TABLE 1
SELECTION OF EXPOSURE PATHWAYS
Southwest Properties, Wells G&H Superfund Sites
Operable Unit 2
Woburn, Massachusetts

Scenario Timeframe	Medium	Exposure Medium	Exposure Point	Receptor Population	Receptor Age	Exposure Route	Type of Analysis	Rationale for Selection or Exclusion of Exposure Pathway
Current	Soil	Surface Soil	Aberjona Property	Resident*	Adult	Ingestion	Qual	Evaluated as part of River Study (OU3).
						Inhalation	Qual	Exposure to fugitive dust expected to be negligible.
						Dermal	Qual	Evaluated as part of River Study (OU3).
					Young Child	Ingestion	Qual	Evaluated as part of River Study (OU3).
						Inhalation	Qual	Exposure to fugitive dust expected to be negligible.
						Dermal	Qual	Evaluated as part of River Study (OU3).
			Aberjona Property (Salvage Yard), Whitney Property, and Fenced Portion of Murphy Property	Commercial Worker	Adult	Ingestion	Quant	Commercial workers are currently present On-Site.
						Inhalation	Qual	Inhalation expected to be negligable
						Dermal	Quant	Commercial workers are currently present On-Site.
			Whitney Property and Triangular Portion of Abjerjona Property	Trespasser	Older Child	Ingestion	Quant	Open gates render these areas accessible.
						Inhalation	Qual	Inhalation expected to be negligable
						Dermal	Quant	Open gates render these areas accessible.
		Indoor Air [Associated with Contaminated Surface and Subsurface Soil (from 0 feet to a maximum of 15 feet)]	Aberjona Property	Resident	Adult	Inhalation	None	Concentrations of VOCs in Site soils are not expected to significantly impact indoor air.
					Young Child	Inhalation	None	Concentrations of VOCs in Site soils are not expected to significantly impact indoor air.
			Aberjona and Murphy Properties	Commercial Worker	Adult	Inhalation	None	Concentrations of VOCs in Site soils are not expected to significantly impact indoor air. Whitney building used for storage only.
	Groundwater	Groundwater	Tap Water/Shower Head at Aberjona Residence	Resident	Adult	Ingestion	None	No known potable use of on-Site groundwater
						Inhalation	None	No known potable use of on-Site groundwater
						Dermal	None	No known potable use of on-Site groundwater
					Young Child	Ingestion	None	No known potable use of on-Site groundwater
						Inhalation	None	No known potable use of on-Site groundwater
						Dermal	None	No known potable use of on-Site groundwater
		Indoor Air (Associated with Contaminated Groundwater < 15 feet bgs)	Aberjona Property	Resident	Adult	Inhalation	Quant	Residents currently live On-Site at Aberjona Property, downgradient of monitoring wells with VOCs present in groundwater.
					Young Child	Inhalation	Quant	Residents currently live On-Site at Aberjona Property, downgradient of monitoring wells with VOCs present in groundwater.
				Commercial Worker	Adult	Inhalation	Quant	Commercial workers are currently present On-Site, and VOCs present in groundwater might migrate to indoor air (occupied structures). Whitney building used for storage only
	Surface Water	Surface Water	Murphy Wetland	Trespasser	Older Child	Ingestion	None	Access is limited at these Sites due to fencing, but access may be gained via open gate at Whitney.
						Dermal	Quant	Access is limited at these Sites due to fencing, but access may be gained via open gate at Whitney.
	Sediment	Sediment	Murphy Wetland	Trespasser	Older Child	Ingestion	Quant	Access is limited at these Sites due to fencing, but access may be gained via open gate at Whitney.
						Dermal	Quant	Access is limited at these Sites due to fencing, but access may be gained via open gate at Whitney.

Aberjona = Aberjona Auto Parts; Whitney = Whitney Barrel; and Murphy = Murphy Waste Oil
* Aberjona Property previously evaluated as part of River Study.

TABLE 1
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Southwest Properties, Wells G&H Superfund Sites
Operable Unit 2
Woburn, Massachusetts

Scenario Timeframe	Medium	Exposure Medium	Exposure Point	Receptor Population	Receptor Age	Exposure Route	Type of Analysis	Rationale for Selection or Exclusion of Exposure Pathway
Future	Soil	Surface Soil (0 - 2 feet)	Aberjona Property	Resident*	Adult	Ingestion	Qual	Evaluated as part of River Study (OU3).
						Inhalation	Qual	Exposure to fugitive dust expected to be negligible.
						Dermal	Qual	Evaluated as part of River Study (OU3).
					Young Child	Ingestion	Qual	Evaluated as part of River Study (OU3).
						Inhalation	Qual	Exposure to fugitive dust expected to be negligible.
						Dermal	Qual	Evaluated as part of River Study (OU3).
			Aberjona, Whitney, and Murphy Properties	Commercial Worker	Adult	Ingestion	Quant	Commercial Workers may continue to work On-Site in the future.
						Inhalation	Qual	Exposure to fugitive dust expected to be negligible.
						Dermal	Quant	Commercial Workers may continue to work On-Site in the future.
				Trespasser	Older Child	Ingestion	Quant	Site access in the future may not be restricted.
						Inhalation	Qual	Exposure to fugitive dust expected to be negligible.
						Dermal	Quant	Site access in the future may not be restricted.
				Recreational User	Adult	Ingestion	Quant	Future Site plans may include recreational use.
						Inhalation	Qual	Exposure to fugitive dust expected to be negligible.
						Dermal	Quant	Future Site plans may include recreational use.
					Young Child	Ingestion	Quant	Future Site plans may include recreational use.
						Inhalation	Qual	Exposure to fugitive dust expected to be negligible.
						Dermal	Quant	Future Site plans may include recreational use.
				Construction Worker	Adult	Ingestion	Quant	Future site plans may involve construction. Construction workers may come into contact with contaminated soil.
						Inhalation	Quant	Future site plans may involve construction. Construction workers may come into contact with contaminated fugitive dusts.
						Dermal	Quant	Future site plans may involve construction. Construction workers may come into contact with contaminated soil.
		Subsurface Soil (2 - 15 ft)	Aberjona Property	Resident*	Adult	Ingestion	Qual	Evaluated as part of River Study (OU3).
						Inhalation	Qual	Exposure to fugitive dust expected to be negligible.
						Dermal	Qual	Evaluated as part of River Study (OU3).
					Young Child	Ingestion	Qual	Evaluated as part of River Study (OU3).
						Inhalation	Qual	Exposure to fugitive dust expected to be negligible.
						Dermal	Qual	Evaluated as part of River Study (OU3).
			Aberjona, Whitney, and Murphy Properties	Recreational User	Adult	Ingestion	Quant	Future Site plans may include recreational use.
						Inhalation	Qual	Exposure to fugitive dust expected to be negligible.
						Dermal	Quant	Future Site plans may include recreational use.
					Young Child	Ingestion	Quant	Future Site plans may include recreational use.
						Inhalation	Qual	Exposure to fugitive dust expected to be negligible.
						Dermal	Quant	Future Site plans may include recreational use.
				Construction Worker	Adult	Ingestion	Quant	Future site plans may involve construction. Construction workers may come into contact with contaminated soil.
						Inhalation	Quant	Future site plans may involve construction. Construction workers may come into contact with contaminated fugitive dusts.
						Dermal	Quant	Future site plans may involve construction. Construction workers may come into contact with contaminated soil.
		Indoor Air [Associated with Contaminated Surface and Subsurface Soil (from 0 feet to a maximum of 15 feet)]	Aberjona, Whitney, and Murphy Properties	Resident	Adult	Inhalation	None	Future Site use at Whitney and Murphy will not likely include residential use. VOCs present in Aberjona Site soils will not significantly impact indoor air.
					Young Child	Inhalation	None	Future Site use at Whitney and Murphy will not likely include residential use. VOCs present in Aberjona Site soils will not significantly impact indoor air.
				Commercial Worker	Adult	Inhalation	Quant	Commercial workers may continue to work On-Site in the future, and VOCs present in Site soil might migrate to indoor air.
				Recreational User	Adult	Inhalation	Quant	Future Site plans may include recreational use, and VOCs present in Site soil might migrate to indoor air.
					Young Child	Inhalation	Quant	Future Site plans may include recreational use, and VOCs present in Site soil might migrate to indoor air.
		Outdoor Air	Whitney and Murphy Properties	Construction Worker	Adult	Inhalation	Quant	Future Site plans include possible recreational use facilities, which will involve construction. Construction workers may be exposed to fugitive contaminant vapors attributable to contaminated soil that migrate to the air space of construction excavations. VOCs present in Aberjona Site soils will not significantly impact outdoor air

Aberjona = Aberjona Auto Parts; Whitney = Whitney Barrel; and Murphy = Murphy Waste Oil
* Aberjona Property previously evaluated as part of River Study.

TABLE 1
SELECTION OF EXPOSURE PATHWAYS
Southwest Properties, Wells G&H Superfund Sites
Operable Unit 2
Woburn, Massachusetts

Scenario Timeframe	Medium	Exposure Medium	Exposure Point	Receptor Population	Receptor Age	Exposure Route	Type of Analysis	Rationale for Selection or Exclusion of Exposure Pathway
Future (cont.)	Groundwater	Groundwater	Tap Water/Shower Head off-site	Off-Site Resident	Adult	Ingestion Inhalation Dermal	Quant Quant Quant	Site groundwater could be used as a future drinking water source. Residents may be exposed to VOCs present in Site groundwater during showering. Future residents could experience dermal exposure to contaminants in Site groundwater while showering.
					Young Child	Ingestion Inhalation Dermal	Quant Quant Quant	Site groundwater could be used as a future drinking water source. Residents may be exposed to VOCs present in Site groundwater during showering. Future residents could experience dermal exposure to contaminants in Site groundwater while showering.
		Shallow Groundwater	Aberjona, Whitney, and Murphy Properties	Construction Worker	Adult	Ingestion Dermal	Quant Quant	Future Site plans include possible recreational use which will involve construction. Construction workers may come into contact with contaminated groundwater during excavation dewatering and other construction activities. Future Site plans include possible recreational use which will involve construction. Construction workers may come into contact with contaminated groundwater during excavation dewatering and other construction activities.
		Indoor Air	Aberjona Property	Resident	Adult	Inhalation	Quant	VOCs present in groundwater might migrate to indoor air
					Young Child	Inhalation	Quant	VOCs present in groundwater might migrate to indoor air
			Aberjona, Whitney, and Murphy Properties	Commercial Worker	Adult	Inhalation	Quant	VOCs present in groundwater might migrate to indoor air.
				Recreational User	Adult	Inhalation	Quant	VOCs present in groundwater might migrate to indoor air
					Young Child	Inhalation	Quant	VOCs present in groundwater might migrate to indoor air
		Outdoor Air	Aberjona, Whitney, and Murphy Properties	Construction Worker	Adult	Inhalation	Quant	Future Site plans include possible recreational use which will involve construction. Construction workers may be exposed to VOCs in Site groundwater that migrate to the air space of excavations.
	Surface	Surface Water	Murphy Wetland	Recreational User	Adult	Ingestion Dermal	None Quant	Wading Scenario: Ingestion is unlikely during wading Standing water has been observed in the Murphy wetland. Contaminants in sediments could partition to aqueous phases.
					Young Child	Ingestion Dermal	None Quant	Wading Scenario: Ingestion is unlikely during wading Standing water has been observed in the Murphy wetland. Contaminants in sediments could partition to aqueous phases.
				Trespasser	Older Child	Ingestion Dermal	None Quant	Wading Scenario: Ingestion is unlikely during wading Standing water has been observed in the Murphy wetland. Contaminants in sediments could partition to aqueous phases.
	Sediment	Sediment	Murphy Wetland	Recreational User	Adult	Ingestion Dermal	Quant Quant	Contaminated sediments have been identified in the Murphy property wetlands Contaminated sediments have been identified in the Murphy property wetlands
					Young Child	Ingestion Dermal	Quant Quant	Contaminated sediments have been identified in the Murphy property wetlands Contaminated sediments have been identified in the Murphy property wetlands
				Trespasser	Older Child	Ingestion Dermal	Quant Quant	Contaminated sediments have been identified in the Murphy property wetlands Contaminated sediments have been identified in the Murphy property wetlands.

Aberjona = Aberjona Auto Parts; Whitney = Whitney Barrel; and Murphy = Murphy Waste Oil
* Aberjona Property previously evaluated as part of River Study.

TABLE 3-2.1
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Southwest Properties, Wells G&H Superfund Site Operable Unit 2 Woburn, Massachusetl

Scenario Timeframe: Current/Future
Medium: Soil
Exposure Medium: Surface Soil (0-2 ft

Exposure Point	CAS Number	Chemical	Minimum Concentration (Qualifier) (1)		Maximum Concentration (Qualifier) (1)		Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (N/C) (4)		Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
Combined Data (a)	540590	1,2-Dichloroethene (total)	4.90E-03		4.90E-03		mg/kg	MR-SS2	1/16	0.0025-0.0133	4.90E-03	N/A	4.30E+00	N	N/A	N/A	N	BSL
	91203	Naphthalene	8.30E-02		1.30E+00	J	mg/kg	WB10SS(0-2.0)	12/38	0.0031-3.2	1.30E+00	N/A	5.60E+00	N	N/A	N/A	N	BSL
	74873	Chloromethane	4.50E-01		4.50E-01		mg/kg	WB6SS(0-2.0)	1/35	0.0017-0.45	4.50E-01	N/A	1.20E+00	C	N/A	N/A	N	BSL
	75014	Vinyl chloride	9.10E-03		2.80E-01		mg/kg	WB6SS(0-2.0)	2/36	0.0017-0.45	2.80E-01	N/A	7.90E-02	C	N/A	N/A	Y	ASL
	74839	Bromomethane	2.40E-03	J	2.40E-03	J	mg/kg	AB-SS9	1/35	0.0017-0.45	2.40E-03	N/A	3.90E-01	N	N/A	N/A	N	BSL
	75003	Chloroethane	1.00E-02		1.00E-02		mg/kg	WB-7/0-2	1/36	0.0017-0.45	1.00E-02	N/A	3.00E+00	C	N/A	N/A	N	BSL
	75354	1,1-Dichloroethene	8.00E-04	J	4.80E-03	J	mg/kg	AB-SS5	11/35	0.0017-0.23	4.80E-03	N/A	1.20E+01	N	N/A	N/A	N	BSL
	67641	Acetone	3.50E-03	JEB	1.20E-01	JEB	mg/kg	WB-11/1-1.75	6/37	0.0046-0.91	1.20E-01	N/A	1.60E+02	N	N/A	N/A	N	BSL
	75150	Carbon disulfide	3.20E-03		4.60E-02		mg/kg	WB12SS(1.0-2.0)	4/35	0.0017-0.45	4.60E-02	N/A	3.60E+01	N	N/A	N/A	N	BSL
	79209	Methyl acetate	2.50E-01		2.50E-01		mg/kg	WB-11/1-1.75	1/15	0.0017-0.082	2.50E-01	N/A	2.20E+03	N	N/A	N/A	N	BSL
	75092	Methylene chloride	1.20E-02		1.80E-02		mg/kg	W-89-S3(0-2)	2/43	0.005-0.95	1.80E-02	N/A	9.10E+00	C	N/A	N/A	N	BSL
	1634044	Methyl tert-butyl ether	3.10E-03		3.70E-01		mg/kg	WB6SS(0-2.0)	2/19	0.0017-0.45	3.70E-01	N/A	6.20E+01	C	N/A	N/A	N	BSL
	75343	1,1-Dichloroethane	2.70E-03		4.60E-02		mg/kg	B-13 SS-1 (0-2)	2/37	0.0017-0.23	4.60E-02	N/A	5.10E+01	N	N/A	N/A	N	BSL
	156592	cis-1,2-Dichloroethene	2.50E-03		2.10E-01		mg/kg	B-13 SS-1 (0-2)	2/18	0.0017-0.082	2.10E-01	N/A	4.30E+00	N	N/A	N/A	N	BSL
	78933	2-Butanone (MEK)	1.10E-02		2.90E-02		mg/kg	WB-6/0-2	2/36	0.0025-0.91	2.90E-02	N/A	7.30E+02	N	N/A	N/A	N	BSL
	71556	1,1,1-Trichloroethane	1.30E-03	J	3.20E-02		mg/kg	B-13 SS-1 (0-2)	2/37	0.0017-0.23	3.20E-02	N/A	2.00E+02	N	N/A	N/A	N	BSL
	110827	Cyclohexane	2.60E-03		2.60E-03		mg/kg	WB-7/0-2	1/15	0.0017-0.082	2.60E-03	N/A	1.40E+02	N	N/A	N/A	N	BSL
	71432	Benzene	5.00E-04	J	1.20E-01		mg/kg	WB6SS(0-2.0)	8/37	0.0017-0.23	1.20E-01	N/A	6.00E-01	C	N/A	N/A	N	BSL
	79016	Trichloroethene	1.40E-03	J	1.30E+00		mg/kg	B-18 SS-1 (0-2)	5/37	0.0017-0.082	1.30E+00	N/A	5.30E-02	C	N/A	N/A	Y	ASL
	108872	Methyl cyclohexane	3.60E-02		1.70E-01		mg/kg	WB-11/1-1.75	2/15	0.0017-0.082	1.70E-01	N/A	2.60E+02	N	N/A	N/A	N	BSL
	108883	Toluene	6.00E-04	J	2.90E-01		mg/kg	WB-11/1-1.75	11/45	0.0017-0.23	2.90E-01	N/A	6.60E+01	N	N/A	N/A	N	BSL
	127184	Tetrachloroethene	1.50E-03	J	2.40E-01		mg/kg	B-18 SS-1 (0-2)	4/37	0.0017-0.082	2.40E-01	N/A	1.50E+00	C	N/A	N/A	N	BSL
	108907	Chlorobenzene	4.60E-02		4.60E-02		mg/kg	WB-6/0-2	1/35	0.0017-0.23	4.60E-02	N/A	1.50E+01	N	N/A	N/A	N	BSL
	100414	Ethylbenzene	8.00E-04	J	1.90E-01		mg/kg	WB-11/1-1.75	10/37	0.0017-0.23	1.90E-01	N/A	8.90E+00	C	N/A	N/A	N	BSL
	1330207	Xylenes (total)	6.00E-04	J	7.20E-01		mg/kg	WB-11/1-1.75	13/45	0.0017-0.23	7.20E-01	N/A	2.70E+01	N	N/A	N/A	N	BSL
	100425	Styrene	2.70E-03	J	2.70E-03	J	mg/kg	AB-SS5	1/35	0.0017-0.23	2.70E-03	N/A	4.40E+02	N	N/A	N/A	N	BSL
	79345	1,1,2,2-Tetrachloroethane	7.00E-04	J	7.00E-04	J	mg/kg	WB-SS2	1/35	0.0017-0.23	7.00E-04	N/A	4.10E-01	C	N/A	N/A	N	BSL
	541731	1,3-Dichlorobenzene	4.30E-03		4.30E-03		mg/kg	WB-6/0-2	1/34	0.0017-0.709	4.30E-03	N/A	1.60E+00	N	N/A	N/A	N	BSL
	106467	1,4-Dichlorobenzene	3.70E-03		3.70E-03		mg/kg	WB-6/0-2	1/34	0.0017-0.709	3.70E-03	N/A	3.40E+00	C	N/A	N/A	N	BSL
	95501	1,2-Dichlorobenzene	2.90E-03		2.90E-03		mg/kg	WB-6/0-2	1/34	0.0017-0.709	2.90E-03	N/A	1.10E+02	N	N/A	N/A	N	BSL
	120821	1,2,4-Trichlorobenzene	3.50E-03		3.50E-03		mg/kg	WB-6/0-2	1/34	0.0017-0.709	3.50E-03	N/A	6.50E+01	N	N/A	N/A	N	BSL
	100527	Benzaldehyde	1.70E-01		4.40E-01	J	mg/kg	WB-7/0-2	4/15	0.13-2.3	4.40E-01	N/A	6.10E+02	N	N/A	N/A	N	BSL
	108952	Phenol	1.50E-01	J	1.50E-01	J	mg/kg	WB11SS(0-1.0)	1/31	0.0042-0.74	1.50E-01	N/A	3.70E+03	N	N/A	N/A	N	BSL
	95487	2-Methylphenol	8.60E-03	JEB	3.60E-02	J	mg/kg	WB-SS2	3/31	0.0027-0.74	3.60E-02	N/A	3.10E+02	N	N/A	N/A	N	BSL
	106445	4-Methylphenol	2.00E-01	J	4.20E-01	J	mg/kg	WB6SS(0-2.0)	2/31	0.13-2.3	4.20E-01	N/A	3.10E+01	N	N/A	N/A	N	BSL
	105679	2,4-Dimethylphenol	7.30E-02	J	7.30E-02	J	mg/kg	WB11SS(0-1.0)	1/28	0.13-1.2	7.30E-02	N/A	1.20E+02	N	N/A	N/A	N	BSL
	91576	2-Methylnaphthalene	3.50E-02	J	1.42E+00		mg/kg	AB-SS5	15/33	0.052-0.55	1.42E+00	N/A	5.60E+00	N	N/A	N/A	N	BSL
	92524	1,1'-Biphenyl	1.10E-01		6.20E-01	J	mg/kg	WB10SS(0-2.0)	3/15	0.052-2.3	6.20E-01	N/A	3.00E+02	N	N/A	N/A	N	BSL
	131113	Dimethyl phthalate	4.10E-02	J	4.10E-02	J	mg/kg	AB-SS4	1/31	0.052-2.3	4.10E-02	N/A	6.10E+04	N	N/A	N/A	N	BSL
	208968	Acenaphthylene	2.10E-02		4.10E+00		mg/kg	B-18 SS-1 (0-2)	12/38	0.0026-3.2	4.10E+00	N/A	5.60E+00	N	N/A	N/A	N	BSL
	83329	Acenaphthene	7.00E-02	J	7.90E+00	J	mg/kg	WB10SS(0-2.0)	17/38	0.0026-3.2	7.90E+00	N/A	3.70E+02	N	N/A	N/A	N	BSL
	51285	2,4-Dinitrophenol	9.10E-02	J	9.10E-02	J	mg/kg	MR-10/0-2	1/27	0.13-1.773	9.10E-02	N/A	1.20E+01	N	N/A	N/A	N	BSL
	132649	Dibenzofuran	3.50E-02	J	4.60E+00	J	mg/kg	WB10SS(0-2.0)	13/31	0.052-0.412	4.60E+00	N/A	2.90E+01	N	N/A	N/A	N	BSL
	84662	Diethyl phthalate	1.81E-01	J	1.81E-01	J	mg/kg	WB-SS1	1/31	0.052-2.3	1.81E-01	N/A	4.90E+03	N	N/A	N/A	N	BSL
	86737	Fluorene	1.80E-02		9.80E+00	J	mg/kg	WB10SS(0-2.0)	16/38	0.0026-3.2	9.80E+00	N/A	2.70E+02	N	N/A	N/A	N	BSL
	118741	Hexachlorobenzene	2.00E-03	J	3.30E-03	J	mg/kg	WB-11/1-1.75	2/31	0.0027-0.709	3.30E-03	N/A	3.00E-01	C	N/A	N/A	N	BSL
	87865	Pentachlorophenol	1.40E-01	J	1.40E-01	J	mg/kg	AB-16/0-2	1/28	0.052-1.773	1.40E-01	N/A	3.00E+00	C	N/A	N/A	N	BSL
	85018	Phenanthrene	7.40E-03	J	6.80E+01	J	mg/kg	WB10SS(0-2.0)	25/38	0.052-3.2	6.80E+01	N/A	5.60E+00	N	N/A	N/A	Y	ASL
	120127	Anthracene	1.40E-01	J	1.90E+01	J	mg/kg	WB10SS(0-2.0)	15/38	0.022-3.2	1.90E+01	N/A	2.20E+03	N	N/A	N/A	N	BSL

TABLE 3-2.1
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Southwest Properties, Wells G&H Superfund Site Operable Unit 2 Woburn, Massachusetl

Scenario Timeframe: Current/Future
Medium: Soil
Exposure Medium: Surface Soil (0-2 ft

Exposure Point	CAS Number	Chemical	Minimum Concentration (Qualifier) (1)		Maximum Concentration (Qualifier) (1)		Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (N/C) (4)		Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
	86748	Carbazole	7.00E-02	J	1.30E+01	J	mg/kg	WB10SS(0-2.0)	12/31	0.052-0.709	1.30E+01	N/A	2.40E+01	C	N/A	N/A	N	BSL
	84742	Di-n-butyl phthalate	3.80E-02	J	4.10E-01	J	mg/kg	WB-10/0-2	15/31	0.19-2.3	4.10E-01	N/A	6.10E+02	N	N/A	N/A	N	BSL
	206440	Fluoranthene	1.50E-02		7.60E+01	J	mg/kg	WB10SS(0-2.0)	32/38	0.052-3.2	7.60E+01	N/A	2.30E+02	N	N/A	N/A	N	BSL
	129000	Pyrene	1.50E-02		8.40E+01	J	mg/kg	WB10SS(0-2.0)	32/38	0.052-3.2	8.40E+01	N/A	2.30E+02	N	N/A	N/A	N	BSL
	85687	Butyl benzyl phthalate	3.50E-02	J	1.15E+01	J	mg/kg	WB11SS(0-1.0)	15/31	0.052-2.3	1.15E+01	N/A	1.20E+03	N	N/A	N/A	N	BSL
	56553	Benzo(a)Anthracene	9.00E-03		3.80E+01	J	mg/kg	WB10SS(0-2.0)	26/38	0.052-3.2	3.80E+01	N/A	6.20E-01	C	N/A	N/A	Y	ASL
	218019	Chrysene	1.20E-02		2.80E+01	J	mg/kg	WB10SS(0-2.0)	26/38	0.052-3.2	2.80E+01	N/A	6.20E+01	C	N/A	N/A	N	BSL
	117817	Bis(2-ethylhexyl) phthalate	5.80E-02	J	2.92E+01		mg/kg	WB-SS3	12/31	0.12-2.624	2.92E+01	N/A	3.50E+01	C	N/A	N/A	N	BSL
	117840	Di-n-octyl phthalate	7.10E-02	J	7.78E-01		mg/kg	AB-SS1	2/31	0.052-2.3	7.78E-01	N/A	2.40E+02	N	N/A	N/A	N	BSL
	205992	Benzo(b)Fluoranthene	1.10E-02		4.00E+01	J	mg/kg	WB10SS(0-2.0)	24/38	0.052-3.2	4.00E+01	N/A	6.20E-01	C	N/A	N/A	Y	ASL
	207089	Benzo(k)Fluoranthene	9.30E-03		1.80E+01	J	mg/kg	WB-10/0-2	24/38	0.052-3.2	1.80E+01	N/A	6.20E+00	C	N/A	N/A	Y	ASL
	50328	Benzo(a)Pyrene	9.90E-03		2.90E+01	J	mg/kg	WB10SS(0-2.0)	24/38	0.052-3.2	2.90E+01	N/A	6.20E-02	C	N/A	N/A	Y	ASL
	193395	Indeno(1,2,3-cd)pyrene	6.20E-03		1.80E+01	J	mg/kg	WB10SS(0-2.0)	26/38	0.052-3.2	1.80E+01	N/A	6.20E-01	C	N/A	N/A	Y	ASL
	53703	Dibenz(a,h) anthracene	2.80E-03		5.50E+00	J	mg/kg	WB10SS(0-2.0)	23/38	0.34-3.2	5.50E+00	N/A	6.20E-02	C	N/A	N/A	Y	ASL
	191242	Benzo(g,h,i)perylene	7.90E-03		1.40E+01	J	mg/kg	WB10SS(0-2.0)	26/38	0.052-3.2	1.40E+01	N/A	5.60E+00	N	N/A	N/A	Y	ASL
	18540299	Chromium (VI)	3.84E-01	J	1.85E+01	J	mg/kg	WB-SS3	30/42	1-1.6	1.85E+01	N/A	3.00E+01	C	N/A	N/A	N	BSL
	7429905	Aluminum	1.11E+03		7.13E+04		mg/kg	WB10SS(0-2.0)	36/36	NA	7.13E+04	N/A	7.60E+03	N	N/A	N/A	N	NTX
	7440360	Antimony	1.30E+00	J	6.68E+00		mg/kg	WB8SS(0-1.0)	5/41	0.094-9	6.68E+00	N/A	3.10E+00	N	N/A	N/A	Y	ASL
	7440382	Arsenic	8.50E-01	J	1.04E+01		mg/kg	AB-SS6	39/41	5-7	1.04E+01	N/A	3.90E-01	C	N/A	N/A	Y	ASL
	7440393	Barium	2.25E+01	B	2.23E+02		mg/kg	WB10SS(0-2.0)	35/36	79.4-79.4	2.23E+02	N/A	5.40E+02	N	N/A	N/A	N	BSL
	7440417	Beryllium	1.40E-01		9.40E-01	J	mg/kg	WB-11/1-1.75	37/41	0.034-0.48	9.40E-01	N/A	1.50E+01	N	N/A	N/A	N	BSL
	7440439	Cadmium	7.90E-02	J	2.76E+01		mg/kg	AB-SS9	38/41	1.16-1.49	2.76E+01	N/A	3.70E+00	N	N/A	N/A	Y	ASL
	7440702	Calcium	4.23E+02	J	6.10E+04	J	mg/kg	WB-11/1-1.75	36/36	NA	6.10E+04	N/A	4.00E+06	N	N/A	N/A	N	NUT
	7440473	Chromium	5.50E+00	J	6.18E+02	J	mg/kg	WB-SS3	42/42	NA	6.18E+02	N/A	1.20E+04	N	N/A	N/A	N	BSL
	7440484	Cobalt	1.81E+00		1.70E+01		mg/kg	AB16SS(0-2.0)	36/36	NA	1.70E+01	N/A	9.00E+02	C	N/A	N/A	N	NTX
	7440508	Copper	7.20E+00	J	3.78E+02		mg/kg	WB6SS(0-2.0)	41/41	NA	3.78E+02	N/A	3.10E+02	N	N/A	N/A	Y	ASL
	57125	Cyanide	1.20E-01		1.80E+00	J	mg/kg	WB-SS1	9/41	0.077-2.2	1.80E+00	N/A	1.20E+02	N	N/A	N/A	N	BSL
	7439896	Iron	5.13E+03	J	4.48E+04	J	mg/kg	WB-SS2	36/36	NA	4.48E+04	N/A	2.30E+03	N	N/A	N/A	N	NTX
	7439921	Lead	1.32E+01	J	1.90E+03		mg/kg	B-8 SS-1 (0-2)	42/42	NA	1.90E+03	N/A	4.00E+02	N	N/A	N/A	Y	ASL
	7439954	Magnesium	3.10E+02	J	9.20E+03	J	mg/kg	AB-16/0-2	36/36	NA	9.20E+03	N/A	8.05E+06	N	N/A	N/A	N	NUT
	7439965	Manganese	4.67E+01	J	4.20E+02	J	mg/kg	MR-10/0-2	36/36	NA	4.20E+02	N/A	1.80E+02	N	N/A	N/A	Y	ASL
	7439976	Mercury	7.60E-03	J	1.10E+00	J	mg/kg	WB-6/0-2	27/42	0.0676-0.208	1.10E+00	N/A	6.10E-01	N	N/A	N/A	Y	ASL
	7440020	Nickel	5.40E+00	J	1.80E+02	J	mg/kg	AB-14/0-2	41/41	NA	1.80E+02	N/A	1.60E+02	N	N/A	N/A	Y	ASL
	2023695	Potassium	1.50E+02	J	2.26E+03	J	mg/kg	WB10SS(0-2.0)	36/36	NA	2.26E+03	N/A	1.00E+06	N	N/A	N/A	N	NUT
	7782492	Selenium	1.90E-01	J	8.40E-01		mg/kg	WB-8/0-2	4/41	0.01-7	8.40E-01	N/A	3.90E+01	N	N/A	N/A	N	BSL
	7440224	Silver	5.10E-02	J	1.94E+00		mg/kg	AB-SS9	22/41	0.29-0.8	1.94E+00	N/A	3.90E+01	N	N/A	N/A	N	BSL
	7440235	Sodium	5.01E+01	B	9.91E+02	J	mg/kg	WB7SS(0-2.0)	28/36	32-308	9.91E+02	N/A	1.00E+06	N	N/A	N/A	N	NUT
	7440280	Thallium	1.00E-01	B	1.00E+01		mg/kg	B-18 SS-1 (0-2)	2/41	0.037-10	1.00E+01	N/A	5.20E-01	N	N/A	N/A	Y	ASL
	7440622	Vanadium	4.40E+00	B	4.60E+01		mg/kg	AB16SS(0-2.0)	36/36	NA	4.60E+01	N/A	5.50E+01	N	N/A	N/A	N	BSL
	7440666	Zinc	3.80E+01		9.10E+02	J	mg/kg	AB-14/0-2	42/42	NA	9.10E+02	N/A	2.30E+03	N	N/A	N/A	N	BSL
	5103719	alpha-Chlordane	1.11E-03	J	1.46E+00	J	mg/kg	WB6SS(0-2.0)	12/25	0.00027-0.0584	1.46E+00	N/A	1.60E+00	C	N/A	N/A	N	BSL
	5103742	gamma-Chlordane	4.09E-04	J	8.92E-01	J	mg/kg	WB6SS(0-2.0)	18/25	0.0017-0.0584	8.92E-01	N/A	1.60E+00	C	N/A	N/A	N	BSL
	319868	delta-BHC	2.80E-03	J	2.80E-03	J	mg/kg	AB-SS9	1/25	0.00026-0.284	2.80E-03	N/A	9.00E-02	C	N/A	N/A	N	BSL
	309002	Aldrin	1.20E-03	J	3.80E-03	J	mg/kg	AB-SS4	4/25	0.00026-0.284	3.80E-03	N/A	2.90E-02	C	N/A	N/A	N	BSL
	1024573	Heptachlor epoxide	2.00E-03		2.00E-03		mg/kg	AB-SS4	1/25	0.00026-0.284	2.00E-03	N/A	5.30E-02	C	N/A	N/A	N	BSL
	72559	4,4'-DDE	2.81E-04	J	2.62E-01	J	mg/kg	WB10SS(0-2.0)	10/25	0.00062-0.0292	2.62E-01	N/A	1.70E+00	C	N/A	N/A	N	BSL
	72208	Endrin	3.00E-03	J	8.30E-02		mg/kg	WB-SS3	5/25	0.00052-0.567	8.30E-02	N/A	1.80E+00	N	N/A	N/A	N	BSL
	33213659	Endosulfan II	2.30E-03	J	2.30E-03	J	mg/kg	AB-SS7	1/25	0.00052-0.567	2.30E-03	N/A	3.70E+01	N	N/A	N/A	N	BSL
	72548	4,4'-DDD	7.43E-04	J	9.54E-01	J	mg/kg	WB6SS(0-2.0)	11/25	0.0034-0.292	9.54E-01	N/A	2.40E+00	C	N/A	N/A	N	BSL

TABLE 3-2.1
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Southwest Properties, Wells G&H Superfund Site Operable Unit 2 Woburn, Massachusetl

Scenario Timeframe: Current/Future
Medium: Soil
Exposure Medium: Surface Soil (0-2 ft

Exposure Point	CAS Number	Chemical	Minimum Concentration (Qualifier) (1)		Maximum Concentration (Qualifier) (1)		Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (N/C) (4)		Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
	50293	4,4'-DDT	8.70E-04	J	1.62E+00	J	mg/kg	WB10SS(0-2.0)	18/25	0.0034-0.0038	1.62E+00	N/A	1.70E+00	C	N/A	N/A	N	BSL
	53469219	Aroclor 1242	4.20E-02		3.25E+00	J	mg/kg	WB-11/1-1.75	5/32	0.0052-0.12	3.25E+00	N/A	2.20E-01	C	N/A	N/A	*Y*	ASL
	12672296	Aroclor 1248	3.24E-01	J	3.24E-01	J	mg/kg	WB11SS(0-1.0)	1/32	0.0052-0.132	3.24E-01	N/A	2.20E-01	C	N/A	N/A	*Y*	ASL
	11097691	Aroclor 1254	1.20E-02	J	4.25E+01	J	mg/kg	WB6SS(0-2.0)	15/32	0.0052-0.06	4.25E+01	N/A	2.20E-01	C	N/A	N/A	*Y*	ASL
	11096825	Aroclor 1260	2.13E-02	J	1.17E+01	J	mg/kg	WB-11/1-1.75	20/32	0.0058-0.1	1.17E+01	N/A	2.20E-01	C	N/A	N/A	*Y*	ASL
	1746016	PCB TEQ*	5.84E-08	J	1.96E-04	J	mg/kg	WB12SS(1.0-2.0)	13/13	NA	1.96E-04	N/A	3.90E-06	C	N/A	N/A	*Y*	ASL
		C5-C8 Aliphatic	1.00E+00	J	9.00E+00	J	mg/kg	WB6SS(0-2.0)	7/7	NA	9.00E+00	N/A	1.00E+02	N	N/A	N/A	N	BSL
		C9-C12 Aliphatic	1.00E+00	J	1.20E+01	J	mg/kg	WB6SS(0-2.0)	7/7	NA	1.20E+01	N/A	1.00E+03	N	N/A	N/A	N	BSL
		C9-C10 Aromatic	1.10E+00	J	5.00E+00	J	mg/kg	WB6SS(0-2.0)	4/4	NA	5.00E+00	N/A	1.00E+02	N	N/A	N/A	N	BSL
		C9-C18 Aliphatic	2.00E+01	J	8.50E+01	J	mg/kg	WB6SS(0-2.0)	2/9	3.12-17.02	8.50E+01	N/A	1.00E+03	N	N/A	N/A	N	BSL
		C19-C36 Aliphatic	2.70E+01	J	9.11E+02	J	mg/kg	WB6SS(0-2.0)	8/9	4.67-4.67	9.11E+02	N/A	2.50E+03	N	N/A	N/A	N	BSL
		C11-C22 Aromatic	1.10E+01	J	4.70E+03	T	mg/kg	B-13 SS-1 (0-2)	25/27	9.09-47.86	4.70E+03	N/A	2.00E+02	N	N/A	N/A	*Y*	ASL

(a) Data presented are from soil samples AB-13/0-2,AB13SS(0-2.0),AB-14/0-2,AB14SS(0-2.0),AB-15/0-2,AB15SS(0-2.0),AB-16/0-2,AB16SS(0-2.0),AB-SS1,AB-SS2,AB-SS3,AB-SS4,AB-SS5,AB-SS6,AB-SS7,AB-SS8,AB-SS9,AB-SS9 DUP,B-13 SS-1 (0-2),B-18 SS-1 (0-2),B-4 SS-1 (0-2), B-8 SS-1 (0-2),CHI-7/88 (0-2),MR-10/0-2,MR10SS(0-2.0),MR-SS1,MR-SS2,MR-SS3,MW-1 SS-1 (0-2),MW-18D SS-1 (0-2),MW-2 SS-1 (0-2),MW-3 SS-1 (0-2),MW-4 SS-1 (0-2),MW-5S SS-1 (0-2),MW-6 SS-1 (0-2),W-89-S1(0-2),W-89-S14(0-2),W-89-S15(0-2),W-89-S16(0-2),W-89-S17(0-2) W-89-S18(0-2),W-89-S3(0-2),W-89-S4(0-2),WB-10/0-2,WB10SS(0-2.0),WB-11/1-1.75,WB11SS(0-1.0),WB12SS(1.0-2.0),WB-13/0-2,WB13SS(0-2.0),WB21SS(0-1.0),WB-6/0-2,WB6SS(0-2.0),WB-7/0-2,WB7SS(0-2.0),WB-8/0-2,WB8SS(0-1.0),WB-SS1,WB-SS2,WB-SS3,WB-SS4

(1) Minimum/maximum detected concentration
(2) Maximum concentration used for screening
(3) Refer to supporting information for background discussior
(4) USEPA Region 9 PRGs for residential soil (adjusted to an hazard quotient = 0.1 for noncarcinogens), October 1, 200
PRG for chromium III used for total chromium
PRG for chromium VI used for chromium VI
PRG for methylmercury used for mercury
PRG for free cyanide used for total cyanide
The screening toxicity value for lead is the residential soil lead guidance level of 400 mg/Kg (USEPA, 1994
The screening toxicity value for the petroleum hydrocarbon fractions are MADEP S-1/GW-1 standard
(5) Rationale Codes:
Selection Reason: Above Screening Levels (ASL)
Deletion Reason: No Toxicity Information (NTX)
Essential Nutrient (NUT)
Below Screening Level (BSL)
Low Concentration, Low Frequency of Detection (LCF)

Definitions:
mg/kg = milligams per kilogram
CAS = Chemical Abstract Service
COPCs = Chemicals of Potential Concerr
ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considere
PRG = Preliminary Remedial Goa
TEQ = Toxic Equivalent for PCB Dioxin-like congener
N/A = Not Applicable or Not Available
J = Estimated Value
C = Carcinogenic
N = Non-Carcinogenic
B = Reported value is less than the contract required detection limit but greater than or equal to the instrument detection li
E = Exceeds Instrument Detection Limit, Diluted
T = C11-C22 Aromatic Measured as Total Petroleum Hydrocarbons by Method 8100M
EB = Analyte Detected In the Associated Equipment Blank
ND = Not Detected
TCDD = tetrachlorodibenzo-p-dioxin
MADEP = Massachusetts Department of Environmental Protection
S-1/GW-1 = MADEP Soil Cleanup Criteria
* PCB Congeners Toxic Equivalent
PCB = polychlorinated biphenyls

TABLE 3-2.1.1
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Southwest Properties, Wells G&H Superfund Site Operable Unit 2 Woburn, Massachusetts

Scenario Timeframe: Current/Future
Medium: Soil
Exposure Medium: Surface Soil (0-2 ft)

Exposure Point	CAS Number	Chemical (b)	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits
Aberjona Property (a)	75014	Vinyl chloride	ND	ND	mg/kg		0/12	0.0017-0.034
	79016	Trichloroethene	ND	ND	mg/kg		0/12	0.0017-0.034
	85018	Phenanthrene	7.40E-03 J	1.28E+00 J	mg/kg	AB-SS5	5/13	0.052-0.55
	56553	Benzo(a)Anthracene	9.00E-03	1.06E+00	mg/kg	AB-SS5	6/13	0.052-0.55
	205992	Benzo(b)Fluoranthene	1.10E-02	1.56E+00	mg/kg	AB-SS5	4/13	0.052-0.55
	207089	Benzo(k)Fluoranthene	9.30E-03	1.06E+00	mg/kg	AB-SS5	4/13	0.052-0.55
	50328	Benzo(a)Pyrene	9.90E-03	1.06E+00	mg/kg	AB-SS5	4/13	0.052-0.55
	193395	Indeno(1,2,3-cd)pyrene	6.20E-03	1.06E+00	mg/kg	AB-SS5	4/13	0.052-0.55
	53703	Dibenz(a,h) anthracene	2.80E-03	6.20E-03 J	mg/kg	AB16SS(0-2.0)	3/13	0.347-0.709
	191242	Benzo(g,h,i)perylene	7.90E-03	1.21E+00	mg/kg	AB-SS5	4/13	0.052-0.55
	7440360	Antimony	1.44E+00	1.80E+00 J	mg/kg	AB-14/0-2	2/15	0.2-9
	7440382	Arsenic	8.50E-01 J	1.04E+01	mg/kg	AB-SS6	15/15	N/A
	7440439	Cadmium	2.70E-01 J	2.76E+01	mg/kg	AB-SS9	14/15	1.39-1.39
	7440508	Copper	1.64E+01	1.60E+02 J	mg/kg	AB-14/0-2	15/15	N/A
	7439921	Lead	4.97E+01 J	1.60E+03 J	mg/kg	AB-14/0-2	15/15	N/A
	7439965	Manganese	1.32E+02 J	3.63E+02	mg/kg	AB-SS8	15/15	N/A
	7439976	Mercury	7.60E-03 J	1.80E-01	mg/kg	AB-SS1	6/15	0.077-0.105
	7440020	Nickel	6.80E+00 J	1.80E+02 J	mg/kg	AB-14/0-2	15/15	N/A
	7440280	Thallium	ND	ND	mg/kg		0/15	0.037-0.17
	53469219	Aroclor 1242	4.20E-02	2.28E-01 J	mg/kg	AB-SS9	3/12	0.0052-0.041
	12672296	Aroclor 1248	ND	ND	mg/kg		0/12	0.0052-0.041
	11097691	Aroclor 1254	1.20E-02 J	2.96E-01	mg/kg	AB-SS4	4/12	0.0052-0.038
	11096825	Aroclor 1260	2.13E-02 J	1.71E-01 J	mg/kg	AB-SS9	8/12	0.0062-0.041
	1746016	PCB TEQ*	4.78E-07 J	2.20E-06 J	mg/kg	AB16SS(0-2.0)	3/3	N/A
		C11-C22 Aromatic	1.10E+01 J	1.80E+01 J	mg/kg	AB15SS(0-2.0)	2/2	N/A

(a) Data presented are from soil samples AB-13/0-2,AB13SS(0-2.0),AB-14/0-2,AB14SS(0-2.0),AB-15/0-2,AB15SS(0-2.0),AB-16/0-2,AB16SS(0-2.0),AB-SS1,AB-SS2, AB-SS3,AB-SS4,AB-SS5,AB-SS6,AB-SS7,AB-SS8,AB-SS9,AB-SS9 DUF
(b) Only COPCs selected on Table 3-2.1 appear.
(1) Minimum/maximum detected concentration.

Definitions:
mg/kg = milligams per kilogram
CAS = Chemical Abstract Service
COPCs = Chemicals of Potential Concern
TEQ = Toxic Equivalent for PCB Dioxin-like congeners
J = Estimated Value
T = C11-C22 Aromatic Measured as Total Petroleum Hydrocarbons by Method 8100M
ND = Not Detected
N/A = Not Applicable or Not Available
* PCB Congeners Toxic Equivalent
PCB = polychlorinated biphenyls

TABLE 3-2.1.2
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Southwest Properties, Wells G&H Superfund Site Operable Unit 2 Woburn, Massachusetts

Scenario Timeframe: Current/Future
Medium: Soil
Exposure Medium: Surface Soil (0-2 ft)

Exposure Point	CAS Number	Chemical (b)	Minimum Concentration (Qualifier) (1)		Maximum Concentration (Qualifier) (1)		Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits
Whitney (a)	75014	Vinyl chloride	9.10E-03		2.80E-01		mg/kg	WB6SS(0-2.0)	2/15	0.002-0.053
	79016	Trichloroethene	1.40E-03	J	1.40E-03	J	mg/kg	WB-7/0-2	1/15	0.002-0.082
	85018	Phenanthrene	2.17E-01	J	6.80E+01	J	mg/kg	WB10SS(0-2.0)	13/15	0.388-0.392
	56553	Benzo(a)Anthracene	1.81E-01	J	3.80E+01	J	mg/kg	WB10SS(0-2.0)	13/15	0.388-0.392
	205992	Benzo(b)Fluoranthene	3.90E-02	J	4.00E+01	J	mg/kg	WB10SS(0-2.0)	14/15	0.388-0.388
	207089	Benzo(k)Fluoranthene	1.09E-01	J	1.80E+01	J	mg/kg	WB-10/0-2	13/15	0.388-0.392
	50328	Benzo(a)Pyrene	1.81E-01	J	2.90E+01	J	mg/kg	WB10SS(0-2.0)	13/15	0.388-0.392
	193395	Indeno(1,2,3-cd)pyrene	7.80E-02	J	1.80E+01	J	mg/kg	WB10SS(0-2.0)	14/15	0.388-0.388
	53703	Dibenz(a,h) anthracene	3.60E-02		5.50E+00	J	mg/kg	WB10SS(0-2.0)	13/15	0.388-0.392
	191242	Benzo(g,h,i)perylene	1.57E-01	J	1.40E+01	J	mg/kg	WB10SS(0-2.0)	14/15	0.388-0.388
	7440360	Antimony	1.30E+00	J	6.68E+00		mg/kg	WB8SS(0-1.0)	2/17	0.24-8.8
	7440382	Arsenic	2.27E+00		8.74E+00		mg/kg	WB12SS(1.0-2.0)	17/17	N/A
	7440439	Cadmium	3.80E-01	J	5.90E+00	J	mg/kg	WB-SS1	15/17	1.16-1.49
	7440508	Copper	7.20E+00	J	3.78E+02		mg/kg	WB6SS(0-2.0)	17/17	N/A
	7439921	Lead	1.32E+01	J	1.21E+03	J	mg/kg	WB-SS2	17/17	N/A
	7439965	Manganese	4.67E+01	J	3.70E+02	J	mg/kg	WB-13/0-2	17/17	N/A
	7439976	Mercury	9.40E-02	J	1.10E+00	J	mg/kg	WB-6/0-2	14/17	0.086-0.208
	7440020	Nickel	5.40E+00	J	9.20E+01		mg/kg	WB6SS(0-2.0)	17/17	N/A
	7440280	Thallium	ND		ND		mg/kg		0/17	0.065-0.18
	53469219	Aroclor 1242	1.43E-01	J	3.25E+00	J	mg/kg	WB-11/1-1.75	2/15	0.0058-0.12
	12672296	Aroclor 1248	3.24E-01	J	3.24E-01	J	mg/kg	WB11SS(0-1.0)	1/15	0.0058-0.132
	11097691	Aroclor 1254	6.00E-02		4.25E+01	J	mg/kg	WB6SS(0-2.0)	10/15	0.0058-0.06
	11096825	Aroclor 1260	8.90E-02	J	1.17E+01	J	mg/kg	WB-11/1-1.75	10/15	0.0058-0.039
	1746016	PCB TEQ*	1.46E-06	J	1.96E-04	J	mg/kg	WB12SS(1.0-2.0)	9/9	N/A
		C11-C22 Aromatic	7.80E+01	J	5.79E+02	J	mg/kg	WB6SS(0-2.0)	5/6	47.86-47.86

(a) Data presented are from soil samples WB-10/0-2,WB10SS(0-2.0),WB-11/1-1.75,WB11SS(0-1.0),WB12SS(1.0-2.0),WB-13/0-2,WB13SS(0-2.0),WB21SS(0-1.0),WB-6/0-2, WB6SS(0-2.0),WB-7/0-2,WB7SS(0-2.0),WB-8/0-2,WB8SS(0-1.0),WB-SS1,WB-SS2,WB-SS3,WB-SS4
(b) Only COPCs selected on Table 3-2.1 appear.
(1) Minimum/maximum detected concentration.

Definitions:
mg/kg = milligams per kilogram
CAS = Chemical Abstract Service
COPCs = Chemicals of Potential Concern
J = Estimated Value
N/A = Not Applicable or Not Available
ND = Not Detected
* PCB Congeners Toxic Equivalent
PCB = polychlorinated biphenyls

TABLE 3-2.1.3
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Southwest Properties, Wells G&H Superfund Site Operable Unit 2 Woburn, Massachusetts

Scenario Timeframe: Current/Future
Medium: Soil
Exposure Medium: Surface Soil (0-2 ft)

Exposure Point	CAS Number	Chemical (b)	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits
Murphy (a)	75014	Vinyl chloride	ND	ND	mg/kg		0/9	0.0021-0.45
	79016	Trichloroethene	1.80E-03 J	1.30E+00	mg/kg	B-18 SS-1 (0-2)	4/10	0.0025-0.01
	85018	Phenanthrene	3.40E-02 J	5.60E+00	mg/kg	B-4 SS-1 (0-2)	7/10	0.53-3.2
	56553	Benzo(a)Anthracene	5.80E-02	3.00E+00	mg/kg	B-4 SS-1 (0-2)	7/10	0.34-3.2
	205992	Benzo(b)Fluoranthene	7.20E-02	2.30E+00	mg/kg	B-4 SS-1 (0-2)	6/10	0.34-3.2
	207089	Benzo(k)Fluoranthene	3.60E-02	1.30E+00	mg/kg	B-4 SS-1 (0-2)	7/10	0.34-3.2
	50328	Benzo(a)Pyrene	5.80E-02	2.80E+00	mg/kg	B-4 SS-1 (0-2)	7/10	0.34-3.2
	193395	Indeno(1,2,3-cd)pyrene	8.90E-03 J	6.50E+00 J	mg/kg	B-4 SS-1 (0-2)	8/10	0.34-3.2
	53703	Dibenz(a,h) anthracene	5.40E-03	2.10E-01	mg/kg	B-4 SS-1 (0-2)	7/10	0.34-3.2
	191242	Benzo(g,h,i)perylene	4.10E-02	2.30E+00	mg/kg	B-4 SS-1 (0-2)	8/10	0.34-3.2
	7440360	Antimony	5.00E+00	5.00E+00	mg/kg	MW-6 SS-1 (0-2)	1/9	0.094-8.3
	7440382	Arsenic	2.80E+00 J	1.00E+01	mg/kg	B-8 SS-1 (0-2)	7/9	5-7
	7440439	Cadmium	7.90E-02 J	3.50E+00	mg/kg	B-18 SS-1 (0-2)	9/9	N/A
	7440508	Copper	1.60E+01	4.80E+01	mg/kg	B-8 SS-1 (0-2)	9/9	N/A
	7439921	Lead	1.50E+01 J	1.90E+03	mg/kg	B-8 SS-1 (0-2)	10/10	N/A
	7439965	Manganese	1.97E+02	4.20E+02 J	mg/kg	MR-10/0-2	4/4	N/A
	7439976	Mercury	1.80E-02 J	7.20E-01	mg/kg	MR-SS3	7/10	0.0676-0.103
	7440020	Nickel	7.50E+00	1.90E+01	mg/kg	MR-SS2	9/9	N/A
	7440280	Thallium	1.00E-01 B	1.00E+01	mg/kg	B-18 SS-1 (0-2)	2/9	0.075-10
	53469219	Aroclor 1242	ND	ND	mg/kg		0/5	0.0054-0.1
	12672296	Aroclor 1248	ND	ND	mg/kg		0/5	0.0054-0.1
	11097691	Aroclor 1254	2.20E+00	2.20E+00	mg/kg	MW-18D SS-1 (0-2)	1/5	0.0054-0.035
	11096825	Aroclor 1260	2.20E-02 J	5.30E-02	mg/kg	MR-SS3	2/5	0.034-0.1
	1746016	PCB TEQ*	5.84E-08 J	5.84E-08 J	mg/kg	MR10SS(0-2.0)	1/1	N/A
		C11-C22 Aromatic	1.30E+01 T	4.70E+03 T	mg/kg	B-13 SS-1 (0-2)	18/19	9.09-9.09

(a) Data presented are from soil samples B-13 SS-1 (0-2),B-18 SS-1 (0-2),B-4 SS-1 (0-2),B-8 SS-1 (0-2),CHI-7/88 (0-2),MR-10/0-2,MR10SS(0-2.0),MR-SS1,MR-SS2,MR-SS3, MW-1 SS-1 (0-2),MW-18D SS-1 (0-2),MW-2 SS-1 (0-2),MW-3 SS-1 (0-2),MW-4 SS-1 (0-2),MW-5S SS-1 (0-2),MW-6 SS-1 (0-2),W-89-S1(0-2), W-89-S14(0-2),W-89-S15(0-2),W-89-S16(0-2),W-89-S17(0-2),W-89-S18(0-2),W-89-S3(0-2),W-89-S4(0-2)
(b) Only COPCs selected on Table 3-2.1 appear.
(1) Minimum/maximum detected concentration.

Definitions:
mg/kg = milligams per kilogram
CAS = Chemical Abstract Service
COPCs = Chemicals of Potential Concern
TEQ = Toxic Equivalent for PCB Dioxin-like congeners
J = Estimated Value
B = Reported value is less than the contract required detection limit but greater than or equal to the instrument detection limit
T = C11-C22 Aromatic Measured as Total Petroleum Hydrocarbons by Method 8100M
N/A = Not Applicable or Not Available
ND = Not Detected
TEQ = Toxic Equivalent for PCB Dioxin-like congeners
* PCB Congeners Toxic Equivalent
PCB = polychlorinated biphenyls

TABLE 3-2.1.4
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Southwest Properties, Wells G&H Superfund Site Operable Unit 2 Woburn, Massachusetts

Scenario Timeframe: Current
Medium: Soil
Exposure Medium: Surface Soil (0-2 ft)

Exposure Point	CAS Number	Chemical (b)	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits
Aberjona Triangle (a)	75014	Vinyl chloride	ND	ND	mg/kg		0/4	0.0027-0.003
	79016	Trichloroethene	ND	ND	mg/kg		0/4	0.0027-0.003
	85018	Phenanthrene	ND	ND	mg/kg		0/4	0.358-0.412
	56553	Benzo(a)Anthracene	3.80E-01 J	3.80E-01 J	mg/kg	AB-SS3	1/4	0.358-0.412
	205992	Benzo(b)Fluoranthene	ND	ND	mg/kg		0/4	0.358-0.412
	207089	Benzo(k)Fluoranthene	ND	ND	mg/kg		0/4	0.358-0.412
	50328	Benzo(a)Pyrene	ND	ND	mg/kg		0/4	0.358-0.412
	193395	Indeno(1,2,3-cd)pyrene	ND	ND	mg/kg		0/4	0.358-0.412
	53703	Dibenz(a,h) anthracene	ND	ND	mg/kg		0/4	0.358-0.412
	191242	Benzo(g,h,i)perylene	ND	ND	mg/kg		0/4	0.358-0.412
	7440360	Antimony	ND	ND	mg/kg		0/4	8.1-9
	7440382	Arsenic	3.10E+00	6.50E+00	mg/kg	AB-SS1	4/4	N/A
	7440439	Cadmium	9.20E-01	2.10E+00	mg/kg	AB-SS4	4/4	N/A
	7440508	Copper	1.64E+01	9.26E+01	mg/kg	AB-SS2	4/4	N/A
	7439921	Lead	4.97E+01 J	3.65E+02 J	mg/kg	AB-SS2	4/4	N/A
	7439965	Manganese	1.32E+02 J	2.11E+02 J	mg/kg	AB-SS3	4/4	N/A
	7439976	Mercury	1.00E-01	1.80E-01	mg/kg	AB-SS1	2/4	0.09-0.09
	7440020	Nickel	7.20E+00	1.60E+01	mg/kg	AB-SS4	4/4	N/A
	7440280	Thallium	ND	ND	mg/kg		0/4	0.15-0.17
	53469219	Aroclor 1242	ND	ND	mg/kg		0/6	0.0062-0.041
	12672296	Aroclor 1248	ND	ND	mg/kg		0/6	0.0062-0.041
	11097691	Aroclor 1254	1.20E-02 J	2.96E-01	mg/kg	AB-SS4	3/6	0.035-0.038
	11096825	Aroclor 1260	2.13E-02 J	9.60E-02	mg/kg	AB-SS2	3/6	0.0062-0.041
	1746016	PCB TEQ*	4.78E-07 J	6.89E-07 J	mg/kg	AB13SS(0-2.0)	2/2	N/A
		C11-C22 Aromatic	ND	ND	mg/kg		0/0	N/A

(a) Data presented are from soil samples AB13SS(0-2.0), AB-13/0-2, AB-SS1,AB-SS2,AB-SS3,AB-SS4
(b) Only COPCs selected on Table 3-2.1 appear.
(1) Minimum/maximum detected concentration.

Definitions:
mg/kg = milligams per kilogram
CAS = Chemical Abstract Service
COPCs = Chemicals of Potential Concern
J = Estimated Value
N/A = Not Applicable or Not Available
ND = Not Detected
* PCB Congeners Toxic Equivalent
PCB = polychlorinated biphenyls

TABLE 3-2.2
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Southwest Properties, Wells G&H Superfund Site Operable Unit 2 Woburn, Massachusetts

Scenario Timeframe: Future
Medium: Soil
Exposure Medium: Subsurface Soil (2-15 ft)

Exposure Point	CAS Number	Chemical	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detectionn Limits	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (N/C) (4)	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
Combined Data (a)	95636	1,2,4-Trimethylbenzene	9.20E-01	4.50E+01	mg/kg	MW-7 SS-4 (6.5-8.5)	2/23	0.025-2.5	4.50E+01	N/A	5.20E+00 N	N/A	N/A	Y	ASL
	540590	1,2-Dichloroethene (total)	1.56E+00 J	1.56E+00 J	mg/kg	MR-SS2D	1/17	0.0027-0.94	1.56E+00	N/A	4.30E+00 N	N/A	N/A	N	BSL
	108678	1,3,5-Trimethylbenzene	4.70E-01	1.90E+01	mg/kg	MW-7 SS-4 (6.5-8.5)	2/23	0.025-2.5	1.90E+01	N/A	2.10E+00 N	N/A	N/A	Y	ASL
	104518	n-Butylbenzene	4.00E-01	4.00E-01	mg/kg	B-4 SS-6 (10-12)	1/23	0.025-3.7	4.00E-01	N/A	5.80E+01 N	N/A	N/A	N	BSL
	91203	Naphthalene	3.80E-02 J	2.70E+01	mg/kg	MW-7 SS-4 (6.5-8.5)	13/73	0.0027-17	2.70E+01	N/A	5.60E+00 N	N/A	N/A	Y	ASL
	99876	p-Isopropyltoluene	2.00E-01	2.00E-01	mg/kg	B-4 SS-6 (10-12)	1/23	0.025-3.7	2.00E-01	N/A	5.70E+01 0	N/A	N/A	N	BSL
	135988	sec-Butylbenzene	2.60E-01	2.60E-01	mg/kg	B-4 SS-6 (10-12)	1/23	0.025-3.7	2.60E-01	N/A	4.50E+01 N	N/A	N/A	N	BSL
	75014	Vinyl chloride	2.20E-01 J	3.90E-01	mg/kg	WB7D(2.0-4.0)	2/59	0.0019-2.6	3.90E-01	N/A	7.90E-02 C	N/A	N/A	Y	ASL
	75003	Chloroethane	8.60E-02	8.60E-02	mg/kg	WB-7/2-4	1/59	0.0019-5.19	8.60E-02	N/A	3.00E+00 C	N/A	N/A	N	BSL
	75354	1,1-Dichloroethene	1.00E-03 J	1.20E-01	mg/kg	WB-7/2-4	12/54	0.0019-5.19	1.20E-01	N/A	1.20E+01 N	N/A	N/A	N	BSL
	76131	Freon 113	3.80E-03	3.80E-03	mg/kg	WB-7/2-4	1/7	0.0019-0.062	3.80E-03	N/A	2.10E+03 N	N/A	N/A	N	BSL
	67641	Acetone	2.30E-02	1.30E+01 J	mg/kg	MR-SS2D	12/77	0.0054-7.5	1.30E+01	N/A	1.60E+02 N	N/A	N/A	N	BSL
	75150	Carbon disulfide	1.10E-03 J	3.60E-03	mg/kg	WB-10/2-4	3/54	0.0022-7.5	3.60E-03	N/A	3.60E+01 N	N/A	N/A	N	BSL
	79209	Methyl acetate	3.50E-01	4.20E-01	mg/kg	WB-7/2-4	2/7	0.0022-0.062	4.20E-01	N/A	2.20E+03 N	N/A	N/A	N	BSL
	75092	Methylene chloride	2.69E+00	2.08E+01 J	mg/kg	MR-SS2D	2/63	0.0047-4	2.08E+01	N/A	9.10E+00 C	N/A	N/A	Y	ASL
	156605	trans-1,2-Dichloroethene	1.30E-02	2.40E+00	mg/kg	MW-14 SS-3 (4-6)	9/53	0.0019-1.1	2.40E+00	N/A	6.90E+00 N	N/A	N/A	N	BSL
	1634044	Methyl tert-butyl ether	1.30E-01 J	1.30E-01 J	mg/kg	AB-15/4-4.5	1/49	0.0018-7.5	1.30E-01	N/A	6.20E+01 C	N/A	N/A	N	BSL
	75343	1,1-Dichloroethane	1.60E-02 J	1.10E+00	mg/kg	WB-7/2-4	6/66	0.0022-5.19	1.10E+00	N/A	5.10E+01 N	N/A	N/A	N	BSL
	156592	cis-1,2-Dichloroethene	6.40E-02	1.00E+01	mg/kg	MW-7 SS-4 (6.5-8.5)	4/30	0.0019-0.5	1.00E+01	N/A	4.30E+00 N	N/A	N/A	Y	ASL
	78933	2-Butanone (MEK)	7.70E-03	5.19E+00 J	mg/kg	MR-SS2D	5/60	0.0027-4	5.19E+00	N/A	7.30E+02 N	N/A	N/A	N	BSL
	71556	1,1,1-Trichloroethane	1.30E-02	2.10E+00	mg/kg	MW-14 SS-3 (4-6)	5/66	0.0018-5.19	2.10E+00	N/A	2.00E+02 N	N/A	N/A	N	BSL
	110827	Cyclohexane	5.80E-02 J	5.80E-02 J	mg/kg	WB-7/2-4	1/7	0.0019-0.062	5.80E-02	N/A	1.40E+02 N	N/A	N/A	N	BSL
	71432	Benzene	6.00E-04 J	5.50E-01	mg/kg	MW-14 SS-3 (4-6)	8/78	0.0022-5.19	5.50E-01	N/A	6.00E-01 C	N/A	N/A	N	BSL
	79016	Trichloroethene	1.60E-03 J	2.08E+00 J	mg/kg	MR-SS2D	8/77	0.0019-0.99	2.08E+00	N/A	5.30E-02 C	N/A	N/A	Y	ASL
	108872	Methyl cyclohexane	1.50E-03 J	1.30E+00 J	mg/kg	WB-6/2-4	3/7	0.0022-0.062	1.30E+00	N/A	2.60E+02 N	N/A	N/A	N	BSL
	108883	Toluene	6.00E-04 J	1.20E+01	mg/kg	MW-7 SS-4 (6.5-8.5)	23/88	0.002-0.99	1.20E+01	N/A	6.60E+01 N	N/A	N/A	N	BSL
	127184	Tetrachloroethene	1.60E-03 J	5.70E-01 J	mg/kg	WB-SS2D	6/66	0.0019-5.19	5.70E-01	N/A	1.50E+00 C	N/A	N/A	N	BSL
	108907	Chlorobenzene	7.00E-04 J	8.80E-01 J	mg/kg	WB-6/2-4	2/54	0.0018-5.19	8.80E-01	N/A	1.50E+01 N	N/A	N/A	N	BSL
	100414	Ethylbenzene	7.00E-04 J	7.60E+00	mg/kg	MW-7 SS-4 (6.5-8.5)	16/78	0.0022-0.99	7.60E+00	N/A	8.90E+00 C	N/A	N/A	N	BSL
	1330207	Xylenes (total)	7.00E-04 J	4.80E+01	mg/kg	MW-7 SS-4 (6.5-8.5)	26/89	0.002-0.99	4.80E+01	N/A	2.70E+01 N	N/A	N/A	Y	ASL
	98828	Isopropylbenzene	7.90E-02 J	1.20E-01	mg/kg	WB6D(2.0-4.0)	2/30	0.0018-3.7	1.20E-01	N/A	5.70E+01 N	N/A	N/A	N	BSL
	541731	1,3-Dichlorobenzene	9.20E-02	1.00E-01 J	mg/kg	WB-6/2-4	2/47	0.0022-9.363	1.00E-01	N/A	1.60E+00 N	N/A	N/A	N	BSL
	106467	1,4-Dichlorobenzene	1.60E-03 J	6.40E-01 J	mg/kg	WB-6/2-4	3/47	0.0022-9.363	6.40E-01	N/A	3.40E+00 C	N/A	N/A	N	BSL
	95501	1,2-Dichlorobenzene	5.10E-02 J	1.20E+01	mg/kg	MW-7 SS-4 (6.5-8.5)	3/47	0.0019-9.363	1.20E+01	N/A	1.10E+02 N	N/A	N/A	N	BSL
	120821	1,2,4-Trichlorobenzene	6.40E-02 J	3.70E-01	mg/kg	WB-7/2-4	2/47	0.0022-9.363	3.70E-01	N/A	6.50E+01 N	N/A	N/A	N	BSL
	100527	Benzaldehyde	4.90E-02 J	1.90E+00 J	mg/kg	AB-15/4-4.5	3/7	0.14-6.5	1.90E+00	N/A	6.10E+02 N	N/A	N/A	N	BSL
	108952	Phenol	2.40E+00	2.40E+00	mg/kg	WB-7/2-4	1/24	0.0038-9.363	2.40E+00	N/A	3.70E+03 N	N/A	N/A	N	BSL
	95487	2-Methylphenol	8.80E-03 JEB	8.80E-03 JEB	mg/kg	AB-15/4-4.5	1/24	0.0027-9.363	8.80E-03	N/A	3.10E+02 N	N/A	N/A	N	BSL
	106445	4-Methylphenol	2.80E+00	2.80E+00	mg/kg	WB-7/2-4	1/24	0.14-9.363	2.80E+00	N/A	3.10E+01 N	N/A	N/A	N	BSL
	105679	2,4-Dimethylphenol	8.50E-01 J	8.50E-01 J	mg/kg	WB-7/2-4	1/22	0.14-9.363	8.50E-01	N/A	1.20E+02 N	N/A	N/A	N	BSL
	105602	Caprolactam	5.90E-02 J	5.90E-02 J	mg/kg	MR-10/3-5	1/7	0.058-2.6	5.90E-02	N/A	3.10E+03 N	N/A	N/A	N	BSL
	91576	2-Methylnaphthalene	7.60E-02 J	3.24E+01 J	mg/kg	AB102(6.0)	9/38	0.058-3.3	3.24E+01	N/A	5.60E+00 N	N/A	N/A	Y	ASL
	88062	2,4,6-Trichlorophenol	1.40E+00 J	1.40E+00 J	mg/kg	WB-7/2-4	1/24	0.14-9.363	1.40E+00	N/A	6.10E-01 N	N/A	N/A	Y	ASL
	95954	2,4,5-Trichlorophenol	3.90E-01 J	3.90E-01 J	mg/kg	WB-7/2-4	1/24	0.14-23.408	3.90E-01	N/A	6.10E+02 N	N/A	N/A	N	BSL
	92524	1,1'-Biphenyl	2.90E+00	5.60E+00 J	mg/kg	WB7D(2.0-4.0)	2/7	0.058-1.2	5.60E+00	N/A	3.00E+02 N	N/A	N/A	N	BSL
	208968	Acenaphthylene	1.90E-02	6.90E+00 J	mg/kg	AB102(6.0)	7/73	0.0029-17	6.90E+00	N/A	5.60E+00 N	N/A	N/A	Y	ASL
	83329	Acenaphthene	3.80E-02 J	1.00E+01 J	mg/kg	AB102(6.0)	13/73	0.039-17	1.00E+01	N/A	3.70E+02 N	N/A	N/A	N	BSL
	132649	Dibenzofuran	1.10E-01 J	1.10E-01 J	mg/kg	WB-10/2-4	1/35	0.058-9.363	1.10E-01	N/A	2.90E+01 N	N/A	N/A	N	BSL
	84662	Diethyl phthalate	6.10E-02 J	7.90E-02 J	mg/kg	AB-SS5D	2/24	0.058-9.363	7.90E-02	N/A	4.90E+03 N	N/A	N/A	N	BSL
	86737	Fluorene	3.80E-02 J	1.20E+00 J	mg/kg	WB6D(2.0-4.0)	11/73	0.0078-17	1.20E+00	N/A	2.70E+02 N	N/A	N/A	N	BSL

TABLE 3-2.2
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Southwest Properties, Wells G&H Superfund Site Operable Unit 2 Woburn, Massachusetts

Scenario Timeframe: Future
Medium: Soil
Exposure Medium: Subsurface Soil (2-15 ft)

Exposure Point	CAS Number	Chemical	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detectionn Limits	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (N/C) (4)	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
	85018	Phenanthrene	1.30E-03 J	9.00E+00	mg/kg	B-17 SS-2 (2-4)	31/77	0.02-17	9.00E+00	N/A	5.60E+00 N	N/A	N/A	Y	ASL
	120127	Anthracene	8.80E-02	2.60E+00	mg/kg	B-17 SS-2 (2-4)	10/73	0.02-17	2.60E+00	N/A	2.20E+03 N	N/A	N/A	N	BSL
	86748	Carbazole	2.80E-01 J	2.80E-01 J	mg/kg	WB-10/2-4	1/23	0.27-9.363	2.80E-01	N/A	2.40E+01 C	N/A	N/A	N	BSL
	84742	Di-n-butyl phthalate	7.80E-02 J	2.71E-01 J	mg/kg	AB-SS4D	9/24	0.27-9.5	2.71E-01	N/A	6.10E+02 N	N/A	N/A	N	BSL
	206440	Fluoranthene	2.20E-03 J	1.10E+01	mg/kg	B-17 SS-2 (2-4)	40/77	0.0078-17	1.10E+01	N/A	2.30E+02 N	N/A	N/A	N	BSL
	129000	Pyrene	2.00E-03 J	1.30E+01	mg/kg	B-17 SS-2 (2-4)	40/77	0.0078-17	1.30E+01	N/A	2.30E+02 N	N/A	N/A	N	BSL
	85687	Butyl benzyl phthalate	1.03E-01 J	3.90E+00	mg/kg	WB-7/2-4	3/24	0.058-9.363	3.90E+00	N/A	1.20E+03 N	N/A	N/A	N	BSL
	56553	Benzo(a)Anthracene	8.30E-04	4.90E+00	mg/kg	B-17 SS-2 (2-4)	36/77	0.00078-17	4.90E+00	N/A	6.20E-01 C	N/A	N/A	Y	ASL
	218019	Chrysene	1.40E-03 J	7.10E+00	mg/kg	B-17 SS-2 (2-4)	33/77	0.0058-17	7.10E+00	N/A	6.20E+01 C	N/A	N/A	N	BSL
	117817	Bis(2-ethylhexyl) phthalate	3.80E-01	4.40E+02 J	mg/kg	WB7D(2.0-4.0)	8/35	0.27-9.363	4.40E+02	N/A	3.50E+01 C	N/A	N/A	Y	ASL
	117840	Di-n-octyl phthalate	5.60E+00 J	1.20E+01 J	mg/kg	WB-7/2-4	2/24	0.058-9.363	1.20E+01	N/A	2.40E+02 N	N/A	N/A	N	BSL
	205992	Benzo(b)Fluoranthene	1.50E-03 J	5.20E+00	mg/kg	B-12 (4-8)	35/77	0.00078-17	5.20E+00	N/A	6.20E-01 C	N/A	N/A	Y	ASL
	207089	Benzo(k)Fluoranthene	1.20E-03	7.90E+00 J	mg/kg	AB15D(4.0-4.5)	30/62	0.00078-17	7.90E+00	N/A	6.20E+00 C	N/A	N/A	Y	ASL
	50328	Benzo(a)Pyrene	9.30E-04	5.90E+00	mg/kg	B-17 SS-2 (2-4)	35/77	0.00078-17	5.90E+00	N/A	6.20E-02 C	N/A	N/A	Y	ASL
	193395	Indeno(1,2,3-cd)pyrene	1.30E-03 J	4.70E+00 J	mg/kg	AB15D(4.0-4.5)	29/77	0.002-17	4.70E+00	N/A	6.20E-01 C	N/A	N/A	Y	ASL
	53703	Dibenz(a,h) anthracene	1.60E-03	2.80E+00 J	mg/kg	AB15D(4.0-4.5)	20/73	0.0012-17	2.80E+00	N/A	6.20E-02 C	N/A	N/A	Y	ASL
	191242	Benzo(g,h,i)perylene	1.30E-03 J	4.00E+00	mg/kg	B-17 SS-2 (2-4)	34/77	0.002-17	4.00E+00	N/A	5.60E+00 N	N/A	N/A	N	BSL
	18540299	Chromium (VI)	3.90E-01	1.63E+01	mg/kg	AB-SS8D	33/68	1-2.8	1.63E+01	N/A	3.00E+01 C	N/A	N/A	N	BSL
	7429905	Aluminum	2.37E+03 J	1.08E+04	mg/kg	WB10D(2.0-4.0)	24/24	NA	1.08E+04	N/A	7.60E+03 N	N/A	N/A	N	NTX
	7440360	Antimony	3.44E+00	1.00E+01	mg/kg	WB7D(2.0-4.0)	9/67	0.67-13.8	1.00E+01	N/A	3.10E+00 N	N/A	N/A	Y	ASL
	7440382	Arsenic	1.25E+00	4.26E+01 J	mg/kg	AB-SS8D	36/67	5-8	4.26E+01	N/A	3.90E-01 C	N/A	N/A	Y	ASL
	7440393	Barium	3.30E+00 B	9.80E+02	mg/kg	B-6 (7-11)	35/35	NA	9.80E+02	N/A	5.40E+02 N	N/A	N/A	Y	ASL
	7440417	Beryllium	4.00E-02	3.10E+00 J	mg/kg	AB-15/4-4.5	36/67	0.025-0.43	3.10E+00	N/A	1.50E+01 N	N/A	N/A	N	BSL
	7440439	Cadmium	2.30E-01	8.34E+00	mg/kg	WB6D(2.0-4.0)	28/67	0.26-1.32	8.34E+00	N/A	3.70E+00 N	N/A	N/A	Y	ASL
	7440702	Calcium	1.28E+02 B	2.10E+04 J	mg/kg	AB-15/4-4.5	24/24	NA	2.10E+04	N/A	4.00E+06 N	N/A	N/A	N	NUT
	7440473	Chromium	3.90E+00	5.44E+02	mg/kg	AB-SS8D	68/68	NA	5.44E+02	N/A	1.20E+04 N	N/A	N/A	N	BSL
	7440484	Cobalt	1.20E+00 B	1.53E+01	mg/kg	AB-SS7D	24/24	NA	1.53E+01	N/A	9.00E+02 C	N/A	N/A	N	NTX
	7440508	Copper	1.50E+00	2.70E+02	mg/kg	B-17 SS-2 (2-4)	66/67	4.65-4.65	2.70E+02	N/A	3.10E+02 N	N/A	N/A	N	BSL
	57125	Cyanide	1.60E-01	8.80E-01	mg/kg	AB15D(4.0-4.5)	6/57	0.077-2.4	8.80E-01	N/A	1.20E+02 N	N/A	N/A	N	BSL
	7439896	Iron	2.65E+03	3.74E+04 J	mg/kg	WB-SS2D	24/24	NA	3.74E+04	N/A	2.30E+03 N	N/A	N/A	N	NTX
	7439921	Lead	1.10E+00 J	6.50E+03	mg/kg	B-6 (7-11)	62/70	3-4	6.50E+03	N/A	4.00E+02 N	N/A	N/A	Y	ASL
	7439954	Magnesium	6.26E+02 B	5.69E+03	mg/kg	AB-SS7D	24/24	NA	5.69E+03	N/A	8.05E+06 N	N/A	N/A	N	NUT
	7439965	Manganese	2.17E+01 J	3.25E+02 J	mg/kg	WB-SS2D	24/24	NA	3.25E+02	N/A	1.80E+02 N	N/A	N/A	Y	ASL
	7439976	Mercury	4.10E-02 J	1.20E+01	mg/kg	WB6D(2.0-4.0)	17/68	0.0463-0.227	1.20E+01	N/A	6.10E-01 N	N/A	N/A	Y	ASL
	7440020	Nickel	1.10E+00	5.14E+01	mg/kg	AB-SS8D	52/67	0.68-1.3	5.14E+01	N/A	1.60E+02 N	N/A	N/A	N	BSL
	2023695	Potassium	5.14E+01 J	2.44E+03 J	mg/kg	MR10D(3.0-5.0)	24/24	NA	2.44E+03	N/A	1.00E+06 N	N/A	N/A	N	NUT
	7782492	Selenium	4.80E-01 J	3.20E+00	mg/kg	AB-15/4-4.5	6/67	0.12-8	3.20E+00	N/A	3.90E+01 N	N/A	N/A	N	BSL
	7440224	Silver	2.50E-01 J	2.70E+00	mg/kg	AB-SS8D	5/67	0.35-1.2	2.70E+00	N/A	3.90E+01 N	N/A	N/A	N	BSL
	7440235	Sodium	5.98E+01 B	1.11E+03 J	mg/kg	AB15D(4.0-4.5)	15/24	33-216	1.11E+03	N/A	1.00E+06 N	N/A	N/A	N	NUT
	7440280	Thallium	1.00E+01	3.00E+01	mg/kg	B-10 (6-10)	6/67	0.04-20	3.00E+01	N/A	5.20E-01 N	N/A	N/A	Y	ASL
	7440622	Vanadium	3.50E+00 B	4.52E+01	mg/kg	WB-SS2D	24/24	NA	4.52E+01	N/A	5.50E+01 N	N/A	N/A	N	BSL
	7440666	Zinc	5.50E+00	1.35E+03	mg/kg	AB-SS8D	68/68	NA	1.35E+03	N/A	2.30E+03 N	N/A	N/A	N	BSL
	5103719	alpha-Chlordane	1.40E-03 J	4.17E+02 J	mg/kg	WB7D(2.0-4.0)	11/21	0.0019-0.003	4.17E+02	N/A	1.60E+00 C	N/A	N/A	Y	ASL
	5103742	gamma-Chlordane	7.72E-03 J	2.99E+02 J	mg/kg	WB7D(2.0-4.0)	10/21	0.0019-0.003	2.99E+02	N/A	1.60E+00 C	N/A	N/A	Y	ASL
	319868	delta-BHC	3.40E-03	3.40E-03	mg/kg	MR-SS3D	1/21	0.00031-2.85	3.40E-03	N/A	9.00E-02 C	N/A	N/A	N	BSL
	309002	Aldrin	1.80E-03 J	1.97E-02	mg/kg	WB-SS2D	3/21	0.00031-2.85	1.97E-02	N/A	2.90E-02 C	N/A	N/A	N	BSL
	60571	Dieldrin	3.20E-03 J	3.20E-03 J	mg/kg	WB-SS2D	1/21	0.00063-5.7	3.20E-03	N/A	3.00E-02 C	N/A	N/A	N	BSL
	72559	4,4'-DDE	7.40E-03 J	1.18E+02 J	mg/kg	WB7D(2.0-4.0)	4/21	0.0037-0.387	1.18E+02	N/A	1.70E+00 C	N/A	N/A	Y	ASL
	72208	Endrin	2.50E-03 J	1.23E-02 J	mg/kg	WB-SS4D	4/21	0.00063-5.7	1.23E-02	N/A	1.80E+00 N	N/A	N/A	N	BSL
	72548	4,4'-DDD	6.47E-03 J	1.61E+00 J	mg/kg	WB10D(2.0-4.0)	6/21	0.0037-5.7	1.61E+00	N/A	2.40E+00 C	N/A	N/A	N	BSL

TABLE 3-2.2
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Southwest Properties, Wells G&H Superfund Site Operable Unit 2 Woburn, Massachusetts

Scenario Timeframe: Future
Medium: Soil
Exposure Medium: Subsurface Soil (2-15 ft)

Exposure Point	CAS Number	Chemical	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detectionn Limits	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (N/C) (4)	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
	1031078	Endosulfan sulfate	2.90E-03 J	2.90E-03 J	mg/kg	AB-SS8D	1/21	0.00063-5.7	2.90E-03	N/A	3.70E+01 N	N/A	N/A	N	BSL
	50293	4,4'-DDT	7.32E-03 J	2.90E+02 J	mg/kg	WB7D(2.0-4.0)	8/21	0.0036-0.0061	2.90E+02	N/A	1.70E+00 C	N/A	N/A	Y	ASL
	7421934	Endrin aldehyde	3.40E-03 J	3.40E-03 J	mg/kg	AB-SS8D	1/21	0.00063-5.7	3.40E-03	N/A	1.80E+00 N	N/A	N/A	N	BSL
	53469219	Aroclor 1242	2.83E-01	2.83E-01	mg/kg	AB-SS8D	1/35	0.0063-1	2.83E-01	N/A	2.20E-01 C	N/A	N/A	Y	ASL
	12672296	Aroclor 1248	8.00E-01	9.77E+02 J	mg/kg	WB6D(2.0-4.0)	2/24	0.0063-0.1	9.77E+02	N/A	2.20E-01 C	N/A	N/A	Y	ASL
	11097691	Aroclor 1254	2.00E-01	5.35E+02 J	mg/kg	WB6D(2.0-4.0)	5/25	0.0063-0.1	5.35E+02	N/A	2.20E-01 C	N/A	N/A	Y	ASL
	11096825	Aroclor 1260	3.40E-02 J	2.95E+02 J	mg/kg	WB7D(2.0-4.0)	6/24	0.036-0.1	2.95E+02	N/A	2.20E-01 C	N/A	N/A	Y	ASL
	1746016	PCB TEQ*	1.35E-06 J	3.72E-03 J	mg/kg	WB6D(2.0-4.0)	5/5	NA	3.72E-03	N/A	3.90E-06 C	N/A	N/A	Y	ASL
		C5-C8 Aliphatic	1.00E+00 J	1.44E+02 J	mg/kg	WB6D(2.0-4.0)	6/6	NA	1.44E+02	N/A	1.00E+02 N	N/A	N/A	Y	ASL
		C9-C12 Aliphatic	1.00E+00 J	1.46E+02 J	mg/kg	WB6D(2.0-4.0)	6/6	NA	1.46E+02	N/A	1.00E+03 N	N/A	N/A	N	BSL
		C9-C10 Aromatic	1.77E+02 J	4.98E+02 J	mg/kg	WB6D(2.0-4.0)	2/2	NA	4.98E+02	N/A	1.00E+02 N	N/A	N/A	Y	ASL
		C9-C18 Aliphatic	7.70E+01 J	6.04E+03 J	mg/kg	WB7D(2.0-4.0)	4/6	3.24-13.44	6.04E+03	N/A	1.00E+03 N	N/A	N/A	Y	ASL
		C19-C36 Aliphatic	4.60E+01 J	4.12E+03 J	mg/kg	WB7D(2.0-4.0)	5/6	4.32-4.32	4.12E+03	N/A	2.50E+03 N	N/A	N/A	Y	ASL
		C11-C22 Aromatic	1.10E+01 T	7.20E+04 T	mg/kg	B-6 (7-11)	67/84	9.18-10	7.20E+04	N/A	2.00E+02 N	N/A	N/A	Y	ASL

(a) Data presented are from soil samples AB102(6.0),AB-13/5-7,AB13D(5.0-7.0),AB14D(2.0-4.0),AB-15/4-4.5,AB15D(4.0-4.5),AB-SS1D,AB-SS1D DUP,AB-SS2D,AB-SS3D,AB-SS4D,AB-SS5D,AB-SS6D,AB-SS7D,AB-SS8D,AB-SS9D,AB-SS9D DUP,B-1 SS-3 (4.5-6.5), B-10 (6-10),B-10 SS-6 (10-12),B-11 SS-4 (6-8),B-11 SS-6 (10-12),B-12 (4-8),B-12 (8-12),B-12 SS-5 (8-10),B-13 SS-5 (8-10),B-14 SS-2 (2.5-4.5),B-14 SS-5 (8.5-10.5),B-15 SS-5 (8-10),B-15 SS-7 (12-14),B-16 SS-6 (10-12),B-17 SS-2 (2-4),B-18 SS-3 (4-6),B-19 SS-4 (6-8), B-21 SS-4 (6-8),B-24 SS-4 (6-8),B-25 SS-3 (4-6),B-26 SS-4 (6-8),B-4 SS-6 (10-12),B-5 (13-15),B-5 (7-10),B-6 (7-11),B-6 SS-5 (8-10),B-7 SS-5 (8-10),B-8 (7-8),B-8 (8-12),B-8 SS-4 (6-8),B-9 (6-10),B-9 SS-5 (8-10),CHI-1/88(2-4),CHI-2/88 (4-6),CHI-3/88 (6-8), CHI-8/88 (5-7),MR-10/3-5,MR10D(3.0-5.0),MR-SS1D,MR-SS2D,MR-SS3D,MR-SS4D,MW-1 SS-5 (8-10),MW-11 SS-3 (4-6),MW-11 SS-5 (8-10),MW-14 SS-3 (4-6),MW-16 SS-3 (4-6),MW-2 SS-2 (2-4),MW-2 SS-4A (7.5-9.5),MW-3 SS-4 (6-8), MW-5 SS-6 (10-12),MW-7 SS-2 (2.5-4.5),MW-7 SS-4 (6.5-8.5),MW-9 SS-6 (10-12),W-89-S1(10-12),W-89-S1(2-4),W-89-S1(6-8),W-89-S1(8-10),W-89-S14(4-6),W-89-S14(6-8),W-89-S14(8-10),W-89-S15(4-6),W-89-S15(6-8),W-89-S15(8-10),W-89-S16(10-12), W-89-S17 (6-8),W-89-S17(4-6),W-89-S17(6-8),W-89-S17(8-10),W-89-S18 (6-8),W-89-S18(4-6),W-89-S18(6-8),W-89-S18(8-10),W-89-S3(10-12),W-89-S3(4-6),W-89-S3(6-8),W-89-S3(8-10),W-89-S4 (6-8),W-89-S4 (8-10),W-89-S4(4-6),W-89-S4(6-8),W-89-S4(8-10), WB-6/2-4,WB6D(2.0-4.0),WB-7/2-4,WB7D(2.0-4.0),WB-SS1D,WB-SS1D,WB-SS2D,WB-SS3D,WB-SS3D DUP,WB-SS4DB-1 SS-5 (8.5-10.5),B-10 (10-14),B-10 (4-6),B-2 SS-3 (4.5-6.5),B-20 SS-4 (6-8),CHI-4/88 (2-4),CHI-5/88 (2-4),CHI-6/88 (2-4), MW-3 SS-6 (10-12),MW-4 SS-5 (8-10),MW-4 SS-6 (10-12),W-89-S16(4-6),W-89-S16(6-8),W-89-S16(8-10),WB-10/2-4,WB10D(2.0-4.0)

(1) Minimum/maximum detected concentration.
(2) Maximum concentration used for screening.
(3) Refer to supporting information for background discussion.
(4) USEPA Region 9 PRGs for residential soil (adjusted to an hazard quotient = 0.1 for noncarcinogens), October 1, 2002.
PRG for chromium III used for total chromium.
PRG for chromium VI used for chromium VI.
PRG for methylmercury used for mercury.
PRG for free cyanide used for total cyanide.
The screening toxicity value for lead is the residential soil lead guidance level of 400 mg/Kg (USEPA, 1994a).
The screening toxicity value for the petroleum hydrocarbon fractions are MADEP S-1/GW-1 standards.
(5) Rationale Codes:
Selection Reason: Above Screening Levels (ASL)
Deletion Reason: No Toxicity Information (NTX)
Essential Nutrient (NUT)
Below Screening Level (BSL)
Low Concentration, Low Frequency of Detection (LCF)

Definitions:
mg/kg = milligams per kilogram
CAS = Chemical Abstract Service
COPCs = Chemicals of Potential Concern
ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered
PRG = Preliminary Remedial Goal
TEQ = Toxic Equivalent for PCB Dioxin-like congeners
N/A = Not Applicable or Not Available
J = Estimated Value
C = Carcinogenic
N = Non-Carcinogenic
B = Reported value is less than the contract required detection limit but greater than or equal to the instrument detection limit
T = C11-C22 Aromatic Measured as Total Petroleum Hydrocarbons by Method 8100M
EB = Analyte Detected in the Associated Equipment Blank
ND = Not Detected
TCDD = tetrachlorodibenzo-p-dioxin
MADEP = Massachusetts Department of Environmental Protection
S-1/GW-1 = MADEP Soil Cleanup Criteria
* PCB Congeners Toxic Equivalent
PCB = polychlorinated biphenyls

TABLE 3-2.2.1
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Southwest Properties, Wells G&H Superfund Site Operable Unit 2 Woburn, Massachusetts

Scenario Timeframe: Future
Medium: Soil
Exposure Medium: Subsurface Soil (2-15 ft)

Exposure Point	CAS Number	Chemical (b)	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits
Aberjona Property (a)	95636	1,2,4-Trimethylbenzene	ND	ND	mg/kg		0/0	N/A
	108678	1,3,5-Trimethylbenzene	ND	ND	mg/kg		0/0	N/A
	91203	Naphthalene	2.60E+01 J	2.60E+01 J	mg/kg	AB102(6.0)	1/12	0.026-2.24
	75014	Vinyl chloride	ND	ND	mg/kg		0/9	0.0028-0.0042
	75092	Methylene chloride	ND	ND	mg/kg		0/9	0.0114-0.05
	156592	cis-1,2-Dichloroethene	ND	ND	mg/kg		0/0	N/A
	79016	Trichloroethene	ND	ND	mg/kg		0/9	0.0028-0.0042
	1330207	Xylenes (total)	7.00E-04 J	4.80E+00 J	mg/kg	AB102(6.0)	4/10	0.0028-0.0033
	91576	2-Methylnaphthalene	3.24E+01 J	3.24E+01 J	mg/kg	AB102(6.0)	1/12	0.347-2.24
	88062	2,4,6-Trichlorophenol	ND	ND	mg/kg		0/10	0.347-1.2
	208968	Acenaphthylene	6.90E+00 J	6.90E+00 J	mg/kg	AB102(6.0)	1/12	0.347-2.24
	85018	Phenanthrene	3.70E-02 J	5.00E+00 J	mg/kg	AB102(6.0)	3/12	0.347-2.24
	56553	Benzo(a)Anthracene	2.50E-02 J	2.50E-02 J	mg/kg	AB-15/4-4.5	1/12	0.347-2.24
	117817	Bis(2-ethylhexyl) phthalate	ND	ND	mg/kg		0/10	0.388-1.468
	205992	Benzo(b)Fluoranthene	5.10E-02 J	5.10E-02 J	mg/kg	AB-15/4-4.5	1/12	0.347-2.24
	207089	Benzo(k)Fluoranthene	1.30E-02 J	7.90E+00 J	mg/kg	AB15D(4.0-4.5)	2/12	0.347-0.86
	50328	Benzo(a)Pyrene	1.90E-02 J	3.70E+00 J	mg/kg	AB15D(4.0-4.5)	2/12	0.347-0.86
	193395	Indeno(1,2,3-cd)pyrene	1.20E-02 J	4.70E+00 J	mg/kg	AB15D(4.0-4.5)	2/12	0.347-0.86
	53703	Dibenz(a,h) anthracene	4.30E-03 J	2.80E+00 J	mg/kg	AB15D(4.0-4.5)	2/12	0.347-1.1
	7440360	Antimony	3.74E+00	3.74E+00	mg/kg	AB14D(2.0-4.0)	1/12	0.67-13.8
	7440382	Arsenic	1.40E+00	4.26E+01 J	mg/kg	AB-SS8D	12/12	N/A
	7440393	Barium	3.30E+00 B	2.03E+02	mg/kg	AB-SS8D	12/12	N/A
	7440439	Cadmium	2.30E-01 J	8.20E+00	mg/kg	AB-SS8D	6/12	0.75-1.2
	7439921	Lead	1.10E+00 J	6.37E+02	mg/kg	AB-SS8D	12/12	N/A
	7439965	Manganese	2.17E+01 J	3.20E+02	mg/kg	AB-SS8D	12/12	N/A
	7439976	Mercury	4.10E-02 J	1.00E+00	mg/kg	AB-SS8D	4/12	0.08-0.227
	7440280	Thallium	ND	ND	mg/kg		0/12	0.04-0.3
	5103719	alpha-Chlordane	6.33E-03 J	6.33E-03 J	mg/kg	AB13D(5.0-7.0)	1/10	0.0019-0.003
	5103742	gamma-Chlordane	7.72E-03 J	7.72E-03 J	mg/kg	AB13D(5.0-7.0)	1/10	0.0019-0.003
	72559	4,4'-DDE	7.40E-03 J	7.40E-03 J	mg/kg	AB13D(5.0-7.0)	1/10	0.0038-0.0061
	50293	4,4'-DDT	8.90E-03	2.20E-02	mg/kg	AB-SS8D	3/10	0.0039-0.0061
	53469219	Aroclor 1242	2.83E-01	2.83E-01	mg/kg	AB-SS8D	1/10	0.0063-0.061
	12672296	Aroclor 1248	ND	ND	mg/kg		0/10	0.0063-0.061
	11097691	Aroclor 1254	ND	ND	mg/kg		0/10	0.0063-0.061
	11096825	Aroclor 1260	3.40E-02 J	2.32E-01	mg/kg	AB-SS8D	3/10	0.038-0.061
	1746016	PCB TEQ*	1.35E-06 J	7.65E-06 J	mg/kg	AB-13/5-7	2/2	N/A

TABLE 3-2.2.1
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Southwest Properties, Wells G&H Superfund Site Operable Unit 2 Woburn, Massachusetts

Scenario Timeframe: Future
Medium: Soil
Exposure Medium: Subsurface Soil (2-15 ft)

Exposure Point	CAS Number	Chemical (b)	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits
		C5-C8 Aliphatic	2.00E+00 J	1.90E+01 J	mg/kg	AB102(6.0)	2/2	N/A
		C9-C10 Aromatic	1.77E+02 J	1.77E+02 J	mg/kg	AB102(6.0)	1/1	N/A
		C9-C18 Aliphatic	2.43E+03 J	2.43E+03 J	mg/kg	AB102(6.0)	1/2	13.44-13.44
		C19-C36 Aliphatic	4.60E+01 J	6.40E+02 J	mg/kg	AB102(6.0)	2/2	N/A
		C11-C22 Aromatic	1.28E+02 J	1.72E+03 J	mg/kg	AB102(6.0)	2/2	N/A

(a) Data presented are from soil samples AB102(6.0),AB-13/5-7,AB13D(5.0-7.0),AB14D(2.0-4.0),AB-15/4-4.5,AB15D(4.0-4.5),AB-SS1D,AB-SS1D DUP,AB-SS2D,AB-SS3D, AB-SS4D,AB-SS5D,AB-SS6D,AB-SS7D,AB-SS8D,AB-SS9D,AB-SS9D DUP
(b) Only COPCs selected on Table 3-2.2 appear.
(1) Minimum/maximum detected concentration.

Definitions:
mg/kg = milligams per kilogram
COPCs = Chemicals of Potential Concern
CAS = Chemical Abstract Service
TEQ = Toxic Equivalent for PCB Dioxin-like congeners
J = Estimated Value
C = Carcinogenic
N = Non-Carcinogenic
B = Reported value is less than the contract required detection limit but greater than or equal to the instrument detection limit
N/A = Not Applicable or Not Available
ND = Not Detected
* PCB Congeners Toxic Equivalent
PCB = polychlorinated biphenyls

TABLE 3-2.2.2
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Southwest Properties, Wells G&H Superfund Site Operable Unit 2 Woburn, Massachusetts

Scenario Timeframe: Future
Medium: Soil
Exposure Medium: Subsurface Soil (2-15 ft)

Exposure Point	CAS Number	Chemical (b)	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits
Whitney Property (a)	95636	1,2,4-Trimethylbenzene	ND	ND	mg/kg		0/0	N/A
	108678	1,3,5-Trimethylbenzene	ND	ND	mg/kg		0/0	N/A
	91203	Naphthalene	3.80E-02 J	1.20E+01 J	mg/kg	WB7D(2.0-4.0)	6/9	0.058-0.402
	75014	Vinyl chloride	2.20E-01 J	3.90E-01	mg/kg	WB7D(2.0-4.0)	2/10	0.0019-0.94
	75092	Methylene chloride	2.69E+00	2.69E+00	mg/kg	WB-SS2D	1/10	0.0047-0.89
	156592	cis-1,2-Dichloroethene	3.00E-01	3.80E-01	mg/kg	WB-7/2-4	2/6	0.0019-0.062
	79016	Trichloroethene	1.60E-03 J	7.40E-01	mg/kg	WB-7/2-4	3/10	0.0019-0.94
	1330207	Xylenes (total)	1.40E-03 J	3.33E+00	mg/kg	WB-SS2D	8/10	0.0027-0.12
	91576	2-Methylnaphthalene	7.60E-02 J	2.00E+01 J	mg/kg	WB7D(2.0-4.0)	5/9	0.058-0.402
	88062	2,4,6-Trichlorophenol	1.40E+00 J	1.40E+00 J	mg/kg	WB-7/2-4	1/9	0.14-6.5
	208968	Acenaphthylene	1.90E-02	1.90E-02	mg/kg	WB10D(2.0-4.0)	1/9	0.0029-2.2
	85018	Phenanthrene	3.90E-02 J	4.70E+00	mg/kg	WB-7/2-4	7/9	0.402-2.6
	56553	Benzo(a)Anthracene	3.90E-02 J	1.80E+00	mg/kg	WB-10/2-4	7/9	0.402-2.6
	117817	Bis(2-ethylhexyl) phthalate	4.00E-01	4.40E+02 J	mg/kg	WB7D(2.0-4.0)	5/9	0.402-1.1
	205992	Benzo(b)Fluoranthene	7.80E-02 J	1.80E+00 J	mg/kg	WB-10/2-4	7/9	0.402-2.6
	207089	Benzo(k)Fluoranthene	3.90E-02 J	1.80E+00	mg/kg	WB-10/2-4	6/9	0.402-2.6
	50328	Benzo(a)Pyrene	3.90E-02 J	1.80E+00 J	mg/kg	WB-10/2-4	7/9	0.402-2.6
	193395	Indeno(1,2,3-cd)pyrene	7.80E-02 J	9.68E-01	mg/kg	WB-SS2D	7/9	0.402-2.6
	53703	Dibenz(a,h) anthracene	5.60E-02	3.00E-01 J	mg/kg	WB10D(2.0-4.0)	7/9	0.392-0.402
	7440360	Antimony	3.44E+00	1.00E+01	mg/kg	WB7D(2.0-4.0)	2/7	0.85-8.9
	7440382	Arsenic	1.60E+00 J	3.20E+01	mg/kg	WB7D(2.0-4.0)	7/7	N/A
	7440393	Barium	4.80E+00 J	2.23E+02	mg/kg	WB6D(2.0-4.0)	7/7	N/A
	7440439	Cadmium	7.70E-01 J	8.34E+00	mg/kg	WB6D(2.0-4.0)	5/7	0.8-0.91
	7439921	Lead	3.17E+00 J	1.04E+03 J	mg/kg	WB6D(2.0-4.0)	7/7	N/A
	7439965	Manganese	3.20E+01 J	3.25E+02 J	mg/kg	WB-SS2D	7/7	N/A
	7439976	Mercury	1.20E-01 J	1.20E+01	mg/kg	WB6D(2.0-4.0)	5/7	0.08-0.11
	7440280	Thallium	ND	ND	mg/kg		0/7	0.13-0.16
	5103719	alpha-Chlordane	9.70E-03 J	4.17E+02 J	mg/kg	WB7D(2.0-4.0)	7/7	N/A
	5103742	gamma-Chlordane	8.55E-03 J	2.99E+02 J	mg/kg	WB7D(2.0-4.0)	7/7	N/A
	72559	4,4'-DDE	5.35E-02	1.18E+02 J	mg/kg	WB7D(2.0-4.0)	3/7	0.0038-0.387
	50293	4,4'-DDT	7.32E-03 J	2.90E+02 J	mg/kg	WB7D(2.0-4.0)	5/7	0.0036-0.0038
	53469219	Aroclor 1242	ND	ND	mg/kg		0/7	0.036-0.077
	12672296	Aroclor 1248	9.77E+02 J	9.77E+02 J	mg/kg	WB6D(2.0-4.0)	1/7	0.036-0.077
	11097691	Aroclor 1254	2.24E-01	5.35E+02 J	mg/kg	WB6D(2.0-4.0)	3/7	0.039-0.077
	11096825	Aroclor 1260	9.00E-02	2.95E+02 J	mg/kg	WB7D(2.0-4.0)	3/7	0.036-0.057
	1746016	PCB TEQ*	1.78E-04 J	3.72E-03 J	mg/kg	WB6D(2.0-4.0)	3/3	N/A

TABLE 3-2.2.2
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Southwest Properties, Wells G&H Superfund Site Operable Unit 2 Woburn, Massachusetts

Scenario Timeframe: Future
Medium: Soil
Exposure Medium: Subsurface Soil (2-15 ft)

Exposure Point	CAS Number	Chemical (b)	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits
		C5-C8 Aliphatic	4.00E+00 J	1.44E+02 J	mg/kg	WB6D(2.0-4.0)	3/3	N/A
		C9-C10 Aromatic	4.98E+02 J	4.98E+02 J	mg/kg	WB6D(2.0-4.0)	1/1	N/A
		C9-C18 Aliphatic	7.70E+01 J	6.04E+03 J	mg/kg	WB7D(2.0-4.0)	3/3	N/A
		C19-C36 Aliphatic	1.35E+02 J	4.12E+03 J	mg/kg	WB7D(2.0-4.0)	3/3	N/A
		C11-C22 Aromatic	1.13E+02 J	4.10E+03 J	mg/kg	WB7D(2.0-4.0)	3/3	N/A

(a) Data presented are from soil samples WB-10/2-4,WB10D(2.0-4.0),WB-6/2-4,WB6D(2.0-4.0),WB-7/2-4,WB7D(2.0-4.0),WB-SS1D,WB-SS2D,WB-SS3D, WB-SS3D DUP,WB-SS4D
(b) Only COPCs selected on Table 3-2.2 appear.
(1) Minimum/maximum detected concentration.

Definitions:
mg/kg = milligams per kilogram
CAS = Chemical Abstract Service
COPCs = Chemicals of Potential Concern
TEQ = Toxic Equivalent for PCB Dioxin-like congeners
J = Estimated Value
C = Carcinogenic
N = Non-Carcinogenic
ND = Not Detected
N/A = Not Applicable or Not Available
* PCB Congeners Toxic Equivalent
PCB = polychlorinated biphenyls

TABLE 3-2.2.3
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Southwest Properties, Wells G&H Superfund Site Operable Unit 2 Woburn, Massachusetts

Scenario Timeframe: Future
Medium: Soil
Exposure Medium: Subsurface Soil (2-15 ft)

Exposure Point	CAS Number	Chemical (b)	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits
Murphy Property (a)	95636	1,2,4-Trimethylbenzene	9.20E-01	4.50E+01	mg/kg	MW-7 SS-4 (6.5-8.5)	2/23	0.025-2.5
	108678	1,3,5-Trimethylbenzene	4.70E-01	1.90E+01	mg/kg	MW-7 SS-4 (6.5-8.5)	2/23	0.025-2.5
	91203	Naphthalene	4.50E-02	2.70E+01	mg/kg	MW-7 SS-4 (6.5-8.5)	6/52	0.0027-17
	75014	Vinyl chloride	ND	ND	mg/kg		0/40	0.0022-2.6
	75092	Methylene chloride	2.08E+01 J	2.08E+01 J	mg/kg	MR-SS2D	1/44	0.005-4
	156592	cis-1,2-Dichloroethene	6.40E-02	1.00E+01	mg/kg	MW-7 SS-4 (6.5-8.5)	2/24	0.0022-0.5
	79016	Trichloroethene	1.20E-02	2.08E+00 J	mg/kg	MR-SS2D	5/58	0.0027-0.99
	1330207	Xylenes (total)	9.00E-04 J	4.80E+01	mg/kg	MW-7 SS-4 (6.5-8.5)	14/69	0.002-0.99
	91576	2-Methylnaphthalene	7.60E-01	2.20E+00	mg/kg	B-8 (8-12)	3/17	0.27-3.3
	88062	2,4,6-Trichlorophenol	ND	ND	mg/kg		0/5	0.27-9.363
	208968	Acenaphthylene	5.20E-02	3.20E+00	mg/kg	B-17 SS-2 (2-4)	5/52	0.038-17
	85018	Phenanthrene	1.30E-03 J	9.00E+00	mg/kg	B-17 SS-2 (2-4)	21/56	0.02-17
	56553	Benzo(a)Anthracene	8.30E-04	4.90E+00	mg/kg	B-17 SS-2 (2-4)	28/56	0.00078-17
	117817	Bis(2-ethylhexyl) phthalate	3.80E-01	3.30E+01	mg/kg	B-12 (4-8)	3/16	0.27-9.363
	205992	Benzo(b)Fluoranthene	1.50E-03 J	5.20E+00	mg/kg	B-12 (4-8)	27/56	0.00078-17
	207089	Benzo(k)Fluoranthene	1.20E-03	2.30E+00	mg/kg	B-17 SS-2 (2-4)	22/41	0.00078-17
	50328	Benzo(a)Pyrene	9.30E-04	5.90E+00	mg/kg	B-17 SS-2 (2-4)	26/56	0.00078-17
	193395	Indeno(1,2,3-cd)pyrene	1.30E-03 J	2.30E+00	mg/kg	B-12 (4-8)	20/56	0.002-17
	53703	Dibenz(a,h) anthracene	1.60E-03	3.80E-01	mg/kg	B-17 SS-2 (2-4)	11/52	0.0012-17
	7440360	Antimony	4.00E+00	6.00E+00	mg/kg	MW-11 SS-3 (4-6)	6/48	1.93-9.4
	7440382	Arsenic	1.25E+00	9.30E+00	mg/kg	MR-SS4D	17/48	5-8
	7440393	Barium	6.10E+00	9.80E+02	mg/kg	B-6 (7-11)	16/16	N/A
	7440439	Cadmium	2.30E-01	4.80E+00	mg/kg	B-6 (7-11)	17/48	0.26-1.32
	7439921	Lead	1.60E+00	6.50E+03	mg/kg	B-6 (7-11)	43/51	3-4
	7439965	Manganese	3.56E+01	1.82E+02	mg/kg	MR-SS2D	5/5	N/A
	7439976	Mercury	5.65E-02	3.30E-01	mg/kg	B-10 (4-6)	8/49	0.0463-0.116
	7440280	Thallium	1.00E+01	3.00E+01	mg/kg	B-10 (6-10)	6/48	0.13-20
	5103719	alpha-Chlordane	1.40E-03 J	1.29E-01	mg/kg	MR-SS2D	3/4	0.002-0.002
	5103742	gamma-Chlordane	7.10E-02	1.28E-01	mg/kg	MR-SS3D	2/4	0.002-0.002
	72559	4,4'-DDE	ND	ND	mg/kg		0/4	0.0037-0.0041
	50293	4,4'-DDT	ND	ND	mg/kg		0/4	0.0037-0.0041
	53469219	Aroclor 1242	ND	ND	mg/kg		0/18	0.037-1
	12672296	Aroclor 1248	8.00E-01	8.00E-01	mg/kg	MW-16 SS-3 (4-6)	1/7	0.037-0.1
	11097691	Aroclor 1254	2.00E-01	2.00E-01	mg/kg	W-89-S4(8-10)	2/8	0.037-0.1
	11096825	Aroclor 1260	ND	ND	mg/kg		0/7	0.037-0.1
	1746016	PCB TEQ*	ND	ND	mg/kg		0/0	N/A

TABLE 3-2.2.3
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Southwest Properties, Wells G&H Superfund Site Operable Unit 2 Woburn, Massachusetts

Scenario Timeframe: Future
Medium: Soil
Exposure Medium: Subsurface Soil (2-15 ft)

Exposure Point	CAS Number	Chemical (b)	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits
		C5-C8 Aliphatic	1.00E+00 J	1.00E+00 J	mg/kg	MR10D(3.0-5.0)	1/1	N/A
		C9-C10 Aromatic	ND	ND	mg/kg		0/0	N/A
		C9-C18 Aliphatic	ND	ND	mg/kg		0/1	3.24-3.24
		C19-C36 Aliphatic	ND	ND	mg/kg		0/1	4.32-4.32
		C11-C22 Aromatic	1.10E+01 T	7.20E+04 T	mg/kg	B-6 (7-11)	62/79	9.18-10

(a) Data presented are from soil samples B-1 SS-3 (4.5-6.5),B-1 SS-5 (8.5-10.5),B-10 (10-14),B-10 (4-6),B-10 (6-10),B-10 SS-6 (10-12),B-11 SS-4 (6-8),B-11 SS-6 (10-12), B-12 (4-8),B-12 (8-12),B-12 SS-5 (8-10),B-13 SS-5 (8-10),B-14 SS-2 (2.5-4.5),B-14 SS-5 (8.5-10.5),B-15 SS-5 (8-10),B-15 SS-7 (12-14),B-16 SS-6 (10-12),B-17 SS-2 (2-4), B-18 SS-3 (4-6),B-19 SS-4 (6-8),B-2 SS-3 (4.5-6.5),B-20 SS-4 (6-8),B-21 SS-4 (6-8),B-24 SS-4 (6-8),B-25 SS-3 (4-6),B-26 SS-4 (6-8),B-4 SS-6 (10-12),B-5 (13-15), B-5 (7-10),B-6 (7-11),B-6 SS-5 (8-10),B-7 SS-5 (8-10),B-8 (7-8),B-8 (8-12),B-8 SS-4 (6-8),B-9 (6-10),B-9 SS-5 (8-10),CHI-1/88(2-4),CHI-2/88 (4-6),CHI-3/88 (6-8), CHI-4/88 (2-4),CHI-5/88 (2-4),CHI-6/88 (2-4),CHI-8/88 (5-7),MR-10/3-5,MR10D(3.0-5.0),MR-SS1D,MR-SS2D,MR-SS3D,MR-SS4D,MW-1 SS-5 (8-10),MW-11 SS-3 (4-6), MW-11 SS-5 (8-10),MW-14 SS-3 (4-6),MW-16 SS-3 (4-6),MW-2 SS-2 (2-4),MW-2 SS-4A (7.5-9.5),MW-3 SS-4 (6-8),MW-3 SS-6 (10-12),MW-4 SS-5 (8-10),MW-4 SS-6 (10-12), MW-5 SS-6 (10-12),MW-7 SS-2 (2.5-4.5),MW-7 SS-4 (6.5-8.5),MW-9 SS-6 (10-12),W-89-S1(10-12),W-89-S1(2-4),W-89-S1(6-8),W-89-S1(8-10),W-89-S14(4-6),W-89-S14(6-8), W-89-S14(8-10),W-89-S15(4-6),W-89-S15(6-8),W-89-S15(8-10),W-89-S16(10-12),W-89-S16(4-6),W-89-S16(6-8),W-89-S16(8-10),W-89-S17 (6-8),W-89-S17(4-6), W-89-S17(8-10),W-89-S18 (6-8),W-89-S18(4-6),W-89-S18(8-10),W-89-S3(10-12),W-89-S3(4-6),W-89-S3(6-8),W-89-S3(8-10),W-89-S4 (6-8),W-89-S4 (8-10), W-89-S4(4-6)

(b) Only COPCs selected on Table 3-2.2 appear.

(1) Minimum/maximum detected concentration.

Definitions:
mg/kg = milligams per kilogram
CAS = Chemical Abstract Service
COPCs = Chemicals of Potential Concern
J = Estimated Value
TEQ = Toxic Equivalent for PCB Dioxin-like congeners
C = Carcinogenic
N = Non-Carcinogenic
T = C11-C22 Aromatic Measured as Total Petroleum Hydrocarbons by Method 8100M
N/A = Not Applicable or Not Available
ND = Not Detected
* PCB Congeners Toxic Equivalent
PCB = polychlorinated biphenyls

TABLE 3-2.3
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Southwest Properties, Wells G&H Superfund Site Operable Unit 2 Woburn, Massachusetts

Scenario Timeframe: Current /Future
Medium: Groundwater
Exposure Medium: Groundwater

Exposure Point	CAS Number	Chemical	Minimum Concentration (Qualifier) (1)		Maximum Concentration (Qualifier) (1)		Units	Location of Maximum Concentration	Detection Frequency	Range of Detection	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (N/C) (4)		Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
Combined Data (a)	71556	1,1,1-Trichloroethane	1.00E+00	J	1.50E+02	J	ug/L	MW-18S	9/50	0.3-10	1.50E+02	N/A	3.20E+02	N	200	MCL	N	BSL
	76131	1,1,2-Trichloro-1,2,2-trifluoroetha	1.00E+00		1.50E+01	J	ug/L	MW-18S	6/50	1-10	1.50E+01	N/A	5.90E+03	N	N/A	N/A	N	BSL
	79005	1,1,2-Trichloroethane	4.00E-01	J	4.00E-01	J	ug/L	MW18S	1/50	0.08-200	4.00E-01	N/A	2.00E-01	C	5	MCL	Y	ASL
	75343	1,1-Dichloroethane	1.00E+00		2.20E+02		ug/L	MW-18S	13/50	1-10	2.20E+02	N/A	8.10E+01	N	N/A	N/A	Y	ASL
	75354	1,1-Dichloroethene	1.94E-01		9.00E+00	J	ug/L	MW-19	4/50	0.08-200	9.00E+00	N/A	3.40E+01	N	7	MCL	Y	ASL
	120821	1,2,4-Trichlorobenzene	2.30E+01	J	2.30E+01	J	ug/L	MW6S	1/50	1-200	2.30E+01	N/A	1.90E+01	N	70	MCL	Y	ASL
	95501	1,2-Dichlorobenzene	9.00E-01	J	1.00E+01	J	ug/L	MW6S	4/50	1-200	1.00E+01	N/A	3.70E+01	N	600	MCL	N	BSL
	541731	1,3-Dichlorobenzene	1.90E+01	J	1.90E+01	J	ug/L	MW6S	1/50	0.1-200	1.90E+01	N/A	5.50E-01	N	N/A	N/A	Y	ASL
	106467	1,4-Dichlorobenzene	4.84E-01		1.97E+02	J	ug/L	MW6S	3/50	0.08-200	1.97E+02	N/A	5.00E-01	C	75	MCL	Y	ASL
	78933	2-Butanone (MEK)	6.00E+00	J	6.00E+00	J	ug/L	MW-20	1/50	3-200	6.00E+00	N/A	1.90E+02	N	N/A	N/A	N	BSL
	67641	Acetone	1.00E+01		3.50E+01	J	ug/L	MW-19	2/50	4-140	3.50E+01	N/A	6.10E+01	N	N/A	N/A	N	BSL
	71432	Benzene	1.00E-01	J	8.60E+01	J	ug/L	MW5S	11/50	0.08-5	8.60E+01	N/A	3.40E-01	C	5	MCL	Y	ASL
	74839	Bromomethane	5.00E-01	J	1.00E+00	J	ug/L	MW-9	3/50	0.1-200	1.00E+00	N/A	8.70E-01	N	N/A	N/A	Y	ASL
	75150	Carbon disulfide	3.00E+00	J	3.00E+00	J	ug/L	MW-15	1/50	0.1-200	3.00E+00	N/A	1.00E+02	N	N/A	N/A	N	BSL
	108907	Chlorobenzene	1.00E+00	J	1.80E+01	J	ug/L	MW6S	2/50	1-200	1.80E+01	N/A	1.10E+01	N	100	MCL	Y	ASL
	124481	Chlorodibromomethane	2.85E-01	J	1.51E+00	J	ug/L	AB6M	5/50	0.08-200	1.51E+00	N/A	1.30E-01	C	N/A	N/A	Y	ASL
	75003	Chloroethane	1.10E+01		5.00E+01		ug/L	MW-14	2/50	1-200	5.00E+01	N/A	4.60E+00	C	N/A	N/A	Y	ASL
	67663	Chloroform	1.07E-01		1.07E-01		ug/L	AB-6SS	1/50	0.08-200	1.07E-01	N/A	6.20E+00	N	N/A	N/A	N	BSL
	156592	cis-1,2-Dichloroethene	1.00E+00	J	1.90E+03		ug/L	MW-19	21/50	1-10	1.90E+03	N/A	6.10E+00	N	70	MCL	Y	ASL
	110827	Cyclohexane	2.00E+00	J	8.00E+00	J	ug/L	MW-16	3/50	1-200	8.00E+00	N/A	3.50E+03	N	N/A	N/A	N	BSL
	75718	Dichlorodifluoromethane	1.00E+00		1.00E+00		ug/L	AB2M	1/50	1-200	1.00E+00	N/A	3.90E+01	N	N/A	N/A	N	BSL
	100414	Ethylbenzene	1.00E+00	J	4.00E+01		ug/L	MW5S	5/50	1-5	4.00E+01	N/A	2.90E+00	C	700	MCL	Y	ASL
	98828	Isopropylbenzene	3.00E-01	J	3.00E+00	J	ug/L	MW6S	6/50	1-200	3.00E+00	N/A	6.60E+01	N	N/A	N/A	N	BSL
	108872	Methyl cyclohexane	8.00E-01	J	7.00E+00	J	ug/L	MW-16	4/50	1-200	7.00E+00	N/A	5.20E+02	N	N/A	N/A	N	BSL
	1634044	Methyl tert-butyl ether	4.00E+00	J	5.40E+02		ug/L	MW5S	6/50	1-15	5.40E+02	N/A	1.30E+01	C	N/A	N/A	Y	ASL
	75092	Methylene chloride	1.00E+00	J	9.00E+01	J	ug/L	MW-18S	5/50	0.2-10	9.00E+01	N/A	4.30E+00	C	5	MCL	Y	ASL
	127184	Tetrachloroethene	4.18E-01		3.60E+01	J	ug/L	AB2R	7/50	0.1-200	3.60E+01	N/A	6.60E-01	C	5	MCL	Y	ASL
	108883	Toluene	3.50E+00		1.20E+03		ug/L	MW5S	6/50	0.6-15	1.20E+03	N/A	7.20E+01	N	1000	MCL	Y	ASL
	156605	trans-1,2-Dichloroethene	8.50E-01	J	2.80E+01	J	ug/L	MW-18S	9/50	1-10	2.80E+01	N/A	1.20E+01	N	100	MCL	Y	ASL
	79016	Trichloroethene	2.00E+00	J	1.60E+02	J	ug/L	AB2R	15/50	0.1-200	1.60E+02	N/A	2.80E-02	C	5	MCL	Y	ASL
	75014	Vinyl chloride	1.53E-01		6.00E+02		ug/L	MW-18S	11/50	0.08-10	6.00E+02	N/A	2.00E-02	C	2	MCL	Y	ASL
	1330207	Xylenes (total)	1.00E+00	J	1.10E+02		ug/L	MW-16	8/50	2-20	1.10E+02	N/A	2.10E+01	N	10000	MCL	Y	ASL
	108952	Phenol	6.00E-01	J	2.00E+00	J	ug/L	MW-20	2/33	10-11	2.00E+00	N/A	2.20E+03	N	N/A	N/A	N	BSL
	95487	2-Methylphenol	1.00E+00	J	2.00E+00	J	ug/L	MW-16	3/33	10-11	2.00E+00	N/A	1.80E+02	N	N/A	N/A	N	BSL
	98862	Acetophenone	1.20E+00	J	1.20E+00	J	ug/L	MW-6S	1/33	10-11	1.20E+00	N/A	NO VALUE	N	N/A	N/A	Y	NSL
	106445	4-Methylphenol	1.80E+00	J	2.50E+01		ug/L	MW-20	4/33	10-11	2.50E+01	N/A	1.80E+01	N	N/A	N/A	Y	ASL
	105679	2,4-Dimethylphenol	1.00E+00	J	8.00E+00	J	ug/L	MW-16	3/33	10-11	8.00E+00	N/A	7.30E+01	N	N/A	N/A	N	BSL
	120832	2,4-Dichlorophenol	2.40E+00	J	2.40E+00	J	ug/L	MW-6S	1/33	10-11	2.40E+00	N/A	1.10E+01	N	N/A	N/A	N	BSL
	91203	Naphthalene	8.65E-02	J	2.50E+01		ug/L	MW-16	8/37	0.01-10	2.50E+01	N/A	6.20E-01	N	N/A	N/A	Y	ASL
	91576	2-Methylnaphthalene	1.10E+01		1.10E+01		ug/L	MW-16	1/37	1-11	1.10E+01	N/A	6.20E-01	N	N/A	N/A	Y	ASL
	95954	2,4,5-Trichlorophenol	1.80E+00	J	1.80E+00	J	ug/L	MW-6S	1/33	10-28	1.80E+00	N/A	3.60E+02	N	N/A	N/A	N	BSL
	92524	1,1'-Biphenyl	5.00E-01	J	7.00E+00	J	ug/L	MW-6S	2/33	10-11	7.00E+00	N/A	3.00E+01	N	N/A	N/A	N	BSL
	208968	Acenaphthylene	3.20E+00		3.20E+00		ug/L	MW6S	1/37	1-11	3.20E+00	N/A	6.20E-01	N	N/A	N/A	Y	ASL
	83329	Acenaphthene	5.00E-01	J	3.90E+00	J	ug/L	AB2SS	3/37	5-11	3.90E+00	N/A	3.70E+01	N	N/A	N/A	N	BSL
	84662	Diethyl phthalate	3.00E+00	J	4.00E+00	J	ug/L	MW-6S	2/33	1-11	4.00E+00	N/A	2.90E+03	N	N/A	N/A	N	BSL
	86737	Fluorene	5.00E-01	J	5.50E+00		ug/L	MW6S	2/37	5-11	5.50E+00	N/A	2.40E+01	N	N/A	N/A	N	BSL

TABLE 3-2.3
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Southwest Properties, Wells G&H Superfund Site Operable Unit 2 Woburn, Massachusetts

Scenario Timeframe: Current /Future
Medium: Groundwater
Exposure Medium: Groundwater

Exposure Point	CAS Number	Chemical	Minimum Concentration (Qualifier) (1)		Maximum Concentration (Qualifier) (1)		Units	Location of Maximum Concentration	Detection Frequency	Range of Detection	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (N/C) (4)		Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
	85018	Phenanthrene	4.00E-01	J	1.00E+01	J	ug/L	MW-16	6/37	10-11	1.00E+01	N/A	6.20E-01	N	N/A	N/A	Y	ASL
	120127	Anthracene	2.00E-01	J	2.00E-01	J	ug/L	MW-7	1/37	5-11	2.00E-01	N/A	1.80E+02	N	N/A	N/A	N	BSL
	129000	Pyrene	5.00E-01	J	1.80E+01	J	ug/L	MW-7	3/37	5-11	1.80E+01	N/A	1.80E+01	N	N/A	N/A	N	BSL
	56553	Benzo(a)Anthracene	5.00E-03	J	4.80E-02		ug/L	MW-6S	3/37	0.01-11	4.80E-02	N/A	9.20E-02	C	N/A	N/A	N	BSL
	218019	Chrysene	1.50E-02		2.70E-02		ug/L	MW-6S	2/37	0.01-11	2.70E-02	N/A	9.20E+00	C	N/A	N/A	N	BSL
	117817	Bis(2-ethylhexyl) phthalate	2.00E+00	J	2.00E+00	J	ug/L	MW-20	1/33	0.5-11	2.00E+00	N/A	4.80E+00	C	6	MCL	N	BSL
	205992	Benzo(b)Fluoranthene	5.30E-03	J	1.50E-02		ug/L	AB-6SS	3/37	0.01-11	1.50E-02	N/A	9.20E-02	C	N/A	N/A	N	BSL
	207089	Benzo(k)Fluoranthene	7.40E-03	J	1.40E-02	J	ug/L	AB-6SS	3/37	0.0067-11	1.40E-02	N/A	9.20E-01	C	N/A	N/A	N	BSL
	50328	Benzo(a)Pyrene	1.10E-02		1.50E-02		ug/L	MW-6S	2/37	0.01-11	1.50E-02	N/A	9.20E-03	C	0.2	MCL	Y	ASL
	193395	Indeno(1,2,3-cd)pyrene	6.80E-03	J	1.40E-02		ug/L	AB-6SS	3/37	0.0072-11	1.40E-02	N/A	9.20E-02	C	N/A	N/A	N	BSL
	53703	Dibenz(a,h) anthracene	5.70E-03	J	1.30E-02		ug/L	AB-6SS	3/37	0.006-11	1.30E-02	N/A	9.20E-03	C	N/A	N/A	Y	ASL
		C9-C18 Aliphatic	5.90E+01		3.10E+03		ug/L	MW-7	4/32	50-68	3.10E+03	N/A	1.00E+03	N	N/A	N/A	Y	ASL
		C11-C22 Aromatic	2.20E+02		1.20E+03		ug/L	MW-7	2/32	50-190	1.20E+03	N/A	2.00E+02	N	N/A	N/A	Y	ASL
		C19-C36 Aliphatic	4.50E+01		2.40E+04		ug/L	MW-7	6/32	50-91	2.40E+04	N/A	5.00E+03	N	N/A	N/A	Y	ASL
		C5-C8 Aliphatic	7.42E+01		4.48E+02		ug/L	MW6S	7/32	40-50	4.48E+02	N/A	4.00E+02	N	N/A	N/A	Y	ASL
		C9-C10 Aromatic	1.10E+01		2.00E+02	J	ug/L	MW-16	4/32	10-200	2.00E+02	N/A	1.00E+03	N	N/A	N/A	N	BSL
		C9-C12 Aliphatic	1.03E+01		9.59E+01	J	ug/L	MW-16	4/32	10-50	9.59E+01	N/A	2.00E+02	N	N/A	N/A	N	BSL
	57125	Cyanide	3.00E+00	J	1.60E+01		ug/L	WB1M	5/27	3-3	1.60E+01	N/A	7.30E+01	N	N/A	N/A	N	BSL
	7429905	Aluminum	2.09E+01	J	3.56E+03		ug/L	MW-5D	18/27	18.299999-128	3.56E+03	N/A	3.60E+03	N	N/A	N/A	N	NTX
	7440382	Arsenic	2.50E+00	J	1.75E+02		ug/L	MW-19	10/48	0.15-4.6	1.75E+02	N/A	4.50E-02	C	10	MCL	Y	ASL
	7440393	Barium	7.90E+00	J	9.35E+01		ug/L	MW5S	27/27	N/A	9.35E+01	N/A	2.60E+02	N	2000	MCL	N	BSL
	7440439	Cadmium	1.05E-02	J	1.40E+00	J	ug/L	MR-1SS	6/48	0.8-1.3	1.40E+00	N/A	1.80E+00	N	5	MCL	N	BSL
	7440702	Calcium	8.68E+03		9.79E+04	J	ug/L	MW5S	27/27	N/A	9.79E+04	N/A	4.00E+08	N	N/A	N/A	N	NUT
	7440473	Chromium	1.20E+00		1.33E+02		ug/L	MW-5D	19/48	0.9-9.7	1.33E+02	N/A	5.50E+03	N	100	MCL	Y	ASL
	7440484	Cobalt	5.46E-01	J	1.81E+01	J	ug/L	MW-5D	21/27	1.3-1.3	1.81E+01	N/A	7.30E+01	C	N/A	N/A	N	NTX
	7440508	Copper	2.30E+00	J	1.94E+01	J	ug/L	MW-5D	6/27	0.59-15	1.94E+01	N/A	1.50E+02	N	1300	MCL	N	BSL
	7439896	Iron	1.18E+02		2.07E+04		ug/L	MW6S	22/27	31.799999-128	2.07E+04	N/A	1.10E+03	N	N/A	N/A	N	NTX
	7439921	Lead	2.10E+00	J	1.48E+02	J	ug/L	MR-1SS	10/48	0.064-20	1.48E+02	N/A	0.00E+00	N	15	MCL	Y	ASL
	7439954	Magnesium	1.53E+03	J	3.68E+04		ug/L	MW5S	27/27	N/A	3.68E+04	N/A	8.05E+08	N	N/A	N/A	N	NUT
	7439965	Manganese	2.30E+00	J	2.64E+03		ug/L	MW5S	27/27	N/A	2.64E+03	N/A	8.80E+01	N	N/A	N/A	Y	ASL
	7439976	Mercury	2.00E-01		2.00E-01		ug/L	MW5S	1/27	0.1-0.2	2.00E-01	N/A	1.10E+00	N	2	MCL	N	BSL
	7440020	Nickel	2.00E+00		9.31E+01		ug/L	MW-5D	20/27	0.93-7.91	9.31E+01	N/A	7.30E+01	N	N/A	N/A	Y	ASL
	2023695	Potassium	1.59E+03	J	2.42E+04	J	ug/L	MW5S	27/27	N/A	2.42E+04	N/A	1.00E+08	N	N/A	N/A	N	NUT
	7782492	Selenium	3.00E-01	J	6.90E+00	J	ug/L	MW-5D	4/27	0.2-4.9	6.90E+00	N/A	1.80E+01	N	50	MCL	N	BSL
	7440235	Sodium	9.00E+03		1.01E+06		ug/L	AB-6SS	27/27	N/A	1.01E+06	N/A	1.00E+08	N	N/A	N/A	N	NUT
	7440280	Thallium	1.20E-02	J	2.50E-02	J	ug/L	WB-1R	3/27	0.003-10	2.50E-02	N/A	2.40E-01	N	2	MCL	N	BSL
	7440622	Vanadium	1.70E+00		6.75E+00	J	ug/L	MW5S	10/27	0.6-1.5	6.75E+00	N/A	2.60E+01	N	N/A	N/A	N	BSL
	7440666	Zinc	2.67E+00	J	7.70E+01		ug/L	S83	6/27	0.97-53	7.70E+01	N/A	1.10E+03	N	N/A	N/A	N	BSL
	1746016	PCB TEQ*	9.06E-09		2.90E-06		ug/L	MW-13	5/5	N/A	2.90E-06	N/A	4.50E-07	C	N/A	N/A	Y	ASL
	5103719	alpha-Chlordane	4.25E-03	J	8.90E-02	J	ug/L	MW6S	2/3	0.005-0.005	8.90E-02	N/A	1.90E-01	C	2	MCL	N	BSL
	5103742	gamma-Chlordane	4.70E-02	J	4.70E-02	J	ug/L	MW6S	1/3	0.005-0.005	4.70E-02	N/A	1.90E-01	C	2	MCL	N	BSL
	319857	beta-BHC	6.25E-03	J	6.25E-03	J	ug/L	AB2SS	1/3	0.005-0.1	6.25E-03	N/A	3.70E-02	C	N/A	N/A	N	BSL
	58899	gamma-BHC	4.75E-03	J	4.75E-03	J	ug/L	AB2SS	1/3	0.005-0.1	4.75E-03	N/A	5.20E-02	C	0.2	MCL	N	BSL
	60571	Dieldrin	1.40E-02	J	1.40E-02	J	ug/L	AB2SS	1/1	N/A	1.40E-02	N/A	4.20E-03	C	N/A	N/A	Y	ASL
	72548	4,4'-DDD	5.58E-01	J	5.58E-01	J	ug/L	MW6S	1/3	0.01-0.01	5.58E-01	N/A	2.80E-01	C	N/A	N/A	Y	ASL
	50293	4,4'-DDT	1.10E-02	J	1.88E-01	J	ug/L	MW6S	2/3	0.01-0.01	1.88E-01	N/A	2.00E-01	C	N/A	N/A	N	BSL
	72435	Methoxychlor	7.50E-02	J	7.50E-02	J	ug/L	AB2SS	1/1	N/A	7.50E-02	N/A	1.80E+01	N	40	MCL	N	BSL

TABLE 3-2.3
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Southwest Properties, Wells G&H Superfund Site Operable Unit 2 Woburn, Massachusetts

Scenario Timeframe: Current /Future
Medium: Groundwater
Exposure Medium: Groundwater

Exposure Point	CAS Number	Chemical	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (N/C) (4)	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)

(a) Data presented are from groundwater samples AB1,AB-1,AB-02SS DUP,AB2M,AB2R,AB2SS,AB-2SS,AB4M,AB4SS,AB6M,AB6SS,AB-6SS,MW-04M DUP,MW-03 DUP,MW-21 DUP,MR-1SS,MR-2SS,MW1,MW-1,MW-1,MW-10,MW-11,MW-12,MW-13,MW-14,MW-15,MW-16, MW-17,MW18D,MW-18D,MW18S,MW-18S,MW-18S,MW-19,MW1S,MW2,MW-2,MW-20,MW-21,MW-05S DUP,MW-3,MW-3BR,MW-3D,MW-4,MW4D,MW-4D,MW4M,MW-4M,MW4S,MW-4S,MW-4S,MW5D,MW-5D,MW5S,MW-5S,MW-6,MW6S,MW-6S,MW-7,MW-8, MW-9,MW-18S DUP,MW-06S DUP,S83,S83SS,WB1M,WB1R,WB-1R,WB1SS

(1) Minimum/maximum detected concentration.
(2) Maximum concentration used for screening.
(3) Refer to supporting information for background discussion.
(4) USEPA Region 9 PRGs for residential soil (adjusted to an hazard quotient = 0.1 for noncarcinogens), October 1, 2002.
PRG for chromium III used for total chromium.
PRG for chromium VI used for chromium VI.
PRG for mercury and compounds used for mercury.
PRG for free cyanide used for total cyanide.
The screening toxicity value for the petroleum hydrocarbon fractions are MADEP S-1/GW-1 standards.
(5) Rationale Codes:
Selection Reason: Above Screening Levels (ASL)
Deletion Reason: No Toxicity Information (NTX)
Essential Nutrient (NUT)
Below Screening Level (BSL)
Region 1 Exclusion (R1X)
Low Concentration, Low Frequency of Detection (LCF)

Definitions:
ug/L = micrograms per liter
CAS = Chemical Abstract Service
COPC = Chemical of Potential Concern
ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered
PRG = Preliminary Remedial Goal
N/A = Not Applicable or Not Available
ND = Not Detected
J = Estimated Value
C = Carcinogenic
N = Non-Carcinogenic
MCL = Maximum Contaminant Level
MADEP = Massachusetts Department of Environmental Protection
GW-1/GW-2 = MADEP Groundwater Cleanup Criteria
TEQ = Toxic Equivalent for PCB Dioxin-like congeners
* PCB Congeners Toxic Equivalent
PCB = polychlorinated biphenyls

TABLE 3-2.3.1
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Southwest Properties, Wells G&H Superfund Site Operable Unit 2 Woburn, Massachusetts

Scenario Timeframe: Current/Future
Medium: Groundwater
Exposure Medium: Groundwater

Exposure Point	CAS Number	Chemical (b)	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits
Aberjona Property (a)	79005	1,1,2-Trichloroethane	ND	ND	ug/L		0/12	0.08-0.1
	75343	1,1-Dichloroethane	ND	ND	ug/L		0/12	1-10
	75354	1,1-Dichloroethene	1.94E-01	1.94E-01	ug/L	AB-6SS	1/12	0.08-0.1
	120821	1,2,4-Trichlorobenzene	ND	ND	ug/L		0/12	1-10
	541731	1,3-Dichlorobenzene	ND	ND	ug/L		0/12	0.1-1
	106467	1,4-Dichlorobenzene	4.84E-01	4.84E-01	ug/L	AB-6SS	1/12	0.08-0.75
	71432	Benzene	1.00E-01 J	3.20E-01 J	ug/L	AB2SS	3/12	0.08-0.1
	74839	Bromomethane	ND	ND	ug/L		0/12	0.1-1
	108907	Chlorobenzene	ND	ND	ug/L		0/12	1-10
	124481	Chlorodibromomethane	2.85E-01 J	1.51E+00 J	ug/L	AB6M	4/12	0.08-0.33
	75003	Chloroethane	ND	ND	ug/L		0/12	1-2
	156592	cis-1,2-Dichloroethene	5.00E+00 J	2.90E+01 J	ug/L	AB2SS	5/12	1-2
	100414	Ethylbenzene	ND	ND	ug/L		0/12	1-2
	1634044	Methyl tert-butyl ether	4.00E+00 J	1.40E+01	ug/L	S83SS	2/12	1-10
	75092	Methylene chloride	ND	ND	ug/L		0/12	1-2
	127184	Tetrachloroethene	4.18E-01	3.60E+01 J	ug/L	AB2R	5/12	0.1-1
	108883	Toluene	ND	ND	ug/L		0/12	1-2
	156605	trans-1,2-Dichloroethene	ND	ND	ug/L		0/12	1-10
	79016	Trichloroethene	1.80E+01 J	1.60E+02 J	ug/L	AB2R	4/12	0.1-8
	75014	Vinyl chloride	1.53E-01	4.90E-01 J	ug/L	AB2M	3/12	0.08-0.1
	1330207	Xylenes (total)	ND	ND	ug/L		0/12	2-10
	98862	Acetophenone	ND	ND	ug/L		0/1	11-11
	106445	4-Methylphenol	ND	ND	ug/L		0/1	11-11
	91203	Naphthalene	1.25E+00 J	2.70E+00	ug/L	AB6SS	2/3	0.011-0.011
	91576	2-Methylnaphthalene	ND	ND	ug/L		0/3	1-11
	208968	Acenaphthylene	ND	ND	ug/L		0/3	1-11
	85018	Phenanthrene	9.00E-01 J	2.10E+00	ug/L	AB6SS	2/3	11-11
	50328	Benzo(a)Pyrene	1.10E-02	1.10E-02	ug/L	AB-6SS	1/3	1-1
	53703	Dibenz(a,h) anthracene	1.30E-02	1.30E-02	ug/L	AB-6SS	1/3	1-1
		C9-C18 Aliphatic	ND	ND	ug/L		0/2	50-50

TABLE 3-2.3.1
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Southwest Properties, Wells G&H Superfund Site Operable Unit 2 Woburn, Massachusetts

Scenario Timeframe: Current/Future
Medium: Groundwater
Exposure Medium: Groundwater

Exposure Point	CAS Number	Chemical (b)	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits
		C11-C22 Aromatic	ND	ND	ug/L		0/2	50-50
		C19-C36 Aliphatic	ND	ND	ug/L		0/2	50-50
		C5-C8 Aliphatic	ND	ND	ug/L		0/2	50-50
	7440382	Arsenic	2.50E+00 J	2.50E+00 J	ug/L	AB4SS	1/11	0.37-2.5
	7440473	Chromium	1.20E+00	1.30E+01	ug/L	AB1	5/11	1.3-2.2
	7439921	Lead	ND	ND	ug/L		0/11	0.064-20
	7439965	Manganese	1.30E+01	1.80E+03	ug/L	AB4M	11/11	N/A
	7440020	Nickel	2.00E+00	6.80E+00	ug/L	S83	10/11	1.22-1.22
	1746016	PCB TEQ*	ND	ND	ug/L		0/0	N/A
	60571	Dieldrin	1.40E-02 J	1.40E-02 J	ug/L	AB2SS	1/1	N/A
	72548	4,4'-DDD	ND	ND	ug/L		0/1	0.01-0.01

(a) Data presented are from groundwater samples AB-1,AB1,AB2M,AB2R,AB2SS,AB-02SS DUP,AB-2SS,AB4M,AB4SS,AB6M,AB-6SS,AB6SS,S83,S83SS
(b) Only COPCs selected on Table 3-2.3 appear.
(1) Minimum/maximum detected concentration.

Definitions:
ug/L = micrograms per liter
CAS = Chemical Abstract Service
COPCs = Chemicals of Potential Concern
J = Estimated Value
N/A = Not Applicable or Not Available
ND = Not Detected
TEQ = Toxic Equivalent for PCB Dioxin-like congeners
* PCB Congeners Toxic Equivalent
PCB = polychlorinated biphenyls

TABLE 3-2.3.2
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Southwest Properties, Wells G&H Superfund Site Operable Unit 2 Woburn, Massachusetts

Scenario Timeframe: Current/Future
Medium: Groundwater
Exposure Medium: Groundwater

Exposure Point	CAS Number	Chemical (b)	Minimum Concentration (Qualifier) (1)		Maximum Concentration (Qualifier) (1)		Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits
Whitney Property (a)	79005	1,1,2-Trichloroethane	ND		ND		ug/L		0/10	0.08-10
	75343	1,1-Dichloroethane	1.00E+00		1.20E+02	J	ug/L	MW6S	2/10	1-10
	75354	1,1-Dichloroethene	ND		ND		ug/L		0/10	0.08-10
	120821	1,2,4-Trichlorobenzene	2.30E+01	J	2.30E+01	J	ug/L	MW6S	1/10	1-10
	541731	1,3-Dichlorobenzene	1.90E+01	J	1.90E+01	J	ug/L	MW6S	1/10	0.1-10
	106467	1,4-Dichlorobenzene	3.64E+00	J	1.97E+02	J	ug/L	MW6S	2/10	0.08-10
	71432	Benzene	9.70E-01	J	8.60E+01	J	ug/L	MW5S	3/10	0.08-5
	74839	Bromomethane	ND		ND		ug/L		0/10	0.1-10
	108907	Chlorobenzene	1.80E+01	J	1.80E+01	J	ug/L	MW6S	1/10	1-10
	124481	Chlorodibromomethane	1.05E+00	J	1.05E+00	J	ug/L	MW6S	1/10	0.08-10
	75003	Chloroethane	ND		ND		ug/L		0/10	1-10
	156592	cis-1,2-Dichloroethene	1.00E+00	J	4.80E+02	J	ug/L	MW6S	2/10	1-10
	100414	Ethylbenzene	7.00E+00	J	4.00E+01		ug/L	MW5S	2/10	1-5
	1634044	Methyl tert-butyl ether	4.00E+00	J	5.40E+02		ug/L	MW5S	4/10	1-10
	75092	Methylene chloride	1.00E+00	J	1.00E+00	J	ug/L	MW-4D	1/10	1-10
	127184	Tetrachloroethene	ND		ND		ug/L		0/10	0.1-10
	108883	Toluene	1.90E+01	J	1.20E+03		ug/L	MW5S	2/10	1-10
	156605	trans-1,2-Dichloroethene	1.50E+01	J	1.50E+01	J	ug/L	MW6S	1/10	1-10
	79016	Trichloroethene	2.00E+00	J	9.00E+00	J	ug/L	MW-4D	2/10	0.1-10
	75014	Vinyl chloride	4.20E+02	J	4.20E+02	J	ug/L	MW6S	1/10	0.08-10
	1330207	Xylenes (total)	2.00E+00	J	4.25E+01		ug/L	MW5S	3/10	2-10
	98862	Acetophenone	1.20E+00	J	1.20E+00	J	ug/L	MW-6S	1/6	10-11
	106445	4-Methylphenol	1.80E+00	J	1.80E+00	J	ug/L	MW-6S	1/6	10-11
	91203	Naphthalene	2.40E+00	J	1.36E+01		ug/L	MW6S	2/8	0.01-10
	91576	2-Methylnaphthalene	ND		ND		ug/L		0/8	2.2-10
	208968	Acenaphthylene	3.20E+00		3.20E+00		ug/L	MW6S	1/8	1-10
	85018	Phenanthrene	2.40E+00		3.10E+00		ug/L	MW6S	2/8	10-10
	50328	Benzo(a)Pyrene	1.50E-02		1.50E-02		ug/L	MW-6S	1/8	0.01-10
	53703	Dibenz(a,h) anthracene	5.70E-03	J	5.80E-03	J	ug/L	MW-4S	2/8	0.01-10
		C9-C18 Aliphatic	5.90E+01		5.90E+01		ug/L	WB1SS	2/5	61-61

TABLE 3-2.3.2
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Southwest Properties, Wells G&H Superfund Site Operable Unit 2 Woburn, Massachusetts

Scenario Timeframe: Current/Future
Medium: Groundwater
Exposure Medium: Groundwater

Exposure Point	CAS Number	Chemical (b)	Minimum Concentration (Qualifier) (1)		Maximum Concentration (Qualifier) (1)		Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits
		C11-C22 Aromatic	ND		ND		ug/L		0/5	50-170
		C19-C36 Aliphatic	4.50E+01		1.50E+02		ug/L	WB1SS	2/5	81-82
		C5-C8 Aliphatic	4.48E+02		4.48E+02		ug/L	MW6S	1/5	40-50
	7440382	Arsenic	3.50E+00	J	3.50E+00	J	ug/L	WB1SS	1/11	0.15-4.6
	7440473	Chromium	3.10E+00		2.30E+01	J	ug/L	MW5S	6/11	1.5-9.7
	7439921	Lead	2.10E+00	J	2.10E+00	J	ug/L	MW-4S	1/11	0.227-3.2
	7439965	Manganese	2.30E+00	J	2.64E+03		ug/L	MW5S	11/11	N/A
	7440020	Nickel	2.10E+00		1.90E+01		ug/L	MW5S	7/11	0.93-7.91
	1746016	PCB TEQ*	9.06E-09		1.40E-06	J	ug/L	MW6S	3/3	N/A
	60571	Dieldrin	ND		ND		ug/L		0/0	N/A
	72548	4,4'-DDD	5.58E-01	J	5.58E-01	J	ug/L	MW6S	1/2	0.01-0.01

(a) Data presented are from soil samples MW1S,MW-4D,MW4D,MW-4M,MW-04M DUP,MW4M,MW-4S,MW-4S,MW4S,MW5S,MW-05S DUP,MW6S,MW-6S,MW-06S DUP, WB1M,WB-1R,WB1R,WB1SS
(b) Only COPCs selected on Table 3-2.3 appear.
(1) Minimum/maximum detected concentration.

Definitions:
ug/L = micrograms per liter
CAS = Chemical Abstract Service
COPCs = Chemicals of Potential Concern
J = Estimated Value
N/A = Not Applicable or Not Available
ND = Not Detected
TEQ = Toxic Equivalent for PCB Dioxin-like congeners
* PCB Congeners Toxic Equivalent
PCB = polychlorinated biphenyls

TABLE 3-2.3.3
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Southwest Properties, Wells G&H Superfund Site Operable Unit 2 Woburn, Massachusetts

Scenario Timeframe: Current/Future
Medium: Groundwater
Exposure Medium: Groundwater

Exposure Point	CAS Number	Chemical (b)	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits
Murphy Property (a)	79005	1,1,2-Trichloroethane	4.00E-01 J	4.00E-01 J	ug/L	MW18S	1/28	0.08-200
	75343	1,1-Dichloroethane	1.00E+00 J	2.20E+02	ug/L	MW-18S	11/28	1-10
	75354	1,1-Dichloroethene	5.00E-01 J	9.00E+00 J	ug/L	MW-19	3/28	0.08-200
	120821	1,2,4-Trichlorobenzene	ND	ND	ug/L		0/28	1-200
	541731	1,3-Dichlorobenzene	ND	ND	ug/L		0/28	1-200
	106467	1,4-Dichlorobenzene	ND	ND	ug/L		0/28	0.08-200
	71432	Benzene	6.00E-01 J	1.60E+01	ug/L	MW-16	5/28	0.08-5
	74839	Bromomethane	5.00E-01 J	1.00E+00 J	ug/L	MW-9	3/28	1-200
	108907	Chlorobenzene	1.00E+00 J	1.00E+00 J	ug/L	MW-11	1/28	1-200
	124481	Chlorodibromomethane	ND	ND	ug/L		0/28	0.08-200
	75003	Chloroethane	1.10E+01	5.00E+01	ug/L	MW-14	2/28	1-200
	156592	cis-1,2-Dichloroethene	1.00E+00 J	1.90E+03	ug/L	MW-19	14/28	10-10
	100414	Ethylbenzene	1.00E+00 J	2.30E+01	ug/L	MW-16	3/28	1-5
	1634044	Methyl tert-butyl ether	ND	ND	ug/L		0/28	1-15
	75092	Methylene chloride	1.00E+00 J	9.00E+01 J	ug/L	MW-18S	4/28	0.2-10
	127184	Tetrachloroethene	2.00E+00 J	7.00E+00 J	ug/L	MW-9	2/28	1-200
	108883	Toluene	3.50E+00	5.20E+01	ug/L	MW-16	4/28	0.6-15
	156605	trans-1,2-Dichloroethene	8.50E-01 J	2.80E+01 J	ug/L	MW-18S	8/28	1-10
	79016	Trichloroethene	2.00E+00	4.20E+01	ug/L	MW-9	9/28	5-200
	75014	Vinyl chloride	1.00E+01	6.00E+02	ug/L	MW-18S	7/28	0.08-10
	1330207	Xylenes (total)	1.00E+00 J	1.10E+02	ug/L	MW-16	5/28	2-20
	98862	Acetophenone	ND	ND	ug/L		0/26	10-11
	106445	4-Methylphenol	3.00E+00 J	2.50E+01	ug/L	MW-20	3/26	10-11
	91203	Naphthalene	8.65E-02 J	2.50E+01	ug/L	MW-16	4/26	10-10
	91576	2-Methylnaphthalene	1.10E+01	1.10E+01	ug/L	MW-16	1/26	10-11
	208968	Acenaphthylene	ND	ND	ug/L		0/26	10-11
	85018	Phenanthrene	4.00E-01 J	1.00E+01 J	ug/L	MW-16	2/26	10-11
	50328	Benzo(a)Pyrene	ND	ND	ug/L		0/26	0.01-11
	53703	Dibenz(a,h) anthracene	ND	ND	ug/L		0/26	0.006-11
		C9-C18 Aliphatic	1.60E+02	3.10E+03	ug/L	MW-7	2/25	60-68

TABLE 3-2.3.3
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Southwest Properties, Wells G&H Superfund Site Operable Unit 2 Woburn, Massachusetts

Scenario Timeframe: Current/Future
Medium: Groundwater
Exposure Medium: Groundwater

Exposure Point	CAS Number	Chemical (b)	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits
		C11-C22 Aromatic	2.20E+02	1.20E+03	ug/L	MW-7	2/25	170-190
		C19-C36 Aliphatic	2.40E+02	2.40E+04	ug/L	MW-7	4/25	80-91
		C5-C8 Aliphatic	7.42E+01	2.58E+02	ug/L	MW-18S	6/25	40-40
	7440382	Arsenic	4.60E+00 J	1.75E+02	ug/L	MW-19	8/26	1.36-4.6
	7440473	Chromium	1.09E+01 J	1.33E+02	ug/L	MW-5D	8/26	0.9-6.4
	7439921	Lead	2.98E+00 J	1.48E+02 J	ug/L	MR-1SS	9/26	2-2.3
	7439965	Manganese	2.01E+02	4.70E+02	ug/L	MW-18S	5/5	N/A
	7440020	Nickel	2.40E+00 J	9.31E+01	ug/L	MW-5D	3/5	1.3-1.8
	1746016	PCB TEQ*	1.20E-06	2.90E-06	ug/L	MW-13	2/2	N/A
	60571	Dieldrin	ND	ND	ug/L		0/0	N/A
	72548	4,4'-DDD	ND	ND	ug/L		0/0	N/A

(a) Data presented are from soil samples MR-1SS,MR-2SS,MW-1,MW-1,MW1,MW-2,MW2,MW-3,MW-03 DUP,MW-3BR,MW-3D,MW-4,MW-5D,MW5D,MW5S,MW-5S, MW-6,MW-7,MW-8,MW-9,MW-10,MW-11,MW-12,MW-13,MW-14,MW-15,MW-16,MW-17,MW-18D,MW18D,MW-18S,MW-18S,MW-18S DUP,MW18S,MW-19,MW-20, MW-21,MW-21 DUP
(b) Only COPCs selected on Table 3-2.3 appear.
(1) Minimum/maximum COPC = Chemical of Potential Concern

Definitions:
ug/L = micrograms per liter
CAS = Chemical Abstract Service
COPCs = Chemicals of Potential Concern
J = Estimated Value
N/A = Not Applicable or Not Available
ND = Not Detected
TEQ = Toxic Equivalent for PCB Dioxin-like congeners
* PCB Congeners Toxic Equivalent
PCB = polychlorinated biphenyls

TABLE 3-2.4
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Southwest Properties, Wells G&H Superfund Site Operable Unit 2 Woburn, Massachusetts

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Shallow Groundwater

Exposure Point	CAS Number	Chemical	Minimum Concentration (Qualifier) (1)		Maximum Concentration (Qualifier) (1)		Units	Location of Maximum Concentration	Detection Frequency	Range of Detection	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (N/C) (4)		Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
Combined Data (a)	71556	1,1,1-Trichloroethane	1.00E+00	J	1.50E+02	J	ug/L	MW-18S	9/33	0.3-10	1.50E+02	N/A	3.20E+02	N	200	MCL	N	BSL
	76131	1,1,2-Trichloro-1,2,2-trifluoroethane	1.00E+00		1.50E+01	J	ug/L	MW-18S	6/33	1-10	1.50E+01	N/A	5.90E+03	N	N/A	N/A	N	BSL
	79005	1,1,2-Trichloroethane	4.00E-01	J	4.00E-01	J	ug/L	MW18S	1/33	0.08-200	4.00E-01	N/A	2.00E-01	C	5	MCL	Y	ASL
	75343	1,1-Dichloroethane	1.00E+00		2.20E+02		ug/L	MW-18S	12/33	1-10	2.20E+02	N/A	8.10E+01	N	N/A	N/A	Y	ASL
	75354	1,1-Dichloroethene	1.94E-01		9.00E+00	J	ug/L	MW-19	3/33	0.08-200	9.00E+00	N/A	3.40E+01	N	7	MCL	Y	ASL
	120821	1,2,4-Trichlorobenzene	2.30E+01	J	2.30E+01	J	ug/L	MW6S	1/33	1-200	2.30E+01	N/A	1.90E+01	N	70	MCL	Y	ASL
	95501	1,2-Dichlorobenzene	9.00E-01	J	1.00E+01	J	ug/L	MW6S	4/33	1-200	1.00E+01	N/A	3.70E+01	N	600	MCL	N	BSL
	541731	1,3-Dichlorobenzene	1.90E+01	J	1.90E+01	J	ug/L	MW6S	1/33	0.1-200	1.90E+01	N/A	5.50E-01	N	N/A	N/A	Y	ASL
	106467	1,4-Dichlorobenzene	4.84E-01		1.97E+02	J	ug/L	MW6S	3/33	0.08-200	1.97E+02	N/A	5.00E-01	C	75	MCL	Y	ASL
	78933	2-Butanone (MEK)	6.00E+00	J	6.00E+00	J	ug/L	MW-20	1/33	3-200	6.00E+00	N/A	1.90E+02	N	N/A	N/A	N	BSL
	67641	Acetone	1.00E+01		3.50E+01	J	ug/L	MW-19	2/33	4-140	3.50E+01	N/A	6.10E+01	N	N/A	N/A	N	BSL
	71432	Benzene	1.00E-01	J	8.60E+01	J	ug/L	MW5S	10/33	0.08-5	8.60E+01	N/A	3.40E-01	C	5	MCL	Y	ASL
	74839	Bromomethane	9.00E-01	J	1.00E+00	J	ug/L	MW-9	2/33	0.1-200	1.00E+00	N/A	8.70E-01	N	N/A	N/A	Y	ASL
	75150	Carbon disulfide	3.00E+00	J	3.00E+00	J	ug/L	MW-15	1/33	0.1-200	3.00E+00	N/A	1.00E+02	N	N/A	N/A	N	BSL
	108907	Chlorobenzene	1.00E+00	J	1.80E+01	J	ug/L	MW6S	2/33	1-200	1.80E+01	N/A	1.10E+01	N	100	MCL	Y	ASL
	124481	Chlorodibromomethane	2.85E-01	J	1.05E+00	J	ug/L	MW6S	4/33	0.08-200	1.05E+00	N/A	1.30E-01	C	N/A	N/A	Y	ASL
	75003	Chloroethane	1.10E+01		5.00E+01		ug/L	MW-14	2/33	1-200	5.00E+01	N/A	4.60E+00	C	N/A	N/A	Y	ASL
	67663	Chloroform	1.07E-01		1.07E-01		ug/L	AB-6SS	1/33	0.08-200	1.07E-01	N/A	6.20E+00	N	N/A	N/A	N	BSL
	156592	cis-1,2-Dichloroethene	1.00E+00	J	1.90E+03		ug/L	MW-19	18/33	1-10	1.90E+03	N/A	6.10E+00	N	70	MCL	Y	ASL
	110827	Cyclohexane	2.00E+00	J	8.00E+00	J	ug/L	MW-16	3/33	1-200	8.00E+00	N/A	3.50E+03	N	N/A	N/A	N	BSL
	100414	Ethylbenzene	1.00E+00	J	4.00E+01		ug/L	MW5S	5/33	1-5	4.00E+01	N/A	2.90E+00	C	700	MCL	Y	ASL
	98828	Isopropylbenzene	3.00E-01	J	3.00E+00	J	ug/L	MW6S	6/33	1-200	3.00E+00	N/A	6.60E+01	N	N/A	N/A	N	BSL
	108872	Methyl cyclohexane	8.00E-01	J	7.00E+00	J	ug/L	MW-16	4/33	1-200	7.00E+00	N/A	5.20E+02	N	N/A	N/A	N	BSL
	1634044	Methyl tert-butyl ether	4.00E+00	J	5.40E+02		ug/L	MW5S	6/33	1-15	5.40E+02	N/A	1.30E+01	C	N/A	N/A	Y	ASL
	75092	Methylene chloride	1.00E+00	J	9.00E+01	J	ug/L	MW-18S	3/33	0.2-10	9.00E+01	N/A	4.30E+00	C	5	MCL	Y	ASL
	127184	Tetrachloroethene	4.18E-01		7.00E+00	J	ug/L	MW-9	3/33	0.1-200	7.00E+00	N/A	6.60E-01	C	5	MCL	Y	ASL
	108883	Toluene	3.50E+00		1.20E+03		ug/L	MW5S	6/33	0.6-15	1.20E+03	N/A	7.20E+01	N	1000	MCL	Y	ASL
	156605	trans-1,2-Dichloroethene	8.50E-01	J	2.80E+01	J	ug/L	MW-18S	8/33	1-10	2.80E+01	N/A	1.20E+01	N	100	MCL	Y	ASL
	79016	Trichloroethene	2.00E+00	J	4.20E+01		ug/L	MW-9	11/33	0.1-200	4.20E+01	N/A	2.80E-02	C	5	MCL	Y	ASL
	75014	Vinyl chloride	1.53E-01		6.00E+02		ug/L	MW-18S	9/33	0.08-10	6.00E+02	N/A	2.00E-02	C	2	MCL	Y	ASL
	1330207	Xylenes (total)	1.00E+00	J	1.10E+02		ug/L	MW-16	8/33	2-20	1.10E+02	N/A	2.10E+01	N	10000	MCL	Y	ASL
	108952	Phenol	6.00E-01	J	2.00E+00	J	ug/L	MW-20	2/23	10-11	2.00E+00	N/A	2.20E+03	N	N/A	N/A	N	BSL
	95487	2-Methylphenol	1.00E+00	J	2.00E+00	J	ug/L	MW-16	3/23	10-11	2.00E+00	N/A	1.80E+02	N	N/A	N/A	N	BSL
	98862	Acetophenone	1.20E+00	J	1.20E+00	J	ug/L	MW-6S	1/23	10-11	1.20E+00	N/A	NO VALUE	N	N/A	N/A	Y	ASL
	106445	4-Methylphenol	1.80E+00	J	2.50E+01		ug/L	MW-20	4/23	10-11	2.50E+01	N/A	1.80E+01	N	N/A	N/A	Y	ASL
	105679	2,4-Dimethylphenol	1.00E+00	J	8.00E+00	J	ug/L	MW-16	3/23	10-11	8.00E+00	N/A	7.30E+01	N	N/A	N/A	N	BSL
	120832	2,4-Dichlorophenol	2.40E+00	J	2.40E+00	J	ug/L	MW-6S	1/23	10-11	2.40E+00	N/A	1.10E+01	N	N/A	N/A	N	BSL
	91203	Naphthalene	8.65E-02	J	2.50E+01		ug/L	MW-16	8/27	0.01-10	2.50E+01	N/A	6.20E-01	N	N/A	N/A	Y	ASL
	91576	2-Methylnaphthalene	1.10E+01		1.10E+01		ug/L	MW-16	1/27	1-11	1.10E+01	N/A	6.20E-01	N	N/A	N/A	Y	ASL
	95954	2,4,5-Trichlorophenol	1.80E+00	J	1.80E+00	J	ug/L	MW-6S	1/23	10-28	1.80E+00	N/A	3.60E+02	N	N/A	N/A	N	BSL
	92524	1,1'-Biphenyl	5.00E-01	J	7.00E+00	J	ug/L	MW-6S	2/23	10-11	7.00E+00	N/A	3.00E+01	N	N/A	N/A	N	BSL
	208968	Acenaphthylene	3.20E+00		3.20E+00		ug/L	MW6S	1/27	1-11	3.20E+00	N/A	6.20E-01	N	N/A	N/A	Y	ASL
	83329	Acenaphthene	5.00E-01	J	3.90E+00	J	ug/L	AB2SS	3/27	5-11	3.90E+00	N/A	3.70E+01	N	N/A	N/A	N	BSL
	84662	Diethyl phthalate	3.00E+00	J	4.00E+00	J	ug/L	MW-6S	2/23	1-11	4.00E+00	N/A	2.90E+03	N	N/A	N/A	N	BSL

TABLE 3-2.4
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Southwest Properties, Wells G&H Superfund Site Operable Unit 2 Woburn, Massachusetts

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Shallow Groundwater

Exposure Point	CAS Number	Chemical	Minimum Concentration (Qualifier) (1)		Maximum Concentration (Qualifier) (1)		Units	Location of Maximum Concentration	Detection Frequency	Range of Detection	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (N/C) (4)		Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
	86737	Fluorene	5.00E-01	J	5.50E+00		ug/L	MW6S	2/27	5-11	5.50E+00	N/A	2.40E+01	N	N/A	N/A	N	BSL
	85018	Phenanthrene	4.00E-01	J	1.00E+01	J	ug/L	MW-16	6/27	10-11	1.00E+01	N/A	6.20E-01	N	N/A	N/A	Y	ASL
	120127	Anthracene	2.00E-01	J	2.00E-01	J	ug/L	MW-7	1/27	5-11	2.00E-01	N/A	1.80E+02	N	N/A	N/A	N	BSL
	129000	Pyrene	5.00E-01	J	1.80E+01	J	ug/L	MW-7	3/27	5-11	1.80E+01	N/A	1.80E+01	N	N/A	N/A	N	BSL
	56553	Benzo(a)Anthracene	5.00E-03	J	4.80E-02		ug/L	MW-6S	3/27	0.01-11	4.80E-02	N/A	9.20E-02	C	N/A	N/A	N	BSL
	218019	Chrysene	1.50E-02		2.70E-02		ug/L	MW-6S	2/27	0.01-11	2.70E-02	N/A	9.20E+00	C	N/A	N/A	N	BSL
	117817	Bis(2-ethylhexyl) phthalate	2.00E+00	J	2.00E+00	J	ug/L	MW-20	1/23	0.5-11	2.00E+00	N/A	4.80E+00	C	6	MCL	N	BSL
	205992	Benzo(b)Fluoranthene	5.30E-03	J	1.50E-02		ug/L	AB-6SS	3/27	0.01-11	1.50E-02	N/A	9.20E-02	C	N/A	N/A	N	BSL
	207089	Benzo(k)Fluoranthene	7.40E-03	J	1.40E-02	J	ug/L	AB-6SS	3/27	0.0067-11	1.40E-02	N/A	9.20E-01	C	N/A	N/A	N	BSL
	50328	Benzo(a)Pyrene	1.10E-02		1.50E-02		ug/L	MW-6S	2/27	0.01-11	1.50E-02	N/A	9.20E-03	C	0.2	MCL	Y	ASL
	193395	Indeno(1,2,3-cd)pyrene	6.80E-03	J	1.40E-02		ug/L	AB-6SS	3/27	0.0072-11	1.40E-02	N/A	9.20E-02	C	N/A	N/A	N	BSL
	53703	Dibenz(a,h) anthracene	5.70E-03	J	1.30E-02		ug/L	AB-6SS	3/27	0.006-11	1.30E-02	N/A	9.20E-03	C	N/A	N/A	Y	ASL
		C9-C18 Aliphatic	5.90E+01		3.10E+03		ug/L	MW-7	4/23	50-68	3.10E+03	N/A	1.00E+03	N	N/A	N/A	Y	ASL
		C11-C22 Aromatic	1.20E+03		1.20E+03		ug/L	MW-7	1/23	50-190	1.20E+03	N/A	2.00E+02	N	N/A	N/A	Y	ASL
		C19-C36 Aliphatic	4.50E+01		2.40E+04		ug/L	MW-7	6/23	50-91	2.40E+04	N/A	5.00E+03	N	N/A	N/A	Y	ASL
		C5-C8 Aliphatic	7.42E+01		4.48E+02		ug/L	MW6S	6/23	40-50	4.48E+02	N/A	4.00E+02	N	N/A	N/A	Y	ASL
		C9-C10 Aromatic	1.10E+01		2.00E+02	J	ug/L	MW-16	4/23	10-200	2.00E+02	N/A	1.00E+03	N	N/A	N/A	N	BSL
		C9-C12 Aliphatic	1.03E+01		9.59E+01	J	ug/L	MW-16	4/23	10-50	9.59E+01	N/A	2.00E+02	N	N/A	N/A	N	BSL
	57125	Cyanide	3.00E+00	J	3.00E+00	J	ug/L	MW-4S	2/15	3-3	3.00E+00	N/A	7.30E+01	N	N/A	N/A	N	BSL
	7429905	Aluminum	2.09E+01	J	6.65E+02		ug/L	WB1SS	11/15	27-128	6.65E+02	N/A	3.60E+03	N	N/A	N/A	N	R1X
	7440382	Arsenic	2.50E+00	J	1.75E+02		ug/L	MW-19	9/31	0.2-4.6	1.75E+02	N/A	4.50E-02	C	10	MCL	Y	ASL
	7440393	Barium	7.90E+00	J	9.35E+01		ug/L	MW5S	15/15	N/A	9.35E+01	N/A	2.60E+02	N	2000	MCL	N	BSL
	7440439	Cadmium	1.05E-02	J	1.40E+00	J	ug/L	MR-1SS	4/31	0.8-1.3	1.40E+00	N/A	1.80E+00	N	5	MCL	N	BSL
	7440702	Calcium	8.68E+03		9.79E+04	J	ug/L	MW5S	15/15	N/A	9.79E+04	N/A	4.00E+08	N	N/A	N/A	N	BSL
	7440473	Chromium	1.20E+00		1.13E+02	J	ug/L	MR-1SS	13/31	0.9-4.6	1.13E+02	N/A	5.50E+03	N	100	MCL	Y	ASL
	7440484	Cobalt	5.46E-01	J	7.90E+00		ug/L	S83SS	10/15	1.3-1.3	7.90E+00	N/A	7.30E+01	C	N/A	N/A	N	BSL
	7440508	Copper	2.30E+00	J	5.60E+00	J	ug/L	MW-5S	2/15	0.59-8	5.60E+00	N/A	1.50E+02	N	1300	MCL	N	BSL
	7439896	Iron	1.18E+02		2.07E+04		ug/L	MW6S	13/15	43-128	2.07E+04	N/A	1.10E+03	N	N/A	N/A	N	R1X
	7439921	Lead	2.10E+00	J	1.48E+02	J	ug/L	MR-1SS	8/31	0.064-4.2	1.48E+02	N/A	0.00E+00	N	15	MCL	Y	ASL
	7439954	Magnesium	1.53E+03	J	3.68E+04		ug/L	MW5S	15/15	N/A	3.68E+04	N/A	8.05E+08	N	N/A	N/A	N	BSL
	7439965	Manganese	2.98E+01		2.64E+03		ug/L	MW5S	15/15	N/A	2.64E+03	N/A	8.80E+01	N	N/A	N/A	Y	ASL
	7439976	Mercury	2.00E-01		2.00E-01		ug/L	MW5S	1/15	0.1-0.2	2.00E-01	N/A	1.10E+00	N	2	MCL	N	BSL
	7440020	Nickel	2.10E+00		1.90E+01		ug/L	MW5S	10/15	0.93-1.8	1.90E+01	N/A	7.30E+01	N	N/A	N/A	N	BSL
	2023695	Potassium	2.64E+03		2.42E+04	J	ug/L	MW5S	15/15	N/A	2.42E+04	N/A	1.00E+08	N	N/A	N/A	N	BSL
	7782492	Selenium	3.00E-01	J	7.00E-01	J	ug/L	MW-18S	3/15	2.5-4.9	7.00E-01	N/A	1.80E+01	N	50	MCL	N	BSL
	7440235	Sodium	1.74E+04	J	1.01E+06		ug/L	AB-6SS	15/15	N/A	1.01E+06	N/A	1.00E+08	N	N/A	N/A	N	BSL
	7440280	Thallium	1.20E-02	J	1.60E-02	J	ug/L	AB-6SS	2/15	0.003-10	1.60E-02	N/A	2.40E-01	N	2	MCL	N	BSL
	7440622	Vanadium	1.70E+00		6.75E+00	J	ug/L	MW5S	7/15	0.6-1.5	6.75E+00	N/A	2.60E+01	N	N/A	N/A	N	BSL
	7440666	Zinc	2.67E+00	J	2.67E+00	J	ug/L	MW-18S	1/15	0.97-53	2.67E+00	N/A	1.10E+03	N	N/A	N/A	N	BSL
	1746016	PCB TEQ*	9.06E-09		1.40E-06	J	ug/L	MW6S	4/4	N/A	1.40E-06	N/A	4.50E-07	C	N/A	N/A	Y	ASL
	5103719	alpha-Chlordane	4.25E-03	J	8.90E-02	J	ug/L	MW6S	2/3	0.005-0.005	8.90E-02	N/A	1.90E-01	C	2	MCL	N	BSL
	5103742	gamma-Chlordane	4.70E-02	J	4.70E-02	J	ug/L	MW6S	1/3	0.005-0.005	4.70E-02	N/A	1.90E-01	C	2	MCL	N	BSL
	319857	beta-BHC	6.25E-03	J	6.25E-03	J	ug/L	AB2SS	1/3	0.005-0.1	6.25E-03	N/A	3.70E-02	C	N/A	N/A	N	BSL
	58899	gamma-BHC	4.75E-03	J	4.75E-03	J	ug/L	AB2SS	1/3	0.005-0.1	4.75E-03	N/A	5.20E-02	C	0.2	MCL	N	BSL
	60571	Dieldrin	1.40E-02	J	1.40E-02	J	ug/L	AB2SS	1/1	N/A	1.40E-02	N/A	4.20E-03	C	N/A	N/A	Y	ASL

TABLE 3-2.4
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Southwest Properties, Wells G&H Superfund Site Operable Unit 2 Woburn, Massachusetts

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Shallow Groundwater

Exposure Point	CAS Number	Chemical	Minimum Concentration (Qualifier) (1)		Maximum Concentration (Qualifier) (1)		Units	Location of Maximum Concentration	Detection Frequency	Range of Detection	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (N/C) (4)		Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
	72548	4,4'-DDD	5.58E-01	J	5.58E-01	J	ug/L	MW6S	1/3	0.01-0.01	5.58E-01	N/A	2.80E-01	C	N/A	N/A	Y	ASL
	50293	4,4'-DDT	1.10E-02	J	1.88E-01	J	ug/L	MW6S	2/3	0.01-0.01	1.88E-01	N/A	2.00E-01	C	N/A	N/A	N	BSL
	72435	Methoxychlor	7.50E-02	J	7.50E-02	J	ug/L	AB2SS	1/1	N/A	7.50E-02	N/A	1.80E+01	N	40	MCL	N	BSL

(a) Data presented are from groundwater samples AB1,AB-1,AB-02SS DUP,AB2SS,AB-2SS,AB4SS,AB6SS,AB-6SS,MW-03 DUP,MW-21 DUP,MR-1SS,MR-2SS,MW1,MW-1,MW-1,MW-11,MW-14,MW-15,MW-16,MW-17,MW18S,MW-18S,MW-18S,MW-19,MW1S,MW2,MW-2,MW-20, MW-21,MW-05S DUP,MW-3,MW-4,MW4S,MW-4S,MW-4S,MW5S,MW5S,MW-5S,MW-6,MW6S,MW-6S,MW-7,MW-8,MW-9,MW-18S DUP,MW-06S DUP,S83SS,WB1SS

(1) Minimum/maximum detected concentration.
(2) Maximum concentration used for screening.
(3) Refer to supporting information for background discussion.
(4) USEPA Region 9 PRGs for residential soil (adjusted to an hazard quotient = 0.1 for noncarcinogens), October 1, 2002.
PRG for chromium III used for total chromium.
PRG for chromium VI used for chromium VI.
PRG for mercury and compunds used for mercury.
PRG for free cyanide used for total cyanide.
The screening toxicity value for the petroleum hydrocarbon fractions are MADEP S-1/GW-1 standards.
(5) Rationale Codes:
Selection Reason: Above Screening Levels (ASL)
Deletion Reason: No Toxicity Information (NTX)
Essential Nutrient (NUT)
Below Screening Level (BSL)
Region 1 Exclusion (R1X)
Low Concentration, Low Frequency of Detection (LCF)

Definitions:
ug/L = micrograms per liter
CAS = Chemical Abstract Service
COPCs = Chemicals of Potential Concern
ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered
PRG = Preliminary Remedial Goal
N/A = Not Applicable or Not Available
ND = Not Detected
J = Estimated Value
C = Carcinogenic
N = Non-Carcinogenic
MCL = Maximum Contaminant Level
MADEP = Massachusetts Department of Environmental Protection
EPA = Environmental Protection Agency
GW-1/GW-2 = MADEP Groundwater Cleanup Criteria
TEQ = Toxic Equivalent for PCB Dioxin-like congeners
TCDD = tetrachlorodibenzo-p-dioxin
* PCB Congeners Toxic Equivalent
PCB = polychlorinated biphenyls

TABLE 3-2.4.1

OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Southwest Properties, Wells G&H Superfund Site Operable Unit 2 Woburn, Massachusetts

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Shallow Groundwater

Exposure Point	CAS Number	Chemical (b)	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits
Aberjona Property (a)	79005	1,1,2-Trichloroethane	ND	ND	ug/L		0/7	0.08-0.1
	75343	1,1-Dichloroethane	ND	ND	ug/L		0/7	1-10
	75354	1,1-Dichloroethene	1.94E-01	1.94E-01	ug/L	AB-6SS	1/7	0.08-0.1
	120821	1,2,4-Trichlorobenzene	ND	ND	ug/L		0/7	1-10
	541731	1,3-Dichlorobenzene	ND	ND	ug/L		0/7	0.1-1
	106467	1,4-Dichlorobenzene	4.84E-01	4.84E-01	ug/L	AB-6SS	1/7	0.08-0.75
	71432	Benzene	1.00E-01 J	3.20E-01 J	ug/L	AB2SS	2/7	0.08-0.1
	74839	Bromomethane	ND	ND	ug/L		0/7	0.1-1
	108907	Chlorobenzene	ND	ND	ug/L		0/7	1-10
	124481	Chlorodibromomethane	2.85E-01 J	1.03E+00 J	ug/L	AB6SS	3/7	0.08-0.33
	75003	Chloroethane	ND	ND	ug/L		0/7	1-2
	156592	cis-1,2-Dichloroethene	8.00E+00 J	2.90E+01 J	ug/L	AB2SS	3/7	1-2
	100414	Ethylbenzene	ND	ND	ug/L		0/7	1-2
	1634044	Methyl tert-butyl ether	4.00E+00 J	1.40E+01	ug/L	S83SS	2/7	1-10
	75092	Methylene chloride	ND	ND	ug/L		0/7	1-2
	127184	Tetrachloroethene	4.18E-01	4.18E-01	ug/L	AB-6SS	1/7	0.1-1
	108883	Toluene	ND	ND	ug/L		0/7	1-2
	156605	trans-1,2-Dichloroethene	ND	ND	ug/L		0/7	1-10
	79016	Trichloroethene	1.80E+01 J	2.50E+01	ug/L	AB-6SS	2/7	0.1-8
	75014	Vinyl chloride	1.53E-01	2.40E-01 J	ug/L	AB6SS	2/7	0.08-0.1
	1330207	Xylenes (total)	ND	ND	ug/L		0/7	2-10
	98862	Acetophenone	ND	ND	ug/L		0/1	11-11
	106445	4-Methylphenol	ND	ND	ug/L		0/1	11-11
	91203	Naphthalene	1.25E+00 J	2.70E+00	ug/L	AB6SS	2/3	0.011-0.011
	91576	2-Methylnaphthalene	ND	ND	ug/L		0/3	1-11
	208968	Acenaphthylene	ND	ND	ug/L		0/3	1-11
	85018	Phenanthrene	9.00E-01 J	2.10E+00	ug/L	AB6SS	2/3	11-11

TABLE 3-2.4.1

OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Southwest Properties, Wells G&H Superfund Site Operable Unit 2 Woburn, Massachusetts

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Shallow Groundwater

Exposure Point	CAS Number	Chemical (b)	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits
	50328	Benzo(a)Pyrene	1.10E-02	1.10E-02	ug/L	AB-6SS	1/3	1-1
	53703	Dibenz(a,h) anthracene	1.30E-02	1.30E-02	ug/L	AB-6SS	1/3	1-1
		C9-C18 Aliphatic	ND	ND	ug/L		0/2	50-50
		C11-C22 Aromatic	ND	ND	ug/L		0/2	50-50
		C19-C36 Aliphatic	ND	ND	ug/L		0/2	50-50
		C5-C8 Aliphatic	ND	ND	ug/L		0/2	50-50
	7440382	Arsenic	2.50E+00 J	2.50E+00 J	ug/L	AB4SS	1/6	0.37-2.5
	7440473	Chromium	1.20E+00	1.30E+01	ug/L	AB1	3/6	1.8-2.2
	7439921	Lead	ND	ND	ug/L		0/6	0.064-4.2
	7439965	Manganese	1.16E+02	8.24E+02	ug/L	AB1	6/6	N/A
	1746016	PCB TEQ*	ND	ND	ug/L		0/0	N/A
	60571	Dieldrin	1.40E-02 J	1.40E-02 J	ug/L	AB2SS	1/1	N/A
	72548	4,4'-DDD	ND	ND	ug/L		0/1	0.01-0.01

(a) Data presented are from groundwater samples AB1,AB-1,AB-02SS DUP,AB2SS,AB-2SS,AB4SS,AB6SS,AB-6SS,S83SS
(b) Only COPCs selected on Table 3-2.4 appear.
(1) Minimum/maximum detected concentration.

