel, total	NCC	0.01	1.6E-08	NC	2.0E-02	NC
Thallium, total	NCC	0.01	1.6E-08	NC	2.0E-01	NC
Vanadium, total	4.2E+01	0.01	1.6E-08	6.8E-09	7.0E-03	9.8E-07
Zinc, total	NCC	0.01	1.6E-08	NC	3.0E-01	NC
					SUBTOTAL:	**1.7E-05**
					SITE RELATED RISK:	**1.8E-06**
					BACKGROUND RISK:	**1.6E-05**

TABLE 8.44-24 (CONT'D)

CALCULATION OF AVERAGE DAILY DOSES AND RISK ESTIMATES
FOR DERMAL CONTACT WITH SEDIMENT - CEDAR SWAMP BROOK AND QUARRY STREAM

RECEPTOR: Adult Facilty Worker
CARCINOGENIC EFFECTS

Contaminants	Exposure Point Concentration (mg/kg)	x Dermal Absorption x Adjustment Factor	Receptor-Specific Exposure Factor (kg/kg-day)	= Lifetime Average Daily Dose (mg/kg-day)	x Oral Cancer Slope Factor (mg/kg-day)$^{-1}$	= Incremental Lifetime Cancer Risk Estimate
Volatile Organic Compounds						
1,4-Dichlorobenzene	NCC	NA	5.8E-09	NC	2.4E-02	NC
Benzene	NCC	NA	5.8E-09	NC	2.9E-02	NC
Carbon Tetrachloride	NCC	NA	5.8E-09	NC	1.3E-01	NC
Chlorobenzene	NCC	NA	5.8E-09	NC	NA	NC
Chloroform	NCC	NA	5.8E-09	NC	6.1E-03	NC
Tetrachloroethene	NCC	NA	5.8E-09	NC	5.2E-02	NC
Trichloroethene	NCC	NA	5.8E-09	NC	1.1E-02	NC
Vinyl Chloride	NCC	NA	5.8E-09	NC	1.4E+00	NC
Semivolatile Organic Compounds						
Benzo(a)anthracene	2.5E-01	0.13	5.8E-09	1.8E-10	7.3E-01	1.3E-10
Benzo(a)pyrene	2.2E-01	0.13	5.8E-09	1.7E-10	7.3E+00	1.2E-09
Benzo(b)fluoranthene	3.1E-01	0.13	5.8E-09	2.4E-10	7.3E-01	1.7E-10
Benzo(g,h,i)perylene	7.9E-02	NA	5.8E-09	NC	NA	NC
bis(2-Ethylhexyl)phthalate	NCC	0.10	5.8E-09	NC	1.4E-02	NC
Phenanthrene	2.8E-01	NA	5.8E-09	NC	NA	NC
Pesticides/PCBs						
Aldrin	NCC	NA	5.8E-09	NC	1.7E+01	NC
Dieldrin	NCC	0.25	5.8E-09	NC	1.6E+01	NC
Metals						
Aluminum, total	1.2E+04	NA	5.8E-09	NC	NA	NC
Arsenic, total	7.7E+00	0.03	5.8E-09	1.3E-09	1.5E+00	2.0E-09
Barium, total	NCC	NA	5.8E-09	NC	NA	NC
Beryllium, total	2.4E+00	0.01	5.8E-09	1.4E-10	4.3E+00	6.0E-10
Cadmium, total	1.4E-01	1.00	5.8E-09	8.1E-10	NA	NC
Copper, total	NCC	NA	5.8E-09	NC	NA	NC
Iron, total	NCC	NA	5.8E-09	NC	NA	NC
Lead, total	3.7E+01	NA	5.8E-09	NC	NA	NC
Manganese, total	7.6E+02	NA	5.8E-09	NC	NA	NC
Mercury, total	NCC	NA	5.8E-09	NC	NA	NC
Nickel, total	NCC	NA	5.8E-09	NC	NA	NC
Thallium, total	NCC	NA	5.8E-09	NC	NA	NC
Vanadium, total	4.2E+01	NA	5.8E-09	NC	NA	NC
Zinc, total	NCC	NA	5.8E-09	NC	NA	NC
					SUBTOTAL:	4.1E-09
					SITE RELATED RISK:	1.5E-09
					BACKGROUND RISK:	2.6E-09

Notes:

1. NA = Not Analyzed/Not Applicable; NC = Not Calculated; NSCC = Not a Study Chemical of Concern.
2. For constituents without an AAF value, a default value of 1.00 was used.

TABLE 8.44-25

CALCULATION OF AVERAGE DAILY DOSES AND RISK ESTIMATES
FOR INCIDENTAL INGESTION OF SEDIMENT - CEDAR SWAMP BROOK AND QUARRY STREAM

RECEPTOR: Adult Facilty Worker
CHRONIC NONCARCINOGENIC EFFECTS

Contaminants	Exposure Point Concentration (mg/kg)	x Oral Absorption Adjustment Factor	x Receptor-Specific Exposure Factor (kg/kg-day)	= Chronic Average Daily Dose (mg/kg-day)	/ Oral Chronic Reference Dose (mg/kg-day)	= Hazard Index
Volatile Organic Compounds						
1,4-Dichlorobenzene	NCC	1.00	1.1E-08	NC	NA	NC
Benzene	NCC	1.00	1.1E-08	NC	1.0E-03	NC
Carbon Tetrachloride	NCC	1.00	1.1E-08	NC	7.0E-04	NC
Chlorobenzene	NCC	1.00	1.1E-08	NC	2.0E-02	NC
Chloroform	NCC	1.00	1.1E-08	NC	1.0E-02	NC
Tetrachloroethene	NCC	1.00	1.1E-08	NC	1.0E-02	NC
Trichloroethene	NCC	1.00	1.1E-08	NC	2.0E-03	NC
Vinyl Chloride	NCC	1.00	1.1E-08	NC	3.0E-03	NC
Semivolatile Organic Compounds						
Benzo(a)anthracene	2.5E-01	1.00	1.1E-08	2.8E-09	3.0E-02	9.3E-08
Benzo(a)pyrene	2.2E-01	1.00	1.1E-08	2.5E-09	3.0E-02	8.4E-08
Benzo(b)fluoranthene	3.1E-01	1.00	1.1E-08	3.6E-09	3.0E-02	1.2E-07
Benzo(g,h,i)perylene	7.9E-02	1.00	1.1E-08	9.0E-10	3.0E-02	3.0E-08
bis(2-Ethylhexyl)phthalate	NCC	1.00	1.1E-08	NC	2.0E-02	NC
Phenanthrene	2.8E-01	1.00	1.1E-08	3.2E-09	3.0E-02	1.1E-07
Pesticides/PCBs						
Aldrin	NCC	1.00	1.1E-08	NC	3.0E-05	NC
Dieldrin	NCC	1.00	1.1E-08	NC	5.0E-05	NC
Metals						
Aluminum, total	1.2E+04	1.00	1.1E-08	1.4E-04	1.0E+00	1.4E-04
Arsenic, total	7.7E+00	0.48	1.1E-08	4.2E-08	3.0E-04	1.4E-04
Barium, total	NCC	1.00	1.1E-08	NC	7.0E-02	NC
Beryllium, total	2.4E+00	1.00	1.1E-08	2.7E-08	2.0E-03	1.4E-05
Cadmium, total	1.4E-01	1.00	1.1E-08	1.6E-09	1.0E-03	1.6E-06
Copper, total	NCC	1.00	1.1E-08	NC	3.7E-02	NC
Iron, total	NCC	1.00	1.1E-08	NC	NA	NC
Lead, total	3.7E+01	1.00	1.1E-08	4.2E-07	NA	NC
Manganese, total	7.6E+02	1.00	1.1E-08	8.7E-06	7.0E-02	1.2E-04
Mercury, total	NCC	0.50	1.1E-08	NC	3.0E-04	NC
Nickel, total	NCC	1.00	1.1E-08	NC	2.0E-02	NC
Thallium, total	NCC	1.00	1.1E-08	NC	2.0E-01	NC
Vanadium, total	4.2E+01	1.00	1.1E-08	4.8E-07	7.0E-03	6.8E-05
Zinc, total	NCC	1.00	1.1E-08	NC	3.0E-01	NC
					SUBTOTAL:	4.9E-04
					SITE RELATED RISK:	1.2E-04
					BACKGROUND RISK:	3.6E-04

TABLE 8.44-25 (CONT'D)

CALCULATION OF AVERAGE DAILY DOSES AND RISK ESTIMATES
FOR INCIDENTAL INGESTION OF SEDIMENT - CEDAR SWAMP BROOK AND QUARRY STREAM

RECEPTOR: Adult Facilty Worker
CARCINOGENIC EFFECTS

Contaminants	Exposure Point Concentration (mg/kg)	x	Oral Absorption Adjustment Factor	x	Receptor-Specific Exposure Factor (kg/kg-day)	=	Lifetime Average Daily Dose (mg/kg-day)	x	Oral Cancer Slope Factor (mg/kg-day)$^{-1}$	=	Incremental Lifetime Cancer Risk Estimate
Volatile Organic Compounds											
1,4-Dichlorobenzene	NCC		1.00		4.1E-09		NC		2.4E-02		NC
Benzene	NCC		1.00		4.1E-09		NC		2.9E-02		NC
Carbon Tetrachloride	NCC		1.00		4.1E-09		NC		1.3E-01		NC
Chlorobenzene	NCC		1.00		4.1E-09		NC		NA		NC
Chloroform	NCC		1.00		4.1E-09		NC		6.1E-03		NC
Tetrachloroethene	NCC		1.00		4.1E-09		NC		5.2E-02		NC
Trichloroethene	NCC		1.00		4.1E-09		NC		1.1E-02		NC
Vinyl Chloride	NCC		1.00		4.1E-09		NC		1.4E+00		NC
Semivolatile Organic Compounds											
Benzo(a)anthracene	2.5E-01		1.00		4.1E-09		1.0E-09		7.3E-01		7.3E-10
Benzo(a)pyrene	2.2E-01		1.00		4.1E-09		9.0E-10		7.3E+00		6.6E-09
Benzo(b)fluoranthene	3.1E-01		1.00		4.1E-09		1.3E-09		7.3E-01		9.3E-10
Benzo(g,h,i)perylene	7.9E-02		1.00		4.1E-09		3.2E-10		NA		NC
bis(2-Ethylhexyl)phthalate	NCC		1.00		4.1E-09		NC		1.4E-02		NC
Phenanthrene	2.8E-01		1.00		4.1E-09		1.1E-09		NA		NC
Pesticides/PCBs											
Aldrin	NCC		1.00		4.1E-09		NC		1.7E+01		NC
Dieldrin	NCC		1.00		4.1E-09		NC		1.6E+01		NC
Metals											
Aluminum, total	1.2E+04		1.00		4.1E-09		5.0E-05		NA		NC
Arsenic, total	7.7E+00		0.48		4.1E-09		1.5E-08		1.5E+00		2.2E-08
Barium, total	NCC		1.00		4.1E-09		NC		NA		NC
Beryllium, total	2.4E+00		1.00		4.1E-09		9.8E-09		4.3E+00		4.2E-08
Cadmium, total	1.4E-01		1.00		4.1E-09		5.7E-10		NA		NC
Copper, total	NCC		1.00		4.1E-09		NC		NA		NC
Iron, total	NCC		1.00		4.1E-09		NC		NA		NC
Lead, total	3.7E+01		1.00		4.1E-09		1.5E-07		NA		NC
Manganese, total	7.6E+02		1.00		4.1E-09		3.1E-06		NA		NC
Mercury, total	NCC		1.00		4.1E-09		NC		NA		NC
Nickel, total	NCC		1.00		4.1E-09		NC		NA		NC
Thallium, total	NCC		1.00		4.1E-09		NC		NA		NC
Vanadium, total	4.2E+01		1.00		4.1E-09		1.7E-07		NA		NC
Zinc, total	NCC		1.00		4.1E-09		NC		NA		NC
									SUBTOTAL:		**7.3E-08**
									SITE RELATED RISK:		**8.2E-09**
									BACKGROUND RISK:		**6.4E-08**

Notes:

1. NA = Not Analyzed/Not Applicable; NC = Not Calculated; NSCC = Not a Study Chemical of Concern.
2. For constituents without an AAF value, a default value of 1.00 was used.

TABLE 8.44-26

CALCULATION OF AVERAGE DAILY DOSES AND RISK ESTIMATES
FOR DERMAL CONTACT WITH SURFACE WATER - CEDAR SWAMP BROOK AND QUARRY STREAM