Definitions:
ug/L = micrograms per liter
CAS = Chemical Abstract Service
COPCs = Chemicals of Potential Concern
J = Estimated Value
N/A = Not Applicable or Not Available
ND = Not Detected
TEQ = Toxic Equivalent for PCB Dioxin-like congeners
* PCB Congeners Toxic Equivalent
PCB = polychlorinated biphenyls

TABLE 3-2.4.2
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Southwest Properties, Wells G&H Superfund Site Operable Unit 2 Woburn, Massachusetts

Scenario Timeframe: Current /Future
Medium: Groundwater
Exposure Medium: Shallow Groundwater

Exposure Point	CAS Number	Chemical (b)	Minimum Concentration (Qualifier) (1)		Maximum Concentration (Qualifier) (1)		Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits
Whitney Property (a)	79005	1,1,2-Trichloroethane	ND		ND		ug/L		0/5	0.08-10
	75343	1,1-Dichloroethane	1.00E+00		1.20E+02	J	ug/L	MW6S	2/5	1-10
	75354	1,1-Dichloroethene	ND		ND		ug/L		0/5	0.08-10
	120821	1,2,4-Trichlorobenzene	2.30E+01	J	2.30E+01	J	ug/L	MW6S	1/5	1-10
	541731	1,3-Dichlorobenzene	1.90E+01	J	1.90E+01	J	ug/L	MW6S	1/5	1-10
	106467	1,4-Dichlorobenzene	3.64E+00	J	1.97E+02	J	ug/L	MW6S	2/5	0.08-10
	71432	Benzene	9.70E-01	J	8.60E+01	J	ug/L	MW5S	3/5	0.08-5
	74839	Bromomethane	ND		ND		ug/L		0/5	1-10
	108907	Chlorobenzene	1.80E+01	J	1.80E+01	J	ug/L	MW6S	1/5	1-10
	124481	Chlorodibromomethane	1.05E+00	J	1.05E+00	J	ug/L	MW6S	1/5	0.08-10
	75003	Chloroethane	ND		ND		ug/L		0/5	1-10
	156592	cis-1,2-Dichloroethene	1.00E+00	J	4.80E+02	J	ug/L	MW6S	2/5	1-10
	100414	Ethylbenzene	7.00E+00	J	4.00E+01		ug/L	MW5S	2/5	1-5
	1634044	Methyl tert-butyl ether	4.00E+00	J	5.40E+02		ug/L	MW5S	4/5	10-10
	75092	Methylene chloride	ND		ND		ug/L		0/5	1-10
	127184	Tetrachloroethene	ND		ND		ug/L		0/5	1-10
	108883	Toluene	1.90E+01	J	1.20E+03		ug/L	MW5S	2/5	1-10
	156605	trans-1,2-Dichloroethene	1.50E+01	J	1.50E+01	J	ug/L	MW6S	1/5	1-10
	79016	Trichloroethene	2.00E+00	J	2.00E+00	J	ug/L	MW6S	1/5	2-10
	75014	Vinyl chloride	4.20E+02	J	4.20E+02	J	ug/L	MW6S	1/5	0.08-10
	1330207	Xylenes (total)	2.00E+00	J	4.25E+01		ug/L	MW5S	3/5	2-10
	98862	Acetophenone	1.20E+00	J	1.20E+00	J	ug/L	MW-6S	1/3	10-11
	106445	4-Methylphenol	1.80E+00	J	1.80E+00	J	ug/L	MW-6S	1/3	10-11
	91203	Naphthalene	2.40E+00	J	1.36E+01		ug/L	MW6S	2/5	0.01-10
	91576	2-Methylnaphthalene	ND		ND		ug/L		0/5	2.2-10
	208968	Acenaphthylene	3.20E+00		3.20E+00		ug/L	MW6S	1/5	1-10
	85018	Phenanthrene	2.40E+00		3.10E+00		ug/L	MW6S	2/5	10-10
	50328	Benzo(a)Pyrene	1.50E-02		1.50E-02		ug/L	MW-6S	1/5	0.01-10

TABLE 3-2.4.2
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Southwest Properties, Wells G&H Superfund Site Operable Unit 2 Woburn, Massachusetts

Scenario Timeframe: Current /Future
Medium: Groundwater
Exposure Medium: Shallow Groundwater

Exposure Point	CAS Number	Chemical (b)	Minimum Concentration (Qualifier) (1)		Maximum Concentration (Qualifier) (1)		Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits
	53703	Dibenz(a,h) anthracene	5.70E-03	J	5.80E-03	J	ug/L	MW-4S	2/5	1-10
		C9-C18 Aliphatic	5.90E+01		5.90E+01		ug/L	WB1SS	2/3	61-61
		C11-C22 Aromatic	ND		ND		ug/L		0/3	50-170
		C19-C36 Aliphatic	4.50E+01		1.50E+02		ug/L	WB1SS	2/3	82-82
		C5-C8 Aliphatic	4.48E+02		4.48E+02		ug/L	MW6S	1/3	40-50
	7440382	Arsenic	3.50E+00	J	3.50E+00	J	ug/L	WB1SS	1/6	0.2-4.4
	7440473	Chromium	3.10E+00		2.30E+01	J	ug/L	MW5S	4/6	1.6-2.9
	7439921	Lead	2.10E+00	J	2.10E+00	J	ug/L	MW-4S	1/6	0.887-3.1
	7439965	Manganese	2.98E+01		2.64E+03		ug/L	MW5S	6/6	N/A
	1746016	PCB TEQ*	9.06E-09		1.40E-06	J	ug/L	MW6S	3/3	N/A
	60571	Dieldrin	ND		ND		ug/L		0/0	N/A
	72548	4,4'-DDD	5.58E-01	J	5.58E-01	J	ug/L	MW6S	1/2	0.01-0.01

(a) Data presented are from soil samples MW1S,MW-4S,MW-4S,MW4S,MW5S,MW-05S DUP,MW6S,MW-6S,MW-06S DUP,WB1SS
(b) Only COPCs selected on Table 3-2.3 appear.
(1) Minimum/maximum detected concentration.

Definitions:
ug/L = micrograms per liter
CAS = Chemical Abstract Service
COPCs = Chemicals of Potential Concern
J = Estimated Value
N/A = Not Applicable or Not Available
ND = Not Detected
TEQ = Toxic Equivalent for PCB Dioxin-like congeners
* PCB Congeners Toxic Equivalent
PCB = polychlorinated biphenyls

TABLE 3-2.4.3
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Southwest Properties, Wells G&H Superfund Site Operable Unit 2 Woburn, Massachusetts

Scenario Timeframe: Current /Future
Medium: Groundwater
Exposure Medium: Shallow Groundwater

Exposure Point	CAS Number	Chemical (b)	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits
Murphy Property (a)	79005	1,1,2-Trichloroethane	4.00E-01 J	4.00E-01 J	ug/L	MW18S	1/21	0.08-200
	75343	1,1-Dichloroethane	1.00E+00 J	2.20E+02	ug/L	MW-18S	10/21	1-10
	75354	1,1-Dichloroethene	2.00E+00 J	9.00E+00 J	ug/L	MW-19	2/21	0.08-200
	120821	1,2,4-Trichlorobenzene	ND	ND	ug/L		0/21	1-200
	541731	1,3-Dichlorobenzene	ND	ND	ug/L		0/21	1-200
	106467	1,4-Dichlorobenzene	ND	ND	ug/L		0/21	0.08-200
	71432	Benzene	6.00E-01 J	1.60E+01	ug/L	MW-16	5/21	0.08-5
	74839	Bromomethane	9.00E-01 J	1.00E+00 J	ug/L	MW-9	2/21	1-200
	108907	Chlorobenzene	1.00E+00 J	1.00E+00 J	ug/L	MW-11	1/21	1-200
	124481	Chlorodibromomethane	ND	ND	ug/L		0/21	0.08-200
	75003	Chloroethane	1.10E+01	5.00E+01	ug/L	MW-14	2/21	1-200
	156592	cis-1,2-Dichloroethene	1.00E+00 J	1.90E+03	ug/L	MW-19	13/21	10-10
	100414	Ethylbenzene	1.00E+00 J	2.30E+01	ug/L	MW-16	3/21	1-5
	1634044	Methyl tert-butyl ether	ND	ND	ug/L		0/21	1-15
	75092	Methylene chloride	1.00E+00 J	9.00E+01 J	ug/L	MW-18S	3/21	0.2-10
	127184	Tetrachloroethene	2.00E+00 J	7.00E+00 J	ug/L	MW-9	2/21	1-200
	108883	Toluene	3.50E+00	5.20E+01	ug/L	MW-16	4/21	0.6-15
	156605	trans-1,2-Dichloroethene	8.50E-01 J	2.80E+01 J	ug/L	MW-18S	7/21	1-10
	79016	Trichloroethene	2.00E+00	4.20E+01	ug/L	MW-9	8/21	5-200
	75014	Vinyl chloride	1.00E+01	6.00E+02	ug/L	MW-18S	6/21	0.08-10
	1330207	Xylenes (total)	1.00E+00 J	1.10E+02	ug/L	MW-16	5/21	2-20
	98862	Acetophenone	ND	ND	ug/L		0/19	10-11
	106445	4-Methylphenol	3.00E+00 J	2.50E+01	ug/L	MW-20	3/19	10-11
	91203	Naphthalene	8.65E-02 J	2.50E+01	ug/L	MW-16	4/19	10-10
	91576	2-Methylnaphthalene	1.10E+01	1.10E+01	ug/L	MW-16	1/19	10-11
	208968	Acenaphthylene	ND	ND	ug/L		0/19	10-11
	85018	Phenanthrene	4.00E-01 J	1.00E+01 J	ug/L	MW-16	2/19	10-11
	50328	Benzo(a)Pyrene	ND	ND	ug/L		0/19	0.01-11

TABLE 3-2.4.3
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Southwest Properties, Wells G&H Superfund Site Operable Unit 2 Woburn, Massachusetts

Scenario Timeframe: Current /Future
Medium: Groundwater
Exposure Medium: Shallow Groundwater

Exposure Point	CAS Number	Chemical (b)	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits
	53703	Dibenz(a,h) anthracene	ND	ND	ug/L		0/19	0.006-11
		C9-C18 Aliphatic	1.60E+02	3.10E+03	ug/L	MW-7	2/18	60-68
		C11-C22 Aromatic	1.20E+03	1.20E+03	ug/L	MW-7	1/18	170-190
		C19-C36 Aliphatic	2.40E+02	2.40E+04	ug/L	MW-7	4/18	80-91
		C5-C8 Aliphatic	7.42E+01	2.58E+02	ug/L	MW-18S	5/18	40-40
	7440382	Arsenic	4.60E+00 J	1.75E+02	ug/L	MW-19	7/19	1.36-4.6
	7440473	Chromium	1.62E+01	1.13E+02 J	ug/L	MR-1SS	6/19	0.9-4.6
	7439921	Lead	2.98E+00 J	1.48E+02 J	ug/L	MR-1SS	7/19	2-2.3
	7439965	Manganese	2.01E+02	4.70E+02	ug/L	MW-18S	3/3	N/A
	1746016	PCB TEQ*	1.20E-06	1.20E-06	ug/L	MW-16	1/1	N/A
	60571	Dieldrin	ND	ND	ug/L		0/0	N/A
	72548	4,4'-DDD	ND	ND	ug/L		0/0	N/A

(a) Data presented are from soil samples MR-1SS,MR-2SS,MW-1,MW-1,MW1,MW-2,MW2,MW-3,MW-03 DUP,MW-4,MW5S,MW-5S,MW-6,MW-7,MW-8,MW-9,MW-11, MW-14,MW-15,MW-16,MW-17,MW-18S,MW-18S,MW-18S DUP,MW18S,MW-19,MW-20,MW-21,MW-21 DUP
(b) Only COPCs selected on Table 3-2.3 appear.
(1) Minimum/maximum detected concentration.

Definitions:
ug/L = micrograms per liter
CAS = Chemical Abstract Service
COPCs = Chemicals of Potential Concern
J = Estimated Value
N/A = Not Applicable or Not Available
ND = Not Detected
TEQ = Toxic Equivalent for PCB Dioxin-like congeners
* PCB Congeners Toxic Equivalent
PCB = polychlorinated biphenyls

TABLE 3-2.5
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Southwest Properties, Wells G&H Superfund Site Operable Unit 2 Woburn, Massachusetts

Scenario Timeframe: Future
Medium: Ground Water
Exposure Medium: Indoor Air

Exposure Point	CAS Number	Chemical (b)	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detectionn Limits	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (N/C) (4)		Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
Tap Water/Shower	71556	1,1,1-Trichloroethane	N/A	4.88E+02	ug/m^3	N/A	N/A	N/A	4.88E+02	N/A	2.30E+03	N	N/A	N/A	Y	ASL
	76131	1,1,2-Trichloro-1,2,2-trifluoroetha	N/A	4.32E+01	ug/m^3	N/A	N/A	N/A	4.32E+01	N/A	3.13E+04	N	N/A	N/A	N	BSL
	79005	1,1,2-Trichloroethane	N/A	1.06E+00	ug/m^3	N/A	N/A	N/A	1.06E+00	N/A	1.20E-01	C	N/A	N/A	Y	ASL
	75343	1,1-Dichloroethane	N/A	7.84E+02	ug/m^3	N/A	N/A	N/A	7.84E+02	N/A	5.21E+02	N	N/A	N/A	Y	ASL
	75354	1,1-Dichloroethene	N/A	3.31E+01	ug/m^3	N/A	N/A	N/A	3.31E+01	N/A	2.08E+02	N	N/A	N/A	Y	ASL
	120821	1,2,4-Trichlorobenzene	N/A	5.87E+01	ug/m^3	N/A	N/A	N/A	5.87E+01	N/A	2.08E+02	N	N/A	N/A	Y	ASL
	95501	1,2-Dichlorobenzene	N/A	2.87E+01	ug/m^3	N/A	N/A	N/A	2.87E+01	N/A	2.09E+02	N	N/A	N/A	Y	ASL
	541731	1,3-Dichlorobenzene	N/A	5.60E+01	ug/m^3	N/A	N/A	N/A	5.60E+01	N/A	3.29E+00	C	N/A	N/A	Y	ASL
	106467	1,4-Dichlorobenzene	N/A	5.77E+02	ug/m^3	N/A	N/A	N/A	5.77E+02	N/A	3.06E-01	C	N/A	N/A	Y	ASL
	78933	2-Butanone (MEK)	N/A	5.90E+00	ug/m^3	N/A	N/A	N/A	5.90E+00	N/A	1.04E+03	N	N/A	N/A	N	BSL
	67641	Acetone	N/A	2.86E+01	ug/m^3	N/A	N/A	N/A	2.86E+01	N/A	3.65E+02	N	N/A	N/A	N	BSL
	71432	Benzene	N/A	3.34E+02	ug/m^3	N/A	N/A	N/A	3.34E+02	N/A	2.32E-01	C	N/A	N/A	Y	ASL
	74839	Bromomethane	N/A	3.63E+00	ug/m^3	N/A	N/A	N/A	3.63E+00	N/A	5.21E+00	N	N/A	N/A	Y	ASL
	75150	Carbon disulfide	N/A	1.20E+01	ug/m^3	N/A	N/A	N/A	1.20E+01	N/A	7.30E+02	N	N/A	N/A	N	BSL
	108907	Chlorobenzene	N/A	5.95E+01	ug/m^3	N/A	N/A	N/A	5.95E+01	N/A	6.21E+01	N	N/A	N/A	Y	ASL
	75003	Chloroethane	N/A	2.11E+02	ug/m^3	N/A	N/A	N/A	2.11E+02	N/A	2.32E+00	C	N/A	N/A	Y	ASL
	67663	Chloroform	N/A	3.49E-01	ug/m^3	N/A	N/A	N/A	3.49E-01	N/A	3.14E+00	N	N/A	N/A	Y	ASL
	156592	cis-1,2-Dichloroethene	N/A	6.74E+03	ug/m^3	N/A	N/A	N/A	6.74E+03	N/A	3.65E+01	N	N/A	N/A	Y	ASL
	110827	Cyclohexane	N/A	3.12E+01	ug/m^3	N/A	N/A	N/A	3.12E+01	N/A	2.08E+04	N	N/A	N/A	N	BSL
	75718	Dichlorodifluoromethane	N/A	3.41E+00	ug/m^3	N/A	N/A	N/A	3.41E+00	N/A	2.09E+02	N	N/A	N/A	N	BSL
	100414	Ethylbenzene	N/A	1.40E+02	ug/m^3	N/A	N/A	N/A	1.40E+02	N/A	1.75E+00	C	N/A	N/A	Y	ASL
	98828	Isopropylbenzene	N/A	1.01E+01	ug/m^3	N/A	N/A	N/A	1.01E+01	N/A	4.02E+02	N	N/A	N/A	N	BSL
	108872	Methyl cyclohexane	N/A	2.58E+01	ug/m^3	N/A	N/A	N/A	2.58E+01	N/A	3.13E+03	N	N/A	N/A	N	BSL
	1634044	Methyl tert-butyl ether	N/A	1.58E+03	ug/m^3	N/A	N/A	N/A	1.58E+03	N/A	1.92E+01	C	N/A	N/A	Y	ASL
	75092	Methylene chloride	N/A	3.31E+02	ug/m^3	N/A	N/A	N/A	3.31E+02	N/A	4.09E+00	C	N/A	N/A	Y	ASL
	127184	Tetrachloroethene	N/A	1.08E+02	ug/m^3	N/A	N/A	N/A	1.08E+02	N/A	6.72E-01	C	N/A	N/A	Y	ASL
	108883	Toluene	N/A	4.41E+03	ug/m^3	N/A	N/A	N/A	4.41E+03	N/A	4.02E+02	N	N/A	N/A	Y	ASL
	156605	trans-1,2-Dichloroethene	N/A	1.02E+02	ug/m^3	N/A	N/A	N/A	1.02E+02	N/A	7.30E+01	N	N/A	N/A	Y	ASL
	79016	Trichloroethene	N/A	5.19E+02	ug/m^3	N/A	N/A	N/A	5.19E+02	N/A	1.68E-02	C	N/A	N/A	Y	ASL
	75014	Vinyl chloride	N/A	2.58E+03	ug/m^3	N/A	N/A	N/A	2.58E+03	N/A	1.06E-01	C	N/A	N/A	Y	ASL
	1330207	Xylenes (total)	N/A	3.84E+02	ug/m^3	N/A	N/A	N/A	3.84E+02	N/A	1.06E+02	N	N/A	N/A	Y	ASL
	98862	Acetophenone	N/A	2.07E-01	ug/m^3	N/A	N/A	N/A	2.07E-01	N/A	3.10E-02	N	N/A	N/A	Y	ASL
	91203	Naphthalene	N/A	5.79E+01	ug/m^3	N/A	N/A	N/A	5.79E+01	N/A	3.13E+00	N	N/A	N/A	Y	ASL
	91576	2-Methylnaphthalene	N/A	2.56E+01	ug/m^3	N/A	N/A	N/A	2.56E+01	N/A	3.00E+00	N	N/A	N/A	Y	ASL
	92524	1,1'-Biphenyl	N/A	1.32E+01	ug/m^3	N/A	N/A	N/A	1.32E+01	N/A	1.83E+02	N	N/A	N/A	N	BSL
	208968	Acenaphthylene	N/A	3.84E+00	ug/m^3	N/A	N/A	N/A	3.84E+00	N/A	3.10E+00	N	N/A	N/A	Y	ASL
	83329	Acenaphthene	N/A	5.77E+00	ug/m^3	N/A	N/A	N/A	5.77E+00	N/A	2.19E+02	N	N/A	N/A	N	BSL
	86737	Fluorene	N/A	5.34E+00	ug/m^3	N/A	N/A	N/A	5.34E+00	N/A	1.46E+02	N	N/A	N/A	N	BSL
	85018	Phenanthrene	N/A	5.03E+00	ug/m^3	N/A	N/A	N/A	5.03E+00	N/A	3.10E+00	N	N/A	N/A	Y	ASL
	120127	Anthracene	N/A	1.25E-01	ug/m^3	N/A	N/A	N/A	1.25E-01	N/A	1.10E+03	N	N/A	N/A	N	BSL
		C9-C18 Aliphatic	N/A	9.28E+03	ug/m^3	N/A	N/A	N/A	9.28E+03	N/A	N/A	N/A	N/A	N/A	Y	NSL
		C11-C22 Aromatic	N/A	2.98E+03	ug/m^3	N/A	N/A	N/A	2.98E+03	N/A	N/A	N/A	N/A	N/A	Y	NSL
		C5-C8 Aliphatic	N/A	1.69E+03	ug/m^3	N/A	N/A	N/A	1.69E+03	N/A	N/A	N/A	N/A	N/A	Y	NSL
		C9-C10 Aromatic	N/A	6.69E+02	ug/m^3	N/A	N/A	N/A	6.69E+02	N/A	N/A	N/A	N/A	N/A	Y	NSL
		C9-C12 Aliphatic	N/A	3.02E+02	ug/m^3	N/A	N/A	N/A	3.02E+02	N/A	N/A	N/A	N/A	N/A	Y	NSL

TABLE 3-2.5
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Southwest Properties, Wells G&H Superfund Site Operable Unit 2 Woburn, Massachusetts

Scenario Timeframe: Future
Medium: Ground Water
Exposure Medium: Indoor Air

Exposure Point	CAS Number	Chemical (b)	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detectionn Limits	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (N/C) (4)	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)

(a) Data presented are from groundwater samples AB1,AB-1,AB-02SS DUP,AB2M,AB2R,AB2SS,AB-2SS,AB4M,AB4SS,AB6M,AB6SS,AB-6SS,MW-04M DUP,MW-03 DUP,MW-21 DUP,MR-1SS,MR-2SS,MW1,MW-1,MW-1,MW-10,MW-11,MW-12,MW-13,MW-14,MW-15,MW-16,MW-17,MW18D,MW-18D,MW18S, MW-18S,MW-18S,MW-19,MW1S,MW2,MW-2,MW-20,MW-21,MW-05S DUP,MW-3,MW-3BR,MW-3D,MW-4,MW4D,MW-4D,MW4M,MW-4M,MW4S,MW-4S,MW-4S,MW5D,MW-5D,MW5S,MW-5S,MW-6,MW6S,MW-6S,MW-7,MW-8,MW-9,MW-18S DUP,MW-06S DUP,S83,S83SS,WB1M,WB1R,WB-1R,WB1SS

(b) Compounds listed are limited to those with a Henry's Law Constant greater than $1X10^{-5}$ atm-m^3/mole and a molecular weight less than 200 grams/mole

(1) Minimum/maximum detected concentration.
(2) Maximum concentration used for screening.
(3) Refer to supporting information for background discussion.
(4) No screening toxicity data used. Selection based on detection and the Henry's Law/molecular weight criteria.
(5) Rationale Codes:
Selection Reason: Above Screening Level (ASL)
No Screening Level (NSL)
Deletion Reason: Below Screening Level (BSL)

Definitions:
ug/m^3 = micrograms per cubic meter
ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered
N/A = Not Applicable or Not Available
J = Estimated Value
C = Carcinogenic
N = Non-Carcinogenic
T = C11-C22 Aromatic Measured as Total Petroleum Hydrocarbons by Method 8100M
EB = Analyte Detected In The Associated Equipment Blank

TABLE 3-2.6
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Southwest Properties, Wells G&H Superfund Site Operable Unit 2 Woburn, Massachusetl

Scenario Timeframe: Current/Future
Medium: Soil (0-15ft) + Ground Water
Exposure Medium: Indoor Ai

Exposure Point	CAS Number	Chemical (b)	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detectionn Limits	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (N/C) (4)		Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
Combined Data (a)	95636	1,2,4-Trimethylbenzene	N/A	5.40E+02	ug/m3	N/A	N/A	N/A	5.40E+02	N/A	6.21E+00	N	N/A	N/A	Y	ASL
	540590	1,2-Dichloroethene (total)	N/A	6.16E+02	ug/m3	N/A	N/A	N/A	6.16E+02	N/A	3.70E+01	N	N/A	N/A	Y	ASL
	108678	1,3,5-Trimethylbenzene	N/A	6.82E+02	ug/m3	N/A	N/A	N/A	6.82E+02	N/A	6.21E+00	N	N/A	N/A	Y	ASL
	104518	n-Butylbenzene	N/A	1.54E+01	ug/m3	N/A	N/A	N/A	1.54E+01	N/A	1.46E+02	N	N/A	N/A	Y	ASL
	91203	Naphthalene	N/A	1.85E+01	ug/m3	N/A	N/A	N/A	1.85E+01	N/A	3.13E+00	N	N/A	N/A	Y	ASL
	99876	p-Isopropyltoluene	N/A	4.15E+02	ug/m3	N/A	N/A	N/A	4.15E+02	N/A	4.00E+02	N	N/A	N/A	Y	ASL
	135988	sec-Butylbenzene	N/A	1.10E+00	ug/m3	N/A	N/A	N/A	1.10E+00	N/A	1.46E+02	N	N/A	N/A	N	BSL
	74873	Chloromethane	N/A	4.54E+02	ug/m3	N/A	N/A	N/A	4.54E+02	N/A	1.07E+00	C	N/A	N/A	Y	ASL
	75014	Vinyl chloride	N/A	6.55E+02	ug/m3	N/A	N/A	N/A	6.55E+02	N/A	1.06E-01	C	N/A	N/A	Y	ASL
	74839	Bromomethane	N/A	1.61E+00	ug/m3	N/A	N/A	N/A	1.61E+00	N/A	5.21E+00	N	N/A	N/A	Y	ASL
	75003	Chloroethane	N/A	8.76E+01	ug/m3	N/A	N/A	N/A	8.76E+01	N/A	2.32E+00	C	N/A	N/A	Y	ASL
	75354	1,1-Dichloroethene	N/A	1.13E+02	ug/m3	N/A	N/A	N/A	1.13E+02	N/A	2.08E+02	N	N/A	N/A	Y	ASL
	76131	1,1,2-Trichloro-1,2,2-trifluoroetha	N/A	4.56E+01	ug/m3	N/A	N/A	N/A	4.56E+01	N/A	3.13E+04	N	N/A	N/A	N	BSL
	67641	Acetone	N/A	9.66E+01	ug/m3	N/A	N/A	N/A	9.66E+01	N/A	3.65E+02	N	N/A	N/A	Y	ASL
	75150	Carbon disulfide	N/A	2.83E+01	ug/m3	N/A	N/A	N/A	2.83E+01	N/A	7.30E+02	N	N/A	N/A	N	BSL
	79209	Methyl acetate (acetic acid, meth	N/A	1.39E+01	ug/m3	N/A	N/A	N/A	1.39E+01	N/A	3.65E+03	N	N/A	N/A	N	BSL
	75092	Methylene chloride	N/A	5.51E+03	ug/m3	N/A	N/A	N/A	5.51E+03	N/A	4.09E+00	C	N/A	N/A	Y	ASL
	156605	trans-1,2-Dichloroethene	N/A	1.64E+03	ug/m3	N/A	N/A	N/A	1.64E+03	N/A	7.30E+01	N	N/A	N/A	Y	ASL
	1634044	Methyl tert-butyl ether	N/A	3.05E+01	ug/m3	N/A	N/A	N/A	3.05E+01	N/A	1.92E+01	C	N/A	N/A	Y	ASL
	75343	1,1-Dichloroethane	N/A	4.36E+02	ug/m3	N/A	N/A	N/A	4.36E+02	N/A	5.21E+02	N	N/A	N/A	Y	ASL
	156592	cis-1,2-Dichloroethene	N/A	2.79E+03	ug/m3	N/A	N/A	N/A	2.79E+03	N/A	3.65E+01	N	N/A	N/A	Y	ASL
	78933	2-Butanone (MEK)	N/A	8.42E+01	ug/m3	N/A	N/A	N/A	8.42E+01	N/A	1.04E+03	N	N/A	N/A	N	BSL
	71556	1,1,1-Trichloroethane	N/A	9.73E+02	ug/m3	N/A	N/A	N/A	9.73E+02	N/A	2.30E+03	N	N/A	N/A	Y	ASL
	110827	Cyclohexane	N/A	2.64E+02	ug/m3	N/A	N/A	N/A	2.64E+02	N/A	2.08E+04	N	N/A	N/A	N	BSL
	71432	Benzene	N/A	1.46E+02	ug/m3	N/A	N/A	N/A	1.46E+02	N/A	2.32E-01	C	N/A	N/A	Y	ASL
	79016	Trichloroethene	N/A	4.34E+02	ug/m3	N/A	N/A	N/A	4.34E+02	N/A	1.68E-02	C	N/A	N/A	Y	ASL
	108872	Methyl cyclohexane	N/A	2.41E+03	ug/m3	N/A	N/A	N/A	2.41E+03	N/A	3.13E+03	N	N/A	N/A	Y	ASL
	108883	Toluene	N/A	1.50E+03	ug/m3	N/A	N/A	N/A	1.50E+03	N/A	4.02E+02	N	N/A	N/A	Y	ASL
	127184	Tetrachloroethene	N/A	1.93E+02	ug/m3	N/A	N/A	N/A	1.93E+02	N/A	6.72E-01	C	N/A	N/A	Y	ASL
	108907	Chlorobenzene	N/A	4.99E+01	ug/m3	N/A	N/A	N/A	4.99E+01	N/A	6.21E+01	N	N/A	N/A	Y	ASL
	100414	Ethylbenzene	N/A	5.51E+02	ug/m3	N/A	N/A	N/A	5.51E+02	N/A	1.75E+00	C	N/A	N/A	Y	ASL
	1330207	Xylenes (total)	N/A	9.68E+00	ug/m3	N/A	N/A	N/A	9.68E+00	N/A	1.06E+02	N	N/A	N/A	N	BSL
	100425	Styrene	N/A	3.31E-02	ug/m3	N/A	N/A	N/A	3.31E-02	N/A	1.06E+03	N	N/A	N/A	N	BSL
	98828	Isopropylbenzene	N/A	1.84E+00	ug/m3	N/A	N/A	N/A	1.84E+00	N/A	4.02E+02	N	N/A	N/A	N	BSL
	79345	1,1,2,2-Tetrachloroethane	N/A	7.27E-03	ug/m3	N/A	N/A	N/A	7.27E-03	N/A	3.31E-02	C	N/A	N/A	N	BSL
	541731	1,3-Dichlorobenzene	N/A	1.83E+01	ug/m3	N/A	N/A	N/A	1.83E+01	N/A	3.29E+00	N	N/A	N/A	Y	ASL
	106467	1,4-Dichlorobenzene	N/A	9.79E+00	ug/m3	N/A	N/A	N/A	9.79E+00	N/A	3.06E-01	C	N/A	N/A	Y	ASL
	95501	1,2-Dichlorobenzene	N/A	1.13E+02	ug/m3	N/A	N/A	N/A	1.13E+02	N/A	2.09E+02	N	N/A	N/A	Y	ASL
	120821	1,2,4-Trichlorobenzene	N/A	8.91E-01	ug/m3	N/A	N/A	N/A	8.91E-01	N/A	2.08E+02	N	N/A	N/A	N	BSL
	100527	Benzaldehyde	N/A	7.02E+00	ug/m3	N/A	N/A	N/A	7.02E+00	N/A	3.65E+02	N	N/A	N/A	N	BSL
	91576	2-Methylnaphthalene	N/A	3.06E+01	ug/m3	N/A	N/A	N/A	3.06E+01	N/A	3.10E+00	N	N/A	N/A	Y	ASL
	92524	1,1'-Biphenyl	N/A	2.17E+00	ug/m3	N/A	N/A	N/A	2.17E+00	N/A	1.83E+02	N	N/A	N/A	N	BSL
	208968	Acenaphthylene	N/A	3.20E+00	ug/m3	N/A	N/A	N/A	3.20E+00	N/A	3.10E+00	N	N/A	N/A	Y	ASL
	83329	Acenaphthene	N/A	4.71E-01	ug/m3	N/A	N/A	N/A	4.71E-01	N/A	2.19E+02	N	N/A	N/A	N	BSL
	132649	Dibenzofuran	N/A	1.79E+01	ug/m3	N/A	N/A	N/A	1.79E+01	N/A	1.46E+01	N	N/A	N/A	Y	ASL
	86737	Fluorene	N/A	2.56E-04	ug/m3	N/A	N/A	N/A	2.56E-04	N/A	1.46E+02	N	N/A	N/A	N	BSL
	85018	Phenanthrene	N/A	2.66E+00	ug/m3	N/A	N/A	N/A	2.66E+00	N/A	3.10E+00	N	N/A	N/A	Y	ASL
	120127	Anthracene	N/A	9.98E-03	ug/m3	N/A	N/A	N/A	9.98E-03	N/A	1.10E+03	N	N/A	N/A	N	BSL
		C5-C8 Aliphatic	N/A	1.70E+05	ug/m3	N/A	N/A	N/A	1.70E+05	N/A	N/A	N/A	N/A	N/A	Y	NSL

TABLE 3-2.6
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Southwest Properties, Wells G&H Superfund Site Operable Unit 2 Woburn, Massachusetl

Scenario Timeframe: Current/Future
Medium: Soil (0-15ft) + Ground Water
Exposure Medium: Indoor Ai

Exposure Point	CAS Number	Chemical (b)	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detectionn Limits	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (N/C) (4)	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
		C9-C12 Aliphatic	N/A	6.75E+03	ug/m^3	N/A	N/A	N/A	6.75E+03	N/A	N/A N/A	N/A	N/A	*Y*	NSL
		C9-C10 Aromatic	N/A	1.13E+04	ug/m^3	N/A	N/A	N/A	1.13E+04	N/A	N/A N/A	N/A	N/A	*Y*	NSL
		C9-C18 Aliphatic	N/A	8.41E+04	ug/m^3	N/A	N/A	N/A	8.41E+04	N/A	N/A N/A	N/A	N/A	*Y*	NSL
		C11-C22 Aromatic	N/A	4.62E+04	ug/m^3	N/A	N/A	N/A	4.62E+04	N/A	N/A N/A	N/A	N/A	*Y*	NSL

(a) Data presented are from soil samples AB102(6.0),AB-13/0-2,AB-13/5-7,AB13D(5.0-7.0),AB13SS(0-2.0),AB-14/0-2,AB14D(2.0-4.0),AB14SS(0-2.0),AB-15/0-2,AB-15/4-4.5,AB15D(4.0-4.5),AB15SS(0-2.0),AB-16/0-2,AB16SS(0-2.0),AB-SS1,AB-SS1D,AB-SS1D DUP,AB-SS2,AB-SS
AB-SS5,AB-SS5D,AB-SS6,AB-SS6D,AB-SS7,AB-SS7D,AB-SS8,AB-SS8D,AB-SS9,AB-SS9 DUP,AB-SS9D,AB-SS9D DUP,B-1 SS-3 (4.5-6.5),B-1 SS-5 (8.5-10.5),B-10 (10-14),B-10 (4-6),B-10 (6-10),B-10 SS-6 (10-12),B-11 SS-4 (6-8),B-11 SS-6 (10-12),B-12 (4-8),B-12 (8-12),
B-13 SS-5 (8-10),B-14 SS-2 (2.5-4.5),B-14 SS-5 (8.5-10.5),B-15 SS-5 (8-10),B-15 SS-7 (12-14),B-16 SS-6 (10-12),B-17 SS-2 (2-4),B-18 SS-1 (0-2),B-18 SS-3 (4-6),B-19 SS-4 (6-8),B-2 SS-3 (4.5-6.5),B-20 SS-4 (6-8),B-21 SS-4 (6-8),B-24 SS-4 (6-8),B-25 S
B-5 (7-10),B-6 (7-11),B-6 SS-5 (8-10),B-7 SS-5 (8-10),B-8 (7-8),B-8 (8-12),B-8 SS-1 (0-2),B-8 SS-4 (6-8),B-9 (6-10),B-9 SS-5 (8-10),CHI-1/88(2-4),CHI-2/88 (4-6),CHI-3/88 (6-8),CHI-4/88 (2-4),CHI-5/88 (2-4),CHI-6/88 (2-4),CHI-7/88 (0-2),CHI-8/88 (5-
MR-SS1D,MR-SS2,MR-SS2D,MR-SS3,MR-SS3D,MR-SS4D,MW-1 SS-1 (0-2),MW-1 SS-5 (8-10),MW-11 SS-3 (4-6),MW-11 SS-5 (8-10),MW-14 SS-3 (4-6),MW-16 SS-3 (4-6),MW-18D SS-1 (0-2),MW-2 SS-1 (0-2),MW-2 SS-2 (2-4),MW-2 SS-4A (7.5-9.5),MW-3 SS-1 (0-2),MW-3 SS-4 (6-
MW-4 SS-1 (0-2),MW-4 SS-5 (8-10),MW-4 SS-6 (10-12),MW-5 SS-6 (10-12),MW-5S SS-1 (0-2),MW-6 SS-1 (0-2),MW-7 SS-2 (2.5-4.5),MW-7 SS-4 (6.5-8.5),MW-9 SS-6 (10-12),W-89-S1(0-2),W-89-S1(10-12),W-89-S1(2-4),W-89-S1(6-8),W-89-S1(8-10),W-89-S14(0-2),W-89-S
W-89-S15(0-2),W-89-S15(4-6),W-89-S15(6-8),W-89-S15(8-10),W-89-S16(0-2),W-89-S16(10-12),W-89-S16(4-6),W-89-S16(6-8),W-89-S16(8-10),W-89-S17 (6-8),W-89-S17(0-2),W-89-S17(4-6),W-89-S17(8-10),W-89-S18 (6-8),W-89-S18(0-2),W-89-S18(4-6),W-89-S18(8-10),W-
W-89-S3(10-12),W-89-S3(4-6),W-89-S3(6-8),W-89-S3(8-10),W-89-S4 (6-8),W-89-S4 (8-10),W-89-S4(0-2),W-89-S4(4-6),W-89-S4(6-8),W-89-S4(8-10),WB-10/0-2,WB-10/2-4,WB10D(2.0-4.0),WB10SS(0-2.0),WB-11/1-1.75,WB11SS(0-1.0),WB12SS(1.0-2.0),WB-13/0-2,WB13SS(0-
WB-6/2-4,WB6D(2.0-4.0),WB6SS(0-2.0),WB-7/0-2,WB-7/2-4,WB7D(2.0-4.0),WB7SS(0-2.0),WB-8/0-2,WB8SS(0-1.0),WB-SS1,WB-SS1D,WB-SS1D,WB-SS2,WB-SS2D,WB-SS3,WB-SS3D,WB-SS3D DUP,WB-SS4,WB-SS4D

(a) Data presented are from groundwater samples AB1,AB-1,AB-02SS DUP,AB2M,AB2R,AB2SS,AB-2SS,AB4M,AB4SS,AB6M,AB6SS,AB-6SS,MW-04M DUP,MW-03 DUP,MW-21 DUP,MR-1SS,MR-2SS,MW1,MW-1,MW-1,MW-10,MW-11,MW-12,MW-13,MW-14,MW-15,MW-16,MW-17,MW18D,MW-18D,MW18S
MW-18S,MW-18S,MW-19,MW1S,MW2,MW-2,MW-20,MW-21,MW-05S DUP,MW-3,MW-3BR,MW-3D,MW-4,MW4D,MW-4D,MW4M,MW-4M,MW4S,MW-4S,MW-4S,MW5D,MW-5D,MW5S,MW-5S,MW-6,MW6S,MW-6S,MW-7,MW-8,MW-9,MW-18S DUP,MW-06S DUP,S83,S83SS,WB1M,WB1R,WB-1R,WB1S

(b) Compounds listed are limited to those with a Henry's Law Constant greater than 1X10^{-5} atm-m^3/mole and a molecular weight less than 200 grams/mole

(1) Minimum/maximum detected concentration.
(2) Maximum concentration used for screening.
(3) Refer to supporting information for background discussion.
(4) No screening toxicity data used. Selection based on detection and the Henry's Law/molecular weight criteria.
(5) Rationale Codes:
Selection Reason: Above Screening Level (ASL)
No Screening Level (NSL)
Deletion Reason: Below Screening Level (BSL)

Definitions:
ug/m^3 = micrograms per cubic meter
ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered
N/A = Not Applicable or Not Available
J = Estimated Value
C = Carcinogenic
N = Non-Carcinogenic
T = C11-C22 Aromatic Measured as Total Petroleum Hydrocarbons by Method 8100M
EB = Analyte Detected In The Associated Equipment Blank

TABLE 3-2.7
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Southwest Properties, Wells G&H Superfund Site Operable Unit 2 Woburn, Massachusetts

Scenario Timeframe: Future
Medium: Soil (0-15ft) + Ground Water
Exposure Medium: Outdoor Air

Exposure Point	CAS Number	Chemical (b)	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detectionn Limits	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (N/C) (4)	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
Combined Data (a)	67641	Acetone	N/A	9.15E-04	ug/m^3	N/A	N/A	N/A	9.15E-04	N/A	3.65E+02 N	N/A	N/A	N	BSL
	67663	Chloroform	N/A	3.56E-07	ug/m^3	N/A	N/A	N/A	3.56E-07	N/A	3.14E+00 N	N/A	N/A	N	BSL
	71432	Benzene	N/A	3.67E-03	ug/m^3	N/A	N/A	N/A	3.67E-03	N/A	2.32E-01 C	N/A	N/A	N	BSL
	71556	1,1,1-Trichloroethane	N/A	2.96E-02	ug/m^3	N/A	N/A	N/A	2.96E-02	N/A	2.30E+03 N	N/A	N/A	N	BSL
	74839	Bromomethane	N/A	2.80E-05	ug/m^3	N/A	N/A	N/A	2.80E-05	N/A	5.21E+00 N	N/A	N/A	N	BSL
	74873	Chloromethane	N/A	5.46E-03	ug/m^3	N/A	N/A	N/A	5.46E-03	N/A	1.07E+00 C	N/A	N/A	N	BSL
	75003	Chloroethane	N/A	1.66E-03	ug/m^3	N/A	N/A	N/A	1.66E-03	N/A	2.32E+00 C	N/A	N/A	N	BSL
	75014	Vinyl chloride	N/A	2.62E-02	ug/m^3	N/A	N/A	N/A	2.62E-02	N/A	1.06E-01 C	N/A	N/A	N	BSL
	75092	Methylene chloride	N/A	7.18E-02	ug/m^3	N/A	N/A	N/A	7.18E-02	N/A	4.09E+00 C	N/A	N/A	N	BSL
	75150	Carbon disulfide	N/A	1.34E-03	ug/m^3	N/A	N/A	N/A	1.34E-03	N/A	7.30E+02 N	N/A	N/A	N	BSL
	75343	1,1-Dichloroethane	N/A	9.04E-03	ug/m^3	N/A	N/A	N/A	9.04E-03	N/A	5.21E+02 N	N/A	N/A	N	BSL
	75354	1,1-Dichloroethene	N/A	2.97E-03	ug/m^3	N/A	N/A	N/A	2.97E-03	N/A	2.08E+02 N	N/A	N/A	N	BSL
	76131	1,1,2-Trichloro-1,2,2-trifluoroetha	N/A	7.23E-03	ug/m^3	N/A	N/A	N/A	7.23E-03	N/A	3.13E+04 N	N/A	N/A	N	BSL
	78933	2-Butanone (MEK)	N/A	5.11E-04	ug/m^3	N/A	N/A	N/A	5.11E-04	N/A	1.04E+03 N	N/A	N/A	N	BSL
	79005	1,1,2-Trichloroethane	N/A	3.31E-07	ug/m^3	N/A	N/A	N/A	3.31E-07	N/A	1.20E-01 C	N/A	N/A	N	BSL
	79016	Trichloroethene	N/A	1.41E-02	ug/m^3	N/A	N/A	N/A	1.41E-02	N/A	1.68E-02 C	N/A	N/A	N	BSL
	79209	Methyl acetate (acetic acid, meth	N/A	8.37E-05	ug/m^3	N/A	N/A	N/A	8.37E-05	N/A	3.65E+03 N	N/A	N/A	N	BSL
	79345	1,1,2,2-Tetrachloroethane	N/A	2.26E-07	ug/m^3	N/A	N/A	N/A	2.26E-07	N/A	3.31E-02 C	N/A	N/A	N	BSL
	83329	Acenaphthene	N/A	3.99E-05	ug/m^3	N/A	N/A	N/A	3.99E-05	N/A	2.19E+02 N	N/A	N/A	N	BSL
	85018	Phenanthrene	N/A	1.14E-04	ug/m^3	N/A	N/A	N/A	1.14E-04	N/A	3.13E+00 N	N/A	N/A	N	BSL
	86737	Fluorene	N/A	8.51E-06	ug/m^3	N/A	N/A	N/A	8.51E-06	N/A	1.46E+02 N	N/A	N/A	N	BSL
	91203	Naphthalene	N/A	1.14E-03	ug/m^3	N/A	N/A	N/A	1.14E-03	N/A	3.13E+00 N	N/A	N/A	N	BSL
	91576	2-Methylnaphthalene	N/A	7.04E-04	ug/m^3	N/A	N/A	N/A	7.04E-04	N/A	3.13E+00 N	N/A	N/A	N	BSL
	92524	1,1'-Biphenyl	N/A	5.06E-05	ug/m^3	N/A	N/A	N/A	5.06E-05	N/A	1.83E+02 N	N/A	N/A	N	BSL
	95501	1,2-Dichlorobenzene	N/A	5.79E-03	ug/m^3	N/A	N/A	N/A	5.79E-03	N/A	2.09E+02 N	N/A	N/A	N	BSL
	95636	1,2,4-Trimethylbenzene	N/A	1.22E-02	ug/m^3	N/A	N/A	N/A	1.22E-02	N/A	6.21E+00 N	N/A	N/A	N	BSL
	95954	2,4,5-Trichlorophenol	N/A	1.82E-07	ug/m^3	N/A	N/A	N/A	1.82E-07	N/A	3.65E+02 N	N/A	N/A	N	BSL
	98828	Isopropylbenzene	N/A	7.40E-05	ug/m^3	N/A	N/A	N/A	7.40E-05	N/A	4.02E+02 N	N/A	N/A	N	BSL
	98862	Acetophenone	N/A	1.12E-08	ug/m^3	N/A	N/A	N/A	1.12E-08	N/A	3.10E-02 N	N/A	N/A	N	BSL
	99876	p-Isopropyltoluene	N/A	1.77E-02	ug/m^3	N/A	N/A	N/A	1.77E-02	N/A	4.00E+02 N	N/A	N/A	N	BSL
	100414	Ethylbenzene	N/A	3.46E-02	ug/m^3	N/A	N/A	N/A	3.46E-02	N/A	1.75E+00 C	N/A	N/A	N	BSL
	100425	Styrene	N/A	1.54E-06	ug/m^3	N/A	N/A	N/A	1.54E-06	N/A	1.06E+03 N	N/A	N/A	N	BSL
	100527	Benzaldehyde	N/A	6.85E-05	ug/m^3	N/A	N/A	N/A	6.85E-05	N/A	3.65E+02 N	N/A	N/A	N	BSL
	104518	n-Butylbenzene	N/A	3.46E-04	ug/m^3	N/A	N/A	N/A	3.46E-04	N/A	1.46E+02 N	N/A	N/A	N	BSL
	106467	1,4-Dichlorobenzene	N/A	8.27E-04	ug/m^3	N/A	N/A	N/A	8.27E-04	N/A	3.06E-01 C	N/A	N/A	N	BSL
	108678	1,3,5-Trimethylbenzene	N/A	1.52E-02	ug/m^3	N/A	N/A	N/A	1.52E-02	N/A	6.21E+00 N	N/A	N/A	N	BSL
	108872	Methyl cyclohexane	N/A	8.94E-02	ug/m^3	N/A	N/A	N/A	8.94E-02	N/A	3.13E+03 N	N/A	N/A	N	BSL
	108883	Toluene	N/A	6.48E-02	ug/m^3	N/A	N/A	N/A	6.48E-02	N/A	4.02E+02 N	N/A	N/A	N	BSL
	108907	Chlorobenzene	N/A	1.89E-03	ug/m^3	N/A	N/A	N/A	1.89E-03	N/A	6.21E+01 N	N/A	N/A	N	BSL
	110827	Cyclohexane	N/A	1.98E-02	ug/m^3	N/A	N/A	N/A	1.98E-02	N/A	2.08E+04 N	N/A	N/A	N	BSL
	120127	Anthracene	N/A	7.63E-06	ug/m^3	N/A	N/A	N/A	7.63E-06	N/A	1.10E+03 N	N/A	N/A	N	BSL
	120821	1,2,4-Trichlorobenzene	N/A	8.00E-05	ug/m^3	N/A	N/A	N/A	8.00E-05	N/A	2.08E+02 N	N/A	N/A	N	BSL
	127184	Tetrachloroethene	N/A	4.91E-03	ug/m^3	N/A	N/A	N/A	4.91E-03	N/A	6.72E-01 C	N/A	N/A	N	BSL
	132649	Dibenzofuran	N/A	4.05E-04	ug/m^3	N/A	N/A	N/A	4.05E-04	N/A	1.46E+01 N	N/A	N/A	N	BSL
	135988	sec-Butylbenzene	N/A	2.54E-05	ug/m^3	N/A	N/A	N/A	2.54E-05	N/A	1.46E+02 N	N/A	N/A	N	BSL
	156592	cis-1,2-Dichloroethene	N/A	5.89E-02	ug/m^3	N/A	N/A	N/A	5.89E-02	N/A	3.65E+01 N	N/A	N/A	N	BSL

TABLE 3-2.7
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Southwest Properties, Wells G&H Superfund Site Operable Unit 2 Woburn, Massachusetts

Scenario Timeframe: Future
Medium: Soil (0-15ft) + Ground Water
Exposure Medium: Outdoor Air

Exposure Point	CAS Number	Chemical (b)	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detectionn Limits	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (N/C) (4)	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
	156605	trans-1,2-Dichloroethene	N/A	2.44E-02	ug/m^3	N/A	N/A	N/A	2.44E-02	N/A	7.30E+01 N	N/A	N/A	N	BSL
	208968	Acenaphthylene	N/A	7.28E-05	ug/m^3	N/A	N/A	N/A	7.28E-05	N/A	3.13E+00 N	N/A	N/A	N	BSL
	540590	1,2-Dichloroethene (total)	N/A	7.65E-03	ug/m^3	N/A	N/A	N/A	7.65E-03	N/A	3.70E+01 N	N/A	N/A	N	BSL
	541731	1,3-Dichlorobenzene	N/A	3.88E-04	ug/m^3	N/A	N/A	N/A	3.88E-04	N/A	3.29E+00 N	N/A	N/A	N	BSL
	1330207	Xylenes (total)	N/A	1.74E-04	ug/m^3	N/A	N/A	N/A	1.74E-04	N/A	1.06E+02 N	N/A	N/A	N	BSL
	1634044	Methyl tert-butyl ether	N/A	5.72E-04	ug/m^3	N/A	N/A	N/A	5.72E-04	N/A	1.92E+01 C	N/A	N/A	N	BSL
		C11-C22 Aromatic	N/A	1.85E+00	ug/m^3	N/A	N/A	N/A	1.85E+00	N/A	N/A N/A	N/A	N/A	Y	NSL
		C5-C8 Aliphatic	N/A	7.64E+00	ug/m^3	N/A	N/A	N/A	7.64E+00	N/A	N/A N/A	N/A	N/A	Y	NSL
		C9-C10 Aromatic	N/A	3.81E-01	ug/m^3	N/A	N/A	N/A	3.81E-01	N/A	N/A N/A	N/A	N/A	Y	NSL
		C9-C12 Aliphatic	N/A	4.14E-01	ug/m^3	N/A	N/A	N/A	4.14E-01	N/A	N/A N/A	N/A	N/A	Y	NSL
		C9-C18 Aliphatic	N/A	7.29E+00	ug/m^3	N/A	N/A	N/A	7.29E+00	N/A	N/A N/A	N/A	N/A	Y	NSL

(a) Data presented are from soil samples AB102(6.0),AB-13/0-2,AB-13/5-7,AB13D(5.0-7.0),AB13SS(0-2.0),AB-14/0-2,AB14D(2.0-4.0),AB14SS(0-2.0),AB-15/0-2,AB-15/4-4.5,AB15D(4.0-4.5),AB15SS(0-2.0),AB-16/0-2,AB16SS(0-2.0),AB-SS1,AB-SS1D,AB-SS1D DUP,AB-SS2,AB-SS AB-SS5,AB-SS5D,AB-SS6,AB-SS6D,AB-SS7,AB-SS7D,AB-SS8,AB-SS8D,AB-SS9,AB-SS9 DUP,AB-SS9D,AB-SS9D DUP,B-1 SS-3 (4.5-6.5),B-1 SS-5 (8.5-10.5),B-10 (10-14),B-10 (4-6),B-10 (6-10),B-10 SS-6 (10-12),B-11 SS-4 (6-8),B-11 SS-6 (10-12),B-12 (4-8),B-12 (8-12), B-13 SS-5 (8-10),B-14 SS-2 (2.5-4.5),B-14 SS-5 (8.5-10.5),B-15 SS-5 (8-10),B-15 SS-7 (12-14),B-16 SS-6 (10-12),B-17 SS-2 (2-4),B-18 SS-1 (0-2),B-18 SS-3 (4-6),B-19 SS-4 (6-8),B-2 SS-3 (4.5-6.5),B-20 SS-4 (6-8),B-21 SS-4 (6-8),B-24 SS-4 (6-8),B-25 S B-5 (7-10),B-6 (7-11),B-6 SS-5 (8-10),B-7 SS-5 (8-10),B-8 (7-8),B-8 (8-12),B-8 SS-1 (0-2),B-8 SS-4 (6-8),B-9 (6-10),B-9 SS-5 (8-10),CHI-1/88(2-4),CHI-2/88 (4-6),CHI-3/88 (6-8),CHI-4/88 (2-4),CHI-5/88 (2-4),CHI-6/88 (2-4),CHI-7/88 (0-2),CHI-8/88 (5- MR-SS1D,MR-SS2,MR-SS2D,MR-SS3,MR-SS3D,MR-SS4D,MW-1 SS-1 (0-2),MW-1 SS-5 (8-10),MW-11 SS-3 (4-6),MW-11 SS-5 (8-10),MW-14 SS-3 (4-6),MW-16 SS-3 (4-6),MW-18D SS-1 (0-2),MW-2 SS-1 (0-2),MW-2 SS-2 (2-4),MW-2 SS-4A (7.5-9.5),MW-3 SS-1 (0-2),MW-3 SS-4 (6- MW-4 SS-1 (0-2),MW-4 SS-5 (8-10),MW-4 SS-6 (10-12),MW-5 SS-6 (10-12),MW-5S SS-1 (0-2),MW-6 SS-1 (0-2),MW-7 SS-2 (2.5-4.5),MW-7 SS-4 (6.5-8.5),MW-9 SS-6 (10-12),W-89-S1(0-2),W-89-S1(10-12),W-89-S1(2-4),W-89-S1(6-8),W-89-S1(8-10),W-89-S14(0-2),W-89-S W-89-S15(0-2),W-89-S15(4-6),W-89-S15(6-8),W-89-S15(8-10),W-89-S16(0-2),W-89-S16(10-12),W-89-S16(4-6),W-89-S16(6-8),W-89-S16(8-10),W-89-S17 (6-8),W-89-S17(0-2),W-89-S17(4-6),W-89-S17(8-10),W-89-S18 (6-8),W-89-S18(0-2),W-89-S18(4-6),W-89-S18(8-10),W- W-89-S3(10-12),W-89-S3(4-6),W-89-S3(6-8),W-89-S3(8-10),W-89-S4 (6-8),W-89-S4 (8-10),W-89-S4(0-2),W-89-S4(4-6),W-89-S4(6-8),W-89-S4(8-10),WB-10/0-2,WB-10/2-4,WB10D(2.0-4.0),WB10SS(0-2.0),WB-11/1-1.75,WB11SS(0-1.0),WB12SS(1.0-2.0),WB-13/0-2,WB13SS(0- WB-6/2-4,WB6D(2.0-4.0),WB6SS(0-2.0),WB-7/0-2,WB-7/2-4,WB7D(2.0-4.0),WB7SS(0-2.0),WB-8/0-2,WB8SS(0-1.0),WB-SS1,WB-SS1D,WB-SS1D,WB-SS2,WB-SS2D,WB-SS3,WB-SS3D,WB-SS3D DUP,WB-SS4,WB-SS4D

(a) Data presented are from groundwater samples AB1,AB-1,AB-02SS DUP,AB2M,AB2R,AB2SS,AB-2SS,AB4M,AB4SS,AB6M,AB6SS,AB-6SS,MW-04M DUP,MW-03 DUP,MW-21 DUP,MR-1SS,MR-2SS,MW1,MW-1,MW-1,MW-10,MW-11,MW-12,MW-13,MW-14,MW-15,MW-16,MW-17,MW18D,MW-18D,MW18S, MW-18S,MW-18S,MW-19,MW1S,MW2,MW-2,MW-20,MW-21,MW-05S DUP,MW-3,MW-3BR,MW-3D,MW-4,MW4D,MW-4D,MW4M,MW-4M,MW4S,MW-4S,MW-4S,MW5D,MW-5D,MW5S,MW-5S,MW-6,MW6S,MW-6S,MW-7,MW-8,MW-9,MW-18S DUP,MW-06S DUP,S83,S83SS,WB1M,WB1R,WB-1R,WB1SS

(b) Compounds listed are limited to those with a Henry's Law Constant greater than 1X10^5 atm-m^3/mole and a molecular weight less than 200 grams/mole

(1) Minimum/maximum detected concentration.
(2) Maximum concentration used for screening.
(3) Refer to supporting information for background discussion.
(4) No screening toxicity data used. Selection based on detection and the Henry's Law/molecular weight criteria.
(5) Rationale Codes:
Selection Reason: Above Screening Level (ASL)
No Screening Level (NSL)
Deletion Reason: Below Screening Level (BSL)

Definitions:
ug/m^3 = micrograms per cubic meter
ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered
N/A = Not Applicable or Not Available
J = Estimated Value
C = Carcinogenic
N = Non-Carcinogenic
T = C11-C22 Aromatic Measured as Total Petroleum Hydrocarbons by Method 8100M
EB = Analyte Detected In The Associated Equipment Blank

TABLE 3-2.8
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Southwest Properties, Wells G&H Superfund Site Operable Unit 2 Woburn, Massachusetts

Scenario Timeframe: Current/Future
Medium: Sediment
Exposure Medium: Sediment

Exposure Point	CAS Number	Chemical	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detectionn Limits	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (N/C) (4)	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
Murphy Wetland (a)	91203	Naphthalene	4.60E-02 JEB	1.88E+01 J	mg/kg	MR11D(0.75-1.75)	5/20	0.082-56	1.88E+01	N/A	5.60E+00 N	N/A	N/A	Y	ASL
	75014	Vinyl chloride	1.70E-01 J	1.70E-01 J	mg/kg	MR-11/0.75-1.75	1/9	0.003-19	1.70E-01	N/A	7.90E-02 C	N/A	N/A	Y	ASL
	67641	Acetone	4.85E-01 JEB	4.90E-01 JEB	mg/kg	MR-11/0.75-1.75	2/10	0.0106-38	4.90E-01	N/A	1.60E+02 N	N/A	N/A	N	BSL
	75150	Carbon disulfide	1.40E-02 J	1.70E-02 J	mg/kg	MR-12/0-0.5	2/10	0.003-19	1.70E-02	N/A	3.60E+01 N	N/A	N/A	N	BSL
	79209	Methyl acetate	7.30E-01	7.30E-01	mg/kg	MR-11/0.75-1.75	1/3	0.042-0.097	7.30E-01	N/A	2.20E+03 N	N/A	N/A	N	BSL
	75092	Methylene chloride	2.25E-01 J	2.25E-01 J	mg/kg	MR-SS7	1/10	0.01-38	2.25E-01	N/A	9.10E+00 C	N/A	N/A	N	BSL
	1634044	Methyl tert-butyl ether	1.15E-01 J	1.15E-01 J	mg/kg	MR-12/0-0.5	1/7	0.0041-19	1.15E-01	N/A	6.20E+01 C	N/A	N/A	N	BSL
	75343	1,1-Dichloroethane	1.10E-01 J	1.10E-01 J	mg/kg	MR-11/0.75-1.75	1/9	0.003-9.5	1.10E-01	N/A	5.10E+01 N	N/A	N/A	N	BSL
	156592	cis-1,2-Dichloroethene	2.50E+00	2.50E+00	mg/kg	MR-11/0.75-1.75	1/3	0.042-0.097	2.50E+00	N/A	4.30E+00 N	N/A	N/A	N	BSL
	78933	2-Butanone (MEK)	1.45E-01 J	1.45E-01 J	mg/kg	MR-12/0-0.5	1/10	0.0043-38	1.45E-01	N/A	7.30E+02 N	N/A	N/A	N	BSL
	71432	Benzene	2.00E-01 J	3.70E-01 J	mg/kg	MR-11/0.75-1.75	2/10	0.003-9.5	3.70E-01	N/A	6.00E-01 C	N/A	N/A	N	BSL
	79016	Trichloroethene	8.50E-02 J	8.50E-02 J	mg/kg	MR-11/0.75-1.75	1/9	0.003-9.5	8.50E-02	N/A	5.30E-02 C	N/A	N/A	Y	ASL
	108872	Methyl cyclohexane	4.40E+00 J	4.40E+00 J	mg/kg	MR-11/0.75-1.75	1/3	0.042-0.097	4.40E+00	N/A	2.60E+02 N	N/A	N/A	N	BSL
	108883	Toluene	1.40E-01 J	1.30E+01	mg/kg	MR-11/0.75-1.75	3/11	0.003-9.5	1.30E+01	N/A	6.60E+01 N	N/A	N/A	N	BSL
	127184	Tetrachloroethene	4.10E-01 J	4.10E-01 J	mg/kg	MR-11/0.75-1.75	1/9	0.003-9.5	4.10E-01	N/A	1.50E+00 C	N/A	N/A	N	BSL
	106934	Ethylenedibromide	9.50E+00	9.50E+00	mg/kg	P-12	1/6	0.0041-0.25	9.50E+00	N/A	6.90E-03 C	N/A	N/A	Y	ASL
	100414	Ethylbenzene	6.70E+00 J	1.10E+01	mg/kg	MR-11/0.75-1.75	2/10	0.003-9.5	1.10E+01	N/A	8.90E+00 C	N/A	N/A	Y	ASL
	1330207	Xylenes (total)	7.00E-03 J	5.30E+01	mg/kg	P-12	4/11	0.003-0.25	5.30E+01	N/A	2.70E+01 N	N/A	N/A	Y	ASL
	98828	Isopropylbenzene	5.90E-01	5.90E-01	mg/kg	MR-11/0.75-1.75	1/3	0.042-0.097	5.90E-01	N/A	5.70E+01 N	N/A	N/A	N	BSL
	106467	1,4-Dichlorobenzene	5.50E-02 J	5.50E-02 J	mg/kg	MR-11/0.75-1.75	1/8	0.042-8.3	5.50E-02	N/A	3.40E+00 C	N/A	N/A	N	BSL
	95501	1,2-Dichlorobenzene	1.50E+00	1.50E+00	mg/kg	MR-11/0.75-1.75	1/8	0.042-8.3	1.50E+00	N/A	1.10E+02 N	N/A	N/A	N	BSL
	100527	Benzaldehyde	1.90E-01 J	1.56E+00 J	mg/kg	MR-12/0-0.5	3/6	0.12-3.5	1.56E+00	N/A	6.10E+02 N	N/A	N/A	N	BSL
	108952	Phenol	1.90E-01 J	1.01E+01 J	mg/kg	MR11SS(0-0.5)	4/9	0.025-1.075	1.01E+01	N/A	3.70E+03 N	N/A	N/A	N	BSL
	95487	2-Methylphenol	5.10E-03 JEB	2.80E-01 JEB	mg/kg	MR-11/0.75-1.75	3/9	0.12-1.075	2.80E-01	N/A	3.10E+02 N	N/A	N/A	N	BSL
	98862	Acetophenone	2.40E+00 J	4.95E+00 J	mg/kg	MR11SS(0-0.5)	2/6	0.1-3.5	4.95E+00	N/A	3.30E-03 N	N/A	N/A	Y	ASL
	91576	2-Methylnaphthalene	4.25E-02 J	2.48E+01 J	mg/kg	MR11D(0.75-1.75)	3/16	0.082-8.3	2.48E+01	N/A	5.60E+00 N	N/A	N/A	Y	ASL
	131113	Dimethyl phthalate	4.30E-02 J	4.30E-02 J	mg/kg	MR-SS6	1/11	0.048-8.3	4.30E-02	N/A	6.10E+04 N	N/A	N/A	N	BSL
	208968	Acenaphthylene	1.81E-02 J	2.50E-02 J	mg/kg	MR12SS(0-0.5)	3/20	0.427-56	2.50E-02	N/A	5.60E+00 N	N/A	N/A	N	BSL
	83329	Acenaphthene	1.90E-02 J	1.50E-01 J	mg/kg	MR-12/0-0.5	4/20	0.427-56	1.50E-01	N/A	3.70E+02 N	N/A	N/A	N	BSL
	86737	Fluorene	1.40E-02 J	7.00E-01 J	mg/kg	MR17SS(0-0.5)	5/20	0.427-56	7.00E-01	N/A	2.70E+02 N	N/A	N/A	N	BSL
	85018	Phenanthrene	1.28E-01 J	2.00E+00 J	mg/kg	MR-11/0.75-1.75	9/20	0.82-56	2.00E+00	N/A	5.60E+00 N	N/A	N/A	N	BSL
	120127	Anthracene	2.30E-01 J	5.20E-01 J	mg/kg	MR11SS(0-0.5)	3/20	0.1-56	5.20E-01	N/A	2.20E+03 N	N/A	N/A	N	BSL
	86748	Carbazole	1.20E-01 J	2.30E-01 J	mg/kg	MR-12/0-0.5	2/8	0.1-3.5	2.30E-01	N/A	2.40E+01 C	N/A	N/A	N	BSL
	84742	Di-n-butyl phthalate	1.28E-01 J	4.04E-01 J	mg/kg	MR-SS5	2/11	0.05-8.3	4.04E-01	N/A	6.10E+02 N	N/A	N/A	N	BSL
	206440	Fluoranthene	2.14E-01 J	5.40E+00 J	mg/kg	MR14SS(0-0.5)	13/20	0.88-11	5.40E+00	N/A	2.30E+02 N	N/A	N/A	N	BSL
	129000	Pyrene	1.71E-01 J	1.01E+01 J	mg/kg	MR11D(0.75-1.75)	14/20	0.88-11	1.01E+01	N/A	2.30E+02 N	N/A	N/A	N	BSL
	56553	Benzo(a)Anthracene	1.01E-01 J	3.10E+00 J	mg/kg	MR14SS(0-0.5)	13/20	0.88-11	3.10E+00	N/A	6.20E-01 C	N/A	N/A	Y	ASL
	218019	Chrysene	2.02E-01 J	3.60E+00 J	mg/kg	MR14SS(0-0.5)	13/20	0.88-11	3.60E+00	N/A	6.20E+01 C	N/A	N/A	N	BSL
	117817	Bis(2-ethylhexyl) phthalate	3.60E-01 J	5.05E+00 J	mg/kg	MR-SS5	4/11	0.082-17	5.05E+00	N/A	3.50E+01 C	N/A	N/A	N	BSL
	205992	Benzo(b)Fluoranthene	1.30E-01 J	2.90E+00 J	mg/kg	MR17SS(0-0.5)	11/20	0.82-11	2.90E+00	N/A	6.20E-01 C	N/A	N/A	Y	ASL

TABLE 3-2.8
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Southwest Properties, Wells G&H Superfund Site Operable Unit 2 Woburn, Massachusetts

Scenario Timeframe: Current/Future
Medium: Sediment
Exposure Medium: Sediment

Exposure Point	CAS Number	Chemical	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detectionn Limits	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (N/C) (4)	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
	207089	Benzo(k)Fluoranthene	8.50E-02 J	3.30E+00 J	mg/kg	MR14SS(0-0.5)	12/20	0.88-11	3.30E+00	N/A	6.20E+00 C	N/A	N/A	N	BSL
	50328	Benzo(a)Pyrene	8.50E-02 J	3.30E+00 J	mg/kg	MR17SS(0-0.5)	12/20	0.88-11	3.30E+00	N/A	6.20E-02 C	N/A	N/A	Y	ASL
	193395	Indeno(1,2,3-cd)pyrene	7.25E-02 J	3.20E+00 J	mg/kg	MR17SS(0-0.5)	12/20	0.88-11	3.20E+00	N/A	6.20E-01 C	N/A	N/A	Y	ASL
	53703	Dibenz(a,h) anthracene	3.90E-02 J	1.30E+00 J	mg/kg	MR17SS(0-0.5)	8/20	0.0025-11	1.30E+00	N/A	6.20E-02 C	N/A	N/A	Y	ASL
	191242	Benzo(g,h,i)perylene	8.50E-02 J	4.60E+00 J	mg/kg	MR17SS(0-0.5)	12/20	0.88-11	4.60E+00	N/A	5.60E+00 N	N/A	N/A	N	BSL
		C11-C22 Aromatic	2.20E+01 T	9.70E+04 T	mg/kg	SW-2	43/43	N/A	9.70E+04	N/A	2.00E+02 N	N/A	N/A	Y	ASL
		C19-C36 Aliphatic	2.40E+01 J	1.94E+04 J	mg/kg	MR11D(0.75-1.75)	8/8	N/A	1.94E+04	N/A	2.50E+03 N	N/A	N/A	Y	ASL
		C9-C18 Aliphatic	2.70E+00 J	2.50E+03 J	mg/kg	MR11D(0.75-1.75)	4/8	6.08-8.04	2.50E+03	N/A	1.00E+03 N	N/A	N/A	Y	ASL
		C5-C8 Aliphatic	4.00E+00 J	2.50E+01 J	mg/kg	MR11D(0.75-1.75)	5/5	N/A	2.50E+01	N/A	1.00E+02 N	N/A	N/A	N	BSL
		C9-C12 Aliphatic	3.00E+00 J	5.10E+01 J	mg/kg	MR11D(0.75-1.75)	5/5	N/A	5.10E+01	N/A	1.00E+03 N	N/A	N/A	N	BSL
		C9-C10 Aromatic	9.00E-01 J	6.90E+01 J	mg/kg	MR11D(0.75-1.75)	4/4	N/A	6.90E+01	N/A	1.00E+02 N	N/A	N/A	N	BSL
	18540299	Chromium (VI)	2.09E+00 J	3.66E+02	mg/kg	P-26	45/68	1-6.4	3.66E+02	N/A	3.00E+01 C	N/A	N/A	Y	ASL
	7429905	Aluminum	3.17E+03	2.35E+04 JEB	mg/kg	MR-12/0-0.5	10/10	N/A	2.35E+04	N/A	7.60E+03 N	N/A	N/A	N	NTX
	7440360	Antimony	1.10E+00 J	1.17E+02	mg/kg	MR15SS(0-0.5)	7/10	0.35-23.6	1.17E+02	N/A	3.10E+00 N	N/A	N/A	Y	ASL
	7440382	Arsenic	3.80E+00 J	1.70E+01	mg/kg	MR-SS7	10/13	10-20	1.70E+01	N/A	3.90E-01 C	N/A	N/A	Y	ASL
	7440393	Barium	4.60E+01 J	2.60E+03 J	mg/kg	MR-11/0.75-1.75	10/10	N/A	2.60E+03	N/A	5.40E+02 N	N/A	N/A	Y	ASL
	7440417	Beryllium	1.80E-01 B	1.30E+00 B	mg/kg	MR-SS7	8/10	0.58-0.67	1.30E+00	N/A	1.50E+01 N	N/A	N/A	N	BSL
	7440439	Cadmium	7.00E-01 J	4.80E+00	mg/kg	MR-SS7	9/13	0.65-1	4.80E+00	N/A	3.70E+00 N	N/A	N/A	Y	ASL
	7440702	Calcium	2.20E+03 J	2.30E+04 J	mg/kg	MR-12/0-0.5	10/10	N/A	2.30E+04	N/A	4.00E+06 N	N/A	N/A	N	NUT
	7440473	Chromium	4.51E+01	6.65E+04	mg/kg	P-26	67/67	N/A	6.65E+04	N/A	1.20E+04 N	N/A	N/A	Y	ASL
	7440484	Cobalt	1.00E+00 J	2.00E+01 B	mg/kg	MR-SS7	10/10	N/A	2.00E+01	N/A	9.00E+02 C	N/A	N/A	N	NTX
	7440508	Copper	1.73E+01	1.60E+02 J	mg/kg	MR-12/0-0.5	10/10	N/A	1.60E+02	N/A	3.10E+02 N	N/A	N/A	N	BSL
	57125	Cyanide	3.00E-01	4.70E+00	mg/kg	MR-SS7	8/13	0.16-1.01	4.70E+00	N/A	1.20E+02 N	N/A	N/A	N	BSL
	7439896	Iron	2.40E+03 J	3.08E+04 J	mg/kg	MR-SS7	10/10	N/A	3.08E+04	N/A	2.30E+03 N	N/A	N/A	N	NTX
	7439921	Lead	3.00E+01	3.51E+04	mg/kg	SW-2	62/62	N/A	3.51E+04	N/A	4.00E+02 N	N/A	N/A	Y	ASL
	7439954	Magnesium	2.43E+02 B	7.54E+03	mg/kg	MR-SS7	10/10	N/A	7.54E+03	N/A	8.05E+06 N	N/A	N/A	N	NUT
	7439965	Manganese	7.90E+01 J	5.75E+02 J	mg/kg	MR-SS7	10/10	N/A	5.75E+02	N/A	1.80E+02 N	N/A	N/A	Y	ASL
	7439976	Mercury	1.80E-01	7.40E+00 J	mg/kg	MR-SS5	8/10	0.171-0.328	7.40E+00	N/A	6.10E-01 N	N/A	N/A	Y	ASL
	7440020	Nickel	4.60E+00 B	5.53E+01	mg/kg	MR-SS7	10/10	N/A	5.53E+01	N/A	1.60E+02 N	N/A	N/A	N	BSL
	2023695	Potassium	1.12E+02 B	6.40E+03 J	mg/kg	MR-12/0-0.5	10/10	N/A	6.40E+03	N/A	1.00E+06 N	N/A	N/A	N	NUT
	7782492	Selenium	2.55E-01 J	1.60E+00 B	mg/kg	MR-SS5	7/10	0.79-1.33	1.60E+00	N/A	3.90E+01 N	N/A	N/A	N	BSL
	7440224	Silver	1.60E-01	3.20E-01 J	mg/kg	MR-12/0-0.5	4/10	0.4-2.2	3.20E-01	N/A	3.90E+01 N	N/A	N/A	N	BSL
	7440235	Sodium	8.50E+01 J	8.80E+02	mg/kg	MR-12/0-0.5	8/10	51-58	8.80E+02	N/A	1.00E+06 N	N/A	N/A	N	NUT
	7440280	Thallium	7.20E-02	1.90E-01	mg/kg	MR-11/0-0.5	2/10	0.11-0.44	1.90E-01	N/A	5.20E-01 N	N/A	N/A	N	BSL
	7440622	Vanadium	1.10E+01 J	9.63E+01	mg/kg	MR-SS7	10/10	N/A	9.63E+01	N/A	5.50E+01 N	N/A	N/A	Y	ASL
	7440666	Zinc	1.28E+02	1.20E+03 J	mg/kg	MR-11/0.75-1.75	10/10	N/A	1.20E+03	N/A	2.30E+03 N	N/A	N/A	N	BSL
	1746016	PCB TEQ*	1.33E-05 J	2.84E-04 J	mg/kg	MR11SS(0-0.5)	7/7	N/A	2.84E-04	N/A	3.90E-06 C	N/A	N/A	Y	ASL

TABLE 3-2.8
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Southwest Properties, Wells G&H Superfund Site Operable Unit 2 Woburn, Massachusetts

Scenario Timeframe: Current/Future
Medium: Sediment
Exposure Medium: Sediment

Exposure Point	CAS Number	Chemical	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detectionn Limits	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (N/C) (4)	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
	5103719	alpha-Chlordane	7.22E-03 FBJ	8.92E-01	mg/kg	MR-SS6	6/7	0.0131-0.0131	8.92E-01	N/A	1.60E+00 C	N/A	N/A	N	BSL
	5103742	gamma-Chlordane	1.30E-02 FBJ	1.98E+00	mg/kg	MR-SS6	6/7	0.0131-0.0131	1.98E+00	N/A	1.60E+00 C	N/A	N/A	*Y*	ASL
	309002	Aldrin	2.80E-03 J	2.80E-03 J	mg/kg	MR-SS7	1/10	0.00052-12	2.80E-03	N/A	2.90E-02 C	N/A	N/A	N	BSL
	72559	4,4'-DDE	4.62E-03 J	1.20E-02 J	mg/kg	MR-SS7	4/10	0.00776-12	1.20E-02	N/A	1.70E+00 C	N/A	N/A	N	BSL
	72548	4,4'-DDD	1.46E-02 J	4.83E-02	mg/kg	MR-SS6	5/10	0.0048-12	4.83E-02	N/A	2.40E+00 C	N/A	N/A	N	BSL
	50293	4,4'-DDT	1.69E-02 J	2.40E-01 FBJ	mg/kg	MR11D(0.75-1.75)	7/10	1-12	2.40E-01	N/A	1.70E+00 C	N/A	N/A	N	BSL
	7421934	Endrin aldehyde	5.60E-03 J	5.60E-03 J	mg/kg	MR-SS7	1/10	0.00104-12	5.60E-03	N/A	1.80E+00 N	N/A	N/A	N	BSL
	11097691	Aroclor 1254	3.11E-01 J	2.20E+02	mg/kg	SW-2	35/57	0.01-31	2.20E+02	N/A	2.20E-01 C	N/A	N/A	*Y*	ASL
	11096825	Aroclor 1260	1.09E-01 FBJ	4.50E+02	mg/kg	P-38	27/56	0.1-21	4.50E+02	N/A	2.20E-01 C	N/A	N/A	*Y*	ASL

(a) Data presented are from soil samples MR-11 2003/03/18,MR-11/0.75-1.75,MR-11/0-0.5,MR11D(0.75-1.75),MR11SS(0-0.5),MR-12/0-0.5,MR12SS(0-0.5),MR13SST1(0-1.0),MR13SST2(0-1.0),MR14SS(0-0.5),MR15SS(0-0.5),MR16SS(0-0.5),MR17SS(0-0.5),MR18SS(0-0.5),
MR-21SS(0.0-0.5),MR21SS(0-0.5),MRE-12/0-0.5,MR-SS5,MR-SS6,MR-SS7,MW-19,P-1,P-10,P-11,P-12,P-12,P-13,P-14,P-15,P-17,P-18,P-19,P-2,P-20,P-21,P-22,P-23,P-24,P-24,P-24A,P-25,P-26,P-26,P-27,P-28,P-29,P-3,P-30,P-31,P-32,P-33,P-34,P-35,P-36,P-37,P-38,P-39
P-4,P-40,P-41,P-42,P-43,P-44,P-45,P-46,P-47,P-48,P-5,P-6,P-7,P-9,SW-1,SW-2,SW-3,SW-4,WB-9/0-0.5,WB9SS(0-0.5)

(1) Minimum/maximum detected concentration.
(2) Maximum concentration used for screening.
(3) Refer to supporting information for background discussion.
(4) USEPA Region 9 PRGs for residential soil (adjusted to an hazard quotient = 0.1 for noncarcinogens), October 1, 2002.
PRG for chromium III used for total chromium.
PRG for chromium VI used for chromium VI.
PRG for methylmercury used for mercury.
PRG for free cyanide used for total cyanide.
The screening toxicity value for lead is the residential soil lead guidance level of 400 mg/Kg (USEPA, 1994a).
(5) Rationale Codes:
Selection Reason: Above Screening Levels (ASL)
Deletion Reason: No Toxicity Information (NTX)
Essential Nutrient (NUT)
Below Screening Level (BSL)

Definitions:
mg/kg = milligams per kilogram
COPCs = Chemicals of Potential Concern
ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered
PRG = Preliminary Remedial Goal
J = Estimated Value
C = Carcinogenic
N = Non-Carcinogenic
N/A = Not Applicable or Not Available
ND = Not Detected

TABLE 3-2.9
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Southwest Properties, Wells G&H Superfund Site Operable Unit 2 Woburn, Massachusetts

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

Exposure Point	CAS Number	Chemical	Minimum Concentration (Qualifier) (1)		Maximum Concentration (Qualifier) (1)		Units	Location of Maximum Concentration	Detection Frequency	Range of Detection	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (N/C) (4)		Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
Murphy Wetland (a)	7429905	Aluminum	2.44E+02		2.44E+02		ug/L	MW12SW	1/3	78-186	244	N/A	3.60E+03	N	87	AWQC	N	NTX
	7440393	Barium	1.90E+01		8.50E+01		ug/L	MW13SW	3/3	N/A	85	N/A	2.60E+02	N	2000	MCL	N	BSL
	7440702	Calcium	1.48E+04	J	6.10E+04	J	ug/L	MW13SW	3/3	N/A	61000	N/A	4.00E+08	N	N/A	N/A	N	BSL
	7440473	Chromium	5.20E+00	J	2.30E+01	J	ug/L	MW12SW	3/3	N/A	23	N/A	5.50E+03	N	11	AWQC	*Y*	ASL
	7440484	Cobalt	1.70E+00		2.60E+00		ug/L	MW12SW	2/3	1.3-1.3	2.6	N/A	7.30E+01	C	N/A	N/A	N	BSL
	57125	Cyanide	6.00E+00		9.00E+00		ug/L	BW4SW	2/3	3-3	9	N/A	7.30E+01	N	N/A	N/A	N	BSL
	7439896	Iron	3.18E+02		2.77E+03		ug/L	MW13SW	3/3	N/A	2770	N/A	1.10E+03	N	1000	AWQC	N	NTX
	7439954	Magnesium	2.49E+03		6.11E+03		ug/L	MW12SW	3/3	N/A	6110	N/A	8.05E+08	N	N/A	N/A	N	BSL
	7439965	Manganese	6.30E+01		5.45E+02		ug/L	MW12SW	3/3	N/A	545	N/A	8.80E+01	N	N/A	N/A	*Y*	ASL
	7440020	Nickel	2.70E+00		4.00E+00		ug/L	MW12SW	2/3	1.3-1.3	4	N/A	7.30E+01	N	52	AWQC	N	BSL
	2023695	Potassium	3.35E+03	J	1.03E+04	J	ug/L	MW13SW	3/3	N/A	10300	N/A	1.00E+08	N	N/A	N/A	N	BSL
	7440235	Sodium	2.17E+04	J	8.20E+04	J	ug/L	MW13SW	3/3	N/A	82000	N/A	1.00E+08	N	N/A	N/A	N	BSL
	7440622	Vanadium	1.70E+00	J	2.00E+00	J	ug/L	MW12SW	2/3	1.3-1.3	2	N/A	2.60E+01	N	N/A	N/A	N	BSL

(a) Data presented are from groundwater samples BW4SW,MW12SW,MW13SW

(1) Minimum/maximum detected concentration.
(2) Maximum concentration used for screening.
(3) Refer to supporting information for background discussion.
(4) USEPA Region 9 PRGs for residential soil (adjusted to an hazard quotient = 0.1 for noncarcinogens), October 1, 2002.
PRG for chromium III used for total chromium.
PRG for chromium VI used for chromium VI.
PRG for mercury and compounds used for mercury.
PRG for free cyanide used for total cyanide.
(5) Rationale Codes:
Selection Reason: Above Screening Levels (ASL)
Deletion Reason: No Toxicity Information (NTX)
Essential Nutrient (NUT)
Below Screening Level (BSL)
Region 1 Exclusion (R1X)
Low Concentration, Low Frequency of Detection (LCF)

Definitions:
ug/L = micrograms per liter
CAS = Chemical Abstract Service
COPCs = Chemicals of Potential Concern
ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered
PRG = Preliminary Remedial Goal
N/A = Not Applicable or Not Available
ND = Not Detected
J = Estimated Value
C = Carcinogenic
N = Non-Carcinogenic
MCL = Maximum Contaminant Level
EPA = Environmental Protection Agency
AWQC = Ambient Water Quality Criteria

TABLE 3-3.1.RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

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

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)
Aberjona Property (a)	Vinyl chloride	mg/kg	N/A	N/A	ND	N/A			
	Trichloroethene	mg/kg	N/A	N/A	ND	N/A			
	Phenanthrene	mg/kg	2.13E-01	6.92E-01 (T)	1.3E+00 J	6.92E-01	mg/kg	95% UCL-T	(c)
	Benzo(a)Anthracene	mg/kg	2.14E-01	7.09E-01 (T)	1.1E+00	7.09E-01	mg/kg	95% UCL-T	(c)
	Benzo(b)Fluoranthene	mg/kg	2.55E-01	7.39E-01 (NP)	1.6E+00	7.39E-01	mg/kg	95% UCL-NP	(d)
	Benzo(k)Fluoranthene	mg/kg	2.11E-01	5.14E-01 (NP)	1.1E+00	5.14E-01	mg/kg	95% UCL-NP	(d)
	Benzo(a)Pyrene	mg/kg	2.11E-01	5.15E-01 (NP)	1.1E+00	5.15E-01	mg/kg	95% UCL-NP	(d)
	Indeno(1,2,3-cd)pyrene	mg/kg	2.19E-01	5.17E-01 (NP)	1.1E+00	5.17E-01	mg/kg	95% UCL-NP	(d)
	Dibenz(a,h) anthracene	mg/kg	1.62E-01	2.13E-01 (NP)	6.2E-03 J	6.20E-03	mg/kg	Max	(d)
	Benzo(g,h,i)perylene	mg/kg	2.35E-01	5.95E-01 (NP)	1.2E+00	5.95E-01	mg/kg	95% UCL-NP	(d)
	Antimony	mg/kg	2.71E+00	3.55E+00 (NP)	1.8E+00 J	1.80E+00	mg/kg	Max	(d)
	Arsenic	mg/kg	4.50E+00	5.67E+00 (N)	1.0E+01	5.67E+00	mg/kg	95% UCL-N	(b)
	Cadmium	mg/kg	4.41E+00	9.79E+00 (T)	2.8E+01	9.79E+00	mg/kg	95% UCL-T	(c)
	Copper	mg/kg	6.15E+01	1.01E+02 (T)	1.6E+02 J	1.01E+02	mg/kg	95% UCL-T	(c)
	Lead	mg/kg	4.39E+02	1.14E+03 (T)	1.6E+03 J	1.14E+03	mg/kg	95% UCL-T	(c)
	Manganese	mg/kg	2.47E+02	2.74E+02 (N)	3.6E+02	2.74E+02	mg/kg	95% UCL-N	(b)
	Mercury	mg/kg	5.97E-02	9.47E-02 (NP)	1.8E-01	9.47E-02	mg/kg	95% UCL-NP	(d)
	Nickel	mg/kg	3.38E+01	6.46E+01 (T)	1.8E+02 J	6.46E+01	mg/kg	95% UCL-T	(c)
	Thallium	mg/kg	N/A	N/A	ND	N/A			
	Aroclor 1242	mg/kg	4.13E-02	1.12E-01 (T)	2.3E-01 J	1.12E-01	mg/kg	95% UCL-T	(c)
	Aroclor 1248	mg/kg	N/A	N/A	ND	N/A			
	Aroclor 1254	mg/kg	5.38E-02	1.54E-01 (NP)	3.0E-01	1.54E-01	mg/kg	97.5% UCL-NP	(d)
	Aroclor 1260	mg/kg	5.44E-02	7.88E-02 (N)	1.7E-01 J	7.88E-02	mg/kg	95% UCL-N	(b)
	PCB TEQ*	mg/kg	1.12E-06	N/A (<4)	2.2E-06 J	2.20E-06	mg/kg	Max	(a)
	C11-C22 Aromatic	mg/kg	1.45E+01	N/A (<4)	1.8E+01 J	1.80E+01	mg/kg	Max	(a)

TABLE 3-3.1.RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

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

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)
Aberjona Triangle (a)	Vinyl chloride	mg/kg	N/A	N/A	ND	N/A			
	Trichloroethene	mg/kg	N/A	N/A	ND	N/A			
	Phenanthrene	mg/kg	N/A	N/A	ND	N/A			
	Benzo(a)Anthracene	mg/kg	2.38E-01	4.99E-01 (T)	3.80E-01 J	3.80E-01	mg/kg	Max	(c & e)
	Benzo(b)Fluoranthene	mg/kg	N/A	N/A	ND	N/A			
	Benzo(k)Fluoranthene	mg/kg	N/A	N/A	ND	N/A			
	Benzo(a)Pyrene	mg/kg	N/A	N/A	ND	N/A			
	Indeno(1,2,3-cd)pyrene	mg/kg	N/A	N/A	ND	N/A			
	Dibenz(a,h) anthracene	mg/kg	N/A	N/A	ND	N/A			
	Benzo(g,h,i)perylene	mg/kg	N/A	N/A	ND	N/A			
	Antimony	mg/kg	N/A	N/A	ND	N/A			
	Arsenic	mg/kg	4.98E+00	7.02E+00 (N)	6.50E+00	6.50E+00	mg/kg	Max	(b & e)
	Cadmium	mg/kg	1.51E+00	2.08E+00 (N)	2.10E+00	2.08E+00	mg/kg	95% UCL-N	(b)
	Copper	mg/kg	4.54E+01	8.51E+01 (N)	9.26E+01	8.51E+01	mg/kg	95% UCL-N	(b)
	Lead	mg/kg	1.85E+02	3.42E+02 (N)	3.65E+02 J	3.42E+02	mg/kg	95% UCL-N	(b)
	Manganese	mg/kg	1.83E+02	2.25E+02 (N)	2.11E+02 J	2.11E+02	mg/kg	Max	(b & e)
	Mercury	mg/kg	9.25E-02	1.68E-01 (N)	1.80E-01	1.68E-01	mg/kg	95% UCL-N	(b)
	Nickel	mg/kg	1.03E+01	1.51E+01 (N)	1.60E+01	1.51E+01	mg/kg	95% UCL-N	(b)
	Thallium	mg/kg	N/A	N/A	ND	N/A			
	Aroclor 1242	mg/kg	N/A	N/A	ND	N/A			
	Aroclor 1248	mg/kg	N/A	N/A	ND	N/A			
	Aroclor 1254	mg/kg	6.57E-02	2.67E-01 (NP)	2.96E-01	2.67E-01	mg/kg	95% UCL-NP	(d)
	Aroclor 1260	mg/kg	3.92E-02	6.97E-02 (N)	9.60E-02	6.97E-02	mg/kg	95% UCL-N	(b)
	PCB TEQ*	mg/kg	5.83E-07	N/A (<4)	6.89E-07 J	6.89E-07	mg/kg	Max	(a)
	C11-C22 Aromatic	mg/kg	N/A	N/A	ND	N/A			

TABLE 3-3.1.RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

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

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)
Whitney (a)	Vinyl chloride	mg/kg	2.82E-02	1.08E-01 (NP)	2.8E-01	1.08E-01	mg/kg	95% UCL-NP	(d)
	Trichloroethene	mg/kg	1.17E-02	1.90E-02 (NP)	1.4E-03	1.40E-03	mg/kg	Max	(d)
	Phenanthrene	mg/kg	1.29E+01	1.41E+02 (T)	6.8E+01	6.80E+01	mg/kg	Max	(c & e)
	Benzo(a)Anthracene	mg/kg	7.63E+00	6.67E+01 (T)	3.8E+01	3.80E+01	mg/kg	Max	(c & e)
	Benzo(b)Fluoranthene	mg/kg	7.50E+00	7.99E+01 (T)	4.0E+01	4.00E+01	mg/kg	Max	(c & e)
	Benzo(k)Fluoranthene	mg/kg	3.93E+00	2.67E+01 (T)	1.8E+01	1.80E+01	mg/kg	Max	(c & e)
	Benzo(a)Pyrene	mg/kg	6.47E+00	5.18E+01 (T)	2.9E+01	2.90E+01	mg/kg	Max	(c & e)
	Indeno(1,2,3-cd)pyrene	mg/kg	3.21E+00	1.10E+01 (T)	1.8E+01	1.10E+01	mg/kg	95% UCL-T	(c)
	Dibenz(a,h) anthracene	mg/kg	1.07E+00	2.98E+00 (T)	5.5E+00	2.98E+00	mg/kg	95% UCL-T	(c)
	Benzo(g,h,i)perylene	mg/kg	2.75E+00	8.20E+00 (T)	1.4E+01	8.20E+00	mg/kg	95% UCL-T	(c)
	Antimony	mg/kg	1.67E+00	2.82E+00 (NP)	6.7E+00	2.82E+00	mg/kg	95% UCL-NP	(d)
	Arsenic	mg/kg	4.94E+00	5.66E+00 (N)	8.7E+00	5.66E+00	mg/kg	95% UCL-N	(b)
	Cadmium	mg/kg	1.83E+00	2.85E+00 (T)	5.9E+00	2.85E+00	mg/kg	95% UCL-T	(c)
	Copper	mg/kg	7.11E+01	1.26E+02 (T)	3.8E+02	1.26E+02	mg/kg	95% UCL-T	(c)
	Lead	mg/kg	3.02E+02	7.27E+02 (T)	1.2E+03	7.27E+02	mg/kg	95% UCL-T	(c)
	Manganese	mg/kg	2.21E+02	2.61E+02 (N)	3.7E+02	2.61E+02	mg/kg	95% UCL-N	(b)
	Mercury	mg/kg	4.10E-01	5.49E-01 (N)	1.1E+00	5.49E-01	mg/kg	95% UCL-N	(b)
	Nickel	mg/kg	1.85E+01	2.60E+01 (T)	9.2E+01	2.60E+01	mg/kg	95% UCL-T	(c)
	Thallium	mg/kg	N/A	N/A	ND	N/A			
	Aroclor 1242	mg/kg	2.43E-01	3.81E-01 (NP)	3.3E+00	3.81E-01	mg/kg	95% UCL-NP	(d)
	Aroclor 1248	mg/kg	4.08E-02	9.48E-02 (T)	3.2E-01	9.48E-02	mg/kg	95% UCL-T	(c)
	Aroclor 1254	mg/kg	3.96E+00	6.90E+01 (T)	4.3E+01	4.25E+01	mg/kg	Max	(c & e)
	Aroclor 1260	mg/kg	2.01E+00	4.42E+01 (T)	1.2E+01	1.17E+01	mg/kg	Max	(c & e)
	PCB TEQ*	mg/kg	4.75E-05	3.40E-04 (T)	2.0E-04	1.96E-04	mg/kg	Max	(c & e)
	C11-C22 Aromatic	mg/kg	2.60E+02	4.56E+02 (N)	5.8E+02	4.56E+02	mg/kg	95% UCL-N	(b)

TABLE 3-3.1.RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

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

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)
Murphy (a)	Vinyl chloride	mg/kg	N/A	N/A	ND	N/A			
	Trichloroethene	mg/kg	1.42E-01	3.79E-01 (NP)	1.30E+00	3.79E-01	mg/kg	95% UCL-NP	(d)
	Phenanthrene	mg/kg	1.55E+00	1.20E+01 (T)	5.60E+00	5.60E+00	mg/kg	Max	(c & e)
	Benzo(a)Anthracene	mg/kg	8.06E-01	2.45E+00 (T)	3.00E+00	2.45E+00	mg/kg	95% UCL-T	(c)
	Benzo(b)Fluoranthene	mg/kg	9.31E-01	3.09E+00 (T)	2.30E+00	2.30E+00	mg/kg	Max	(c & e)
	Benzo(k)Fluoranthene	mg/kg	6.09E-01	9.28E-01 (N)	1.30E+00	9.28E-01	mg/kg	95% UCL-N	(b)
	Benzo(a)Pyrene	mg/kg	9.67E-01	1.55E+00 (N)	2.80E+00	1.55E+00	mg/kg	95% UCL-N	(b)
	Indeno(1,2,3-cd)pyrene	mg/kg	1.27E+00	1.21E+01 (T)	6.50E+00 J	6.50E+00	mg/kg	Max	(c & e)
	Dibenz(a,h) anthracene	mg/kg	2.76E-01	9.15E-01 (T)	2.10E-01	2.10E-01	mg/kg	Max	(c)
	Benzo(g,h,i)perylene	mg/kg	8.90E-01	1.36E+00 (N)	2.30E+00	1.36E+00	mg/kg	95% UCL-N	(b)
	Antimony	mg/kg	2.54E+00	3.60E+00 (N)	5.00E+00	3.60E+00	mg/kg	95% UCL-N	(b)
	Arsenic	mg/kg	5.14E+00	8.12E+00 (T)	1.00E+01	8.12E+00	mg/kg	95% UCL-T	(c)
	Cadmium	mg/kg	1.07E+00	2.96E+00 (T)	3.50E+00	2.96E+00	mg/kg	95% UCL-T	(c)
	Copper	mg/kg	2.91E+01	3.55E+01 (N)	4.80E+01	3.55E+01	mg/kg	95% UCL-N	(b)
	Lead	mg/kg	3.17E+02	8.28E+02 (T)	1.90E+03	8.28E+02	mg/kg	95% UCL-T	(c)
	Manganese	mg/kg	2.88E+02	4.11E+02 (N)	4.20E+02 J	4.11E+02	mg/kg	95% UCL-N	(b)
	Mercury	mg/kg	2.06E-01	5.76E-01 (T)	7.20E-01	5.76E-01	mg/kg	95% UCL-T	(c)
	Nickel	mg/kg	1.43E+01	1.68E+01 (N)	1.90E+01	1.68E+01	mg/kg	95% UCL-N	(b)
	Thallium	mg/kg	3.30E+00	5.71E+00 (NP)	1.00E+01	5.71E+00	mg/kg	95% UCL-NP	(d)
	Aroclor 1242	mg/kg	N/A	N/A	ND	N/A			
	Aroclor 1248	mg/kg	N/A	N/A	ND	N/A			
	Aroclor 1254	mg/kg	4.51E-01	4.80E+00 (T)	2.20E+00	2.20E+00	mg/kg	Max	(d)
	Aroclor 1260	mg/kg	3.19E-02	4.91E-02 (N)	5.30E-02	4.91E-02	mg/kg	95% UCL-N	(b)
	PCB TEQ*	mg/kg	5.84E-08	N/A (<4)	5.84E-08 J	5.84E-08	mg/kg	Max	(a)
	C11-C22 Aromatic	mg/kg	5.66E+02	3.72E+03 (T)	4.70E+03 T	3.72E+03	mg/kg	95% UCL-T	(c)

TABLE 3-3.1.RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

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

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)

(1) Only COPCs selected on Table 3-2.1 and detected at each exposure point appear.

(2) T - Transformed; N - Normal; NP - Non-parametric; <4 - sample size too small to calculate 95% UCL

(3) Statistics: Maximum Detected Value (Max); 95% UCL of Transformed Data (95% UCL - T); 95% of Normal Data (95% UCL - N); 95% of Non-parametric Data (95% UCL - NP); Arithmatic Mean (Mean).

(4) Rationale

(a) Due to small sample size (<4), the maximum detected concentration is used.

(b) Shapiro-Wilk W Test indicates data are normally distributed.

(c) Shapiro-Wilk W Test indicates data are log-normally distributed.

(d) Shapiro-Wilk W Test indicates data are neither normally nor log-normally distributed.

(e) Recommended UCL exceeds maximum detected concentration. Therefore, maximum concentration is used for EPC.

(f) When the maximum detected concentration is selected as the RME EPC, the arithmetic mean concentration is selected as the CT EPC.

(g) If the arithmetic mean concentration equals or exceeds the maximum detected concentration, the maximum detected concentration is used as the CT EPC.

J = Estimated concentration

Max = Maximum detected concentration

N/A = Not applicable

UCL = Upper confidence limit

EPC = Exposure point concentration

RME = Reasonable Maximum Exposure

CT = Central Tendency

TABLE 3-3.1.CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

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

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)
Aberjona Property (a)	Vinyl chloride	mg/kg	N/A	N/A	ND	N/A			
	Trichloroethene	mg/kg	N/A	N/A	ND	N/A			
	Phenanthrene	mg/kg	2.13E-01	6.92E-01 (T)	1.28E+00 J	6.92E-01	mg/kg	95% UCL-T	(c)
	Benzo(a)Anthracene	mg/kg	2.14E-01	7.09E-01 (T)	1.06E+00	7.09E-01	mg/kg	95% UCL-T	(c)
	Benzo(b)Fluoranthene	mg/kg	2.55E-01	7.39E-01 (NP)	1.56E+00	7.39E-01	mg/kg	95% UCL-NP	(d)
	Benzo(k)Fluoranthene	mg/kg	2.11E-01	5.14E-01 (NP)	1.06E+00	5.14E-01	mg/kg	95% UCL-NP	(d)
	Benzo(a)Pyrene	mg/kg	2.11E-01	5.15E-01 (NP)	1.06E+00	5.15E-01	mg/kg	95% UCL-NP	(d)
	Indeno(1,2,3-cd)pyrene	mg/kg	2.19E-01	5.17E-01 (NP)	1.06E+00	5.17E-01	mg/kg	95% UCL-NP	(d)
	Dibenz(a,h) anthracene	mg/kg	1.62E-01	2.13E-01 (NP)	6.20E-03 J	6.20E-03	mg/kg	Max	(g)
	Benzo(g,h,i)perylene	mg/kg	2.35E-01	5.95E-01 (NP)	1.21E+00	5.95E-01	mg/kg	95% UCL-NP	(d)
	Antimony	mg/kg	2.71E+00	3.55E+00 (NP)	1.80E+00 J	1.80E+00	mg/kg	Max	(g)
	Arsenic	mg/kg	4.50E+00	5.67E+00 (N)	1.04E+01	5.67E+00	mg/kg	95% UCL-N	(b)
	Cadmium	mg/kg	4.41E+00	9.79E+00 (T)	2.76E+01	9.79E+00	mg/kg	95% UCL-T	(c)
	Copper	mg/kg	6.15E+01	1.01E+02 (T)	1.60E+02 J	1.01E+02	mg/kg	95% UCL-T	(c)
	Lead	mg/kg	4.39E+02	1.14E+03 (T)	1.60E+03 J	1.14E+03	mg/kg	95% UCL-T	(c)
	Manganese	mg/kg	2.47E+02	2.74E+02 (N)	3.63E+02	2.74E+02	mg/kg	95% UCL-N	(b)
	Mercury	mg/kg	5.97E-02	9.47E-02 (NP)	1.80E-01	9.47E-02	mg/kg	95% UCL-NP	(d)
	Nickel	mg/kg	3.38E+01	6.46E+01 (T)	1.80E+02 J	6.46E+01	mg/kg	95% UCL-T	(c)
	Thallium	mg/kg	N/A	N/A	ND	N/A			
	Aroclor 1242	mg/kg	4.13E-02	1.12E-01 (T)	2.28E-01 J	1.12E-01	mg/kg	95% UCL-T	(c)
	Aroclor 1248	mg/kg	N/A	N/A	ND	N/A			
	Aroclor 1254	mg/kg	5.38E-02	1.54E-01 (NP)	2.96E-01	5.38E-02	mg/kg	Mean	(f)
	Aroclor 1260	mg/kg	5.44E-02	7.88E-02 (N)	1.71E-01 J	7.88E-02	mg/kg	95% UCL-N	(b)
	PCB TEQ*	mg/kg	1.12E-06	N/A (<4)	2.20E-06 J	1.12E-06	mg/kg	Mean	(f)
	C11-C22 Aromatic	mg/kg	1.45E+01	N/A (<4)	1.80E+01 J	1.45E+01	mg/kg	Mean	(f)

TABLE 3-3.1.CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

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

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)
Aberjona Triangle (a)	Vinyl chloride	mg/kg	N/A	N/A	ND	N/A			
	Trichloroethene	mg/kg	N/A	N/A	ND	N/A			
	Phenanthrene	mg/kg	N/A	N/A	ND	N/A			
	Benzo(a)Anthracene	mg/kg	2.38E-01	4.99E-01 (T)	3.80E-01 J	2.38E-01	mg/kg	Mean	(f)
	Benzo(b)Fluoranthene	mg/kg	N/A	N/A	ND	N/A			
	Benzo(k)Fluoranthene	mg/kg	N/A	N/A	ND	N/A			
	Benzo(a)Pyrene	mg/kg	N/A	N/A	ND	N/A			
	Indeno(1,2,3-cd)pyrene	mg/kg	N/A	N/A	ND	N/A			
	Dibenz(a,h) anthracene	mg/kg	N/A	N/A	ND	N/A			
	Benzo(g,h,i)perylene	mg/kg	N/A	N/A	ND	N/A			
	Antimony	mg/kg	N/A	N/A	ND	N/A			
	Arsenic	mg/kg	4.98E+00	7.02E+00 (N)	6.50E+00	4.98E+00	mg/kg	Mean	(f)
	Cadmium	mg/kg	1.51E+00	2.08E+00 (N)	2.10E+00	2.08E+00	mg/kg	95% UCL-N	(b)
	Copper	mg/kg	4.54E+01	8.51E+01 (N)	9.26E+01	8.51E+01	mg/kg	95% UCL-N	(b)
	Lead	mg/kg	1.85E+02	3.42E+02 (N)	3.65E+02 J	3.42E+02	mg/kg	95% UCL-N	(b)
	Manganese	mg/kg	1.83E+02	2.25E+02 (N)	2.11E+02 J	1.83E+02	mg/kg	Mean	(f)
	Mercury	mg/kg	9.25E-02	1.68E-01 (N)	1.80E-01	1.68E-01	mg/kg	95% UCL-N	(b)
	Nickel	mg/kg	1.03E+01	1.51E+01 (N)	1.60E+01	1.51E+01	mg/kg	95% UCL-N	(b)
	Thallium	mg/kg	N/A	N/A	ND	N/A			
	Aroclor 1242	mg/kg	N/A	N/A	ND	N/A			
	Aroclor 1248	mg/kg	N/A	N/A	ND	N/A			
	Aroclor 1254	mg/kg	6.57E-02	2.67E-01 (NP)	2.96E-01	2.67E-01	mg/kg	95% UCL-NP	(d)
	Aroclor 1260	mg/kg	3.92E-02	6.97E-02 (N)	9.60E-02	6.97E-02	mg/kg	95% UCL-N	(b)
	PCB TEQ*	mg/kg	5.83E-07	N/A (<4)	6.89E-07 J	5.83E-07	mg/kg	Mean	(f)
	C11-C22 Aromatic	mg/kg	N/A	N/A	ND	N/A			

TABLE 3-3.1.CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

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

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)
Whitney (a)	Vinyl chloride	mg/kg	2.82E-02	1.08E-01 (NP)	2.80E-01	1.08E-01	mg/kg	95% UCL-NP	(d)
	Trichloroethene	mg/kg	1.17E-02	1.90E-02 (NP)	1.40E-03	1.40E-03	mg/kg	Max	(g)
	Phenanthrene	mg/kg	1.29E+01	1.41E+02 (T)	6.80E+01	1.29E+01	mg/kg	Mean	(f)
	Benzo(a)Anthracene	mg/kg	7.63E+00	6.67E+01 (T)	3.80E+01	7.63E+00	mg/kg	Mean	(f)
	Benzo(b)Fluoranthene	mg/kg	7.50E+00	7.99E+01 (T)	4.00E+01	7.50E+00	mg/kg	Mean	(f)
	Benzo(k)Fluoranthene	mg/kg	3.93E+00	2.67E+01 (T)	1.80E+01	3.93E+00	mg/kg	Mean	(f)
	Benzo(a)Pyrene	mg/kg	6.47E+00	5.18E+01 (T)	2.90E+01	6.47E+00	mg/kg	Mean	(f)
	Indeno(1,2,3-cd)pyrene	mg/kg	3.21E+00	1.10E+01 (T)	1.80E+01	1.10E+01	mg/kg	95% UCL-T	(c)
	Dibenz(a,h) anthracene	mg/kg	1.07E+00	2.98E+00 (T)	5.50E+00	2.98E+00	mg/kg	95% UCL-T	(c)
	Benzo(g,h,i)perylene	mg/kg	2.75E+00	8.20E+00 (T)	1.40E+01	8.20E+00	mg/kg	95% UCL-T	(c)
	Antimony	mg/kg	1.67E+00	2.82E+00 (NP)	6.68E+00	2.82E+00	mg/kg	95% UCL-NP	(d)
	Arsenic	mg/kg	4.94E+00	5.66E+00 (N)	8.74E+00	5.66E+00	mg/kg	95% UCL-N	(b)
	Cadmium	mg/kg	1.83E+00	2.85E+00 (T)	5.90E+00	2.85E+00	mg/kg	95% UCL-T	(c)
	Copper	mg/kg	7.11E+01	1.26E+02 (T)	3.78E+02	1.26E+02	mg/kg	95% UCL-T	(c)
	Lead	mg/kg	3.02E+02	7.27E+02 (T)	1.21E+03	7.27E+02	mg/kg	95% UCL-T	(c)
	Manganese	mg/kg	2.21E+02	2.61E+02 (N)	3.70E+02	2.61E+02	mg/kg	95% UCL-N	(b)
	Mercury	mg/kg	4.10E-01	5.49E-01 (N)	1.10E+00	5.49E-01	mg/kg	95% UCL-N	(b)
	Nickel	mg/kg	1.85E+01	2.60E+01 (T)	9.20E+01	2.60E+01	mg/kg	95% UCL-T	(c)
	Thallium	mg/kg	N/A	N/A	ND	N/A			
	Aroclor 1242	mg/kg	2.43E-01	3.81E-01 (NP)	3.25E+00	3.81E-01	mg/kg	95% UCL-NP	(d)
	Aroclor 1248	mg/kg	4.08E-02	9.48E-02 (T)	3.24E-01	9.48E-02	mg/kg	95% UCL-T	(c)
	Aroclor 1254	mg/kg	3.96E+00	6.90E+01 (T)	4.25E+01	3.96E+00	mg/kg	Mean	(f)
	Aroclor 1260	mg/kg	2.01E+00	4.42E+01 (T)	1.17E+01	2.01E+00	mg/kg	Mean	(f)
	PCB TEQ*	mg/kg	4.75E-05	3.40E-04 (T)	1.96E-04	4.75E-05	mg/kg	Mean	(f)
	C11-C22 Aromatic	mg/kg	2.60E+02	4.56E+02 (N)	5.79E+02	4.56E+02	mg/kg	95% UCL-N	(b)

TABLE 3-3.1.CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

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

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)
Murphy (a)	Vinyl chloride	mg/kg	N/A	N/A	ND	N/A			
	Trichloroethene	mg/kg	1.42E-01	3.79E-01 (NP)	1.30E+00	3.79E-01	mg/kg	95% UCL-NP	(d)
	Phenanthrene	mg/kg	1.55E+00	1.20E+01 (T)	5.60E+00	1.55E+00	mg/kg	Mean	(f)
	Benzo(a)Anthracene	mg/kg	8.06E-01	2.45E+00 (T)	3.00E+00	2.45E+00	mg/kg	95% UCL-T	(c)
	Benzo(b)Fluoranthene	mg/kg	9.31E-01	3.09E+00 (T)	2.30E+00	9.31E-01	mg/kg	Mean	(f)
	Benzo(k)Fluoranthene	mg/kg	6.09E-01	9.28E-01 (N)	1.30E+00	9.28E-01	mg/kg	95% UCL-N	(b)
	Benzo(a)Pyrene	mg/kg	9.67E-01	1.55E+00 (N)	2.80E+00	1.55E+00	mg/kg	95% UCL-N	(b)
	Indeno(1,2,3-cd)pyrene	mg/kg	1.27E+00	1.21E+01 (T)	6.50E+00 J	1.27E+00	mg/kg	Mean	(f)
	Dibenz(a,h) anthracene	mg/kg	2.76E-01	9.15E-01 (T)	2.10E-01	2.10E-01	mg/kg	Max	(g)
	Benzo(g,h,i)perylene	mg/kg	8.90E-01	1.36E+00 (N)	2.30E+00	1.36E+00	mg/kg	95% UCL-N	(b)
	Antimony	mg/kg	2.54E+00	3.60E+00 (N)	5.00E+00	3.60E+00	mg/kg	95% UCL-N	(b)
	Arsenic	mg/kg	5.14E+00	8.12E+00 (T)	1.00E+01	8.12E+00	mg/kg	95% UCL-T	(c)
	Cadmium	mg/kg	1.07E+00	2.96E+00 (T)	3.50E+00	2.96E+00	mg/kg	95% UCL-T	(c)
	Copper	mg/kg	2.91E+01	3.55E+01 (N)	4.80E+01	3.55E+01	mg/kg	95% UCL-N	(b)
	Lead	mg/kg	3.17E+02	8.28E+02 (T)	1.90E+03	8.28E+02	mg/kg	95% UCL-T	(c)
	Manganese	mg/kg	2.88E+02	4.11E+02 (N)	4.20E+02 J	4.11E+02	mg/kg	95% UCL-N	(b)
	Mercury	mg/kg	2.06E-01	5.76E-01 (T)	7.20E-01	5.76E-01	mg/kg	95% UCL-T	(c)
	Nickel	mg/kg	1.43E+01	1.68E+01 (N)	1.90E+01	1.68E+01	mg/kg	95% UCL-N	(b)
	Thallium	mg/kg	3.30E+00	5.71E+00 (NP)	1.00E+01	5.71E+00	mg/kg	95% UCL-NP	(d)
	Aroclor 1242	mg/kg	N/A	N/A	ND	N/A			
	Aroclor 1248	mg/kg	N/A	N/A	ND	N/A			
	Aroclor 1254	mg/kg	4.51E-01	4.80E+00 (T)	2.20E+00	4.51E-01	mg/kg	Mean	(f)
	Aroclor 1260	mg/kg	3.19E-02	4.91E-02 (N)	5.30E-02	4.91E-02	mg/kg	95% UCL-N	(b)
	PCB TEQ*	mg/kg	5.84E-08	N/A (<4)	5.84E-08 J	5.84E-08	mg/kg	Max	(g)
	C11-C22 Aromatic	mg/kg	5.66E+02	3.72E+03 (T)	4.70E+03 T	3.72E+03	mg/kg	95% UCL-T	(c)

TABLE 3-3.1.CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

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

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)

(1) Only COPCs selected on Table 3-2.1 and detected at each exposure point appear.

(2) T - Transformed; N - Normal; NP - Non-parametric; <4 - sample size too small to calculate 95% UCL

(3) Statistics: Maximum Detected Value (Max); 95% UCL of Transformed Data (95% UCL - T); 95% of Normal Data (95% UCL - N); 95% of Non-parametric Data (95% UCL - NP); Arithmatic Mean (Mean).

(4) Rationale

(a) Due to small sample size (<4), the maximum detected concentration is used.

(b) Shapiro-Wilk W Test indicates data are normally distributed.

(c) Shapiro-Wilk W Test indicates data are log-normally distributed.

(d) Shapiro-Wilk W Test indicates data are neither normally nor log-normally distributed.

(e) Recommended UCL exceeds maximum detected concentration. Therefore, maximum concentration is used for EPC.

(f) When the maximum detected concentration is selected as the RME EPC, the arithmetic mean concentration is selected as the CT EPC.

(g) If the arithmetic mean concentration equals or exceeds the maximum detected concentration, the maximum detected concentration is used as the CT

J = Estimated concentration

Max = Maximum detected concentration

N/A = Not applicable

UCL = Upper confidence limit

EPC = Exposure point concentration

RME = Reasonable Maximum Exposure

CT = Central Tendency

TABLE 3-3.2.RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe:	Future
Medium:	Soil
Exposure Medium:	Subsurface Soil

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)
Aberjona Property (a)	1,2,4-Trimethylbenzene	mg/kg	N/A	N/A	ND	N/A			
	1,3,5-Trimethylbenzene	mg/kg	N/A	N/A	ND	N/A			
	Naphthalene	mg/kg	2.42E+00	1.18E+01 (NP)	2.6E+01 J	1.18E+01	mg/kg	95% UCL-NP	(d)
	Vinyl chloride	mg/kg	N/A	N/A	ND	N/A			
	Methylene chloride	mg/kg	N/A	N/A	ND	N/A			
	cis-1,2-Dichloroethene	mg/kg	N/A	N/A	ND	N/A			
	Trichloroethene	mg/kg	N/A	N/A	ND	N/A			
	Xylenes (total)	mg/kg	4.84E-01	2.57E+00 (NP)	4.8E+00 J	2.57E+00	mg/kg	95% UCL-NP	(d)
	2-Methylnaphthalene	mg/kg	3.00E+00	1.47E+01 (NP)	3.2E+01 J	1.47E+01	mg/kg	95% UCL-NP	(d)
	2,4,6-Trichlorophenol	mg/kg	N/A	N/A	ND	N/A			
	Acenaphthylene	mg/kg	8.73E-01	3.29E+00 (NP)	6.9E+00 J	3.29E+00	mg/kg	95% UCL-NP	(d)
	Phenanthrene	mg/kg	6.55E-01	2.41E+00 (NP)	5.0E+00 J	2.41E+00	mg/kg	95% UCL-NP	(d)
	Benzo(a)Anthracene	mg/kg	2.86E-01	6.35E-01 (NP)	2.5E-02 J	2.50E-02	mg/kg	Max	(d)
	Bis(2-ethylhexyl) phthalat	mg/kg	N/A	N/A	ND	N/A			
	Benzo(b)Fluoranthene	mg/kg	2.88E-01	6.34E-01 (NP)	5.1E-02 J	5.10E-02	mg/kg	Max	(d)
	Benzo(k)Fluoranthene	mg/kg	8.50E-01	3.65E+00 (NP)	7.9E+00 J	3.65E+00	mg/kg	95% UCL-NP	(d)
	Benzo(a)Pyrene	mg/kg	5.00E-01	1.77E+00 (NP)	3.7E+00 J	1.77E+00	mg/kg	95% UCL-NP	(d)
	Indeno(1,2,3-cd)pyrene	mg/kg	5.83E-01	2.22E+00 (NP)	4.7E+00 J	2.22E+00	mg/kg	95% UCL-NP	(d)
	Dibenz(a,h) anthracene	mg/kg	4.34E-01	1.38E+00 (NP)	2.8E+00 J	1.38E+00	mg/kg	95% UCL-NP	(d)
	Antimony	mg/kg	4.11E+00	5.10E+00 (NP)	3.7E+00	3.74E+00	mg/kg	Max	(d)
	Arsenic	mg/kg	6.45E+00	2.09E+01 (NP)	4.3E+01 J	2.09E+01	mg/kg	95% UCL-NP	(d)
	Barium	mg/kg	4.92E+01	1.55E+02 (T)	2.0E+02	1.55E+02	mg/kg	95% UCL-T	(c)
	Cadmium	mg/kg	1.54E+00	3.30E+00 (T)	8.2E+00	3.30E+00	mg/kg	95% UCL-T	(c)
	Lead	mg/kg	7.33E+01	1.85E+02 (T)	6.4E+02	1.85E+02	mg/kg	95% UCL-T	(c)

TABLE 3-3.2.RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe:	Future
Medium:	Soil
Exposure Medium:	Subsurface Soil

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)
Whitney Property (a)	Manganese	mg/kg	1.05E+02	2.60E+02 (T)	3.2E+02	2.60E+02	mg/kg	95% UCL-T	(c)
	Mercury	mg/kg	1.48E-01	4.87E-01 (NP)	1.0E+00	4.87E-01	mg/kg	95% UCL-NP	(d)
	Thallium	mg/kg	N/A	N/A	ND	N/A			
	alpha-Chlordane	mg/kg	1.61E-03	3.91E-03 (NP)	6.3E-03 J	3.91E-03	mg/kg	95% UCL-NP	(d)
	gamma-Chlordane	mg/kg	1.75E-03	4.65E-03 (NP)	7.7E-03 J	4.65E-03	mg/kg	95% UCL-NP	(d)
	4,4'-DDE	mg/kg	2.73E-03	5.04E-03 (NP)	7.4E-03 J	5.04E-03	mg/kg	95% UCL-NP	(d)
	4,4'-DDT	mg/kg	6.32E-03	1.64E-02 (NP)	2.2E-02	1.64E-02	mg/kg	95% UCL-NP	(d)
	Aroclor 1242	mg/kg	4.59E-02	1.61E-01 (NP)	2.8E-01	1.61E-01	mg/kg	95% UCL-NP	(d)
	Aroclor 1248	mg/kg	N/A	N/A	ND	N/A			
	Aroclor 1254	mg/kg	N/A	N/A	ND	N/A			
	Aroclor 1260	mg/kg	4.66E-02	1.37E-01 (NP)	2.3E-01	1.37E-01	mg/kg	95% UCL-NP	(d)
	PCB TEQ*	mg/kg	4.50E-06	N/A (<4)	7.7E-06 J	7.65E-06	mg/kg	Max	(a)
	C5-C8 Aliphatic	mg/kg	1.05E+01	N/A (<4)	1.9E+01 J	1.90E+01	mg/kg	Max	(a)
	C9-C10 Aromatic	mg/kg	1.77E+02	N/A (<4)	1.8E+02 J	1.77E+02	mg/kg	Max	(a)
	C9-C18 Aliphatic	mg/kg	1.22E+03	N/A (<4)	2.4E+03 J	2.43E+03	mg/kg	Max	(a)
	C19-C36 Aliphatic	mg/kg	3.43E+02	N/A (<4)	6.4E+02 J	6.40E+02	mg/kg	Max	(a)
	C11-C22 Aromatic	mg/kg	9.24E+02	N/A (<4)	1.7E+03 J	1.72E+03	mg/kg	Max	(a)
	1,2,4-Trimethylbenzene	mg/kg	N/A	N/A	ND	N/A			
	1,3,5-Trimethylbenzene	mg/kg	N/A	N/A	ND	N/A			
	Naphthalene	mg/kg	2.44E+00	2.32E+01 (T)	1.2E+01 J	1.20E+01	mg/kg	Max	(c & e)
	Vinyl chloride	mg/kg	1.14E-01	3.38E-01 (NP)	3.9E-01	3.38E-01	mg/kg	95% UCL-NP	(d)
	Methylene chloride	mg/kg	3.79E-01	3.08E+00 (T)	2.7E+00	2.69E+00	mg/kg	Max	(c & e)
	cis-1,2-Dichloroethene	mg/kg	1.22E-01	1.69E+00 (T)	3.8E-01	3.80E-01	mg/kg	Max	(c & e)
	Trichloroethene	mg/kg	1.39E-01	4.92E-01 (NP)	7.4E-01	4.92E-01	mg/kg	95% UCL-NP	(d)

TABLE 3-3.2.RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe:	Future
Medium:	Soil
Exposure Medium:	Subsurface Soil

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)
	Xylenes (total)	mg/kg	6.38E-01	1.27E+01 (T)	3.3E+00	3.33E+00	mg/kg	Max	(c & e)
	2-Methylnaphthalene	mg/kg	4.43E+00	4.38E+01 (T)	2.0E+01 J	2.00E+01	mg/kg	Max	(c & e)
	2,4,6-Trichlorophenol	mg/kg	7.03E-01	1.77E+00 (T)	1.4E+00 J	1.40E+00	mg/kg	Max	(c)
	Acenaphthylene	mg/kg	2.26E-01	2.82E+00 (T)	1.9E-02	1.90E-02	mg/kg	Max	(c & e)
	Phenanthrene	mg/kg	1.82E+00	2.93E+00 (N)	4.7E+00	2.93E+00	mg/kg	95% UCL-N	(b)
	Benzo(a)Anthracene	mg/kg	8.50E-01	1.22E+00 (N)	1.8E+00	1.22E+00	mg/kg	95% UCL-N	(b)
	Bis(2-ethylhexyl) phthalat	mg/kg	7.20E+01	2.94E+02 (NP)	4.4E+02 J	2.94E+02	mg/kg	95% UCL-NP	(d & e)
	Benzo(b)Fluoranthene	mg/kg	1.07E+00	1.49E+00 (N)	1.8E+00 J	1.49E+00	mg/kg	95% UCL-N	(b)
	Benzo(k)Fluoranthene	mg/kg	6.21E-01	9.85E-01 (N)	1.8E+00	9.85E-01	mg/kg	95% UCL-N	(b)
	Benzo(a)Pyrene	mg/kg	8.67E-01	1.23E+00 (N)	1.8E+00 J	1.23E+00	mg/kg	95% UCL-N	(b)
	Indeno(1,2,3-cd)pyrene	mg/kg	6.24E-01	8.70E-01 (N)	9.7E-01	8.70E-01	mg/kg	95% UCL-N	(b)
	Dibenz(a,h) anthracene	mg/kg	1.85E-01	2.32E-01 (N)	3.0E-01 J	2.32E-01	mg/kg	95% UCL-N	(b)
	Antimony	mg/kg	4.42E+00	6.50E+00 (N)	1.0E+01	6.50E+00	mg/kg	95% UCL-N	(b)
	Arsenic	mg/kg	1.04E+01	2.80E+01 (T)	3.2E+01	2.80E+01	mg/kg	95% UCL-T	(c)
	Barium	mg/kg	1.00E+02	1.66E+02 (N)	2.2E+02	1.66E+02	mg/kg	95% UCL-N	(b)
	Cadmium	mg/kg	3.61E+00	6.05E+00 (N)	8.3E+00	6.05E+00	mg/kg	95% UCL-N	(b)
	Lead	mg/kg	3.01E+02	5.76E+02 (N)	1.0E+03 J	5.76E+02	mg/kg	95% UCL-N	(b)
	Manganese	mg/kg	1.71E+02	2.51E+02 (N)	3.3E+02 J	2.51E+02	mg/kg	95% UCL-N	(b)
	Mercury	mg/kg	2.44E+00	1.67E+01 (T)	1.2E+01	1.20E+01	mg/kg	Max	(c & e)
	Thallium	mg/kg	N/A	N/A	ND	N/A			
	alpha-Chlordane	mg/kg	6.20E+01	5.37E+02 (T)	4.2E+02 J	4.17E+02	mg/kg	Max	(c & e)
	gamma-Chlordane	mg/kg	6.11E-03	3.82E+02 (T)	3.0E+02 J	2.99E+02	mg/kg	Max	(c & e)
	4,4'-DDE	mg/kg	1.79E+01	1.72E+02 (T)	1.2E+02 J	1.18E+02	mg/kg	Max	(c & e)
	4,4'-DDT	mg/kg	5.29E-03	6.57E+02 (T)	2.9E+02 J	2.90E+02	mg/kg	Max	(c & e)

TABLE 3-3.2.RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe:	Future
Medium:	Soil
Exposure Medium:	Subsurface Soil

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)
	Aroclor 1242	mg/kg	N/A	N/A	ND	N/A			
	Aroclor 1248	mg/kg	1.40E+02	7.48E+02 (NP)	9.8E+02 J	7.48E+02	mg/kg	95% UCL-NP	(d)
	Aroclor 1254	mg/kg	7.67E+01	4.10E+02 (NP)	5.4E+02 J	4.10E+02	mg/kg	95% UCL-NP	(d)
	Aroclor 1260	mg/kg	4.33E+01	2.26E+02 (NP)	3.0E+02 J	2.26E+02	mg/kg	95% UCL-NP	(d)
	PCB TEQ*	mg/kg	1.40E-03	N/A (<4)	3.7E-03 J	3.72E-03	mg/kg	Max	(a)
	C5-C8 Aliphatic	mg/kg	5.20E+01	N/A (<4)	1.4E+02 J	1.44E+02	mg/kg	Max	(a)
	C9-C10 Aromatic	mg/kg	4.98E+02	N/A (<4)	5.0E+02 J	4.98E+02	mg/kg	Max	(a)
	C9-C18 Aliphatic	mg/kg	2.73E+03	N/A (<4)	6.0E+03 J	6.04E+03	mg/kg	Max	(a)
	C19-C36 Aliphatic	mg/kg	1.61E+03	N/A (<4)	4.1E+03 J	4.12E+03	mg/kg	Max	(a)
	C11-C22 Aromatic	mg/kg	2.24E+03	N/A (<4)	4.1E+03 J	4.10E+03	mg/kg	Max	(a)
Murphy Property (a)	1,2,4-Trimethylbenzene	mg/kg	2.08E+00	1.06E+01 (NP)	4.5E+01	1.06E+01	mg/kg	95% UCL-NP	(d)
	1,3,5-Trimethylbenzene	mg/kg	9.34E-01	4.52E+00 (NP)	1.9E+01	4.52E+00	mg/kg	95% UCL-NP	(d)
	Naphthalene	mg/kg	1.24E+00	3.69E+00 (NP)	2.7E+01	3.69E+00	mg/kg	95% UCL-NP	(d)
	Vinyl chloride	mg/kg	N/A	N/A	ND	N/A			
	Methylene chloride	mg/kg	6.66E-01	2.72E+00 (NP)	2.1E+01 J	2.72E+00	mg/kg	95% UCL-NP	(d)
	cis-1,2-Dichloroethene	mg/kg	4.36E-01	2.25E+00 (NP)	1.0E+01	2.25E+00	mg/kg	95% UCL-NP	(d)
	Trichloroethene	mg/kg	9.47E-02	2.82E-01 (NP)	2.1E+00 J	2.82E-01	mg/kg	95% UCL-NP	(d)
	Xylenes (total)	mg/kg	9.99E-01	4.10E+00 (NP)	4.8E+01	4.10E+00	mg/kg	95% UCL-NP	(d)
	2-Methylnaphthalene	mg/kg	6.06E-01	1.07E+00 (NP)	2.2E+00	1.07E+00	mg/kg	95% UCL-NP	(d)
	2,4,6-Trichlorophenol	mg/kg	N/A	N/A	ND	N/A			
	Acenaphthylene	mg/kg	8.04E-01	1.60E+00 (NP)	3.2E+00	1.60E+00	mg/kg	95% UCL-NP	(d)
	Phenanthrene	mg/kg	1.04E+00	1.77E+00 (NP)	9.0E+00	1.77E+00	mg/kg	95% UCL-NP	(d)
	Benzo(a)Anthracene	mg/kg	8.37E-01	1.48E+00 (NP)	4.9E+00	1.48E+00	mg/kg	95% UCL-NP	(d)
	Bis(2-ethylhexyl) phthalat	mg/kg	2.82E+00	1.17E+01 (NP)	3.3E+01	1.17E+01	mg/kg	95% UCL-NP	(d)

TABLE 3-3.2.RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe:	Future
Medium:	Soil
Exposure Medium:	Subsurface Soil

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)
	Benzo(b)Fluoranthene	mg/kg	8.56E-01	1.49E+00 (NP)	5.2E+00	1.49E+00	mg/kg	95% UCL-NP	(d)
	Benzo(k)Fluoranthene	mg/kg	7.31E-01	1.82E+00 (NP)	2.3E+00	1.82E+00	mg/kg	95% UCL-NP	(d)
	Benzo(a)Pyrene	mg/kg	8.73E-01	1.58E+00 (NP)	5.9E+00	1.58E+00	mg/kg	95% UCL-NP	(d)
	Indeno(1,2,3-cd)pyrene	mg/kg	6.64E-01	1.49E+00 (NP)	2.3E+00	1.49E+00	mg/kg	95% UCL-NP	(d)
	Dibenz(a,h) anthracene	mg/kg	5.98E-01	1.51E+00 (NP)	3.8E-01	3.80E-01	mg/kg	Max	(d)
	Antimony	mg/kg	2.50E+00	2.85E+00 (NP)	6.0E+00	2.85E+00	mg/kg	95% UCL-NP	(d)
	Arsenic	mg/kg	3.53E+00	3.98E+00 (NP)	9.3E+00	3.98E+00	mg/kg	95% UCL-NP	(d)
	Barium	mg/kg	1.43E+02	3.36E+02 (T)	9.8E+02	3.36E+02	mg/kg	95% UCL-T	(d)
	Cadmium	mg/kg	9.11E-01	1.26E+00 (NP)	4.8E+00	1.26E+00	mg/kg	95% UCL-NP	(d)
	Lead	mg/kg	2.56E+02	5.03E+02 (T)	6.5E+03	5.03E+02	mg/kg	95% UCL-T	(d)
	Manganese	mg/kg	1.20E+02	1.83E+02 (N)	1.8E+02	1.82E+02	mg/kg	Max	(b & e)
	Mercury	mg/kg	5.26E-02	7.55E-02 (NP)	3.3E-01	7.55E-02	mg/kg	95% UCL-NP	(d)
	Thallium	mg/kg	6.45E+00	8.86E+00 (NP)	3.0E+01	8.86E+00	mg/kg	95% UCL-NP	(d)
	alpha-Chlordane	mg/kg	4.91E-02	1.21E-01 (N)	1.3E-01	1.21E-01	mg/kg	95% UCL-N	(b)
	gamma-Chlordane	mg/kg	5.03E-02	1.23E-01 (N)	1.3E-01	1.23E-01	mg/kg	95% UCL-N	(b)
	4,4'-DDE	mg/kg	N/A	N/A	ND	N/A			
	4,4'-DDT	mg/kg	N/A	N/A	ND	N/A			
	Aroclor 1242	mg/kg	N/A	N/A	ND	N/A			
	Aroclor 1248	mg/kg	1.40E-01	6.20E-01 (NP)	8.0E-01	6.20E-01	mg/kg	95% UCL-NP	(d)
	Aroclor 1254	mg/kg	7.23E-02	1.95E-01 (NP)	2.0E-01	1.95E-01	mg/kg	95% UCL-NP	(d)
	Aroclor 1260	mg/kg	N/A	N/A	ND	N/A			
	PCB TEQ*	mg/kg	N/A	N/A	ND	N/A			
	C5-C8 Aliphatic	mg/kg	1.00E+00	N/A (<4)	1.0E+00 J	1.00E+00	mg/kg	Max	(a)
	C9-C10 Aromatic	mg/kg	N/A	N/A	ND	N/A			

TABLE 3-3.2.RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe:	Future
Medium:	Soil
Exposure Medium:	Subsurface Soil

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)
	C9-C18 Aliphatic	mg/kg	N/A	N/A	ND	N/A			
	C19-C36 Aliphatic	mg/kg	N/A	N/A	ND	N/A			
	C11-C22 Aromatic	mg/kg	3.27E+03	6.72E+03 (NP)	7.2E+04 T	6.72E+03	mg/kg	95% UCL-NP	(d)

(1) Only COPCs selected on Table 3-2.2 and detected at each exposure point appear.

(2) T - Transformed; N - Normal; NP - Non-parametric; <4 - sample size too small to calculate 95% UCL

(3) Statistics: Maximum Detected Value (Max); 95% UCL of Transformed Data (95% UCL - T); 95% of Normal Data (95% UCL - N); 95% of Non-parametric Data (95% UCL - NP); Arithmatic Mean (Mean).

(4) Rationale

(a) Due to small sample size (<4), the maximum detected concentration is used.

(b) Shapiro-Wilk W Test indicates data are normally distributed.

(c) Shapiro-Wilk W Test indicates data are log-normally distributed.

(d) Shapiro-Wilk W Test indicates data are neither normally nor log-normally distributed.

(e) Recommended UCL exceeds maximum detected concentration. Therefore, maximum concentration is used for EPC.

(f) Due to high standard deviation, the maximum concentration is used.

(g) When the maximum detected concentration is selected as the RME EPC, the arithmetic mean concentration is selected as the CT EPC.

(h) If the arithmetic mean concentration equals or exceeds the maximum detected concentration, the maximum detected concentration is used as the CT EPC

J = Estimated concentration

Max = Maximum detected concentration

N/A = Not applicable

UCL = Upper confidence limit

EPC = Exposure point concentration

RME = Reasonable Maximum Exposure

CT = Central Tendency

TABLE 3-3.2.CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe:	Future
Medium:	Soil
Exposure Medium:	Subsurface Soil

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)
Aberjona Property (a)	1,2,4-Trimethylbenzene	mg/kg	N/A	N/A	ND	N/A			
	1,3,5-Trimethylbenzene	mg/kg	N/A	N/A	ND	N/A			
	Naphthalene	mg/kg	2.42E+00	1.18E+01 (NP)	2.6E+01 J	1.18E+01	mg/kg	95% UCL-NP	(d)
	Vinyl chloride	mg/kg	N/A	N/A	ND	N/A			
	Methylene chloride	mg/kg	N/A	N/A	ND	N/A			
	cis-1,2-Dichloroethene	mg/kg	N/A	N/A	ND	N/A			
	Trichloroethene	mg/kg	N/A	N/A	ND	N/A			
	Xylenes (total)	mg/kg	4.84E-01	2.57E+00 (NP)	4.8E+00 J	2.57E+00	mg/kg	95% UCL-NP	(d)
	2-Methylnaphthalene	mg/kg	3.00E+00	1.47E+01 (NP)	3.2E+01 J	1.47E+01	mg/kg	95% UCL-NP	(d)
	2,4,6-Trichlorophenol	mg/kg	N/A	N/A	ND	N/A			
	Acenaphthylene	mg/kg	8.73E-01	3.29E+00 (NP)	6.9E+00 J	3.29E+00	mg/kg	95% UCL-NP	(d)
	Phenanthrene	mg/kg	6.55E-01	2.41E+00 (NP)	5.0E+00 J	2.41E+00	mg/kg	95% UCL-NP	(d)
	Benzo(a)Anthracene	mg/kg	2.86E-01	6.35E-01 (NP)	2.5E-02 J	2.50E-02	mg/kg	Max	(h)
	Bis(2-ethylhexyl) phthalat	mg/kg	N/A	N/A	ND	N/A			
	Benzo(b)Fluoranthene	mg/kg	2.88E-01	6.34E-01 (NP)	5.1E-02 J	5.10E-02	mg/kg	Max	(h)
	Benzo(k)Fluoranthene	mg/kg	8.50E-01	3.65E+00 (NP)	7.9E+00 J	3.65E+00	mg/kg	95% UCL-NP	(d)
	Benzo(a)Pyrene	mg/kg	5.00E-01	1.77E+00 (NP)	3.7E+00 J	1.77E+00	mg/kg	95% UCL-NP	(d)
	Indeno(1,2,3-cd)pyrene	mg/kg	5.83E-01	2.22E+00 (NP)	4.7E+00 J	2.22E+00	mg/kg	95% UCL-NP	(d)
	Dibenz(a,h) anthracene	mg/kg	4.34E-01	1.38E+00 (NP)	2.8E+00 J	1.38E+00	mg/kg	95% UCL-NP	(d)
	Antimony	mg/kg	4.11E+00	5.10E+00 (NP)	3.7E+00	3.74E+00	mg/kg	Max	(h)
	Arsenic	mg/kg	6.45E+00	2.09E+01 (NP)	4.3E+01 J	2.09E+01	mg/kg	95% UCL-NP	(d)
	Barium	mg/kg	4.92E+01	1.55E+02 (T)	2.0E+02	1.55E+02	mg/kg	95% UCL-T	(c)
	Cadmium	mg/kg	1.54E+00	3.30E+00 (T)	8.2E+00	3.30E+00	mg/kg	95% UCL-T	(c)
	Lead	mg/kg	7.33E+01	1.85E+02 (T)	6.4E+02	1.85E+02	mg/kg	95% UCL-T	(c)

TABLE 3-3.2.CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe:	Future
Medium:	Soil
Exposure Medium:	Subsurface Soil

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)
	Manganese	mg/kg	1.05E+02	2.60E+02 (T)	3.2E+02	2.60E+02	mg/kg	95% UCL-T	(c)
	Mercury	mg/kg	1.48E-01	4.87E-01 (NP)	1.0E+00	4.87E-01	mg/kg	95% UCL-NP	(d)
	Thallium	mg/kg	N/A	N/A	ND	N/A			
	alpha-Chlordane	mg/kg	1.61E-03	3.91E-03 (NP)	6.3E-03 J	3.91E-03	mg/kg	95% UCL-NP	(d)
	gamma-Chlordane	mg/kg	1.75E-03	4.65E-03 (NP)	7.7E-03 J	4.65E-03	mg/kg	95% UCL-NP	(d)
	4,4'-DDE	mg/kg	2.73E-03	5.04E-03 (NP)	7.4E-03 J	5.04E-03	mg/kg	95% UCL-NP	(d)
	4,4'-DDT	mg/kg	6.32E-03	1.64E-02 (NP)	2.2E-02	1.64E-02	mg/kg	95% UCL-NP	(d)
	Aroclor 1242	mg/kg	4.59E-02	1.61E-01 (NP)	2.8E-01	1.61E-01	mg/kg	95% UCL-NP	(d)
	Aroclor 1248	mg/kg	N/A	N/A	ND	N/A			
	Aroclor 1254	mg/kg	N/A	N/A	ND	N/A			
	Aroclor 1260	mg/kg	4.66E-02	1.37E-01 (NP)	2.3E-01	1.37E-01	mg/kg	95% UCL-NP	(d)
	PCB TEQ*	mg/kg	4.50E-06	N/A (<4)	7.7E-06 J	4.50E-06	mg/kg	Mean	(g)
	C5-C8 Aliphatic	mg/kg	1.05E+01	N/A (<4)	1.9E+01 J	1.05E+01	mg/kg	Mean	(g)
	C9-C10 Aromatic	mg/kg	1.77E+02	N/A (<4)	1.8E+02 J	1.77E+02	mg/kg	Max	(h)
	C9-C18 Aliphatic	mg/kg	1.22E+03	N/A (<4)	2.4E+03 J	1.22E+03	mg/kg	Mean	(g)
	C19-C36 Aliphatic	mg/kg	3.43E+02	N/A (<4)	6.4E+02 J	3.43E+02	mg/kg	Mean	(g)
	C11-C22 Aromatic	mg/kg	9.24E+02	N/A (<4)	1.7E+03 J	9.24E+02	mg/kg	Mean	(g)
Whitney Property (a)	1,2,4-Trimethylbenzene	mg/kg	N/A	N/A	ND	N/A			
	1,3,5-Trimethylbenzene	mg/kg	N/A	N/A	ND	N/A			
	Naphthalene	mg/kg	2.44E+00	2.32E+01 (T)	1.2E+01 J	2.44E+00	mg/kg	Mean	(g)
	Vinyl chloride	mg/kg	1.14E-01	3.38E-01 (NP)	3.9E-01	3.38E-01	mg/kg	95% UCL-NP	(d)
	Methylene chloride	mg/kg	3.79E-01	3.08E+00 (T)	2.7E+00	3.79E-01	mg/kg	Mean	(g)
	cis-1,2-Dichloroethene	mg/kg	1.22E-01	1.69E+00 (T)	3.8E-01	1.22E-01	mg/kg	Mean	(g)
	Trichloroethene	mg/kg	1.39E-01	4.92E-01 (NP)	7.4E-01	4.92E-01	mg/kg	95% UCL-NP	(d)

TABLE 3-3.2.CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe:	Future
Medium:	Soil
Exposure Medium:	Subsurface Soil

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)
	Xylenes (total)	mg/kg	6.38E-01	1.27E+01 (T)	3.3E+00	6.38E-01	mg/kg	Mean	(g)
	2-Methylnaphthalene	mg/kg	4.43E+00	4.38E+01 (T)	2.0E+01 J	4.43E+00	mg/kg	Mean	(g)
	2,4,6-Trichlorophenol	mg/kg	7.03E-01	1.77E+00 (T)	1.4E+00 J	7.03E-01	mg/kg	Mean	(g)
	Acenaphthylene	mg/kg	2.26E-01	2.82E+00 (T)	1.9E-02	1.90E-02	mg/kg	Max	(h)
	Phenanthrene	mg/kg	1.82E+00	2.93E+00 (N)	4.7E+00	2.93E+00	mg/kg	95% UCL-N	(b)
	Benzo(a)Anthracene	mg/kg	8.50E-01	1.22E+00 (N)	1.8E+00	1.22E+00	mg/kg	95% UCL-N	(b)
	Bis(2-ethylhexyl) phthalat	mg/kg	7.20E+01	2.94E+02 (NP)	4.4E+02 J	2.94E+02	mg/kg	95% UCL-NP	(d & e)
	Benzo(b)Fluoranthene	mg/kg	1.07E+00	1.49E+00 (N)	1.8E+00 J	1.49E+00	mg/kg	95% UCL-N	(b)
	Benzo(k)Fluoranthene	mg/kg	6.21E-01	9.85E-01 (N)	1.8E+00	9.85E-01	mg/kg	95% UCL-N	(b)
	Benzo(a)Pyrene	mg/kg	8.67E-01	1.23E+00 (N)	1.8E+00 J	1.23E+00	mg/kg	95% UCL-N	(b)
	Indeno(1,2,3-cd)pyrene	mg/kg	6.24E-01	8.70E-01 (N)	9.7E-01	8.70E-01	mg/kg	95% UCL-N	(b)
	Dibenz(a,h) anthracene	mg/kg	1.85E-01	2.32E-01 (N)	3.0E-01 J	2.32E-01	mg/kg	95% UCL-N	(b)
	Antimony	mg/kg	4.42E+00	6.50E+00 (N)	1.0E+01	6.50E+00	mg/kg	95% UCL-N	(b)
	Arsenic	mg/kg	1.04E+01	2.80E+01 (T)	3.2E+01	2.80E+01	mg/kg	95% UCL-T	(c)
	Barium	mg/kg	1.00E+02	1.66E+02 (N)	2.2E+02	1.66E+02	mg/kg	95% UCL-N	(b)
	Cadmium	mg/kg	3.61E+00	6.05E+00 (N)	8.3E+00	6.05E+00	mg/kg	95% UCL-N	(b)
	Lead	mg/kg	3.01E+02	5.76E+02 (N)	1.0E+03 J	5.76E+02	mg/kg	95% UCL-N	(b)
	Manganese	mg/kg	1.71E+02	2.51E+02 (N)	3.3E+02 J	2.51E+02	mg/kg	95% UCL-N	(b)
	Mercury	mg/kg	2.44E+00	1.67E+01 (T)	1.2E+01	2.44E+00	mg/kg	Mean	(g)
	Thallium	mg/kg	N/A	N/A	ND	N/A			
	alpha-Chlordane	mg/kg	6.20E+01	5.37E+02 (T)	4.2E+02 J	6.20E+01	mg/kg	Mean	(g)
	gamma-Chlordane	mg/kg	6.11E-03	3.82E+02 (T)	3.0E+02 J	6.11E-03	mg/kg	Mean	(g)
	4,4'-DDE	mg/kg	1.79E+01	1.72E+02 (T)	1.2E+02 J	1.79E+01	mg/kg	Mean	(g)
	4,4'-DDT	mg/kg	5.29E-03	6.57E+02 (T)	2.9E+02 J	5.29E-03	mg/kg	Mean	(g)

TABLE 3-3.2.CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe:	Future
Medium:	Soil
Exposure Medium:	Subsurface Soil

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)
Murphy Property (a)	Aroclor 1242	mg/kg	N/A	N/A	ND	N/A			
	Aroclor 1248	mg/kg	1.40E+02	7.48E+02 (NP)	9.8E+02 J	7.48E+02	mg/kg	95% UCL-NP	(d)
	Aroclor 1254	mg/kg	7.67E+01	4.10E+02 (NP)	5.4E+02 J	4.10E+02	mg/kg	95% UCL-NP	(d)
	Aroclor 1260	mg/kg	4.33E+01	2.26E+02 (NP)	3.0E+02 J	2.26E+02	mg/kg	95% UCL-NP	(d)
	PCB TEQ*	mg/kg	1.40E-03	N/A (<4)	3.7E-03 J	1.40E-03	mg/kg	Mean	(g)
	C5-C8 Aliphatic	mg/kg	5.20E+01	N/A (<4)	1.4E+02 J	5.20E+01	mg/kg	Mean	(g)
	C9-C10 Aromatic	mg/kg	4.98E+02	N/A (<4)	5.0E+02 J	4.98E+02	mg/kg	Max	(h)
	C9-C18 Aliphatic	mg/kg	2.73E+03	N/A (<4)	6.0E+03 J	2.73E+03	mg/kg	Mean	(g)
	C19-C36 Aliphatic	mg/kg	1.61E+03	N/A (<4)	4.1E+03 J	1.61E+03	mg/kg	Mean	(g)
	C11-C22 Aromatic	mg/kg	2.24E+03	N/A (<4)	4.1E+03 J	2.24E+03	mg/kg	Mean	(g)
	1,2,4-Trimethylbenzene	mg/kg	2.08E+00	1.06E+01 (NP)	4.5E+01	1.06E+01	mg/kg	95% UCL-NP	(d)
	1,3,5-Trimethylbenzene	mg/kg	9.34E-01	4.52E+00 (NP)	1.9E+01	4.52E+00	mg/kg	95% UCL-NP	(d)
	Naphthalene	mg/kg	1.24E+00	3.69E+00 (NP)	2.7E+01	3.69E+00	mg/kg	95% UCL-NP	(d)
	Vinyl chloride	mg/kg	N/A	N/A	ND	N/A			
	Methylene chloride	mg/kg	6.66E-01	2.72E+00 (NP)	2.1E+01 J	2.72E+00	mg/kg	95% UCL-NP	(d)
	cis-1,2-Dichloroethene	mg/kg	4.36E-01	2.25E+00 (NP)	1.0E+01	2.25E+00	mg/kg	95% UCL-NP	(d)
	Trichloroethene	mg/kg	9.47E-02	2.82E-01 (NP)	2.1E+00 J	2.82E-01	mg/kg	95% UCL-NP	(d)
	Xylenes (total)	mg/kg	9.99E-01	4.10E+00 (NP)	4.8E+01	4.10E+00	mg/kg	95% UCL-NP	(d)
	2-Methylnaphthalene	mg/kg	6.06E-01	1.07E+00 (NP)	2.2E+00	1.07E+00	mg/kg	95% UCL-NP	(d)
	2,4,6-Trichlorophenol	mg/kg	N/A	N/A	ND	N/A			
	Acenaphthylene	mg/kg	8.04E-01	1.60E+00 (NP)	3.2E+00	1.60E+00	mg/kg	95% UCL-NP	(d)
	Phenanthrene	mg/kg	1.04E+00	1.77E+00 (NP)	9.0E+00	1.77E+00	mg/kg	95% UCL-NP	(d)
	Benzo(a)Anthracene	mg/kg	8.37E-01	1.48E+00 (NP)	4.9E+00	1.48E+00	mg/kg	95% UCL-NP	(d)
	Bis(2-ethylhexyl) phthalat	mg/kg	2.82E+00	1.17E+01 (NP)	3.3E+01	1.17E+01	mg/kg	95% UCL-NP	(d)

TABLE 3-3.2.CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe:	Future
Medium:	Soil
Exposure Medium:	Subsurface Soil

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)
	Benzo(b)Fluoranthene	mg/kg	8.56E-01	1.49E+00 (NP)	5.2E+00	1.49E+00	mg/kg	95% UCL-NP	(d)
	Benzo(k)Fluoranthene	mg/kg	7.31E-01	1.82E+00 (NP)	2.3E+00	1.82E+00	mg/kg	95% UCL-NP	(d)
	Benzo(a)Pyrene	mg/kg	8.73E-01	1.58E+00 (NP)	5.9E+00	1.58E+00	mg/kg	95% UCL-NP	(d)
	Indeno(1,2,3-cd)pyrene	mg/kg	6.64E-01	1.49E+00 (NP)	2.3E+00	1.49E+00	mg/kg	95% UCL-NP	(d)
	Dibenz(a,h) anthracene	mg/kg	5.98E-01	1.51E+00 (NP)	3.8E-01	3.80E-01	mg/kg	Max	(h)
	Antimony	mg/kg	2.50E+00	2.85E+00 (NP)	6.0E+00	2.85E+00	mg/kg	95% UCL-NP	(d)
	Arsenic	mg/kg	3.53E+00	3.98E+00 (NP)	9.3E+00	3.98E+00	mg/kg	95% UCL-NP	(d)
	Barium	mg/kg	1.43E+02	3.36E+02 (T)	9.8E+02	3.36E+02	mg/kg	95% UCL-T	(d)
	Cadmium	mg/kg	9.11E-01	1.26E+00 (NP)	4.8E+00	1.26E+00	mg/kg	95% UCL-NP	(d)
	Lead	mg/kg	2.56E+02	5.03E+02 (T)	6.5E+03	5.03E+02	mg/kg	95% UCL-T	(d)
	Manganese	mg/kg	1.20E+02	1.83E+02 (N)	1.8E+02	1.20E+02	mg/kg	Mean	(g)
	Mercury	mg/kg	5.26E-02	7.55E-02 (NP)	3.3E-01	7.55E-02	mg/kg	95% UCL-NP	(d)
	Thallium	mg/kg	6.45E+00	8.86E+00 (NP)	3.0E+01	8.86E+00	mg/kg	95% UCL-NP	(d)
	alpha-Chlordane	mg/kg	4.91E-02	1.21E-01 (N)	1.3E-01	1.21E-01	mg/kg	95% UCL-N	(b)
	gamma-Chlordane	mg/kg	5.03E-02	1.23E-01 (N)	1.3E-01	1.23E-01	mg/kg	95% UCL-N	(b)
	4,4'-DDE	mg/kg	N/A	N/A	ND	N/A			
	4,4'-DDT	mg/kg	N/A	N/A	ND	N/A			
	Aroclor 1242	mg/kg	N/A	N/A	ND	N/A			
	Aroclor 1248	mg/kg	1.40E-01	6.20E-01 (NP)	8.0E-01	6.20E-01	mg/kg	95% UCL-NP	(d)
	Aroclor 1254	mg/kg	7.23E-02	1.95E-01 (NP)	2.0E-01	1.95E-01	mg/kg	95% UCL-NP	(d)
	Aroclor 1260	mg/kg	N/A	N/A	ND	N/A			
	PCB TEQ*	mg/kg	N/A	N/A	ND	N/A			
	C5-C8 Aliphatic	mg/kg	1.00E+00	N/A (<4)	1.0E+00 J	1.00E+00	mg/kg	Max	(h)
	C9-C10 Aromatic	mg/kg	N/A	N/A	ND	N/A			

TABLE 3-3.2.CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe:	Future
Medium:	Soil
Exposure Medium:	Subsurface Soil

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)
	C9-C18 Aliphatic	mg/kg	N/A	N/A	ND	N/A			
	C19-C36 Aliphatic	mg/kg	N/A	N/A	ND	N/A			
	C11-C22 Aromatic	mg/kg	3.27E+03	6.72E+03 (NP)	7.2E+04 T	6.72E+03	mg/kg	95% UCL-NP	(d)

(1) Only COPCs selected on Table 3-2.2 and detected at each exposure point appear.

(2) T - Transformed; N - Normal; NP - Non-parametric; <4 - sample size too small to calculate 95% UCL

(3) Statistics: Maximum Detected Value (Max); 95% UCL of Transformed Data (95% UCL - T); 95% of Normal Data (95% UCL - N); 95% of Non-parametric Data (95% UCL - NP); Arithmatic Mean (Mean).

(4) Rationale

(a) Due to small sample size (<4), the maximum detected concentration is used.

(b) Shapiro-Wilk W Test indicates data are normally distributed.

(c) Shapiro-Wilk W Test indicates data are log-normally distributed.

(d) Shapiro-Wilk W Test indicates data are neither normally nor log-normally distributed.

(e) Recommended UCL exceeds maximum detected concentration. Therefore, maximum concentration is used for EPC.

(f) Due to high standard deviation, the maximum concentration is used.

(g) When the maximum detected concentration is selected as the RME EPC, the arithmetic mean concentration is selected as the CT EPC.

(h) If the arithmetic mean concentration equals or exceeds the maximum detected concentration, the maximum detected concentration is used as the CT

J = Estimated concentration

Max = Maximum detected concentration

N/A = Not applicable

UCL = Upper confidence limit

EPC = Exposure point concentration

RME = Reasonable Maximum Exposure

CT = Central Tendency

TABLE 3-3.3.RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe:	Current/Future
Medium:	Groundwater
Exposure Medium:	Groundwater

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)
Aberjona Property (a)	1,1,2-Trichloroethane	ug/L	N/A	N/A	ND	N/A	ug/L		
	1,1-Dichloroethane	ug/L	N/A	N/A	ND	N/A	ug/L		
	1,1-Dichloroethene	ug/L	5.37E-02	1.09E-01 (NP)	1.9E-01	1.09E-01	ug/L	95% UCL-NP	(d)
	1,2,4-Trichlorobenzene	ug/L	N/A	N/A	ND	N/A	ug/L		
	1,3-Dichlorobenzene	ug/L	N/A	N/A	ND	N/A	ug/L		
	1,4-Dichlorobenzene	ug/L	1.17E-01	3.04E-01 (NP)	4.8E-01	3.04E-01	ug/L	95% UCL-NP	(d)
	Benzene	ug/L	7.58E-02	1.77E-01 (NP)	3.2E-01 J	1.77E-01	ug/L	95% UCL-NP	(d)
	Bromomethane	ug/L	N/A	N/A	ND	N/A	ug/L		
	Chlorobenzene	ug/L	N/A	N/A	ND	N/A	ug/L		
	Chlorodibromomethane	ug/L	3.15E-01	9.16E-01 (NP)	1.5E+00 J	9.16E-01	ug/L	95% UCL-NP	(d)
	Chloroethane	ug/L	N/A	N/A	ND	N/A	ug/L		
	cis-1,2-Dichloroethene	ug/L	5.42E+00	1.44E+01 (NP)	2.9E+01 J	1.44E+01	ug/L	95% UCL-NP	(d)
	Ethylbenzene	ug/L	N/A	N/A	ND	N/A	ug/L		
	Methyl tert-butyl ether	ug/L	2.67E+00	7.35E+00 (NP)	1.4E+01	7.35E+00	ug/L	95% UCL-NP	(d)
	Methylene chloride	ug/L	N/A	N/A	ND	N/A	ug/L		
	Tetrachloroethene	ug/L	6.96E+00	1.98E+01 (NP)	3.6E+01 J	1.98E+01	ug/L	95% UCL-NP	(d)
	Toluene	ug/L	N/A	N/A	ND	N/A	ug/L		
	trans-1,2-Dichloroethene	ug/L	N/A	N/A	ND	N/A	ug/L		
	Trichloroethene	ug/L	2.16E+01	1.89E+02 (T)	1.6E+02 J	1.60E+02	ug/L	Max	(c & e)
	Vinyl chloride	ug/L	1.04E-01	2.76E-01 (NP)	4.9E-01 J	2.76E-01	ug/L	95% UCL-NP	(d)
	Xylenes (total)	ug/L	N/A	N/A	ND	N/A	ug/L		
	Acetophenone	ug/L	N/A	N/A	ND	N/A	ug/L		
	4-Methylphenol	ug/L	N/A	N/A	ND	N/A	ug/L		
	Naphthalene	ug/L	1.32E+00	N/A (<4)	2.7E+00	2.70E+00	ug/L	Max	(a)

TABLE 3-3.3.RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe:	Current/Future
Medium:	Groundwater
Exposure Medium:	Groundwater

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)
	2-Methylnaphthalene	ug/L	N/A	N/A	ND	N/A	ug/L		
	Acenaphthylene	ug/L	N/A	N/A	ND	N/A	ug/L		
	Phenanthrene	ug/L	2.83E+00	N/A (<4)	2.1E+00	2.10E+00	ug/L	Max	(a)
	Benzo(a)Pyrene	ug/L	3.37E-01	N/A (<4)	1.1E-02	1.10E-02	ug/L	Max	(a)
	Dibenz(a,h) anthracene	ug/L	3.38E-01	N/A (<4)	1.3E-02	1.30E-02	ug/L	Max	(a)
	C9-C18 Aliphatic	ug/L	N/A	N/A	ND	N/A	ug/L		
	C11-C22 Aromatic	ug/L	N/A	N/A	ND	N/A	ug/L		
	C19-C36 Aliphatic	ug/L	N/A	N/A	ND	N/A	ug/L		
	C5-C8 Aliphatic	ug/L	N/A	N/A	ND	N/A	ug/L		
	Arsenic	ug/L	1.27E+00	1.55E+00 (NP)	2.5E+00 J	1.55E+00	ug/L	95% UCL-NP	(d)
	Chromium	ug/L	3.93E+00	7.99E+00 (NP)	1.3E+01	7.99E+00	ug/L	95% UCL-NP	(d)
	Lead	ug/L	N/A	N/A	ND	N/A	ug/L		
	Manganese	ug/L	4.21E+02	1.33E+03 (T)	1.8E+03	1.33E+03	ug/L	95% UCL-T	(c)
	Nickel	ug/L	3.34E+00	4.41E+00 (N)	6.8E+00	4.41E+00	ug/L	95% UCL-N	(b)
	PCB TEQ*	ug/L	N/A	N/A	ND	N/A	ug/L		
	Dieldrin	ug/L	1.40E-02	N/A (<4)	1.4E-02 J	1.40E-02	ug/L	Max	(a)
	4,4'-DDD	ug/L	N/A	N/A	ND	N/A	ug/L		
Whitney Property (a)	1,1,2-Trichloroethane	ug/L	N/A	N/A	ND	N/A	ug/L		
	1,1-Dichloroethane	ug/L	1.43E+01	6.56E+01 (NP)	1.2E+02 J	6.56E+01	ug/L	95% UCL-NP	(d)
	1,1-Dichloroethene	ug/L	N/A	N/A	ND	N/A	ug/L		
	1,2,4-Trichlorobenzene	ug/L	4.55E+00	1.31E+01 (NP)	2.3E+01 J	1.31E+01	ug/L	95% UCL-NP	(d)
	1,3-Dichlorobenzene	ug/L	3.66E+00	2.68E+01 (T)	1.9E+01 J	1.90E+01	ug/L	Max	(c & e)
	1,4-Dichlorobenzene	ug/L	2.16E+01	1.07E+02 (NP)	2.0E+02 J	1.07E+02	ug/L	95% UCL-NP	(d)
	Benzene	ug/L	1.11E+01	1.16E+02 (T)	8.6E+01 J	8.60E+01	ug/L	Max	(c & e)

TABLE 3-3.3.RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe:	Current/Future
Medium:	Groundwater
Exposure Medium:	Groundwater

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)
	Bromomethane	ug/L	N/A	N/A	ND	N/A	ug/L		
	Chlorobenzene	ug/L	4.05E+00	9.50E+00 (NP)	1.8E+01 J	9.50E+00	ug/L	95% UCL-NP	(d)
	Chlorodibromomethane	ug/L	1.66E+00	3.26E+00 (NP)	1.0E+00 J	1.05E+00	ug/L	Max	(d)
	Chloroethane	ug/L	N/A	N/A	ND	N/A	ug/L		
	cis-1,2-Dichloroethene	ug/L	4.99E+01	2.58E+02 (NP)	4.8E+02 J	2.58E+02	ug/L	95% UCL-NP	(d)
	Ethylbenzene	ug/L	5.75E+00	2.26E+01 (NP)	4.0E+01	2.26E+01	ug/L	95% UCL-NP	(d)
	Methyl tert-butyl ether	ug/L	6.55E+01	3.25E+02 (T)	5.4E+02	3.25E+02	ug/L	95% UCL-T	(c)
	Methylene chloride	ug/L	1.50E+00	4.06E+00 (NP)	1.0E+00 J	1.00E+00	ug/L	Max	(d)
	Tetrachloroethene	ug/L	N/A	N/A	ND	N/A	ug/L		
	Toluene	ug/L	1.24E+02	6.45E+02 (NP)	1.2E+03	6.45E+02	ug/L	95% UCL-NP	(d)
	trans-1,2-Dichloroethene	ug/L	3.75E+00	7.72E+00 (NP)	1.5E+01 J	7.72E+00	ug/L	95% UCL-NP	(d)
	Trichloroethene	ug/L	3.01E+00	4.56E+00 (N)	9.0E+00 J	4.56E+00	ug/L	95% UCL-N	(b)
	Vinyl chloride	ug/L	4.35E+01	2.26E+02 (NP)	4.2E+02 J	2.26E+02	ug/L	95% UCL-NP	(d)
	Xylenes (total)	ug/L	8.05E+00	2.01E+01 (T)	4.3E+01	2.01E+01	ug/L	95% UCL-T	(c)
	Acetophenone	ug/L	4.53E+00	5.89E+00 (NP)	1.2E+00 J	1.20E+00	ug/L	Max	(d & e)
	4-Methylphenol	ug/L	4.63E+00	5.79E+00 (NP)	1.8E+00 J	1.80E+00	ug/L	Max	(d & e)
	Naphthalene	ug/L	3.94E+00	8.57E+00 (NP)	1.4E+01	8.57E+00	ug/L	95% UCL-NP	(d)
	2-Methylnaphthalene	ug/L	N/A	N/A	ND	N/A	ug/L		
	Acenaphthylene	ug/L	4.21E+00	5.30E+00 (NP)	3.2E+00	3.20E+00	ug/L	Max	(d & e)
	Phenanthrene	ug/L	4.44E+00	5.15E+00 (NP)	3.1E+00	3.10E+00	ug/L	Max	(d & e)
	Benzo(a)Pyrene	ug/L	2.00E+00	5.36E+01 (NP)	1.5E-02	1.50E-02	ug/L	Max	(d & e)
	Dibenz(a,h) anthracene	ug/L	2.00E+00	3.80E+00 (NP)	5.8E-03 J	5.80E-03	ug/L	Max	(d)
	C9-C18 Aliphatic	ug/L	4.19E+01	5.68E+01 (NP)	5.9E+01	5.68E+01	ug/L	95% UCL-NP	(d)
	C11-C22 Aromatic	ug/L	N/A	N/A	ND	N/A	ug/L		

TABLE 3-3.3.RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe:	Current/Future
Medium:	Groundwater
Exposure Medium:	Groundwater

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)
Murphy Property (a)	C19-C36 Aliphatic	ug/L	6.35E+01	1.58E+02 (NP)	1.5E+02	1.50E+02	ug/L	Max	(d & e)
	C5-C8 Aliphatic	ug/L	1.07E+02	2.89E+02 (NP)	4.5E+02	2.89E+02	ug/L	95% UCL-NP	(d)
	Arsenic	ug/L	1.51E+00	2.06E+00 (N)	3.5E+00 J	2.06E+00	ug/L	95% UCL-N	(b)
	Chromium	ug/L	5.62E+00	1.44E+01 (T)	2.3E+01 J	1.44E+01	ug/L	95% UCL-T	(c)
	Lead	ug/L	1.08E+00	1.38E+00 (N)	2.1E+00 J	1.38E+00	ug/L	95% UCL-N	(b)
	Manganese	ug/L	5.53E+02	6.03E+03 (T)	2.6E+03	2.64E+03	ug/L	Max	(c & e)
	Nickel	ug/L	4.97E+00	1.41E+01 (T)	1.9E+01	1.41E+01	ug/L	95% UCL-T	(c)
	PCB TEQ*	ug/L	8.92E-07	N/A (<4)	1.4E-06 J	1.40E-06	ug/L	Max	(a)
	Dieldrin	ug/L	N/A	N/A	ND	N/A	ug/L		
	4,4'-DDD	ug/L	2.82E-01	N/A (<4)	5.6E-01 J	5.58E-01	ug/L	Max	(a)
	1,1,2-Trichloroethane	ug/L	9.52E+00	2.58E+01 (NP)	4.0E-01 J	4.00E-01	ug/L	Max	(d & e)
	1,1-Dichloroethane	ug/L	2.93E+01	5.64E+01 (NP)	2.2E+02	5.64E+01	ug/L	95% UCL-NP	(d)
	1,1-Dichloroethene	ug/L	7.91E+00	2.29E+01 (NP)	9.0E+00 J	9.00E+00	ug/L	Max	(d)
	1,2,4-Trichlorobenzene	ug/L	N/A	N/A	ND	N/A	ug/L		
	1,3-Dichlorobenzene	ug/L	N/A	N/A	ND	N/A	ug/L		
	1,4-Dichlorobenzene	ug/L	N/A	N/A	ND	N/A	ug/L		
	Benzene	ug/L	3.03E+00	5.53E+00 (NP)	1.6E+01	5.53E+00	ug/L	95% UCL-NP	(d)
	Bromomethane	ug/L	9.09E+00	2.55E+01 (NP)	1.0E+00 J	1.00E+00	ug/L	Max	(d)
	Chlorobenzene	ug/L	9.54E+00	2.58E+01 (NP)	1.0E+00 J	1.00E+00	ug/L	Max	(d)
	Chlorodibromomethane	ug/L	N/A	N/A	ND	N/A	ug/L		
	Chloroethane	ug/L	1.14E+01	2.43E+01 (NP)	5.0E+01	2.43E+01	ug/L	95% UCL-NP	(d)
	cis-1,2-Dichloroethene	ug/L	1.77E+02	5.75E+02 (NP)	1.9E+03	5.75E+02	ug/L	95% UCL-NP	(d)
	Ethylbenzene	ug/L	3.09E+00	6.33E+00 (NP)	2.3E+01	6.33E+00	ug/L	95% UCL-NP	(d)
	Methyl tert-butyl ether	ug/L	N/A	N/A	ND	N/A	ug/L		

TABLE 3-3.3.RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe:	Current/Future
Medium:	Groundwater
Exposure Medium:	Groundwater

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)
	Methylene chloride	ug/L	6.15E+00	1.10E+01 (T)	9.0E+01 J	1.10E+01	ug/L	95%UCL-T	(c)
	Tetrachloroethene	ug/L	9.50E+00	2.58E+01 (NP)	7.0E+00 J	7.00E+00	ug/L	Max	(d)
	Toluene	ug/L	6.99E+00	1.43E+01 (NP)	5.2E+01	1.43E+01	ug/L	95% UCL-NP	(d)
	trans-1,2-Dichloroethene	ug/L	6.69E+00	1.04E+01 (NP)	2.8E+01 J	1.04E+01	ug/L	95% UCL-NP	(d)
	Trichloroethene	ug/L	1.08E+01	2.67E+01 (NP)	4.2E+01	2.67E+01	ug/L	95% UCL-NP	(d)
	Vinyl chloride	ug/L	4.48E+01	1.44E+02 (NP)	6.0E+02	1.44E+02	ug/L	95% UCL-NP	(d)
	Xylenes (total)	ug/L	8.57E+00	2.50E+01 (NP)	1.1E+02	2.50E+01	ug/L	95% UCL-NP	(d)
	Acetophenone	ug/L	N/A	N/A	ND	N/A	ug/L		
	4-Methylphenol	ug/L	5.87E+00	9.23E+00 (NP)	2.5E+01	9.23E+00	ug/L	95% UCL-NP	(d)
	Naphthalene	ug/L	5.24E+00	7.86E+00 (NP)	2.5E+01	7.86E+00	ug/L	95% UCL-NP	(d)
	2-Methylnaphthalene	ug/L	5.27E+00	6.28E+00 (NP)	1.1E+01	6.28E+00	ug/L	95% UCL-NP	(d)
	Acenaphthylene	ug/L	N/A	N/A	ND	N/A	ug/L		
	Phenanthrene	ug/L	5.05E+00	5.54E+00 (NP)	1.0E+01 J	5.54E+00	ug/L	95% UCL-NP	(d)
	Benzo(a)Pyrene	ug/L	N/A	N/A	ND	N/A	ug/L		
	Dibenz(a,h) anthracene	ug/L	N/A	N/A	ND	N/A	ug/L		
	C9-C18 Aliphatic	ug/L	1.59E+02	6.93E+02 (NP)	3.1E+03	6.93E+02	ug/L	95% UCL-NP	(d)
	C11-C22 Aromatic	ug/L	1.37E+02	3.31E+02 (NP)	1.2E+03	3.31E+02	ug/L	95% UCL-NP	(d)
	C19-C36 Aliphatic	ug/L	1.31E+03	5.57E+03 (NP)	2.4E+04	5.57E+03	ug/L	95% UCL-NP	(d)
	C5-C8 Aliphatic	ug/L	5.45E+01	1.18E+02 (NP)	2.6E+02	1.18E+02	ug/L	95% UCL-NP	(d)
	Arsenic	ug/L	1.15E+01	4.04E+01 (NP)	1.8E+02	4.04E+01	ug/L	95% UCL-NP	(d)
	Chromium	ug/L	1.48E+01	4.31E+01 (NP)	1.3E+02	4.31E+01	ug/L	95% UCL-NP	(d)
	Lead	ug/L	1.44E+01	3.68E+01 (NP)	1.5E+02 J	3.68E+01	ug/L	95% UCL-NP	(d)
	Manganese	ug/L	3.39E+02	4.58E+02 (N)	4.7E+02	4.58E+02	ug/L	95%UCL-N	(b)
	Nickel	ug/L	1.99E+01	9.65E+01 (T)	9.3E+01	9.31E+01	ug/L	Max	(c & e)

TABLE 3-3.3.RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe:	Current/Future
Medium:	Groundwater
Exposure Medium:	Groundwater

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)
	PCB TEQ*	ug/L	2.05E-06	N/A (<4)	2.9E-06	2.90E-06	ug/L	Max	(a)
	Dieldrin	ug/L	N/A	N/A	ND	N/A	ug/L		
	4,4'-DDD	ug/L	N/A	N/A	ND	N/A	ug/L		

(1) Only COPCs selected on Table 3-2.3 and detected at each exposure point appear.