RECEPTOR: Adult Facilty Worker
CHRONIC NONCARCINOGENIC EFFECTS

Contaminants	Exposure Point Concentration (mg/l)	x	Dermal Absorption Adjustment Factor	x	Permeability Coefficient (cm/hr)	x	Receptor-Specific Exposure Factor (l-hr/cm-kg-day)	=	Chronic Average Daily Dose (mg/kg-day)	/	Oral Chronic Reference Dose (mg/kg-day)	=	Hazard Index
Volatile Organic Compounds													
1,4-Dichlorobenzene	NCC		1.00		6.2E-02		2.3E-03		NC		NA		NC
Benzene	NCC		1.00		1.1E-01		2.3E-03		NC		1.0E-03		NC
Carbon Tetrachloride	NCC		1.00		2.2E-02		2.3E-03		NC		7.0E-04		NC
Chlorobenzene	NCC		1.00		4.1E-02		2.3E-03		NC		2.0E-02		NC
Chloroform	NCC		1.00		1.3E-01		2.3E-03		NC		1.0E-02		NC
Tetrachloroethene	NCC		1.00		3.7E-01		2.3E-03		NC		1.0E-02		NC
Trichloroethene	NCC		1.00		2.3E-01		2.3E-03		NC		2.0E-03		NC
Vinyl Chloride	NCC		1.00		7.3E-03		2.3E-03		NC		3.0E-03		NC
Semivolatile Organic Compounds													
Benzo(a)anthracene	NCC		1.00		8.1E-01		2.3E-03		NC		3.0E-02		NC
Benzo(a)pyrene	NCC		1.00		1.2E+00		2.3E-03		NC		3.0E-02		NC
Benzo(b)fluoranthene	NCC		1.00		1.2E+00		2.3E-03		NC		3.0E-02		NC
Benzo(g,h,i)perylene	NCC		1.00		1.7E+00		2.3E-03		NC		3.0E-02		NC
bis(2-Ethylhexyl)phthalate	NCC		1.00		3.3E-02		2.3E-03		NC		2.0E-02		NC
Phenanthrene	NCC		1.00		2.3E-01		2.3E-03		NC		3.0E-02		NC
Pesticides/PCBs													
Aldrin	NCC		1.00		1.6E-03		2.3E-03		NC		3.0E-05		NC
Dieldrin	NCC		1.00		1.6E-02		2.3E-03		NC		5.0E-05		NC
Metals													
Aluminum, total	NCC		1.00		1.0E-03		2.3E-03		NC		1.0E+00		NC
Arsenic, total	2.2E-03		1.00		1.0E-03		2.3E-03		4.9E-09		3.0E-04		1.6E-05
Barium, total	NCC		1.00		1.0E-03		2.3E-03		NC		7.0E-02		NC
Beryllium, total	2.5E-03		1.00		1.0E-03		2.3E-03		5.8E-09		2.0E-03		2.9E-06
Cadmium, total	NCC		1.00		1.0E-03		2.3E-03		NC		1.0E-03		NC
Copper, total	NCC		1.00		1.0E-03		2.3E-03		NC		3.7E-02		NC
Iron, total	NCC		1.00		1.0E-03		2.3E-03		NC		NA		NC
Lead, total	6.0E-03		1.00		1.0E-03		2.3E-03		1.4E-08		NA		NC
Manganese, total	3.0E+01		1.00		1.0E-03		2.3E-03		6.7E-05		7.0E-02		9.5E-04
Mercury, total	9.8E-04		1.00		1.0E-03		2.3E-03		2.2E-09		3.0E-04		7.4E-06
Nickel, total	NCC		1.00		1.0E-03		2.3E-03		NC		2.0E-02		NC
Thallium, total	1.1E-02		1.00		1.0E-03		2.3E-03		2.5E-08		2.0E-01		1.2E-07
Vanadium, total	NCC		1.00		1.0E-03		2.3E-03		NC		7.0E-03		NC
Zinc, total	NCC		1.00		1.0E-03		2.3E-03		NC		3.0E-01		NC
											SUBTOTAL:		9.8E-04
											SITE RELATED RISK:		9.8E-04
											BACKGROUND RISK:		2.9E-06

TABLE 8.44-26 (CONT'D)

CALCULATION OF AVERAGE DAILY DOSES AND RISK ESTIMATES
FOR DERMAL CONTACT WITH SURFACE WATER - CEDAR SWAMP BROOK AND QUARRY STREAM

RECEPTOR: Adult Facilty Worker
CARCINOGENIC EFFECTS

Contaminants	Exposure Point Concentration (mg/l)	x	Dermal Absorption Adjustment Factor	x	Permeability Coefficient (cm/hr)	x	Receptor-Specific Exposure Factor (l-hr/cm-kg-day)	=	Lifetime Average Daily Dose (mg/kg-day)	x	Oral Cancer Slope Factor (mg/kg-day)-[1]	=	Incremental Lifetime Cancer Risk Estimate
Volatile Organic Compounds													
1,4-Dichlorobenzene	NCC		1.00		6.2E-02		8.1E-04		NC		2.4E-02		NC
Benzene	NCC		1.00		1.1E-01		8.1E-04		NC		2.9E-02		NC
Carbon Tetrachloride	NCC		1.00		2.2E-02		8.1E-04		NC		1.3E-01		NC
Chlorobenzene	NCC		1.00		4.1E-02		8.1E-04		NC		NA		NC
Chloroform	NCC		1.00		1.3E-01		8.1E-04		NC		6.1E-03		NC
Tetrachloroethene	NCC		1.00		3.7E-01		8.1E-04		NC		5.2E-02		NC
Trichloroethene	NCC		1.00		2.3E-01		8.1E-04		NC		1.1E-02		NC
Vinyl Chloride	NCC		1.00		7.3E-03		8.1E-04		NC		1.4E+00		NC
Semivolatile Organic Compounds													
Benzo(a)anthracene	NCC		1.00		8.1E-01		8.1E-04		NC		7.3E-01		NC
Benzo(a)pyrene	NCC		1.00		1.2E+00		8.1E-04		NC		7.3E+00		NC
Benzo(b)fluoranthene	NCC		1.00		1.2E+00		8.1E-04		NC		7.3E-01		NC
Benzo(g,h,i)perylene	NCC		1.00		1.7E+00		8.1E-04		NC		NA		NC
bis(2-Ethylhexyl)phthalate	NCC		1.00		3.3E-02		8.1E-04		NC		1.4E-02		NC
Phenanthrene	NCC		1.00		2.3E-01		8.1E-04		NC		NA		NC
Pesticides/PCBs													
Aldrin	NCC		1.00		1.6E-03		8.1E-04		NC		1.7E+01		NC
Dieldrin	NCC		1.00		1.6E-02		8.1E-04		NC		1.6E+01		NC
Metals													
Aluminum, total	NCC		1.00		1.0E-03		8.1E-04		NC		NA		NC
Arsenic, total	2.2E-03		1.00		1.0E-03		8.1E-04		1.7E-09		1.5E+00		2.6E-09
Barium, total	NCC		1.00		1.0E-03		8.1E-04		NC		NA		NC
Beryllium, total	2.5E-03		1.00		1.0E-03		8.1E-04		2.1E-09		4.3E+00		8.9E-09
Cadmium, total	NCC		1.00		1.0E-03		8.1E-04		NC		NA		NC
Copper, total	NCC		1.00		1.0E-03		8.1E-04		NC		NA		NC
Iron, total	NCC		1.00		1.0E-03		8.1E-04		NC		NA		NC
Lead, total	6.0E-03		1.00		1.0E-03		8.1E-04		4.9E-09		NA		NC
Manganese, total	3.0E+01		1.00		1.0E-03		8.1E-04		2.4E-05		NA		NC
Mercury, total	9.8E-04		1.00		1.0E-03		8.1E-04		7.9E-10		NA		NC
Nickel, total	NCC		1.00		1.0E-03		8.1E-04		NC		NA		NC
Thallium, total	1.1E-02		1.00		1.0E-03		8.1E-04		8.8E-09		NA		NC
Vanadium, total	NCC		1.00		1.0E-03		8.1E-04		NC		NA		NC
Zinc, total	NCC		1.00		1.0E-03		8.1E-04		NC		NA		NC
											SUBTOTAL:		1.1E-08
											SITE RELATED RISK:		2.6E-09
											BACKGROUND RISK:		8.9E-09

Notes:

1. NA = Not Analyzed/Not Applicable; NC = Not Calculated; NSCC = Not a Study Chemical of Concern.
2. For constituents without an AAF value, a default value of 1.00 was used.