(2) T - Transformed; N - Normal; NP - Non-parametric; <4 - sample size too small to calculate 95% UCL

(3) Statistics: Maximum Detected Value (Max); 95% UCL of Transformed Data (95% UCL - T); 95% of Normal Data (95% UCL - N); 95% of Non-parametric Data (95% UCL - NP); Arithmatic Mean (Mean).

(4) Rationale

(a) Due to small sample size (<4), the maximum detected concentration is used.

(b) Shapiro-Wilk W Test indicates data are normally distributed.

(c) Shapiro-Wilk W Test indicates data are log-normally distributed.

(d) Shapiro-Wilk W Test indicates data are neither normally nor log-normally distributed.

(e) Recommended UCL exceeds maximum detected concentration. Therefore, maximum concentration is used for EPC.

(f) When the maximum detected concentration is selected as the RME EPC, the arithmetic mean concentration is selected as the CT EPC.

(g) If the arithmetic mean concentration equals or exceeds the maximum detected concentration, the maximum detected concentration is used as the CT EP

J = Estimated concentration

Max = Maximum detected concentration

N/A = Not applicable

UCL = Upper confidence limit

EPC = Exposure point concentration

RME = Reasonable Maximum Exposure

CT = Central Tendency

TABLE 3-3.3.CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe:	Current/Future
Medium:	Groundwater
Exposure Medium:	Groundwater

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)
Aberjona Property (a)	1,1,2-Trichloroethane	ug/L	N/A	N/A	ND	N/A			
	1,1-Dichloroethane	ug/L	N/A	N/A	ND	N/A			
	1,1-Dichloroethene	ug/L	5.37E-02	1.09E-01 (NP)	1.9E-01	1.09E-01	ug/L	95% UCL-NP	(d)
	1,2,4-Trichlorobenzene	ug/L	N/A	N/A	ND	N/A			
	1,3-Dichlorobenzene	ug/L	N/A	N/A	ND	N/A			
	1,4-Dichlorobenzene	ug/L	1.17E-01	3.04E-01 (NP)	4.8E-01	3.04E-01	ug/L	95% UCL-NP	(d)
	Benzene	ug/L	7.58E-02	1.77E-01 (NP)	3.2E-01 J	1.77E-01	ug/L	95% UCL-NP	(d)
	Bromomethane	ug/L	N/A	N/A	ND	N/A			
	Chlorobenzene	ug/L	N/A	N/A	ND	N/A			
	Chlorodibromomethane	ug/L	3.15E-01	9.16E-01 (NP)	1.5E+00 J	9.16E-01	ug/L	95% UCL-NP	(d)
	Chloroethane	ug/L	N/A	N/A	ND	N/A			
	cis-1,2-Dichloroethene	ug/L	5.42E+00	1.44E+01 (NP)	2.9E+01 J	1.44E+01	ug/L	95% UCL-NP	(d)
	Ethylbenzene	ug/L	N/A	N/A	ND	N/A			
	Methyl tert-butyl ether	ug/L	2.67E+00	7.35E+00 (NP)	1.4E+01	7.35E+00	ug/L	95% UCL-NP	(d)
	Methylene chloride	ug/L	N/A	N/A	ND	N/A			
	Tetrachloroethene	ug/L	6.96E+00	1.98E+01 (NP)	3.6E+01 J	1.98E+01	ug/L	95% UCL-NP	(d)
	Toluene	ug/L	N/A	N/A	ND	N/A			
	trans-1,2-Dichloroethene	ug/L	N/A	N/A	ND	N/A			
	Trichloroethene	ug/L	2.16E+01	1.89E+02 (T)	1.6E+02 J	2.16E+01	ug/L	Mean	(f)
	Vinyl chloride	ug/L	1.04E-01	2.76E-01 (NP)	4.9E-01 J	2.76E-01	ug/L	95% UCL-NP	(d)
	Xylenes (total)	ug/L	N/A	N/A	ND	N/A			
	Acetophenone	ug/L	N/A	N/A	ND	N/A			
	4-Methylphenol	ug/L	N/A	N/A	ND	N/A			
	Naphthalene	ug/L	1.32E+00	N/A (<4)	2.7E+00	1.32E+00	ug/L	Mean	(f)

TABLE 3-3.3.CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe:	Current/Future
Medium:	Groundwater
Exposure Medium:	Groundwater

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)
Whitney Property (a)	2-Methylnaphthalene	ug/L	N/A	N/A	ND	N/A			
	Acenaphthylene	ug/L	N/A	N/A	ND	N/A			
	Phenanthrene	ug/L	2.83E+00	N/A (<4)	2.1E+00	2.10E+00	ug/L	Max	(g)
	Benzo(a)Pyrene	ug/L	3.37E-01	N/A (<4)	1.1E-02	1.10E-02	ug/L	Max	(g)
	Dibenz(a,h) anthracene	ug/L	3.38E-01	N/A (<4)	1.3E-02	1.30E-02	ug/L	Max	(g)
	C9-C18 Aliphatic	ug/L	N/A	N/A	ND	N/A			
	C11-C22 Aromatic	ug/L	N/A	N/A	ND	N/A			
	C19-C36 Aliphatic	ug/L	N/A	N/A	ND	N/A			
	C5-C8 Aliphatic	ug/L	N/A	N/A	ND	N/A			
	Arsenic	ug/L	1.27E+00	1.55E+00 (NP)	2.5E+00 J	1.55E+00	ug/L	95% UCL-NP	(d)
	Chromium	ug/L	3.93E+00	7.99E+00 (NP)	1.3E+01	7.99E+00	ug/L	95% UCL-NP	(d)
	Lead	ug/L	N/A	N/A	ND	N/A			
	Manganese	ug/L	4.21E+02	1.33E+03 (T)	1.8E+03	1.33E+03	ug/L	95% UCL-T	(c)
	Nickel	ug/L	3.34E+00	4.41E+00 (N)	6.8E+00	4.41E+00	ug/L	95% UCL-N	(b)
	PCB TEQ*	ug/L	N/A	N/A	ND	N/A			
	Dieldrin	ug/L	1.40E-02	N/A (<4)	1.4E-02 J	1.40E-02	ug/L	Mean	(f)
	4,4'-DDD	ug/L	N/A	N/A	ND	N/A			
	1,1,2-Trichloroethane	ug/L	N/A	N/A	ND	N/A			
	1,1-Dichloroethane	ug/L	1.43E+01	6.56E+01 (NP)	1.2E+02 J	6.56E+01	ug/L	95% UCL-NP	(d)
	1,1-Dichloroethene	ug/L	N/A	N/A	ND	N/A			
	1,2,4-Trichlorobenzene	ug/L	4.55E+00	1.31E+01 (NP)	2.3E+01 J	1.31E+01	ug/L	95% UCL-NP	(d)
	1,3-Dichlorobenzene	ug/L	3.66E+00	2.68E+01 (T)	1.9E+01 J	3.66E+00	ug/L	Mean	(f)
	1,4-Dichlorobenzene	ug/L	2.16E+01	1.07E+02 (NP)	2.0E+02 J	1.07E+02	ug/L	95% UCL-NP	(d)

TABLE 3-3.3.CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe:	Current/Future
Medium:	Groundwater
Exposure Medium:	Groundwater

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)
	Benzene	ug/L	1.11E+01	1.16E+02 (T)	8.6E+01 J	1.11E+01	ug/L	Mean	(f)
	Bromomethane	ug/L	N/A	N/A	ND	N/A			
	Chlorobenzene	ug/L	4.05E+00	9.50E+00 (NP)	1.8E+01 J	9.50E+00	ug/L	95% UCL-NP	(d)
	Chlorodibromomethane	ug/L	1.66E+00	3.26E+00 (NP)	1.0E+00 J	1.05E+00	ug/L	Max	(g)
	Chloroethane	ug/L	N/A	N/A	ND	N/A			
	cis-1,2-Dichloroethene	ug/L	4.99E+01	2.58E+02 (NP)	4.8E+02 J	2.58E+02	ug/L	95% UCL-NP	(d)
	Ethylbenzene	ug/L	5.75E+00	2.26E+01 (NP)	4.0E+01	2.26E+01	ug/L	95% UCL-NP	(d)
	Methyl tert-butyl ether	ug/L	6.55E+01	3.25E+02 (T)	5.4E+02	3.25E+02	ug/L	95% UCL-T	(c)
	Methylene chloride	ug/L	1.50E+00	4.06E+00 (NP)	1.0E+00 J	1.00E+00	ug/L	Max	(g)
	Tetrachloroethene	ug/L	N/A	N/A	ND	N/A			
	Toluene	ug/L	1.24E+02	6.45E+02 (NP)	1.2E+03	6.45E+02	ug/L	95% UCL-NP	(d)
	trans-1,2-Dichloroethene	ug/L	3.75E+00	7.72E+00 (NP)	1.5E+01 J	7.72E+00	ug/L	95% UCL-NP	(d)
	Trichloroethene	ug/L	3.01E+00	4.56E+00 (N)	9.0E+00 J	4.56E+00	ug/L	95% UCL-N	(b)
	Vinyl chloride	ug/L	4.35E+01	2.26E+02 (NP)	4.2E+02 J	2.26E+02	ug/L	95% UCL-NP	(d)
	Xylenes (total)	ug/L	8.05E+00	2.01E+01 (T)	4.3E+01	2.01E+01	ug/L	95% UCL-T	(c)
	Acetophenone	ug/L	4.53E+00	5.89E+00 (NP)	1.2E+00 J	1.20E+00	ug/L	Max	(g)
	4-Methylphenol	ug/L	4.63E+00	5.79E+00 (NP)	1.8E+00 J	1.80E+00	ug/L	Max	(g)
	Naphthalene	ug/L	3.94E+00	8.57E+00 (NP)	1.4E+01	8.57E+00	ug/L	95% UCL-NP	(d)
	2-Methylnaphthalene	ug/L	N/A	N/A	ND	N/A			
	Acenaphthylene	ug/L	4.21E+00	5.30E+00 (NP)	3.2E+00	3.20E+00	ug/L	Max	(g)
	Phenanthrene	ug/L	4.44E+00	5.15E+00 (NP)	3.1E+00	3.10E+00	ug/L	Max	(g)
	Benzo(a)Pyrene	ug/L	2.00E+00	5.36E+01 (NP)	1.5E-02	1.50E-02	ug/L	Max	(g)
	Dibenz(a,h) anthracene	ug/L	2.00E+00	3.80E+00 (NP)	5.8E-03 J	5.80E-03	ug/L	Max	(g)
	C9-C18 Aliphatic	ug/L	4.19E+01	5.68E+01 (NP)	5.9E+01	5.68E+01	ug/L	95% UCL-NP	(d)

TABLE 3-3.3.CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe:	Current/Future
Medium:	Groundwater
Exposure Medium:	Groundwater

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)
Murphy Property (a)	C11-C22 Aromatic	ug/L	N/A	N/A	ND	N/A			
	C19-C36 Aliphatic	ug/L	6.35E+01	1.58E+02 (NP)	1.5E+02	6.35E+01	ug/L	Mean	(f)
	C5-C8 Aliphatic	ug/L	1.07E+02	2.89E+02 (NP)	4.5E+02	2.89E+02	ug/L	95% UCL-NP	(d)
	Arsenic	ug/L	1.51E+00	2.06E+00 (N)	3.5E+00 J	2.06E+00	ug/L	95% UCL-N	(b)
	Chromium	ug/L	5.62E+00	1.44E+01 (T)	2.3E+01 J	1.44E+01	ug/L	95% UCL-T	(c)
	Lead	ug/L	1.08E+00	1.38E+00 (N)	2.1E+00 J	1.38E+00	ug/L	95% UCL-N	(b)
	Manganese	ug/L	5.53E+02	6.03E+03 (T)	2.6E+03	5.53E+02	ug/L	Mean	(f)
	Nickel	ug/L	4.97E+00	1.41E+01 (T)	1.9E+01	1.41E+01	ug/L	95% UCL-T	(c)
	PCB TEQ*	ug/L	8.92E-07	N/A (<4)	1.4E-06 J	8.92E-07	ug/L	Mean	(f)
	Dieldrin	ug/L	N/A	N/A	ND	N/A			
	4,4'-DDD	ug/L	2.82E-01	N/A (<4)	5.6E-01 J	2.82E-01	ug/L	Mean	(f)
	1,1,2-Trichloroethane	ug/L	9.52E+00	2.58E+01 (NP)	4.0E-01 J	4.00E-01	ug/L	Max	(g)
	1,1-Dichloroethane	ug/L	2.93E+01	5.64E+01 (NP)	2.2E+02	5.64E+01	ug/L	95% UCL-NP	(d)
	1,1-Dichloroethene	ug/L	7.91E+00	2.29E+01 (NP)	9.0E+00 J	7.91E+00	ug/L	Mean	(f)
	1,2,4-Trichlorobenzene	ug/L	N/A	N/A	ND	N/A			
	1,3-Dichlorobenzene	ug/L	N/A	N/A	ND	N/A			
	1,4-Dichlorobenzene	ug/L	N/A	N/A	ND	N/A			
	Benzene	ug/L	3.03E+00	5.53E+00 (NP)	1.6E+01	5.53E+00	ug/L	95% UCL-NP	(d)
	Bromomethane	ug/L	9.09E+00	2.55E+01 (NP)	1.0E+00 J	1.00E+00	ug/L	Max	(g)
	Chlorobenzene	ug/L	9.54E+00	2.58E+01 (NP)	1.0E+00 J	1.00E+00	ug/L	Max	(g)
	Chlorodibromomethane	ug/L	N/A	N/A	ND	N/A			
	Chloroethane	ug/L	1.14E+01	2.43E+01 (NP)	5.0E+01	2.43E+01	ug/L	95% UCL-NP	(d)
	cis-1,2-Dichloroethene	ug/L	1.77E+02	5.75E+02 (NP)	1.9E+03	5.75E+02	ug/L	95% UCL-NP	(d)

TABLE 3-3.3.CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe:	Current/Future
Medium:	Groundwater
Exposure Medium:	Groundwater

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)
	Ethylbenzene	ug/L	3.09E+00	6.33E+00 (NP)	2.3E+01	6.33E+00	ug/L	95% UCL-NP	(d)
	Methyl tert-butyl ether	ug/L	N/A	N/A	ND	N/A			
	Methylene chloride	ug/L	6.15E+00	1.10E+01 (T)	9.0E+01 J	6.15E+00	ug/L	Mean	(f)
	Tetrachloroethene	ug/L	9.50E+00	2.58E+01 (NP)	7.0E+00 J	7.00E+00	ug/L	Max	(g)
	Toluene	ug/L	6.99E+00	1.43E+01 (NP)	5.2E+01	1.43E+01	ug/L	95% UCL-NP	(d)
	trans-1,2-Dichloroethene	ug/L	6.69E+00	1.04E+01 (NP)	2.8E+01 J	1.04E+01	ug/L	95% UCL-NP	(d)
	Trichloroethene	ug/L	1.08E+01	2.67E+01 (NP)	4.2E+01	2.67E+01	ug/L	95% UCL-NP	(d)
	Vinyl chloride	ug/L	4.48E+01	1.44E+02 (NP)	6.0E+02	1.44E+02	ug/L	95% UCL-NP	(d)
	Xylenes (total)	ug/L	8.57E+00	2.50E+01 (NP)	1.1E+02	2.50E+01	ug/L	95% UCL-NP	(d)
	Acetophenone	ug/L	N/A	N/A	ND	N/A			
	4-Methylphenol	ug/L	5.87E+00	9.23E+00 (NP)	2.5E+01	9.23E+00	ug/L	95% UCL-NP	(d)
	Naphthalene	ug/L	5.24E+00	7.86E+00 (NP)	2.5E+01	7.86E+00	ug/L	95% UCL-NP	(d)
	2-Methylnaphthalene	ug/L	5.27E+00	6.28E+00 (NP)	1.1E+01	6.28E+00	ug/L	95% UCL-NP	(d)
	Acenaphthylene	ug/L	N/A	N/A	ND	N/A			
	Phenanthrene	ug/L	5.05E+00	5.54E+00 (NP)	1.0E+01 J	5.54E+00	ug/L	95% UCL-NP	(d)
	Benzo(a)Pyrene	ug/L	N/A	N/A	ND	N/A			
	Dibenz(a,h) anthracene	ug/L	N/A	N/A	ND	N/A			
	C9-C18 Aliphatic	ug/L	1.59E+02	6.93E+02 (NP)	3.1E+03	6.93E+02	ug/L	95% UCL-NP	(d)
	C11-C22 Aromatic	ug/L	1.37E+02	3.31E+02 (NP)	1.2E+03	3.31E+02	ug/L	95% UCL-NP	(d)
	C19-C36 Aliphatic	ug/L	1.31E+03	5.57E+03 (NP)	2.4E+04	5.57E+03	ug/L	95% UCL-NP	(d)
	C5-C8 Aliphatic	ug/L	5.45E+01	1.18E+02 (NP)	2.6E+02	1.18E+02	ug/L	95% UCL-NP	(d)
	Arsenic	ug/L	1.15E+01	4.04E+01 (NP)	1.8E+02	4.04E+01	ug/L	95% UCL-NP	(d)
	Chromium	ug/L	1.48E+01	4.31E+01 (NP)	1.3E+02	4.31E+01	ug/L	95% UCL-NP	(d)
	Lead	ug/L	1.44E+01	3.68E+01 (NP)	1.5E+02 J	3.68E+01	ug/L	95% UCL-NP	(d)

TABLE 3-3.3.CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe:	Current/Future
Medium:	Groundwater
Exposure Medium:	Groundwater

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)
	Manganese	ug/L	3.39E+02	4.58E+02 (N)	4.7E+02	3.39E+02	ug/L	Mean	(f)
	Nickel	ug/L	1.99E+01	9.65E+01 (T)	9.3E+01	1.99E+01	ug/L	Mean	(f)
	PCB TEQ*	ug/L	2.05E-06	N/A (<4)	2.9E-06	2.05E-06	ug/L	Mean	(f)
	Dieldrin	ug/L	N/A	N/A	ND	N/A			
	4,4'-DDD	ug/L	N/A	N/A	ND	N/A			

(1) Only COPCs selected on Table 3-2.3 and detected at each exposure point appear.

(2) T - Transformed; N - Normal; NP - Non-parametric; <4 - sample size too small to calculate 95% UCL

(3) Statistics: Maximum Detected Value (Max); 95% UCL of Transformed Data (95% UCL - T); 95% of Normal Data (95% UCL - N); 95% of Non-parametric Data (95% UCL - NP); Arithmatic Mean (Mean).

(4) Rationale

(a) Due to small sample size (<4), the maximum detected concentration is used.

(b) Shapiro-Wilk W Test indicates data are normally distributed.

(c) Shapiro-Wilk W Test indicates data are log-normally distributed.

(d) Shapiro-Wilk W Test indicates data are neither normally nor log-normally distributed.

(e) Recommended UCL exceeds maximum detected concentration. Therefore, maximum concentration is used for EPC.

(f) When the maximum detected concentration is selected as the RME EPC, the arithmetic mean concentration is selected as the CT EPC.

(g) If the arithmetic mean concentration equals or exceeds the maximum detected concentration, the maximum detected concentration is used as the CT

J = Estimated concentration

Max = Maximum detected concentration

N/A = Not applicable

UCL = Upper confidence limit

EPC = Exposure point concentration

RME = Reasonable Maximum Exposure

CT = Central Tendency

TABLE 3-3.4.RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe:	Future
Medium:	Groundwater
Exposure Medium:	Shallow Groundwater

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)
Aberjona Property (a)	1,1,2-Trichloroethane	ug/L	N/A	N/A	ND	N/A			
	1,1-Dichloroethane	ug/L	N/A	N/A	ND	N/A			
	1,1-Dichloroethene	ug/L	6.34E-02	1.06E-01 (NP)	1.9E-01	1.06E-01	ug/L	95% UCL-NP	(d)
	1,2,4-Trichlorobenzene	ug/L	N/A	N/A	ND	N/A			
	1,3-Dichlorobenzene	ug/L	N/A	N/A	ND	N/A			
	1,4-Dichlorobenzene	ug/L	1.59E-01	4.68E-01 (NP)	4.8E-01	4.68E-01	ug/L	95% UCL-NP	(d)
	Benzene	ug/L	9.14E-02	2.61E-01 (NP)	3.2E-01 J	2.61E-01	ug/L	95% UCL-NP	(d)
	Bromomethane	ug/L	N/A	N/A	ND	N/A			
	Chlorobenzene	ug/L	N/A	N/A	ND	N/A			
	Chlorodibromomethane	ug/L	3.01E-01	9.18E-01 (T)	1.0E+00 J	9.18E-01	ug/L	95% UCL-T	(c)
	Chloroethane	ug/L	N/A	N/A	ND	N/A			
	cis-1,2-Dichloroethene	ug/L	6.79E+00	4.57E+01 (T)	2.9E+01 J	2.90E+01	ug/L	Max	(c & e)
	Ethylbenzene	ug/L	N/A	N/A	ND	N/A			
	Methyl tert-butyl ether	ug/L	4.21E+00	1.47E+01 (T)	1.4E+01	1.40E+01	ug/L	Max	(c & e)
	Methylene chloride	ug/L	N/A	N/A	ND	N/A			
	Tetrachloroethene	ug/L	4.24E-01	5.47E-01 (NP)	4.2E-01	4.18E-01	ug/L	Max	(d & e)
	Toluene	ug/L	N/A	N/A	ND	N/A			
	trans-1,2-Dichloroethene	ug/L	N/A	N/A	ND	N/A			
	Trichloroethene	ug/L	7.51E+00	9.36E+01 (T)	2.5E+01	2.50E+01	ug/L	Max	(c & e)
	Vinyl chloride	ug/L	8.61E-02	2.17E-01 (NP)	2.4E-01 J	2.17E-01	ug/L	95% UCL-NP	(d)
	Xylenes (total)	ug/L	N/A	N/A	ND	N/A			
	Acetophenone	ug/L	N/A	N/A	ND	N/A			
	4-Methylphenol	ug/L	N/A	N/A	ND	N/A			
	Naphthalene	ug/L	1.32E+00	N/A (<4)	2.7E+00	2.70E+00	ug/L	Max	(a)

TABLE 3-3.4.RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe:	Future
Medium:	Groundwater
Exposure Medium:	Shallow Groundwater

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)
Whitney Property (a)	2-Methylnaphthalene	ug/L	N/A	N/A	ND	N/A			
	Acenaphthylene	ug/L	N/A	N/A	ND	N/A			
	Phenanthrene	ug/L	2.83E+00	N/A (<4)	2.1E+00	2.10E+00	ug/L	Max	(a)
	Benzo(a)Pyrene	ug/L	3.37E-01	N/A (<4)	1.1E-02	1.10E-02	ug/L	Max	(a)
	Dibenz(a,h) anthracene	ug/L	3.38E-01	N/A (<4)	1.3E-02	1.30E-02	ug/L	Max	(a)
	C9-C18 Aliphatic	ug/L	N/A	N/A	ND	N/A			
	C11-C22 Aromatic	ug/L	N/A	N/A	ND	N/A			
	C19-C36 Aliphatic	ug/L	N/A	N/A	ND	N/A			
	C5-C8 Aliphatic	ug/L	N/A	N/A	ND	N/A			
	Arsenic	ug/L	1.28E+00	1.88E+00 (N)	2.5E+00 J	1.88E+00	ug/L	95% UCL-N	(b)
	Chromium	ug/L	3.84E+00	1.25E+01 (NP)	1.3E+01	1.25E+01	ug/L	95% UCL-NP	(d)
	Lead	ug/L	N/A	N/A	ND	N/A			
	Manganese	ug/L	4.05E+02	5.98E+02 (N)	8.2E+02	5.98E+02	ug/L	95% UCL-N	(b)
	PCB TEQ*	ug/L	N/A	N/A	ND	N/A			
	Dieldrin	ug/L	1.40E-02	N/A (<4)	1.4E-02 J	1.40E-02	ug/L	Max	(a)
	4,4'-DDD	ug/L	N/A	N/A	ND	N/A			
	1,1,2-Trichloroethane	ug/L	N/A	N/A	ND	N/A			
	1,1-Dichloroethane	ug/L	2.54E+01	1.31E+02 (T)	1.2E+02 J	1.20E+02	ug/L	Max	(c & e)
	1,1-Dichloroethene	ug/L	N/A	N/A	ND	N/A			
	1,2,4-Trichlorobenzene	ug/L	5.90E+00	3.81E+01 (T)	2.3E+01 J	2.30E+01	ug/L	Max	(c & e)
	1,3-Dichlorobenzene	ug/L	5.10E+00	3.33E+01 (T)	1.9E+01 J	1.90E+01	ug/L	Max	(c & e)
	1,4-Dichlorobenzene	ug/L	4.11E+01	4.18E+02 (T)	2.0E+02 J	1.97E+02	ug/L	Max	(c & e)
	Benzene	ug/L	2.13E+01	3.02E+02 (T)	8.6E+01 J	8.60E+01	ug/L	Max	(c & e)
	Bromomethane	ug/L	N/A	N/A	ND	N/A			

TABLE 3-3.4.RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe:	Future
Medium:	Groundwater
Exposure Medium:	Shallow Groundwater

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)
	Chlorobenzene	ug/L	4.90E+00	3.21E+01 (T)	1.8E+01 J	1.80E+01	ug/L	Max	(c & e)
	Chlorodibromomethane	ug/L	1.29E+00	9.36E+00 (T)	1.0E+00 J	1.05E+00	ug/L	Max	(c & e)
	Chloroethane	ug/L	N/A	N/A	ND	N/A			
	cis-1,2-Dichloroethene	ug/L	9.74E+01	1.05E+03 (T)	4.8E+02 J	4.80E+02	ug/L	Max	(c & e)
	Ethylbenzene	ug/L	1.01E+01	7.20E+01 (T)	4.0E+01	4.00E+01	ug/L	Max	(c & e)
	Methyl tert-butyl ether	ug/L	1.28E+02	8.83E+02 (T)	5.4E+02	5.40E+02	ug/L	Max	(c & e)
	Methylene chloride	ug/L	N/A	N/A	ND	N/A			
	Tetrachloroethene	ug/L	N/A	N/A	ND	N/A			
	Toluene	ug/L	2.45E+02	1.34E+03 (T)	1.2E+03	1.20E+03	ug/L	Max	(c & e)
	trans-1,2-Dichloroethene	ug/L	4.30E+00	2.83E+01 (T)	1.5E+01 J	1.50E+01	ug/L	Max	(c & e)
	Trichloroethene	ug/L	2.60E+00	4.01E+00 (N)	2.0E+00 J	2.00E+00	ug/L	Max	(b & e)
	Vinyl chloride	ug/L	8.50E+01	4.55E+02 (T)	4.2E+02 J	4.20E+02	ug/L	Max	(c & e)
	Xylenes (total)	ug/L	1.27E+01	2.92E+01 (N)	4.3E+01	2.92E+01	ug/L	95% UCL-N	(b)
	Acetophenone	ug/L	3.90E+00	N/A (<4)	1.2E+00 J	1.20E+00	ug/L	Max	(a)
	4-Methylphenol	ug/L	4.10E+00	N/A (<4)	1.8E+00 J	1.80E+00	ug/L	Max	(a)
	Naphthalene	ug/L	4.30E+00	9.60E+00 (N)	1.4E+01	9.60E+00	ug/L	95% UCL-N	(b)
	2-Methylnaphthalene	ug/L	N/A	N/A	ND	N/A			
	Acenaphthylene	ug/L	3.74E+00	5.62E+00 (NP)	3.2E+00	3.20E+00	ug/L	Max	(d & e)
	Phenanthrene	ug/L	4.10E+00	6.41E+00 (T)	3.1E+00	3.10E+00	ug/L	Max	(c & e)
	Benzo(a)Pyrene	ug/L	1.20E+00	1.55E+01 (T)	1.5E-02	1.50E-02	ug/L	Max	(c & e)
	Dibenz(a,h) anthracene	ug/L	1.20E+00	1.71E+01 (NP)	5.8E-03 J	5.80E-03	ug/L	Max	(c & e)
	C9-C18 Aliphatic	ug/L	4.95E+01	N/A (<4)	5.9E+01	5.90E+01	ug/L	Max	(a)
	C11-C22 Aromatic	ug/L	N/A	N/A	ND	N/A			
	C19-C36 Aliphatic	ug/L	7.87E+01	N/A (<4)	1.5E+02	1.50E+02	ug/L	Max	(a)

TABLE 3-3.4.RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe:	Future
Medium:	Groundwater
Exposure Medium:	Shallow Groundwater

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)
Murphy Property (a)	C5-C8 Aliphatic	ug/L	1.64E+02	N/A (<4)	4.5E+02	4.48E+02	ug/L	Max	(a)
	Arsenic	ug/L	1.59E+00	2.54E+00 (N)	3.5E+00 J	2.54E+00	ug/L	95% UCL-N	(b)
	Chromium	ug/L	6.88E+00	2.08E+01 (T)	2.3E+01 J	2.08E+01	ug/L	95% UCL-T	(c)
	Lead	ug/L	1.16E+00	1.64E+00 (N)	2.1E+00 J	1.64E+00	ug/L	95% UCL-N	(b)
	Manganese	ug/L	8.86E+02	1.69E+03 (N)	2.6E+03	1.69E+03	ug/L	95% UCL-N	(b)
	PCB TEQ*	ug/L	8.92E-07	N/A (<4)	1.4E-06 J	1.40E-06	ug/L	Max	(a)
	Dieldrin	ug/L	N/A	N/A	ND	N/A			
	4,4'-DDD	ug/L	2.82E-01	N/A (<4)	5.6E-01 J	5.58E-01	ug/L	Max	(a)
	1,1,2-Trichloroethane	ug/L	1.10E+01	3.27E+01 (NP)	4.0E-01 J	4.00E-01	ug/L	Max	(d)
	1,1-Dichloroethane	ug/L	3.54E+01	7.24E+01 (NP)	2.2E+02	7.24E+01	ug/L	95% UCL-NP	(d)
	1,1-Dichloroethene	ug/L	9.10E+00	2.90E+01 (NP)	9.0E+00 J	9.00E+00	ug/L	Max	(d)
	1,2,4-Trichlorobenzene	ug/L	N/A	N/A	ND	N/A			
	1,3-Dichlorobenzene	ug/L	N/A	N/A	ND	N/A			
	1,4-Dichlorobenzene	ug/L	N/A	N/A	ND	N/A			
	Benzene	ug/L	3.21E+00	6.54E+00 (NP)	1.6E+01	6.54E+00	ug/L	95% UCL-NP	(d)
	Bromomethane	ug/L	1.07E+01	3.24E+01 (NP)	1.0E+00 J	1.00E+00	ug/L	Max	(d)
	Chlorobenzene	ug/L	1.10E+01	3.27E+01 (NP)	1.0E+00 J	1.00E+00	ug/L	Max	(d)
	Chlorodibromomethane	ug/L	N/A	N/A	ND	N/A			
	Chloroethane	ug/L	1.35E+01	3.05E+01 (NP)	5.0E+01	3.05E+01	ug/L	95% UCL-NP	(d)
	cis-1,2-Dichloroethene	ug/L	2.19E+02	7.43E+02 (NP)	1.9E+03	7.43E+02	ug/L	95% UCL-NP	(d)
	Ethylbenzene	ug/L	3.29E+00	7.61E+00 (NP)	2.3E+01	7.61E+00	ug/L	95% UCL-NP	(d)
	Methyl tert-butyl ether	ug/L	N/A	N/A	ND	N/A			
	Methylene chloride	ug/L	7.54E+00	1.59E+01 (T)	9.0E+01 J	1.59E+01	ug/L	95% UCL-T	(c)
	Tetrachloroethene	ug/L	1.10E+01	3.27E+01 (NP)	7.0E+00 J	7.00E+00	ug/L	Max	(d)

TABLE 3-3.4.RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe:	Future
Medium:	Groundwater
Exposure Medium:	Shallow Groundwater

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)
	Toluene	ug/L	7.85E+00	1.71E+01 (NP)	5.2E+01	1.71E+01	ug/L	95% UCL-NP	(d)
	trans-1,2-Dichloroethene	ug/L	6.97E+00	1.28E+01 (NP)	2.8E+01 J	1.28E+01	ug/L	95% UCL-NP	(d)
	Trichloroethene	ug/L	1.21E+01	3.31E+01 (NP)	4.2E+01	3.31E+01	ug/L	95% UCL-NP	(d)
	Vinyl chloride	ug/L	5.71E+01	1.85E+02 (NP)	6.0E+02	1.85E+02	ug/L	95% UCL-NP	(d)
	Xylenes (total)	ug/L	9.76E+00	3.17E+01 (NP)	1.1E+02	3.17E+01	ug/L	95% UCL-NP	(d)
	Acetophenone	ug/L	N/A	N/A	ND	N/A			
	4-Methylphenol	ug/L	6.11E+00	1.07E+01 (NP)	2.5E+01	1.07E+01	ug/L	95% UCL-NP	(d)
	Naphthalene	ug/L	5.33E+00	9.09E+00 (NP)	2.5E+01	9.09E+00	ug/L	95% UCL-NP	(d)
	2-Methylnaphthalene	ug/L	5.34E+00	5.89E+00 (NP)	1.1E+01	5.89E+00	ug/L	95% UCL-NP	(d)
	Acenaphthylene	ug/L	N/A	N/A	ND	N/A			
	Phenanthrene	ug/L	5.05E+00	5.74E+00 (NP)	1.0E+01 J	5.74E+00	ug/L	95% UCL-NP	(d)
	Benzo(a)Pyrene	ug/L	N/A	N/A	ND	N/A			
	Dibenz(a,h) anthracene	ug/L	N/A	N/A	ND	N/A			
	C9-C18 Aliphatic	ug/L	2.09E+02	9.51E+02 (NP)	3.1E+03	9.51E+02	ug/L	95% UCL-NP	(d)
	C11-C22 Aromatic	ug/L	1.49E+02	4.19E+02 (NP)	1.2E+03	4.19E+02	ug/L	95% UCL-NP	(d)
	C19-C36 Aliphatic	ug/L	1.81E+03	7.69E+03 (NP)	2.4E+04	7.69E+03	ug/L	95% UCL-NP	(d)
	C5-C8 Aliphatic	ug/L	6.33E+01	1.15E+02 (NP)	2.6E+02	1.15E+02	ug/L	95% UCL-NP	(d)
	Arsenic	ug/L	1.37E+01	5.31E+01 (NP)	1.8E+02	5.31E+01	ug/L	95% UCL-NP	(d)
	Chromium	ug/L	1.24E+01	3.86E+01 (NP)	1.1E+02 J	3.86E+01	ug/L	95% UCL-NP	(d)
	Lead	ug/L	1.58E+01	5.18E+01 (NP)	1.5E+02 J	5.18E+01	ug/L	95% UCL-NP	(d)
	Manganese	ug/L	2.93E+02	N/A (<4)	4.7E+02	4.70E+02	ug/L	Max	(a)
	PCB TEQ*	ug/L	1.20E-06	N/A (<4)	1.2E-06	1.20E-06	ug/L	Max	(a)
	Dieldrin	ug/L	N/A	N/A	ND	N/A			
	4,4'-DDD	ug/L	N/A	N/A	ND	N/A			

TABLE 3-3.4.RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe:	Future
Medium:	Groundwater
Exposure Medium:	Shallow Groundwater

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)

(1) Only COPCs selected on Table 3-2.4 and detected at each exposure point appear.

(2) T - Transformed; N - Normal; NP - Non-parametric; <4 - sample size too small to calculate 95% UCL

(3) Statistics: Maximum Detected Value (Max); 95% UCL of Transformed Data (95% UCL - T); 95% of Normal Data (95% UCL - N); 95% of Non-parametric Data (95% UCL - NP); Arithmatic Mean (Mean).

(4) Rationale

(a) Due to small sample size (<4), the maximum detected concentration is used.

(b) Shapiro-Wilk W Test indicates data are normally distributed.

(c) Shapiro-Wilk W Test indicates data are log-normally distributed.

(d) Shapiro-Wilk W Test indicates data are neither normally nor log-normally distributed.

(e) Recommended UCL exceeds maximum detected concentration. Therefore, maximum concentration is used for EPC.

(f) When the maximum detected concentration is selected as the RME EPC, the arithmetic mean concentration is selected as the CT EPC.

(g) If the arithmetic mean concentration equals or exceeds the maximum detected concentration, the maximum detected concentration is used as the CT EPC

J = Estimated concentration

Max = Maximum detected concentration

N/A = Not applicable

UCL = Upper confidence limit

EPC = Exposure point concentration

RME = Reasonable Maximum Exposure

CT = Central Tendency

TABLE 3-3.4.CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe:	Future
Medium:	Groundwater
Exposure Medium:	Shallow Groundwater

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)
Aberjona Property (a)	1,1,2-Trichloroethane	ug/L	N/A	N/A	ND	N/A			
	1,1-Dichloroethane	ug/L	N/A	N/A	ND	N/A			
	1,1-Dichloroethene	ug/L	6.34E-02	1.06E-01 (NP)	1.9E-01	1.06E-01	ug/L	95% UCL-NP	(d)
	1,2,4-Trichlorobenzene	ug/L	N/A	N/A	ND	N/A			
	1,3-Dichlorobenzene	ug/L	N/A	N/A	ND	N/A			
	1,4-Dichlorobenzene	ug/L	1.59E-01	4.68E-01 (NP)	4.8E-01	4.68E-01	ug/L	95% UCL-NP	(d)
	Benzene	ug/L	9.14E-02	2.61E-01 (NP)	3.2E-01 J	2.61E-01	ug/L	95% UCL-NP	(d)
	Bromomethane	ug/L	N/A	N/A	ND	N/A			
	Chlorobenzene	ug/L	N/A	N/A	ND	N/A			
	Chlorodibromomethane	ug/L	3.01E-01	9.18E-01 (T)	1.0E+00 J	9.18E-01	ug/L	95% UCL-T	(c)
	Chloroethane	ug/L	N/A	N/A	ND	N/A			
	cis-1,2-Dichloroethene	ug/L	6.79E+00	4.57E+01 (T)	2.9E+01 J	6.79E+00	ug/L	Mean	(f)
	Ethylbenzene	ug/L	N/A	N/A	ND	N/A			
	Methyl tert-butyl ether	ug/L	4.21E+00	1.47E+01 (T)	1.4E+01	4.21E+00	ug/L	Mean	(f)
	Methylene chloride	ug/L	N/A	N/A	ND	N/A			
	Tetrachloroethene	ug/L	4.24E-01	5.47E-01 (NP)	4.2E-01	4.18E-01	ug/L	Max	(g)
	Toluene	ug/L	N/A	N/A	ND	N/A			
	trans-1,2-Dichloroethene	ug/L	N/A	N/A	ND	N/A			
	Trichloroethene	ug/L	7.51E+00	9.36E+01 (T)	2.5E+01	7.51E+00	ug/L	Mean	(f)
	Vinyl chloride	ug/L	8.61E-02	2.17E-01 (NP)	2.4E-01 J	2.17E-01	ug/L	95% UCL-NP	(d)
	Xylenes (total)	ug/L	N/A	N/A	ND	N/A			
	Acetophenone	ug/L	N/A	N/A	ND	N/A			
	4-Methylphenol	ug/L	N/A	N/A	ND	N/A			
	Naphthalene	ug/L	1.32E+00	N/A (<4)	2.7E+00	1.32E+00	ug/L	Mean	(f)

TABLE 3-3.4.CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe:	Future
Medium:	Groundwater
Exposure Medium:	Shallow Groundwater

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)
	2-Methylnaphthalene	ug/L	N/A	N/A	ND	N/A			
	Acenaphthylene	ug/L	N/A	N/A	ND	N/A			
	Phenanthrene	ug/L	2.83E+00	N/A (<4)	2.1E+00	2.10E+00	ug/L	Max	(g)
	Benzo(a)Pyrene	ug/L	3.37E-01	N/A (<4)	1.1E-02	1.10E-02	ug/L	Max	(g)
	Dibenz(a,h) anthracene	ug/L	3.38E-01	N/A (<4)	1.3E-02	1.30E-02	ug/L	Max	(g)
	C9-C18 Aliphatic	ug/L	N/A	N/A	ND	N/A			
	C11-C22 Aromatic	ug/L	N/A	N/A	ND	N/A			
	C19-C36 Aliphatic	ug/L	N/A	N/A	ND	N/A			
	C5-C8 Aliphatic	ug/L	N/A	N/A	ND	N/A			
	Arsenic	ug/L	1.28E+00	1.88E+00 (N)	2.5E+00 J	1.88E+00	ug/L	95% UCL-N	(b)
	Chromium	ug/L	3.84E+00	1.25E+01 (NP)	1.3E+01	1.25E+01	ug/L	95% UCL-NP	(d)
	Lead	ug/L	N/A	N/A	ND	N/A			
	Manganese	ug/L	4.05E+02	5.98E+02 (N)	8.2E+02	5.98E+02	ug/L	95% UCL-N	(b)
	PCB TEQ*	ug/L	N/A	N/A	ND	N/A			
	Dieldrin	ug/L	1.40E-02	N/A (<4)	1.4E-02 J	1.40E-02	ug/L	Mean	(f)
	4,4'-DDD	ug/L	N/A	N/A	ND	N/A			
Whitney Property (a)	1,1,2-Trichloroethane	ug/L	N/A	N/A	ND	N/A			
	1,1-Dichloroethane	ug/L	2.54E+01	1.31E+02 (T)	1.2E+02 J	2.54E+01	ug/L	Mean	(f)
	1,1-Dichloroethene	ug/L	N/A	N/A	ND	N/A			
	1,2,4-Trichlorobenzene	ug/L	5.90E+00	3.81E+01 (T)	2.3E+01 J	5.90E+00	ug/L	Mean	(f)
	1,3-Dichlorobenzene	ug/L	5.10E+00	3.33E+01 (T)	1.9E+01 J	5.10E+00	ug/L	Mean	(f)
	1,4-Dichlorobenzene	ug/L	4.11E+01	4.18E+02 (T)	2.0E+02 J	4.11E+01	ug/L	Mean	(f)
	Benzene	ug/L	2.13E+01	3.02E+02 (T)	8.6E+01 J	2.13E+01	ug/L	Mean	(f)

TABLE 3-3.4.CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe:	Future
Medium:	Groundwater
Exposure Medium:	Shallow Groundwater

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)
	Bromomethane	ug/L	N/A	N/A	ND	N/A			
	Chlorobenzene	ug/L	4.90E+00	3.21E+01 (T)	1.8E+01 J	4.90E+00	ug/L	Mean	(f)
	Chlorodibromomethane	ug/L	1.29E+00	9.36E+00 (T)	1.0E+00 J	1.05E+00	ug/L	Max	(g)
	Chloroethane	ug/L	N/A	N/A	ND	N/A			
	cis-1,2-Dichloroethene	ug/L	9.74E+01	1.05E+03 (T)	4.8E+02 J	9.74E+01	ug/L	Mean	(f)
	Ethylbenzene	ug/L	1.01E+01	7.20E+01 (T)	4.0E+01	1.01E+01	ug/L	Mean	(f)
	Methyl tert-butyl ether	ug/L	1.28E+02	8.83E+02 (T)	5.4E+02	1.28E+02	ug/L	Mean	(f)
	Methylene chloride	ug/L	N/A	N/A	ND	N/A			
	Tetrachloroethene	ug/L	N/A	N/A	ND	N/A			
	Toluene	ug/L	2.45E+02	1.34E+03 (T)	1.2E+03	2.45E+02	ug/L	Mean	(f)
	trans-1,2-Dichloroethene	ug/L	4.30E+00	2.83E+01 (T)	1.5E+01 J	4.30E+00	ug/L	Mean	(f)
	Trichloroethene	ug/L	2.60E+00	4.01E+00 (N)	2.0E+00 J	2.00E+00	ug/L	Max	(g)
	Vinyl chloride	ug/L	8.50E+01	4.55E+02 (T)	4.2E+02 J	8.50E+01	ug/L	Mean	(f)
	Xylenes (total)	ug/L	1.27E+01	2.92E+01 (N)	4.3E+01	2.92E+01	ug/L	95% UCL-N	(b)
	Acetophenone	ug/L	3.90E+00	N/A (<4)	1.2E+00 J	1.20E+00	ug/L	Max	(g)
	4-Methylphenol	ug/L	4.10E+00	N/A (<4)	1.8E+00 J	1.80E+00	ug/L	Max	(g)
	Naphthalene	ug/L	4.30E+00	9.60E+00 (N)	1.4E+01	9.60E+00	ug/L	95% UCL-N	(b)
	2-Methylnaphthalene	ug/L	N/A	N/A	ND	N/A			
	Acenaphthylene	ug/L	3.74E+00	5.62E+00 (NP)	3.2E+00	3.20E+00	ug/L	Max	(g)
	Phenanthrene	ug/L	4.10E+00	6.41E+00 (T)	3.1E+00	3.10E+00	ug/L	Max	(g)
	Benzo(a)Pyrene	ug/L	1.20E+00	1.55E+01 (T)	1.5E-02	1.50E-02	ug/L	Max	(g)
	Dibenz(a,h) anthracene	ug/L	1.20E+00	1.71E+01 (NP)	5.8E-03 J	5.80E-03	ug/L	Max	(g)
	C9-C18 Aliphatic	ug/L	4.95E+01	N/A (<4)	5.9E+01	4.95E+01	ug/L	Mean	(f)
	C11-C22 Aromatic	ug/L	N/A	N/A	ND	N/A			

TABLE 3-3.4.CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe:	Future
Medium:	Groundwater
Exposure Medium:	Shallow Groundwater

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)
Murphy Property (a)	C19-C36 Aliphatic	ug/L	7.87E+01	N/A (<4)	1.5E+02	7.87E+01	ug/L	Mean	(f)
	C5-C8 Aliphatic	ug/L	1.64E+02	N/A (<4)	4.5E+02	1.64E+02	ug/L	Mean	(f)
	Arsenic	ug/L	1.59E+00	2.54E+00 (N)	3.5E+00 J	2.54E+00	ug/L	95% UCL-N	(b)
	Chromium	ug/L	6.88E+00	2.08E+01 (T)	2.3E+01 J	2.08E+01	ug/L	95% UCL-T	(c)
	Lead	ug/L	1.16E+00	1.64E+00 (N)	2.1E+00 J	1.64E+00	ug/L	95% UCL-N	(b)
	Manganese	ug/L	8.86E+02	1.69E+03 (N)	2.6E+03	1.69E+03	ug/L	95% UCL-N	(b)
	PCB TEQ*	ug/L	8.92E-07	N/A (<4)	1.4E-06 J	8.92E-07	ug/L	Mean	(f)
	Dieldrin	ug/L	N/A	N/A	ND	N/A			
	4,4'-DDD	ug/L	2.82E-01	N/A (<4)	5.6E-01 J	2.82E-01	ug/L	Mean	(f)
	1,1,2-Trichloroethane	ug/L	1.10E+01	3.27E+01 (NP)	4.0E-01 J	4.00E-01	ug/L	Max	(g)
	1,1-Dichloroethane	ug/L	3.54E+01	7.24E+01 (NP)	2.2E+02	7.24E+01	ug/L	95% UCL-NP	(d)
	1,1-Dichloroethene	ug/L	9.10E+00	2.90E+01 (NP)	9.0E+00 J	9.00E+00	ug/L	Max	(g)
	1,2,4-Trichlorobenzene	ug/L	N/A	N/A	ND	N/A			
	1,3-Dichlorobenzene	ug/L	N/A	N/A	ND	N/A			
	1,4-Dichlorobenzene	ug/L	N/A	N/A	ND	N/A			
	Benzene	ug/L	3.21E+00	6.54E+00 (NP)	1.6E+01	6.54E+00	ug/L	95% UCL-NP	(d)
	Bromomethane	ug/L	1.07E+01	3.24E+01 (NP)	1.0E+00 J	1.00E+00	ug/L	Max	(g)
	Chlorobenzene	ug/L	1.10E+01	3.27E+01 (NP)	1.0E+00 J	1.00E+00	ug/L	Max	(g)
	Chlorodibromomethane	ug/L	N/A	N/A	ND	N/A			
	Chloroethane	ug/L	1.35E+01	3.05E+01 (NP)	5.0E+01	3.05E+01	ug/L	95% UCL-NP	(d)
	cis-1,2-Dichloroethene	ug/L	2.19E+02	7.43E+02 (NP)	1.9E+03	7.43E+02	ug/L	95% UCL-NP	(d)
	Ethylbenzene	ug/L	3.29E+00	7.61E+00 (NP)	2.3E+01	7.61E+00	ug/L	95% UCL-NP	(d)
	Methyl tert-butyl ether	ug/L	N/A	N/A	ND	N/A			

TABLE 3-3.4.CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe:	Future
Medium:	Groundwater
Exposure Medium:	Shallow Groundwater

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)
	Methylene chloride	ug/L	7.54E+00	1.59E+01 (T)	9.0E+01 J	1.59E+01	ug/L	95% UCL-T	(c)
	Tetrachloroethene	ug/L	1.10E+01	3.27E+01 (NP)	7.0E+00 J	7.00E+00	ug/L	Max	(g)
	Toluene	ug/L	7.85E+00	1.71E+01 (NP)	5.2E+01	1.71E+01	ug/L	95% UCL-NP	(d)
	trans-1,2-Dichloroethene	ug/L	6.97E+00	1.28E+01 (NP)	2.8E+01 J	1.28E+01	ug/L	95% UCL-NP	(d)
	Trichloroethene	ug/L	1.21E+01	3.31E+01 (NP)	4.2E+01	3.31E+01	ug/L	95% UCL-NP	(d)
	Vinyl chloride	ug/L	5.71E+01	1.85E+02 (NP)	6.0E+02	1.85E+02	ug/L	95% UCL-NP	(d)
	Xylenes (total)	ug/L	9.76E+00	3.17E+01 (NP)	1.1E+02	3.17E+01	ug/L	95% UCL-NP	(d)
	Acetophenone	ug/L	N/A	N/A	ND	N/A			
	4-Methylphenol	ug/L	6.11E+00	1.07E+01 (NP)	2.5E+01	1.07E+01	ug/L	95% UCL-NP	(d)
	Naphthalene	ug/L	5.33E+00	9.09E+00 (NP)	2.5E+01	9.09E+00	ug/L	95% UCL-NP	(d)
	2-Methylnaphthalene	ug/L	5.34E+00	5.89E+00 (NP)	1.1E+01	5.89E+00	ug/L	95% UCL-NP	(d)
	Acenaphthylene	ug/L	N/A	N/A	ND	N/A			
	Phenanthrene	ug/L	5.05E+00	5.74E+00 (NP)	1.0E+01 J	5.74E+00	ug/L	95% UCL-NP	(d)
	Benzo(a)Pyrene	ug/L	N/A	N/A	ND	N/A			
	Dibenz(a,h) anthracene	ug/L	N/A	N/A	ND	N/A			
	C9-C18 Aliphatic	ug/L	2.09E+02	9.51E+02 (NP)	3.1E+03	9.51E+02	ug/L	95% UCL-NP	(d)
	C11-C22 Aromatic	ug/L	1.49E+02	4.19E+02 (NP)	1.2E+03	4.19E+02	ug/L	95% UCL-NP	(d)
	C19-C36 Aliphatic	ug/L	1.81E+03	7.69E+03 (NP)	2.4E+04	7.69E+03	ug/L	95% UCL-NP	(d)
	C5-C8 Aliphatic	ug/L	6.33E+01	1.15E+02 (NP)	2.6E+02	1.15E+02	ug/L	95% UCL-NP	(d)
	Arsenic	ug/L	1.37E+01	5.31E+01 (NP)	1.8E+02	5.31E+01	ug/L	95% UCL-NP	(d)
	Chromium	ug/L	1.24E+01	3.86E+01 (NP)	1.1E+02 J	3.86E+01	ug/L	95% UCL-NP	(d)
	Lead	ug/L	1.58E+01	5.18E+01 (NP)	1.5E+02 J	5.18E+01	ug/L	95% UCL-NP	(d)
	Manganese	ug/L	2.93E+02	N/A (<4)	4.7E+02	2.93E+02	ug/L	Mean	(f)
	PCB TEQ*	ug/L	1.20E-06	N/A (<4)	1.2E-06	1.20E-06	ug/L	Mean	(f)
	Dieldrin	ug/L	N/A	N/A	ND	N/A			
	4,4'-DDD	ug/L	N/A	N/A	ND	N/A			

TABLE 3-3.4.CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe:	Future
Medium:	Groundwater
Exposure Medium:	Shallow Groundwater

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)

(1) Only COPCs selected on Table 3-2.4 and detected at each exposure point appear.

(2) T - Transformed; N - Normal; NP - Non-parametric; <4 - sample size too small to calculate 95% UCL

(3) Statistics: Maximum Detected Value (Max); 95% UCL of Transformed Data (95% UCL - T); 95% of Normal Data (95% UCL - N); 95% of Non-parametric Data (95% UCL - NP); Arithmatic Mean (Mean).

(4) Rationale

(a) Due to small sample size (<4), the maximum detected concentration is used.

(b) Shapiro-Wilk W Test indicates data are normally distributed.

(c) Shapiro-Wilk W Test indicates data are log-normally distributed.

(d) Shapiro-Wilk W Test indicates data are neither normally nor log-normally distributed.

(e) Recommended UCL exceeds maximum detected concentration. Therefore, maximum concentration is used for EPC.

(f) When the maximum detected concentration is selected as the RME EPC, the arithmetic mean concentration is selected as the CT EPC.

(g) If the arithmetic mean concentration equals or exceeds the maximum detected concentration, the maximum detected concentration is used as the CT EPC.

J = Estimated concentration

Max = Maximum detected concentration

N/A = Not applicable

UCL = Upper confidence limit

EPC = Exposure point concentration

RME = Reasonable Maximum Exposure

CT = Central Tendency

TABLE 3-3.5.RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe:	Future
Medium:	Groundwater
Exposure Medium:	Groundwater

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)
Shower Head Off-site (a) (Inhalation)	1,1,1-Trichloroethane	ug/L	9.39E+00	2.26E+01 (NP)	1.5E+02 J	1.50E+02	ug/L	Max	(h)
	1,1,2-Trichloro-1,2,2-triflu	ug/L	3.83E+00	4.57E+00 (NP)	1.5E+01 J	1.50E+01	ug/L	Max	(h)
	1,1,2-Trichloroethane	ug/L	5.64E+00	1.51E+01 (NP)	4.0E-01 J	4.00E-01	ug/L	Max	(h)
	1,1-Dichloroethane	ug/L	1.96E+01	3.51E+01 (NP)	2.2E+02	2.20E+02	ug/L	Max	(h)
	1,1-Dichloroethene	ug/L	4.75E+00	1.34E+01 (NP)	9.0E+00 J	9.00E+00	ug/L	Max	(h)
	1,2,4-Trichlorobenzene	ug/L	6.63E+00	1.61E+01 (NP)	2.3E+01 J	2.30E+01	ug/L	Max	(h)
	1,2-Dichlorobenzene	ug/L	6.24E+00	1.56E+01 (NP)	1.0E+01 J	1.00E+01	ug/L	Max	(h)
	1,3-Dichlorobenzene	ug/L	6.17E+00	1.57E+01 (NP)	1.9E+01 J	1.90E+01	ug/L	Max	(h)
	1,4-Dichlorobenzene	ug/L	9.67E+00	2.88E+01 (NP)	2.0E+02 J	1.97E+02	ug/L	Max	(h)
	2-Butanone (MEK)	ug/L	6.43E+00	1.78E+01 (NP)	6.0E+00 J	6.00E+00	ug/L	Max	(h)
	Acetone	ug/L	6.09E+00	1.25E+01 (NP)	3.5E+01 J	3.50E+01	ug/L	Max	(h)
	Benzene	ug/L	3.94E+00	1.15E+01 (NP)	8.6E+01 J	8.60E+01	ug/L	Max	(h)
	Bromomethane	ug/L	5.55E+00	1.50E+01 (NP)	1.0E+00 J	1.00E+00	ug/L	Max	(h)
	Carbon disulfide	ug/L	5.76E+00	1.52E+01 (NP)	3.0E+00 J	3.00E+00	ug/L	Max	(h)
	Chlorobenzene	ug/L	6.45E+00	1.59E+01 (NP)	1.8E+01 J	1.80E+01	ug/L	Max	(h)
	Chloroethane	ug/L	6.88E+00	1.46E+01 (NP)	5.0E+01	5.00E+01	ug/L	Max	(h)
	Chloroform	ug/L	5.64E+00	1.51E+01 (NP)	1.1E-01	1.07E-01	ug/L	Max	(h)
	cis-1,2-Dichloroethene	ug/L	1.10E+02	3.40E+02 (NP)	1.9E+03	1.90E+03	ug/L	Max	(h)
	Cyclohexane	ug/L	6.05E+00	1.75E+01 (NP)	8.0E+00 J	8.00E+00	ug/L	Max	(h)
	Dichlorodifluoromethane	ug/L	6.23E+00	1.56E+01 (NP)	1.0E+00	1.00E+00	ug/L	Max	(h)
	Ethylbenzene	ug/L	3.02E+00	6.86E+00 (NP)	4.0E+01	4.00E+01	ug/L	Max	(h)
	Isopropylbenzene	ug/L	6.08E+00	1.55E+01 (NP)	3.0E+00 J	3.00E+00	ug/L	Max	(h)
	Methyl cyclohexane	ug/L	6.03E+00	1.54E+01 (NP)	7.0E+00 J	7.00E+00	ug/L	Max	(h)
	Methyl tert-butyl ether	ug/L	1.65E+01	6.34E+01 (NP)	5.4E+02	5.40E+02	ug/L	Max	(h)

TABLE 3-3.5.RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe:	Future
Medium:	Groundwater
Exposure Medium:	Groundwater

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)
	Methylene chloride	ug/L	3.89E+00	1.19E+01 (NP)	9.0E+01 J	9.00E+01	ug/L	Max	(h)
	Tetrachloroethene	ug/L	7.35E+00	1.64E+01 (NP)	3.6E+01 J	3.60E+01	ug/L	Max	(h)
	Toluene	ug/L	2.88E+01	1.33E+02 (NP)	1.2E+03	1.20E+03	ug/L	Max	(h)
	trans-1,2-Dichloroethene	ug/L	4.80E+00	6.92E+00 (NP)	2.8E+01 J	2.80E+01	ug/L	Max	(h)
	Trichloroethene	ug/L	1.18E+01	2.82E+01 (NP)	1.6E+02 J	1.60E+02	ug/L	Max	(h)
	Vinyl chloride	ug/L	3.38E+01	1.00E+02 (NP)	6.0E+02	6.00E+02	ug/L	Max	(h)
	Xylenes (total)	ug/L	6.81E+00	1.67E+01 (NP)	1.1E+02	1.10E+02	ug/L	Max	(h)
	Acetophenone	ug/L	5.07E+00	5.28E+00 (NP)	1.2E+00 J	1.20E+00	ug/L	Max	(h)
	Naphthalene	ug/L	4.64E+00	6.61E+00 (NP)	2.5E+01	2.50E+01	ug/L	Max	(h)
	2-Methylnaphthalene	ug/L	4.82E+00	5.25E+00 (NP)	1.1E+01	1.10E+01	ug/L	Max	(h)
	1,1'-Biphenyl	ug/L	5.11E+00	5.38E+00 (NP)	7.0E+00 J	7.00E+00	ug/L	Max	(h)
	Acenaphthylene	ug/L	4.63E+00	4.98E+00 (NP)	3.2E+00	3.20E+00	ug/L	Max	(h)
	Acenaphthene	ug/L	4.68E+00	4.97E+00 (NP)	3.9E+00 J	3.90E+00	ug/L	Max	(h)
	Fluorene	ug/L	4.73E+00	5.01E+00 (NP)	5.5E+00	5.50E+00	ug/L	Max	(h)
	Phenanthrene	ug/L	4.74E+00	5.15E+00 (NP)	1.0E+01 J	1.00E+01	ug/L	Max	(h)
	Anthracene	ug/L	4.64E+00	4.95E+00 (NP)	2.0E-01 J	2.00E-01	ug/L	Max	(h)
	C9-C18 Aliphatic	ug/L	1.32E+02	5.50E+02 (NP)	3.1E+03	3.10E+03	ug/L	Max	(h)
	C11-C22 Aromatic	ug/L	1.18E+02	2.72E+02 (NP)	1.2E+03	1.20E+03	ug/L	Max	(h)
	C5-C8 Aliphatic	ug/L	6.08E+01	1.10E+02 (NP)	4.5E+02	4.48E+02	ug/L	Max	(h)
	C9-C10 Aromatic	ug/L	1.93E+01	4.60E+01 (NP)	2.0E+02 J	2.00E+02	ug/L	Max	(h)
	C9-C12 Aliphatic	ug/L	1.17E+01	2.48E+01 (NP)	9.6E+01 J	9.59E+01	ug/L	Max	(h)

TABLE 3-3.5.RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe:	Future
Medium:	Groundwater
Exposure Medium:	Groundwater

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)

(1) Only COPCs selected on Table 3-5.1 and detected at each exposure point appear.

(2) T - Transformed; N - Normal; NP - Non-parametric; <4 - sample size too small to calculate 95% UCL

(3) Statistics: Maximum Detected Value (Max); 95% UCL of Transformed Data (95% UCL - T); 95% of Normal Data (95% UCL - N); 95% of Non-parametric Data (95% UCL - NP); Arithmatic Mean (Mean).

(4) Rationale

(a) Due to small sample size (<4), the maximum detected concentration is used.

(b) Shapiro-Wilk W Test indicates data are normally distributed.

(c) Shapiro-Wilk W Test indicates data are log-normally distributed.

(d) Shapiro-Wilk W Test indicates data are neither normally nor log-normally distributed.

(e) Recommended UCL exceeds maximum detected concentration. Therefore, maximum concentration is used for EPC.

(f) When the maximum detected concentration is selected as the RME EPC, the arithmetic mean concentration is selected as the CT EPC.

(g) If the arithmetic mean concentration equals or exceeds the maximum detected concentration, the maximum detected concentration is used as the CT EPC

(h) Maximum concentration used for EPC exposures.

(i) Mean concentration used for EPC exposures.

J = Estimated concentration

Max = Maximum detected concentration

N/A = Not applicable

UCL = Upper confidence limit

EPC = Exposure point concentration

RME = Reasonable Maximum Exposure

TABLE 3-3.5.CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe:	Future
Medium:	Groundwater
Exposure Medium:	Groundwater

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)
Shower Head Off-site (a) (Inhalation)	1,1,1-Trichloroethane	ug/L	9.39E+00	2.26E+01 (NP)	1.5E+02 J	9.39E+00	ug/L	Mean	(i)
	1,1,2-Trichloro-1,2,2-triflu	ug/L	3.83E+00	4.57E+00 (NP)	1.5E+01 J	3.83E+00	ug/L	Mean	(i)
	1,1,2-Trichloroethane	ug/L	5.64E+00	1.51E+01 (NP)	4.0E-01 J	5.64E+00	ug/L	Mean	(i)
	1,1-Dichloroethane	ug/L	1.96E+01	3.51E+01 (NP)	2.2E+02	1.96E+01	ug/L	Mean	(i)
	1,1-Dichloroethene	ug/L	4.75E+00	1.34E+01 (NP)	9.0E+00 J	4.75E+00	ug/L	Mean	(i)
	1,2,4-Trichlorobenzene	ug/L	6.63E+00	1.61E+01 (NP)	2.3E+01 J	6.63E+00	ug/L	Mean	(i)
	1,2-Dichlorobenzene	ug/L	6.24E+00	1.56E+01 (NP)	1.0E+01 J	6.24E+00	ug/L	Mean	(i)
	1,3-Dichlorobenzene	ug/L	6.17E+00	1.57E+01 (NP)	1.9E+01 J	6.17E+00	ug/L	Mean	(i)
	1,4-Dichlorobenzene	ug/L	9.67E+00	2.88E+01 (NP)	2.0E+02 J	9.67E+00	ug/L	Mean	(i)
	2-Butanone (MEK)	ug/L	6.43E+00	1.78E+01 (NP)	6.0E+00 J	6.43E+00	ug/L	Mean	(i)
	Acetone	ug/L	6.09E+00	1.25E+01 (NP)	3.5E+01 J	6.09E+00	ug/L	Mean	(i)
	Benzene	ug/L	3.94E+00	1.15E+01 (NP)	8.6E+01 J	3.94E+00	ug/L	Mean	(i)
	Bromomethane	ug/L	5.55E+00	1.50E+01 (NP)	1.0E+00 J	5.55E+00	ug/L	Mean	(i)
	Carbon disulfide	ug/L	5.76E+00	1.52E+01 (NP)	3.0E+00 J	5.76E+00	ug/L	Mean	(i)
	Chlorobenzene	ug/L	6.45E+00	1.59E+01 (NP)	1.8E+01 J	6.45E+00	ug/L	Mean	(i)
	Chloroethane	ug/L	6.88E+00	1.46E+01 (NP)	5.0E+01	6.88E+00	ug/L	Mean	(i)
	Chloroform	ug/L	5.64E+00	1.51E+01 (NP)	1.1E-01	5.64E+00	ug/L	Mean	(i)
	cis-1,2-Dichloroethene	ug/L	1.10E+02	3.40E+02 (NP)	1.9E+03	1.10E+02	ug/L	Mean	(i)
	Cyclohexane	ug/L	6.05E+00	1.75E+01 (NP)	8.0E+00 J	6.05E+00	ug/L	Mean	(i)
	Dichlorodifluoromethane	ug/L	6.23E+00	1.56E+01 (NP)	1.0E+00	6.23E+00	ug/L	Mean	(i)
	Ethylbenzene	ug/L	3.02E+00	6.86E+00 (NP)	4.0E+01	3.02E+00	ug/L	Mean	(i)
	Isopropylbenzene	ug/L	6.08E+00	1.55E+01 (NP)	3.0E+00 J	6.08E+00	ug/L	Mean	(i)
	Methyl cyclohexane	ug/L	6.03E+00	1.54E+01 (NP)	7.0E+00 J	6.03E+00	ug/L	Mean	(i)
	Methyl tert-butyl ether	ug/L	1.65E+01	6.34E+01 (NP)	5.4E+02	1.65E+01	ug/L	Mean	(i)

TABLE 3-3.5.CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe:	Future
Medium:	Groundwater
Exposure Medium:	Groundwater

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)
	Methylene chloride	ug/L	3.89E+00	1.19E+01 (NP)	9.0E+01 J	3.89E+00	ug/L	Mean	(i)
	Tetrachloroethene	ug/L	7.35E+00	1.64E+01 (NP)	3.6E+01 J	7.35E+00	ug/L	Mean	(i)
	Toluene	ug/L	2.88E+01	1.33E+02 (NP)	1.2E+03	2.88E+01	ug/L	Mean	(i)
	trans-1,2-Dichloroethene	ug/L	4.80E+00	6.92E+00 (NP)	2.8E+01 J	4.80E+00	ug/L	Mean	(i)
	Trichloroethene	ug/L	1.18E+01	2.82E+01 (NP)	1.6E+02 J	1.18E+01	ug/L	Mean	(i)
	Vinyl chloride	ug/L	3.38E+01	1.00E+02 (NP)	6.0E+02	3.38E+01	ug/L	Mean	(i)
	Xylenes (total)	ug/L	6.81E+00	1.67E+01 (NP)	1.1E+02	6.81E+00	ug/L	Mean	(i)
	Acetophenone	ug/L	5.07E+00	5.28E+00 (NP)	1.2E+00 J	5.07E+00	ug/L	Mean	(i)
	Naphthalene	ug/L	4.64E+00	6.61E+00 (NP)	2.5E+01	4.64E+00	ug/L	Mean	(i)
	2-Methylnaphthalene	ug/L	4.82E+00	5.25E+00 (NP)	1.1E+01	4.82E+00	ug/L	Mean	(i)
	1,1'-Biphenyl	ug/L	5.11E+00	5.38E+00 (NP)	7.0E+00 J	5.11E+00	ug/L	Mean	(i)
	Acenaphthylene	ug/L	4.63E+00	4.98E+00 (NP)	3.2E+00	4.63E+00	ug/L	Mean	(i)
	Acenaphthene	ug/L	4.68E+00	4.97E+00 (NP)	3.9E+00 J	4.68E+00	ug/L	Mean	(i)
	Fluorene	ug/L	4.73E+00	5.01E+00 (NP)	5.5E+00	4.73E+00	ug/L	Mean	(i)
	Phenanthrene	ug/L	4.74E+00	5.15E+00 (NP)	1.0E+01 J	4.74E+00	ug/L	Mean	(i)
	Anthracene	ug/L	4.64E+00	4.95E+00 (NP)	2.0E-01 J	4.64E+00	ug/L	Mean	(i)
	C9-C18 Aliphatic	ug/L	1.32E+02	5.50E+02 (NP)	3.1E+03	1.32E+02	ug/L	Mean	(i)
	C11-C22 Aromatic	ug/L	1.18E+02	2.72E+02 (NP)	1.2E+03	1.18E+02	ug/L	Mean	(i)
	C5-C8 Aliphatic	ug/L	6.08E+01	1.10E+02 (NP)	4.5E+02	6.08E+01	ug/L	Mean	(i)
	C9-C10 Aromatic	ug/L	1.93E+01	4.60E+01 (NP)	2.0E+02 J	1.93E+01	ug/L	Mean	(i)
	C9-C12 Aliphatic	ug/L	1.17E+01	2.48E+01 (NP)	9.6E+01 J	1.17E+01	ug/L	Mean	(i)

TABLE 3-3.5.CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe:	Future
Medium:	Groundwater
Exposure Medium:	Groundwater

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)

(1) Only COPCs selected on Table 3-5.1 and detected at each exposure point appear.

(2) T - Transformed; N - Normal; NP - Non-parametric; <4 - sample size too small to calculate 95% UCL

(3) Statistics: Maximum Detected Value (Max); 95% UCL of Transformed Data (95% UCL - T); 95% of Normal Data (95% UCL - N); 95% of Non-parametric Data (95% UCL - NP); Arithmatic Mean (Mean).

(4) Rationale

(a) Due to small sample size (<4), the maximum detected concentration is used.

(b) Shapiro-Wilk W Test indicates data are normally distributed.

(c) Shapiro-Wilk W Test indicates data are log-normally distributed.

(d) Shapiro-Wilk W Test indicates data are neither normally nor log-normally distributed.

(e) Recommended UCL exceeds maximum detected concentration. Therefore, maximum concentration is used for EPC.

(f) When the maximum detected concentration is selected as the RME EPC, the arithmetic mean concentration is selected as the CT EPC.

(g) If the arithmetic mean concentration equals or exceeds the maximum detected concentration, the maximum detected concentration is used as the CT

(h) Maximum concentration used for EPC exposures.

(i) Mean concentration used for EPC exposures.

J = Estimated concentration

Max = Maximum detected concentration

N/A = Not applicable

UCL = Upper confidence limit

EPC = Exposure point concentration

RME = Reasonable Maximum Exposure

CT = Central Tendency

TABLE 3-3.6.RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe:	Future
Medium:	Soil
Exposure Medium:	Indoor Air

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)
Aberjona Property (a)	1,2,4-Trimethylbenzene					N/A			
	1,2-Dichloroethene (total)					N/A			
	1,3,5-Trimethylbenzene					N/A			
	n-Butylbenzene					N/A			
	Naphthalene					2.37E-02	ug/m3	95% UCL-NP	(d)
	p-Isopropyltoluene					N/A			
	Chloromethane					N/A			
	Vinyl chloride					N/A			
	Bromomethane					4.31E-03	ug/m3	Max	(d)
	Chloroethane					N/A			
	1,1-Dichloroethene					2.16E-02	ug/m3	Max	(d)
	Acetone					1.64E-03	ug/m3	95% UCL-NP	(d)
	Methylene chloride					N/A			
	trans-1,2-Dichloroethene					N/A			
	Methyl tert-butyl ether					2.74E-02	ug/m3	Max	(c & e)
	1,1-Dichloroethane					N/A			
	cis-1,2-Dichloroethene					N/A			
	1,1,1-Trichloroethane					N/A			
	Benzene					1.23E-02	ug/m3	95% UCL-NP	(d)
	Trichloroethene					N/A			
	Methyl cyclohexane					N/A			
	Toluene					5.78E-02	ug/m3	95% UCL-NP	(d)
	Tetrachloroethene					N/A			
	Chlorobenzene					N/A			

TABLE 3-3.6.RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe:	Future
Medium:	Soil
Exposure Medium:	Indoor Air

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)
	Ethylbenzene					4.14E-01	ug/m3	95% UCL-NP	(d)
	1,3-Dichlorobenzene					N/A			
	1,4-Dichlorobenzene					N/A			
	1,2-Dichlorobenzene					N/A			
	2-Methylnaphthalene					4.19E-02	ug/m3	95% UCL-NP	(d)
	Acenaphthylene					4.78E-03	ug/m3	95% UCL-NP	(d)
	Dibenzofuran					3.43E-03	ug/m3	Max	(d)
	Phenanthrene					5.90E-04	ug/m3	95% UCL-NP	(d)
	Anthracene					N/A		0	
	C5-C8 Aliphatic					1.96E+02	ug/m3	Max	(a)
	C9-C12 Aliphatic					1.78E+01	ug/m3	Max	(a)
	C9-C10 Aromatic					2.11E+01	ug/m3	Max	(a)
	C9-C18 Aliphatic					9.05E+01	ug/m3	95% UCL-NP	(c)
	C11-C22 Aromatic					6.90E+00	ug/m3	Max	(c & e)
Whitney Property (a)	1,2,4-Trimethylbenzene					N/A			
	1,2-Dichloroethene (total)					N/A			
	1,3,5-Trimethylbenzene					N/A			
	n-Butylbenzene					N/A			
	Naphthalene					4.61E-02	ug/m3	95% UCL-NP	(c)
	p-Isopropyltoluene					N/A			
	Chloromethane					3.51E+00	ug/m3	95% UCL-NP	(d)
	Vinyl chloride					6.99E+00	ug/m3	95% UCL-NP	(d)
	Bromomethane					N/A			
	Chloroethane					1.21E+00	ug/m3	Max	(d)
	1,1-Dichloroethene					2.21E+00	ug/m3	Max	(d)
	Acetone					1.48E-02	ug/m3	95% UCL-N	(c)

TABLE 3-3.6.RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe:	Future
Medium:	Soil
Exposure Medium:	Indoor Air

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)
	Methylene chloride					1.73E+00	ug/m3	95% UCL-NP	
	trans-1,2-Dichloroethene					8.85E-01	ug/m3	95% UCL-NP	(d)
	Methyl tert-butyl ether					4.96E-02	ug/m3	95% UCL-NP	(d)
	1,1-Dichloroethane					1.75E+00	ug/m3	95% UCL-NP	
	cis-1,2-Dichloroethene					6.12E-01	ug/m3	95% UCL-NP	(d)
	1,1,1-Trichloroethane					N/A			
	Benzene					8.02E-01	ug/m3	Max	(d)
	Trichloroethene					1.18E+00	ug/m3	95% UCL-NP	(d)
	Methyl cyclohexane					3.62E+01	ug/m3	95% UCL-NP	(d)
	Toluene					1.39E+00	ug/m3	95% UCL-T	(c)
	Tetrachloroethene					9.92E-01	ug/m3	95% UCL-NP	(d)
	Chlorobenzene					3.46E-01	ug/m3	95% UCL-NP	(d)
	Ethylbenzene					2.90E-01	ug/m3	95% UCL-NP	(d)
	1,3-Dichlorobenzene					3.42E-01	ug/m3	Max	(d)
	1,4-Dichlorobenzene					7.19E-02	ug/m3	95% UCL-NP	(d)
	1,2-Dichlorobenzene					4.28E-05	ug/m3	Max	(d)
	2-Methylnaphthalene					1.29E-01	ug/m3	95% UCL-NP	(d)
	Acenaphthylene					4.64E-03	ug/m3	Max	(d)
	Dibenzofuran					1.75E-01	ug/m3	95% UCL-NP	(c)
	Phenanthrene					6.76E-02	ug/m3	95% UCL-NP	(c)
	Anthracene					N/A			
	C5-C8 Aliphatic					4.14E+03	ug/m3		(d)
	C9-C12 Aliphatic					7.29E+01	ug/m3		(c)
	C9-C10 Aromatic					2.10E+02	ug/m3	95% UCL-NP	(c)
	C9-C18 Aliphatic					1.70E+03	ug/m3	Max	(c & e)
	C11-C22 Aromatic					6.72E+01	ug/m3	Max	(c & e)

TABLE 3-3.6.RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe:	Future
Medium:	Soil
Exposure Medium:	Indoor Air

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)
Murphy Property (a)	1,2,4-Trimethylbenzene					3.89E+00	ug/m3	Max	(d)
	1,2-Dichloroethene (total)					3.21E-01	ug/m3	95% UCL-NP	(d)
	1,3,5-Trimethylbenzene					4.88E+00	ug/m3	95% UCL-NP	(d)
	n-Butylbenzene					5.30E-01	ug/m3	Max	(d)
	Naphthalene					7.33E-02	ug/m3	95% UCL-NP	(d)
	p-Isopropyltoluene					3.06E+01	ug/m3	Max	(d)
	Chloromethane					N/A			
	Vinyl chloride					N/A			
	Bromomethane					N/A			
	Chloroethane					N/A			
	1,1-Dichloroethene					4.05E-02	ug/m3	Max	(d)
	Acetone					8.05E-02	ug/m3	95% UCL-NP	(d)
	Methylene chloride					6.62E+00	ug/m3		
	trans-1,2-Dichloroethene					4.95E+00	ug/m3	95% UCL-NP	(d)
	Methyl tert-butyl ether					N/A			
	1,1-Dichloroethane					2.19E+00	ug/m3		
	cis-1,2-Dichloroethene					4.68E+01	ug/m3	Max	(d & e)
	1,1,1-Trichloroethane					4.49E+00	ug/m3	95% UCL-NP	(d)
	Benzene					1.31E+00	ug/m3	95% UCL-NP	(d)
	Trichloroethene					1.25E+00	ug/m3	95% UCL-NP	(d)
	Methyl cyclohexane					N/A			
	Toluene					2.79E+00	ug/m3	95% UCL-NP	(d)
	Tetrachloroethene					2.79E+00	ug/m3	Max	(d)
	Chlorobenzene					N/A			
	Ethylbenzene					1.45E+00	ug/m3	95% UCL-NP	(d)
	1,3-Dichlorobenzene					N/A			
	1,4-Dichlorobenzene					N/A			

TABLE 3-3.6.RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe:	Future
Medium:	Soil
Exposure Medium:	Indoor Air

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)
	1,2-Dichlorobenzene					2.59E-03	ug/m3	95% UCL-NP	(d)
	2-Methylnaphthalene					2.79E-02	ug/m3	95% UCL-NP	(d)
	Acenaphthylene					2.22E-02	ug/m3	95% UCL-NP	(d)
	Dibenzofuran					4.70E-03	ug/m3	Max	(d)
	Phenanthrene					4.40E-03	ug/m3	95% UCL-NP	(d)
	Anthracene					N/A			
	C5-C8 Aliphatic					5.79E+01	ug/m3	Max	(a)
	C9-C12 Aliphatic					1.64E+00	ug/m3	Max	(a)
	C9-C10 Aromatic					N/A			
	C9-C18 Aliphatic					N/A			
	C11-C22 Aromatic					1.23E+02	ug/m3	95% UCL-NP	(d)

(1) Only COPCs selected on Table 3-2.6 and detected at each exposure point appear.

(2) T - Transformed; N - Normal; NP - Non-parametric; <4 - sample size too small to calculate 95% UCL

(3) Statistics: Maximum Detected Value (Max); 95% UCL of Transformed Data (95% UCL - T); 95% of Normal Data (95% UCL - N); 95% of Non-parametric Data (95% UCL - NP); Arithmatic Mean (Mean).

(4) Rationale

(a) Due to small sample size (<4), the maximum detected concentration is used.

(b) Shapiro-Wilk W Test indicates data are normally distributed.

(c) Shapiro-Wilk W Test indicates data are log-normally distributed.

(d) Shapiro-Wilk W Test indicates data are neither normally nor log-normally distributed.

(e) Recommended UCL exceeds maximum detected concentration. Therefore, maximum concentration is used for EPC.

(f) When the maximum detected concentration is selected as the RME EPC, the arithmetic mean concentration is selected as the CT EPC.

(g) If the arithmetic mean concentration equals or exceeds the maximum detected concentration, the maximum detected concentration is used as the CT EPC.

J = Estimated concentration

Max = Maximum detected concentration

N/A = Not applicable

UCL = Upper confidence limit

EPC = Exposure point concentration

RME = Reasonable Maximum Exposure

CT = Central Tendency

TABLE 3-3.6.CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe:	Future
Medium:	Soil
Exposure Medium:	Indoor Air

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)
Aberjona Property (a)	1,2,4-Trimethylbenzene					N/A			
	1,2-Dichloroethene (total)					N/A			
	1,3,5-Trimethylbenzene					N/A			
	n-Butylbenzene					N/A			
	Naphthalene					2.37E-02	ug/m3	95% UCL-NP	(d)
	p-Isopropyltoluene					N/A			
	Chloromethane					N/A			
	Vinyl chloride					N/A			
	Bromomethane					4.31E-03	ug/m3	Max	(g)
	Chloroethane					N/A			
	1,1-Dichloroethene					9.98E-03	ug/m3	Mean	(f)
	Acetone					1.64E-03	ug/m3	95% UCL-NP	(d)
	Methylene chloride					N/A			
	trans-1,2-Dichloroethene					N/A			
	Methyl tert-butyl ether					7.83E-03	ug/m3	Mean	(f)
	1,1-Dichloroethane					N/A			
	cis-1,2-Dichloroethene					N/A			
	1,1,1-Trichloroethane					N/A			
	Benzene					1.23E-02	ug/m3	95% UCL-NP	(d)
	Trichloroethene					N/A			
	Methyl cyclohexane					N/A			
	Toluene					5.78E-02	ug/m3		(d)
	Tetrachloroethene					N/A			
	Chlorobenzene					N/A			
	Ethylbenzene					4.14E-01	ug/m3	95% UCL-NP	(d)
	1,3-Dichlorobenzene					N/A			
	1,4-Dichlorobenzene					N/A			

TABLE 3-3.6.CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe:	Future
Medium:	Soil
Exposure Medium:	Indoor Air

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)
	1,2-Dichlorobenzene					N/A			
	2-Methylnaphthalene					4.19E-02	ug/m3	95% UCL-NP	(d)
	Acenaphthylene					4.78E-03	ug/m3	95% UCL-NP	(d)
	Dibenzofuran					3.43E-03	ug/m3	Max	(g)
	Phenanthrene					5.90E-04	ug/m3		(d)
	Anthracene					N/A			
	C5-C8 Aliphatic					7.55E+01	ug/m3	Mean	(f)
	C9-C12 Aliphatic					6.14E+00	ug/m3	Mean	(f)
	C9-C10 Aromatic					2.11E+01	ug/m3	Max	(g)
	C9-C18 Aliphatic					9.05E+01	ug/m3	95% UCL-NP	(c)
	C11-C22 Aromatic					1.88E+00	ug/m3	Mean	(f)
Whitney Property (a)	1,2,4-Trimethylbenzene					N/A			
	1,2-Dichloroethene (total)					N/A			
	1,3,5-Trimethylbenzene					N/A			
	n-Butylbenzene					N/A			
	Naphthalene					4.61E-02	ug/m3	95% UCL-NP	(c)
	p-Isopropyltoluene					N/A			
	Chloromethane					3.51E+00	ug/m3	95% UCL-NP	(d)
	Vinyl chloride					6.99E+00	ug/m3	95% UCL-NP	(d)
	Bromomethane					N/A			
	Chloroethane					1.21E+00	ug/m3	Max	(g)
	1,1-Dichloroethene					1.17E+00	ug/m3	Mean	(f)
	Acetone					1.48E-02	ug/m3	95% UCL-N	(c)
	Methylene chloride					N/A			
	trans-1,2-Dichloroethene					8.85E-01	ug/m3	95% UCL-NP	(d)
	Methyl tert-butyl ether					4.96E-02	ug/m3	95% UCL-NP	(d)

TABLE 3-3.6.CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe:	Future
Medium:	Soil
Exposure Medium:	Indoor Air

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)
	1,1-Dichloroethane					N/A			
	cis-1,2-Dichloroethene					6.12E-01	ug/m3	95% UCL-NP	(d)
	1,1,1-Trichloroethane					N/A			
	Benzene					3.08E-01	ug/m3	Mean	(f)
	Trichloroethene					1.18E+00	ug/m3	95% UCL-NP	(d)
	Methyl cyclohexane					3.62E+01	ug/m3	95% UCL-NP	(d)
	Toluene					1.39E+00	ug/m3	95% UCL-T	(c)
	Tetrachloroethene					9.92E-01	ug/m3	95% UCL-NP	(d)
	Chlorobenzene					3.46E-01	ug/m3	95% UCL-NP	(d)
	Ethylbenzene					2.90E-01	ug/m3	95% UCL-NP	(d)
	1,3-Dichlorobenzene					3.42E-01	ug/m3	Max	(g)
	1,4-Dichlorobenzene					7.19E-02	ug/m3	95% UCL-NP	(d)
	1,2-Dichlorobenzene					4.28E-05	ug/m3	Max	(g)
	2-Methylnaphthalene					1.29E-01	ug/m3	95% UCL-NP	(d)
	Acenaphthylene					4.64E-03	ug/m3	Max	(g)
	Dibenzofuran					1.75E-01	ug/m3	95% UCL-NP	(c)
	Phenanthrene					6.76E-02	ug/m3	95% UCL-NP	(c)
	Anthracene					N/A			
	C5-C8 Aliphatic					4.14E+03	ug/m3	95% UCL-NP	(d)
	C9-C12 Aliphatic					7.29E+01	ug/m3	95% UCL-NP	(c)
	C9-C10 Aromatic					2.10E+02	ug/m3	95% UCL-NP	(c)
	C9-C18 Aliphatic					2.61E+02	ug/m3	Mean	(f)
	C11-C22 Aromatic					1.51E+01	ug/m3	Mean	(f)
Murphy Property (a)	1,2,4-Trimethylbenzene					7.66E-01	ug/m3	Mean	(f)
	1,2-Dichloroethene (total)					3.21E-01	ug/m3	95% UCL-NP	(d)
	1,3,5-Trimethylbenzene					4.88E+00	ug/m3	95% UCL-NP	(d)

TABLE 3-3.6.CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe:	Future
Medium:	Soil
Exposure Medium:	Indoor Air

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)
	n-Butylbenzene					2.19E-01	ug/m3	Mean	(f)
	Naphthalene					7.33E-02	ug/m3	95% UCL-NP	(d)
	p-Isopropyltoluene					2.42E+01	ug/m3	Mean	(f)
	Chloromethane					N/A			
	Vinyl chloride					N/A			
	Bromomethane					N/A			
	Chloroethane					N/A			
	1,1-Dichloroethene					4.05E-02	ug/m3	Max	(g)
	Acetone					8.05E-02	ug/m3	95% UCL-NP	(d)
	Methylene chloride					N/A			
	trans-1,2-Dichloroethene					4.95E+00	ug/m3	95% UCL-NP	(d)
	Methyl tert-butyl ether					N/A			
	1,1-Dichloroethane					N/A			
	cis-1,2-Dichloroethene					1.79E+00	ug/m3	Mean	(f)
	1,1,1-Trichloroethane					4.49E+00	ug/m3	95% UCL-NP	(d)
	Benzene					1.31E+00	ug/m3	95% UCL-NP	(d)
	Trichloroethene					1.25E+00	ug/m3	95% UCL-NP	(d)
	Methyl cyclohexane					N/A			
	Toluene					2.79E+00	ug/m3	95% UCL-NP	(d)
	Tetrachloroethene					8.93E-01	ug/m3	Mean	(f)
	Chlorobenzene					N/A			
	Ethylbenzene					1.45E+00	ug/m3	95% UCL-NP	(d)
	1,3-Dichlorobenzene					N/A			
	1,4-Dichlorobenzene					N/A			
	1,2-Dichlorobenzene					2.59E-03	ug/m3	95% UCL-NP	(d)
	2-Methylnaphthalene					2.79E-02	ug/m3	95% UCL-NP	(d)
	Acenaphthylene					2.22E-02	ug/m3	95% UCL-NP	(d)

TABLE 3-3.6.CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe:	Future
Medium:	Soil
Exposure Medium:	Indoor Air

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)
	Dibenzofuran					4.70E-03	ug/m3	Max	(g)
	Phenanthrene					4.40E-03	ug/m3	95% UCL-NP	(d)
	Anthracene					N/A			
	C5-C8 Aliphatic					5.79E+01	ug/m3	Max	(g)
	C9-C12 Aliphatic					1.64E+00	ug/m3	Max	(g)
	C9-C10 Aromatic					N/A			
	C9-C18 Aliphatic					N/A			
	C11-C22 Aromatic					1.23E+02	ug/m3	95% UCL-NP	(d)

(1) Only COPCs selected on Table 3-2.6 and detected at each exposure point appear.

(2) T - Transformed; N - Normal; NP - Non-parametric; <4 - sample size too small to calculate 95% UCL

(3) Statistics: Maximum Detected Value (Max); 95% UCL of Transformed Data (95% UCL - T); 95% of Normal Data (95% UCL - N); 95% of Non-parametric Data (95% UCL - NP); Arithmatic Mean (Mean).

(4) Rationale

(a) Due to small sample size (<4), the maximum detected concentration is used.

(b) Shapiro-Wilk W Test indicates data are normally distributed.

(c) Shapiro-Wilk W Test indicates data are log-normally distributed.

(d) Shapiro-Wilk W Test indicates data are neither normally nor log-normally distributed.

(e) Recommended UCL exceeds maximum detected concentration. Therefore, maximum concentration is used for EPC.

(f) When the maximum detected concentration is selected as the RME EPC, the arithmetic mean concentration is selected as the CT EPC.

(g) If the arithmetic mean concentration equals or exceeds the maximum detected concentration, the maximum detected concentration is used as the CT EPC.

J = Estimated concentration

Max = Maximum detected concentration

N/A = Not applicable

UCL = Upper confidence limit

EPC = Exposure point concentration

RME = Reasonable Maximum Exposure

CT = Central Tendency

TABLE 3-3.7.RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe:	Current/Future
Medium:	Groundwater
Exposure Medium:	Indoor Air

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)
Aberjona Property (a) (Resident)	1,2,4-Trimethylbenzene					N/A			
	1,2-Dichloroethene (total)					N/A			
	1,3,5-Trimethylbenzene					N/A			
	n-Butylbenzene					N/A			
	Naphthalene					3.05E-03	ug/m3	Max	(a)
	p-Isopropyltoluene					N/A			
	Chloromethane					N/A			
	Vinyl chloride					3.22E-02	ug/m3	Max	(a)
	Bromomethane					N/A			
	Chloroethane					N/A			
	1,1-Dichloroethene					2.16E-02	ug/m3	Max	(a)
	Acetone					N/A			
	Methylene chloride					N/A			
	trans-1,2-Dichloroethene					N/A			
	Methyl tert-butyl ether					N/A			
	1,1-Dichloroethane					N/A			
	cis-1,2-Dichloroethene					1.20E-01	ug/m3	Max	(a)
	1,1,1-Trichloroethane					N/A			
	Benzene					2.03E-03	ug/m3	Max	(a)
	Trichloroethene					8.90E-01	ug/m3	Max	(a)
	Methyl cyclohexane					N/A			
	Toluene					N/A			
	Tetrachloroethene					2.39E-02	ug/m3	Max	(a)
	Chlorobenzene					N/A			
	Ethylbenzene					N/A			
	1,3-Dichlorobenzene					N/A			
	1,4-Dichlorobenzene					3.15E-03	ug/m3	Max	(a)
	1,2-Dichlorobenzene					N/A			

TABLE 3-3.7.RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe:	Current/Future
Medium:	Groundwater
Exposure Medium:	Indoor Air

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)
Aberjona Property (a)	2-Methylnaphthalene					N/A			
	Acenaphthylene					N/A			
	Dibenzofuran					N/A			
	Phenanthrene					1.68E-03	ug/m3	Max	(a)
	Anthracene					N/A			
	C5-C8 Aliphatic					N/A			
	C9-C12 Aliphatic					N/A			
	C9-C10 Aromatic					N/A			
	C9-C18 Aliphatic					N/A			
	C11-C22 Aromatic					N/A			
	1,2,4-Trimethylbenzene					N/A			
	1,2-Dichloroethene (total)					N/A			
	1,3,5-Trimethylbenzene					N/A			
	n-Butylbenzene					N/A			
	Naphthalene					4.17E-05	ug/m3	Max	(a)
	p-Isopropyltoluene					N/A			
	Chloromethane					N/A			
	Vinyl chloride					3.93E-04	ug/m3	95% UCL-NP	(d)
	Bromomethane					N/A			
	Chloroethane					N/A			
	1,1-Dichloroethene					1.60E-04	ug/m3	95% UCL-NP	(d)
	Acetone					N/A			
	Methylene chloride					N/A			
	trans-1,2-Dichloroethene					N/A			
	Methyl tert-butyl ether					7.56E-04	ug/m3	Max	(c & e)
	1,1-Dichloroethane					N/A			
	cis-1,2-Dichloroethene					5.97E-03	ug/m3	Max	(c & e)
	1,1,1-Trichloroethane					N/A			

TABLE 3-3.7.RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe:	Current/Future
Medium:	Groundwater
Exposure Medium:	Indoor Air

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)
Whitney Property (a)	Benzene					7.22E-05	ug/m3	95% UCL-NP	(d)
	Trichloroethene					1.22E-02	ug/m3	Max	(c & e)
	Methyl cyclohexane					N/A			
	Toluene					N/A			
	Tetrachloroethene					3.29E-04	ug/m3	Max	(d & e)
	Chlorobenzene					N/A			
	Ethylbenzene					N/A			
	1,3-Dichlorobenzene					N/A			
	1,4-Dichlorobenzene					4.19E-05	ug/m3	95% UCL-NP	(d)
	1,2-Dichlorobenzene					N/A			
	2-Methylnaphthalene					N/A			
	Acenaphthylene					N/A			
	Dibenzofuran					N/A			
	Phenanthrene					2.34E-05	ug/m3	Max	(a)
	Anthracene					N/A			
	C5-C8 Aliphatic					N/A			
	C9-C12 Aliphatic					N/A			
	C9-C10 Aromatic					N/A			
	C9-C18 Aliphatic					N/A			
	C11-C22 Aromatic					N/A			
	1,2,4-Trimethylbenzene					N/A			
	1,2-Dichloroethene (total)					N/A			
	1,3,5-Trimethylbenzene					N/A			
	n-Butylbenzene					N/A			
	Naphthalene					4.98E-04	ug/m3	95% UCL-N	(b)
	p-Isopropyltoluene					N/A			
	Chloromethane					N/A			
	Vinyl chloride					2.67E+00	ug/m3	Max	(c & e)

TABLE 3-3.7.RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe:	Current/Future
Medium:	Groundwater
Exposure Medium:	Indoor Air

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)
	Bromomethane					N/A			
	Chloroethane					N/A			
	1,1-Dichloroethene					N/A			
	Acetone					N/A			
	Methylene chloride					N/A			
	trans-1,2-Dichloroethene					4.12E-02	ug/m3	Max	(c & e)
	Methyl tert-butyl ether					1.03E-01	ug/m3	Max	(c & e)
	1,1-Dichloroethane					1.17E-01	ug/m3	Max	(c & e)
	cis-1,2-Dichloroethene					3.30E-01	ug/m3	Max	(c & e)
	1,1,1-Trichloroethane					1.34E-02	ug/m3	95% UCL-NP	(d)
	Benzene					8.16E-02	ug/m3	Max	(c & e)
	Trichloroethene					3.28E-03	ug/m3	Max	(b)
	Methyl cyclohexane					N/A			
	Toluene					1.23E+00	ug/m3	Max	(c & e)
	Tetrachloroethene					N/A			
	Chlorobenzene					9.37E-03	ug/m3	Max	(c & e)
	Ethylbenzene					4.30E-02	ug/m3	Max	(c & e)
	1,3-Dichlorobenzene					2.16E-02	ug/m3	Max	(c & e)
	1,4-Dichlorobenzene					5.84E-02	ug/m3	Max	(c & e)
	1,2-Dichlorobenzene					4.86E-06	ug/m3	95% UCL-N	(b)
	2-Methylnaphthalene					N/A			
	Acenaphthylene					2.41E-04	ug/m3	Max	(d & e)
	Dibenzofuran					N/A			
	Phenanthrene					1.10E-04	ug/m3	Max	(c & e)
	Anthracene					N/A			
	C5-C8 Aliphatic					9.14E+01	ug/m3	Max	(a)
	C9-C12 Aliphatic					1.23E+01	ug/m3	Max	(a)
	C9-C10 Aromatic					N/A			

TABLE 3-3.7.RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe:	Current/Future
Medium:	Groundwater
Exposure Medium:	Indoor Air

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)
Murphy Property (a)	C9-C18 Aliphatic					1.54E+01	ug/m3	Max	(a)
	C11-C22 Aromatic					N/A			
	1,2,4-Trimethylbenzene					N/A			
	1,2-Dichloroethene (total)					N/A			
	1,3,5-Trimethylbenzene					N/A			
	n-Butylbenzene					N/A			
	Naphthalene					6.32E-04	ug/m3	95% UCL-NP	(d)
	p-Isopropyltoluene					N/A			
	Chloromethane					N/A			
	Vinyl chloride					1.59E+00	ug/m3	95% UCL-NP	(d)
	Bromomethane					2.47E-03	ug/m3	Max	(d)
	Chloroethane					1.22E-01	ug/m3	95% UCL-NP	(d)
	1,1-Dichloroethene					6.30E-02	ug/m3	Max	(d)
	Acetone					2.83E-04	ug/m3	95% UCL-NP	(d)
	Methylene chloride					9.14E-03	ug/m3	95% UCL-T	(c)
	trans-1,2-Dichloroethene					4.69E-02	ug/m3	95% UCL-NP	(d)
	Methyl tert-butyl ether					N/A			
	1,1-Dichloroethane					9.43E-02	ug/m3	95% UCL-NP	(d)
	cis-1,2-Dichloroethene					6.85E-01	ug/m3	95% UCL-NP	(d)
	1,1,1-Trichloroethane					2.05E-01	ug/m3	95% UCL-NP	(d)
	Benzene					8.34E-03	ug/m3	95% UCL-NP	(d)
	Trichloroethene					7.28E-02	ug/m3	95% UCL-NP	(d)
	Methyl cyclohexane					1.26E+00	ug/m3	Max	(d)
	Toluene					2.37E-02	ug/m3	95% UCL-NP	(d)
	Tetrachloroethene					2.45E-02	ug/m3	Max	(d)
	Chlorobenzene					6.97E-04	ug/m3	Max	(d)
	Ethylbenzene					1.09E-02	ug/m3	95% UCL-NP	(d)
	1,3-Dichlorobenzene					N/A			

TABLE 3-3.7.RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe:	Current/Future
Medium:	Groundwater
Exposure Medium:	Indoor Air

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)
	1,4-Dichlorobenzene					N/A			
	1,2-Dichlorobenzene					9.02E-07	ug/m3	Max	(d)
	2-Methylnaphthalene					2.07E-03	ug/m3	95% UCL-NP	(d)
	Acenaphthylene					N/A			
	Dibenzofuran					N/A			
	Phenanthrene					2.72E-04	ug/m3	95% UCL-NP	(d)
	Anthracene					N/A			
	C5-C8 Aliphatic					3.14E+01	ug/m3	95% UCL-NP	(d)
	C9-C12 Aliphatic					1.08E+01	ug/m3	95% UCL-NP	(d)
	C9-C10 Aromatic					1.20E-01	ug/m3	95% UCL-NP	(d)
	C9-C18 Aliphatic					3.30E+02	ug/m3	95% UCL-NP	(d)
	C11-C22 Aromatic					6.68E-02	ug/m3	95% UCL-NP	(d)

(1) Only COPCs selected on Table 3-2.9 and detected at each exposure point appear.

(2) T - Transformed; N - Normal; NP - Non-parametric; <4 - sample size too small to calculate 95% UCL

(3) Statistics: Maximum Detected Value (Max); 95% UCL of Transformed Data (95% UCL - T); 95% of Normal Data (95% UCL - N); 95% of Non-parametric Data (95% UCL - NP); Arithmatic Mean (Mean).

(4) Rationale

(a) Due to small sample size (<4), the maximum detected concentration is used.

(b) Shapiro-Wilk W Test indicates data are normally distributed.

(c) Shapiro-Wilk W Test indicates data are log-normally distributed.

(d) Shapiro-Wilk W Test indicates data are neither normally nor log-normally distributed.

(e) Recommended UCL exceeds maximum detected concentration. Therefore, maximum concentration is used for EPC.

(f) When the maximum detected concentration is selected as the RME EPC, the arithmetic mean concentration is selected as the CT EPC.

(g) If the arithmetic mean concentration equals or exceeds the maximum detected concentration, the maximum detected concentration is used as the CT EP

J = Estimated concentration

Max = Maximum detected concentration

N/A = Not applicable

UCL = Upper confidence limit

EPC = Exposure point concentration

RME = Reasonable Maximum Exposure

CT = Central Tendency

TABLE 3-3.7.CT

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe:	Future
Medium:	Groundwater
Exposure Medium:	Indoor Air

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)
Aberjona Property (a) (Resident)	1,2,4-Trimethylbenzene					N/A			
	1,2-Dichloroethene (total)					N/A			
	1,3,5-Trimethylbenzene					N/A			
	n-Butylbenzene					N/A			
	Naphthalene					1.53E-03	ug/m3	Mean	(f)
	p-Isopropyltoluene					N/A			
	Chloromethane					N/A			
	Vinyl chloride					2.64E-02	ug/m3	Mean	(f)
	Bromomethane					N/A			
	Chloroethane					N/A			
	1,1-Dichloroethene					1.31E-02	ug/m3	Mean	(f)
	Acetone					N/A			
	Methylene chloride					N/A			
	trans-1,2-Dichloroethene					N/A			
	Methyl tert-butyl ether					N/A			
	1,1-Dichloroethane					N/A			
	cis-1,2-Dichloroethene					1.20E-01	ug/m3	Max	(g)
	1,1,1-Trichloroethane					N/A			
	Benzene					1.53E-03	ug/m3	Mean	(f)
	Trichloroethene					7.66E-01	ug/m3	Mean	(f)
	Methyl cyclohexane					N/A			
	Toluene					N/A			
	Tetrachloroethene					2.39E-02	ug/m3	Max	(g)
	Chlorobenzene					N/A			
	Ethylbenzene					N/A			
	1,3-Dichlorobenzene					N/A			
	1,4-Dichlorobenzene					2.79E-03	ug/m3	Mean	(f)
	1,2-Dichlorobenzene					N/A			

TABLE 3-3.7.CT

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe:	Future
Medium:	Groundwater
Exposure Medium:	Indoor Air

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)
Aberjona Property (a)	2-Methylnaphthalene					N/A			
	Acenaphthylene					N/A			
	Dibenzofuran					N/A			
	Phenanthrene					1.68E-03	ug/m3	Max	(g)
	Anthracene					N/A			
	C5-C8 Aliphatic					N/A			
	C9-C12 Aliphatic					N/A			
	C9-C10 Aromatic					N/A			
	C9-C18 Aliphatic					N/A			
	C11-C22 Aromatic					N/A			
	1,2,4-Trimethylbenzene					N/A			
	1,2-Dichloroethene (total)					N/A			
	1,3,5-Trimethylbenzene					N/A			
	n-Butylbenzene					N/A			
	Naphthalene					2.04E-05	ug/m3	Mean	(f)
	p-Isopropyltoluene					N/A			
	Chloromethane					N/A			
	Vinyl chloride					3.93E-04	ug/m3	95% UCL-NP	(d)
	Bromomethane					N/A			
	Chloroethane					N/A			
	1,1-Dichloroethene					1.60E-04	ug/m3	95% UCL-NP	(d)
	Acetone					N/A			
	Methylene chloride					N/A			
	trans-1,2-Dichloroethene					N/A			
	Methyl tert-butyl ether					2.28E-04	ug/m3	Mean	(f)
	1,1-Dichloroethane					N/A			
	cis-1,2-Dichloroethene					1.40E-03	ug/m3	Mean	(f)
	1,1,1-Trichloroethane					N/A			

TABLE 3-3.7.CT

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe:	Future
Medium:	Groundwater
Exposure Medium:	Indoor Air

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)
Whitney Property (a)	Benzene					7.22E-05	ug/m3	95% UCL-NP	(d)
	Trichloroethene					3.66E-03	ug/m3	Mean	(f)
	Methyl cyclohexane					N/A			
	Toluene					N/A			
	Tetrachloroethene					3.29E-04	ug/m3	Max	(g)
	Chlorobenzene					N/A			
	Ethylbenzene					N/A			
	1,3-Dichlorobenzene					N/A			
	1,4-Dichlorobenzene					4.19E-05	ug/m3	95% UCL-NP	(d)
	1,2-Dichlorobenzene					N/A			
	2-Methylnaphthalene					N/A			
	Acenaphthylene					N/A			
	Dibenzofuran					N/A			
	Phenanthrene					2.34E-05	ug/m3	Max	(g)
	Anthracene					N/A			
	C5-C8 Aliphatic					N/A			
	C9-C12 Aliphatic					N/A			
	C9-C10 Aromatic					N/A			
	C9-C18 Aliphatic					N/A			
	C11-C22 Aromatic					N/A			
	1,2,4-Trimethylbenzene					N/A			
	1,2-Dichloroethene (total)					N/A			
	1,3,5-Trimethylbenzene					N/A			
	n-Butylbenzene					N/A			
	Naphthalene					4.98E-04	ug/m3	95% UCL-N	(b)
	p-Isopropyltoluene					N/A			
	Chloromethane					N/A			
	Vinyl chloride					5.41E-01	ug/m3	Mean	(f)

TABLE 3-3.7.CT

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe:	Future
Medium:	Groundwater
Exposure Medium:	Indoor Air

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)
	Bromomethane					N/A			
	Chloroethane					N/A			
	1,1-Dichloroethene					N/A			
	Acetone					N/A			
	Methylene chloride					N/A			
	trans-1,2-Dichloroethene					1.18E-02	ug/m3	Mean	(f)
	Methyl tert-butyl ether					2.44E-02	ug/m3	Mean	(f)
	1,1-Dichloroethane					2.47E-02	ug/m3	Mean	(f)
	cis-1,2-Dichloroethene					6.71E-02	ug/m3	Mean	(f)
	1,1,1-Trichloroethane					1.34E-02	ug/m3	95% UCL-NP	(d)
	Benzene					2.02E-02	ug/m3	Mean	(f)
	Trichloroethene					3.28E-03	ug/m3	Max	(g)
	Methyl cyclohexane					N/A			
	Toluene					2.52E-01	ug/m3	Mean	(f)
	Tetrachloroethene					N/A			
	Chlorobenzene					2.55E-03	ug/m3	Mean	(f)
	Ethylbenzene					1.09E-02	ug/m3	Mean	(f)
	1,3-Dichlorobenzene					5.80E-03	ug/m3	Mean	(f)
	1,4-Dichlorobenzene					1.22E-02	ug/m3	Mean	(f)
	1,2-Dichlorobenzene					4.86E-06	ug/m3	95% UCL-N	(b)
	2-Methylnaphthalene					N/A			
	Acenaphthylene					2.41E-04	ug/m3	Max	(g)
	Dibenzofuran					N/A			
	Phenanthrene					1.10E-04	ug/m3	Max	(g)
	Anthracene					N/A			
	C5-C8 Aliphatic					3.35E+01	ug/m3	Mean	(f)
	C9-C12 Aliphatic					6.55E+00	ug/m3	Mean	(f)
	C9-C10 Aromatic					N/A			

TABLE 3-3.7.CT

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe:	Future
Medium:	Groundwater
Exposure Medium:	Indoor Air

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)
Murphy Property (a)	C9-C18 Aliphatic					1.29E+01	ug/m3	Mean	(f)
	C11-C22 Aromatic					N/A			
	1,2,4-Trimethylbenzene					N/A			
	1,2-Dichloroethene (total)					N/A			
	1,3,5-Trimethylbenzene					N/A			
	n-Butylbenzene					N/A			
	Naphthalene					6.32E-04	ug/m3	95% UCL-NP	(d)
	p-Isopropyltoluene					N/A			
	Chloromethane					N/A			
	Vinyl chloride					1.59E+00	ug/m3	95% UCL-NP	(d)
	Bromomethane					2.47E-03	ug/m3	Max	(g)
	Chloroethane					1.22E-01	ug/m3	95% UCL-NP	(d)
	1,1-Dichloroethene					6.30E-02	ug/m3	Max	(g)
	Acetone					2.83E-04	ug/m3	95% UCL-NP	(d)
	Methylene chloride					9.14E-03	ug/m3	95% UCL-T	(c)
	trans-1,2-Dichloroethene					4.69E-02	ug/m3	95% UCL-NP	(d)
	Methyl tert-butyl ether					N/A			
	1,1-Dichloroethane					9.43E-02	ug/m3	95% UCL-NP	(d)
	cis-1,2-Dichloroethene					6.85E-01	ug/m3	95% UCL-NP	(d)
	1,1,1-Trichloroethane					2.05E-01	ug/m3	95% UCL-NP	(d)
	Benzene					8.34E-03	ug/m3	95% UCL-NP	(d)
	Trichloroethene					7.28E-02	ug/m3	95% UCL-NP	(d)
	Methyl cyclohexane					1.26E+00	ug/m3	Max	(g)
	Toluene					2.37E-02	ug/m3	95% UCL-NP	(d)
	Tetrachloroethene					2.45E-02	ug/m3	Max	(g)
	Chlorobenzene					6.97E-04	ug/m3	Max	(g)
	Ethylbenzene					1.09E-02	ug/m3	95% UCL-NP	(d)
	1,3-Dichlorobenzene					N/A			

TABLE 3-3.7.CT

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe:	Future
Medium:	Groundwater
Exposure Medium:	Indoor Air

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)
	1,4-Dichlorobenzene					N/A			
	1,2-Dichlorobenzene					9.02E-07	ug/m3	Max	(g)
	2-Methylnaphthalene					2.07E-03	ug/m3	95% UCL-NP	(d)
	Acenaphthylene					N/A			
	Dibenzofuran					N/A			
	Phenanthrene					2.72E-04	ug/m3	95% UCL-NP	(d)
	Anthracene					N/A		SD2	(g)
	C5-C8 Aliphatic					3.14E+01	ug/m3	95% UCL-NP	(d)
	C9-C12 Aliphatic					1.08E+01	ug/m3	95% UCL-NP	(d)
	C9-C10 Aromatic					1.20E-01	ug/m3	95% UCL-NP	(d)
	C9-C18 Aliphatic					3.30E+02	ug/m3	95% UCL-NP	(d)
	C11-C22 Aromatic					6.68E-02	ug/m3	95% UCL-NP	(d)

(1) Only COPCs selected on Table 3-2.9 and detected at each exposure point appear.

(2) T - Transformed; N - Normal; NP - Non-parametric; <4 - sample size too small to calculate 95% UCL

(3) Statistics: Maximum Detected Value (Max); 95% UCL of Transformed Data (95% UCL - T); 95% of Normal Data (95% UCL - N); 95% of Non-parametric Data (95% UCL - NP); Arithmatic Mean (Mean).

(4) Rationale

(a) Due to small sample size (<4), the maximum detected concentration is used.

(b) Shapiro-Wilk W Test indicates data are normally distributed.

(c) Shapiro-Wilk W Test indicates data are log-normally distributed.

(d) Shapiro-Wilk W Test indicates data are neither normally nor log-normally distributed.

(e) Recommended UCL exceeds maximum detected concentration. Therefore, maximum concentration is used for EPC.

(f) When the maximum detected concentration is selected as the CT EPC, the arithmetic mean concentration is selected as the CT EPC.

(g) If the arithmetic mean concentration equals or exceeds the maximum detected concentration, the maximum detected concentration is used as the CT I

J = Estimated concentration

Max = Maximum detected concentration

N/A = Not applicable

UCL = Upper confidence limit

EPC = Exposure point concentration

CT = Reasonable Maximum Exposure

CT = Central Tendency

TABLE 3-3.8.RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe:	Future
Medium:	Soil (0 - 2 ft)
Exposure Medium:	Outdoor Air

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)
Aberjona Property (a)	C11-C22 Aromatic	ug/m3				4.63E-04	ug/m3	Max	(h)
	C5-C8 Aliphatic	ug/m3				4.96E-02	ug/m3	Max	(h)
	C9-C10 Aromatic	ug/m3				N/A			
	C9-C12 Aliphatic	ug/m3				1.86E-03	ug/m3	Max	(h)
	C9-C18 Aliphatic	ug/m3				N/A			
Whitney Property (a)	C11-C22 Aromatic	ug/m3				1.49E-02	ug/m3	Max	(h)
	C5-C8 Aliphatic	ug/m3				4.46E-01	ug/m3	Max	(h)
	C9-C10 Aromatic	ug/m3				3.83E-03	ug/m3	Max	(h)
	C9-C12 Aliphatic	ug/m3				2.24E-02	ug/m3	Max	(h)
	C9-C18 Aliphatic	ug/m3				3.75E-02	ug/m3	Max	(h)
Murphy Property (a)	C11-C22 Aromatic	ug/m3				1.21E-01	ug/m3	Max	(h)
	C5-C8 Aliphatic	ug/m3				4.96E-02	ug/m3	Max	(h)
	C9-C10 Aromatic	ug/m3				N/A			
	C9-C12 Aliphatic	ug/m3				1.86E-03	ug/m3	Max	(h)
	C9-C18 Aliphatic	ug/m3				N/A			

TABLE 3-3.8.RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe:	Future
Medium:	Soil (0 - 2 ft)
Exposure Medium:	Outdoor Air

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)

(1) Only COPCs selected on Table 3-2.7 and detected at each exposure point appear.

(2) T - Transformed; N - Normal; NP - Non-parametric; <4 - sample size too small to calculate 95% UCL

(3) Statistics: Maximum Detected Value (Max); 95% UCL of Transformed Data (95% UCL - T); 95% of Normal Data (95% UCL - N); 95% of Non-parametric Data (95% UCL - NP); Arithmatic Mean (Mean).

(4) Rationale

(a) Due to small sample size (<4), the maximum detected concentration is used.

(b) Shapiro-Wilk W Test indicates data are normally distributed.

(c) Shapiro-Wilk W Test indicates data are log-normally distributed.

(d) Shapiro-Wilk W Test indicates data are neither normally nor log-normally distributed.

(e) Recommended UCL exceeds maximum detected concentration. Therefore, maximum concentration is used for EPC.

(f) When the maximum detected concentration is selected as the RME EPC, the arithmetic mean concentration is selected as the CT EPC.

(g) If the arithmetic mean concentration equals or exceeds the maximum detected concentration, the maximum detected concentration is used as the CT EPC.

(h) Maximum concentration used for EPC Modeling.

J = Estimated concentration

Max = Maximum detected concentration

N/A = Not applicable

UCL = Upper confidence limit

EPC = Exposure point concentration

RME = Reasonable Maximum Exposure

CT = Central Tendency

TABLE 3-3.8.CT

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe:	Future
Medium:	Soil (0 - 2 ft)
Exposure Medium:	Outdoor Air

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)
Aberjona Property (a)	C11-C22 Aromatic	ug/m3				4.63E-04	ug/m3	Max	(h)
	C5-C8 Aliphatic	ug/m3				4.96E-02	ug/m3	Max	(h)
	C9-C10 Aromatic	ug/m3				N/A			
	C9-C12 Aliphatic	ug/m3				1.86E-03	ug/m3	Max	(h)
	C9-C18 Aliphatic	ug/m3				N/A			
Whitney Property (a)	C11-C22 Aromatic	ug/m3				1.49E-02	ug/m3	Max	(h)
	C5-C8 Aliphatic	ug/m3				4.46E-01	ug/m3	Max	(h)
	C9-C10 Aromatic	ug/m3				3.83E-03	ug/m3	Max	(h)
	C9-C12 Aliphatic	ug/m3				2.24E-02	ug/m3	Max	(h)
	C9-C18 Aliphatic	ug/m3				3.75E-02	ug/m3	Max	(h)
Murphy Property (a)	C11-C22 Aromatic	ug/m3				1.21E-01	ug/m3	Max	(h)
	C5-C8 Aliphatic	ug/m3				4.96E-02	ug/m3	Max	(h)
	C9-C10 Aromatic	ug/m3				N/A			
	C9-C12 Aliphatic	ug/m3				1.86E-03	ug/m3	Max	(h)
	C9-C18 Aliphatic	ug/m3				N/A			

TABLE 3-3.8.CT

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe:	Future
Medium:	Soil (0 - 2 ft)
Exposure Medium:	Outdoor Air

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)

(1) Only COPCs selected on Table 3-2.7 and detected at each exposure point appear.

(2) T - Transformed; N - Normal; NP - Non-parametric; <4 - sample size too small to calculate 95% UCL

(3) Statistics: Maximum Detected Value (Max); 95% UCL of Transformed Data (95% UCL - T); 95% of Normal Data (95% UCL - N); 95% of Non-parametric Data (95% UCL - NP); Arithmatic Mean (Mean).

(4) Rationale

(a) Due to small sample size (<4), the maximum detected concentration is used.

(b) Shapiro-Wilk W Test indicates data are normally distributed.

(c) Shapiro-Wilk W Test indicates data are log-normally distributed.

(d) Shapiro-Wilk W Test indicates data are neither normally nor log-normally distributed.

(e) Recommended UCL exceeds maximum detected concentration. Therefore, maximum concentration is used for EPC.

(f) When the maximum detected concentration is selected as the RME EPC, the arithmetic mean concentration is selected as the CT EPC.

(g) If the arithmetic mean concentration equals or exceeds the maximum detected concentration, the maximum detected concentration is used as the CT EPC.

(h) Maximum concentration used for EPC Modeling.

J = Estimated concentration

Max = Maximum detected concentration

N/A = Not applicable

UCL = Upper confidence limit

EPC = Exposure point concentration

RME = Reasonable Maximum Exposure

CT = Central Tendency

TABLE 3-3.9.RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe:	Future
Medium:	Soil (2 - 15 ft)
Exposure Medium:	Outdoor Air

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)
Aberjona Property (a)	C11-C22 Aromatic	ug/m3				4.42E-02	ug/m3	Max	(h)
	C5-C8 Aliphatic	ug/m3				9.42E-01	ug/m3	Max	(h)
	C9-C10 Aromatic	ug/m3				1.35E-01	ug/m3	Max	(h)
	C9-C12 Aliphatic	ug/m3				1.14E-01	ug/m3	Max	(h)
	C9-C18 Aliphatic	ug/m3				1.07E+00	ug/m3	Max	(h)
Whitney Property (a)	C11-C22 Aromatic	ug/m3				1.05E-01	ug/m3	Max	(h)
	C5-C8 Aliphatic	ug/m3				7.14E+00	ug/m3	Max	(h)
	C9-C10 Aromatic	ug/m3				3.81E-01	ug/m3	Max	(h)
	C9-C12 Aliphatic	ug/m3				2.72E-01	ug/m3	Max	(h)
	C9-C18 Aliphatic	ug/m3				2.67E+00	ug/m3	Max	(h)
Murphy Property (a)	C11-C22 Aromatic	ug/m3				1.85E+00	ug/m3	Max	(h)
	C5-C8 Aliphatic	ug/m3				4.96E-02	ug/m3	Max	(h)
	C9-C10 Aromatic	ug/m3				N/A			
	C9-C12 Aliphatic	ug/m3				1.86E-03	ug/m3	Max	(h)
	C9-C18 Aliphatic	ug/m3				N/A			

TABLE 3-3.9.RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe:	Future
Medium:	Soil (2 - 15 ft)
Exposure Medium:	Outdoor Air

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)

(1) Only COPCs selected on Table 3-2.7 and detected at each exposure point appear.

(2) T - Transformed; N - Normal; NP - Non-parametric; <4 - sample size too small to calculate 95% UCL

(3) Statistics: Maximum Detected Value (Max); 95% UCL of Transformed Data (95% UCL - T); 95% of Normal Data (95% UCL - N); 95% of Non-parametric Data (95% UCL - NP); Arithmatic Mean (Mean).

(4) Rationale

(a) Due to small sample size (<4), the maximum detected concentration is used.

(b) Shapiro-Wilk W Test indicates data are normally distributed.

(c) Shapiro-Wilk W Test indicates data are log-normally distributed.

(d) Shapiro-Wilk W Test indicates data are neither normally nor log-normally distributed.

(e) Recommended UCL exceeds maximum detected concentration. Therefore, maximum concentration is used for EPC.

(f) When the maximum detected concentration is selected as the RME EPC, the arithmetic mean concentration is selected as the CT EPC.

(g) If the arithmetic mean concentration equals or exceeds the maximum detected concentration, the maximum detected concentration is used as the CT EPC.

(h) Maximum concentration used for EPC Modeling.

J = Estimated concentration

Max = Maximum detected concentration

N/A = Not applicable

UCL = Upper confidence limit

EPC = Exposure point concentration

RME = Reasonable Maximum Exposure

CT = Central Tendency

TABLE 3-3.9.CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe:	Future
Medium:	Soil (2 - 15 ft)
Exposure Medium:	Outdoor Air

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)
Aberjona Property (a)	C11-C22 Aromatic	ug/m3				4.42E-02	ug/m3	Max	(h)
	C5-C8 Aliphatic	ug/m3				9.42E-01	ug/m3	Max	(h)
	C9-C10 Aromatic	ug/m3				1.35E-01	ug/m3	Max	(h)
	C9-C12 Aliphatic	ug/m3				1.14E-01	ug/m3	Max	(h)
	C9-C18 Aliphatic	ug/m3				1.07E+00	ug/m3	Max	(h)
Whitney Property (a)	C11-C22 Aromatic	ug/m3				1.05E-01	ug/m3	Max	(h)
	C5-C8 Aliphatic	ug/m3				7.14E+00	ug/m3	Max	(h)
	C9-C10 Aromatic	ug/m3				3.81E-01	ug/m3	Max	(h)
	C9-C12 Aliphatic	ug/m3				2.72E-01	ug/m3	Max	(h)
	C9-C18 Aliphatic	ug/m3				2.67E+00	ug/m3	Max	(h)
Murphy Property (a)	C11-C22 Aromatic	ug/m3				1.85E+00	ug/m3	Max	(h)
	C5-C8 Aliphatic	ug/m3				4.96E-02	ug/m3	Max	(h)
	C9-C10 Aromatic	ug/m3				N/A			
	C9-C12 Aliphatic	ug/m3				1.86E-03	ug/m3	Max	(h)
	C9-C18 Aliphatic	ug/m3				N/A			

TABLE 3-3.9.CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe:	Future
Medium:	Soil (2 - 15 ft)
Exposure Medium:	Outdoor Air

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)

(1) Only COPCs selected on Table 3-2.7 and detected at each exposure point appear.

(2) T - Transformed; N - Normal; NP - Non-parametric; <4 - sample size too small to calculate 95% UCL

(3) Statistics: Maximum Detected Value (Max); 95% UCL of Transformed Data (95% UCL - T); 95% of Normal Data (95% UCL - N); 95% of Non-parametric Data (95% UCL - NP); Arithmatic Mean (Mean).

(4) Rationale

(a) Due to small sample size (<4), the maximum detected concentration is used.

(b) Shapiro-Wilk W Test indicates data are normally distributed.

(c) Shapiro-Wilk W Test indicates data are log-normally distributed.

(d) Shapiro-Wilk W Test indicates data are neither normally nor log-normally distributed.

(e) Recommended UCL exceeds maximum detected concentration. Therefore, maximum concentration is used for EPC.

(f) When the maximum detected concentration is selected as the RME EPC, the arithmetic mean concentration is selected as the CT EPC.

(g) If the arithmetic mean concentration equals or exceeds the maximum detected concentration, the maximum detected concentration is used as the CT EPC.

(h) Maximum concentration used for EPC Modeling.

J = Estimated concentration

Max = Maximum detected concentration

N/A = Not applicable

UCL = Upper confidence limit

EPC = Exposure point concentration

RME = Reasonable Maximum Exposure

CT = Central Tendency

TABLE 3-3.10.RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe:	Future
Medium:	Ground Water
Exposure Medium:	Outdoor Air

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)
Aberjona Property (a)	C11-C22 Aromatic	ug/m3				N/A			
	C5-C8 Aliphatic	ug/m3				N/A			
	C9-C10 Aromatic	ug/m3				N/A			
	C9-C12 Aliphatic	ug/m3				N/A			
	C9-C18 Aliphatic	ug/m3				N/A			
Whitney Property (a)	C11-C22 Aromatic	ug/m3				N/A			
	C5-C8 Aliphatic	ug/m3				5.30E-01	ug/m3	Max	(h)
	C9-C10 Aromatic	ug/m3				N/A			
	C9-C12 Aliphatic	ug/m3				2.25E-01	ug/m3	Max	(h)
	C9-C18 Aliphatic	ug/m3				8.88E-02	ug/m3	Max	(h)
Murphy Property (a)	C11-C22 Aromatic	ug/m3				7.85E-04	ug/m3	Max	(h)
	C5-C8 Aliphatic	ug/m3				3.05E-01	ug/m3	Max	(h)
	C9-C10 Aromatic	ug/m3				1.45E-03	ug/m3	Max	(h)
	C9-C12 Aliphatic	ug/m3				1.36E-01	ug/m3	Max	(h)
	C9-C18 Aliphatic	ug/m3				4.67E+00	ug/m3	Max	(h)

TABLE 3-3.10.RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe:	Future
Medium:	Ground Water
Exposure Medium:	Outdoor Air

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)

(1) Only COPCs selected on Table 3-2.7 and detected at each exposure point appear.

(2) T - Transformed; N - Normal; NP - Non-parametric; <4 - sample size too small to calculate 95% UCL

(3) Statistics: Maximum Detected Value (Max); 95% UCL of Transformed Data (95% UCL - T); 95% of Normal Data (95% UCL - N); 95% of Non-parametric Data (95% UCL - NP); Arithmatic Mean (Mean).

(4) Rationale

(a) Due to small sample size (<4), the maximum detected concentration is used.

(b) Shapiro-Wilk W Test indicates data are normally distributed.

(c) Shapiro-Wilk W Test indicates data are log-normally distributed.

(d) Shapiro-Wilk W Test indicates data are neither normally nor log-normally distributed.

(e) Recommended UCL exceeds maximum detected concentration. Therefore, maximum concentration is used for EPC.

(f) When the maximum detected concentration is selected as the RME EPC, the arithmetic mean concentration is selected as the CT EPC.

(g) If the arithmetic mean concentration equals or exceeds the maximum detected concentration, the maximum detected concentration is used as the CT EPC.

(h) Maximum concentration used for EPC Modeling.

J = Estimated concentration

Max = Maximum detected concentration

N/A = Not applicable

UCL = Upper confidence limit

EPC = Exposure point concentration

RME = Reasonable Maximum Exposure

CT = Central Tendency

TABLE 3-3.10.CT

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe:	Future
Medium:	Ground Water
Exposure Medium:	Outdoor Air

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)
Aberjona Property (a)	C11-C22 Aromatic	ug/m3				N/A			
	C5-C8 Aliphatic	ug/m3				N/A			
	C9-C10 Aromatic	ug/m3				N/A			
	C9-C12 Aliphatic	ug/m3				N/A			
	C9-C18 Aliphatic	ug/m3				N/A			
Whitney Property (a)	C11-C22 Aromatic	ug/m3				N/A			
	C5-C8 Aliphatic	ug/m3				5.30E-01	ug/m3	Max	(h)
	C9-C10 Aromatic	ug/m3				N/A			
	C9-C12 Aliphatic	ug/m3				2.25E-01	ug/m3	Max	(h)
	C9-C18 Aliphatic	ug/m3				8.88E-02	ug/m3	Max	(h)
Murphy Property (a)	C11-C22 Aromatic	ug/m3				7.85E-04	ug/m3	Max	(h)
	C5-C8 Aliphatic	ug/m3				3.05E-01	ug/m3	Max	(h)
	C9-C10 Aromatic	ug/m3				1.45E-03	ug/m3	Max	(h)
	C9-C12 Aliphatic	ug/m3				1.36E-01	ug/m3	Max	(h)
	C9-C18 Aliphatic	ug/m3				4.67E+00	ug/m3	Max	(h)

TABLE 3-3.10.CT

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe:	Future
Medium:	Ground Water
Exposure Medium:	Outdoor Air

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)

(1) Only COPCs selected on Table 3-2.7 and detected at each exposure point appear.

(2) T - Transformed; N - Normal; NP - Non-parametric; <4 - sample size too small to calculate 95% UCL

(3) Statistics: Maximum Detected Value (Max); 95% UCL of Transformed Data (95% UCL - T); 95% of Normal Data (95% UCL - N); 95% of Non-parametric Data (95% UCL - NP); Arithmatic Mean (Mean).

(4) Rationale

(a) Due to small sample size (<4), the maximum detected concentration is used.

(b) Shapiro-Wilk W Test indicates data are normally distributed.

(c) Shapiro-Wilk W Test indicates data are log-normally distributed.

(d) Shapiro-Wilk W Test indicates data are neither normally nor log-normally distributed.

(e) Recommended UCL exceeds maximum detected concentration. Therefore, maximum concentration is used for EPC.

(f) When the maximum detected concentration is selected as the RME EPC, the arithmetic mean concentration is selected as the CT EPC.

(g) If the arithmetic mean concentration equals or exceeds the maximum detected concentration, the maximum detected concentration is used as the CT EPC.

(h) Maximum concentration used for EPC Modeling.

J = Estimated concentration

Max = Maximum detected concentration

N/A = Not applicable

UCL = Upper confidence limit

EPC = Exposure point concentration

RME = Reasonable Maximum Exposure

CT = Central Tendency

TABLE 3-3.11.RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe:	Current/Future
Medium:	Sediment
Exposure Medium:	Sediment

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)
Murphy Wetland	Naphthalene	mg/kg	4.53E+00	3.53E+01 (T)	1.9E+01 J	1.88E+01	mg/kg	Max	(c & e)
	Vinyl chloride	mg/kg	1.14E+00	1.15E+01 (T)	1.7E-01 J	1.70E-01	mg/kg	Max	(c & e)
	Trichloroethene	mg/kg	5.73E-01	2.91E+00 (T)	8.5E-02 J	8.50E-02	mg/kg	Max	(c & e)
	Ethylenedibromide	mg/kg	1.64E+00	1.73E+01 (T)	9.5E+00	9.50E+00	mg/kg	Max	(c & e)
	Ethylbenzene	mg/kg	2.28E+00	3.99E+01 (T)	1.1E+01	1.10E+01	mg/kg	Max	(c & e)
	Xylenes (total)	mg/kg	1.20E+01	2.51E+02 (T)	5.3E+01	5.30E+01	mg/kg	Max	(c & e)
	Acetophenone	mg/kg	1.65E+00	3.18E+00 (N)	5.0E+00 J	3.18E+00	mg/kg	95% UCL-N	(b)
	2-Methylnaphthalene	mg/kg	2.59E+00	1.23E+01 (T)	2.5E+01 J	1.23E+01	mg/kg	95% UCL-T	(c)
	Benzo(a)Anthracene	mg/kg	1.64E+00	3.99E+00 (T)	3.1E+00 J	3.10E+00	mg/kg	Max	(c & e)
	Benzo(b)Fluoranthene	mg/kg	1.64E+00	3.70E+00 (T)	2.9E+00 J	2.90E+00	mg/kg	Max	(c & e)
	Benzo(a)Pyrene	mg/kg	1.68E+00	4.23E+00 (T)	3.3E+00 J	3.30E+00	mg/kg	Max	(c & e)
	Indeno(1,2,3-cd)pyrene	mg/kg	1.71E+00	5.22E+00 (T)	3.2E+00 J	3.20E+00	mg/kg	Max	(d & e)
	Dibenz(a,h) anthracene	mg/kg	1.30E+00	7.78E+00 (T)	1.3E+00 J	1.30E+00	mg/kg	Max	(c & e)
	C11-C22 Aromatic	mg/kg	7.24E+03	2.05E+04 (NP)	9.7E+04 T	2.05E+04	mg/kg	95% UCL-NP	(d)
	C19-C36 Aliphatic	mg/kg	2.62E+03	9.40E+03 (T)	1.9E+04 J	9.40E+03	mg/kg	95% UCL-T	(c)
	C9-C18 Aliphatic	mg/kg	3.30E+02	1.68E+03 (NP)	2.5E+03 J	1.68E+03	mg/kg	95% UCL-NP	(d)
	Chromium (VI)	mg/kg	2.72E+01	5.39E+01 (NP)	3.7E+02	5.39E+01	mg/kg	95% UCL-NP	(d)
	Antimony	mg/kg	2.52E+01	1.65E+02 (T)	1.2E+02	1.17E+02	mg/kg	Max	(c & e)
	Arsenic	mg/kg	9.10E+00	1.12E+01 (N)	1.7E+01	1.12E+01	mg/kg	95% UCL-N	(b)
	Barium	mg/kg	4.89E+02	1.13E+03 (T)	2.6E+03 J	1.13E+03	mg/kg	95% UCL-N	(b)
	Cadmium	mg/kg	2.16E+00	2.99E+00 (N)	4.8E+00	2.99E+00	mg/kg	95% UCL-N	(b)
	Chromium	mg/kg	5.32E+03	1.26E+04 (T)	6.7E+04	1.26E+04	mg/kg	95% UCL-T	(c)
	Lead	mg/kg	2.45E+03	4.04E+03 (T)	3.5E+04	4.04E+03	mg/kg	95% UCL-T	(c)
	Manganese	mg/kg	2.50E+02	3.38E+02 (N)	5.8E+02 J	3.38E+02	mg/kg	95% UCL-N	(b)

TABLE 3-3.11.RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe:	Current/Future
Medium:	Sediment
Exposure Medium:	Sediment

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)
	Mercury	mg/kg	1.23E+00	3.04E+00 (T)	7.4E+00 J	3.04E+00	mg/kg	95% UCL-T	(c)
	Vanadium	mg/kg	4.06E+01	5.55E+01 (N)	9.6E+01	5.55E+01	mg/kg	95% UCL-N	(b)
	PCB TEQ*	mg/kg	1.12E-04	1.84E-04 (N)	2.8E-04 J	1.84E-04	mg/kg	95% UCL-N	(b)
	gamma-Chlordane	mg/kg	3.40E-01	1.83E+00 (T)	2.0E+00	1.83E+00	mg/kg	95% UCL-T	(c)
	Aroclor 1254	mg/kg	1.32E+01	8.83E+01 (T)	2.2E+02	8.83E+01	mg/kg	95% UCL-T	(c)
	Aroclor 1260	mg/kg	1.13E+01	4.62E+01 (NP)	4.5E+02	4.62E+01	mg/kg	95% UCL-NP	(d)

(1) Only COPCs selected on Table 3-2.9 and detected at each exposure point appear.

(2) T - Transformed; N - Normal; NP - Non-parametric; <4 - sample size too small to calculate 95% UCL

(3) Statistics: Maximum Detected Value (Max); 95% UCL of Transformed Data (95% UCL - T); 95% of Normal Data (95% UCL - N); 95% of Non-parametric Data (95% UCL - NP); Arithmatic Mean (Mean).

(4) Rationale

(a) Due to small sample size (<4), the maximum detected concentration is used.

(b) Shapiro-Wilk W Test indicates data are normally distributed.

(c) Shapiro-Wilk W Test indicates data are log-normally distributed.

(d) Shapiro-Wilk W Test indicates data are neither normally nor log-normally distributed.

(e) Recommended UCL exceeds maximum detected concentration. Therefore, maximum concentration is used for EPC.

(f) Due to high standard deviation, the maximum concentration is used.

(g) When the maximum detected concentration is selected as the RME EPC, the arithmetic mean concentration is selected as the CT EPC.

(h) If the arithmetic mean concentration equals or exceeds the maximum detected concentration, the maximum detected concentration is used as the CT EPC

J = Estimated concentration

Max = Maximum detected concentration

N/A = Not applicable

UCL = Upper confidence limit

EPC = Exposure point concentration

RME = Reasonable Maximum Exposure

CT = Central Tendency

TABLE 3-3.11.CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe:	Current/Future
Medium:	Sediment
Exposure Medium:	Sediment

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)
Murphy Wetland	Naphthalene	mg/kg	4.53E+00	3.53E+01 (T)	1.9E+01 J	4.53E+00	mg/kg	Mean	(g)
	Vinyl chloride	mg/kg	1.14E+00	1.15E+01 (T)	1.7E-01 J	1.70E-01	mg/kg	Max	(h)
	Trichloroethene	mg/kg	5.73E-01	2.91E+00 (T)	8.5E-02 J	8.50E-02	mg/kg	Max	(h)
	Ethylenedibromide	mg/kg	1.64E+00	1.73E+01 (T)	9.5E+00	1.64E+00	mg/kg	Mean	(g)
	Ethylbenzene	mg/kg	2.28E+00	3.99E+01 (T)	1.1E+01	2.28E+00	mg/kg	Mean	(g)
	Xylenes (total)	mg/kg	1.20E+01	2.51E+02 (T)	5.3E+01	1.20E+01	mg/kg	Mean	(g)
	Acetophenone	mg/kg	1.65E+00	3.18E+00 (N)	5.0E+00 J	3.18E+00	mg/kg	95% UCL-N	(b)
	2-Methylnaphthalene	mg/kg	2.59E+00	1.23E+01 (T)	2.5E+01 J	1.23E+01	mg/kg	95% UCL-T	(c)
	Benzo(a)Anthracene	mg/kg	1.64E+00	3.99E+00 (T)	3.1E+00 J	1.64E+00	mg/kg	Mean	(g)
	Benzo(b)Fluoranthene	mg/kg	1.64E+00	3.70E+00 (T)	2.9E+00 J	1.64E+00	mg/kg	Mean	(g)
	Benzo(a)Pyrene	mg/kg	1.68E+00	4.23E+00 (T)	3.3E+00 J	1.68E+00	mg/kg	Mean	(g)
	Indeno(1,2,3-cd)pyrene	mg/kg	1.71E+00	5.22E+00 (T)	3.2E+00 J	1.71E+00	mg/kg	Mean	(g)
	Dibenz(a,h) anthracene	mg/kg	1.30E+00	7.78E+00 (T)	1.3E+00 J	1.30E+00	mg/kg	Mean	(g)
	C11-C22 Aromatic	mg/kg	7.24E+03	2.05E+04 (NP)	9.7E+04 T	2.05E+04	mg/kg	95% UCL-NP	(d)
	C19-C36 Aliphatic	mg/kg	2.62E+03	9.40E+03 (T)	1.9E+04 J	9.40E+03	mg/kg	95% UCL-T	(c)
	C9-C18 Aliphatic	mg/kg	3.30E+02	1.68E+03 (NP)	2.5E+03 J	1.68E+03	mg/kg	95% UCL-NP	(d)
	Chromium (VI)	mg/kg	2.72E+01	5.39E+01 (NP)	3.7E+02	5.39E+01	mg/kg	95% UCL-NP	(d)
	Antimony	mg/kg	2.52E+01	1.65E+02 (T)	1.2E+02	2.52E+01	mg/kg	Mean	(g)
	Arsenic	mg/kg	9.10E+00	1.12E+01 (N)	1.7E+01	1.12E+01	mg/kg	95% UCL-N	(b)
	Barium	mg/kg	4.89E+02	1.13E+03 (T)	2.6E+03 J	1.13E+03	mg/kg	95% UCL-N	(b)
	Cadmium	mg/kg	2.16E+00	2.99E+00 (N)	4.8E+00	2.99E+00	mg/kg	95% UCL-N	(b)
	Chromium	mg/kg	5.32E+03	1.26E+04 (T)	6.7E+04	1.26E+04	mg/kg	95% UCL-T	(c)
	Lead	mg/kg	2.45E+03	4.04E+03 (T)	3.5E+04	4.04E+03	mg/kg	95% UCL-T	(c)
	Manganese	mg/kg	2.50E+02	3.38E+02 (N)	5.8E+02 J	3.38E+02	mg/kg	95% UCL-N	(b)

TABLE 3-3.11.CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe:	Current/Future
Medium:	Sediment
Exposure Medium:	Sediment

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)
	Mercury	mg/kg	1.23E+00	3.04E+00 (T)	7.4E+00 J	3.04E+00	mg/kg	95% UCL-T	(c)
	Vanadium	mg/kg	4.06E+01	5.55E+01 (N)	9.6E+01	5.55E+01	mg/kg	95% UCL-N	(b)
	PCB TEQ*	mg/kg	1.12E-04	1.84E-04 (N)	2.8E-04 J	1.84E-04	mg/kg	95% UCL-N	(b)
	gamma-Chlordane	mg/kg	3.40E-01	1.83E+00 (T)	2.0E+00	1.83E+00	mg/kg	95% UCL-T	(c)
	Aroclor 1254	mg/kg	1.32E+01	8.83E+01 (T)	2.2E+02	8.83E+01	mg/kg	95% UCL-T	(c)
	Aroclor 1260	mg/kg	1.13E+01	4.62E+01 (NP)	4.5E+02	4.62E+01	mg/kg	95% UCL-NP	(d)

(1) Only COPCs selected on Table 3-2.9 and detected at each exposure point appear.

(2) T - Transformed; N - Normal; NP - Non-parametric; <4 - sample size too small to calculate 95% UCL

(3) Statistics: Maximum Detected Value (Max); 95% UCL of Transformed Data (95% UCL - T); 95% of Normal Data (95% UCL - N); 95% of Non-parametric Data (95% UCL - NP); Arithmatic Mean (Mean).

(4) Rationale

(a) Due to small sample size (<4), the maximum detected concentration is used.

(b) Shapiro-Wilk W Test indicates data are normally distributed.

(c) Shapiro-Wilk W Test indicates data are log-normally distributed.

(d) Shapiro-Wilk W Test indicates data are neither normally nor log-normally distributed.

(e) Recommended UCL exceeds maximum detected concentration. Therefore, maximum concentration is used for EPC.

(f) Due to high standard deviation, the maximum concentration is used.

(g) When the maximum detected concentration is selected as the RME EPC, the arithmetic mean concentration is selected as the CT EPC.

(h) If the arithmetic mean concentration equals or exceeds the maximum detected concentration, the maximum detected concentration is used as the CT EPC.

J = Estimated concentration

Max = Maximum detected concentration

N/A = Not applicable

UCL = Upper confidence limit

EPC = Exposure point concentration

RME = Reasonable Maximum Exposure

CT = Central Tendency

TABLE 3-3.12.RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

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

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)
Murphy Wetland	Chromium	ug/L	1.14E+01	N/A (<4)	2.3E+01 J	2.30E+01	ug/L	Max	(a)
	Manganese	ug/L	2.75E+02	N/A (<4)	5.5E+02	5.45E+02	ug/L	Max	(a)

(1) Only COPCs selected on Table 3-2.9 and detected at each exposure point appear.

(2) T - Transformed; N - Normal; NP - Non-parametric; <4 - sample size too small to calculate 95% UCL

(3) Statistics: Maximum Detected Value (Max); 95% UCL of Transformed Data (95% UCL - T); 95% of Normal Data (95% UCL - N); 95% of Non-parametric Data (95% UCL - NP); Arithmatic Mean (Mean).

(4) Rationale

(a) Due to small sample size (<4), the maximum detected concentration is used.

(b) Shapiro-Wilk W Test indicates data are normally distributed.

(c) Shapiro-Wilk W Test indicates data are log-normally distributed.

(d) Shapiro-Wilk W Test indicates data are neither normally nor log-normally distributed.

(e) Recommended UCL exceeds maximum detected concentration. Therefore, maximum concentration is used for EPC.

(f) Due to high standard deviation, the maximum concentration is used.

(g) When the maximum detected concentration is selected as the RME EPC, the arithmetic mean concentration is selected as the CT EPC.

(h) If the arithmetic mean concentration equals or exceeds the maximum detected concentration, the maximum detected concentration is used as the CT EPC

J = Estimated concentration

Max = Maximum detected concentration

N/A = Not applicable

UCL = Upper confidence limit

EPC = Exposure point concentration

RME = Reasonable Maximum Exposure

CT = Central Tendency

TABLE 3-3.12.CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

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

Exposure Point (1)	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale (4)
Murphy Wetland	Chromium	ug/L	1.14E+01	N/A (<4)	2.3E+01 J	1.14E+01	ug/L	Mean	(g)
	Manganese	ug/L	2.75E+02	N/A (<4)	5.5E+02	2.75E+02	ug/L	Mean	(g)

(1) Only COPCs selected on Table 3-2.9 and detected at each exposure point appear.

(2) T - Transformed; N - Normal; NP - Non-parametric; <4 - sample size too small to calculate 95% UCL

(3) Statistics: Maximum Detected Value (Max); 95% UCL of Transformed Data (95% UCL - T); 95% of Normal Data (95% UCL - N); 95% of Non-parametric Data (95% UCL - NP); Arithmatic Mean (Mean).

(4) Rationale

(a) Due to small sample size (<4), the maximum detected concentration is used.

(b) Shapiro-Wilk W Test indicates data are normally distributed.

(c) Shapiro-Wilk W Test indicates data are log-normally distributed.

(d) Shapiro-Wilk W Test indicates data are neither normally nor log-normally distributed.

(e) Recommended UCL exceeds maximum detected concentration. Therefore, maximum concentration is used for EPC.

(f) Due to high standard deviation, the maximum concentration is used.

(g) When the maximum detected concentration is selected as the RME EPC, the arithmetic mean concentration is selected as the CT EPC.

(h) If the arithmetic mean concentration equals or exceeds the maximum detected concentration, the maximum detected concentration is used as the CT EPC

J = Estimated concentration

Max = Maximum detected concentration

N/A = Not applicable

UCL = Upper confidence limit

EPC = Exposure point concentration

RME = Reasonable Maximum Exposure

CT = Central Tendency

Table 3-4.1 - RME
Values Used for Daily Intake Calculations
Reasonable Maximum Exposure
Southwest Properties, Wells G&H Superfund Site Operable Unit 2
Woburn, Massachusetts

Scenario Timeframe: Current
Medium: Soil
Exposure Medium: Surface Soil (0 - 2 ft)*

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Ingestion	Commercial Worker	Adult	Aberjona Property (Salvage Yard), Whitney Property, and Fenced Portion of Murphy Property	CS	Chemical Concentration in Soil	see Table 3-3.1 RME	mg/kg	see Table 3-3.1 RME	CDI (mg/kg-day) =
				IR	Ingestion Rate of Soil	50	mg/day	USEPA 1997a	CS x IR x FI x EF x ED x CF / BW x AT
				FI	Fraction Ingested	1	unitless	Prof. Judgement	
				EF	Exposure Frequency	125	days/year	Prof. Judgement	
				ED	Exposure Duration	25	years	USEPA 2001c	
				BW	Body Weight	70	kg	USEPA 1997a	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	9,125	days	USEPA 1989	
				CF	Conversion Factor	0.000001	kg/mg	- -	
	Trespasser	Older Child (12 - 18 yrs)	Whitney Property and Triangular Portion of Aberjona Property	CS	Chemical Concentration in Soil	see Table 3-3.1 RME	mg/kg	see Table 3-3.1 RME	CDI (mg/kg-day) =
				IR	Ingestion Rate of Soil	100	mg/day	USEPA 1997a	CS x IR x FI x EF x ED x CF / BW x AT
				FI	Fraction Ingested	0.5	unitless	Prof. Judgement	
				EF	Exposure Frequency	26	days/year	Prof. Judgement	
				ED	Exposure Duration	6	years	USEPA 1997a	
				BW	Body Weight	57	kg	USEPA 1997a	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	2,190	days	USEPA 1989	
				CF	Conversion Factor	0.000001	kg/mg	- -	

EF for direct contact for the commercial worker assumes outdoors 5 days per week, May through October.

EF for direct contact for the older child tresspasser assumes 1 day per week, May through October.

* - unless otherwise specified for certain exposure routes

Table 3-4.1 - RME
Values Used for Daily Intake Calculations
Reasonable Maximum Exposure
Southwest Properties, Wells G&H Superfund Site Operable Unit 2
Woburn, Massachusetts

Scenario Timeframe: Current
Medium: Soil
Exposure Medium: Surface Soil (0 - 2 ft)*

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Dermal	Commercial Worker	Adult	Aberjona Property (Salvage Yard), Whitney Property, and Fenced Portion of Murphy Property	CS	Chemical Concentration in Soil	see Table 3-3.1 RME	mg/kg	see Table 3-3.1 RME	CDI (mg/kg-day) =
				SA	Skin Surface Area Available for Contact	3,300	cm^2	USEPA 2001c	$\frac{CS \times SA \times AF \times EF \times ED \times DAF \times CF}{BW \times AT}$
				AF	Skin Adherence Factor	0.2	mg/cm^2-day	USEPA 2001c	
				EF	Exposure Frequency	125	days/year	Prof. Judgement	
				ED	Exposure Duration	25	years	USEPA 1997a	
				DAF	Dermal Absorption Factor	chemical specific	- -	- -	
				BW	Body Weight	70	kg	USEPA 1997a	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	9,125	days	USEPA 1989	
				CF	Conversion Factor	0.000001	kg/mg	USEPA 2001c	
	Trespasser	Older Child (12 - 18 yrs)	Whitney Property and Triangular Portion of Aberjona Property	CS	Chemical Concentration in Soil	see Table 3-3.1 RME	mg/kg	see Table 3-3.1 RME	CDI (mg/kg-day) =
				SA	Skin Surface Area Available for Contact	4,500	cm^2	USEPA 2001c	$\frac{CS \times SA \times AF \times EF \times ED \times DAF \times CF}{BW \times AT}$
				AF	Skin Adherence Factor	0.2	mg/cm^2-day	USEPA 2001c	
				EF	Exposure Frequency	26	days/year	Prof. Judgement	
				ED	Exposure Duration	6	years	USEPA 1997a	
				DAF	Dermal Absorption Factor	chemical specific	- -	- -	
				BW	Body Weight	57	kg	USEPA 1997a	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	2,190	days	USEPA 1989	
				CF	Conversion Factor	0.000001	kg/mg	USEPA 2001c	

EF for direct contact for the commercial worker assumes outdoors 5 days per week, May through October.

EF for direct contact for the older child tresspasser assumes 1 day per week, May through October.

* - unless otherwise specified for certain exposure routes

Table 3-4.1 - CT
Values Used for Daily Intake Calculations
Central Tendency
Southwest Properties, Wells G&H Superfund Site Operable Unit 2
Woburn, Massachusetts

Scenario Timeframe: Current
Medium: Soil
Exposure Medium: Surface Soil (0 - 2 ft)*

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Ingestion	Commercial Worker	Adult	Aberjona Property (Salvage Yard), Whitney Property, and Fenced Portion of Murphy Property	CS	Chemical Concentration in Soil	see Table 3-3.1 CT	mg/kg	see Table 3-3.1 CT	CDI (mg/kg-day) =
				IR	Ingestion Rate of Soil	50	mg/day	USEPA 1997a	CS x IR x FI x EF x ED x CF / BW x AT
				FI	Fraction Ingested	1	unitless	Prof. Judgement	
				EF	Exposure Frequency	60	days/year	Prof. Judgement	
				ED	Exposure Duration	9	years	USEPA 2001c	
				BW	Body Weight	70	kg	USEPA 1997a	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	3,285	days	USEPA 1989	
				CF	Conversion Factor	0.000001	kg/mg	- -	
	Trespasser	Older Child (12 - 18 yrs)	Whitney Property and Triangular Portion of Aberjona Property	CS	Chemical Concentration in Soil	see Table 3-3.1 CT	mg/kg	see Table 3-3.1 CT	CDI (mg/kg-day) =
				IR	Ingestion Rate of Soil	50	mg/day	USEPA 1997a	CS x IR x FI x EF x ED x CF / BW x AT
				FI	Fraction Ingested	0.5	unitless	Prof. Judgement	
				EF	Exposure Frequency	26	days/year	Prof. Judgement	
				ED	Exposure Duration	2	years	USEPA 1997a	
				BW	Body Weight	57	kg	USEPA 1997a	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	730	days	USEPA 1989	
				CF	Conversion Factor	0.000001	kg/mg	- -	

EF for direct contact for the commercial worker assumes outdoors 5 days per week, May through October.

EF for direct contact for the older child tresspasser assumes outdoors 1 day per week, May through October.

* - unless otherwise specified for certain exposure routes.

Table 3-4.1 - CT
Values Used for Daily Intake Calculations
Central Tendency
Southwest Properties, Wells G&H Superfund Site Operable Unit 2
Woburn, Massachusetts

Scenario Timeframe: Current
Medium: Soil
Exposure Medium: Surface Soil (0 - 2 ft)*

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Dermal	Commercial Worker	Adult	Aberjona Property (Salvage Yard), Whitney Property, and Fenced Portion of Murphy Property	CS	Chemical Concentration in Soil	see Table 3-3.1 CT	mg/kg	see Table 3-3.1 CT	CDI (mg/kg-day) =
				SA	Skin Surface Area Available for Contact	3,300	cm^2	USEPA 2001c	$\frac{CS \times SA \times AF \times EF \times ED \times DAF \times CF}{BW \times AT}$
				AF	Skin Adherence Factor	0.2	mg/cm^2-day	USEPA 2001c	
				EF	Exposure Frequency	60	days/year	Prof. Judgement	
				ED	Exposure Duration	9	years	USEPA 2001c	
				DAF	Dermal Absorption Factor	chemical specific	- -	- -	
				BW	Body Weight	70	kg	USEPA 1997a	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	3,285	days	USEPA 1989	
				CF	Conversion Factor	0.000001	kg/mg	- -	
	Trespasser	Older Child (12 - 18 yrs)	Whitney Property and Triangular Portion of Aberjona Property	CS	Chemical Concentration in Soil	see Table 3-3.1 CT	mg/kg	see Table 3-3.1 CT	CDI (mg/kg-day) =
				SA	Skin Surface Area Available for Contact	4,500	cm^2	USEPA 2001c	$\frac{CS \times SA \times AF \times EF \times ED \times DAF \times CF}{BW \times AT}$
				AF	Skin Adherence Factor	0.2	mg/cm^2-day	USEPA 2001c	
				EF	Exposure Frequency	26	days/year	Prof. Judgement	
				ED	Exposure Duration	2	years	USEPA 1997a	
				DAF	Dermal Absorption Factor	chemical specific	- -	- -	
				BW	Body Weight	57	kg	USEPA 1997a	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	730	days	USEPA 1989	
				CF	Conversion Factor	0.000001	kg/mg	USEPA 2001c	

EF for direct contact for the commercial worker assumes outdoors 5 days per week, May through October.

EF for direct contact for the older child tresspasser assumes outdoors 1 day per week, May through October.

* - unless otherwise specified for certain exposure routes.

Table 3-4.2 - RME
Values Used for Daily Intake Calculations
Reasonable Maximum Exposure
Southwest Properties, Wells G&H Superfund Site, Operable Unit 2
Woburn, Massachusetts

Scenario Timeframe: Future
Medium: Soil
Exposure Medium: Surface Soil (0 - 2 ft)

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Ingestion	Commercial Worker	Adult	Aberjona, Whitney and Murphy Properties	CS	Chemical Concentration in Soil	see Table 3-3.1 RME	mg/kg	see Table 3-3.1 RME	CDI (mg/kg-day) =
				IR	Ingestion Rate of Soil	50	mg/day	USEPA 1997a	CS x IR x FI x EF x ED x CF / BW x AT
				FI	Fraction Ingested	1	unitless	Prof. Judgement	
				EF	Exposure Frequency	125	days/year	Prof. Judgement	
				ED	Exposure Duration	25	years	USEPA 2001c	
				BW	Body Weight	70	kg	USEPA 1997a	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	9,125	days	USEPA 1989	
				CF	Conversion Factor	0.000001	kg/mg	- -	
	Trespasser	Older Child (12 - 18 yrs)	Aberjona, Whitney, and Murphy Properties	CS	Chemical Concentration in Soil	see Table 3-3.1 RME	mg/kg	see Table 3-3.1 RME	CDI (mg/kg-day) =
				IR	Ingestion Rate of Soil	100	mg/day	USEPA 1997a	CS x IR x FI x EF x ED x CF / BW x AT
				FI	Fraction Ingested	0.5	unitless	Prof. Judgement	
				EF	Exposure Frequency	52	days/year	Prof. Judgement	
				ED	Exposure Duration	6	years	USEPA 1997a	
				BW	Body Weight	57	kg	USEPA 1997a	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	2,190	days	USEPA 1989	
				CF	Conversion Factor	0.000001	kg/mg	- -	
	Recreational User	Adult	Aberjona, Whitney and Murphy Properties	CS	Chemical Concentration in Soil	see Table 3-3.1 RME	mg/kg	see Table 3-3.1 RME	CDI (mg/kg-day) =
				IR	Ingestion Rate of Soil	100	mg/day	USEPA 1997a	CS x IR x FI x EF x ED x CF / BW x AT
				FI	Fraction Ingested	0.5	unitless	USEPA 2001c	
				EF	Exposure Frequency	78	days/year	Prof. Judgement	
				ED	Exposure Duration	24	years	USEPA 1997a	
				BW	Body Weight	70	kg	USEPA 1997a	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	8,760	days	USEPA 1989	
				CF	Conversion Factor	0.000001	kg/mg	- -	

EF for direct contact for the commercial and construction worker assumes outdoors 5 days per week, May through October.

EF for direct contact for the older child trespasser assumes outdoors 2 days per week, May through October.

EF for direct contact for the adult and young child recreational user assumes outdoors 3 days per week, May through October.

Table 3-4.2 - RME
Values Used for Daily Intake Calculations
Reasonable Maximum Exposure
Southwest Properties, Wells G&H Superfund Site, Operable Unit 2
Woburn, Massachusetts

Scenario Timeframe: Future
Medium: Soil
Exposure Medium: Surface Soil (0 - 2 ft)

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Ingestion (cont.)	Recreational User	Young Child (1 - 6 yrs)	Aberjona, Whitney and Murphy Properties	CS	Chemical Concentration in Soil	see Table 3-3.1 RME	mg/kg	see Table 3-3.1 RME	CDI (mg/kg-day) =
				IR	Ingestion Rate of Soil	200	mg/day	USEPA 1997a	$\frac{CS \times IR \times FI \times EF \times ED \times CF}{BW \times AT}$
				FI	Fraction Ingested	0.5	unitless	Prof. Judgement	
				EF	Exposure Frequency	78	days/year	Prof. Judgement	
				ED	Exposure Duration	6	years	USEPA 1997a	
				BW	Body Weight	15	kg	USEPA 1997a	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	2,190	days	USEPA 1989	
				CF	Conversion Factor	0.000001	kg/mg	- -	
	Construction Worker	Adult	Aberjona, Whitney and Murphy Properties	CS	Chemical Concentration in Soil	see Table 3-3.1 RME	mg/kg	see Table 3-3.1 RME	CDI (mg/kg-day) =
				IR	Ingestion Rate of Soil	200	mg/day	USEPA 1997a	$\frac{CS \times IR \times FI \times EF \times ED \times CF}{BW \times AT}$
				FI	Fraction Ingested	1	unitless	USEPA 2001c	
				EF	Exposure Frequency	125	days/year	Prof. Judgement	
				ED	Exposure Duration	1	years	USEPA 2001c	
				BW	Body Weight	70	kg	USEPA 1997a	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	365	days	USEPA 1989	
				CF	Conversion Factor	0.000001	kg/mg	- -	
Inhalation of fugitive dust	Construction Worker	Adult	Aberjona, Whitney and Murphy Properties	CS	Chemical Concentration in Soil	see Table 3-3.1 RME	mg/kg	see Table 3-3.1 RME	CDI (mg/m^3) =
				ET	Exposure Time	8	hrs/day	USEPA 1997a	$\frac{CS \times ET \times EF \times ED}{AT \times PEF \times CF}$
				EF	Exposure Frequency	125	days/year	USEPA 2001c	
				ED	Exposure Duration	1	years	USEPA 2001c	
				PEF	Particulate Emission Factor	6.93E+08	m^3/kg	USEPA, 1991	
				CF	Conversion Factor	24	hrs/day	--	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	365	days	USEPA 1989	

EF for direct contact for the commercial and construction worker assumes outdoors 5 days per week, May through October.

EF for direct contact for the older child trespasser assumes outdoors 2 days per week, May through October.

EF for direct contact for the adult and young child recreational user assumes outdoors 3 days per week, May through October.

Table 3-4.2 - RME
Values Used for Daily Intake Calculations
Reasonable Maximum Exposure
Southwest Properties, Wells G&H Superfund Site, Operable Unit 2
Woburn, Massachusetts

Scenario Timeframe: Future
Medium: Soil
Exposure Medium: Surface Soil (0 - 2 ft)

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Dermal	Commercial Worker	Adult	Aberjona, Whitney and Murphy Properties	CS	Chemical Concentration in Soil	see Table 3-3.1 RME	mg/kg	see Table 3-3.1 RME	CDI (mg/kg-day) =
				SA	Skin Surface Area Available for Contact	3,300	cm^2	USEPA 2001c	$\frac{CS \times SA \times AF \times EF \times ED \times DAF \times CF}{BW \times AT}$
				AF	Skin Adherence Factor	0.2	mg/cm^2-day	USEPA 2001c	
				EF	Exposure Frequency	125	days/year	Prof. Judgement	
				ED	Exposure Duration	25	years	USEPA 2001c	
				DAF	Dermal Absorption Factor	chemical specific	- -	- -	
				BW	Body Weight	70	kg	USEPA 1997a	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	9,125	days	USEPA 1989	
				CF	Conversion Factor	0.000001	kg/mg	- -	
	Trespasser	Older Child (12 - 18 yrs)	Aberjona, Whitney and Murphy Properties	CS	Chemical Concentration in Soil	see Table 3-3.1 RME	mg/kg	see Table 3-3.1 RME	CDI (mg/kg-day) =
				SA	Skin Surface Area Available for Contact	4,500	cm^2	USEPA 2001c	$\frac{CS \times SA \times AF \times EF \times ED \times DAF \times CF}{BW \times AT}$
				AF	Skin Adherence Factor	0.2	mg/cm^2-day	USEPA 2001c	
				EF	Exposure Frequency	52	days/year	Prof. Judgement	
				ED	Exposure Duration	6	years	USEPA 1997a	
				DAF	Dermal Absorption Factor	chemical specific	- -	- -	
				BW	Body Weight	57	kg	USEPA 1997a	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	2,190	days	USEPA 1989	
				CF	Conversion Factor	0.000001	kg/mg	- -	
	Recreational User	Adult	Aberjona, Whitney and Murphy Properties	CS	Chemical Concentration in Soil	see Table 3-3.1 RME	mg/kg	see Table 3-3.1 RME	CDI (mg/kg-day) =
				SA	Skin Surface Area Available for Contact	5,700	cm^2	USEPA 2001c	$\frac{CS \times SA \times AF \times EF \times ED \times DAF \times CF}{BW \times AT}$
				AF	Skin Adherence Factor	0.07	mg/cm^2-day	USEPA 2001c	
				EF	Exposure Frequency	78	days/year	USEPA 2001c	
				ED	Exposure Duration	24	years	USEPA 1997a	
				DAF	Dermal Absorption Factor	chemical specific	- -	- -	
				BW	Body Weight	70	kg	USEPA 1997a	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	8,760	days	USEPA 1989	
				CF	Conversion Factor	0.000001	kg/mg	- -	

Adult SA term assumes exposure to face, forearms, hands, and lower legs.

Young child SA term assumes exposure to face, forearms, hands, lower legs, and feet.

Older child SA term assumes exposure to hands, lower legs, and feet.

Adult AF term is geometric mean value for adult gardeners.

Older child and young child AF term is geometric mean value for children playing in wet soil.

EF for direct contact for the commercial and construction worker assumes outdoors 5 days per week, May through October.

EF for direct contact for the older child trespasser assumes outdoors 2 days per week, May through October.

EF for direct contact for the adult and young child recreational user assumes outdoors 3 days per week, May through October.

Table 3-4.2 - RME
Values Used for Daily Intake Calculations
Reasonable Maximum Exposure
Southwest Properties, Wells G&H Superfund Site, Operable Unit 2
Woburn, Massachusetts

Scenario Timeframe: Future
Medium: Soil
Exposure Medium: Surface Soil (0 - 2 ft)

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Dermal (cont.)	Recreational User	Young Child (1 - 6 yrs)	Aberjona, Whitney and Murphy Properties	CS	Chemical Concentration in Soil	see Table 3-3.1 RME	mg/kg	see Table 3-3.1 RME	CDI (mg/kg-day) =
				SA	Skin Surface Area Available for Contact	2,800	cm^2	USEPA 2001c	$\frac{CS \times SA \times AF \times EF \times ED \times DAF \times CF}{BW \times AT}$
				AF	Skin Adherence Factor	0.2	mg/cm^2-day	USEPA 2001c	
				EF	Exposure Frequency	78	days/year	USEPA 2001c	
				ED	Exposure Duration	6	years	USEPA 1997a	
				DAF	Dermal Absorption Factor	chemical specific	- -	- -	
				BW	Body Weight	15	kg	USEPA 1997a	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	2,190	days	USEPA 1989	
				CF	Conversion Factor	0.000001	kg/mg	- -	
	Construction Worker	Adult	Aberjona, Whitney and Murphy Properties	CS	Chemical Concentration in Soil	see Table 3-3.1 RME	mg/kg	see Table 3-3.1 RME	CDI (mg/kg-day) =
				SA	Skin Surface Area Available for Contact	3,300	cm^2	USEPA 2001c	$\frac{CS \times SA \times AF \times EF \times ED \times DAF \times CF}{BW \times AT}$
				AF	Skin Adherence Factor	0.2	mg/cm^2-day	USEPA 2001c	
				EF	Exposure Frequency	125	days/year	Prof. Judgement	
				ED	Exposure Duration	1	years	Prof. Judgement	
				DAF	Dermal Absorption Factor	chemical specific	- -	- -	
				BW	Body Weight	70	kg	USEPA 1997a	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	365	days	USEPA 1989	
				CF	Conversion Factor	0.000001	kg/mg	- -	

Adult SA term assumes exposure to face, forearms, hands, and lower legs.

Young child SA term assumes exposure to face, forearms, hands, lower legs, and feet.

Older child SA term assumes exposure to hands, lower legs, and feet.

Adult AF term is geometric mean value for adult gardeners.

Older child and young child AF term is geometric mean value for children playing in wet soil.

EF for direct contact for the commercial and construction worker assumes outdoors 5 days per week, May through October.

EF for direct contact for the older child trespasser assumes outdoors 2 days per week, May through October.

EF for direct contact for the adult and young child recreational user assumes outdoors 3 days per week, May through October.

Table 3-4.2 - CT
Values Used for Daily Intake Calculations
Central Tendency
Southwest Properties, Wells G&H Superfund Site, Operable Unit 2
Woburn, Massachusetts

Scenario Timeframe: Future
Medium: Soil
Exposure Medium: Surface Soil (0 - 2 ft)

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Ingestion	Commercial Worker	Adult	Aberjona, Whitney and Murphy Properties	CS	Chemical Concentration in Soil	see Table 3-3.1 CT	mg/kg	see Table 3-3.1 CT	CDI (mg/kg-day) =
				IR	Ingestion Rate of Soil	50	mg/day	USEPA 1997a	CS x IR x FI x EF x ED x CF / BW x AT
				FI	Fraction Ingested	1	unitless	Prof. Judgement	
				EF	Exposure Frequency	60	days/year	Prof. Judgement	
				ED	Exposure Duration	9	years	USEPA 2001c	
				BW	Body Weight	70	kg	USEPA 1997a	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	3,285	days	USEPA 1989	
				CF	Conversion Factor	0.000001	kg/mg	- -	
	Trespasser	Older Child (12 - 18 yrs)	Aberjona, Whitney and Murphy Properties	CS	Chemical Concentration in Soil	see Table 3-3.1 CT	mg/kg	see Table 3-3.1 CT	CDI (mg/kg-day) =
				IR	Ingestion Rate of Soil	50	mg/day	USEPA 1997a	CS x IR x FI x EF x ED x CF / BW x AT
				FI	Fraction Ingested	0.5	unitless	Prof. Judgement	
				EF	Exposure Frequency	26	days/year	Prof. Judgement	
				ED	Exposure Duration	2	years	USEPA 1997a	
				BW	Body Weight	57	kg	USEPA 1997a	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	730	days	USEPA 1989	
				CF	Conversion Factor	0.000001	kg/mg	- -	
	Recreational User	Adult	Aberjona, Whitney and Murphy Properties	CS	Chemical Concentration in Soil	see Table 3-3.1 CT	mg/kg	see Table 3-3.1 CT	CDI (mg/kg-day) =
				IR	Ingestion Rate of Soil	50	mg/day	USEPA 1997a	CS x IR x FI x EF x ED x CF / BW x AT
				FI	Fraction Ingested	0.5	unitless	USEPA 2001c	
				EF	Exposure Frequency	26	days/year	Prof. Judgement	
				ED	Exposure Duration	7	years	USEPA 1997a	
				BW	Body Weight	70	kg	USEPA 1997a	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	2,555	days	USEPA 1989	
				CF	Conversion Factor	0.000001	kg/mg	- -	

EF for direct contact for the commercial and construction worker assumes outdoors 5 days per week, May through October.

EF for direct contact for the older child trespasser assumes outdoors 1 day per week, May through October.

EF for direct contact for the adult and young child recreational user assumes outdoors 3 days per week, May through October.

Table 3-4.2 - CT
Values Used for Daily Intake Calculations
Central Tendency
Southwest Properties, Wells G&H Superfund Site, Operable Unit 2
Woburn, Massachusetts

Scenario Timeframe: Future
Medium: Soil
Exposure Medium: Surface Soil (0 - 2 ft)

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Ingestion (cont.)	Recreational User	Young Child (1 - 6 yrs)	Aberjona, Whitney and Murphy Properties	CS	Chemical Concentration in Soil	see Table 3-3.1 CT	mg/kg	see Table 3-3.1 CT	CDI (mg/kg-day) =
				IR	Ingestion Rate of Soil	100	mg/day	USEPA 1997a	$\frac{CS \times IR \times FI \times EF \times ED \times CF}{BW \times AT}$
				FI	Fraction Ingested	0.5	unitless	Prof. Judgement	
				EF	Exposure Frequency	26	days/year	assumption	
				ED	Exposure Duration	2	years	USEPA 1997a	
				BW	Body Weight	15	kg	USEPA 1997a	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	730	days	USEPA 1989	
				CF	Conversion Factor	0.000001	kg/mg	- -	
	Construction Worker	Adult	Aberjona, Whitney and Murphy Properties	CS	Chemical Concentration in Soil	see Table 3-3.1 CT	mg/kg	see Table 3-3.1 CT	CDI (mg/kg-day) =
				IR	Ingestion Rate of Soil	200	mg/day	USEPA 1997a	$\frac{CS \times IR \times FI \times EF \times ED \times CF}{BW \times AT}$
				FI	Fraction Ingested	1	unitless	Prof. Judgement	
				EF	Exposure Frequency	40	days/year	assumption	
				ED	Exposure Duration	1	years	USEPA 1997a	
				BW	Body Weight	70	kg	USEPA 1997a	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	365	days	USEPA 1989	
				CF	Conversion Factor	0.000001	kg/mg	- -	
Inhalation of fugitive dust	Construction Worker	Adult	Aberjona, Whitney and Murphy Properties	CS	Chemical Concentration in Soil	see Table 3-3.1 CT	mg/kg	see Table 3-3.1 CT	CDI (mg/m^3) =
				ET	Exposure Time	8	hrs/day	USEPA 1997a	$\frac{CS \times ET \times EF \times ED}{AT \times PEF \times CF}$
				EF	Exposure Frequency	40	days/year	USEPA 2001c	
				ED	Exposure Duration	1	years	USEPA 2001c	
				PEF	Particulate Emission Factor	4.63E+09	m^3/kg	USEPA 1991	
				CF	Conversion Factor	24	hrs/day	--	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	365	days	USEPA 1989	

EF for direct contact for the commercial and construction worker assumes outdoors 5 days per week, May through October.

EF for direct contact for the older child trespasser assumes outdoors 1 day per week, May through October.

EF for direct contact for the adult and young child recreational user assumes outdoors 3 days per week, May through October.

Table 3-4.2 - CT
Values Used for Daily Intake Calculations
Central Tendency
Southwest Properties, Wells G&H Superfund Site, Operable Unit 2
Woburn, Massachusetts

Scenario Timeframe: Future
Medium: Soil
Exposure Medium: Surface Soil (0 - 2 ft)

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Dermal	Commercial Worker	Adult	Aberjona, Whitney and Murphy Properties	CS	Chemical Concentration in Soil	see Table 3-3.1 CT	mg/kg	see Table 3-3.1 CT	CDI (mg/kg-day) =
				SA	Skin Surface Area Available for Contact	3,300	cm^2	USEPA 2001c	$\frac{CS \times SA \times AF \times EF \times ED \times DAF \times CF}{BW \times AT}$
				AF	Skin Adherence Factor	0.2	mg/cm^2-day	USEPA 2001c	
				EF	Exposure Frequency	60	days/year	Prof. Judgement	
				ED	Exposure Duration	9	years	USEPA 2001c	
				DAF	Dermal Absorption Factor	chemical specific	- -	- -	
				BW	Body Weight	70	kg	USEPA 1997a	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	3,285	days	USEPA 1989	
				CF	Conversion Factor	0.000001	kg/mg	- -	
	Trespasser	Older Child (12 - 18 yrs)	Aberjona, Whitney and Murphy Properties	CS	Chemical Concentration in Soil	see Table 3-3.1 CT	mg/kg	see Table 3-3.1 CT	CDI (mg/kg-day) =
				SA	Skin Surface Area Available for Contact	4,500	cm^2	USEPA 2001c	$\frac{CS \times SA \times AF \times EF \times ED \times DAF \times CF}{BW \times AT}$
				AF	Skin Adherence Factor	0.2	mg/cm^2-day	USEPA 2001c	
				EF	Exposure Frequency	26	days/year	Prof. Judgement	
				ED	Exposure Duration	2	years	USEPA 1997a	
				DAF	Dermal Absorption Factor	chemical specific	- -	- -	
				BW	Body Weight	57	kg	USEPA 1997a	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	730	days	USEPA 1989	
				CF	Conversion Factor	0.000001	kg/mg	- -	
	Recreational User	Adult	Aberjona, Whitney and Murphy Properties	CS	Chemical Concentration in Soil	see Table 3-3.1 CT	mg/kg	see Table 3-3.1 CT	CDI (mg/kg-day) =
				SA	Skin Surface Area Available for Contact	5,700	cm^2	USEPA 2001c	$\frac{CS \times SA \times AF \times EF \times ED \times DAF \times CF}{BW \times AT}$
				AF	Skin Adherence Factor	0.07	mg/cm^2-day	USEPA 2001c	
				EF	Exposure Frequency	26	days/year	USEPA 2001c	
				ED	Exposure Duration	7	years	USEPA 1997a	
				DAF	Dermal Absorption Factor	chemical specific	- -	- -	
				BW	Body Weight	70	kg	USEPA 1997a	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	2,555	days	USEPA 1989	
				CF	Conversion Factor	0.000001	kg/mg	- -	

Adult SA term assumes exposure to face, forearms, hands, and lower legs.

Young child SA term assumes exposure to face, forearms, hands, lower legs, and feet.

Older child SA term assumes exposure to hands, lower legs, and feet.

Adult AF term is geometric mean value for adult gardeners.

Older child and young child AF term is geometric mean value for children playing in wet soil.

EF for direct contact for the commercial and construction worker assumes outdoors 5 days per week, May through October.

EF for direct contact for the older child trespasser assumes outdoors 1 day per week, May through October.

EF for direct contact for the adult and young child recreational user assumes outdoors 3 days per week, May through October.

Table 3-4.2 - CT
Values Used for Daily Intake Calculations
Central Tendency
Southwest Properties, Wells G&H Superfund Site, Operable Unit 2
Woburn, Massachusetts

Scenario Timeframe: Future
Medium: Soil
Exposure Medium: Surface Soil (0 - 2 ft)

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Dermal (cont.)	Recreational User	Young Child (1 - 6 yrs)	Aberjona, Whitney and Murphy Properties	CS	Chemical Concentration in Soil	see Table 3-3.1 CT	mg/kg	see Table 3-3.1 CT	CDI (mg/kg-day) = $\frac{CS \times SA \times AF \times EF \times ED \times DAF \times CF}{BW \times AT}$
				SA	Skin Surface Area Available for Contact	2,800	cm^2	USEPA 2001c	
				AF	Skin Adherence Factor	0.2	mg/cm^2-day	USEPA 2001c	
				EF	Exposure Frequency	26	days/year	assumption	
				ED	Exposure Duration	2	years	USEPA 1997a	
				DAF	Dermal Absorption Factor	chemical specific	- -	- -	
				BW	Body Weight	15	kg	USEPA 1997a	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	730	days	USEPA 1989	
				CF	Conversion Factor	0.000001	kg/mg	- -	
	Construction Worker	Adult	Aberjona, Whitney and Murphy Properties	CS	Chemical Concentration in Soil	see Table 3-3.1 CT	mg/kg	see Table 3-3.1 CT	CDI (mg/kg-day) = $\frac{CS \times SA \times AF \times EF \times ED \times DAF \times CF}{BW \times AT}$
				SA	Skin Surface Area Available for Contact	3,300	cm^2	USEPA 2001c	
				AF	Skin Adherence Factor	0.2	mg/cm^2-day	USEPA 2001c	
				EF	Exposure Frequency	40	days/year	Prof. Judgement	
				ED	Exposure Duration	1	years	Prof. Judgement	
				DAF	Dermal Absorption Factor	chemical specific	- -	- -	
				BW	Body Weight	70	kg	USEPA 1997a	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	365	days	USEPA 1989	
				CF	Conversion Factor	0.000001	kg/mg	- -	

Adult SA term assumes exposure to face, forearms, hands, and lower legs.

Young child SA term assumes exposure to face, forearms, hands, lower legs, and feet.

Older child SA term assumes exposure to hands, lower legs, and feet.

Adult AF term is geometric mean value for adult gardeners.

Older child and young child AF term is geometric mean value for children playing in wet soil.

EF for direct contact for the commercial and construction worker assumes outdoors 5 days per week, May through October.

EF for direct contact for the older child trespasser assumes outdoors 1 day per week, May through October.

EF for direct contact for the adult and young child recreational user assumes outdoors 3 days per week, May through October.

Table 3-4.3 - RME
Values Used for Daily Intake Calculations
Reasonable Maximum Exposure
Southwest Properties, Wells G&H Superfund Site, Operable Unit 2
Woburn, Massachusetts

Scenario Timeframe: Future
Medium: Soil
Exposure Medium: Subsurface Soil (2 - 15 ft)

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Ingestion	Recreational User	Adult	Aberjona, Whitney and Murphy Properties	CS	Chemical Concentration in Soil	see Table 3-3.2 RME	mg/kg	see Table 3-3.2 RME	CDI (mg/kg-day) =
				IR	Ingestion Rate of Soil	100	mg/day	USEPA 1997a	CS x IR x FI x EF x ED x CF / BW x AT
				FI	Fraction Ingested	0.5	unitless	USEPA 2001c	
				EF	Exposure Frequency	78	days/year	Prof. Judgement	
				ED	Exposure Duration	24	years	USEPA 1997a	
				BW	Body Weight	70	kg	USEPA 1997a	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	8,760	days	USEPA 1989	
				CF	Conversion Factor	0.000001	kg/mg	- -	
		Young Child (1 - 6 yrs)	Aberjona, Whitney and Murphy Properties	CS	Chemical Concentration in Soil	see Table 3-3.2 RME	mg/kg	see Table 3-3.2 RME	CDI (mg/kg-day) =
				IR	Ingestion Rate of Soil	200	mg/day	USEPA 1997a	CS x IR x FI x EF x ED x CF / BW x AT
				FI	Fraction Ingested	0.5	unitless	Prof. Judgement	
				EF	Exposure Frequency	78	days/year	Prof. Judgement	
				ED	Exposure Duration	6	years	USEPA 1997a	
				BW	Body Weight	15	kg	USEPA 1997a	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	2,190	days	USEPA 1989	
				CF	Conversion Factor	0.000001	kg/mg	- -	
	Construction Worker	Adult	Aberjona, Whitney and Murphy Properties	CS	Chemical Concentration in Soil	see Table 3-3.2 RME	mg/kg	see Table 3-3.2 RME	CDI (mg/kg-day) =
				IR	Ingestion Rate of Soil	200	mg/day	USEPA 1997a	CS x IR x FI x EF x ED x CF / BW x AT
				FI	Fraction Ingested	1	unitless	USEPA 2001c	
				EF	Exposure Frequency	125	days/year	Prof. Judgement	
				ED	Exposure Duration	1	years	USEPA 2001c	
				BW	Body Weight	70	kg	USEPA 1997a	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	365	days	USEPA 1989	
				CF	Conversion Factor	0.000001	kg/mg	- -	

EF for direct contact for the commercial and construction worker assumes outdoors 5 days per week, May through October.

EF for direct contact for the adults and young child recreational user assumes outdoors 3 days per week, May through October.

Table 3-4.3 - RME
Values Used for Daily Intake Calculations
Reasonable Maximum Exposure
Southwest Properties, Wells G&H Superfund Site, Operable Unit 2
Woburn, Massachusetts

Scenario Timeframe: Future
Medium: Soil
Exposure Medium: Subsurface Soil (2 - 15 ft)

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Inhalation of fugitive dust	Construction Worker	Adult	Aberjona, Whitney and Murphy Properties	CS	Chemical Concentration in Soil	see Table 3-3.2 RME	mg/kg	see Table 3-3.2 RME	CDI (mg/m^3) =
				ET	Exposure Time	8	hrs/day	USEPA 1997a	$\frac{CS \times ET \times EF \times ED}{AT \times PEF \times CF}$
				EF	Exposure Frequency	125	days/year	USEPA 2001c	
				ED	Exposure Duration	1	years	USEPA 2001c	
				PEF	Particulate emission factor	4.63E+09	m^3/kg	USEPA 1991	
				CF	Conversion Factor	24	hrs/day	--	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	365	days	USEPA 1989	
Dermal	Recreational User	Adult	Aberjona, Whitney and Murphy Properties	CS	Chemical Concentration in Soil	see Table 3-3.2 RME	mg/kg	see Table 3-3.2 RME	CDI (mg/kg-day) =
				SA	Skin Surface Area Available for Contact	5,700	cm^2	USEPA 2001c	$\frac{CS \times SA \times AF \times EF \times ED \times DAF \times CF}{BW \times AT}$
				AF	Skin Adherence Factor	0.07	mg/cm^2-day	USEPA 2001c	
				EF	Exposure Frequency	78	days/year	USEPA 2001c	
				ED	Exposure Duration	24	years	USEPA 1997a	
				DAF	Dermal Absorption Factor	chemical specific	- -	- -	
				BW	Body Weight	70	kg	USEPA 1997a	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	8,760	days	USEPA 1989	
				CF	Conversion Factor	0.000001	kg/mg	- -	
		Young Child (1 - 6 yrs)	Aberjona, Whitney and Murphy Properties	CS	Chemical Concentration in Soil	see Table 3-3.2 RME	mg/kg	see Table 3-3.2 RME	CDI (mg/kg-day) =
				SA	Skin Surface Area Available for Contact	2,800	cm^2	USEPA 2001c	$\frac{CS \times SA \times AF \times EF \times ED \times DAF \times CF}{BW \times AT}$
				AF	Skin Adherence Factor	0.2	mg/cm^2-day	USEPA 2001c	
				EF	Exposure Frequency	78	days/year	USEPA 2001c	
				ED	Exposure Duration	6	years	USEPA 1997a	
				DAF	Dermal Absorption Factor	chemical specific	- -	- -	
				BW	Body Weight	15	kg	USEPA 1997a	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	2,190	days	USEPA 1989	
				CF	Conversion Factor	0.000001	kg/mg	- -	

Adult SA term assumes exposure to face, forearms, hands, and lower legs.

Young child SA term assumes exposure to face, forearms, hands, lower legs, and feet.

Adult AF term is geometric mean value for adult gardeners.

EF for direct contact for the commercial and construction worker assumes outdoors 5 days per week, May through October.

EF for direct contact for the adults and young child recreational user assumes outdoors 3 days per week, May through October.

Table 3-4.3 - RME
Values Used for Daily Intake Calculations
Reasonable Maximum Exposure
Southwest Properties, Wells G&H Superfund Site, Operable Unit 2
Woburn, Massachusetts

Scenario Timeframe: Future
Medium: Soil
Exposure Medium: Subsurface Soil (2 - 15 ft)

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Dermal (cont.)	Construction Worker	Adult	Aberjona, Whitney and Murphy Properties	CS	Chemical Concentration in Soil	see Table 3-3.2 RME	mg/kg	see Table 3-3.2 RME	CDI (mg/kg-day) = $\frac{CS \times SA \times AF \times EF \times ED \times DAF \times CF}{BW \times AT}$
				SA	Skin Surface Area Available for Contact	3,300	cm^2	USEPA 2001c	
				AF	Skin Adherence Factor	0.2	mg/cm^2-day	USEPA 2001c	
				EF	Exposure Frequency	125	days/year	Prof. Judgement	
				ED	Exposure Duration	1	years	Prof. Judgement	
				DAF	Dermal Absorption Factor	chemical specific	- -	- -	
				BW	Body Weight	70	kg	USEPA 1997a	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	365	days	USEPA 1989	
				CF	Conversion Factor	0.000001	kg/mg	- -	

Adult SA term assumes exposure to face, forearms, hands, and lower legs.

Young child SA term assumes exposure to face, forearms, hands, lower legs, and feet.

Adult AF term is geometric mean value for adult gardeners.

EF for direct contact for the commercial and construction worker assumes outdoors 5 days per week, May through October.

EF for direct contact for the adults and young child recreational user assumes outdoors 3 days per week, May through October.

Table 3-4.3 - CT
Values Used for Daily Intake Calculations
Central Tendency
Southwest Properties, Wells G&H Superfund Site, Operable Unit 2
Woburn, Massachusetts

Scenario Timeframe: Future
Medium: Soil
Exposure Medium: Subsurface Soil (2 - 15 ft)

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Ingestion	Recreational User	Adult	Aberjona, Whitney and Murphy Properties	CS	Chemical Concentration in Soil	see Table 3-3.2 CT	mg/kg	see Table 3-3.2 CT	CDI (mg/kg-day) =
				IR	Ingestion Rate of Soil	50	mg/day	USEPA 1997a	$\frac{CS \times IR \times FI \times EF \times ED \times CF}{BW \times AT}$
				FI	Fraction Ingested	0.5	unitless	USEPA 2001c	
				EF	Exposure Frequency	26	days/year	Prof. Judgement	
				ED	Exposure Duration	7	years	USEPA 1997a	
				BW	Body Weight	70	kg	USEPA 1997a	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	2,555	days	USEPA 1989	
				CF	Conversion Factor	0.000001	kg/mg	- -	
		Young Child (1 - 6 yrs)	Aberjona, Whitney and Murphy Properties	CS	Chemical Concentration in Soil	see Table 3-3.2 CT	mg/kg	see Table 3-3.2 CT	CDI (mg/kg-day) =
				IR	Ingestion Rate of Soil	100	mg/day	USEPA 1997a	$\frac{CS \times IR \times FI \times EF \times ED \times CF}{BW \times AT}$
				FI	Fraction Ingested	0.5	unitless	Prof. Judgement	
				EF	Exposure Frequency	26	days/year	assumption	
				ED	Exposure Duration	2	years	USEPA 1997a	
				BW	Body Weight	15	kg	USEPA 1997a	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	730	days	USEPA 1989	
				CF	Conversion Factor	0.000001	kg/mg	- -	
	Construction Worker	Adult	Aberjona, Whitney and Murphy Properties	CS	Chemical Concentration in Soil	see Table 3-3.2 CT	mg/kg	see Table 3-3.2 CT	CDI (mg/kg-day) =
				IR	Ingestion Rate of Soil	200	mg/day	USEPA 1997a	$\frac{CS \times IR \times FI \times EF \times ED \times CF}{BW \times AT}$
				FI	Fraction Ingested	1	unitless	Prof. Judgement	
				EF	Exposure Frequency	40	days/year	assumption	
				ED	Exposure Duration	1	years	USEPA 1997a	
				BW	Body Weight	70	kg	USEPA 1997a	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	365	days	USEPA 1989	
				CF	Conversion Factor	0.000001	kg/mg	- -	

EF for direct contact for the commercial and construction worker assumes outdoors 5 days per week, May through October.

EF for direct contact for the adults and young child recreational user assumes outdoors 3 days per week, May through October.

Table 3-4.3 - CT
Values Used for Daily Intake Calculations
Central Tendency
Southwest Properties, Wells G&H Superfund Site, Operable Unit 2
Woburn, Massachusetts

Scenario Timeframe: Future
Medium: Soil
Exposure Medium: Subsurface Soil (2 - 15 ft)

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Inhalation of fugitive dust	Construction Worker	Adult	Aberjona, Whitney and Murphy Properties	CS	Chemical Concentration in Soil	see Table 3-3.2 CT	mg/kg	see Table 3-3.2 CT	CDI (mg/m^3) =
				ET	Exposure Time	8	hrs/day	USEPA 1997a	$\frac{CS \times ET \times EF \times ED}{AT \times PEF \times CF}$
				EF	Exposure Frequency	40	days/year	USEPA 2001c	
				ED	Exposure Duration	1	years	USEPA 2001c	
				PEF	Particulate Emission Factor	4.63E+09	m^3/kg	USEPA 1991	
				CF	Conversion Factor	24	hrs/day	--	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	365	days	USEPA 1989	
Dermal	Recreational User	Adult	Aberjona, Whitney and Murphy Properties	CS	Chemical Concentration in Soil	see Table 3-3.2 CT	mg/kg	see Table 3-3.2 CT	CDI (mg/kg-day) =
				SA	Skin Surface Area Available for Contact	5,700	cm^2	USEPA 2001c	$\frac{CS \times SA \times AF \times EF \times ED \times DAF \times CF}{BW \times AT}$
				AF	Skin Adherence Factor	0.07	mg/cm^2-day	USEPA 2001c	
				EF	Exposure Frequency	26	days/year	USEPA 2001c	
				ED	Exposure Duration	7	years	USEPA 1997a	
				DAF	Dermal Absorption Factor	chemical specific	- -	- -	
				BW	Body Weight	70	kg	USEPA 1997a	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	2,555	days	USEPA 1989	
				CF	Conversion Factor	0.000001	kg/mg	- -	
		Young Child (1 - 6 yrs)	Aberjona, Whitney and Murphy Properties	CS	Chemical Concentration in Soil	see Table 3-3.2 CT	mg/kg	see Table 3-3.2 CT	CDI (mg/kg-day) =
				SA	Skin Surface Area Available for Contact	2,800	cm^2	USEPA 2001c	$\frac{CS \times SA \times AF \times EF \times ED \times DAF \times CF}{BW \times AT}$
				AF	Skin Adherence Factor	0.2	mg/cm^2-day	USEPA 2001c	
				EF	Exposure Frequency	26	days/year	assumption	
				ED	Exposure Duration	2	years	USEPA 1997a	
				DAF	Dermal Absorption Factor	chemical specific	- -	- -	
				BW	Body Weight	15	kg	USEPA 1997a	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	730	days	USEPA 1989	
				CF	Conversion Factor	0.000001	kg/mg	- -	

Adult SA term assumes exposure to face, forearms, hands, and lower legs.

Young child SA term assumes exposure to face, forearms, hands, lower legs, and feet.

Adult AF term is geometric mean value for adult gardeners.

EF for direct contact for the commercial and construction worker assumes outdoors 5 days per week, May through October.

EF for direct contact for the adults and young child recreational user assumes outdoors 3 days per week, May through October.

Table 3-4.3 - CT
Values Used for Daily Intake Calculations
Central Tendency
Southwest Properties, Wells G&H Superfund Site, Operable Unit 2
Woburn, Massachusetts

Scenario Timeframe: Future
Medium: Soil
Exposure Medium: Subsurface Soil (2 - 15 ft)

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Dermal (cont.)	Construction Worker	Adult	Aberjona, Whitney and Murphy Properties	CS	Chemical Concentration in Soil	see Table 3-3.2 CT	mg/kg	see Table 3-3.2 CT	CDI (mg/kg-day) =
				SA	Skin Surface Area Available for Contact	3,300	cm^2	USEPA 2001c	$\frac{CS \times SA \times AF \times EF \times ED \times DAF \times CF}{BW \times AT}$
				AF	Skin Adherence Factor	0.2	mg/cm^2-day	USEPA 2001c	
				EF	Exposure Frequency	40	days/year	Prof. Judgement	
				ED	Exposure Duration	1	years	Prof. Judgement	
				DAF	Dermal Absorption Factor	chemical specific	- -	- -	
				BW	Body Weight	70	kg	USEPA 1997a	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	365	days	USEPA 1989	
				CF	Conversion Factor	0.000001	kg/mg	- -	

Adult SA term assumes exposure to face, forearms, hands, and lower legs.

Young child SA term assumes exposure to face, forearms, hands, lower legs, and feet.

Adult AF term is geometric mean value for adult gardeners.

EF for direct contact for the commercial and construction worker assumes outdoors 5 days per week, May through October.

EF for direct contact for the adults and young child recreational user assumes outdoors 3 days per week, May through October.

Table 3-4.4 - RME
Values Used for Daily Intake Calculations
Reasonable Maximum Exposure
Southwest Properties, Wells G&H Superfund Site, Operable Unit 2
Woburn, Massachusetts

Scenario Timeframe: Future
Medium: Soil
Exposure Medium: Indoor Air

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Inhalation	Commercial Worker	Adult	Aberjona, Whitney and Murphy Properties	CS	Chemical Concentration in Soil	see Appendix C.4	mg/m^3	- -	$CDI\ (mg/m^3) = \frac{CA \times ET \times EF \times ED}{AT \times CF}$
				ET	Exposure Time	8	hrs/day	USEPA 1997a	
				EF	Exposure Frequency	250	days/year	USEPA 2001c	
				ED	Exposure Duration	25	years	USEPA 1991	
				CF	Conversion Factor	24	hrs/day	- -	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	9,125	days	USEPA 1989	
	Recreational User	Adult	Aberjona, Whitney and Murphy Properties	CA	Chemical Concentration in Air	see Appendix C.4	mg/m^3	- -	$CDI\ (mg/m^3) = \frac{CA \times ET \times EF \times ED}{AT \times CF}$
				ET	Exposure Time	2.5	hrs/day	Prof. Judgement	
				EF	Exposure Frequency	78	days/year	USEPA 2001c	
				ED	Exposure Duration	24	years	USEPA 1991	
				CF	Conversion Factor	24	hrs/day	- -	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	8,760	days	USEPA 1989	
		Young Child	Aberjona, Whitney and Murphy Properties	CA	Chemical Concentration in Air	see Appendix C.4	mg/m^3	- -	$CDI\ (mg/m^3) = \frac{CA \times ET \times EF \times ED}{AT \times CF}$
				ET	Exposure Time	2.5	hrs/day	Prof. Judgement	
				EF	Exposure Frequency	78	days/year	USEPA 2001c	
				ED	Exposure Duration	6	years	USEPA 1991	
				CF	Conversion Factor	24	hrs/day	- -	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	2,190	days	USEPA 1989	

EF for Commercial Worker (250 days/year) is based on 5 days per week for 50 weeks.

EF for Recreational User (78 days/year) is based on 3 days per week for coldest 6 months of the year (hockey rink).

Table 3-4.4 - CT
Values Used for Daily Intake Calculations
Central Tendency
Southwest Properties, Wells G&H Superfund Site, Operable Unit 2
Woburn, Massachusetts

Scenario Timeframe: Future
Medium: Soil
Exposure Medium: Indoor Air

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Inhalation	Commercial Worker	Adult	Aberjona, Whitney and Murphy Properties	CS	Chemical Concentration in Soil	see Appendix C.4	mg/m^3	- -	$CDI\ (mg/m^3) = \frac{CA \times ET \times EF \times ED}{AT \times CF}$
				ET	Exposure Time	8	hrs/day	USEPA 1997a	
				EF	Exposure Frequency	219	days/year	USEPA 2001c	
				ED	Exposure Duration	9	years	USEPA 2001c	
				CF	Conversion Factor	24	hrs/day	- -	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	3,285	days	USEPA 1989	
	Recreational User	Adult	Aberjona, Whitney and Murphy Properties	CA	Chemical Concentration in Air	see Appendix C.4	mg/m^3	- -	$CDI\ (mg/m^3) = \frac{CA \times ET \times EF \times ED}{AT \times CF}$
				ET	Exposure Time	2.5	hrs/day	Prof. Judgement	
				EF	Exposure Frequency	26	days/year	USEPA 2001c	
				ED	Exposure Duration	7	years	USEPA 1991	
				CF	Conversion Factor	24	hrs/day	- -	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	2,555	days	USEPA 1989	
		Young Child	Aberjona, Whitney and Murphy Properties	CA	Chemical Concentration in Air	see Appendix C.4	mg/m^3	- -	$CDI\ (mg/m^3) = \frac{CA \times ET \times EF \times ED}{AT \times CF}$
				ET	Exposure Time	2.5	hrs/day	Prof. Judgement	
				EF	Exposure Frequency	26	days/year	USEPA 2001c	
				ED	Exposure Duration	2	years	USEPA 1991	
				CF	Conversion Factor	24	hrs/day	- -	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	730	days	USEPA 1989	

EF for Recreational User (26 days/year) is based on 1 day per week for coldest 6 months of the year (hockey rink).

Table 3-4.5 - RME
Values Used for Daily Intake Calculations
Reasonable Maximum Exposure
Southwest Properties, Wells G&H Superfund Site, Operable Unit 2
Woburn, Massachusetts

Scenario Timeframe: Future
Medium: Soil (0 - 2 ft)
Exposure Medium: Outdoor Air

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Inhalation	Construction Worker	Adult	Aberjona, Whitney and Murphy Properties	CA	Chemical Concentration in Air	see Appendix C.4	mg/m^3	- -	$CDI\ (mg/m^3) = \frac{CA \times ET \times EF \times ED}{AT \times CF}$
				ET	Exposure Time	8	hrs/day	Prof. Judgement	
				EF	Exposure Frequency	125	days/year	USEPA 2001c	
				ED	Exposure Duration	1	years	USEPA 1991	
				CF	Conversion Factor	24	hrs/day	- -	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	365	days	USEPA 1989	

EF of 125 days/year is based on 5 days per week for a 6 month construction project.

Table 3-4.5 - CT
Values Used for Daily Intake Calculations
Central Tendency
Southwest Properties, Wells G&H Superfund Site, Operable Unit 2
Woburn, Massachusetts

Scenario Timeframe: Future
Medium: Soil (0 - 2 ft)
Exposure Medium: Outdoor Air

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Inhalation	Construction Worker	Adult	Aberjona, Whitney and Murphy Properties	CA	Chemical Concentration in Air	see Appendix C.4	mg/m^3	- -	$CDI\ (mg/m^3) = \frac{CA \times ET \times EF \times ED}{AT \times CF}$
				ET	Exposure Time	8	hrs/day	USEPA 1997a	
				EF	Exposure Frequency	40	days/year	USEPA 2001c	
				ED	Exposure Duration	1	years	USEPA 2001c	
				CF	Conversion Factor	24	hrs/day	- -	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	365	days	USEPA 1989	

EF of 40 days/year is based on a 2 month construction project.

Table 3-4.6 - RME
Values Used for Daily Intake Calculations
Reasonable Maximum Exposure
Southwest Properties, Wells G&H Superfund Site, Operable Unit 2
Woburn, Massachusetts

Scenario Timeframe: Future
Medium: Soil (2 - 15 ft)
Exposure Medium: Outdoor Air

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Inhalation	Construction Worker	Adult	Aberjona, Whitney and Murphy Properties	CA	Chemical Concentration in Air	see Appendix C.4	mg/m^3	- -	$CDI\ (mg/m^3) = \frac{CA \times ET \times EF \times ED}{AT \times CF}$
				ET	Exposure Time	8	hrs/day	Prof. Judgement	
				EF	Exposure Frequency	125	days/year	USEPA 2001c	
				ED	Exposure Duration	1	years	USEPA 1991	
				CF	Conversion Factor	24	hrs/day	- -	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	365	days	USEPA 1989	

EF of 125 days/year is based on 5 days per week for a 6 month construction project.

Table 3-4.6 - CT
Values Used for Daily Intake Calculations
Central Tendency
Southwest Properties, Wells G&H Superfund Site, Operable Unit 2
Woburn, Massachusetts

Scenario Timeframe: Future
Medium: Soil (2 - 15 ft)
Exposure Medium: Outdoor Air

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Inhalation	Construction Worker	Adult	Aberjona, Whitney and Murphy Properties	CA	Chemical Concentration in Air	see Appendix C.4	mg/m^3	- -	$CDI\ (mg/m^3) = \frac{CA \times ET \times EF \times ED}{AT \times CF}$
				ET	Exposure Time	8	hrs/day	USEPA 1997a	
				EF	Exposure Frequency	40	days/year	USEPA 2001c	
				ED	Exposure Duration	1	years	USEPA 2001c	
				CF	Conversion Factor	24	hrs/day	- -	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	365	days	USEPA 1989	

EF of 40 days/year is based on a 2 month construction project.

Table 3-4.7 - RME
Values Used for Daily Intake Calculations
Reasonable Maximum Exposure
Southwest Properties, Wells G&H Superfund Site, Operable Unit 2
Woburn, Massachusetts

Scenario Timeframe: Current
Medium: Groundwater
Exposure Medium: Indoor Air

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Inhalation	Commercial Worker	Adult	Aberjona Property	CA	Concentration in Air	aee Appendix C.4	mg/m3	--	CDI (mg/m^3) =
				ET	Exposure Time	8	hrs/days	USEPA 1997a	$\frac{CA \times ET \times EF \times ED}{AT \times CF}$
				EF	Exposure Frequency	250	days/year	USEPA 2001c	
				ED	Exposure Duration	25	years	USEPA 2001c	
				CF	Conversion Factor	24	hrs/days	--	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	9,125	days	USEPA 1989	
	Resident	Adult	Aberjona Property	CA	Concentration in Air	see Appendix C.4	mg/m^3	--	CDI (mg/m^3) =
				ET	Exposure Time	16	hrs/days	Prof. Judgement	$\frac{CA \times ET \times EF \times ED}{AT \times CF}$
				EF	Exposure Frequency	350	days/year	USEPA 2001c	
				ED	Exposure Duration	24	years	USEPA 2001c	
				CF	Conversion Factor	24	hrs/days	--	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	8,760	days	USEPA 1989	
		Young Child (1 - 6 yrs)	Aberjona Property	CA	Concentration in Air	see Appendix C.4	mg/m^3	--	CDI (mg/m^3) =
				ET	Exposure Time	16	hrs/days	Prof. Judgement	$\frac{CA \times ET \times EF \times ED}{AT \times CF}$
				EF	Exposure Frequency	350	days/year	USEPA 2001c	
				ED	Exposure Duration	6	years	USEPA 2001c	
				CF	Conversion Factor	24	hrs/days	--	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	2,190	days	USEPA 1989	

EF of 250 days/year for Commercial Worker assumes 5 days per week for 50 weeks per year
EF of 350 days/year for the Resident assumes 7 days per week for 50 weeks per year

Table 3-4.7 - CT
Values Used for Daily Intake Calculations
Central Tendency
Southwest Properties, Wells G&H Superfund Site, Operable Unit 2
Woburn, Massachusetts

Scenario Timeframe: Current
Medium: Groundwater
Exposure Medium: Indoor Air

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Inhalation	Commercial Worker	Adult	Aberjona Property	CA	Concentration in Air	see Appendix C.4	mg/m3	--	CDI (mg/m^3) =
				ET	Exposure Time	8	hrs/days	USEPA 1997a	$\frac{CA \times ET \times EF \times ED}{AT \times CF}$
				EF	Exposure Frequency	219	days/year	USEPA 2001c	
				ED	Exposure Duration	9	years	USEPA 2001c	
				CF	Conversion Factor	24	hrs/days	--	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	3,285	days	USEPA 1989	
	Resident	Adult	Aberjona Property	CA	Concentration in Air	see Appendix C.4	mg/m^3	--	CDI (mg/m^3) =
				ET	Exposure Time	16	hrs/days	Prof. Judgement	$\frac{CA \times ET \times EF \times ED}{AT \times CF}$
				EF	Exposure Frequency	350	days/year	USEPA 2001c	
				ED	Exposure Duration	7	years	USEPA 2001c	
				CF	Conversion Factor	24	hrs/days	--	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	2,555	days	USEPA 1989	
		Young Child (1 - 6 yrs)	Aberjona Property	CA	Concentration in Air	see Appendix C.4	mg/m^3	--	CDI (mg/m^3) =
				ET	Exposure Time	16	hrs/days	Prof. Judgement	$\frac{CA \times ET \times EF \times ED}{AT \times CF}$
				EF	Exposure Frequency	350	days/year	USEPA 2001c	
				ED	Exposure Duration	2	years	USEPA 2001c	
				CF	Conversion Factor	24	hrs/days	--	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	730	days	USEPA 1989	

EF of 219 days/year for Commercial Worker assumes 5 days per week for 44 weeks per year
EF of 350 days/year for the Resident assumes 7 days per week for 50 weeks per year

Table 3-4.8 - RME
Values Used for Daily Intake Calculations
Reasonable Maximum Exposure
Southwest Properties, Wells G&H Superfund Site, Operable Unit 2
Woburn, Massachusetts

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater*

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Ingestion	Off-Site Resident	Adult	Tap Water	CW	Chemical Concentration in Water	see Table 3-3.5 RME	ug/L	see Table 3-3.5 RME	Chronic Daily Intake (CDI) (mg/kg-day) =
				IR	Ingestion Rate of Water	2.0	liters/day	USEPA 1997a	$\frac{CW \times IR \times EF \times ED \times CF}{BW \times AT}$
				EF	Exposure Frequency	350	days/year	USEPA 2001c	
				ED	Exposure Duration	24	years	USEPA 2001c	
				CF	Conversion Factor	0.001	mg/ug	--	
				BW	Body Weight	70	kg	USEPA 1997a	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	8,760	days	USEPA 1989	
		Young Child (1 - 6 yrs)	Tap Water	CW	Chemical Concentration in Water	see Table 3-3.5 RME	ug/L	see Table 3-3.5 RME	CDI (mg/kg-day) =
				IR	Ingestion Rate of Water	1.5	liters/day	USEPA 1997a	$\frac{CW \times IR \times EF \times ED \times CF}{BW \times AT}$
				EF	Exposure Frequency	350	days/year	USEPA 2001c	
				ED	Exposure Duration	6	years	USEPA 2001c	
				CF	Conversion Factor	0.001	mg/ug	--	
				BW	Body Weight	15	kg	USEPA 1997a	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	2,190	days	USEPA 1989	
	Construction Worker*	Adult	Aberjona, Whitney, and Murphy Properties	CW	Chemical Concentration in Water	see Table 3-3.4 RME	ug/L	see Table 3-3.4 RME	CDI (mg/kg-day) =
				IR	Ingestion Rate of Water	0.05	liters/day	Prof. Judgement	$\frac{CW \times IR \times EF \times ED \times CF}{BW \times AT}$
				EF	Exposure Frequency	125	days/year	USEPA 2001c	
				ED	Exposure Duration	1	years	USEPA 2001c	
				CF	Conversion Factor	0.001	mg/ug	--	
				BW	Body Weight	70	kg	USEPA 1997a	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	365	days	USEPA 1989	
Dermal	Off-Site Resident	Adult	Shower Head	DA	Dose Absorbed per Unit Area per Event	see Appendix C.6	mg/cm^2-event	--	CDI (mg/kg-day) =
				SA	Skin Surface Area Available for Contact	18000	cm^2	USEPA 2001c	$\frac{DA \times SA \times EV \times EF \times ED}{BW \times AT}$
				EV	Event Frequency	1	events/day	USEPA 2001c	
				EF	Exposure Frequency	350	days/year	Prof. Judgement	
				ED	Exposure Duration	24	years	USEPA 2001c	
				BW	Body Weight	70	kg	USEPA 1997a	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	8,760	days	USEPA 1989	

* - Shallow groundwater assumed for construction worker exposures.
IR for Construction Worker assumes one mouthful/day.
EF for Construction Worker of 125 days/year is based on 5 days per week for a 6 month construction project.
EF of 350 days/year for the Off-Site Resident assumes 7 days per week for 50 weeks.

Table 3-4.8 - RME
Values Used for Daily Intake Calculations
Reasonable Maximum Exposure
Southwest Properties, Wells G&H Superfund Site, Operable Unit 2
Woburn, Massachusetts

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater*

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Dermal (Cont.)	Off-Site Resident	Young Child (1 - 6 yrs)	Shower Head	DA	Dose Absorbed per Unit Area per Event	see Appendix C.6	mg/cm^2-event	--	CDI (mg/kg-day) =
				SA	Skin Surface Area Available for Contact	6,600	cm^2	USEPA 2001c	DA x SA x EV x EF x ED
				EV	Event Frequency	1	events/day	USEPA 2001c	BW X AT
				EF	Exposure Frequency	350	days/year	USEPA 2001c	
				ED	Exposure Duration	6	years	USEPA 2001c	
				BW	Body Weight	15	kg	USEPA 1997a	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	2,190	days	USEPA 1989	
	Construction Worker*	Adult	Aberjona, Whitney, and Murphy Properties	DA	Dose Absorbed per Unit Area per Event	see Appendix C.6	mg/cm^2-event	--	CDI (mg/kg-day) =
				SA	Skin Surface Area Available for Contact	3,300	cm^2	USEPA 2001c	DA x SA x EV x EF x ED
				EV	Event Frequency	1	events/day	Prof. Judgement	BW X AT
				EF	Exposure Frequency	125	days/year	Prof. Judgement	
				ED	Exposure Duration	1	years	Prof. Judgement	
				BW	Body Weight	70	kg	USEPA 1997a	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	365	days	USEPA 1989	
Inhalation	Off-Site Resident	Adult	Shower Head	See Appendix C.5 for Foster and Chrostowski Model					
		Young Child (1 - 6 yrs)	Shower Head	See Appendix C.5 for Foster and Chrostowski Model					

* - Shallow groundwater assumed for construction worker exposures.
IR for Construction Worker assumes one mouthful/day.
EF for Construction Worker of 125 days/year is based on 5 days per week for a 6 month construction project.
EF of 350 days/year for the Off-Site Resident assumes 7 days per week for 50 weeks.

Table 3-4.8 - CT
Values Used for Daily Intake Calculations
Central Tendency
Southwest Properties, Wells G&H Superfund Site, Operable Unit 2
Woburn, Massachusetts

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater*

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Ingestion	Off-Site Resident	Adult	Tap Water	CW	Chemical Concentration in Water	see Table 3-3.5 CT	ug/L	see Table 3-3.5 CT	Chronic Daily Intake (CDI) (mg/kg-day) =
				IR	Ingestion Rate of Water	1.4	liters/day	USEPA 1997a	$\frac{CW \times IR \times EF \times ED \times CF}{BW \times AT}$
				EF	Exposure Frequency	350	days/year	USEPA 2001c	
				ED	Exposure Duration	7	years	USEPA 2001c	
				CF	Conversion Factor	0.001	mg/ug	--	
				BW	Body Weight	70	kg	USEPA 1997a	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	2,555	days	USEPA 1989	
		Young Child (1 - 6 yrs)	Tap Water	CW	Chemical Concentration in Water	see Table 3-3.5 CT	ug/L	see Table 3-3.5 CT	CDI (mg/kg-day) =
				IR	Ingestion Rate of Water	0.87	liters/day	USEPA 1997a	$\frac{CW \times IR \times EF \times ED \times CF}{BW \times AT}$
				EF	Exposure Frequency	350	days/year	USEPA 2001c	
				ED	Exposure Duration	2	years	USEPA 2001c	
				CF	Conversion Factor	0.001	mg/ug	--	
				BW	Body Weight	15	kg	USEPA 1997a	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	730	days	USEPA 1989	
	Construction Worker*	Adult	Aberjona, Whitney, and Murphy Properties	CW	Chemical Concentration in Water	see Table 3-3.4 CT	ug/L	see Table 3-3.4 CT	CDI (mg/kg-day) =
				IR	Ingestion Rate of Water	0.05	liters/day	USEPA 1997a	$\frac{CW \times IR \times EF \times ED \times CF}{BW \times AT}$
				EF	Exposure Frequency	40	days/year	USEPA 2001c	
				ED	Exposure Duration	1	years	USEPA 2001c	
				CF	Conversion Factor	0.001	mg/ug	--	
				BW	Body Weight	70	kg	USEPA 1997a	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	365	days	USEPA 1989	
Dermal	Off-Site Resident	Adult	Shower Head	DA	Dose Absorbed per Unit Area per Event	see Appendix C.6	mg/cm^2-event	--	CDI (mg/kg-day) =
				SA	Skin Surface Area Available for Contact	18,000	cm^2	USEPA 2001c	$\frac{DA \times SA \times EV \times EF \times ED}{BW \times AT}$
				EV	Event Frequency	1	events/day	USEPA 2001c	
				EF	Exposure Frequency	350	days/year	Prof. Judgement	
				ED	Exposure Duration	7	years	USEPA 2001c	
				BW	Body Weight	70	kg	USEPA 1997a	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	2,555	days	USEPA 1989	

* - Shallow groundwater assumed for construction worker exposures.
IR for Construction Worker assumes one mouthful/day.
EF for Construction Worker of 40 days/year is based on 5 days per week for a 2 month construction project.
EF of 350 days/year for the Off-Site Resident assumes 7days per week for 50 weeks.

Table 3-4.8 - CT
Values Used for Daily Intake Calculations
Central Tendency
Southwest Properties, Wells G&H Superfund Site, Operable Unit 2
Woburn, Massachusetts

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater*

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Dermal (cont.)	Off-Site Resident	Young Child (1 - 6 yrs)	Shower Head	DA	Dose Absorbed per Unit Area per Event	see Appendix C.6	mg/cm^2-event	--	CDI (mg/kg-day) =
				SA	Skin Surface Area Available for Contact	6600	cm^2	USEPA 2001c	DA x SA x EV x EF x ED / BW x AT
				EV	Event Frequency	1	events/day	USEPA 2001c	
				EF	Exposure Frequency	350	days/year	USEPA 2001c	
				ED	Exposure Duration	2	years	USEPA 2001c	
				BW	Body Weight	15	kg	USEPA 1997a	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	730	days	USEPA 1989	
	Construction Worker*	Adult	Aberjona, Whitney, and Murphy Properties	DA	Dose Absorbed per Unit Area per Event	see Appendix C.6	mg/cm^2-event	--	CDI (mg/kg-day) =
				SA	Skin Surface Area Available for Contact	3,300	cm^2	USEPA 2001c	DA x SA x EV x EF x ED / BW x AT
				EV	Event Frequency	1	events/day	Prof. Judgement	
				EF	Exposure Frequency	40	days/year	Prof. Judgement	
				ED	Exposure Duration	1	years	Prof. Judgement	
				BW	Body Weight	70	kg	USEPA 1997a	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	365	days	USEPA 1989	
Inhalation	Off-Site Resident	Adult	Shower Head	See Appendix C.5 for Foster and Chrostowski Model					
		Young Child (1 - 6 yrs)	Shower Head	See Appendix C.5 for Foster and Chrostowski Model					

* - Shallow groundwater assumed for construction worker exposures.
IR for Construction Worker assumes one mouthful/day.
EF for Construction Worker of 40 days/year is based on 5 days per week for a 2 month construction project.
EF of 350 days/year for the Off-Site Resident assumes 7 days per week for 50 weeks.

Table 3-4.9 - RME
Values Used for Daily Intake Calculations
Reasonable Maximum Exposure
Southwest Properties, Wells G&H Superfund Site, Operable Unit 2
Woburn, Massachusetts

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Indoor Air

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Inhalation	Commercial Worker	Adult	Aberjona, Whitney, and Murphy Properties	CA	Concentration in Air	see Appendix C.4	mg/m^3	--	CDI (mg/m^3) =
				ET	Exposure Time	8	hrs/days	USEPA 1997a	$\frac{CA \times EF \times ET \times ED}{CF \times AT}$
				EF	Exposure Frequency	250	days/year	USEPA 2001c	
				ED	Exposure Duration	25	years	USEPA 2001c	
				CF	Conversion Factor	24	hrs/days	--	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	9,125	days	USEPA 1989	
	Resident	Adult	Aberjona Property	CA	Concentration in Air	see Appendix C.4	mg/m^3	--	CDI (mg/m^3) =
				ET	Exposure Time	16	hrs/days	Prof. Judgement	$\frac{CA \times EF \times ET \times ED}{CF \times AT}$
				EF	Exposure Frequency	350	days/year	USEPA 2001c	
				ED	Exposure Duration	24	years	USEPA 2001c	
				CF	Conversion Factor	24	hrs/days	--	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	8,760	days	USEPA 1989	
		Young Child (1 - 6 yrs)	Aberjona Property	CA	Concentration in Air	see Appendix C.4	mg/m^3	--	CDI (mg/m^3) =
				ET	Exposure Time	16	hrs/days	Prof. Judgement	$\frac{CA \times EF \times ET \times ED}{CF \times AT}$
				EF	Exposure Frequency	350	days/year	USEPA 2001c	
				ED	Exposure Duration	6	years	USEPA 2001c	
				CF	Conversion Factor	24	hrs/days	--	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	2,190	days	USEPA 1989	
	Recreational User	Adult	Aberjona, Whitney, and Murphy Properties	CA	Concentration in Air	see Appendix C.4	mg/m^3	--	CDI (mg/m^3) =
				ET	Exposure Time	2.5	hrs/days	Prof. Judgement	$\frac{CA \times EF \times ET \times ED}{CF \times AT}$
				EF	Exposure Frequency	78	days/year	USEPA 2001c	
				ED	Exposure Duration	24	years	USEPA 2001c	
				CF	Conversion Factor	24	hrs/days	--	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	8,760	days	USEPA 1989	
		Young Child (1 - 6 yrs)	Aberjona, Whitney, and Murphy Properties	CA	Concentration in Air	see Appendix C.4	mg/m^3	--	CDI (mg/m^3) =
				ET	Exposure Time	2.5	hrs/days	Prof. Judgement	$\frac{CA \times EF \times ET \times ED}{CF \times AT}$
				EF	Exposure Frequency	78	days/year	USEPA 2001c	
				ED	Exposure Duration	6	years	USEPA 2001c	
				CF	Conversion Factor	24	hrs/days	--	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	2,190	days	USEPA 1989	

* - Assumes groundwater within 30 feet of the existing buildings and within 15 feet in depth from the slab or basement of the existing buildings.
EF for Commercial Worker of 250 days per year assumes 5 days per week for 50 weeks.
EF for Resident of 350 days/year assumes 7 days per week for 50 weeks.

Table 3-4.9 - CT
Values Used for Daily Intake Calculations
Central Tendency
Southwest Properties, Wells G&H Superfund Site, Operable Unit 2
Woburn, Massachusetts

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Indoor Air

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Inhalation	Commercial Worker	Adult	Aberjona, Whitney, and Murphy Properties	CA	Concentration in Air	see Appendix C.4	mg/m^3	--	CDI (mg/m^3) =
				ET	Exposure Time	8	hrs/days	Prof. Judgement	$\frac{CA \times EF \times ET \times ED}{CF \times AT}$
				EF	Exposure Frequency	219	days/year	USEPA 2001c	
				ED	Exposure Duration	9	years	USEPA 2001c	
				CF	Conversion Factor	24	hrs/day	--	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	3,285	days	USEPA 1989	
	Resident	Adult	Aberjona Properties	CA	Concentration in Air	see Appendix C.4	mg/m^3	--	CDI (mg/m^3) =
				ET	Exposure Time	16	hrs/days	Prof. Judgement	$\frac{CA \times EF \times ET \times ED}{CF \times AT}$
				EF	Exposure Frequency	350	days/year	USEPA 2001c	
				ED	Exposure Duration	7	years	USEPA 2001c	
				CF	Conversion Factor	24	hrs/day	--	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	2,555	days	USEPA 1989	
		Young Child (1 - 6 yrs)	Aberjona Property	CA	Concentration in Air	see Appendix C.4	mg/m^3	--	CDI (mg/m^3) =
				ET	Exposure Time	16	hrs/days	Prof. Judgement	$\frac{CA \times EF \times ET \times ED}{CF \times AT}$
				EF	Exposure Frequency	350	days/year	USEPA 2001c	
				ED	Exposure Duration	2	years	USEPA 2001c	
				CF	Conversion Factor	24	hrs/day	--	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	730	days	USEPA 1989	
	Recreational User	Adult	Aberjona, Whitney, and Murphy Properties	CA	Concentration in Air	see Appendix C.4	mg/m^3	--	CDI (mg/m^3) =
				ET	Exposure Time	2.5	hrs/days	Prof. Judgement	$\frac{CA \times EF \times ET \times ED}{CF \times AT}$
				EF	Exposure Frequency	26	days/year	USEPA 2001c	
				ED	Exposure Duration	7	years	USEPA 2001c	
				CF	Conversion Factor	24	hrs/day	--	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	2,555	days	USEPA 1989	
		Young Child (1 - 6 yrs)	Aberjona, Whitney, and Murphy Properties	CA	Concentration in Air	see Appendix C.4	mg/m^3	--	CDI (mg/m^3) =
				ET	Exposure Time	2.5	hrs/days	Prof. Judgement	$\frac{CA \times EF \times ET \times ED}{CF \times AT}$
				EF	Exposure Frequency	26	days/year	USEPA 2001c	
				ED	Exposure Duration	2	years	USEPA 2001c	
				CF	Conversion Factor	24	hrs/day	--	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	730	days	USEPA 1989	

* - Assumes groundwater within 30 feet of the existing buildings and within 15 feet in depth from the slab or basement of the existing buildings.
EF for Resident of 350 days/year assumes 7 days per week for 50 weeks.

Table 3-4.10 - RME
Values Used for Daily Intake Calculations
Reasonable Maximum Exposure
Southwest Properties, Wells G&H Superfund Site, Operable Unit 2
Woburn, Massachusetts

Scenario Timeframe: Future
Medium: Groundwater *
Exposure Medium: Outdoor Air

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Inhalation	Construction Worker	Adult	Aberjona, Whitney, and Murphy Properties	CA	Concentration in Air	see Appendix C.4	mg/m^3	- -	$CDI\ (mg/m^3) = \frac{CA \times ET \times EF \times ED}{AT \times CF}$
				ET	Exposure Time	8	hrs/days	Prof. Judgement	
				EF	Exposure Frequency	125	days/year	USEPA 2001c	
				ED	Exposure Duration	1	years	USEPA 2001c	
				CF	Conversion Factor	24	hrs/days	- -	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	365	days	USEPA 1989	

* - Shallow groundwater assumed for the construction worker scenario.

Table 3-4.10 - CT
Values Used for Daily Intake Calculations
Central Tendency
Southwest Properties, Wells G&H Superfund Site, Operable Unit 2
Woburn, Massachusetts

Scenario Timeframe: Future
Medium: Groundwater *
Exposure Medium: Outdoor Air

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Inhalation	Construction Worker	Adult	Aberjona, Whitney, and Murphy Properties	CA	Concentration in Air	see Appendix C.4	mg/m^3	- -	$CDI\ (mg/m^3) = \frac{CA \times ET \times EF \times ED}{AT \times CF}$
				ET	Exposure Time	8.0	hrs/days	Prof. Judgement	
				EF	Exposure Frequency	40	days/year	USEPA 2001c	
				ED	Exposure Duration	1	years	USEPA 2001c	
				CF	Conversion Factor	24	hrs/days	- -	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	365	days	USEPA 1989	

* - Shallow groundwater assumed for the construction worker scenario.

Table 3-4.11 - RME
Values Used for Daily Intake Calculation
Reasonable Maximum Exposure
Southwest Properties, Wells G&H Superfund Site, Operable Unit 2
Woburn, Massachusetts

Scenario Timeframe: Current
Medium: Sediment
Exposure Medium: Sediment

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Ingestion	Trespasser	Older Child (12 - 18 yrs)	Murphy Wetland	CS	Chemical Concentration in Sediment	see Table 3-3.13 RME	mg/kg	see Table 3-3.13 RME	Chronic Daily Intake (CDI) (mg/kg-day) = $\frac{CS \times IR \times FI \times EF \times ED \times CF}{BW \times AT}$
				IR	Ingestion Rate of Sediment	100	mg/day	USEPA 1997a	
				FI	Fraction Ingested	0.5	unitless	Prof. Judgement	
				EF	Exposure Frequency	26	days/year	assumption	
				ED	Exposure Duration	6	years	USEPA 1997a	
				BW	Body Weight	57	kg	USEPA 1997a	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	2,190	days	USEPA 1989	
				CF	Conversion Factor	0.000001	kg/mg	--	
Dermal	Trespasser	Older Child (12 - 18 yrs)	Murphy Wetland	CS	Chemical Concentration in Sediment	see Table 3-3.13 RME	mg/kg	see Table 3-3.13 RME	CDI (mg/kg-day) = $\frac{CS \times SA \times AF \times EF \times ED \times DAF \times CF}{BW \times AT}$
				SA	Skin Surface Area Available for Contact	4,500	cm^2	USEPA 2001c	
				AF	Skin Adherence Factor	0.2	mg/cm^2-day	USEPA 2001c	
				EF	Exposure Frequency	26	days/year	Prof. Judgement	
				ED	Exposure Duration	6	years	USEPA 2001c	
				DAF	Dermal Absorption Factor	chemical specific	--	--	
				BW	Body Weight	57	kg	USEPA 1997a	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	2,190	days	USEPA 1989	
				CF	Conversion Factor	0.000001	kg/mg	--	

Older child SA term assumes exposure to hands, lower legs, and feet.

Older child AF term is geometric mean value for children playing in wet soil.

EF for direct contact for the older child trespasser assumes 1 day per week, May through October.

Table 3-4.11 - CT
Values Used for Daily Intake Calculation
Central Tendency
Southwest Properties, Wells G&H Superfund Site, Operable Unit 2
Woburn, Massachusetts

Scenario Timeframe: Current
Medium: Sediment
Exposure Medium: Sediment

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Ingestion	Trespasser	Older Child (12 - 18 yrs)	Murphy Wetland	CS	Chemical Concentration in Sediment	see Table 3-3.13 CT	mg/kg	see Table 3-3.13 CT	Chronic Daily Intake (CDI) (mg/kg-day) = $\frac{CS \times IR \times FI \times EF \times ED \times CF}{BW \times AT}$
				IR	Ingestion Rate of Sediment	50	mg/day	USEPA, 1997	
				FI	Fraction Ingested	0.5	unitless	Prof. Judgement	
				EF	Exposure Frequency	26	days/year	assumption	
				ED	Exposure Duration	2	years	USEPA, 2002	
				BW	Body Weight	57	kg	USEPA, 1997	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	730	days	USEPA, 1989	
				CF	Conversion Factor	0.000001	kg/mg	- -	
Dermal	Trespasser	Older Child (12 - 18 yrs)	Murphy Wetland	CS	Chemical Concentration in Sediment	see Table 3-3.13 CT	mg/kg	see Table 3-3.13 CT	CDI (mg/kg-day) = $\frac{CS \times SA \times AF \times EF \times ED \times DAF \times CF}{BW \times AT}$
				SA	Skin Surface Area Available for Contact	4,500	cm^2	USEPA, 2002	
				AF	Skin Adherence Factor	0.2	mg/cm^2-day	USEPA, 2002	
				EF	Exposure Frequency	26	days/year	Prof. Judgement	
				ED	Exposure Duration	2	years	USEPA, 2002	
				DAF	Dermal Absorption Factor	chemical specific	- -	- -	
				BW	Body Weight	57	kg	USEPA, 1997	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	730	days	USEPA, 1989	
				CF	Conversion Factor	0.000001	kg/mg	- -	

Older child SA term assumes exposure to hands, lower legs, and feet.

Older child AF term is geometric mean value for children playing in wet soil.

EF for direct contact for the older child trespasser assumes 1 day per week, May through October.

Table 3-4.12 - RME
Values Used for Daily Intake Calculation
Reasonable Maximum Exposure
Southwest Properties, Wells G&H Superfund Site, Operable Unit 2
Woburn, Massachusetts

Scenario Timeframe: Future
Medium: Sediment
Exposure Medium: Sediment

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Ingestion	Trespasser	Older Child (12 - 18 yrs)	Murphy Wetland	CS	Chemical Concentration in Sediment	see Table 3-3.13 RME	mg/kg	see Table 3-3.13 RME	Chronic Daily Intake (CDI) (mg/kg-day) = CS x IR x FI x EF x ED x CF / BW x AT
				IR	Ingestion Rate of Sediment	100	mg/day	USEPA 1997a	
				FI	Fraction Ingested	0.5	unitless	Prof. Judgement	
				EF	Exposure Frequency	52	days/year	assumption	
				ED	Exposure Duration	6	years	USEPA 1997a	
				BW	Body Weight	57	kg	USEPA 1997a	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	2,190	days	USEPA 1989	
				CF	Conversion Factor	0.000001	kg/mg	--	
	Recreational User	Adult	Murphy Wetland	CS	Chemical Concentration in Sediment	see Table 3-3.13 RME	mg/kg	see Table 3-3.13 RME	CDI (mg/kg-day) = CS x IR x FI x EF x ED x CF / BW x AT
				IR	Ingestion Rate of Sediment	100	mg/day	USEPA 1997a	
				FI	Fraction Ingested	0.5	unitless	Prof. Judgement	
				EF	Exposure Frequency	78	days/year	assumption	
				ED	Exposure Duration	24	years	USEPA 1997a	
				BW	Body Weight	70	kg	USEPA 1997a	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	8,760	days	USEPA 1989	
				CF	Conversion Factor	0.000001	kg/mg	--	
		Young Child (1 - 6 yrs)	Murphy Wetland	CS	Chemical Concentration in Sediment	see Table 3-3.13 RME	mg/kg	see Table 3-3.13 RME	CDI (mg/kg-day) = CS x IR x FI x EF x ED x CF / BW x AT
				IR	Ingestion Rate of Sediment	200	mg/day	USEPA 1997a	
				FI	Fraction Ingested	0.5	unitless	Prof. Judgement	
				EF	Exposure Frequency	78	days/year	Prof. Judgement	
				ED	Exposure Duration	6	years	USEPA 2001c	
				BW	Body Weight	15	kg	USEPA 1997a	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	2,190	days	USEPA 1989	
				CF	Conversion Factor	0.000001	kg/mg	--	

EF for direct contact for the older child trespasser assumes 2 days per week, May through October.

EF for direct contact for the adult and young child recreational user assumes 3 days per week, May through October.

Table 3-4.12 - RME
Values Used for Daily Intake Calculation
Reasonable Maximum Exposure
Southwest Properties, Wells G&H Superfund Site, Operable Unit 2
Woburn, Massachusetts

Scenario Timeframe: Future
Medium: Sediment
Exposure Medium: Sediment

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Dermal	Trespasser	Older Child (12 - 18 yrs)	Murphy Wetland	CS	Chemical Concentration in Sediment	see Table 3-3.13 RME	mg/kg	see Table 3-3.13 RME	CDI (mg/kg-day) = $\frac{CS \times SA \times AF \times EF \times ED \times DAF \times CF}{BW \times AT}$
				SA	Skin Surface Area Available for Contact	4,500	cm^2	USEPA 2001c	
				AF	Skin Adherence Factor	0.2	mg/cm^2-day	USEPA 2001c	
				EF	Exposure Frequency	52	days/year	Prof. Judgement	
				ED	Exposure Duration	6	years	USEPA 2001c	
				DAF	Dermal Absorption Factor	chemical specific	--	--	
				BW	Body Weight	57	kg	USEPA 1997a	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	2,190	days	USEPA 1989	
				CF	Conversion Factor	0.000001	kg/mg	--	
	Recreational User	Adult	Murphy Wetland	CS	Chemical Concentration in Sediment	see Table 3-3.13 RME	mg/kg	see Table 3-3.13 RME	CDI (mg/kg-day) = $\frac{CS \times SA \times AF \times EF \times ED \times DAF \times CF}{BW \times AT}$
				SA	Skin Surface Area Available for Contact	5,700	cm^2	USEPA 2001c	
				AF	Skin Adherence Factor	0.07	mg/cm^2-day	USEPA 2001c	
				EF	Exposure Frequency	78	days/year	Prof. Judgement	
				ED	Exposure Duration	24	years	USEPA 2001c	
				DAF	Dermal Absorption Factor	chemical specific	--	--	
				BW	Body Weight	70	kg	USEPA 1997a	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	8,760	days	USEPA 1989	
				CF	Conversion Factor	0.000001	kg/mg	--	
		Young Child (1 - 6 yrs)	Murphy Wetland	CS	Chemical Concentration in Sediment	see Table 3-3.13 RME	mg/kg	see Table 3-3.13 RME	CDI (mg/kg-day) = $\frac{CS \times SA \times AF \times EF \times ED \times DAF \times CF}{BW \times AT}$
				SA	Skin Surface Area Available for Contact	2,800	cm^2	USEPA 2001c	
				AF	Skin Adherence Factor	0.2	mg/cm^2-day	USEPA 2001c	
				EF	Exposure Frequency	78	days/year	Prof. Judgement	
				ED	Exposure Duration	6	years	USEPA 1997a	
				DAF	Dermal Absorption Factor	chemical specific	--	--	
				BW	Body Weight	15	kg	USEPA 1997a	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	2,190	days	USEPA 1989	
				CF	Conversion Factor	0.000001	kg/mg	--	

Adult SA term assumes exposure to face, forearms, hands, and lower legs.

Young child SA term assumes exposure to face, forearms, hands, lower legs, and feet.

Older child SA term assumes exposure to hands, lower legs, and feet.

Adult AF term is geometric mean value for adult gardeners.

Older child and young child AF term is geometric mean value for children playing in wet soil.

EF for direct contact for the older child trespasser assumes 2 days per week, May through October.

EF for direct contact for the adult and young child recreational user assumes 3 days per week, May through October.

Table 3-4.12 - CT
Values Used for Daily Intake Calculation
Central Tendency
Southwest Properties, Wells G&H Superfund Site, Operable Unit 2
Woburn, Massachusetts

Scenario Timeframe: Future
Medium: Sediment
Exposure Medium: Sediment

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Ingestion	Recreational User	Adult	Murphy Wetland	CS	Chemical Concentration in Sediment	see Table 3-3.13 CT	mg/kg	see Table 3-3.13 CT	Chronic Daily Intake (CDI) (mg/kg-day) =
				IR	Ingestion Rate of Sediment	50	mg/day	USEPA 1997a	$\frac{CS \times IR \times FI \times EF \times ED \times CF}{BW \times AT}$
				FI	Fraction Ingested	0.5	unitless	Prof. Judgement	
				EF	Exposure Frequency	26	days/year	assumption	
				ED	Exposure Duration	7	years	USEPA 2001c	
				BW	Body Weight	70	kg	USEPA 1997a	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	2,555	days	USEPA 1989	
				CF	Conversion Factor	0.000001	kg/mg	- -	
		Young Child (1 - 6 yrs)	Murphy Wetland	CS	Chemical Concentration in Sediment	see Table 3-3.13 CT	mg/kg	see Table 3-3.13 CT	CDI (mg/kg-day) =
				IR	Ingestion Rate of Sediment	100	mg/day	USEPA 1997a	$\frac{CS \times IR \times FI \times EF \times ED \times CF}{BW \times AT}$
				FI	Fraction Ingested	0.5	unitless	Prof. Judgement	
				EF	Exposure Frequency	26	days/year	assumption	
				ED	Exposure Duration	2	years	USEPA 2001c	
				BW	Body Weight	15	kg	USEPA 1997a	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	730	days	USEPA 1989	
				CF	Conversion Factor	0.000001	kg/mg	- -	
	Trespasser	Older Child (12 - 18 yrs)	Murphy Wetland	CS	Chemical Concentration in Sediment	see Table 3-3.13 CT	mg/kg	see Table 3-3.13 CT	CDI (mg/kg-day) =
				IR	Ingestion Rate of Sediment	50	mg/day	USEPA 1997a	$\frac{CS \times IR \times FI \times EF \times ED \times CF}{BW \times AT}$
				FI	Fraction Ingested	0.5	unitless	Prof. Judgement	
				EF	Exposure Frequency	26	days/year	assumption	
				ED	Exposure Duration	2	years	USEPA 2001c	
				BW	Body Weight	57	kg	USEPA 1997a	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	730	days	USEPA 1989	
				CF	Conversion Factor	0.000001	kg/mg	- -	

EF for direct contact for the older child trespasser assumes 1 day per week, May through October.

EF for direct contact for the adult and young child recreational user assumes 1 day per week, May through October.

Table 3-4.12 - CT
Values Used for Daily Intake Calculation
Central Tendency
Southwest Properties, Wells G&H Superfund Site, Operable Unit 2
Woburn, Massachusetts

Scenario Timeframe: Future
Medium: Sediment
Exposure Medium: Sediment

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Dermal	Trespasser	Older Child (12 - 18 yrs)	Murphy Wetland	CS	Chemical Concentration in Sediment	see Table 3-3.13 CT	mg/kg	see Table 3-3.13 CT	CDI (mg/kg-day) = $\frac{CS \times SA \times AF \times EF \times ED \times DAF \times CF}{BW \times AT}$
				SA	Skin Surface Area Available for Contact	4,500	cm^2	USEPA 2001c	
				AF	Skin Adherence Factor	0.2	mg/cm^2-day	USEPA 2001c	
				EF	Exposure Frequency	26	days/year	Prof. Judgement	
				ED	Exposure Duration	2	years	USEPA 2001c	
				DAF	Dermal Absorption Factor	chemical specific	--	--	
				BW	Body Weight	57	kg	USEPA 1997a	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	730	days	USEPA 1989	
				CF	Conversion Factor	0.000001	kg/mg	--	
	Recreational User	Adult	Murphy Wetland	CS	Chemical Concentration in Sediment	see Table 3-3.13 CT	mg/kg	see Table 3-3.13 CT	CDI (mg/kg-day) = $\frac{CS \times SA \times AF \times EF \times ED \times DAF \times CF}{BW \times AT}$
				SA	Skin Surface Area Available for Contact	5,700	cm^2	USEPA 2001c	
				AF	Skin Adherence Factor	0.07	mg/cm^2-day	USEPA 2001c	
				EF	Exposure Frequency	26	days/year	Prof. Judgement	
				ED	Exposure Duration	7	years	USEPA 2001c	
				DAF	Dermal Absorption Factor	chemical specific	--	--	
				BW	Body Weight	70	kg	USEPA 1997a	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	2,555	days	USEPA 1989	
				CF	Conversion Factor	0.000001	kg/mg	--	
		Young Child (1 - 6 yrs)	Murphy Wetland	CS	Chemical Concentration in Sediment	see Table 3-3.13 CT	mg/kg	see Table 3-3.13 CT	CDI (mg/kg-day) = $\frac{CS \times SA \times AF \times EF \times ED \times DAF \times CF}{BW \times AT}$
				SA	Skin Surface Area Available for Contact	2,800	cm^2	USEPA 2001c	
				AF	Skin Adherence Factor	0.2	mg/cm^2-day	USEPA 2001c	
				EF	Exposure Frequency	26	days/year	Prof. Judgement	
				ED	Exposure Duration	2	years	USEPA 2001c	
				DAF	Dermal Absorption Factor	chemical specific	--	--	
				BW	Body Weight	15	kg	USEPA 1997a	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	730	days	USEPA 1989	
				CF	Conversion Factor	0.000001	kg/mg	--	

Adult SA term assumes exposure to face, forearms, hands, and lower legs.

Young child SA term assumes exposure to face, forearms, hands, lower legs, and feet.

Older child SA term assumes exposure to hands, lower legs, and feet.

Adult AF term is geometric mean value for adult gardeners.

Older child and young child AF term is geometric mean value for children playing in wet soil.

EF for direct contact for the older child trespasser assumes 1 day per week, May through October.

EF for direct contact for the adult and young child recreational user assumes 1 day per week, May through October.

Table 3-4.13 - RME
Values Used for Daily Intake Calculations
Reasonable Maximum Exposure
Southwest Properties, Wells G&H Superfund Site, Operable Unit 2
Woburn, Massachusetts

Scenario Timeframe: Current
Medium: Surface Water
Exposure Medium: Surface Water

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Dermal	Trespasser	Older Child (12 - 18 yrs)	Murphy/Whitney Wetlands	DA	Dose Absorbed per Unit Area per Event	see Appendix C.6	mg/cm^2-event	- -	CDI (mg/kg-day) =
				SA	Skin Surface Area Available for Contact	4,500	cm^2	USEPA 2001c	DA x SA x EV x EF x ED / BW x AT
				EV	Event Frequency	1	events/day	Prof. Judgement	
				EF	Exposure Frequency	26	days/year	Prof. Judgement	
				ED	Exposure Duration	6	years	USEPA 1997a	
				BW	Body Weight	57	kg	USEPA 1997a	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	2,190	days	USEPA 1989	

Older child SA term assumes exposure to hands, lower legs, and feet.

Table 3-4.13 - CT
Values Used for Daily Intake Calculations
Central Tendency
Southwest Properties, Wells G&H Superfund Site, Operable Unit 2
Woburn, Massachusetts

Scenario Timeframe: Current
Medium: Surface Water
Exposure Medium: Surface Water

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Dermal	Trespasser	Older Child (12 - 18 yrs)	Murphy Property	DA	Dose Absorbed per Unit Area per Event	see Appendix C.6	mg/cm^2-event	- -	CDI (mg/kg-day) = $\frac{DA \times SA \times EV \times EF \times ED}{BW \times AT}$
				SA	Skin Surface Area Available for Contact	4,500	cm^2	USEPA 2001c	
				EV	Event Frequency	1	events/day	Prof. Judgement	
				EF	Exposure Frequency	26	days/year	Prof. Judgement	
				ED	Exposure Duration	2	years	USEPA 1997a	
				BW	Body Weight	57	kg	USEPA 1997a	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	730	days	USEPA 1989	

Older child SA term assumes exposure to hands, lower legs, and feet.

Table / ME
Values Used for D. ke Calculations
Reasonable Maximum Exposure
Southwest Properties, Wells G&H Superfund Site, Operable Unit 2
Woburn, Massachusetts

Scenario Timeframe: Future
Medium: Surface Water
Exposure Medium: Surface Water

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Dermal	Trespasser	Older Child (12 - 18 yrs)	Murphy Wetland	DA	Dose Absorbed per Unit Area per Event	see Appendix C.6	mg/cm^2-event	- -	CDI (mg/kg-day) =
				SA	Skin Surface Area Available for Contact	4,500	cm^2	USEPA 2001c	DA x SA x EV x EF x ED
				EV	Event Frequency	1	events/day	Prof. Judgement	BW x AT
				EF	Exposure Frequency	52	days/year	Prof. Judgement	
				ED	Exposure Duration	6	years	USEPA 1997a	
				BW	Body Weight	57	kg	USEPA 1997a	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	2,190	days	USEPA 1989	
	Recreational User	Adult	Murphy Wetland	DA	Dose Absorbed per Unit Area per Event	see Appendix C.6	mg/cm^2-event	- -	CDI (mg/kg-day) =
				SA	Skin Surface Area Available for Contact	5,700	cm^2	USEPA 2001c	DA x SA x EV x EF x ED
				EV	Event Frequency	1	events/day	Prof. Judgement	BW x AT
				EF	Exposure Frequency	78	days/year	Prof. Judgement	
				ED	Exposure Duration	24	years	USEPA 1997a	
				BW	Body Weight	70	kg	USEPA 1997a	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	8,760	days	USEPA 1989	
		Young Child (1 - 6 yrs)	Murphy Wetland	DA	Dose Absorbed per Unit Area per Event	see Appendix C.6	mg/cm^2-event	- -	CDI (mg/kg-day) =
				SA	Skin Surface Area Available for Contact	2,800	cm^2	USEPA 2001c	DA x SA x EV x EF x ED
				EV	Event Frequency	1	events/day	Prof. Judgement	BW x AT
				EF	Exposure Frequency	78	days/year	Prof. Judgement	
				ED	Exposure Duration	6	years	USEPA 1997a	
				BW	Body Weight	15	kg	USEPA 1997a	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	2,190	days	USEPA 1989	

Recreational user adult SA term assumes exposure to face, forearms, hands, and lower legs.
Recreational user young child SA term assumes exposure to face, forearms, hands, lower legs, and feet.
Older child SA term assumes exposure to hands, lower legs, and feet.

Table 3-4.14 - CT
Values Used for Daily Intake Calculations
Central Tendency
Southwest Properties, Wells G&H Superfund Site, Operable Unit 2
Woburn, Massachusetts

Scenario Timeframe: Future
Medium: Surface Water
Exposure Medium: Surface Water

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Dermal	Trespasser	Older Child (12 - 18 yrs)	Murphy Wetland	DA	Dose Absorbed per Unit Area per Event	see Appendix C.6	mg/cm^2-event	- -	CDI (mg/kg-day) =
				SA	Skin Surface Area Available for Contact	4,500	cm^2	USEPA 2001c	DA x SA x EV x EF x ED
				EV	Event Frequency	1	events/day	Prof. Judgement	BW x AT
				EF	Exposure Frequency	26	days/year	Prof. Judgement	
				ED	Exposure Duration	2	years	USEPA 1997a	
				BW	Body Weight	57	kg	USEPA 1997a	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	730	days	USEPA 1989	
	Recreational User	Adult	Murphy Wetland	DA	Dose Absorbed per Unit Area per Event	see Appendix C.6	mg/cm^2-event	- -	CDI (mg/kg-day) =
				SA	Skin Surface Area Available for Contact	5,700	cm^2	USEPA 2001c	DA x SA x EV x EF x ED
				EV	Event Frequency	1	events/day	Prof. Judgement	BW x AT
				EF	Exposure Frequency	26	days/year	Prof. Judgement	
				ED	Exposure Duration	7	years	USEPA 1997a	
				BW	Body Weight	70	kg	USEPA 1997a	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	2,555	days	USEPA 1989	
		Young Child (1 - 6 yrs)	Murphy Wetland	DA	Dose Absorbed per Unit Area per Event	see Appendix C.6	mg/cm^2-event	- -	CDI (mg/kg-day) =
				SA	Skin Surface Area Available for Contact	2,800	cm^2	USEPA 2001c	DA x SA x EV x EF x ED
				EV	Event Frequency	1	events/day	Prof. Judgement	BW x AT
				EF	Exposure Frequency	26	days/year	Prof. Judgement	
				ED	Exposure Duration	2	years	USEPA 1997a	
				BW	Body Weight	15	kg	USEPA 1997a	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA 1989	
				AT-N	Averaging Time (Non-Cancer)	730	days	USEPA 1989	

Recreational user adult SA term assumes exposure to face, forearms, hands, and lower legs.

Recreational user young child SA term assumes exposure to face, forearms, hands, lower legs, and feet.

Older child SA term assumes exposure to hands, lower legs, and feet.

TABLE 3-5.1

NON-CANCER TOXICITY DATA -- ORAL/DERMAL

Southwest Properties, Wells G&H Superfund Site Operable Unit 2 Woburn, Massachusetts

Chemical of Potential Concern	Chronic	Oral RfD		Oral Absorption Efficiency for Dermal	Absorbed RfD for Dermal		Primary Target Organ(s)	Combined Uncertainty/Modifying Factors	RfD:Target Organ(s)	
		Value	Units	(1)	Value (2)	Units			Source(s)	Date(s) (MM/DD/YYYY)
C11-C22 Aromatic	Chronic	3.00E-02	mg/kg-day	(4)	3.00E-02	mg/kg-day	Kidney	N/A	MADEP	10/31/02
C11-C22 Aromatic	Subchronic	3.00E-01	mg/kg-day	(4)	3.00E-01	mg/kg-day	Kidney	N/A	MADEP	10/31/02
C19-C36 Aliphatic	Chronic	2.00E+00	mg/kg-day	(4)	2.00E+00	mg/kg-day	Liver	N/A	MADEP	10/31/02
C19-C36 Aliphatic	Subchronic	6.00E+00	mg/kg-day	(4)	6.00E+00	mg/kg-day	Liver	N/A	MADEP	10/31/02
C9-C18 Aliphatic	Chronic	1.00E-01	mg/kg-day	(4)	1.00E-01	mg/kg-day	Liver/Blood	N/A	MADEP	10/31/02
C9-C18 Aliphatic	Subchronic	1.00E+00	mg/kg-day	(4)	1.00E+00	mg/kg-day	Liver/Blood	N/A	MADEP	10/31/02
C5-C8 Aliphatic	Chronic	4.00E-02	mg/kg-day	(4)	4.00E-02	mg/kg-day	CNS	N/A	MADEP	10/31/02
C5-C8 Aliphatic	Subchronic	4.00E-01	mg/kg-day	(4)	4.00E-01	mg/kg-day	CNS	N/A	MADEP	10/31/02
C9-C10 Aromatic	Chronic	3.00E-02	mg/kg-day	(4)	3.00E-02	mg/kg-day	Kidney	N/A	MADEP	10/31/02
C9-C10 Aromatic	Subchronic	3.00E-01	mg/kg-day	(4)	3.00E-01	mg/kg-day	Kidney	N/A	MADEP	10/31/02
Xylenes	Chronic	2.00E-01	mg/kg-day	(4)	2.00E-01	mg/kg-day	General Toxicity	1000	IRIS	10/31/02
1,1,1,-Trichloroethane	Chronic	2.80E-01	mg/kg-day	(4)	2.80E-01	mg/kg-day	Liver	900	NCEA	08/01/03
1,1,1,-Trichloroethane	Subchronic	2.80E+00	mg/kg-day	(4)	2.80E+00	mg/kg-day	Liver	90	NCEA	08/01/03
1,1-Dichloroethane	Chronic	1.00E-01	mg/kg-day	(4)	1.00E-01	mg/kg-day	Liver	1000	HEAST	07/01/97
1,1-Dichloroethane	Subchronic	1.00E+00	mg/kg-day	(4)	1.00E+00	mg/kg-day	Liver	100	HEAST	07/01/97
trans-1,2-Dichloroethylene	Chronic	2.00E-02	mg/kg-day	(4)	2.00E-02	mg/kg-day	Liver	1000	IRIS	08/01/03
Methyl tert-butyl ether	Chronic	N/A	mg/kg-day	(4)	N/A	mg/kg-day	N/A	N/A	IRIS	08/01/03
cis-1,2-Dichloroethylene	Chronic	1.00E-02	mg/kg-day	(4)	1.00E-02	mg/kg-day	Blood	3000	HEAST	07/01/97
cis-1,2-Dichloroethylene	Subchronic	1.00E-01	mg/kg-day	(4)	1.00E-01	mg/kg-day	Blood	300	HEAST	07/01/97
1,1-Dichloroethylene	Chronic	5.00E-02	mg/kg-day	(4)	5.00E-02	mg/kg-day	Liver	100	IRIS	08/01/03
2,4,6-Trichlorophenol	Subchronic	1.00E-03	mg/kg-day	(4)	1.00E-03	mg/kg-day	Reproductive	3000	NCEA	08/01/03
2,4,6-Trichlorophenol	Chronic	1.00E-04	mg/kg-day	(4)	1.00E-04	mg/kg-day	Reproductive	300	NCEA	08/01/03
1,2,4-Trichlorobenzene	Chronic	1.00E-02	mg/kg-day	(4)	1.00E-02	mg/kg-day	Endocrine	1000	IRIS	08/01/03
1,2,4-Trichlorobenzene	Subchronic	1.00E-01	mg/kg-day	(4)	1.00E-01	mg/kg-day	Endocrine	100	IRIS	08/01/03
1,2,4-Trimethylbenzene [3]	Chronic	5.00E-02	mg/kg-day	(4)	5.00E-02	mg/kg-day	General Toxicity	3000	NCEA	08/01/03
1,2,4-Trimethylbenzene [3]	Subchronic	5.00E-01	mg/kg-day	(4)	5.00E-01	mg/kg-day	General Toxicity	300	NCEA	08/01/03
1,3,5-Trimethylbenzene	Chronic	5.00E-02	mg/kg-day	(4)	5.00E-02	mg/kg-day	General Toxicity	3000	NCEA	08/01/03
1,3,5-Trimethylbenzene	Subchronic	5.00E-01	mg/kg-day	(4)	5.00E-01	mg/kg-day	General Toxicity	300	NCEA	08/01/03
2 Butanone (MEK)	Chronic	6.00E-01	mg/kg-day	(4)	6.00E-01	mg/kg-day	Developmental	3000	IRIS	09/26/03

TABLE 3-5.1

NON-CANCER TOXICITY DATA -- ORAL/DERMAL

Southwest Properties, Wells G&H Superfund Site Operable Unit 2 Woburn, Massachusetts

Chemical of Potential Concern	Chronic	Oral RfD		Oral Absorption Efficiency for Dermal	Absorbed RfD for Dermal		Primary Target Organ(s)	Combined Uncertainty/Modifying Factors	RfD:Target Organ(s)	
		Value	Units	(1)	Value (2)	Units			Source(s)	Date(s) (MM/DD/YYYY)
2 Butanone (MEK)	Subchronic	6.00E+00	mg/kg-day	(4)	6.00E+00	mg/kg-day	Developmental	300	IRIS	09/26/03
Acetophenone	Chronic	1.00E-01	mg/kg-day	(4)	1.00E-01	mg/kg-day	General Toxicity	3000	IRIS	08/01/03
Naphthalene	Chronic	2.00E-02	mg/kg-day	(4)	2.00E-02	mg/kg-day	General Toxicity	3000	IRIS	08/01/03
Naphthalene	Subchronic	2.00E-01	mg/kg-day	(4)	2.00E-01	mg/kg-day	General Toxicity	300	IRIS	08/01/03
2-Methylnaphthalene (3)	Chronic	2.00E-02	mg/kg-day	(4)	2.00E-02	mg/kg-day	General Toxicity	3000	IRIS	08/01/03
2-Methylnaphthalene (3)	Subchronic	2.00E-01	mg/kg-day	(4)	2.00E-01	mg/kg-day	General Toxicity	300	IRIS	08/01/03
Tetrachloroethene	Chronic	1.00E-02	mg/kg-day	(4)	1.00E-02	mg/kg-day	Liver	1000	IRIS	08/01/03
Tetrachloroethene	Subchronic	1.00E-01	mg/kg-day	(4)	1.00E-01	mg/kg-day	Liver	100	HEAST	07/01/97
Trichloroethene	Chronic	3.00E-04	mg/kg-day	(4)	3.00E-04	mg/kg-day	Liver	3000	NCEA	06/24/03
Vinyl chloride	Chronic	3.00E-03	mg/kg-day	(4)	3.00E-03	mg/kg-day	Liver	30	IRIS	08/01/03
Ethylenedibromide	Chronic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	IRIS	08/01/03
Bromomethane	Chronic	1.40E-03	mg/kg-day	(4)	1.40E-03	mg/kg-day	GI System	1000	IRIS	08/01/03
Bromomethane	subchronic	1.40E-02	mg/kg-day	(4)	1.40E-02	mg/kg-day	GI System	100	IRIS	06/18/03
Chloroethane	Chronic	4.00E-01	mg/kg-day	(4)	4.00E-01	mg/kg-day	Developmental	3000	NCEA	08/01/03
Methylene Chloride	Chronic	6.00E-02	mg/kg-day	(4)	6.00E-02	mg/kg-day	Liver	100	IRIS	08/01/03
Benzene	Chronic	4.00E-03	mg/kg-day	(4)	4.00E-03	mg/kg-day	Immune System	300	IRIS	08/01/03
Benzene	Subchronic	1.20E-02	mg/kg-day	(4)	1.20E-02	mg/kg-day	Immune System	100	IRIS	06/18/03
Toluene	Chronic	2.00E-01	mg/kg-day	(4)	2.00E-01	mg/kg-day	Liver/Kidney	1000	IRIS	08/01/03
Toluene	Subchronic	2.00E+00	mg/kg-day	(4)	2.00E+00	mg/kg-day	Liver/Kidney	100	IRIS	06/18/03
1,1,2-Trichloroethane	Chronic	4.00E-03	mg/kg-day	(4)	4.00E-03	mg/kg-day	Liver	1000	IRIS	08/01/03
1,1,2-Trichloroethane	Subchronic	4.00E-02	mg/kg-day	(4)	4.00E-02	mg/kg-day	Liver	100	IRIS	06/18/03
Chlorodibromomethane	Chronic	2.00E-02	mg/kg-day	(4)	2.00E-02	mg/kg-day	Liber	1000	IRIS	08/01/03
Chlorodibromomethane	Subchronic	2.00E-01	mg/kg-day	(4)	2.00E-01	mg/kg-day	Liver	100	IRIS	06/18/03
Chlorobenzene	Chronic	2.00E-02	mg/kg-day	(4)	2.00E-02	mg/kg-day	Liver	1000	IRIS	08/01/03
Chlorobenzene	Subchronic	2.00E-01	mg/kg-day	(4)	2.00E-01	mg/kg-day	Liver	100	IRIS	06/18/03
Ethylbenzene	Chronic	1.00E-01	mg/kg-day	(4)	1.00E-01	mg/kg-day	Liver/Kidney	1000	IRIS	08/01/03
Ethylbenzene	Subchronic	1.00E+00	mg/kg-day	(4)	1.00E+00	mg/kg-day	Liver/Kidney	100	IRIS	06/18/03
1,3-Dichlorobenzene	Chronic	9.00E-04	mg/kg-day	(4)	9.00E-04	mg/kg-day	Endocrine	10000	NCEA	08/01/03
1,3-Dichlorobenzene	Subchronic	9.00E-03	mg/kg-day	(4)	9.00E-03	mg/kg-day	Endocrine	1000	NCEA	08/01/03

TABLE 3-5.1

NON-CANCER TOXICITY DATA -- ORAL/DERMAL

Southwest Properties, Wells G&H Superfund Site Operable Unit 2 Woburn, Massachusetts

Chemical of Potential Concern	Chronic	Oral RfD		Oral Absorption Efficiency for Dermal	Absorbed RfD for Dermal		Primary Target Organ(s)	Combined Uncertainty/Modifying Factors	RfD:Target Organ(s)	
		Value	Units	(1)	Value (2)	Units			Source(s)	Date(s) (MM/DD/YYYY)
1,4-Dichlorobenzene	Chronic	3.00E-02	mg/kg-day	(4)	3.00E-02	mg/kg-day	Developmental	1000	NCEA	08/01/03
1,4-Dichlorobenzene	Subchronic	3.00E-01	mg/kg-day	(4)	3.00E-01	mg/kg-day	Developmental	100	NCEA	08/01/03
1,2-Dibromo-3-chloropropane	Chronic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	IRIS	08/01/03
4-Methylphenol	Chronic	5.00E-03	mg/kg-day	(4)	5.00E-03	mg/kg-day	Nervous System	1000	HEAST	07/01/97
Phenanthrene	Chronic	2.00E-02	mg/kg-day	(4)	2.00E-02	mg/kg-day	General Toxicity	3000	IRIS	08/01/03
Phenanthrene	Subchronic	2.00E-01	mg/kg-day	(4)	2.00E-01	mg/kg-day	General Toxicity	300	IRIS	08/01/03
Acenaphthylene	Chronic	2.00E-02	mg/kg-day	(4)	2.00E-02	mg/kg-day	General Toxicity	3000	IRIS	08/01/03
Acenaphthylene	Subchronic	2.00E-01	mg/kg-day	(4)	2.00E-01	mg/kg-day	General Toxicity	300	IRIS	08/01/03
Benz(a)anthracene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	IRIS	08/01/03
Benzo(a)pyrene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	IRIS	08/01/03
Bis(2-ethylhexyl)phthalate	Chronic	2.00E-02	mg/kg-day	(4)	2.00E-02	mg/kg-day	Liver	1000	IRIS	08/01/03
Benzo(b)fluoranthene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	IRIS	08/01/03
Benzo(k)fluoranthene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	IRIS	08/01/03
Dibenz(a,h)anthracene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	IRIS	08/01/03
Indeno(1,2,3-cd)pyrene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	IRIS	08/01/03
Dibenz(a,h)anthracene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	IRIS	8/1/2003
Benzo(g,h,I)perylene	Chronic	2.00E-02	mg/kg-day	(4)	2.00E-02	mg/kg-day	General Toxicity	3000	IRIS	08/01/03
Benzo(g,h,I)perylene	Subchronic	2.00E-01	mg/kg-day	(4)	2.00E-01	mg/kg-day	General Toxicity	300	IRIS	08/01/03
alpha-Chlordane	Chronic	5.00E-04	mg/kg-day	(4)	5.00E-04	mg/kg-day	Liver	300	IRIS	08/01/03
gamma-Chlordane	Chronic	5.00E-04	mg/kg-day	(4)	5.00E-04	mg/kg-day	Liver	300	IRIS	08/01/03
Dieldrin	Chronic	5.00E-05	mg/kg-day	(4)	5.00E-05	mg/kg-day	Liver	100	IRIS	8/1/2003
Heptachlor epoxide	Chronic	1.30E-05	mg/kg-day	(4)	1.30E-05	mg/kg-day	Liver	1000	IRIS	8/1/2003
4,4-DDT	Chronic	5.00E-04	mg/kg-day	(4)	5.00E-04	mg/kg-day	Liver	100	IRIS	8/1/2003
4,4'-DDE	Chronic	3.00E-04	mg/kg-day	(4)	3.00E-04	mg/kg-day	Developmental	3000	NCEA	8/1/2003
4,4'-DDE	Subchronic	3.00E-03	mg/kg-day	(4)	3.00E-03	mg/kg-day	Developmental	300	NCEA	8/1/2003
4,4-DDD	Chronic	2.00E-03	mg/kg-day	(4)	2.00E-03	mg/kg-day	Immune System	300	NCEA	8/1/2003
4,4-DDD	Subchronic	2.00E-02	mg/kg-day	(4)	2.00E-02	mg/kg-day	Immune System	300	NCEA	8/1/2003
Aroclor1242 (3)	Chronic	2.00E-05	mg/kg-day	(4)	2.00E-05	mg/kg-day	Immune System	300	IRIS	08/01/03
Aroclor 1248 (3)	Chronic	2.00E-05	mg/kg-day	(4)	2.00E-05	mg/kg-day	Immune System	300	IRIS	08/01/03

TABLE 3-5.1

NON-CANCER TOXICITY DATA -- ORAL/DERMAL

Southwest Properties, Wells G&H Superfund Site Operable Unit 2 Woburn, Massachusetts

Chemical of Potential Concern	Chronic	Oral RfD		Oral Absorption Efficiency for Dermal	Absorbed RfD for Dermal		Primary Target Organ(s)	Combined Uncertainty/Modifying Factors	RfD:Target Organ(s)	
		Value	Units	(1)	Value (2)	Units			Source(s)	Date(s) (MM/DD/YYYY)
Aroclor 1254	Chronic	2.00E-05	mg/kg-day	(4)	2.00E-05	mg/kg-day	Immune System	300	IRIS	08/01/03
Aroclor 1260 [3]	Chronic	2.00E-05	mg/kg-day	(4)	2.00E-05	mg/kg-day	Immune System	300	IRIS	08/01/03
PCB TEQ	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Antimony	Chronic	4.00E-04	mg/kg-day	0.15	6.00E-05	mg/kg-day	Blood	1000	IRIS	08/01/03
Arsenic [5]	Chronic	3.00E-04	mg/kg-day	(4)	3.00E-04	mg/kg-day	Skin	3	IRIS	08/01/03
Barium	Chronic	7.00E-02	mg/kg-day	0.07	4.90E-03	mg/kg-day	Cardiovascular	3	IRIS	08/01/03
Cadmium (food)	Chronic	1.00E-03	mg/kg-day	0.025	2.50E-05	mg/kg-day	Kidney	10	IRIS	08/01/03
Chromium (III)	Chronic	1.50E+00	mg/kg-day	0.013	1.95E-02	mg/kg-day	General Toxicity	1000	IRIS	08/01/03
Chromium (VI)	Chronic	3.00E-03	mg/kg-day	0.025	7.50E-05	mg/kg-day	GI System	300	IRIS	08/01/03
Copper	Chronic	3.00E-02	mg/kg-day	(4)	3.00E-02	mg/kg-day	Kidney	1000	NCEA	08/01/03
Copper	Subchronic	3.00E-01	mg/kg-day	(4)	3.00E-01	mg/kg-day	Kidney	100	NCEA	08/01/03
Lead [6]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Manganese (water)	Chronic	2.40E-02	mg/kg-day	0.04	9.60E-04	mg/kg-day	CNS	1	IRIS	08/01/03
Manganese (other media)	Chronic	7.00E-02	mg/kg-day	0.04	2.80E-03	mg/kg-day	CNS	1	IRIS	08/01/03
Mercury (inorganic)	Chronic	3.00E-04	mg/kg-day	0.07	2.10E-05	mg/kg-day	Immune System	1000	IRIS	08/01/03
Mercury (inorganic)	Subchronic	3.00E-03	mg/kg-day	0.07	2.10E-04	mg/kg-day	Immune System	100	IRIS	08/01/03
Mecury (organic)	Chronic	1.00E-04	mg/kg-day	(4)	1.00E-04	mg/kg-day	Nervous System	10	IRIS	08/01/03
Nickel	Chronic	2.00E-02	mg/kg-day	0.04	8.00E-04	mg/kg-day	General Toxicity	300	IRIS	08/01/03
Thallium	Chronic	8.00E-05	mg/kg-day	(4)	8.00E-05	mg/kg-day	Blood	3000	IRIS	08/01/03
Thallium	Subchronic	8.00E-04	mg/kg-day	(4)	8.00E-04	mg/kg-day	Blood	300	HEAST	07/01/97

TABLE 3-5.1

NON-CANCER TOXICITY DATA -- ORAL/DERMAL

Southwest Properties, Wells G&H Superfund Site Operable Unit 2 Woburn, Massachusetts

Chemical of Potential Concern	Chronic	Oral RfD		Oral Absorption Efficiency for Dermal	Absorbed RfD for Dermal		Primary Target Organ(s)	Combined Uncertainty/Modifying Factors	RfD:Target Organ(s)	
		Value	Units	(1)	Value (2)	Units			Source(s)	Date(s) (MM/DD/YYYY)
Vanadium	Chronic	1.00E-03	mg/kg-day	0.026	2.60E-05	mg/kg-day	Kidney	300	NCEA	08/01/03
Vanadium	Subchronic	1.00E-02	mg/kg-day	0.026	2.60E-04	mg/kg-day	Kidney	30	NCEA	08/01/03
Cyanide	Chronic	2.00E-02	mg/kg-day	(4)	2.00E-02	mg/kg-day	CNS/Endocrine	500	IRIS	08/01/03

(1) Oral Absorption Efficiencies from Exhibit 4-1, RAGS Part E, USEPA 2001.

(2) Calculated as: (oral RfD) x (oral to dermal adjustment factor).

(3) RfD for Aroclor 1254 used as a surrogate for Aroclor 1242, Aroclor 1248 and Aroclor 1260 (High risk and persistence; upper-bound slope factor).
RfDs for managanese are based on total allowable intake (10 mg/day) minus the background intake (5 mg/day). The remaining intake (5 mg/day) is divided by 70 kg.
RfD for 1,2,4-trimethylbenzene is based on 1,3,5-trimethylbenzene.
RfD for thallium is based on thallium sulfate.
RfD for chlordane used as a surrogate for alpha-and gamma-chlordane.
RfD for mercury (inorganic) based on mercuric chloride; for mercury (organic), based on methylmercury.
RfD for naphthalene used as a surrogate for 2-methylnaphthalene, phenanthrene, acenaphthylene, and benzo(g,h,I)perylene.
RfD for nickel is based on nickel, soluble salts.

(4) Oral absorption efficiency exceeds 50%. Therefore, no adjustment of the oral reference dose is necessary (USEPA, 2001).

(5) Used for all media and exposures except oral exposures to sediment (see Table 5-3.3).

(6) See Appendix C.12 for lead model calculations

When the chronic RfD is based on a subchronic study, a subchronic RfD has been developed by the elimination of the 10-fold uncertainty factor for subchronic to chronic adjustment. If no subchronic data are available, the chronic RfD has been adopted as the subchronic RfD.

IRIS = Integrated Risk Information System

HEAST = Health Effects Assessment Summary Tables

N/A = Not Applicable/Not Available

NOAEL = No Observed Adverse Effects Level

NCEA = National Center for Environmental Assessment

TABLE 3-5.2

NON-CANCER TOXICITY DATA -- INHALATION

Southwest Properties, Wells G&H Superfund Site Operable Unit 2 Woburn, Massachusetts

Chemical of Potential Concern	Chronic	Inhalation RfC		Extrapolated RfD[(1)]		Primary Target Organ(s)	Combined Uncertainty/Modifying Factors	RfC : Target Organ(s)	
		Value	Units	Value	Units			Source(s)	Date(s) (MM/DD/YYYY)
C11-C22 Aromatic	Chronic	5.00E-02	mg/m^3	N/A	N/A	Liver/Kidney	N/A	MADEP	10/31/2002
C19-C36 Aliphatic	Chronic	N/A	mg/m^3	N/A	N/A	N/A	N/A	MADEP	10/31/2002
C9-C18 Aliphatic	Chronic	2.00E-01	mg/m^3	N/A	N/A	Kidney	N/A	MADEP	10/31/2002
C9-C12 Aliphatics	Chronic	2.00E-01	mg/m^3	N/A	N/A	Kidney	N/A	MADEP	10/31/2002
C5-C8 Aliphatic	Chronic	2.00E-01	mg/m^3	N/A	N/A	Kidney	N/A	MADEP	10/31/2002
C9-C10 Aromatic	Chronic	5.00E-02	mg/m^3	N/A	N/A	Liver/Kidney	N/A	MADEP	10/31/2002
Xylenes	Chronic	1.00E-01	mg/m^3	N/A	N/A	CNS	300	IRIS	8/1/2003
Xylenes	Subchronic	1.00E+00	mg/m^3	N/A	N/A	CNS	30	IRIS	8/1/2003
2,4,6-Trichlorophenol	Chronic	N/A	mg/m^3	N/A	N/A	N/A	N/A	IRIS	8/1/2003
1,1,1,-Trichloroethane	Chronic	2.20E+00	mg/m^3	N/A	N/A	CNS	90	NCEA	8/1/2003
1,1,1,-Trichloroethane	Subchronic	2.20E+01	mg/m^3	N/A	N/A	CNS	9	NCEA	8/1/2003
1,1,2-Trichloro-1,2,2-triflouroethane	Chronic	3.00E+01	mg/m^3	N/A	N/A	General Toxicity	100	HEAST	7/1/1997
1,2,4-Trichlorobenzene	Chronic	2.00E-01	mg/m^3	N/A	N/A	Liver	1000	HEAST	7/1/1997
1,2,4-Trichlorobenzene	Subchronic	2.00E+00	mg/m^3	N/A	N/A	Liver	100	HEAST	7/1/1997
1,2-Dichlorobenzene	Chronic	N/A	N/A	N/A	N/A	N/A	N/A	IRIS	8/1/2003
Acetone	Chronic	N/A	N/A	N/A	N/A	N/A	N/A	IRIS	8/1/2003
Carbon Disulfide	Chronic	7.00E-01	mg/m^3	N/A	N/A	CNS	30	IRIS	8/1/2003
Chloroform	Chronic	5.00E-02	mg/m^3	N/A	N/A	N/A	N/A	NCEA	8/1/2003
Dichlorodifluoromethane	Chronic	2.00E-01	mg/m^3	N/A	N/A	Liver	10000	HEAST	7/1/1997
Dichlorodifluoromethane	Subchronic	2.00E+00	mg/m^3	N/A	N/A	Liver	1000	HEAST	7/1/1997
Isopropylbenzene	Chronic	4.00E-01	mg/m^3	N/A	N/A	Kidney	1000	IRIS	8/1/2003
Isopropylbenzene	Subchronic	4.00E+00	mg/m^3	N/A	N/A	Kidney	100	IRIS	8/1/2003
p-Isopropyltoluene[(2)]	Chronic	4.00E-01	mg/m^3	N/A	N/A	Kidney	1000	IRIS	8/1/2003
p-Isopropyltoluene[(2)]	Subchronic	4.00E+00	mg/m^3	N/A	N/A	Kidney	100	IRIS	8/1/2003

TABLE 3-5.2

NON-CANCER TOXICITY DATA -- INHALATION

Southwest Properties, Wells G&H Superfund Site Operable Unit 2 Woburn, Massachusetts

Chemical of Potential Concern	Chronic	Inhalation RfC		Extrapolated RfD[1]		Primary Target Organ(s)	Combined Uncertainty/Modifying Factors	RfC : Target Organ(s)	
		Value	Units	Value	Units			Source(s)	Date(s) (MM/DD/YYYY)
1,1-Biphenyl	Chronic	N/A	N/A	N/A	N/A	N/A	N/A	IRIS	8/1/2003
Chloromethane	Chronic	9.00E-02	mg/m^3	N/A	N/A	CNS	1000	IRIS	8/1/2003
Chloromethane	Subchronic	9.00E-01	mg/m^3	N/A	N/A	CNS	100	IRIS	8/1/2003
1,1-Dichloroethane	Chronic	5.00E-01	mg/m3	N/A	N/A	Kidney	1000	HEAST	7/1/1997
1,1-Dichloroethane	Subchronic	5.00E+00	mg/m^3	N/A	N/A	Kidney	100	HEAST	7/1/1997
trans-1,2-Dichloroethylene[2]	Chronic	2.00E-01	mg/m^3	N/A	N/A	Liver	30	IRIS	8/1/2003
total-1,2 Dichloroethylene [2]	Chronic	2.00E-01	mg/m^3	N/A	N/A	Liver	30	IRIS	8/1/2003
Methyl tert-butyl ether	Chronic	3.00E+00	mg/m^3	N/A	N/A	Liver/Kidney	100	IRIS	8/1/2003
Methyl cyclohexane	Chronic	3.00E+00	mg/m^3	N/A	N/A	Kidney	100	HEAST	7/1/1997
cis-1,2-Dichloroethylene[2]	Chronic	2.00E-01	mg/m^3	N/A	N/A	Liver	30	IRIS	8/1/2003
1,1-Dichloroethylene	Chronic	2.00E-01	mg/m^3	N/A	N/A	Liver	30	IRIS	8/1/2003
1,2,4-Trimethylbenzene[2]	Chronic	6.00E-03	mg/m^3	N/A	N/A	Respiratory	3000	NCEA	8/1/2003
1,2,4-Trimethylbenzene[2]	Subchronic	6.00E-02	mg/m^3	N/A	N/A	Respiratory	300	NCEA	8/1/2003
1,3,5-Trimethylbenzene[2]	Chronic	6.00E-03	mg/m^3	N/A	N/A	Respiratory	3000	NCEA	8/1/2003
1,3,5-Trimethylbenzene[2]	SubChronic	6.00E-02	mg/m^3	N/A	N/A	Respiratory	300	NCEA	8/1/2003
2 Butanone (MEK)	Chronic	5.00E+00	mg/m^3	N/A	N/A	Developmental	300	IRIS	9/26/2003
2 Butanone (MEK)	SubChronic	5.00E+01	mg/m^3	N/A	N/A	Developmental	30	IRIS	9/26/2003
Acetophenone	Chronic	N/A	N/A	N/A	N/A	N/A	N/A	IRIS	8/1/2003
Acenaphthene[1]	Chronic	3.00E-03	mg/m^3	N/A	N/A	Respiratory	3000	IRIS	8/1/2003
Dibensofuran	Chronic	N/A	N/A	N/A	N/A	N/A	N/A	IRIS	8/1/2003
Fluorene	Chronic	3.00E-03	mg/m^3	N/A	N/A	Respiratory	3000	IRIS	8/1/2003
Anthracene	Chronic	3.00E-03	mg/m^3	N/A	N/A	Respiratory	3000	IRIS	8/1/2003
Naphthalene	Chronic	3.00E-03	mg/m^3	N/A	N/A	Respiratory	3000	IRIS	8/1/2003
2-Methylnaphthalene [2]	Chronic	3.00E-03	mg/m^3	N/A	N/A	Respiratory	3000	IRIS	8/1/2003

TABLE 3-5.2

NON-CANCER TOXICITY DATA -- INHALATION

Southwest Properties, Wells G&H Superfund Site Operable Unit 2 Woburn, Massachusetts

Chemical of Potential Concern	Chronic	Inhalation RfC		Extrapolated RfD[1]		Primary Target Organ(s)	Combined Uncertainty/Modifying Factors	RfC : Target Organ(s)	
		Value	Units	Value	Units			Source(s)	Date(s) (MM/DD/YYYY)
Tetrachloroethene	Chronic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Trichloroethene	Chronic	4.00E-02	mg/m^3	N/A	N/A	CNS/Liver	3000	NCEA	6/24/2003
Vinyl chloride	Chronic	1.00E-01	mg/m^3	N/A	N/A	Liver	30	IRIS	8/1/2003
Ethylenedibromide	Chronic	2.00E-04	mg/m^3	N/A	N/A	Reproductive	1000	HEAST	7/1/1997
Ethylenedibromide	Subchronic	2.00E-03	mg/m^3	N/A	N/A	Reproductive	100	HEAST	7/1/1997
Bromomethane	Chronic	5.00E-03	mg/m^3	N/A	N/A	Respiratory	100	IRIS	8/1/2003
Chloroethane	Chronic	1.00E+01	mg/m^3	N/A	N/A	Developmental	300	IRIS	8/1/2003
Methylene Chloride	Chronic	3.00E+00	mg/m3	N/A	N/A	Liver	100	HEAST	7/1/1997
Benzene	Chronic	3.00E-02	mg/m^3	N/A	N/A	Immune System	300	IRIS	8/1/2003
Benzene	Subchronic	9.00E-02	mg/m^3	N/A	N/A	Immune System	100	IRIS	6/18/2003
Toluene	Chronic	4.00E-01	mg/m^3	N/A	N/A	CNS	300	IRIS	8/1/2003
1,1,2-Trichloroethane[2]	Chronic	2.20E+00	mg/m^3	N/A	N/A	CNS	90	NCEA	8/1/2003
1,1,2-Trichloroethane[2]	Subchronic	2.20E+01	mg/m^3	N/A	N/A	CNS	9	NCEA	8/1/2003
Chlorodibromomethane	Chronic	N/A	N/A	N/A	N/A	N/A	N/A	IRIS	8/1/2003
Chlorobenzene	Chronic	6.00E-02	mg/m^3	N/A	N/A	Liver	1000	NCEA	8/1/2003
Chlorobenzene	Subchronic	6.00E-01	mg/m^3	N/A	N/A	Liver	100	NCEA	8/1/2003
Ethylbenzene	Chronic	1.00E+00	mg/m^3	N/A	N/A	Developmental	300	IRIS	8/1/2003
Ethylbenzene	Subchronic	1.00E+01	mg/m^3	N/A	N/A	Developmental	100	IRIS	8/1/2003
1,3-Dichlorobenzene	Chronic	N/A	N/A	N/A	N/A	N/A	N/A	NCEA	8/1/2003
1,4-Dichlorobenzene	Chronic	8.00E-01	mg/m^3	N/A	N/A	Liver	100	IRIS	8/1/2003
1,2-Dibromo-3-chloropropane	Chronic	2.00E-04	mg/m^3	N/A	N/A	Reproductive	1000	IRIS	8/1/2003
1,2-Dibromo-3-chloropropane	Subchronic	2.00E-03	mg/m^3	N/A	N/A	Reproductive	100	IRIS	6/18/2003
4-Methylphenol	Chronic	N/A	N/A	N/A	N/A	N/A	N/A	IRIS	8/1/2003
Phenanthrene	Chronic	3.00E-03	mg/m^3	N/A	N/A	Respiratory	3000	IRIS	8/1/2003

TABLE 3-5.2

NON-CANCER TOXICITY DATA -- INHALATION

Southwest Properties, Wells G&H Superfund Site Operable Unit 2 Woburn, Massachusetts

Chemical of Potential Concern	Chronic	Inhalation RfC		Extrapolated RfD[(1)]		Primary Target Organ(s)	Combined Uncertainty/Modifying Factors	RfC : Target Organ(s)	
		Value	Units	Value	Units			Source(s)	Date(s) (MM/DD/YYYY)
Acenaphthylene[(1)]	Chronic	3.00E-03	mg/m^3	N/A	N/A	Respiratory	3000	IRIS	8/1/2003
Benzo(a)anthracene	Chronic	N/A	N/A	N/A	N/A	N/A	N/A	IRIS	8/1/2003
Benzo(a)pyrene	Chronic	N/A	N/A	N/A	N/A	N/A	N/A	IRIS	8/1/2003
Bis(2-ethylhexyl)phthalate	Chronic	N/A	N/A	N/A	N/A	N/A	N/A	IRIS	8/1/2003
Benzo(b)fluoranthene	Chronic	N/A	N/A	N/A	N/A	N/A	N/A	IRIS	8/1/2003
Benzo(k)fluoranthene	Chronic	N/A	N/A	N/A	N/A	N/A	N/A	IRIS	8/1/2003
Dibenz(a,h)anthracene	Chronic	N/A	N/A	N/A	N/A	N/A	N/A	IRIS	8/1/2003
Indeno(1,2,3-cd)pyrene	Chronic	N/A	N/A	N/A	N/A	N/A	N/A	IRIS	8/1/2003
Benzo(g,h,I)perylene	Chronic	3.00E-03	mg/m^3	N/A	N/A	Respiratory	3000	IRIS	8/1/2003
alpha-Chlordane	Chronic	7.00E-04	mg/m^3	N/A	N/A	Liver	1000	IRIS	8/1/2003
alpha-Chlordane	Subchronic	7.00E-03	mg/m^3	N/A	N/A	Liver	100	IRIS	8/1/2003
gamma-Chlordane	Chronic	7.00E-04	mg/m^3	N/A	N/A	Liver	1000	IRIS	8/1/2003
gamma-Chlordane	Subchronic	7.00E-03	mg/m^3	N/A	N/A	Liver	100	IRIS	8/1/2003
Dieldrin	Chronic	N/A	N/A	N/A	N/A	N/A	N/A	IRIS	8/1/2003
Heptachlor epoxide	Chronic	N/A	N/A	N/A	N/A	N/A	N/A	IRIS	8/1/2003
4,4-DDT	Chronic	N/A	N/A	N/A	N/A	N/A	N/A	IRIS	8/1/2003
4,4'-DDE	Chronic	N/A	N/A	N/A	N/A	N/A	N/A	IRIS	8/1/2003
4,4-DDD	Chronic	N/A	N/A	N/A	N/A	N/A	N/A	IRIS	8/1/2003
Aroclor 1242	Chronic	N/A	N/A	N/A	N/A	N/A	N/A	IRIS	8/1/2003
Aroclor 1248	Chronic	N/A	N/A	N/A	N/A	N/A	N/A	IRIS	8/1/2003
Aroclor 1254	Chronic	N/A	N/A	N/A	N/A	N/A	N/A	IRIS	8/1/2003
Aroclor 1260	Chronic	N/A	N/A	N/A	N/A	N/A	N/A	IRIS	8/1/2003
PCB TEQ	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Antimony	Chronic	N/A	N/A	N/A	N/A	N/A	N/A	IRIS	8/1/2003
Arsenic	Chronic	N/A	N/A	N/A	N/A	N/A	N/A	IRIS	8/1/2003

TABLE 3-5.2

NON-CANCER TOXICITY DATA -- INHALATION

Southwest Properties, Wells G&H Superfund Site Operable Unit 2 Woburn, Massachusetts

Chemical of Potential Concern	Chronic	Inhalation RfC		Extrapolated RfD[1]		Primary Target Organ(s)	Combined Uncertainty/Modifying Factors	RfC : Target Organ(s)	
		Value	Units	Value	Units			Source(s)	Date(s) (MM/DD/YYYY)
Barium	Chronic	N/A	N/A	N/A	N/A	N/A	N/A	IRIS	8/1/2003
Cadmium	Chronic	N/A	N/A	N/A	N/A	N/A	N/A	IRIS	8/1/2003
Chromium (III)	Chronic	N/A	N/A	N/A	N/A	N/A	N/A	IRIS	8/1/2003
Chromium (VI) as particulates	Chronic	1.00E-04	mg/m^3	N/A	N/A	Respiratory	300	IRIS	8/1/2003
Chromium (VI) as particulates	Subchronic	1.00E-03	mg/m^3	N/A	N/A	Respiratory	30	IRIS	8/1/2003
Copper	Chronic	N/A	N/A	N/A	N/A	N/A	N/A	IRIS	8/1/2003
Lead [2]	Chronic	N/A	N/A	N/A	N/A	N/A	N/A	IRIS	8/1/2003
Manganese	Chronic	5.00E-05	mg/m^3	N/A	N/A	CNS	1000	IRIS	8/1/2003
Mercury (inorganic)[2]	Chronic	N/A	N/A	N/A	N/A	N/A	N/A	IRIS	8/1/2003
Mercury (organic)	Chronic	N/A	N/A	N/A	N/A	N/A	N/A	IRIS	8/1/2003
Nickel [2]	Chronic	N/A	N/A	N/A	N/A	N/A	N/A	IRIS	8/1/2003
Thallium[2]	Chronic	N/A	N/A	N/A	N/A	N/A	N/A	IRIS	8/1/2003
Vanadium	Chronic	N/A	N/A	N/A	N/A	N/A	N/A	IRIS	8/1/2003
Cyanide	Chronic	N/A	N/A	N/A	N/A	N/A	N/A	IRIS	8/1/2003

IRIS = Integrated Risk Information System

NCEA = National Center for Environmental Assessment

RME = Reasonable Maximum Exposure

CT = Central Tendency

N/A = Not Applicable

(1) RfC for Naphthalene used as a surrogate for all noncarcinogenic PAHs.

RfC for 1,2,4- and 1,3,5-trimethylbenzenes based on trimethylbenzene mixture.

RfC for mercury (inorganic) based on elemental mercury; for mercury (organic), based on methylmercury.

RfC for nickel is based on nickel, soluble salts.

RfC for thallium is based on thallium sulfate.

RfC for 1,1-Dichlorethylene used as a surrogate for cis, trans and total -1,2-Dichloroethylene

RfC for 1,1,1-Trichloroethane used as a surrogate for 1,1,2-Trichloroethane

RfC for Isopropylbenzene used as a surrogate for p-Isopropyltoluene

(2) See Appendix C.12 for lead model calculations.

TABLE 3-5.3

NON-CANCER TOXICITY DATA -- SPECIAL CASE CHEMICALS

Southwest Properties, Wells G&H Superfund Site Operable Unit 2 Woburn, Massachusetts

Chemical of Potential Concern	Chronic/ Subchronic	Parameter			Primary Target Organ(s)	Combined Uncertainty/Modifying Factors	Parameter:Target Organ(s)	
		Name	Value	Units			Source(s)	Date(s)
Arsenic	Chronic	Sediment Oral RfD adjusted for site-specific relative bioavailability	5.9E-04	mg/kg-day	skin	3	IRIS	02/01/03

RfD (adjusted) = RfD (IRIS) / RBA

IRIS = Integrated Risk Information System

RBA = Relative Bioavailability = 0.51 (site-specific; see Appendix C.9)

TABLE 3-6.1

CANCER TOXICITY DATA -- ORAL/DERMAL

Southwest Properties, Wells G&H Superfund Site Operable Unit 2 Woburn, Massachusetts

Chemical of Potential Concern	Oral Cancer Slope Factor		Oral Absorption Efficiency for Dermal	Absorbed Cancer Slope Factor for Dermal		Weight of Evidence/ Cancer Guideline Description	Oral CSF	
	Value	Units		Value	Units		Source(s)	Date(s) (MM/DD/YYYY)
C11-C22 Aromatic	N/A	N/A	N/A	NA	NA	D	MADEP	10/31/2002
C19-C36 Aliphatic	N/A	N/A	N/A	NA	NA	D	MADEP	10/31/2002
C9-C18 Aliphatic	N/A	N/A	N/A	NA	NA	D	MADEP	10/31/2002
C5-C8 Aliphatic	N/A	N/A	N/A	NA	NA	D	MADEP	10/31/2002
C9-C10 Aromatic	N/A	N/A	N/A	NA	NA	D	MADEP	10/31/2002
Xylenes	N/A	N/A	N/A	NA	NA	D	IRIS	8/1/2003
1,1,1,-Trichloroethane	N/A	N/A	N/A	NA	NA	D	IRIS	8/1/2003
1,1-Dichloroethane	N/A	N/A	N/A	NA	NA	C	IRIS	8/1/2003
trans-1,2-Dichloroethylene	N/A	N/A	N/A	NA	NA	D	IRIS	8/1/2003
Methyl tert-butyl ether	3.30E-03	$(mg/kg\text{-}day)^{-1}$	(1)	3.30E-03	$(mg/kg\text{-}day)^{-1}$	NA	Region IX	10/1/2002
cis-1,2-Dichloroethylene	N/A	N/A	N/A	NA	NA	D	IRIS	8/1/2003
1,1-Dichloroethylene	N/A	N/A	N/A	NA	NA	C	IRIS	8/1/2003
2,4,6-Trichlorophenol	1.10E-02	$(mg/kg\text{-}day)^{-1}$	(1)	1.10E-02	$(mg/kg\text{-}day)^{-1}$	B2	IRIS	8/1/2003
1,2,4-Trichlorobenzene	N/A	N/A	N/A	NA	NA	D	IRIS	8/1/2003
1,2,4-Trimethylbenzene	N/A	N/A	N/A	NA	NA	D	NCEA	8/1/2003
1,3,5-Trimethylbenzene	N/A	N/A	N/A	NA	NA	D	NCEA	8/1/2003
2 Butanone (MEK)	N/A	N/A	N/A	NA	NA	D	IRIS	09/26/03
2 Butanone (MEK)	N/A	N/A	N/A	NA	NA	D	IRIS	09/26/03
Acetophenone	N/A	N/A	N/A	N/A	N/A	D	IRIS	8/1/2003
Naphthalene	N/A	N/A	N/A	N/A	N/A	C	IRIS	8/1/2003
2-Methylnaphthalene	N/A	N/A	N/A	NA	NA	C	IRIS	8/1/2003
Tetrachloroethene	2.10E-02	$(mg/kg\text{-}day)^{-1}$	(1)	2.10E-02	$(mg/kg\text{-}day)^{-1}$	B2	CalEPA	8/1/2003
Trichloroethene	4.00E-01	$(mg/kg\text{-}day)^{-1}$	(1)	4.00E-01	$(mg/kg\text{-}day)^{-1}$	C-B2	NCEA	6/24/2004
Vinyl chloride	1.50E+00	$(mg/kg\text{-}day)^{-1}$	(1)	1.50E+00	$(mg/kg\text{-}day)^{-1}$	C	IRIS	8/1/2003
Ethylenedibromide[6]	8.50E+01	$(mg/kg\text{-}day)^{-1}$	(1)	8.50E+01	$(mg/kg\text{-}day)^{-1}$	B2	IRIS	8/1/2003
Bromomethane	N/A	N/A	N/A	N/A	N/A	D	IRIS	8/1/2003

TABLE 3-6.1

CANCER TOXICITY DATA -- ORAL/DERMAL

Southwest Properties, Wells G&H Superfund Site Operable Unit 2 Woburn, Massachusetts

Chemical of Potential Concern	Oral Cancer Slope Factor		Oral Absorption Efficiency for Dermal	Absorbed Cancer Slope Factor for Dermal		Weight of Evidence/ Cancer Guideline Description	Oral CSF	
	Value	Units		Value	Units		Source(s)	Date(s) (MM/DD/YYYY)
Chloroethane	N/A	N/A	N/A	N/A	N/A	D	IRIS	8/1/2003
Methylene Chloride()	7.50E-03	(mg/kg-day)$^{-1}$	(1)	7.50E-03	(mg/kg-day)$^{-1}$	B2	IRIS	8/1/2003
Benzene(6)	5.50E-02	(mg/kg-day)$^{-1}$	(1)	5.50E-02	(mg/kg-day)	A	IRIS	8/1/2003
Toluene	N/A	N/A	N/A	N/A	N/A	D	IRIS	8/1/2003
1,1,2-Trichloroethane(6)	5.70E-02	(mg/kg-day)$^{-1}$	(1)	5.70E-02	(mg/kg-day)$^{-1}$	C	IRIS	8/1/2003
Chlorodibromomethane	8.40E-02	(mg/kg-day)$^{-1}$	(1)	8.40E-02	(mg/kg-day)$^{-1}$	C	IRIS	8/1/2003
Chlorobenzene	N/A	N/A	N/A	N/A	N/A	D	IRIS	8/1/2003
Ethylbenzene	N/A	N/A	N/A	N/A	N/A	D	IRIS	8/1/2003
1,3-Dichlorobenzene	N/A	N/A	N/A	N/A	N/A	D	IRIS	8/1/2003
1,4-Dichlorobenzene	N/A	N/A	N/A	N/A	N/A	C	NCEA	8/1/2003
1,2-Dibromo-3-chloropropane	N/A	N/A	N/A	N/A	N/A	D	IRIS	8/1/2003
4-Methylphenol	N/A	N/A	N/A	N/A	N/A	C	IRIS	8/1/2003
Phenanthrene	N/A	N/A	N/A	N/A	N/A	D	IRIS	8/1/2003
Acenaphthylene	N/A	N/A	N/A	N/A	N/A	D	IRIS	8/1/2003
Benzo(a)anthracene	7.30E-01	(mg/kg-day)$^{-1}$	(1)	7.30E-01	(mg/kg-day)$^{-1}$	B2	IRIS	8/1/2003
Benzo(a)pyrene	7.30E+00	(mg/kg-day)$^{-1}$	(1)	7.30E+00	(mg/kg-day)$^{-1}$	B2	IRIS	8/1/2003
Bis(2-ethylhexyl)phthalate	1.40E-02	(mg/kg-day)$^{-1}$	(1)	1.40E-02	(mg/kg-day)$^{-1}$	B2	IRIS	8/1/2003
Benzo(b)fluoranthene	7.30E-01	(mg/kg-day)$^{-1}$	(1)	7.30E-01	(mg/kg-day)$^{-1}$	B2	IRIS	8/1/2003
Benzo(k)fluoranthene	7.30E-02	(mg/kg-day)$^{-1}$	(1)	7.30E-02	(mg/kg-day)$^{-1}$	B2	IRIS	8/1/2003
Dibenz(a,h)anthracene	7.30E+00	(mg/kg-day)$^{-1}$	(1)	7.30E+00	(mg/kg-day)$^{-1}$	B2	IRIS	8/1/2003
Indeno(1,2,3-cd)pyrene	7.30E-01	(mg/kg-day)$^{-1}$	(1)	7.30E-01	(mg/kg-day)$^{-1}$	B2	IRIS	8/1/2003
Benzo(g,h,I)perylene	N/A	N/A	N/A	N/A	N/A	D	IRIS	8/1/2003
alpha-Chlordane	3.50E-01	(mg/kg-day)$^{-1}$	(1)	3.50E-01	(mg/kg-day)$^{-1}$	B2	IRIS	8/1/2003
gamma-Chlordane	3.50E-01	(mg/kg-day)$^{-1}$	(1)	3.50E-01	(mg/kg-day)$^{-1}$	B2	IRIS	8/1/2003
Dieldrin(6)	1.60E+01	(mg/kg-day)$^{-1}$	(1)	1.60E+01	(mg/kg-day)$^{-1}$	B2	IRIS	8/1/2003

TABLE 3-6.1

CANCER TOXICITY DATA -- ORAL/DERMAL

Southwest Properties, Wells G&H Superfund Site Operable Unit 2 Woburn, Massachusetts

Chemical of Potential Concern	Oral Cancer Slope Factor		Oral Absorption Efficiency for Dermal	Absorbed Cancer Slope Factor for Dermal		Weight of Evidence/ Cancer Guideline Description	Oral CSF	
	Value	Units		Value	Units		Source(s)	Date(s) (MM/DD/YYYY)
Heptachlor epoxide	9.10E+00	(mg/kg-day) $^{-1}$	(1)	9.10E+00	(mg/kg-day) $^{-1}$	B2	IRIS	8/1/2003
4,4-DDT	3.40E-01	(mg/kg-day) $^{-1}$	(1)	3.40E-01	(mg/kg-day) $^{-1}$	B2	IRIS	8/1/2003
4,4'-DDE[6]	3.40E-01	(mg/kg-day) $^{-1}$	(1)	3.40E-01	(mg/kg-day) $^{-1}$	B2	IRIS	8/1/2003
4,4-DDD	2.40E-01	(mg/kg-day) $^{-1}$	(1)	2.40E-01	(mg/kg-day) $^{-1}$	B2	IRIS	8/1/2003
Aroclor1242 (3)	2.00E+00	(mg/kg-day) $^{-1}$	(1)	2.00E+00	(mg/kg-day) $^{-1}$	B2	IRIS	8/1/2003
Aroclor 1248	2.00E+00	(mg/kg-day) $^{-1}$	(1)	2.00E+00	(mg/kg-day) $^{-1}$	B2	IRIS	8/1/2003
Aroclor 1254	2.00E+00	(mg/kg-day) $^{-1}$	(1)	2.00E+00	(mg/kg-day) $^{-1}$	B2	IRIS	8/1/2003
Aroclor 1260	2.00E+00	(mg/kg-day) $^{-1}$	(1)	2.00E+00	(mg/kg-day) $^{-1}$	B2	IRIS	8/1/2003
PCB TEQ[5]	1.50E+05	(mg/kg-day) $^{-1}$	(1)	1.50E+05	(mg/kg-day) $^{-1}$	B2	HEAST	7/1/1997
Antimony	N/A	N/A	N/A	N/A	N/A	D	IRIS	8/1/2003
Arsenic [3]	1.50E+00	(mg/kg-day) $^{-1}$	(1)	1.50E+00	(mg/kg-day) $^{-1}$	A	IRIS	8/1/2003
Barium	N/A	N/A	N/A	N/A	N/A	D	IRIS	8/1/2003
Cadmium (food)	N/A	N/A	N/A	N/A	N/A	D	IRIS	8/1/2003
Chromium (III)	N/A	N/A	N/A	N/A	N/A	D	IRIS	8/1/2003
Chromium (VI)	N/A	N/A	N/A	N/A	N/A	D	IRIS	8/1/2003
Copper	N/A	N/A	N/A	N/A	N/A	D	IRIS	8/1/2003
Lead [4]	N/A	N/A	N/A	N/A	N/A	B2	IRIS	8/1/2003
Manganese (water)	N/A	N/A	N/A	N/A	N/A	D	IRIS	8/1/2003
Manganese (other media)	N/A	N/A	N/A	N/A	N/A	D	IRIS	8/1/2003
Mercury (inorganic)	N/A	N/A	N/A	N/A	N/A	C	IRIS	8/1/2003
Mercury (organic)	N/A	N/A	N/A	N/A	N/A	C	IRIS	8/1/2003
Nickel	N/A	N/A	N/A	N/A	N/A	D	IRIS	8/1/2003
Thallium	N/A	N/A	N/A	N/A	N/A	D	IRIS	8/1/2003

TABLE 3-6.1

CANCER TOXICITY DATA -- ORAL/DERMAL

Southwest Properties, Wells G&H Superfund Site Operable Unit 2 Woburn, Massachusetts

Chemical of Potential Concern	Oral Cancer Slope Factor		Oral Absorption Efficiency for Dermal	Absorbed Cancer Slope Factor for Dermal		Weight of Evidence/ Cancer Guideline Description	Oral CSF	
	Value	Units		Value	Units		Source(s)	Date(s) (MM/DD/YYYY)
Vanadium	N/A	N/A	N/A	N/A	N/A	D	IRIS	8/1/2003
Cyanide	N/A	N/A	N/A	N/A	N/A	D	IRIS	8/1/2003

IRIS = Integrated Risk Information System

NCEA = National Center for Environmental Assessment

N/A = Not Applicable/Not Available

Region IX = USEPA Region IX PRG Tables, October 2002

CalEPA = California Environmental Protection Agency, Office of Environmental Health Hazard Assessment, December 2002

Slope factor for chlordane used as a surrogate for alpha- and gamma chlordane.

Slope factor for benzo(a)pyrene, along with the appropriate relative potency factor (USEPA, 1993), used for the other carcinogenic PAHs.

Weight of evidence for mercury (inorganic) based on elemental mercury; for mercury (organic), based on methylmercury.

For PCBs, the RME slope factor is presented. A slope factor of 1 (mg/kg-day)-1 is used for CT risk estimates (USEPA, 2003a).

(1) Oral absorption efficiency exceeds 50%. Therefore, no adjustment of the oral slope factor is necessary.

(2) Calculated as: (oral slope factor) / (oral to dermal adjustment factor)

(3) Used for all media and exposures except oral exposures to sediment (see Table 3-6.3).

(4) See Appendix C.12 for lead model calculations.

(5) Value based on the toxicity of 2,3,7,8-TCDD

EPA Group:

A - Human carcinogen

B1 - Probable human carcinogen - indicates that limited human data are available

B2 - Probable human carcinogen - indicates sufficient evidence in animals and inadequate or no evidence in humans

C - Possible human carcinogen

D - Not classifiable as a human carcinogen (by the oral route)

E - Evidence of noncarcinogenicity

TABLE 3-6.2

CANCER TOXICITY DATA -- INHALATION

Southwest Properties, Wells G&H Superfund Site Operable Unit 2 Woburn, Massachusetts

Chemical of Potential Concern	Unit Risk		Inhalation Cancer Slope Factor		Weight of Evidence/ Cancer Guideline Description	Unit Risk : Inhalation CSF	
	Value	Units	Value	Units		Source(s)	Date(s) (MM/DD/YYYY)
C11-C22 Aromatic	N/A	N/A	N/A	N/A	D	MADEP	10/31/2002
C19-C36 Aliphatic	N/A	N/A	N/A	N/A	D	MADEP	10/31/2002
C9-C18 Aliphatic	N/A	N/A	N/A	N/A	D	MADEP	10/31/2002
C9-C12 Aliphatics	N/A	N/A	N/A	N/A	D	MADEP	10/31/2002
C5-C8 Aliphatic	N/A	N/A	N/A	N/A	D	MADEP	10/31/2002
C9-C10 Aromatic	N/A	N/A	N/A	N/A	D	MADEP	10/31/2002
Xylenes	N/A	N/A	N/A	N/A	D	IRIS	8/1/2003
2,4,6-Trichlorophenol	3.10E-06	(ug/m3)-1	N/A	N/A	B2	IRIS	8/1/2003
1,1,1,-Trichloroethane	N/A	N/A	N/A	N/A	D	IRIS	8/1/2003
Trichloro-1,2,2-triflouroethane	N/A	N/A	N/A	N/A	D	IRIS	8/1/2003
1,2,4-Trichlorobenzene	N/A	N/A	N/A	N/A	D	IRIS	8/1/2003
1,2-Dichlorobenzene	N/A	N/A	N/A	N/A	D	IRIS	8/1/2003
Acetone	N/A	N/A	N/A	N/A	D	IRIS	8/1/2003
Carbon Disulfide	N/A	N/A	N/A	N/A	D	IRIS	8/1/2003
Chloroform	2.30E-05	(ug/m3)-1	N/A	N/A	B2	IRIS	8/1/2003
Dichlorodifluoromethane	N/A	N/A	N/A	N/A	D	IRIS	8/1/2003
Isopropylbenzene	N/A	N/A	N/A	N/A	D	IRIS	8/1/2003
p-Isopropyltoluene	N/A	N/A	N/A	N/A	D	IRIS	8/1/2003
1,1-Biphenyl	N/A	N/A	N/A	N/A	D	IRIS	8/1/2003
Chloromethane	N/A	N/A	N/A	N/A	D	IRIS	8/1/2003
1,1-Dichloroethane	N/A	N/A	N/A	N/A	C	IRIS	8/1/2003
trans-1,2-Dichloroethylene	N/A	N/A	N/A	N/A	D	IRIS	8/1/2003
total-1,2 Dichloroethylene [(2)]	N/A	N/A	N/A	N/A	D	IRIS	8/1/2003
Methyl tert-butyl ether	N/A	N/A	N/A	N/A	D	IRIS	8/1/2003
Methyl cyclohexane	N/A	N/A	N/A	N/A	D	IRIS	8/1/2003
cis-1,2-Dichloroethylene	N/A	N/A	N/A	N/A	D	IRIS	8/1/2003
1,1-Dichloroethylene	N/A	N/A	N/A	N/A	C	IRIS	8/1/2003
1,2,4-Trimethylbenzene	NA	NA	N/A	N/A	D	NCEA	8/1/2003

TABLE 3-6.2

CANCER TOXICITY DATA -- INHALATION

Southwest Properties, Wells G&H Superfund Site Operable Unit 2 Woburn, Massachusetts

Chemical of Potential Concern	Unit Risk		Inhalation Cancer Slope Factor		Weight of Evidence/ Cancer Guideline Description	Unit Risk : Inhalation CSF	
	Value	Units	Value	Units		Source(s)	Date(s) (MM/DD/YYYY)
1,3,5-Trimethylbenzene	NA	NA	N/A	N/A	D	NCEA	8/1/2003
2,4,6-Trichlorophenol	3.10E-06	(ug/m3)-1	N/A	N/A	B2	IRIS	6/1/2003
2 Butanone (MEK)	N/A	N/A	N/A	N/A	D	IRIS	09/26/03
Acetophenone	N/A	N/A	N/A	N/A	D	IRIS	8/1/2003
Acenaphthene	N/A	N/A	N/A	N/A	D	IRIS	8/1/2003
Dibensofuran	N/A	N/A	N/A	N/A	D	IRIS	8/1/2003
Fluorene	N/A	N/A	N/A	N/A	D	IRIS	8/1/2003
Anthracene	N/A	N/A	N/A	N/A	D	IRIS	8/1/2003
Naphthalene	N/A	N/A	N/A	N/A	C	IRIS	8/1/2003
2-Methylnaphthalene	N/A	N/A	N/A	N/A	D	IRIS	8/1/2003
Tetrachloroethene	5.90E-06	$(ug/m^3)^{-1}$	N/A	N/A	B2	CalEPA	8/1/2003
Trichloroethene	1.10E-04	$(ug/m^3)^{-1}$	N/A	N/A	C-B2	NCEA	8/1/2003
Vinyl chloride	8.80E-06	$(ug/m^3)^{-1}$	N/A	N/A	A	IRIS	8/1/2003
Ethylenedibromide	2.20E-04	$(ug/m^3)^{-1}$	N/A	N/A	B2	IRIS	8/1/2003
Bromomethane	N/A	N/A	N/A	N/A	D	IRIS	8/1/2003
Chloroethane	N/A	N/A	N/A	N/A	D	IRIS	8/1/2003
Methylene Chloride	4.70E-07	$(ug/m^3)^{-1}$	N/A	N/A	B2	IRIS	8/1/2003
Benzene	7.80E-06	$(ug/m^3)^{-1}$	N/A	N/A	A	IRIS	8/1/2003
Toluene	N/A	N/A	N/A	N/A	D	IRIS	8/1/2003
1,1,2-Trichloroethane	1.60E-05	$(ug/m^3)^{-1}$	N/A	N/A	C	IRIS	8/1/2003
Chlorodibromomethane	N/A	N/A	N/A	N/A	C	IRIS	8/1/2003
Chlorobenzene	N/A	N/A	N/A	N/A	D	IRIS	8/1/2003
Ethylbenzene	N/A	N/A	N/A	N/A	D	IRIS	8/1/2003
1,3-Dichlorobenzene	N/A	N/A	N/A	N/A	D	IRIS	8/1/2003
1,4-Dichlorobenzene	N/A	N/A	N/A	N/A	D	IRIS	8/1/2003
1,2-Dibromo-3-chloropropane	N/A	N/A	N/A	N/A	D	IRIS	8/1/2003
4-Methylphenol	N/A	N/A	N/A	N/A	C	IRIS	8/1/2003
Phenanthrene	N/A	N/A	N/A	N/A	D	IRIS	8/1/2003

TABLE 3-6.2

CANCER TOXICITY DATA -- INHALATION

Southwest Properties, Wells G&H Superfund Site Operable Unit 2 Woburn, Massachusetts

Chemical of Potential Concern	Unit Risk		Inhalation Cancer Slope Factor		Weight of Evidence/ Cancer Guideline Description	Unit Risk : Inhalation CSF	
	Value	Units	Value	Units		Source(s)	Date(s) (MM/DD/YYYY)
Acenaphthylene	N/A	N/A	N/A	N/A	D	IRIS	8/1/2003
Benzo(a)anthracene	8.80E-05	$(ug/m^3)^{-1}$	N/A	N/A	B2	NCEA	8/1/2003
Benzo(a)pyrene	8.80E-04	$(ug/m^3)^{-1}$	N/A	N/A	B2	NCEA	8/1/2003
Bis(2-ethylhexyl)phthalate	NA	N/A	N/A	N/A	B2	IRIS	8/1/2003
Benzo(b)fluoranthene	8.80E-05	$(ug/m^3)^{-1}$	N/A	N/A	B2	NCEA	8/1/2003
Benzo(k)fluoranthene	8.80E-06	$(ug/m^3)^{-1}$	N/A	N/A	B2	NCEA	8/1/2003
Dibenz(a,h)anthracene	8.80E-04	$(ug/m^3)^{-1}$	N/A	N/A	B2	NCEA	8/1/2003
Indeno(1,2,3-cd)pyrene	8.80E-05	$(ug/m^3)^{-1}$	N/A	N/A	B2	NCEA	8/1/2003
Benzo(g,h,I)perylene	N/A	N/A	N/A	N/A	D	IRIS	8/1/2003
alpha-Chlordane	1.00E-04	$(ug/m^3)^{-1}$	N/A	N/A	B2	IRIS	8/1/2003
gamma-Chlorodane	1.00E-04	$(ug/m^3)^{-1}$	N/A	N/A	B2	IRIS	8/1/2003
Dieldrin	4.60E-03	(ug/m^3)-1	N/A	N/A	B2	IRIS	8/1/2003
Heptachlor epoxide	2.60E-03	(ug/m3)-1	N/A	N/A	B2	IRIS	8/1/2003
4,4-DDT	9.70E-05	(ug/m3)-1	N/A	N/A	B2	IRIS	8/1/2003
4,4'-DDE	N/A	N/A	N/A	N/A	B2	IRIS	8/1/2003
4,4-DDD	N/A	N/A	N/A	N/A	B2	IRIS	8/1/2003
Aroclor 1242 (1)	5.00E-04	$(ug/m^3)^{-1}$	N/A	N/A	B2	IRIS	8/1/2003
Aroclor 1248 (1)	5.00E-04	$(ug/m^3)^{-1}$	N/A	N/A	B2	IRIS	8/1/2003
Aroclor 1254 (1)	5.00E-04	$(ug/m^3)^{-1}$	N/A	N/A	B2	IRIS	8/1/2003
Aroclor 1260 (1)	5.00E-04	$(ug/m^3)^{-1}$	N/A	N/A	B2	IRIS	8/1/2003
PCB TEQ(2)	3.30E+01	(ug/m3)-1	N/A	N/A	B2	HEAST	7/1/1997
Antimony	N/A	N/A	N/A	N/A	NA	IRIS	8/1/2003
Arsenic* (3)	4.30E-03	$(ug/m^3)^{-1}$	N/A	N/A	A	IRIS	8/1/2003
Barium	N/A	N/A	N/A	N/A	NA	IRIS	8/1/2003
Cadmium	1.80E-03	$(ug/m^3)^{-1}$	N/A	N/A	B1	IRIS	8/1/2003
Chromium (III)	N/A	N/A	N/A	N/A	D	IRIS	8/1/2003
Chromium (VI)	1.20E-02	$(ug/m^3)^{-1}$	N/A	N/A	A	IRIS	8/1/2003
Copper	N/A	N/A	N/A	N/A	D	IRIS	8/1/2003
Lead	N/A	N/A	N/A	N/A	B2	IRIS	8/1/2003

TABLE 3-6.2

CANCER TOXICITY DATA -- INHALATION

Southwest Properties, Wells G&H Superfund Site Operable Unit 2 Woburn, Massachusetts

Chemical of Potential Concern	Unit Risk		Inhalation Cancer Slope Factor		Weight of Evidence/ Cancer Guideline Description	Unit Risk : Inhalation CSF	
	Value	Units	Value	Units		Source(s)	Date(s) (MM/DD/YYYY)
Manganese	N/A	N/A	N/A	N/A	D	IRIS	8/1/2003
Mercury (inorganic)	N/A	N/A	N/A	N/A	C	IRIS	8/1/2003
Mercury (organic)	N/A	N/A	N/A	N/A	C	IRIS	8/1/2003
Nickel	N/A	N/A	N/A	N/A	D	IRIS	8/1/2003
Thallium	N/A	N/A	N/A	N/A	D	IRIS	8/1/2003
Vanadium	N/A	N/A	N/A	N/A	D	IRIS	8/1/2003
Cyanide	N/A	N/A	N/A	N/A	D	IRIS	8/1/2003

IRIS = Integrated Risk Information System

NCEA = National Center for Environmental Assessment

IRIS = Integrated Risk Information System

HEAST = Health Effects Assessment Summary Tables

N/A = Not Applicable

EPA Group:

A - Human carcinogen

B1 - Probable human carcinogen - indicates that limited human data are available

B2 - Probable human carcinogen - indicates sufficient evidence in animals and inadequate or no evidence in humans

C - Possible human carcinogen

D - Not classifiable as a human carcinogen (by the oral route)

E - Evidence of noncarcinogenicity

(1) UR for Aroclor 1242,1248, and 1260 is based on Aroclor 1254

(2) UR for PCB TEQ is based on 2,3,7,8-TCDD

(3) Weight of evidence for mercury (inorganic) based on elemental mercury; for mercury (organic), based on methylmercury.

TABLE 3-6.3

CANCER TOXICITY DATA -- SPECIAL CASE CHEMICALS

Southwest Properties, Wells G&H Superfund Site Operable Unit 2 Woburn, Massachusetts

Chemical of Potential Concern	Parameter			Parameter:Target Organ(s)	
	Name	Value	Units	Source(s)	Date(s)
Arsenic	Sediment oral cancer slope factor adjusted for site-specific relative bioavailability	7.7E-01	$(mg/kg\text{-}day)^{-1}$	IRIS	02/01/03

SF (adjusted) = SF (IRIS) * RBA

IRIS = Integrated Risk Information System

RBA = Relative Bioavailability = 0.51 (site-specific; see Appendix C.9)

TABLE 3-6.4

CANCER TOXICITY DATA -- EXTERNAL (RADIATION)

Southwest Properties, Wells G&H Superfund Site Operable Unit 2 Woburn, Massachusetts

Chemical of Potential Concern	Cancer Slope Factor		Source(s)	Date(s) (MM/DD/YYYY)
	Value	Units		
NOT APPLICABLE				

TABLE 3-7.1.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Current
Receptor Population: Commercial Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Aberjona Property	Ingestion													
				Vinyl chloride	N/A	N/A	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Trichloroethene	N/A	N/A	N/A	N/A	4.0E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Phenanthrene	7E-01	mg/kg	6.0E-08	mg/kg-day	N/A	N/A	N/A	1.7E-07	mg/kg-day	2.0E-02	mg/kg-day	8.5E-06
				Benzo(a)Anthracene	7E-01	mg/kg	6.2E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	4.5E-08	1.7E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	7E-01	mg/kg	6.5E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	4.7E-08	1.8E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	5E-01	mg/kg	4.5E-08	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	3.3E-09	1.3E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	5E-01	mg/kg	4.5E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	3.3E-07	1.3E-07	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	5E-01	mg/kg	4.5E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	3.3E-08	1.3E-07	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	6E-03	mg/kg	5.4E-10	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	4.0E-09	1.5E-09	mg/kg-day	N/A	N/A	N/A
				Benzo(g,h,i)perylene	6E-01	mg/kg	5.2E-08	mg/kg-day	N/A	N/A	N/A	1.5E-07	mg/kg-day	2.0E-02	mg/kg-day	7.3E-06
				Antimony	2E+00	mg/kg	1.6E-07	mg/kg-day	N/A	N/A	N/A	4.4E-07	mg/kg-day	4.0E-04	mg/kg-day	1.1E-03
				Arsenic	6E+00	mg/kg	5.0E-07	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	7.4E-07	1.4E-06	mg/kg-day	3.0E-04	mg/kg-day	4.6E-03
				Cadmium	1E+01	mg/kg	8.6E-07	mg/kg-day	N/A	N/A	N/A	2.4E-06	mg/kg-day	1.0E-03	mg/kg-day	2.4E-03
				Copper	1E+02	mg/kg	8.8E-06	mg/kg-day	N/A	N/A	N/A	2.5E-05	mg/kg-day	3.0E-02	mg/kg-day	8.3E-04
				Lead	1E+03	mg/kg	1.0E-04	mg/kg-day	N/A	N/A	N/A	2.8E-04	mg/kg-day	N/A	N/A	N/A
				Manganese	3E+02	mg/kg	2.4E-05	mg/kg-day	N/A	N/A	N/A	6.7E-05	mg/kg-day	7.0E-02	mg/kg-day	9.6E-04
				Mercury	9E-02	mg/kg	8.3E-09	mg/kg-day	N/A	N/A	N/A	2.3E-08	mg/kg-day	1.0E-04	mg/kg-day	2.3E-04
				Nickel	6E+01	mg/kg	5.6E-06	mg/kg-day	N/A	N/A	N/A	1.6E-05	mg/kg-day	2.0E-02	mg/kg-day	7.9E-04
				Thallium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-05	mg/kg-day	N/A
				Aroclor 1242	1E-01	mg/kg	9.8E-09	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	2.0E-08	2.7E-08	mg/kg-day	2.0E-05	mg/kg-day	1.4E-03
				Aroclor 1248	N/A	N/A	N/A	N/A	2.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1254	2E-01	mg/kg	1.3E-08	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	2.7E-08	3.8E-08	mg/kg-day	2.0E-05	mg/kg-day	1.9E-03
				Aroclor 1260	8E-02	mg/kg	6.9E-09	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	1.4E-08	1.9E-08	mg/kg-day	2.0E-05	mg/kg-day	9.6E-04
				PCB TEQ*	2E-06	mg/kg	1.9E-13	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	2.9E-08	5.4E-13	mg/kg-day	N/A	N/A	N/A
				C11-C22 Aromatic	2E+01	mg/kg	1.6E-06	mg/kg-day	N/A	N/A	N/A	4.4E-06	mg/kg-day	3.0E-02	mg/kg-day	1.5E-04
			Exp. Route Total								1E-06					2E-02

TABLE 3-7.1.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Current
Receptor Population: Commercial Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil (Cont.)	Surface Soil (Cont.)	Aberjona Property	Dermal													
				Vinyl chloride	N/A	N/A	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Trichloroethene	N/A	N/A	N/A	N/A	4.0E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Phenanthrene	7E-01	mg/kg	1.0E-07	mg/kg-day	N/A	N/A	N/A	2.9E-07	mg/kg-day	2.0E-02	mg/kg-day	1.5E-05
				Benzo(a)Anthracene	7E-01	mg/kg	1.1E-07	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	7.8E-08	3.0E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	7E-01	mg/kg	1.1E-07	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	8.1E-08	3.1E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	5E-01	mg/kg	7.7E-08	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	5.6E-09	2.2E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	5E-01	mg/kg	7.7E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	5.6E-07	2.2E-07	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	5E-01	mg/kg	7.7E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	5.7E-08	2.2E-07	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	6E-03	mg/kg	9.3E-10	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	6.8E-09	2.6E-09	mg/kg-day	N/A	N/A	N/A
				Benzo(g,h,i)perylene	6E-01	mg/kg	8.9E-08	mg/kg-day	N/A	N/A	N/A	2.5E-07	mg/kg-day	2.0E-02	mg/kg-day	1.2E-05
				Antimony	2E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-05	mg/kg-day	N/A
				Arsenic	6E+00	mg/kg	2.0E-07	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	2.9E-07	5.5E-07	mg/kg-day	3.0E-04	mg/kg-day	1.8E-03
				Cadmium	1E+01	mg/kg	1.1E-08	mg/kg-day	N/A	N/A	N/A	3.2E-08	mg/kg-day	2.5E-05	mg/kg-day	1.3E-03
				Copper	1E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
				Lead	1E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Manganese	3E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.8E-03	mg/kg-day	N/A
				Mercury	9E-02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A
				Nickel	6E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-04	mg/kg-day	N/A
				Thallium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-05	mg/kg-day	N/A
				Aroclor 1242	1E-01	mg/kg	1.8E-08	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	3.6E-08	5.1E-08	mg/kg-day	2.0E-05	mg/kg-day	2.5E-03
				Aroclor 1248	N/A	N/A	N/A	N/A	2.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1254	2E-01	mg/kg	2.5E-08	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	5.0E-08	6.9E-08	mg/kg-day	2.0E-05	mg/kg-day	3.5E-03
				Aroclor 1260	8E-02	mg/kg	1.3E-08	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	2.5E-08	3.6E-08	mg/kg-day	2.0E-05	mg/kg-day	1.8E-03
				PCB TEQ*	2E-06	mg/kg	3.5E-13	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	5.3E-08	9.9E-13	mg/kg-day	N/A	N/A	N/A
				C11-C22 Aromatic	2E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
			Exp. Route Total								1E-06					1E-02
		Exposure Point Total									3E-06					3E-02

TABLE 3-7.1.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Current
Receptor Population: Commercial Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil (Cont.)	Surface Soil (Cont.)	Whitney Property	Ingestion													
				Vinyl chloride	1E-01	mg/kg	9.4E-09	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	1.4E-08	2.6E-08	mg/kg-day	3.0E-03	mg/kg-day	8.8E-06
				Trichloroethene	1E-03	mg/kg	1.2E-10	mg/kg-day	4.0E-01	(mg/kg-day)$^{-1}$	4.9E-11	3.4E-10	mg/kg-day	3.0E-04	mg/kg-day	1.1E-06
				Phenanthrene	7E+01	mg/kg	5.9E-06	mg/kg-day	N/A	N/A	N/A	1.7E-05	mg/kg-day	2.0E-02	mg/kg-day	8.3E-04
				Benzo(a)Anthracene	4E+01	mg/kg	3.3E-06	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	2.4E-06	9.3E-06	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	4E+01	mg/kg	3.5E-06	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	2.6E-06	9.8E-06	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	2E+01	mg/kg	1.6E-06	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	1.1E-07	4.4E-06	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	3E+01	mg/kg	2.5E-06	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.8E-05	7.1E-06	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	1E+01	mg/kg	9.6E-07	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	7.0E-07	2.7E-06	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	3E+00	mg/kg	2.6E-07	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.9E-06	7.3E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(g,h,i)perylene	8E+00	mg/kg	7.2E-07	mg/kg-day	N/A	N/A	N/A	2.0E-06	mg/kg-day	2.0E-02	mg/kg-day	1.0E-04
				Antimony	3E+00	mg/kg	2.5E-07	mg/kg-day	N/A	N/A	N/A	6.9E-07	mg/kg-day	4.0E-04	mg/kg-day	1.7E-03
				Arsenic	6E+00	mg/kg	4.9E-07	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	7.4E-07	1.4E-06	mg/kg-day	3.0E-04	mg/kg-day	4.6E-03
				Cadmium	3E+00	mg/kg	2.5E-07	mg/kg-day	N/A	N/A	N/A	7.0E-07	mg/kg-day	1.0E-03	mg/kg-day	7.0E-04
				Copper	1E+02	mg/kg	1.1E-05	mg/kg-day	N/A	N/A	N/A	3.1E-05	mg/kg-day	3.0E-02	mg/kg-day	1.0E-03
				Lead	7E+02	mg/kg	6.4E-05	mg/kg-day	N/A	N/A	N/A	1.8E-04	mg/kg-day	N/A	N/A	N/A
				Manganese	3E+02	mg/kg	2.3E-05	mg/kg-day	N/A	N/A	N/A	6.4E-05	mg/kg-day	7.0E-02	mg/kg-day	9.1E-04
				Mercury	5E-01	mg/kg	4.8E-08	mg/kg-day	N/A	N/A	N/A	1.3E-07	mg/kg-day	1.0E-04	mg/kg-day	1.3E-03
				Nickel	3E+01	mg/kg	2.3E-06	mg/kg-day	N/A	N/A	N/A	6.3E-06	mg/kg-day	2.0E-02	mg/kg-day	3.2E-04
				Thallium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-05	mg/kg-day	N/A
				Aroclor 1242	4E-01	mg/kg	3.3E-08	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	6.7E-08	9.3E-08	mg/kg-day	2.0E-05	mg/kg-day	4.7E-03
				Aroclor 1248	9E-02	mg/kg	8.3E-09	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	1.7E-08	2.3E-08	mg/kg-day	2.0E-05	mg/kg-day	1.2E-03
				Aroclor 1254	4E+01	mg/kg	3.7E-06	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	7.4E-06	1.0E-05	mg/kg-day	2.0E-05	mg/kg-day	5.2E-01
				Aroclor 1260	1E+01	mg/kg	1.0E-06	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	2.0E-06	2.9E-06	mg/kg-day	2.0E-05	mg/kg-day	1.4E-01
				PCB TEQ*	2E-04	mg/kg	1.7E-11	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	2.6E-06	4.8E-11	mg/kg-day	N/A	N/A	N/A
				C11-C22 Aromatic	5E+02	mg/kg	4.0E-05	mg/kg-day	N/A	N/A	N/A	1.1E-04	mg/kg-day	3.0E-02	mg/kg-day	3.7E-03
			Exp. Route Total								4E-05					7E-01

TABLE 3-7.1.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Current
Receptor Population: Commercial Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil (Cont.)	Surface Soil (Cont.)	Whitney Property	Dermal													
				Vinyl chloride	1E-01	mg/kg	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Trichloroethene	1E-03	mg/kg	N/A	N/A	4.0E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Phenanthrene	7E+01	mg/kg	1.0E-05	mg/kg-day	N/A	N/A	N/A	2.9E-05	mg/kg-day	2.0E-02	mg/kg-day	1.4E-03
				Benzo(a)Anthracene	4E+01	mg/kg	5.7E-06	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	4.2E-06	1.6E-05	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	4E+01	mg/kg	6.0E-06	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	4.4E-06	1.7E-05	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	2E+01	mg/kg	2.7E-06	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	2.0E-07	7.6E-06	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	3E+01	mg/kg	4.3E-06	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	3.2E-05	1.2E-05	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	1E+01	mg/kg	1.6E-06	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.2E-06	4.6E-06	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	3E+00	mg/kg	4.5E-07	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	3.3E-06	1.3E-06	mg/kg-day	N/A	N/A	N/A
				Benzo(g,h,i)perylene	8E+00	mg/kg	1.2E-06	mg/kg-day	N/A	N/A	N/A	3.4E-06	mg/kg-day	2.0E-02	mg/kg-day	1.7E-04
				Antimony	3E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-05	mg/kg-day	N/A
				Arsenic	6E+00	mg/kg	2.0E-07	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	2.9E-07	5.5E-07	mg/kg-day	3.0E-04	mg/kg-day	1.8E-03
				Cadmium	3E+00	mg/kg	3.3E-09	mg/kg-day	N/A	N/A	N/A	9.2E-09	mg/kg-day	2.5E-05	mg/kg-day	3.7E-04
				Copper	1E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
				Lead	7E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Manganese	3E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.8E-03	mg/kg-day	N/A
				Mercury	5E-01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A
				Nickel	3E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-04	mg/kg-day	N/A
				Thallium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-05	mg/kg-day	N/A
				Aroclor 1242	4E-01	mg/kg	6.2E-08	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	1.2E-07	1.7E-07	mg/kg-day	2.0E-05	mg/kg-day	8.6E-03
				Aroclor 1248	9E-02	mg/kg	1.5E-08	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	3.1E-08	4.3E-08	mg/kg-day	2.0E-05	mg/kg-day	2.1E-03
				Aroclor 1254	4E+01	mg/kg	6.9E-06	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	1.4E-05	1.9E-05	mg/kg-day	2.0E-05	mg/kg-day	9.6E-01
				Aroclor 1260	1E+01	mg/kg	1.9E-06	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	3.8E-06	5.3E-06	mg/kg-day	2.0E-05	mg/kg-day	2.6E-01
				PCB TEQ*	2E-04	mg/kg	3.2E-11	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	4.7E-06	8.9E-11	mg/kg-day	N/A	N/A	N/A
				C11-C22 Aromatic	5E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
			Exp. Route Total								7E-05					1E+00
		Exposure Point Total									1E-04					2E+00

TABLE 3-7.1.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Current
Receptor Population: Commercial Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil (Cont.)	Surface Soil (Cont.)	Murphy Property	Ingestion													
				Vinyl chloride	N/A	N/A	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Trichloroethene	4E-01	mg/kg	3.3E-08	mg/kg-day	4.0E-01	(mg/kg-day)$^{-1}$	1.3E-08	9.3E-08	mg/kg-day	3.0E-04	mg/kg-day	3.1E-04
				Phenanthrene	6E+00	mg/kg	4.9E-07	mg/kg-day	N/A	N/A	N/A	1.4E-06	mg/kg-day	2.0E-02	mg/kg-day	6.8E-05
				Benzo(a)Anthracene	2E+00	mg/kg	2.1E-07	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.6E-07	6.0E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	2E+00	mg/kg	2.0E-07	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.5E-07	5.6E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	9E-01	mg/kg	8.1E-08	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	5.9E-09	2.3E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	2E+00	mg/kg	1.4E-07	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	9.9E-07	3.8E-07	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	7E+00	mg/kg	5.7E-07	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	4.1E-07	1.6E-06	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	2E-01	mg/kg	1.8E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.3E-07	5.1E-08	mg/kg-day	N/A	N/A	N/A
				Benzo(g,h,i)perylene	1E+00	mg/kg	1.2E-07	mg/kg-day	N/A	N/A	N/A	3.3E-07	mg/kg-day	2.0E-02	mg/kg-day	1.7E-05
				Antimony	4E+00	mg/kg	3.1E-07	mg/kg-day	N/A	N/A	N/A	8.8E-07	mg/kg-day	4.0E-04	mg/kg-day	2.2E-03
				Arsenic	8E+00	mg/kg	7.1E-07	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	1.1E-06	2.0E-06	mg/kg-day	3.0E-04	mg/kg-day	6.6E-03
				Cadmium	3E+00	mg/kg	2.6E-07	mg/kg-day	N/A	N/A	N/A	7.2E-07	mg/kg-day	1.0E-03	mg/kg-day	7.2E-04
				Copper	4E+01	mg/kg	3.1E-06	mg/kg-day	N/A	N/A	N/A	8.7E-06	mg/kg-day	3.0E-02	mg/kg-day	2.9E-04
				Lead	8E+02	mg/kg	7.2E-05	mg/kg-day	N/A	N/A	N/A	2.0E-04	mg/kg-day	N/A	N/A	N/A
				Manganese	4E+02	mg/kg	3.6E-05	mg/kg-day	N/A	N/A	N/A	1.0E-04	mg/kg-day	7.0E-02	mg/kg-day	1.4E-03
				Mercury	6E-01	mg/kg	5.0E-08	mg/kg-day	N/A	N/A	N/A	1.4E-07	mg/kg-day	1.0E-04	mg/kg-day	1.4E-03
				Nickel	2E+01	mg/kg	1.5E-06	mg/kg-day	N/A	N/A	N/A	4.1E-06	mg/kg-day	2.0E-02	mg/kg-day	2.1E-04
				Thallium	6E+00	mg/kg	5.0E-07	mg/kg-day	N/A	N/A	N/A	1.4E-06	mg/kg-day	8.0E-05	mg/kg-day	1.7E-02
				Aroclor 1242	N/A	N/A	N/A	N/A	2.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1248	N/A	N/A	N/A	N/A	2.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1254	2E+00	mg/kg	1.9E-07	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	3.8E-07	5.4E-07	mg/kg-day	2.0E-05	mg/kg-day	2.7E-02
				Aroclor 1260	5E-02	mg/kg	4.3E-09	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	8.6E-09	1.2E-08	mg/kg-day	2.0E-05	mg/kg-day	6.0E-04
				PCB TEQ*	6E-08	mg/kg	5.1E-15	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	7.7E-10	1.4E-14	mg/kg-day	N/A	N/A	N/A
				C11-C22 Aromatic	4E+03	mg/kg	3.3E-04	mg/kg-day	N/A	N/A	N/A	9.1E-04	mg/kg-day	3.0E-02	mg/kg-day	3.0E-02
			Exp. Route Total								3E-06					9E-02

TABLE 3-7.1.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Current
Receptor Population: Commercial Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil (Cont.)	Surface Soil (Cont.)	Murphy Property	Dermal													
				Vinyl chloride	N/A	N/A	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Trichloroethene	4E-01	mg/kg	N/A	N/A	4.0E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Phenanthrene	6E+00	mg/kg	8.4E-07	mg/kg-day	N/A	N/A	N/A	2.4E-06	mg/kg-day	2.0E-02	mg/kg-day	1.2E-04
				Benzo(a)Anthracene	2E+00	mg/kg	3.7E-07	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	2.7E-07	1.0E-06	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	2E+00	mg/kg	3.4E-07	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	2.5E-07	9.7E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	9E-01	mg/kg	1.4E-07	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	1.0E-08	3.9E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	2E+00	mg/kg	2.3E-07	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.7E-06	6.5E-07	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	7E+00	mg/kg	9.7E-07	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	7.1E-07	2.7E-06	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	2E-01	mg/kg	3.1E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	2.3E-07	8.8E-08	mg/kg-day	N/A	N/A	N/A
				Benzo(g,h,i)perylene	1E+00	mg/kg	2.0E-07	mg/kg-day	N/A	N/A	N/A	5.7E-07	mg/kg-day	2.0E-02	mg/kg-day	2.8E-05
				Antimony	4E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-05	mg/kg-day	N/A
				Arsenic	8E+00	mg/kg	2.8E-07	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	4.2E-07	7.9E-07	mg/kg-day	3.0E-04	mg/kg-day	2.6E-03
				Cadmium	3E+00	mg/kg	3.4E-09	mg/kg-day	N/A	N/A	N/A	9.6E-09	mg/kg-day	2.5E-05	mg/kg-day	3.8E-04
				Copper	4E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
				Lead	8E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Manganese	4E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.8E-03	mg/kg-day	N/A
				Mercury	6E-01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A
				Nickel	2E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-04	mg/kg-day	N/A
				Thallium	6E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-05	mg/kg-day	N/A
				Aroclor 1242	N/A	N/A	N/A	N/A	2.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1248	N/A	N/A	N/A	N/A	2.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1254	2E+00	mg/kg	3.6E-07	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	7.1E-07	9.9E-07	mg/kg-day	2.0E-05	mg/kg-day	5.0E-02
				Aroclor 1260	5E-02	mg/kg	7.9E-09	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	1.6E-08	2.2E-08	mg/kg-day	2.0E-05	mg/kg-day	1.1E-03
				PCB TEQ*	6E-08	mg/kg	9.4E-15	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	1.4E-09	2.6E-14	mg/kg-day	N/A	N/A	N/A
				C11-C22 Aromatic	4E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
			Exp. Route Total								4E-06					5E-02
		Exposure Point Total									8E-06					1E-01
	Exposure Medium Total										NA					NA
Medium Total											NA					NA

TABLE 3-7.1.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Current
Receptor Population: Commercial Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Ground Water	Indoor Air	Aberjona Property	Inhalation													
				1,1-Dichloroethene	1E-02	ug/m3	1.2E-03	ug/m3	N/A	N/A	N/A	3.4E-06	mg/m3	2.0E-01	mg/m3	1.7E-05
				1,4-Dichlorobenzene	2E-03	ug/m3	1.9E-04	ug/m3	N/A	N/A	N/A	5.3E-07	mg/m3	8.0E-01	mg/m3	6.6E-07
				Benzene	4E-03	ug/m3	3.7E-04	ug/m3	7.8E-06	(ug/m3)-1	2.9E-09	1.0E-06	mg/m3	3.0E-02	mg/m3	3.4E-05
				Chloroform	N/A	N/A	N/A	N/A	2.3E-05	(ug/m3)-1	N/A	N/A	N/A	5.0E-02	mg/m3	N/A
				cis-1,2-Dichloroethene	3E-01	ug/m3	2.4E-02	ug/m3	N/A	N/A	N/A	6.6E-05	mg/m3	2.0E-01	mg/m3	3.3E-04
				Methyl tert-butyl ether	4E-02	ug/m3	3.4E-03	ug/m3	N/A	N/A	N/A	9.5E-06	mg/m3	3.0E+00	mg/m3	3.2E-06
				Tetrachloroethene	2E-02	ug/m3	1.4E-03	ug/m3	5.9E-06	(ug/m3)-1	8.4E-09	4.0E-06	mg/m3	N/A	N/A	N/A
				Trichloroethene	7E-01	ug/m3	5.5E-02	ug/m3	1.1E-04	(ug/m3)-1	6.0E-06	1.5E-04	mg/m3	4.0E-02	mg/m3	3.8E-03
				Vinyl chloride	3E-02	ug/m3	2.1E-03	ug/m3	8.8E-06	(ug/m3)-1	1.8E-08	5.9E-06	mg/m3	1.0E-01	mg/m3	5.9E-05
				Naphthalene	2E-03	ug/m3	1.9E-04	ug/m3	N/A	N/A	N/A	5.2E-07	mg/m3	3.0E-03	mg/m3	1.7E-04
				Acenaphthene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-03	mg/m3	N/A
				Phenanthrene	1E-03	ug/m3	9.3E-05	ug/m3	N/A	N/A	N/A	2.6E-07	mg/m3	3.0E-03	mg/m3	8.7E-05
			Exp. Route Total								6E-06					5E-03
		Exposure Point Total									6E-06					5E-03
	Exposure Medium Total										NA					NA
Medium Total											NA					NA
											Total of Receptor Risks Across All Media					NA
																Total of Receptor Hazards Across All Media

TABLE 3-7.1.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Current
Receptor Population: Commercial Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Aberjona Property	Ingestion													
				Vinyl chloride	N/A	N/A	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Trichloroethene	N/A	N/A	N/A	N/A	4.0E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Phenanthrene	7E-01	mg/kg	1.0E-08	mg/kg-day	N/A	N/A	N/A	8.1E-08	mg/kg-day	2.0E-02	mg/kg-day	4.1E-06
				Benzo(a)Anthracene	7E-01	mg/kg	1.1E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	7.8E-09	8.3E-08	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	7E-01	mg/kg	1.1E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	8.1E-09	8.7E-08	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	5E-01	mg/kg	7.8E-09	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	5.7E-10	6.0E-08	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	5E-01	mg/kg	7.8E-09	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	5.7E-08	6.0E-08	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	5E-01	mg/kg	7.8E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	5.7E-09	6.1E-08	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	6E-03	mg/kg	9.4E-11	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	6.8E-10	7.3E-10	mg/kg-day	N/A	N/A	N/A
				Benzo(g,h,i)perylene	6E-01	mg/kg	9.0E-09	mg/kg-day	N/A	N/A	N/A	7.0E-08	mg/kg-day	2.0E-02	mg/kg-day	3.5E-06
				Antimony	2E+00	mg/kg	2.7E-08	mg/kg-day	N/A	N/A	N/A	2.1E-07	mg/kg-day	4.0E-04	mg/kg-day	5.3E-04
				Arsenic	6E+00	mg/kg	8.6E-08	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	1.3E-07	6.7E-07	mg/kg-day	3.0E-04	mg/kg-day	2.2E-03
				Cadmium	1E+01	mg/kg	1.5E-07	mg/kg-day	N/A	N/A	N/A	1.1E-06	mg/kg-day	1.0E-03	mg/kg-day	1.1E-03
				Copper	1E+02	mg/kg	1.5E-06	mg/kg-day	N/A	N/A	N/A	1.2E-05	mg/kg-day	3.0E-02	mg/kg-day	4.0E-04
				Lead	1E+03	mg/kg	1.7E-05	mg/kg-day	N/A	N/A	N/A	1.3E-04	mg/kg-day	N/A	N/A	N/A
				Manganese	3E+02	mg/kg	4.1E-06	mg/kg-day	N/A	N/A	N/A	3.2E-05	mg/kg-day	7.0E-02	mg/kg-day	4.6E-04
				Mercury	9E-02	mg/kg	1.4E-09	mg/kg-day	N/A	N/A	N/A	1.1E-08	mg/kg-day	1.0E-04	mg/kg-day	1.1E-04
				Nickel	6E+01	mg/kg	9.8E-07	mg/kg-day	N/A	N/A	N/A	7.6E-06	mg/kg-day	2.0E-02	mg/kg-day	3.8E-04
				Thallium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-05	mg/kg-day	N/A
				Aroclor 1242	1E-01	mg/kg	1.7E-09	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	1.7E-09	1.3E-08	mg/kg-day	2.0E-05	mg/kg-day	6.6E-04
				Aroclor 1248	N/A	N/A	N/A	N/A	1.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1254	5E-02	mg/kg	8.1E-10	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	8.1E-10	6.3E-09	mg/kg-day	2.0E-05	mg/kg-day	3.2E-04
				Aroclor 1260	8E-02	mg/kg	1.2E-09	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	1.2E-09	9.3E-09	mg/kg-day	2.0E-05	mg/kg-day	4.6E-04
				PCB TEQ*	1E-06	mg/kg	1.7E-14	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	2.5E-09	1.3E-13	mg/kg-day	N/A	N/A	N/A
				C11-C22 Aromatic	1E+01	mg/kg	2.2E-07	mg/kg-day	N/A	N/A	N/A	1.7E-06	mg/kg-day	3.0E-02	mg/kg-day	5.7E-05
			Exp. Route Total								2E-07					7E-03

TABLE 3-7.1.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Current
Receptor Population: Commercial Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil (Cont.)	Surface Soil (Cont.)	Aberjona Property	Dermal													
				Vinyl chloride	N/A	N/A	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Trichloroethene	N/A	N/A	N/A	N/A	4.0E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Phenanthrene	7E-01	mg/kg	1.8E-08	mg/kg-day	N/A	N/A	N/A	1.4E-07	mg/kg-day	2.0E-02	mg/kg-day	7.0E-06
				Benzo(a)Anthracene	7E-01	mg/kg	1.8E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.3E-08	1.4E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	7E-01	mg/kg	1.9E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.4E-08	1.5E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	5E-01	mg/kg	1.3E-08	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	9.7E-10	1.0E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	5E-01	mg/kg	1.3E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	9.7E-08	1.0E-07	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	5E-01	mg/kg	1.3E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	9.8E-09	1.0E-07	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	6E-03	mg/kg	1.6E-10	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.2E-09	1.2E-09	mg/kg-day	N/A	N/A	N/A
				Benzo(g,h,i)perylene	6E-01	mg/kg	1.5E-08	mg/kg-day	N/A	N/A	N/A	1.2E-07	mg/kg-day	2.0E-02	mg/kg-day	6.0E-06
				Antimony	2E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-05	mg/kg-day	N/A
				Arsenic	6E+00	mg/kg	3.4E-08	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	5.1E-08	2.6E-07	mg/kg-day	3.0E-04	mg/kg-day	8.8E-04
				Cadmium	1E+01	mg/kg	2.0E-09	mg/kg-day	N/A	N/A	N/A	1.5E-08	mg/kg-day	2.5E-05	mg/kg-day	6.1E-04
				Copper	1E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
				Lead	1E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Manganese	3E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.8E-03	mg/kg-day	N/A
				Mercury	9E-02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A
				Nickel	6E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-04	mg/kg-day	N/A
				Thallium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-05	mg/kg-day	N/A
				Aroclor 1242	1E-01	mg/kg	3.1E-09	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	3.1E-09	2.4E-08	mg/kg-day	2.0E-05	mg/kg-day	1.2E-03
				Aroclor 1248	N/A	N/A	N/A	N/A	1.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1254	5E-02	mg/kg	1.5E-09	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	1.5E-09	1.2E-08	mg/kg-day	2.0E-05	mg/kg-day	5.8E-04
				Aroclor 1260	8E-02	mg/kg	2.2E-09	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	2.2E-09	1.7E-08	mg/kg-day	2.0E-05	mg/kg-day	8.5E-04
				PCB TEQ*	1E-06	mg/kg	3.1E-14	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	4.7E-09	2.4E-13	mg/kg-day	N/A	N/A	N/A
				C11-C22 Aromatic	1E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
			Exp. Route Total								2E-07					4E-03
		Exposure Point Total									4E-07					1E-02