TABLE 8.44-27

CALCULATION OF AVERAGE DAILY DOSES AND RISK ESTIMATES
FOR DERMAL CONTACT WITH SEDIMENT - SEDIMENTATION POND

RECEPTOR: Adult Facilty Worker
CHRONIC NONCARCINOGENIC EFFECTS

Contaminants	Exposure Point Concentration (mg/kg)	x Dermal Absorption Adjustment Factor	x Receptor-Specific Exposure Factor (kg/kg-day)	= Chronic Average Daily Dose (mg/kg-day)	/ Oral Chronic Reference Dose (mg/kg-day)	= Hazard Index
Volatile Organic Compounds						
1,4-Dichlorobenzene	NCC	NA	1.9E-08	NC	NA	NC
Benzene	NCC	NA	1.9E-08	NC	1.0E-03	NC
Carbon Tetrachloride	NCC	NA	1.9E-08	NC	7.0E-04	NC
Chlorobenzene	NCC	NA	1.9E-08	NC	2.0E-02	NC
Chloroform	NCC	NA	1.9E-08	NC	1.0E-02	NC
Tetrachloroethene	NCC	NA	1.9E-08	NC	1.0E-02	NC
Trichloroethene	NCC	NA	1.9E-08	NC	2.0E-03	NC
Vinyl Chloride	NCC	NA	1.9E-08	NC	3.0E-03	NC
Semivolatile Organic Compounds						
Benzo(a)anthracene	9.2E-01	0.13	1.9E-08	2.3E-09	3.0E-02	7.6E-08
Benzo(a)pyrene	6.2E-01	0.13	1.9E-08	1.5E-09	3.0E-02	5.1E-08
Benzo(b)fluoranthene	1.2E+00	0.13	1.9E-08	2.9E-09	3.0E-02	9.6E-08
Benzo(g,h,i)perylene	2.5E-01	0.10	1.9E-08	4.8E-10	3.0E-02	1.6E-08
bis(2-Ethylhexyl)phthalate	NCC	0.10	1.9E-08	NC	2.0E-02	NC
Phenanthrene	9.2E-01	0.10	1.9E-08	1.8E-09	3.0E-02	5.9E-08
Pesticides/PCBs						
Aldrin	NCC	NA	1.9E-08	NC	3.0E-05	NC
Dieldrin	NCC	0.25	1.9E-08	NC	5.0E-05	NC
Metals						
Aluminum, total	1.6E+04	0.01	1.9E-08	3.0E-06	1.0E+00	3.0E-06
Arsenic, total	5.8E+00	0.03	1.9E-08	3.3E-09	3.0E-04	1.1E-05
Barium, total	NCC	0.01	1.9E-08	NC	7.0E-02	NC
Beryllium, total	2.8E+00	0.01	1.9E-08	5.4E-10	2.0E-03	2.7E-07
Cadmium, total	8.9E-01	0.001	1.9E-08	1.7E-11	1.0E-03	1.7E-08
Copper, total	NCC	0.02	1.9E-08	NC	3.7E-02	NC
Iron, total	NCC	0.01	1.9E-08	NC	NA	NC
Lead, total	1.1E+02	1.000	1.9E-08	2.1E-06	NA	NC
Manganese, total	7.5E+02	0.01	1.9E-08	1.4E-07	7.0E-02	2.1E-06
Mercury, total	NCC	0.01	1.9E-08	NC	3.0E-04	NC
Nickel, total	NCC	0.01	1.9E-08	NC	2.0E-02	NC
Thallium, total	NCC	0.01	1.9E-08	NC	2.0E-01	NC
Vanadium, total	2.8E+01	0.01	1.9E-08	5.4E-09	7.0E-03	7.8E-07
Zinc, total	NCC	0.01	1.9E-08	NC	3.0E-01	NC
					SUBTOTAL:	**1.8E-05**
					SITE RELATED RISK:	**2.4E-06**
					BACKGROUND RISK:	**1.5E-05**

TABLE 8.44-27 (CONT'D)

CALCULATION OF AVERAGE DAILY DOSES AND RISK ESTIMATES
FOR DERMAL CONTACT WITH SEDIMENT - SEDIMENTATION POND

RECEPTOR: Adult Facilty Worker
CARCINOGENIC EFFECTS

Contaminants	Exposure Point Concentration (mg/kg)	x Dermal Absorption Adjustment Factor	x Receptor-Specific Exposure Factor (kg/kg-day)	= Lifetime Average Daily Dose (mg/kg-day)	x Oral Cancer Slope Factor (mg/kg-day)$^{-1}$	= Incremental Lifetime Cancer Risk Estimate
Volatile Organic Compounds						
1,4-Dichlorobenzene	NCC	NA	6.8E-09	NC	2.4E-02	NC
Benzene	NCC	NA	6.8E-09	NC	2.9E-02	NC
Carbon Tetrachloride	NCC	NA	6.8E-09	NC	1.3E-01	NC
Chlorobenzene	NCC	NA	6.8E-09	NC	NA	NC
Chloroform	NCC	NA	6.8E-09	NC	6.1E-03	NC
Tetrachloroethene	NCC	NA	6.8E-09	NC	5.2E-02	NC
Trichloroethene	NCC	NA	6.8E-09	NC	1.1E-02	NC
Vinyl Chloride	NCC	NA	6.8E-09	NC	1.4E+00	NC
Semivolatile Organic Compounds						
Benzo(a)anthracene	9.2E-01	0.13	6.8E-09	8.2E-10	7.3E-01	6.0E-10
Benzo(a)pyrene	6.2E-01	0.13	6.8E-09	5.5E-10	7.3E+00	4.0E-09
Benzo(b)fluoranthene	1.2E+00	0.13	6.8E-09	1.0E-09	7.3E-01	7.5E-10
Benzo(g,h,i)perylene	2.5E-01	NA	6.8E-09	NC	NA	NC
bis(2-Ethylhexyl)phthalate	NCC	0.10	6.8E-09	NC	1.4E-02	NC
Phenanthrene	9.2E-01	NA	6.8E-09	NC	NA	NC
Pesticides/PCBs						
Aldrin	NCC	NA	6.8E-09	NC	1.7E+01	NC
Dieldrin	NCC	0.25	6.8E-09	NC	1.6E+01	NC
Metals						
Aluminum, total	1.6E+04	NA	6.8E-09	NC	NA	NC
Arsenic, total	5.8E+00	0.03	6.8E-09	1.2E-09	1.5E+00	1.8E-09
Barium, total	NCC	NA	6.8E-09	NC	NA	NC
Beryllium, total	2.8E+00	0.01	6.8E-09	1.9E-10	4.3E+00	8.3E-10
Cadmium, total	8.9E-01	1.00	6.8E-09	6.1E-09	NA	NC
Copper, total	NCC	NA	6.8E-09	NC	NA	NC
Iron, total	NCC	NA	6.8E-09	NC	NA	NC
Lead, total	1.1E+02	NA	6.8E-09	NC	NA	NC
Manganese, total	7.5E+02	NA	6.8E-09	NC	NA	NC
Mercury, total	NCC	NA	6.8E-09	NC	NA	NC
Nickel, total	NCC	NA	6.8E-09	NC	NA	NC
Thallium, total	NCC	NA	6.8E-09	NC	NA	NC
Vanadium, total	2.8E+01	NA	6.8E-09	NC	NA	NC
Zinc, total	NCC	NA	6.8E-09	NC	NA	NC
					SUBTOTAL:	**8.0E-09**
					SITE RELATED RISK:	**5.4E-09**
					BACKGROUND RISK:	**2.6E-09**

Notes:

1. NA = Not Analyzed/Not Applicable; NC = Not Calculated; NSCC = Not a Study Chemical of Concern.
2. For constituents without an AAF value, a default value of 1.00 was used.