TABLE 3-7.1.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Current
Receptor Population: Commercial Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil (Cont.)	Surface Soil (Cont.)	Whitney Property	Ingestion													
				Vinyl chloride	1E-01	mg/kg	1.6E-09	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	2.4E-09	1.3E-08	mg/kg-day	3.0E-03	mg/kg-day	4.2E-06
				Trichloroethene	1E-03	mg/kg	2.1E-11	mg/kg-day	4.0E-01	(mg/kg-day)$^{-1}$	8.5E-12	1.6E-10	mg/kg-day	3.0E-04	mg/kg-day	5.5E-07
				Phenanthrene	1E+01	mg/kg	1.9E-07	mg/kg-day	N/A	N/A	N/A	1.5E-06	mg/kg-day	2.0E-02	mg/kg-day	7.6E-05
				Benzo(a)Anthracene	8E+00	mg/kg	1.2E-07	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	8.4E-08	9.0E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	8E+00	mg/kg	1.1E-07	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	8.3E-08	8.8E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	4E+00	mg/kg	5.9E-08	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	4.3E-09	4.6E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	6E+00	mg/kg	9.8E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	7.1E-07	7.6E-07	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	1E+01	mg/kg	1.7E-07	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.2E-07	1.3E-06	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	3E+00	mg/kg	4.5E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	3.3E-07	3.5E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(g,h,i)perylene	8E+00	mg/kg	1.2E-07	mg/kg-day	N/A	N/A	N/A	9.6E-07	mg/kg-day	2.0E-02	mg/kg-day	4.8E-05
				Antimony	3E+00	mg/kg	4.3E-08	mg/kg-day	N/A	N/A	N/A	3.3E-07	mg/kg-day	4.0E-04	mg/kg-day	8.3E-04
				Arsenic	6E+00	mg/kg	8.5E-08	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	1.3E-07	6.6E-07	mg/kg-day	3.0E-04	mg/kg-day	2.2E-03
				Cadmium	3E+00	mg/kg	4.3E-08	mg/kg-day	N/A	N/A	N/A	3.3E-07	mg/kg-day	1.0E-03	mg/kg-day	3.3E-04
				Copper	1E+02	mg/kg	1.9E-06	mg/kg-day	N/A	N/A	N/A	1.5E-05	mg/kg-day	3.0E-02	mg/kg-day	4.9E-04
				Lead	7E+02	mg/kg	1.1E-05	mg/kg-day	N/A	N/A	N/A	8.5E-05	mg/kg-day	N/A	N/A	N/A
				Manganese	3E+02	mg/kg	3.9E-06	mg/kg-day	N/A	N/A	N/A	3.1E-05	mg/kg-day	7.0E-02	mg/kg-day	4.4E-04
				Mercury	5E-01	mg/kg	8.3E-09	mg/kg-day	N/A	N/A	N/A	6.4E-08	mg/kg-day	1.0E-04	mg/kg-day	6.4E-04
				Nickel	3E+01	mg/kg	3.9E-07	mg/kg-day	N/A	N/A	N/A	3.0E-06	mg/kg-day	2.0E-02	mg/kg-day	1.5E-04
				Thallium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-05	mg/kg-day	N/A
				Aroclor 1242	4E-01	mg/kg	5.8E-09	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	5.8E-09	4.5E-08	mg/kg-day	2.0E-05	mg/kg-day	2.2E-03
				Aroclor 1248	9E-02	mg/kg	1.4E-09	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	1.4E-09	1.1E-08	mg/kg-day	2.0E-05	mg/kg-day	5.6E-04
				Aroclor 1254	4E+00	mg/kg	6.0E-08	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	6.0E-08	4.6E-07	mg/kg-day	2.0E-05	mg/kg-day	2.3E-02
				Aroclor 1260	2E+00	mg/kg	3.0E-08	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	3.0E-08	2.4E-07	mg/kg-day	2.0E-05	mg/kg-day	1.2E-02
				PCB TEQ*	5E-05	mg/kg	7.2E-13	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	1.1E-07	5.6E-12	mg/kg-day	N/A	N/A	N/A
				C11-C22 Aromatic	5E+02	mg/kg	6.9E-06	mg/kg-day	N/A	N/A	N/A	5.4E-05	mg/kg-day	3.0E-02	mg/kg-day	1.8E-03
			Exp. Route Total								2E-06					4E-02

TABLE 3-7.1.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Current
Receptor Population: Commercial Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil (Cont.)	Surface Soil (Cont.)	Whitney Property	Dermal													
				Vinyl chloride	1E-01	mg/kg	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Trichloroethene	1E-03	mg/kg	N/A	N/A	4.0E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Phenanthrene	1E+01	mg/kg	3.3E-07	mg/kg-day	N/A	N/A	N/A	2.6E-06	mg/kg-day	2.0E-02	mg/kg-day	1.3E-04
				Benzo(a)Anthracene	8E+00	mg/kg	2.0E-07	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.4E-07	1.5E-06	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	8E+00	mg/kg	1.9E-07	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.4E-07	1.5E-06	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	4E+00	mg/kg	1.0E-07	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	7.4E-09	7.9E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	6E+00	mg/kg	1.7E-07	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.2E-06	1.3E-06	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	1E+01	mg/kg	2.8E-07	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	2.1E-07	2.2E-06	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	3E+00	mg/kg	7.7E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	5.6E-07	6.0E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(g,h,i)perylene	8E+00	mg/kg	2.1E-07	mg/kg-day	N/A	N/A	N/A	1.7E-06	mg/kg-day	2.0E-02	mg/kg-day	8.3E-05
				Antimony	3E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-05	mg/kg-day	N/A
				Arsenic	6E+00	mg/kg	3.4E-08	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	5.1E-08	2.6E-07	mg/kg-day	3.0E-04	mg/kg-day	8.8E-04
				Cadmium	3E+00	mg/kg	5.7E-10	mg/kg-day	N/A	N/A	N/A	4.4E-09	mg/kg-day	2.5E-05	mg/kg-day	1.8E-04
				Copper	1E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
				Lead	7E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Manganese	3E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.8E-03	mg/kg-day	N/A
				Mercury	5E-01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A
				Nickel	3E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-04	mg/kg-day	N/A
				Thallium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-05	mg/kg-day	N/A
				Aroclor 1242	4E-01	mg/kg	1.1E-08	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	1.1E-08	8.3E-08	mg/kg-day	2.0E-05	mg/kg-day	4.1E-03
				Aroclor 1248	9E-02	mg/kg	2.6E-09	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	2.6E-09	2.1E-08	mg/kg-day	2.0E-05	mg/kg-day	1.0E-03
				Aroclor 1254	4E+00	mg/kg	1.1E-07	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	1.1E-07	8.6E-07	mg/kg-day	2.0E-05	mg/kg-day	4.3E-02
				Aroclor 1260	2E+00	mg/kg	5.6E-08	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	5.6E-08	4.4E-07	mg/kg-day	2.0E-05	mg/kg-day	2.2E-02
				PCB TEQ*	5E-05	mg/kg	1.3E-12	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	2.0E-07	1.0E-11	mg/kg-day	N/A	N/A	N/A
				C11-C22 Aromatic	5E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
			Exp. Route Total								3E-06					7E-02
		Exposure Point Total									4E-06					1E-01

TABLE 3-7.1.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Current
Receptor Population: Commercial Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil (Cont.)	Surface Soil (Cont.)	Murphy Property	Ingestion													
				Vinyl chloride	N/A	N/A	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Trichloroethene	4E-01	mg/kg	5.7E-09	mg/kg-day	4.0E-01	(mg/kg-day)$^{-1}$	2.3E-09	4.4E-08	mg/kg-day	3.0E-04	mg/kg-day	1.5E-04
				Phenanthrene	2E+00	mg/kg	2.3E-08	mg/kg-day	N/A	N/A	N/A	1.8E-07	mg/kg-day	2.0E-02	mg/kg-day	9.1E-06
				Benzo(a)Anthracene	2E+00	mg/kg	3.7E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	2.7E-08	2.9E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	9E-01	mg/kg	1.4E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.0E-08	1.1E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	9E-01	mg/kg	1.4E-08	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	1.0E-09	1.1E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	2E+00	mg/kg	2.3E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.7E-07	1.8E-07	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	1E+00	mg/kg	1.9E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.4E-08	1.5E-07	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	2E-01	mg/kg	3.2E-09	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	2.3E-08	2.5E-08	mg/kg-day	N/A	N/A	N/A
				Benzo(g,h,i)perylene	1E+00	mg/kg	2.0E-08	mg/kg-day	N/A	N/A	N/A	1.6E-07	mg/kg-day	2.0E-02	mg/kg-day	8.0E-06
				Antimony	4E+00	mg/kg	5.4E-08	mg/kg-day	N/A	N/A	N/A	4.2E-07	mg/kg-day	4.0E-04	mg/kg-day	1.1E-03
				Arsenic	8E+00	mg/kg	1.2E-07	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	1.8E-07	9.5E-07	mg/kg-day	3.0E-04	mg/kg-day	3.2E-03
				Cadmium	3E+00	mg/kg	4.5E-08	mg/kg-day	N/A	N/A	N/A	3.5E-07	mg/kg-day	1.0E-03	mg/kg-day	3.5E-04
				Copper	4E+01	mg/kg	5.4E-07	mg/kg-day	N/A	N/A	N/A	4.2E-06	mg/kg-day	3.0E-02	mg/kg-day	1.4E-04
				Lead	8E+02	mg/kg	1.3E-05	mg/kg-day	N/A	N/A	N/A	9.7E-05	mg/kg-day	N/A	N/A	N/A
				Manganese	4E+02	mg/kg	6.2E-06	mg/kg-day	N/A	N/A	N/A	4.8E-05	mg/kg-day	7.0E-02	mg/kg-day	6.9E-04
				Mercury	6E-01	mg/kg	8.7E-09	mg/kg-day	N/A	N/A	N/A	6.8E-08	mg/kg-day	1.0E-04	mg/kg-day	6.8E-04
				Nickel	2E+01	mg/kg	2.5E-07	mg/kg-day	N/A	N/A	N/A	2.0E-06	mg/kg-day	2.0E-02	mg/kg-day	9.9E-05
				Thallium	6E+00	mg/kg	8.6E-08	mg/kg-day	N/A	N/A	N/A	6.7E-07	mg/kg-day	8.0E-05	mg/kg-day	8.4E-03
				Aroclor 1242	N/A	N/A	N/A	N/A	1.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1248	N/A	N/A	N/A	N/A	1.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1254	5E-01	mg/kg	6.8E-09	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	6.8E-09	5.3E-08	mg/kg-day	2.0E-05	mg/kg-day	2.6E-03
				Aroclor 1260	5E-02	mg/kg	7.4E-10	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	7.4E-10	5.8E-09	mg/kg-day	2.0E-05	mg/kg-day	2.9E-04
				PCB TEQ*	6E-08	mg/kg	8.8E-16	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	1.3E-10	6.9E-15	mg/kg-day	N/A	N/A	N/A
				C11-C22 Aromatic	4E+03	mg/kg	5.6E-05	mg/kg-day	N/A	N/A	N/A	4.4E-04	mg/kg-day	3.0E-02	mg/kg-day	1.5E-02
			Exp. Route Total								4E-07					3E-02

TABLE 3-7.1.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Current
Receptor Population: Commercial Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil (Cont.)	Surface Soil (Cont.)	Murphy Property	Dermal													
				Vinyl chloride	N/A	N/A	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Trichloroethene	4E-01	mg/kg	N/A	N/A	4.0E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Phenanthrene	2E+00	mg/kg	4.0E-08	mg/kg-day	N/A	N/A	N/A	3.1E-07	mg/kg-day	2.0E-02	mg/kg-day	1.6E-05
				Benzo(a)Anthracene	2E+00	mg/kg	6.4E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	4.6E-08	4.9E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	9E-01	mg/kg	2.4E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.8E-08	1.9E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	9E-01	mg/kg	2.4E-08	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	1.8E-09	1.9E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	2E+00	mg/kg	4.0E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	2.9E-07	3.1E-07	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	1E+00	mg/kg	3.3E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	2.4E-08	2.6E-07	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	2E-01	mg/kg	5.4E-09	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	4.0E-08	4.2E-08	mg/kg-day	N/A	N/A	N/A
				Benzo(g,h,i)perylene	1E+00	mg/kg	3.5E-08	mg/kg-day	N/A	N/A	N/A	2.7E-07	mg/kg-day	2.0E-02	mg/kg-day	1.4E-05
				Antimony	4E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-05	mg/kg-day	N/A
				Arsenic	8E+00	mg/kg	4.9E-08	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	7.3E-08	3.8E-07	mg/kg-day	3.0E-04	mg/kg-day	1.3E-03
				Cadmium	3E+00	mg/kg	5.9E-10	mg/kg-day	N/A	N/A	N/A	4.6E-09	mg/kg-day	2.5E-05	mg/kg-day	1.8E-04
				Copper	4E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
				Lead	8E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Manganese	4E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.8E-03	mg/kg-day	N/A
				Mercury	6E-01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A
				Nickel	2E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-04	mg/kg-day	N/A
				Thallium	6E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-05	mg/kg-day	N/A
				Aroclor 1242	N/A	N/A	N/A	N/A	1.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1248	N/A	N/A	N/A	N/A	1.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1254	5E-01	mg/kg	1.3E-08	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	1.3E-08	9.8E-08	mg/kg-day	2.0E-05	mg/kg-day	4.9E-03
				Aroclor 1260	5E-02	mg/kg	1.4E-09	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	1.4E-09	1.1E-08	mg/kg-day	2.0E-05	mg/kg-day	5.3E-04
				PCB TEQ*	6E-08	mg/kg	1.6E-15	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	2.4E-10	1.3E-14	mg/kg-day	N/A	N/A	N/A
				C11-C22 Aromatic	4E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
			Exp. Route Total								5E-07					7E-03
		Exposure Point Total									1E-06					4E-02
	Exposure Medium Total										N/A					N/A
Medium Total											N/A					N/A

TABLE 3-7.1.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Current
Receptor Population: Commercial Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Ground Water	Indoor Air	Aberjona Property	Inhalation													
				1,1-Dichloroethene	7E-03	ug/m3	1.8E-04	ug/m3	N/A	N/A	N/A	1.4E-06	mg/m3	2.0E-01	mg/m3	7.1E-06
				1,4-Dichlorobenzene	2E-04	ug/m3	5.1E-06	ug/m3	N/A	N/A	N/A	3.9E-08	mg/m3	8.0E-01	mg/m3	4.9E-08
				Benzene	7E-04	ug/m3	1.7E-05	ug/m3	7.8E-06	(ug/m3)-1	1.3E-10	1.3E-07	mg/m3	3.0E-02	mg/m3	4.4E-06
				Chloroform	N/A	N/A	N/A	N/A	2.3E-05	(ug/m3)-1	N/A	N/A	N/A	5.0E-02	mg/m3	N/A
				cis-1,2-Dichloroethene	6E-03	ug/m3	1.5E-04	ug/m3	N/A	N/A	N/A	1.2E-06	mg/m3	2.0E-01	mg/m3	5.8E-06
				Methyl tert-butyl ether	2E-02	ug/m3	4.4E-04	ug/m3	N/A	N/A	N/A	3.4E-06	mg/m3	3.0E+00	mg/m3	1.1E-06
				Tetrachloroethene	2E-02	ug/m3	4.7E-04	ug/m3	5.9E-06	(ug/m3)-1	2.8E-09	3.6E-06	mg/m3	N/A	N/A	N/A
				Trichloroethene	1E-02	ug/m3	3.6E-04	ug/m3	1.1E-04	(ug/m3)-1	3.9E-08	2.8E-06	mg/m3	4.0E-02	mg/m3	7.0E-05
				Vinyl chloride	5E-03	ug/m3	1.2E-04	ug/m3	8.8E-06	(ug/m3)-1	1.0E-09	9.1E-07	mg/m3	1.0E-01	mg/m3	9.1E-06
				Naphthalene	1E-03	ug/m3	3.0E-05	ug/m3	N/A	N/A	N/A	2.3E-07	mg/m3	3.0E-03	mg/m3	7.7E-05
				Acenaphthene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-03	mg/m3	N/A
				Phenanthrene	1E-03	ug/m3	3.1E-05	ug/m3	N/A	N/A	N/A	2.4E-07	mg/m3	3.0E-03	mg/m3	7.9E-05
			Exp. Route Total								4E-08					3E-04
		Exposure Point Total									4E-08					3E-04
	Exposure Medium Total										N/A					N/A
Medium Total											N/A					N/A
											Total of Receptor Risks Across All Media					N/A
															Total of Receptor Hazards Across All Media	N/A

TABLE 3-7.2.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Commercial Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Aberjona Property	Ingestion													
				Vinyl chloride	N/A	N/A	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Trichloroethene	N/A	N/A	N/A	N/A	4.0E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Phenanthrene	7E-01	mg/kg	6.0E-08	mg/kg-day	N/A	N/A	N/A	1.7E-07	mg/kg-day	2.0E-02	mg/kg-day	8.5E-06
				Benzo(a)Anthracene	7E-01	mg/kg	6.2E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	4.5E-08	1.7E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	7E-01	mg/kg	6.5E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	4.7E-08	1.8E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	5E-01	mg/kg	4.5E-08	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	3.3E-09	1.3E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	5E-01	mg/kg	4.5E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	3.3E-07	1.3E-07	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	5E-01	mg/kg	4.5E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	3.3E-08	1.3E-07	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	6E-03	mg/kg	5.4E-10	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	4.0E-09	1.5E-09	mg/kg-day	N/A	N/A	N/A
				Benzo(g,h,i)perylene	6E-01	mg/kg	5.2E-08	mg/kg-day	N/A	N/A	N/A	1.5E-07	mg/kg-day	2.0E-02	mg/kg-day	7.3E-06
				Antimony	2E+00	mg/kg	1.6E-07	mg/kg-day	N/A	N/A	N/A	4.4E-07	mg/kg-day	4.0E-04	mg/kg-day	1.1E-03
				Arsenic	6E+00	mg/kg	5.0E-07	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	7.4E-07	1.4E-06	mg/kg-day	3.0E-04	mg/kg-day	4.6E-03
				Cadmium	1E+01	mg/kg	8.6E-07	mg/kg-day	N/A	N/A	N/A	2.4E-06	mg/kg-day	1.0E-03	mg/kg-day	2.4E-03
				Copper	1E+02	mg/kg	8.8E-06	mg/kg-day	N/A	N/A	N/A	2.5E-05	mg/kg-day	3.0E-02	mg/kg-day	8.3E-04
				Lead	1E+03	mg/kg	1.0E-04	mg/kg-day	N/A	N/A	N/A	2.8E-04	mg/kg-day	N/A	N/A	N/A
				Manganese	3E+02	mg/kg	2.4E-05	mg/kg-day	N/A	N/A	N/A	6.7E-05	mg/kg-day	7.0E-02	mg/kg-day	9.6E-04
				Mercury	9E-02	mg/kg	8.3E-09	mg/kg-day	N/A	N/A	N/A	2.3E-08	mg/kg-day	1.0E-04	mg/kg-day	2.3E-04
				Nickel	6E+01	mg/kg	5.6E-06	mg/kg-day	N/A	N/A	N/A	1.6E-05	mg/kg-day	2.0E-02	mg/kg-day	7.9E-04
				Thallium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-05	mg/kg-day	N/A
				Aroclor 1242	1E-01	mg/kg	9.8E-09	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	2.0E-08	2.7E-08	mg/kg-day	2.0E-05	mg/kg-day	1.4E-03
				Aroclor 1248	N/A	N/A	N/A	N/A	2.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1254	2E-01	mg/kg	1.3E-08	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	2.7E-08	3.8E-08	mg/kg-day	2.0E-05	mg/kg-day	1.9E-03
				Aroclor 1260	8E-02	mg/kg	6.9E-09	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	1.4E-08	1.9E-08	mg/kg-day	2.0E-05	mg/kg-day	9.6E-04
				PCB TEQ*	2E-06	mg/kg	1.9E-13	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	2.9E-08	5.4E-13	mg/kg-day	N/A	N/A	N/A
				C11-C22 Aromatic	2E+01	mg/kg	1.6E-06	mg/kg-day	N/A	N/A	N/A	4.4E-06	mg/kg-day	3.0E-02	mg/kg-day	1.5E-04
			Exp. Route Total								1E-06					2E-02

TABLE 3-7.2.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Commercial Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil (Cont.)	Surface Soil (Cont.)	Aberjona Property	Dermal													
				Vinyl chloride	N/A	N/A	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Trichloroethene	N/A	N/A	N/A	N/A	4.0E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Phenanthrene	7E-01	mg/kg	1.0E-07	mg/kg-day	N/A	N/A	N/A	2.9E-07	mg/kg-day	2.0E-02	mg/kg-day	1.5E-05
				Benzo(a)Anthracene	7E-01	mg/kg	1.1E-07	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	7.8E-08	3.0E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	7E-01	mg/kg	1.1E-07	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	8.1E-08	3.1E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	5E-01	mg/kg	7.7E-08	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	5.6E-09	2.2E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	5E-01	mg/kg	7.7E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	5.6E-07	2.2E-07	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	5E-01	mg/kg	7.7E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	5.7E-08	2.2E-07	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	6E-03	mg/kg	9.3E-10	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	6.8E-09	2.6E-09	mg/kg-day	N/A	N/A	N/A
				Benzo(g,h,i)perylene	6E-01	mg/kg	8.9E-08	mg/kg-day	N/A	N/A	N/A	2.5E-07	mg/kg-day	2.0E-02	mg/kg-day	1.2E-05
				Antimony	2E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-05	mg/kg-day	N/A
				Arsenic	6E+00	mg/kg	2.0E-07	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	2.9E-07	5.5E-07	mg/kg-day	3.0E-04	mg/kg-day	1.8E-03
				Cadmium	1E+01	mg/kg	1.1E-08	mg/kg-day	N/A	N/A	N/A	3.2E-08	mg/kg-day	2.5E-05	mg/kg-day	1.3E-03
				Copper	1E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
				Lead	1E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Manganese	3E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.8E-03	mg/kg-day	N/A
				Mercury	9E-02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A
				Nickel	6E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-04	mg/kg-day	N/A
				Thallium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-05	mg/kg-day	N/A
				Aroclor 1242	1E-01	mg/kg	1.8E-08	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	3.6E-08	5.1E-08	mg/kg-day	2.0E-05	mg/kg-day	2.5E-03
				Aroclor 1248	N/A	N/A	N/A	N/A	2.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1254	2E-01	mg/kg	2.5E-08	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	5.0E-08	6.9E-08	mg/kg-day	2.0E-05	mg/kg-day	3.5E-03
				Aroclor 1260	8E-02	mg/kg	1.3E-08	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	2.5E-08	3.6E-08	mg/kg-day	2.0E-05	mg/kg-day	1.8E-03
				PCB TEQ*	2E-06	mg/kg	3.5E-13	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	5.3E-08	9.9E-13	mg/kg-day	N/A	N/A	N/A
				C11-C22 Aromatic	2E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
			Exp. Route Total								1E-06					1E-02
		Exposure Point Total									3E-06					3E-02

TABLE 3-7.2.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Commercial Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil (Cont.)	Surface Soil (Cont.)	Whitney Property	Ingestion													
				Vinyl chloride	1E-01	mg/kg	9.4E-09	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	1.4E-08	2.6E-08	mg/kg-day	3.0E-03	mg/kg-day	8.8E-06
				Trichloroethene	1E-03	mg/kg	1.2E-10	mg/kg-day	4.0E-01	(mg/kg-day)$^{-1}$	4.9E-11	3.4E-10	mg/kg-day	3.0E-04	mg/kg-day	1.1E-06
				Phenanthrene	7E+01	mg/kg	5.9E-06	mg/kg-day	N/A	N/A	N/A	1.7E-05	mg/kg-day	2.0E-02	mg/kg-day	8.3E-04
				Benzo(a)Anthracene	4E+01	mg/kg	3.3E-06	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	2.4E-06	9.3E-06	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	4E+01	mg/kg	3.5E-06	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	2.6E-06	9.8E-06	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	2E+01	mg/kg	1.6E-06	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	1.1E-07	4.4E-06	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	3E+01	mg/kg	2.5E-06	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.8E-05	7.1E-06	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	1E+01	mg/kg	9.6E-07	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	7.0E-07	2.7E-06	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	3E+00	mg/kg	2.6E-07	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.9E-06	7.3E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(g,h,i)perylene	8E+00	mg/kg	7.2E-07	mg/kg-day	N/A	N/A	N/A	2.0E-06	mg/kg-day	2.0E-02	mg/kg-day	1.0E-04
				Antimony	3E+00	mg/kg	2.5E-07	mg/kg-day	N/A	N/A	N/A	6.9E-07	mg/kg-day	4.0E-04	mg/kg-day	1.7E-03
				Arsenic	6E+00	mg/kg	4.9E-07	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	7.4E-07	1.4E-06	mg/kg-day	3.0E-04	mg/kg-day	4.6E-03
				Cadmium	3E+00	mg/kg	2.5E-07	mg/kg-day	N/A	N/A	N/A	7.0E-07	mg/kg-day	1.0E-03	mg/kg-day	7.0E-04
				Copper	1E+02	mg/kg	1.1E-05	mg/kg-day	N/A	N/A	N/A	3.1E-05	mg/kg-day	3.0E-02	mg/kg-day	1.0E-03
				Lead	7E+02	mg/kg	6.4E-05	mg/kg-day	N/A	N/A	N/A	1.8E-04	mg/kg-day	N/A	N/A	N/A
				Manganese	3E+02	mg/kg	2.3E-05	mg/kg-day	N/A	N/A	N/A	6.4E-05	mg/kg-day	7.0E-02	mg/kg-day	9.1E-04
				Mercury	5E-01	mg/kg	4.8E-08	mg/kg-day	N/A	N/A	N/A	1.3E-07	mg/kg-day	1.0E-04	mg/kg-day	1.3E-03
				Nickel	3E+01	mg/kg	2.3E-06	mg/kg-day	N/A	N/A	N/A	6.3E-06	mg/kg-day	2.0E-02	mg/kg-day	3.2E-04
				Thallium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-05	mg/kg-day	N/A
				Aroclor 1242	4E-01	mg/kg	3.3E-08	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	6.7E-08	9.3E-08	mg/kg-day	2.0E-05	mg/kg-day	4.7E-03
				Aroclor 1248	9E-02	mg/kg	8.3E-09	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	1.7E-08	2.3E-08	mg/kg-day	2.0E-05	mg/kg-day	1.2E-03
				Aroclor 1254	4E+01	mg/kg	3.7E-06	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	7.4E-06	1.0E-05	mg/kg-day	2.0E-05	mg/kg-day	5.2E-01
				Aroclor 1260	1E+01	mg/kg	1.0E-06	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	2.0E-06	2.9E-06	mg/kg-day	2.0E-05	mg/kg-day	1.4E-01
				PCB TEQ*	2E-04	mg/kg	1.7E-11	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	2.6E-06	4.8E-11	mg/kg-day	N/A	N/A	N/A
				C11-C22 Aromatic	5E+02	mg/kg	4.0E-05	mg/kg-day	N/A	N/A	N/A	1.1E-04	mg/kg-day	3.0E-02	mg/kg-day	3.7E-03
			Exp. Route Total								4E-05					7E-01

TABLE 3-7.2.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Commercial Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil (Cont.)	Surface Soil (Cont.)	Whitney Property	Dermal													
				Vinyl chloride	1E-01	mg/kg	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Trichloroethene	1E-03	mg/kg	N/A	N/A	4.0E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Phenanthrene	7E+01	mg/kg	1.0E-05	mg/kg-day	N/A	N/A	N/A	2.9E-05	mg/kg-day	2.0E-02	mg/kg-day	1.4E-03
				Benzo(a)Anthracene	4E+01	mg/kg	5.7E-06	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	4.2E-06	1.6E-05	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	4E+01	mg/kg	6.0E-06	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	4.4E-06	1.7E-05	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	2E+01	mg/kg	2.7E-06	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	2.0E-07	7.6E-06	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	3E+01	mg/kg	4.3E-06	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	3.2E-05	1.2E-05	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	1E+01	mg/kg	1.6E-06	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.2E-06	4.6E-06	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	3E+00	mg/kg	4.5E-07	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	3.3E-06	1.3E-06	mg/kg-day	N/A	N/A	N/A
				Benzo(g,h,i)perylene	8E+00	mg/kg	1.2E-06	mg/kg-day	N/A	N/A	N/A	3.4E-06	mg/kg-day	2.0E-02	mg/kg-day	1.7E-04
				Antimony	3E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-05	mg/kg-day	N/A
				Arsenic	6E+00	mg/kg	2.0E-07	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	2.9E-07	5.5E-07	mg/kg-day	3.0E-04	mg/kg-day	1.8E-03
				Cadmium	3E+00	mg/kg	3.3E-09	mg/kg-day	N/A	N/A	N/A	9.2E-09	mg/kg-day	2.5E-05	mg/kg-day	3.7E-04
				Copper	1E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
				Lead	7E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Manganese	3E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.8E-03	mg/kg-day	N/A
				Mercury	5E-01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A
				Nickel	3E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-04	mg/kg-day	N/A
				Thallium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-05	mg/kg-day	N/A
				Aroclor 1242	4E-01	mg/kg	6.2E-08	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	1.2E-07	1.7E-07	mg/kg-day	2.0E-05	mg/kg-day	8.6E-03
				Aroclor 1248	9E-02	mg/kg	1.5E-08	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	3.1E-08	4.3E-08	mg/kg-day	2.0E-05	mg/kg-day	2.1E-03
				Aroclor 1254	4E+01	mg/kg	6.9E-06	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	1.4E-05	1.9E-05	mg/kg-day	2.0E-05	mg/kg-day	9.6E-01
				Aroclor 1260	1E+01	mg/kg	1.9E-06	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	3.8E-06	5.3E-06	mg/kg-day	2.0E-05	mg/kg-day	2.6E-01
				PCB TEQ*	2E-04	mg/kg	3.2E-11	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	4.7E-06	8.9E-11	mg/kg-day	N/A	N/A	N/A
				C11-C22 Aromatic	5E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
			Exp. Route Total								7E-05					1E+00
		Exposure Point Total									1E-04					2E+00

TABLE 3-7.2.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Commercial Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil (Cont.)	Surface Soil (Cont.)	Murphy Property	Ingestion													
				Vinyl chloride	N/A	N/A	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Trichloroethene	4E-01	mg/kg	3.3E-08	mg/kg-day	4.0E-01	(mg/kg-day)$^{-1}$	1.3E-08	9.3E-08	mg/kg-day	3.0E-04	mg/kg-day	3.1E-04
				Phenanthrene	6E+00	mg/kg	4.9E-07	mg/kg-day	N/A	N/A	N/A	1.4E-06	mg/kg-day	2.0E-02	mg/kg-day	6.8E-05
				Benzo(a)Anthracene	2E+00	mg/kg	2.1E-07	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.6E-07	6.0E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	2E+00	mg/kg	2.0E-07	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.5E-07	5.6E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	9E-01	mg/kg	8.1E-08	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	5.9E-09	2.3E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	2E+00	mg/kg	1.4E-07	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	9.9E-07	3.8E-07	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	7E+00	mg/kg	5.7E-07	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	4.1E-07	1.6E-06	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	2E-01	mg/kg	1.8E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.3E-07	5.1E-08	mg/kg-day	N/A	N/A	N/A
				Benzo(g,h,i)perylene	1E+00	mg/kg	1.2E-07	mg/kg-day	N/A	N/A	N/A	3.3E-07	mg/kg-day	2.0E-02	mg/kg-day	1.7E-05
				Antimony	4E+00	mg/kg	3.1E-07	mg/kg-day	N/A	N/A	N/A	8.8E-07	mg/kg-day	4.0E-04	mg/kg-day	2.2E-03
				Arsenic	8E+00	mg/kg	7.1E-07	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	1.1E-06	2.0E-06	mg/kg-day	3.0E-04	mg/kg-day	6.6E-03
				Cadmium	3E+00	mg/kg	2.6E-07	mg/kg-day	N/A	N/A	N/A	7.2E-07	mg/kg-day	1.0E-03	mg/kg-day	7.2E-04
				Copper	4E+01	mg/kg	3.1E-06	mg/kg-day	N/A	N/A	N/A	8.7E-06	mg/kg-day	3.0E-02	mg/kg-day	2.9E-04
				Lead	8E+02	mg/kg	7.2E-05	mg/kg-day	N/A	N/A	N/A	2.0E-04	mg/kg-day	N/A	N/A	N/A
				Manganese	4E+02	mg/kg	3.6E-05	mg/kg-day	N/A	N/A	N/A	1.0E-04	mg/kg-day	7.0E-02	mg/kg-day	1.4E-03
				Mercury	6E-01	mg/kg	5.0E-08	mg/kg-day	N/A	N/A	N/A	1.4E-07	mg/kg-day	1.0E-04	mg/kg-day	1.4E-03
				Nickel	2E+01	mg/kg	1.5E-06	mg/kg-day	N/A	N/A	N/A	4.1E-06	mg/kg-day	2.0E-02	mg/kg-day	2.1E-04
				Thallium	6E+00	mg/kg	5.0E-07	mg/kg-day	N/A	N/A	N/A	1.4E-06	mg/kg-day	8.0E-05	mg/kg-day	1.7E-02
				Aroclor 1242	N/A	N/A	N/A	N/A	2.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1248	N/A	N/A	N/A	N/A	2.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1254	2E+00	mg/kg	1.9E-07	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	3.8E-07	5.4E-07	mg/kg-day	2.0E-05	mg/kg-day	2.7E-02
				Aroclor 1260	5E-02	mg/kg	4.3E-09	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	8.6E-09	1.2E-08	mg/kg-day	2.0E-05	mg/kg-day	6.0E-04
				PCB TEQ*	6E-08	mg/kg	5.1E-15	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	7.7E-10	1.4E-14	mg/kg-day	N/A	N/A	N/A
				C11-C22 Aromatic	4E+03	mg/kg	3.3E-04	mg/kg-day	N/A	N/A	N/A	9.1E-04	mg/kg-day	3.0E-02	mg/kg-day	3.0E-02
			Exp. Route Total								3E-06					9E-02

TABLE 3-7.2.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Commercial Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil (Cont.)	Surface Soil (Cont.)	Murphy Property	Dermal													
				Vinyl chloride	N/A	N/A	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Trichloroethene	4E-01	mg/kg	N/A	N/A	4.0E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Phenanthrene	6E+00	mg/kg	8.4E-07	mg/kg-day	N/A	N/A	N/A	2.4E-06	mg/kg-day	2.0E-02	mg/kg-day	1.2E-04
				Benzo(a)Anthracene	2E+00	mg/kg	3.7E-07	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	2.7E-07	1.0E-06	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	2E+00	mg/kg	3.4E-07	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	2.5E-07	9.7E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	9E-01	mg/kg	1.4E-07	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	1.0E-08	3.9E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	2E+00	mg/kg	2.3E-07	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.7E-06	6.5E-07	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	7E+00	mg/kg	9.7E-07	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	7.1E-07	2.7E-06	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	2E-01	mg/kg	3.1E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	2.3E-07	8.8E-08	mg/kg-day	N/A	N/A	N/A
				Benzo(g,h,i)perylene	1E+00	mg/kg	2.0E-07	mg/kg-day	N/A	N/A	N/A	5.7E-07	mg/kg-day	2.0E-02	mg/kg-day	2.8E-05
				Antimony	4E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-05	mg/kg-day	N/A
				Arsenic	8E+00	mg/kg	2.8E-07	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	4.2E-07	7.9E-07	mg/kg-day	3.0E-04	mg/kg-day	2.6E-03
				Cadmium	3E+00	mg/kg	3.4E-09	mg/kg-day	N/A	N/A	N/A	9.6E-09	mg/kg-day	2.5E-05	mg/kg-day	3.8E-04
				Copper	4E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
				Lead	8E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Manganese	4E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.8E-03	mg/kg-day	N/A
				Mercury	6E-01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A
				Nickel	2E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-04	mg/kg-day	N/A
				Thallium	6E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-05	mg/kg-day	N/A
				Aroclor 1242	N/A	N/A	N/A	N/A	2.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1248	N/A	N/A	N/A	N/A	2.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1254	2E+00	mg/kg	3.6E-07	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	7.1E-07	9.9E-07	mg/kg-day	2.0E-05	mg/kg-day	5.0E-02
				Aroclor 1260	5E-02	mg/kg	7.9E-09	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	1.6E-08	2.2E-08	mg/kg-day	2.0E-05	mg/kg-day	1.1E-03
				PCB TEQ*	6E-08	mg/kg	9.4E-15	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	1.4E-09	2.6E-14	mg/kg-day	N/A	N/A	N/A
				C11-C22 Aromatic	4E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
			Exp. Route Total								4E-06					5E-02
		Exposure Point Total									8E-06					1E-01
	Exposure Medium Total										N/A					N/A

TABLE 3-7.2.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Commercial Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Soil	Indoor Air	Aberjona Property	Inhalation													
				1,2,4-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-03	mg/m3	N/A
				1,2-Dichloroethene (total)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				1,3,5-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-03	mg/m3	N/A
				n-Butylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Naphthalene	2E-02	ug/m3	1.9E-03	ug/m3	N/A	N/A	N/A	5.4E-06	mg/m3	3.0E-03	mg/m3	1.8E-03
				p-Isopropyltoluene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.0E-01	mg/m3	N/A
				Chloromethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9.0E-02	mg/m3	N/A
				Vinyl chloride	N/A	N/A	N/A	N/A	8.8E-06	(ug/m3)-1	N/A	N/A	N/A	1.0E-01	mg/m3	N/A
				Bromomethane	4E-03	ug/m3	3.5E-04	ug/m3	N/A	N/A	N/A	9.8E-07	mg/m3	5.0E-03	mg/m3	2.0E-04
				Chloroethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E+01	mg/m3	N/A
				1,1-Dichloroethene	2E-02	ug/m3	1.8E-03	ug/m3	N/A	N/A	N/A	4.9E-06	mg/m3	2.0E-01	mg/m3	2.5E-05
				Acetone	2E-03	ug/m3	1.3E-04	ug/m3	N/A	N/A	N/A	3.7E-07	mg/m3	N/A	N/A	N/A
				Methylene chloride	N/A	N/A	N/A	N/A	4.7E-07	(ug/m3)-1	N/A	N/A	N/A	3.0E+00	mg/m3	N/A
				trans-1,2-Dichloroethene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/m3	N/A
				Methyl tert-butyl ether	3E-02	ug/m3	2.2E-03	ug/m3	N/A	N/A	N/A	6.2E-06	mg/m3	3.0E+00	mg/m3	2.1E-06
				1,1-Dichloroethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-01	mg/m3	N/A
				cis-1,2-Dichloroethene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/m3	N/A
				1,1,1-Trichloroethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.2E+00	mg/m3	N/A
				Benzene	1E-02	ug/m3	1.0E-03	ug/m3	7.8E-06	(ug/m3)-1	7.8E-09	2.8E-06	mg/m3	3.0E-02	mg/m3	9.3E-05
				Trichloroethene	N/A	N/A	N/A	N/A	1.1E-04	(ug/m3)-1	N/A	N/A	N/A	4.0E-02	mg/m3	N/A
				Methyl cyclohexane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E+00	mg/m3	N/A
				Toluene	6E-02	ug/m3	4.7E-03	ug/m3	N/A	N/A	N/A	1.3E-05	mg/m3	4.0E-01	mg/m3	3.3E-05
				Tetrachloroethene	N/A	N/A	N/A	N/A	5.9E-06	(ug/m3)-1	N/A	N/A	N/A	N/A	N/A	N/A
				Chlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-02	mg/m3	N/A
				Ethylbenzene	4E-01	ug/m3	3.4E-02	ug/m3	N/A	N/A	N/A	9.4E-05	mg/m3	1.0E+00	mg/m3	9.4E-05
				1,3-Dichlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				1,4-Dichlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-01	mg/m3	N/A
				1,2-Dichlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				2-Methylnaphthalene	4E-02	ug/m3	3.4E-03	ug/m3	N/A	N/A	N/A	9.6E-06	mg/m3	N/A	N/A	N/A
				Acenaphthylene	5E-03	ug/m3	3.9E-04	ug/m3	N/A	N/A	N/A	1.1E-06	mg/m3	3.0E-03	mg/m3	3.6E-04
				Dibenzofuran	3E-03	ug/m3	2.8E-04	ug/m3	N/A	N/A	N/A	7.8E-07	mg/m3	N/A	N/A	N/A
				Phenanthrene	6E-04	ug/m3	4.8E-05	ug/m3	N/A	N/A	N/A	1.3E-07	mg/m3	3.0E-03	mg/m3	4.5E-05
				Anthracene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-03	mg/m3	N/A
				C5-C8 Aliphatic	2E+02	ug/m3	1.6E+01	ug/m3	N/A	N/A	N/A	4.5E-02	mg/m3	2.0E-01	mg/m3	2.2E-01
				C9-C12 Aliphatic	2E+01	ug/m3	1.5E+00	ug/m3	N/A	N/A	N/A	4.1E-03	mg/m3	2.0E-01	mg/m3	2.0E-02
				C9-C10 Aromatic	2E+01	ug/m3	1.7E+00	ug/m3	N/A	N/A	N/A	4.8E-03	mg/m3	5.0E-02	mg/m3	9.6E-02
				C9-C18 Aliphatic	9E+01	ug/m3	7.4E+00	ug/m3	N/A	N/A	N/A	2.1E-02	mg/m3	2.0E-01	mg/m3	1.0E-01
				C11-C22 Aromatic	7E+00	ug/m3	5.6E-01	ug/m3	N/A	N/A	N/A	1.6E-03	mg/m3	5.0E-02	mg/m3	3.1E-02
			Exp. Route Total								8E-09					5E-01
		Exposure Point Total									8E-09					5E-01

TABLE 3-7.2.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Commercial Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Soil (Cont.)	Indoor Air (Cont.)	Whitney Property	Inhalation													
				1,2,4-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-03	mg/m3	N/A
				1,2-Dichloroethene (total)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				1,3,5-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-03	mg/m3	N/A
				n-Butylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Naphthalene	5E-02	ug/m3	3.8E-03	ug/m3	N/A	N/A	N/A	1.1E-05	mg/m3	3.0E-03	mg/m3	3.5E-03
				p-Isopropyltoluene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.0E-01	mg/m3	N/A
				Chloromethane	4E+00	ug/m3	2.9E-01	ug/m3	N/A	N/A	N/A	8.0E-04	mg/m3	9.0E-02	mg/m3	8.9E-03
				Vinyl chloride	7E+00	ug/m3	5.7E-01	ug/m3	8.8E-06	(ug/m3)-1	5.0E-06	1.6E-03	mg/m3	1.0E-01	mg/m3	1.6E-02
				Bromomethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-03	mg/m3	N/A
				Chloroethane	1E+00	ug/m3	9.9E-02	ug/m3	N/A	N/A	N/A	2.8E-04	mg/m3	1.0E+01	mg/m3	2.8E-05
				1,1-Dichloroethene	2E+00	ug/m3	1.8E-01	ug/m3	N/A	N/A	N/A	5.0E-04	mg/m3	2.0E-01	mg/m3	2.5E-03
				Acetone	1E-02	ug/m3	1.2E-03	ug/m3	N/A	N/A	N/A	3.4E-06	mg/m3	N/A	N/A	N/A
				Methylene chloride	2E+00	ug/m3	1.4E-01	ug/m3	4.7E-07	(ug/m3)-1	6.6E-08	4.0E-04	mg/m3	3.0E+00	mg/m3	1.3E-04
				trans-1,2-Dichloroethene	9E-01	ug/m3	7.2E-02	ug/m3	N/A	N/A	N/A	2.0E-04	mg/m3	2.0E-01	mg/m3	1.0E-03
				Methyl tert-butyl ether	5E-02	ug/m3	4.0E-03	ug/m3	N/A	N/A	N/A	1.1E-05	mg/m3	3.0E+00	mg/m3	3.8E-06
				1,1-Dichloroethane	2E+00	ug/m3	1.4E-01	ug/m3	N/A	N/A	N/A	4.0E-04	mg/m3	5.0E-01	mg/m3	8.0E-04
				cis-1,2-Dichloroethene	6E-01	ug/m3	5.0E-02	ug/m3	N/A	N/A	N/A	1.4E-04	mg/m3	2.0E-01	mg/m3	7.0E-04
				1,1,1-Trichloroethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.2E+00	mg/m3	N/A
				Benzene	8E-01	ug/m3	6.5E-02	ug/m3	7.8E-06	(ug/m3)-1	5.1E-07	1.8E-04	mg/m3	3.0E-02	mg/m3	6.1E-03
				Trichloroethene	1E+00	ug/m3	9.6E-02	ug/m3	1.1E-04	(ug/m3)-1	1.1E-05	2.7E-04	mg/m3	4.0E-02	mg/m3	6.7E-03
				Methyl cyclohexane	4E+01	ug/m3	3.0E+00	ug/m3	N/A	N/A	N/A	8.3E-03	mg/m3	3.0E+00	mg/m3	2.8E-03
				Toluene	1E+00	ug/m3	1.1E-01	ug/m3	N/A	N/A	N/A	3.2E-04	mg/m3	4.0E-01	mg/m3	7.9E-04
				Tetrachloroethene	1E+00	ug/m3	8.1E-02	ug/m3	5.9E-06	(ug/m3)-1	4.8E-07	2.3E-04	mg/m3	N/A	N/A	N/A
				Chlorobenzene	3E-01	ug/m3	2.8E-02	ug/m3	N/A	N/A	N/A	7.9E-05	mg/m3	6.0E-02	mg/m3	1.3E-03
				Ethylbenzene	3E-01	ug/m3	2.4E-02	ug/m3	N/A	N/A	N/A	6.6E-05	mg/m3	1.0E+00	mg/m3	6.6E-05
				1,3-Dichlorobenzene	3E-01	ug/m3	2.8E-02	ug/m3	N/A	N/A	N/A	7.8E-05	mg/m3	N/A	N/A	N/A
				1,4-Dichlorobenzene	7E-02	ug/m3	5.9E-03	ug/m3	N/A	N/A	N/A	1.6E-05	mg/m3	8.0E-01	mg/m3	2.1E-05
				1,2-Dichlorobenzene	4E-05	ug/m3	3.5E-06	ug/m3	N/A	N/A	N/A	9.8E-09	mg/m3	N/A	N/A	N/A
				2-Methylnaphthalene	1E-01	ug/m3	1.1E-02	ug/m3	N/A	N/A	N/A	2.9E-05	mg/m3	N/A	N/A	N/A
				Acenaphthylene	5E-03	ug/m3	3.8E-04	ug/m3	N/A	N/A	N/A	1.1E-06	mg/m3	3.0E-03	mg/m3	3.5E-04
				Dibenzofuran	2E-01	ug/m3	1.4E-02	ug/m3	N/A	N/A	N/A	4.0E-05	mg/m3	N/A	N/A	N/A
				Phenanthrene	7E-02	ug/m3	5.5E-03	ug/m3	N/A	N/A	N/A	1.5E-05	mg/m3	3.0E-03	mg/m3	5.1E-03
				Anthracene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-03	mg/m3	N/A
				C5-C8 Aliphatic	4E+03	ug/m3	3.4E+02	ug/m3	N/A	N/A	N/A	9.4E-01	mg/m3	2.0E-01	mg/m3	4.7E+00
				C9-C12 Aliphatic	7E+01	ug/m3	5.9E+00	ug/m3	N/A	N/A	N/A	1.7E-02	mg/m3	2.0E-01	mg/m3	8.3E-02
				C9-C10 Aromatic	2E+02	ug/m3	1.7E+01	ug/m3	N/A	N/A	N/A	4.8E-02	mg/m3	5.0E-02	mg/m3	9.6E-01
				C9-C18 Aliphatic	2E+03	ug/m3	1.4E+02	ug/m3	N/A	N/A	N/A	3.9E-01	mg/m3	2.0E-01	mg/m3	1.9E+00
				C11-C22 Aromatic	7E+01	ug/m3	5.5E+00	ug/m3	N/A	N/A	N/A	1.5E-02	mg/m3	5.0E-02	mg/m3	3.1E-01
			Exp. Route Total								2E-05					8E+00
		Exposure Point Total									2E-05					8E+00

TABLE 3-7.2.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Commercial Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Soil (Cont.)	Indoor Air (Cont.)	Murphy Property	Inhalation													
				1,2,4-Trimethylbenzene	4E+00	ug/m3	3.2E-01	ug/m3	N/A	N/A	N/A	8.9E-04	mg/m3	6.0E-03	mg/m3	1.5E-01
				1,2-Dichloroethene (total)	3E-01	ug/m3	2.6E-02	ug/m3	N/A	N/A	N/A	7.3E-05	mg/m3	N/A	N/A	N/A
				1,3,5-Trimethylbenzene	5E+00	ug/m3	4.0E-01	ug/m3	N/A	N/A	N/A	1.1E-03	mg/m3	6.0E-03	mg/m3	1.9E-01
				n-Butylbenzene	5E-01	ug/m3	4.3E-02	ug/m3	N/A	N/A	N/A	1.2E-04	mg/m3	N/A	N/A	N/A
				Naphthalene	7E-02	ug/m3	6.0E-03	ug/m3	N/A	N/A	N/A	1.7E-05	mg/m3	3.0E-03	mg/m3	5.6E-03
				p-Isopropyltoluene	3E+01	ug/m3	2.5E+00	ug/m3	N/A	N/A	N/A	7.0E-03	mg/m3	4.0E-01	mg/m3	1.7E-02
				Chloromethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9.0E-02	mg/m3	N/A
				Vinyl chloride	N/A	N/A	N/A	N/A	8.8E-06	(ug/m3)-1	N/A	N/A	N/A	1.0E-01	mg/m3	N/A
				Bromomethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-03	mg/m3	N/A
				Chloroethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E+01	mg/m3	N/A
				1,1-Dichloroethene	4E-02	ug/m3	3.3E-03	ug/m3	N/A	N/A	N/A	9.3E-06	mg/m3	2.0E-01	mg/m3	4.6E-05
				Acetone	8E-02	ug/m3	6.6E-03	ug/m3	N/A	N/A	N/A	1.8E-05	mg/m3	N/A	N/A	N/A
				Methylene chloride	7E+00	ug/m3	5.4E-01	ug/m3	4.7E-07	(ug/m3)-1	2.5E-07	1.5E-03	mg/m3	3.0E+00	mg/m3	5.0E-04
				trans-1,2-Dichloroethene	5E+00	ug/m3	4.0E-01	ug/m3	N/A	N/A	N/A	1.1E-03	mg/m3	2.0E-01	mg/m3	5.6E-03
				Methyl tert-butyl ether	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E+00	mg/m3	N/A
				1,1-Dichloroethane	2E+00	ug/m3	1.8E-01	ug/m3	N/A	N/A	N/A	5.0E-04	mg/m3	5.0E-01	mg/m3	1.0E-03
				cis-1,2-Dichloroethene	5E+01	ug/m3	3.8E+00	ug/m3	N/A	N/A	N/A	1.1E-02	mg/m3	2.0E-01	mg/m3	5.3E-02
				1,1,1-Trichloroethane	4E+00	ug/m3	3.7E-01	ug/m3	N/A	N/A	N/A	1.0E-03	mg/m3	2.2E+00	mg/m3	4.7E-04
				Benzene	1E+00	ug/m3	1.1E-01	ug/m3	7.8E-06	(ug/m3)-1	8.3E-07	3.0E-04	mg/m3	3.0E-02	mg/m3	1.0E-02
				Trichloroethene	1E+00	ug/m3	1.0E-01	ug/m3	1.1E-04	(ug/m3)-1	1.1E-05	2.8E-04	mg/m3	4.0E-02	mg/m3	7.1E-03
				Methyl cyclohexane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E+00	mg/m3	N/A
				Toluene	3E+00	ug/m3	2.3E-01	ug/m3	N/A	N/A	N/A	6.4E-04	mg/m3	4.0E-01	mg/m3	1.6E-03
				Tetrachloroethene	3E+00	ug/m3	2.3E-01	ug/m3	5.9E-06	(ug/m3)-1	1.3E-06	6.4E-04	mg/m3	N/A	N/A	N/A
				Chlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-02	mg/m3	N/A
				Ethylbenzene	1E+00	ug/m3	1.2E-01	ug/m3	N/A	N/A	N/A	3.3E-04	mg/m3	1.0E+00	mg/m3	3.3E-04
				1,3-Dichlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				1,4-Dichlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-01	mg/m3	N/A
				1,2-Dichlorobenzene	3E-03	ug/m3	2.1E-04	ug/m3	N/A	N/A	N/A	5.9E-07	mg/m3	N/A	N/A	N/A
				2-Methylnaphthalene	3E-02	ug/m3	2.3E-03	ug/m3	N/A	N/A	N/A	6.4E-06	mg/m3	N/A	N/A	N/A
				Acenaphthylene	2E-02	ug/m3	1.8E-03	ug/m3	N/A	N/A	N/A	5.1E-06	mg/m3	3.0E-03	mg/m3	1.7E-03
				Dibenzofuran	5E-03	ug/m3	3.8E-04	ug/m3	N/A	N/A	N/A	1.1E-06	mg/m3	N/A	N/A	N/A
				Phenanthrene	4E-03	ug/m3	3.6E-04	ug/m3	N/A	N/A	N/A	1.0E-06	mg/m3	3.0E-03	mg/m3	3.3E-04
				Anthracene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-03	mg/m3	N/A
				C5-C8 Aliphatic	6E+01	ug/m3	4.7E+00	ug/m3	N/A	N/A	N/A	1.3E-02	mg/m3	2.0E-01	mg/m3	6.6E-02
				C9-C12 Aliphatic	2E+00	ug/m3	1.3E-01	ug/m3	N/A	N/A	N/A	3.8E-04	mg/m3	2.0E-01	mg/m3	1.9E-03
				C9-C10 Aromatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/m3	N/A
				C9-C18 Aliphatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/m3	N/A
				C11-C22 Aromatic	1E+02	ug/m3	1.0E+01	ug/m3	N/A	N/A	N/A	2.8E-02	mg/m3	5.0E-02	mg/m3	5.6E-01
			Exp. Route Total								1E-05					1E+00
		Exposure Point Total									1E-05					1E+00
	Exposure Medium Total										N/A					N/A

TABLE 3-7.2.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Commercial Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Ground Water	Indoor Air	Aberjona Property	Inhalation													
				1,2,4-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-03	mg/m3	N/A
				1,2-Dichloroethene (total)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				1,3,5-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-03	mg/m3	N/A
				n-Butylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Naphthalene	4E-05	ug/m3	3.4E-06	ug/m3	N/A	N/A	N/A	9.5E-09	mg/m3	3.0E-03	mg/m3	3.2E-06
				p-Isopropyltoluene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.0E-01	mg/m3	N/A
				Chloromethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9.0E-02	mg/m3	N/A
				Vinyl chloride	4E-04	ug/m3	3.2E-05	ug/m3	8.8E-06	(ug/m3)-1	2.8E-10	9.0E-08	mg/m3	1.0E-01	mg/m3	9.0E-07
				Bromomethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-03	mg/m3	N/A
				Chloroethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E+01	mg/m3	N/A
				1,1-Dichloroethene	2E-04	ug/m3	1.3E-05	ug/m3	N/A	N/A	N/A	3.7E-08	mg/m3	2.0E-01	mg/m3	1.8E-07
				Acetone	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Methylene chloride	N/A	N/A	N/A	N/A	4.7E-07	(ug/m3)-1	N/A	N/A	N/A	3.0E+00	mg/m3	N/A
				trans-1,2-Dichloroethene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/m3	N/A
				Methyl tert-butyl ether	8E-04	ug/m3	6.2E-05	ug/m3	N/A	N/A	N/A	1.7E-07	mg/m3	3.0E+00	mg/m3	5.8E-08
				1,1-Dichloroethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-01	mg/m3	N/A
				cis-1,2-Dichloroethene	6E-03	ug/m3	4.9E-04	ug/m3	N/A	N/A	N/A	1.4E-06	mg/m3	2.0E-01	mg/m3	6.8E-06
				1,1,1-Trichloroethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.2E+00	mg/m3	N/A
				Benzene	7E-05	ug/m3	5.9E-06	ug/m3	7.8E-06	(ug/m3)-1	4.6E-11	1.6E-08	mg/m3	3.0E-02	mg/m3	5.5E-07
				Trichloroethene	1E-02	ug/m3	9.9E-04	ug/m3	1.1E-04	(ug/m3)-1	1.1E-07	2.8E-06	mg/m3	4.0E-02	mg/m3	7.0E-05
				Methyl cyclohexane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E+00	mg/m3	N/A
				Toluene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.0E-01	mg/m3	N/A
				Tetrachloroethene	3E-04	ug/m3	2.7E-05	ug/m3	5.9E-06	(ug/m3)-1	1.6E-10	7.5E-08	mg/m3	N/A	N/A	N/A
				Chlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-02	mg/m3	N/A
				Ethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E+00	mg/m3	N/A
				1,3-Dichlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				1,4-Dichlorobenzene	4E-05	ug/m3	3.4E-06	ug/m3	N/A	N/A	N/A	9.6E-09	mg/m3	8.0E-01	mg/m3	1.2E-08
				1,2-Dichlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				2-Methylnaphthalene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Acenaphthylene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-03	mg/m3	N/A
				Dibenzofuran	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Phenanthrene	2E-05	ug/m3	1.9E-06	ug/m3	N/A	N/A	N/A	5.3E-09	mg/m3	3.0E-03	mg/m3	1.8E-06
				Anthracene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-03	mg/m3	N/A
				C5-C8 Aliphatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/m3	N/A
				C9-C12 Aliphatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/m3	N/A
				C9-C10 Aromatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/m3	N/A
				C9-C18 Aliphatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/m3	N/A
				C11-C22 Aromatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/m3	N/A
			Exp. Route Total								1E-07					8E-05
		Exposure Point Total									1E-07					8E-05

TABLE 3-7.2.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Commercial Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Ground Water (Cont.)	Indoor Air (Cont.)	Whitney Property	Inhalation													
				1,2,4-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-03	mg/m3	N/A
				1,2-Dichloroethene (total)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				1,3,5-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-03	mg/m3	N/A
				n-Butylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Naphthalene	5E-04	ug/m3	4.1E-05	ug/m3	N/A	N/A	N/A	1.1E-07	mg/m3	3.0E-03	mg/m3	3.8E-05
				p-Isopropyltoluene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.0E-01	mg/m3	N/A
				Chloromethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9.0E-02	mg/m3	N/A
				Vinyl chloride	3E+00	ug/m3	2.2E-01	ug/m3	8.8E-06	(ug/m3)-1	1.9E-06	6.1E-04	mg/m3	1.0E-01	mg/m3	6.1E-03
				Bromomethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-03	mg/m3	N/A
				Chloroethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E+01	mg/m3	N/A
				1,1-Dichloroethene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/m3	N/A
				Acetone	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Methylene chloride	N/A	N/A	N/A	N/A	4.7E-07	(ug/m3)-1	N/A	N/A	N/A	3.0E+00	mg/m3	N/A
				trans-1,2-Dichloroethene	4E-02	ug/m3	3.4E-03	ug/m3	N/A	N/A	N/A	9.4E-06	mg/m3	2.0E-01	mg/m3	4.7E-05
				Methyl tert-butyl ether	1E-01	ug/m3	8.4E-03	ug/m3	N/A	N/A	N/A	2.4E-05	mg/m3	3.0E+00	mg/m3	7.8E-06
				1,1-Dichloroethane	1E-01	ug/m3	9.5E-03	ug/m3	N/A	N/A	N/A	2.7E-05	mg/m3	5.0E-01	mg/m3	5.3E-05
				cis-1,2-Dichloroethene	3E-01	ug/m3	2.7E-02	ug/m3	N/A	N/A	N/A	7.5E-05	mg/m3	2.0E-01	mg/m3	3.8E-04
				1,1,1-Trichloroethane	1E-02	ug/m3	1.1E-03	ug/m3	N/A	N/A	N/A	3.1E-06	mg/m3	2.2E+00	mg/m3	1.4E-06
				Benzene	8E-02	ug/m3	6.7E-03	ug/m3	7.8E-06	(ug/m3)-1	5.2E-08	1.9E-05	mg/m3	3.0E-02	mg/m3	6.2E-04
				Trichloroethene	3E-03	ug/m3	2.7E-04	ug/m3	1.1E-04	(ug/m3)-1	2.9E-08	7.5E-07	mg/m3	4.0E-02	mg/m3	1.9E-05
				Methyl cyclohexane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E+00	mg/m3	N/A
				Toluene	1E+00	ug/m3	1.0E-01	ug/m3	N/A	N/A	N/A	2.8E-04	mg/m3	4.0E-01	mg/m3	7.0E-04
				Tetrachloroethene	N/A	N/A	N/A	N/A	5.9E-06	(ug/m3)-1	N/A	N/A	N/A	N/A	N/A	N/A
				Chlorobenzene	9E-03	ug/m3	7.6E-04	ug/m3	N/A	N/A	N/A	2.1E-06	mg/m3	6.0E-02	mg/m3	3.6E-05
				Ethylbenzene	4E-02	ug/m3	3.5E-03	ug/m3	N/A	N/A	N/A	9.8E-06	mg/m3	1.0E+00	mg/m3	9.8E-06
				1,3-Dichlorobenzene	2E-02	ug/m3	1.8E-03	ug/m3	N/A	N/A	N/A	4.9E-06	mg/m3	N/A	N/A	N/A
				1,4-Dichlorobenzene	6E-02	ug/m3	4.8E-03	ug/m3	N/A	N/A	N/A	1.3E-05	mg/m3	8.0E-01	mg/m3	1.7E-05
				1,2-Dichlorobenzene	5E-06	ug/m3	4.0E-07	ug/m3	N/A	N/A	N/A	1.1E-09	mg/m3	N/A	N/A	N/A
				2-Methylnaphthalene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Acenaphthylene	2E-04	ug/m3	2.0E-05	ug/m3	N/A	N/A	N/A	5.5E-08	mg/m3	3.0E-03	mg/m3	1.8E-05
				Dibenzofuran	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Phenanthrene	1E-04	ug/m3	9.0E-06	ug/m3	N/A	N/A	N/A	2.5E-08	mg/m3	3.0E-03	mg/m3	8.4E-06
				Anthracene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-03	mg/m3	N/A
				C5-C8 Aliphatic	9E+01	ug/m3	7.5E+00	ug/m3	N/A	N/A	N/A	2.1E-02	mg/m3	2.0E-01	mg/m3	1.0E-01
				C9-C12 Aliphatic	1E+01	ug/m3	1.0E+00	ug/m3	N/A	N/A	N/A	2.8E-03	mg/m3	2.0E-01	mg/m3	1.4E-02
				C9-C10 Aromatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/m3	N/A
				C9-C18 Aliphatic	2E+01	ug/m3	1.3E+00	ug/m3	N/A	N/A	N/A	3.5E-03	mg/m3	2.0E-01	mg/m3	1.8E-02
				C11-C22 Aromatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/m3	N/A
			Exp. Route Total								2E-06					1E-01
		Exposure Point Total									2E-06					1E-01

TABLE 3-7.2.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Commercial Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Ground Water (Cont.)	Indoor Air (Cont.)	Murphy Property	Inhalation													
				1,2,4-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-03	mg/m3	N/A
				1,2-Dichloroethene (total)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				1,3,5-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-03	mg/m3	N/A
				n-Butylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Naphthalene	6E-04	ug/m3	5.2E-05	ug/m3	N/A	N/A	N/A	1.4E-07	mg/m3	3.0E-03	mg/m3	4.8E-05
				p-Isopropyltoluene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.0E-01	mg/m3	N/A
				Chloromethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9.0E-02	mg/m3	N/A
				Vinyl chloride	2E+00	ug/m3	1.3E-01	ug/m3	8.8E-06	(ug/m3)-1	1.1E-06	3.6E-04	mg/m3	1.0E-01	mg/m3	3.6E-03
				Bromomethane	2E-03	ug/m3	2.0E-04	ug/m3	N/A	N/A	N/A	5.6E-07	mg/m3	5.0E-03	mg/m3	1.1E-04
				Chloroethane	1E-01	ug/m3	9.9E-03	ug/m3	N/A	N/A	N/A	2.8E-05	mg/m3	1.0E+01	mg/m3	2.8E-06
				1,1-Dichloroethene	6E-02	ug/m3	5.1E-03	ug/m3	N/A	N/A	N/A	1.4E-05	mg/m3	2.0E-01	mg/m3	7.2E-05
				Acetone	3E-04	ug/m3	2.3E-05	ug/m3	N/A	N/A	N/A	6.5E-08	mg/m3	N/A	N/A	N/A
				Methylene chloride	9E-03	ug/m3	7.5E-04	ug/m3	4.7E-07	(ug/m3)-1	3.5E-10	2.1E-06	mg/m3	3.0E+00	mg/m3	7.0E-07
				trans-1,2-Dichloroethene	5E-02	ug/m3	3.8E-03	ug/m3	N/A	N/A	N/A	1.1E-05	mg/m3	2.0E-01	mg/m3	5.4E-05
				Methyl tert-butyl ether	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E+00	mg/m3	N/A
				1,1-Dichloroethane	9E-02	ug/m3	7.7E-03	ug/m3	N/A	N/A	N/A	2.2E-05	mg/m3	5.0E-01	mg/m3	4.3E-05
				cis-1,2-Dichloroethene	7E-01	ug/m3	5.6E-02	ug/m3	N/A	N/A	N/A	1.6E-04	mg/m3	2.0E-01	mg/m3	7.8E-04
				1,1,1-Trichloroethane	2E-01	ug/m3	1.7E-02	ug/m3	N/A	N/A	N/A	4.7E-05	mg/m3	2.2E+00	mg/m3	2.1E-05
				Benzene	8E-03	ug/m3	6.8E-04	ug/m3	7.8E-06	(ug/m3)-1	5.3E-09	1.9E-06	mg/m3	3.0E-02	mg/m3	6.3E-05
				Trichloroethene	7E-02	ug/m3	5.9E-03	ug/m3	1.1E-04	(ug/m3)-1	6.5E-07	1.7E-05	mg/m3	4.0E-02	mg/m3	4.2E-04
				Methyl cyclohexane	1E+00	ug/m3	1.0E-01	ug/m3	N/A	N/A	N/A	2.9E-04	mg/m3	3.0E+00	mg/m3	9.6E-05
				Toluene	2E-02	ug/m3	1.9E-03	ug/m3	N/A	N/A	N/A	5.4E-06	mg/m3	4.0E-01	mg/m3	1.4E-05
				Tetrachloroethene	2E-02	ug/m3	2.0E-03	ug/m3	5.9E-06	(ug/m3)-1	1.2E-08	5.6E-06	mg/m3	N/A	N/A	N/A
				Chlorobenzene	7E-04	ug/m3	5.7E-05	ug/m3	N/A	N/A	N/A	1.6E-07	mg/m3	6.0E-02	mg/m3	2.7E-06
				Ethylbenzene	1E-02	ug/m3	8.9E-04	ug/m3	N/A	N/A	N/A	2.5E-06	mg/m3	1.0E+00	mg/m3	2.5E-06
				1,3-Dichlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				1,4-Dichlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-01	mg/m3	N/A
				1,2-Dichlorobenzene	9E-07	ug/m3	7.4E-08	ug/m3	N/A	N/A	N/A	2.1E-10	mg/m3	N/A	N/A	N/A
				2-Methylnaphthalene	2E-03	ug/m3	1.7E-04	ug/m3	N/A	N/A	N/A	4.7E-07	mg/m3	N/A	N/A	N/A
				Acenaphthylene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-03	mg/m3	N/A
				Dibenzofuran	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Phenanthrene	3E-04	ug/m3	2.2E-05	ug/m3	N/A	N/A	N/A	6.2E-08	mg/m3	3.0E-03	mg/m3	2.1E-05
				Anthracene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-03	mg/m3	N/A
				C5-C8 Aliphatic	3E+01	ug/m3	2.6E+00	ug/m3	N/A	N/A	N/A	7.2E-03	mg/m3	2.0E-01	mg/m3	3.6E-02
				C9-C12 Aliphatic	1E+01	ug/m3	8.8E-01	ug/m3	N/A	N/A	N/A	2.5E-03	mg/m3	2.0E-01	mg/m3	1.2E-02
				C9-C10 Aromatic	1E-01	ug/m3	9.8E-03	ug/m3	N/A	N/A	N/A	2.7E-05	mg/m3	5.0E-02	mg/m3	5.5E-04
				C9-C18 Aliphatic	3E+02	ug/m3	2.7E+01	ug/m3	N/A	N/A	N/A	7.5E-02	mg/m3	2.0E-01	mg/m3	3.8E-01
				C11-C22 Aromatic	7E-02	ug/m3	5.4E-03	ug/m3	N/A	N/A	N/A	1.5E-05	mg/m3	5.0E-02	mg/m3	3.0E-04
			Exp. Route Total								2E-06					4E-01
		Exposure Point Total									2E-06					4E-01
	Exposure Medium Total										N/A					N/A
Medium Total											N/A					N/A
											Total of Receptor Risks Across All Media					Total of Receptor Hazards Across All Media
											NA					NA

TABLE 3-7.2.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Commercial Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Aberjona Property	Ingestion													
				Vinyl chloride	N/A	N/A	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Trichloroethene	N/A	N/A	N/A	N/A	4.0E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Phenanthrene	7E-01	mg/kg	1.0E-08	mg/kg-day	N/A	N/A	N/A	8.1E-08	mg/kg-day	2.0E-02	mg/kg-day	4.1E-06
				Benzo(a)Anthracene	7E-01	mg/kg	1.1E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	7.8E-09	8.3E-08	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	7E-01	mg/kg	1.1E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	8.1E-09	8.7E-08	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	5E-01	mg/kg	7.8E-09	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	5.7E-10	6.0E-08	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	5E-01	mg/kg	7.8E-09	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	5.7E-08	6.0E-08	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	5E-01	mg/kg	7.8E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	5.7E-09	6.1E-08	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	6E-03	mg/kg	9.4E-11	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	6.8E-10	7.3E-10	mg/kg-day	N/A	N/A	N/A
				Benzo(g,h,i)perylene	6E-01	mg/kg	9.0E-09	mg/kg-day	N/A	N/A	N/A	7.0E-08	mg/kg-day	2.0E-02	mg/kg-day	3.5E-06
				Antimony	2E+00	mg/kg	2.7E-08	mg/kg-day	N/A	N/A	N/A	2.1E-07	mg/kg-day	4.0E-04	mg/kg-day	5.3E-04
				Arsenic	6E+00	mg/kg	8.6E-08	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	1.3E-07	6.7E-07	mg/kg-day	3.0E-04	mg/kg-day	2.2E-03
				Cadmium	1E+01	mg/kg	1.5E-07	mg/kg-day	N/A	N/A	N/A	1.1E-06	mg/kg-day	1.0E-03	mg/kg-day	1.1E-03
				Copper	1E+02	mg/kg	1.5E-06	mg/kg-day	N/A	N/A	N/A	1.2E-05	mg/kg-day	3.0E-02	mg/kg-day	4.0E-04
				Lead	1E+03	mg/kg	1.7E-05	mg/kg-day	N/A	N/A	N/A	1.3E-04	mg/kg-day	N/A	N/A	N/A
				Manganese	3E+02	mg/kg	4.1E-06	mg/kg-day	N/A	N/A	N/A	3.2E-05	mg/kg-day	7.0E-02	mg/kg-day	4.6E-04
				Mercury	9E-02	mg/kg	1.4E-09	mg/kg-day	N/A	N/A	N/A	1.1E-08	mg/kg-day	1.0E-04	mg/kg-day	1.1E-04
				Nickel	6E+01	mg/kg	9.8E-07	mg/kg-day	N/A	N/A	N/A	7.6E-06	mg/kg-day	2.0E-02	mg/kg-day	3.8E-04
				Thallium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-05	mg/kg-day	N/A
				Aroclor 1242	1E-01	mg/kg	1.7E-09	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	1.7E-09	1.3E-08	mg/kg-day	2.0E-05	mg/kg-day	6.6E-04
				Aroclor 1248	N/A	N/A	N/A	N/A	1.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1254	5E-02	mg/kg	8.1E-10	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	8.1E-10	6.3E-09	mg/kg-day	2.0E-05	mg/kg-day	3.2E-04
				Aroclor 1260	8E-02	mg/kg	1.2E-09	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	1.2E-09	9.3E-09	mg/kg-day	2.0E-05	mg/kg-day	4.6E-04
				PCB TEQ*	1E-06	mg/kg	1.7E-14	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	2.5E-09	1.3E-13	mg/kg-day	N/A	N/A	N/A
				C11-C22 Aromatic	1E+01	mg/kg	2.2E-07	mg/kg-day	N/A	N/A	N/A	1.7E-06	mg/kg-day	3.0E-02	mg/kg-day	5.7E-05
			Exp. Route Total								2E-07					7E-03

TABLE 3-7.2.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Commercial Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil (Cont.)	Surface Soil (Cont.)	Aberjona Property	Dermal													
				Vinyl chloride	N/A	N/A	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Trichloroethene	N/A	N/A	N/A	N/A	4.0E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Phenanthrene	7E-01	mg/kg	1.8E-08	mg/kg-day	N/A	N/A	N/A	1.4E-07	mg/kg-day	2.0E-02	mg/kg-day	7.0E-06
				Benzo(a)Anthracene	7E-01	mg/kg	1.8E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.3E-08	1.4E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	7E-01	mg/kg	1.9E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.4E-08	1.5E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	5E-01	mg/kg	1.3E-08	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	9.7E-10	1.0E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	5E-01	mg/kg	1.3E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	9.7E-08	1.0E-07	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	5E-01	mg/kg	1.3E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	9.8E-09	1.0E-07	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	6E-03	mg/kg	1.6E-10	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.2E-09	1.2E-09	mg/kg-day	N/A	N/A	N/A
				Benzo(g,h,i)perylene	6E-01	mg/kg	1.5E-08	mg/kg-day	N/A	N/A	N/A	1.2E-07	mg/kg-day	2.0E-02	mg/kg-day	6.0E-06
				Antimony	2E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-05	mg/kg-day	N/A
				Arsenic	6E+00	mg/kg	3.4E-08	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	5.1E-08	2.6E-07	mg/kg-day	3.0E-04	mg/kg-day	8.8E-04
				Cadmium	1E+01	mg/kg	2.0E-09	mg/kg-day	N/A	N/A	N/A	1.5E-08	mg/kg-day	2.5E-05	mg/kg-day	6.1E-04
				Copper	1E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
				Lead	1E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Manganese	3E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.8E-03	mg/kg-day	N/A
				Mercury	9E-02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A
				Nickel	6E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-04	mg/kg-day	N/A
				Thallium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-05	mg/kg-day	N/A
				Aroclor 1242	1E-01	mg/kg	3.1E-09	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	3.1E-09	2.4E-08	mg/kg-day	2.0E-05	mg/kg-day	1.2E-03
				Aroclor 1248	N/A	N/A	N/A	N/A	1.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1254	5E-02	mg/kg	1.5E-09	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	1.5E-09	1.2E-08	mg/kg-day	2.0E-05	mg/kg-day	5.8E-04
				Aroclor 1260	8E-02	mg/kg	2.2E-09	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	2.2E-09	1.7E-08	mg/kg-day	2.0E-05	mg/kg-day	8.5E-04
				PCB TEQ*	1E-06	mg/kg	3.1E-14	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	4.7E-09	2.4E-13	mg/kg-day	N/A	N/A	N/A
				C11-C22 Aromatic	1E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
			Exp. Route Total								2E-07					4E-03
		Exposure Point Total									4E-07					1E-02

TABLE 3-7.2.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Commercial Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil (Cont.)	Surface Soil (Cont.)	Whitney Property	Ingestion													
				Vinyl chloride	1E-01	mg/kg	1.6E-09	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	2.4E-09	1.3E-08	mg/kg-day	3.0E-03	mg/kg-day	4.2E-06
				Trichloroethene	1E-03	mg/kg	2.1E-11	mg/kg-day	4.0E-01	(mg/kg-day)$^{-1}$	8.5E-12	1.6E-10	mg/kg-day	3.0E-04	mg/kg-day	5.5E-07
				Phenanthrene	1E+01	mg/kg	1.9E-07	mg/kg-day	N/A	N/A	N/A	1.5E-06	mg/kg-day	2.0E-02	mg/kg-day	7.6E-05
				Benzo(a)Anthracene	8E+00	mg/kg	1.2E-07	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	8.4E-08	9.0E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	8E+00	mg/kg	1.1E-07	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	8.3E-08	8.8E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	4E+00	mg/kg	5.9E-08	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	4.3E-09	4.6E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	6E+00	mg/kg	9.8E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	7.1E-07	7.6E-07	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	1E+01	mg/kg	1.7E-07	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.2E-07	1.3E-06	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	3E+00	mg/kg	4.5E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	3.3E-07	3.5E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(g,h,i)perylene	8E+00	mg/kg	1.2E-07	mg/kg-day	N/A	N/A	N/A	9.6E-07	mg/kg-day	2.0E-02	mg/kg-day	4.8E-05
				Antimony	3E+00	mg/kg	4.3E-08	mg/kg-day	N/A	N/A	N/A	3.3E-07	mg/kg-day	4.0E-04	mg/kg-day	8.3E-04
				Arsenic	6E+00	mg/kg	8.5E-08	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	1.3E-07	6.6E-07	mg/kg-day	3.0E-04	mg/kg-day	2.2E-03
				Cadmium	3E+00	mg/kg	4.3E-08	mg/kg-day	N/A	N/A	N/A	3.3E-07	mg/kg-day	1.0E-03	mg/kg-day	3.3E-04
				Copper	1E+02	mg/kg	1.9E-06	mg/kg-day	N/A	N/A	N/A	1.5E-05	mg/kg-day	3.0E-02	mg/kg-day	4.9E-04
				Lead	7E+02	mg/kg	1.1E-05	mg/kg-day	N/A	N/A	N/A	8.5E-05	mg/kg-day	N/A	N/A	N/A
				Manganese	3E+02	mg/kg	3.9E-06	mg/kg-day	N/A	N/A	N/A	3.1E-05	mg/kg-day	7.0E-02	mg/kg-day	4.4E-04
				Mercury	5E-01	mg/kg	8.3E-09	mg/kg-day	N/A	N/A	N/A	6.4E-08	mg/kg-day	1.0E-04	mg/kg-day	6.4E-04
				Nickel	3E+01	mg/kg	3.9E-07	mg/kg-day	N/A	N/A	N/A	3.0E-06	mg/kg-day	2.0E-02	mg/kg-day	1.5E-04
				Thallium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-05	mg/kg-day	N/A
				Aroclor 1242	4E-01	mg/kg	5.8E-09	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	5.8E-09	4.5E-08	mg/kg-day	2.0E-05	mg/kg-day	2.2E-03
				Aroclor 1248	9E-02	mg/kg	1.4E-09	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	1.4E-09	1.1E-08	mg/kg-day	2.0E-05	mg/kg-day	5.6E-04
				Aroclor 1254	4E+00	mg/kg	6.0E-08	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	6.0E-08	4.6E-07	mg/kg-day	2.0E-05	mg/kg-day	2.3E-02
				Aroclor 1260	2E+00	mg/kg	3.0E-08	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	3.0E-08	2.4E-07	mg/kg-day	2.0E-05	mg/kg-day	1.2E-02
				PCB TEQ*	5E-05	mg/kg	7.2E-13	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	1.1E-07	5.6E-12	mg/kg-day	N/A	N/A	N/A
				C11-C22 Aromatic	5E+02	mg/kg	6.9E-06	mg/kg-day	N/A	N/A	N/A	5.4E-05	mg/kg-day	3.0E-02	mg/kg-day	1.8E-03
			Exp. Route Total								2E-06					4E-02

TABLE 3-7.2.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Commercial Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil (Cont.)	Surface Soil (Cont.)	Whitney Property	Dermal													
				Vinyl chloride	1E-01	mg/kg	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Trichloroethene	1E-03	mg/kg	N/A	N/A	4.0E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Phenanthrene	1E+01	mg/kg	3.3E-07	mg/kg-day	N/A	N/A	N/A	2.6E-06	mg/kg-day	2.0E-02	mg/kg-day	1.3E-04
				Benzo(a)Anthracene	8E+00	mg/kg	2.0E-07	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.4E-07	1.5E-06	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	8E+00	mg/kg	1.9E-07	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.4E-07	1.5E-06	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	4E+00	mg/kg	1.0E-07	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	7.4E-09	7.9E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	6E+00	mg/kg	1.7E-07	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.2E-06	1.3E-06	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	1E+01	mg/kg	2.8E-07	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	2.1E-07	2.2E-06	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	3E+00	mg/kg	7.7E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	5.6E-07	6.0E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(g,h,i)perylene	8E+00	mg/kg	2.1E-07	mg/kg-day	N/A	N/A	N/A	1.7E-06	mg/kg-day	2.0E-02	mg/kg-day	8.3E-05
				Antimony	3E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-05	mg/kg-day	N/A
				Arsenic	6E+00	mg/kg	3.4E-08	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	5.1E-08	2.6E-07	mg/kg-day	3.0E-04	mg/kg-day	8.8E-04
				Cadmium	3E+00	mg/kg	5.7E-10	mg/kg-day	N/A	N/A	N/A	4.4E-09	mg/kg-day	2.5E-05	mg/kg-day	1.8E-04
				Copper	1E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
				Lead	7E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Manganese	3E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.8E-03	mg/kg-day	N/A
				Mercury	5E-01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A
				Nickel	3E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-04	mg/kg-day	N/A
				Thallium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-05	mg/kg-day	N/A
				Aroclor 1242	4E-01	mg/kg	1.1E-08	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	1.1E-08	8.3E-08	mg/kg-day	2.0E-05	mg/kg-day	4.1E-03
				Aroclor 1248	9E-02	mg/kg	2.6E-09	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	2.6E-09	2.1E-08	mg/kg-day	2.0E-05	mg/kg-day	1.0E-03
				Aroclor 1254	4E+00	mg/kg	1.1E-07	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	1.1E-07	8.6E-07	mg/kg-day	2.0E-05	mg/kg-day	4.3E-02
				Aroclor 1260	2E+00	mg/kg	5.6E-08	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	5.6E-08	4.4E-07	mg/kg-day	2.0E-05	mg/kg-day	2.2E-02
				PCB TEQ*	5E-05	mg/kg	1.3E-12	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	2.0E-07	1.0E-11	mg/kg-day	N/A	N/A	N/A
				C11-C22 Aromatic	5E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
			Exp. Route Total								3E-06					7E-02
		Exposure Point Total									4E-06					1E-01

TABLE 3-7.2.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Commercial Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil (Cont.)	Surface Soil (Cont.)	Murphy Property	Ingestion													
				Vinyl chloride	N/A	N/A	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Trichloroethene	4E-01	mg/kg	5.7E-09	mg/kg-day	4.0E-01	(mg/kg-day)$^{-1}$	2.3E-09	4.4E-08	mg/kg-day	3.0E-04	mg/kg-day	1.5E-04
				Phenanthrene	2E+00	mg/kg	2.3E-08	mg/kg-day	N/A	N/A	N/A	1.8E-07	mg/kg-day	2.0E-02	mg/kg-day	9.1E-06
				Benzo(a)Anthracene	2E+00	mg/kg	3.7E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	2.7E-08	2.9E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	9E-01	mg/kg	1.4E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.0E-08	1.1E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	9E-01	mg/kg	1.4E-08	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	1.0E-09	1.1E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	2E+00	mg/kg	2.3E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.7E-07	1.8E-07	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	1E+00	mg/kg	1.9E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.4E-08	1.5E-07	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	2E-01	mg/kg	3.2E-09	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	2.3E-08	2.5E-08	mg/kg-day	N/A	N/A	N/A
				Benzo(g,h,i)perylene	1E+00	mg/kg	2.0E-08	mg/kg-day	N/A	N/A	N/A	1.6E-07	mg/kg-day	2.0E-02	mg/kg-day	8.0E-06
				Antimony	4E+00	mg/kg	5.4E-08	mg/kg-day	N/A	N/A	N/A	4.2E-07	mg/kg-day	4.0E-04	mg/kg-day	1.1E-03
				Arsenic	8E+00	mg/kg	1.2E-07	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	1.8E-07	9.5E-07	mg/kg-day	3.0E-04	mg/kg-day	3.2E-03
				Cadmium	3E+00	mg/kg	4.5E-08	mg/kg-day	N/A	N/A	N/A	3.5E-07	mg/kg-day	1.0E-03	mg/kg-day	3.5E-04
				Copper	4E+01	mg/kg	5.4E-07	mg/kg-day	N/A	N/A	N/A	4.2E-06	mg/kg-day	3.0E-02	mg/kg-day	1.4E-04
				Lead	8E+02	mg/kg	1.3E-05	mg/kg-day	N/A	N/A	N/A	9.7E-05	mg/kg-day	N/A	N/A	N/A
				Manganese	4E+02	mg/kg	6.2E-06	mg/kg-day	N/A	N/A	N/A	4.8E-05	mg/kg-day	7.0E-02	mg/kg-day	6.9E-04
				Mercury	6E-01	mg/kg	8.7E-09	mg/kg-day	N/A	N/A	N/A	6.8E-08	mg/kg-day	1.0E-04	mg/kg-day	6.8E-04
				Nickel	2E+01	mg/kg	2.5E-07	mg/kg-day	N/A	N/A	N/A	2.0E-06	mg/kg-day	2.0E-02	mg/kg-day	9.9E-05
				Thallium	6E+00	mg/kg	8.6E-08	mg/kg-day	N/A	N/A	N/A	6.7E-07	mg/kg-day	8.0E-05	mg/kg-day	8.4E-03
				Aroclor 1242	N/A	N/A	N/A	N/A	1.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1248	N/A	N/A	N/A	N/A	1.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1254	5E-01	mg/kg	6.8E-09	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	6.8E-09	5.3E-08	mg/kg-day	2.0E-05	mg/kg-day	2.6E-03
				Aroclor 1260	5E-02	mg/kg	7.4E-10	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	7.4E-10	5.8E-09	mg/kg-day	2.0E-05	mg/kg-day	2.9E-04
				PCB TEQ*	6E-08	mg/kg	8.8E-16	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	1.3E-10	6.9E-15	mg/kg-day	N/A	N/A	N/A
				C11-C22 Aromatic	4E+03	mg/kg	5.6E-05	mg/kg-day	N/A	N/A	N/A	4.4E-04	mg/kg-day	3.0E-02	mg/kg-day	1.5E-02
			Exp. Route Total								4E-07					3E-02

TABLE 3-7.2.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Commercial Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil (Cont.)	Surface Soil (Cont.)	Murphy Property	Dermal													
				Vinyl chloride	N/A	N/A	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Trichloroethene	4E-01	mg/kg	N/A	N/A	4.0E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Phenanthrene	2E+00	mg/kg	4.0E-08	mg/kg-day	N/A	N/A	N/A	3.1E-07	mg/kg-day	2.0E-02	mg/kg-day	1.6E-05
				Benzo(a)Anthracene	2E+00	mg/kg	6.4E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	4.6E-08	4.9E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	9E-01	mg/kg	2.4E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.8E-08	1.9E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	9E-01	mg/kg	2.4E-08	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	1.8E-09	1.9E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	2E+00	mg/kg	4.0E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	2.9E-07	3.1E-07	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	1E+00	mg/kg	3.3E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	2.4E-08	2.6E-07	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	2E-01	mg/kg	5.4E-09	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	4.0E-08	4.2E-08	mg/kg-day	N/A	N/A	N/A
				Benzo(g,h,i)perylene	1E+00	mg/kg	3.5E-08	mg/kg-day	N/A	N/A	N/A	2.7E-07	mg/kg-day	2.0E-02	mg/kg-day	1.4E-05
				Antimony	4E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-05	mg/kg-day	N/A
				Arsenic	8E+00	mg/kg	4.9E-08	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	7.3E-08	3.8E-07	mg/kg-day	3.0E-04	mg/kg-day	1.3E-03
				Cadmium	3E+00	mg/kg	5.9E-10	mg/kg-day	N/A	N/A	N/A	4.6E-09	mg/kg-day	2.5E-05	mg/kg-day	1.8E-04
				Copper	4E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
				Lead	8E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Manganese	4E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.8E-03	mg/kg-day	N/A
				Mercury	6E-01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A
				Nickel	2E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-04	mg/kg-day	N/A
				Thallium	6E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-05	mg/kg-day	N/A
				Aroclor 1242	N/A	N/A	N/A	N/A	1.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1248	N/A	N/A	N/A	N/A	1.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1254	5E-01	mg/kg	1.3E-08	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	1.3E-08	9.8E-08	mg/kg-day	2.0E-05	mg/kg-day	4.9E-03
				Aroclor 1260	5E-02	mg/kg	1.4E-09	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	1.4E-09	1.1E-08	mg/kg-day	2.0E-05	mg/kg-day	5.3E-04
				PCB TEQ*	6E-08	mg/kg	1.6E-15	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	2.4E-10	1.3E-14	mg/kg-day	N/A	N/A	N/A
				C11-C22 Aromatic	4E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
			Exp. Route Total								5E-07					7E-03
		Exposure Point Total									1E-06					4E-02
	Exposure Medium Total										N/A					N/A

TABLE 3-7.2.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Commercial Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Soil	Indoor Air	Aberjona Property	Inhalation													
				1,2,4-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-03	mg/m3	N/A
				1,2-Dichloroethene (total)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				1,3,5-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-03	mg/m3	N/A
				n-Butylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Naphthalene	2E-02	ug/m3	6.1E-04	ug/m3	N/A	N/A	N/A	4.7E-06	mg/m3	3.0E-03	mg/m3	1.6E-03
				p-Isopropyltoluene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.0E-01	mg/m3	N/A
				Chloromethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9.0E-02	mg/m3	N/A
				Vinyl chloride	N/A	N/A	N/A	N/A	8.8E-06	(ug/m3)-1	N/A	N/A	N/A	1.0E-01	mg/m3	N/A
				Bromomethane	4E-03	ug/m3	1.1E-04	ug/m3	N/A	N/A	N/A	8.6E-07	mg/m3	5.0E-03	mg/m3	1.7E-04
				Chloroethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E+01	mg/m3	N/A
				1,1-Dichloroethene	1E-02	ug/m3	2.6E-04	ug/m3	N/A	N/A	N/A	2.0E-06	mg/m3	2.0E-01	mg/m3	1.0E-05
				Acetone	2E-03	ug/m3	4.2E-05	ug/m3	N/A	N/A	N/A	3.3E-07	mg/m3	N/A	N/A	N/A
				Methylene chloride	N/A	N/A	N/A	N/A	4.7E-07	(ug/m3)-1	N/A	N/A	N/A	3.0E+00	mg/m3	N/A
				trans-1,2-Dichloroethene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/m3	N/A
				Methyl tert-butyl ether	8E-03	ug/m3	2.0E-04	ug/m3	N/A	N/A	N/A	1.6E-06	mg/m3	3.0E+00	mg/m3	5.2E-07
				1,1-Dichloroethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-01	mg/m3	N/A
				cis-1,2-Dichloroethene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/m3	N/A
				1,1,1-Trichloroethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.2E+00	mg/m3	N/A
				Benzene	1E-02	ug/m3	3.2E-04	ug/m3	7.8E-06	(ug/m3)-1	2.5E-09	2.5E-06	mg/m3	3.0E-02	mg/m3	8.2E-05
				Trichloroethene	N/A	N/A	N/A	N/A	1.1E-04	(ug/m3)-1	N/A	N/A	N/A	4.0E-02	mg/m3	N/A
				Methyl cyclohexane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E+00	mg/m3	N/A
				Toluene	6E-02	ug/m3	1.5E-03	ug/m3	N/A	N/A	N/A	1.2E-05	mg/m3	4.0E-01	mg/m3	2.9E-05
				Tetrachloroethene	N/A	N/A	N/A	N/A	5.9E-06	(ug/m3)-1	N/A	N/A	N/A	N/A	N/A	N/A
				Chlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-02	mg/m3	N/A
				Ethylbenzene	4E-01	ug/m3	1.1E-02	ug/m3	N/A	N/A	N/A	8.3E-05	mg/m3	1.0E+00	mg/m3	8.3E-05
				1,3-Dichlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				1,4-Dichlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-01	mg/m3	N/A
				1,2-Dichlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				2-Methylnaphthalene	4E-02	ug/m3	1.1E-03	ug/m3	N/A	N/A	N/A	8.4E-06	mg/m3	N/A	N/A	N/A
				Acenaphthylene	5E-03	ug/m3	1.2E-04	ug/m3	N/A	N/A	N/A	9.6E-07	mg/m3	3.0E-03	mg/m3	3.2E-04
				Dibenzofuran	3E-03	ug/m3	8.8E-05	ug/m3	N/A	N/A	N/A	6.9E-07	mg/m3	N/A	N/A	N/A
				Phenanthrene	6E-04	ug/m3	1.5E-05	ug/m3	N/A	N/A	N/A	1.2E-07	mg/m3	3.0E-03	mg/m3	3.9E-05
				Anthracene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-03	mg/m3	N/A
				C5-C8 Aliphatic	8E+01	ug/m3	1.9E+00	ug/m3	N/A	N/A	N/A	1.5E-02	mg/m3	2.0E-01	mg/m3	7.6E-02
				C9-C12 Aliphatic	6E+00	ug/m3	1.6E-01	ug/m3	N/A	N/A	N/A	1.2E-03	mg/m3	2.0E-01	mg/m3	6.1E-03
				C9-C10 Aromatic	2E+01	ug/m3	5.4E-01	ug/m3	N/A	N/A	N/A	4.2E-03	mg/m3	5.0E-02	mg/m3	8.4E-02
				C9-C18 Aliphatic	9E+01	ug/m3	2.3E+00	ug/m3	N/A	N/A	N/A	1.8E-02	mg/m3	2.0E-01	mg/m3	9.0E-02
				C11-C22 Aromatic	2E+00	ug/m3	4.8E-02	ug/m3	N/A	N/A	N/A	3.8E-04	mg/m3	5.0E-02	mg/m3	7.5E-03
			Exp. Route Total								2E-09					3E-01
		Exposure Point Total									2E-09					3E-01

TABLE 3-7.2.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Commercial Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Soil (Cont.)	Indoor Air (Cont.)	Whitney Property	Inhalation													
				1,2,4-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-03	mg/m3	N/A
				1,2-Dichloroethene (total)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				1,3,5-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-03	mg/m3	N/A
				n-Butylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Naphthalene	5E-02	ug/m3	1.2E-03	ug/m3	N/A	N/A	N/A	9.2E-06	mg/m3	3.0E-03	mg/m3	3.1E-03
				p-Isopropyltoluene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.0E-01	mg/m3	N/A
				Chloromethane	4E+00	ug/m3	9.0E-02	ug/m3	N/A	N/A	N/A	7.0E-04	mg/m3	9.0E-02	mg/m3	7.8E-03
				Vinyl chloride	7E+00	ug/m3	1.8E-01	ug/m3	8.8E-06	(ug/m3)-1	1.6E-06	1.4E-03	mg/m3	1.0E-01	mg/m3	1.4E-02
				Bromomethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-03	mg/m3	N/A
				Chloroethane	1E+00	ug/m3	3.1E-02	ug/m3	N/A	N/A	N/A	2.4E-04	mg/m3	1.0E+01	mg/m3	2.4E-05
				1,1-Dichloroethene	1E+00	ug/m3	3.0E-02	ug/m3	N/A	N/A	N/A	2.3E-04	mg/m3	2.0E-01	mg/m3	1.2E-03
				Acetone	1E-02	ug/m3	3.8E-04	ug/m3	N/A	N/A	N/A	3.0E-06	mg/m3	N/A	N/A	N/A
				Methylene chloride	2E+00	ug/m3	4.5E-02	ug/m3	4.7E-07	(ug/m3)-1	2.1E-08	3.5E-04	mg/m3	3.0E+00	mg/m3	1.2E-04
				trans-1,2-Dichloroethene	9E-01	ug/m3	2.3E-02	ug/m3	N/A	N/A	N/A	1.8E-04	mg/m3	2.0E-01	mg/m3	8.8E-04
				Methyl tert-butyl ether	5E-02	ug/m3	1.3E-03	ug/m3	N/A	N/A	N/A	9.9E-06	mg/m3	3.0E+00	mg/m3	3.3E-06
				1,1-Dichloroethane	2E+00	ug/m3	4.5E-02	ug/m3	N/A	N/A	N/A	3.5E-04	mg/m3	5.0E-01	mg/m3	7.0E-04
				cis-1,2-Dichloroethene	6E-01	ug/m3	1.6E-02	ug/m3	N/A	N/A	N/A	1.2E-04	mg/m3	2.0E-01	mg/m3	6.1E-04
				1,1,1-Trichloroethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.2E+00	mg/m3	N/A
				Benzene	3E-01	ug/m3	7.9E-03	ug/m3	7.8E-06	(ug/m3)-1	6.2E-08	6.2E-05	mg/m3	3.0E-02	mg/m3	2.1E-03
				Trichloroethene	1E+00	ug/m3	3.0E-02	ug/m3	1.1E-04	(ug/m3)-1	3.3E-06	2.4E-04	mg/m3	4.0E-02	mg/m3	5.9E-03
				Methyl cyclohexane	4E+01	ug/m3	9.3E-01	ug/m3	N/A	N/A	N/A	7.2E-03	mg/m3	3.0E+00	mg/m3	2.4E-03
				Toluene	1E+00	ug/m3	3.6E-02	ug/m3	N/A	N/A	N/A	2.8E-04	mg/m3	4.0E-01	mg/m3	6.9E-04
				Tetrachloroethene	1E+00	ug/m3	2.6E-02	ug/m3	5.9E-06	(ug/m3)-1	1.5E-07	2.0E-04	mg/m3	N/A	N/A	N/A
				Chlorobenzene	3E-01	ug/m3	8.9E-03	ug/m3	N/A	N/A	N/A	6.9E-05	mg/m3	6.0E-02	mg/m3	1.2E-03
				Ethylbenzene	3E-01	ug/m3	7.5E-03	ug/m3	N/A	N/A	N/A	5.8E-05	mg/m3	1.0E+00	mg/m3	5.8E-05
				1,3-Dichlorobenzene	3E-01	ug/m3	8.8E-03	ug/m3	N/A	N/A	N/A	6.8E-05	mg/m3	N/A	N/A	N/A
				1,4-Dichlorobenzene	7E-02	ug/m3	1.8E-03	ug/m3	N/A	N/A	N/A	1.4E-05	mg/m3	8.0E-01	mg/m3	1.8E-05
				1,2-Dichlorobenzene	4E-05	ug/m3	1.1E-06	ug/m3	N/A	N/A	N/A	8.6E-09	mg/m3	N/A	N/A	N/A
				2-Methylnaphthalene	1E-01	ug/m3	3.3E-03	ug/m3	N/A	N/A	N/A	2.6E-05	mg/m3	N/A	N/A	N/A
				Acenaphthylene	5E-03	ug/m3	1.2E-04	ug/m3	N/A	N/A	N/A	9.3E-07	mg/m3	3.0E-03	mg/m3	3.1E-04
				Dibenzofuran	2E-01	ug/m3	4.5E-03	ug/m3	N/A	N/A	N/A	3.5E-05	mg/m3	N/A	N/A	N/A
				Phenanthrene	7E-02	ug/m3	1.7E-03	ug/m3	N/A	N/A	N/A	1.4E-05	mg/m3	3.0E-03	mg/m3	4.5E-03
				Anthracene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-03	mg/m3	N/A
				C5-C8 Aliphatic	4E+03	ug/m3	1.1E+02	ug/m3	N/A	N/A	N/A	8.3E-01	mg/m3	2.0E-01	mg/m3	4.1E+00
				C9-C12 Aliphatic	7E+01	ug/m3	1.9E+00	ug/m3	N/A	N/A	N/A	1.5E-02	mg/m3	2.0E-01	mg/m3	7.3E-02
				C9-C10 Aromatic	2E+02	ug/m3	5.4E+00	ug/m3	N/A	N/A	N/A	4.2E-02	mg/m3	5.0E-02	mg/m3	8.4E-01
				C9-C18 Aliphatic	3E+02	ug/m3	6.7E+00	ug/m3	N/A	N/A	N/A	5.2E-02	mg/m3	2.0E-01	mg/m3	2.6E-01
				C11-C22 Aromatic	2E+01	ug/m3	3.9E-01	ug/m3	N/A	N/A	N/A	3.0E-03	mg/m3	5.0E-02	mg/m3	6.1E-02
			Exp. Route Total								5E-06					5E+00
		Exposure Point Total									5E-06					5E+00

TABLE 3-7.2.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Commercial Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Soil (Cont.)	Indoor Air (Cont.)	Murphy Property	Inhalation													
				1,2,4-Trimethylbenzene	8E-01	ug/m3	2.0E-02	ug/m3	N/A	N/A	N/A	1.5E-04	mg/m3	6.0E-03	mg/m3	2.6E-02
				1,2-Dichloroethene (total)	3E-01	ug/m3	8.3E-03	ug/m3	N/A	N/A	N/A	6.4E-05	mg/m3	N/A	N/A	N/A
				1,3,5-Trimethylbenzene	5E+00	ug/m3	1.3E-01	ug/m3	N/A	N/A	N/A	9.8E-04	mg/m3	6.0E-03	mg/m3	1.6E-01
				n-Butylbenzene	2E-01	ug/m3	5.6E-03	ug/m3	N/A	N/A	N/A	4.4E-05	mg/m3	N/A	N/A	N/A
				Naphthalene	7E-02	ug/m3	1.9E-03	ug/m3	N/A	N/A	N/A	1.5E-05	mg/m3	3.0E-03	mg/m3	4.9E-03
				p-Isopropyltoluene	2E+01	ug/m3	6.2E-01	ug/m3	N/A	N/A	N/A	4.8E-03	mg/m3	4.0E-01	mg/m3	1.2E-02
				Chloromethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9.0E-02	mg/m3	N/A
				Vinyl chloride	N/A	N/A	N/A	N/A	8.8E-06	(ug/m3)-1	N/A	N/A	N/A	1.0E-01	mg/m3	N/A
				Bromomethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-03	mg/m3	N/A
				Chloroethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E+01	mg/m3	N/A
				1,1-Dichloroethene	4E-02	ug/m3	1.0E-03	ug/m3	N/A	N/A	N/A	8.1E-06	mg/m3	2.0E-01	mg/m3	4.1E-05
				Acetone	8E-02	ug/m3	2.1E-03	ug/m3	N/A	N/A	N/A	1.6E-05	mg/m3	N/A	N/A	N/A
				Methylene chloride	7E+00	ug/m3	1.7E-01	ug/m3	4.7E-07	(ug/m3)-1	8.0E-08	1.3E-03	mg/m3	3.0E+00	mg/m3	4.4E-04
				trans-1,2-Dichloroethene	5E+00	ug/m3	1.3E-01	ug/m3	N/A	N/A	N/A	9.9E-04	mg/m3	2.0E-01	mg/m3	4.9E-03
				Methyl tert-butyl ether	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E+00	mg/m3	N/A
				1,1-Dichloroethane	2E+00	ug/m3	5.6E-02	ug/m3	N/A	N/A	N/A	4.4E-04	mg/m3	5.0E-01	mg/m3	8.8E-04
				cis-1,2-Dichloroethene	2E+00	ug/m3	4.6E-02	ug/m3	N/A	N/A	N/A	3.6E-04	mg/m3	2.0E-01	mg/m3	1.8E-03
				1,1,1-Trichloroethane	4E+00	ug/m3	1.2E-01	ug/m3	N/A	N/A	N/A	9.0E-04	mg/m3	2.2E+00	mg/m3	4.1E-04
				Benzene	1E+00	ug/m3	3.4E-02	ug/m3	7.8E-06	(ug/m3)-1	2.6E-07	2.6E-04	mg/m3	3.0E-02	mg/m3	8.7E-03
				Trichloroethene	1E+00	ug/m3	3.2E-02	ug/m3	1.1E-04	(ug/m3)-1	3.5E-06	2.5E-04	mg/m3	4.0E-02	mg/m3	6.2E-03
				Methyl cyclohexane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E+00	mg/m3	N/A
				Toluene	3E+00	ug/m3	7.2E-02	ug/m3	N/A	N/A	N/A	5.6E-04	mg/m3	4.0E-01	mg/m3	1.4E-03
				Tetrachloroethene	9E-01	ug/m3	2.3E-02	ug/m3	5.9E-06	(ug/m3)-1	1.4E-07	1.8E-04	mg/m3	N/A	N/A	N/A
				Chlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-02	mg/m3	N/A
				Ethylbenzene	1E+00	ug/m3	3.7E-02	ug/m3	N/A	N/A	N/A	2.9E-04	mg/m3	1.0E+00	mg/m3	2.9E-04
				1,3-Dichlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				1,4-Dichlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-01	mg/m3	N/A
				1,2-Dichlorobenzene	3E-03	ug/m3	6.7E-05	ug/m3	N/A	N/A	N/A	5.2E-07	mg/m3	N/A	N/A	N/A
				2-Methylnaphthalene	3E-02	ug/m3	7.2E-04	ug/m3	N/A	N/A	N/A	5.6E-06	mg/m3	N/A	N/A	N/A
				Acenaphthylene	2E-02	ug/m3	5.7E-04	ug/m3	N/A	N/A	N/A	4.4E-06	mg/m3	3.0E-03	mg/m3	1.5E-03
				Dibenzofuran	5E-03	ug/m3	1.2E-04	ug/m3	N/A	N/A	N/A	9.4E-07	mg/m3	N/A	N/A	N/A
				Phenanthrene	4E-03	ug/m3	1.1E-04	ug/m3	N/A	N/A	N/A	8.8E-07	mg/m3	3.0E-03	mg/m3	2.9E-04
				Anthracene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-03	mg/m3	N/A
				C5-C8 Aliphatic	6E+01	ug/m3	1.5E+00	ug/m3	N/A	N/A	N/A	1.2E-02	mg/m3	2.0E-01	mg/m3	5.8E-02
				C9-C12 Aliphatic	2E+00	ug/m3	4.2E-02	ug/m3	N/A	N/A	N/A	3.3E-04	mg/m3	2.0E-01	mg/m3	1.6E-03
				C9-C10 Aromatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/m3	N/A
				C9-C18 Aliphatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/m3	N/A
				C11-C22 Aromatic	1E+02	ug/m3	3.2E+00	ug/m3	N/A	N/A	N/A	2.5E-02	mg/m3	5.0E-02	mg/m3	4.9E-01
			Exp. Route Total								4E-06					8E-01
		Exposure Point Total									4E-06					8E-01
	Exposure Medium Total										N/A					N/A

TABLE 3-7.2.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Commercial Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Ground Water	Indoor Air	Aberjona Property	Inhalation													
				1,2,4-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-03	mg/m3	N/A
				1,2-Dichloroethene (total)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				1,3,5-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-03	mg/m3	N/A
				n-Butylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Naphthalene	2E-05	ug/m3	5.2E-07	ug/m3	N/A	N/A	N/A	4.1E-09	mg/m3	3.0E-03	mg/m3	1.4E-06
				p-Isopropyltoluene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.0E-01	mg/m3	N/A
				Chloromethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9.0E-02	mg/m3	N/A
				Vinyl chloride	4E-04	ug/m3	1.0E-05	ug/m3	8.8E-06	(ug/m3)-1	8.9E-11	7.9E-08	mg/m3	1.0E-01	mg/m3	7.9E-07
				Bromomethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-03	mg/m3	N/A
				Chloroethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E+01	mg/m3	N/A
				1,1-Dichloroethene	2E-04	ug/m3	4.1E-06	ug/m3	N/A	N/A	N/A	3.2E-08	mg/m3	2.0E-01	mg/m3	1.6E-07
				Acetone	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Methylene chloride	N/A	N/A	N/A	N/A	4.7E-07	(ug/m3)-1	N/A	N/A	N/A	3.0E+00	mg/m3	N/A
				trans-1,2-Dichloroethene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/m3	N/A
				Methyl tert-butyl ether	2E-04	ug/m3	5.9E-06	ug/m3	N/A	N/A	N/A	4.6E-08	mg/m3	3.0E+00	mg/m3	1.5E-08
				1,1-Dichloroethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-01	mg/m3	N/A
				cis-1,2-Dichloroethene	1E-03	ug/m3	3.6E-05	ug/m3	N/A	N/A	N/A	2.8E-07	mg/m3	2.0E-01	mg/m3	1.4E-06
				1,1,1-Trichloroethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.2E+00	mg/m3	N/A
				Benzene	7E-05	ug/m3	1.9E-06	ug/m3	7.8E-06	(ug/m3)-1	1.4E-11	1.4E-08	mg/m3	3.0E-02	mg/m3	4.8E-07
				Trichloroethene	4E-03	ug/m3	9.4E-05	ug/m3	1.1E-04	(ug/m3)-1	1.0E-08	7.3E-07	mg/m3	4.0E-02	mg/m3	1.8E-05
				Methyl cyclohexane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E+00	mg/m3	N/A
				Toluene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.0E-01	mg/m3	N/A
				Tetrachloroethene	3E-04	ug/m3	8.5E-06	ug/m3	5.9E-06	(ug/m3)-1	5.0E-11	6.6E-08	mg/m3	N/A	N/A	N/A
				Chlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-02	mg/m3	N/A
				Ethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E+00	mg/m3	N/A
				1,3-Dichlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				1,4-Dichlorobenzene	4E-05	ug/m3	1.1E-06	ug/m3	N/A	N/A	N/A	8.4E-09	mg/m3	8.0E-01	mg/m3	1.0E-08
				1,2-Dichlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				2-Methylnaphthalene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Acenaphthylene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-03	mg/m3	N/A
				Dibenzofuran	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Phenanthrene	2E-05	ug/m3	6.0E-07	ug/m3	N/A	N/A	N/A	4.7E-09	mg/m3	3.0E-03	mg/m3	1.6E-06
				Anthracene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-03	mg/m3	N/A
				C5-C8 Aliphatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/m3	N/A
				C9-C12 Aliphatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/m3	N/A
				C9-C10 Aromatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/m3	N/A
				C9-C18 Aliphatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/m3	N/A
				C11-C22 Aromatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/m3	N/A
			Exp. Route Total								1E-08					2E-05
		Exposure Point Total									1E-08					2E-05

TABLE 3-7.2.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Commercial Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Ground Water (Cont.)	Indoor Air (Cont.)	Whitney Property	Inhalation													
				1,2,4-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-03	mg/m3	N/A
				1,2-Dichloroethene (total)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				1,3,5-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-03	mg/m3	N/A
				n-Butylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Naphthalene	5E-04	ug/m3	1.3E-05	ug/m3	N/A	N/A	N/A	1.0E-07	mg/m3	3.0E-03	mg/m3	3.3E-05
				p-Isopropyltoluene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.0E-01	mg/m3	N/A
				Chloromethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9.0E-02	mg/m3	N/A
				Vinyl chloride	5E-01	ug/m3	1.4E-02	ug/m3	8.8E-06	(ug/m3)-1	1.2E-07	1.1E-04	mg/m3	1.0E-01	mg/m3	1.1E-03
				Bromomethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-03	mg/m3	N/A
				Chloroethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E+01	mg/m3	N/A
				1,1-Dichloroethene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/m3	N/A
				Acetone	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Methylene chloride	N/A	N/A	N/A	N/A	4.7E-07	(ug/m3)-1	N/A	N/A	N/A	3.0E+00	mg/m3	N/A
				trans-1,2-Dichloroethene	1E-02	ug/m3	3.0E-04	ug/m3	N/A	N/A	N/A	2.4E-06	mg/m3	2.0E-01	mg/m3	1.2E-05
				Methyl tert-butyl ether	2E-02	ug/m3	6.3E-04	ug/m3	N/A	N/A	N/A	4.9E-06	mg/m3	3.0E+00	mg/m3	1.6E-06
				1,1-Dichloroethane	2E-02	ug/m3	6.4E-04	ug/m3	N/A	N/A	N/A	4.9E-06	mg/m3	5.0E-01	mg/m3	9.9E-06
				cis-1,2-Dichloroethene	7E-02	ug/m3	1.7E-03	ug/m3	N/A	N/A	N/A	1.3E-05	mg/m3	2.0E-01	mg/m3	6.7E-05
				1,1,1-Trichloroethane	1E-02	ug/m3	3.4E-04	ug/m3	N/A	N/A	N/A	2.7E-06	mg/m3	2.2E+00	mg/m3	1.2E-06
				Benzene	2E-02	ug/m3	5.2E-04	ug/m3	7.8E-06	(ug/m3)-1	4.0E-09	4.0E-06	mg/m3	3.0E-02	mg/m3	1.3E-04
				Trichloroethene	3E-03	ug/m3	8.4E-05	ug/m3	1.1E-04	(ug/m3)-1	9.3E-09	6.6E-07	mg/m3	4.0E-02	mg/m3	1.6E-05
				Methyl cyclohexane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E+00	mg/m3	N/A
				Toluene	3E-01	ug/m3	6.5E-03	ug/m3	N/A	N/A	N/A	5.0E-05	mg/m3	4.0E-01	mg/m3	1.3E-04
				Tetrachloroethene	N/A	N/A	N/A	N/A	5.9E-06	(ug/m3)-1	N/A	N/A	N/A	N/A	N/A	N/A
				Chlorobenzene	3E-03	ug/m3	6.6E-05	ug/m3	N/A	N/A	N/A	5.1E-07	mg/m3	6.0E-02	mg/m3	8.5E-06
				Ethylbenzene	1E-02	ug/m3	2.8E-04	ug/m3	N/A	N/A	N/A	2.2E-06	mg/m3	1.0E+00	mg/m3	2.2E-06
				1,3-Dichlorobenzene	6E-03	ug/m3	1.5E-04	ug/m3	N/A	N/A	N/A	1.2E-06	mg/m3	N/A	N/A	N/A
				1,4-Dichlorobenzene	1E-02	ug/m3	3.1E-04	ug/m3	N/A	N/A	N/A	2.4E-06	mg/m3	8.0E-01	mg/m3	3.1E-06
				1,2-Dichlorobenzene	5E-06	ug/m3	1.3E-07	ug/m3	N/A	N/A	N/A	9.7E-10	mg/m3	N/A	N/A	N/A
				2-Methylnaphthalene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Acenaphthylene	2E-04	ug/m3	6.2E-06	ug/m3	N/A	N/A	N/A	4.8E-08	mg/m3	3.0E-03	mg/m3	1.6E-05
				Dibenzofuran	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Phenanthrene	1E-04	ug/m3	2.8E-06	ug/m3	N/A	N/A	N/A	2.2E-08	mg/m3	3.0E-03	mg/m3	7.3E-06
				Anthracene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-03	mg/m3	N/A
				C5-C8 Aliphatic	3E+01	ug/m3	8.6E-01	ug/m3	N/A	N/A	N/A	6.7E-03	mg/m3	2.0E-01	mg/m3	3.4E-02
				C9-C12 Aliphatic	7E+00	ug/m3	1.7E-01	ug/m3	N/A	N/A	N/A	1.3E-03	mg/m3	2.0E-01	mg/m3	6.5E-03
				C9-C10 Aromatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/m3	N/A
				C9-C18 Aliphatic	1E+01	ug/m3	3.3E-01	ug/m3	N/A	N/A	N/A	2.6E-03	mg/m3	2.0E-01	mg/m3	1.3E-02
				C11-C22 Aromatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/m3	N/A
			Exp. Route Total								1E-07					5E-02
		Exposure Point Total									1E-07					5E-02

TABLE 3-7.2.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Commercial Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Ground Water (Cont.)	Indoor Air (Cont.)	Murphy Property	Inhalation													
				1,2,4-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-03	mg/m3	N/A
				1,2-Dichloroethene (total)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				1,3,5-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-03	mg/m3	N/A
				n-Butylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Naphthalene	6E-04	ug/m3	1.6E-05	ug/m3	N/A	N/A	N/A	1.3E-07	mg/m3	3.0E-03	mg/m3	4.2E-05
				p-Isopropyltoluene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.0E-01	mg/m3	N/A
				Chloromethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9.0E-02	mg/m3	N/A
				Vinyl chloride	2E+00	ug/m3	4.1E-02	ug/m3	8.8E-06	(ug/m3)-1	3.6E-07	3.2E-04	mg/m3	1.0E-01	mg/m3	3.2E-03
				Bromomethane	2E-03	ug/m3	6.4E-05	ug/m3	N/A	N/A	N/A	4.9E-07	mg/m3	5.0E-03	mg/m3	9.9E-05
				Chloroethane	1E-01	ug/m3	3.1E-03	ug/m3	N/A	N/A	N/A	2.4E-05	mg/m3	1.0E+01	mg/m3	2.4E-06
				1,1-Dichloroethene	6E-02	ug/m3	1.6E-03	ug/m3	N/A	N/A	N/A	1.3E-05	mg/m3	2.0E-01	mg/m3	6.3E-05
				Acetone	3E-04	ug/m3	7.3E-06	ug/m3	N/A	N/A	N/A	5.7E-08	mg/m3	N/A	N/A	N/A
				Methylene chloride	9E-03	ug/m3	2.4E-04	ug/m3	4.7E-07	(ug/m3)-1	1.1E-10	1.8E-06	mg/m3	3.0E+00	mg/m3	6.1E-07
				trans-1,2-Dichloroethene	5E-02	ug/m3	1.2E-03	ug/m3	N/A	N/A	N/A	9.4E-06	mg/m3	2.0E-01	mg/m3	4.7E-05
				Methyl tert-butyl ether	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E+00	mg/m3	N/A
				1,1-Dichloroethane	9E-02	ug/m3	2.4E-03	ug/m3	N/A	N/A	N/A	1.9E-05	mg/m3	5.0E-01	mg/m3	3.8E-05
				cis-1,2-Dichloroethene	7E-01	ug/m3	1.8E-02	ug/m3	N/A	N/A	N/A	1.4E-04	mg/m3	2.0E-01	mg/m3	6.9E-04
				1,1,1-Trichloroethane	2E-01	ug/m3	5.3E-03	ug/m3	N/A	N/A	N/A	4.1E-05	mg/m3	2.2E+00	mg/m3	1.9E-05
				Benzene	8E-03	ug/m3	2.1E-04	ug/m3	7.8E-06	(ug/m3)-1	1.7E-09	1.7E-06	mg/m3	3.0E-02	mg/m3	5.6E-05
				Trichloroethene	7E-02	ug/m3	1.9E-03	ug/m3	1.1E-04	(ug/m3)-1	2.1E-07	1.5E-05	mg/m3	4.0E-02	mg/m3	3.6E-04
				Methyl cyclohexane	1E+00	ug/m3	3.2E-02	ug/m3	N/A	N/A	N/A	2.5E-04	mg/m3	3.0E+00	mg/m3	8.4E-05
				Toluene	2E-02	ug/m3	6.1E-04	ug/m3	N/A	N/A	N/A	4.7E-06	mg/m3	4.0E-01	mg/m3	1.2E-05
				Tetrachloroethene	2E-02	ug/m3	6.3E-04	ug/m3	5.9E-06	(ug/m3)-1	3.7E-09	4.9E-06	mg/m3	N/A	N/A	N/A
				Chlorobenzene	7E-04	ug/m3	1.8E-05	ug/m3	N/A	N/A	N/A	1.4E-07	mg/m3	6.0E-02	mg/m3	2.3E-06
				Ethylbenzene	1E-02	ug/m3	2.8E-04	ug/m3	N/A	N/A	N/A	2.2E-06	mg/m3	1.0E+00	mg/m3	2.2E-06
				1,3-Dichlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				1,4-Dichlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-01	mg/m3	N/A
				1,2-Dichlorobenzene	9E-07	ug/m3	2.3E-08	ug/m3	N/A	N/A	N/A	1.8E-10	mg/m3	N/A	N/A	N/A
				2-Methylnaphthalene	2E-03	ug/m3	5.3E-05	ug/m3	N/A	N/A	N/A	4.1E-07	mg/m3	N/A	N/A	N/A
				Acenaphthylene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-03	mg/m3	N/A
				Dibenzofuran	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Phenanthrene	3E-04	ug/m3	7.0E-06	ug/m3	N/A	N/A	N/A	5.4E-08	mg/m3	3.0E-03	mg/m3	1.8E-05
				Anthracene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-03	mg/m3	N/A
				C5-C8 Aliphatic	3E+01	ug/m3	8.1E-01	ug/m3	N/A	N/A	N/A	6.3E-03	mg/m3	2.0E-01	mg/m3	3.1E-02
				C9-C12 Aliphatic	1E+01	ug/m3	2.8E-01	ug/m3	N/A	N/A	N/A	2.2E-03	mg/m3	2.0E-01	mg/m3	1.1E-02
				C9-C10 Aromatic	1E-01	ug/m3	3.1E-03	ug/m3	N/A	N/A	N/A	2.4E-05	mg/m3	5.0E-02	mg/m3	4.8E-04
				C9-C18 Aliphatic	3E+02	ug/m3	8.5E+00	ug/m3	N/A	N/A	N/A	6.6E-02	mg/m3	2.0E-01	mg/m3	3.3E-01
				C11-C22 Aromatic	7E-02	ug/m3	1.7E-03	ug/m3	N/A	N/A	N/A	1.3E-05	mg/m3	5.0E-02	mg/m3	2.7E-04
			Exp. Route Total								6E-07					4E-01
		Exposure Point Total									6E-07					4E-01
	Exposure Medium Total										N/A					N/A
Medium Total											N/A					N/A
									Total of Receptor Risks Across All Media		NA			Total of Receptor Hazards Across All Media		NA

TABLE 3-7.3.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Current
Receptor Population: Trespasser
Receptor Age: Older Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Aberjona Triangle	Ingestion													
				Vinyl chloride	N/A	N/A	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Trichloroethene	N/A	N/A	N/A	N/A	4.0E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Phenanthrene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-02	mg/kg-day	N/A
				Benzo(a)Anthracene	3.8E-01	mg/kg	2.0E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.5E-09	2.4E-08	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	N/A	N/A	N/A	N/A	7.3E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	N/A	N/A	N/A
				Benzo(k)Fluoranthene	N/A	N/A	N/A	N/A	7.3E-02	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	N/A	N/A	N/A
				Benzo(a)Pyrene	N/A	N/A	N/A	N/A	7.3E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	N/A	N/A	N/A	N/A	7.3E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	N/A	N/A	N/A
				Dibenz(a,h) anthracene	N/A	N/A	N/A	N/A	7.3E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	N/A	N/A	N/A
				Benzo(g,h,i)perylene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-02	mg/kg-day	N/A
				Antimony	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.0E-04	mg/kg-day	N/A
				Arsenic	6.5E+00	mg/kg	3.5E-08	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	5.2E-08	4.1E-07	mg/kg-day	3.0E-04	mg/kg-day	1.4E-03
				Cadmium	2.1E+00	mg/kg	1.1E-08	mg/kg-day	N/A	N/A	N/A	1.3E-07	mg/kg-day	1.0E-03	mg/kg-day	1.3E-04
				Copper	8.5E+01	mg/kg	4.6E-07	mg/kg-day	N/A	N/A	N/A	5.3E-06	mg/kg-day	3.0E-02	mg/kg-day	1.8E-04
				Lead	3.4E+02	mg/kg	1.8E-06	mg/kg-day	N/A	N/A	N/A	2.1E-05	mg/kg-day	N/A	N/A	N/A
				Manganese	2.1E+02	mg/kg	1.1E-06	mg/kg-day	N/A	N/A	N/A	1.3E-05	mg/kg-day	7.0E-02	mg/kg-day	1.9E-04
				Mercury	1.7E-01	mg/kg	9.0E-10	mg/kg-day	N/A	N/A	N/A	1.0E-08	mg/kg-day	1.0E-04	mg/kg-day	1.0E-04
				Nickel	1.5E+01	mg/kg	8.1E-08	mg/kg-day	N/A	N/A	N/A	9.4E-07	mg/kg-day	2.0E-02	mg/kg-day	4.7E-05
				Thallium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-05	mg/kg-day	N/A
				Aroclor 1242	N/A	N/A	N/A	N/A	2.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1248	N/A	N/A	N/A	N/A	2.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1254	2.7E-01	mg/kg	1.4E-09	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	2.9E-09	1.7E-08	mg/kg-day	2.0E-05	mg/kg-day	8.3E-04
				Aroclor 1260	7.0E-02	mg/kg	3.7E-10	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	7.5E-10	4.4E-09	mg/kg-day	2.0E-05	mg/kg-day	2.2E-04
				PCB TEQ*	6.9E-07	mg/kg	3.7E-15	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	5.5E-10	4.3E-14	mg/kg-day	N/A	N/A	N/A
				C11-C22 Aromatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
			Exp. Route Total								6E-08					3E-03

TABLE 3-7.3.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Current
Receptor Population: Trespasser
Receptor Age: Older Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil (Cont.)	Surface Soil (Cont.)	Aberjona Triangle	Dermal													
				Vinyl chloride	N/A	N/A	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Trichloroethene	N/A	N/A	N/A	N/A	4.0E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Phenanthrene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-02	mg/kg-day	N/A
				Benzo(a)Anthracene	3.8E-01	mg/kg	4.8E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	3.5E-09	5.6E-08	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	N/A	N/A	N/A	N/A	7.3E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	N/A	N/A	N/A
				Benzo(k)Fluoranthene	N/A	N/A	N/A	N/A	7.3E-02	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	N/A	N/A	N/A
				Benzo(a)Pyrene	N/A	N/A	N/A	N/A	7.3E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	N/A	N/A	N/A	N/A	7.3E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	N/A	N/A	N/A
				Dibenz(a,h) anthracene	N/A	N/A	N/A	N/A	7.3E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	N/A	N/A	N/A
				Benzo(g,h,i)perylene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-02	mg/kg-day	N/A
				Antimony	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-05	mg/kg-day	N/A
				Arsenic	6.5E+00	mg/kg	1.9E-08	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	2.8E-08	2.2E-07	mg/kg-day	3.0E-04	mg/kg-day	7.3E-04
				Cadmium	2.1E+00	mg/kg	2.0E-10	mg/kg-day	N/A	N/A	N/A	2.3E-09	mg/kg-day	2.5E-05	mg/kg-day	9.4E-05
				Copper	8.5E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
				Lead	3.4E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Manganese	2.1E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.8E-03	mg/kg-day	N/A
				Mercury	1.7E-01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A
				Nickel	1.5E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-04	mg/kg-day	N/A
				Thallium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-05	mg/kg-day	N/A
				Aroclor 1242	N/A	N/A	N/A	N/A	2.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1248	N/A	N/A	N/A	N/A	2.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1254	2.7E-01	mg/kg	3.6E-09	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	7.2E-09	4.2E-08	mg/kg-day	2.0E-05	mg/kg-day	2.1E-03
				Aroclor 1260	7.0E-02	mg/kg	9.4E-10	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	1.9E-09	1.1E-08	mg/kg-day	2.0E-05	mg/kg-day	5.5E-04
				PCB TEQ*	6.9E-07	mg/kg	9.3E-15	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	1.4E-09	1.1E-13	mg/kg-day	N/A	N/A	N/A
				C11-C22 Aromatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
			Exp. Route Total								4E-08					3E-03
		Exposure Point Total									1E-07					7E-03

TABLE 3-7.3.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Current
Receptor Population: Trespasser
Receptor Age: Older Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil (Cont.)	Surface Soil (Cont.)	Whitney Property	Ingestion													
				Vinyl chloride	1.1E-01	mg/kg	5.8E-10	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	8.6E-10	6.7E-09	mg/kg-day	3.0E-03	mg/kg-day	2.2E-06
				Trichloroethene	1.4E-03	mg/kg	7.5E-12	mg/kg-day	4.0E-01	(mg/kg-day)$^{-1}$	3.0E-12	8.7E-11	mg/kg-day	3.0E-04	mg/kg-day	2.9E-07
				Phenanthrene	6.8E+01	mg/kg	3.6E-07	mg/kg-day	N/A	N/A	N/A	4.2E-06	mg/kg-day	2.0E-02	mg/kg-day	2.1E-04
				Benzo(a)Anthracene	3.8E+01	mg/kg	2.0E-07	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.5E-07	2.4E-06	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	4.0E+01	mg/kg	2.1E-07	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.6E-07	2.5E-06	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	1.8E+01	mg/kg	9.6E-08	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	7.0E-09	1.1E-06	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	2.9E+01	mg/kg	1.6E-07	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.1E-06	1.8E-06	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	1.1E+01	mg/kg	5.9E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	4.3E-08	6.9E-07	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	3.0E+00	mg/kg	1.6E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.2E-07	1.9E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(g,h,i)perylene	8.2E+00	mg/kg	4.4E-08	mg/kg-day	N/A	N/A	N/A	5.1E-07	mg/kg-day	2.0E-02	mg/kg-day	2.6E-05
				Antimony	2.8E+00	mg/kg	1.5E-08	mg/kg-day	N/A	N/A	N/A	1.8E-07	mg/kg-day	4.0E-04	mg/kg-day	4.4E-04
				Arsenic	5.7E+00	mg/kg	3.0E-08	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	4.5E-08	3.5E-07	mg/kg-day	3.0E-04	mg/kg-day	1.2E-03
				Cadmium	2.8E+00	mg/kg	1.5E-08	mg/kg-day	N/A	N/A	N/A	1.8E-07	mg/kg-day	1.0E-03	mg/kg-day	1.8E-04
				Copper	1.3E+02	mg/kg	6.7E-07	mg/kg-day	N/A	N/A	N/A	7.9E-06	mg/kg-day	3.0E-02	mg/kg-day	2.6E-04
				Lead	7.3E+02	mg/kg	3.9E-06	mg/kg-day	N/A	N/A	N/A	4.5E-05	mg/kg-day	N/A	N/A	N/A
				Manganese	2.6E+02	mg/kg	1.4E-06	mg/kg-day	N/A	N/A	N/A	1.6E-05	mg/kg-day	7.0E-02	mg/kg-day	2.3E-04
				Mercury	5.5E-01	mg/kg	2.9E-09	mg/kg-day	N/A	N/A	N/A	3.4E-08	mg/kg-day	1.0E-04	mg/kg-day	3.4E-04
				Nickel	2.6E+01	mg/kg	1.4E-07	mg/kg-day	N/A	N/A	N/A	1.6E-06	mg/kg-day	2.0E-02	mg/kg-day	8.1E-05
				Thallium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-05	mg/kg-day	N/A
				Aroclor 1242	3.8E-01	mg/kg	2.0E-09	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	4.1E-09	2.4E-08	mg/kg-day	2.0E-05	mg/kg-day	1.2E-03
				Aroclor 1248	9.5E-02	mg/kg	5.1E-10	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	1.0E-09	5.9E-09	mg/kg-day	2.0E-05	mg/kg-day	3.0E-04
				Aroclor 1254	4.3E+01	mg/kg	2.3E-07	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	4.6E-07	2.7E-06	mg/kg-day	2.0E-05	mg/kg-day	1.3E-01
				Aroclor 1260	1.2E+01	mg/kg	6.3E-08	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	1.3E-07	7.3E-07	mg/kg-day	2.0E-05	mg/kg-day	3.7E-02
				PCB TEQ*	2.0E-04	mg/kg	1.0E-12	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	1.6E-07	1.2E-11	mg/kg-day	N/A	N/A	N/A
				C11-C22 Aromatic	4.6E+02	mg/kg	2.4E-06	mg/kg-day	N/A	N/A	N/A	2.9E-05	mg/kg-day	3.0E-02	mg/kg-day	9.5E-04
			Exp. Route Total								2E-06					2E-01

TABLE 3-7.3.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Current
Receptor Population: Trespasser
Receptor Age: Older Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil (Cont.)	Surface Soil (Cont.)	Whitney Property	Dermal													
				Vinyl chloride	1.1E-01	mg/kg	N/A	N/A	1.5E+00	(mg/kg-day) $^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Trichloroethene	1.4E-03	mg/kg	N/A	N/A	4.0E-01	(mg/kg-day) $^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Phenanthrene	6.8E+01	mg/kg	8.5E-07	mg/kg-day	N/A	N/A	N/A	9.9E-06	mg/kg-day	2.0E-02	mg/kg-day	5.0E-04
				Benzo(a)Anthracene	3.8E+01	mg/kg	4.8E-07	mg/kg-day	7.3E-01	(mg/kg-day) $^{-1}$	3.5E-07	5.6E-06	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	4.0E+01	mg/kg	5.0E-07	mg/kg-day	7.3E-01	(mg/kg-day) $^{-1}$	3.7E-07	5.8E-06	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	1.8E+01	mg/kg	2.3E-07	mg/kg-day	7.3E-02	(mg/kg-day) $^{-1}$	1.6E-08	2.6E-06	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	2.9E+01	mg/kg	3.6E-07	mg/kg-day	7.3E+00	(mg/kg-day) $^{-1}$	2.7E-06	4.2E-06	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	1.1E+01	mg/kg	1.4E-07	mg/kg-day	7.3E-01	(mg/kg-day) $^{-1}$	1.0E-07	1.6E-06	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	3.0E+00	mg/kg	3.7E-08	mg/kg-day	7.3E+00	(mg/kg-day) $^{-1}$	2.7E-07	4.4E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(g,h,i)perylene	8.2E+00	mg/kg	1.0E-07	mg/kg-day	N/A	N/A	N/A	1.2E-06	mg/kg-day	2.0E-02	mg/kg-day	6.0E-05
				Antimony	2.8E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-05	mg/kg-day	N/A
				Arsenic	5.7E+00	mg/kg	1.6E-08	mg/kg-day	1.5E+00	(mg/kg-day) $^{-1}$	2.5E-08	1.9E-07	mg/kg-day	3.0E-04	mg/kg-day	6.4E-04
				Cadmium	2.8E+00	mg/kg	2.7E-10	mg/kg-day	N/A	N/A	N/A	3.2E-09	mg/kg-day	2.5E-05	mg/kg-day	1.3E-04
				Copper	1.3E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
				Lead	7.3E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Manganese	2.6E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.8E-03	mg/kg-day	N/A
				Mercury	5.5E-01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A
				Nickel	2.6E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-04	mg/kg-day	N/A
				Thallium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-05	mg/kg-day	N/A
				Aroclor 1242	3.8E-01	mg/kg	5.1E-09	mg/kg-day	2.0E+00	(mg/kg-day) $^{-1}$	1.0E-08	6.0E-08	mg/kg-day	2.0E-05	mg/kg-day	3.0E-03
				Aroclor 1248	9.5E-02	mg/kg	1.3E-09	mg/kg-day	2.0E+00	(mg/kg-day) $^{-1}$	2.6E-09	1.5E-08	mg/kg-day	2.0E-05	mg/kg-day	7.5E-04
				Aroclor 1254	4.3E+01	mg/kg	5.7E-07	mg/kg-day	2.0E+00	(mg/kg-day) $^{-1}$	1.1E-06	6.7E-06	mg/kg-day	2.0E-05	mg/kg-day	3.3E-01
				Aroclor 1260	1.2E+01	mg/kg	1.6E-07	mg/kg-day	2.0E+00	(mg/kg-day) $^{-1}$	3.2E-07	1.8E-06	mg/kg-day	2.0E-05	mg/kg-day	9.2E-02
				PCB TEQ*	2.0E-04	mg/kg	2.6E-12	mg/kg-day	1.5E+05	(mg/kg-day) $^{-1}$	4.0E-07	3.1E-11	mg/kg-day	N/A	N/A	N/A
				C11-C22 Aromatic	4.6E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
			Exp. Route Total								6E-06					4E-01
		Exposure Point Total									8E-06					6E-01
	Exposure Medium Total										N/A					N/A
Medium Total											N/A					N/A

TABLE 3-7.3.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Current
Receptor Population: Trespasser
Receptor Age: Older Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Water	Surface Water	Murphy Wetland	Dermal	Chromium	2.3E+01	ug/L	1.1E-08	mg/kg-day	N/A	N/A	N/A	1.3E-07	mg/kg-day	7.5E-05	mg/kg-day	1.7E-03
				Manganese	5.5E+02	ug/L	2.6E-07	mg/kg-day	N/A	N/A	N/A	3.1E-06	mg/kg-day	9.6E-04	mg/kg-day	3.2E-03
			Exp. Route Total								0E+00					5E-03
		Exposure Point Total									0E+00					5E-03
	Exposure Medium Total										N/A					N/A
Medium Total											N/A					N/A

TABLE 3-7.3.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Current
Receptor Population: Trespasser
Receptor Age: Older Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Sediment	Sediment	Murphy Property	Ingestion													
				Naphthalene	1.9E+01	mg/kg	1.0E-07	mg/kg-day	N/A	N/A	N/A	1.2E-06	mg/kg-day	2.0E-02	mg/kg-day	5.9E-05
				Vinyl chloride	1.7E-01	mg/kg	9.1E-10	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	1.4E-09	1.1E-08	mg/kg-day	3.0E-03	mg/kg-day	3.5E-06
				Trichloroethene	8.5E-02	mg/kg	4.6E-10	mg/kg-day	4.0E-01	(mg/kg-day)$^{-1}$	1.8E-10	5.3E-09	mg/kg-day	3.0E-04	mg/kg-day	1.8E-05
				Ethylenedibromide	9.5E+00	mg/kg	5.1E-08	mg/kg-day	8.5E+01	(mg/kg-day)$^{-1}$	4.3E-06	5.9E-07	mg/kg-day	N/A	N/A	N/A
				Ethylbenzene	1.1E+01	mg/kg	5.9E-08	mg/kg-day	N/A	N/A	N/A	6.9E-07	mg/kg-day	1.0E-01	mg/kg-day	6.9E-06
				Xylenes (total)	5.3E+01	mg/kg	2.8E-07	mg/kg-day	N/A	N/A	N/A	3.3E-06	mg/kg-day	2.0E-01	mg/kg-day	1.7E-05
				Acetophenone	3.2E+00	mg/kg	1.7E-08	mg/kg-day	N/A	N/A	N/A	2.0E-07	mg/kg-day	1.0E-01	mg/kg-day	2.0E-06
				2-Methylnaphthalene	1.2E+01	mg/kg	6.6E-08	mg/kg-day	N/A	N/A	N/A	7.7E-07	mg/kg-day	4.0E-03	mg/kg-day	1.9E-04
				Benzo(a)Anthracene	3.1E+00	mg/kg	1.7E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.2E-08	1.9E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	2.9E+00	mg/kg	1.6E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.1E-08	1.8E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	3.3E+00	mg/kg	1.8E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.3E-07	2.1E-07	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	3.2E+00	mg/kg	1.7E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.3E-08	2.0E-07	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	1.3E+00	mg/kg	7.0E-09	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	5.1E-08	8.1E-08	mg/kg-day	N/A	N/A	N/A
				C11-C22 Aromatic	2.0E+04	mg/kg	1.1E-04	mg/kg-day	N/A	N/A	N/A	1.3E-03	mg/kg-day	3.0E-02	mg/kg-day	4.3E-02
				C19-C36 Aliphatic	9.4E+03	mg/kg	5.0E-05	mg/kg-day	N/A	N/A	N/A	5.9E-04	mg/kg-day	2.0E+00	mg/kg-day	2.9E-04
				C9-C18 Aliphatic	1.7E+03	mg/kg	9.0E-06	mg/kg-day	N/A	N/A	N/A	1.1E-04	mg/kg-day	1.0E-01	mg/kg-day	1.1E-03
				Chromium (VI)	5.4E+01	mg/kg	2.9E-07	mg/kg-day	N/A	N/A	N/A	3.4E-06	mg/kg-day	3.0E-03	mg/kg-day	1.1E-03
				Antimony	1.2E+02	mg/kg	6.3E-07	mg/kg-day	N/A	N/A	N/A	7.3E-06	mg/kg-day	4.0E-04	mg/kg-day	1.8E-02
				Arsenic	1.1E+01	mg/kg	6.0E-08	mg/kg-day	7.7E-01	(mg/kg-day)$^{-1}$	4.6E-08	7.0E-07	mg/kg-day	5.9E-04	mg/kg-day	1.2E-03
				Barium	1.1E+03	mg/kg	6.0E-06	mg/kg-day	N/A	N/A	N/A	7.1E-05	mg/kg-day	7.0E-02	mg/kg-day	1.0E-03
				Cadmium	3.0E+00	mg/kg	1.6E-08	mg/kg-day	N/A	N/A	N/A	1.9E-07	mg/kg-day	1.0E-03	mg/kg-day	1.9E-04
				Chromium	1.3E+04	mg/kg	6.8E-05	mg/kg-day	N/A	N/A	N/A	7.9E-04	mg/kg-day	1.5E+00	mg/kg-day	5.3E-04
				Lead	4.0E+03	mg/kg	2.2E-05	mg/kg-day	N/A	N/A	N/A	2.5E-04	mg/kg-day	N/A	N/A	N/A
				Manganese	3.4E+02	mg/kg	1.8E-06	mg/kg-day	N/A	N/A	N/A	2.1E-05	mg/kg-day	7.0E-02	mg/kg-day	3.0E-04
				Mercury	3.0E+00	mg/kg	1.6E-08	mg/kg-day	N/A	N/A	N/A	1.9E-07	mg/kg-day	1.0E-04	mg/kg-day	1.9E-03
				Vanadium	5.5E+01	mg/kg	3.0E-07	mg/kg-day	N/A	N/A	N/A	3.5E-06	mg/kg-day	1.0E-03	mg/kg-day	3.5E-03
				PCB TEQ*	1.8E-04	mg/kg	9.9E-13	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	1.5E-07	1.2E-11	mg/kg-day	N/A	N/A	N/A
				gamma-Chlordane	1.8E+00	mg/kg	9.8E-09	mg/kg-day	3.5E-01	(mg/kg-day)$^{-1}$	3.4E-09	1.1E-07	mg/kg-day	5.0E-04	mg/kg-day	2.3E-04
				Aroclor 1254	8.8E+01	mg/kg	4.7E-07	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	9.5E-07	5.5E-06	mg/kg-day	2.0E-05	mg/kg-day	2.8E-01
				Aroclor 1260	4.6E+01	mg/kg	2.5E-07	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	5.0E-07	2.9E-06	mg/kg-day	2.0E-05	mg/kg-day	1.4E-01
			Exp. Route Total								6E-06					5E-01

TABLE 3-7.3.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Current
Receptor Population: Trespasser
Receptor Age: Older Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Sediment (Cont.)	Sediment (Cont.)	Murphy Property	Dermal													
				Naphthalene	1.9E+01	mg/kg	2.4E-07	mg/kg-day	N/A	N/A	N/A	2.7E-06	mg/kg-day	2.0E-02	mg/kg-day	1.4E-04
				Vinyl chloride	1.7E-01	mg/kg	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Trichloroethene	8.5E-02	mg/kg	N/A	N/A	4.0E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Ethylenedibromide	9.5E+00	mg/kg	N/A	N/A	8.5E+01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	N/A	N/A	N/A
				Ethylbenzene	1.1E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-01	mg/kg-day	N/A
				Xylenes (total)	5.3E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/kg-day	N/A
				Acetophenone	3.2E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-01	mg/kg-day	N/A
				2-Methylnaphthalene	1.2E+01	mg/kg	1.5E-07	mg/kg-day	N/A	N/A	N/A	1.8E-06	mg/kg-day	4.0E-03	mg/kg-day	4.5E-04
				Benzo(a)Anthracene	3.1E+00	mg/kg	3.9E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	2.8E-08	4.5E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	2.9E+00	mg/kg	3.6E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	2.7E-08	4.2E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	3.3E+00	mg/kg	4.1E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	3.0E-07	4.8E-07	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	3.2E+00	mg/kg	4.0E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	2.9E-08	4.7E-07	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	1.3E+00	mg/kg	1.6E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.2E-07	1.9E-07	mg/kg-day	N/A	N/A	N/A
				C11-C22 Aromatic	2.0E+04	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
				C19-C36 Aliphatic	9.4E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E+00	mg/kg-day	N/A
				C9-C18 Aliphatic	1.7E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-01	mg/kg-day	N/A
				Chromium (VI)	5.4E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	7.5E-05	mg/kg-day	N/A
				Antimony	1.2E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-05	mg/kg-day	N/A
				Arsenic	1.1E+01	mg/kg	3.2E-08	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	4.9E-08	3.8E-07	mg/kg-day	3.0E-04	mg/kg-day	1.3E-03
				Barium	1.1E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.9E-03	mg/kg-day	N/A
				Cadmium	3.0E+00	mg/kg	2.9E-10	mg/kg-day	N/A	N/A	N/A	3.4E-09	mg/kg-day	2.5E-05	mg/kg-day	1.3E-04
				Chromium	1.3E+04	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-02	mg/kg-day	N/A
				Lead	4.0E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Manganese	3.4E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.8E-03	mg/kg-day	N/A
				Mercury	3.0E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A
				Vanadium	5.5E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.6E-05	mg/kg-day	N/A
				PCB TEQ*	1.8E-04	mg/kg	2.5E-12	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	3.7E-07	2.9E-11	mg/kg-day	N/A	N/A	N/A
				gamma-Chlordane	1.8E+00	mg/kg	7.1E-09	mg/kg-day	3.5E-01	(mg/kg-day)$^{-1}$	2.5E-09	8.2E-08	mg/kg-day	5.0E-04	mg/kg-day	1.6E-04
				Aroclor 1254	8.8E+01	mg/kg	1.2E-06	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	2.4E-06	1.4E-05	mg/kg-day	2.0E-05	mg/kg-day	7.0E-01
				Aroclor 1260	4.6E+01	mg/kg	6.2E-07	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	1.2E-06	7.3E-06	mg/kg-day	2.0E-05	mg/kg-day	3.6E-01
			Exp. Route Total								5E-06					1E+00
		Exposure Point Total									1E-05					2E+00
	Exposure Medium Total										N/A					N/A
Medium Total											N/A					N/A
										Total of Receptor Risks Across All Media	N/A				Total of Receptor Hazards Across All Media	N/A

TABLE 3-7.3.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Current
Receptor Population: Trespasser
Receptor Age: Older Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Aberjona Triangle	Ingestion													
				Vinyl chloride	N/A	mg/kg	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Trichloroethene	N/A	mg/kg	N/A	N/A	4.0E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Phenanthrene	N/A	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-02	mg/kg-day	N/A
				Benzo(a)Anthracene	2.4E-01	mg/kg	2.1E-10	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.5E-10	7.4E-09	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	N/A	mg/kg	N/A	N/A	7.3E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	N/A	N/A	N/A
				Benzo(k)Fluoranthene	N/A	mg/kg	N/A	N/A	7.3E-02	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	N/A	N/A	N/A
				Benzo(a)Pyrene	N/A	mg/kg	N/A	N/A	7.3E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	N/A	mg/kg	N/A	N/A	7.3E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	N/A	N/A	N/A
				Dibenz(a,h) anthracene	N/A	mg/kg	N/A	N/A	7.3E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	N/A	N/A	N/A
				Benzo(g,h,i)perylene	N/A	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-02	mg/kg-day	N/A
				Antimony	N/A	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.0E-04	mg/kg-day	N/A
				Arsenic	5.0E+00	mg/kg	4.4E-09	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	6.7E-09	1.6E-07	mg/kg-day	3.0E-04	mg/kg-day	5.2E-04
				Cadmium	2.1E+00	mg/kg	1.9E-09	mg/kg-day	N/A	N/A	N/A	6.5E-08	mg/kg-day	1.0E-03	mg/kg-day	6.5E-05
				Copper	8.5E+01	mg/kg	7.6E-08	mg/kg-day	N/A	N/A	N/A	2.7E-06	mg/kg-day	3.0E-02	mg/kg-day	8.9E-05
				Lead	3.4E+02	mg/kg	3.1E-07	mg/kg-day	N/A	N/A	N/A	1.1E-05	mg/kg-day	N/A	N/A	N/A
				Manganese	1.8E+02	mg/kg	1.6E-07	mg/kg-day	N/A	N/A	N/A	5.7E-06	mg/kg-day	7.0E-02	mg/kg-day	8.1E-05
				Mercury	1.7E-01	mg/kg	1.5E-10	mg/kg-day	N/A	N/A	N/A	5.2E-09	mg/kg-day	1.0E-04	mg/kg-day	5.2E-05
				Nickel	1.5E+01	mg/kg	1.3E-08	mg/kg-day	N/A	N/A	N/A	4.7E-07	mg/kg-day	2.0E-02	mg/kg-day	2.4E-05
				Thallium	N/A	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-05	mg/kg-day	N/A
				Aroclor 1242	N/A	mg/kg	N/A	N/A	1.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1248	N/A	mg/kg	N/A	N/A	1.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1254	2.7E-01	mg/kg	2.4E-10	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	2.4E-10	8.3E-09	mg/kg-day	2.0E-05	mg/kg-day	4.2E-04
				Aroclor 1260	7.0E-02	mg/kg	6.2E-11	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	6.2E-11	2.2E-09	mg/kg-day	2.0E-05	mg/kg-day	1.1E-04
				PCB TEQ*	5.8E-07	mg/kg	5.2E-16	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	7.8E-11	1.8E-14	mg/kg-day	N/A	N/A	N/A
				C11-C22 Aromatic	N/A	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
			Exp. Route Total								7E-09					1E-03

TABLE 3-7.3.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Current
Receptor Population: Trespasser
Receptor Age: Older Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil (Cont.)	Surface Soil (Cont.)	Aberjona Triangle	Dermal	Vinyl chloride	N/A	mg/kg	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Trichloroethene	N/A	mg/kg	N/A	N/A	4.0E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Phenanthrene	N/A	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-02	mg/kg-day	N/A
				Benzo(a)Anthracene	2.4E-01	mg/kg	9.9E-10	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	7.2E-10	3.5E-08	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	N/A	mg/kg	N/A	N/A	7.3E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	N/A	N/A	N/A
				Benzo(k)Fluoranthene	N/A	mg/kg	N/A	N/A	7.3E-02	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	N/A	N/A	N/A
				Benzo(a)Pyrene	N/A	mg/kg	N/A	N/A	7.3E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	N/A	mg/kg	N/A	N/A	7.3E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	N/A	N/A	N/A
				Dibenz(a,h) anthracene	N/A	mg/kg	N/A	N/A	7.3E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	N/A	N/A	N/A
				Benzo(g,h,i)perylene	N/A	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-02	mg/kg-day	N/A
				Antimony	N/A	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-05	mg/kg-day	N/A
				Arsenic	5.0E+00	mg/kg	4.8E-09	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	7.2E-09	1.7E-07	mg/kg-day	3.0E-04	mg/kg-day	5.6E-04
				Cadmium	2.1E+00	mg/kg	6.7E-11	mg/kg-day	N/A	N/A	N/A	2.3E-09	mg/kg-day	2.5E-05	mg/kg-day	9.4E-05
				Copper	8.5E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
				Lead	3.4E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Manganese	1.8E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.8E-03	mg/kg-day	N/A
				Mercury	1.7E-01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A
				Nickel	1.5E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-04	mg/kg-day	N/A
				Thallium	N/A	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-05	mg/kg-day	N/A
				Aroclor 1242	N/A	mg/kg	N/A	N/A	1.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1248	N/A	mg/kg	N/A	N/A	1.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1254	2.7E-01	mg/kg	1.2E-09	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	1.2E-09	4.2E-08	mg/kg-day	2.0E-05	mg/kg-day	2.1E-03
				Aroclor 1260	7.0E-02	mg/kg	3.1E-10	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	3.1E-10	1.1E-08	mg/kg-day	2.0E-05	mg/kg-day	5.5E-04
				PCB TEQ*	5.8E-07	mg/kg	2.6E-15	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	3.9E-10	9.2E-14	mg/kg-day	N/A	N/A	N/A
				C11-C22 Aromatic	N/A	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
			Exp. Route Total								1E-08					3E-03
		Exposure Point Total									2E-08					5E-03

TABLE 3-7.3.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Current
Receptor Population: Trespasser
Receptor Age: Older Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil (Cont.)	Surface Soil (Cont.)	Whitney Property	Ingestion													
				Vinyl chloride	1.1E-01	mg/kg	9.6E-11	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	1.4E-10	3.4E-09	mg/kg-day	3.0E-03	mg/kg-day	1.1E-06
				Trichloroethene	1.4E-03	mg/kg	1.2E-12	mg/kg-day	4.0E-01	(mg/kg-day)$^{-1}$	5.0E-13	4.4E-11	mg/kg-day	3.0E-04	mg/kg-day	1.5E-07
				Phenanthrene	1.3E+01	mg/kg	1.2E-08	mg/kg-day	N/A	N/A	N/A	4.0E-07	mg/kg-day	2.0E-02	mg/kg-day	2.0E-05
				Benzo(a)Anthracene	7.6E+00	mg/kg	6.8E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	5.0E-09	2.4E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	7.5E+00	mg/kg	6.7E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	4.9E-09	2.3E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	3.9E+00	mg/kg	3.5E-09	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	2.6E-10	1.2E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	6.5E+00	mg/kg	5.8E-09	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	4.2E-08	2.0E-07	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	1.1E+01	mg/kg	9.8E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	7.2E-09	3.4E-07	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	3.0E+00	mg/kg	2.7E-09	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.9E-08	9.3E-08	mg/kg-day	N/A	N/A	N/A
				Benzo(g,h,i)perylene	8.2E+00	mg/kg	7.3E-09	mg/kg-day	N/A	N/A	N/A	2.6E-07	mg/kg-day	2.0E-02	mg/kg-day	1.3E-05
				Antimony	2.8E+00	mg/kg	2.5E-09	mg/kg-day	N/A	N/A	N/A	8.8E-08	mg/kg-day	4.0E-04	mg/kg-day	2.2E-04
				Arsenic	5.7E+00	mg/kg	5.1E-09	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	7.6E-09	1.8E-07	mg/kg-day	3.0E-04	mg/kg-day	5.9E-04
				Cadmium	2.8E+00	mg/kg	2.5E-09	mg/kg-day	N/A	N/A	N/A	8.9E-08	mg/kg-day	1.0E-03	mg/kg-day	8.9E-05
				Copper	1.3E+02	mg/kg	1.1E-07	mg/kg-day	N/A	N/A	N/A	3.9E-06	mg/kg-day	3.0E-02	mg/kg-day	1.3E-04
				Lead	7.3E+02	mg/kg	6.5E-07	mg/kg-day	N/A	N/A	N/A	2.3E-05	mg/kg-day	N/A	N/A	N/A
				Manganese	2.6E+02	mg/kg	2.3E-07	mg/kg-day	N/A	N/A	N/A	8.1E-06	mg/kg-day	7.0E-02	mg/kg-day	1.2E-04
				Mercury	5.5E-01	mg/kg	4.9E-10	mg/kg-day	N/A	N/A	N/A	1.7E-08	mg/kg-day	1.0E-04	mg/kg-day	1.7E-04
				Nickel	2.6E+01	mg/kg	2.3E-08	mg/kg-day	N/A	N/A	N/A	8.1E-07	mg/kg-day	2.0E-02	mg/kg-day	4.1E-05
				Thallium	N/A	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-05	mg/kg-day	N/A
				Aroclor 1242	3.8E-01	mg/kg	3.4E-10	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	3.4E-10	1.2E-08	mg/kg-day	2.0E-05	mg/kg-day	6.0E-04
				Aroclor 1248	9.5E-02	mg/kg	8.5E-11	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	8.5E-11	3.0E-09	mg/kg-day	2.0E-05	mg/kg-day	1.5E-04
				Aroclor 1254	4.0E+00	mg/kg	3.5E-09	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	3.5E-09	1.2E-07	mg/kg-day	2.0E-05	mg/kg-day	6.2E-03
				Aroclor 1260	2.0E+00	mg/kg	1.8E-09	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	1.8E-09	6.3E-08	mg/kg-day	2.0E-05	mg/kg-day	3.1E-03
				PCB TEQ*	4.7E-05	mg/kg	4.2E-14	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	6.4E-09	1.5E-12	mg/kg-day	N/A	N/A	N/A
				C11-C22 Aromatic	4.6E+02	mg/kg	4.1E-07	mg/kg-day	N/A	N/A	N/A	1.4E-05	mg/kg-day	3.0E-02	mg/kg-day	4.8E-04
			Exp. Route Total								1E-07					1E-02

TABLE 3-7.3.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Current
Receptor Population: Trespasser
Receptor Age: Older Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil (Cont.)	Surface Soil (Cont.)	Whitney Property	Dermal	Vinyl chloride	1.1E-01	mg/kg	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Trichloroethene	1.4E-03	mg/kg	N/A	N/A	4.0E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Phenanthrene	1.3E+01	mg/kg	5.4E-08	mg/kg-day	N/A	N/A	N/A	1.9E-06	mg/kg-day	2.0E-02	mg/kg-day	9.4E-05
				Benzo(a)Anthracene	7.6E+00	mg/kg	3.2E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	2.3E-08	1.1E-06	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	7.5E+00	mg/kg	3.1E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	2.3E-08	1.1E-06	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	3.9E+00	mg/kg	1.6E-08	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	1.2E-09	5.7E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	6.5E+00	mg/kg	2.7E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	2.0E-07	9.5E-07	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	1.1E+01	mg/kg	4.6E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	3.4E-08	1.6E-06	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	3.0E+00	mg/kg	1.2E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	9.1E-08	4.4E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(g,h,i)perylene	8.2E+00	mg/kg	3.4E-08	mg/kg-day	N/A	N/A	N/A	1.2E-06	mg/kg-day	2.0E-02	mg/kg-day	6.0E-05
				Antimony	2.8E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-05	mg/kg-day	N/A
				Arsenic	5.7E+00	mg/kg	5.5E-09	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	8.2E-09	1.9E-07	mg/kg-day	3.0E-04	mg/kg-day	6.4E-04
				Cadmium	2.8E+00	mg/kg	9.2E-11	mg/kg-day	N/A	N/A	N/A	3.2E-09	mg/kg-day	2.5E-05	mg/kg-day	1.3E-04
				Copper	1.3E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
				Lead	7.3E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Manganese	2.6E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.8E-03	mg/kg-day	N/A
				Mercury	5.5E-01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A
				Nickel	2.6E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-04	mg/kg-day	N/A
				Thallium	N/A	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-05	mg/kg-day	N/A
				Aroclor 1242	3.8E-01	mg/kg	1.7E-09	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	1.7E-09	6.0E-08	mg/kg-day	2.0E-05	mg/kg-day	3.0E-03
				Aroclor 1248	9.5E-02	mg/kg	4.3E-10	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	4.3E-10	1.5E-08	mg/kg-day	2.0E-05	mg/kg-day	7.5E-04
				Aroclor 1254	4.0E+00	mg/kg	1.8E-08	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	1.8E-08	6.2E-07	mg/kg-day	2.0E-05	mg/kg-day	3.1E-02
				Aroclor 1260	2.0E+00	mg/kg	9.0E-09	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	9.0E-09	3.2E-07	mg/kg-day	2.0E-05	mg/kg-day	1.6E-02
				PCB TEQ*	4.7E-05	mg/kg	2.1E-13	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	3.2E-08	7.5E-12	mg/kg-day	N/A	N/A	N/A
				C11-C22 Aromatic	4.6E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
			Exp. Route Total								4E-07					5E-02
		Exposure Point Total									5E-07					6E-02
	Exposure Medium Total										N/A					N/A

TABLE 3-7.3.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Current
Receptor Population: Trespasser
Receptor Age: Older Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Surface Water	Surface Water	Murphy Wetland	Dermal	Chromium	1.1E+01	ug/L	1.8E-09	mg/kg-day	N/A	N/A	N/A	6.5E-08	mg/kg-day	7.5E-05	mg/kg-day	8.6E-04
				Manganese	2.8E+02	ug/L	4.4E-08	mg/kg-day	N/A	N/A	N/A	1.5E-06	mg/kg-day	9.6E-04	mg/kg-day	1.6E-03
			Exp. Route Total								0E+00					2E-03
	Exposure Medium Total	Exposure Point Total									0E+00					2E-03
Medium Total											N/A					N/A

TABLE 3-7.3.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Current
Receptor Population: Trespasser
Receptor Age: Older Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Sediment	Sediment	Murphy Wetland	Ingestion													
				Naphthalene	5E+00	mg/kg	4.0E-09	mg/kg-day	N/A	N/A	N/A	1.4E-07	mg/kg-day	2.0E-02	mg/kg-day	7.1E-06
				Vinyl chloride	2E-01	mg/kg	1.5E-10	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	2.3E-10	5.3E-09	mg/kg-day	3.0E-03	mg/kg-day	1.8E-06
				Trichloroethene	9E-02	mg/kg	7.6E-11	mg/kg-day	4.0E-01	(mg/kg-day)$^{-1}$	3.0E-11	2.7E-09	mg/kg-day	3.0E-04	mg/kg-day	8.9E-06
				Ethylenedibromide	2E+00	mg/kg	1.5E-09	mg/kg-day	8.5E+01	(mg/kg-day)$^{-1}$	1.2E-07	5.1E-08	mg/kg-day	N/A	N/A	N/A
				Ethylbenzene	2E+00	mg/kg	2.0E-09	mg/kg-day	N/A	N/A	N/A	7.1E-08	mg/kg-day	1.0E-01	mg/kg-day	7.1E-07
				Xylenes (total)	1E+01	mg/kg	1.1E-08	mg/kg-day	N/A	N/A	N/A	3.8E-07	mg/kg-day	2.0E-01	mg/kg-day	1.9E-06
				Acetophenone	3E+00	mg/kg	2.8E-09	mg/kg-day	N/A	N/A	N/A	9.9E-08	mg/kg-day	1.0E-01	mg/kg-day	9.9E-07
				2-Methylnaphthalene	1E+01	mg/kg	1.1E-08	mg/kg-day	N/A	N/A	N/A	3.8E-07	mg/kg-day	4.0E-03	mg/kg-day	9.6E-05
				Benzo(a)Anthracene	2E+00	mg/kg	1.5E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.1E-09	5.1E-08	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	2E+00	mg/kg	1.5E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.1E-09	5.1E-08	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	2E+00	mg/kg	1.5E-09	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.1E-08	5.3E-08	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	2E+00	mg/kg	1.5E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.1E-09	5.3E-08	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	1E+00	mg/kg	1.2E-09	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	8.5E-09	4.1E-08	mg/kg-day	N/A	N/A	N/A
				C11-C22 Aromatic	2E+04	mg/kg	1.8E-05	mg/kg-day	N/A	N/A	N/A	6.4E-04	mg/kg-day	3.0E-02	mg/kg-day	2.1E-02
				C19-C36 Aliphatic	9E+03	mg/kg	8.4E-06	mg/kg-day	N/A	N/A	N/A	2.9E-04	mg/kg-day	2.0E+00	mg/kg-day	1.5E-04
				C9-C18 Aliphatic	2E+03	mg/kg	1.5E-06	mg/kg-day	N/A	N/A	N/A	5.3E-05	mg/kg-day	1.0E-01	mg/kg-day	5.3E-04
				Chromium (VI)	5E+01	mg/kg	4.8E-08	mg/kg-day	N/A	N/A	N/A	1.7E-06	mg/kg-day	3.0E-03	mg/kg-day	5.6E-04
				Antimony	3E+01	mg/kg	2.2E-08	mg/kg-day	N/A	N/A	N/A	7.9E-07	mg/kg-day	4.0E-04	mg/kg-day	2.0E-03
				Arsenic	1E+01	mg/kg	1.0E-08	mg/kg-day	7.7E-01	(mg/kg-day)$^{-1}$	7.7E-09	3.5E-07	mg/kg-day	5.9E-04	mg/kg-day	5.9E-04
				Barium	1E+03	mg/kg	1.0E-06	mg/kg-day	N/A	N/A	N/A	3.5E-05	mg/kg-day	7.0E-02	mg/kg-day	5.0E-04
				Cadmium	3E+00	mg/kg	2.7E-09	mg/kg-day	N/A	N/A	N/A	9.3E-08	mg/kg-day	1.0E-03	mg/kg-day	9.3E-05
				Chromium	1E+04	mg/kg	1.1E-05	mg/kg-day	N/A	N/A	N/A	4.0E-04	mg/kg-day	3.0E-03	mg/kg-day	1.3E-01
				Lead	4E+03	mg/kg	3.6E-06	mg/kg-day	N/A	N/A	N/A	1.3E-04	mg/kg-day	N/A	N/A	N/A
				Manganese	3E+02	mg/kg	3.0E-07	mg/kg-day	N/A	N/A	N/A	1.1E-05	mg/kg-day	7.0E-02	mg/kg-day	1.5E-04
				Mercury	3E+00	mg/kg	2.7E-09	mg/kg-day	N/A	N/A	N/A	9.5E-08	mg/kg-day	1.0E-04	mg/kg-day	9.5E-04
				Vanadium	6E+01	mg/kg	5.0E-08	mg/kg-day	N/A	N/A	N/A	1.7E-06	mg/kg-day	1.0E-03	mg/kg-day	1.7E-03
				PCB TEQ*	2E-04	mg/kg	1.6E-13	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	2.5E-08	5.8E-12	mg/kg-day	N/A	N/A	N/A
				gamma-Chlordane	2E+00	mg/kg	1.6E-09	mg/kg-day	3.5E-01	(mg/kg-day)$^{-1}$	5.7E-10	5.7E-08	mg/kg-day	5.0E-04	mg/kg-day	1.1E-04
				Aroclor 1254	9E+01	mg/kg	7.9E-08	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	7.9E-08	2.8E-06	mg/kg-day	2.0E-05	mg/kg-day	1.4E-01
				Aroclor 1260	5E+01	mg/kg	4.1E-08	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	4.1E-08	1.4E-06	mg/kg-day	2.0E-05	mg/kg-day	7.2E-02
			Exp. Route Total								3E-07					4E-01

TABLE 3-7.3.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Current
Receptor Population: Trespasser
Receptor Age: Older Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Sediment (Cont.)	Sediment (Cont.)	Murphy Wetland	Dermal													
				Naphthalene	5E+00	mg/kg	1.9E-08	mg/kg-day	N/A	N/A	N/A	6.6E-07	mg/kg-day	2.0E-02	mg/kg-day	3.3E-05
				Vinyl chloride	2E-01	mg/kg	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Trichloroethene	9E-02	mg/kg	N/A	N/A	4.0E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Ethylenedibromide	2E+00	mg/kg	N/A	N/A	8.5E+01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	N/A	N/A	N/A
				Ethylbenzene	2E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-01	mg/kg-day	N/A
				Xylenes (total)	1E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/kg-day	N/A
				Acetophenone	3E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-01	mg/kg-day	N/A
				2-Methylnaphthalene	1E+01	mg/kg	5.1E-08	mg/kg-day	N/A	N/A	N/A	1.8E-06	mg/kg-day	4.0E-03	mg/kg-day	4.5E-04
				Benzo(a)Anthracene	2E+00	mg/kg	6.8E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	5.0E-09	2.4E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	2E+00	mg/kg	6.9E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	5.0E-09	2.4E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	2E+00	mg/kg	7.0E-09	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	5.1E-08	2.5E-07	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	2E+00	mg/kg	7.1E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	5.2E-09	2.5E-07	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	1E+00	mg/kg	5.4E-09	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	4.0E-08	1.9E-07	mg/kg-day	N/A	N/A	N/A
				C11-C22 Aromatic	2E+04	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
				C19-C36 Aliphatic	9E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E+00	mg/kg-day	N/A
				C9-C18 Aliphatic	2E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-01	mg/kg-day	N/A
				Chromium (VI)	5E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	7.5E-05	mg/kg-day	N/A
				Antimony	3E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-05	mg/kg-day	N/A
				Arsenic	1E+01	mg/kg	1.1E-08	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	1.6E-08	3.8E-07	mg/kg-day	3.0E-04	mg/kg-day	1.3E-03
				Barium	1E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.9E-03	mg/kg-day	N/A
				Cadmium	3E+00	mg/kg	9.6E-11	mg/kg-day	N/A	N/A	N/A	3.4E-09	mg/kg-day	2.5E-05	mg/kg-day	1.3E-04
				Chromium	1E+04	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-02	mg/kg-day	N/A
				Lead	4E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Manganese	3E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.8E-03	mg/kg-day	N/A
				Mercury	3E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A
				Vanadium	6E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.6E-05	mg/kg-day	N/A
				PCB TEQ*	2E-04	mg/kg	8.3E-13	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	1.2E-07	2.9E-11	mg/kg-day	N/A	N/A	N/A
				gamma-Chlordane	2E+00	mg/kg	2.4E-09	mg/kg-day	3.5E-01	(mg/kg-day)$^{-1}$	8.2E-10	8.2E-08	mg/kg-day	5.0E-04	mg/kg-day	1.6E-04
				Aroclor 1254	9E+01	mg/kg	4.0E-07	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	4.0E-07	1.4E-05	mg/kg-day	2.0E-05	mg/kg-day	7.0E-01
				Aroclor 1260	5E+01	mg/kg	2.1E-07	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	2.1E-07	7.3E-06	mg/kg-day	2.0E-05	mg/kg-day	3.6E-01
			Exp. Route Total								9E-07					1E+00
		Exposure Point Total									1E-06					1E+00
	Exposure Medium Total										N/A					N/A
Medium Total											N/A					N/A
											Total of Receptor Risks Across All Media					N/A
																Total of Receptor Hazards Across All Media

TABLE 3-7.4.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Trespasser
Receptor Age: Older Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Aberjona Property	Ingestion													
				Vinyl chloride	N/A	N/A	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Trichloroethene	N/A	N/A	N/A	N/A	4.0E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Phenanthrene	6.9E-01	mg/kg	7.4E-09	mg/kg-day	N/A	N/A	N/A	8.7E-08	mg/kg-day	2.0E-02	mg/kg-day	4.3E-06
				Benzo(a)Anthracene	7.1E-01	mg/kg	7.6E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	5.5E-09	8.9E-08	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	7.4E-01	mg/kg	7.9E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	5.8E-09	9.2E-08	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	5.1E-01	mg/kg	5.5E-09	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	4.0E-10	6.4E-08	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	5.1E-01	mg/kg	5.5E-09	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	4.0E-08	6.4E-08	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	5.2E-01	mg/kg	5.5E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	4.0E-09	6.5E-08	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	6.2E-03	mg/kg	6.6E-11	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	4.8E-10	7.7E-10	mg/kg-day	N/A	N/A	N/A
				Benzo(g,h,i)perylene	5.9E-01	mg/kg	6.4E-09	mg/kg-day	N/A	N/A	N/A	7.4E-08	mg/kg-day	2.0E-02	mg/kg-day	3.7E-06
				Antimony	1.8E+00	mg/kg	1.9E-08	mg/kg-day	N/A	N/A	N/A	2.2E-07	mg/kg-day	4.0E-04	mg/kg-day	5.6E-04
				Arsenic	5.7E+00	mg/kg	6.1E-08	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	9.1E-08	7.1E-07	mg/kg-day	3.0E-04	mg/kg-day	2.4E-03
				Cadmium	9.8E+00	mg/kg	1.0E-07	mg/kg-day	N/A	N/A	N/A	1.2E-06	mg/kg-day	1.0E-03	mg/kg-day	1.2E-03
				Copper	1.0E+02	mg/kg	1.1E-06	mg/kg-day	N/A	N/A	N/A	1.3E-05	mg/kg-day	3.0E-02	mg/kg-day	4.2E-04
				Lead	1.1E+03	mg/kg	1.2E-05	mg/kg-day	N/A	N/A	N/A	1.4E-04	mg/kg-day	N/A	N/A	N/A
				Manganese	2.7E+02	mg/kg	2.9E-06	mg/kg-day	N/A	N/A	N/A	3.4E-05	mg/kg-day	7.0E-02	mg/kg-day	4.9E-04
				Mercury	9.5E-02	mg/kg	1.0E-09	mg/kg-day	N/A	N/A	N/A	1.2E-08	mg/kg-day	1.0E-04	mg/kg-day	1.2E-04
				Nickel	6.5E+01	mg/kg	6.9E-07	mg/kg-day	N/A	N/A	N/A	8.1E-06	mg/kg-day	2.0E-02	mg/kg-day	4.0E-04
				Thallium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-05	mg/kg-day	N/A
				Aroclor 1242	1.1E-01	mg/kg	1.2E-09	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	2.4E-09	1.4E-08	mg/kg-day	2.0E-05	mg/kg-day	7.0E-04
				Aroclor 1248	N/A	N/A	N/A	N/A	2.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1254	1.5E-01	mg/kg	1.6E-09	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	3.3E-09	1.9E-08	mg/kg-day	2.0E-05	mg/kg-day	9.6E-04
				Aroclor 1260	7.9E-02	mg/kg	8.4E-10	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	1.7E-09	9.8E-09	mg/kg-day	2.0E-05	mg/kg-day	4.9E-04
				PCB TEQ*	2.2E-06	mg/kg	2.4E-14	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	3.5E-09	2.7E-13	mg/kg-day	N/A	N/A	N/A
				C11-C22 Aromatic	1.8E+01	mg/kg	1.9E-07	mg/kg-day	N/A	N/A	N/A	2.2E-06	mg/kg-day	3.0E-02	mg/kg-day	7.5E-05
			Exp. Route Total								2E-07					8E-03

TABLE 3-7.4.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Trespasser
Receptor Age: Older Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil (Cont.)	Surface Soil (Cont.)	Aberjona Property	Dermal	Vinyl chloride	N/A	N/A	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Trichloroethene	N/A	N/A	N/A	N/A	4.0E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Phenanthrene	6.9E-01	mg/kg	1.7E-08	mg/kg-day	N/A	N/A	N/A	2.0E-07	mg/kg-day	2.0E-02	mg/kg-day	1.0E-05
				Benzo(a)Anthracene	7.1E-01	mg/kg	1.8E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.3E-08	2.1E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	7.4E-01	mg/kg	1.9E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.4E-08	2.2E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	5.1E-01	mg/kg	1.3E-08	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	9.4E-10	1.5E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	5.1E-01	mg/kg	1.3E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	9.4E-08	1.5E-07	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	5.2E-01	mg/kg	1.3E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	9.5E-09	1.5E-07	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	6.2E-03	mg/kg	1.6E-10	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.1E-09	1.8E-09	mg/kg-day	N/A	N/A	N/A
				Benzo(g,h,i)perylene	5.9E-01	mg/kg	1.5E-08	mg/kg-day	N/A	N/A	N/A	1.7E-07	mg/kg-day	2.0E-02	mg/kg-day	8.7E-06
				Antimony	1.8E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-05	mg/kg-day	N/A
				Arsenic	5.7E+00	mg/kg	3.3E-08	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	4.9E-08	3.8E-07	mg/kg-day	3.0E-04	mg/kg-day	1.3E-03
				Cadmium	9.8E+00	mg/kg	1.9E-09	mg/kg-day	N/A	N/A	N/A	2.2E-08	mg/kg-day	2.5E-05	mg/kg-day	8.8E-04
				Copper	1.0E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
				Lead	1.1E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Manganese	2.7E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.8E-03	mg/kg-day	N/A
				Mercury	9.5E-02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A
				Nickel	6.5E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-04	mg/kg-day	N/A
				Thallium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-05	mg/kg-day	N/A
				Aroclor 1242	1.1E-01	mg/kg	3.0E-09	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	6.1E-09	3.5E-08	mg/kg-day	2.0E-05	mg/kg-day	1.8E-03
				Aroclor 1248	N/A	N/A	N/A	N/A	2.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1254	1.5E-01	mg/kg	4.1E-09	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	8.3E-09	4.8E-08	mg/kg-day	2.0E-05	mg/kg-day	2.4E-03
				Aroclor 1260	7.9E-02	mg/kg	2.1E-09	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	4.3E-09	2.5E-08	mg/kg-day	2.0E-05	mg/kg-day	1.2E-03
				PCB TEQ*	2.2E-06	mg/kg	5.9E-14	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	8.9E-09	6.9E-13	mg/kg-day	N/A	N/A	N/A
				C11-C22 Aromatic	1.8E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
			Exp. Route Total								2E-07					8E-03
		Exposure Point Total									4E-07					2E-02

TABLE 3-7.4.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Trespasser
Receptor Age: Older Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil (Cont.)	Surface Soil (Cont.)	Whitney Property	Ingestion													
				Vinyl chloride	1.1E-01	mg/kg	1.2E-09	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	1.7E-09	1.3E-08	mg/kg-day	3.0E-03	mg/kg-day	4.5E-06
				Trichloroethene	1.4E-03	mg/kg	1.5E-11	mg/kg-day	4.0E-01	(mg/kg-day)$^{-1}$	6.0E-12	1.7E-10	mg/kg-day	3.0E-04	mg/kg-day	5.8E-07
				Phenanthrene	6.8E+01	mg/kg	7.3E-07	mg/kg-day	N/A	N/A	N/A	8.5E-06	mg/kg-day	2.0E-02	mg/kg-day	4.2E-04
				Benzo(a)Anthracene	3.8E+01	mg/kg	4.1E-07	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	3.0E-07	4.7E-06	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	4.0E+01	mg/kg	4.3E-07	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	3.1E-07	5.0E-06	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	1.8E+01	mg/kg	1.9E-07	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	1.4E-08	2.2E-06	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	2.9E+01	mg/kg	3.1E-07	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	2.3E-06	3.6E-06	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	1.1E+01	mg/kg	1.2E-07	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	8.6E-08	1.4E-06	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	3.0E+00	mg/kg	3.2E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	2.3E-07	3.7E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(g,h,i)perylene	8.2E+00	mg/kg	8.8E-08	mg/kg-day	N/A	N/A	N/A	1.0E-06	mg/kg-day	2.0E-02	mg/kg-day	5.1E-05
				Antimony	2.8E+00	mg/kg	3.0E-08	mg/kg-day	N/A	N/A	N/A	3.5E-07	mg/kg-day	4.0E-04	mg/kg-day	8.8E-04
				Arsenic	5.7E+00	mg/kg	6.1E-08	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	9.1E-08	7.1E-07	mg/kg-day	3.0E-04	mg/kg-day	2.4E-03
				Cadmium	2.8E+00	mg/kg	3.1E-08	mg/kg-day	N/A	N/A	N/A	3.6E-07	mg/kg-day	1.0E-03	mg/kg-day	3.6E-04
				Copper	1.3E+02	mg/kg	1.3E-06	mg/kg-day	N/A	N/A	N/A	1.6E-05	mg/kg-day	3.0E-02	mg/kg-day	5.2E-04
				Lead	7.3E+02	mg/kg	7.8E-06	mg/kg-day	N/A	N/A	N/A	9.1E-05	mg/kg-day	N/A	N/A	N/A
				Manganese	2.6E+02	mg/kg	2.8E-06	mg/kg-day	N/A	N/A	N/A	3.3E-05	mg/kg-day	7.0E-02	mg/kg-day	4.7E-04
				Mercury	5.5E-01	mg/kg	5.9E-09	mg/kg-day	N/A	N/A	N/A	6.9E-08	mg/kg-day	1.0E-04	mg/kg-day	6.9E-04
				Nickel	2.6E+01	mg/kg	2.8E-07	mg/kg-day	N/A	N/A	N/A	3.2E-06	mg/kg-day	2.0E-02	mg/kg-day	1.6E-04
				Thallium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-05	mg/kg-day	N/A
				Aroclor 1242	3.8E-01	mg/kg	4.1E-09	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	8.2E-09	4.8E-08	mg/kg-day	2.0E-05	mg/kg-day	2.4E-03
				Aroclor 1248	9.5E-02	mg/kg	1.0E-09	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	2.0E-09	1.2E-08	mg/kg-day	2.0E-05	mg/kg-day	5.9E-04
				Aroclor 1254	4.3E+01	mg/kg	4.6E-07	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	9.1E-07	5.3E-06	mg/kg-day	2.0E-05	mg/kg-day	2.7E-01
				Aroclor 1260	1.2E+01	mg/kg	1.3E-07	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	2.5E-07	1.5E-06	mg/kg-day	2.0E-05	mg/kg-day	7.3E-02
				PCB TEQ*	2.0E-04	mg/kg	2.1E-12	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	3.1E-07	2.4E-11	mg/kg-day	N/A	N/A	N/A
				C11-C22 Aromatic	4.6E+02	mg/kg	4.9E-06	mg/kg-day	N/A	N/A	N/A	5.7E-05	mg/kg-day	3.0E-02	mg/kg-day	1.9E-03
			Exp. Route Total								5E-06					3E-01

TABLE 3-7.4.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Trespasser
Receptor Age: Older Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil (Cont.)	Surface Soil (Cont.)	Whitney Property	Dermal	Vinyl chloride	1.1E-01	mg/kg	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Trichloroethene	1.4E-03	mg/kg	N/A	N/A	4.0E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Phenanthrene	6.8E+01	mg/kg	1.7E-06	mg/kg-day	N/A	N/A	N/A	2.0E-05	mg/kg-day	2.0E-02	mg/kg-day	9.9E-04
				Benzo(a)Anthracene	3.8E+01	mg/kg	9.5E-07	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	7.0E-07	1.1E-05	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	4.0E+01	mg/kg	1.0E-06	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	7.3E-07	1.2E-05	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	1.8E+01	mg/kg	4.5E-07	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	3.3E-08	5.3E-06	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	2.9E+01	mg/kg	7.3E-07	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	5.3E-06	8.5E-06	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	1.1E+01	mg/kg	2.8E-07	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	2.0E-07	3.2E-06	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	3.0E+00	mg/kg	7.5E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	5.5E-07	8.7E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(g,h,i)perylene	8.2E+00	mg/kg	2.1E-07	mg/kg-day	N/A	N/A	N/A	2.4E-06	mg/kg-day	2.0E-02	mg/kg-day	1.2E-04
				Antimony	2.8E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-05	mg/kg-day	N/A
				Arsenic	5.7E+00	mg/kg	3.3E-08	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	4.9E-08	3.8E-07	mg/kg-day	3.0E-04	mg/kg-day	1.3E-03
				Cadmium	2.8E+00	mg/kg	5.5E-10	mg/kg-day	N/A	N/A	N/A	6.4E-09	mg/kg-day	2.5E-05	mg/kg-day	2.6E-04
				Copper	1.3E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
				Lead	7.3E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Manganese	2.6E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.8E-03	mg/kg-day	N/A
				Mercury	5.5E-01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A
				Nickel	2.6E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-04	mg/kg-day	N/A
				Thallium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-05	mg/kg-day	N/A
				Aroclor 1242	3.8E-01	mg/kg	1.0E-08	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	2.1E-08	1.2E-07	mg/kg-day	2.0E-05	mg/kg-day	6.0E-03
				Aroclor 1248	9.5E-02	mg/kg	2.6E-09	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	5.1E-09	3.0E-08	mg/kg-day	2.0E-05	mg/kg-day	1.5E-03
				Aroclor 1254	4.3E+01	mg/kg	1.1E-06	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	2.3E-06	1.3E-05	mg/kg-day	2.0E-05	mg/kg-day	6.7E-01
				Aroclor 1260	1.2E+01	mg/kg	3.2E-07	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	6.3E-07	3.7E-06	mg/kg-day	2.0E-05	mg/kg-day	1.8E-01
				PCB TEQ*	2.0E-04	mg/kg	5.3E-12	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	7.9E-07	6.2E-11	mg/kg-day	N/A	N/A	N/A
				C11-C22 Aromatic	4.6E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
			Exp. Route Total								1E-05					9E-01
		Exposure Point Total									2E-05					1E+00

TABLE 3-7.4.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Trespasser
Receptor Age: Older Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil (Cont.)	Surface Soil (Cont.)	Murphy Property	Ingestion	Vinyl chloride	N/A	N/A	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Trichloroethene	3.8E-01	mg/kg	4.1E-09	mg/kg-day	4.0E-01	(mg/kg-day)$^{-1}$	1.6E-09	4.7E-08	mg/kg-day	3.0E-04	mg/kg-day	1.6E-04
				Phenanthrene	5.6E+00	mg/kg	6.0E-08	mg/kg-day	N/A	N/A	N/A	7.0E-07	mg/kg-day	2.0E-02	mg/kg-day	3.5E-05
				Benzo(a)Anthracene	2.5E+00	mg/kg	2.6E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.9E-08	3.1E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	2.3E+00	mg/kg	2.5E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.8E-08	2.9E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	9.3E-01	mg/kg	9.9E-09	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	7.3E-10	1.2E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	1.6E+00	mg/kg	1.7E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.2E-07	1.9E-07	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	6.5E+00	mg/kg	7.0E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	5.1E-08	8.1E-07	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	2.1E-01	mg/kg	2.2E-09	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.6E-08	2.6E-08	mg/kg-day	N/A	N/A	N/A
				Benzo(g,h,i)perylene	1.4E+00	mg/kg	1.5E-08	mg/kg-day	N/A	N/A	N/A	1.7E-07	mg/kg-day	2.0E-02	mg/kg-day	8.5E-06
				Antimony	3.6E+00	mg/kg	3.9E-08	mg/kg-day	N/A	N/A	N/A	4.5E-07	mg/kg-day	4.0E-04	mg/kg-day	1.1E-03
				Arsenic	8.1E+00	mg/kg	8.7E-08	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	1.3E-07	1.0E-06	mg/kg-day	3.0E-04	mg/kg-day	3.4E-03
				Cadmium	3.0E+00	mg/kg	3.2E-08	mg/kg-day	N/A	N/A	N/A	3.7E-07	mg/kg-day	1.0E-03	mg/kg-day	3.7E-04
				Copper	3.6E+01	mg/kg	3.8E-07	mg/kg-day	N/A	N/A	N/A	4.4E-06	mg/kg-day	3.0E-02	mg/kg-day	1.5E-04
				Lead	8.3E+02	mg/kg	8.9E-06	mg/kg-day	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A	N/A	N/A
				Manganese	4.1E+02	mg/kg	4.4E-06	mg/kg-day	N/A	N/A	N/A	5.1E-05	mg/kg-day	7.0E-02	mg/kg-day	7.3E-04
				Mercury	5.8E-01	mg/kg	6.2E-09	mg/kg-day	N/A	N/A	N/A	7.2E-08	mg/kg-day	1.0E-04	mg/kg-day	7.2E-04
				Nickel	1.7E+01	mg/kg	1.8E-07	mg/kg-day	N/A	N/A	N/A	2.1E-06	mg/kg-day	2.0E-02	mg/kg-day	1.1E-04
				Thallium	5.7E+00	mg/kg	6.1E-08	mg/kg-day	N/A	N/A	N/A	7.1E-07	mg/kg-day	8.0E-05	mg/kg-day	8.9E-03
				Aroclor 1242	N/A	N/A	N/A	N/A	2.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1248	N/A	N/A	N/A	N/A	2.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1254	2.2E+00	mg/kg	2.4E-08	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	4.7E-08	2.7E-07	mg/kg-day	2.0E-05	mg/kg-day	1.4E-02
				Aroclor 1260	4.9E-02	mg/kg	5.3E-10	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	1.1E-09	6.1E-09	mg/kg-day	2.0E-05	mg/kg-day	3.1E-04
				PCB TEQ*	5.8E-08	mg/kg	6.3E-16	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	9.4E-11	7.3E-15	mg/kg-day	N/A	N/A	N/A
				C11-C22 Aromatic	3.7E+03	mg/kg	4.0E-05	mg/kg-day	N/A	N/A	N/A	4.6E-04	mg/kg-day	3.0E-02	mg/kg-day	1.5E-02
			Exp. Route Total								4E-07					5E-02

TABLE 3-7.4.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Trespasser
Receptor Age: Older Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil (Cont.)	Surface Soil (Cont.)	Murphy Property	Dermal	Vinyl chloride	N/A	N/A	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Trichloroethene	3.8E-01	mg/kg	N/A	N/A	4.0E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Phenanthrene	5.6E+00	mg/kg	1.4E-07	mg/kg-day	N/A	N/A	N/A	1.6E-06	mg/kg-day	2.0E-02	mg/kg-day	8.2E-05
				Benzo(a)Anthracene	2.5E+00	mg/kg	6.1E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	4.5E-08	7.2E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	2.3E+00	mg/kg	5.8E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	4.2E-08	6.7E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	9.3E-01	mg/kg	2.3E-08	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	1.7E-09	2.7E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	1.6E+00	mg/kg	3.9E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	2.8E-07	4.5E-07	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	6.5E+00	mg/kg	1.6E-07	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.2E-07	1.9E-06	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	2.1E-01	mg/kg	5.3E-09	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	3.8E-08	6.1E-08	mg/kg-day	N/A	N/A	N/A
				Benzo(g,h,i)perylene	1.4E+00	mg/kg	3.4E-08	mg/kg-day	N/A	N/A	N/A	4.0E-07	mg/kg-day	2.0E-02	mg/kg-day	2.0E-05
				Antimony	3.6E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-05	mg/kg-day	N/A
				Arsenic	8.1E+00	mg/kg	4.7E-08	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	7.0E-08	5.5E-07	mg/kg-day	3.0E-04	mg/kg-day	1.8E-03
				Cadmium	3.0E+00	mg/kg	5.7E-10	mg/kg-day	N/A	N/A	N/A	6.7E-09	mg/kg-day	2.5E-05	mg/kg-day	2.7E-04
				Copper	3.6E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
				Lead	8.3E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Manganese	4.1E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.8E-03	mg/kg-day	N/A
				Mercury	5.8E-01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A
				Nickel	1.7E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-04	mg/kg-day	N/A
				Thallium	5.7E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-05	mg/kg-day	N/A
				Aroclor 1242	N/A	N/A	N/A	N/A	2.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1248	N/A	N/A	N/A	N/A	2.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1254	2.2E+00	mg/kg	5.9E-08	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	1.2E-07	6.9E-07	mg/kg-day	2.0E-05	mg/kg-day	3.5E-02
				Aroclor 1260	4.9E-02	mg/kg	1.3E-09	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	2.7E-09	1.5E-08	mg/kg-day	2.0E-05	mg/kg-day	7.7E-04
				PCB TEQ*	5.8E-08	mg/kg	1.6E-15	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	2.4E-10	1.8E-14	mg/kg-day	N/A	N/A	N/A
				C11-C22 Aromatic	3.7E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
			Exp. Route Total								7E-07					4E-02
		Exposure Point Total									1E-06					8E-02
	Exposure Medium Total										N/A					N/A

TABLE 3-7.4.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Trespasser
Receptor Age: Older Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Surface Water	Surface Water	Murphy Wetland	Dermal	Chromium	2.3E+01	ug/L	2.2E-08	mg/kg-day	N/A	N/A	N/A	2.6E-07	mg/kg-day	7.5E-05	mg/kg-day	3.4E-03
				Manganese	5.5E+02	ug/L	5.3E-07	mg/kg-day	N/A	N/A	N/A	6.1E-06	mg/kg-day	9.6E-04	mg/kg-day	6.4E-03
			Exp. Route Total								0E+00					1E-02
		Exposure Point Total									0E+00					1E-02
	Exposure Medium Total										N/A					N/A

TABLE 3-7.4.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Trespasser
Receptor Age: Older Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Sediment	Sediment	Murphy Wetland	Ingestion													
				Naphthalene	2E+01	mg/kg	2.0E-07	mg/kg-day	N/A	N/A	N/A	2.3E-06	mg/kg-day	2.0E-02	mg/kg-day	1.2E-04
				Vinyl chloride	2E-01	mg/kg	1.8E-09	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	2.7E-09	2.1E-08	mg/kg-day	3.0E-03	mg/kg-day	7.1E-06
				Trichloroethene	9E-02	mg/kg	9.1E-10	mg/kg-day	4.0E-01	(mg/kg-day)$^{-1}$	3.6E-10	1.1E-08	mg/kg-day	3.0E-04	mg/kg-day	3.5E-05
				Ethylenedibromide	1E+01	mg/kg	1.0E-07	mg/kg-day	8.5E+01	(mg/kg-day)$^{-1}$	8.6E-06	1.2E-06	mg/kg-day	N/A	N/A	N/A
				Ethylbenzene	1E+01	mg/kg	1.2E-07	mg/kg-day	N/A	N/A	N/A	1.4E-06	mg/kg-day	1.0E-01	mg/kg-day	1.4E-05
				Xylenes (total)	5E+01	mg/kg	5.7E-07	mg/kg-day	N/A	N/A	N/A	6.6E-06	mg/kg-day	2.0E-01	mg/kg-day	3.3E-05
				Acetophenone	3E+00	mg/kg	3.4E-08	mg/kg-day	N/A	N/A	N/A	4.0E-07	mg/kg-day	1.0E-01	mg/kg-day	4.0E-06
				2-Methylnaphthalene	1E+01	mg/kg	1.3E-07	mg/kg-day	N/A	N/A	N/A	1.5E-06	mg/kg-day	4.0E-03	mg/kg-day	3.8E-04
				Benzo(a)Anthracene	3E+00	mg/kg	3.3E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	2.4E-08	3.9E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	3E+00	mg/kg	3.1E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	2.3E-08	3.6E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	3E+00	mg/kg	3.5E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	2.6E-07	4.1E-07	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	3E+00	mg/kg	3.4E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	2.5E-08	4.0E-07	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	1E+00	mg/kg	1.4E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.0E-07	1.6E-07	mg/kg-day	N/A	N/A	N/A
				C11-C22 Aromatic	2E+04	mg/kg	2.2E-04	mg/kg-day	N/A	N/A	N/A	2.6E-03	mg/kg-day	3.0E-02	mg/kg-day	8.5E-02
				C19-C36 Aliphatic	9E+03	mg/kg	1.0E-04	mg/kg-day	N/A	N/A	N/A	1.2E-03	mg/kg-day	2.0E+00	mg/kg-day	5.9E-04
				C9-C18 Aliphatic	2E+03	mg/kg	1.8E-05	mg/kg-day	N/A	N/A	N/A	2.1E-04	mg/kg-day	1.0E-01	mg/kg-day	2.1E-03
				Chromium (VI)	5E+01	mg/kg	5.8E-07	mg/kg-day	N/A	N/A	N/A	6.7E-06	mg/kg-day	3.0E-03	mg/kg-day	2.2E-03
				Antimony	1E+02	mg/kg	1.3E-06	mg/kg-day	N/A	N/A	N/A	1.5E-05	mg/kg-day	4.0E-04	mg/kg-day	3.7E-02
				Arsenic	1E+01	mg/kg	1.2E-07	mg/kg-day	7.7E-01	(mg/kg-day)$^{-1}$	9.2E-08	1.4E-06	mg/kg-day	5.9E-04	mg/kg-day	2.4E-03
				Barium	1E+03	mg/kg	1.2E-05	mg/kg-day	N/A	N/A	N/A	1.4E-04	mg/kg-day	7.0E-02	mg/kg-day	2.0E-03
				Cadmium	3E+00	mg/kg	3.2E-08	mg/kg-day	N/A	N/A	N/A	3.7E-07	mg/kg-day	1.0E-03	mg/kg-day	3.7E-04
				Chromium	1E+04	mg/kg	1.4E-04	mg/kg-day	N/A	N/A	N/A	1.6E-03	mg/kg-day	3.0E-03	mg/kg-day	5.3E-01
				Lead	4E+03	mg/kg	4.3E-05	mg/kg-day	N/A	N/A	N/A	5.0E-04	mg/kg-day	N/A	N/A	N/A
				Manganese	3E+02	mg/kg	3.6E-06	mg/kg-day	N/A	N/A	N/A	4.2E-05	mg/kg-day	7.0E-02	mg/kg-day	6.0E-04
				Mercury	3E+00	mg/kg	3.3E-08	mg/kg-day	N/A	N/A	N/A	3.8E-07	mg/kg-day	1.0E-04	mg/kg-day	3.8E-03
				Vanadium	6E+01	mg/kg	5.9E-07	mg/kg-day	N/A	N/A	N/A	6.9E-06	mg/kg-day	1.0E-03	mg/kg-day	6.9E-03
				PCB TEQ*	2E-04	mg/kg	2.0E-12	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	3.0E-07	2.3E-11	mg/kg-day	N/A	N/A	N/A
				gamma-Chlordane	2E+00	mg/kg	2.0E-08	mg/kg-day	3.5E-01	(mg/kg-day)$^{-1}$	6.9E-09	2.3E-07	mg/kg-day	5.0E-04	mg/kg-day	4.6E-04
				Aroclor 1254	9E+01	mg/kg	9.5E-07	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	1.9E-06	1.1E-05	mg/kg-day	2.0E-05	mg/kg-day	5.5E-01
				Aroclor 1260	5E+01	mg/kg	5.0E-07	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	9.9E-07	5.8E-06	mg/kg-day	2.0E-05	mg/kg-day	2.9E-01
			Exp. Route Total								1E-05					2E+00

TABLE 3-7.4.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Trespasser
Receptor Age: Older Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Sediment (Cont.)	Sediment (Cont.)	Murphy Wetland	Dermal													
				Naphthalene	2E+01	mg/kg	4.7E-07	mg/kg-day	N/A	N/A	N/A	5.5E-06	mg/kg-day	2.0E-02	mg/kg-day	2.7E-04
				Vinyl chloride	2E-01	mg/kg	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Trichloroethene	9E-02	mg/kg	N/A	N/A	4.0E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Ethylenedibromide	1E+01	mg/kg	N/A	N/A	8.5E+01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	N/A	N/A	N/A
				Ethylbenzene	1E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-01	mg/kg-day	N/A
				Xylenes (total)	5E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/kg-day	N/A
				Acetophenone	3E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-01	mg/kg-day	N/A
				2-Methylnaphthalene	1E+01	mg/kg	3.1E-07	mg/kg-day	N/A	N/A	N/A	3.6E-06	mg/kg-day	4.0E-03	mg/kg-day	9.0E-04
				Benzo(a)Anthracene	3E+00	mg/kg	7.8E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	5.7E-08	9.1E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	3E+00	mg/kg	7.3E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	5.3E-08	8.5E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	3E+00	mg/kg	8.3E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	6.0E-07	9.7E-07	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	3E+00	mg/kg	8.0E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	5.9E-08	9.4E-07	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	1E+00	mg/kg	3.3E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	2.4E-07	3.8E-07	mg/kg-day	N/A	N/A	N/A
				C11-C22 Aromatic	2E+04	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
				C19-C36 Aliphatic	9E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E+00	mg/kg-day	N/A
				C9-C18 Aliphatic	2E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-01	mg/kg-day	N/A
				Chromium (VI)	5E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	7.5E-05	mg/kg-day	N/A
				Antimony	1E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-05	mg/kg-day	N/A
				Arsenic	1E+01	mg/kg	6.5E-08	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	9.7E-08	7.5E-07	mg/kg-day	3.0E-04	mg/kg-day	2.5E-03
				Barium	1E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.9E-03	mg/kg-day	N/A
				Cadmium	3E+00	mg/kg	5.8E-10	mg/kg-day	N/A	N/A	N/A	6.7E-09	mg/kg-day	2.5E-05	mg/kg-day	2.7E-04
				Chromium	1E+04	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-02	mg/kg-day	N/A
				Lead	4E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Manganese	3E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.8E-03	mg/kg-day	N/A
				Mercury	3E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A
				Vanadium	6E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.6E-05	mg/kg-day	N/A
				PCB TEQ*	2E-04	mg/kg	5.0E-12	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	7.5E-07	5.8E-11	mg/kg-day	N/A	N/A	N/A
				gamma-Chlordane	2E+00	mg/kg	1.4E-08	mg/kg-day	3.5E-01	(mg/kg-day)$^{-1}$	4.9E-09	1.6E-07	mg/kg-day	5.0E-04	mg/kg-day	3.3E-04
				Aroclor 1254	9E+01	mg/kg	2.4E-06	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	4.8E-06	2.8E-05	mg/kg-day	2.0E-05	mg/kg-day	1.4E+00
				Aroclor 1260	5E+01	mg/kg	1.2E-06	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	2.5E-06	1.5E-05	mg/kg-day	2.0E-05	mg/kg-day	7.3E-01
			Exp. Route Total								9E-06					2E+00
		Exposure Point Total									2E-05					4E+00
	Exposure Medium Total										N/A					N/A
Medium Total											N/A					N/A
											Total of Receptor Risks Across All Media					N/A
																Total of Receptor Hazards Across All Media

TABLE 3-7.4.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Trespasser
Receptor Age: Older Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Aberjona Property	Ingestion													
				Vinyl chloride	N/A	N/A	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Trichloroethene	N/A	N/A	N/A	N/A	4.0E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Phenanthrene	6.9E-01	mg/kg	6.2E-10	mg/kg-day	N/A	N/A	N/A	2.2E-08	mg/kg-day	2.0E-02	mg/kg-day	1.1E-06
				Benzo(a)Anthracene	7.1E-01	mg/kg	6.3E-10	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	4.6E-10	2.2E-08	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	7.4E-01	mg/kg	6.6E-10	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	4.8E-10	2.3E-08	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	5.1E-01	mg/kg	4.6E-10	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	3.3E-11	1.6E-08	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	5.1E-01	mg/kg	4.6E-10	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	3.4E-09	1.6E-08	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	5.2E-01	mg/kg	4.6E-10	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	3.4E-10	1.6E-08	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	6.2E-03	mg/kg	5.5E-12	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	4.0E-11	1.9E-10	mg/kg-day	N/A	N/A	N/A
				Benzo(g,h,i)perylene	5.9E-01	mg/kg	5.3E-10	mg/kg-day	N/A	N/A	N/A	1.9E-08	mg/kg-day	2.0E-02	mg/kg-day	9.3E-07
				Antimony	1.8E+00	mg/kg	1.6E-09	mg/kg-day	N/A	N/A	N/A	5.6E-08	mg/kg-day	4.0E-04	mg/kg-day	1.4E-04
				Arsenic	5.7E+00	mg/kg	5.1E-09	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	7.6E-09	1.8E-07	mg/kg-day	3.0E-04	mg/kg-day	5.9E-04
				Cadmium	9.8E+00	mg/kg	8.7E-09	mg/kg-day	N/A	N/A	N/A	3.1E-07	mg/kg-day	1.0E-03	mg/kg-day	3.1E-04
				Copper	1.0E+02	mg/kg	9.0E-08	mg/kg-day	N/A	N/A	N/A	3.2E-06	mg/kg-day	3.0E-02	mg/kg-day	1.1E-04
				Lead	1.1E+03	mg/kg	1.0E-06	mg/kg-day	N/A	N/A	N/A	3.6E-05	mg/kg-day	N/A	N/A	N/A
				Manganese	2.7E+02	mg/kg	2.4E-07	mg/kg-day	N/A	N/A	N/A	8.5E-06	mg/kg-day	7.0E-02	mg/kg-day	1.2E-04
				Mercury	9.5E-02	mg/kg	8.5E-11	mg/kg-day	N/A	N/A	N/A	3.0E-09	mg/kg-day	1.0E-04	mg/kg-day	3.0E-05
				Nickel	6.5E+01	mg/kg	5.8E-08	mg/kg-day	N/A	N/A	N/A	2.0E-06	mg/kg-day	2.0E-02	mg/kg-day	1.0E-04
				Thallium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-05	mg/kg-day	N/A
				Aroclor 1242	1.1E-01	mg/kg	1.0E-10	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	1.0E-10	3.5E-09	mg/kg-day	2.0E-05	mg/kg-day	1.8E-04
				Aroclor 1248	N/A	N/A	N/A	N/A	1.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1254	5.4E-02	mg/kg	4.8E-11	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	4.8E-11	1.7E-09	mg/kg-day	2.0E-05	mg/kg-day	8.4E-05
				Aroclor 1260	7.9E-02	mg/kg	7.0E-11	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	7.0E-11	2.5E-09	mg/kg-day	2.0E-05	mg/kg-day	1.2E-04
				PCB TEQ*	1.1E-06	mg/kg	1.0E-15	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	1.5E-10	3.5E-14	mg/kg-day	N/A	N/A	N/A
				C11-C22 Aromatic	1.5E+01	mg/kg	1.3E-08	mg/kg-day	N/A	N/A	N/A	4.5E-07	mg/kg-day	3.0E-02	mg/kg-day	1.5E-05
			Exp. Route Total								1E-08					2E-03

TABLE 3-7.4.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Trespasser
Receptor Age: Older Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil (Cont.)	Surface Soil (Cont.)	Aberjona Property	Dermal													
				Vinyl chloride	N/A	N/A	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Trichloroethene	N/A	N/A	N/A	N/A	4.0E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Phenanthrene	6.9E-01	mg/kg	2.9E-09	mg/kg-day	N/A	N/A	N/A	1.0E-07	mg/kg-day	2.0E-02	mg/kg-day	5.1E-06
				Benzo(a)Anthracene	7.1E-01	mg/kg	3.0E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	2.2E-09	1.0E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	7.4E-01	mg/kg	3.1E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	2.3E-09	1.1E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	5.1E-01	mg/kg	2.1E-09	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	1.6E-10	7.5E-08	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	5.1E-01	mg/kg	2.1E-09	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.6E-08	7.5E-08	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	5.2E-01	mg/kg	2.2E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.6E-09	7.6E-08	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	6.2E-03	mg/kg	2.6E-11	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.9E-10	9.1E-10	mg/kg-day	N/A	N/A	N/A
				Benzo(g,h,i)perylene	5.9E-01	mg/kg	2.5E-09	mg/kg-day	N/A	N/A	N/A	8.7E-08	mg/kg-day	2.0E-02	mg/kg-day	4.3E-06
				Antimony	1.8E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-05	mg/kg-day	N/A
				Arsenic	5.7E+00	mg/kg	5.5E-09	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	8.2E-09	1.9E-07	mg/kg-day	3.0E-04	mg/kg-day	6.4E-04
				Cadmium	9.8E+00	mg/kg	3.1E-10	mg/kg-day	N/A	N/A	N/A	1.1E-08	mg/kg-day	2.5E-05	mg/kg-day	4.4E-04
				Copper	1.0E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
				Lead	1.1E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Manganese	2.7E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.8E-03	mg/kg-day	N/A
				Mercury	9.5E-02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A
				Nickel	6.5E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-04	mg/kg-day	N/A
				Thallium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-05	mg/kg-day	N/A
				Aroclor 1242	1.1E-01	mg/kg	5.1E-10	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	5.1E-10	1.8E-08	mg/kg-day	2.0E-05	mg/kg-day	8.8E-04
				Aroclor 1248	N/A	N/A	N/A	N/A	1.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1254	5.4E-02	mg/kg	2.4E-10	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	2.4E-10	8.5E-09	mg/kg-day	2.0E-05	mg/kg-day	4.2E-04
				Aroclor 1260	7.9E-02	mg/kg	3.5E-10	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	3.5E-10	1.2E-08	mg/kg-day	2.0E-05	mg/kg-day	6.2E-04
				PCB TEQ*	1.1E-06	mg/kg	5.0E-15	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	7.6E-10	1.8E-13	mg/kg-day	N/A	N/A	N/A
				C11-C22 Aromatic	1.5E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
			Exp. Route Total								3E-08					3E-03
		Exposure Point Total									4E-08					5E-03

TABLE 3-7.4.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Trespasser
Receptor Age: Older Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil (Cont.)	Surface Soil (Cont.)	Whitney Property	Ingestion													
				Vinyl chloride	1.1E-01	mg/kg	9.6E-11	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	1.4E-10	3.4E-09	mg/kg-day	3.0E-03	mg/kg-day	1.1E-06
				Trichloroethene	1.4E-03	mg/kg	1.2E-12	mg/kg-day	4.0E-01	(mg/kg-day)$^{-1}$	5.0E-13	4.4E-11	mg/kg-day	3.0E-04	mg/kg-day	1.5E-07
				Phenanthrene	1.3E+01	mg/kg	1.2E-08	mg/kg-day	N/A	N/A	N/A	4.0E-07	mg/kg-day	2.0E-02	mg/kg-day	2.0E-05
				Benzo(a)Anthracene	7.6E+00	mg/kg	6.8E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	5.0E-09	2.4E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	7.5E+00	mg/kg	6.7E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	4.9E-09	2.3E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	3.9E+00	mg/kg	3.5E-09	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	2.6E-10	1.2E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	6.5E+00	mg/kg	5.8E-09	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	4.2E-08	2.0E-07	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	1.1E+01	mg/kg	9.8E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	7.2E-09	3.4E-07	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	3.0E+00	mg/kg	2.7E-09	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.9E-08	9.3E-08	mg/kg-day	N/A	N/A	N/A
				Benzo(g,h,i)perylene	8.2E+00	mg/kg	7.3E-09	mg/kg-day	N/A	N/A	N/A	2.6E-07	mg/kg-day	2.0E-02	mg/kg-day	1.3E-05
				Antimony	2.8E+00	mg/kg	2.5E-09	mg/kg-day	N/A	N/A	N/A	8.8E-08	mg/kg-day	4.0E-04	mg/kg-day	2.2E-04
				Arsenic	5.7E+00	mg/kg	5.1E-09	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	7.6E-09	1.8E-07	mg/kg-day	3.0E-04	mg/kg-day	5.9E-04
				Cadmium	2.8E+00	mg/kg	2.5E-09	mg/kg-day	N/A	N/A	N/A	8.9E-08	mg/kg-day	1.0E-03	mg/kg-day	8.9E-05
				Copper	1.3E+02	mg/kg	1.1E-07	mg/kg-day	N/A	N/A	N/A	3.9E-06	mg/kg-day	3.0E-02	mg/kg-day	1.3E-04
				Lead	7.3E+02	mg/kg	6.5E-07	mg/kg-day	N/A	N/A	N/A	2.3E-05	mg/kg-day	N/A	N/A	N/A
				Manganese	2.6E+02	mg/kg	2.3E-07	mg/kg-day	N/A	N/A	N/A	8.1E-06	mg/kg-day	7.0E-02	mg/kg-day	1.2E-04
				Mercury	5.5E-01	mg/kg	4.9E-10	mg/kg-day	N/A	N/A	N/A	1.7E-08	mg/kg-day	1.0E-04	mg/kg-day	1.7E-04
				Nickel	2.6E+01	mg/kg	2.3E-08	mg/kg-day	N/A	N/A	N/A	8.1E-07	mg/kg-day	2.0E-02	mg/kg-day	4.1E-05
				Thallium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-05	mg/kg-day	N/A
				Aroclor 1242	3.8E-01	mg/kg	3.4E-10	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	3.4E-10	1.2E-08	mg/kg-day	2.0E-05	mg/kg-day	6.0E-04
				Aroclor 1248	9.5E-02	mg/kg	8.5E-11	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	8.5E-11	3.0E-09	mg/kg-day	2.0E-05	mg/kg-day	1.5E-04
				Aroclor 1254	4.0E+00	mg/kg	3.5E-09	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	3.5E-09	1.2E-07	mg/kg-day	2.0E-05	mg/kg-day	6.2E-03
				Aroclor 1260	2.0E+00	mg/kg	1.8E-09	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	1.8E-09	6.3E-08	mg/kg-day	2.0E-05	mg/kg-day	3.1E-03
				PCB TEQ*	4.7E-05	mg/kg	4.2E-14	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	6.4E-09	1.5E-12	mg/kg-day	N/A	N/A	N/A
				C11-C22 Aromatic	4.6E+02	mg/kg	4.1E-07	mg/kg-day	N/A	N/A	N/A	1.4E-05	mg/kg-day	3.0E-02	mg/kg-day	4.8E-04
			Exp. Route Total								1E-07					1E-02

TABLE 3-7.4.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Trespasser
Receptor Age: Older Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil (Cont.)	Surface Soil (Cont.)	Whitney Property	Dermal													
				Vinyl chloride	1.1E-01	mg/kg	N/A	N/A	1.5E+00	(mg/kg-day) $^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Trichloroethene	1.4E-03	mg/kg	N/A	N/A	4.0E-01	(mg/kg-day) $^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Phenanthrene	1.3E+01	mg/kg	5.4E-08	mg/kg-day	N/A	N/A	N/A	1.9E-06	mg/kg-day	2.0E-02	mg/kg-day	9.4E-05
				Benzo(a)Anthracene	7.6E+00	mg/kg	3.2E-08	mg/kg-day	7.3E-01	(mg/kg-day) $^{-1}$	2.3E-08	1.1E-06	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	7.5E+00	mg/kg	3.1E-08	mg/kg-day	7.3E-01	(mg/kg-day) $^{-1}$	2.3E-08	1.1E-06	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	3.9E+00	mg/kg	1.6E-08	mg/kg-day	7.3E-02	(mg/kg-day) $^{-1}$	1.2E-09	5.7E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	6.5E+00	mg/kg	2.7E-08	mg/kg-day	7.3E+00	(mg/kg-day) $^{-1}$	2.0E-07	9.5E-07	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	1.1E+01	mg/kg	4.6E-08	mg/kg-day	7.3E-01	(mg/kg-day) $^{-1}$	3.4E-08	1.6E-06	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	3.0E+00	mg/kg	1.2E-08	mg/kg-day	7.3E+00	(mg/kg-day) $^{-1}$	9.1E-08	4.4E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(g,h,i)perylene	8.2E+00	mg/kg	3.4E-08	mg/kg-day	N/A	N/A	N/A	1.2E-06	mg/kg-day	2.0E-02	mg/kg-day	6.0E-05
				Antimony	2.8E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-05	mg/kg-day	N/A
				Arsenic	5.7E+00	mg/kg	5.5E-09	mg/kg-day	1.5E+00	(mg/kg-day) $^{-1}$	8.2E-09	1.9E-07	mg/kg-day	3.0E-04	mg/kg-day	6.4E-04
				Cadmium	2.8E+00	mg/kg	9.2E-11	mg/kg-day	N/A	N/A	N/A	3.2E-09	mg/kg-day	2.5E-05	mg/kg-day	1.3E-04
				Copper	1.3E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
				Lead	7.3E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Manganese	2.6E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.8E-03	mg/kg-day	N/A
				Mercury	5.5E-01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A
				Nickel	2.6E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-04	mg/kg-day	N/A
				Thallium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-05	mg/kg-day	N/A
				Aroclor 1242	3.8E-01	mg/kg	1.7E-09	mg/kg-day	1.0E+00	(mg/kg-day) $^{-1}$	1.7E-09	6.0E-08	mg/kg-day	2.0E-05	mg/kg-day	3.0E-03
				Aroclor 1248	9.5E-02	mg/kg	4.3E-10	mg/kg-day	1.0E+00	(mg/kg-day) $^{-1}$	4.3E-10	1.5E-08	mg/kg-day	2.0E-05	mg/kg-day	7.5E-04
				Aroclor 1254	4.0E+00	mg/kg	1.8E-08	mg/kg-day	1.0E+00	(mg/kg-day) $^{-1}$	1.8E-08	6.2E-07	mg/kg-day	2.0E-05	mg/kg-day	3.1E-02
				Aroclor 1260	2.0E+00	mg/kg	9.0E-09	mg/kg-day	1.0E+00	(mg/kg-day) $^{-1}$	9.0E-09	3.2E-07	mg/kg-day	2.0E-05	mg/kg-day	1.6E-02
				PCB TEQ*	4.7E-05	mg/kg	2.1E-13	mg/kg-day	1.5E+05	(mg/kg-day) $^{-1}$	3.2E-08	7.5E-12	mg/kg-day	N/A	N/A	N/A
				C11-C22 Aromatic	4.6E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
			Exp. Route Total								4E-07					5E-02
		Exposure Point Total									5E-07					6E-02

TABLE 3-7.4.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Trespasser
Receptor Age: Older Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil (Cont.)	Surface Soil (Cont.)	Murphy Property	Ingestion													
				Vinyl chloride	N/A	N/A	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Trichloroethene	3.8E-01	mg/kg	3.4E-10	mg/kg-day	4.0E-01	(mg/kg-day)$^{-1}$	1.4E-10	1.2E-08	mg/kg-day	3.0E-04	mg/kg-day	3.9E-05
				Phenanthrene	1.6E+00	mg/kg	1.4E-09	mg/kg-day	N/A	N/A	N/A	4.9E-08	mg/kg-day	2.0E-02	mg/kg-day	2.4E-06
				Benzo(a)Anthracene	2.5E+00	mg/kg	2.2E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.6E-09	7.7E-08	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	9.3E-01	mg/kg	8.3E-10	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	6.1E-10	2.9E-08	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	9.3E-01	mg/kg	8.3E-10	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	6.0E-11	2.9E-08	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	1.6E+00	mg/kg	1.4E-09	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.0E-08	4.9E-08	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	1.3E+00	mg/kg	1.1E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	8.3E-10	4.0E-08	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	2.1E-01	mg/kg	1.9E-10	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.4E-09	6.6E-09	mg/kg-day	N/A	N/A	N/A
				Benzo(g,h,i)perylene	1.4E+00	mg/kg	1.2E-09	mg/kg-day	N/A	N/A	N/A	4.2E-08	mg/kg-day	2.0E-02	mg/kg-day	2.1E-06
				Antimony	3.6E+00	mg/kg	3.2E-09	mg/kg-day	N/A	N/A	N/A	1.1E-07	mg/kg-day	4.0E-04	mg/kg-day	2.8E-04
				Arsenic	8.1E+00	mg/kg	7.2E-09	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	1.1E-08	2.5E-07	mg/kg-day	3.0E-04	mg/kg-day	8.5E-04
				Cadmium	3.0E+00	mg/kg	2.6E-09	mg/kg-day	N/A	N/A	N/A	9.2E-08	mg/kg-day	1.0E-03	mg/kg-day	9.2E-05
				Copper	3.6E+01	mg/kg	3.2E-08	mg/kg-day	N/A	N/A	N/A	1.1E-06	mg/kg-day	3.0E-02	mg/kg-day	3.7E-05
				Lead	8.3E+02	mg/kg	7.4E-07	mg/kg-day	N/A	N/A	N/A	2.6E-05	mg/kg-day	N/A	N/A	N/A
				Manganese	4.1E+02	mg/kg	3.7E-07	mg/kg-day	N/A	N/A	N/A	1.3E-05	mg/kg-day	7.0E-02	mg/kg-day	1.8E-04
				Mercury	5.8E-01	mg/kg	5.1E-10	mg/kg-day	N/A	N/A	N/A	1.8E-08	mg/kg-day	1.0E-04	mg/kg-day	1.8E-04
				Nickel	1.7E+01	mg/kg	1.5E-08	mg/kg-day	N/A	N/A	N/A	5.3E-07	mg/kg-day	2.0E-02	mg/kg-day	2.6E-05
				Thallium	5.7E+00	mg/kg	5.1E-09	mg/kg-day	N/A	N/A	N/A	1.8E-07	mg/kg-day	8.0E-05	mg/kg-day	2.2E-03
				Aroclor 1242	N/A	N/A	N/A	N/A	1.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1248	N/A	N/A	N/A	N/A	1.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1254	4.5E-01	mg/kg	4.0E-10	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	4.0E-10	1.4E-08	mg/kg-day	2.0E-05	mg/kg-day	7.0E-04
				Aroclor 1260	4.9E-02	mg/kg	4.4E-11	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	4.4E-11	1.5E-09	mg/kg-day	2.0E-05	mg/kg-day	7.7E-05
				PCB TEQ*	5.8E-08	mg/kg	5.2E-17	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	7.8E-12	1.8E-15	mg/kg-day	N/A	N/A	N/A
				C11-C22 Aromatic	3.7E+03	mg/kg	3.3E-06	mg/kg-day	N/A	N/A	N/A	1.2E-04	mg/kg-day	3.0E-02	mg/kg-day	3.9E-03
			Exp. Route Total								3E-08					9E-03

TABLE 3-7.4.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Trespasser
Receptor Age: Older Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil (Cont.)	Surface Soil (Cont.)	Murphy Property	Dermal	Vinyl chloride	N/A	N/A	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Trichloroethene	3.8E-01	mg/kg	N/A	N/A	4.0E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Phenanthrene	1.6E+00	mg/kg	6.5E-09	mg/kg-day	N/A	N/A	N/A	2.3E-07	mg/kg-day	2.0E-02	mg/kg-day	1.1E-05
				Benzo(a)Anthracene	2.5E+00	mg/kg	1.0E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	7.5E-09	3.6E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	9.3E-01	mg/kg	3.9E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	2.8E-09	1.4E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	9.3E-01	mg/kg	3.9E-09	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	2.8E-10	1.4E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	1.6E+00	mg/kg	6.5E-09	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	4.7E-08	2.3E-07	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	1.3E+00	mg/kg	5.3E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	3.9E-09	1.9E-07	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	2.1E-01	mg/kg	8.8E-10	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	6.4E-09	3.1E-08	mg/kg-day	N/A	N/A	N/A
				Benzo(g,h,i)perylene	1.4E+00	mg/kg	5.7E-09	mg/kg-day	N/A	N/A	N/A	2.0E-07	mg/kg-day	2.0E-02	mg/kg-day	9.9E-06
				Antimony	3.6E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-05	mg/kg-day	N/A
				Arsenic	8.1E+00	mg/kg	7.8E-09	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	1.2E-08	2.7E-07	mg/kg-day	3.0E-04	mg/kg-day	9.1E-04
				Cadmium	3.0E+00	mg/kg	9.5E-11	mg/kg-day	N/A	N/A	N/A	3.3E-09	mg/kg-day	2.5E-05	mg/kg-day	1.3E-04
				Copper	3.6E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
				Lead	8.3E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Manganese	4.1E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.8E-03	mg/kg-day	N/A
				Mercury	5.8E-01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A
				Nickel	1.7E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-04	mg/kg-day	N/A
				Thallium	5.7E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-05	mg/kg-day	N/A
				Aroclor 1242	N/A	N/A	N/A	N/A	1.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1248	N/A	N/A	N/A	N/A	1.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1254	4.5E-01	mg/kg	2.0E-09	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	2.0E-09	7.1E-08	mg/kg-day	2.0E-05	mg/kg-day	3.5E-03
				Aroclor 1260	4.9E-02	mg/kg	2.2E-10	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	2.2E-10	7.7E-09	mg/kg-day	2.0E-05	mg/kg-day	3.9E-04
				PCB TEQ*	5.8E-08	mg/kg	2.6E-16	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	3.9E-11	9.2E-15	mg/kg-day	N/A	N/A	N/A
				C11-C22 Aromatic	3.7E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
			Exp. Route Total								8E-08					5E-03
		Exposure Point Total									1E-07					1E-02
	Exposure Medium Total										N/A					N/A

TABLE 3-7.4.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Trespasser
Receptor Age: Older Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Water	Surface Water	Murphy Wetland	Dermal	Chromium	1.1E+01	ug/L	6.5E-08	mg/kg-day	N/A	N/A	N/A	6.5E-08	mg/kg-day	7.5E-05	mg/kg-day	8.6E-04
				Manganese	2.8E+02	ug/L	1.5E-06	mg/kg-day	N/A	N/A	N/A	1.5E-06	mg/kg-day	9.6E-04	mg/kg-day	1.6E-03
			Exp. Route Total								0E+00					2E-03
		Exposure Point Total									0E+00					2E-03
	Exposure Medium Total										N/A					N/A

TABLE 3-7.4.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Trespasser
Receptor Age: Older Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Sediment	Sediment	Murphy Wetland	Ingestion													
				Naphthalene	5E+00	mg/kg	4.0E-09	mg/kg-day	N/A	N/A	N/A	1.4E-07	mg/kg-day	2.0E-02	mg/kg-day	7.1E-06
				Vinyl chloride	2E-01	mg/kg	1.5E-10	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	2.3E-10	5.3E-09	mg/kg-day	3.0E-03	mg/kg-day	1.8E-06
				Trichloroethene	9E-02	mg/kg	7.6E-11	mg/kg-day	4.0E-01	(mg/kg-day)$^{-1}$	3.0E-11	2.7E-09	mg/kg-day	3.0E-04	mg/kg-day	8.9E-06
				Ethylenedibromide	2E+00	mg/kg	1.5E-09	mg/kg-day	8.5E+01	(mg/kg-day)$^{-1}$	1.2E-07	5.1E-08	mg/kg-day	N/A	N/A	N/A
				Ethylbenzene	2E+00	mg/kg	2.0E-09	mg/kg-day	N/A	N/A	N/A	7.1E-08	mg/kg-day	1.0E-01	mg/kg-day	7.1E-07
				Xylenes (total)	1E+01	mg/kg	1.1E-08	mg/kg-day	N/A	N/A	N/A	3.8E-07	mg/kg-day	2.0E-01	mg/kg-day	1.9E-06
				Acetophenone	3E+00	mg/kg	2.8E-09	mg/kg-day	N/A	N/A	N/A	9.9E-08	mg/kg-day	1.0E-01	mg/kg-day	9.9E-07
				2-Methylnaphthalene	1E+01	mg/kg	1.1E-08	mg/kg-day	N/A	N/A	N/A	3.8E-07	mg/kg-day	4.0E-03	mg/kg-day	9.6E-05
				Benzo(a)Anthracene	2E+00	mg/kg	1.5E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.1E-09	5.1E-08	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	2E+00	mg/kg	1.5E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.1E-09	5.1E-08	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	2E+00	mg/kg	1.5E-09	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.1E-08	5.3E-08	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	2E+00	mg/kg	1.5E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.1E-09	5.3E-08	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	1E+00	mg/kg	1.2E-09	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	8.5E-09	4.1E-08	mg/kg-day	N/A	N/A	N/A
				C11-C22 Aromatic	2E+04	mg/kg	1.8E-05	mg/kg-day	N/A	N/A	N/A	6.4E-04	mg/kg-day	3.0E-02	mg/kg-day	2.1E-02
				C19-C36 Aliphatic	9E+03	mg/kg	8.4E-06	mg/kg-day	N/A	N/A	N/A	2.9E-04	mg/kg-day	2.0E+00	mg/kg-day	1.5E-04
				C9-C18 Aliphatic	2E+03	mg/kg	1.5E-06	mg/kg-day	N/A	N/A	N/A	5.3E-05	mg/kg-day	1.0E-01	mg/kg-day	5.3E-04
				Chromium (VI)	5E+01	mg/kg	4.8E-08	mg/kg-day	N/A	N/A	N/A	1.7E-06	mg/kg-day	3.0E-03	mg/kg-day	5.6E-04
				Antimony	3E+01	mg/kg	2.2E-08	mg/kg-day	N/A	N/A	N/A	7.9E-07	mg/kg-day	4.0E-04	mg/kg-day	2.0E-03
				Arsenic	1E+01	mg/kg	1.0E-08	mg/kg-day	7.7E-01	(mg/kg-day)$^{-1}$	7.7E-09	3.5E-07	mg/kg-day	5.9E-04	mg/kg-day	5.9E-04
				Barium	1E+03	mg/kg	1.0E-06	mg/kg-day	N/A	N/A	N/A	3.5E-05	mg/kg-day	7.0E-02	mg/kg-day	5.0E-04
				Cadmium	3E+00	mg/kg	2.7E-09	mg/kg-day	N/A	N/A	N/A	9.3E-08	mg/kg-day	1.0E-03	mg/kg-day	9.3E-05
				Chromium	1E+04	mg/kg	1.1E-05	mg/kg-day	N/A	N/A	N/A	4.0E-04	mg/kg-day	3.0E-03	mg/kg-day	1.3E-01
				Lead	4E+03	mg/kg	3.6E-06	mg/kg-day	N/A	N/A	N/A	1.3E-04	mg/kg-day	N/A	N/A	N/A
				Manganese	3E+02	mg/kg	3.0E-07	mg/kg-day	N/A	N/A	N/A	1.1E-05	mg/kg-day	7.0E-02	mg/kg-day	1.5E-04
				Mercury	3E+00	mg/kg	2.7E-09	mg/kg-day	N/A	N/A	N/A	9.5E-08	mg/kg-day	1.0E-04	mg/kg-day	9.5E-04
				Vanadium	6E+01	mg/kg	5.0E-08	mg/kg-day	N/A	N/A	N/A	1.7E-06	mg/kg-day	1.0E-03	mg/kg-day	1.7E-03
				PCB TEQ*	2E-04	mg/kg	1.6E-13	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	2.5E-08	5.8E-12	mg/kg-day	N/A	N/A	N/A
				gamma-Chlordane	2E+00	mg/kg	1.6E-09	mg/kg-day	3.5E-01	(mg/kg-day)$^{-1}$	5.7E-10	5.7E-08	mg/kg-day	5.0E-04	mg/kg-day	1.1E-04
				Aroclor 1254	9E+01	mg/kg	7.9E-08	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	7.9E-08	2.8E-06	mg/kg-day	2.0E-05	mg/kg-day	1.4E-01
				Aroclor 1260	5E+01	mg/kg	4.1E-08	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	4.1E-08	1.4E-06	mg/kg-day	2.0E-05	mg/kg-day	7.2E-02
			Exp. Route Total								3E-07					4E-01

TABLE 3-7.4.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Trespasser
Receptor Age: Older Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Sediment (Cont.)	Sediment (Cont.)	Murphy Property	Dermal													
				Naphthalene	5E+00	mg/kg	1.9E-08	mg/kg-day	N/A	N/A	N/A	6.6E-07	mg/kg-day	2.0E-02	mg/kg-day	3.3E-05
				Vinyl chloride	2E-01	mg/kg	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Trichloroethene	9E-02	mg/kg	N/A	N/A	4.0E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Ethylenedibromide	2E+00	mg/kg	N/A	N/A	8.5E+01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	N/A	N/A	N/A
				Ethylbenzene	2E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-01	mg/kg-day	N/A
				Xylenes (total)	1E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/kg-day	N/A
				Acetophenone	3E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-01	mg/kg-day	N/A
				2-Methylnaphthalene	1E+01	mg/kg	5.1E-08	mg/kg-day	N/A	N/A	N/A	1.8E-06	mg/kg-day	4.0E-03	mg/kg-day	4.5E-04
				Benzo(a)Anthracene	2E+00	mg/kg	6.8E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	5.0E-09	2.4E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	2E+00	mg/kg	6.9E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	5.0E-09	2.4E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	2E+00	mg/kg	7.0E-09	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	5.1E-08	2.5E-07	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	2E+00	mg/kg	7.1E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	5.2E-09	2.5E-07	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	1E+00	mg/kg	5.4E-09	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	4.0E-08	1.9E-07	mg/kg-day	N/A	N/A	N/A
				C11-C22 Aromatic	2E+04	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
				C19-C36 Aliphatic	9E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E+00	mg/kg-day	N/A
				C9-C18 Aliphatic	2E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-01	mg/kg-day	N/A
				Chromium (VI)	5E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	7.5E-05	mg/kg-day	N/A
				Antimony	3E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-05	mg/kg-day	N/A
				Arsenic	1E+01	mg/kg	1.1E-08	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	1.6E-08	3.8E-07	mg/kg-day	3.0E-04	mg/kg-day	1.3E-03
				Barium	1E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.9E-03	mg/kg-day	N/A
				Cadmium	3E+00	mg/kg	9.6E-11	mg/kg-day	N/A	N/A	N/A	3.4E-09	mg/kg-day	2.5E-05	mg/kg-day	1.3E-04
				Chromium	1E+04	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	7.5E-05	mg/kg-day	N/A
				Lead	4E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Manganese	3E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.8E-03	mg/kg-day	N/A
				Mercury	3E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A
				Vanadium	6E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.6E-05	mg/kg-day	N/A
				PCB TEQ*	2E-04	mg/kg	8.3E-13	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	1.2E-07	2.9E-11	mg/kg-day	N/A	N/A	N/A
				gamma-Chlordane	2E+00	mg/kg	2.4E-09	mg/kg-day	3.5E-01	(mg/kg-day)$^{-1}$	8.2E-10	8.2E-08	mg/kg-day	5.0E-04	mg/kg-day	1.6E-04
				Aroclor 1254	9E+01	mg/kg	4.0E-07	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	4.0E-07	1.4E-05	mg/kg-day	2.0E-05	mg/kg-day	7.0E-01
				Aroclor 1260	5E+01	mg/kg	2.1E-07	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	2.1E-07	7.3E-06	mg/kg-day	2.0E-05	mg/kg-day	3.6E-01
			Exp. Route Total								9E-07					1E+00
		Exposure Point Total									1E-06					1E+00
	Exposure Medium Total										N/A					N/A
Medium Total											N/A					N/A
											Total of Receptor Risks Across All Media					N/A
																Total of Receptor Hazards Across All Media

TABLE 3-7.5.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Current
Receptor Population: Resident
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Ground Water	Indoor Air	Aberjona Property	Inhalation													
				1,1-Dichloroethene	2.2E-02	ug/m3	4.7E-03	ug/m3	N/A	N/A	N/A	1.4E-05	mg/m3	2.0E-01	mg/m3	6.9E-05
				1,4-Dichlorobenzene	3.1E-03	ug/m3	6.9E-04	ug/m3	N/A	N/A	N/A	2.0E-06	mg/m3	8.0E-01	mg/m3	2.5E-06
				Benzene	2.0E-03	ug/m3	4.5E-04	ug/m3	7.8E-06	(ug/m3)-1	3.5E-09	1.3E-06	mg/m3	3.0E-02	mg/m3	4.3E-05
				Chloroform	N/A	N/A	N/A	N/A	2.3E-05	(ug/m3)-1	N/A	N/A	N/A	5.0E-02	mg/m3	N/A
				cis-1,2-Dichloroethene	1.2E-01	ug/m3	2.6E-02	ug/m3	N/A	N/A	N/A	7.7E-05	mg/m3	2.0E-01	mg/m3	3.8E-04
				Tetrachloroethene	2.4E-02	ug/m3	5.2E-03	ug/m3	5.9E-06	(ug/m3)-1	3.1E-08	1.5E-05	mg/m3	N/A	N/A	N/A
				Trichloroethene	8.9E-01	ug/m3	2.0E-01	ug/m3	1.1E-04	(ug/m3)-1	2.1E-05	5.7E-04	mg/m3	4.0E-02	mg/m3	1.4E-02
				Vinyl chloride	3.2E-02	ug/m3	7.1E-03	ug/m3	8.8E-06	(ug/m3)-1	6.2E-08	2.1E-05	mg/m3	1.0E-01	mg/m3	2.1E-04
				Naphthalene	3.0E-03	ug/m3	6.7E-04	ug/m3	N/A	N/A	N/A	1.9E-06	mg/m3	3.0E-03	mg/m3	6.5E-04
				Phenanthrene	1.7E-03	ug/m3	3.7E-04	ug/m3	N/A	N/A	N/A	1.1E-06	mg/m3	3.0E-03	mg/m3	3.6E-04
			Exp. Route Total								2E-05					2E-02
		Exposure Point Total									2E-05					2E-02
	Exposure Medium Total										N/A					N/A
Medium Total											N/A					N/A
											Total of Receptor Risks Across All Media					N/A
																Total of Receptor Hazards Across All Media		N/A

TABLE 3-7.5.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Current
Receptor Population: Resident
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Ground Water	Indoor Air	Aberjona Property	Inhalation	1,1-Dichloroethene	1.3E-02	ug/m3	8.3E-04	ug/m3	N/A	N/A	N/A	8.3E-06	mg/m3	2.0E-01	mg/m3	4.2E-05
				1,4-Dichlorobenzene	2.8E-03	ug/m3	1.8E-04	ug/m3	N/A	N/A	N/A	1.8E-06	mg/m3	8.0E-01	mg/m3	2.2E-06
				Benzene	1.5E-03	ug/m3	9.7E-05	ug/m3	7.8E-06	(ug/m3)-1	7.6E-10	9.7E-07	mg/m3	3.0E-02	mg/m3	3.2E-05
				Chloroform	N/A	N/A	N/A	N/A	2.3E-05	(ug/m3)-1	N/A	N/A	N/A	5.0E-02	mg/m3	N/A
				cis-1,2-Dichloroethene	1.2E-01	ug/m3	7.7E-03	ug/m3	N/A	N/A	N/A	7.7E-05	mg/m3	2.0E-01	mg/m3	3.8E-04
				Tetrachloroethene	2.4E-02	ug/m3	1.5E-03	ug/m3	5.9E-06	(ug/m3)-1	9.0E-09	1.5E-05	mg/m3	N/A	N/A	N/A
				Trichloroethene	7.7E-01	ug/m3	4.9E-02	ug/m3	1.1E-04	(ug/m3)-1	5.4E-06	4.9E-04	mg/m3	4.0E-02	mg/m3	1.2E-02
				Vinyl chloride	2.6E-02	ug/m3	1.7E-03	ug/m3	8.8E-06	(ug/m3)-1	1.5E-08	1.7E-05	mg/m3	1.0E-01	mg/m3	1.7E-04
				Naphthalene	1.5E-03	ug/m3	9.8E-05	ug/m3	N/A	N/A	N/A	9.8E-07	mg/m3	3.0E-03	mg/m3	3.3E-04
				Phenanthrene	1.7E-03	ug/m3	1.1E-04	ug/m3	N/A	N/A	N/A	1.1E-06	mg/m3	3.0E-03	mg/m3	3.6E-04
			Exp. Route Total								5E-06					1E-02
		Exposure Point Total									5E-06					1E-02
	Exposure Medium Total										N/A					N/A
Medium Total											N/A					N/A
											Total of Receptor Risks Across All Media					N/A
																Total of Receptor Hazards Across All Media

TABLE 3-7.6.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Ground Water	Indoor Air	Aberjona Property	Inhalation	1,1-Dichloroethene	2.2E-02	ug/m3	4.7E-03	ug/m3	N/A	N/A	N/A	1.4E-05	mg/m3	2.0E-01	mg/m3	6.9E-05
				1,4-Dichlorobenzene	3.1E-03	ug/m3	6.9E-04	ug/m3	N/A	N/A	N/A	2.0E-06	mg/m3	8.0E-01	mg/m3	2.5E-06
				Benzene	2.0E-03	ug/m3	4.5E-04	ug/m3	7.8E-06	(ug/m3)-1	3.5E-09	1.3E-06	mg/m3	3.0E-02	mg/m3	4.3E-05
				Chloroform	N/A	N/A	N/A	N/A	2.3E-05	(ug/m3)-1	N/A	N/A	N/A	5.0E-02	mg/m3	N/A
				cis-1,2-Dichloroethene	1.2E-01	ug/m3	2.6E-02	ug/m3	N/A	N/A	N/A	7.7E-05	mg/m3	2.0E-01	mg/m3	3.8E-04
				Tetrachloroethene	2.4E-02	ug/m3	5.2E-03	ug/m3	5.9E-06	(ug/m3)-1	3.1E-08	1.5E-05	mg/m3	N/A	N/A	N/A
				Trichloroethene	8.9E-01	ug/m3	2.0E-01	ug/m3	1.1E-04	(ug/m3)-1	2.1E-05	5.7E-04	mg/m3	4.0E-02	mg/m3	1.4E-02
				Vinyl chloride	3.2E-02	ug/m3	7.1E-03	ug/m3	8.8E-06	(ug/m3)-1	6.2E-08	2.1E-05	mg/m3	1.0E-01	mg/m3	2.1E-04
				Naphthalene	3.0E-03	ug/m3	6.7E-04	ug/m3	N/A	N/A	N/A	1.9E-06	mg/m3	3.0E-03	mg/m3	6.5E-04
				Phenanthrene	1.7E-03	ug/m3	3.7E-04	ug/m3	N/A	N/A	N/A	1.1E-06	mg/m3	3.0E-03	mg/m3	3.6E-04
			Exp. Route Total								2E-05					2E-02
		Exposure Point Total									2E-05					2E-02
	Exposure Medium Total										N/A					N/A
Medium Total											N/A					N/A
											Total of Receptor Risks Across All Media					N/A
																Total of Receptor Hazards Across All Media

TABLE 3-7.6.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Ground Water	Indoor Air	Aberjona Property	Inhalation	1,1-Dichloroethene	1.3E-02	ug/m3	8.3E-04	ug/m3	N/A	N/A	N/A	8.3E-06	mg/m3	2.0E-01	mg/m3	4.2E-05
				1,4-Dichlorobenzene	2.8E-03	ug/m3	1.8E-04	ug/m3	N/A	N/A	N/A	1.8E-06	mg/m3	8.0E-01	mg/m3	2.2E-06
				Benzene	1.5E-03	ug/m3	9.7E-05	ug/m3	7.8E-06	(ug/m3)-1	7.6E-10	9.7E-07	mg/m3	3.0E-02	mg/m3	3.2E-05
				Chloroform	N/A	N/A	N/A	N/A	2.3E-05	(ug/m3)-1	N/A	N/A	N/A	5.0E-02	mg/m3	N/A
				cis-1,2-Dichloroethene	1.2E-01	ug/m3	7.7E-03	ug/m3	N/A	N/A	N/A	7.7E-05	mg/m3	2.0E-01	mg/m3	3.8E-04
				Tetrachloroethene	2.4E-02	ug/m3	1.5E-03	ug/m3	5.9E-06	(ug/m3)-1	9.0E-09	1.5E-05	mg/m3	N/A	N/A	N/A
				Trichloroethene	7.7E-01	ug/m3	4.9E-02	ug/m3	1.1E-04	(ug/m3)-1	5.4E-06	4.9E-04	mg/m3	4.0E-02	mg/m3	1.2E-02
				Vinyl chloride	2.6E-02	ug/m3	1.7E-03	ug/m3	8.8E-06	(ug/m3)-1	1.5E-08	1.7E-05	mg/m3	1.0E-01	mg/m3	1.7E-04
				Naphthalene	1.5E-03	ug/m3	9.8E-05	ug/m3	N/A	N/A	N/A	9.8E-07	mg/m3	3.0E-03	mg/m3	3.3E-04
				Phenanthrene	1.7E-03	ug/m3	1.1E-04	ug/m3	N/A	N/A	N/A	1.1E-06	mg/m3	3.0E-03	mg/m3	3.6E-04
			Exp. Route Total								5E-06					1E-02
		Exposure Point Total									5E-06					1E-02
	Exposure Medium Total										N/A					N/A
Medium Total											N/A					N/A
											Total of Receptor Risks Across All Media					N/A
																Total of Receptor Hazards Across All Media

TABLE 3-7.7.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Current
Receptor Population: Resident
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Ground Water	Indoor Air	Aberjona Property	Inhalation	1,1-Dichloroethene	2.2E-02	ug/m3	1.2E-03	ug/m3	N/A	N/A	N/A	1.4E-05	mg/m3	2.0E-01	mg/m3	6.9E-05
				1,4-Dichlorobenzene	3.1E-03	ug/m3	1.7E-04	ug/m3	N/A	N/A	N/A	2.0E-06	mg/m3	8.0E-01	mg/m3	2.5E-06
				Benzene	2.0E-03	ug/m3	1.1E-04	ug/m3	7.8E-06	(ug/m3)-1	8.7E-10	1.3E-06	mg/m3	3.0E-02	mg/m3	4.3E-05
				Chloroform	N/A	N/A	N/A	N/A	2.3E-05	(ug/m3)-1	N/A	N/A	N/A	5.0E-02	mg/m3	N/A
				cis-1,2-Dichloroethene	1.2E-01	ug/m3	6.6E-03	ug/m3	N/A	N/A	N/A	7.7E-05	mg/m3	2.0E-01	mg/m3	3.8E-04
				Tetrachloroethene	2.4E-02	ug/m3	1.3E-03	ug/m3	5.9E-06	(ug/m3)-1	7.7E-09	1.5E-05	mg/m3	N/A	N/A	N/A
				Trichloroethene	8.9E-01	ug/m3	4.9E-02	ug/m3	1.1E-04	(ug/m3)-1	5.4E-06	5.7E-04	mg/m3	4.0E-02	mg/m3	1.4E-02
				Vinyl chloride	3.2E-02	ug/m3	1.8E-03	ug/m3	8.8E-06	(ug/m3)-1	1.6E-08	2.1E-05	mg/m3	1.0E-01	mg/m3	2.1E-04
				Naphthalene	3.0E-03	ug/m3	1.7E-04	ug/m3	N/A	N/A	N/A	1.9E-06	mg/m3	3.0E-03	mg/m3	6.5E-04
				Phenanthrene	1.7E-03	ug/m3	9.2E-05	ug/m3	N/A	N/A	N/A	1.1E-06	mg/m3	3.0E-03	mg/m3	3.6E-04
			Exp. Route Total								5E-06					2E-02
		Exposure Point Total									5E-06					2E-02
	Exposure Medium Total										N/A					N/A
Medium Total											N/A					N/A
											Total of Receptor Risks Across All Media					N/A
																Total of Receptor Hazards Across All Media

TABLE 3-7.7.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Current
Receptor Population: Resident
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Ground Water	Indoor Air	Aberjona Property	Inhalation	1,1-Dichloroethene	1.3E-02	ug/m3	2.4E-04	ug/m3	N/A	N/A	N/A	8.3E-06	mg/m3	2.0E-01	mg/m3	4.2E-05
				1,4-Dichlorobenzene	2.8E-03	ug/m3	5.1E-05	ug/m3	N/A	N/A	N/A	1.8E-06	mg/m3	8.0E-01	mg/m3	2.2E-06
				Benzene	1.5E-03	ug/m3	2.8E-05	ug/m3	7.8E-06	(ug/m3)-1	2.2E-10	9.7E-07	mg/m3	3.0E-02	mg/m3	3.2E-05
				Chloroform	N/A	N/A	N/A	N/A	2.3E-05	(ug/m3)-1	N/A	N/A	N/A	5.0E-02	mg/m3	N/A
				cis-1,2-Dichloroethene	1.2E-01	ug/m3	2.2E-03	ug/m3	N/A	N/A	N/A	7.7E-05	mg/m3	2.0E-01	mg/m3	3.8E-04
				Tetrachloroethene	2.4E-02	ug/m3	4.4E-04	ug/m3	5.9E-06	(ug/m3)-1	2.6E-09	1.5E-05	mg/m3	N/A	N/A	N/A
				Trichloroethene	7.7E-01	ug/m3	1.4E-02	ug/m3	1.1E-04	(ug/m3)-1	1.5E-06	4.9E-04	mg/m3	4.0E-02	mg/m3	1.2E-02
				Vinyl chloride	2.6E-02	ug/m3	4.8E-04	ug/m3	8.8E-06	(ug/m3)-1	4.2E-09	1.7E-05	mg/m3	1.0E-01	mg/m3	1.7E-04
				Naphthalene	1.5E-03	ug/m3	2.8E-05	ug/m3	N/A	N/A	N/A	9.8E-07	mg/m3	3.0E-03	mg/m3	3.3E-04
				Phenanthrene	1.7E-03	ug/m3	3.1E-05	ug/m3	N/A	N/A	N/A	1.1E-06	mg/m3	3.0E-03	mg/m3	3.6E-04
			Exp. Route Total								2E-06					1E-02
		Exposure Point Total									2E-06					1E-02
	Exposure Medium Total										N/A					N/A
Medium Total											N/A					N/A
											Total of Receptor Risks Across All Media					N/A
																Total of Receptor Hazards Across All Media

TABLE 3-7.8.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Ground Water	Indoor Air	Aberjona Property	Inhalation	1,1-Dichloroethene	2.2E-02	ug/m3	1.2E-03	ug/m3	N/A	N/A	N/A	1.4E-05	mg/m3	2.0E-01	mg/m3	6.9E-05
				1,4-Dichlorobenzene	3.1E-03	ug/m3	1.7E-04	ug/m3	N/A	N/A	N/A	2.0E-06	mg/m3	8.0E-01	mg/m3	2.5E-06
				Benzene	2.0E-03	ug/m3	1.1E-04	ug/m3	7.8E-06	(ug/m3)-1	8.7E-10	1.3E-06	mg/m3	3.0E-02	mg/m3	4.3E-05
				Chloroform	N/A	N/A	N/A	N/A	2.3E-05	(ug/m3)-1	N/A	N/A	N/A	5.0E-02	mg/m3	N/A
				cis-1,2-Dichloroethene	1.2E-01	ug/m3	6.6E-03	ug/m3	N/A	N/A	N/A	7.7E-05	mg/m3	2.0E-01	mg/m3	3.8E-04
				Tetrachloroethene	2.4E-02	ug/m3	1.3E-03	ug/m3	5.9E-06	(ug/m3)-1	7.7E-09	1.5E-05	mg/m3	N/A	N/A	N/A
				Trichloroethene	8.9E-01	ug/m3	4.9E-02	ug/m3	1.1E-04	(ug/m3)-1	5.4E-06	5.7E-04	mg/m3	4.0E-02	mg/m3	1.4E-02
				Vinyl chloride	3.2E-02	ug/m3	1.8E-03	ug/m3	8.8E-06	(ug/m3)-1	1.6E-08	2.1E-05	mg/m3	1.0E-01	mg/m3	2.1E-04
				Naphthalene	3.0E-03	ug/m3	1.7E-04	ug/m3	N/A	N/A	N/A	1.9E-06	mg/m3	3.0E-03	mg/m3	6.5E-04
				Phenanthrene	1.7E-03	ug/m3	9.2E-05	ug/m3	N/A	N/A	N/A	1.1E-06	mg/m3	3.0E-03	mg/m3	3.6E-04
			Exp. Route Total								5E-06					2E-02
		Exposure Point Total									5E-06					2E-02
	Exposure Medium Total										N/A					N/A
Medium Total											N/A					N/A
											Total of Receptor Risks Across All Media					N/A
																Total of Receptor Hazards Across All Media

TABLE 3-7.8.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Ground Water	Indoor Air	Aberjona Property	Inhalation	1,1-Dichloroethene	1.3E-02	ug/m3	2.4E-04	ug/m3	N/A	N/A	N/A	8.3E-06	mg/m3	2.0E-01	mg/m3	4.2E-05
				1,4-Dichlorobenzene	2.8E-03	ug/m3	5.1E-05	ug/m3	N/A	N/A	N/A	1.8E-06	mg/m3	8.0E-01	mg/m3	2.2E-06
				Benzene	1.5E-03	ug/m3	2.8E-05	ug/m3	7.8E-06	(ug/m3)-1	2.2E-10	9.7E-07	mg/m3	3.0E-02	mg/m3	3.2E-05
				Chloroform	N/A	N/A	N/A	N/A	2.3E-05	(ug/m3)-1	N/A	N/A	N/A	5.0E-02	mg/m3	N/A
				cis-1,2-Dichloroethene	1.2E-01	ug/m3	2.2E-03	ug/m3	N/A	N/A	N/A	7.7E-05	mg/m3	2.0E-01	mg/m3	3.8E-04
				Tetrachloroethene	2.4E-02	ug/m3	4.4E-04	ug/m3	5.9E-06	(ug/m3)-1	2.6E-09	1.5E-05	mg/m3	N/A	N/A	N/A
				Trichloroethene	7.7E-01	ug/m3	1.4E-02	ug/m3	1.1E-04	(ug/m3)-1	1.5E-06	4.9E-04	mg/m3	4.0E-02	mg/m3	1.2E-02
				Vinyl chloride	2.6E-02	ug/m3	4.8E-04	ug/m3	8.8E-06	(ug/m3)-1	4.2E-09	1.7E-05	mg/m3	1.0E-01	mg/m3	1.7E-04
				Naphthalene	1.5E-03	ug/m3	2.8E-05	ug/m3	N/A	N/A	N/A	9.8E-07	mg/m3	3.0E-03	mg/m3	3.3E-04
				Phenanthrene	1.7E-03	ug/m3	3.1E-05	ug/m3	N/A	N/A	N/A	1.1E-06	mg/m3	3.0E-03	mg/m3	3.6E-04
			Exp. Route Total								2E-06					1E-02
		Exposure Point Total									2E-06					1E-02
	Exposure Medium Total										N/A					N/A
Medium Total											N/A					N/A
											Total of Receptor Risks Across All Media					N/A
																Total of Receptor Hazards Across All Media		N/A

TABLE 3-7.9.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Off Site Resident
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Ground Water	Tap Water/Shower Head	Combined Data	Ingestion													
				1,1,2-Trichloroethane	4.0E-01	ug/L	3.8E-06	mg/kg-day	5.7E-02	(mg/kg-day)$^{-1}$	2.1E-07	1.1E-05	mg/kg-day	4.0E-03	mg/kg-day	2.7E-03
				1,1-Dichloroethane	2.2E+02	ug/L	2.1E-03	mg/kg-day	N/A	N/A	N/A	6.0E-03	mg/kg-day	1.0E-01	mg/kg-day	6.0E-02
				1,1-Dichloroethene	9.0E+00	ug/L	8.5E-05	mg/kg-day	N/A	N/A	N/A	2.5E-04	mg/kg-day	5.0E-02	mg/kg-day	4.9E-03
				1,2,4-Trichlorobenzene	2.3E+01	ug/L	2.2E-04	mg/kg-day	N/A	N/A	N/A	6.3E-04	mg/kg-day	1.0E-02	mg/kg-day	6.3E-02
				1,3-Dichlorobenzene	1.9E+01	ug/L	1.8E-04	mg/kg-day	N/A	N/A	N/A	5.2E-04	mg/kg-day	9.0E-04	mg/kg-day	5.8E-01
				1,4-Dichlorobenzene	2.0E+02	ug/L	1.9E-03	mg/kg-day	N/A	N/A	N/A	5.4E-03	mg/kg-day	3.0E-02	mg/kg-day	1.8E-01
				Benzene	8.6E+01	ug/L	8.1E-04	mg/kg-day	5.5E-02	(mg/kg-day)$^{-1}$	4.4E-05	2.4E-03	mg/kg-day	4.0E-03	mg/kg-day	5.9E-01
				Bromomethane	1.0E+00	ug/L	9.4E-06	mg/kg-day	N/A	N/A	N/A	2.7E-05	mg/kg-day	1.4E-03	mg/kg-day	2.0E-02
				Chlorobenzene	1.8E+01	ug/L	1.7E-04	mg/kg-day	N/A	N/A	N/A	4.9E-04	mg/kg-day	2.0E-02	mg/kg-day	2.5E-02
				Chlorodibromomethane	1.5E+00	ug/L	1.4E-05	mg/kg-day	8.4E-02	(mg/kg-day)$^{-1}$	1.2E-06	4.1E-05	mg/kg-day	2.0E-02	mg/kg-day	2.1E-03
				Chloroethane	5.0E+01	ug/L	4.7E-04	mg/kg-day	N/A	N/A	N/A	1.4E-03	mg/kg-day	4.0E-01	mg/kg-day	3.4E-03
				cis-1,2-Dichloroethene	1.9E+03	ug/L	1.8E-02	mg/kg-day	N/A	N/A	N/A	5.2E-02	mg/kg-day	1.0E-02	mg/kg-day	5.2E+00
				Ethylbenzene	4.0E+01	ug/L	3.8E-04	mg/kg-day	N/A	N/A	N/A	1.1E-03	mg/kg-day	1.0E-01	mg/kg-day	1.1E-02
				Methyl tert-butyl ether	5.4E+02	ug/L	5.1E-03	mg/kg-day	3.3E-03	(mg/kg-day)$^{-1}$	1.7E-05	1.5E-02	mg/kg-day	N/A	N/A	N/A
				Methylene chloride	9.0E+01	ug/L	8.5E-04	mg/kg-day	7.5E-03	(mg/kg-day)$^{-1}$	6.3E-06	2.5E-03	mg/kg-day	6.0E-02	mg/kg-day	4.1E-02
				Tetrachloroethene	3.6E+01	ug/L	3.4E-04	mg/kg-day	2.1E-02	(mg/kg-day)$^{-1}$	7.1E-06	9.9E-04	mg/kg-day	1.0E-02	mg/kg-day	9.9E-02
				Toluene	1.2E+03	ug/L	1.1E-02	mg/kg-day	N/A	N/A	N/A	3.3E-02	mg/kg-day	2.0E-01	mg/kg-day	1.6E-01
				trans-1,2-Dichloroethene	2.8E+01	ug/L	2.6E-04	mg/kg-day	N/A	N/A	N/A	7.7E-04	mg/kg-day	2.0E-02	mg/kg-day	3.8E-02
				Trichloroethene	1.6E+02	ug/L	1.5E-03	mg/kg-day	4.0E-01	(mg/kg-day)$^{-1}$	6.0E-04	4.4E-03	mg/kg-day	3.0E-04	mg/kg-day	1.5E+01
				Vinyl chloride	6.0E+02	ug/L	5.6E-03	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	8.5E-03	1.6E-02	mg/kg-day	3.0E-03	mg/kg-day	5.5E+00
				Xylenes (total)	1.1E+02	ug/L	1.0E-03	mg/kg-day	N/A	N/A	N/A	3.0E-03	mg/kg-day	2.0E-01	mg/kg-day	1.5E-02
				Acetophenone	1.2E+00	ug/L	1.1E-05	mg/kg-day	N/A	N/A	N/A	3.3E-05	mg/kg-day	1.0E-01	mg/kg-day	3.3E-04
				4-Methylphenol	2.5E+01	ug/L	2.3E-04	mg/kg-day	N/A	N/A	N/A	6.8E-04	mg/kg-day	5.0E-03	mg/kg-day	1.4E-01
				Naphthalene	2.5E+01	ug/L	2.3E-04	mg/kg-day	N/A	N/A	N/A	6.8E-04	mg/kg-day	2.0E-02	mg/kg-day	3.4E-02
				2-Methylnaphthalene	1.1E+01	ug/L	1.0E-04	mg/kg-day	N/A	N/A	N/A	3.0E-04	mg/kg-day	4.0E-03	mg/kg-day	7.5E-02
				Acenaphthylene	3.2E+00	ug/L	3.0E-05	mg/kg-day	N/A	N/A	N/A	8.8E-05	mg/kg-day	2.0E-02	mg/kg-day	4.4E-03
				Phenanthrene	1.0E+01	ug/L	9.4E-05	mg/kg-day	N/A	N/A	N/A	2.7E-04	mg/kg-day	2.0E-02	mg/kg-day	1.4E-02
				Benzo(a)Pyrene	1.5E-02	ug/L	1.4E-07	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.0E-06	4.1E-07	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	1.3E-02	ug/L	1.2E-07	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	8.9E-07	3.6E-07	mg/kg-day	N/A	N/A	N/A
				C9-C18 Aliphatic	3.1E+03	ug/L	2.9E-02	mg/kg-day	N/A	N/A	N/A	8.5E-02	mg/kg-day	1.0E-01	mg/kg-day	8.5E-01
				C11-C22 Aromatic	1.2E+03	ug/L	1.1E-02	mg/kg-day	N/A	N/A	N/A	3.3E-02	mg/kg-day	3.0E-02	mg/kg-day	1.1E+00
				C19-C36 Aliphatic	2.4E+04	ug/L	2.3E-01	mg/kg-day	N/A	N/A	N/A	6.6E-01	mg/kg-day	2.0E+00	mg/kg-day	3.3E-01
				C5-C8 Aliphatic	4.5E+02	ug/L	4.2E-03	mg/kg-day	N/A	N/A	N/A	1.2E-02	mg/kg-day	4.0E-02	mg/kg-day	3.1E-01
				Arsenic	1.8E+02	ug/L	1.6E-03	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	2.5E-03	4.8E-03	mg/kg-day	3.0E-04	mg/kg-day	1.6E+01
				Chromium	1.3E+02	ug/L	1.2E-03	mg/kg-day	N/A	N/A	N/A	3.6E-03	mg/kg-day	1.5E+00	mg/kg-day	2.4E-03
				Lead	1.5E+02	ug/L	1.4E-03	mg/kg-day	N/A	N/A	N/A	4.1E-03	mg/kg-day	N/A	N/A	N/A
				Manganese	2.6E+03	ug/L	2.5E-02	mg/kg-day	N/A	N/A	N/A	7.2E-02	mg/kg-day	2.4E-02	mg/kg-day	3.0E+00
				Nickel	9.3E+01	ug/L	8.7E-04	mg/kg-day	N/A	N/A	N/A	2.6E-03	mg/kg-day	2.0E-02	mg/kg-day	1.3E-01
				PCB TEQ*	2.9E-06	ug/L	2.7E-11	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	4.1E-06	7.9E-11	mg/kg-day	N/A	N/A	N/A
				Dieldrin	1.4E-02	ug/L	1.3E-07	mg/kg-day	1.6E+01	(mg/kg-day)$^{-1}$	2.1E-06	3.8E-07	mg/kg-day	5.0E-05	mg/kg-day	7.7E-03
				4,4'-DDD	5.6E-01	ug/L	5.2E-06	mg/kg-day	2.4E-01	(mg/kg-day)$^{-1}$	1.3E-06	1.5E-05	mg/kg-day	2.0E-03	mg/kg-day	7.6E-03
			Exp. Route Total								1E-02					5E+01

TABLE 3-7.9.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Off Site Resident
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Ground Water	Tap Water/Shower Head	Combined Data	Dermal													
				1,1,2-Trichloroethane	4.0E-01	ug/L	N/A	N/A	5.7E-02	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	4.0E-03	mg/kg-day	N/A
				1,1-Dichloroethane	2.2E+02	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-01	mg/kg-day	N/A
				1,1-Dichloroethene	9.0E+00	ug/L	1.1E-05	mg/kg-day	N/A	N/A	N/A	3.3E-05	mg/kg-day	5.0E-02	mg/kg-day	6.6E-04
				1,2,4-Trichlorobenzene	2.3E+01	ug/L	2.9E-04	mg/kg-day	NA	N/A	N/A	8.3E-04	mg/kg-day	1.0E-02	mg/kg-day	8.3E-02
				1,3-Dichlorobenzene	1.9E+01	ug/L	1.7E-04	mg/kg-day	N/A	N/A	N/A	4.8E-04	mg/kg-day	9.0E-04	mg/kg-day	5.3E-01
				1,4-Dichlorobenzene	2.0E+02	ug/L	1.2E-03	mg/kg-day	N/A	N/A	N/A	3.6E-03	mg/kg-day	3.0E-02	mg/kg-day	1.2E-01
				Benzene	8.6E+01	ug/L	1.2E-04	mg/kg-day	5.5E-02	(mg/kg-day)$^{-1}$	6.8E-06	3.6E-04	mg/kg-day	4.0E-03	mg/kg-day	9.0E-02
				Bromomethane	1.0E+00	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.4E-03	mg/kg-day	N/A
				Chlorobenzene	1.8E+01	ug/L	6.1E-05	mg/kg-day	N/A	N/A	N/A	1.8E-04	mg/kg-day	2.0E-02	mg/kg-day	8.9E-03
				Chlorodibromomethane	1.5E+00	ug/L	N/A	N/A	8.4E-02	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-02	mg/kg-day	N/A
				Chloroethane	5.0E+01	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.0E-01	mg/kg-day	N/A
				cis-1,2-Dichloroethene	1.9E+03	ug/L	2.3E-03	mg/kg-day	N/A	N/A	N/A	6.6E-03	mg/kg-day	1.0E-02	mg/kg-day	6.6E-01
				Ethylbenzene	4.0E+01	ug/L	2.3E-04	mg/kg-day	N/A	N/A	N/A	6.6E-04	mg/kg-day	1.0E-01	mg/kg-day	6.6E-03
				Methyl tert-butyl ether	5.4E+02	ug/L	N/A	N/A	3.3E-03	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	N/A	N/A	N/A
				Methylene chloride	9.0E+01	ug/L	N/A	N/A	7.5E-03	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	6.0E-02	mg/kg-day	N/A
				Tetrachloroethene	3.6E+01	ug/L	2.0E-04	mg/kg-day	2.1E-02	(mg/kg-day)$^{-1}$	4.3E-06	5.9E-04	mg/kg-day	1.0E-02	mg/kg-day	5.9E-02
				Toluene	1.2E+03	ug/L	3.9E-03	mg/kg-day	N/A	N/A	N/A	1.1E-02	mg/kg-day	2.0E-01	mg/kg-day	5.7E-02
				trans-1,2-Dichloroethene	2.8E+01	ug/L	3.3E-05	mg/kg-day	N/A	N/A	N/A	9.7E-05	mg/kg-day	2.0E-02	mg/kg-day	4.9E-03
				Trichloroethene	1.6E+02	ug/L	2.5E-04	mg/kg-day	4.0E-01	(mg/kg-day)$^{-1}$	1.0E-04	7.4E-04	mg/kg-day	3.0E-04	mg/kg-day	2.5E+00
				Vinyl chloride	6.0E+02	ug/L	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Xylenes (total)	1.1E+02	ug/L	6.0E-04	mg/kg-day	N/A	N/A	N/A	1.7E-03	mg/kg-day	2.0E-01	mg/kg-day	8.7E-03
				Acetophenone	1.2E+00	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-01	mg/kg-day	N/A
				4-Methylphenol	2.5E+01	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-03	mg/kg-day	N/A
				Naphthalene	2.5E+01	ug/L	1.6E-04	mg/kg-day	N/A	N/A	N/A	4.5E-04	mg/kg-day	2.0E-02	mg/kg-day	2.3E-02
				2-Methylnaphthalene	1.1E+01	ug/L	1.5E-04	mg/kg-day	N/A	N/A	N/A	4.3E-04	mg/kg-day	4.0E-03	mg/kg-day	1.1E-01
				Acenaphthylene	3.2E+00	ug/L	4.5E-05	mg/kg-day	N/A	N/A	N/A	1.3E-04	mg/kg-day	2.0E-02	mg/kg-day	6.6E-03
				Phenanthrene	1.0E+01	ug/L	2.7E-04	mg/kg-day	N/A	N/A	N/A	7.7E-04	mg/kg-day	2.0E-02	mg/kg-day	3.9E-02
				Benzo(a)Pyrene	1.5E-02	ug/L	3.1E-06	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	2.2E-05	9.0E-06	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	1.3E-02	ug/L	4.1E-06	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	3.0E-05	1.2E-05	mg/kg-day	N/A	N/A	N/A
				C9-C18 Aliphatic	3.1E+03	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-01	mg/kg-day	N/A
				C11-C22 Aromatic	1.2E+03	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
				C19-C36 Aliphatic	2.4E+04	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E+00	mg/kg-day	N/A
				C5-C8 Aliphatic	4.5E+02	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.0E-02	mg/kg-day	N/A
				Arsenic	1.8E+02	ug/L	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Chromium	1.3E+02	ug/L	6.5E-06	mg/kg-day	N/A	N/A	N/A	1.9E-05	mg/kg-day	2.0E-02	mg/kg-day	9.8E-04
				Lead	1.5E+02	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Manganese	2.6E+03	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9.6E-04	mg/kg-day	N/A
				Nickel	9.3E+01	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-04	mg/kg-day	N/A
				PCB TEQ*	2.9E-06	ug/L	5.5E-10	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	8.2E-05	1.6E-09	mg/kg-day	N/A	N/A	N/A
				Dieldrin	1.4E-02	ug/L	9.3E-08	mg/kg-day	1.6E+01	(mg/kg-day)$^{-1}$	1.5E-06	2.7E-07	mg/kg-day	5.0E-05	mg/kg-day	5.4E-03
				4,4'-DDD	5.6E-01	ug/L	3.7E-05	mg/kg-day	2.4E-01	(mg/kg-day)$^{-1}$	8.8E-06	1.1E-04	mg/kg-day	N/A	mg/kg-day	N/A
			Exp. Route Total								3E-04					4E+00

TABLE 3-7.9.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Off Site Resident
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Ground Water	Tap Water/Shower Head	Combined Data	Inhalation													
				1,1,1-Trichloroethane	4.9E-01	mg/m3	2.2E+00	ug/m3	N/A	N/A	N/A	6.4E-03	mg/m3	2.2E+00	mg/m3	2.9E-03
				1,1,2-Trichloro-1,2,2-trifluoroethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E+01	mg/m3	N/A
				1,1,2-Trichloroethane	1.1E-03	mg/m3	4.8E-03	ug/m3	1.6E-05	(ug/m3)-1	7.7E-08	1.4E-05	mg/m3	2.2E+00	mg/m3	6.4E-06
				1,1-Dichloroethane	7.8E-01	mg/m3	3.5E+00	ug/m3	N/A	N/A	N/A	1.0E-02	mg/m3	5.0E-01	mg/m3	2.1E-02
				1,1-Dichloroethene	3.3E-02	mg/m3	1.5E-01	ug/m3	N/A	N/A	N/A	4.4E-04	mg/m3	2.0E-01	mg/m3	2.2E-03
				1,2,4-Trichlorobenzene	5.9E-02	mg/m3	2.7E-01	ug/m3	N/A	N/A	N/A	7.7E-04	mg/m3	2.0E-01	mg/m3	3.9E-03
				1,2-Dichlorobenzene	2.9E-02	mg/m3	1.3E-01	ug/m3	N/A	N/A	N/A	3.8E-04	mg/m3	N/A	N/A	N/A
				1,3-Dichlorobenzene	5.6E-02	mg/m3	2.5E-01	ug/m3	N/A	N/A	N/A	7.4E-04	mg/m3	N/A	N/A	N/A
				1,4-Dichlorobenzene	5.8E-01	mg/m3	2.6E+00	ug/m3	N/A	N/A	N/A	7.6E-03	mg/m3	8.0E-01	mg/m3	9.5E-03
				2-Butanone (MEK)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E+00	mg/m3	N/A
				Acetone	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Benzene	3.3E-01	mg/m3	1.5E+00	ug/m3	7.8E-06	(ug/m3)-1	1.2E-05	4.4E-03	mg/m3	3.0E-02	mg/m3	1.5E-01
				Bromomethane	3.6E-03	mg/m3	1.6E-02	ug/m3	N/A	N/A	N/A	4.8E-05	mg/m3	5.0E-03	mg/m3	9.6E-03
				Carbon disulfide	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	7.0E-01	mg/m3	N/A
				Chlorobenzene	6.0E-02	mg/m3	2.7E-01	ug/m3	N/A	N/A	N/A	7.8E-04	mg/m3	6.0E-02	mg/m3	1.3E-02
				Chloroethane	2.1E-01	mg/m3	9.5E-01	ug/m3	N/A	N/A	N/A	2.8E-03	mg/m3	1.0E+01	mg/m3	2.8E-04
				Chloroform	3.5E-04	mg/m3	1.6E-03	ug/m3	2.3E-05	(ug/m3)-1	3.6E-08	4.6E-06	mg/m3	5.0E-02	mg/m3	9.2E-05
				cis-1,2-Dichloroethene	6.7E+00	mg/m3	3.0E+01	ug/m3	N/A	N/A	N/A	8.9E-02	mg/m3	2.0E-01	mg/m3	4.4E-01
				Cyclohexane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Dichlorodifluoromethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/m3	N/A
				Ethylbenzene	1.4E-01	mg/m3	6.3E-01	ug/m3	N/A	N/A	N/A	1.8E-03	mg/m3	1.0E+00	mg/m3	1.8E-03
				Isopropylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.0E-01	mg/m3	N/A
				Methyl cyclohexane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E+00	mg/m3	N/A
				Methyl tert-butyl ether	1.6E+00	mg/m3	7.1E+00	ug/m3	N/A	N/A	N/A	2.1E-02	mg/m3	3.0E+00	mg/m3	6.9E-03
				Methylene chloride	3.3E-01	mg/m3	1.5E+00	ug/m3	4.7E-07	(ug/m3)-1	7.0E-07	4.4E-03	mg/m3	3.0E+00	mg/m3	1.5E-03
				Tetrachloroethene	1.1E-01	mg/m3	4.9E-01	ug/m3	5.9E-06	(ug/m3)-1	2.9E-06	1.4E-03	mg/m3	N/A	N/A	N/A
				Toluene	4.4E+00	mg/m3	2.0E+01	ug/m3	N/A	N/A	N/A	5.8E-02	mg/m3	4.0E-01	mg/m3	1.5E-01
				trans-1,2-Dichloroethene	1.0E-01	mg/m3	4.6E-01	ug/m3	N/A	N/A	N/A	1.3E-03	mg/m3	2.0E-01	mg/m3	6.7E-03
				Trichloroethene	5.2E-01	mg/m3	2.3E+00	ug/m3	1.1E-04	(ug/m3)-1	2.6E-04	6.8E-03	mg/m3	4.0E-02	mg/m3	1.7E-01
				Vinyl chloride	2.6E+00	mg/m3	1.2E+01	ug/m3	8.8E-06	(ug/m3)-1	1.0E-04	3.4E-02	mg/m3	1.0E-01	mg/m3	3.4E-01
				Xylenes (total)	3.8E-01	mg/m3	1.7E+00	ug/m3	N/A	N/A	N/A	5.1E-03	mg/m3	1.0E-01	mg/m3	5.1E-02
				Acetophenone	2.1E-04	mg/m3	9.3E-04	ug/m3	N/A	N/A	N/A	2.7E-06	mg/m3	N/A	N/A	N/A
				Naphthalene	5.8E-02	mg/m3	2.6E-01	ug/m3	N/A	N/A	N/A	7.6E-04	mg/m3	3.0E-03	mg/m3	2.5E-01
				2-Methylnaphthalene	2.6E-02	mg/m3	1.2E-01	ug/m3	N/A	N/A	N/A	3.4E-04	mg/m3	N/A	N/A	N/A
				1,1'-Biphenyl	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Acenaphthylene	3.8E-03	mg/m3	1.7E-02	ug/m3	N/A	N/A	N/A	5.1E-05	mg/m3	3.0E-03	mg/m3	1.7E-02
				Acenaphthene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-03	mg/m3	N/A
				Fluorene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-03	mg/m3	N/A
				Phenanthrene	5.0E-03	mg/m3	2.3E-02	ug/m3	N/A	N/A	N/A	6.6E-05	mg/m3	3.0E-03	mg/m3	2.2E-02
				Anthracene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-03	mg/m3	N/A
				C9-C18 Aliphatic	9.3E+00	mg/m3	4.2E+01	ug/m3	N/A	N/A	N/A	1.2E-01	mg/m3	2.0E-01	mg/m3	6.1E-01
				C11-C22 Aromatic	3.0E+00	mg/m3	1.3E+01	ug/m3	N/A	N/A	N/A	3.9E-02	mg/m3	5.0E-02	mg/m3	7.9E-01
				C5-C8 Aliphatic	1.7E+00	mg/m3	7.6E+00	ug/m3	N/A	N/A	N/A	2.2E-02	mg/m3	2.0E-01	mg/m3	1.1E-01
				C9-C10 Aromatic	6.7E-01	mg/m3	3.0E+00	ug/m3	N/A	N/A	N/A	8.8E-03	mg/m3	5.0E-02	mg/m3	1.8E-01
				C9-C12 Aliphatic	3.0E-01	mg/m3	1.4E+00	ug/m3	N/A	N/A	N/A	4.0E-03	mg/m3	2.0E-01	mg/m3	2.0E-02
			Exp. Route Total								4E-04					3E+00
		Exposure Point Total									1E-02					6E+01
	Exposure Medium Total										N/A					N/A
Medium Total											N/A					N/A
											Total of Receptor Risks Across All Media					N/A
																Total of Receptor Hazards Across All Media

TABLE 3-7.9.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Off Site Resident
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Ground Water	Tap Water/Shower Head	Combined Data	Ingestion													
				1,1,2-Trichloroethane	4.0E-01	ug/L	7.7E-07	mg/kg-day	5.7E-02	(mg/kg-day) $^{-1}$	4.4E-08	7.7E-06	mg/kg-day	4.0E-03	mg/kg-day	1.9E-03
				1,1-Dichloroethane	2.0E+01	ug/L	3.7E-05	mg/kg-day	N/A	N/A	N/A	3.7E-04	mg/kg-day	1.0E-01	mg/kg-day	3.7E-03
				1,1-Dichloroethene	4.8E+00	ug/L	9.1E-06	mg/kg-day	N/A	N/A	N/A	9.1E-05	mg/kg-day	5.0E-02	mg/kg-day	1.8E-03
				1,2,4-Trichlorobenzene	6.6E+00	ug/L	1.3E-05	mg/kg-day	N/A	N/A	N/A	1.3E-04	mg/kg-day	1.0E-02	mg/kg-day	1.3E-02
				1,3-Dichlorobenzene	6.2E+00	ug/L	1.2E-05	mg/kg-day	N/A	N/A	N/A	1.2E-04	mg/kg-day	9.0E-04	mg/kg-day	1.3E-01
				1,4-Dichlorobenzene	9.7E+00	ug/L	1.9E-05	mg/kg-day	N/A	N/A	N/A	1.9E-04	mg/kg-day	3.0E-02	mg/kg-day	6.2E-03
				Benzene	3.9E+00	ug/L	7.6E-06	mg/kg-day	5.5E-02	(mg/kg-day) $^{-1}$	4.2E-07	7.6E-05	mg/kg-day	4.0E-03	mg/kg-day	1.9E-02
				Bromomethane	1.0E+00	ug/L	1.9E-06	mg/kg-day	N/A	N/A	N/A	1.9E-05	mg/kg-day	1.4E-03	mg/kg-day	1.4E-02
				Chlorobenzene	6.5E+00	ug/L	1.2E-05	mg/kg-day	N/A	N/A	N/A	1.2E-04	mg/kg-day	2.0E-02	mg/kg-day	6.2E-03
				Chlorodibromomethane	1.5E+00	ug/L	2.9E-06	mg/kg-day	8.4E-02	(mg/kg-day) $^{-1}$	2.4E-07	2.9E-05	mg/kg-day	2.0E-02	mg/kg-day	1.4E-03
				Chloroethane	6.9E+00	ug/L	1.3E-05	mg/kg-day	N/A	N/A	N/A	1.3E-04	mg/kg-day	4.0E-01	mg/kg-day	3.3E-04
				cis-1,2-Dichloroethene	1.1E+02	ug/L	2.1E-04	mg/kg-day	N/A	N/A	N/A	2.1E-03	mg/kg-day	1.0E-02	mg/kg-day	2.1E-01
				Ethylbenzene	3.0E+00	ug/L	5.8E-06	mg/kg-day	N/A	N/A	N/A	5.8E-05	mg/kg-day	1.0E-01	mg/kg-day	5.8E-04
				Methyl tert-butyl ether	1.6E+01	ug/L	3.2E-05	mg/kg-day	3.3E-03	(mg/kg-day) $^{-1}$	1.0E-07	3.2E-04	mg/kg-day	N/A	N/A	N/A
				Methylene chloride	3.9E+00	ug/L	7.5E-06	mg/kg-day	7.5E-03	(mg/kg-day) $^{-1}$	5.6E-08	7.5E-05	mg/kg-day	6.0E-02	mg/kg-day	1.2E-03
				Tetrachloroethene	7.4E+00	ug/L	1.4E-05	mg/kg-day	2.1E-02	(mg/kg-day) $^{-1}$	3.0E-07	1.4E-04	mg/kg-day	1.0E-02	mg/kg-day	1.4E-02
				Toluene	2.9E+01	ug/L	5.5E-05	mg/kg-day	N/A	N/A	N/A	5.5E-04	mg/kg-day	2.0E-01	mg/kg-day	2.8E-03
				trans-1,2-Dichloroethene	4.8E+00	ug/L	9.2E-06	mg/kg-day	N/A	N/A	N/A	9.2E-05	mg/kg-day	2.0E-02	mg/kg-day	4.6E-03
				Trichloroethene	1.2E+01	ug/L	2.3E-05	mg/kg-day	4.0E-01	(mg/kg-day) $^{-1}$	9.1E-06	2.3E-04	mg/kg-day	3.0E-04	mg/kg-day	7.6E-01
				Vinyl chloride	3.4E+01	ug/L	6.5E-05	mg/kg-day	1.5E+00	(mg/kg-day) $^{-1}$	9.7E-05	6.5E-04	mg/kg-day	3.0E-03	mg/kg-day	2.2E-01
				Xylenes (total)	6.8E+00	ug/L	1.3E-05	mg/kg-day	N/A	N/A	N/A	1.3E-04	mg/kg-day	2.0E-01	mg/kg-day	6.5E-04
				Acetophenone	1.2E+00	ug/L	2.3E-06	mg/kg-day	N/A	N/A	N/A	2.3E-05	mg/kg-day	1.0E-01	mg/kg-day	2.3E-04
				4-Methylphenol	5.6E+00	ug/L	1.1E-05	mg/kg-day	N/A	N/A	N/A	1.1E-04	mg/kg-day	5.0E-03	mg/kg-day	2.2E-02
				Naphthalene	4.6E+00	ug/L	8.9E-06	mg/kg-day	N/A	N/A	N/A	8.9E-05	mg/kg-day	2.0E-02	mg/kg-day	4.4E-03
				2-Methylnaphthalene	4.8E+00	ug/L	9.2E-06	mg/kg-day	N/A	N/A	N/A	9.2E-05	mg/kg-day	4.0E-03	mg/kg-day	2.3E-02
				Acenaphthylene	3.2E+00	ug/L	6.1E-06	mg/kg-day	N/A	N/A	N/A	6.1E-05	mg/kg-day	2.0E-02	mg/kg-day	3.1E-03
				Phenanthrene	4.7E+00	ug/L	9.1E-06	mg/kg-day	N/A	N/A	N/A	9.1E-05	mg/kg-day	2.0E-02	mg/kg-day	4.5E-03
				Benzo(a)Pyrene	1.5E-02	ug/L	2.9E-08	mg/kg-day	7.3E+00	(mg/kg-day) $^{-1}$	2.1E-07	2.9E-07	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	1.3E-02	ug/L	2.5E-08	mg/kg-day	7.3E+00	(mg/kg-day) $^{-1}$	1.8E-07	2.5E-07	mg/kg-day	N/A	N/A	N/A
				C9-C18 Aliphatic	1.3E+02	ug/L	2.5E-04	mg/kg-day	N/A	N/A	N/A	2.5E-03	mg/kg-day	1.0E-01	mg/kg-day	2.5E-02
				C11-C22 Aromatic	1.2E+02	ug/L	2.3E-04	mg/kg-day	N/A	N/A	N/A	2.3E-03	mg/kg-day	3.0E-02	mg/kg-day	7.6E-02
				C19-C36 Aliphatic	1.0E+03	ug/L	2.0E-03	mg/kg-day	N/A	N/A	N/A	2.0E-02	mg/kg-day	2.0E+00	mg/kg-day	9.9E-03
				C5-C8 Aliphatic	6.1E+01	ug/L	1.2E-04	mg/kg-day	N/A	N/A	N/A	1.2E-03	mg/kg-day	4.0E-02	mg/kg-day	2.9E-02
				Arsenic	6.9E+00	ug/L	1.3E-05	mg/kg-day	1.5E+00	(mg/kg-day) $^{-1}$	2.0E-05	1.3E-04	mg/kg-day	3.0E-04	mg/kg-day	4.4E-01
				Chromium	1.0E+01	ug/L	2.0E-05	mg/kg-day	N/A	N/A	N/A	2.0E-04	mg/kg-day	1.5E+00	mg/kg-day	1.3E-04
				Lead	8.5E+00	ug/L	1.6E-05	mg/kg-day	N/A	N/A	N/A	1.6E-04	mg/kg-day	N/A	N/A	N/A
				Manganese	4.6E+02	ug/L	8.8E-04	mg/kg-day	N/A	N/A	N/A	8.8E-03	mg/kg-day	2.4E-02	mg/kg-day	3.7E-01
				Nickel	7.1E+00	ug/L	1.4E-05	mg/kg-day	N/A	N/A	N/A	1.4E-04	mg/kg-day	2.0E-02	mg/kg-day	6.8E-03
				PCB TEQ*	1.4E-06	ug/L	2.6E-12	mg/kg-day	1.5E+05	(mg/kg-day) $^{-1}$	3.9E-07	2.6E-11	mg/kg-day	N/A	N/A	N/A
				Dieldrin	1.4E-02	ug/L	2.7E-08	mg/kg-day	1.6E+01	(mg/kg-day) $^{-1}$	4.3E-07	2.7E-07	mg/kg-day	5.0E-05	mg/kg-day	5.4E-03
				4,4'-DDD	1.9E-01	ug/L	3.6E-07	mg/kg-day	2.4E-01	(mg/kg-day) $^{-1}$	8.7E-08	3.6E-06	mg/kg-day	2.0E-03	mg/kg-day	1.8E-03
			Exp. Route Total								1E-04					2E+00

TABLE 3-7.9.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Off Site Resident
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Ground Water	Tap Water/Shower Head	Combined Data	Dermal													
				1,1,2-Trichloroethane	4.0E-01	ug/L	6.8E-08	mg/kg-day	5.7E-02	(mg/kg-day)$^{-1}$	3.9E-09	6.8E-07	mg/kg-day	4.0E-03	mg/kg-day	1.7E-04
				1,1-Dichloroethane	2.0E+01	ug/L	2.8E-06	mg/kg-day	N/A	N/A	N/A	2.8E-05	mg/kg-day	1.0E-01	mg/kg-day	2.8E-04
				1,1-Dichloroethene	4.8E+00	ug/L	1.2E-06	mg/kg-day	N/A	N/A	N/A	1.2E-05	mg/kg-day	5.0E-02	mg/kg-day	2.3E-04
				1,2,4-Trichlorobenzene	6.6E+00	ug/L	1.6E-05	mg/kg-day	NA	N/A	N/A	1.6E-04	mg/kg-day	1.0E-02	mg/kg-day	1.6E-02
				1,3-Dichlorobenzene	6.2E+00	ug/L	1.0E-05	mg/kg-day	N/A	N/A	N/A	1.0E-04	mg/kg-day	9.0E-04	mg/kg-day	1.1E-01
				1,4-Dichlorobenzene	9.7E+00	ug/L	1.2E-05	mg/kg-day	N/A	N/A	N/A	1.2E-04	mg/kg-day	3.0E-02	mg/kg-day	3.9E-03
				Benzene	3.9E+00	ug/L	1.1E-06	mg/kg-day	5.5E-02	(mg/kg-day)$^{-1}$	5.9E-08	1.1E-05	mg/kg-day	4.0E-03	mg/kg-day	2.7E-03
				Bromomethane	1.0E+00	ug/L	5.8E-08	mg/kg-day	N/A	N/A	N/A	5.8E-07	mg/kg-day	1.4E-03	mg/kg-day	4.2E-04
				Chlorobenzene	6.5E+00	ug/L	4.2E-06	mg/kg-day	N/A	N/A	N/A	4.2E-05	mg/kg-day	2.0E-02	mg/kg-day	2.1E-03
				Chlorodibromomethane	1.5E+00	ug/L	2.1E-07	mg/kg-day	8.4E-02	(mg/kg-day)$^{-1}$	1.7E-08	2.1E-06	mg/kg-day	2.0E-02	mg/kg-day	1.0E-04
				Chloroethane	6.9E+00	ug/L	7.0E-07	mg/kg-day	N/A	N/A	N/A	7.0E-06	mg/kg-day	4.0E-01	mg/kg-day	1.8E-05
				cis-1,2-Dichloroethene	1.1E+02	ug/L	2.5E-05	mg/kg-day	N/A	N/A	N/A	2.5E-04	mg/kg-day	1.0E-02	mg/kg-day	2.5E-02
				Ethylbenzene	3.0E+00	ug/L	3.3E-06	mg/kg-day	N/A	N/A	N/A	3.3E-05	mg/kg-day	1.0E-01	mg/kg-day	3.3E-04
				Methyl tert-butyl ether	1.6E+01	ug/L	6.8E-07	mg/kg-day	3.3E-03	(mg/kg-day)$^{-1}$	2.3E-09	6.8E-06	mg/kg-day	N/A	N/A	N/A
				Methylene chloride	3.9E+00	ug/L	2.6E-07	mg/kg-day	7.5E-03	(mg/kg-day)$^{-1}$	2.0E-09	2.6E-06	mg/kg-day	6.0E-02	mg/kg-day	4.4E-05
				Tetrachloroethene	7.4E+00	ug/L	8.0E-06	mg/kg-day	2.1E-02	(mg/kg-day)$^{-1}$	1.7E-07	8.0E-05	mg/kg-day	1.0E-02	mg/kg-day	8.0E-03
				Toluene	2.9E+01	ug/L	1.8E-05	mg/kg-day	N/A	N/A	N/A	1.8E-04	mg/kg-day	2.0E-01	mg/kg-day	9.0E-04
				trans-1,2-Dichloroethene	4.8E+00	ug/L	1.1E-06	mg/kg-day	N/A	N/A	N/A	1.1E-05	mg/kg-day	2.0E-02	mg/kg-day	5.5E-04
				Trichloroethene	1.2E+01	ug/L	3.6E-06	mg/kg-day	4.0E-01	(mg/kg-day)$^{-1}$	1.4E-06	3.6E-05	mg/kg-day	3.0E-04	mg/kg-day	1.2E-01
				Vinyl chloride	3.4E+01	ug/L	3.1E-06	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	4.7E-06	3.1E-05	mg/kg-day	3.0E-03	mg/kg-day	1.0E-02
				Xylenes (total)	6.8E+00	ug/L	7.1E-06	mg/kg-day	N/A	N/A	N/A	7.1E-05	mg/kg-day	2.0E-01	mg/kg-day	3.5E-04
				Acetophenone	1.2E+00	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-01	mg/kg-day	N/A
				4-Methylphenol	5.6E+00	ug/L	9.6E-07	mg/kg-day	N/A	N/A	N/A	9.6E-06	mg/kg-day	5.0E-03	mg/kg-day	1.9E-03
				Naphthalene	4.6E+00	ug/L	5.5E-06	mg/kg-day	N/A	N/A	N/A	5.5E-05	mg/kg-day	2.0E-02	mg/kg-day	2.8E-03
				2-Methylnaphthalene	4.8E+00	ug/L	1.2E-05	mg/kg-day	N/A	N/A	N/A	1.2E-04	mg/kg-day	4.0E-03	mg/kg-day	3.1E-02
				Acenaphthylene	3.2E+00	ug/L	8.7E-06	mg/kg-day	N/A	N/A	N/A	8.7E-05	mg/kg-day	2.0E-02	mg/kg-day	4.3E-03
				Phenanthrene	4.7E+00	ug/L	2.4E-05	mg/kg-day	N/A	N/A	N/A	2.4E-04	mg/kg-day	2.0E-02	mg/kg-day	1.2E-02
				Benzo(a)Pyrene	1.5E-02	ug/L	5.9E-07	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	4.3E-06	5.9E-06	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	1.3E-02	ug/L	7.9E-07	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	5.8E-06	1.3E-05	mg/kg-day	N/A	N/A	N/A
				C9-C18 Aliphatic	1.3E+02	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-01	mg/kg-day	N/A
				C11-C22 Aromatic	1.2E+02	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
				C19-C36 Aliphatic	1.0E+03	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E+00	mg/kg-day	N/A
				C5-C8 Aliphatic	6.1E+01	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.0E-02	mg/kg-day	N/A
				Arsenic	6.9E+00	ug/L	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Chromium	1.0E+01	ug/L	6.3E-08	mg/kg-day	N/A	N/A	N/A	6.3E-07	mg/kg-day	2.0E-02	mg/kg-day	3.2E-05
				Lead	8.5E+00	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Manganese	4.6E+02	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9.6E-04	mg/kg-day	N/A
				Nickel	7.1E+00	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-04	mg/kg-day	N/A
				PCB TEQ*	1.4E-06	ug/L	4.9E-11	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	7.3E-06	9.7E-10	mg/kg-day	N/A	N/A	N/A
				Dieldrin	1.4E-02	ug/L	1.8E-08	mg/kg-day	1.6E+01	(mg/kg-day)$^{-1}$	2.9E-07	2.2E-07	mg/kg-day	5.0E-05	mg/kg-day	4.5E-03
				4,4'-DDD	1.9E-01	ug/L	2.4E-06	mg/kg-day	2.4E-01	(mg/kg-day)$^{-1}$	5.7E-07	3.0E-05	mg/kg-day	N/A	mg/kg-day	N/A
			Exp. Route Total								2E-05					4E-01

TABLE 3-7.9.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Off Site Resident
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Ground Water	Tap Water/Shower Head	Combined Data	Inhalation													
				1,1,1-Trichloroethane	3.1E-02	mg/m3	4.0E-02	ug/m3	N/A	N/A	N/A	4.0E-04	mg/m3	2.2E+00	mg/m3	1.8E-04
				1,1,2-Trichloro-1,2,2-trifluoroethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E+01	mg/m3	N/A
				1,1,2-Trichloroethane	1.5E-02	mg/m3	2.0E-02	ug/m3	1.6E-05	(ug/m3)-1	3.2E-07	2.0E-04	mg/m3	2.2E+00	mg/m3	9.0E-05
				1,1-Dichloroethane	7.0E-02	mg/m3	9.2E-02	ug/m3	N/A	N/A	N/A	9.2E-04	mg/m3	5.0E-01	mg/m3	1.8E-03
				1,1-Dichloroethene	1.7E-02	mg/m3	2.3E-02	ug/m3	N/A	N/A	N/A	2.3E-04	mg/m3	2.0E-01	mg/m3	1.2E-03
				1,2,4-Trichlorobenzene	1.7E-02	mg/m3	2.2E-02	ug/m3	N/A	N/A	N/A	2.2E-04	mg/m3	2.0E-01	mg/m3	1.1E-03
				1,2-Dichlorobenzene	1.8E-02	mg/m3	2.4E-02	ug/m3	N/A	N/A	N/A	2.4E-04	mg/m3	N/A	N/A	N/A
				1,3-Dichlorobenzene	1.8E-02	mg/m3	2.4E-02	ug/m3	N/A	N/A	N/A	2.4E-04	mg/m3	N/A	N/A	N/A
				1,4-Dichlorobenzene	2.8E-02	mg/m3	3.7E-02	ug/m3	N/A	N/A	N/A	3.7E-04	mg/m3	8.0E-01	mg/m3	4.7E-04
				2-Butanone (MEK)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E+00	mg/m3	N/A
				Acetone	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Benzene	1.5E-02	mg/m3	2.0E-02	ug/m3	7.8E-06	(ug/m3)-1	1.6E-07	2.0E-04	mg/m3	3.0E-02	mg/m3	6.7E-03
				Bromomethane	2.0E-02	mg/m3	2.7E-02	ug/m3	N/A	N/A	N/A	2.7E-04	mg/m3	5.0E-03	mg/m3	5.3E-02
				Carbon disulfide	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	7.0E-01	mg/m3	N/A
				Chlorobenzene	2.1E-02	mg/m3	2.8E-02	ug/m3	N/A	N/A	N/A	2.8E-04	mg/m3	6.0E-02	mg/m3	4.7E-03
				Chloroethane	2.9E-02	mg/m3	3.8E-02	ug/m3	N/A	N/A	N/A	3.8E-04	mg/m3	1.0E+01	mg/m3	3.8E-05
				Chloroform	1.8E-02	mg/m3	2.4E-02	ug/m3	2.3E-05	(ug/m3)-1	5.6E-07	2.4E-04	mg/m3	5.0E-02	mg/m3	4.9E-03
				cis-1,2-Dichloroethene	3.9E-01	mg/m3	5.1E-01	ug/m3	N/A	N/A	N/A	5.1E-03	mg/m3	2.0E-01	mg/m3	2.6E-02
				Cyclohexane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Dichlorodifluoromethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/m3	N/A
				Ethylbenzene	1.1E-02	mg/m3	1.4E-02	ug/m3	N/A	N/A	N/A	1.4E-04	mg/m3	1.0E+00	mg/m3	1.4E-04
				Isopropylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.0E-01	mg/m3	N/A
				Methyl cyclohexane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E+00	mg/m3	N/A
				Methyl tert-butyl ether	4.8E-02	mg/m3	6.3E-02	ug/m3	N/A	N/A	N/A	6.3E-04	mg/m3	3.0E+00	mg/m3	2.1E-04
				Methylene chloride	1.4E-02	mg/m3	1.9E-02	ug/m3	4.7E-07	(ug/m3)-1	8.9E-09	1.9E-04	mg/m3	3.0E+00	mg/m3	6.3E-05
				Tetrachloroethene	2.2E-02	mg/m3	2.9E-02	ug/m3	5.9E-06	(ug/m3)-1	1.7E-07	2.9E-04	mg/m3	N/A	N/A	N/A
				Toluene	1.1E-01	mg/m3	1.4E-01	ug/m3	N/A	N/A	N/A	1.4E-03	mg/m3	4.0E-01	mg/m3	3.5E-03
				trans-1,2-Dichloroethene	1.7E-02	mg/m3	2.3E-02	ug/m3	N/A	N/A	N/A	2.3E-04	mg/m3	2.0E-01	mg/m3	1.1E-03
				Trichloroethene	3.8E-02	mg/m3	5.1E-02	ug/m3	1.1E-04	(ug/m3)-1	5.6E-06	5.1E-04	mg/m3	4.0E-02	mg/m3	1.3E-02
				Vinyl chloride	1.5E-01	mg/m3	1.9E-01	ug/m3	8.8E-06	(ug/m3)-1	1.7E-06	1.9E-03	mg/m3	1.0E-01	mg/m3	1.9E-02
				Xylenes (total)	2.4E-02	mg/m3	3.1E-02	ug/m3	N/A	N/A	N/A	3.1E-04	mg/m3	1.0E-01	mg/m3	3.1E-03
				Acetophenone	8.7E-04	mg/m3	1.2E-03	ug/m3	N/A	N/A	N/A	1.2E-05	mg/m3	N/A	N/A	N/A
				Naphthalene	1.1E-02	mg/m3	1.4E-02	ug/m3	N/A	N/A	N/A	1.4E-04	mg/m3	3.0E-03	mg/m3	4.7E-02
				2-Methylnaphthalene	1.1E-02	mg/m3	1.5E-02	ug/m3	N/A	N/A	N/A	1.5E-04	mg/m3	N/A	N/A	N/A
				1,1'-Biphenyl	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Acenaphthylene	5.6E-03	mg/m3	7.3E-03	ug/m3	N/A	N/A	N/A	7.3E-05	mg/m3	3.0E-03	mg/m3	2.4E-02
				Acenaphthene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-03	mg/m3	N/A
				Fluorene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-03	mg/m3	N/A
				Phenanthrene	2.4E-03	mg/m3	3.1E-03	ug/m3	N/A	N/A	N/A	3.1E-05	mg/m3	3.0E-03	mg/m3	1.0E-02
				Anthracene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-03	mg/m3	N/A
				C9-C18 Aliphatic	4.0E-01	mg/m3	5.2E-01	ug/m3	N/A	N/A	N/A	5.2E-03	mg/m3	2.0E-01	mg/m3	2.6E-02
				C11-C22 Aromatic	2.9E-01	mg/m3	N/A	N/A	N/A	N/A	N/A	3.9E-03	mg/m3	5.0E-02	mg/m3	7.7E-02
				C5-C8 Aliphatic	2.3E-01	mg/m3	N/A	N/A	N/A	N/A	N/A	3.0E-03	mg/m3	2.0E-01	mg/m3	1.5E-02
				C9-C10 Aromatic	6.4E-02	mg/m3	N/A	N/A	N/A	N/A	N/A	8.5E-04	mg/m3	5.0E-02	mg/m3	1.7E-02
				C9-C12 Aliphatic	3.7E-02	mg/m3	N/A	N/A	N/A	N/A	N/A	4.9E-04	mg/m3	2.0E-01	mg/m3	2.4E-03
			Exp. Route Total								8E-06					4E-01
		Exposure Point Total									2E-04					3E+00
	Exposure Medium Total										N/A					N/A
Medium Total											N/A					N/A
											Total of Receptor Risks Across All Media					N/A
																Total of Receptor Hazards Across All Media

TABLE 3-7.10.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Off Site Resident
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Ground Water	Tap Water/Shower Head	Combined Data	Ingestion													
				1,1,2-Trichloroethane	4.0E-01	ug/L	3.3E-06	mg/kg-day	5.7E-02	(mg/kg-day)$^{-1}$	1.9E-07	3.8E-05	mg/kg-day	4.0E-03	mg/kg-day	9.6E-03
				1,1-Dichloroethane	2.2E+02	ug/L	1.8E-03	mg/kg-day	N/A	N/A	N/A	2.1E-02	mg/kg-day	1.0E-01	mg/kg-day	2.1E-01
				1,1-Dichloroethene	9.0E+00	ug/L	7.4E-05	mg/kg-day	N/A	N/A	N/A	8.6E-04	mg/kg-day	5.0E-02	mg/kg-day	1.7E-02
				1,2,4-Trichlorobenzene	2.3E+01	ug/L	1.9E-04	mg/kg-day	N/A	N/A	N/A	2.2E-03	mg/kg-day	1.0E-02	mg/kg-day	2.2E-01
				1,3-Dichlorobenzene	1.9E+01	ug/L	1.6E-04	mg/kg-day	N/A	N/A	N/A	1.8E-03	mg/kg-day	9.0E-04	mg/kg-day	2.0E+00
				1,4-Dichlorobenzene	2.0E+02	ug/L	1.6E-03	mg/kg-day	N/A	N/A	N/A	1.9E-02	mg/kg-day	3.0E-02	mg/kg-day	6.3E-01
				Benzene	8.6E+01	ug/L	7.1E-04	mg/kg-day	5.5E-02	(mg/kg-day)$^{-1}$	3.9E-05	8.2E-03	mg/kg-day	4.0E-03	mg/kg-day	2.1E+00
				Bromomethane	1.0E+00	ug/L	8.2E-06	mg/kg-day	N/A	N/A	N/A	9.6E-05	mg/kg-day	1.4E-03	mg/kg-day	6.8E-02
				Chlorobenzene	1.8E+01	ug/L	1.5E-04	mg/kg-day	N/A	N/A	N/A	1.7E-03	mg/kg-day	2.0E-02	mg/kg-day	8.6E-02
				Chlorodibromomethane	1.5E+00	ug/L	1.2E-05	mg/kg-day	8.4E-02	(mg/kg-day)$^{-1}$	1.0E-06	1.4E-04	mg/kg-day	2.0E-02	mg/kg-day	7.2E-03
				Chloroethane	5.0E+01	ug/L	4.1E-04	mg/kg-day	N/A	N/A	N/A	4.8E-03	mg/kg-day	4.0E-01	mg/kg-day	1.2E-02
				cis-1,2-Dichloroethene	1.9E+03	ug/L	1.6E-02	mg/kg-day	N/A	N/A	N/A	1.8E-01	mg/kg-day	1.0E-02	mg/kg-day	1.8E+01
				Ethylbenzene	4.0E+01	ug/L	3.3E-04	mg/kg-day	N/A	N/A	N/A	3.8E-03	mg/kg-day	1.0E-01	mg/kg-day	3.8E-02
				Methyl tert-butyl ether	5.4E+02	ug/L	4.4E-03	mg/kg-day	3.3E-03	(mg/kg-day)$^{-1}$	1.5E-05	5.2E-02	mg/kg-day	N/A	N/A	N/A
				Methylene chloride	9.0E+01	ug/L	7.4E-04	mg/kg-day	7.5E-03	(mg/kg-day)$^{-1}$	5.5E-06	8.6E-03	mg/kg-day	6.0E-02	mg/kg-day	1.4E-01
				Tetrachloroethene	3.6E+01	ug/L	3.0E-04	mg/kg-day	2.1E-02	(mg/kg-day)$^{-1}$	6.2E-06	3.5E-03	mg/kg-day	1.0E-02	mg/kg-day	3.5E-01
				Toluene	1.2E+03	ug/L	9.9E-03	mg/kg-day	N/A	N/A	N/A	1.2E-01	mg/kg-day	2.0E-01	mg/kg-day	5.8E-01
				trans-1,2-Dichloroethene	2.8E+01	ug/L	2.3E-04	mg/kg-day	N/A	N/A	N/A	2.7E-03	mg/kg-day	2.0E-02	mg/kg-day	1.3E-01
				Trichloroethene	1.6E+02	ug/L	1.3E-03	mg/kg-day	4.0E-01	(mg/kg-day)$^{-1}$	5.3E-04	1.5E-02	mg/kg-day	3.0E-04	mg/kg-day	5.1E+01
				Vinyl chloride	6.0E+02	ug/L	4.9E-03	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	7.4E-03	5.8E-02	mg/kg-day	3.0E-03	mg/kg-day	1.9E+01
				Xylenes (total)	1.1E+02	ug/L	9.0E-04	mg/kg-day	N/A	N/A	N/A	1.1E-02	mg/kg-day	2.0E-01	mg/kg-day	5.3E-02
				Acetophenone	1.2E+00	ug/L	9.9E-06	mg/kg-day	N/A	N/A	N/A	1.2E-04	mg/kg-day	1.0E-01	mg/kg-day	1.2E-03
				4-Methylphenol	2.5E+01	ug/L	2.1E-04	mg/kg-day	N/A	N/A	N/A	2.4E-03	mg/kg-day	5.0E-03	mg/kg-day	4.8E-01
				Naphthalene	2.5E+01	ug/L	2.1E-04	mg/kg-day	N/A	N/A	N/A	2.4E-03	mg/kg-day	2.0E-02	mg/kg-day	1.2E-01
				2-Methylnaphthalene	1.1E+01	ug/L	9.0E-05	mg/kg-day	N/A	N/A	N/A	1.1E-03	mg/kg-day	4.0E-03	mg/kg-day	2.6E-01
				Acenaphthylene	3.2E+00	ug/L	2.6E-05	mg/kg-day	N/A	N/A	N/A	3.1E-04	mg/kg-day	2.0E-02	mg/kg-day	1.5E-02
				Phenanthrene	1.0E+01	ug/L	8.2E-05	mg/kg-day	N/A	N/A	N/A	9.6E-04	mg/kg-day	2.0E-02	mg/kg-day	4.8E-02
				Benzo(a)Pyrene	1.5E-02	ug/L	1.2E-07	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	9.0E-07	1.4E-06	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	1.3E-02	ug/L	1.1E-07	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	7.8E-07	1.2E-06	mg/kg-day	N/A	N/A	N/A
				C9-C18 Aliphatic	3.1E+03	ug/L	2.5E-02	mg/kg-day	N/A	N/A	N/A	3.0E-01	mg/kg-day	1.0E-01	mg/kg-day	3.0E+00
				C11-C22 Aromatic	1.2E+03	ug/L	9.9E-03	mg/kg-day	N/A	N/A	N/A	1.2E-01	mg/kg-day	3.0E-02	mg/kg-day	3.8E+00
				C19-C36 Aliphatic	2.4E+04	ug/L	2.0E-01	mg/kg-day	N/A	N/A	N/A	2.3E+00	mg/kg-day	2.0E+00	mg/kg-day	1.2E+00
				C5-C8 Aliphatic	4.5E+02	ug/L	3.7E-03	mg/kg-day	N/A	N/A	N/A	4.3E-02	mg/kg-day	4.0E-02	mg/kg-day	1.1E+00
				Arsenic	1.8E+02	ug/L	1.4E-03	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	2.2E-03	1.7E-02	mg/kg-day	3.0E-04	mg/kg-day	5.6E+01
				Chromium	1.3E+02	ug/L	1.1E-03	mg/kg-day	N/A	N/A	N/A	1.3E-02	mg/kg-day	1.5E+00	mg/kg-day	8.5E-03
				Lead	1.5E+02	ug/L	1.2E-03	mg/kg-day	N/A	N/A	N/A	1.4E-02	mg/kg-day	N/A	N/A	N/A
				Manganese	2.6E+03	ug/L	2.2E-02	mg/kg-day	N/A	N/A	N/A	2.5E-01	mg/kg-day	2.4E-02	mg/kg-day	1.1E+01
				Nickel	9.3E+01	ug/L	7.7E-04	mg/kg-day	N/A	N/A	N/A	8.9E-03	mg/kg-day	2.0E-02	mg/kg-day	4.5E-01
				PCB TEQ*	2.9E-06	ug/L	2.4E-11	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	3.6E-06	2.8E-10	mg/kg-day	N/A	N/A	N/A
				Dieldrin	1.4E-02	ug/L	1.2E-07	mg/kg-day	1.6E+01	(mg/kg-day)$^{-1}$	1.8E-06	1.3E-06	mg/kg-day	5.0E-05	mg/kg-day	2.7E-02
				4,4'-DDD	5.6E-01	ug/L	4.6E-06	mg/kg-day	2.4E-01	(mg/kg-day)$^{-1}$	1.1E-06	5.4E-05	mg/kg-day	2.0E-03	mg/kg-day	2.7E-02
			Exp. Route Total								1E-02					2E+02

TABLE 3-7.10.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Off Site Resident
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Ground Water	Tap Water/Shower Head	Combined Data	Dermal													
				1,1,2-Trichloroethane	4.0E-01	ug/L	N/A	N/A	5.7E-02	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	4.0E-03	mg/kg-day	N/A
				1,1-Dichloroethane	2.2E+02	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-01	mg/kg-day	N/A
				1,1-Dichloroethene	9.0E+00	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/kg-day	N/A
				1,2,4-Trichlorobenzene	2.3E+01	ug/L	1.6E-04	mg/kg-day	N/A	N/A	N/A	1.9E-03	mg/kg-day	1.0E-02	mg/kg-day	1.9E-01
				1,3-Dichlorobenzene	1.9E+01	ug/L	9.3E-05	mg/kg-day	N/A	N/A	N/A	1.1E-03	mg/kg-day	9.0E-04	mg/kg-day	1.2E+00
				1,4-Dichlorobenzene	2.0E+02	ug/L	7.0E-04	mg/kg-day	N/A	N/A	N/A	8.1E-03	mg/kg-day	3.0E-02	mg/kg-day	2.7E-01
				Benzene	8.6E+01	ug/L	7.3E-05	mg/kg-day	5.5E-02	(mg/kg-day)$^{-1}$	4.0E-06	8.4E-04	mg/kg-day	4.0E-03	mg/kg-day	2.1E-01
				Bromomethane	1.0E+00	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.4E-03	mg/kg-day	N/A
				Chlorobenzene	1.8E+01	ug/L	3.4E-05	mg/kg-day	N/A	N/A	N/A	4.0E-04	mg/kg-day	2.0E-02	mg/kg-day	2.0E-02
				Chlorodibromomethane	1.5E+00	ug/L	N/A	N/A	8.4E-02	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-02	mg/kg-day	N/A
				Chloroethane	5.0E+01	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.0E-01	mg/kg-day	N/A
				cis-1,2-Dichloroethene	1.9E+03	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-02	mg/kg-day	N/A
				Ethylbenzene	4.0E+01	ug/L	1.3E-04	mg/kg-day	N/A	N/A	N/A	1.5E-03	mg/kg-day	1.0E-01	mg/kg-day	1.5E-02
				Methyl tert-butyl ether	5.4E+02	ug/L	N/A	N/A	3.3E-03	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	N/A	N/A	N/A
				Methylene chloride	9.0E+01	ug/L	N/A	N/A	7.5E-03	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	6.0E-02	mg/kg-day	N/A
				Tetrachloroethene	3.6E+01	ug/L	1.1E-04	mg/kg-day	2.1E-02	(mg/kg-day)$^{-1}$	2.4E-06	1.3E-03	mg/kg-day	1.0E-02	mg/kg-day	1.3E-01
				Toluene	1.2E+03	ug/L	2.3E-03	mg/kg-day	N/A	N/A	N/A	2.6E-02	mg/kg-day	2.0E-01	mg/kg-day	1.3E-01
				trans-1,2-Dichloroethene	2.8E+01	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-02	mg/kg-day	N/A
				Trichloroethene	1.6E+02	ug/L	1.4E-04	mg/kg-day	4.0E-01	(mg/kg-day)$^{-1}$	5.7E-05	1.7E-03	mg/kg-day	3.0E-04	mg/kg-day	5.5E+00
				Vinyl chloride	6.0E+02	ug/L	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Xylenes (total)	1.1E+02	ug/L	3.4E-04	mg/kg-day	N/A	N/A	N/A	3.9E-03	mg/kg-day	2.0E-01	mg/kg-day	2.0E-02
				Acetophenone	1.2E+00	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-01	mg/kg-day	N/A
				4-Methylphenol	2.5E+01	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-03	mg/kg-day	N/A
				Naphthalene	2.5E+01	ug/L	8.7E-05	mg/kg-day	N/A	N/A	N/A	1.0E-03	mg/kg-day	2.0E-02	mg/kg-day	5.1E-02
				2-Methylnaphthalene	1.1E+01	ug/L	8.3E-05	mg/kg-day	N/A	N/A	N/A	9.6E-04	mg/kg-day	4.0E-03	mg/kg-day	2.4E-01
				Acenaphthylene	3.2E+00	ug/L	2.5E-05	mg/kg-day	N/A	N/A	N/A	3.0E-04	mg/kg-day	2.0E-02	mg/kg-day	1.5E-02
				Phenanthrene	1.0E+01	ug/L	1.5E-04	mg/kg-day	N/A	N/A	N/A	1.7E-03	mg/kg-day	2.0E-02	mg/kg-day	8.7E-02
				Benzo(a)Pyrene	1.5E-02	ug/L	1.7E-06	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.3E-05	2.0E-05	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	1.3E-02	ug/L	2.3E-06	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.7E-05	2.7E-05	mg/kg-day	N/A	N/A	N/A
				C9-C18 Aliphatic	3.1E+03	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-01	mg/kg-day	N/A
				C11-C22 Aromatic	1.2E+03	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
				C19-C36 Aliphatic	2.4E+04	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E+00	mg/kg-day	N/A
				C5-C8 Aliphatic	4.5E+02	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.0E-02	mg/kg-day	N/A
				Arsenic	1.8E+02	ug/L	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Chromium	1.3E+02	ug/L	4.8E-06	mg/kg-day	N/A	N/A	N/A	5.6E-05	mg/kg-day	2.0E-02	mg/kg-day	2.9E-03
				Lead	1.5E+02	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Manganese	2.6E+03	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9.6E-04	mg/kg-day	N/A
				Nickel	9.3E+01	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-04	mg/kg-day	N/A
				PCB TEQ*	2.9E-06	ug/L	3.1E-10	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	4.6E-05	3.6E-09	mg/kg-day	N/A	N/A	N/A
				Dieldrin	1.4E-02	ug/L	5.2E-08	mg/kg-day	1.6E+01	(mg/kg-day)$^{-1}$	8.4E-07	6.1E-07	mg/kg-day	5.0E-05	mg/kg-day	1.2E-02
				4,4'-DDD	5.6E-01	ug/L	2.1E-05	mg/kg-day	2.4E-01	(mg/kg-day)$^{-1}$	5.0E-06	2.4E-04	mg/kg-day	N/A	mg/kg-day	N/A
			Exp. Route Total								1E-04					8E+00

TABLE 3-7.10.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Off Site Resident
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Ground Water	Tap Water/Shower Head	Combined Data	Inhalation													
				1,1,1-Trichloroethane	4.9E-01	mg/m3	2.7E+01	ug/m3	N/A	N/A	N/A	6.4E-03	mg/m3	2.2E+00	mg/m3	2.9E-03
				1,1,2-Trichloro-1,2,2-trifluoroethane	N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E+01	mg/m3	N/A
				1,1,2-Trichloroethane	1.1E-03	mg/m3	2.7E+01	ug/m3	1.6E-05	(ug/m3)-1	4.3E-04	1.4E-05	mg/m3	2.2E+00	mg/m3	6.4E-06
				1,1-Dichloroethane	7.8E-01	mg/m3	2.7E+01	ug/m3	N/A	N/A	N/A	1.0E-02	mg/m3	5.0E-01	mg/m3	2.1E-02
				1,1-Dichloroethene	3.3E-02	mg/m3	2.7E+01	ug/m3	N/A	N/A	N/A	4.4E-04	mg/m3	2.0E-01	mg/m3	2.2E-03
				1,2,4-Trichlorobenzene	5.9E-02	mg/m3	2.7E+01	ug/m3	N/A	N/A	N/A	7.7E-04	mg/m3	2.0E-01	mg/m3	3.9E-03
				1,2-Dichlorobenzene	2.9E-02	mg/m3	2.7E+01	ug/m3	N/A	N/A	N/A	3.8E-04	mg/m3	N/A	N/A	N/A
				1,3-Dichlorobenzene	5.6E-02	mg/m3	2.7E+01	ug/m3	N/A	N/A	N/A	7.4E-04	mg/m3	N/A	N/A	N/A
				1,4-Dichlorobenzene	5.8E-01	mg/m3	6.5E-01	ug/m3	N/A	N/A	N/A	7.6E-03	mg/m3	8.0E-01	mg/m3	9.5E-03
				2-Butanone (MEK)	N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E+00	mg/m3	N/A
				Acetone	N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Benzene	3.3E-01	mg/m3	3.8E-01	ug/m3	7.8E-06	(ug/m3)-1	2.9E-06	4.4E-03	mg/m3	3.0E-02	mg/m3	1.5E-01
				Bromomethane	3.6E-03	mg/m3	4.1E-03	ug/m3	N/A	N/A	N/A	4.8E-05	mg/m3	5.0E-03	mg/m3	9.6E-03
				Carbon disulfide	N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	7.0E-01	mg/m3	N/A
				Chlorobenzene	6.0E-02	mg/m3	6.7E-02	ug/m3	N/A	N/A	N/A	7.8E-04	mg/m3	6.0E-02	mg/m3	1.3E-02
				Chloroethane	2.1E-01	mg/m3	2.4E-01	ug/m3	N/A	N/A	N/A	2.8E-03	mg/m3	1.0E+01	mg/m3	2.8E-04
				Chloroform	3.5E-04	mg/m3	3.9E-04	ug/m3	2.3E-05	(ug/m3)-1	9.1E-09	4.6E-06	mg/m3	5.0E-02	mg/m3	9.2E-05
				cis-1,2-Dichloroethene	6.7E+00	mg/m3	7.6E+00	ug/m3	N/A	N/A	N/A	8.9E-02	mg/m3	2.0E-01	mg/m3	4.4E-01
				Cyclohexane	N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Dichlorodifluoromethane	N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/m3	N/A
				Ethylbenzene	1.4E-01	mg/m3	1.6E-01	ug/m3	N/A	N/A	N/A	1.8E-03	mg/m3	1.0E+00	mg/m3	1.8E-03
				Isopropylbenzene	N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.0E-01	mg/m3	N/A
				Methyl cyclohexane	N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E+00	mg/m3	N/A
				Methyl tert-butyl ether	1.6E+00	mg/m3	1.8E+00	ug/m3	N/A	N/A	N/A	2.1E-02	mg/m3	3.0E+00	mg/m3	6.9E-03
				Methylene chloride	3.3E-01	mg/m3	3.7E-01	ug/m3	4.7E-07	(ug/m3)-1	1.8E-07	4.4E-03	mg/m3	3.0E+00	mg/m3	1.5E-03
				Tetrachloroethene	1.1E-01	mg/m3	1.2E-01	ug/m3	5.9E-06	(ug/m3)-1	7.2E-07	1.4E-03	mg/m3	N/A	N/A	N/A
				Toluene	4.4E+00	mg/m3	5.0E+00	ug/m3	N/A	N/A	N/A	5.8E-02	mg/m3	4.0E-01	mg/m3	1.5E-01
				trans-1,2-Dichloroethene	1.0E-01	mg/m3	1.2E-01	ug/m3	N/A	N/A	N/A	1.3E-03	mg/m3	2.0E-01	mg/m3	6.7E-03
				Trichloroethene	5.2E-01	mg/m3	5.9E-01	ug/m3	1.1E-04	(ug/m3)-1	6.5E-05	6.8E-03	mg/m3	4.0E-02	mg/m3	1.7E-01
				Vinyl chloride	2.6E+00	mg/m3	2.9E+00	ug/m3	8.8E-06	(ug/m3)-1	2.6E-05	3.4E-02	mg/m3	1.0E-01	mg/m3	3.4E-01
				Xylenes (total)	3.8E-01	mg/m3	4.3E-01	ug/m3	N/A	N/A	N/A	5.1E-03	mg/m3	1.0E-01	mg/m3	5.1E-02
				Acetophenone	2.1E-04	mg/m3	2.3E-04	ug/m3	N/A	N/A	N/A	2.7E-06	mg/m3	N/A	N/A	N/A
				Naphthalene	5.8E-02	mg/m3	6.5E-02	ug/m3	N/A	N/A	N/A	7.6E-04	mg/m3	3.0E-03	mg/m3	2.5E-01
				2-Methylnaphthalene	2.6E-02	mg/m3	2.9E-02	ug/m3	N/A	N/A	N/A	3.4E-04	mg/m3	N/A	N/A	N/A
				1,1'-Biphenyl	N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Acenaphthylene	3.8E-03	mg/m3	4.3E-03	ug/m3	N/A	N/A	N/A	5.1E-05	mg/m3	3.0E-03	mg/m3	1.7E-02
				Acenaphthene	N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-03	mg/m3	N/A
				Fluorene	N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-03	mg/m3	N/A
				Phenanthrene	5.0E-03	mg/m3	5.7E-03	ug/m3	N/A	N/A	N/A	6.6E-05	mg/m3	3.0E-03	mg/m3	2.2E-02
				Anthracene	N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-03	mg/m3	N/A
				C9-C18 Aliphatic	9.3E+00	mg/m3	1.0E+01	ug/m3	N/A	N/A	N/A	1.2E-01	mg/m3	2.0E-01	mg/m3	6.1E-01
				C11-C22 Aromatic	3.0E+00	mg/m3	N/A	N/A	N/A	N/A	N/A	3.9E-02	mg/m3	5.0E-02	mg/m3	7.9E-01
				C5-C8 Aliphatic	1.7E+00	mg/m3	N/A	N/A	N/A	N/A	N/A	2.2E-02	mg/m3	2.0E-01	mg/m3	1.1E-01
				C9-C10 Aromatic	6.7E-01	mg/m3	N/A	N/A	N/A	N/A	N/A	8.8E-03	mg/m3	5.0E-02	mg/m3	1.8E-01
				C9-C12 Aliphatic	3.0E-01	mg/m3	N/A	N/A	N/A	N/A	N/A	4.0E-03	mg/m3	2.0E-01	mg/m3	2.0E-02
			Exp. Route Total								5E-04					3E+00
		Exposure Point Total									1E-02					2E+02
	Exposure Medium Total										N/A					N/A
Medium Total											N/A					N/A
											Total of Receptor Risks Across All Media					Total of Receptor Hazards Across All Media
											N/A					N/A

TABLE 3-7.10.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Off Site Resident
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Ground Water	Tap Water/Shower Head	Aberjona	Ingestion													
				1,1,2-Trichloroethane	4.0E-01	ug/L	6.4E-07	mg/kg-day	5.7E-02	(mg/kg-day) $^{-1}$	3.6E-08	2.2E-05	mg/kg-day	4.0E-03	mg/kg-day	5.6E-03
				1,1-Dichloroethane	2.0E+01	ug/L	3.1E-05	mg/kg-day	N/A	N/A	N/A	1.1E-03	mg/kg-day	1.0E-01	mg/kg-day	1.1E-02
				1,1-Dichloroethene	4.8E+00	ug/L	7.5E-06	mg/kg-day	N/A	N/A	N/A	2.6E-04	mg/kg-day	5.0E-02	mg/kg-day	5.3E-03
				1,2,4-Trichlorobenzene	6.6E+00	ug/L	1.1E-05	mg/kg-day	N/A	N/A	N/A	3.7E-04	mg/kg-day	1.0E-02	mg/kg-day	3.7E-02
				1,3-Dichlorobenzene	6.2E+00	ug/L	9.8E-06	mg/kg-day	N/A	N/A	N/A	3.4E-04	mg/kg-day	9.0E-04	mg/kg-day	3.8E-01
				1,4-Dichlorobenzene	9.7E+00	ug/L	1.5E-05	mg/kg-day	N/A	N/A	N/A	5.4E-04	mg/kg-day	3.0E-02	mg/kg-day	1.8E-02
				Benzene	3.9E+00	ug/L	6.3E-06	mg/kg-day	5.5E-02	(mg/kg-day) $^{-1}$	3.4E-07	2.2E-04	mg/kg-day	4.0E-03	mg/kg-day	5.5E-02
				Bromomethane	1.0E+00	ug/L	1.6E-06	mg/kg-day	N/A	N/A	N/A	5.6E-05	mg/kg-day	1.4E-03	mg/kg-day	4.0E-02
				Chlorobenzene	6.5E+00	ug/L	1.0E-05	mg/kg-day	N/A	N/A	N/A	3.6E-04	mg/kg-day	2.0E-02	mg/kg-day	1.8E-02
				Chlorodibromomethane	1.5E+00	ug/L	2.4E-06	mg/kg-day	8.4E-02	(mg/kg-day) $^{-1}$	2.0E-07	8.4E-05	mg/kg-day	2.0E-02	mg/kg-day	4.2E-03
				Chloroethane	6.9E+00	ug/L	1.1E-05	mg/kg-day	N/A	N/A	N/A	3.8E-04	mg/kg-day	4.0E-01	mg/kg-day	9.6E-04
				cis-1,2-Dichloroethene	1.1E+02	ug/L	1.8E-04	mg/kg-day	N/A	N/A	N/A	6.1E-03	mg/kg-day	1.0E-02	mg/kg-day	6.1E-01
				Ethylbenzene	3.0E+00	ug/L	4.8E-06	mg/kg-day	N/A	N/A	N/A	1.7E-04	mg/kg-day	1.0E-01	mg/kg-day	1.7E-03
				Methyl tert-butyl ether	1.6E+01	ug/L	2.6E-05	mg/kg-day	3.3E-03	(mg/kg-day) $^{-1}$	8.6E-08	9.2E-04	mg/kg-day	N/A	N/A	N/A
				Methylene chloride	3.9E+00	ug/L	6.2E-06	mg/kg-day	7.5E-03	(mg/kg-day) $^{-1}$	4.6E-08	2.2E-04	mg/kg-day	6.0E-02	mg/kg-day	3.6E-03
				Tetrachloroethene	7.4E+00	ug/L	1.2E-05	mg/kg-day	2.1E-02	(mg/kg-day) $^{-1}$	2.5E-07	4.1E-04	mg/kg-day	1.0E-02	mg/kg-day	4.1E-02
				Toluene	2.9E+01	ug/L	4.6E-05	mg/kg-day	N/A	N/A	N/A	1.6E-03	mg/kg-day	2.0E-01	mg/kg-day	8.0E-03
				trans-1,2-Dichloroethene	4.8E+00	ug/L	7.6E-06	mg/kg-day	N/A	N/A	N/A	2.7E-04	mg/kg-day	2.0E-02	mg/kg-day	1.3E-02
				Trichloroethene	1.2E+01	ug/L	1.9E-05	mg/kg-day	4.0E-01	(mg/kg-day) $^{-1}$	7.5E-06	6.6E-04	mg/kg-day	3.0E-04	mg/kg-day	2.2E+00
				Vinyl chloride	3.4E+01	ug/L	5.4E-05	mg/kg-day	1.5E+00	(mg/kg-day) $^{-1}$	8.1E-05	1.9E-03	mg/kg-day	3.0E-03	mg/kg-day	6.3E-01
				Xylenes (total)	6.8E+00	ug/L	1.1E-05	mg/kg-day	N/A	N/A	N/A	3.8E-04	mg/kg-day	2.0E-01	mg/kg-day	1.9E-03
				Acetophenone	1.2E+00	ug/L	1.9E-06	mg/kg-day	N/A	N/A	N/A	6.7E-05	mg/kg-day	1.0E-01	mg/kg-day	6.7E-04
				4-Methylphenol	5.6E+00	ug/L	8.9E-06	mg/kg-day	N/A	N/A	N/A	3.1E-04	mg/kg-day	5.0E-03	mg/kg-day	6.3E-02
				Naphthalene	4.6E+00	ug/L	7.4E-06	mg/kg-day	N/A	N/A	N/A	2.6E-04	mg/kg-day	2.0E-02	mg/kg-day	1.3E-02
				2-Methylnaphthalene	4.8E+00	ug/L	7.7E-06	mg/kg-day	N/A	N/A	N/A	2.7E-04	mg/kg-day	4.0E-03	mg/kg-day	6.7E-02
				Acenaphthylene	3.2E+00	ug/L	5.1E-06	mg/kg-day	N/A	N/A	N/A	1.8E-04	mg/kg-day	2.0E-02	mg/kg-day	8.9E-03
				Phenanthrene	4.7E+00	ug/L	7.5E-06	mg/kg-day	N/A	N/A	N/A	2.6E-04	mg/kg-day	2.0E-02	mg/kg-day	1.3E-02
				Benzo(a)Pyrene	1.5E-02	ug/L	2.4E-08	mg/kg-day	7.3E+00	(mg/kg-day) $^{-1}$	1.7E-07	8.3E-07	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	1.3E-02	ug/L	2.1E-08	mg/kg-day	7.3E+00	(mg/kg-day) $^{-1}$	1.5E-07	7.2E-07	mg/kg-day	N/A	N/A	N/A
				C9-C18 Aliphatic	1.3E+02	ug/L	2.1E-04	mg/kg-day	N/A	N/A	N/A	7.4E-03	mg/kg-day	1.0E-01	mg/kg-day	7.4E-02
				C11-C22 Aromatic	1.2E+02	ug/L	1.9E-04	mg/kg-day	N/A	N/A	N/A	6.6E-03	mg/kg-day	3.0E-02	mg/kg-day	2.2E-01
				C19-C36 Aliphatic	1.0E+03	ug/L	1.6E-03	mg/kg-day	N/A	N/A	N/A	5.8E-02	mg/kg-day	2.0E+00	mg/kg-day	2.9E-02
				C5-C8 Aliphatic	6.1E+01	ug/L	9.7E-05	mg/kg-day	N/A	N/A	N/A	3.4E-03	mg/kg-day	4.0E-02	mg/kg-day	8.5E-02
				Arsenic	6.9E+00	ug/L	1.1E-05	mg/kg-day	1.5E+00	(mg/kg-day) $^{-1}$	1.6E-05	3.8E-04	mg/kg-day	3.0E-04	mg/kg-day	1.3E+00
				Chromium	1.0E+01	ug/L	1.6E-05	mg/kg-day	N/A	N/A	N/A	5.7E-04	mg/kg-day	1.5E+00	mg/kg-day	3.8E-04
				Lead	8.5E+00	ug/L	1.4E-05	mg/kg-day	N/A	N/A	N/A	4.7E-04	mg/kg-day	N/A	N/A	N/A
				Manganese	4.6E+02	ug/L	7.3E-04	mg/kg-day	N/A	N/A	N/A	2.6E-02	mg/kg-day	2.4E-02	mg/kg-day	1.1E+00
				Nickel	7.1E+00	ug/L	1.1E-05	mg/kg-day	N/A	N/A	N/A	3.9E-04	mg/kg-day	2.0E-02	mg/kg-day	2.0E-02
				PCB TEQ*	1.4E-06	ug/L	2.2E-12	mg/kg-day	1.5E+05	(mg/kg-day) $^{-1}$	3.2E-07	7.5E-11	mg/kg-day	N/A	N/A	N/A
				Dieldrin	1.4E-02	ug/L	2.2E-08	mg/kg-day	1.6E+01	(mg/kg-day) $^{-1}$	3.6E-07	7.8E-07	mg/kg-day	5.0E-05	mg/kg-day	1.6E-02
				4,4'-DDD	1.9E-01	ug/L	3.0E-07	mg/kg-day	2.4E-01	(mg/kg-day) $^{-1}$	7.2E-08	1.1E-05	mg/kg-day	2.0E-03	mg/kg-day	5.3E-03
			Exp. Route Total								1E-04					7E+00

TABLE 3-7.10.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Off Site Resident
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Ground Water	Tap Water/Shower Head	Aberjona	Dermal													
				1,1,2-Trichloroethane	4.0E-01	ug/L	N/A	N/A	5.7E-02	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	4.0E-03	mg/kg-day	N/A
				1,1-Dichloroethane	2.0E+01	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-01	mg/kg-day	N/A
				1,1-Dichloroethene	4.8E+00	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/kg-day	N/A
				1,2,4-Trichlorobenzene	6.6E+00	ug/L	8.9E-06	mg/kg-day	NA	N/A	N/A	3.1E-04	mg/kg-day	1.0E-02	mg/kg-day	3.1E-02
				1,3-Dichlorobenzene	6.2E+00	ug/L	5.8E-06	mg/kg-day	N/A	N/A	N/A	2.0E-04	mg/kg-day	9.0E-04	mg/kg-day	2.2E-01
				1,4-Dichlorobenzene	9.7E+00	ug/L	6.5E-06	mg/kg-day	N/A	N/A	N/A	2.3E-04	mg/kg-day	3.0E-02	mg/kg-day	7.6E-03
				Benzene	3.9E+00	ug/L	N/A	N/A	5.5E-02	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	4.0E-03	mg/kg-day	N/A
				Bromomethane	1.0E+00	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.4E-03	mg/kg-day	N/A
				Chlorobenzene	6.5E+00	ug/L	2.4E-06	mg/kg-day	N/A	N/A	N/A	8.2E-05	mg/kg-day	2.0E-02	mg/kg-day	4.1E-03
				Chlorodibromomethane	1.5E+00	ug/L	N/A	N/A	8.4E-02	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-02	mg/kg-day	N/A
				Chloroethane	6.9E+00	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.0E-01	mg/kg-day	N/A
				cis-1,2-Dichloroethene	1.1E+02	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-02	mg/kg-day	N/A
				Ethylbenzene	3.0E+00	ug/L	1.8E-06	mg/kg-day	N/A	N/A	N/A	6.5E-05	mg/kg-day	1.0E-01	mg/kg-day	6.5E-04
				Methyl tert-butyl ether	1.6E+01	ug/L	N/A	N/A	3.3E-03	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	N/A	N/A	N/A
				Methylene chloride	3.9E+00	ug/L	N/A	N/A	7.5E-03	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	6.0E-02	mg/kg-day	N/A
				Tetrachloroethene	7.4E+00	ug/L	4.5E-06	mg/kg-day	2.1E-02	(mg/kg-day)$^{-1}$	9.4E-08	1.6E-04	mg/kg-day	1.0E-02	mg/kg-day	1.6E-02
				Toluene	2.9E+01	ug/L	1.0E-05	mg/kg-day	N/A	N/A	N/A	3.5E-04	mg/kg-day	2.0E-01	mg/kg-day	1.8E-03
				trans-1,2-Dichloroethene	4.8E+00	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-02	mg/kg-day	N/A
				Trichloroethene	1.2E+01	ug/L	2.0E-06	mg/kg-day	4.0E-01	(mg/kg-day)$^{-1}$	8.0E-07	7.0E-05	mg/kg-day	3.0E-04	mg/kg-day	2.3E-01
				Vinyl chloride	3.4E+01	ug/L	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Xylenes (total)	6.8E+00	ug/L	4.0E-06	mg/kg-day	N/A	N/A	N/A	1.4E-04	mg/kg-day	2.0E-01	mg/kg-day	7.0E-04
				Acetophenone	1.2E+00	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-01	mg/kg-day	N/A
				4-Methylphenol	5.6E+00	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-03	mg/kg-day	N/A
				Naphthalene	4.6E+00	ug/L	3.1E-06	mg/kg-day	N/A	N/A	N/A	1.1E-04	mg/kg-day	2.0E-02	mg/kg-day	5.4E-03
				2-Methylnaphthalene	4.8E+00	ug/L	6.9E-06	mg/kg-day	N/A	N/A	N/A	2.4E-04	mg/kg-day	4.0E-03	mg/kg-day	6.1E-02
				Acenaphthylene	3.2E+00	ug/L	4.9E-06	mg/kg-day	N/A	N/A	N/A	1.7E-04	mg/kg-day	2.0E-02	mg/kg-day	8.5E-03
				Phenanthrene	4.7E+00	ug/L	1.3E-05	mg/kg-day	N/A	N/A	N/A	4.7E-04	mg/kg-day	2.0E-02	mg/kg-day	2.4E-02
				Benzo(a)Pyrene	1.5E-02	ug/L	3.3E-07	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	2.4E-06	1.2E-05	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	1.3E-02	ug/L	4.4E-07	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	3.2E-06	1.6E-05	mg/kg-day	N/A	N/A	N/A
				C9-C18 Aliphatic	1.3E+02	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-01	mg/kg-day	N/A
				C11-C22 Aromatic	1.2E+02	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
				C19-C36 Aliphatic	1.0E+03	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E+00	mg/kg-day	N/A
				C5-C8 Aliphatic	6.1E+01	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.0E-02	mg/kg-day	N/A
				Arsenic	6.9E+00	ug/L	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Chromium	1.0E+01	ug/L	4.1E-08	mg/kg-day	N/A	N/A	N/A	1.4E-06	mg/kg-day	2.0E-02	mg/kg-day	7.3E-05
				Lead	8.5E+00	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Manganese	4.6E+02	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9.6E-04	mg/kg-day	N/A
				Nickel	7.1E+00	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-04	mg/kg-day	N/A
				PCB TEQ*	1.4E-06	ug/L	2.7E-11	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	4.1E-06	9.6E-10	mg/kg-day	N/A	N/A	N/A
				Dieldrin	1.4E-02	ug/L	1.0E-08	mg/kg-day	1.6E+01	(mg/kg-day)$^{-1}$	1.6E-07	3.5E-07	mg/kg-day	5.0E-05	mg/kg-day	7.0E-03
				4,4'-DDD	1.9E-01	ug/L	1.3E-06	mg/kg-day	2.4E-01	(mg/kg-day)$^{-1}$	3.2E-07	4.7E-05	mg/kg-day	N/A	mg/kg-day	N/A
			Exp. Route Total								1E-05					6E-01

TABLE 3-7.10.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Off Site Resident
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Ground Water	Tap Water/Shower Head	Aberjona	Inhalation													
				1,1,1-Trichloroethane	3.1E-02	mg/m3	9.0E+00	ug/m3	N/A	N/A	N/A	4.0E-04	mg/m3	2.2E+00	mg/m3	1.8E-04
				1,1,2-Trichloro-1,2,2-trifluoroethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E+01	mg/m3	N/A
				1,1,2-Trichloroethane	1.5E-02	mg/m3	9.0E+00	ug/m3	1.6E-05	(ug/m3)-1	1.4E-04	2.0E-04	mg/m3	2.2E+00	mg/m3	9.0E-05
				1,1-Dichloroethane	7.0E-02	mg/m3	9.0E+00	ug/m3	N/A	N/A	N/A	9.2E-04	mg/m3	5.0E-01	mg/m3	1.8E-03
				1,1-Dichloroethene	1.7E-02	mg/m3	9.0E+00	ug/m3	N/A	N/A	N/A	2.3E-04	mg/m3	2.0E-01	mg/m3	1.2E-03
				1,2,4-Trichlorobenzene	1.7E-02	mg/m3	9.0E+00	ug/m3	N/A	N/A	N/A	2.2E-04	mg/m3	2.0E-01	mg/m3	1.1E-03
				1,2-Dichlorobenzene	1.8E-02	mg/m3	9.0E+00	ug/m3	N/A	N/A	N/A	2.4E-04	mg/m3	N/A	N/A	N/A
				1,3-Dichlorobenzene	1.8E-02	mg/m3	9.0E+00	ug/m3	N/A	N/A	N/A	2.4E-04	mg/m3	N/A	N/A	N/A
				1,4-Dichlorobenzene	2.8E-02	mg/m3	1.1E-02	ug/m3	N/A	N/A	N/A	3.7E-04	mg/m3	8.0E-01	mg/m3	4.7E-04
				2-Butanone (MEK)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E+00	mg/m3	N/A
				Acetone	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Benzene	1.5E-02	mg/m3	5.8E-03	ug/m3	7.8E-06	(ug/m3)-1	4.5E-08	2.0E-04	mg/m3	3.0E-02	mg/m3	6.7E-03
				Bromomethane	2.0E-02	mg/m3	7.6E-03	ug/m3	N/A	N/A	N/A	2.7E-04	mg/m3	5.0E-03	mg/m3	5.3E-02
				Carbon disulfide	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	7.0E-01	mg/m3	N/A
				Chlorobenzene	2.1E-02	mg/m3	8.0E-03	ug/m3	N/A	N/A	N/A	2.8E-04	mg/m3	6.0E-02	mg/m3	4.7E-03
				Chloroethane	2.9E-02	mg/m3	1.1E-02	ug/m3	N/A	N/A	N/A	3.8E-04	mg/m3	1.0E+01	mg/m3	3.8E-05
				Chloroform	1.8E-02	mg/m3	6.9E-03	ug/m3	2.3E-05	(ug/m3)-1	1.6E-07	2.4E-04	mg/m3	5.0E-02	mg/m3	4.9E-03
				cis-1,2-Dichloroethene	3.9E-01	mg/m3	1.5E-01	ug/m3	N/A	N/A	N/A	5.1E-03	mg/m3	2.0E-01	mg/m3	2.6E-02
				Cyclohexane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Dichlorodifluoromethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/m3	N/A
				Ethylbenzene	1.1E-02	mg/m3	4.0E-03	ug/m3	N/A	N/A	N/A	1.4E-04	mg/m3	1.0E+00	mg/m3	1.4E-04
				Isopropylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.0E-01	mg/m3	N/A
				Methyl cyclohexane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E+00	mg/m3	N/A
				Methyl tert-butyl ether	4.8E-02	mg/m3	1.8E-02	ug/m3	N/A	N/A	N/A	6.3E-04	mg/m3	3.0E+00	mg/m3	2.1E-04
				Methylene chloride	1.4E-02	mg/m3	5.4E-03	ug/m3	4.7E-07	(ug/m3)-1	2.5E-09	1.9E-04	mg/m3	3.0E+00	mg/m3	6.3E-05
				Tetrachloroethene	2.2E-02	mg/m3	8.3E-03	ug/m3	5.9E-06	(ug/m3)-1	4.9E-08	2.9E-04	mg/m3	N/A	N/A	N/A
				Toluene	1.1E-01	mg/m3	4.0E-02	ug/m3	N/A	N/A	N/A	1.4E-03	mg/m3	4.0E-01	mg/m3	3.5E-03
				trans-1,2-Dichloroethene	1.7E-02	mg/m3	6.6E-03	ug/m3	N/A	N/A	N/A	2.3E-04	mg/m3	2.0E-01	mg/m3	1.1E-03
				Trichloroethene	3.8E-02	mg/m3	1.4E-02	ug/m3	1.1E-04	(ug/m3)-1	1.6E-06	5.1E-04	mg/m3	4.0E-02	mg/m3	1.3E-02
				Vinyl chloride	1.5E-01	mg/m3	5.5E-02	ug/m3	8.8E-06	(ug/m3)-1	4.8E-07	1.9E-03	mg/m3	1.0E-01	mg/m3	1.9E-02
				Xylenes (total)	2.4E-02	mg/m3	8.9E-03	ug/m3	N/A	N/A	N/A	3.1E-04	mg/m3	1.0E-01	mg/m3	3.1E-03
				Acetophenone	8.7E-04	mg/m3	3.3E-04	ug/m3	N/A	N/A	N/A	1.2E-05	mg/m3	N/A	N/A	N/A
				Naphthalene	1.1E-02	mg/m3	4.0E-03	ug/m3	N/A	N/A	N/A	1.4E-04	mg/m3	3.0E-03	mg/m3	4.7E-02
				2-Methylnaphthalene	1.1E-02	mg/m3	4.2E-03	ug/m3	N/A	N/A	N/A	1.5E-04	mg/m3	N/A	N/A	N/A
				1,1'-Biphenyl	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Acenaphthylene	5.6E-03	mg/m3	2.1E-03	ug/m3	N/A	N/A	N/A	7.3E-05	mg/m3	3.0E-03	mg/m3	2.4E-02
				Acenaphthene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-03	mg/m3	N/A
				Fluorene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-03	mg/m3	N/A
				Phenanthrene	2.4E-03	mg/m3	9.0E-04	ug/m3	N/A	N/A	N/A	3.1E-05	mg/m3	3.0E-03	mg/m3	1.0E-02
				Anthracene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-03	mg/m3	N/A
				C9-C18 Aliphatic	4.0E-01	mg/m3	1.5E-01	ug/m3	N/A	N/A	N/A	5.2E-03	mg/m3	2.0E-01	mg/m3	2.6E-02
				C11-C22 Aromatic	2.9E-01	mg/m3	N/A	N/A	N/A	N/A	N/A	3.9E-03	mg/m3	5.0E-02	mg/m3	7.7E-02
				C5-C8 Aliphatic	2.3E-01	mg/m3	N/A	N/A	N/A	N/A	N/A	3.0E-03	mg/m3	2.0E-01	mg/m3	1.5E-02
				C9-C10 Aromatic	6.4E-02	mg/m3	N/A	N/A	N/A	N/A	N/A	8.5E-04	mg/m3	5.0E-02	mg/m3	1.7E-02
				C9-C12 Aliphatic	3.7E-02	mg/m3	N/A	N/A	N/A	N/A	N/A	4.9E-04	mg/m3	2.0E-01	mg/m3	2.4E-03
			Exp. Route Total								1E-04					4E-01
		Exposure Point Total									3E-04					8E+00
	Exposure Medium Total										N/A					N/A
Medium Total											N/A					N/A
											Total of Receptor Risks Across All Media					N/A
																Total of Receptor Hazards Across All Media

TABLE 3-7.11.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Aberjona Property	Ingestion													
				Vinyl chloride	N/A	N/A	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Trichloroethene	N/A	N/A	N/A	N/A	4.0E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Phenanthrene	7E-01	mg/kg	3.6E-08	mg/kg-day	N/A	N/A	N/A	1.1E-07	mg/kg-day	2.0E-02	mg/kg-day	5.3E-06
				Benzo(a)Anthracene	7E-01	mg/kg	3.7E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	2.7E-08	1.1E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	7E-01	mg/kg	3.9E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	2.8E-08	1.1E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	5E-01	mg/kg	2.7E-08	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	2.0E-09	7.8E-08	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	5E-01	mg/kg	2.7E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	2.0E-07	7.9E-08	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	5E-01	mg/kg	2.7E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	2.0E-08	7.9E-08	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	6E-03	mg/kg	3.2E-10	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	2.4E-09	9.5E-10	mg/kg-day	N/A	N/A	N/A
				Benzo(g,h,i)perylene	6E-01	mg/kg	3.1E-08	mg/kg-day	N/A	N/A	N/A	9.1E-08	mg/kg-day	2.0E-02	mg/kg-day	4.5E-06
				Antimony	2E+00	mg/kg	9.4E-08	mg/kg-day	N/A	N/A	N/A	2.7E-07	mg/kg-day	4.0E-04	mg/kg-day	6.9E-04
				Arsenic	6E+00	mg/kg	3.0E-07	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	4.5E-07	8.7E-07	mg/kg-day	3.0E-04	mg/kg-day	2.9E-03
				Cadmium	1E+01	mg/kg	5.1E-07	mg/kg-day	N/A	N/A	N/A	1.5E-06	mg/kg-day	1.0E-03	mg/kg-day	1.5E-03
				Copper	1E+02	mg/kg	5.3E-06	mg/kg-day	N/A	N/A	N/A	1.5E-05	mg/kg-day	3.0E-02	mg/kg-day	5.1E-04
				Lead	1E+03	mg/kg	6.0E-05	mg/kg-day	N/A	N/A	N/A	1.7E-04	mg/kg-day	N/A	N/A	N/A
				Manganese	3E+02	mg/kg	1.4E-05	mg/kg-day	N/A	N/A	N/A	4.2E-05	mg/kg-day	7.0E-02	mg/kg-day	6.0E-04
				Mercury	9E-02	mg/kg	5.0E-09	mg/kg-day	N/A	N/A	N/A	1.4E-08	mg/kg-day	1.0E-04	mg/kg-day	1.4E-04
				Nickel	6E+01	mg/kg	3.4E-06	mg/kg-day	N/A	N/A	N/A	9.9E-06	mg/kg-day	2.0E-02	mg/kg-day	4.9E-04
				Thallium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-05	mg/kg-day	N/A
				Aroclor 1242	1E-01	mg/kg	5.9E-09	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	1.2E-08	1.7E-08	mg/kg-day	2.0E-05	mg/kg-day	8.6E-04
				Aroclor 1248	N/A	N/A	N/A	N/A	2.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1254	2E-01	mg/kg	8.0E-09	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	1.6E-08	2.3E-08	mg/kg-day	2.0E-05	mg/kg-day	1.2E-03
				Aroclor 1260	8E-02	mg/kg	4.1E-09	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	8.2E-09	1.2E-08	mg/kg-day	2.0E-05	mg/kg-day	6.0E-04
				PCB TEQ*	2E-06	mg/kg	1.1E-13	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	1.7E-08	3.4E-13	mg/kg-day	N/A	N/A	N/A
				C11-C22 Aromatic	2E+01	mg/kg	9.4E-07	mg/kg-day	N/A	N/A	N/A	2.7E-06	mg/kg-day	3.0E-02	mg/kg-day	9.2E-05
			Exp. Route Total								8E-07					1E-02

TABLE 3-7.11.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil (Cont.)	Surface Soil (Cont.)	Aberjona Property	Dermal													
				Vinyl chloride	N/A	N/A	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Trichloroethene	N/A	N/A	N/A	N/A	4.0E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Phenanthrene	7E-01	mg/kg	3.8E-08	mg/kg-day	N/A	N/A	N/A	1.1E-07	mg/kg-day	2.0E-02	mg/kg-day	5.5E-06
				Benzo(a)Anthracene	7E-01	mg/kg	3.8E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	2.8E-08	1.1E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	7E-01	mg/kg	4.0E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	2.9E-08	1.2E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	5E-01	mg/kg	2.8E-08	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	2.0E-09	8.1E-08	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	5E-01	mg/kg	2.8E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	2.0E-07	8.1E-08	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	5E-01	mg/kg	2.8E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	2.0E-08	8.2E-08	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	6E-03	mg/kg	3.4E-10	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	2.5E-09	9.8E-10	mg/kg-day	N/A	N/A	N/A
				Benzo(g,h,i)perylene	6E-01	mg/kg	3.2E-08	mg/kg-day	N/A	N/A	N/A	9.4E-08	mg/kg-day	2.0E-02	mg/kg-day	4.7E-06
				Antimony	2E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-05	mg/kg-day	N/A
				Arsenic	6E+00	mg/kg	7.1E-08	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	1.1E-07	2.1E-07	mg/kg-day	3.0E-04	mg/kg-day	6.9E-04
				Cadmium	1E+01	mg/kg	4.1E-09	mg/kg-day	N/A	N/A	N/A	1.2E-08	mg/kg-day	2.5E-05	mg/kg-day	4.8E-04
				Copper	1E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
				Lead	1E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Manganese	3E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.8E-03	mg/kg-day	N/A
				Mercury	9E-02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A
				Nickel	6E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-04	mg/kg-day	N/A
				Thallium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-05	mg/kg-day	N/A
				Aroclor 1242	1E-01	mg/kg	6.6E-09	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	1.3E-08	1.9E-08	mg/kg-day	2.0E-05	mg/kg-day	9.6E-04
				Aroclor 1248	N/A	N/A	N/A	N/A	2.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1254	2E-01	mg/kg	9.0E-09	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	1.8E-08	2.6E-08	mg/kg-day	2.0E-05	mg/kg-day	1.3E-03
				Aroclor 1260	8E-02	mg/kg	4.6E-09	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	9.2E-09	1.3E-08	mg/kg-day	2.0E-05	mg/kg-day	6.7E-04
				PCB TEQ*	2E-06	mg/kg	1.3E-13	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	1.9E-08	3.7E-13	mg/kg-day	N/A	N/A	N/A
				C11-C22 Aromatic	2E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
			Exp. Route Total								5E-07					4E-03
		Exposure Point Total									1E-06					1E-02