TABLE 8.44-28

CALCULATION OF AVERAGE DAILY DOSES AND RISK ESTIMATES
FOR INCIDENTAL INGESTION OF SEDIMENT - SEDIMENTATION POND

RECEPTOR: Adult Facilty Worker
CHRONIC NONCARCINOGENIC EFFECTS

Contaminants	Exposure Point Concentration (mg/kg)	x Oral Absorption Adjustment Factor	x Receptor-Specific Exposure Factor (kg/kg-day)	= Chronic Average Daily Dose (mg/kg-day)	/ Oral Chronic Reference Dose (mg/kg-day)	= Hazard Index
Volatile Organic Compounds						
1,4-Dichlorobenzene	NCC	1.00	1.9E-08	NC	NA	NC
Benzene	NCC	1.00	1.9E-08	NC	1.0E-03	NC
Carbon Tetrachloride	NCC	1.00	1.9E-08	NC	7.0E-04	NC
Chlorobenzene	NCC	1.00	1.9E-08	NC	2.0E-02	NC
Chloroform	NCC	1.00	1.9E-08	NC	1.0E-02	NC
Tetrachloroethene	NCC	1.00	1.9E-08	NC	1.0E-02	NC
Trichloroethene	NCC	1.00	1.9E-08	NC	2.0E-03	NC
Vinyl Chloride	NCC	1.00	1.9E-08	NC	3.0E-03	NC
Semivolatile Organic Compounds						
Benzo(a)anthracene	9.2E-01	1.00	1.9E-08	1.7E-08	3.0E-02	5.8E-07
Benzo(a)pyrene	6.2E-01	1.00	1.9E-08	1.2E-08	3.0E-02	3.9E-07
Benzo(b)fluoranthene	1.2E+00	1.00	1.9E-08	2.2E-08	3.0E-02	7.3E-07
Benzo(g,h,i)perylene	2.5E-01	1.00	1.9E-08	4.7E-09	3.0E-02	1.6E-07
bis(2-Ethylhexyl)phthalate	NCC	1.00	1.9E-08	NC	2.0E-02	NC
Phenanthrene	9.2E-01	1.00	1.9E-08	1.7E-08	3.0E-02	5.8E-07
Pesticides/PCBs						
Aldrin	NCC	1.00	1.9E-08	NC	3.0E-05	NC
Dieldrin	NCC	1.00	1.9E-08	NC	5.0E-05	NC
Metals						
Aluminum, total	1.6E+04	1.00	1.9E-08	3.0E-04	1.0E+00	3.0E-04
Arsenic, total	5.8E+00	0.48	1.9E-08	5.3E-08	3.0E-04	1.8E-04
Barium, total	NCC	1.00	1.9E-08	NC	7.0E-02	NC
Beryllium, total	2.8E+00	1.00	1.9E-08	5.3E-08	2.0E-03	2.7E-05
Cadmium, total	8.9E-01	1.00	1.9E-08	1.7E-08	1.0E-03	1.7E-05
Copper, total	NCC	1.00	1.9E-08	NC	3.7E-02	NC
Iron, total	NCC	1.00	1.9E-08	NC	NA	NC
Lead, total	1.1E+02	1.00	1.9E-08	2.1E-06	NA	NC
Manganese, total	7.5E+02	1.00	1.9E-08	1.4E-05	7.0E-02	2.0E-04
Mercury, total	NCC	0.50	1.9E-08	NC	3.0E-04	NC
Nickel, total	NCC	1.00	1.9E-08	NC	2.0E-02	NC
Thallium, total	NCC	1.00	1.9E-08	NC	2.0E-01	NC
Vanadium, total	2.8E+01	1.00	1.9E-08	5.4E-07	7.0E-03	7.7E-05
Zinc, total	NCC	1.00	1.9E-08	NC	3.0E-01	NC
					SUBTOTAL:	**8.0E-04**
					SITE RELATED RISK:	**2.1E-04**
					BACKGROUND RISK:	**6.0E-04**

TABLE 8.44-28 (CONT'D)

CALCULATION OF AVERAGE DAILY DOSES AND RISK ESTIMATES
FOR INCIDENTAL INGESTION OF SEDIMENT - SEDIMENTATION POND

RECEPTOR: Adult Facilty Worker
CARCINOGENIC EFFECTS

Contaminants	Exposure Point Concentration (mg/kg)	x Oral Absorption Adjustment Factor	x Receptor-Specific Exposure Factor (kg/kg-day)	= Lifetime Average Daily Dose (mg/kg-day)	x Oral Cancer Slope Factor (mg/kg-day)$^{-1}$	= Incremental Lifetime Cancer Risk Estimate
Volatile Organic Compounds						
1,4-Dichlorobenzene	NCC	1.00	6.8E-09	NC	2.4E-02	NC
Benzene	NCC	1.00	6.8E-09	NC	2.9E-02	NC
Carbon Tetrachloride	NCC	1.00	6.8E-09	NC	1.3E-01	NC
Chlorobenzene	NCC	1.00	6.8E-09	NC	NA	NC
Chloroform	NCC	1.00	6.8E-09	NC	6.1E-03	NC
Tetrachloroethene	NCC	1.00	6.8E-09	NC	5.2E-02	NC
Trichloroethene	NCC	1.00	6.8E-09	NC	1.1E-02	NC
Vinyl Chloride	NCC	1.00	6.8E-09	NC	1.4E+00	NC
Semivolatile Organic Compounds						
Benzo(a)anthracene	9.2E-01	1.00	6.8E-09	6.2E-09	7.3E-01	4.5E-09
Benzo(a)pyrene	6.2E-01	1.00	6.8E-09	4.2E-09	7.3E+00	3.1E-08
Benzo(b)fluoranthene	1.2E+00	1.00	6.8E-09	7.8E-09	7.3E-01	5.7E-09
Benzo(g,h,i)perylene	2.5E-01	1.00	6.8E-09	1.7E-09	NA	NC
bis(2-Ethylhexyl)phthalate	NCC	1.00	6.8E-09	NC	1.4E-02	NC
Phenanthrene	9.2E-01	1.00	6.8E-09	6.2E-09	NA	NC
Pesticides/PCBs						
Aldrin	NCC	1.00	6.8E-09	NC	1.7E+01	NC
Dieldrin	NCC	1.00	6.8E-09	NC	1.6E+01	NC
Metals						
Aluminum, total	1.6E+04	1.00	6.8E-09	1.1E-04	NA	NC
Arsenic, total	5.8E+00	0.48	6.8E-09	1.9E-08	1.5E+00	2.8E-08
Barium, total	NCC	1.00	6.8E-09	NC	NA	NC
Beryllium, total	2.8E+00	1.00	6.8E-09	1.9E-08	4.3E+00	8.2E-08
Cadmium, total	8.9E-01	1.00	6.8E-09	6.0E-09	NA	NC
Copper, total	NCC	1.00	6.8E-09	NC	NA	NC
Iron, total	NCC	1.00	6.8E-09	NC	NA	NC
Lead, total	1.1E+02	1.00	6.8E-09	7.4E-07	NA	NC
Manganese, total	7.5E+02	1.00	6.8E-09	5.1E-06	NA	NC
Mercury, total	NCC	1.00	6.8E-09	NC	NA	NC
Nickel, total	NCC	1.00	6.8E-09	NC	NA	NC
Thallium, total	NCC	1.00	6.8E-09	NC	NA	NC
Vanadium, total	2.8E+01	1.00	6.8E-09	1.9E-07	NA	NC
Zinc, total	NCC	1.00	6.8E-09	NC	NA	NC
					SUBTOTAL:	1.5E-07
					SITE RELATED RISK:	4.1E-08
					BACKGROUND RISK:	1.1E-07