TABLE 3-7.11.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil (Cont.)	Surface Soil (Cont.)	Whitney Property	Ingestion													
				Vinyl chloride	1E-01	mg/kg	5.6E-09	mg/kg-day	1.5E+00	(mg/kg-day) $^{-1}$	8.4E-09	1.6E-08	mg/kg-day	3.0E-03	mg/kg-day	5.5E-06
				Trichloroethene	1E-03	mg/kg	7.3E-11	mg/kg-day	4.0E-01	(mg/kg-day) $^{-1}$	2.9E-11	2.1E-10	mg/kg-day	3.0E-04	mg/kg-day	7.1E-07
				Phenanthrene	7E+01	mg/kg	3.6E-06	mg/kg-day	N/A	N/A	N/A	1.0E-05	mg/kg-day	2.0E-02	mg/kg-day	5.2E-04
				Benzo(a)Anthracene	4E+01	mg/kg	2.0E-06	mg/kg-day	7.3E-01	(mg/kg-day) $^{-1}$	1.5E-06	5.8E-06	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	4E+01	mg/kg	2.1E-06	mg/kg-day	7.3E-01	(mg/kg-day) $^{-1}$	1.5E-06	6.1E-06	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	2E+01	mg/kg	9.4E-07	mg/kg-day	7.3E-02	(mg/kg-day) $^{-1}$	6.9E-08	2.7E-06	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	3E+01	mg/kg	1.5E-06	mg/kg-day	7.3E+00	(mg/kg-day) $^{-1}$	1.1E-05	4.4E-06	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	1E+01	mg/kg	5.8E-07	mg/kg-day	7.3E-01	(mg/kg-day) $^{-1}$	4.2E-07	1.7E-06	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	3E+00	mg/kg	1.6E-07	mg/kg-day	7.3E+00	(mg/kg-day) $^{-1}$	1.1E-06	4.5E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(g,h,i)perylene	8E+00	mg/kg	4.3E-07	mg/kg-day	N/A	N/A	N/A	1.3E-06	mg/kg-day	2.0E-02	mg/kg-day	6.3E-05
				Antimony	3E+00	mg/kg	1.5E-07	mg/kg-day	N/A	N/A	N/A	4.3E-07	mg/kg-day	4.0E-04	mg/kg-day	1.1E-03
				Arsenic	6E+00	mg/kg	3.0E-07	mg/kg-day	1.5E+00	(mg/kg-day) $^{-1}$	4.4E-07	8.6E-07	mg/kg-day	3.0E-04	mg/kg-day	2.9E-03
				Cadmium	3E+00	mg/kg	1.5E-07	mg/kg-day	N/A	N/A	N/A	4.3E-07	mg/kg-day	1.0E-03	mg/kg-day	4.3E-04
				Copper	1E+02	mg/kg	6.6E-06	mg/kg-day	N/A	N/A	N/A	1.9E-05	mg/kg-day	3.0E-02	mg/kg-day	6.4E-04
				Lead	7E+02	mg/kg	3.8E-05	mg/kg-day	N/A	N/A	N/A	1.1E-04	mg/kg-day	N/A	N/A	N/A
				Manganese	3E+02	mg/kg	1.4E-05	mg/kg-day	N/A	N/A	N/A	4.0E-05	mg/kg-day	7.0E-02	mg/kg-day	5.7E-04
				Mercury	5E-01	mg/kg	2.9E-08	mg/kg-day	N/A	N/A	N/A	8.4E-08	mg/kg-day	1.0E-04	mg/kg-day	8.4E-04
				Nickel	3E+01	mg/kg	1.4E-06	mg/kg-day	N/A	N/A	N/A	4.0E-06	mg/kg-day	2.0E-02	mg/kg-day	2.0E-04
				Thallium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-05	mg/kg-day	N/A
				Aroclor 1242	4E-01	mg/kg	2.0E-08	mg/kg-day	2.0E+00	(mg/kg-day) $^{-1}$	4.0E-08	5.8E-08	mg/kg-day	2.0E-05	mg/kg-day	2.9E-03
				Aroclor 1248	9E-02	mg/kg	5.0E-09	mg/kg-day	2.0E+00	(mg/kg-day) $^{-1}$	9.9E-09	1.4E-08	mg/kg-day	2.0E-05	mg/kg-day	7.2E-04
				Aroclor 1254	4E+01	mg/kg	2.2E-06	mg/kg-day	2.0E+00	(mg/kg-day) $^{-1}$	4.4E-06	6.5E-06	mg/kg-day	2.0E-05	mg/kg-day	3.2E-01
				Aroclor 1260	1E+01	mg/kg	6.1E-07	mg/kg-day	2.0E+00	(mg/kg-day) $^{-1}$	1.2E-06	1.8E-06	mg/kg-day	2.0E-05	mg/kg-day	8.9E-02
				PCB TEQ*	2E-04	mg/kg	1.0E-11	mg/kg-day	1.5E+05	(mg/kg-day) $^{-1}$	1.5E-06	3.0E-11	mg/kg-day	N/A	N/A	N/A
				C11-C22 Aromatic	5E+02	mg/kg	2.4E-05	mg/kg-day	N/A	N/A	N/A	7.0E-05	mg/kg-day	3.0E-02	mg/kg-day	2.3E-03
			Exp. Route Total								2E-05					4E-01

TABLE 3-7.11.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil (Cont.)	Surface Soil (Cont.)	Whitney Property	Dermal													
				Vinyl chloride	1E-01	mg/kg	N/A	N/A	1.5E+00	(mg/kg-day) $^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Trichloroethene	1E-03	mg/kg	N/A	N/A	4.0E-01	(mg/kg-day) $^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Phenanthrene	7E+01	mg/kg	3.7E-06	mg/kg-day	N/A	N/A	N/A	1.1E-05	mg/kg-day	2.0E-02	mg/kg-day	5.4E-04
				Benzo(a)Anthracene	4E+01	mg/kg	2.1E-06	mg/kg-day	7.3E-01	(mg/kg-day) $^{-1}$	1.5E-06	6.0E-06	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	4E+01	mg/kg	2.2E-06	mg/kg-day	7.3E-01	(mg/kg-day) $^{-1}$	1.6E-06	6.3E-06	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	2E+01	mg/kg	9.8E-07	mg/kg-day	7.3E-02	(mg/kg-day) $^{-1}$	7.1E-08	2.9E-06	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	3E+01	mg/kg	1.6E-06	mg/kg-day	7.3E+00	(mg/kg-day) $^{-1}$	1.1E-05	4.6E-06	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	1E+01	mg/kg	6.0E-07	mg/kg-day	7.3E-01	(mg/kg-day) $^{-1}$	4.4E-07	1.7E-06	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	3E+00	mg/kg	1.6E-07	mg/kg-day	7.3E+00	(mg/kg-day) $^{-1}$	1.2E-06	4.7E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(g,h,i)perylene	8E+00	mg/kg	4.4E-07	mg/kg-day	N/A	N/A	N/A	1.3E-06	mg/kg-day	2.0E-02	mg/kg-day	6.5E-05
				Antimony	3E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-05	mg/kg-day	N/A
				Arsenic	6E+00	mg/kg	7.1E-08	mg/kg-day	1.5E+00	(mg/kg-day) $^{-1}$	1.1E-07	2.1E-07	mg/kg-day	3.0E-04	mg/kg-day	6.9E-04
				Cadmium	3E+00	mg/kg	1.2E-09	mg/kg-day	N/A	N/A	N/A	3.5E-09	mg/kg-day	2.5E-05	mg/kg-day	1.4E-04
				Copper	1E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
				Lead	7E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Manganese	3E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.8E-03	mg/kg-day	N/A
				Mercury	5E-01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A
				Nickel	3E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-04	mg/kg-day	N/A
				Thallium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-05	mg/kg-day	N/A
				Aroclor 1242	4E-01	mg/kg	2.2E-08	mg/kg-day	2.0E+00	(mg/kg-day) $^{-1}$	4.5E-08	6.5E-08	mg/kg-day	2.0E-05	mg/kg-day	3.3E-03
				Aroclor 1248	9E-02	mg/kg	5.5E-09	mg/kg-day	2.0E+00	(mg/kg-day) $^{-1}$	1.1E-08	1.6E-08	mg/kg-day	2.0E-05	mg/kg-day	8.1E-04
				Aroclor 1254	4E+01	mg/kg	2.5E-06	mg/kg-day	2.0E+00	(mg/kg-day) $^{-1}$	5.0E-06	7.2E-06	mg/kg-day	2.0E-05	mg/kg-day	3.6E-01
				Aroclor 1260	1E+01	mg/kg	6.8E-07	mg/kg-day	2.0E+00	(mg/kg-day) $^{-1}$	1.4E-06	2.0E-06	mg/kg-day	2.0E-05	mg/kg-day	1.0E-01
				PCB TEQ*	2E-04	mg/kg	1.1E-11	mg/kg-day	1.5E+05	(mg/kg-day) $^{-1}$	1.7E-06	3.3E-11	mg/kg-day	N/A	N/A	N/A
				C11-C22 Aromatic	5E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
			Exp. Route Total								2E-05					5E-01
		Exposure Point Total									5E-05					9E-01

TABLE 3-7.11.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil (Cont.)	Surface Soil (Cont.)	Murphy Property	Ingestion													
				Vinyl chloride	N/A	N/A	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Trichloroethene	4E-01	mg/kg	2.0E-08	mg/kg-day	4.0E-01	(mg/kg-day)$^{-1}$	7.9E-09	5.8E-08	mg/kg-day	3.0E-04	mg/kg-day	1.9E-04
				Phenanthrene	6E+00	mg/kg	2.9E-07	mg/kg-day	N/A	N/A	N/A	8.5E-07	mg/kg-day	2.0E-02	mg/kg-day	4.3E-05
				Benzo(a)Anthracene	2E+00	mg/kg	1.3E-07	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	9.4E-08	3.7E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	2E+00	mg/kg	1.2E-07	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	8.8E-08	3.5E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	9E-01	mg/kg	4.9E-08	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	3.5E-09	1.4E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	2E+00	mg/kg	8.1E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	5.9E-07	2.4E-07	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	7E+00	mg/kg	3.4E-07	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	2.5E-07	9.9E-07	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	2E-01	mg/kg	1.1E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	8.0E-08	3.2E-08	mg/kg-day	N/A	N/A	N/A
				Benzo(g,h,i)perylene	1E+00	mg/kg	7.1E-08	mg/kg-day	N/A	N/A	N/A	2.1E-07	mg/kg-day	2.0E-02	mg/kg-day	1.0E-05
				Antimony	4E+00	mg/kg	1.9E-07	mg/kg-day	N/A	N/A	N/A	5.5E-07	mg/kg-day	4.0E-04	mg/kg-day	1.4E-03
				Arsenic	8E+00	mg/kg	4.2E-07	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	6.4E-07	1.2E-06	mg/kg-day	3.0E-04	mg/kg-day	4.1E-03
				Cadmium	3E+00	mg/kg	1.5E-07	mg/kg-day	N/A	N/A	N/A	4.5E-07	mg/kg-day	1.0E-03	mg/kg-day	4.5E-04
				Copper	4E+01	mg/kg	1.9E-06	mg/kg-day	N/A	N/A	N/A	5.4E-06	mg/kg-day	3.0E-02	mg/kg-day	1.8E-04
				Lead	8E+02	mg/kg	4.3E-05	mg/kg-day	N/A	N/A	N/A	1.3E-04	mg/kg-day	N/A	N/A	N/A
				Manganese	4E+02	mg/kg	2.2E-05	mg/kg-day	N/A	N/A	N/A	6.3E-05	mg/kg-day	7.0E-02	mg/kg-day	9.0E-04
				Mercury	6E-01	mg/kg	3.0E-08	mg/kg-day	N/A	N/A	N/A	8.8E-08	mg/kg-day	1.0E-04	mg/kg-day	8.8E-04
				Nickel	2E+01	mg/kg	8.8E-07	mg/kg-day	N/A	N/A	N/A	2.6E-06	mg/kg-day	2.0E-02	mg/kg-day	1.3E-04
				Thallium	6E+00	mg/kg	3.0E-07	mg/kg-day	N/A	N/A	N/A	8.7E-07	mg/kg-day	8.0E-05	mg/kg-day	1.1E-02
				Aroclor 1242	N/A	N/A	N/A	N/A	2.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1248	N/A	N/A	N/A	N/A	2.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1254	2E+00	mg/kg	1.2E-07	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	2.3E-07	3.4E-07	mg/kg-day	2.0E-05	mg/kg-day	1.7E-02
				Aroclor 1260	5E-02	mg/kg	2.6E-09	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	5.1E-09	7.5E-09	mg/kg-day	2.0E-05	mg/kg-day	3.7E-04
				PCB TEQ*	6E-08	mg/kg	3.1E-15	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	4.6E-10	8.9E-15	mg/kg-day	N/A	N/A	N/A
				C11-C22 Aromatic	4E+03	mg/kg	1.9E-04	mg/kg-day	N/A	N/A	N/A	5.7E-04	mg/kg-day	3.0E-02	mg/kg-day	1.9E-02
			Exp. Route Total								2E-06					6E-02

TABLE 3-7.11.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil (Cont.)	Surface Soil (Cont.)	Murphy Property	Dermal													
				Vinyl chloride	N/A	N/A	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Trichloroethene	4E-01	mg/kg	N/A	N/A	4.0E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Phenanthrene	6E+00	mg/kg	3.0E-07	mg/kg-day	N/A	N/A	N/A	8.9E-07	mg/kg-day	2.0E-02	mg/kg-day	4.4E-05
				Benzo(a)Anthracene	2E+00	mg/kg	1.3E-07	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	9.7E-08	3.9E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	2E+00	mg/kg	1.2E-07	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	9.1E-08	3.6E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	9E-01	mg/kg	5.0E-08	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	3.7E-09	1.5E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	2E+00	mg/kg	8.4E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	6.2E-07	2.5E-07	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	7E+00	mg/kg	3.5E-07	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	2.6E-07	1.0E-06	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	2E-01	mg/kg	1.1E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	8.3E-08	3.3E-08	mg/kg-day	N/A	N/A	N/A
				Benzo(g,h,i)perylene	1E+00	mg/kg	7.4E-08	mg/kg-day	N/A	N/A	N/A	2.1E-07	mg/kg-day	2.0E-02	mg/kg-day	1.1E-05
				Antimony	4E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-05	mg/kg-day	N/A
				Arsenic	8E+00	mg/kg	1.0E-07	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	1.5E-07	3.0E-07	mg/kg-day	3.0E-04	mg/kg-day	9.9E-04
				Cadmium	3E+00	mg/kg	1.2E-09	mg/kg-day	N/A	N/A	N/A	3.6E-09	mg/kg-day	2.5E-05	mg/kg-day	1.4E-04
				Copper	4E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
				Lead	8E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Manganese	4E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.8E-03	mg/kg-day	N/A
				Mercury	6E-01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A
				Nickel	2E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-04	mg/kg-day	N/A
				Thallium	6E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-05	mg/kg-day	N/A
				Aroclor 1242	N/A	N/A	N/A	N/A	2.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1248	N/A	N/A	N/A	N/A	2.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1254	2E+00	mg/kg	1.3E-07	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	2.6E-07	3.8E-07	mg/kg-day	2.0E-05	mg/kg-day	1.9E-02
				Aroclor 1260	5E-02	mg/kg	2.9E-09	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	5.7E-09	8.4E-09	mg/kg-day	2.0E-05	mg/kg-day	4.2E-04
				PCB TEQ*	6E-08	mg/kg	3.4E-15	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	5.1E-10	1.0E-14	mg/kg-day	N/A	N/A	N/A
				C11-C22 Aromatic	4E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
			Exp. Route Total								2E-06					2E-02
		Exposure Point Total									4E-06					8E-02
	Exposure Medium Total										N/A					N/A
Medium Total											N/A					N/A

TABLE 3-7.11.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Subsurface Soil	Subsurface Soil	Aberjona Property	Ingestion													
				1,2,4-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/kg-day	N/A
				1,3,5-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/kg-day	N/A
				Naphthalene	1E+01	mg/kg	6.2E-07	mg/kg-day	N/A	N/A	N/A	1.8E-06	mg/kg-day	2.0E-02	mg/kg-day	9.0E-05
				Vinyl chloride	N/A	N/A	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Methylene chloride	N/A	N/A	N/A	N/A	7.5E-03	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	6.0E-02	mg/kg-day	N/A
				cis-1,2-Dichloroethene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-02	mg/kg-day	N/A
				Trichloroethene	N/A	N/A	N/A	N/A	4.0E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Xylenes (total)	3E+00	mg/kg	1.3E-07	mg/kg-day	N/A	N/A	N/A	3.9E-07	mg/kg-day	2.0E-01	mg/kg-day	2.0E-06
				2-Methylnaphthalene	1E+01	mg/kg	7.7E-07	mg/kg-day	N/A	N/A	N/A	2.2E-06	mg/kg-day	4.0E-03	mg/kg-day	5.6E-04
				2,4,6-Trichlorophenol	N/A	N/A	N/A	N/A	1.1E-02	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A
				Acenaphthylene	3E+00	mg/kg	1.7E-07	mg/kg-day	N/A	N/A	N/A	5.0E-07	mg/kg-day	2.0E-02	mg/kg-day	2.5E-05
				Phenanthrene	2E+00	mg/kg	1.3E-07	mg/kg-day	N/A	N/A	N/A	3.7E-07	mg/kg-day	2.0E-02	mg/kg-day	1.8E-05
				Benzo(a)Anthracene	3E-02	mg/kg	1.3E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	9.6E-10	3.8E-09	mg/kg-day	N/A	N/A	N/A
				Bis(2-ethylhexyl) phthalate	N/A	N/A	N/A	N/A	1.4E-02	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-02	mg/kg-day	N/A
				Benzo(b)Fluoranthene	5E-02	mg/kg	2.7E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.9E-09	7.8E-09	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	4E+00	mg/kg	1.9E-07	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	1.4E-08	5.6E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	2E+00	mg/kg	9.3E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	6.8E-07	2.7E-07	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	2E+00	mg/kg	1.2E-07	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	8.5E-08	3.4E-07	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	1E+00	mg/kg	7.2E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	5.3E-07	2.1E-07	mg/kg-day	N/A	N/A	N/A
				Antimony	4E+00	mg/kg	2.0E-07	mg/kg-day	N/A	N/A	N/A	5.7E-07	mg/kg-day	4.0E-04	mg/kg-day	1.4E-03
				Arsenic	2E+01	mg/kg	1.1E-06	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	1.6E-06	3.2E-06	mg/kg-day	3.0E-04	mg/kg-day	1.1E-02
				Barium	2E+02	mg/kg	8.1E-06	mg/kg-day	N/A	N/A	N/A	2.4E-05	mg/kg-day	7.0E-02	mg/kg-day	3.4E-04
				Cadmium	3E+00	mg/kg	1.7E-07	mg/kg-day	N/A	N/A	N/A	5.0E-07	mg/kg-day	1.0E-03	mg/kg-day	5.0E-04
				Lead	2E+02	mg/kg	9.7E-06	mg/kg-day	N/A	N/A	N/A	2.8E-05	mg/kg-day	N/A	N/A	N/A
				Manganese	3E+02	mg/kg	1.4E-05	mg/kg-day	N/A	N/A	N/A	4.0E-05	mg/kg-day	7.0E-02	mg/kg-day	5.7E-04
				Mercury	5E-01	mg/kg	2.5E-08	mg/kg-day	N/A	N/A	N/A	7.4E-08	mg/kg-day	1.0E-04	mg/kg-day	7.4E-04
				Thallium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-05	mg/kg-day	N/A
				alpha-Chlordane	4E-03	mg/kg	2.0E-10	mg/kg-day	3.5E-01	(mg/kg-day)$^{-1}$	7.2E-11	6.0E-10	mg/kg-day	5.0E-04	mg/kg-day	1.2E-06
				gamma-Chlordane	5E-03	mg/kg	2.4E-10	mg/kg-day	3.5E-01	(mg/kg-day)$^{-1}$	8.5E-11	7.1E-10	mg/kg-day	5.0E-04	mg/kg-day	1.4E-06
				4,4'-DDE	5E-03	mg/kg	2.6E-10	mg/kg-day	3.4E-01	(mg/kg-day)$^{-1}$	9.0E-11	7.7E-10	mg/kg-day	3.0E-04	mg/kg-day	2.6E-06
				4,4'-DDT	2E-02	mg/kg	8.6E-10	mg/kg-day	3.4E-01	(mg/kg-day)$^{-1}$	2.9E-10	2.5E-09	mg/kg-day	5.0E-04	mg/kg-day	5.0E-06
				Aroclor 1242	2E-01	mg/kg	8.4E-09	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	1.7E-08	2.5E-08	mg/kg-day	2.0E-05	mg/kg-day	1.2E-03
				Aroclor 1248	N/A	N/A	N/A	N/A	2.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1254	N/A	N/A	N/A	N/A	2.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1260	1E-01	mg/kg	7.2E-09	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	1.4E-08	2.1E-08	mg/kg-day	2.0E-05	mg/kg-day	1.0E-03
				PCB TEQ*	8E-06	mg/kg	4.0E-13	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	6.0E-08	1.2E-12	mg/kg-day	N/A	N/A	N/A
				C5-C8 Aliphatic	2E+01	mg/kg	9.9E-07	mg/kg-day	N/A	N/A	N/A	2.9E-06	mg/kg-day	4.0E-02	mg/kg-day	7.3E-05
				C9-C10 Aromatic	2E+02	mg/kg	9.3E-06	mg/kg-day	N/A	N/A	N/A	2.7E-05	mg/kg-day	3.0E-02	mg/kg-day	9.0E-04
				C9-C18 Aliphatic	2E+03	mg/kg	1.3E-04	mg/kg-day	N/A	N/A	N/A	3.7E-04	mg/kg-day	1.0E-01	mg/kg-day	3.7E-03
				C19-C36 Aliphatic	6E+02	mg/kg	3.3E-05	mg/kg-day	N/A	N/A	N/A	9.8E-05	mg/kg-day	2.0E+00	mg/kg-day	4.9E-05
				C11-C22 Aromatic	2E+03	mg/kg	9.0E-05	mg/kg-day	N/A	N/A	N/A	2.6E-04	mg/kg-day	3.0E-02	mg/kg-day	8.8E-03
			Exp. Route Total								3E-06					3E-02

TABLE 3-7.11.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Subsurface Soil (Cont.)	Subsurface Soil (Cont.)	Aberjona Property	Dermal													
				1,2,4-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/kg-day	N/A
				1,3,5-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/kg-day	N/A
				Naphthalene	1E+01	mg/kg	6.4E-07	mg/kg-day	N/A	N/A	N/A	1.9E-06	mg/kg-day	2.0E-02	mg/kg-day	9.3E-05
				Vinyl chloride	N/A	N/A	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Methylene chloride	N/A	N/A	N/A	N/A	7.5E-03	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	6.0E-02	mg/kg-day	N/A
				cis-1,2-Dichloroethene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-02	mg/kg-day	N/A
				Trichloroethene	N/A	N/A	N/A	N/A	4.0E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Xylenes (total)	3E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/kg-day	N/A
				2-Methylnaphthalene	1E+01	mg/kg	8.0E-07	mg/kg-day	N/A	N/A	N/A	2.3E-06	mg/kg-day	4.0E-03	mg/kg-day	5.8E-04
				2,4,6-Trichlorophenol	N/A	N/A	N/A	N/A	1.1E-02	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A
				Acenaphthylene	3E+00	mg/kg	1.8E-07	mg/kg-day	N/A	N/A	N/A	5.2E-07	mg/kg-day	2.0E-02	mg/kg-day	2.6E-05
				Phenanthrene	2E+00	mg/kg	1.3E-07	mg/kg-day	N/A	N/A	N/A	3.8E-07	mg/kg-day	2.0E-02	mg/kg-day	1.9E-05
				Benzo(a)Anthracene	3E-02	mg/kg	1.4E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	9.9E-10	4.0E-09	mg/kg-day	N/A	N/A	N/A
				Bis(2-ethylhexyl) phthalate	N/A	N/A	N/A	N/A	1.4E-02	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-02	mg/kg-day	N/A
				Benzo(b)Fluoranthene	5E-02	mg/kg	2.8E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	2.0E-09	8.1E-09	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	4E+00	mg/kg	2.0E-07	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	1.4E-08	5.8E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	2E+00	mg/kg	9.6E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	7.0E-07	2.8E-07	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	2E+00	mg/kg	1.2E-07	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	8.8E-08	3.5E-07	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	1E+00	mg/kg	7.5E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	5.5E-07	2.2E-07	mg/kg-day	N/A	N/A	N/A
				Antimony	4E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-05	mg/kg-day	N/A
				Arsenic	2E+01	mg/kg	2.6E-07	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	3.9E-07	7.6E-07	mg/kg-day	3.0E-04	mg/kg-day	2.5E-03
				Barium	2E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.9E-03	mg/kg-day	N/A
				Cadmium	3E+00	mg/kg	1.4E-09	mg/kg-day	N/A	N/A	N/A	4.0E-09	mg/kg-day	2.5E-05	mg/kg-day	1.6E-04
				Lead	2E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Manganese	3E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.8E-03	mg/kg-day	N/A
				Mercury	5E-01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A
				Thallium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-05	mg/kg-day	N/A
				alpha-Chlordane	4E-03	mg/kg	6.5E-11	mg/kg-day	3.5E-01	(mg/kg-day)$^{-1}$	2.3E-11	1.9E-10	mg/kg-day	5.0E-04	mg/kg-day	3.8E-07
				gamma-Chlordane	5E-03	mg/kg	7.8E-11	mg/kg-day	3.5E-01	(mg/kg-day)$^{-1}$	2.7E-11	2.3E-10	mg/kg-day	5.0E-04	mg/kg-day	4.5E-07
				4,4'-DDE	5E-03	mg/kg	N/A	N/A	3.4E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				4,4'-DDT	2E-02	mg/kg	2.1E-10	mg/kg-day	3.4E-01	(mg/kg-day)$^{-1}$	7.0E-11	6.0E-10	mg/kg-day	5.0E-04	mg/kg-day	1.2E-06
				Aroclor 1242	2E-01	mg/kg	9.4E-09	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	1.9E-08	2.7E-08	mg/kg-day	2.0E-05	mg/kg-day	1.4E-03
				Aroclor 1248	N/A	N/A	N/A	N/A	2.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1254	N/A	N/A	N/A	N/A	2.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1260	1E-01	mg/kg	8.0E-09	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	1.6E-08	2.3E-08	mg/kg-day	2.0E-05	mg/kg-day	1.2E-03
				PCB TEQ*	8E-06	mg/kg	4.5E-13	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	6.7E-08	1.3E-12	mg/kg-day	N/A	N/A	N/A
				C5-C8 Aliphatic	2E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.0E-02	mg/kg-day	N/A
				C9-C10 Aromatic	2E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
				C9-C18 Aliphatic	2E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-01	mg/kg-day	N/A
				C19-C36 Aliphatic	6E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E+00	mg/kg-day	N/A
				C11-C22 Aromatic	2E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
			Exp. Route Total								2E-06					6E-03
		Exposure Point Total									5E-06					4E-02

TABLE 3-7.11.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Subsurface Soil (Cont.)	Subsurface Soil (Cont.)	Whitney Property	Ingestion													
				1,2,4-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/kg-day	N/A
				1,3,5-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/kg-day	N/A
				Naphthalene	1E+01	mg/kg	6.3E-07	mg/kg-day	N/A	N/A	N/A	1.8E-06	mg/kg-day	2.0E-02	mg/kg-day	9.2E-05
				Vinyl chloride	3E-01	mg/kg	1.8E-08	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	2.7E-08	5.2E-08	mg/kg-day	3.0E-03	mg/kg-day	1.7E-05
				Methylene chloride	3E+00	mg/kg	1.4E-07	mg/kg-day	7.5E-03	(mg/kg-day)$^{-1}$	1.1E-09	4.1E-07	mg/kg-day	6.0E-02	mg/kg-day	6.8E-06
				cis-1,2-Dichloroethene	4E-01	mg/kg	2.0E-08	mg/kg-day	N/A	N/A	N/A	5.8E-08	mg/kg-day	1.0E-02	mg/kg-day	5.8E-06
				Trichloroethene	5E-01	mg/kg	2.6E-08	mg/kg-day	4.0E-01	(mg/kg-day)$^{-1}$	1.0E-08	7.5E-08	mg/kg-day	3.0E-04	mg/kg-day	2.5E-04
				Xylenes (total)	3E+00	mg/kg	1.7E-07	mg/kg-day	N/A	N/A	N/A	5.1E-07	mg/kg-day	2.0E-01	mg/kg-day	2.5E-06
				2-Methylnaphthalene	2E+01	mg/kg	1.0E-06	mg/kg-day	N/A	N/A	N/A	3.1E-06	mg/kg-day	4.0E-03	mg/kg-day	7.6E-04
				2,4,6-Trichlorophenol	1E+00	mg/kg	7.3E-08	mg/kg-day	1.1E-02	(mg/kg-day)$^{-1}$	8.1E-10	2.1E-07	mg/kg-day	1.0E-04	mg/kg-day	2.1E-03
				Acenaphthylene	2E-02	mg/kg	9.9E-10	mg/kg-day	N/A	N/A	N/A	2.9E-09	mg/kg-day	2.0E-02	mg/kg-day	1.5E-07
				Phenanthrene	3E+00	mg/kg	1.5E-07	mg/kg-day	N/A	N/A	N/A	4.5E-07	mg/kg-day	2.0E-02	mg/kg-day	2.2E-05
				Benzo(a)Anthracene	1E+00	mg/kg	6.4E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	4.6E-08	1.9E-07	mg/kg-day	N/A	N/A	N/A
				Bis(2-ethylhexyl) phthalate	3E+02	mg/kg	1.5E-05	mg/kg-day	1.4E-02	(mg/kg-day)$^{-1}$	2.2E-07	4.5E-05	mg/kg-day	2.0E-02	mg/kg-day	2.2E-03
				Benzo(b)Fluoranthene	1E+00	mg/kg	7.8E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	5.7E-08	2.3E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	1E+00	mg/kg	5.2E-08	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	3.8E-09	1.5E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	1E+00	mg/kg	6.4E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	4.7E-07	1.9E-07	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	9E-01	mg/kg	4.6E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	3.3E-08	1.3E-07	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	2E-01	mg/kg	1.2E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	8.9E-08	3.5E-08	mg/kg-day	N/A	N/A	N/A
				Antimony	6E+00	mg/kg	3.4E-07	mg/kg-day	N/A	N/A	N/A	9.9E-07	mg/kg-day	4.0E-04	mg/kg-day	2.5E-03
				Arsenic	3E+01	mg/kg	1.5E-06	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	2.2E-06	4.3E-06	mg/kg-day	3.0E-04	mg/kg-day	1.4E-02
				Barium	2E+02	mg/kg	8.7E-06	mg/kg-day	N/A	N/A	N/A	2.5E-05	mg/kg-day	7.0E-02	mg/kg-day	3.6E-04
				Cadmium	6E+00	mg/kg	3.2E-07	mg/kg-day	N/A	N/A	N/A	9.2E-07	mg/kg-day	1.0E-03	mg/kg-day	9.2E-04
				Lead	6E+02	mg/kg	3.0E-05	mg/kg-day	N/A	N/A	N/A	8.8E-05	mg/kg-day	N/A	N/A	N/A
				Manganese	3E+02	mg/kg	1.3E-05	mg/kg-day	N/A	N/A	N/A	3.8E-05	mg/kg-day	7.0E-02	mg/kg-day	5.5E-04
				Mercury	1E+01	mg/kg	6.3E-07	mg/kg-day	N/A	N/A	N/A	1.8E-06	mg/kg-day	1.0E-04	mg/kg-day	1.8E-02
				Thallium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-05	mg/kg-day	N/A
				alpha-Chlordane	4E+02	mg/kg	2.2E-05	mg/kg-day	3.5E-01	(mg/kg-day)$^{-1}$	7.6E-06	6.4E-05	mg/kg-day	5.0E-04	mg/kg-day	1.3E-01
				gamma-Chlordane	3E+02	mg/kg	1.6E-05	mg/kg-day	3.5E-01	(mg/kg-day)$^{-1}$	5.5E-06	4.6E-05	mg/kg-day	5.0E-04	mg/kg-day	9.1E-02
				4,4'-DDE	1E+02	mg/kg	6.2E-06	mg/kg-day	3.4E-01	(mg/kg-day)$^{-1}$	2.1E-06	1.8E-05	mg/kg-day	3.0E-04	mg/kg-day	6.0E-02
				4,4'-DDT	3E+02	mg/kg	1.5E-05	mg/kg-day	3.4E-01	(mg/kg-day)$^{-1}$	5.2E-06	4.4E-05	mg/kg-day	5.0E-04	mg/kg-day	8.9E-02
				Aroclor 1242	N/A	N/A	N/A	N/A	2.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1248	7E+02	mg/kg	3.9E-05	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	7.8E-05	1.1E-04	mg/kg-day	2.0E-05	mg/kg-day	5.7E+00
				Aroclor 1254	4E+02	mg/kg	2.1E-05	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	4.3E-05	6.3E-05	mg/kg-day	2.0E-05	mg/kg-day	3.1E+00
				Aroclor 1260	2E+02	mg/kg	1.2E-05	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	2.4E-05	3.5E-05	mg/kg-day	2.0E-05	mg/kg-day	1.7E+00
				PCB TEQ*	4E-03	mg/kg	1.9E-10	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	2.9E-05	5.7E-10	mg/kg-day	N/A	N/A	N/A
				C5-C8 Aliphatic	1E+02	mg/kg	7.5E-06	mg/kg-day	N/A	N/A	N/A	2.2E-05	mg/kg-day	4.0E-02	mg/kg-day	5.5E-04
				C9-C10 Aromatic	5E+02	mg/kg	2.6E-05	mg/kg-day	N/A	N/A	N/A	7.6E-05	mg/kg-day	3.0E-02	mg/kg-day	2.5E-03
				C9-C18 Aliphatic	6E+03	mg/kg	3.2E-04	mg/kg-day	N/A	N/A	N/A	9.2E-04	mg/kg-day	1.0E-01	mg/kg-day	9.2E-03
				C19-C36 Aliphatic	4E+03	mg/kg	2.2E-04	mg/kg-day	N/A	N/A	N/A	6.3E-04	mg/kg-day	2.0E+00	mg/kg-day	3.1E-04
				C11-C22 Aromatic	4E+03	mg/kg	2.1E-04	mg/kg-day	N/A	N/A	N/A	6.3E-04	mg/kg-day	3.0E-02	mg/kg-day	2.1E-02
			Exp. Route Total								2E-04					1E+01

TABLE 3-7.11.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Subsurface Soil (Cont.)	Subsurface Soil (Cont.)	Whitney Property	Dermal													
				1,2,4-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/kg-day	N/A
				1,3,5-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/kg-day	N/A
				Naphthalene	1E+01	mg/kg	6.5E-07	mg/kg-day	N/A	N/A	N/A	1.9E-06	mg/kg-day	2.0E-02	mg/kg-day	9.5E-05
				Vinyl chloride	3E-01	mg/kg	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Methylene chloride	3E+00	mg/kg	N/A	N/A	7.5E-03	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	6.0E-02	mg/kg-day	N/A
				cis-1,2-Dichloroethene	4E-01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-02	mg/kg-day	N/A
				Trichloroethene	5E-01	mg/kg	N/A	N/A	4.0E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Xylenes (total)	3E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/kg-day	N/A
				2-Methylnaphthalene	2E+01	mg/kg	1.1E-06	mg/kg-day	N/A	N/A	N/A	3.2E-06	mg/kg-day	4.0E-03	mg/kg-day	7.9E-04
				2,4,6-Trichlorophenol	1E+00	mg/kg	N/A	N/A	1.1E-02	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A
				Acenaphthylene	2E-02	mg/kg	1.0E-09	mg/kg-day	N/A	N/A	N/A	3.0E-09	mg/kg-day	2.0E-02	mg/kg-day	1.5E-07
				Phenanthrene	3E+00	mg/kg	1.6E-07	mg/kg-day	N/A	N/A	N/A	4.6E-07	mg/kg-day	2.0E-02	mg/kg-day	2.3E-05
				Benzo(a)Anthracene	1E+00	mg/kg	6.6E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	4.8E-08	1.9E-07	mg/kg-day	N/A	N/A	N/A
				Bis(2-ethylhexyl) phthalate	3E+02	mg/kg	N/A	N/A	1.4E-02	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-02	mg/kg-day	N/A
				Benzo(b)Fluoranthene	1E+00	mg/kg	8.1E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	5.9E-08	2.4E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	1E+00	mg/kg	5.3E-08	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	3.9E-09	1.6E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	1E+00	mg/kg	6.7E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	4.9E-07	1.9E-07	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	9E-01	mg/kg	4.7E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	3.4E-08	1.4E-07	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	2E-01	mg/kg	1.3E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	9.2E-08	3.7E-08	mg/kg-day	N/A	N/A	N/A
				Antimony	6E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-05	mg/kg-day	N/A
				Arsenic	3E+01	mg/kg	3.5E-07	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	5.3E-07	1.0E-06	mg/kg-day	3.0E-04	mg/kg-day	3.4E-03
				Barium	2E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.9E-03	mg/kg-day	N/A
				Cadmium	6E+00	mg/kg	2.5E-09	mg/kg-day	N/A	N/A	N/A	7.4E-09	mg/kg-day	2.5E-05	mg/kg-day	2.9E-04
				Lead	6E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Manganese	3E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.8E-03	mg/kg-day	N/A
				Mercury	1E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A
				Thallium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-05	mg/kg-day	N/A
				alpha-Chlordane	4E+02	mg/kg	7.0E-06	mg/kg-day	3.5E-01	(mg/kg-day)$^{-1}$	2.4E-06	2.0E-05	mg/kg-day	5.0E-04	mg/kg-day	4.1E-02
				gamma-Chlordane	3E+02	mg/kg	5.0E-06	mg/kg-day	3.5E-01	(mg/kg-day)$^{-1}$	1.7E-06	1.5E-05	mg/kg-day	5.0E-04	mg/kg-day	2.9E-02
				4,4'-DDE	1E+02	mg/kg	N/A	N/A	3.4E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				4,4'-DDT	3E+02	mg/kg	3.6E-06	mg/kg-day	3.4E-01	(mg/kg-day)$^{-1}$	1.2E-06	1.1E-05	mg/kg-day	5.0E-04	mg/kg-day	2.1E-02
				Aroclor 1242	N/A	N/A	N/A	N/A	2.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1248	7E+02	mg/kg	4.4E-05	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	8.7E-05	1.3E-04	mg/kg-day	2.0E-05	mg/kg-day	6.4E+00
				Aroclor 1254	4E+02	mg/kg	2.4E-05	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	4.8E-05	7.0E-05	mg/kg-day	2.0E-05	mg/kg-day	3.5E+00
				Aroclor 1260	2E+02	mg/kg	1.3E-05	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	2.6E-05	3.9E-05	mg/kg-day	2.0E-05	mg/kg-day	1.9E+00
				PCB TEQ*	4E-03	mg/kg	2.2E-10	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	3.3E-05	6.3E-10	mg/kg-day	N/A	N/A	N/A
				C5-C8 Aliphatic	1E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.0E-02	mg/kg-day	N/A
				C9-C10 Aromatic	5E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
				C9-C18 Aliphatic	6E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-01	mg/kg-day	N/A
				C19-C36 Aliphatic	4E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E+00	mg/kg-day	N/A
				C11-C22 Aromatic	4E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
			Exp. Route Total								2E-04					1E+01
		Exposure Point Total									4E-04					2E+01

TABLE 3-7.11.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Subsurface Soil (Cont.)	Subsurface Soil (Cont.)	Murphy Property	Ingestion													
				1,2,4-Trimethylbenzene	1E+01	mg/kg	5.5E-07	mg/kg-day	N/A	N/A	N/A	1.6E-06	mg/kg-day	5.0E-02	mg/kg-day	3.2E-05
				1,3,5-Trimethylbenzene	5E+00	mg/kg	2.4E-07	mg/kg-day	N/A	N/A	N/A	6.9E-07	mg/kg-day	5.0E-02	mg/kg-day	1.4E-05
				Naphthalene	4E+00	mg/kg	1.9E-07	mg/kg-day	N/A	N/A	N/A	5.6E-07	mg/kg-day	2.0E-02	mg/kg-day	2.8E-05
				Vinyl chloride	N/A	N/A	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Methylene chloride	3E+00	mg/kg	1.4E-07	mg/kg-day	7.5E-03	(mg/kg-day)$^{-1}$	1.1E-09	4.2E-07	mg/kg-day	6.0E-02	mg/kg-day	6.9E-06
				cis-1,2-Dichloroethene	2E+00	mg/kg	1.2E-07	mg/kg-day	N/A	N/A	N/A	3.4E-07	mg/kg-day	1.0E-02	mg/kg-day	3.4E-05
				Trichloroethene	3E-01	mg/kg	1.5E-08	mg/kg-day	4.0E-01	(mg/kg-day)$^{-1}$	5.9E-09	4.3E-08	mg/kg-day	3.0E-04	mg/kg-day	1.4E-04
				Xylenes (total)	4E+00	mg/kg	2.1E-07	mg/kg-day	N/A	N/A	N/A	6.3E-07	mg/kg-day	2.0E-01	mg/kg-day	3.1E-06
				2-Methylnaphthalene	1E+00	mg/kg	5.6E-08	mg/kg-day	N/A	N/A	N/A	1.6E-07	mg/kg-day	4.0E-03	mg/kg-day	4.1E-05
				2,4,6-Trichlorophenol	N/A	N/A	N/A	N/A	1.1E-02	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A
				Acenaphthylene	2E+00	mg/kg	8.4E-08	mg/kg-day	N/A	N/A	N/A	2.4E-07	mg/kg-day	2.0E-02	mg/kg-day	1.2E-05
				Phenanthrene	2E+00	mg/kg	9.3E-08	mg/kg-day	N/A	N/A	N/A	2.7E-07	mg/kg-day	2.0E-02	mg/kg-day	1.4E-05
				Benzo(a)Anthracene	1E+00	mg/kg	7.7E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	5.6E-08	2.3E-07	mg/kg-day	N/A	N/A	N/A
				Bis(2-ethylhexyl) phthalate	1E+01	mg/kg	6.1E-07	mg/kg-day	1.4E-02	(mg/kg-day)$^{-1}$	8.6E-09	1.8E-06	mg/kg-day	2.0E-02	mg/kg-day	8.9E-05
				Benzo(b)Fluoranthene	1E+00	mg/kg	7.8E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	5.7E-08	2.3E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	2E+00	mg/kg	9.5E-08	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	7.0E-09	2.8E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	2E+00	mg/kg	8.3E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	6.0E-07	2.4E-07	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	1E+00	mg/kg	7.8E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	5.7E-08	2.3E-07	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	4E-01	mg/kg	2.0E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.5E-07	5.8E-08	mg/kg-day	N/A	N/A	N/A
				Antimony	3E+00	mg/kg	1.5E-07	mg/kg-day	N/A	N/A	N/A	4.3E-07	mg/kg-day	4.0E-04	mg/kg-day	1.1E-03
				Arsenic	4E+00	mg/kg	2.1E-07	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	3.1E-07	6.1E-07	mg/kg-day	3.0E-04	mg/kg-day	2.0E-03
				Barium	3E+02	mg/kg	1.8E-05	mg/kg-day	N/A	N/A	N/A	5.1E-05	mg/kg-day	7.0E-02	mg/kg-day	7.3E-04
				Cadmium	1E+00	mg/kg	6.6E-08	mg/kg-day	N/A	N/A	N/A	1.9E-07	mg/kg-day	1.0E-03	mg/kg-day	1.9E-04
				Lead	5E+02	mg/kg	2.6E-05	mg/kg-day	N/A	N/A	N/A	7.7E-05	mg/kg-day	N/A	N/A	N/A
				Manganese	2E+02	mg/kg	9.5E-06	mg/kg-day	N/A	N/A	N/A	2.8E-05	mg/kg-day	7.0E-02	mg/kg-day	4.0E-04
				Mercury	8E-02	mg/kg	3.9E-09	mg/kg-day	N/A	N/A	N/A	1.2E-08	mg/kg-day	1.0E-04	mg/kg-day	1.2E-04
				Thallium	9E+00	mg/kg	4.6E-07	mg/kg-day	N/A	N/A	N/A	1.4E-06	mg/kg-day	8.0E-05	mg/kg-day	1.7E-02
				alpha-Chlordane	1E-01	mg/kg	6.3E-09	mg/kg-day	3.5E-01	(mg/kg-day)$^{-1}$	2.2E-09	1.8E-08	mg/kg-day	5.0E-04	mg/kg-day	3.7E-05
				gamma-Chlordane	1E-01	mg/kg	6.4E-09	mg/kg-day	3.5E-01	(mg/kg-day)$^{-1}$	2.2E-09	1.9E-08	mg/kg-day	5.0E-04	mg/kg-day	3.7E-05
				4,4'-DDE	N/A	N/A	N/A	N/A	3.4E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				4,4'-DDT	N/A	N/A	N/A	N/A	3.4E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	5.0E-04	mg/kg-day	N/A
				Aroclor 1242	N/A	N/A	N/A	N/A	2.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1248	6E-01	mg/kg	3.2E-08	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	6.5E-08	9.5E-08	mg/kg-day	2.0E-05	mg/kg-day	4.7E-03
				Aroclor 1254	2E-01	mg/kg	1.0E-08	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	2.0E-08	3.0E-08	mg/kg-day	2.0E-05	mg/kg-day	1.5E-03
				Aroclor 1260	N/A	N/A	N/A	N/A	2.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				PCB TEQ*	N/A	N/A	N/A	N/A	1.5E+05	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	N/A	N/A	N/A
				C5-C8 Aliphatic	1E+00	mg/kg	5.2E-08	mg/kg-day	N/A	N/A	N/A	1.5E-07	mg/kg-day	4.0E-02	mg/kg-day	3.8E-06
				C9-C10 Aromatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
				C9-C18 Aliphatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-01	mg/kg-day	N/A
				C19-C36 Aliphatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E+00	mg/kg-day	N/A
				C11-C22 Aromatic	7E+03	mg/kg	3.5E-04	mg/kg-day	N/A	N/A	N/A	1.0E-03	mg/kg-day	3.0E-02	mg/kg-day	3.4E-02
			Exp. Route Total								1E-06					6E-02

TABLE 3-7.11.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Subsurface Soil (Cont.)	Subsurface Soil (Cont.)	Murphy Property	Dermal													
				1,2,4-Trimethylbenzene	1E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/kg-day	N/A
				1,3,5-Trimethylbenzene	5E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/kg-day	N/A
				Naphthalene	4E+00	mg/kg	2.0E-07	mg/kg-day	N/A	N/A	N/A	5.8E-07	mg/kg-day	2.0E-02	mg/kg-day	2.9E-05
				Vinyl chloride	N/A	N/A	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Methylene chloride	3E+00	mg/kg	N/A	N/A	7.5E-03	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	6.0E-02	mg/kg-day	N/A
				cis-1,2-Dichloroethene	2E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-02	mg/kg-day	N/A
				Trichloroethene	3E-01	mg/kg	N/A	N/A	4.0E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Xylenes (total)	4E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/kg-day	N/A
				2-Methylnaphthalene	1E+00	mg/kg	5.8E-08	mg/kg-day	N/A	N/A	N/A	1.7E-07	mg/kg-day	4.0E-03	mg/kg-day	4.3E-05
				2,4,6-Trichlorophenol	N/A	N/A	N/A	N/A	1.1E-02	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A
				Acenaphthylene	2E+00	mg/kg	8.7E-08	mg/kg-day	N/A	N/A	N/A	2.5E-07	mg/kg-day	2.0E-02	mg/kg-day	1.3E-05
				Phenanthrene	2E+00	mg/kg	9.6E-08	mg/kg-day	N/A	N/A	N/A	2.8E-07	mg/kg-day	2.0E-02	mg/kg-day	1.4E-05
				Benzo(a)Anthracene	1E+00	mg/kg	8.0E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	5.9E-08	2.3E-07	mg/kg-day	N/A	N/A	N/A
				Bis(2-ethylhexyl) phthalate	1E+01	mg/kg	N/A	N/A	1.4E-02	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-02	mg/kg-day	N/A
				Benzo(b)Fluoranthene	1E+00	mg/kg	8.1E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	5.9E-08	2.4E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	2E+00	mg/kg	9.9E-08	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	7.2E-09	2.9E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	2E+00	mg/kg	8.6E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	6.3E-07	2.5E-07	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	1E+00	mg/kg	8.1E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	5.9E-08	2.4E-07	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	4E-01	mg/kg	2.1E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.5E-07	6.0E-08	mg/kg-day	N/A	N/A	N/A
				Antimony	3E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-05	mg/kg-day	N/A
				Arsenic	4E+00	mg/kg	5.0E-08	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	7.5E-08	1.5E-07	mg/kg-day	3.0E-04	mg/kg-day	4.8E-04
				Barium	3E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.9E-03	mg/kg-day	N/A
				Cadmium	1E+00	mg/kg	5.3E-10	mg/kg-day	N/A	N/A	N/A	1.5E-09	mg/kg-day	2.5E-05	mg/kg-day	6.1E-05
				Lead	5E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Manganese	2E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.8E-03	mg/kg-day	N/A
				Mercury	8E-02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A
				Thallium	9E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-05	mg/kg-day	N/A
				alpha-Chlordane	1E-01	mg/kg	2.0E-09	mg/kg-day	3.5E-01	(mg/kg-day)$^{-1}$	7.1E-10	5.9E-09	mg/kg-day	5.0E-04	mg/kg-day	1.2E-05
				gamma-Chlordane	1E-01	mg/kg	2.0E-09	mg/kg-day	3.5E-01	(mg/kg-day)$^{-1}$	7.2E-10	6.0E-09	mg/kg-day	5.0E-04	mg/kg-day	1.2E-05
				4,4'-DDE	N/A	N/A	N/A	N/A	3.4E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				4,4'-DDT	N/A	N/A	N/A	N/A	3.4E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	5.0E-04	mg/kg-day	N/A
				Aroclor 1242	N/A	N/A	N/A	N/A	2.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1248	6E-01	mg/kg	3.6E-08	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	7.3E-08	1.1E-07	mg/kg-day	2.0E-05	mg/kg-day	5.3E-03
				Aroclor 1254	2E-01	mg/kg	1.1E-08	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	2.3E-08	3.3E-08	mg/kg-day	2.0E-05	mg/kg-day	1.7E-03
				Aroclor 1260	N/A	N/A	N/A	N/A	2.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				PCB TEQ*	N/A	N/A	N/A	N/A	1.5E+05	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	N/A	N/A	N/A
				C5-C8 Aliphatic	1E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.0E-02	mg/kg-day	N/A
				C9-C10 Aromatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
				C9-C18 Aliphatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-01	mg/kg-day	N/A
				C19-C36 Aliphatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E+00	mg/kg-day	N/A
				C11-C22 Aromatic	7E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
			Exp. Route Total								1E-06					8E-03
		Exposure Point Total									2E-06					7E-02
	Exposure Medium Total										N/A					N/A
Medium Total											N/A					N/A

TABLE 3-7.11.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Soil	Indoor Air	Aberjona Property	Inhalation													
				1,2,4-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-03	mg/m3	N/A
				1,2-Dichloroethene (total)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				1,3,5-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-03	mg/m3	N/A
				n-Butylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Naphthalene	2E-02	ug/m3	1.8E-04	ug/m3	N/A	N/A	N/A	5.3E-07	mg/m3	3.0E-03	mg/m3	1.8E-04
				p-Isopropyltoluene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.0E-01	mg/m3	N/A
				Chloromethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9.0E-02	mg/m3	N/A
				Vinyl chloride	N/A	N/A	N/A	N/A	8.8E-06	(ug/m3)-1	N/A	N/A	N/A	1.0E-01	mg/m3	N/A
				Bromomethane	4E-03	ug/m3	3.3E-05	ug/m3	N/A	N/A	N/A	9.6E-08	mg/m3	5.0E-03	mg/m3	1.9E-05
				Chloroethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E+01	mg/m3	N/A
				1,1-Dichloroethene	2E-02	ug/m3	1.6E-04	ug/m3	N/A	N/A	N/A	4.8E-07	mg/m3	2.0E-01	mg/m3	2.4E-06
				Acetone	2E-03	ug/m3	1.3E-05	ug/m3	N/A	N/A	N/A	3.6E-08	mg/m3	N/A	N/A	N/A
				Methylene chloride	N/A	N/A	N/A	N/A	4.7E-07	(ug/m3)-1	N/A	N/A	N/A	3.0E+00	mg/m3	N/A
				trans-1,2-Dichloroethene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/m3	N/A
				Methyl tert-butyl ether	3E-02	ug/m3	2.1E-04	ug/m3	N/A	N/A	N/A	6.1E-07	mg/m3	3.0E+00	mg/m3	2.0E-07
				1,1-Dichloroethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-01	mg/m3	N/A
				cis-1,2-Dichloroethene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/m3	N/A
				1,1,1-Trichloroethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.2E+00	mg/m3	N/A
				Benzene	1E-02	ug/m3	9.4E-05	ug/m3	7.8E-06	(ug/m3)-1	7.3E-10	2.7E-07	mg/m3	3.0E-02	mg/m3	9.1E-06
				Trichloroethene	N/A	N/A	N/A	N/A	1.1E-04	(ug/m3)-1	N/A	N/A	N/A	4.0E-02	mg/m3	N/A
				Methyl cyclohexane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E+00	mg/m3	N/A
				Toluene	6E-02	ug/m3	4.4E-04	ug/m3	N/A	N/A	N/A	1.3E-06	mg/m3	4.0E-01	mg/m3	3.2E-06
				Tetrachloroethene	N/A	N/A	N/A	N/A	5.9E-06	(ug/m3)-1	N/A	N/A	N/A	N/A	N/A	N/A
				Chlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-02	mg/m3	N/A
				Ethylbenzene	4E-01	ug/m3	3.2E-03	ug/m3	N/A	N/A	N/A	9.2E-06	mg/m3	1.0E+00	mg/m3	9.2E-06
				1,3-Dichlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				1,4-Dichlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-01	mg/m3	N/A
				1,2-Dichlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				2-Methylnaphthalene	4E-02	ug/m3	3.2E-04	ug/m3	N/A	N/A	N/A	9.3E-07	mg/m3	N/A	N/A	N/A
				Acenaphthylene	5E-03	ug/m3	3.6E-05	ug/m3	N/A	N/A	N/A	1.1E-07	mg/m3	3.0E-03	mg/m3	3.5E-05
				Dibenzofuran	3E-03	ug/m3	2.6E-05	ug/m3	N/A	N/A	N/A	7.6E-08	mg/m3	N/A	N/A	N/A
				Phenanthrene	6E-04	ug/m3	4.5E-06	ug/m3	N/A	N/A	N/A	1.3E-08	mg/m3	3.0E-03	mg/m3	4.4E-06
				Anthracene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-03	mg/m3	N/A
				C5-C8 Aliphatic	2E+02	ug/m3	1.5E+00	ug/m3	N/A	N/A	N/A	4.4E-03	mg/m3	2.0E-01	mg/m3	2.2E-02
				C9-C12 Aliphatic	2E+01	ug/m3	1.4E-01	ug/m3	N/A	N/A	N/A	4.0E-04	mg/m3	2.0E-01	mg/m3	2.0E-03
				C9-C10 Aromatic	2E+01	ug/m3	1.6E-01	ug/m3	N/A	N/A	N/A	4.7E-04	mg/m3	5.0E-02	mg/m3	9.4E-03
				C9-C18 Aliphatic	9E+01	ug/m3	6.9E-01	ug/m3	N/A	N/A	N/A	2.0E-03	mg/m3	2.0E-01	mg/m3	1.0E-02
				C11-C22 Aromatic	7E+00	ug/m3	5.3E-02	ug/m3	N/A	N/A	N/A	1.5E-04	mg/m3	5.0E-02	mg/m3	3.1E-03
			Exp. Route Total								7E-10					5E-02
		Exposure Point Total									7E-10					5E-02

TABLE 3-7.11.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Soil (Cont.)	Indoor Air (Cont.)	Whitney Property	Inhalation													
				1,2,4-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-03	mg/m3	N/A
				1,2-Dichloroethene (total)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				1,3,5-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-03	mg/m3	N/A
				n-Butylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Naphthalene	5E-02	ug/m3	3.5E-04	ug/m3	N/A	N/A	N/A	1.0E-06	mg/m3	3.0E-03	mg/m3	3.4E-04
				p-Isopropyltoluene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.0E-01	mg/m3	N/A
				Chloromethane	4E+00	ug/m3	2.7E-02	ug/m3	N/A	N/A	N/A	7.8E-05	mg/m3	9.0E-02	mg/m3	8.7E-04
				Vinyl chloride	7E+00	ug/m3	5.3E-02	ug/m3	8.8E-06	(ug/m3)-1	4.7E-07	1.6E-04	mg/m3	1.0E-01	mg/m3	1.6E-03
				Bromomethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-03	mg/m3	N/A
				Chloroethane	1E+00	ug/m3	9.2E-03	ug/m3	N/A	N/A	N/A	2.7E-05	mg/m3	1.0E+01	mg/m3	2.7E-06
				1,1-Dichloroethene	2E+00	ug/m3	1.7E-02	ug/m3	N/A	N/A	N/A	4.9E-05	mg/m3	2.0E-01	mg/m3	2.5E-04
				Acetone	1E-02	ug/m3	1.1E-04	ug/m3	N/A	N/A	N/A	3.3E-07	mg/m3	N/A	N/A	N/A
				Methylene chloride	2E+00	ug/m3	1.3E-02	ug/m3	4.7E-07	(ug/m3)-1	6.2E-09	3.9E-05	mg/m3	3.0E+00	mg/m3	1.3E-05
				trans-1,2-Dichloroethene	9E-01	ug/m3	6.8E-03	ug/m3	N/A	N/A	N/A	2.0E-05	mg/m3	2.0E-01	mg/m3	9.8E-05
				Methyl tert-butyl ether	5E-02	ug/m3	3.8E-04	ug/m3	N/A	N/A	N/A	1.1E-06	mg/m3	3.0E+00	mg/m3	3.7E-07
				1,1-Dichloroethane	2E+00	ug/m3	1.3E-02	ug/m3	N/A	N/A	N/A	3.9E-05	mg/m3	5.0E-01	mg/m3	7.8E-05
				cis-1,2-Dichloroethene	6E-01	ug/m3	4.7E-03	ug/m3	N/A	N/A	N/A	1.4E-05	mg/m3	2.0E-01	mg/m3	6.8E-05
				1,1,1-Trichloroethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.2E+00	mg/m3	N/A
				Benzene	8E-01	ug/m3	6.1E-03	ug/m3	7.8E-06	(ug/m3)-1	4.8E-08	1.8E-05	mg/m3	3.0E-02	mg/m3	5.9E-04
				Trichloroethene	1E+00	ug/m3	9.0E-03	ug/m3	1.1E-04	(ug/m3)-1	9.9E-07	2.6E-05	mg/m3	4.0E-02	mg/m3	6.6E-04
				Methyl cyclohexane	4E+01	ug/m3	2.8E-01	ug/m3	N/A	N/A	N/A	8.1E-04	mg/m3	3.0E+00	mg/m3	2.7E-04
				Toluene	1E+00	ug/m3	1.1E-02	ug/m3	N/A	N/A	N/A	3.1E-05	mg/m3	4.0E-01	mg/m3	7.7E-05
				Tetrachloroethene	1E+00	ug/m3	7.6E-03	ug/m3	5.9E-06	(ug/m3)-1	4.5E-08	2.2E-05	mg/m3	N/A	N/A	N/A
				Chlorobenzene	3E-01	ug/m3	2.6E-03	ug/m3	N/A	N/A	N/A	7.7E-06	mg/m3	6.0E-02	mg/m3	1.3E-04
				Ethylbenzene	3E-01	ug/m3	2.2E-03	ug/m3	N/A	N/A	N/A	6.5E-06	mg/m3	1.0E+00	mg/m3	6.5E-06
				1,3-Dichlorobenzene	3E-01	ug/m3	2.6E-03	ug/m3	N/A	N/A	N/A	7.6E-06	mg/m3	N/A	N/A	N/A
				1,4-Dichlorobenzene	7E-02	ug/m3	5.5E-04	ug/m3	N/A	N/A	N/A	1.6E-06	mg/m3	8.0E-01	mg/m3	2.0E-06
				1,2-Dichlorobenzene	4E-05	ug/m3	3.3E-07	ug/m3	N/A	N/A	N/A	9.5E-10	mg/m3	N/A	N/A	N/A
				2-Methylnaphthalene	1E-01	ug/m3	9.8E-04	ug/m3	N/A	N/A	N/A	2.9E-06	mg/m3	N/A	N/A	N/A
				Acenaphthylene	5E-03	ug/m3	3.5E-05	ug/m3	N/A	N/A	N/A	1.0E-07	mg/m3	3.0E-03	mg/m3	3.4E-05
				Dibenzofuran	2E-01	ug/m3	1.3E-03	ug/m3	N/A	N/A	N/A	3.9E-06	mg/m3	N/A	N/A	N/A
				Phenanthrene	7E-02	ug/m3	5.2E-04	ug/m3	N/A	N/A	N/A	1.5E-06	mg/m3	3.0E-03	mg/m3	5.0E-04
				Anthracene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-03	mg/m3	N/A
				C5-C8 Aliphatic	4E+03	ug/m3	3.2E+01	ug/m3	N/A	N/A	N/A	9.2E-02	mg/m3	2.0E-01	mg/m3	4.6E-01
				C9-C12 Aliphatic	7E+01	ug/m3	5.6E-01	ug/m3	N/A	N/A	N/A	1.6E-03	mg/m3	2.0E-01	mg/m3	8.1E-03
				C9-C10 Aromatic	2E+02	ug/m3	1.6E+00	ug/m3	N/A	N/A	N/A	4.7E-03	mg/m3	5.0E-02	mg/m3	9.3E-02
				C9-C18 Aliphatic	2E+03	ug/m3	1.3E+01	ug/m3	N/A	N/A	N/A	3.8E-02	mg/m3	2.0E-01	mg/m3	1.9E-01
				C11-C22 Aromatic	7E+01	ug/m3	5.1E-01	ug/m3	N/A	N/A	N/A	1.5E-03	mg/m3	5.0E-02	mg/m3	3.0E-02
			Exp. Route Total								2E-06					8E-01
		Exposure Point Total									2E-06					8E-01

TABLE 3-7.11.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Soil (Cont.)	Indoor Air (Cont.)	Murphy Property	Inhalation													
				1,2,4-Trimethylbenzene	4E+00	ug/m3	3.0E-02	ug/m3	N/A	N/A	N/A	8.7E-05	mg/m3	6.0E-03	mg/m3	1.4E-02
				1,2-Dichloroethene (total)	3E-01	ug/m3	2.5E-03	ug/m3	N/A	N/A	N/A	7.2E-06	mg/m3	N/A	N/A	N/A
				1,3,5-Trimethylbenzene	5E+00	ug/m3	3.7E-02	ug/m3	N/A	N/A	N/A	1.1E-04	mg/m3	6.0E-03	mg/m3	1.8E-02
				n-Butylbenzene	5E-01	ug/m3	4.0E-03	ug/m3	N/A	N/A	N/A	1.2E-05	mg/m3	N/A	N/A	N/A
				Naphthalene	7E-02	ug/m3	5.6E-04	ug/m3	N/A	N/A	N/A	1.6E-06	mg/m3	3.0E-03	mg/m3	5.4E-04
				p-Isopropyltoluene	3E+01	ug/m3	2.3E-01	ug/m3	N/A	N/A	N/A	6.8E-04	mg/m3	4.0E-01	mg/m3	1.7E-03
				Chloromethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9.0E-02	mg/m3	N/A
				Vinyl chloride	N/A	N/A	N/A	N/A	8.8E-06	(ug/m3)-1	N/A	N/A	N/A	1.0E-01	mg/m3	N/A
				Bromomethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-03	mg/m3	N/A
				Chloroethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E+01	mg/m3	N/A
				1,1-Dichloroethene	4E-02	ug/m3	3.1E-04	ug/m3	N/A	N/A	N/A	9.0E-07	mg/m3	2.0E-01	mg/m3	4.5E-06
				Acetone	8E-02	ug/m3	6.1E-04	ug/m3	N/A	N/A	N/A	1.8E-06	mg/m3	N/A	N/A	N/A
				Methylene chloride	7E+00	ug/m3	5.1E-02	ug/m3	4.7E-07	(ug/m3)-1	2.4E-08	1.5E-04	mg/m3	3.0E+00	mg/m3	4.9E-05
				trans-1,2-Dichloroethene	5E+00	ug/m3	3.8E-02	ug/m3	N/A	N/A	N/A	1.1E-04	mg/m3	2.0E-01	mg/m3	5.5E-04
				Methyl tert-butyl ether	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E+00	mg/m3	N/A
				1,1-Dichloroethane	2E+00	ug/m3	1.7E-02	ug/m3	N/A	N/A	N/A	4.9E-05	mg/m3	5.0E-01	mg/m3	9.8E-05
				cis-1,2-Dichloroethene	5E+01	ug/m3	3.6E-01	ug/m3	N/A	N/A	N/A	1.0E-03	mg/m3	2.0E-01	mg/m3	5.2E-03
				1,1,1-Trichloroethane	4E+00	ug/m3	3.4E-02	ug/m3	N/A	N/A	N/A	1.0E-04	mg/m3	2.2E+00	mg/m3	4.5E-05
				Benzene	1E+00	ug/m3	1.0E-02	ug/m3	7.8E-06	(ug/m3)-1	7.8E-08	2.9E-05	mg/m3	3.0E-02	mg/m3	9.7E-04
				Trichloroethene	1E+00	ug/m3	9.5E-03	ug/m3	1.1E-04	(ug/m3)-1	1.0E-06	2.8E-05	mg/m3	4.0E-02	mg/m3	6.9E-04
				Methyl cyclohexane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E+00	mg/m3	N/A
				Toluene	3E+00	ug/m3	2.1E-02	ug/m3	N/A	N/A	N/A	6.2E-05	mg/m3	4.0E-01	mg/m3	1.6E-04
				Tetrachloroethene	3E+00	ug/m3	2.1E-02	ug/m3	5.9E-06	(ug/m3)-1	1.3E-07	6.2E-05	mg/m3	N/A	N/A	N/A
				Chlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-02	mg/m3	N/A
				Ethylbenzene	1E+00	ug/m3	1.1E-02	ug/m3	N/A	N/A	N/A	3.2E-05	mg/m3	1.0E+00	mg/m3	3.2E-05
				1,3-Dichlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				1,4-Dichlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-01	mg/m3	N/A
				1,2-Dichlorobenzene	3E-03	ug/m3	2.0E-05	ug/m3	N/A	N/A	N/A	5.8E-08	mg/m3	N/A	N/A	N/A
				2-Methylnaphthalene	3E-02	ug/m3	2.1E-04	ug/m3	N/A	N/A	N/A	6.2E-07	mg/m3	N/A	N/A	N/A
				Acenaphthylene	2E-02	ug/m3	1.7E-04	ug/m3	N/A	N/A	N/A	4.9E-07	mg/m3	3.0E-03	mg/m3	1.6E-04
				Dibenzofuran	5E-03	ug/m3	3.6E-05	ug/m3	N/A	N/A	N/A	1.0E-07	mg/m3	N/A	N/A	N/A
				Phenanthrene	4E-03	ug/m3	3.4E-05	ug/m3	N/A	N/A	N/A	9.8E-08	mg/m3	3.0E-03	mg/m3	3.3E-05
				Anthracene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-03	mg/m3	N/A
				C5-C8 Aliphatic	6E+01	ug/m3	4.4E-01	ug/m3	N/A	N/A	N/A	1.3E-03	mg/m3	2.0E-01	mg/m3	6.4E-03
				C9-C12 Aliphatic	2E+00	ug/m3	1.3E-02	ug/m3	N/A	N/A	N/A	3.7E-05	mg/m3	2.0E-01	mg/m3	1.8E-04
				C9-C10 Aromatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/m3	N/A
				C9-C18 Aliphatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/m3	N/A
				C11-C22 Aromatic	1E+02	ug/m3	9.4E-01	ug/m3	N/A	N/A	N/A	2.7E-03	mg/m3	5.0E-02	mg/m3	5.5E-02
			Exp. Route Total								1E-06					1E-01
		Exposure Point Total									1E-06					1E-01
	Exposure Medium Total										N/A					N/A

TABLE 3-7.11.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Ground Water	Indoor Air	Aberjona Property	Inhalation													
				1,2,4-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-03	mg/m3	N/A
				1,2-Dichloroethene (total)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				1,3,5-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-03	mg/m3	N/A
				n-Butylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Naphthalene	4E-05	ug/m3	3.2E-07	ug/m3	N/A	N/A	N/A	9.3E-10	mg/m3	3.0E-03	mg/m3	3.1E-07
				p-Isopropyltoluene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.0E-01	mg/m3	N/A
				Chloromethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9.0E-02	mg/m3	N/A
				Vinyl chloride	4E-04	ug/m3	3.0E-06	ug/m3	8.8E-06	(ug/m3)-1	2.6E-11	8.8E-09	mg/m3	1.0E-01	mg/m3	8.8E-08
				Bromomethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-03	mg/m3	N/A
				Chloroethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E+01	mg/m3	N/A
				1,1-Dichloroethene	2E-04	ug/m3	1.2E-06	ug/m3	N/A	N/A	N/A	3.6E-09	mg/m3	2.0E-01	mg/m3	1.8E-08
				Acetone	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Methylene chloride	N/A	N/A	N/A	N/A	4.7E-07	(ug/m3)-1	N/A	N/A	N/A	3.0E+00	mg/m3	N/A
				trans-1,2-Dichloroethene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/m3	N/A
				Methyl tert-butyl ether	8E-04	ug/m3	5.8E-06	ug/m3	N/A	N/A	N/A	1.7E-08	mg/m3	3.0E+00	mg/m3	5.6E-09
				1,1-Dichloroethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-01	mg/m3	N/A
				cis-1,2-Dichloroethene	6E-03	ug/m3	4.6E-05	ug/m3	N/A	N/A	N/A	1.3E-07	mg/m3	2.0E-01	mg/m3	6.6E-07
				1,1,1-Trichloroethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.2E+00	mg/m3	N/A
				Benzene	7E-05	ug/m3	5.5E-07	ug/m3	7.8E-06	(ug/m3)-1	4.3E-12	1.6E-09	mg/m3	3.0E-02	mg/m3	5.4E-08
				Trichloroethene	1E-02	ug/m3	9.3E-05	ug/m3	1.1E-04	(ug/m3)-1	1.0E-08	2.7E-07	mg/m3	4.0E-02	mg/m3	6.8E-06
				Methyl cyclohexane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E+00	mg/m3	N/A
				Toluene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.0E-01	mg/m3	N/A
				Tetrachloroethene	3E-04	ug/m3	2.5E-06	ug/m3	5.9E-06	(ug/m3)-1	1.5E-11	7.3E-09	mg/m3	N/A	N/A	N/A
				Chlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-02	mg/m3	N/A
				Ethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E+00	mg/m3	N/A
				1,3-Dichlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				1,4-Dichlorobenzene	4E-05	ug/m3	3.2E-07	ug/m3	N/A	N/A	N/A	9.3E-10	mg/m3	8.0E-01	mg/m3	1.2E-09
				1,2-Dichlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				2-Methylnaphthalene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Acenaphthylene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-03	mg/m3	N/A
				Dibenzofuran	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Phenanthrene	2E-05	ug/m3	1.8E-07	ug/m3	N/A	N/A	N/A	5.2E-10	mg/m3	3.0E-03	mg/m3	1.7E-07
				Anthracene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-03	mg/m3	N/A
				C5-C8 Aliphatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/m3	N/A
				C9-C12 Aliphatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/m3	N/A
				C9-C10 Aromatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/m3	N/A
				C9-C18 Aliphatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/m3	N/A
				C11-C22 Aromatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/m3	N/A
			Exp. Route Total								1E-08					8E-06
		Exposure Point Total									1E-08					8E-06

TABLE 3-7.11.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Ground Water (Cont.)	Indoor Air (Cont.)	Whitney Property	Inhalation													
				1,2,4-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-03	mg/m3	N/A
				1,2-Dichloroethene (total)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				1,3,5-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-03	mg/m3	N/A
				n-Butylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Naphthalene	5E-04	ug/m3	3.8E-06	ug/m3	N/A	N/A	N/A	1.1E-08	mg/m3	3.0E-03	mg/m3	3.7E-06
				p-Isopropyltoluene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.0E-01	mg/m3	N/A
				Chloromethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9.0E-02	mg/m3	N/A
				Vinyl chloride	3E+00	ug/m3	2.0E-02	ug/m3	8.8E-06	(ug/m3)-1	1.8E-07	5.9E-05	mg/m3	1.0E-01	mg/m3	5.9E-04
				Bromomethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-03	mg/m3	N/A
				Chloroethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E+01	mg/m3	N/A
				1,1-Dichloroethene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/m3	N/A
				Acetone	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Methylene chloride	N/A	N/A	N/A	N/A	4.7E-07	(ug/m3)-1	N/A	N/A	N/A	3.0E+00	mg/m3	N/A
				trans-1,2-Dichloroethene	4E-02	ug/m3	3.1E-04	ug/m3	N/A	N/A	N/A	9.2E-07	mg/m3	2.0E-01	mg/m3	4.6E-06
				Methyl tert-butyl ether	1E-01	ug/m3	7.9E-04	ug/m3	N/A	N/A	N/A	2.3E-06	mg/m3	3.0E+00	mg/m3	7.6E-07
				1,1-Dichloroethane	1E-01	ug/m3	8.9E-04	ug/m3	N/A	N/A	N/A	2.6E-06	mg/m3	5.0E-01	mg/m3	5.2E-06
				cis-1,2-Dichloroethene	3E-01	ug/m3	2.5E-03	ug/m3	N/A	N/A	N/A	7.4E-06	mg/m3	2.0E-01	mg/m3	3.7E-05
				1,1,1-Trichloroethane	1E-02	ug/m3	1.0E-04	ug/m3	N/A	N/A	N/A	3.0E-07	mg/m3	2.2E+00	mg/m3	1.4E-07
				Benzene	8E-02	ug/m3	6.2E-04	ug/m3	7.8E-06	(ug/m3)-1	4.9E-09	1.8E-06	mg/m3	3.0E-02	mg/m3	6.1E-05
				Trichloroethene	3E-03	ug/m3	2.5E-05	ug/m3	1.1E-04	(ug/m3)-1	2.8E-09	7.3E-08	mg/m3	4.0E-02	mg/m3	1.8E-06
				Methyl cyclohexane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E+00	mg/m3	N/A
				Toluene	1E+00	ug/m3	9.4E-03	ug/m3	N/A	N/A	N/A	2.7E-05	mg/m3	4.0E-01	mg/m3	6.9E-05
				Tetrachloroethene	N/A	N/A	N/A	N/A	5.9E-06	(ug/m3)-1	N/A	N/A	N/A	N/A	N/A	N/A
				Chlorobenzene	9E-03	ug/m3	7.2E-05	ug/m3	N/A	N/A	N/A	2.1E-07	mg/m3	6.0E-02	mg/m3	3.5E-06
				Ethylbenzene	4E-02	ug/m3	3.3E-04	ug/m3	N/A	N/A	N/A	9.6E-07	mg/m3	1.0E+00	mg/m3	9.6E-07
				1,3-Dichlorobenzene	2E-02	ug/m3	1.6E-04	ug/m3	N/A	N/A	N/A	4.8E-07	mg/m3	N/A	N/A	N/A
				1,4-Dichlorobenzene	6E-02	ug/m3	4.5E-04	ug/m3	N/A	N/A	N/A	1.3E-06	mg/m3	8.0E-01	mg/m3	1.6E-06
				1,2-Dichlorobenzene	5E-06	ug/m3	3.7E-08	ug/m3	N/A	N/A	N/A	1.1E-10	mg/m3	N/A	N/A	N/A
				2-Methylnaphthalene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Acenaphthylene	2E-04	ug/m3	1.8E-06	ug/m3	N/A	N/A	N/A	5.4E-09	mg/m3	3.0E-03	mg/m3	1.8E-06
				Dibenzofuran	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Phenanthrene	1E-04	ug/m3	8.4E-07	ug/m3	N/A	N/A	N/A	2.5E-09	mg/m3	3.0E-03	mg/m3	8.2E-07
				Anthracene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-03	mg/m3	N/A
				C5-C8 Aliphatic	9E+01	ug/m3	7.0E-01	ug/m3	N/A	N/A	N/A	2.0E-03	mg/m3	2.0E-01	mg/m3	1.0E-02
				C9-C12 Aliphatic	1E+01	ug/m3	9.4E-02	ug/m3	N/A	N/A	N/A	2.7E-04	mg/m3	2.0E-01	mg/m3	1.4E-03
				C9-C10 Aromatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/m3	N/A
				C9-C18 Aliphatic	2E+01	ug/m3	1.2E-01	ug/m3	N/A	N/A	N/A	3.4E-04	mg/m3	2.0E-01	mg/m3	1.7E-03
				C11-C22 Aromatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/m3	N/A
			Exp. Route Total								2E-07					1E-02
		Exposure Point Total									2E-07					1E-02

TABLE 3-7.11.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Ground Water (Cont.)	Indoor Air (Cont.)	Murphy Property	Inhalation													
				1,2,4-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-03	mg/m3	N/A
				1,2-Dichloroethene (total)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				1,3,5-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-03	mg/m3	N/A
				n-Butylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Naphthalene	6E-04	ug/m3	4.8E-06	ug/m3	N/A	N/A	N/A	1.4E-08	mg/m3	3.0E-03	mg/m3	4.7E-06
				p-Isopropyltoluene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.0E-01	mg/m3	N/A
				Chloromethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9.0E-02	mg/m3	N/A
				Vinyl chloride	2E+00	ug/m3	1.2E-02	ug/m3	8.8E-06	(ug/m3)-1	1.1E-07	3.5E-05	mg/m3	1.0E-01	mg/m3	3.5E-04
				Bromomethane	2E-03	ug/m3	1.9E-05	ug/m3	N/A	N/A	N/A	5.5E-08	mg/m3	5.0E-03	mg/m3	1.1E-05
				Chloroethane	1E-01	ug/m3	9.3E-04	ug/m3	N/A	N/A	N/A	2.7E-06	mg/m3	1.0E+01	mg/m3	2.7E-07
				1,1-Dichloroethene	6E-02	ug/m3	4.8E-04	ug/m3	N/A	N/A	N/A	1.4E-06	mg/m3	2.0E-01	mg/m3	7.0E-06
				Acetone	3E-04	ug/m3	2.2E-06	ug/m3	N/A	N/A	N/A	6.3E-09	mg/m3	N/A	N/A	N/A
				Methylene chloride	9E-03	ug/m3	7.0E-05	ug/m3	4.7E-07	(ug/m3)-1	3.3E-11	2.0E-07	mg/m3	3.0E+00	mg/m3	6.8E-08
				trans-1,2-Dichloroethene	5E-02	ug/m3	3.6E-04	ug/m3	N/A	N/A	N/A	1.0E-06	mg/m3	2.0E-01	mg/m3	5.2E-06
				Methyl tert-butyl ether	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E+00	mg/m3	N/A
				1,1-Dichloroethane	9E-02	ug/m3	7.2E-04	ug/m3	N/A	N/A	N/A	2.1E-06	mg/m3	5.0E-01	mg/m3	4.2E-06
				cis-1,2-Dichloroethene	7E-01	ug/m3	5.2E-03	ug/m3	N/A	N/A	N/A	1.5E-05	mg/m3	2.0E-01	mg/m3	7.6E-05
				1,1,1-Trichloroethane	2E-01	ug/m3	1.6E-03	ug/m3	N/A	N/A	N/A	4.6E-06	mg/m3	2.2E+00	mg/m3	2.1E-06
				Benzene	8E-03	ug/m3	6.4E-05	ug/m3	7.8E-06	(ug/m3)-1	5.0E-10	1.9E-07	mg/m3	3.0E-02	mg/m3	6.2E-06
				Trichloroethene	7E-02	ug/m3	5.6E-04	ug/m3	1.1E-04	(ug/m3)-1	6.1E-08	1.6E-06	mg/m3	4.0E-02	mg/m3	4.1E-05
				Methyl cyclohexane	1E+00	ug/m3	9.6E-03	ug/m3	N/A	N/A	N/A	2.8E-05	mg/m3	3.0E+00	mg/m3	9.3E-06
				Toluene	2E-02	ug/m3	1.8E-04	ug/m3	N/A	N/A	N/A	5.3E-07	mg/m3	4.0E-01	mg/m3	1.3E-06
				Tetrachloroethene	2E-02	ug/m3	1.9E-04	ug/m3	5.9E-06	(ug/m3)-1	1.1E-09	5.4E-07	mg/m3	N/A	N/A	N/A
				Chlorobenzene	7E-04	ug/m3	5.3E-06	ug/m3	N/A	N/A	N/A	1.6E-08	mg/m3	6.0E-02	mg/m3	2.6E-07
				Ethylbenzene	1E-02	ug/m3	8.4E-05	ug/m3	N/A	N/A	N/A	2.4E-07	mg/m3	1.0E+00	mg/m3	2.4E-07
				1,3-Dichlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				1,4-Dichlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-01	mg/m3	N/A
				1,2-Dichlorobenzene	9E-07	ug/m3	6.9E-09	ug/m3	N/A	N/A	N/A	2.0E-11	mg/m3	N/A	N/A	N/A
				2-Methylnaphthalene	2E-03	ug/m3	1.6E-05	ug/m3	N/A	N/A	N/A	4.6E-08	mg/m3	N/A	N/A	N/A
				Acenaphthylene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-03	mg/m3	N/A
				Dibenzofuran	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Phenanthrene	3E-04	ug/m3	2.1E-06	ug/m3	N/A	N/A	N/A	6.1E-09	mg/m3	3.0E-03	mg/m3	2.0E-06
				Anthracene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-03	mg/m3	N/A
				C5-C8 Aliphatic	3E+01	ug/m3	2.4E-01	ug/m3	N/A	N/A	N/A	7.0E-04	mg/m3	2.0E-01	mg/m3	3.5E-03
				C9-C12 Aliphatic	1E+01	ug/m3	8.2E-02	ug/m3	N/A	N/A	N/A	2.4E-04	mg/m3	2.0E-01	mg/m3	1.2E-03
				C9-C10 Aromatic	1E-01	ug/m3	9.1E-04	ug/m3	N/A	N/A	N/A	2.7E-06	mg/m3	5.0E-02	mg/m3	5.3E-05
				C9-C18 Aliphatic	3E+02	ug/m3	2.5E+00	ug/m3	N/A	N/A	N/A	7.3E-03	mg/m3	2.0E-01	mg/m3	3.7E-02
				C11-C22 Aromatic	7E-02	ug/m3	5.1E-04	ug/m3	N/A	N/A	N/A	1.5E-06	mg/m3	5.0E-02	mg/m3	3.0E-05
			Exp. Route Total								2E-07					4E-02
		Exposure Point Total									2E-07					4E-02
	Exposure Medium Total										N/A					N/A
Medium Total											N/A					N/A

TABLE 3-7.11.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Water	Surface Water	Murphy Wetland	Dermal	Chromium	2.3E+01	ug/L	2.7E-07	mg/kg-day	N/A	N/A	N/A	8.0E-07	mg/kg-day	7.5E-05	mg/kg-day	1.1E-02
				Manganese	5.5E+02	ug/L	3.3E-06	mg/kg-day	N/A	N/A	N/A	9.5E-06	mg/kg-day	9.6E-04	mg/kg-day	9.9E-03
			Exp. Route Total								0E+00					2E-02
		Exposure Point Total									0E+00					2E-02
	Exposure Medium Total										N/A					N/A

TABLE 3-7.11.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Sediment	Sediment	Murphy Wetland	Ingestion													
				Naphthalene	2E+01	mg/kg	9.8E-07	mg/kg-day	N/A	N/A	N/A	2.9E-06	mg/kg-day	2.0E-02	mg/kg-day	1.4E-04
				Vinyl chloride	2E-01	mg/kg	8.9E-09	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	1.3E-08	2.6E-08	mg/kg-day	3.0E-03	mg/kg-day	8.6E-06
				Trichloroethene	9E-02	mg/kg	4.4E-09	mg/kg-day	4.0E-01	(mg/kg-day)$^{-1}$	1.8E-09	1.3E-08	mg/kg-day	3.0E-04	mg/kg-day	4.3E-05
				Ethylenedibromide	1E+01	mg/kg	5.0E-07	mg/kg-day	8.5E+01	(mg/kg-day)$^{-1}$	4.2E-05	1.5E-06	mg/kg-day	N/A	N/A	N/A
				Ethylbenzene	1E+01	mg/kg	5.8E-07	mg/kg-day	N/A	N/A	N/A	1.7E-06	mg/kg-day	1.0E-01	mg/kg-day	1.7E-05
				Xylenes (total)	5E+01	mg/kg	2.8E-06	mg/kg-day	N/A	N/A	N/A	8.1E-06	mg/kg-day	2.0E-01	mg/kg-day	4.0E-05
				Acetophenone	3E+00	mg/kg	1.7E-07	mg/kg-day	N/A	N/A	N/A	4.9E-07	mg/kg-day	1.0E-01	mg/kg-day	4.9E-06
				2-Methylnaphthalene	1E+01	mg/kg	6.4E-07	mg/kg-day	N/A	N/A	N/A	1.9E-06	mg/kg-day	4.0E-03	mg/kg-day	4.7E-04
				Benzo(a)Anthracene	3E+00	mg/kg	1.6E-07	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.2E-07	4.7E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	3E+00	mg/kg	1.5E-07	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.1E-07	4.4E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	3E+00	mg/kg	1.7E-07	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.3E-06	5.0E-07	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	3E+00	mg/kg	1.7E-07	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.2E-07	4.9E-07	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	1E+00	mg/kg	6.8E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	5.0E-07	2.0E-07	mg/kg-day	N/A	N/A	N/A
				C11-C22 Aromatic	2E+04	mg/kg	1.1E-03	mg/kg-day	N/A	N/A	N/A	3.1E-03	mg/kg-day	3.0E-02	mg/kg-day	1.0E-01
				C19-C36 Aliphatic	9E+03	mg/kg	4.9E-04	mg/kg-day	N/A	N/A	N/A	1.4E-03	mg/kg-day	2.0E+00	mg/kg-day	7.2E-04
				C9-C18 Aliphatic	2E+03	mg/kg	8.8E-05	mg/kg-day	N/A	N/A	N/A	2.6E-04	mg/kg-day	1.0E-01	mg/kg-day	2.6E-03
				Chromium (VI)	5E+01	mg/kg	2.8E-06	mg/kg-day	N/A	N/A	N/A	8.2E-06	mg/kg-day	3.0E-03	mg/kg-day	2.7E-03
				Antimony	1E+02	mg/kg	6.1E-06	mg/kg-day	N/A	N/A	N/A	1.8E-05	mg/kg-day	4.0E-04	mg/kg-day	4.5E-02
				Arsenic	1E+01	mg/kg	5.9E-07	mg/kg-day	7.7E-01	(mg/kg-day)$^{-1}$	4.5E-07	1.7E-06	mg/kg-day	5.9E-04	mg/kg-day	2.9E-03
				Barium	1E+03	mg/kg	5.9E-05	mg/kg-day	N/A	N/A	N/A	1.7E-04	mg/kg-day	7.0E-02	mg/kg-day	2.5E-03
				Cadmium	3E+00	mg/kg	1.6E-07	mg/kg-day	N/A	N/A	N/A	4.6E-07	mg/kg-day	1.0E-03	mg/kg-day	4.6E-04
				Chromium	1E+04	mg/kg	6.6E-04	mg/kg-day	N/A	N/A	N/A	1.9E-03	mg/kg-day	3.0E-03	mg/kg-day	6.4E-01
				Lead	4E+03	mg/kg	2.1E-04	mg/kg-day	N/A	N/A	N/A	6.2E-04	mg/kg-day	N/A	N/A	N/A
				Manganese	3E+02	mg/kg	1.8E-05	mg/kg-day	N/A	N/A	N/A	5.2E-05	mg/kg-day	7.0E-02	mg/kg-day	7.4E-04
				Mercury	3E+00	mg/kg	1.6E-07	mg/kg-day	N/A	N/A	N/A	4.6E-07	mg/kg-day	1.0E-04	mg/kg-day	4.6E-03
				Vanadium	6E+01	mg/kg	2.9E-06	mg/kg-day	N/A	N/A	N/A	8.5E-06	mg/kg-day	1.0E-03	mg/kg-day	8.5E-03
				PCB TEQ*	2E-04	mg/kg	9.6E-12	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	1.4E-06	2.8E-11	mg/kg-day	N/A	N/A	N/A
				gamma-Chlordane	2E+00	mg/kg	9.6E-08	mg/kg-day	3.5E-01	(mg/kg-day)$^{-1}$	3.4E-08	2.8E-07	mg/kg-day	5.0E-04	mg/kg-day	5.6E-04
				Aroclor 1254	9E+01	mg/kg	4.6E-06	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	9.2E-06	1.3E-05	mg/kg-day	2.0E-05	mg/kg-day	6.7E-01
				Aroclor 1260	5E+01	mg/kg	2.4E-06	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	4.8E-06	7.1E-06	mg/kg-day	2.0E-05	mg/kg-day	3.5E-01
			Exp. Route Total								6E-05					2E+00

TABLE 3-7.11.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Sediment (Cont.)	Sediment (Cont.)	Murphy Wetland	Dermal													
				Naphthalene	2E+01	mg/kg	1.0E-06	mg/kg-day	N/A	N/A	N/A	3.0E-06	mg/kg-day	2.0E-02	mg/kg-day	1.5E-04
				Vinyl chloride	2E-01	mg/kg	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Trichloroethene	9E-02	mg/kg	N/A	N/A	4.0E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Ethylenedibromide	1E+01	mg/kg	N/A	N/A	8.5E+01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	N/A	N/A	N/A
				Ethylbenzene	1E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-01	mg/kg-day	N/A
				Xylenes (total)	5E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/kg-day	N/A
				Acetophenone	3E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-01	mg/kg-day	N/A
				2-Methylnaphthalene	1E+01	mg/kg	6.7E-07	mg/kg-day	N/A	N/A	N/A	1.9E-06	mg/kg-day	4.0E-03	mg/kg-day	4.9E-04
				Benzo(a)Anthracene	3E+00	mg/kg	1.7E-07	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.2E-07	4.9E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	3E+00	mg/kg	1.6E-07	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.1E-07	4.6E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	3E+00	mg/kg	1.8E-07	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.3E-06	5.2E-07	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	3E+00	mg/kg	1.7E-07	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.3E-07	5.1E-07	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	1E+00	mg/kg	7.1E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	5.2E-07	2.1E-07	mg/kg-day	N/A	N/A	N/A
				C11-C22 Aromatic	2E+04	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
				C19-C36 Aliphatic	9E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E+00	mg/kg-day	N/A
				C9-C18 Aliphatic	2E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-01	mg/kg-day	N/A
				Chromium (VI)	5E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	7.5E-05	mg/kg-day	N/A
				Antimony	1E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-05	mg/kg-day	N/A
				Arsenic	1E+01	mg/kg	1.4E-07	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	2.1E-07	4.1E-07	mg/kg-day	3.0E-04	mg/kg-day	1.4E-03
				Barium	1E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.9E-03	mg/kg-day	N/A
				Cadmium	3E+00	mg/kg	1.2E-09	mg/kg-day	N/A	N/A	N/A	3.6E-09	mg/kg-day	2.5E-05	mg/kg-day	1.5E-04
				Chromium	1E+04	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	7.5E-05	mg/kg-day	N/A
				Lead	4E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Manganese	3E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.8E-03	mg/kg-day	N/A
				Mercury	3E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A
				Vanadium	6E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.6E-05	mg/kg-day	N/A
				PCB TEQ*	2E-04	mg/kg	1.1E-11	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	1.6E-06	3.1E-11	mg/kg-day	N/A	N/A	N/A
				gamma-Chlordane	2E+00	mg/kg	3.1E-08	mg/kg-day	3.5E-01	(mg/kg-day)$^{-1}$	1.1E-08	8.9E-08	mg/kg-day	5.0E-04	mg/kg-day	1.8E-04
				Aroclor 1254	9E+01	mg/kg	5.2E-06	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	1.0E-05	1.5E-05	mg/kg-day	2.0E-05	mg/kg-day	7.5E-01
				Aroclor 1260	5E+01	mg/kg	2.7E-06	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	5.4E-06	7.9E-06	mg/kg-day	2.0E-05	mg/kg-day	3.9E-01
			Exp. Route Total								2E-05					1E+00
		Exposure Point Total									8E-05					3E+00
	Exposure Medium Total										N/A					N/A
Medium Total											N/A					N/A
											Total of Receptor Risks Across All Media					N/A
																Total of Receptor Hazards Across All Media

TABLE 3-7.11.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Aberjona Property	Ingestion													
				Vinyl chloride	N/A	N/A	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Trichloroethene	N/A	N/A	N/A	N/A	4.0E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Phenanthrene	7E-01	mg/kg	1.8E-09	mg/kg-day	N/A	N/A	N/A	1.8E-08	mg/kg-day	2.0E-02	mg/kg-day	8.8E-07
				Benzo(a)Anthracene	7E-01	mg/kg	1.8E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.3E-09	1.8E-08	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	7E-01	mg/kg	1.9E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.4E-09	1.9E-08	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	5E-01	mg/kg	1.3E-09	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	9.5E-11	1.3E-08	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	5E-01	mg/kg	1.3E-09	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	9.6E-09	1.3E-08	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	5E-01	mg/kg	1.3E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	9.6E-10	1.3E-08	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	6E-03	mg/kg	1.6E-11	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.2E-10	1.6E-10	mg/kg-day	N/A	N/A	N/A
				Benzo(g,h,i)perylene	6E-01	mg/kg	1.5E-09	mg/kg-day	N/A	N/A	N/A	1.5E-08	mg/kg-day	2.0E-02	mg/kg-day	7.6E-07
				Antimony	2E+00	mg/kg	4.6E-09	mg/kg-day	N/A	N/A	N/A	4.6E-08	mg/kg-day	4.0E-04	mg/kg-day	1.1E-04
				Arsenic	6E+00	mg/kg	1.4E-08	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	2.2E-08	1.4E-07	mg/kg-day	3.0E-04	mg/kg-day	4.8E-04
				Cadmium	1E+01	mg/kg	2.5E-08	mg/kg-day	N/A	N/A	N/A	2.5E-07	mg/kg-day	1.0E-03	mg/kg-day	2.5E-04
				Copper	1E+02	mg/kg	2.6E-07	mg/kg-day	N/A	N/A	N/A	2.6E-06	mg/kg-day	3.0E-02	mg/kg-day	8.6E-05
				Lead	1E+03	mg/kg	2.9E-06	mg/kg-day	N/A	N/A	N/A	2.9E-05	mg/kg-day	N/A	N/A	N/A
				Manganese	3E+02	mg/kg	7.0E-07	mg/kg-day	N/A	N/A	N/A	7.0E-06	mg/kg-day	7.0E-02	mg/kg-day	9.9E-05
				Mercury	9E-02	mg/kg	2.4E-10	mg/kg-day	N/A	N/A	N/A	2.4E-09	mg/kg-day	1.0E-04	mg/kg-day	2.4E-05
				Nickel	6E+01	mg/kg	1.6E-07	mg/kg-day	N/A	N/A	N/A	1.6E-06	mg/kg-day	2.0E-02	mg/kg-day	8.2E-05
				Thallium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-05	mg/kg-day	N/A
				Aroclor 1242	1E-01	mg/kg	2.9E-10	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	2.9E-10	2.9E-09	mg/kg-day	2.0E-05	mg/kg-day	1.4E-04
				Aroclor 1248	N/A	N/A	N/A	N/A	1.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1254	5E-02	mg/kg	1.4E-10	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	1.4E-10	1.4E-09	mg/kg-day	2.0E-05	mg/kg-day	6.8E-05
				Aroclor 1260	8E-02	mg/kg	2.0E-10	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	2.0E-10	2.0E-09	mg/kg-day	2.0E-05	mg/kg-day	1.0E-04
				PCB TEQ*	1E-06	mg/kg	2.9E-15	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	4.3E-10	2.9E-14	mg/kg-day	N/A	N/A	N/A
				C11-C22 Aromatic	1E+01	mg/kg	3.7E-08	mg/kg-day	N/A	N/A	N/A	3.7E-07	mg/kg-day	3.0E-02	mg/kg-day	1.2E-05
			Exp. Route Total								4E-08					1E-03

TABLE 3-7.11.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil (Cont.)	Surface Soil (Cont.)	Aberjona Property	Dermal													
				Vinyl chloride	N/A	N/A	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Trichloroethene	N/A	N/A	N/A	N/A	4.0E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Phenanthrene	7E-01	mg/kg	3.7E-09	mg/kg-day	N/A	N/A	N/A	3.7E-08	mg/kg-day	2.0E-02	mg/kg-day	1.8E-06
				Benzo(a)Anthracene	7E-01	mg/kg	3.7E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	2.7E-09	3.7E-08	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	7E-01	mg/kg	3.9E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	2.8E-09	3.9E-08	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	5E-01	mg/kg	2.7E-09	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	2.0E-10	2.7E-08	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	5E-01	mg/kg	2.7E-09	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	2.0E-08	2.7E-08	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	5E-01	mg/kg	2.7E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	2.0E-09	2.7E-08	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	6E-03	mg/kg	3.3E-11	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	2.4E-10	3.3E-10	mg/kg-day	N/A	N/A	N/A
				Benzo(g,h,i)perylene	6E-01	mg/kg	3.1E-09	mg/kg-day	N/A	N/A	N/A	3.1E-08	mg/kg-day	2.0E-02	mg/kg-day	1.6E-06
				Antimony	2E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-05	mg/kg-day	N/A
				Arsenic	6E+00	mg/kg	6.9E-09	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	1.0E-08	6.9E-08	mg/kg-day	3.0E-04	mg/kg-day	2.3E-04
				Cadmium	1E+01	mg/kg	4.0E-10	mg/kg-day	N/A	N/A	N/A	4.0E-09	mg/kg-day	2.5E-05	mg/kg-day	1.6E-04
				Copper	1E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
				Lead	1E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Manganese	3E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.8E-03	mg/kg-day	N/A
				Mercury	9E-02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A
				Nickel	6E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-04	mg/kg-day	N/A
				Thallium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-05	mg/kg-day	N/A
				Aroclor 1242	1E-01	mg/kg	6.4E-10	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	6.4E-10	6.4E-09	mg/kg-day	2.0E-05	mg/kg-day	3.2E-04
				Aroclor 1248	N/A	N/A	N/A	N/A	1.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1254	5E-02	mg/kg	3.1E-10	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	3.1E-10	3.1E-09	mg/kg-day	2.0E-05	mg/kg-day	1.5E-04
				Aroclor 1260	8E-02	mg/kg	4.5E-10	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	4.5E-10	4.5E-09	mg/kg-day	2.0E-05	mg/kg-day	2.2E-04
				PCB TEQ*	1E-06	mg/kg	6.4E-15	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	9.6E-10	6.4E-14	mg/kg-day	N/A	N/A	N/A
				C11-C22 Aromatic	1E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
			Exp. Route Total								4E-08					1E-03
		Exposure Point Total									8E-08					3E-03

TABLE 3-7.11.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil (Cont.)	Surface Soil (Cont.)	Whitney Property	Ingestion													
				Vinyl chloride	1E-01	mg/kg	2.7E-10	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	4.1E-10	2.7E-09	mg/kg-day	3.0E-03	mg/kg-day	9.1E-07
				Trichloroethene	1E-03	mg/kg	3.6E-12	mg/kg-day	4.0E-01	(mg/kg-day)$^{-1}$	1.4E-12	3.6E-11	mg/kg-day	3.0E-04	mg/kg-day	1.2E-07
				Phenanthrene	1E+01	mg/kg	3.3E-08	mg/kg-day	N/A	N/A	N/A	3.3E-07	mg/kg-day	2.0E-02	mg/kg-day	1.6E-05
				Benzo(a)Anthracene	8E+00	mg/kg	1.9E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.4E-08	1.9E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	8E+00	mg/kg	1.9E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.4E-08	1.9E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	4E+00	mg/kg	1.0E-08	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	7.3E-10	1.0E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	6E+00	mg/kg	1.6E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.2E-07	1.6E-07	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	1E+01	mg/kg	2.8E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	2.0E-08	2.8E-07	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	3E+00	mg/kg	7.6E-09	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	5.5E-08	7.6E-08	mg/kg-day	N/A	N/A	N/A
				Benzo(g,h,i)perylene	8E+00	mg/kg	2.1E-08	mg/kg-day	N/A	N/A	N/A	2.1E-07	mg/kg-day	2.0E-02	mg/kg-day	1.0E-05
				Antimony	3E+00	mg/kg	7.2E-09	mg/kg-day	N/A	N/A	N/A	7.2E-08	mg/kg-day	4.0E-04	mg/kg-day	1.8E-04
				Arsenic	6E+00	mg/kg	1.4E-08	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	2.2E-08	1.4E-07	mg/kg-day	3.0E-04	mg/kg-day	4.8E-04
				Cadmium	3E+00	mg/kg	7.2E-09	mg/kg-day	N/A	N/A	N/A	7.2E-08	mg/kg-day	1.0E-03	mg/kg-day	7.2E-05
				Copper	1E+02	mg/kg	3.2E-07	mg/kg-day	N/A	N/A	N/A	3.2E-06	mg/kg-day	3.0E-02	mg/kg-day	1.1E-04
				Lead	7E+02	mg/kg	1.9E-06	mg/kg-day	N/A	N/A	N/A	1.9E-05	mg/kg-day	N/A	N/A	N/A
				Manganese	3E+02	mg/kg	6.6E-07	mg/kg-day	N/A	N/A	N/A	6.6E-06	mg/kg-day	7.0E-02	mg/kg-day	9.5E-05
				Mercury	5E-01	mg/kg	1.4E-09	mg/kg-day	N/A	N/A	N/A	1.4E-08	mg/kg-day	1.0E-04	mg/kg-day	1.4E-04
				Nickel	3E+01	mg/kg	6.6E-08	mg/kg-day	N/A	N/A	N/A	6.6E-07	mg/kg-day	2.0E-02	mg/kg-day	3.3E-05
				Thallium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-05	mg/kg-day	N/A
				Aroclor 1242	4E-01	mg/kg	9.7E-10	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	9.7E-10	9.7E-09	mg/kg-day	2.0E-05	mg/kg-day	4.8E-04
				Aroclor 1248	9E-02	mg/kg	2.4E-10	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	2.4E-10	2.4E-09	mg/kg-day	2.0E-05	mg/kg-day	1.2E-04
				Aroclor 1254	4E+00	mg/kg	1.0E-08	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	1.0E-08	1.0E-07	mg/kg-day	2.0E-05	mg/kg-day	5.0E-03
				Aroclor 1260	2E+00	mg/kg	5.1E-09	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	5.1E-09	5.1E-08	mg/kg-day	2.0E-05	mg/kg-day	2.6E-03
				PCB TEQ*	5E-05	mg/kg	1.2E-13	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	1.8E-08	1.2E-12	mg/kg-day	N/A	N/A	N/A
				C11-C22 Aromatic	5E+02	mg/kg	1.2E-06	mg/kg-day	N/A	N/A	N/A	1.2E-05	mg/kg-day	3.0E-02	mg/kg-day	3.9E-04
			Exp. Route Total								3E-07					1E-02

TABLE 3-7.11.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil (Cont.)	Surface Soil (Cont.)	Whitney Property	Dermal													
				Vinyl chloride	1E-01	mg/kg	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Trichloroethene	1E-03	mg/kg	N/A	N/A	4.0E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Phenanthrene	1E+01	mg/kg	6.8E-08	mg/kg-day	N/A	N/A	N/A	6.8E-07	mg/kg-day	2.0E-02	mg/kg-day	3.4E-05
				Benzo(a)Anthracene	8E+00	mg/kg	4.0E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	2.9E-08	4.0E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	8E+00	mg/kg	4.0E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	2.9E-08	4.0E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	4E+00	mg/kg	2.1E-08	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	1.5E-09	2.1E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	6E+00	mg/kg	3.4E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	2.5E-07	3.4E-07	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	1E+01	mg/kg	5.8E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	4.2E-08	5.8E-07	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	3E+00	mg/kg	1.6E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.1E-07	1.6E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(g,h,i)perylene	8E+00	mg/kg	4.3E-08	mg/kg-day	N/A	N/A	N/A	4.3E-07	mg/kg-day	2.0E-02	mg/kg-day	2.2E-05
				Antimony	3E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-05	mg/kg-day	N/A
				Arsenic	6E+00	mg/kg	6.9E-09	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	1.0E-08	6.9E-08	mg/kg-day	3.0E-04	mg/kg-day	2.3E-04
				Cadmium	3E+00	mg/kg	1.2E-10	mg/kg-day	N/A	N/A	N/A	1.2E-09	mg/kg-day	2.5E-05	mg/kg-day	4.6E-05
				Copper	1E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
				Lead	7E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Manganese	3E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.8E-03	mg/kg-day	N/A
				Mercury	5E-01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A
				Nickel	3E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-04	mg/kg-day	N/A
				Thallium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-05	mg/kg-day	N/A
				Aroclor 1242	4E-01	mg/kg	2.2E-09	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	2.2E-09	2.2E-08	mg/kg-day	2.0E-05	mg/kg-day	1.1E-03
				Aroclor 1248	9E-02	mg/kg	5.4E-10	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	5.4E-10	5.4E-09	mg/kg-day	2.0E-05	mg/kg-day	2.7E-04
				Aroclor 1254	4E+00	mg/kg	2.2E-08	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	2.2E-08	2.2E-07	mg/kg-day	2.0E-05	mg/kg-day	1.1E-02
				Aroclor 1260	2E+00	mg/kg	1.1E-08	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	1.1E-08	1.1E-07	mg/kg-day	2.0E-05	mg/kg-day	5.7E-03
				PCB TEQ*	5E-05	mg/kg	2.7E-13	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	4.0E-08	2.7E-12	mg/kg-day	N/A	N/A	N/A
				C11-C22 Aromatic	5E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
			Exp. Route Total								6E-07					2E-02
		Exposure Point Total									8E-07					3E-02

TABLE 3-7.11.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil (Cont.)	Surface Soil (Cont.)	Murphy Property	Ingestion													
				Vinyl chloride	N/A	N/A	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Trichloroethene	4E-01	mg/kg	9.6E-10	mg/kg-day	4.0E-01	(mg/kg-day)$^{-1}$	3.9E-10	9.6E-09	mg/kg-day	3.0E-04	mg/kg-day	3.2E-05
				Phenanthrene	2E+00	mg/kg	4.0E-09	mg/kg-day	N/A	N/A	N/A	4.0E-08	mg/kg-day	2.0E-02	mg/kg-day	2.0E-06
				Benzo(a)Anthracene	2E+00	mg/kg	6.2E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	4.6E-09	6.2E-08	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	9E-01	mg/kg	2.4E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.7E-09	2.4E-08	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	9E-01	mg/kg	2.4E-09	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	1.7E-10	2.4E-08	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	2E+00	mg/kg	4.0E-09	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	2.9E-08	4.0E-08	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	1E+00	mg/kg	3.2E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	2.4E-09	3.2E-08	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	2E-01	mg/kg	5.3E-10	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	3.9E-09	5.3E-09	mg/kg-day	N/A	N/A	N/A
				Benzo(g,h,i)perylene	1E+00	mg/kg	3.4E-09	mg/kg-day	N/A	N/A	N/A	3.4E-08	mg/kg-day	2.0E-02	mg/kg-day	1.7E-06
				Antimony	4E+00	mg/kg	9.2E-09	mg/kg-day	N/A	N/A	N/A	9.2E-08	mg/kg-day	4.0E-04	mg/kg-day	2.3E-04
				Arsenic	8E+00	mg/kg	2.1E-08	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	3.1E-08	2.1E-07	mg/kg-day	3.0E-04	mg/kg-day	6.9E-04
				Cadmium	3E+00	mg/kg	7.5E-09	mg/kg-day	N/A	N/A	N/A	7.5E-08	mg/kg-day	1.0E-03	mg/kg-day	7.5E-05
				Copper	4E+01	mg/kg	9.0E-08	mg/kg-day	N/A	N/A	N/A	9.0E-07	mg/kg-day	3.0E-02	mg/kg-day	3.0E-05
				Lead	8E+02	mg/kg	2.1E-06	mg/kg-day	N/A	N/A	N/A	2.1E-05	mg/kg-day	N/A	N/A	N/A
				Manganese	4E+02	mg/kg	1.0E-06	mg/kg-day	N/A	N/A	N/A	1.0E-05	mg/kg-day	7.0E-02	mg/kg-day	1.5E-04
				Mercury	6E-01	mg/kg	1.5E-09	mg/kg-day	N/A	N/A	N/A	1.5E-08	mg/kg-day	1.0E-04	mg/kg-day	1.5E-04
				Nickel	2E+01	mg/kg	4.3E-08	mg/kg-day	N/A	N/A	N/A	4.3E-07	mg/kg-day	2.0E-02	mg/kg-day	2.1E-05
				Thallium	6E+00	mg/kg	1.5E-08	mg/kg-day	N/A	N/A	N/A	1.5E-07	mg/kg-day	8.0E-05	mg/kg-day	1.8E-03
				Aroclor 1242	N/A	N/A	N/A	N/A	1.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1248	N/A	N/A	N/A	N/A	1.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1254	5E-01	mg/kg	1.1E-09	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	1.1E-09	1.1E-08	mg/kg-day	2.0E-05	mg/kg-day	5.7E-04
				Aroclor 1260	5E-02	mg/kg	1.2E-10	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	1.2E-10	1.2E-09	mg/kg-day	2.0E-05	mg/kg-day	6.2E-05
				PCB TEQ*	6E-08	mg/kg	1.5E-16	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	2.2E-11	1.5E-15	mg/kg-day	N/A	N/A	N/A
				C11-C22 Aromatic	4E+03	mg/kg	9.5E-06	mg/kg-day	N/A	N/A	N/A	9.5E-05	mg/kg-day	3.0E-02	mg/kg-day	3.2E-03
			Exp. Route Total								7E-08					7E-03

TABLE 3-7.11.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil (Cont.)	Surface Soil (Cont.)	Murphy Property	Dermal													
				Vinyl chloride	N/A	N/A	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Trichloroethene	4E-01	mg/kg	N/A	N/A	4.0E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Phenanthrene	2E+00	mg/kg	8.2E-09	mg/kg-day	N/A	N/A	N/A	8.2E-08	mg/kg-day	2.0E-02	mg/kg-day	4.1E-06
				Benzo(a)Anthracene	2E+00	mg/kg	1.3E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	9.4E-09	1.3E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	9E-01	mg/kg	4.9E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	3.6E-09	4.9E-08	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	9E-01	mg/kg	4.9E-09	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	3.6E-10	4.9E-08	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	2E+00	mg/kg	8.2E-09	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	6.0E-08	8.2E-08	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	1E+00	mg/kg	6.7E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	4.9E-09	6.7E-08	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	2E-01	mg/kg	1.1E-09	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	8.1E-09	1.1E-08	mg/kg-day	N/A	N/A	N/A
				Benzo(g,h,i)perylene	1E+00	mg/kg	7.2E-09	mg/kg-day	N/A	N/A	N/A	7.2E-08	mg/kg-day	2.0E-02	mg/kg-day	3.6E-06
				Antimony	4E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-05	mg/kg-day	N/A
				Arsenic	8E+00	mg/kg	9.9E-09	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	1.5E-08	9.9E-08	mg/kg-day	3.0E-04	mg/kg-day	3.3E-04
				Cadmium	3E+00	mg/kg	1.2E-10	mg/kg-day	N/A	N/A	N/A	1.2E-09	mg/kg-day	2.5E-05	mg/kg-day	4.8E-05
				Copper	4E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
				Lead	8E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Manganese	4E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.8E-03	mg/kg-day	N/A
				Mercury	6E-01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A
				Nickel	2E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-04	mg/kg-day	N/A
				Thallium	6E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-05	mg/kg-day	N/A
				Aroclor 1242	N/A	N/A	N/A	N/A	1.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1248	N/A	N/A	N/A	N/A	1.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1254	5E-01	mg/kg	2.6E-09	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	2.6E-09	2.6E-08	mg/kg-day	2.0E-05	mg/kg-day	1.3E-03
				Aroclor 1260	5E-02	mg/kg	2.8E-10	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	2.8E-10	2.8E-09	mg/kg-day	2.0E-05	mg/kg-day	1.4E-04
				PCB TEQ*	6E-08	mg/kg	3.3E-16	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	5.0E-11	3.3E-15	mg/kg-day	N/A	N/A	N/A
				C11-C22 Aromatic	4E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
			Exp. Route Total								1E-07					2E-03
		Exposure Point Total									2E-07					9E-03
	Exposure Medium Total										N/A					N/A
Medium Total											N/A					N/A

TABLE 3-7.11.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Subsurface Soil	Subsurface Soil	Aberjona Property	Ingestion													
				1,2,4-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/kg-day	N/A
				1,3,5-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/kg-day	N/A
				Naphthalene	1E+01	mg/kg	3.0E-08	mg/kg-day	N/A	N/A	N/A	3.0E-07	mg/kg-day	2.0E-02	mg/kg-day	1.5E-05
				Vinyl chloride	N/A	N/A	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Methylene chloride	N/A	N/A	N/A	N/A	7.5E-03	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	6.0E-02	mg/kg-day	N/A
				cis-1,2-Dichloroethene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-02	mg/kg-day	N/A
				Trichloroethene	N/A	N/A	N/A	N/A	4.0E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Xylenes (total)	3E+00	mg/kg	6.5E-09	mg/kg-day	N/A	N/A	N/A	6.5E-08	mg/kg-day	2.0E-01	mg/kg-day	3.3E-07
				2-Methylnaphthalene	1E+01	mg/kg	3.7E-08	mg/kg-day	N/A	N/A	N/A	3.7E-07	mg/kg-day	4.0E-03	mg/kg-day	9.3E-05
				2,4,6-Trichlorophenol	N/A	N/A	N/A	N/A	1.1E-02	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A
				Acenaphthylene	3E+00	mg/kg	8.4E-09	mg/kg-day	N/A	N/A	N/A	8.4E-08	mg/kg-day	2.0E-02	mg/kg-day	4.2E-06
				Phenanthrene	2E+00	mg/kg	6.1E-09	mg/kg-day	N/A	N/A	N/A	6.1E-08	mg/kg-day	2.0E-02	mg/kg-day	3.1E-06
				Benzo(a)Anthracene	3E-02	mg/kg	6.4E-11	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	4.6E-11	6.4E-10	mg/kg-day	N/A	N/A	N/A
				Bis(2-ethylhexyl) phthalate	N/A	N/A	N/A	N/A	1.4E-02	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-02	mg/kg-day	N/A
				Benzo(b)Fluoranthene	5E-02	mg/kg	1.3E-10	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	9.5E-11	1.3E-09	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	4E+00	mg/kg	9.3E-09	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	6.8E-10	9.3E-08	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	2E+00	mg/kg	4.5E-09	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	3.3E-08	4.5E-08	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	2E+00	mg/kg	5.6E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	4.1E-09	5.6E-08	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	1E+00	mg/kg	3.5E-09	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	2.6E-08	3.5E-08	mg/kg-day	N/A	N/A	N/A
				Antimony	4E+00	mg/kg	9.5E-09	mg/kg-day	N/A	N/A	N/A	9.5E-08	mg/kg-day	4.0E-04	mg/kg-day	2.4E-04
				Arsenic	2E+01	mg/kg	5.3E-08	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	8.0E-08	5.3E-07	mg/kg-day	3.0E-04	mg/kg-day	1.8E-03
				Barium	2E+02	mg/kg	3.9E-07	mg/kg-day	N/A	N/A	N/A	3.9E-06	mg/kg-day	7.0E-02	mg/kg-day	5.6E-05
				Cadmium	3E+00	mg/kg	8.4E-09	mg/kg-day	N/A	N/A	N/A	8.4E-08	mg/kg-day	1.0E-03	mg/kg-day	8.4E-05
				Lead	2E+02	mg/kg	4.7E-07	mg/kg-day	N/A	N/A	N/A	4.7E-06	mg/kg-day	N/A	N/A	N/A
				Manganese	3E+02	mg/kg	6.6E-07	mg/kg-day	N/A	N/A	N/A	6.6E-06	mg/kg-day	7.0E-02	mg/kg-day	9.4E-05
				Mercury	5E-01	mg/kg	1.2E-09	mg/kg-day	N/A	N/A	N/A	1.2E-08	mg/kg-day	1.0E-04	mg/kg-day	1.2E-04
				Thallium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-05	mg/kg-day	N/A
				alpha-Chlordane	4E-03	mg/kg	9.9E-12	mg/kg-day	3.5E-01	(mg/kg-day)$^{-1}$	3.5E-12	9.9E-11	mg/kg-day	5.0E-04	mg/kg-day	2.0E-07
				gamma-Chlordane	5E-03	mg/kg	1.2E-11	mg/kg-day	3.5E-01	(mg/kg-day)$^{-1}$	4.1E-12	1.2E-10	mg/kg-day	5.0E-04	mg/kg-day	2.4E-07
				4,4'-DDE	5E-03	mg/kg	1.3E-11	mg/kg-day	3.4E-01	(mg/kg-day)$^{-1}$	4.4E-12	1.3E-10	mg/kg-day	3.0E-04	mg/kg-day	4.3E-07
				4,4'-DDT	2E-02	mg/kg	4.2E-11	mg/kg-day	3.4E-01	(mg/kg-day)$^{-1}$	1.4E-11	4.2E-10	mg/kg-day	5.0E-04	mg/kg-day	8.4E-07
				Aroclor 1242	2E-01	mg/kg	4.1E-10	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	4.1E-10	4.1E-09	mg/kg-day	2.0E-05	mg/kg-day	2.0E-04
				Aroclor 1248	N/A	N/A	N/A	N/A	1.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1254	N/A	N/A	N/A	N/A	1.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1260	1E-01	mg/kg	3.5E-10	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	3.5E-10	3.5E-09	mg/kg-day	2.0E-05	mg/kg-day	1.7E-04
				PCB TEQ*	5E-06	mg/kg	1.1E-14	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	1.7E-09	1.1E-13	mg/kg-day	N/A	N/A	N/A
				C5-C8 Aliphatic	1E+01	mg/kg	2.7E-08	mg/kg-day	N/A	N/A	N/A	2.7E-07	mg/kg-day	4.0E-02	mg/kg-day	6.7E-06
				C9-C10 Aromatic	2E+02	mg/kg	4.5E-07	mg/kg-day	N/A	N/A	N/A	4.5E-06	mg/kg-day	3.0E-02	mg/kg-day	1.5E-04
				C9-C18 Aliphatic	1E+03	mg/kg	3.1E-06	mg/kg-day	N/A	N/A	N/A	3.1E-05	mg/kg-day	1.0E-01	mg/kg-day	3.1E-04
				C19-C36 Aliphatic	3E+02	mg/kg	8.7E-07	mg/kg-day	N/A	N/A	N/A	8.7E-06	mg/kg-day	2.0E+00	mg/kg-day	4.4E-06
				C11-C22 Aromatic	9E+02	mg/kg	2.4E-06	mg/kg-day	N/A	N/A	N/A	2.4E-05	mg/kg-day	3.0E-02	mg/kg-day	7.8E-04
			Exp. Route Total								1E-07					4E-03

TABLE 3-7.11.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Subsurface Soil (Cont.)	Subsurface Soil (Cont.)	Aberjona Property	Dermal													
				1,2,4-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/kg-day	N/A
				1,3,5-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/kg-day	N/A
				Naphthalene	1E+01	mg/kg	6.2E-08	mg/kg-day	N/A	N/A	N/A	6.2E-07	mg/kg-day	2.0E-02	mg/kg-day	3.1E-05
				Vinyl chloride	N/A	N/A	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Methylene chloride	N/A	N/A	N/A	N/A	7.5E-03	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	6.0E-02	mg/kg-day	N/A
				cis-1,2-Dichloroethene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-02	mg/kg-day	N/A
				Trichloroethene	N/A	N/A	N/A	N/A	4.0E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Xylenes (total)	3E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/kg-day	N/A
				2-Methylnaphthalene	1E+01	mg/kg	7.7E-08	mg/kg-day	N/A	N/A	N/A	7.7E-07	mg/kg-day	4.0E-03	mg/kg-day	1.9E-04
				2,4,6-Trichlorophenol	N/A	N/A	N/A	N/A	1.1E-02	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A
				Acenaphthylene	3E+00	mg/kg	1.7E-08	mg/kg-day	N/A	N/A	N/A	1.7E-07	mg/kg-day	2.0E-02	mg/kg-day	8.7E-06
				Phenanthrene	2E+00	mg/kg	1.3E-08	mg/kg-day	N/A	N/A	N/A	1.3E-07	mg/kg-day	2.0E-02	mg/kg-day	6.4E-06
				Benzo(a)Anthracene	3E-02	mg/kg	1.3E-10	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	9.6E-11	1.3E-09	mg/kg-day	N/A	N/A	N/A
				Bis(2-ethylhexyl) phthalate	N/A	N/A	N/A	N/A	1.4E-02	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-02	mg/kg-day	N/A
				Benzo(b)Fluoranthene	5E-02	mg/kg	2.7E-10	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	2.0E-10	2.7E-09	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	4E+00	mg/kg	1.9E-08	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	1.4E-09	1.9E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	2E+00	mg/kg	9.4E-09	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	6.8E-08	9.4E-08	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	2E+00	mg/kg	1.2E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	8.5E-09	1.2E-07	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	1E+00	mg/kg	7.3E-09	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	5.3E-08	7.3E-08	mg/kg-day	N/A	N/A	N/A
				Antimony	4E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-05	mg/kg-day	N/A
				Arsenic	2E+01	mg/kg	2.5E-08	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	3.8E-08	2.5E-07	mg/kg-day	3.0E-04	mg/kg-day	8.5E-04
				Barium	2E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.9E-03	mg/kg-day	N/A
				Cadmium	3E+00	mg/kg	1.3E-10	mg/kg-day	N/A	N/A	N/A	1.3E-09	mg/kg-day	2.5E-05	mg/kg-day	5.4E-05
				Lead	2E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Manganese	3E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.8E-03	mg/kg-day	N/A
				Mercury	5E-01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A
				Thallium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-05	mg/kg-day	N/A
				alpha-Chlordane	4E-03	mg/kg	6.4E-12	mg/kg-day	3.5E-01	(mg/kg-day)$^{-1}$	2.2E-12	6.4E-11	mg/kg-day	5.0E-04	mg/kg-day	1.3E-07
				gamma-Chlordane	5E-03	mg/kg	7.6E-12	mg/kg-day	3.5E-01	(mg/kg-day)$^{-1}$	2.6E-12	7.6E-11	mg/kg-day	5.0E-04	mg/kg-day	1.5E-07
				4,4'-DDE	5E-03	mg/kg	N/A	N/A	3.4E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				4,4'-DDT	2E-02	mg/kg	2.0E-11	mg/kg-day	3.4E-01	(mg/kg-day)$^{-1}$	6.8E-12	2.0E-10	mg/kg-day	5.0E-04	mg/kg-day	4.0E-07
				Aroclor 1242	2E-01	mg/kg	9.2E-10	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	9.2E-10	9.2E-09	mg/kg-day	2.0E-05	mg/kg-day	4.6E-04
				Aroclor 1248	N/A	N/A	N/A	N/A	1.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1254	N/A	N/A	N/A	N/A	1.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1260	1E-01	mg/kg	7.8E-10	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	7.8E-10	7.8E-09	mg/kg-day	2.0E-05	mg/kg-day	3.9E-04
				PCB TEQ*	5E-06	mg/kg	2.6E-14	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	3.8E-09	2.6E-13	mg/kg-day	N/A	N/A	N/A
				C5-C8 Aliphatic	1E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.0E-02	mg/kg-day	N/A
				C9-C10 Aromatic	2E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
				C9-C18 Aliphatic	1E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-01	mg/kg-day	N/A
				C19-C36 Aliphatic	3E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E+00	mg/kg-day	N/A
				C11-C22 Aromatic	9E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
			Exp. Route Total								2E-07					2E-03
		Exposure Point Total									3E-07					6E-03

TABLE 3-7.11.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Subsurface Soil (Cont.)	Subsurface Soil (Cont.)	Whitney Property	Ingestion													
				1,2,4-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/kg-day	N/A
				1,3,5-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/kg-day	N/A
				Naphthalene	2E+00	mg/kg	6.2E-09	mg/kg-day	N/A	N/A	N/A	6.2E-08	mg/kg-day	2.0E-02	mg/kg-day	3.1E-06
				Vinyl chloride	3E-01	mg/kg	8.6E-10	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	1.3E-09	8.6E-09	mg/kg-day	3.0E-03	mg/kg-day	2.9E-06
				Methylene chloride	4E-01	mg/kg	9.6E-10	mg/kg-day	7.5E-03	(mg/kg-day)$^{-1}$	7.2E-12	9.6E-09	mg/kg-day	6.0E-02	mg/kg-day	1.6E-07
				cis-1,2-Dichloroethene	1E-01	mg/kg	3.1E-10	mg/kg-day	N/A	N/A	N/A	3.1E-09	mg/kg-day	1.0E-02	mg/kg-day	3.1E-07
				Trichloroethene	5E-01	mg/kg	1.3E-09	mg/kg-day	4.0E-01	(mg/kg-day)$^{-1}$	5.0E-10	1.3E-08	mg/kg-day	3.0E-04	mg/kg-day	4.2E-05
				Xylenes (total)	6E-01	mg/kg	1.6E-09	mg/kg-day	N/A	N/A	N/A	1.6E-08	mg/kg-day	2.0E-01	mg/kg-day	8.1E-08
				2-Methylnaphthalene	4E+00	mg/kg	1.1E-08	mg/kg-day	N/A	N/A	N/A	1.1E-07	mg/kg-day	4.0E-03	mg/kg-day	2.8E-05
				2,4,6-Trichlorophenol	7E-01	mg/kg	1.8E-09	mg/kg-day	1.1E-02	(mg/kg-day)$^{-1}$	2.0E-11	1.8E-08	mg/kg-day	1.0E-04	mg/kg-day	1.8E-04
				Acenaphthylene	2E-02	mg/kg	4.8E-11	mg/kg-day	N/A	N/A	N/A	4.8E-10	mg/kg-day	2.0E-02	mg/kg-day	2.4E-08
				Phenanthrene	3E+00	mg/kg	7.4E-09	mg/kg-day	N/A	N/A	N/A	7.4E-08	mg/kg-day	2.0E-02	mg/kg-day	3.7E-06
				Benzo(a)Anthracene	1E+00	mg/kg	3.1E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	2.3E-09	3.1E-08	mg/kg-day	N/A	N/A	N/A
				Bis(2-ethylhexyl) phthalate	3E+02	mg/kg	7.5E-07	mg/kg-day	1.4E-02	(mg/kg-day)$^{-1}$	1.0E-08	7.5E-06	mg/kg-day	2.0E-02	mg/kg-day	3.7E-04
				Benzo(b)Fluoranthene	1E+00	mg/kg	3.8E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	2.8E-09	3.8E-08	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	1E+00	mg/kg	2.5E-09	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	1.8E-10	2.5E-08	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	1E+00	mg/kg	3.1E-09	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	2.3E-08	3.1E-08	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	9E-01	mg/kg	2.2E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.6E-09	2.2E-08	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	2E-01	mg/kg	5.9E-10	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	4.3E-09	5.9E-09	mg/kg-day	N/A	N/A	N/A
				Antimony	6E+00	mg/kg	1.7E-08	mg/kg-day	N/A	N/A	N/A	1.7E-07	mg/kg-day	4.0E-04	mg/kg-day	4.1E-04
				Arsenic	3E+01	mg/kg	7.1E-08	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	1.1E-07	7.1E-07	mg/kg-day	3.0E-04	mg/kg-day	2.4E-03
				Barium	2E+02	mg/kg	4.2E-07	mg/kg-day	N/A	N/A	N/A	4.2E-06	mg/kg-day	7.0E-02	mg/kg-day	6.0E-05
				Cadmium	6E+00	mg/kg	1.5E-08	mg/kg-day	N/A	N/A	N/A	1.5E-07	mg/kg-day	1.0E-03	mg/kg-day	1.5E-04
				Lead	6E+02	mg/kg	1.5E-06	mg/kg-day	N/A	N/A	N/A	1.5E-05	mg/kg-day	N/A	N/A	N/A
				Manganese	3E+02	mg/kg	6.4E-07	mg/kg-day	N/A	N/A	N/A	6.4E-06	mg/kg-day	7.0E-02	mg/kg-day	9.1E-05
				Mercury	2E+00	mg/kg	6.2E-09	mg/kg-day	N/A	N/A	N/A	6.2E-08	mg/kg-day	1.0E-04	mg/kg-day	6.2E-04
				Thallium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-05	mg/kg-day	N/A
				alpha-Chlordane	6E+01	mg/kg	1.6E-07	mg/kg-day	3.5E-01	(mg/kg-day)$^{-1}$	5.5E-08	1.6E-06	mg/kg-day	5.0E-04	mg/kg-day	3.2E-03
				gamma-Chlordane	6E-03	mg/kg	1.6E-11	mg/kg-day	3.5E-01	(mg/kg-day)$^{-1}$	5.4E-12	1.6E-10	mg/kg-day	5.0E-04	mg/kg-day	3.1E-07
				4,4'-DDE	2E+01	mg/kg	4.5E-08	mg/kg-day	3.4E-01	(mg/kg-day)$^{-1}$	1.5E-08	4.5E-07	mg/kg-day	3.0E-04	mg/kg-day	1.5E-03
				4,4'-DDT	5E-03	mg/kg	1.3E-11	mg/kg-day	3.4E-01	(mg/kg-day)$^{-1}$	4.6E-12	1.3E-10	mg/kg-day	5.0E-04	mg/kg-day	2.7E-07
				Aroclor 1242	N/A	N/A	N/A	N/A	1.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1248	7E+02	mg/kg	1.9E-06	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	1.9E-06	1.9E-05	mg/kg-day	2.0E-05	mg/kg-day	9.5E-01
				Aroclor 1254	4E+02	mg/kg	1.0E-06	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	1.0E-06	1.0E-05	mg/kg-day	2.0E-05	mg/kg-day	5.2E-01
				Aroclor 1260	2E+02	mg/kg	5.8E-07	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	5.8E-07	5.8E-06	mg/kg-day	2.0E-05	mg/kg-day	2.9E-01
				PCB TEQ*	1E-03	mg/kg	3.6E-12	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	5.3E-07	3.6E-11	mg/kg-day	N/A	N/A	N/A
				C5-C8 Aliphatic	5E+01	mg/kg	1.3E-07	mg/kg-day	N/A	N/A	N/A	1.3E-06	mg/kg-day	4.0E-02	mg/kg-day	3.3E-05
				C9-C10 Aromatic	5E+02	mg/kg	1.3E-06	mg/kg-day	N/A	N/A	N/A	1.3E-05	mg/kg-day	3.0E-02	mg/kg-day	4.2E-04
				C9-C18 Aliphatic	3E+03	mg/kg	6.9E-06	mg/kg-day	N/A	N/A	N/A	6.9E-05	mg/kg-day	1.0E-01	mg/kg-day	6.9E-04
				C19-C36 Aliphatic	2E+03	mg/kg	4.1E-06	mg/kg-day	N/A	N/A	N/A	4.1E-05	mg/kg-day	2.0E+00	mg/kg-day	2.0E-05
				C11-C22 Aromatic	2E+03	mg/kg	5.7E-06	mg/kg-day	N/A	N/A	N/A	5.7E-05	mg/kg-day	3.0E-02	mg/kg-day	1.9E-03
			Exp. Route Total								4E-06					2E+00

TABLE 3-7.11.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Subsurface Soil (Cont.)	Subsurface Soil (Cont.)	Whitney Property	Dermal													
				1,2,4-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/kg-day	N/A
				1,3,5-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/kg-day	N/A
				Naphthalene	2E+00	mg/kg	1.3E-08	mg/kg-day	N/A	N/A	N/A	1.3E-07	mg/kg-day	2.0E-02	mg/kg-day	6.4E-06
				Vinyl chloride	3E-01	mg/kg	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Methylene chloride	4E-01	mg/kg	N/A	N/A	7.5E-03	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	6.0E-02	mg/kg-day	N/A
				cis-1,2-Dichloroethene	1E-01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-02	mg/kg-day	N/A
				Trichloroethene	5E-01	mg/kg	N/A	N/A	4.0E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Xylenes (total)	6E-01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/kg-day	N/A
				2-Methylnaphthalene	4E+00	mg/kg	2.3E-08	mg/kg-day	N/A	N/A	N/A	2.3E-07	mg/kg-day	4.0E-03	mg/kg-day	5.8E-05
				2,4,6-Trichlorophenol	7E-01	mg/kg	N/A	N/A	1.1E-02	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A
				Acenaphthylene	2E-02	mg/kg	1.0E-10	mg/kg-day	N/A	N/A	N/A	1.0E-09	mg/kg-day	2.0E-02	mg/kg-day	5.0E-08
				Phenanthrene	3E+00	mg/kg	1.5E-08	mg/kg-day	N/A	N/A	N/A	1.5E-07	mg/kg-day	2.0E-02	mg/kg-day	7.7E-06
				Benzo(a)Anthracene	1E+00	mg/kg	6.4E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	4.7E-09	6.4E-08	mg/kg-day	N/A	N/A	N/A
				Bis(2-ethylhexyl) phthalate	3E+02	mg/kg	N/A	N/A	1.4E-02	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-02	mg/kg-day	N/A
				Benzo(b)Fluoranthene	1E+00	mg/kg	7.9E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	5.8E-09	7.9E-08	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	1E+00	mg/kg	5.2E-09	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	3.8E-10	5.2E-08	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	1E+00	mg/kg	6.5E-09	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	4.7E-08	6.5E-08	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	9E-01	mg/kg	4.6E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	3.4E-09	4.6E-08	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	2E-01	mg/kg	1.2E-09	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	9.0E-09	1.2E-08	mg/kg-day	N/A	N/A	N/A
				Antimony	6E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-05	mg/kg-day	N/A
				Arsenic	3E+01	mg/kg	3.4E-08	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	5.1E-08	3.4E-07	mg/kg-day	3.0E-04	mg/kg-day	1.1E-03
				Barium	2E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.9E-03	mg/kg-day	N/A
				Cadmium	6E+00	mg/kg	2.5E-10	mg/kg-day	N/A	N/A	N/A	2.5E-09	mg/kg-day	2.5E-05	mg/kg-day	9.8E-05
				Lead	6E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Manganese	3E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.8E-03	mg/kg-day	N/A
				Mercury	2E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A
				Thallium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-05	mg/kg-day	N/A
				alpha-Chlordane	6E+01	mg/kg	1.0E-07	mg/kg-day	3.5E-01	(mg/kg-day)$^{-1}$	3.5E-08	1.0E-06	mg/kg-day	5.0E-04	mg/kg-day	2.0E-03
				gamma-Chlordane	6E-03	mg/kg	9.9E-12	mg/kg-day	3.5E-01	(mg/kg-day)$^{-1}$	3.5E-12	9.9E-11	mg/kg-day	5.0E-04	mg/kg-day	2.0E-07
				4,4'-DDE	2E+01	mg/kg	N/A	N/A	3.4E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				4,4'-DDT	5E-03	mg/kg	6.4E-12	mg/kg-day	3.4E-01	(mg/kg-day)$^{-1}$	2.2E-12	6.4E-11	mg/kg-day	5.0E-04	mg/kg-day	1.3E-07
				Aroclor 1242	N/A	N/A	N/A	N/A	1.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1248	7E+02	mg/kg	4.3E-06	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	4.3E-06	4.3E-05	mg/kg-day	2.0E-05	mg/kg-day	2.1E+00
				Aroclor 1254	4E+02	mg/kg	2.3E-06	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	2.3E-06	2.3E-05	mg/kg-day	2.0E-05	mg/kg-day	1.2E+00
				Aroclor 1260	2E+02	mg/kg	1.3E-06	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	1.3E-06	1.3E-05	mg/kg-day	2.0E-05	mg/kg-day	6.4E-01
				PCB TEQ*	1E-03	mg/kg	7.9E-12	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	1.2E-06	7.9E-11	mg/kg-day	N/A	N/A	N/A
				C5-C8 Aliphatic	5E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.0E-02	mg/kg-day	N/A
				C9-C10 Aromatic	5E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
				C9-C18 Aliphatic	3E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-01	mg/kg-day	N/A
				C19-C36 Aliphatic	2E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E+00	mg/kg-day	N/A
				C11-C22 Aromatic	2E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
			Exp. Route Total								9E-06					4E+00
		Exposure Point Total									1E-05					6E+00

TABLE 3-7.11.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Subsurface Soil (Cont.)	Subsurface Soil (Cont.)	Murphy Property	Ingestion													
				1,2,4-Trimethylbenzene	1E+01	mg/kg	2.7E-08	mg/kg-day	N/A	N/A	N/A	2.7E-07	mg/kg-day	5.0E-02	mg/kg-day	5.4E-06
				1,3,5-Trimethylbenzene	5E+00	mg/kg	1.2E-08	mg/kg-day	N/A	N/A	N/A	1.2E-07	mg/kg-day	5.0E-02	mg/kg-day	2.3E-06
				Naphthalene	4E+00	mg/kg	9.4E-09	mg/kg-day	N/A	N/A	N/A	9.4E-08	mg/kg-day	2.0E-02	mg/kg-day	4.7E-06
				Vinyl chloride	N/A	N/A	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Methylene chloride	3E+00	mg/kg	6.9E-09	mg/kg-day	7.5E-03	(mg/kg-day)$^{-1}$	5.2E-11	6.9E-08	mg/kg-day	6.0E-02	mg/kg-day	1.2E-06
				cis-1,2-Dichloroethene	2E+00	mg/kg	5.7E-09	mg/kg-day	N/A	N/A	N/A	5.7E-08	mg/kg-day	1.0E-02	mg/kg-day	5.7E-06
				Trichloroethene	3E-01	mg/kg	7.2E-10	mg/kg-day	4.0E-01	(mg/kg-day)$^{-1}$	2.9E-10	7.2E-09	mg/kg-day	3.0E-04	mg/kg-day	2.4E-05
				Xylenes (total)	4E+00	mg/kg	1.0E-08	mg/kg-day	N/A	N/A	N/A	1.0E-07	mg/kg-day	2.0E-01	mg/kg-day	5.2E-07
				2-Methylnaphthalene	1E+00	mg/kg	2.7E-09	mg/kg-day	N/A	N/A	N/A	2.7E-08	mg/kg-day	4.0E-03	mg/kg-day	6.8E-06
				2,4,6-Trichlorophenol	N/A	N/A	N/A	N/A	1.1E-02	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A
				Acenaphthylene	2E+00	mg/kg	4.1E-09	mg/kg-day	N/A	N/A	N/A	4.1E-08	mg/kg-day	2.0E-02	mg/kg-day	2.0E-06
				Phenanthrene	2E+00	mg/kg	4.5E-09	mg/kg-day	N/A	N/A	N/A	4.5E-08	mg/kg-day	2.0E-02	mg/kg-day	2.3E-06
				Benzo(a)Anthracene	1E+00	mg/kg	3.8E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	2.7E-09	3.8E-08	mg/kg-day	N/A	N/A	N/A
				Bis(2-ethylhexyl) phthalate	1E+01	mg/kg	3.0E-08	mg/kg-day	1.4E-02	(mg/kg-day)$^{-1}$	4.2E-10	3.0E-07	mg/kg-day	2.0E-02	mg/kg-day	1.5E-05
				Benzo(b)Fluoranthene	1E+00	mg/kg	3.8E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	2.8E-09	3.8E-08	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	2E+00	mg/kg	4.6E-09	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	3.4E-10	4.6E-08	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	2E+00	mg/kg	4.0E-09	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	2.9E-08	4.0E-08	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	1E+00	mg/kg	3.8E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	2.8E-09	3.8E-08	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	4E-01	mg/kg	9.7E-10	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	7.1E-09	9.7E-09	mg/kg-day	N/A	N/A	N/A
				Antimony	3E+00	mg/kg	7.2E-09	mg/kg-day	N/A	N/A	N/A	7.2E-08	mg/kg-day	4.0E-04	mg/kg-day	1.8E-04
				Arsenic	4E+00	mg/kg	1.0E-08	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	1.5E-08	1.0E-07	mg/kg-day	3.0E-04	mg/kg-day	3.4E-04
				Barium	3E+02	mg/kg	8.6E-07	mg/kg-day	N/A	N/A	N/A	8.6E-06	mg/kg-day	7.0E-02	mg/kg-day	1.2E-04
				Cadmium	1E+00	mg/kg	3.2E-09	mg/kg-day	N/A	N/A	N/A	3.2E-08	mg/kg-day	1.0E-03	mg/kg-day	3.2E-05
				Lead	5E+02	mg/kg	1.3E-06	mg/kg-day	N/A	N/A	N/A	1.3E-05	mg/kg-day	N/A	N/A	N/A
				Manganese	1E+02	mg/kg	3.1E-07	mg/kg-day	N/A	N/A	N/A	3.1E-06	mg/kg-day	7.0E-02	mg/kg-day	4.4E-05
				Mercury	8E-02	mg/kg	1.9E-10	mg/kg-day	N/A	N/A	N/A	1.9E-09	mg/kg-day	1.0E-04	mg/kg-day	1.9E-05
				Thallium	9E+00	mg/kg	2.3E-08	mg/kg-day	N/A	N/A	N/A	2.3E-07	mg/kg-day	8.0E-05	mg/kg-day	2.8E-03
				alpha-Chlordane	1E-01	mg/kg	3.1E-10	mg/kg-day	3.5E-01	(mg/kg-day)$^{-1}$	1.1E-10	3.1E-09	mg/kg-day	5.0E-04	mg/kg-day	6.2E-06
				gamma-Chlordane	1E-01	mg/kg	3.1E-10	mg/kg-day	3.5E-01	(mg/kg-day)$^{-1}$	1.1E-10	3.1E-09	mg/kg-day	5.0E-04	mg/kg-day	6.2E-06
				4,4'-DDE	N/A	N/A	N/A	N/A	3.4E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				4,4'-DDT	N/A	N/A	N/A	N/A	3.4E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	5.0E-04	mg/kg-day	N/A
				Aroclor 1242	N/A	N/A	N/A	N/A	1.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1248	6E-01	mg/kg	1.6E-09	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	1.6E-09	1.6E-08	mg/kg-day	2.0E-05	mg/kg-day	7.9E-04
				Aroclor 1254	2E-01	mg/kg	5.0E-10	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	5.0E-10	5.0E-09	mg/kg-day	2.0E-05	mg/kg-day	2.5E-04
				Aroclor 1260	N/A	N/A	N/A	N/A	1.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				PCB TEQ*	N/A	N/A	N/A	N/A	1.5E+05	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	N/A	N/A	N/A
				C5-C8 Aliphatic	1E+00	mg/kg	2.5E-09	mg/kg-day	N/A	N/A	N/A	2.5E-08	mg/kg-day	4.0E-02	mg/kg-day	6.4E-07
				C9-C10 Aromatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
				C9-C18 Aliphatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-01	mg/kg-day	N/A
				C19-C36 Aliphatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E+00	mg/kg-day	N/A
				C11-C22 Aromatic	7E+03	mg/kg	1.7E-05	mg/kg-day	N/A	N/A	N/A	1.7E-04	mg/kg-day	3.0E-02	mg/kg-day	5.7E-03
			Exp. Route Total								6E-08					1E-02

TABLE 3-7.11.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Subsurface Soil (Cont.)	Subsurface Soil (Cont.)	Murphy Property	Dermal													
				1,2,4-Trimethylbenzene	1E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/kg-day	N/A
				1,3,5-Trimethylbenzene	5E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/kg-day	N/A
				Naphthalene	4E+00	mg/kg	1.9E-08	mg/kg-day	N/A	N/A	N/A	1.9E-07	mg/kg-day	2.0E-02	mg/kg-day	9.7E-06
				Vinyl chloride	N/A	N/A	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Methylene chloride	3E+00	mg/kg	N/A	N/A	7.5E-03	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	6.0E-02	mg/kg-day	N/A
				cis-1,2-Dichloroethene	2E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-02	mg/kg-day	N/A
				Trichloroethene	3E-01	mg/kg	N/A	N/A	4.0E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Xylenes (total)	4E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/kg-day	N/A
				2-Methylnaphthalene	1E+00	mg/kg	5.7E-09	mg/kg-day	N/A	N/A	N/A	5.7E-08	mg/kg-day	4.0E-03	mg/kg-day	1.4E-05
				2,4,6-Trichlorophenol	N/A	N/A	N/A	N/A	1.1E-02	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A
				Acenaphthylene	2E+00	mg/kg	8.4E-09	mg/kg-day	N/A	N/A	N/A	8.4E-08	mg/kg-day	2.0E-02	mg/kg-day	4.2E-06
				Phenanthrene	2E+00	mg/kg	9.4E-09	mg/kg-day	N/A	N/A	N/A	9.4E-08	mg/kg-day	2.0E-02	mg/kg-day	4.7E-06
				Benzo(a)Anthracene	1E+00	mg/kg	7.8E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	5.7E-09	7.8E-08	mg/kg-day	N/A	N/A	N/A
				Bis(2-ethylhexyl) phthalate	1E+01	mg/kg	N/A	N/A	1.4E-02	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-02	mg/kg-day	N/A
				Benzo(b)Fluoranthene	1E+00	mg/kg	7.8E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	5.7E-09	7.8E-08	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	2E+00	mg/kg	9.6E-09	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	7.0E-10	9.6E-08	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	2E+00	mg/kg	8.4E-09	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	6.1E-08	8.4E-08	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	1E+00	mg/kg	7.8E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	5.7E-09	7.8E-08	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	4E-01	mg/kg	2.0E-09	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.5E-08	2.0E-08	mg/kg-day	N/A	N/A	N/A
				Antimony	3E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-05	mg/kg-day	N/A
				Arsenic	4E+00	mg/kg	4.8E-09	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	7.3E-09	4.8E-08	mg/kg-day	3.0E-04	mg/kg-day	1.6E-04
				Barium	3E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.9E-03	mg/kg-day	N/A
				Cadmium	1E+00	mg/kg	5.1E-11	mg/kg-day	N/A	N/A	N/A	5.1E-10	mg/kg-day	2.5E-05	mg/kg-day	2.0E-05
				Lead	5E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Manganese	1E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.8E-03	mg/kg-day	N/A
				Mercury	8E-02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A
				Thallium	9E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-05	mg/kg-day	N/A
				alpha-Chlordane	1E-01	mg/kg	2.0E-10	mg/kg-day	3.5E-01	(mg/kg-day)$^{-1}$	6.9E-11	2.0E-09	mg/kg-day	5.0E-04	mg/kg-day	3.9E-06
				gamma-Chlordane	1E-01	mg/kg	2.0E-10	mg/kg-day	3.5E-01	(mg/kg-day)$^{-1}$	7.0E-11	2.0E-09	mg/kg-day	5.0E-04	mg/kg-day	4.0E-06
				4,4'-DDE	N/A	N/A	N/A	N/A	3.4E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				4,4'-DDT	N/A	N/A	N/A	N/A	3.4E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	5.0E-04	mg/kg-day	N/A
				Aroclor 1242	N/A	N/A	N/A	N/A	1.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1248	6E-01	mg/kg	3.5E-09	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	3.5E-09	3.5E-08	mg/kg-day	2.0E-05	mg/kg-day	1.8E-03
				Aroclor 1254	2E-01	mg/kg	1.1E-09	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	1.1E-09	1.1E-08	mg/kg-day	2.0E-05	mg/kg-day	5.6E-04
				Aroclor 1260	N/A	N/A	N/A	N/A	1.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				PCB TEQ*	N/A	N/A	N/A	N/A	1.5E+05	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	N/A	N/A	N/A
				C5-C8 Aliphatic	1E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.0E-02	mg/kg-day	N/A
				C9-C10 Aromatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
				C9-C18 Aliphatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-01	mg/kg-day	N/A
				C19-C36 Aliphatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E+00	mg/kg-day	N/A
				C11-C22 Aromatic	7E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
			Exp. Route Total								1E-07					3E-03
		Exposure Point Total									2E-07					1E-02
	Exposure Medium Total										N/A					N/A
Medium Total											N/A					N/A

TABLE 3-7.11.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Soil	Indoor Air	Aberjona Property	Inhalation													
				1,2,4-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-03	mg/m3	N/A
				1,2-Dichloroethene (total)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				1,3,5-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-03	mg/m3	N/A
				n-Butylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Naphthalene	2E-02	ug/m3	1.8E-05	ug/m3	N/A	N/A	N/A	1.8E-07	mg/m3	3.0E-03	mg/m3	5.9E-05
				p-Isopropyltoluene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.0E-01	mg/m3	N/A
				Chloromethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9.0E-02	mg/m3	N/A
				Vinyl chloride	N/A	N/A	N/A	N/A	8.8E-06	(ug/m3)-1	N/A	N/A	N/A	1.0E-01	mg/m3	N/A
				Bromomethane	4E-03	ug/m3	3.2E-06	ug/m3	N/A	N/A	N/A	3.2E-08	mg/m3	5.0E-03	mg/m3	6.4E-06
				Chloroethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E+01	mg/m3	N/A
				1,1-Dichloroethene	1E-02	ug/m3	7.4E-06	ug/m3	N/A	N/A	N/A	7.4E-08	mg/m3	2.0E-01	mg/m3	3.7E-07
				Acetone	2E-03	ug/m3	1.2E-06	ug/m3	N/A	N/A	N/A	1.2E-08	mg/m3	N/A	N/A	N/A
				Methylene chloride	N/A	N/A	N/A	N/A	4.7E-07	(ug/m3)-1	N/A	N/A	N/A	3.0E+00	mg/m3	N/A
				trans-1,2-Dichloroethene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/m3	N/A
				Methyl tert-butyl ether	8E-03	ug/m3	5.8E-06	ug/m3	N/A	N/A	N/A	5.8E-08	mg/m3	3.0E+00	mg/m3	1.9E-08
				1,1-Dichloroethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-01	mg/m3	N/A
				cis-1,2-Dichloroethene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/m3	N/A
				1,1,1-Trichloroethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.2E+00	mg/m3	N/A
				Benzene	1E-02	ug/m3	9.1E-06	ug/m3	7.8E-06	(ug/m3)-1	7.1E-11	9.1E-08	mg/m3	3.0E-02	mg/m3	3.0E-06
				Trichloroethene	N/A	N/A	N/A	N/A	1.1E-04	(ug/m3)-1	N/A	N/A	N/A	4.0E-02	mg/m3	N/A
				Methyl cyclohexane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E+00	mg/m3	N/A
				Toluene	6E-02	ug/m3	4.3E-05	ug/m3	N/A	N/A	N/A	4.3E-07	mg/m3	4.0E-01	mg/m3	1.1E-06
				Tetrachloroethene	N/A	N/A	N/A	N/A	5.9E-06	(ug/m3)-1	N/A	N/A	N/A	N/A	N/A	N/A
				Chlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-02	mg/m3	N/A
				Ethylbenzene	4E-01	ug/m3	3.1E-04	ug/m3	N/A	N/A	N/A	3.1E-06	mg/m3	1.0E+00	mg/m3	3.1E-06
				1,3-Dichlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				1,4-Dichlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-01	mg/m3	N/A
				1,2-Dichlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				2-Methylnaphthalene	4E-02	ug/m3	3.1E-05	ug/m3	N/A	N/A	N/A	3.1E-07	mg/m3	N/A	N/A	N/A
				Acenaphthylene	5E-03	ug/m3	3.5E-06	ug/m3	N/A	N/A	N/A	3.5E-08	mg/m3	3.0E-03	mg/m3	1.2E-05
				Dibenzofuran	3E-03	ug/m3	2.5E-06	ug/m3	N/A	N/A	N/A	2.5E-08	mg/m3	N/A	N/A	N/A
				Phenanthrene	6E-04	ug/m3	4.4E-07	ug/m3	N/A	N/A	N/A	4.4E-09	mg/m3	3.0E-03	mg/m3	1.5E-06
				Anthracene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-03	mg/m3	N/A
				C5-C8 Aliphatic	8E+01	ug/m3	5.6E-02	ug/m3	N/A	N/A	N/A	5.6E-04	mg/m3	2.0E-01	mg/m3	2.8E-03
				C9-C12 Aliphatic	6E+00	ug/m3	4.6E-03	ug/m3	N/A	N/A	N/A	4.6E-05	mg/m3	2.0E-01	mg/m3	2.3E-04
				C9-C10 Aromatic	2E+01	ug/m3	1.6E-02	ug/m3	N/A	N/A	N/A	1.6E-04	mg/m3	5.0E-02	mg/m3	3.1E-03
				C9-C18 Aliphatic	9E+01	ug/m3	6.7E-02	ug/m3	N/A	N/A	N/A	6.7E-04	mg/m3	2.0E-01	mg/m3	3.4E-03
				C11-C22 Aromatic	2E+00	ug/m3	1.4E-03	ug/m3	N/A	N/A	N/A	1.4E-05	mg/m3	5.0E-02	mg/m3	2.8E-04
			Exp. Route Total								7E-11					1E-02
		Exposure Point Total									7E-11					1E-02

TABLE 3-7.11.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Soil (Cont.)	Indoor Air (Cont.)	Whitney Property	Inhalation													
				1,2,4-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-03	mg/m3	N/A
				1,2-Dichloroethene (total)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				1,3,5-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-03	mg/m3	N/A
				n-Butylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Naphthalene	5E-02	ug/m3	3.4E-05	ug/m3	N/A	N/A	N/A	3.4E-07	mg/m3	3.0E-03	mg/m3	1.1E-04
				p-Isopropyltoluene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.0E-01	mg/m3	N/A
				Chloromethane	4E+00	ug/m3	2.6E-03	ug/m3	N/A	N/A	N/A	2.6E-05	mg/m3	9.0E-02	mg/m3	2.9E-04
				Vinyl chloride	7E+00	ug/m3	5.2E-03	ug/m3	8.8E-06	(ug/m3)-1	4.6E-08	5.2E-05	mg/m3	1.0E-01	mg/m3	5.2E-04
				Bromomethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-03	mg/m3	N/A
				Chloroethane	1E+00	ug/m3	9.0E-04	ug/m3	N/A	N/A	N/A	9.0E-06	mg/m3	1.0E+01	mg/m3	9.0E-07
				1,1-Dichloroethene	1E+00	ug/m3	8.7E-04	ug/m3	N/A	N/A	N/A	8.7E-06	mg/m3	2.0E-01	mg/m3	4.3E-05
				Acetone	1E-02	ug/m3	1.1E-05	ug/m3	N/A	N/A	N/A	1.1E-07	mg/m3	N/A	N/A	N/A
				Methylene chloride	2E+00	ug/m3	1.3E-03	ug/m3	4.7E-07	(ug/m3)-1	6.0E-10	1.3E-05	mg/m3	3.0E+00	mg/m3	4.3E-06
				trans-1,2-Dichloroethene	9E-01	ug/m3	6.6E-04	ug/m3	N/A	N/A	N/A	6.6E-06	mg/m3	2.0E-01	mg/m3	3.3E-05
				Methyl tert-butyl ether	5E-02	ug/m3	3.7E-05	ug/m3	N/A	N/A	N/A	3.7E-07	mg/m3	3.0E+00	mg/m3	1.2E-07
				1,1-Dichloroethane	2E+00	ug/m3	1.3E-03	ug/m3	N/A	N/A	N/A	1.3E-05	mg/m3	5.0E-01	mg/m3	2.6E-05
				cis-1,2-Dichloroethene	6E-01	ug/m3	4.5E-04	ug/m3	N/A	N/A	N/A	4.5E-06	mg/m3	2.0E-01	mg/m3	2.3E-05
				1,1,1-Trichloroethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.2E+00	mg/m3	N/A
				Benzene	3E-01	ug/m3	2.3E-04	ug/m3	7.8E-06	(ug/m3)-1	1.8E-09	2.3E-06	mg/m3	3.0E-02	mg/m3	7.6E-05
				Trichloroethene	1E+00	ug/m3	8.7E-04	ug/m3	1.1E-04	(ug/m3)-1	9.6E-08	8.7E-06	mg/m3	4.0E-02	mg/m3	2.2E-04
				Methyl cyclohexane	4E+01	ug/m3	2.7E-02	ug/m3	N/A	N/A	N/A	2.7E-04	mg/m3	3.0E+00	mg/m3	9.0E-05
				Toluene	1E+00	ug/m3	1.0E-03	ug/m3	N/A	N/A	N/A	1.0E-05	mg/m3	4.0E-01	mg/m3	2.6E-05
				Tetrachloroethene	1E+00	ug/m3	7.4E-04	ug/m3	5.9E-06	(ug/m3)-1	4.3E-09	7.4E-06	mg/m3	N/A	N/A	N/A
				Chlorobenzene	3E-01	ug/m3	2.6E-04	ug/m3	N/A	N/A	N/A	2.6E-06	mg/m3	6.0E-02	mg/m3	4.3E-05
				Ethylbenzene	3E-01	ug/m3	2.2E-04	ug/m3	N/A	N/A	N/A	2.2E-06	mg/m3	1.0E+00	mg/m3	2.2E-06
				1,3-Dichlorobenzene	3E-01	ug/m3	2.5E-04	ug/m3	N/A	N/A	N/A	2.5E-06	mg/m3	N/A	N/A	N/A
				1,4-Dichlorobenzene	7E-02	ug/m3	5.3E-05	ug/m3	N/A	N/A	N/A	5.3E-07	mg/m3	8.0E-01	mg/m3	6.7E-07
				1,2-Dichlorobenzene	4E-05	ug/m3	3.2E-08	ug/m3	N/A	N/A	N/A	3.2E-10	mg/m3	N/A	N/A	N/A
				2-Methylnaphthalene	1E-01	ug/m3	9.6E-05	ug/m3	N/A	N/A	N/A	9.6E-07	mg/m3	N/A	N/A	N/A
				Acenaphthylene	5E-03	ug/m3	3.4E-06	ug/m3	N/A	N/A	N/A	3.4E-08	mg/m3	3.0E-03	mg/m3	1.1E-05
				Dibenzofuran	2E-01	ug/m3	1.3E-04	ug/m3	N/A	N/A	N/A	1.3E-06	mg/m3	N/A	N/A	N/A
				Phenanthrene	7E-02	ug/m3	5.0E-05	ug/m3	N/A	N/A	N/A	5.0E-07	mg/m3	3.0E-03	mg/m3	1.7E-04
				Anthracene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-03	mg/m3	N/A
				C5-C8 Aliphatic	4E+03	ug/m3	3.1E+00	ug/m3	N/A	N/A	N/A	3.1E-02	mg/m3	2.0E-01	mg/m3	1.5E-01
				C9-C12 Aliphatic	7E+01	ug/m3	5.4E-02	ug/m3	N/A	N/A	N/A	5.4E-04	mg/m3	2.0E-01	mg/m3	2.7E-03
				C9-C10 Aromatic	2E+02	ug/m3	1.6E-01	ug/m3	N/A	N/A	N/A	1.6E-03	mg/m3	5.0E-02	mg/m3	3.1E-02
				C9-C18 Aliphatic	3E+02	ug/m3	1.9E-01	ug/m3	N/A	N/A	N/A	1.9E-03	mg/m3	2.0E-01	mg/m3	9.7E-03
				C11-C22 Aromatic	2E+01	ug/m3	1.1E-02	ug/m3	N/A	N/A	N/A	1.1E-04	mg/m3	5.0E-02	mg/m3	2.2E-03
			Exp. Route Total								1E-07					2E-01
		Exposure Point Total									1E-07					2E-01

TABLE 3-7.11.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Soil (Cont.)	Indoor Air (Cont.)	Murphy Property	Inhalation													
				1,2,4-Trimethylbenzene	8E-01	ug/m3	5.7E-04	ug/m3	N/A	N/A	N/A	5.7E-06	mg/m3	6.0E-03	mg/m3	9.5E-04
				1,2-Dichloroethene (total)	3E-01	ug/m3	2.4E-04	ug/m3	N/A	N/A	N/A	2.4E-06	mg/m3	N/A	N/A	N/A
				1,3,5-Trimethylbenzene	5E+00	ug/m3	3.6E-03	ug/m3	N/A	N/A	N/A	3.6E-05	mg/m3	6.0E-03	mg/m3	6.0E-03
				n-Butylbenzene	2E-01	ug/m3	1.6E-04	ug/m3	N/A	N/A	N/A	1.6E-06	mg/m3	N/A	N/A	N/A
				Naphthalene	7E-02	ug/m3	5.4E-05	ug/m3	N/A	N/A	N/A	5.4E-07	mg/m3	3.0E-03	mg/m3	1.8E-04
				p-Isopropyltoluene	2E+01	ug/m3	1.8E-02	ug/m3	N/A	N/A	N/A	1.8E-04	mg/m3	4.0E-01	mg/m3	4.5E-04
				Chloromethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9.0E-02	mg/m3	N/A
				Vinyl chloride	N/A	N/A	N/A	N/A	8.8E-06	(ug/m3)-1	N/A	N/A	N/A	1.0E-01	mg/m3	N/A
				Bromomethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-03	mg/m3	N/A
				Chloroethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E+01	mg/m3	N/A
				1,1-Dichloroethene	4E-02	ug/m3	3.0E-05	ug/m3	N/A	N/A	N/A	3.0E-07	mg/m3	2.0E-01	mg/m3	1.5E-06
				Acetone	8E-02	ug/m3	6.0E-05	ug/m3	N/A	N/A	N/A	6.0E-07	mg/m3	N/A	N/A	N/A
				Methylene chloride	7E+00	ug/m3	4.9E-03	ug/m3	4.7E-07	(ug/m3)-1	2.3E-09	4.9E-05	mg/m3	3.0E+00	mg/m3	1.6E-05
				trans-1,2-Dichloroethene	5E+00	ug/m3	3.7E-03	ug/m3	N/A	N/A	N/A	3.7E-05	mg/m3	2.0E-01	mg/m3	1.8E-04
				Methyl tert-butyl ether	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E+00	mg/m3	N/A
				1,1-Dichloroethane	2E+00	ug/m3	1.6E-03	ug/m3	N/A	N/A	N/A	1.6E-05	mg/m3	5.0E-01	mg/m3	3.3E-05
				cis-1,2-Dichloroethene	2E+00	ug/m3	1.3E-03	ug/m3	N/A	N/A	N/A	1.3E-05	mg/m3	2.0E-01	mg/m3	6.6E-05
				1,1,1-Trichloroethane	4E+00	ug/m3	3.3E-03	ug/m3	N/A	N/A	N/A	3.3E-05	mg/m3	2.2E+00	mg/m3	1.5E-05
				Benzene	1E+00	ug/m3	9.7E-04	ug/m3	7.8E-06	(ug/m3)-1	7.6E-09	9.7E-06	mg/m3	3.0E-02	mg/m3	3.2E-04
				Trichloroethene	1E+00	ug/m3	9.2E-04	ug/m3	1.1E-04	(ug/m3)-1	1.0E-07	9.2E-06	mg/m3	4.0E-02	mg/m3	2.3E-04
				Methyl cyclohexane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E+00	mg/m3	N/A
				Toluene	3E+00	ug/m3	2.1E-03	ug/m3	N/A	N/A	N/A	2.1E-05	mg/m3	4.0E-01	mg/m3	5.2E-05
				Tetrachloroethene	9E-01	ug/m3	6.6E-04	ug/m3	5.9E-06	(ug/m3)-1	3.9E-09	6.6E-06	mg/m3	N/A	N/A	N/A
				Chlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-02	mg/m3	N/A
				Ethylbenzene	1E+00	ug/m3	1.1E-03	ug/m3	N/A	N/A	N/A	1.1E-05	mg/m3	1.0E+00	mg/m3	1.1E-05
				1,3-Dichlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				1,4-Dichlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-01	mg/m3	N/A
				1,2-Dichlorobenzene	3E-03	ug/m3	1.9E-06	ug/m3	N/A	N/A	N/A	1.9E-08	mg/m3	N/A	N/A	N/A
				2-Methylnaphthalene	3E-02	ug/m3	2.1E-05	ug/m3	N/A	N/A	N/A	2.1E-07	mg/m3	N/A	N/A	N/A
				Acenaphthylene	2E-02	ug/m3	1.6E-05	ug/m3	N/A	N/A	N/A	1.6E-07	mg/m3	3.0E-03	mg/m3	5.5E-05
				Dibenzofuran	5E-03	ug/m3	3.5E-06	ug/m3	N/A	N/A	N/A	3.5E-08	mg/m3	N/A	N/A	N/A
				Phenanthrene	4E-03	ug/m3	3.3E-06	ug/m3	N/A	N/A	N/A	3.3E-08	mg/m3	3.0E-03	mg/m3	1.1E-05
				Anthracene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-03	mg/m3	N/A
				C5-C8 Aliphatic	6E+01	ug/m3	4.3E-02	ug/m3	N/A	N/A	N/A	4.3E-04	mg/m3	2.0E-01	mg/m3	2.1E-03
				C9-C12 Aliphatic	2E+00	ug/m3	1.2E-03	ug/m3	N/A	N/A	N/A	1.2E-05	mg/m3	2.0E-01	mg/m3	6.1E-05
				C9-C10 Aromatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/m3	N/A
				C9-C18 Aliphatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/m3	N/A
				C11-C22 Aromatic	1E+02	ug/m3	9.1E-02	ug/m3	N/A	N/A	N/A	9.1E-04	mg/m3	5.0E-02	mg/m3	1.8E-02
			Exp. Route Total								1E-07					3E-02
		Exposure Point Total									1E-07					3E-02
	Exposure Medium Total										N/A					N/A

TABLE 3-7.11.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Ground Water	Indoor Air	Aberjona Property	Inhalation													
				1,2,4-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-03	mg/m3	N/A
				1,2-Dichloroethene (total)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				1,3,5-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-03	mg/m3	N/A
				n-Butylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Naphthalene	2E-05	ug/m3	1.5E-08	ug/m3	N/A	N/A	N/A	1.5E-10	mg/m3	3.0E-03	mg/m3	5.0E-08
				p-Isopropyltoluene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.0E-01	mg/m3	N/A
				Chloromethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9.0E-02	mg/m3	N/A
				Vinyl chloride	4E-04	ug/m3	2.9E-07	ug/m3	8.8E-06	(ug/m3)-1	2.6E-12	2.9E-09	mg/m3	1.0E-01	mg/m3	2.9E-08
				Bromomethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-03	mg/m3	N/A
				Chloroethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E+01	mg/m3	N/A
				1,1-Dichloroethene	2E-04	ug/m3	1.2E-07	ug/m3	N/A	N/A	N/A	1.2E-09	mg/m3	2.0E-01	mg/m3	6.0E-09
				Acetone	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Methylene chloride	N/A	N/A	N/A	N/A	4.7E-07	(ug/m3)-1	N/A	N/A	N/A	3.0E+00	mg/m3	N/A
				trans-1,2-Dichloroethene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/m3	N/A
				Methyl tert-butyl ether	2E-04	ug/m3	1.7E-07	ug/m3	N/A	N/A	N/A	1.7E-09	mg/m3	3.0E+00	mg/m3	5.6E-10
				1,1-Dichloroethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-01	mg/m3	N/A
				cis-1,2-Dichloroethene	1E-03	ug/m3	1.0E-06	ug/m3	N/A	N/A	N/A	1.0E-08	mg/m3	2.0E-01	mg/m3	5.2E-08
				1,1,1-Trichloroethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.2E+00	mg/m3	N/A
				Benzene	7E-05	ug/m3	5.4E-08	ug/m3	7.8E-06	(ug/m3)-1	4.2E-13	5.4E-10	mg/m3	3.0E-02	mg/m3	1.8E-08
				Trichloroethene	4E-03	ug/m3	2.7E-06	ug/m3	1.1E-04	(ug/m3)-1	3.0E-10	2.7E-08	mg/m3	4.0E-02	mg/m3	6.8E-07
				Methyl cyclohexane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E+00	mg/m3	N/A
				Toluene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.0E-01	mg/m3	N/A
				Tetrachloroethene	3E-04	ug/m3	2.4E-07	ug/m3	5.9E-06	(ug/m3)-1	1.4E-12	2.4E-09	mg/m3	N/A	N/A	N/A
				Chlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-02	mg/m3	N/A
				Ethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E+00	mg/m3	N/A
				1,3-Dichlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				1,4-Dichlorobenzene	4E-05	ug/m3	3.1E-08	ug/m3	N/A	N/A	N/A	3.1E-10	mg/m3	8.0E-01	mg/m3	3.9E-10
				1,2-Dichlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				2-Methylnaphthalene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Acenaphthylene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-03	mg/m3	N/A
				Dibenzofuran	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Phenanthrene	2E-05	ug/m3	1.7E-08	ug/m3	N/A	N/A	N/A	1.7E-10	mg/m3	3.0E-03	mg/m3	5.8E-08
				Anthracene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-03	mg/m3	N/A
				C5-C8 Aliphatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/m3	N/A
				C9-C12 Aliphatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/m3	N/A
				C9-C10 Aromatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/m3	N/A
				C9-C18 Aliphatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/m3	N/A
				C11-C22 Aromatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/m3	N/A
			Exp. Route Total								3E-10					9E-07
		Exposure Point Total									3E-10					9E-07

TABLE 3-7.11.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Ground Water (Cont.)	Indoor Air (Cont.)	Whitney Property	Inhalation													
				1,2,4-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-03	mg/m3	N/A
				1,2-Dichloroethene (total)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				1,3,5-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-03	mg/m3	N/A
				n-Butylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Naphthalene	5E-04	ug/m3	3.7E-07	ug/m3	N/A	N/A	N/A	3.7E-09	mg/m3	3.0E-03	mg/m3	1.2E-06
				p-Isopropyltoluene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.0E-01	mg/m3	N/A
				Chloromethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9.0E-02	mg/m3	N/A
				Vinyl chloride	5E-01	ug/m3	4.0E-04	ug/m3	8.8E-06	(ug/m3)-1	3.5E-09	4.0E-06	mg/m3	1.0E-01	mg/m3	4.0E-05
				Bromomethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-03	mg/m3	N/A
				Chloroethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E+01	mg/m3	N/A
				1,1-Dichloroethene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/m3	N/A
				Acetone	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Methylene chloride	N/A	N/A	N/A	N/A	4.7E-07	(ug/m3)-1	N/A	N/A	N/A	3.0E+00	mg/m3	N/A
				trans-1,2-Dichloroethene	1E-02	ug/m3	8.8E-06	ug/m3	N/A	N/A	N/A	8.8E-08	mg/m3	2.0E-01	mg/m3	4.4E-07
				Methyl tert-butyl ether	2E-02	ug/m3	1.8E-05	ug/m3	N/A	N/A	N/A	1.8E-07	mg/m3	3.0E+00	mg/m3	6.0E-08
				1,1-Dichloroethane	2E-02	ug/m3	1.8E-05	ug/m3	N/A	N/A	N/A	1.8E-07	mg/m3	5.0E-01	mg/m3	3.7E-07
				cis-1,2-Dichloroethene	7E-02	ug/m3	5.0E-05	ug/m3	N/A	N/A	N/A	5.0E-07	mg/m3	2.0E-01	mg/m3	2.5E-06
				1,1,1-Trichloroethane	1E-02	ug/m3	9.9E-06	ug/m3	N/A	N/A	N/A	9.9E-08	mg/m3	2.2E+00	mg/m3	4.5E-08
				Benzene	2E-02	ug/m3	1.5E-05	ug/m3	7.8E-06	(ug/m3)-1	1.2E-10	1.5E-07	mg/m3	3.0E-02	mg/m3	5.0E-06
				Trichloroethene	3E-03	ug/m3	2.4E-06	ug/m3	1.1E-04	(ug/m3)-1	2.7E-10	2.4E-08	mg/m3	4.0E-02	mg/m3	6.1E-07
				Methyl cyclohexane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E+00	mg/m3	N/A
				Toluene	3E-01	ug/m3	1.9E-04	ug/m3	N/A	N/A	N/A	1.9E-06	mg/m3	4.0E-01	mg/m3	4.7E-06
				Tetrachloroethene	N/A	N/A	N/A	N/A	5.9E-06	(ug/m3)-1	N/A	N/A	N/A	N/A	N/A	N/A
				Chlorobenzene	3E-03	ug/m3	1.9E-06	ug/m3	N/A	N/A	N/A	1.9E-08	mg/m3	6.0E-02	mg/m3	3.2E-07
				Ethylbenzene	1E-02	ug/m3	8.1E-06	ug/m3	N/A	N/A	N/A	8.1E-08	mg/m3	1.0E+00	mg/m3	8.1E-08
				1,3-Dichlorobenzene	6E-03	ug/m3	4.3E-06	ug/m3	N/A	N/A	N/A	4.3E-08	mg/m3	N/A	N/A	N/A
				1,4-Dichlorobenzene	1E-02	ug/m3	9.1E-06	ug/m3	N/A	N/A	N/A	9.1E-08	mg/m3	8.0E-01	mg/m3	1.1E-07
				1,2-Dichlorobenzene	5E-06	ug/m3	3.6E-09	ug/m3	N/A	N/A	N/A	3.6E-11	mg/m3	N/A	N/A	N/A
				2-Methylnaphthalene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Acenaphthylene	2E-04	ug/m3	1.8E-07	ug/m3	N/A	N/A	N/A	1.8E-09	mg/m3	3.0E-03	mg/m3	6.0E-07
				Dibenzofuran	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Phenanthrene	1E-04	ug/m3	8.2E-08	ug/m3	N/A	N/A	N/A	8.2E-10	mg/m3	3.0E-03	mg/m3	2.7E-07
				Anthracene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-03	mg/m3	N/A
				C5-C8 Aliphatic	3E+01	ug/m3	2.5E-02	ug/m3	N/A	N/A	N/A	2.5E-04	mg/m3	2.0E-01	mg/m3	1.2E-03
				C9-C12 Aliphatic	7E+00	ug/m3	4.9E-03	ug/m3	N/A	N/A	N/A	4.9E-05	mg/m3	2.0E-01	mg/m3	2.4E-04
				C9-C10 Aromatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/m3	N/A
				C9-C18 Aliphatic	1E+01	ug/m3	9.6E-03	ug/m3	N/A	N/A	N/A	9.6E-05	mg/m3	2.0E-01	mg/m3	4.8E-04
				C11-C22 Aromatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/m3	N/A
			Exp. Route Total								4E-09					2E-03
		Exposure Point Total									4E-09					2E-03