Notes:

1. NA = Not Analyzed/Not Applicable; NC = Not Calculated; NSCC = Not a Study Chemical of Concern.
2. For constituents without an AAF value, a default value of 1.00 was used.

TABLE 8.44-29

CALCULATION OF AVERAGE DAILY DOSES AND RISK ESTIMATES
FOR DERMAL CONTACT WITH SURFACE WATER - SEDIMENTATION POND

RECEPTOR: Adult Facilty Worker
CHRONIC NONCARCINOGENIC EFFECTS

Contaminants	Exposure Point Concentration (mg/l)	x Dermal Absorption Adjustment Factor	x Permeability Coefficient (cm/hr)	x Receptor-Specific Exposure Factor (l-hr/cm-kg-day)	= Chronic Average Daily Dose (mg/kg-day)	/ Oral Chronic Reference Dose (mg/kg-day)	= Hazard Index
Volatile Organic Compounds							
1,4-Dichlorobenzene	NCC	1.00	6.2E-02	1.5E-03	NC	NA	NC
Benzene	NCC	1.00	1.1E-01	1.5E-03	NC	1.0E-03	NC
Carbon Tetrachloride	NCC	1.00	2.2E-02	1.5E-03	NC	7.0E-04	NC
Chlorobenzene	NCC	1.00	4.1E-02	1.5E-03	NC	2.0E-02	NC
Chloroform	NCC	1.00	1.3E-01	1.5E-03	NC	1.0E-02	NC
Tetrachloroethene	NCC	1.00	3.7E-01	1.5E-03	NC	1.0E-02	NC
Trichloroethene	NCC	1.00	2.3E-01	1.5E-03	NC	2.0E-03	NC
Vinyl Chloride	NCC	1.00	7.3E-03	1.5E-03	NC	3.0E-03	NC
Semivolatile Organic Compounds							
Benzo(a)anthracene	NCC	1.00	8.1E-01	1.5E-03	NC	3.0E-02	NC
Benzo(a)pyrene	NCC	1.00	1.2E+00	1.5E-03	NC	3.0E-02	NC
Benzo(b)fluoranthene	NCC	1.00	1.2E+00	1.5E-03	NC	3.0E-02	NC
Benzo(g,h,i)perylene	NCC	1.00	1.7E+00	1.5E-03	NC	3.0E-02	NC
bis(2-Ethylhexyl)phthalate	NCC	1.00	3.3E-02	1.5E-03	NC	2.0E-02	NC
Phenanthrene	NCC	1.00	2.3E-01	1.5E-03	NC	3.0E-02	NC
Pesticides/PCBs							
Aldrin	1.8E-05	1.00	1.6E-03	1.5E-03	4.2E-11	3.0E-05	1.4E-06
Dieldrin	NCC	1.00	1.6E-02	1.5E-03	NC	5.0E-05	NC
Metals							
Aluminum, total	NCC	1.00	1.0E-03	1.5E-03	NC	1.0E+00	NC
Arsenic, total	3.5E-03	1.00	1.0E-03	1.5E-03	5.1E-09	3.0E-04	1.7E-05
Barium, total	NCC	1.00	1.0E-03	1.5E-03	NC	7.0E-02	NC
Beryllium, total	1.7E-03	1.00	1.0E-03	1.5E-03	2.5E-09	2.0E-03	1.3E-06
Cadmium, total	NCC	1.00	1.0E-03	1.5E-03	NC	1.0E-03	NC
Copper, total	NCC	1.00	1.0E-03	1.5E-03	NC	3.7E-02	NC
Iron, total	NCC	1.00	1.0E-03	1.5E-03	NC	NA	NC
Lead, total	3.5E-03	1.00	1.0E-03	1.5E-03	5.1E-09	NA	NC
Manganese, total	1.9E+00	1.00	1.0E-03	1.5E-03	2.8E-06	7.0E-02	4.0E-05
Mercury, total	4.3E-04	1.00	1.0E-03	1.5E-03	6.2E-10	3.0E-04	2.1E-06
Nickel, total	NCC	1.00	1.0E-03	1.5E-03	NC	2.0E-02	NC
Thallium, total	NCC	1.00	1.0E-03	1.5E-03	NC	2.0E-01	NC
Vanadium, total	NCC	1.00	1.0E-03	1.5E-03	NC	7.0E-03	NC
Zinc, total	NCC	1.00	1.0E-03	1.5E-03	NC	3.0E-01	NC
						SUBTOTAL:	6.2E-05
						SITE RELATED RISK:	5.9E-05
						BACKGROUND RISK:	1.3E-06

TABLE 8.44-29 (CONT'D)

CALCULATION OF AVERAGE DAILY DOSES AND RISK ESTIMATES
FOR DERMAL CONTACT WITH SURFACE WATER - SEDIMENTATION POND

RECEPTOR: Adult Facilty Worker
CARCINOGENIC EFFECTS

Contaminants	Exposure Point Concentration (mg/l)	x	Dermal Absorption Adjustment Factor	x	Permeability Coefficient (cm/hr)	x	Receptor-Specific Exposure Factor (l-hr/cm-kg-day)	=	Lifetime Average Daily Dose (mg/kg-day)	x	Oral Cancer Slope Factor (mg/kg-day)-1	=	Incremental Lifetime Cancer Risk Estimate
Volatile Organic Compounds													
1,4-Dichlorobenzene	NCC		1.00		6.2E-02		5.2E-04		NC		2.4E-02		NC
Benzene	NCC		1.00		1.1E-01		5.2E-04		NC		2.9E-02		NC
Carbon Tetrachloride	NCC		1.00		2.2E-02		5.2E-04		NC		1.3E-01		NC
Chlorobenzene	NCC		1.00		4.1E-02		5.2E-04		NC		NA		NC
Chloroform	NCC		1.00		1.3E-01		5.2E-04		NC		6.1E-03		NC
Tetrachloroethene	NCC		1.00		3.7E-01		5.2E-04		NC		5.2E-02		NC
Trichloroethene	NCC		1.00		2.3E-01		5.2E-04		NC		1.1E-02		NC
Vinyl Chloride	NCC		1.00		7.3E-03		5.2E-04		NC		1.4E+00		NC
Semivolatile Organic Compounds													
Benzo(a)anthracene	NCC		1.00		8.1E-01		5.2E-04		NC		7.3E-01		NC
Benzo(a)pyrene	NCC		1.00		1.2E+00		5.2E-04		NC		7.3E+00		NC
Benzo(b)fluoranthene	NCC		1.00		1.2E+00		5.2E-04		NC		7.3E-01		NC
Benzo(g,h,i)perylene	NCC		1.00		1.7E+00		5.2E-04		NC		NA		NC
bis(2-Ethylhexyl)phthalate	NCC		1.00		3.3E-02		5.2E-04		NC		1.4E-02		NC
Phenanthrene	NCC		1.00		2.3E-01		5.2E-04		NC		NA		NC
Pesticides/PCBs													
Aldrin	1.8E-05		1.00		1.6E-03		5.2E-04		1.5E-11		1.7E+01		2.6E-10
Dieldrin	NCC		1.00		1.6E-02		5.2E-04		NC		1.6E+01		NC
Metals													
Aluminum, total	NCC		1.00		1.0E-03		5.2E-04		NC		NA		NC
Arsenic, total	3.5E-03		1.00		1.0E-03		5.2E-04		1.8E-09		1.5E+00		2.7E-09
Barium, total	NCC		1.00		1.0E-03		5.2E-04		NC		NA		NC
Beryllium, total	1.7E-03		1.00		1.0E-03		5.2E-04		9.1E-10		4.3E+00		3.9E-09
Cadmium, total	NCC		1.00		1.0E-03		5.2E-04		NC		NA		NC
Copper, total	NCC		1.00		1.0E-03		5.2E-04		NC		NA		NC
Iron, total	NCC		1.00		1.0E-03		5.2E-04		NC		NA		NC
Lead, total	3.5E-03		1.00		1.0E-03		5.2E-04		1.8E-09		NA		NC
Manganese, total	1.9E+00		1.00		1.0E-03		5.2E-04		9.9E-07		NA		NC
Mercury, total	4.3E-04		1.00		1.0E-03		5.2E-04		2.2E-10		NA		NC
Nickel, total	NCC		1.00		1.0E-03		5.2E-04		NC		NA		NC
Thallium, total	NCC		1.00		1.0E-03		5.2E-04		NC		NA		NC
Vanadium, total	NCC		1.00		1.0E-03		5.2E-04		NC		NA		NC
Zinc, total	NCC		1.00		1.0E-03		5.2E-04		NC		NA		NC
											SUBTOTAL:		6.9E-09
											SITE RELATED RISK:		2.7E-09
											BACKGROUND RISK:		3.9E-09

Notes:

1. NA = Not Analyzed/Not Applicable; NC = Not Calculated; NSCC = Not a Study Chemical of Concern.
2. For constituents without an AAF value, a default value of 1.00 was used.

TABLE 8.44-30

CALCULATION OF AVERAGE DAILY DOSES AND RISK ESTIMATES
FOR FISH CONSUMPTION
CURRENT CONDITIONS

RECEPTOR: Local Resident (Recreators)
CHRONIC NONCARCINOGENIC EFFECTS

Contaminants	Exposure Point Concentration (mg/kg)	Oral x Absorption x Adjustment Factor	Receptor-Specific Exposure Factor (kg/kg-day)	= Chronic Average Daily Dose (mg/kg-day)	/ Oral Chronic Reference Dose (mg/kg-day)	= Hazard Index
Volatile Organic Compounds						
1,4-Dichlorobenzene	1.4E-01	1.00	7.2E-05	1.0E-05	NA	NC
Benzene	NCC	1.00	7.2E-05	NC	1.0E-03	NC
Carbon Tetrachloride	NCC	1.00	7.2E-05	NC	7.0E-04	NC
Chlorobenzene	NCC	1.00	7.2E-05	NC	2.0E-02	NC
Chloroform	NCC	1.00	7.2E-05	NC	1.0E-02	NC
Tetrachloroethene	NCC	1.00	7.2E-05	NC	1.0E-02	NC
Trichloroethene	NCC	1.00	7.2E-05	NC	2.0E-03	NC
Vinyl Chloride	NCC	1.00	7.2E-05	NC	3.0E-03	NC
Semivolatile Organic Compounds						
Benzo(a)anthracene	3.6E-02	1.00	7.2E-05	2.6E-06	3.0E-02	8.7E-05
Benzo(a)pyrene	6.1E-02	1.00	7.2E-05	4.4E-06	3.0E-02	1.5E-04
Benzo(b)fluoranthene	7.7E-02	1.00	7.2E-05	5.5E-06	3.0E-02	1.8E-04
Benzo(g,h,i)perylene	NCC	1.00	7.2E-05	NC	3.0E-02	NC
bis(2-Ethylhexyl)phthalate	NCC	1.00	7.2E-05	NC	2.0E-02	NC
Phenanthrene	NCC	1.00	7.2E-05	NC	3.0E-02	NC
Pesticides/PCBs						
Aldrin	6.9E-04	1.00	7.2E-05	5.0E-08	3.0E-05	1.7E-03
Dieldrin	NCC	1.00	7.2E-05	NC	5.0E-05	NC
Metals						
Aluminum, total	NCC	1.00	7.2E-05	NC	1.0E+00	NC
Arsenic, total	5.1E-02	1.00	7.2E-05	3.7E-06	3.0E-04	1.2E-02
Barium, total	NCC	1.00	7.2E-05	NC	7.0E-02	NC
Beryllium, total	NCC	1.00	7.2E-05	NC	2.0E-03	NC
Cadmium, total	NCC	1.00	7.2E-05	NC	5.0E-04	NC
Copper, total	NCC	1.00	7.2E-05	NC	3.7E-02	NC
Iron, total	NCC	1.00	7.2E-05	NC	NA	NC
Lead, total	NCC	1.00	7.2E-05	NC	NA	NC
Manganese, total	3.3E+00	1.00	7.2E-05	2.4E-04	1.4E-01	1.7E-03
Mercury, total	4.1E-02	1.00	7.2E-05	3.0E-06	3.0E-04	9.9E-03
Nickel, total	NCC	1.00	7.2E-05	NC	2.0E-02	NC
Thallium, total	NCC	1.00	7.2E-05	NC	2.0E-01	NC
Vanadium, total	NCC	1.00	7.2E-05	NC	7.0E-03	NC
Zinc, total	NCC	1.00	7.2E-05	NC	3.0E-01	NC
					SUBTOTAL:	**2.6E-02**
					SITE RELATED RISK:	**2.6E-02**
					BACKGROUND RISK:	**NC**

TABLE 8.44-30 (CONT'D)

CALCULATION OF AVERAGE DAILY DOSES AND RISK ESTIMATES
FOR FISH CONSUMPTION
CURRENT CONDITIONS

RECEPTOR: Local Resident (Recreators)
CARCINOGENIC EFFECTS

Contaminants	Exposure Point Concentration (mg/kg)	x Oral Absorption x Adjustment Factor	Receptor-Specific Exposure Factor (kg/kg-day)	= Lifetime Average Daily Dose (mg/kg-day)	x Cancer Slope Factor (mg/kg-day)-1	= Incremental Lifetime Cancer Risk Estimate
Volatile Organic Compounds						
1,4-Dichlorobenzene	1.4E-01	1.00	1.9E-05	2.7E-06	2.4E-02	6.4E-08
Benzene	NCC	1.00	1.9E-05	NC	2.9E-02	NC
Carbon Tetrachloride	NCC	1.00	1.9E-05	NC	1.3E-01	NC
Chlorobenzene	NCC	1.00	1.9E-05	NC	NA	NC
Chloroform	NCC	1.00	1.9E-05	NC	6.1E-03	NC
Tetrachloroethene	NCC	1.00	1.9E-05	NC	5.2E-02	NC
Trichloroethene	NCC	1.00	1.9E-05	NC	1.1E-02	NC
Vinyl Chloride	NCC	1.00	1.9E-05	NC	1.4E+00	NC
Semivolatile Organic Compounds						
Benzo(a)anthracene	3.6E-02	1.00	1.9E-05	6.9E-07	7.3E-01	5.1E-07
Benzo(a)pyrene	6.1E-02	1.00	1.9E-05	1.2E-06	7.3E+00	8.5E-06
Benzo(b)fluoranthene	7.7E-02	1.00	1.9E-05	1.5E-06	7.3E-01	1.1E-06
Benzo(g,h,i)perylene	NCC	1.00	1.9E-05	NC	NA	NC
bis(2-Ethylhexyl)phthalate	NCC	1.00	1.9E-05	NC	1.4E-02	NC
Phenanthrene	NCC	1.00	1.9E-05	NC	NA	NC
Pesticides/PCBs						
Aldrin	6.9E-04	1.00	1.9E-05	1.3E-08	1.7E+01	2.3E-07
Dieldrin	NCC	1.00	1.9E-05	NC	1.6E+01	NC
Metals						
Aluminum, total	NCC	1.00	1.9E-05	NC	NA	NC
Arsenic, total	5.1E-02	1.00	1.9E-05	9.9E-07	1.5E+00	1.5E-06
Barium, total	NCC	1.00	1.9E-05	NC	NA	NC
Beryllium, total	NCC	1.00	1.9E-05	NC	4.3E+00	NC
Cadmium, total	NCC	1.00	1.9E-05	NC	NA	NC
Copper, total	NCC	1.00	1.9E-05	NC	NA	NC
Iron, total	NCC	1.00	1.9E-05	NC	NA	NC
Lead, total	NCC	1.00	1.9E-05	NC	NA	NC
Manganese, total	3.3E+00	1.00	1.9E-05	6.3E-05	NA	NC
Mercury, total	4.1E-02	1.00	1.9E-05	7.9E-07	NA	NC
Nickel, total	NCC	1.00	1.9E-05	NC	NA	NC
Thallium, total	NCC	1.00	1.9E-05	NC	NA	NC
Vanadium, total	NCC	1.00	1.9E-05	NC	NA	NC
Zinc, total	NCC	1.00	1.9E-05	NC	NA	NC
					SUBTOTAL:	**1.2E-05**
					SITE RELATED RISK:	**1.2E-05**
					BACKGROUND RISK:	**NC**

Notes:

1. NA = Not Analyzed/Not Applicable; NC = Not Calculated; NSCC = Not a Study Chemical of Concern.
2. For constituents without an AAF value, a default value of 1.00 was used.

TABLE 8.45-1
COMPARISON OF SURFACE WATER EXPOSURE POINT CONCENTRATIONS TO AMBIENT WATER QUALITY CRITERIA FOR ORGANISM CONSUMPTION
Central Landfill - OU2
Johnston, Rhode Island

Contaminant	*CAS Number*	Surface Water: Almy Reservoir 95% UCL or Maximum Value [1] (mg/l)	Surface Water: Upper Simmons 95% UCL or Maximum Value [1] (mg/l)	Surface Water: Sedimentation Ponds 95% UCL or Maximum Value [1] (mg/l)	Surface Water: Quarry and Cedar 95% UCL or Maximum Value [1] (mg/l)	Ambient Water Quality Criteria for Organism consumption (mg/L) *Human Health (10-6 risk for carcinogens)*	
Volatile Organic Compounds							
Tetrachloroethene	127184	NCC	5.50E-04	NCC	NCC	8.85E-03	c
Pesticides/PCBs							
Aldrin	309002	NCC	NCC	NCC	NCC	1.40E-07	a,c
Metals							
Arsenic, total	7440382	2.10E-03 *	1.34E-03 *	3.50E-03 *	2.16E-03 *	1.40E-04	a,b,c
Beryllium, total	7440417	2.49E-04 *	9.14E-04 *	1.74E-03 *	2.55E-03 *	6.41E-05	f
Lead, total	7439921	NCC	NCC	3.50E-03	6.01E-03		
Manganese, total	7439965	2.95E-02	6.28E+00 *	1.90E+00 *	2.95E+01 *	1.00E-01	f
Mercury, total	7439976	NCC	NCC	4.26E-04 *	9.80E-04 *	1.50E-04	a
Thallium, total	7440280	NCC	1.08E-02 *	NCC	1.09E-02 *	6.30E-03	a

Notes:
1. Depending normal, lognormal or non-normal distribution. See Figure 8.24-1 for logic diagram on selection of EPC.
2. Shade indicates consistent with background.
3. NCC = Not a Contaminant of Concern in this medium.

a. Criteria for priority pollutants as published in 40 CFR 131.36. These represent EPA's most recent nationwide recommendations which reflect agency RfD values as contained in the Integrated Risk Information System (IRIS) as of July 1, 1995.

b. The criteria refers to the inorganic form only.

c. Criteria in the matrix based on carcinogenicity ($10^{-6\ risk}$)

d. Calculation of criterion was based on sufficient data presented in the 1980 EPA Quality Criteria for Water.

e. US EPA 40 CFR 131.36, July 1,1995.

f. Published Criteria as referenced in US EPA Water Quality Criteria Summary Concentrations. Office of Science and Technology, Health and Ecological Criteria Division (4304).

TABLE 8.45-2

COMPARISON OF LEAD CONCENTRATIONS TO SURFICIAL SOIL STANDARDS
Central Landfill - OU2
Johnston, Rhode Island

Contaminant	95% UCL Concentration on the Mean in Surface Soil (mg/kg)	Maximum Concentration in Surface Soil (mg/kg)	EPA Risk-based Standard (mg/kg)	Rhode Island Permissible Exterior Soil/Dust Standard (mg/kg)
Metals				
Lead, total	85	145	400	150