TABLE 3-7.11.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Ground Water (Cont.)	Indoor Air (Cont.)	Murphy Property	Inhalation													
				1,2,4-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-03	mg/m3	N/A
				1,2-Dichloroethene (total)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				1,3,5-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-03	mg/m3	N/A
				n-Butylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Naphthalene	6E-04	ug/m3	4.7E-07	ug/m3	N/A	N/A	N/A	4.7E-09	mg/m3	3.0E-03	mg/m3	1.6E-06
				p-Isopropyltoluene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.0E-01	mg/m3	N/A
				Chloromethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9.0E-02	mg/m3	N/A
				Vinyl chloride	2E+00	ug/m3	1.2E-03	ug/m3	8.8E-06	(ug/m3)-1	1.0E-08	1.2E-05	mg/m3	1.0E-01	mg/m3	1.2E-04
				Bromomethane	2E-03	ug/m3	1.8E-06	ug/m3	N/A	N/A	N/A	1.8E-08	mg/m3	5.0E-03	mg/m3	3.7E-06
				Chloroethane	1E-01	ug/m3	9.0E-05	ug/m3	N/A	N/A	N/A	9.0E-07	mg/m3	1.0E+01	mg/m3	9.0E-08
				1,1-Dichloroethene	6E-02	ug/m3	4.7E-05	ug/m3	N/A	N/A	N/A	4.7E-07	mg/m3	2.0E-01	mg/m3	2.3E-06
				Acetone	3E-04	ug/m3	2.1E-07	ug/m3	N/A	N/A	N/A	2.1E-09	mg/m3	N/A	N/A	N/A
				Methylene chloride	9E-03	ug/m3	6.8E-06	ug/m3	4.7E-07	(ug/m3)-1	3.2E-12	6.8E-08	mg/m3	3.0E+00	mg/m3	2.3E-08
				trans-1,2-Dichloroethene	5E-02	ug/m3	3.5E-05	ug/m3	N/A	N/A	N/A	3.5E-07	mg/m3	2.0E-01	mg/m3	1.7E-06
				Methyl tert-butyl ether	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E+00	mg/m3	N/A
				1,1-Dichloroethane	9E-02	ug/m3	7.0E-05	ug/m3	N/A	N/A	N/A	7.0E-07	mg/m3	5.0E-01	mg/m3	1.4E-06
				cis-1,2-Dichloroethene	7E-01	ug/m3	5.1E-04	ug/m3	N/A	N/A	N/A	5.1E-06	mg/m3	2.0E-01	mg/m3	2.5E-05
				1,1,1-Trichloroethane	2E-01	ug/m3	1.5E-04	ug/m3	N/A	N/A	N/A	1.5E-06	mg/m3	2.2E+00	mg/m3	6.9E-07
				Benzene	8E-03	ug/m3	6.2E-06	ug/m3	7.8E-06	(ug/m3)-1	4.8E-11	6.2E-08	mg/m3	3.0E-02	mg/m3	2.1E-06
				Trichloroethene	7E-02	ug/m3	5.4E-05	ug/m3	1.1E-04	(ug/m3)-1	5.9E-09	5.4E-07	mg/m3	4.0E-02	mg/m3	1.4E-05
				Methyl cyclohexane	1E+00	ug/m3	9.3E-04	ug/m3	N/A	N/A	N/A	9.3E-06	mg/m3	3.0E+00	mg/m3	3.1E-06
				Toluene	2E-02	ug/m3	1.8E-05	ug/m3	N/A	N/A	N/A	1.8E-07	mg/m3	4.0E-01	mg/m3	4.4E-07
				Tetrachloroethene	2E-02	ug/m3	1.8E-05	ug/m3	5.9E-06	(ug/m3)-1	1.1E-10	1.8E-07	mg/m3	N/A	N/A	N/A
				Chlorobenzene	7E-04	ug/m3	5.2E-07	ug/m3	N/A	N/A	N/A	5.2E-09	mg/m3	6.0E-02	mg/m3	8.6E-08
				Ethylbenzene	1E-02	ug/m3	8.1E-06	ug/m3	N/A	N/A	N/A	8.1E-08	mg/m3	1.0E+00	mg/m3	8.1E-08
				1,3-Dichlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				1,4-Dichlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-01	mg/m3	N/A
				1,2-Dichlorobenzene	9E-07	ug/m3	6.7E-10	ug/m3	N/A	N/A	N/A	6.7E-12	mg/m3	N/A	N/A	N/A
				2-Methylnaphthalene	2E-03	ug/m3	1.5E-06	ug/m3	N/A	N/A	N/A	1.5E-08	mg/m3	N/A	N/A	N/A
				Acenaphthylene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-03	mg/m3	N/A
				Dibenzofuran	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Phenanthrene	3E-04	ug/m3	2.0E-07	ug/m3	N/A	N/A	N/A	2.0E-09	mg/m3	3.0E-03	mg/m3	6.7E-07
				Anthracene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-03	mg/m3	N/A
				C5-C8 Aliphatic	3E+01	ug/m3	2.3E-02	ug/m3	N/A	N/A	N/A	2.3E-04	mg/m3	2.0E-01	mg/m3	1.2E-03
				C9-C12 Aliphatic	1E+01	ug/m3	8.0E-03	ug/m3	N/A	N/A	N/A	8.0E-05	mg/m3	2.0E-01	mg/m3	4.0E-04
				C9-C10 Aromatic	1E-01	ug/m3	8.9E-05	ug/m3	N/A	N/A	N/A	8.9E-07	mg/m3	5.0E-02	mg/m3	1.8E-05
				C9-C18 Aliphatic	3E+02	ug/m3	2.4E-01	ug/m3	N/A	N/A	N/A	2.4E-03	mg/m3	2.0E-01	mg/m3	1.2E-02
				C11-C22 Aromatic	7E-02	ug/m3	5.0E-05	ug/m3	N/A	N/A	N/A	5.0E-07	mg/m3	5.0E-02	mg/m3	9.9E-06
			Exp. Route Total								2E-08					1E-02
		Exposure Point Total									2E-08					1E-02
	Exposure Medium Total										N/A					N/A
Medium Total											N/A					N/A

TABLE 3-7.11.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Water	Surface Water	Murphy Wetland	Dermal	Chromium	1.1E+01	ug/L	1.3E-02	mg/kg-day	N/A	N/A	N/A	1.3E-07	mg/kg-day	7.5E-05	mg/kg-day	1.8E-03
				Manganese	2.8E+02	ug/L	1.6E-01	mg/kg-day	N/A	N/A	N/A	1.6E-06	mg/kg-day	9.6E-04	mg/kg-day	1.6E-03
			Exp. Route Total								0E+00					3E-03
		Exposure Point Total									0E+00					3E-03
	Exposure Medium Total										N/A					N/A

TABLE 3-7.11.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Sediment	Sediment	Murphy Wetland	Ingestion													
				Naphthalene	5E+00	mg/kg	1.2E-08	mg/kg-day	N/A	N/A	N/A	1.2E-07	mg/kg-day	2.0E-02	mg/kg-day	5.8E-06
				Vinyl chloride	2E-01	mg/kg	4.3E-10	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	6.5E-10	4.3E-09	mg/kg-day	3.0E-03	mg/kg-day	1.4E-06
				Trichloroethene	9E-02	mg/kg	2.2E-10	mg/kg-day	4.0E-01	(mg/kg-day)$^{-1}$	8.6E-11	2.2E-09	mg/kg-day	3.0E-04	mg/kg-day	7.2E-06
				Ethylenedibromide	2E+00	mg/kg	4.2E-09	mg/kg-day	8.5E+01	(mg/kg-day)$^{-1}$	3.5E-07	4.2E-08	mg/kg-day	N/A	N/A	N/A
				Ethylbenzene	2E+00	mg/kg	5.8E-09	mg/kg-day	N/A	N/A	N/A	5.8E-08	mg/kg-day	1.0E-01	mg/kg-day	5.8E-07
				Xylenes (total)	1E+01	mg/kg	3.1E-08	mg/kg-day	N/A	N/A	N/A	3.1E-07	mg/kg-day	2.0E-01	mg/kg-day	1.5E-06
				Acetophenone	3E+00	mg/kg	8.1E-09	mg/kg-day	N/A	N/A	N/A	8.1E-08	mg/kg-day	1.0E-01	mg/kg-day	8.1E-07
				2-Methylnaphthalene	1E+01	mg/kg	3.1E-08	mg/kg-day	N/A	N/A	N/A	3.1E-07	mg/kg-day	4.0E-03	mg/kg-day	7.8E-05
				Benzo(a)Anthracene	2E+00	mg/kg	4.2E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	3.0E-09	4.2E-08	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	2E+00	mg/kg	4.2E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	3.1E-09	4.2E-08	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	2E+00	mg/kg	4.3E-09	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	3.1E-08	4.3E-08	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	2E+00	mg/kg	4.3E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	3.2E-09	4.3E-08	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	1E+00	mg/kg	3.3E-09	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	2.4E-08	3.3E-08	mg/kg-day	N/A	N/A	N/A
				C11-C22 Aromatic	2E+04	mg/kg	5.2E-05	mg/kg-day	N/A	N/A	N/A	5.2E-04	mg/kg-day	3.0E-02	mg/kg-day	1.7E-02
				C19-C36 Aliphatic	9E+03	mg/kg	2.4E-05	mg/kg-day	N/A	N/A	N/A	2.4E-04	mg/kg-day	2.0E+00	mg/kg-day	1.2E-04
				C9-C18 Aliphatic	2E+03	mg/kg	4.3E-06	mg/kg-day	N/A	N/A	N/A	4.3E-05	mg/kg-day	1.0E-01	mg/kg-day	4.3E-04
				Chromium (VI)	5E+01	mg/kg	1.4E-07	mg/kg-day	N/A	N/A	N/A	1.4E-06	mg/kg-day	3.0E-03	mg/kg-day	4.6E-04
				Antimony	3E+01	mg/kg	6.4E-08	mg/kg-day	N/A	N/A	N/A	6.4E-07	mg/kg-day	4.0E-04	mg/kg-day	1.6E-03
				Arsenic	1E+01	mg/kg	2.8E-08	mg/kg-day	7.7E-01	(mg/kg-day)$^{-1}$	2.2E-08	2.8E-07	mg/kg-day	5.9E-04	mg/kg-day	4.8E-04
				Barium	1E+03	mg/kg	2.9E-06	mg/kg-day	N/A	N/A	N/A	2.9E-05	mg/kg-day	7.0E-02	mg/kg-day	4.1E-04
				Cadmium	3E+00	mg/kg	7.6E-09	mg/kg-day	N/A	N/A	N/A	7.6E-08	mg/kg-day	1.0E-03	mg/kg-day	7.6E-05
				Chromium	1E+04	mg/kg	3.2E-05	mg/kg-day	N/A	N/A	N/A	3.2E-04	mg/kg-day	3.0E-03	mg/kg-day	1.1E-01
				Lead	4E+03	mg/kg	1.0E-05	mg/kg-day	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A	N/A	N/A
				Manganese	3E+02	mg/kg	8.6E-07	mg/kg-day	N/A	N/A	N/A	8.6E-06	mg/kg-day	7.0E-02	mg/kg-day	1.2E-04
				Mercury	3E+00	mg/kg	7.7E-09	mg/kg-day	N/A	N/A	N/A	7.7E-08	mg/kg-day	1.0E-04	mg/kg-day	7.7E-04
				Vanadium	6E+01	mg/kg	1.4E-07	mg/kg-day	N/A	N/A	N/A	1.4E-06	mg/kg-day	1.0E-03	mg/kg-day	1.4E-03
				PCB TEQ*	2E-04	mg/kg	4.7E-13	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	7.0E-08	4.7E-12	mg/kg-day	N/A	N/A	N/A
				gamma-Chlordane	2E+00	mg/kg	4.7E-09	mg/kg-day	3.5E-01	(mg/kg-day)$^{-1}$	1.6E-09	4.7E-08	mg/kg-day	5.0E-04	mg/kg-day	9.3E-05
				Aroclor 1254	9E+01	mg/kg	2.2E-07	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	2.2E-07	2.2E-06	mg/kg-day	2.0E-05	mg/kg-day	1.1E-01
				Aroclor 1260	5E+01	mg/kg	1.2E-07	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	1.2E-07	1.2E-06	mg/kg-day	2.0E-05	mg/kg-day	5.9E-02
			Exp. Route Total								9E-07					3E-01

TABLE 3-7.11.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Sediment (Cont.)	Sediment (Cont.)	Murphy Wetland	Dermal													
				Naphthalene	5E+00	mg/kg	2.4E-08	mg/kg-day	N/A	N/A	N/A	2.4E-07	mg/kg-day	2.0E-02	mg/kg-day	1.2E-05
				Vinyl chloride	2E-01	mg/kg	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Trichloroethene	9E-02	mg/kg	N/A	N/A	4.0E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Ethylenedibromide	2E+00	mg/kg	N/A	N/A	8.5E+01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	N/A	N/A	N/A
				Ethylbenzene	2E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-01	mg/kg-day	N/A
				Xylenes (total)	1E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/kg-day	N/A
				Acetophenone	3E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-01	mg/kg-day	N/A
				2-Methylnaphthalene	1E+01	mg/kg	6.5E-08	mg/kg-day	N/A	N/A	N/A	6.5E-07	mg/kg-day	4.0E-03	mg/kg-day	1.6E-04
				Benzo(a)Anthracene	2E+00	mg/kg	8.6E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	6.3E-09	8.6E-08	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	2E+00	mg/kg	8.7E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	6.3E-09	8.7E-08	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	2E+00	mg/kg	8.9E-09	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	6.5E-08	8.9E-08	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	2E+00	mg/kg	9.0E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	6.6E-09	9.0E-08	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	1E+00	mg/kg	6.9E-09	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	5.0E-08	6.9E-08	mg/kg-day	N/A	N/A	N/A
				C11-C22 Aromatic	2E+04	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
				C19-C36 Aliphatic	9E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E+00	mg/kg-day	N/A
				C9-C18 Aliphatic	2E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-01	mg/kg-day	N/A
				Chromium (VI)	5E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	7.5E-05	mg/kg-day	N/A
				Antimony	3E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-05	mg/kg-day	N/A
				Arsenic	1E+01	mg/kg	1.4E-08	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	2.0E-08	1.4E-07	mg/kg-day	3.0E-04	mg/kg-day	4.5E-04
				Barium	1E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.9E-03	mg/kg-day	N/A
				Cadmium	3E+00	mg/kg	1.2E-10	mg/kg-day	N/A	N/A	N/A	1.2E-09	mg/kg-day	2.5E-05	mg/kg-day	4.9E-05
				Chromium	1E+04	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	7.5E-05	mg/kg-day	N/A
				Lead	4E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Manganese	3E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.8E-03	mg/kg-day	N/A
				Mercury	3E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A
				Vanadium	6E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.6E-05	mg/kg-day	N/A
				PCB TEQ*	2E-04	mg/kg	1.0E-12	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	1.6E-07	1.0E-11	mg/kg-day	N/A	N/A	N/A
				gamma-Chlordane	2E+00	mg/kg	3.0E-09	mg/kg-day	3.5E-01	(mg/kg-day)$^{-1}$	1.0E-09	3.0E-08	mg/kg-day	5.0E-04	mg/kg-day	6.0E-05
				Aroclor 1254	9E+01	mg/kg	5.0E-07	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	5.0E-07	5.0E-06	mg/kg-day	2.0E-05	mg/kg-day	2.5E-01
				Aroclor 1260	5E+01	mg/kg	2.6E-07	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	2.6E-07	2.6E-06	mg/kg-day	2.0E-05	mg/kg-day	1.3E-01
			Exp. Route Total								1E-06					4E-01
		Exposure Point Total									2E-06					7E-01
	Exposure Medium Total										N/A					N/A
Medium Total											N/A					N/A
											Total of Receptor Risks Across All Media					N/A
																Total of Receptor Hazards Across All Media

TABLE 3-7.12.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Aberjona Property	Ingestion													
				Vinyl chloride	N/A	N/A	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Trichloroethene	N/A	N/A	N/A	N/A	4.0E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Phenanthrene	7E-01	mg/kg	8.5E-08	mg/kg-day	N/A	N/A	N/A	9.9E-07	mg/kg-day	2.0E-02	mg/kg-day	4.9E-05
				Benzo(a)Anthracene	7E-01	mg/kg	8.7E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	6.3E-08	1.0E-06	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	7E-01	mg/kg	9.0E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	6.6E-08	1.1E-06	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	5E-01	mg/kg	6.3E-08	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	4.6E-09	7.3E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	5E-01	mg/kg	6.3E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	4.6E-07	7.3E-07	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	5E-01	mg/kg	6.3E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	4.6E-08	7.4E-07	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	6E-03	mg/kg	7.6E-10	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	5.5E-09	8.8E-09	mg/kg-day	N/A	N/A	N/A
				Benzo(g,h,i)perylene	6E-01	mg/kg	7.3E-08	mg/kg-day	N/A	N/A	N/A	8.5E-07	mg/kg-day	2.0E-02	mg/kg-day	4.2E-05
				Antimony	2E+00	mg/kg	2.2E-07	mg/kg-day	N/A	N/A	N/A	2.6E-06	mg/kg-day	4.0E-04	mg/kg-day	6.4E-03
				Arsenic	6E+00	mg/kg	6.9E-07	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	1.0E-06	8.1E-06	mg/kg-day	3.0E-04	mg/kg-day	2.7E-02
				Cadmium	1E+01	mg/kg	1.2E-06	mg/kg-day	N/A	N/A	N/A	1.4E-05	mg/kg-day	1.0E-03	mg/kg-day	1.4E-02
				Copper	1E+02	mg/kg	1.2E-05	mg/kg-day	N/A	N/A	N/A	1.4E-04	mg/kg-day	3.0E-02	mg/kg-day	4.8E-03
				Lead	1E+03	mg/kg	1.4E-04	mg/kg-day	N/A	N/A	N/A	1.6E-03	mg/kg-day	N/A	N/A	N/A
				Manganese	3E+02	mg/kg	3.3E-05	mg/kg-day	N/A	N/A	N/A	3.9E-04	mg/kg-day	7.0E-02	mg/kg-day	5.6E-03
				Mercury	9E-02	mg/kg	1.2E-08	mg/kg-day	N/A	N/A	N/A	1.3E-07	mg/kg-day	1.0E-04	mg/kg-day	1.3E-03
				Nickel	6E+01	mg/kg	7.9E-06	mg/kg-day	N/A	N/A	N/A	9.2E-05	mg/kg-day	2.0E-02	mg/kg-day	4.6E-03
				Thallium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-05	mg/kg-day	N/A
				Aroclor 1242	1E-01	mg/kg	1.4E-08	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	2.7E-08	1.6E-07	mg/kg-day	2.0E-05	mg/kg-day	8.0E-03
				Aroclor 1248	N/A	N/A	N/A	N/A	2.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1254	2E-01	mg/kg	1.9E-08	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	3.8E-08	2.2E-07	mg/kg-day	2.0E-05	mg/kg-day	1.1E-02
				Aroclor 1260	8E-02	mg/kg	9.6E-09	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	1.9E-08	1.1E-07	mg/kg-day	2.0E-05	mg/kg-day	5.6E-03
				PCB TEQ*	2E-06	mg/kg	2.7E-13	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	4.0E-08	3.1E-12	mg/kg-day	N/A	N/A	N/A
				C11-C22 Aromatic	2E+01	mg/kg	2.2E-06	mg/kg-day	N/A	N/A	N/A	2.6E-05	mg/kg-day	3.0E-02	mg/kg-day	8.5E-04
			Exp. Route Total								2E-06					9E-02

TABLE 3-7.12.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil (Cont.)	Surface Soil (Cont.)	Aberjona Property	Dermal													
				Vinyl chloride	N/A	N/A	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Trichloroethene	N/A	N/A	N/A	N/A	4.0E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Phenanthrene	7E-01	mg/kg	6.2E-08	mg/kg-day	N/A	N/A	N/A	7.2E-07	mg/kg-day	2.0E-02	mg/kg-day	3.6E-05
				Benzo(a)Anthracene	7E-01	mg/kg	6.3E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	4.6E-08	7.3E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	7E-01	mg/kg	6.6E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	4.8E-08	7.7E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	5E-01	mg/kg	4.6E-08	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	3.3E-09	5.3E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	5E-01	mg/kg	4.6E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	3.3E-07	5.3E-07	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	5E-01	mg/kg	4.6E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	3.4E-08	5.4E-07	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	6E-03	mg/kg	5.5E-10	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	4.0E-09	6.4E-09	mg/kg-day	N/A	N/A	N/A
				Benzo(g,h,i)perylene	6E-01	mg/kg	5.3E-08	mg/kg-day	N/A	N/A	N/A	6.2E-07	mg/kg-day	2.0E-02	mg/kg-day	3.1E-05
				Antimony	2E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-05	mg/kg-day	N/A
				Arsenic	6E+00	mg/kg	1.2E-07	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	1.7E-07	1.4E-06	mg/kg-day	3.0E-04	mg/kg-day	4.5E-03
				Cadmium	1E+01	mg/kg	6.7E-09	mg/kg-day	N/A	N/A	N/A	7.8E-08	mg/kg-day	2.5E-05	mg/kg-day	3.1E-03
				Copper	1E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
				Lead	1E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Manganese	3E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.8E-03	mg/kg-day	N/A
				Mercury	9E-02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A
				Nickel	6E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-04	mg/kg-day	N/A
				Thallium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-05	mg/kg-day	N/A
				Aroclor 1242	1E-01	mg/kg	1.1E-08	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	2.2E-08	1.3E-07	mg/kg-day	2.0E-05	mg/kg-day	6.3E-03
				Aroclor 1248	N/A	N/A	N/A	N/A	2.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1254	2E-01	mg/kg	1.5E-08	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	2.9E-08	1.7E-07	mg/kg-day	2.0E-05	mg/kg-day	8.6E-03
				Aroclor 1260	8E-02	mg/kg	7.5E-09	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	1.5E-08	8.8E-08	mg/kg-day	2.0E-05	mg/kg-day	4.4E-03
				PCB TEQ*	2E-06	mg/kg	2.1E-13	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	3.2E-08	2.5E-12	mg/kg-day	N/A	N/A	N/A
				C11-C22 Aromatic	2E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
			Exp. Route Total								7E-07					3E-02
		Exposure Point Total									3E-06					1E-01

TABLE 3-7.12.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil (Cont.)	Surface Soil (Cont.)	Whitney Property	Ingestion													
				Vinyl chloride	1E-01	mg/kg	1.3E-08	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	2.0E-08	1.5E-07	mg/kg-day	3.0E-03	mg/kg-day	5.1E-05
				Trichloroethene	1E-03	mg/kg	1.7E-10	mg/kg-day	4.0E-01	(mg/kg-day)$^{-1}$	6.8E-11	2.0E-09	mg/kg-day	3.0E-04	mg/kg-day	6.6E-06
				Phenanthrene	7E+01	mg/kg	8.3E-06	mg/kg-day	N/A	N/A	N/A	9.7E-05	mg/kg-day	2.0E-02	mg/kg-day	4.8E-03
				Benzo(a)Anthracene	4E+01	mg/kg	4.6E-06	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	3.4E-06	5.4E-05	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	4E+01	mg/kg	4.9E-06	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	3.6E-06	5.7E-05	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	2E+01	mg/kg	2.2E-06	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	1.6E-07	2.6E-05	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	3E+01	mg/kg	3.5E-06	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	2.6E-05	4.1E-05	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	1E+01	mg/kg	1.3E-06	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	9.8E-07	1.6E-05	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	3E+00	mg/kg	3.6E-07	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	2.7E-06	4.2E-06	mg/kg-day	N/A	N/A	N/A
				Benzo(g,h,i)perylene	8E+00	mg/kg	1.0E-06	mg/kg-day	N/A	N/A	N/A	1.2E-05	mg/kg-day	2.0E-02	mg/kg-day	5.8E-04
				Antimony	3E+00	mg/kg	3.4E-07	mg/kg-day	N/A	N/A	N/A	4.0E-06	mg/kg-day	4.0E-04	mg/kg-day	1.0E-02
				Arsenic	6E+00	mg/kg	6.9E-07	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	1.0E-06	8.1E-06	mg/kg-day	3.0E-04	mg/kg-day	2.7E-02
				Cadmium	3E+00	mg/kg	3.5E-07	mg/kg-day	N/A	N/A	N/A	4.1E-06	mg/kg-day	1.0E-03	mg/kg-day	4.1E-03
				Copper	1E+02	mg/kg	1.5E-05	mg/kg-day	N/A	N/A	N/A	1.8E-04	mg/kg-day	3.0E-02	mg/kg-day	6.0E-03
				Lead	7E+02	mg/kg	8.9E-05	mg/kg-day	N/A	N/A	N/A	1.0E-03	mg/kg-day	N/A	N/A	N/A
				Manganese	3E+02	mg/kg	3.2E-05	mg/kg-day	N/A	N/A	N/A	3.7E-04	mg/kg-day	7.0E-02	mg/kg-day	5.3E-03
				Mercury	5E-01	mg/kg	6.7E-08	mg/kg-day	N/A	N/A	N/A	7.8E-07	mg/kg-day	1.0E-04	mg/kg-day	7.8E-03
				Nickel	3E+01	mg/kg	3.2E-06	mg/kg-day	N/A	N/A	N/A	3.7E-05	mg/kg-day	2.0E-02	mg/kg-day	1.8E-03
				Thallium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-05	mg/kg-day	N/A
				Aroclor 1242	4E-01	mg/kg	4.7E-08	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	9.3E-08	5.4E-07	mg/kg-day	2.0E-05	mg/kg-day	2.7E-02
				Aroclor 1248	9E-02	mg/kg	1.2E-08	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	2.3E-08	1.4E-07	mg/kg-day	2.0E-05	mg/kg-day	6.8E-03
				Aroclor 1254	4E+01	mg/kg	5.2E-06	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	1.0E-05	6.1E-05	mg/kg-day	2.0E-05	mg/kg-day	3.0E+00
				Aroclor 1260	1E+01	mg/kg	1.4E-06	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	2.9E-06	1.7E-05	mg/kg-day	2.0E-05	mg/kg-day	8.3E-01
				PCB TEQ*	2E-04	mg/kg	2.4E-11	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	3.6E-06	2.8E-10	mg/kg-day	N/A	N/A	N/A
				C11-C22 Aromatic	5E+02	mg/kg	5.6E-05	mg/kg-day	N/A	N/A	N/A	6.5E-04	mg/kg-day	3.0E-02	mg/kg-day	2.2E-02
			Exp. Route Total								5E-05					4E+00

TABLE 3-7.12.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil (Cont.)	Surface Soil (Cont.)	Whitney Property	Dermal													
				Vinyl chloride	1E-01	mg/kg	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Trichloroethene	1E-03	mg/kg	N/A	N/A	4.0E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Phenanthrene	7E+01	mg/kg	6.0E-06	mg/kg-day	N/A	N/A	N/A	7.1E-05	mg/kg-day	2.0E-02	mg/kg-day	3.5E-03
				Benzo(a)Anthracene	4E+01	mg/kg	3.4E-06	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	2.5E-06	3.9E-05	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	4E+01	mg/kg	3.6E-06	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	2.6E-06	4.1E-05	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	2E+01	mg/kg	1.6E-06	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	1.2E-07	1.9E-05	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	3E+01	mg/kg	2.6E-06	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.9E-05	3.0E-05	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	1E+01	mg/kg	9.8E-07	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	7.1E-07	1.1E-05	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	3E+00	mg/kg	2.6E-07	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.9E-06	3.1E-06	mg/kg-day	N/A	N/A	N/A
				Benzo(g,h,i)perylene	8E+00	mg/kg	7.3E-07	mg/kg-day	N/A	N/A	N/A	8.5E-06	mg/kg-day	2.0E-02	mg/kg-day	4.3E-04
				Antimony	3E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-05	mg/kg-day	N/A
				Arsenic	6E+00	mg/kg	1.2E-07	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	1.7E-07	1.4E-06	mg/kg-day	3.0E-04	mg/kg-day	4.5E-03
				Cadmium	3E+00	mg/kg	1.9E-09	mg/kg-day	N/A	N/A	N/A	2.3E-08	mg/kg-day	2.5E-05	mg/kg-day	9.1E-04
				Copper	1E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
				Lead	7E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Manganese	3E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.8E-03	mg/kg-day	N/A
				Mercury	5E-01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A
				Nickel	3E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-04	mg/kg-day	N/A
				Thallium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-05	mg/kg-day	N/A
				Aroclor 1242	4E-01	mg/kg	3.6E-08	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	7.3E-08	4.3E-07	mg/kg-day	2.0E-05	mg/kg-day	2.1E-02
				Aroclor 1248	9E-02	mg/kg	9.1E-09	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	1.8E-08	1.1E-07	mg/kg-day	2.0E-05	mg/kg-day	5.3E-03
				Aroclor 1254	4E+01	mg/kg	4.1E-06	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	8.1E-06	4.7E-05	mg/kg-day	2.0E-05	mg/kg-day	2.4E+00
				Aroclor 1260	1E+01	mg/kg	1.1E-06	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	2.2E-06	1.3E-05	mg/kg-day	2.0E-05	mg/kg-day	6.5E-01
				PCB TEQ*	2E-04	mg/kg	1.9E-11	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	2.8E-06	2.2E-10	mg/kg-day	N/A	N/A	N/A
				C11-C22 Aromatic	5E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
			Exp. Route Total								4E-05					3E+00
		Exposure Point Total									9E-05					7E+00

TABLE 3-7.12.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil (Cont.)	Surface Soil (Cont.)	Murphy Property	Ingestion													
				Vinyl chloride	N/A	N/A	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Trichloroethene	4E-01	mg/kg	4.6E-08	mg/kg-day	4.0E-01	(mg/kg-day)$^{-1}$	1.8E-08	5.4E-07	mg/kg-day	3.0E-04	mg/kg-day	1.8E-03
				Phenanthrene	6E+00	mg/kg	6.8E-07	mg/kg-day	N/A	N/A	N/A	8.0E-06	mg/kg-day	2.0E-02	mg/kg-day	4.0E-04
				Benzo(a)Anthracene	2E+00	mg/kg	3.0E-07	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	2.2E-07	3.5E-06	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	2E+00	mg/kg	2.8E-07	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	2.1E-07	3.3E-06	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	9E-01	mg/kg	1.1E-07	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	8.3E-09	1.3E-06	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	2E+00	mg/kg	1.9E-07	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.4E-06	2.2E-06	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	7E+00	mg/kg	7.9E-07	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	5.8E-07	9.3E-06	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	2E-01	mg/kg	2.6E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.9E-07	3.0E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(g,h,i)perylene	1E+00	mg/kg	1.7E-07	mg/kg-day	N/A	N/A	N/A	1.9E-06	mg/kg-day	2.0E-02	mg/kg-day	9.7E-05
				Antimony	4E+00	mg/kg	4.4E-07	mg/kg-day	N/A	N/A	N/A	5.1E-06	mg/kg-day	4.0E-04	mg/kg-day	1.3E-02
				Arsenic	8E+00	mg/kg	9.9E-07	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	1.5E-06	1.2E-05	mg/kg-day	3.0E-04	mg/kg-day	3.9E-02
				Cadmium	3E+00	mg/kg	3.6E-07	mg/kg-day	N/A	N/A	N/A	4.2E-06	mg/kg-day	1.0E-03	mg/kg-day	4.2E-03
				Copper	4E+01	mg/kg	4.3E-06	mg/kg-day	N/A	N/A	N/A	5.1E-05	mg/kg-day	3.0E-02	mg/kg-day	1.7E-03
				Lead	8E+02	mg/kg	1.0E-04	mg/kg-day	N/A	N/A	N/A	1.2E-03	mg/kg-day	N/A	N/A	N/A
				Manganese	4E+02	mg/kg	5.0E-05	mg/kg-day	N/A	N/A	N/A	5.9E-04	mg/kg-day	7.0E-02	mg/kg-day	8.4E-03
				Mercury	6E-01	mg/kg	7.0E-08	mg/kg-day	N/A	N/A	N/A	8.2E-07	mg/kg-day	1.0E-04	mg/kg-day	8.2E-03
				Nickel	2E+01	mg/kg	2.1E-06	mg/kg-day	N/A	N/A	N/A	2.4E-05	mg/kg-day	2.0E-02	mg/kg-day	1.2E-03
				Thallium	6E+00	mg/kg	7.0E-07	mg/kg-day	N/A	N/A	N/A	8.1E-06	mg/kg-day	8.0E-05	mg/kg-day	1.0E-01
				Aroclor 1242	N/A	N/A	N/A	N/A	2.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1248	N/A	N/A	N/A	N/A	2.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1254	2E+00	mg/kg	2.7E-07	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	5.4E-07	3.1E-06	mg/kg-day	2.0E-05	mg/kg-day	1.6E-01
				Aroclor 1260	5E-02	mg/kg	6.0E-09	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	1.2E-08	7.0E-08	mg/kg-day	2.0E-05	mg/kg-day	3.5E-03
				PCB TEQ*	6E-08	mg/kg	7.1E-15	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	1.1E-09	8.3E-14	mg/kg-day	N/A	N/A	N/A
				C11-C22 Aromatic	4E+03	mg/kg	4.5E-04	mg/kg-day	N/A	N/A	N/A	5.3E-03	mg/kg-day	3.0E-02	mg/kg-day	1.8E-01
			Exp. Route Total								5E-06					5E-01

TABLE 3-7.12.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil (Cont.)	Surface Soil (Cont.)	Murphy Property	Dermal													
				Vinyl chloride	N/A	N/A	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Trichloroethene	4E-01	mg/kg	N/A	N/A	4.0E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Phenanthrene	6E+00	mg/kg	5.0E-07	mg/kg-day	N/A	N/A	N/A	5.8E-06	mg/kg-day	2.0E-02	mg/kg-day	2.9E-04
				Benzo(a)Anthracene	2E+00	mg/kg	2.2E-07	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.6E-07	2.5E-06	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	2E+00	mg/kg	2.0E-07	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.5E-07	2.4E-06	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	9E-01	mg/kg	8.2E-08	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	6.0E-09	9.6E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	2E+00	mg/kg	1.4E-07	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.0E-06	1.6E-06	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	7E+00	mg/kg	5.8E-07	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	4.2E-07	6.7E-06	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	2E-01	mg/kg	1.9E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.4E-07	2.2E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(g,h,i)perylene	1E+00	mg/kg	1.2E-07	mg/kg-day	N/A	N/A	N/A	1.4E-06	mg/kg-day	2.0E-02	mg/kg-day	7.0E-05
				Antimony	4E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-05	mg/kg-day	N/A
				Arsenic	8E+00	mg/kg	1.7E-07	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	2.5E-07	1.9E-06	mg/kg-day	3.0E-04	mg/kg-day	6.5E-03
				Cadmium	3E+00	mg/kg	2.0E-09	mg/kg-day	N/A	N/A	N/A	2.4E-08	mg/kg-day	2.5E-05	mg/kg-day	9.4E-04
				Copper	4E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
				Lead	8E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Manganese	4E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.8E-03	mg/kg-day	N/A
				Mercury	6E-01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A
				Nickel	2E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-04	mg/kg-day	N/A
				Thallium	6E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-05	mg/kg-day	N/A
				Aroclor 1242	N/A	N/A	N/A	N/A	2.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1248	N/A	N/A	N/A	N/A	2.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1254	2E+00	mg/kg	2.1E-07	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	4.2E-07	2.5E-06	mg/kg-day	2.0E-05	mg/kg-day	1.2E-01
				Aroclor 1260	5E-02	mg/kg	4.7E-09	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	9.4E-09	5.5E-08	mg/kg-day	2.0E-05	mg/kg-day	2.7E-03
				PCB TEQ*	6E-08	mg/kg	5.6E-15	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	8.4E-10	6.5E-14	mg/kg-day	N/A	N/A	N/A
				C11-C22 Aromatic	4E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
			Exp. Route Total								3E-06					1E-01
		Exposure Point Total									7E-06					6E-01
	Exposure Medium Total										N/A					N/A
Medium Total											N/A					N/A

TABLE 3-7.12.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Subsurface Soil	Subsurface Soil	Aberjona Property	Ingestion													
				1,2,4-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/kg-day	N/A
				1,3,5-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/kg-day	N/A
				Naphthalene	1E+01	mg/kg	1.4E-06	mg/kg-day	N/A	N/A	N/A	1.7E-05	mg/kg-day	2.0E-02	mg/kg-day	8.4E-04
				Vinyl chloride	N/A	N/A	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Methylene chloride	N/A	N/A	N/A	N/A	7.5E-03	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	6.0E-02	mg/kg-day	N/A
				cis-1,2-Dichloroethene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-02	mg/kg-day	N/A
				Trichloroethene	N/A	N/A	N/A	N/A	4.0E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Xylenes (total)	3E+00	mg/kg	3.1E-07	mg/kg-day	N/A	N/A	N/A	3.7E-06	mg/kg-day	2.0E-01	mg/kg-day	1.8E-05
				2-Methylnaphthalene	1E+01	mg/kg	1.8E-06	mg/kg-day	N/A	N/A	N/A	2.1E-05	mg/kg-day	4.0E-03	mg/kg-day	5.2E-03
				2,4,6-Trichlorophenol	N/A	N/A	N/A	N/A	1.1E-02	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A
				Acenaphthylene	3E+00	mg/kg	4.0E-07	mg/kg-day	N/A	N/A	N/A	4.7E-06	mg/kg-day	2.0E-02	mg/kg-day	2.3E-04
				Phenanthrene	2E+00	mg/kg	2.9E-07	mg/kg-day	N/A	N/A	N/A	3.4E-06	mg/kg-day	2.0E-02	mg/kg-day	1.7E-04
				Benzo(a)Anthracene	3E-02	mg/kg	3.1E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	2.2E-09	3.6E-08	mg/kg-day	N/A	N/A	N/A
				Bis(2-ethylhexyl) phthalate	N/A	N/A	N/A	N/A	1.4E-02	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-02	mg/kg-day	N/A
				Benzo(b)Fluoranthene	5E-02	mg/kg	6.2E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	4.5E-09	7.3E-08	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	4E+00	mg/kg	4.5E-07	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	3.3E-08	5.2E-06	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	2E+00	mg/kg	2.2E-07	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.6E-06	2.5E-06	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	2E+00	mg/kg	2.7E-07	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	2.0E-07	3.2E-06	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	1E+00	mg/kg	1.7E-07	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.2E-06	2.0E-06	mg/kg-day	N/A	N/A	N/A
				Antimony	4E+00	mg/kg	4.6E-07	mg/kg-day	N/A	N/A	N/A	5.3E-06	mg/kg-day	4.0E-04	mg/kg-day	1.3E-02
				Arsenic	2E+01	mg/kg	2.5E-06	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	3.8E-06	3.0E-05	mg/kg-day	3.0E-04	mg/kg-day	9.9E-02
				Barium	2E+02	mg/kg	1.9E-05	mg/kg-day	N/A	N/A	N/A	2.2E-04	mg/kg-day	7.0E-02	mg/kg-day	3.2E-03
				Cadmium	3E+00	mg/kg	4.0E-07	mg/kg-day	N/A	N/A	N/A	4.7E-06	mg/kg-day	1.0E-03	mg/kg-day	4.7E-03
				Lead	2E+02	mg/kg	2.3E-05	mg/kg-day	N/A	N/A	N/A	2.6E-04	mg/kg-day	N/A	N/A	N/A
				Manganese	3E+02	mg/kg	3.2E-05	mg/kg-day	N/A	N/A	N/A	3.7E-04	mg/kg-day	7.0E-02	mg/kg-day	5.3E-03
				Mercury	5E-01	mg/kg	5.9E-08	mg/kg-day	N/A	N/A	N/A	6.9E-07	mg/kg-day	1.0E-04	mg/kg-day	6.9E-03
				Thallium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-05	mg/kg-day	N/A
				alpha-Chlordane	4E-03	mg/kg	4.8E-10	mg/kg-day	3.5E-01	(mg/kg-day)$^{-1}$	1.7E-10	5.6E-09	mg/kg-day	5.0E-04	mg/kg-day	1.1E-05
				gamma-Chlordane	5E-03	mg/kg	5.7E-10	mg/kg-day	3.5E-01	(mg/kg-day)$^{-1}$	2.0E-10	6.6E-09	mg/kg-day	5.0E-04	mg/kg-day	1.3E-05
				4,4'-DDE	5E-03	mg/kg	6.2E-10	mg/kg-day	3.4E-01	(mg/kg-day)$^{-1}$	2.1E-10	7.2E-09	mg/kg-day	3.0E-04	mg/kg-day	2.4E-05
				4,4'-DDT	2E-02	mg/kg	2.0E-09	mg/kg-day	3.4E-01	(mg/kg-day)$^{-1}$	6.8E-10	2.3E-08	mg/kg-day	5.0E-04	mg/kg-day	4.7E-05
				Aroclor 1242	2E-01	mg/kg	2.0E-08	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	3.9E-08	2.3E-07	mg/kg-day	2.0E-05	mg/kg-day	1.1E-02
				Aroclor 1248	N/A	N/A	N/A	N/A	2.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1254	N/A	N/A	N/A	N/A	2.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1260	1E-01	mg/kg	1.7E-08	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	3.4E-08	2.0E-07	mg/kg-day	2.0E-05	mg/kg-day	9.8E-03
				PCB TEQ*	8E-06	mg/kg	9.3E-13	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	1.4E-07	1.1E-11	mg/kg-day	N/A	N/A	N/A
				C5-C8 Aliphatic	2E+01	mg/kg	2.3E-06	mg/kg-day	N/A	N/A	N/A	2.7E-05	mg/kg-day	4.0E-02	mg/kg-day	6.8E-04
				C9-C10 Aromatic	2E+02	mg/kg	2.2E-05	mg/kg-day	N/A	N/A	N/A	2.5E-04	mg/kg-day	3.0E-02	mg/kg-day	8.4E-03
				C9-C18 Aliphatic	2E+03	mg/kg	3.0E-04	mg/kg-day	N/A	N/A	N/A	3.5E-03	mg/kg-day	1.0E-01	mg/kg-day	3.5E-02
				C19-C36 Aliphatic	6E+02	mg/kg	7.8E-05	mg/kg-day	N/A	N/A	N/A	9.1E-04	mg/kg-day	2.0E+00	mg/kg-day	4.6E-04
				C11-C22 Aromatic	2E+03	mg/kg	2.1E-04	mg/kg-day	N/A	N/A	N/A	2.5E-03	mg/kg-day	3.0E-02	mg/kg-day	8.2E-02
			Exp. Route Total								7E-06					3E-01

TABLE 3-7.12.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Subsurface Soil (Cont.)	Subsurface Soil (Cont.)	Aberjona Property	Dermal													
				1,2,4-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/kg-day	N/A
				1,3,5-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/kg-day	N/A
				Naphthalene	1E+01	mg/kg	1.0E-06	mg/kg-day	N/A	N/A	N/A	1.2E-05	mg/kg-day	2.0E-02	mg/kg-day	6.1E-04
				Vinyl chloride	N/A	N/A	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Methylene chloride	N/A	N/A	N/A	N/A	7.5E-03	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	6.0E-02	mg/kg-day	N/A
				cis-1,2-Dichloroethene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-02	mg/kg-day	N/A
				Trichloroethene	N/A	N/A	N/A	N/A	4.0E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Xylenes (total)	3E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/kg-day	N/A
				2-Methylnaphthalene	1E+01	mg/kg	1.3E-06	mg/kg-day	N/A	N/A	N/A	1.5E-05	mg/kg-day	4.0E-03	mg/kg-day	3.8E-03
				2,4,6-Trichlorophenol	N/A	N/A	N/A	N/A	1.1E-02	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A
				Acenaphthylene	3E+00	mg/kg	2.9E-07	mg/kg-day	N/A	N/A	N/A	3.4E-06	mg/kg-day	2.0E-02	mg/kg-day	1.7E-04
				Phenanthrene	2E+00	mg/kg	2.1E-07	mg/kg-day	N/A	N/A	N/A	2.5E-06	mg/kg-day	2.0E-02	mg/kg-day	1.3E-04
				Benzo(a)Anthracene	3E-02	mg/kg	2.2E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.6E-09	2.6E-08	mg/kg-day	N/A	N/A	N/A
				Bis(2-ethylhexyl) phthalate	N/A	N/A	N/A	N/A	1.4E-02	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-02	mg/kg-day	N/A
				Benzo(b)Fluoranthene	5E-02	mg/kg	4.5E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	3.3E-09	5.3E-08	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	4E+00	mg/kg	3.2E-07	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	2.4E-08	3.8E-06	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	2E+00	mg/kg	1.6E-07	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.2E-06	1.8E-06	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	2E+00	mg/kg	2.0E-07	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.4E-07	2.3E-06	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	1E+00	mg/kg	1.2E-07	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	9.0E-07	1.4E-06	mg/kg-day	N/A	N/A	N/A
				Antimony	4E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-05	mg/kg-day	N/A
				Arsenic	2E+01	mg/kg	4.3E-07	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	6.4E-07	5.0E-06	mg/kg-day	3.0E-04	mg/kg-day	1.7E-02
				Barium	2E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.9E-03	mg/kg-day	N/A
				Cadmium	3E+00	mg/kg	2.3E-09	mg/kg-day	N/A	N/A	N/A	2.6E-08	mg/kg-day	2.5E-05	mg/kg-day	1.1E-03
				Lead	2E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Manganese	3E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.8E-03	mg/kg-day	N/A
				Mercury	5E-01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A
				Thallium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-05	mg/kg-day	N/A
				alpha-Chlordane	4E-03	mg/kg	1.1E-10	mg/kg-day	3.5E-01	(mg/kg-day)$^{-1}$	3.7E-11	1.2E-09	mg/kg-day	5.0E-04	mg/kg-day	2.5E-06
				gamma-Chlordane	5E-03	mg/kg	1.3E-10	mg/kg-day	3.5E-01	(mg/kg-day)$^{-1}$	4.5E-11	1.5E-09	mg/kg-day	5.0E-04	mg/kg-day	3.0E-06
				4,4'-DDE	5E-03	mg/kg	N/A	N/A	3.4E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				4,4'-DDT	2E-02	mg/kg	3.4E-10	mg/kg-day	3.4E-01	(mg/kg-day)$^{-1}$	1.1E-10	3.9E-09	mg/kg-day	5.0E-04	mg/kg-day	7.9E-06
				Aroclor 1242	2E-01	mg/kg	1.5E-08	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	3.1E-08	1.8E-07	mg/kg-day	2.0E-05	mg/kg-day	9.0E-03
				Aroclor 1248	N/A	N/A	N/A	N/A	2.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1254	N/A	N/A	N/A	N/A	2.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1260	1E-01	mg/kg	1.3E-08	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	2.6E-08	1.5E-07	mg/kg-day	2.0E-05	mg/kg-day	7.7E-03
				PCB TEQ*	8E-06	mg/kg	7.3E-13	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	1.1E-07	8.5E-12	mg/kg-day	N/A	N/A	N/A
				C5-C8 Aliphatic	2E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.0E-02	mg/kg-day	N/A
				C9-C10 Aromatic	2E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
				C9-C18 Aliphatic	2E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-01	mg/kg-day	N/A
				C19-C36 Aliphatic	6E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E+00	mg/kg-day	N/A
				C11-C22 Aromatic	2E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
			Exp. Route Total								3E-06					4E-02
		Exposure Point Total									1E-05					3E-01

TABLE 3-7.12.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Subsurface Soil (Cont.)	Subsurface Soil (Cont.)	Whitney Property	Ingestion													
				1,2,4-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/kg-day	N/A
				1,3,5-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/kg-day	N/A
				Naphthalene	1E+01	mg/kg	1.5E-06	mg/kg-day	N/A	N/A	N/A	1.7E-05	mg/kg-day	2.0E-02	mg/kg-day	8.5E-04
				Vinyl chloride	3E-01	mg/kg	4.1E-08	mg/kg-day	1.5E+00	$(mg/kg-day)^{-1}$	6.2E-08	4.8E-07	mg/kg-day	3.0E-03	mg/kg-day	1.6E-04
				Methylene chloride	3E+00	mg/kg	3.3E-07	mg/kg-day	7.5E-03	$(mg/kg-day)^{-1}$	2.5E-09	3.8E-06	mg/kg-day	6.0E-02	mg/kg-day	6.4E-05
				cis-1,2-Dichloroethene	4E-01	mg/kg	4.6E-08	mg/kg-day	N/A	N/A	N/A	5.4E-07	mg/kg-day	1.0E-02	mg/kg-day	5.4E-05
				Trichloroethene	5E-01	mg/kg	6.0E-08	mg/kg-day	4.0E-01	$(mg/kg-day)^{-1}$	2.4E-08	7.0E-07	mg/kg-day	3.0E-04	mg/kg-day	2.3E-03
				Xylenes (total)	3E+00	mg/kg	4.1E-07	mg/kg-day	N/A	N/A	N/A	4.7E-06	mg/kg-day	2.0E-01	mg/kg-day	2.4E-05
				2-Methylnaphthalene	2E+01	mg/kg	2.4E-06	mg/kg-day	N/A	N/A	N/A	2.8E-05	mg/kg-day	4.0E-03	mg/kg-day	7.1E-03
				2,4,6-Trichlorophenol	1E+00	mg/kg	1.7E-07	mg/kg-day	1.1E-02	$(mg/kg-day)^{-1}$	1.9E-09	2.0E-06	mg/kg-day	1.0E-04	mg/kg-day	2.0E-02
				Acenaphthylene	2E-02	mg/kg	2.3E-09	mg/kg-day	N/A	N/A	N/A	2.7E-08	mg/kg-day	2.0E-02	mg/kg-day	1.4E-06
				Phenanthrene	3E+00	mg/kg	3.6E-07	mg/kg-day	N/A	N/A	N/A	4.2E-06	mg/kg-day	2.0E-02	mg/kg-day	2.1E-04
				Benzo(a)Anthracene	1E+00	mg/kg	1.5E-07	mg/kg-day	7.3E-01	$(mg/kg-day)^{-1}$	1.1E-07	1.7E-06	mg/kg-day	N/A	N/A	N/A
				Bis(2-ethylhexyl) phthalate	3E+02	mg/kg	3.6E-05	mg/kg-day	1.4E-02	$(mg/kg-day)^{-1}$	5.0E-07	4.2E-04	mg/kg-day	2.0E-02	mg/kg-day	2.1E-02
				Benzo(b)Fluoranthene	1E+00	mg/kg	1.8E-07	mg/kg-day	7.3E-01	$(mg/kg-day)^{-1}$	1.3E-07	2.1E-06	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	1E+00	mg/kg	1.2E-07	mg/kg-day	7.3E-02	$(mg/kg-day)^{-1}$	8.8E-09	1.4E-06	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	1E+00	mg/kg	1.5E-07	mg/kg-day	7.3E+00	$(mg/kg-day)^{-1}$	1.1E-06	1.8E-06	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	9E-01	mg/kg	1.1E-07	mg/kg-day	7.3E-01	$(mg/kg-day)^{-1}$	7.8E-08	1.2E-06	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	2E-01	mg/kg	2.8E-08	mg/kg-day	7.3E+00	$(mg/kg-day)^{-1}$	2.1E-07	3.3E-07	mg/kg-day	N/A	N/A	N/A
				Antimony	6E+00	mg/kg	7.9E-07	mg/kg-day	N/A	N/A	N/A	9.3E-06	mg/kg-day	4.0E-04	mg/kg-day	2.3E-02
				Arsenic	3E+01	mg/kg	3.4E-06	mg/kg-day	1.5E+00	$(mg/kg-day)^{-1}$	5.1E-06	4.0E-05	mg/kg-day	3.0E-04	mg/kg-day	1.3E-01
				Barium	2E+02	mg/kg	2.0E-05	mg/kg-day	N/A	N/A	N/A	2.4E-04	mg/kg-day	7.0E-02	mg/kg-day	3.4E-03
				Cadmium	6E+00	mg/kg	7.4E-07	mg/kg-day	N/A	N/A	N/A	8.6E-06	mg/kg-day	1.0E-03	mg/kg-day	8.6E-03
				Lead	6E+02	mg/kg	7.0E-05	mg/kg-day	N/A	N/A	N/A	8.2E-04	mg/kg-day	N/A	N/A	N/A
				Manganese	3E+02	mg/kg	3.1E-05	mg/kg-day	N/A	N/A	N/A	3.6E-04	mg/kg-day	7.0E-02	mg/kg-day	5.1E-03
				Mercury	1E+01	mg/kg	1.5E-06	mg/kg-day	N/A	N/A	N/A	1.7E-05	mg/kg-day	1.0E-04	mg/kg-day	1.7E-01
				Thallium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-05	mg/kg-day	N/A
				alpha-Chlordane	4E+02	mg/kg	5.1E-05	mg/kg-day	3.5E-01	$(mg/kg-day)^{-1}$	1.8E-05	5.9E-04	mg/kg-day	5.0E-04	mg/kg-day	1.2E+00
				gamma-Chlordane	3E+02	mg/kg	3.7E-05	mg/kg-day	3.5E-01	$(mg/kg-day)^{-1}$	1.3E-05	4.3E-04	mg/kg-day	5.0E-04	mg/kg-day	8.5E-01
				4,4'-DDE	1E+02	mg/kg	1.4E-05	mg/kg-day	3.4E-01	$(mg/kg-day)^{-1}$	4.9E-06	1.7E-04	mg/kg-day	3.0E-04	mg/kg-day	5.6E-01
				4,4'-DDT	3E+02	mg/kg	3.5E-05	mg/kg-day	3.4E-01	$(mg/kg-day)^{-1}$	1.2E-05	4.1E-04	mg/kg-day	5.0E-04	mg/kg-day	8.3E-01
				Aroclor 1242	N/A	N/A	N/A	N/A	2.0E+00	$(mg/kg-day)^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1248	7E+02	mg/kg	9.1E-05	mg/kg-day	2.0E+00	$(mg/kg-day)^{-1}$	1.8E-04	1.1E-03	mg/kg-day	2.0E-05	mg/kg-day	5.3E+01
				Aroclor 1254	4E+02	mg/kg	5.0E-05	mg/kg-day	2.0E+00	$(mg/kg-day)^{-1}$	1.0E-04	5.8E-04	mg/kg-day	2.0E-05	mg/kg-day	2.9E+01
				Aroclor 1260	2E+02	mg/kg	2.8E-05	mg/kg-day	2.0E+00	$(mg/kg-day)^{-1}$	5.5E-05	3.2E-04	mg/kg-day	2.0E-05	mg/kg-day	1.6E+01
				PCB TEQ*	4E-03	mg/kg	4.5E-10	mg/kg-day	1.5E+05	$(mg/kg-day)^{-1}$	6.8E-05	5.3E-09	mg/kg-day	N/A	N/A	N/A
				C5-C8 Aliphatic	1E+02	mg/kg	1.8E-05	mg/kg-day	N/A	N/A	N/A	2.1E-04	mg/kg-day	4.0E-02	mg/kg-day	5.1E-03
				C9-C10 Aromatic	5E+02	mg/kg	6.1E-05	mg/kg-day	N/A	N/A	N/A	7.1E-04	mg/kg-day	3.0E-02	mg/kg-day	2.4E-02
				C9-C18 Aliphatic	6E+03	mg/kg	7.4E-04	mg/kg-day	N/A	N/A	N/A	8.6E-03	mg/kg-day	1.0E-01	mg/kg-day	8.6E-02
				C19-C36 Aliphatic	4E+03	mg/kg	5.0E-04	mg/kg-day	N/A	N/A	N/A	5.9E-03	mg/kg-day	2.0E+00	mg/kg-day	2.9E-03
				C11-C22 Aromatic	4E+03	mg/kg	5.0E-04	mg/kg-day	N/A	N/A	N/A	5.8E-03	mg/kg-day	3.0E-02	mg/kg-day	1.9E-01
			Exp. Route Total								5E-04					1E+02

TABLE 3-7.12.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Subsurface Soil (Cont.)	Subsurface Soil (Cont.)	Whitney Property	Dermal													
				1,2,4-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/kg-day	N/A
				1,3,5-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/kg-day	N/A
				Naphthalene	1E+01	mg/kg	1.1E-06	mg/kg-day	N/A	N/A	N/A	1.2E-05	mg/kg-day	2.0E-02	mg/kg-day	6.2E-04
				Vinyl chloride	3E-01	mg/kg	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Methylene chloride	3E+00	mg/kg	N/A	N/A	7.5E-03	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	6.0E-02	mg/kg-day	N/A
				cis-1,2-Dichloroethene	4E-01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-02	mg/kg-day	N/A
				Trichloroethene	5E-01	mg/kg	N/A	N/A	4.0E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Xylenes (total)	3E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/kg-day	N/A
				2-Methylnaphthalene	2E+01	mg/kg	1.8E-06	mg/kg-day	N/A	N/A	N/A	2.1E-05	mg/kg-day	4.0E-03	mg/kg-day	5.2E-03
				2,4,6-Trichlorophenol	1E+00	mg/kg	N/A	N/A	1.1E-02	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A
				Acenaphthylene	2E-02	mg/kg	1.7E-09	mg/kg-day	N/A	N/A	N/A	2.0E-08	mg/kg-day	2.0E-02	mg/kg-day	9.9E-07
				Phenanthrene	3E+00	mg/kg	2.6E-07	mg/kg-day	N/A	N/A	N/A	3.0E-06	mg/kg-day	2.0E-02	mg/kg-day	1.5E-04
				Benzo(a)Anthracene	1E+00	mg/kg	1.1E-07	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	7.9E-08	1.3E-06	mg/kg-day	N/A	N/A	N/A
				Bis(2-ethylhexyl) phthalate	3E+02	mg/kg	N/A	N/A	1.4E-02	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-02	mg/kg-day	N/A
				Benzo(b)Fluoranthene	1E+00	mg/kg	1.3E-07	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	9.7E-08	1.5E-06	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	1E+00	mg/kg	8.8E-08	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	6.4E-09	1.0E-06	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	1E+00	mg/kg	1.1E-07	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	8.0E-07	1.3E-06	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	9E-01	mg/kg	7.7E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	5.6E-08	9.0E-07	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	2E-01	mg/kg	2.1E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.5E-07	2.4E-07	mg/kg-day	N/A	N/A	N/A
				Antimony	6E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-05	mg/kg-day	N/A
				Arsenic	3E+01	mg/kg	5.8E-07	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	8.6E-07	6.7E-06	mg/kg-day	3.0E-04	mg/kg-day	2.2E-02
				Barium	2E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.9E-03	mg/kg-day	N/A
				Cadmium	6E+00	mg/kg	4.1E-09	mg/kg-day	N/A	N/A	N/A	4.8E-08	mg/kg-day	2.5E-05	mg/kg-day	1.9E-03
				Lead	6E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Manganese	3E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.8E-03	mg/kg-day	N/A
				Mercury	1E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A
				Thallium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-05	mg/kg-day	N/A
				alpha-Chlordane	4E+02	mg/kg	1.1E-05	mg/kg-day	3.5E-01	(mg/kg-day)$^{-1}$	4.0E-06	1.3E-04	mg/kg-day	5.0E-04	mg/kg-day	2.7E-01
				gamma-Chlordane	3E+02	mg/kg	8.2E-06	mg/kg-day	3.5E-01	(mg/kg-day)$^{-1}$	2.9E-06	9.5E-05	mg/kg-day	5.0E-04	mg/kg-day	1.9E-01
				4,4'-DDE	1E+02	mg/kg	N/A	N/A	3.4E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				4,4'-DDT	3E+02	mg/kg	5.9E-06	mg/kg-day	3.4E-01	(mg/kg-day)$^{-1}$	2.0E-06	6.9E-05	mg/kg-day	5.0E-04	mg/kg-day	1.4E-01
				Aroclor 1242	N/A	N/A	N/A	N/A	2.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1248	7E+02	mg/kg	7.2E-05	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	1.4E-04	8.4E-04	mg/kg-day	2.0E-05	mg/kg-day	4.2E+01
				Aroclor 1254	4E+02	mg/kg	3.9E-05	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	7.8E-05	4.6E-04	mg/kg-day	2.0E-05	mg/kg-day	2.3E+01
				Aroclor 1260	2E+02	mg/kg	2.2E-05	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	4.3E-05	2.5E-04	mg/kg-day	2.0E-05	mg/kg-day	1.3E+01
				PCB TEQ*	4E-03	mg/kg	3.6E-10	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	5.3E-05	4.2E-09	mg/kg-day	N/A	N/A	N/A
				C5-C8 Aliphatic	1E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.0E-02	mg/kg-day	N/A
				C9-C10 Aromatic	5E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
				C9-C18 Aliphatic	6E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-01	mg/kg-day	N/A
				C19-C36 Aliphatic	4E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E+00	mg/kg-day	N/A
				C11-C22 Aromatic	4E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
			Exp. Route Total								3E-04					8E+01
		Exposure Point Total									8E-04					2E+02

TABLE 3-7.12.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Subsurface Soil (Cont.)	Subsurface Soil (Cont.)	Murphy Property	Ingestion													
				1,2,4-Trimethylbenzene	1E+01	mg/kg	1.3E-06	mg/kg-day	N/A	N/A	N/A	1.5E-05	mg/kg-day	5.0E-02	mg/kg-day	3.0E-04
				1,3,5-Trimethylbenzene	5E+00	mg/kg	5.5E-07	mg/kg-day	N/A	N/A	N/A	6.4E-06	mg/kg-day	5.0E-02	mg/kg-day	1.3E-04
				Naphthalene	4E+00	mg/kg	4.5E-07	mg/kg-day	N/A	N/A	N/A	5.3E-06	mg/kg-day	2.0E-02	mg/kg-day	2.6E-04
				Vinyl chloride	N/A	N/A	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Methylene chloride	3E+00	mg/kg	3.3E-07	mg/kg-day	7.5E-03	(mg/kg-day)$^{-1}$	2.5E-09	3.9E-06	mg/kg-day	6.0E-02	mg/kg-day	6.5E-05
				cis-1,2-Dichloroethene	2E+00	mg/kg	2.7E-07	mg/kg-day	N/A	N/A	N/A	3.2E-06	mg/kg-day	1.0E-02	mg/kg-day	3.2E-04
				Trichloroethene	3E-01	mg/kg	3.4E-08	mg/kg-day	4.0E-01	(mg/kg-day)$^{-1}$	1.4E-08	4.0E-07	mg/kg-day	3.0E-04	mg/kg-day	1.3E-03
				Xylenes (total)	4E+00	mg/kg	5.0E-07	mg/kg-day	N/A	N/A	N/A	5.8E-06	mg/kg-day	2.0E-01	mg/kg-day	2.9E-05
				2-Methylnaphthalene	1E+00	mg/kg	1.3E-07	mg/kg-day	N/A	N/A	N/A	1.5E-06	mg/kg-day	4.0E-03	mg/kg-day	3.8E-04
				2,4,6-Trichlorophenol	N/A	N/A	N/A	N/A	1.1E-02	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A
				Acenaphthylene	2E+00	mg/kg	1.9E-07	mg/kg-day	N/A	N/A	N/A	2.3E-06	mg/kg-day	2.0E-02	mg/kg-day	1.1E-04
				Phenanthrene	2E+00	mg/kg	2.2E-07	mg/kg-day	N/A	N/A	N/A	2.5E-06	mg/kg-day	2.0E-02	mg/kg-day	1.3E-04
				Benzo(a)Anthracene	1E+00	mg/kg	1.8E-07	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.3E-07	2.1E-06	mg/kg-day	N/A	N/A	N/A
				Bis(2-ethylhexyl) phthalate	1E+01	mg/kg	1.4E-06	mg/kg-day	1.4E-02	(mg/kg-day)$^{-1}$	2.0E-08	1.7E-05	mg/kg-day	2.0E-02	mg/kg-day	8.3E-04
				Benzo(b)Fluoranthene	1E+00	mg/kg	1.8E-07	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.3E-07	2.1E-06	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	2E+00	mg/kg	2.2E-07	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	1.6E-08	2.6E-06	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	2E+00	mg/kg	1.9E-07	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.4E-06	2.3E-06	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	1E+00	mg/kg	1.8E-07	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.3E-07	2.1E-06	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	4E-01	mg/kg	4.6E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	3.4E-07	5.4E-07	mg/kg-day	N/A	N/A	N/A
				Antimony	3E+00	mg/kg	3.5E-07	mg/kg-day	N/A	N/A	N/A	4.1E-06	mg/kg-day	4.0E-04	mg/kg-day	1.0E-02
				Arsenic	4E+00	mg/kg	4.9E-07	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	7.3E-07	5.7E-06	mg/kg-day	3.0E-04	mg/kg-day	1.9E-02
				Barium	3E+02	mg/kg	4.1E-05	mg/kg-day	N/A	N/A	N/A	4.8E-04	mg/kg-day	7.0E-02	mg/kg-day	6.8E-03
				Cadmium	1E+00	mg/kg	1.5E-07	mg/kg-day	N/A	N/A	N/A	1.8E-06	mg/kg-day	1.0E-03	mg/kg-day	1.8E-03
				Lead	5E+02	mg/kg	6.1E-05	mg/kg-day	N/A	N/A	N/A	7.2E-04	mg/kg-day	N/A	N/A	N/A
				Manganese	2E+02	mg/kg	2.2E-05	mg/kg-day	N/A	N/A	N/A	2.6E-04	mg/kg-day	7.0E-02	mg/kg-day	3.7E-03
				Mercury	8E-02	mg/kg	9.2E-09	mg/kg-day	N/A	N/A	N/A	1.1E-07	mg/kg-day	1.0E-04	mg/kg-day	1.1E-03
				Thallium	9E+00	mg/kg	1.1E-06	mg/kg-day	N/A	N/A	N/A	1.3E-05	mg/kg-day	8.0E-05	mg/kg-day	1.6E-01
				alpha-Chlordane	1E-01	mg/kg	1.5E-08	mg/kg-day	3.5E-01	(mg/kg-day)$^{-1}$	5.2E-09	1.7E-07	mg/kg-day	5.0E-04	mg/kg-day	3.4E-04
				gamma-Chlordane	1E-01	mg/kg	1.5E-08	mg/kg-day	3.5E-01	(mg/kg-day)$^{-1}$	5.2E-09	1.7E-07	mg/kg-day	5.0E-04	mg/kg-day	3.5E-04
				4,4'-DDE	N/A	N/A	N/A	N/A	3.4E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				4,4'-DDT	N/A	N/A	N/A	N/A	3.4E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	5.0E-04	mg/kg-day	N/A
				Aroclor 1242	N/A	N/A	N/A	N/A	2.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1248	6E-01	mg/kg	7.6E-08	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	1.5E-07	8.8E-07	mg/kg-day	2.0E-05	mg/kg-day	4.4E-02
				Aroclor 1254	2E-01	mg/kg	2.4E-08	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	4.8E-08	2.8E-07	mg/kg-day	2.0E-05	mg/kg-day	1.4E-02
				Aroclor 1260	N/A	N/A	N/A	N/A	2.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				PCB TEQ*	N/A	N/A	N/A	N/A	1.5E+05	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	N/A	N/A	N/A
				C5-C8 Aliphatic	1E+00	mg/kg	1.2E-07	mg/kg-day	N/A	N/A	N/A	1.4E-06	mg/kg-day	4.0E-02	mg/kg-day	3.6E-05
				C9-C10 Aromatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
				C9-C18 Aliphatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-01	mg/kg-day	N/A
				C19-C36 Aliphatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E+00	mg/kg-day	N/A
				C11-C22 Aromatic	7E+03	mg/kg	8.2E-04	mg/kg-day	N/A	N/A	N/A	9.6E-03	mg/kg-day	3.0E-02	mg/kg-day	3.2E-01
			Exp. Route Total								3E-06					6E-01

TABLE 3-7.12.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Subsurface Soil (Cont.)	Subsurface Soil (Cont.)	Murphy Property	Dermal													
				1,2,4-Trimethylbenzene	1E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/kg-day	N/A
				1,3,5-Trimethylbenzene	5E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/kg-day	N/A
				Naphthalene	4E+00	mg/kg	3.3E-07	mg/kg-day	N/A	N/A	N/A	3.8E-06	mg/kg-day	2.0E-02	mg/kg-day	1.9E-04
				Vinyl chloride	N/A	N/A	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Methylene chloride	3E+00	mg/kg	N/A	N/A	7.5E-03	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	6.0E-02	mg/kg-day	N/A
				cis-1,2-Dichloroethene	2E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-02	mg/kg-day	N/A
				Trichloroethene	3E-01	mg/kg	N/A	N/A	4.0E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Xylenes (total)	4E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/kg-day	N/A
				2-Methylnaphthalene	1E+00	mg/kg	9.6E-08	mg/kg-day	N/A	N/A	N/A	1.1E-06	mg/kg-day	4.0E-03	mg/kg-day	2.8E-04
				2,4,6-Trichlorophenol	N/A	N/A	N/A	N/A	1.1E-02	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A
				Acenaphthylene	2E+00	mg/kg	1.4E-07	mg/kg-day	N/A	N/A	N/A	1.7E-06	mg/kg-day	2.0E-02	mg/kg-day	8.3E-05
				Phenanthrene	2E+00	mg/kg	1.6E-07	mg/kg-day	N/A	N/A	N/A	1.8E-06	mg/kg-day	2.0E-02	mg/kg-day	9.2E-05
				Benzo(a)Anthracene	1E+00	mg/kg	1.3E-07	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	9.6E-08	1.5E-06	mg/kg-day	N/A	N/A	N/A
				Bis(2-ethylhexyl) phthalate	1E+01	mg/kg	N/A	N/A	1.4E-02	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-02	mg/kg-day	N/A
				Benzo(b)Fluoranthene	1E+00	mg/kg	1.3E-07	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	9.6E-08	1.5E-06	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	2E+00	mg/kg	1.6E-07	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	1.2E-08	1.9E-06	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	2E+00	mg/kg	1.4E-07	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.0E-06	1.6E-06	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	1E+00	mg/kg	1.3E-07	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	9.6E-08	1.5E-06	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	4E-01	mg/kg	3.4E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	2.5E-07	3.9E-07	mg/kg-day	N/A	N/A	N/A
				Antimony	3E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-05	mg/kg-day	N/A
				Arsenic	4E+00	mg/kg	8.2E-08	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	1.2E-07	9.5E-07	mg/kg-day	3.0E-04	mg/kg-day	3.2E-03
				Barium	3E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.9E-03	mg/kg-day	N/A
				Cadmium	1E+00	mg/kg	8.6E-10	mg/kg-day	N/A	N/A	N/A	1.0E-08	mg/kg-day	2.5E-05	mg/kg-day	4.0E-04
				Lead	5E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Manganese	2E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.8E-03	mg/kg-day	N/A
				Mercury	8E-02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A
				Thallium	9E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-05	mg/kg-day	N/A
				alpha-Chlordane	1E-01	mg/kg	3.3E-09	mg/kg-day	3.5E-01	(mg/kg-day)$^{-1}$	1.2E-09	3.9E-08	mg/kg-day	5.0E-04	mg/kg-day	7.7E-05
				gamma-Chlordane	1E-01	mg/kg	3.4E-09	mg/kg-day	3.5E-01	(mg/kg-day)$^{-1}$	1.2E-09	3.9E-08	mg/kg-day	5.0E-04	mg/kg-day	7.8E-05
				4,4'-DDE	N/A	N/A	N/A	N/A	3.4E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				4,4'-DDT	N/A	N/A	N/A	N/A	3.4E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	5.0E-04	mg/kg-day	N/A
				Aroclor 1242	N/A	N/A	N/A	N/A	2.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1248	6E-01	mg/kg	5.9E-08	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	1.2E-07	6.9E-07	mg/kg-day	2.0E-05	mg/kg-day	3.5E-02
				Aroclor 1254	2E-01	mg/kg	1.9E-08	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	3.7E-08	2.2E-07	mg/kg-day	2.0E-05	mg/kg-day	1.1E-02
				Aroclor 1260	N/A	N/A	N/A	N/A	2.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				PCB TEQ*	N/A	N/A	N/A	N/A	1.5E+05	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	N/A	N/A	N/A
				C5-C8 Aliphatic	1E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.0E-02	mg/kg-day	N/A
				C9-C10 Aromatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
				C9-C18 Aliphatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-01	mg/kg-day	N/A
				C19-C36 Aliphatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E+00	mg/kg-day	N/A
				C11-C22 Aromatic	7E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
			Exp. Route Total								2E-06					5E-02
		Exposure Point Total									5E-06					6E-01
	Exposure Medium Total										N/A					N/A
Medium Total											N/A					N/A

TABLE 3-7.12.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Soil	Indoor Air	Aberjona Property	Inhalation													
				1,2,4-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-03	mg/m3	N/A
				1,2-Dichloroethene (total)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				1,3,5-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-03	mg/m3	N/A
				n-Butylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Naphthalene	2E-02	ug/m3	4.5E-05	ug/m3	N/A	N/A	N/A	5.3E-07	mg/m3	3.0E-03	mg/m3	1.8E-04
				p-Isopropyltoluene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.0E-01	mg/m3	N/A
				Chloromethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9.0E-02	mg/m3	N/A
				Vinyl chloride	N/A	N/A	N/A	N/A	8.8E-06	(ug/m3)-1	N/A	N/A	N/A	1.0E-01	mg/m3	N/A
				Bromomethane	4E-03	ug/m3	8.2E-06	ug/m3	N/A	N/A	N/A	9.6E-08	mg/m3	5.0E-03	mg/m3	1.9E-05
				Chloroethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E+01	mg/m3	N/A
				1,1-Dichloroethene	2E-02	ug/m3	4.1E-05	ug/m3	N/A	N/A	N/A	4.8E-07	mg/m3	2.0E-01	mg/m3	2.4E-06
				Acetone	2E-03	ug/m3	3.1E-06	ug/m3	N/A	N/A	N/A	3.6E-08	mg/m3	N/A	N/A	N/A
				Methylene chloride	N/A	N/A	N/A	N/A	4.7E-07	(ug/m3)-1	N/A	N/A	N/A	3.0E+00	mg/m3	N/A
				trans-1,2-Dichloroethene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/m3	N/A
				Methyl tert-butyl ether	3E-02	ug/m3	5.2E-05	ug/m3	N/A	N/A	N/A	6.1E-07	mg/m3	3.0E+00	mg/m3	2.0E-07
				1,1-Dichloroethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-01	mg/m3	N/A
				cis-1,2-Dichloroethene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/m3	N/A
				1,1,1-Trichloroethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.2E+00	mg/m3	N/A
				Benzene	1E-02	ug/m3	2.3E-05	ug/m3	7.8E-06	(ug/m3)-1	1.8E-10	2.7E-07	mg/m3	3.0E-02	mg/m3	9.1E-06
				Trichloroethene	N/A	N/A	N/A	N/A	1.1E-04	(ug/m3)-1	N/A	N/A	N/A	4.0E-02	mg/m3	N/A
				Methyl cyclohexane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E+00	mg/m3	N/A
				Toluene	6E-02	ug/m3	1.1E-04	ug/m3	N/A	N/A	N/A	1.3E-06	mg/m3	4.0E-01	mg/m3	3.2E-06
				Tetrachloroethene	N/A	N/A	N/A	N/A	5.9E-06	(ug/m3)-1	N/A	N/A	N/A	N/A	N/A	N/A
				Chlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-02	mg/m3	N/A
				Ethylbenzene	4E-01	ug/m3	7.9E-04	ug/m3	N/A	N/A	N/A	9.2E-06	mg/m3	1.0E+00	mg/m3	9.2E-06
				1,3-Dichlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				1,4-Dichlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-01	mg/m3	N/A
				1,2-Dichlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				2-Methylnaphthalene	4E-02	ug/m3	8.0E-05	ug/m3	N/A	N/A	N/A	9.3E-07	mg/m3	N/A	N/A	N/A
				Acenaphthylene	5E-03	ug/m3	9.1E-06	ug/m3	N/A	N/A	N/A	1.1E-07	mg/m3	3.0E-03	mg/m3	3.5E-05
				Dibenzofuran	3E-03	ug/m3	6.5E-06	ug/m3	N/A	N/A	N/A	7.6E-08	mg/m3	N/A	N/A	N/A
				Phenanthrene	6E-04	ug/m3	1.1E-06	ug/m3	N/A	N/A	N/A	1.3E-08	mg/m3	3.0E-03	mg/m3	4.4E-06
				Anthracene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-03	mg/m3	N/A
				C5-C8 Aliphatic	2E+02	ug/m3	3.7E-01	ug/m3	N/A	N/A	N/A	4.4E-03	mg/m3	2.0E-01	mg/m3	2.2E-02
				C9-C12 Aliphatic	2E+01	ug/m3	3.4E-02	ug/m3	N/A	N/A	N/A	4.0E-04	mg/m3	2.0E-01	mg/m3	2.0E-03
				C9-C10 Aromatic	2E+01	ug/m3	4.0E-02	ug/m3	N/A	N/A	N/A	4.7E-04	mg/m3	5.0E-02	mg/m3	9.4E-03
				C9-C18 Aliphatic	9E+01	ug/m3	1.7E-01	ug/m3	N/A	N/A	N/A	2.0E-03	mg/m3	2.0E-01	mg/m3	1.0E-02
				C11-C22 Aromatic	7E+00	ug/m3	1.3E-02	ug/m3	N/A	N/A	N/A	1.5E-04	mg/m3	5.0E-02	mg/m3	3.1E-03
			Exp. Route Total								2E-10					5E-02
		Exposure Point Total									2E-10					5E-02

TABLE 3-7.12.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Soil (Cont.)	Indoor Air (Cont.)	Whitney Property	Inhalation													
				1,2,4-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-03	mg/m3	N/A
				1,2-Dichloroethene (total)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				1,3,5-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-03	mg/m3	N/A
				n-Butylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Naphthalene	5E-02	ug/m3	8.8E-05	ug/m3	N/A	N/A	N/A	1.0E-06	mg/m3	3.0E-03	mg/m3	3.4E-04
				p-Isopropyltoluene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.0E-01	mg/m3	N/A
				Chloromethane	4E+00	ug/m3	6.7E-03	ug/m3	N/A	N/A	N/A	7.8E-05	mg/m3	9.0E-02	mg/m3	8.7E-04
				Vinyl chloride	7E+00	ug/m3	1.3E-02	ug/m3	8.8E-06	(ug/m3)-1	1.2E-07	1.6E-04	mg/m3	1.0E-01	mg/m3	1.6E-03
				Bromomethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-03	mg/m3	N/A
				Chloroethane	1E+00	ug/m3	2.3E-03	ug/m3	N/A	N/A	N/A	2.7E-05	mg/m3	1.0E+01	mg/m3	2.7E-06
				1,1-Dichloroethene	2E+00	ug/m3	4.2E-03	ug/m3	N/A	N/A	N/A	4.9E-05	mg/m3	2.0E-01	mg/m3	2.5E-04
				Acetone	1E-02	ug/m3	2.8E-05	ug/m3	N/A	N/A	N/A	3.3E-07	mg/m3	N/A	N/A	N/A
				Methylene chloride	2E+00	ug/m3	3.3E-03	ug/m3	4.7E-07	(ug/m3)-1	1.6E-09	3.9E-05	mg/m3	3.0E+00	mg/m3	1.3E-05
				trans-1,2-Dichloroethene	9E-01	ug/m3	1.7E-03	ug/m3	N/A	N/A	N/A	2.0E-05	mg/m3	2.0E-01	mg/m3	9.8E-05
				Methyl tert-butyl ether	5E-02	ug/m3	9.5E-05	ug/m3	N/A	N/A	N/A	1.1E-06	mg/m3	3.0E+00	mg/m3	3.7E-07
				1,1-Dichloroethane	2E+00	ug/m3	3.3E-03	ug/m3	N/A	N/A	N/A	3.9E-05	mg/m3	5.0E-01	mg/m3	7.8E-05
				cis-1,2-Dichloroethene	6E-01	ug/m3	1.2E-03	ug/m3	N/A	N/A	N/A	1.4E-05	mg/m3	2.0E-01	mg/m3	6.8E-05
				1,1,1-Trichloroethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.2E+00	mg/m3	N/A
				Benzene	8E-01	ug/m3	1.5E-03	ug/m3	7.8E-06	(ug/m3)-1	1.2E-08	1.8E-05	mg/m3	3.0E-02	mg/m3	5.9E-04
				Trichloroethene	1E+00	ug/m3	2.2E-03	ug/m3	1.1E-04	(ug/m3)-1	2.5E-07	2.6E-05	mg/m3	4.0E-02	mg/m3	6.6E-04
				Methyl cyclohexane	4E+01	ug/m3	6.9E-02	ug/m3	N/A	N/A	N/A	8.1E-04	mg/m3	3.0E+00	mg/m3	2.7E-04
				Toluene	1E+00	ug/m3	2.6E-03	ug/m3	N/A	N/A	N/A	3.1E-05	mg/m3	4.0E-01	mg/m3	7.7E-05
				Tetrachloroethene	1E+00	ug/m3	1.9E-03	ug/m3	5.9E-06	(ug/m3)-1	1.1E-08	2.2E-05	mg/m3	N/A	N/A	N/A
				Chlorobenzene	3E-01	ug/m3	6.6E-04	ug/m3	N/A	N/A	N/A	7.7E-06	mg/m3	6.0E-02	mg/m3	1.3E-04
				Ethylbenzene	3E-01	ug/m3	5.5E-04	ug/m3	N/A	N/A	N/A	6.5E-06	mg/m3	1.0E+00	mg/m3	6.5E-06
				1,3-Dichlorobenzene	3E-01	ug/m3	6.5E-04	ug/m3	N/A	N/A	N/A	7.6E-06	mg/m3	N/A	N/A	N/A
				1,4-Dichlorobenzene	7E-02	ug/m3	1.4E-04	ug/m3	N/A	N/A	N/A	1.6E-06	mg/m3	8.0E-01	mg/m3	2.0E-06
				1,2-Dichlorobenzene	4E-05	ug/m3	8.2E-08	ug/m3	N/A	N/A	N/A	9.5E-10	mg/m3	N/A	N/A	N/A
				2-Methylnaphthalene	1E-01	ug/m3	2.5E-04	ug/m3	N/A	N/A	N/A	2.9E-06	mg/m3	N/A	N/A	N/A
				Acenaphthylene	5E-03	ug/m3	8.9E-06	ug/m3	N/A	N/A	N/A	1.0E-07	mg/m3	3.0E-03	mg/m3	3.4E-05
				Dibenzofuran	2E-01	ug/m3	3.3E-04	ug/m3	N/A	N/A	N/A	3.9E-06	mg/m3	N/A	N/A	N/A
				Phenanthrene	7E-02	ug/m3	1.3E-04	ug/m3	N/A	N/A	N/A	1.5E-06	mg/m3	3.0E-03	mg/m3	5.0E-04
				Anthracene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-03	mg/m3	N/A
				C5-C8 Aliphatic	4E+03	ug/m3	7.9E+00	ug/m3	N/A	N/A	N/A	9.2E-02	mg/m3	2.0E-01	mg/m3	4.6E-01
				C9-C12 Aliphatic	7E+01	ug/m3	1.4E-01	ug/m3	N/A	N/A	N/A	1.6E-03	mg/m3	2.0E-01	mg/m3	8.1E-03
				C9-C10 Aromatic	2E+02	ug/m3	4.0E-01	ug/m3	N/A	N/A	N/A	4.7E-03	mg/m3	5.0E-02	mg/m3	9.3E-02
				C9-C18 Aliphatic	2E+03	ug/m3	3.2E+00	ug/m3	N/A	N/A	N/A	3.8E-02	mg/m3	2.0E-01	mg/m3	1.9E-01
				C11-C22 Aromatic	7E+01	ug/m3	1.3E-01	ug/m3	N/A	N/A	N/A	1.5E-03	mg/m3	5.0E-02	mg/m3	3.0E-02
			Exp. Route Total								4E-07					8E-01
		Exposure Point Total									4E-07					8E-01

TABLE 3-7.12.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Soil (Cont.)	Indoor Air (Cont.)	Murphy Property	Inhalation													
				1,2,4-Trimethylbenzene	4E+00	ug/m3	7.4E-03	ug/m3	N/A	N/A	N/A	8.7E-05	mg/m3	6.0E-03	mg/m3	1.4E-02
				1,2-Dichloroethene (total)	3E-01	ug/m3	6.1E-04	ug/m3	N/A	N/A	N/A	7.2E-06	mg/m3	N/A	N/A	N/A
				1,3,5-Trimethylbenzene	5E+00	ug/m3	9.3E-03	ug/m3	N/A	N/A	N/A	1.1E-04	mg/m3	6.0E-03	mg/m3	1.8E-02
				n-Butylbenzene	5E-01	ug/m3	1.0E-03	ug/m3	N/A	N/A	N/A	1.2E-05	mg/m3	N/A	N/A	N/A
				Naphthalene	7E-02	ug/m3	1.4E-04	ug/m3	N/A	N/A	N/A	1.6E-06	mg/m3	3.0E-03	mg/m3	5.4E-04
				p-Isopropyltoluene	3E+01	ug/m3	5.8E-02	ug/m3	N/A	N/A	N/A	6.8E-04	mg/m3	4.0E-01	mg/m3	1.7E-03
				Chloromethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9.0E-02	mg/m3	N/A
				Vinyl chloride	N/A	N/A	N/A	N/A	8.8E-06	(ug/m3)-1	N/A	N/A	N/A	1.0E-01	mg/m3	N/A
				Bromomethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-03	mg/m3	N/A
				Chloroethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E+01	mg/m3	N/A
				1,1-Dichloroethene	4E-02	ug/m3	7.7E-05	ug/m3	N/A	N/A	N/A	9.0E-07	mg/m3	2.0E-01	mg/m3	4.5E-06
				Acetone	8E-02	ug/m3	1.5E-04	ug/m3	N/A	N/A	N/A	1.8E-06	mg/m3	N/A	N/A	N/A
				Methylene chloride	7E+00	ug/m3	1.3E-02	ug/m3	4.7E-07	(ug/m3)-1	5.9E-09	1.5E-04	mg/m3	3.0E+00	mg/m3	4.9E-05
				trans-1,2-Dichloroethene	5E+00	ug/m3	9.4E-03	ug/m3	N/A	N/A	N/A	1.1E-04	mg/m3	2.0E-01	mg/m3	5.5E-04
				Methyl tert-butyl ether	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E+00	mg/m3	N/A
				1,1-Dichloroethane	2E+00	ug/m3	4.2E-03	ug/m3	N/A	N/A	N/A	4.9E-05	mg/m3	5.0E-01	mg/m3	9.8E-05
				cis-1,2-Dichloroethene	5E+01	ug/m3	8.9E-02	ug/m3	N/A	N/A	N/A	1.0E-03	mg/m3	2.0E-01	mg/m3	5.2E-03
				1,1,1-Trichloroethane	4E+00	ug/m3	8.6E-03	ug/m3	N/A	N/A	N/A	1.0E-04	mg/m3	2.2E+00	mg/m3	4.5E-05
				Benzene	1E+00	ug/m3	2.5E-03	ug/m3	7.8E-06	(ug/m3)-1	1.9E-08	2.9E-05	mg/m3	3.0E-02	mg/m3	9.7E-04
				Trichloroethene	1E+00	ug/m3	2.4E-03	ug/m3	1.1E-04	(ug/m3)-1	2.6E-07	2.8E-05	mg/m3	4.0E-02	mg/m3	6.9E-04
				Methyl cyclohexane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E+00	mg/m3	N/A
				Toluene	3E+00	ug/m3	5.3E-03	ug/m3	N/A	N/A	N/A	6.2E-05	mg/m3	4.0E-01	mg/m3	1.6E-04
				Tetrachloroethene	3E+00	ug/m3	5.3E-03	ug/m3	5.9E-06	(ug/m3)-1	3.1E-08	6.2E-05	mg/m3	N/A	N/A	N/A
				Chlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-02	mg/m3	N/A
				Ethylbenzene	1E+00	ug/m3	2.8E-03	ug/m3	N/A	N/A	N/A	3.2E-05	mg/m3	1.0E+00	mg/m3	3.2E-05
				1,3-Dichlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				1,4-Dichlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-01	mg/m3	N/A
				1,2-Dichlorobenzene	3E-03	ug/m3	4.9E-06	ug/m3	N/A	N/A	N/A	5.8E-08	mg/m3	N/A	N/A	N/A
				2-Methylnaphthalene	3E-02	ug/m3	5.3E-05	ug/m3	N/A	N/A	N/A	6.2E-07	mg/m3	N/A	N/A	N/A
				Acenaphthylene	2E-02	ug/m3	4.2E-05	ug/m3	N/A	N/A	N/A	4.9E-07	mg/m3	3.0E-03	mg/m3	1.6E-04
				Dibenzofuran	5E-03	ug/m3	9.0E-06	ug/m3	N/A	N/A	N/A	1.0E-07	mg/m3	N/A	N/A	N/A
				Phenanthrene	4E-03	ug/m3	8.4E-06	ug/m3	N/A	N/A	N/A	9.8E-08	mg/m3	3.0E-03	mg/m3	3.3E-05
				Anthracene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-03	mg/m3	N/A
				C5-C8 Aliphatic	6E+01	ug/m3	1.1E-01	ug/m3	N/A	N/A	N/A	1.3E-03	mg/m3	2.0E-01	mg/m3	6.4E-03
				C9-C12 Aliphatic	2E+00	ug/m3	3.1E-03	ug/m3	N/A	N/A	N/A	3.7E-05	mg/m3	2.0E-01	mg/m3	1.8E-04
				C9-C10 Aromatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/m3	N/A
				C9-C18 Aliphatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/m3	N/A
				C11-C22 Aromatic	1E+02	ug/m3	2.3E-01	ug/m3	N/A	N/A	N/A	2.7E-03	mg/m3	5.0E-02	mg/m3	5.5E-02
			Exp. Route Total								3E-07					1E-01
		Exposure Point Total									3E-07					1E-01
	Exposure Medium Total										N/A					N/A

TABLE 3-7.12.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Ground Water	Indoor Air	Aberjona Property	Inhalation													
				1,2,4-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-03	mg/m3	N/A
				1,2-Dichloroethene (total)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				1,3,5-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-03	mg/m3	N/A
				n-Butylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Naphthalene	4E-05	ug/m3	8.0E-08	ug/m3	N/A	N/A	N/A	9.3E-10	mg/m3	3.0E-03	mg/m3	3.1E-07
				p-Isopropyltoluene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.0E-01	mg/m3	N/A
				Chloromethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9.0E-02	mg/m3	N/A
				Vinyl chloride	4E-04	ug/m3	7.5E-07	ug/m3	8.8E-06	(ug/m3)-1	6.6E-12	8.8E-09	mg/m3	1.0E-01	mg/m3	8.8E-08
				Bromomethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-03	mg/m3	N/A
				Chloroethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E+01	mg/m3	N/A
				1,1-Dichloroethene	2E-04	ug/m3	3.1E-07	ug/m3	N/A	N/A	N/A	3.6E-09	mg/m3	2.0E-01	mg/m3	1.8E-08
				Acetone	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Methylene chloride	N/A	N/A	N/A	N/A	4.7E-07	(ug/m3)-1	N/A	N/A	N/A	3.0E+00	mg/m3	N/A
				trans-1,2-Dichloroethene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/m3	N/A
				Methyl tert-butyl ether	8E-04	ug/m3	1.4E-06	ug/m3	N/A	N/A	N/A	1.7E-08	mg/m3	3.0E+00	mg/m3	5.6E-09
				1,1-Dichloroethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-01	mg/m3	N/A
				cis-1,2-Dichloroethene	6E-03	ug/m3	1.1E-05	ug/m3	N/A	N/A	N/A	1.3E-07	mg/m3	2.0E-01	mg/m3	6.6E-07
				1,1,1-Trichloroethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.2E+00	mg/m3	N/A
				Benzene	7E-05	ug/m3	1.4E-07	ug/m3	7.8E-06	(ug/m3)-1	1.1E-12	1.6E-09	mg/m3	3.0E-02	mg/m3	5.4E-08
				Trichloroethene	1E-02	ug/m3	2.3E-05	ug/m3	1.1E-04	(ug/m3)-1	2.6E-09	2.7E-07	mg/m3	4.0E-02	mg/m3	6.8E-06
				Methyl cyclohexane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E+00	mg/m3	N/A
				Toluene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.0E-01	mg/m3	N/A
				Tetrachloroethene	3E-04	ug/m3	6.3E-07	ug/m3	5.9E-06	(ug/m3)-1	3.7E-12	7.3E-09	mg/m3	N/A	N/A	N/A
				Chlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-02	mg/m3	N/A
				Ethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E+00	mg/m3	N/A
				1,3-Dichlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				1,4-Dichlorobenzene	4E-05	ug/m3	8.0E-08	ug/m3	N/A	N/A	N/A	9.3E-10	mg/m3	8.0E-01	mg/m3	1.2E-09
				1,2-Dichlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				2-Methylnaphthalene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Acenaphthylene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-03	mg/m3	N/A
				Dibenzofuran	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Phenanthrene	2E-05	ug/m3	4.5E-08	ug/m3	N/A	N/A	N/A	5.2E-10	mg/m3	3.0E-03	mg/m3	1.7E-07
				Anthracene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-03	mg/m3	N/A
				C5-C8 Aliphatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/m3	N/A
				C9-C12 Aliphatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/m3	N/A
				C9-C10 Aromatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/m3	N/A
				C9-C18 Aliphatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/m3	N/A
				C11-C22 Aromatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/m3	N/A
			Exp. Route Total								3E-09					8E-06
		Exposure Point Total									3E-09					8E-06

TABLE 3-7.12.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Ground Water (Cont.)	Indoor Air (Cont.)	Whitney Property	Inhalation													
				1,2,4-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-03	mg/m3	N/A
				1,2-Dichloroethene (total)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				1,3,5-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-03	mg/m3	N/A
				n-Butylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Naphthalene	5E-04	ug/m3	9.5E-07	ug/m3	N/A	N/A	N/A	1.1E-08	mg/m3	3.0E-03	mg/m3	3.7E-06
				p-Isopropyltoluene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.0E-01	mg/m3	N/A
				Chloromethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9.0E-02	mg/m3	N/A
				Vinyl chloride	3E+00	ug/m3	5.1E-03	ug/m3	8.8E-06	(ug/m3)-1	4.5E-08	5.9E-05	mg/m3	1.0E-01	mg/m3	5.9E-04
				Bromomethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-03	mg/m3	N/A
				Chloroethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E+01	mg/m3	N/A
				1,1-Dichloroethene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/m3	N/A
				Acetone	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Methylene chloride	N/A	N/A	N/A	N/A	4.7E-07	(ug/m3)-1	N/A	N/A	N/A	3.0E+00	mg/m3	N/A
				trans-1,2-Dichloroethene	4E-02	ug/m3	7.9E-05	ug/m3	N/A	N/A	N/A	9.2E-07	mg/m3	2.0E-01	mg/m3	4.6E-06
				Methyl tert-butyl ether	1E-01	ug/m3	2.0E-04	ug/m3	N/A	N/A	N/A	2.3E-06	mg/m3	3.0E+00	mg/m3	7.6E-07
				1,1-Dichloroethane	1E-01	ug/m3	2.2E-04	ug/m3	N/A	N/A	N/A	2.6E-06	mg/m3	5.0E-01	mg/m3	5.2E-06
				cis-1,2-Dichloroethene	3E-01	ug/m3	6.3E-04	ug/m3	N/A	N/A	N/A	7.4E-06	mg/m3	2.0E-01	mg/m3	3.7E-05
				1,1,1-Trichloroethane	1E-02	ug/m3	2.6E-05	ug/m3	N/A	N/A	N/A	3.0E-07	mg/m3	2.2E+00	mg/m3	1.4E-07
				Benzene	8E-02	ug/m3	1.6E-04	ug/m3	7.8E-06	(ug/m3)-1	1.2E-09	1.8E-06	mg/m3	3.0E-02	mg/m3	6.1E-05
				Trichloroethene	3E-03	ug/m3	6.3E-06	ug/m3	1.1E-04	(ug/m3)-1	6.9E-10	7.3E-08	mg/m3	4.0E-02	mg/m3	1.8E-06
				Methyl cyclohexane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E+00	mg/m3	N/A
				Toluene	1E+00	ug/m3	2.4E-03	ug/m3	N/A	N/A	N/A	2.7E-05	mg/m3	4.0E-01	mg/m3	6.9E-05
				Tetrachloroethene	N/A	N/A	N/A	N/A	5.9E-06	(ug/m3)-1	N/A	N/A	N/A	N/A	N/A	N/A
				Chlorobenzene	9E-03	ug/m3	1.8E-05	ug/m3	N/A	N/A	N/A	2.1E-07	mg/m3	6.0E-02	mg/m3	3.5E-06
				Ethylbenzene	4E-02	ug/m3	8.2E-05	ug/m3	N/A	N/A	N/A	9.6E-07	mg/m3	1.0E+00	mg/m3	9.6E-07
				1,3-Dichlorobenzene	2E-02	ug/m3	4.1E-05	ug/m3	N/A	N/A	N/A	4.8E-07	mg/m3	N/A	N/A	N/A
				1,4-Dichlorobenzene	6E-02	ug/m3	1.1E-04	ug/m3	N/A	N/A	N/A	1.3E-06	mg/m3	8.0E-01	mg/m3	1.6E-06
				1,2-Dichlorobenzene	5E-06	ug/m3	9.3E-09	ug/m3	N/A	N/A	N/A	1.1E-10	mg/m3	N/A	N/A	N/A
				2-Methylnaphthalene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Acenaphthylene	2E-04	ug/m3	4.6E-07	ug/m3	N/A	N/A	N/A	5.4E-09	mg/m3	3.0E-03	mg/m3	1.8E-06
				Dibenzofuran	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Phenanthrene	1E-04	ug/m3	2.1E-07	ug/m3	N/A	N/A	N/A	2.5E-09	mg/m3	3.0E-03	mg/m3	8.2E-07
				Anthracene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-03	mg/m3	N/A
				C5-C8 Aliphatic	9E+01	ug/m3	1.7E-01	ug/m3	N/A	N/A	N/A	2.0E-03	mg/m3	2.0E-01	mg/m3	1.0E-02
				C9-C12 Aliphatic	1E+01	ug/m3	2.3E-02	ug/m3	N/A	N/A	N/A	2.7E-04	mg/m3	2.0E-01	mg/m3	1.4E-03
				C9-C10 Aromatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/m3	N/A
				C9-C18 Aliphatic	2E+01	ug/m3	2.9E-02	ug/m3	N/A	N/A	N/A	3.4E-04	mg/m3	2.0E-01	mg/m3	1.7E-03
				C11-C22 Aromatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/m3	N/A
			Exp. Route Total								5E-08					1E-02
		Exposure Point Total									5E-08					1E-02

TABLE 3-7.12.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Ground Water (Cont.)	Indoor Air (Cont.)	Murphy Property	Inhalation													
				1,2,4-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-03	mg/m3	N/A
				1,2-Dichloroethene (total)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				1,3,5-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-03	mg/m3	N/A
				n-Butylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Naphthalene	6E-04	ug/m3	1.2E-06	ug/m3	N/A	N/A	N/A	1.4E-08	mg/m3	3.0E-03	mg/m3	4.7E-06
				p-Isopropyltoluene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.0E-01	mg/m3	N/A
				Chloromethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9.0E-02	mg/m3	N/A
				Vinyl chloride	2E+00	ug/m3	3.0E-03	ug/m3	8.8E-06	(ug/m3)-1	2.7E-08	3.5E-05	mg/m3	1.0E-01	mg/m3	3.5E-04
				Bromomethane	2E-03	ug/m3	4.7E-06	ug/m3	N/A	N/A	N/A	5.5E-08	mg/m3	5.0E-03	mg/m3	1.1E-05
				Chloroethane	1E-01	ug/m3	2.3E-04	ug/m3	N/A	N/A	N/A	2.7E-06	mg/m3	1.0E+01	mg/m3	2.7E-07
				1,1-Dichloroethene	6E-02	ug/m3	1.2E-04	ug/m3	N/A	N/A	N/A	1.4E-06	mg/m3	2.0E-01	mg/m3	7.0E-06
				Acetone	3E-04	ug/m3	5.4E-07	ug/m3	N/A	N/A	N/A	6.3E-09	mg/m3	N/A	N/A	N/A
				Methylene chloride	9E-03	ug/m3	1.7E-05	ug/m3	4.7E-07	(ug/m3)-1	8.2E-12	2.0E-07	mg/m3	3.0E+00	mg/m3	6.8E-08
				trans-1,2-Dichloroethene	5E-02	ug/m3	8.9E-05	ug/m3	N/A	N/A	N/A	1.0E-06	mg/m3	2.0E-01	mg/m3	5.2E-06
				Methyl tert-butyl ether	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E+00	mg/m3	N/A
				1,1-Dichloroethane	9E-02	ug/m3	1.8E-04	ug/m3	N/A	N/A	N/A	2.1E-06	mg/m3	5.0E-01	mg/m3	4.2E-06
				cis-1,2-Dichloroethene	7E-01	ug/m3	1.3E-03	ug/m3	N/A	N/A	N/A	1.5E-05	mg/m3	2.0E-01	mg/m3	7.6E-05
				1,1,1-Trichloroethane	2E-01	ug/m3	3.9E-04	ug/m3	N/A	N/A	N/A	4.6E-06	mg/m3	2.2E+00	mg/m3	2.1E-06
				Benzene	8E-03	ug/m3	1.6E-05	ug/m3	7.8E-06	(ug/m3)-1	1.2E-10	1.9E-07	mg/m3	3.0E-02	mg/m3	6.2E-06
				Trichloroethene	7E-02	ug/m3	1.4E-04	ug/m3	1.1E-04	(ug/m3)-1	1.5E-08	1.6E-06	mg/m3	4.0E-02	mg/m3	4.1E-05
				Methyl cyclohexane	1E+00	ug/m3	2.4E-03	ug/m3	N/A	N/A	N/A	2.8E-05	mg/m3	3.0E+00	mg/m3	9.3E-06
				Toluene	2E-02	ug/m3	4.5E-05	ug/m3	N/A	N/A	N/A	5.3E-07	mg/m3	4.0E-01	mg/m3	1.3E-06
				Tetrachloroethene	2E-02	ug/m3	4.7E-05	ug/m3	5.9E-06	(ug/m3)-1	2.8E-10	5.4E-07	mg/m3	N/A	N/A	N/A
				Chlorobenzene	7E-04	ug/m3	1.3E-06	ug/m3	N/A	N/A	N/A	1.6E-08	mg/m3	6.0E-02	mg/m3	2.6E-07
				Ethylbenzene	1E-02	ug/m3	2.1E-05	ug/m3	N/A	N/A	N/A	2.4E-07	mg/m3	1.0E+00	mg/m3	2.4E-07
				1,3-Dichlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				1,4-Dichlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-01	mg/m3	N/A
				1,2-Dichlorobenzene	9E-07	ug/m3	1.7E-09	ug/m3	N/A	N/A	N/A	2.0E-11	mg/m3	N/A	N/A	N/A
				2-Methylnaphthalene	2E-03	ug/m3	4.0E-06	ug/m3	N/A	N/A	N/A	4.6E-08	mg/m3	N/A	N/A	N/A
				Acenaphthylene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-03	mg/m3	N/A
				Dibenzofuran	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Phenanthrene	3E-04	ug/m3	5.2E-07	ug/m3	N/A	N/A	N/A	6.1E-09	mg/m3	3.0E-03	mg/m3	2.0E-06
				Anthracene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-03	mg/m3	N/A
				C5-C8 Aliphatic	3E+01	ug/m3	6.0E-02	ug/m3	N/A	N/A	N/A	7.0E-04	mg/m3	2.0E-01	mg/m3	3.5E-03
				C9-C12 Aliphatic	1E+01	ug/m3	2.1E-02	ug/m3	N/A	N/A	N/A	2.4E-04	mg/m3	2.0E-01	mg/m3	1.2E-03
				C9-C10 Aromatic	1E-01	ug/m3	2.3E-04	ug/m3	N/A	N/A	N/A	2.7E-06	mg/m3	5.0E-02	mg/m3	5.3E-05
				C9-C18 Aliphatic	3E+02	ug/m3	6.3E-01	ug/m3	N/A	N/A	N/A	7.3E-03	mg/m3	2.0E-01	mg/m3	3.7E-02
				C11-C22 Aromatic	7E-02	ug/m3	1.3E-04	ug/m3	N/A	N/A	N/A	1.5E-06	mg/m3	5.0E-02	mg/m3	3.0E-05
			Exp. Route Total								4E-08					4E-02
		Exposure Point Total									4E-08					4E-02
	Exposure Medium Total										N/A					N/A
Medium Total											N/A					N/A

TABLE 3-7.12.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Water	Surface Water	Murphy Wetland	Dermal	Chromium	2.3E+01	ug/L	1.6E-07	mg/kg-day	N/A	N/A	N/A	1.8E-06	mg/kg-day	7.5E-05	mg/kg-day	2.4E-02
				Manganese	5.5E+02	ug/L	1.9E-06	mg/kg-day	N/A	N/A	N/A	2.2E-05	mg/kg-day	9.6E-04	mg/kg-day	2.3E-02
			Exp. Route Total								0E+00					5E-02
		Exposure Point Total									0E+00					5E-02
	Exposure Medium Total										N/A					N/A

TABLE 3-7.12.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Sediment	Sediment	Murphy Wetland	Ingestion													
				Naphthalene	2E+01	mg/kg	2.3E-06	mg/kg-day	N/A	N/A	N/A	2.7E-05	mg/kg-day	2.0E-02	mg/kg-day	1.3E-03
				Vinyl chloride	2E-01	mg/kg	2.1E-08	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	3.1E-08	2.4E-07	mg/kg-day	3.0E-03	mg/kg-day	8.1E-05
				Trichloroethene	9E-02	mg/kg	1.0E-08	mg/kg-day	4.0E-01	(mg/kg-day)$^{-1}$	4.2E-09	1.2E-07	mg/kg-day	3.0E-04	mg/kg-day	4.0E-04
				Ethylenedibromide	1E+01	mg/kg	1.2E-06	mg/kg-day	8.5E+01	(mg/kg-day)$^{-1}$	9.9E-05	1.4E-05	mg/kg-day	N/A	N/A	N/A
				Ethylbenzene	1E+01	mg/kg	1.3E-06	mg/kg-day	N/A	N/A	N/A	1.6E-05	mg/kg-day	1.0E-01	mg/kg-day	1.6E-04
				Xylenes (total)	5E+01	mg/kg	6.5E-06	mg/kg-day	N/A	N/A	N/A	7.6E-05	mg/kg-day	2.0E-01	mg/kg-day	3.8E-04
				Acetophenone	3E+00	mg/kg	3.9E-07	mg/kg-day	N/A	N/A	N/A	4.5E-06	mg/kg-day	1.0E-01	mg/kg-day	4.5E-05
				2-Methylnaphthalene	1E+01	mg/kg	1.5E-06	mg/kg-day	N/A	N/A	N/A	1.8E-05	mg/kg-day	4.0E-03	mg/kg-day	4.4E-03
				Benzo(a)Anthracene	3E+00	mg/kg	3.8E-07	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	2.8E-07	4.4E-06	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	3E+00	mg/kg	3.5E-07	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	2.6E-07	4.1E-06	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	3E+00	mg/kg	4.0E-07	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	2.9E-06	4.7E-06	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	3E+00	mg/kg	3.9E-07	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	2.9E-07	4.6E-06	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	1E+00	mg/kg	1.6E-07	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.2E-06	1.9E-06	mg/kg-day	N/A	N/A	N/A
				C11-C22 Aromatic	2E+04	mg/kg	2.5E-03	mg/kg-day	N/A	N/A	N/A	2.9E-02	mg/kg-day	3.0E-02	mg/kg-day	9.7E-01
				C19-C36 Aliphatic	9E+03	mg/kg	1.1E-03	mg/kg-day	N/A	N/A	N/A	1.3E-02	mg/kg-day	2.0E+00	mg/kg-day	6.7E-03
				C9-C18 Aliphatic	2E+03	mg/kg	2.1E-04	mg/kg-day	N/A	N/A	N/A	2.4E-03	mg/kg-day	1.0E-01	mg/kg-day	2.4E-02
				Chromium (VI)	5E+01	mg/kg	6.6E-06	mg/kg-day	N/A	N/A	N/A	7.7E-05	mg/kg-day	3.0E-03	mg/kg-day	2.6E-02
				Antimony	1E+02	mg/kg	1.4E-05	mg/kg-day	N/A	N/A	N/A	1.7E-04	mg/kg-day	4.0E-04	mg/kg-day	4.2E-01
				Arsenic	1E+01	mg/kg	1.4E-06	mg/kg-day	7.7E-01	(mg/kg-day)$^{-1}$	1.1E-06	1.6E-05	mg/kg-day	5.9E-04	mg/kg-day	2.7E-02
				Barium	1E+03	mg/kg	1.4E-04	mg/kg-day	N/A	N/A	N/A	1.6E-03	mg/kg-day	7.0E-02	mg/kg-day	2.3E-02
				Cadmium	3E+00	mg/kg	3.6E-07	mg/kg-day	N/A	N/A	N/A	4.3E-06	mg/kg-day	1.0E-03	mg/kg-day	4.3E-03
				Chromium	1E+04	mg/kg	1.5E-03	mg/kg-day	N/A	N/A	N/A	1.8E-02	mg/kg-day	3.0E-03	mg/kg-day	6.0E+00
				Lead	4E+03	mg/kg	4.9E-04	mg/kg-day	N/A	N/A	N/A	5.8E-03	mg/kg-day	N/A	N/A	N/A
				Manganese	3E+02	mg/kg	4.1E-05	mg/kg-day	N/A	N/A	N/A	4.8E-04	mg/kg-day	7.0E-02	mg/kg-day	6.9E-03
				Mercury	3E+00	mg/kg	3.7E-07	mg/kg-day	N/A	N/A	N/A	4.3E-06	mg/kg-day	1.0E-04	mg/kg-day	4.3E-02
				Vanadium	6E+01	mg/kg	6.8E-06	mg/kg-day	N/A	N/A	N/A	7.9E-05	mg/kg-day	1.0E-03	mg/kg-day	7.9E-02
				PCB TEQ*	2E-04	mg/kg	2.2E-11	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	3.4E-06	2.6E-10	mg/kg-day	N/A	N/A	N/A
				gamma-Chlordane	2E+00	mg/kg	2.2E-07	mg/kg-day	3.5E-01	(mg/kg-day)$^{-1}$	7.8E-08	2.6E-06	mg/kg-day	5.0E-04	mg/kg-day	5.2E-03
				Aroclor 1254	9E+01	mg/kg	1.1E-05	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	2.2E-05	1.3E-04	mg/kg-day	2.0E-05	mg/kg-day	6.3E+00
				Aroclor 1260	5E+01	mg/kg	5.6E-06	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	1.1E-05	6.6E-05	mg/kg-day	2.0E-05	mg/kg-day	3.3E+00
			Exp. Route Total								1E-04					1E+01

TABLE 3-7.12.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Sediment (Cont.)	Sediment (Cont.)	Murphy Wetland	Dermal													
				Naphthalene	2E+01	mg/kg	1.7E-06	mg/kg-day	N/A	N/A	N/A	1.9E-05	mg/kg-day	2.0E-02	mg/kg-day	9.7E-04
				Vinyl chloride	2E-01	mg/kg	N/A	N/A	1.5E+00	$(mg/kg-day)^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Trichloroethene	9E-02	mg/kg	N/A	N/A	4.0E-01	$(mg/kg-day)^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Ethylenedibromide	1E+01	mg/kg	N/A	N/A	8.5E+01	$(mg/kg-day)^{-1}$	N/A	N/A	N/A	N/A	N/A	N/A
				Ethylbenzene	1E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-01	mg/kg-day	N/A
				Xylenes (total)	5E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/kg-day	N/A
				Acetophenone	3E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-01	mg/kg-day	N/A
				2-Methylnaphthalene	1E+01	mg/kg	1.1E-06	mg/kg-day	N/A	N/A	N/A	1.3E-05	mg/kg-day	4.0E-03	mg/kg-day	3.2E-03
				Benzo(a)Anthracene	3E+00	mg/kg	2.8E-07	mg/kg-day	7.3E-01	$(mg/kg-day)^{-1}$	2.0E-07	3.2E-06	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	3E+00	mg/kg	2.6E-07	mg/kg-day	7.3E-01	$(mg/kg-day)^{-1}$	1.9E-07	3.0E-06	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	3E+00	mg/kg	2.9E-07	mg/kg-day	7.3E+00	$(mg/kg-day)^{-1}$	2.1E-06	3.4E-06	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	3E+00	mg/kg	2.8E-07	mg/kg-day	7.3E-01	$(mg/kg-day)^{-1}$	2.1E-07	3.3E-06	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	1E+00	mg/kg	1.2E-07	mg/kg-day	7.3E+00	$(mg/kg-day)^{-1}$	8.4E-07	1.3E-06	mg/kg-day	N/A	N/A	N/A
				C11-C22 Aromatic	2E+04	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
				C19-C36 Aliphatic	9E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E+00	mg/kg-day	N/A
				C9-C18 Aliphatic	2E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-01	mg/kg-day	N/A
				Chromium (VI)	5E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	7.5E-05	mg/kg-day	N/A
				Antimony	1E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-05	mg/kg-day	N/A
				Arsenic	1E+01	mg/kg	2.3E-07	mg/kg-day	1.5E+00	$(mg/kg-day)^{-1}$	3.4E-07	2.7E-06	mg/kg-day	3.0E-04	mg/kg-day	8.9E-03
				Barium	1E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.9E-03	mg/kg-day	N/A
				Cadmium	3E+00	mg/kg	2.0E-09	mg/kg-day	N/A	N/A	N/A	2.4E-08	mg/kg-day	2.5E-05	mg/kg-day	9.5E-04
				Chromium	1E+04	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	7.5E-05	mg/kg-day	N/A
				Lead	4E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Manganese	3E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.8E-03	mg/kg-day	N/A
				Mercury	3E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A
				Vanadium	6E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.6E-05	mg/kg-day	N/A
				PCB TEQ*	2E-04	mg/kg	1.8E-11	mg/kg-day	1.5E+05	$(mg/kg-day)^{-1}$	2.6E-06	2.1E-10	mg/kg-day	N/A	N/A	N/A
				gamma-Chlordane	2E+00	mg/kg	5.0E-08	mg/kg-day	3.5E-01	$(mg/kg-day)^{-1}$	1.8E-08	5.9E-07	mg/kg-day	5.0E-04	mg/kg-day	1.2E-03
				Aroclor 1254	9E+01	mg/kg	8.5E-06	mg/kg-day	2.0E+00	$(mg/kg-day)^{-1}$	1.7E-05	9.9E-05	mg/kg-day	2.0E-05	mg/kg-day	4.9E+00
				Aroclor 1260	5E+01	mg/kg	4.4E-06	mg/kg-day	2.0E+00	$(mg/kg-day)^{-1}$	8.9E-06	5.2E-05	mg/kg-day	2.0E-05	mg/kg-day	2.6E+00
			Exp. Route Total								3E-05					8E+00
		Exposure Point Total									2E-04					2E+01
	Exposure Medium Total										N/A					N/A
Medium Total											N/A					N/A
											Total of Receptor Risks Across All Media					N/A
																Total of Receptor Hazards Across All Media

TABLE 3-7.12.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Aberjona Property	Ingestion													
				Vinyl chloride	N/A	N/A	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Trichloroethene	N/A	N/A	N/A	N/A	4.0E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Phenanthrene	7E-01	mg/kg	4.7E-09	mg/kg-day	N/A	N/A	N/A	1.6E-07	mg/kg-day	2.0E-02	mg/kg-day	8.2E-06
				Benzo(a)Anthracene	7E-01	mg/kg	4.8E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	3.5E-09	1.7E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	7E-01	mg/kg	5.0E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	3.7E-09	1.8E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	5E-01	mg/kg	3.5E-09	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	2.5E-10	1.2E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	5E-01	mg/kg	3.5E-09	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	2.5E-08	1.2E-07	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	5E-01	mg/kg	3.5E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	2.6E-09	1.2E-07	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	6E-03	mg/kg	4.2E-11	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	3.1E-10	1.5E-09	mg/kg-day	N/A	N/A	N/A
				Benzo(g,h,i)perylene	6E-01	mg/kg	4.0E-09	mg/kg-day	N/A	N/A	N/A	1.4E-07	mg/kg-day	2.0E-02	mg/kg-day	7.1E-06
				Antimony	2E+00	mg/kg	1.2E-08	mg/kg-day	N/A	N/A	N/A	4.3E-07	mg/kg-day	4.0E-04	mg/kg-day	1.1E-03
				Arsenic	6E+00	mg/kg	3.8E-08	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	5.8E-08	1.3E-06	mg/kg-day	3.0E-04	mg/kg-day	4.5E-03
				Cadmium	1E+01	mg/kg	6.6E-08	mg/kg-day	N/A	N/A	N/A	2.3E-06	mg/kg-day	1.0E-03	mg/kg-day	2.3E-03
				Copper	1E+02	mg/kg	6.9E-07	mg/kg-day	N/A	N/A	N/A	2.4E-05	mg/kg-day	3.0E-02	mg/kg-day	8.0E-04
				Lead	1E+03	mg/kg	7.7E-06	mg/kg-day	N/A	N/A	N/A	2.7E-04	mg/kg-day	N/A	N/A	N/A
				Manganese	3E+02	mg/kg	1.9E-06	mg/kg-day	N/A	N/A	N/A	6.5E-05	mg/kg-day	7.0E-02	mg/kg-day	9.3E-04
				Mercury	9E-02	mg/kg	6.4E-10	mg/kg-day	N/A	N/A	N/A	2.2E-08	mg/kg-day	1.0E-04	mg/kg-day	2.2E-04
				Nickel	6E+01	mg/kg	4.4E-07	mg/kg-day	N/A	N/A	N/A	1.5E-05	mg/kg-day	2.0E-02	mg/kg-day	7.7E-04
				Thallium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-05	mg/kg-day	N/A
				Aroclor 1242	1E-01	mg/kg	7.6E-10	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	7.6E-10	2.7E-08	mg/kg-day	2.0E-05	mg/kg-day	1.3E-03
				Aroclor 1248	N/A	N/A	N/A	N/A	1.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1254	5E-02	mg/kg	3.6E-10	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	3.6E-10	1.3E-08	mg/kg-day	2.0E-05	mg/kg-day	6.4E-04
				Aroclor 1260	8E-02	mg/kg	5.3E-10	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	5.3E-10	1.9E-08	mg/kg-day	2.0E-05	mg/kg-day	9.4E-04
				PCB TEQ*	1E-06	mg/kg	7.6E-15	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	1.1E-09	2.7E-13	mg/kg-day	N/A	N/A	N/A
				C11-C22 Aromatic	1E+01	mg/kg	9.8E-08	mg/kg-day	N/A	N/A	N/A	3.4E-06	mg/kg-day	3.0E-02	mg/kg-day	1.1E-04
			Exp. Route Total								1E-07					1E-02

TABLE 3-7.12.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil (Cont.)	Surface Soil (Cont.)	Aberjona Property	Dermal													
				Vinyl chloride	N/A	N/A	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Trichloroethene	N/A	N/A	N/A	N/A	4.0E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Phenanthrene	7E-01	mg/kg	6.8E-09	mg/kg-day	N/A	N/A	N/A	2.4E-07	mg/kg-day	2.0E-02	mg/kg-day	1.2E-05
				Benzo(a)Anthracene	7E-01	mg/kg	7.0E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	5.1E-09	2.4E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	7E-01	mg/kg	7.3E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	5.3E-09	2.6E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	5E-01	mg/kg	5.1E-09	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	3.7E-10	1.8E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	5E-01	mg/kg	5.1E-09	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	3.7E-08	1.8E-07	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	5E-01	mg/kg	5.1E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	3.7E-09	1.8E-07	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	6E-03	mg/kg	6.1E-11	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	4.5E-10	2.1E-09	mg/kg-day	N/A	N/A	N/A
				Benzo(g,h,i)perylene	6E-01	mg/kg	5.9E-09	mg/kg-day	N/A	N/A	N/A	2.1E-07	mg/kg-day	2.0E-02	mg/kg-day	1.0E-05
				Antimony	2E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-05	mg/kg-day	N/A
				Arsenic	6E+00	mg/kg	1.3E-08	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	1.9E-08	4.5E-07	mg/kg-day	3.0E-04	mg/kg-day	1.5E-03
				Cadmium	1E+01	mg/kg	7.4E-10	mg/kg-day	N/A	N/A	N/A	2.6E-08	mg/kg-day	2.5E-05	mg/kg-day	1.0E-03
				Copper	1E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
				Lead	1E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Manganese	3E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.8E-03	mg/kg-day	N/A
				Mercury	9E-02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A
				Nickel	6E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-04	mg/kg-day	N/A
				Thallium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-05	mg/kg-day	N/A
				Aroclor 1242	1E-01	mg/kg	1.2E-09	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	1.2E-09	4.2E-08	mg/kg-day	2.0E-05	mg/kg-day	2.1E-03
				Aroclor 1248	N/A	N/A	N/A	N/A	1.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1254	5E-02	mg/kg	5.7E-10	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	5.7E-10	2.0E-08	mg/kg-day	2.0E-05	mg/kg-day	1.0E-03
				Aroclor 1260	8E-02	mg/kg	8.4E-10	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	8.4E-10	2.9E-08	mg/kg-day	2.0E-05	mg/kg-day	1.5E-03
				PCB TEQ*	1E-06	mg/kg	1.2E-14	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	1.8E-09	4.2E-13	mg/kg-day	N/A	N/A	N/A
				C11-C22 Aromatic	1E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
			Exp. Route Total								8E-08					7E-03
		Exposure Point Total									2E-07					2E-02

TABLE 3-7.12.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil (Cont.)	Surface Soil (Cont.)	Whitney Property	Ingestion													
				Vinyl chloride	1E-01	mg/kg	7.3E-10	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	1.1E-09	2.6E-08	mg/kg-day	3.0E-03	mg/kg-day	8.5E-06
				Trichloroethene	1E-03	mg/kg	9.5E-12	mg/kg-day	4.0E-01	(mg/kg-day)$^{-1}$	3.8E-12	3.3E-10	mg/kg-day	3.0E-04	mg/kg-day	1.1E-06
				Phenanthrene	1E+01	mg/kg	8.8E-08	mg/kg-day	N/A	N/A	N/A	3.1E-06	mg/kg-day	2.0E-02	mg/kg-day	1.5E-04
				Benzo(a)Anthracene	8E+00	mg/kg	5.2E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	3.8E-08	1.8E-06	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	8E+00	mg/kg	5.1E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	3.7E-08	1.8E-06	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	4E+00	mg/kg	2.7E-08	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	1.9E-09	9.3E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	6E+00	mg/kg	4.4E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	3.2E-07	1.5E-06	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	1E+01	mg/kg	7.5E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	5.4E-08	2.6E-06	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	3E+00	mg/kg	2.0E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.5E-07	7.1E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(g,h,i)perylene	8E+00	mg/kg	5.6E-08	mg/kg-day	N/A	N/A	N/A	1.9E-06	mg/kg-day	2.0E-02	mg/kg-day	9.7E-05
				Antimony	3E+00	mg/kg	1.9E-08	mg/kg-day	N/A	N/A	N/A	6.7E-07	mg/kg-day	4.0E-04	mg/kg-day	1.7E-03
				Arsenic	6E+00	mg/kg	3.8E-08	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	5.8E-08	1.3E-06	mg/kg-day	3.0E-04	mg/kg-day	4.5E-03
				Cadmium	3E+00	mg/kg	1.9E-08	mg/kg-day	N/A	N/A	N/A	6.8E-07	mg/kg-day	1.0E-03	mg/kg-day	6.8E-04
				Copper	1E+02	mg/kg	8.5E-07	mg/kg-day	N/A	N/A	N/A	3.0E-05	mg/kg-day	3.0E-02	mg/kg-day	1.0E-03
				Lead	7E+02	mg/kg	4.9E-06	mg/kg-day	N/A	N/A	N/A	1.7E-04	mg/kg-day	N/A	N/A	N/A
				Manganese	3E+02	mg/kg	1.8E-06	mg/kg-day	N/A	N/A	N/A	6.2E-05	mg/kg-day	7.0E-02	mg/kg-day	8.8E-04
				Mercury	5E-01	mg/kg	3.7E-09	mg/kg-day	N/A	N/A	N/A	1.3E-07	mg/kg-day	1.0E-04	mg/kg-day	1.3E-03
				Nickel	3E+01	mg/kg	1.8E-07	mg/kg-day	N/A	N/A	N/A	6.2E-06	mg/kg-day	2.0E-02	mg/kg-day	3.1E-04
				Thallium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-05	mg/kg-day	N/A
				Aroclor 1242	4E-01	mg/kg	2.6E-09	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	2.6E-09	9.1E-08	mg/kg-day	2.0E-05	mg/kg-day	4.5E-03
				Aroclor 1248	9E-02	mg/kg	6.4E-10	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	6.4E-10	2.3E-08	mg/kg-day	2.0E-05	mg/kg-day	1.1E-03
				Aroclor 1254	4E+00	mg/kg	2.7E-08	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	2.7E-08	9.4E-07	mg/kg-day	2.0E-05	mg/kg-day	4.7E-02
				Aroclor 1260	2E+00	mg/kg	1.4E-08	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	1.4E-08	4.8E-07	mg/kg-day	2.0E-05	mg/kg-day	2.4E-02
				PCB TEQ*	5E-05	mg/kg	3.2E-13	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	4.8E-08	1.1E-11	mg/kg-day	N/A	N/A	N/A
				C11-C22 Aromatic	5E+02	mg/kg	3.1E-06	mg/kg-day	N/A	N/A	N/A	1.1E-04	mg/kg-day	3.0E-02	mg/kg-day	3.6E-03
			Exp. Route Total								7E-07					9E-02

TABLE 3-7.12.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil (Cont.)	Surface Soil (Cont.)	Whitney Property	Dermal													
				Vinyl chloride	1E-01	mg/kg	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Trichloroethene	1E-03	mg/kg	N/A	N/A	4.0E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Phenanthrene	1E+01	mg/kg	1.3E-07	mg/kg-day	N/A	N/A	N/A	4.5E-06	mg/kg-day	2.0E-02	mg/kg-day	2.2E-04
				Benzo(a)Anthracene	8E+00	mg/kg	7.5E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	5.5E-08	2.6E-06	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	8E+00	mg/kg	7.4E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	5.4E-08	2.6E-06	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	4E+00	mg/kg	3.9E-08	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	2.8E-09	1.4E-06	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	6E+00	mg/kg	6.4E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	4.7E-07	2.2E-06	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	1E+01	mg/kg	1.1E-07	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	7.9E-08	3.8E-06	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	3E+00	mg/kg	2.9E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	2.1E-07	1.0E-06	mg/kg-day	N/A	N/A	N/A
				Benzo(g,h,i)perylene	8E+00	mg/kg	8.1E-08	mg/kg-day	N/A	N/A	N/A	2.8E-06	mg/kg-day	2.0E-02	mg/kg-day	1.4E-04
				Antimony	3E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-05	mg/kg-day	N/A
				Arsenic	6E+00	mg/kg	1.3E-08	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	1.9E-08	4.5E-07	mg/kg-day	3.0E-04	mg/kg-day	1.5E-03
				Cadmium	3E+00	mg/kg	2.2E-10	mg/kg-day	N/A	N/A	N/A	7.6E-09	mg/kg-day	2.5E-05	mg/kg-day	3.0E-04
				Copper	1E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
				Lead	7E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Manganese	3E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.8E-03	mg/kg-day	N/A
				Mercury	5E-01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A
				Nickel	3E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-04	mg/kg-day	N/A
				Thallium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-05	mg/kg-day	N/A
				Aroclor 1242	4E-01	mg/kg	4.1E-09	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	4.1E-09	1.4E-07	mg/kg-day	2.0E-05	mg/kg-day	7.1E-03
				Aroclor 1248	9E-02	mg/kg	1.0E-09	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	1.0E-09	3.5E-08	mg/kg-day	2.0E-05	mg/kg-day	1.8E-03
				Aroclor 1254	4E+00	mg/kg	4.2E-08	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	4.2E-08	1.5E-06	mg/kg-day	2.0E-05	mg/kg-day	7.4E-02
				Aroclor 1260	2E+00	mg/kg	2.1E-08	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	2.1E-08	7.5E-07	mg/kg-day	2.0E-05	mg/kg-day	3.7E-02
				PCB TEQ*	5E-05	mg/kg	5.0E-13	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	7.6E-08	1.8E-11	mg/kg-day	N/A	N/A	N/A
				C11-C22 Aromatic	5E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
			Exp. Route Total								1E-06					1E-01
		Exposure Point Total									2E-06					2E-01

TABLE 3-7.12.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil (Cont.)	Surface Soil (Cont.)	Murphy Property	Ingestion													
				Vinyl chloride	N/A	N/A	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Trichloroethene	4E-01	mg/kg	2.6E-09	mg/kg-day	4.0E-01	(mg/kg-day)$^{-1}$	1.0E-09	9.0E-08	mg/kg-day	3.0E-04	mg/kg-day	3.0E-04
				Phenanthrene	2E+00	mg/kg	1.1E-08	mg/kg-day	N/A	N/A	N/A	3.7E-07	mg/kg-day	2.0E-02	mg/kg-day	1.8E-05
				Benzo(a)Anthracene	2E+00	mg/kg	1.7E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.2E-08	5.8E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	9E-01	mg/kg	6.3E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	4.6E-09	2.2E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	9E-01	mg/kg	6.3E-09	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	4.6E-10	2.2E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	2E+00	mg/kg	1.1E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	7.7E-08	3.7E-07	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	1E+00	mg/kg	8.6E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	6.3E-09	3.0E-07	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	2E-01	mg/kg	1.4E-09	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.0E-08	5.0E-08	mg/kg-day	N/A	N/A	N/A
				Benzo(g,h,i)perylene	1E+00	mg/kg	9.2E-09	mg/kg-day	N/A	N/A	N/A	3.2E-07	mg/kg-day	2.0E-02	mg/kg-day	1.6E-05
				Antimony	4E+00	mg/kg	2.4E-08	mg/kg-day	N/A	N/A	N/A	8.5E-07	mg/kg-day	4.0E-04	mg/kg-day	2.1E-03
				Arsenic	8E+00	mg/kg	5.5E-08	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	8.3E-08	1.9E-06	mg/kg-day	3.0E-04	mg/kg-day	6.4E-03
				Cadmium	3E+00	mg/kg	2.0E-08	mg/kg-day	N/A	N/A	N/A	7.0E-07	mg/kg-day	1.0E-03	mg/kg-day	7.0E-04
				Copper	4E+01	mg/kg	2.4E-07	mg/kg-day	N/A	N/A	N/A	8.4E-06	mg/kg-day	3.0E-02	mg/kg-day	2.8E-04
				Lead	8E+02	mg/kg	5.6E-06	mg/kg-day	N/A	N/A	N/A	2.0E-04	mg/kg-day	N/A	N/A	N/A
				Manganese	4E+02	mg/kg	2.8E-06	mg/kg-day	N/A	N/A	N/A	9.8E-05	mg/kg-day	7.0E-02	mg/kg-day	1.4E-03
				Mercury	6E-01	mg/kg	3.9E-09	mg/kg-day	N/A	N/A	N/A	1.4E-07	mg/kg-day	1.0E-04	mg/kg-day	1.4E-03
				Nickel	2E+01	mg/kg	1.1E-07	mg/kg-day	N/A	N/A	N/A	4.0E-06	mg/kg-day	2.0E-02	mg/kg-day	2.0E-04
				Thallium	6E+00	mg/kg	3.9E-08	mg/kg-day	N/A	N/A	N/A	1.4E-06	mg/kg-day	8.0E-05	mg/kg-day	1.7E-02
				Aroclor 1242	N/A	N/A	N/A	N/A	1.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1248	N/A	N/A	N/A	N/A	1.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1254	5E-01	mg/kg	3.1E-09	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	3.1E-09	1.1E-07	mg/kg-day	2.0E-05	mg/kg-day	5.4E-03
				Aroclor 1260	5E-02	mg/kg	3.3E-10	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	3.3E-10	1.2E-08	mg/kg-day	2.0E-05	mg/kg-day	5.8E-04
				PCB TEQ*	6E-08	mg/kg	4.0E-16	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	5.9E-11	1.4E-14	mg/kg-day	N/A	N/A	N/A
				C11-C22 Aromatic	4E+03	mg/kg	2.5E-05	mg/kg-day	N/A	N/A	N/A	8.8E-04	mg/kg-day	3.0E-02	mg/kg-day	2.9E-02
			Exp. Route Total								2E-07					7E-02

TABLE 3-7.12.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil (Cont.)	Surface Soil (Cont.)	Murphy Property	Dermal													
				Vinyl chloride	N/A	N/A	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Trichloroethene	4E-01	mg/kg	N/A	N/A	4.0E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Phenanthrene	2E+00	mg/kg	1.5E-08	mg/kg-day	N/A	N/A	N/A	5.4E-07	mg/kg-day	2.0E-02	mg/kg-day	2.7E-05
				Benzo(a)Anthracene	2E+00	mg/kg	2.4E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.8E-08	8.5E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	9E-01	mg/kg	9.2E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	6.7E-09	3.2E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	9E-01	mg/kg	9.2E-09	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	6.7E-10	3.2E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	2E+00	mg/kg	1.5E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.1E-07	5.4E-07	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	1E+00	mg/kg	1.3E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	9.1E-09	4.4E-07	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	2E-01	mg/kg	2.1E-09	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.5E-08	7.3E-08	mg/kg-day	N/A	N/A	N/A
				Benzo(g,h,i)perylene	1E+00	mg/kg	1.3E-08	mg/kg-day	N/A	N/A	N/A	4.7E-07	mg/kg-day	2.0E-02	mg/kg-day	2.3E-05
				Antimony	4E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-05	mg/kg-day	N/A
				Arsenic	8E+00	mg/kg	1.9E-08	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	2.8E-08	6.5E-07	mg/kg-day	3.0E-04	mg/kg-day	2.2E-03
				Cadmium	3E+00	mg/kg	2.2E-10	mg/kg-day	N/A	N/A	N/A	7.9E-09	mg/kg-day	2.5E-05	mg/kg-day	3.1E-04
				Copper	4E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
				Lead	8E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Manganese	4E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.8E-03	mg/kg-day	N/A
				Mercury	6E-01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A
				Nickel	2E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-04	mg/kg-day	N/A
				Thallium	6E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-05	mg/kg-day	N/A
				Aroclor 1242	N/A	N/A	N/A	N/A	1.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1248	N/A	N/A	N/A	N/A	1.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1254	5E-01	mg/kg	4.8E-09	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	4.8E-09	1.7E-07	mg/kg-day	2.0E-05	mg/kg-day	8.4E-03
				Aroclor 1260	5E-02	mg/kg	5.2E-10	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	5.2E-10	1.8E-08	mg/kg-day	2.0E-05	mg/kg-day	9.1E-04
				PCB TEQ*	6E-08	mg/kg	6.2E-16	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	9.3E-11	2.2E-14	mg/kg-day	N/A	N/A	N/A
				C11-C22 Aromatic	4E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
			Exp. Route Total								2E-07					1E-02
		Exposure Point Total									4E-07					8E-02
	Exposure Medium Total										N/A					N/A
Medium Total											N/A					N/A

TABLE 3-7.12.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Subsurface Soil	Subsurface Soil	Aberjona Property	Ingestion													
				1,2,4-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/kg-day	N/A
				1,3,5-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/kg-day	N/A
				Naphthalene	1E+01	mg/kg	8.0E-08	mg/kg-day	N/A	N/A	N/A	2.8E-06	mg/kg-day	2.0E-02	mg/kg-day	1.4E-04
				Vinyl chloride	N/A	N/A	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Methylene chloride	N/A	N/A	N/A	N/A	7.5E-03	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	6.0E-02	mg/kg-day	N/A
				cis-1,2-Dichloroethene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-02	mg/kg-day	N/A
				Trichloroethene	N/A	N/A	N/A	N/A	4.0E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Xylenes (total)	3E+00	mg/kg	1.7E-08	mg/kg-day	N/A	N/A	N/A	6.1E-07	mg/kg-day	2.0E-01	mg/kg-day	3.1E-06
				2-Methylnaphthalene	1E+01	mg/kg	9.9E-08	mg/kg-day	N/A	N/A	N/A	3.5E-06	mg/kg-day	4.0E-03	mg/kg-day	8.7E-04
				2,4,6-Trichlorophenol	N/A	N/A	N/A	N/A	1.1E-02	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A
				Acenaphthylene	3E+00	mg/kg	2.2E-08	mg/kg-day	N/A	N/A	N/A	7.8E-07	mg/kg-day	2.0E-02	mg/kg-day	3.9E-05
				Phenanthrene	2E+00	mg/kg	1.6E-08	mg/kg-day	N/A	N/A	N/A	5.7E-07	mg/kg-day	2.0E-02	mg/kg-day	2.9E-05
				Benzo(a)Anthracene	3E-02	mg/kg	1.7E-10	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.2E-10	5.9E-09	mg/kg-day	N/A	N/A	N/A
				Bis(2-ethylhexyl) phthalate	N/A	N/A	N/A	N/A	1.4E-02	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-02	mg/kg-day	N/A
				Benzo(b)Fluoranthene	5E-02	mg/kg	3.5E-10	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	2.5E-10	1.2E-08	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	4E+00	mg/kg	2.5E-08	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	1.8E-09	8.7E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	2E+00	mg/kg	1.2E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	8.8E-08	4.2E-07	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	2E+00	mg/kg	1.5E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.1E-08	5.3E-07	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	1E+00	mg/kg	9.4E-09	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	6.9E-08	3.3E-07	mg/kg-day	N/A	N/A	N/A
				Antimony	4E+00	mg/kg	2.5E-08	mg/kg-day	N/A	N/A	N/A	8.9E-07	mg/kg-day	4.0E-04	mg/kg-day	2.2E-03
				Arsenic	2E+01	mg/kg	1.4E-07	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	2.1E-07	5.0E-06	mg/kg-day	3.0E-04	mg/kg-day	1.7E-02
				Barium	2E+02	mg/kg	1.1E-06	mg/kg-day	N/A	N/A	N/A	3.7E-05	mg/kg-day	7.0E-02	mg/kg-day	5.3E-04
				Cadmium	3E+00	mg/kg	2.2E-08	mg/kg-day	N/A	N/A	N/A	7.8E-07	mg/kg-day	1.0E-03	mg/kg-day	7.8E-04
				Lead	2E+02	mg/kg	1.3E-06	mg/kg-day	N/A	N/A	N/A	4.4E-05	mg/kg-day	N/A	N/A	N/A
				Manganese	3E+02	mg/kg	1.8E-06	mg/kg-day	N/A	N/A	N/A	6.2E-05	mg/kg-day	7.0E-02	mg/kg-day	8.8E-04
				Mercury	5E-01	mg/kg	3.3E-09	mg/kg-day	N/A	N/A	N/A	1.2E-07	mg/kg-day	1.0E-04	mg/kg-day	1.2E-03
				Thallium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-05	mg/kg-day	N/A
				alpha-Chlordane	4E-03	mg/kg	2.7E-11	mg/kg-day	3.5E-01	(mg/kg-day)$^{-1}$	9.3E-12	9.3E-10	mg/kg-day	5.0E-04	mg/kg-day	1.9E-06
				gamma-Chlordane	5E-03	mg/kg	3.2E-11	mg/kg-day	3.5E-01	(mg/kg-day)$^{-1}$	1.1E-11	1.1E-09	mg/kg-day	5.0E-04	mg/kg-day	2.2E-06
				4,4'-DDE	5E-03	mg/kg	3.4E-11	mg/kg-day	3.4E-01	(mg/kg-day)$^{-1}$	1.2E-11	1.2E-09	mg/kg-day	3.0E-04	mg/kg-day	4.0E-06
				4,4'-DDT	2E-02	mg/kg	1.1E-10	mg/kg-day	3.4E-01	(mg/kg-day)$^{-1}$	3.8E-11	3.9E-09	mg/kg-day	5.0E-04	mg/kg-day	7.8E-06
				Aroclor 1242	2E-01	mg/kg	1.1E-09	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	1.1E-09	3.8E-08	mg/kg-day	2.0E-05	mg/kg-day	1.9E-03
				Aroclor 1248	N/A	N/A	N/A	N/A	1.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1254	N/A	N/A	N/A	N/A	1.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1260	1E-01	mg/kg	9.3E-10	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	9.3E-10	3.3E-08	mg/kg-day	2.0E-05	mg/kg-day	1.6E-03
				PCB TEQ*	5E-06	mg/kg	3.1E-14	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	4.6E-09	1.1E-12	mg/kg-day	N/A	N/A	N/A
				C5-C8 Aliphatic	1E+01	mg/kg	7.1E-08	mg/kg-day	N/A	N/A	N/A	2.5E-06	mg/kg-day	4.0E-02	mg/kg-day	6.2E-05
				C9-C10 Aromatic	2E+02	mg/kg	1.2E-06	mg/kg-day	N/A	N/A	N/A	4.2E-05	mg/kg-day	3.0E-02	mg/kg-day	1.4E-03
				C9-C18 Aliphatic	1E+03	mg/kg	8.3E-06	mg/kg-day	N/A	N/A	N/A	2.9E-04	mg/kg-day	1.0E-01	mg/kg-day	2.9E-03
				C19-C36 Aliphatic	3E+02	mg/kg	2.3E-06	mg/kg-day	N/A	N/A	N/A	8.1E-05	mg/kg-day	2.0E+00	mg/kg-day	4.1E-05
				C11-C22 Aromatic	9E+02	mg/kg	6.3E-06	mg/kg-day	N/A	N/A	N/A	2.2E-04	mg/kg-day	3.0E-02	mg/kg-day	7.3E-03
			Exp. Route Total								4E-07					4E-02

TABLE 3-7.12.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

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Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Subsurface Soil (Cont.)	Subsurface Soil (Cont.)	Aberjona Property	Dermal													
				1,2,4-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/kg-day	N/A
				1,3,5-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/kg-day	N/A
				Naphthalene	1E+01	mg/kg	1.2E-07	mg/kg-day	N/A	N/A	N/A	4.1E-06	mg/kg-day	2.0E-02	mg/kg-day	2.0E-04
				Vinyl chloride	N/A	N/A	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Methylene chloride	N/A	N/A	N/A	N/A	7.5E-03	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	6.0E-02	mg/kg-day	N/A
				cis-1,2-Dichloroethene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-02	mg/kg-day	N/A
				Trichloroethene	N/A	N/A	N/A	N/A	4.0E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Xylenes (total)	3E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/kg-day	N/A
				2-Methylnaphthalene	1E+01	mg/kg	1.4E-07	mg/kg-day	N/A	N/A	N/A	5.1E-06	mg/kg-day	4.0E-03	mg/kg-day	1.3E-03
				2,4,6-Trichlorophenol	N/A	N/A	N/A	N/A	1.1E-02	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A
				Acenaphthylene	3E+00	mg/kg	3.2E-08	mg/kg-day	N/A	N/A	N/A	1.1E-06	mg/kg-day	2.0E-02	mg/kg-day	5.7E-05
				Phenanthrene	2E+00	mg/kg	2.4E-08	mg/kg-day	N/A	N/A	N/A	8.3E-07	mg/kg-day	2.0E-02	mg/kg-day	4.2E-05
				Benzo(a)Anthracene	3E-02	mg/kg	2.5E-10	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.8E-10	8.6E-09	mg/kg-day	N/A	N/A	N/A
				Bis(2-ethylhexyl) phthalate	N/A	N/A	N/A	N/A	1.4E-02	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-02	mg/kg-day	N/A
				Benzo(b)Fluoranthene	5E-02	mg/kg	5.0E-10	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	3.7E-10	1.8E-08	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	4E+00	mg/kg	3.6E-08	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	2.6E-09	1.3E-06	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	2E+00	mg/kg	1.8E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.3E-07	6.1E-07	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	2E+00	mg/kg	2.2E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.6E-08	7.7E-07	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	1E+00	mg/kg	1.4E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.0E-07	4.8E-07	mg/kg-day	N/A	N/A	N/A
				Antimony	4E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-05	mg/kg-day	N/A
				Arsenic	2E+01	mg/kg	4.8E-08	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	7.1E-08	1.7E-06	mg/kg-day	3.0E-04	mg/kg-day	5.6E-03
				Barium	2E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.9E-03	mg/kg-day	N/A
				Cadmium	3E+00	mg/kg	2.5E-10	mg/kg-day	N/A	N/A	N/A	8.8E-09	mg/kg-day	2.5E-05	mg/kg-day	3.5E-04
				Lead	2E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Manganese	3E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.8E-03	mg/kg-day	N/A
				Mercury	5E-01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A
				Thallium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-05	mg/kg-day	N/A
				alpha-Chlordane	4E-03	mg/kg	1.2E-11	mg/kg-day	3.5E-01	(mg/kg-day)$^{-1}$	4.2E-12	4.2E-10	mg/kg-day	5.0E-04	mg/kg-day	8.3E-07
				gamma-Chlordane	5E-03	mg/kg	1.4E-11	mg/kg-day	3.5E-01	(mg/kg-day)$^{-1}$	4.9E-12	4.9E-10	mg/kg-day	5.0E-04	mg/kg-day	9.9E-07
				4,4'-DDE	5E-03	mg/kg	N/A	N/A	3.4E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				4,4'-DDT	2E-02	mg/kg	3.7E-11	mg/kg-day	3.4E-01	(mg/kg-day)$^{-1}$	1.3E-11	1.3E-09	mg/kg-day	5.0E-04	mg/kg-day	2.6E-06
				Aroclor 1242	2E-01	mg/kg	1.7E-09	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	1.7E-09	6.0E-08	mg/kg-day	2.0E-05	mg/kg-day	3.0E-03
				Aroclor 1248	N/A	N/A	N/A	N/A	1.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1254	N/A	N/A	N/A	N/A	1.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1260	1E-01	mg/kg	1.5E-09	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	1.5E-09	5.1E-08	mg/kg-day	2.0E-05	mg/kg-day	2.6E-03
				PCB TEQ*	5E-06	mg/kg	4.8E-14	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	7.2E-09	1.7E-12	mg/kg-day	N/A	N/A	N/A
				C5-C8 Aliphatic	1E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.0E-02	mg/kg-day	N/A
				C9-C10 Aromatic	2E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
				C9-C18 Aliphatic	1E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-01	mg/kg-day	N/A
				C19-C36 Aliphatic	3E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E+00	mg/kg-day	N/A
				C11-C22 Aromatic	9E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
			Exp. Route Total								3E-07					1E-02
		Exposure Point Total									7E-07					5E-02

TABLE 3-7.12.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Subsurface Soil (Cont.)	Subsurface Soil (Cont.)	Whitney Property	Ingestion													
				1,2,4-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/kg-day	N/A
				1,3,5-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/kg-day	N/A
				Naphthalene	2E+00	mg/kg	1.7E-08	mg/kg-day	N/A	N/A	N/A	5.8E-07	mg/kg-day	2.0E-02	mg/kg-day	2.9E-05
				Vinyl chloride	3E-01	mg/kg	2.3E-09	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	3.4E-09	8.0E-08	mg/kg-day	3.0E-03	mg/kg-day	2.7E-05
				Methylene chloride	4E-01	mg/kg	2.6E-09	mg/kg-day	7.5E-03	(mg/kg-day)$^{-1}$	1.9E-11	9.0E-08	mg/kg-day	6.0E-02	mg/kg-day	1.5E-06
				cis-1,2-Dichloroethene	1E-01	mg/kg	8.3E-10	mg/kg-day	N/A	N/A	N/A	2.9E-08	mg/kg-day	1.0E-02	mg/kg-day	2.9E-06
				Trichloroethene	5E-01	mg/kg	3.3E-09	mg/kg-day	4.0E-01	(mg/kg-day)$^{-1}$	1.3E-09	1.2E-07	mg/kg-day	3.0E-04	mg/kg-day	3.9E-04
				Xylenes (total)	6E-01	mg/kg	4.3E-09	mg/kg-day	N/A	N/A	N/A	1.5E-07	mg/kg-day	2.0E-01	mg/kg-day	7.6E-07
				2-Methylnaphthalene	4E+00	mg/kg	3.0E-08	mg/kg-day	N/A	N/A	N/A	1.1E-06	mg/kg-day	4.0E-03	mg/kg-day	2.6E-04
				2,4,6-Trichlorophenol	7E-01	mg/kg	4.8E-09	mg/kg-day	1.1E-02	(mg/kg-day)$^{-1}$	5.2E-11	1.7E-07	mg/kg-day	1.0E-04	mg/kg-day	1.7E-03
				Acenaphthylene	2E-02	mg/kg	1.3E-10	mg/kg-day	N/A	N/A	N/A	4.5E-09	mg/kg-day	2.0E-02	mg/kg-day	2.3E-07
				Phenanthrene	3E+00	mg/kg	2.0E-08	mg/kg-day	N/A	N/A	N/A	7.0E-07	mg/kg-day	2.0E-02	mg/kg-day	3.5E-05
				Benzo(a)Anthracene	1E+00	mg/kg	8.3E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	6.0E-09	2.9E-07	mg/kg-day	N/A	N/A	N/A
				Bis(2-ethylhexyl) phthalate	3E+02	mg/kg	2.0E-06	mg/kg-day	1.4E-02	(mg/kg-day)$^{-1}$	2.8E-08	7.0E-05	mg/kg-day	2.0E-02	mg/kg-day	3.5E-03
				Benzo(b)Fluoranthene	1E+00	mg/kg	1.0E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	7.4E-09	3.5E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	1E+00	mg/kg	6.7E-09	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	4.9E-10	2.3E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	1E+00	mg/kg	8.4E-09	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	6.1E-08	2.9E-07	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	9E-01	mg/kg	5.9E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	4.3E-09	2.1E-07	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	2E-01	mg/kg	1.6E-09	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.2E-08	5.5E-08	mg/kg-day	N/A	N/A	N/A
				Antimony	6E+00	mg/kg	4.4E-08	mg/kg-day	N/A	N/A	N/A	1.5E-06	mg/kg-day	4.0E-04	mg/kg-day	3.9E-03
				Arsenic	3E+01	mg/kg	1.9E-07	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	2.9E-07	6.7E-06	mg/kg-day	3.0E-04	mg/kg-day	2.2E-02
				Barium	2E+02	mg/kg	1.1E-06	mg/kg-day	N/A	N/A	N/A	3.9E-05	mg/kg-day	7.0E-02	mg/kg-day	5.6E-04
				Cadmium	6E+00	mg/kg	4.1E-08	mg/kg-day	N/A	N/A	N/A	1.4E-06	mg/kg-day	1.0E-03	mg/kg-day	1.4E-03
				Lead	6E+02	mg/kg	3.9E-06	mg/kg-day	N/A	N/A	N/A	1.4E-04	mg/kg-day	N/A	N/A	N/A
				Manganese	3E+02	mg/kg	1.7E-06	mg/kg-day	N/A	N/A	N/A	6.0E-05	mg/kg-day	7.0E-02	mg/kg-day	8.5E-04
				Mercury	2E+00	mg/kg	1.7E-08	mg/kg-day	N/A	N/A	N/A	5.8E-07	mg/kg-day	1.0E-04	mg/kg-day	5.8E-03
				Thallium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-05	mg/kg-day	N/A
				alpha-Chlordane	6E+01	mg/kg	4.2E-07	mg/kg-day	3.5E-01	(mg/kg-day)$^{-1}$	1.5E-07	1.5E-05	mg/kg-day	5.0E-04	mg/kg-day	2.9E-02
				gamma-Chlordane	6E-03	mg/kg	4.1E-11	mg/kg-day	3.5E-01	(mg/kg-day)$^{-1}$	1.5E-11	1.5E-09	mg/kg-day	5.0E-04	mg/kg-day	2.9E-06
				4,4'-DDE	2E+01	mg/kg	1.2E-07	mg/kg-day	3.4E-01	(mg/kg-day)$^{-1}$	4.1E-08	4.2E-06	mg/kg-day	3.0E-04	mg/kg-day	1.4E-02
				4,4'-DDT	5E-03	mg/kg	3.6E-11	mg/kg-day	3.4E-01	(mg/kg-day)$^{-1}$	1.2E-11	1.3E-09	mg/kg-day	5.0E-04	mg/kg-day	2.5E-06
				Aroclor 1242	N/A	N/A	N/A	N/A	1.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1248	7E+02	mg/kg	5.1E-06	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	5.1E-06	1.8E-04	mg/kg-day	2.0E-05	mg/kg-day	8.9E+00
				Aroclor 1254	4E+02	mg/kg	2.8E-06	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	2.8E-06	9.7E-05	mg/kg-day	2.0E-05	mg/kg-day	4.9E+00
				Aroclor 1260	2E+02	mg/kg	1.5E-06	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	1.5E-06	5.4E-05	mg/kg-day	2.0E-05	mg/kg-day	2.7E+00
				PCB TEQ*	1E-03	mg/kg	9.5E-12	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	1.4E-06	3.3E-10	mg/kg-day	N/A	N/A	N/A
				C5-C8 Aliphatic	5E+01	mg/kg	3.5E-07	mg/kg-day	N/A	N/A	N/A	1.2E-05	mg/kg-day	4.0E-02	mg/kg-day	3.1E-04
				C9-C10 Aromatic	5E+02	mg/kg	3.4E-06	mg/kg-day	N/A	N/A	N/A	1.2E-04	mg/kg-day	3.0E-02	mg/kg-day	3.9E-03
				C9-C18 Aliphatic	3E+03	mg/kg	1.8E-05	mg/kg-day	N/A	N/A	N/A	6.5E-04	mg/kg-day	1.0E-01	mg/kg-day	6.5E-03
				C19-C36 Aliphatic	2E+03	mg/kg	1.1E-05	mg/kg-day	N/A	N/A	N/A	3.8E-04	mg/kg-day	2.0E+00	mg/kg-day	1.9E-04
				C11-C22 Aromatic	2E+03	mg/kg	1.5E-05	mg/kg-day	N/A	N/A	N/A	5.3E-04	mg/kg-day	3.0E-02	mg/kg-day	1.8E-02
			Exp. Route Total								1E-05					2E+01

TABLE 3-7.12.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Subsurface Soil (Cont.)	Subsurface Soil (Cont.)	Whitney Property	Dermal													
				1,2,4-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/kg-day	N/A
				1,3,5-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/kg-day	N/A
				Naphthalene	2E+00	mg/kg	2.4E-08	mg/kg-day	N/A	N/A	N/A	8.4E-07	mg/kg-day	2.0E-02	mg/kg-day	4.2E-05
				Vinyl chloride	3E-01	mg/kg	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Methylene chloride	4E-01	mg/kg	N/A	N/A	7.5E-03	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	6.0E-02	mg/kg-day	N/A
				cis-1,2-Dichloroethene	1E-01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-02	mg/kg-day	N/A
				Trichloroethene	5E-01	mg/kg	N/A	N/A	4.0E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Xylenes (total)	6E-01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/kg-day	N/A
				2-Methylnaphthalene	4E+00	mg/kg	4.4E-08	mg/kg-day	N/A	N/A	N/A	1.5E-06	mg/kg-day	4.0E-03	mg/kg-day	3.8E-04
				2,4,6-Trichlorophenol	7E-01	mg/kg	N/A	N/A	1.1E-02	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A
				Acenaphthylene	2E-02	mg/kg	1.9E-10	mg/kg-day	N/A	N/A	N/A	6.6E-09	mg/kg-day	2.0E-02	mg/kg-day	3.3E-07
				Phenanthrene	3E+00	mg/kg	2.9E-08	mg/kg-day	N/A	N/A	N/A	1.0E-06	mg/kg-day	2.0E-02	mg/kg-day	5.1E-05
				Benzo(a)Anthracene	1E+00	mg/kg	1.2E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	8.8E-09	4.2E-07	mg/kg-day	N/A	N/A	N/A
				Bis(2-ethylhexyl) phthalate	3E+02	mg/kg	N/A	N/A	1.4E-02	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-02	mg/kg-day	N/A
				Benzo(b)Fluoranthene	1E+00	mg/kg	1.5E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.1E-08	5.2E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	1E+00	mg/kg	9.7E-09	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	7.1E-10	3.4E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	1E+00	mg/kg	1.2E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	8.9E-08	4.3E-07	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	9E-01	mg/kg	8.6E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	6.3E-09	3.0E-07	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	2E-01	mg/kg	2.3E-09	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.7E-08	8.0E-08	mg/kg-day	N/A	N/A	N/A
				Antimony	6E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-05	mg/kg-day	N/A
				Arsenic	3E+01	mg/kg	6.4E-08	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	9.6E-08	2.2E-06	mg/kg-day	3.0E-04	mg/kg-day	7.5E-03
				Barium	2E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.9E-03	mg/kg-day	N/A
				Cadmium	6E+00	mg/kg	4.6E-10	mg/kg-day	N/A	N/A	N/A	1.6E-08	mg/kg-day	2.5E-05	mg/kg-day	6.4E-04
				Lead	6E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Manganese	3E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.8E-03	mg/kg-day	N/A
				Mercury	2E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A
				Thallium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-05	mg/kg-day	N/A
				alpha-Chlordane	6E+01	mg/kg	1.9E-07	mg/kg-day	3.5E-01	(mg/kg-day)$^{-1}$	6.6E-08	6.6E-06	mg/kg-day	5.0E-04	mg/kg-day	1.3E-02
				gamma-Chlordane	6E-03	mg/kg	1.9E-11	mg/kg-day	3.5E-01	(mg/kg-day)$^{-1}$	6.5E-12	6.5E-10	mg/kg-day	5.0E-04	mg/kg-day	1.3E-06
				4,4'-DDE	2E+01	mg/kg	N/A	N/A	3.4E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				4,4'-DDT	5E-03	mg/kg	1.2E-11	mg/kg-day	3.4E-01	(mg/kg-day)$^{-1}$	4.1E-12	4.2E-10	mg/kg-day	5.0E-04	mg/kg-day	8.4E-07
				Aroclor 1242	N/A	N/A	N/A	N/A	1.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1248	7E+02	mg/kg	8.0E-06	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	8.0E-06	2.8E-04	mg/kg-day	2.0E-05	mg/kg-day	1.4E+01
				Aroclor 1254	4E+02	mg/kg	4.4E-06	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	4.4E-06	1.5E-04	mg/kg-day	2.0E-05	mg/kg-day	7.6E+00
				Aroclor 1260	2E+02	mg/kg	2.4E-06	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	2.4E-06	8.4E-05	mg/kg-day	2.0E-05	mg/kg-day	4.2E+00
				PCB TEQ*	1E-03	mg/kg	1.5E-11	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	2.2E-06	5.2E-10	mg/kg-day	N/A	N/A	N/A
				C5-C8 Aliphatic	5E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.0E-02	mg/kg-day	N/A
				C9-C10 Aromatic	5E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
				C9-C18 Aliphatic	3E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-01	mg/kg-day	N/A
				C19-C36 Aliphatic	2E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E+00	mg/kg-day	N/A
				C11-C22 Aromatic	2E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
			Exp. Route Total								2E-05					3E+01
		Exposure Point Total									3E-05					4E+01

TABLE 3-7.12.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Subsurface Soil (Cont.)	Subsurface Soil (Cont.)	Murphy Property	Ingestion													
				1,2,4-Trimethylbenzene	1E+01	mg/kg	7.2E-08	mg/kg-day	N/A	N/A	N/A	2.5E-06	mg/kg-day	5.0E-02	mg/kg-day	5.0E-05
				1,3,5-Trimethylbenzene	5E+00	mg/kg	3.1E-08	mg/kg-day	N/A	N/A	N/A	1.1E-06	mg/kg-day	5.0E-02	mg/kg-day	2.1E-05
				Naphthalene	4E+00	mg/kg	2.5E-08	mg/kg-day	N/A	N/A	N/A	8.8E-07	mg/kg-day	2.0E-02	mg/kg-day	4.4E-05
				Vinyl chloride	N/A	N/A	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Methylene chloride	3E+00	mg/kg	1.8E-08	mg/kg-day	7.5E-03	(mg/kg-day)$^{-1}$	1.4E-10	6.5E-07	mg/kg-day	6.0E-02	mg/kg-day	1.1E-05
				cis-1,2-Dichloroethene	2E+00	mg/kg	1.5E-08	mg/kg-day	N/A	N/A	N/A	5.3E-07	mg/kg-day	1.0E-02	mg/kg-day	5.3E-05
				Trichloroethene	3E-01	mg/kg	1.9E-09	mg/kg-day	4.0E-01	(mg/kg-day)$^{-1}$	7.6E-10	6.7E-08	mg/kg-day	3.0E-04	mg/kg-day	2.2E-04
				Xylenes (total)	4E+00	mg/kg	2.8E-08	mg/kg-day	N/A	N/A	N/A	9.7E-07	mg/kg-day	2.0E-01	mg/kg-day	4.9E-06
				2-Methylnaphthalene	1E+00	mg/kg	7.3E-09	mg/kg-day	N/A	N/A	N/A	2.6E-07	mg/kg-day	4.0E-03	mg/kg-day	6.4E-05
				2,4,6-Trichlorophenol	N/A	N/A	N/A	N/A	1.1E-02	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A
				Acenaphthylene	2E+00	mg/kg	1.1E-08	mg/kg-day	N/A	N/A	N/A	3.8E-07	mg/kg-day	2.0E-02	mg/kg-day	1.9E-05
				Phenanthrene	2E+00	mg/kg	1.2E-08	mg/kg-day	N/A	N/A	N/A	4.2E-07	mg/kg-day	2.0E-02	mg/kg-day	2.1E-05
				Benzo(a)Anthracene	1E+00	mg/kg	1.0E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	7.3E-09	3.5E-07	mg/kg-day	N/A	N/A	N/A
				Bis(2-ethylhexyl) phthalate	1E+01	mg/kg	7.9E-08	mg/kg-day	1.4E-02	(mg/kg-day)$^{-1}$	1.1E-09	2.8E-06	mg/kg-day	2.0E-02	mg/kg-day	1.4E-04
				Benzo(b)Fluoranthene	1E+00	mg/kg	1.0E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	7.4E-09	3.5E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	2E+00	mg/kg	1.2E-08	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	9.0E-10	4.3E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	2E+00	mg/kg	1.1E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	7.8E-08	3.8E-07	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	1E+00	mg/kg	1.0E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	7.4E-09	3.5E-07	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	4E-01	mg/kg	2.6E-09	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.9E-08	9.0E-08	mg/kg-day	N/A	N/A	N/A
				Antimony	3E+00	mg/kg	1.9E-08	mg/kg-day	N/A	N/A	N/A	6.8E-07	mg/kg-day	4.0E-04	mg/kg-day	1.7E-03
				Arsenic	4E+00	mg/kg	2.7E-08	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	4.0E-08	9.4E-07	mg/kg-day	3.0E-04	mg/kg-day	3.1E-03
				Barium	3E+02	mg/kg	2.3E-06	mg/kg-day	N/A	N/A	N/A	8.0E-05	mg/kg-day	7.0E-02	mg/kg-day	1.1E-03
				Cadmium	1E+00	mg/kg	8.5E-09	mg/kg-day	N/A	N/A	N/A	3.0E-07	mg/kg-day	1.0E-03	mg/kg-day	3.0E-04
				Lead	5E+02	mg/kg	3.4E-06	mg/kg-day	N/A	N/A	N/A	1.2E-04	mg/kg-day	N/A	N/A	N/A
				Manganese	1E+02	mg/kg	8.1E-07	mg/kg-day	N/A	N/A	N/A	2.8E-05	mg/kg-day	7.0E-02	mg/kg-day	4.1E-04
				Mercury	8E-02	mg/kg	5.1E-10	mg/kg-day	N/A	N/A	N/A	1.8E-08	mg/kg-day	1.0E-04	mg/kg-day	1.8E-04
				Thallium	9E+00	mg/kg	6.0E-08	mg/kg-day	N/A	N/A	N/A	2.1E-06	mg/kg-day	8.0E-05	mg/kg-day	2.6E-02
				alpha-Chlordane	1E-01	mg/kg	8.2E-10	mg/kg-day	3.5E-01	(mg/kg-day)$^{-1}$	2.9E-10	2.9E-08	mg/kg-day	5.0E-04	mg/kg-day	5.7E-05
				gamma-Chlordane	1E-01	mg/kg	8.3E-10	mg/kg-day	3.5E-01	(mg/kg-day)$^{-1}$	2.9E-10	2.9E-08	mg/kg-day	5.0E-04	mg/kg-day	5.8E-05
				4,4'-DDE	N/A	N/A	N/A	N/A	3.4E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				4,4'-DDT	N/A	N/A	N/A	N/A	3.4E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	5.0E-04	mg/kg-day	N/A
				Aroclor 1242	N/A	N/A	N/A	N/A	1.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1248	6E-01	mg/kg	4.2E-09	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	4.2E-09	1.5E-07	mg/kg-day	2.0E-05	mg/kg-day	7.4E-03
				Aroclor 1254	2E-01	mg/kg	1.3E-09	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	1.3E-09	4.6E-08	mg/kg-day	2.0E-05	mg/kg-day	2.3E-03
				Aroclor 1260	N/A	N/A	N/A	N/A	1.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				PCB TEQ*	N/A	N/A	N/A	N/A	1.5E+05	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	N/A	N/A	N/A
				C5-C8 Aliphatic	1E+00	mg/kg	6.8E-09	mg/kg-day	N/A	N/A	N/A	2.4E-07	mg/kg-day	4.0E-02	mg/kg-day	5.9E-06
				C9-C10 Aromatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
				C9-C18 Aliphatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-01	mg/kg-day	N/A
				C19-C36 Aliphatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E+00	mg/kg-day	N/A
				C11-C22 Aromatic	7E+03	mg/kg	4.6E-05	mg/kg-day	N/A	N/A	N/A	1.6E-03	mg/kg-day	3.0E-02	mg/kg-day	5.3E-02
			Exp. Route Total								2E-07					1E-01

TABLE 3-7.12.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Subsurface Soil (Cont.)	Subsurface Soil (Cont.)	Murphy Property	Dermal													
				1,2,4-Trimethylbenzene	1E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/kg-day	N/A
				1,3,5-Trimethylbenzene	5E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/kg-day	N/A
				Naphthalene	4E+00	mg/kg	3.6E-08	mg/kg-day	N/A	N/A	N/A	1.3E-06	mg/kg-day	2.0E-02	mg/kg-day	6.4E-05
				Vinyl chloride	N/A	N/A	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Methylene chloride	3E+00	mg/kg	N/A	N/A	7.5E-03	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	6.0E-02	mg/kg-day	N/A
				cis-1,2-Dichloroethene	2E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-02	mg/kg-day	N/A
				Trichloroethene	3E-01	mg/kg	N/A	N/A	4.0E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Xylenes (total)	4E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/kg-day	N/A
				2-Methylnaphthalene	1E+00	mg/kg	1.1E-08	mg/kg-day	N/A	N/A	N/A	3.7E-07	mg/kg-day	4.0E-03	mg/kg-day	9.3E-05
				2,4,6-Trichlorophenol	N/A	N/A	N/A	N/A	1.1E-02	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A
				Acenaphthylene	2E+00	mg/kg	1.6E-08	mg/kg-day	N/A	N/A	N/A	5.5E-07	mg/kg-day	2.0E-02	mg/kg-day	2.8E-05
				Phenanthrene	2E+00	mg/kg	1.8E-08	mg/kg-day	N/A	N/A	N/A	6.1E-07	mg/kg-day	2.0E-02	mg/kg-day	3.1E-05
				Benzo(a)Anthracene	1E+00	mg/kg	1.5E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.1E-08	5.1E-07	mg/kg-day	N/A	N/A	N/A
				Bis(2-ethylhexyl) phthalate	1E+01	mg/kg	N/A	N/A	1.4E-02	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-02	mg/kg-day	N/A
				Benzo(b)Fluoranthene	1E+00	mg/kg	1.5E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.1E-08	5.1E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	2E+00	mg/kg	1.8E-08	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	1.3E-09	6.3E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	2E+00	mg/kg	1.6E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.1E-07	5.5E-07	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	1E+00	mg/kg	1.5E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.1E-08	5.1E-07	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	4E-01	mg/kg	3.8E-09	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	2.7E-08	1.3E-07	mg/kg-day	N/A	N/A	N/A
				Antimony	3E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-05	mg/kg-day	N/A
				Arsenic	4E+00	mg/kg	9.1E-09	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	1.4E-08	3.2E-07	mg/kg-day	3.0E-04	mg/kg-day	1.1E-03
				Barium	3E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.9E-03	mg/kg-day	N/A
				Cadmium	1E+00	mg/kg	9.6E-11	mg/kg-day	N/A	N/A	N/A	3.3E-09	mg/kg-day	2.5E-05	mg/kg-day	1.3E-04
				Lead	5E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Manganese	1E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.8E-03	mg/kg-day	N/A
				Mercury	8E-02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A
				Thallium	9E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-05	mg/kg-day	N/A
				alpha-Chlordane	1E-01	mg/kg	3.7E-10	mg/kg-day	3.5E-01	(mg/kg-day)$^{-1}$	1.3E-10	1.3E-08	mg/kg-day	5.0E-04	mg/kg-day	2.6E-05
				gamma-Chlordane	1E-01	mg/kg	3.7E-10	mg/kg-day	3.5E-01	(mg/kg-day)$^{-1}$	1.3E-10	1.3E-08	mg/kg-day	5.0E-04	mg/kg-day	2.6E-05
				4,4'-DDE	N/A	N/A	N/A	N/A	3.4E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				4,4'-DDT	N/A	N/A	N/A	N/A	3.4E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	5.0E-04	mg/kg-day	N/A
				Aroclor 1242	N/A	N/A	N/A	N/A	1.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1248	6E-01	mg/kg	6.6E-09	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	6.6E-09	2.3E-07	mg/kg-day	2.0E-05	mg/kg-day	1.2E-02
				Aroclor 1254	2E-01	mg/kg	2.1E-09	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	2.1E-09	7.3E-08	mg/kg-day	2.0E-05	mg/kg-day	3.6E-03
				Aroclor 1260	N/A	N/A	N/A	N/A	1.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				PCB TEQ*	N/A	N/A	N/A	N/A	1.5E+05	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	N/A	N/A	N/A
				C5-C8 Aliphatic	1E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.0E-02	mg/kg-day	N/A
				C9-C10 Aromatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
				C9-C18 Aliphatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-01	mg/kg-day	N/A
				C19-C36 Aliphatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E+00	mg/kg-day	N/A
				C11-C22 Aromatic	7E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
			Exp. Route Total								2E-07					2E-02
		Exposure Point Total									4E-07					1E-01
	Exposure Medium Total										N/A					N/A
Medium Total											N/A					N/A

TABLE 3-7.12.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Soil	Indoor Air	Aberjona Property	Inhalation													
				1,2,4-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-03	mg/m3	N/A
				1,2-Dichloroethene (total)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				1,3,5-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-03	mg/m3	N/A
				n-Butylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Naphthalene	2E-02	ug/m3	5.0E-06	ug/m3	N/A	N/A	N/A	1.8E-07	mg/m3	3.0E-03	mg/m3	5.9E-05
				p-Isopropyltoluene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.0E-01	mg/m3	N/A
				Chloromethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9.0E-02	mg/m3	N/A
				Vinyl chloride	N/A	N/A	N/A	N/A	8.8E-06	(ug/m3)-1	N/A	N/A	N/A	1.0E-01	mg/m3	N/A
				Bromomethane	4E-03	ug/m3	9.1E-07	ug/m3	N/A	N/A	N/A	3.2E-08	mg/m3	5.0E-03	mg/m3	6.4E-06
				Chloroethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E+01	mg/m3	N/A
				1,1-Dichloroethene	1E-02	ug/m3	2.1E-06	ug/m3	N/A	N/A	N/A	7.4E-08	mg/m3	2.0E-01	mg/m3	3.7E-07
				Acetone	2E-03	ug/m3	3.5E-07	ug/m3	N/A	N/A	N/A	1.2E-08	mg/m3	N/A	N/A	N/A
				Methylene chloride	N/A	N/A	N/A	N/A	4.7E-07	(ug/m3)-1	N/A	N/A	N/A	3.0E+00	mg/m3	N/A
				trans-1,2-Dichloroethene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/m3	N/A
				Methyl tert-butyl ether	8E-03	ug/m3	1.7E-06	ug/m3	N/A	N/A	N/A	5.8E-08	mg/m3	3.0E+00	mg/m3	1.9E-08
				1,1-Dichloroethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-01	mg/m3	N/A
				cis-1,2-Dichloroethene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/m3	N/A
				1,1,1-Trichloroethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.2E+00	mg/m3	N/A
				Benzene	1E-02	ug/m3	2.6E-06	ug/m3	7.8E-06	(ug/m3)-1	2.0E-11	9.1E-08	mg/m3	3.0E-02	mg/m3	3.0E-06
				Trichloroethene	N/A	N/A	N/A	N/A	1.1E-04	(ug/m3)-1	N/A	N/A	N/A	4.0E-02	mg/m3	N/A
				Methyl cyclohexane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E+00	mg/m3	N/A
				Toluene	6E-02	ug/m3	1.2E-05	ug/m3	N/A	N/A	N/A	4.3E-07	mg/m3	4.0E-01	mg/m3	1.1E-06
				Tetrachloroethene	N/A	N/A	N/A	N/A	5.9E-06	(ug/m3)-1	N/A	N/A	N/A	N/A	N/A	N/A
				Chlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-02	mg/m3	N/A
				Ethylbenzene	4E-01	ug/m3	8.8E-05	ug/m3	N/A	N/A	N/A	3.1E-06	mg/m3	1.0E+00	mg/m3	3.1E-06
				1,3-Dichlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				1,4-Dichlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-01	mg/m3	N/A
				1,2-Dichlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				2-Methylnaphthalene	4E-02	ug/m3	8.9E-06	ug/m3	N/A	N/A	N/A	3.1E-07	mg/m3	N/A	N/A	N/A
				Acenaphthylene	5E-03	ug/m3	1.0E-06	ug/m3	N/A	N/A	N/A	3.5E-08	mg/m3	3.0E-03	mg/m3	1.2E-05
				Dibenzofuran	3E-03	ug/m3	7.3E-07	ug/m3	N/A	N/A	N/A	2.5E-08	mg/m3	N/A	N/A	N/A
				Phenanthrene	6E-04	ug/m3	1.3E-07	ug/m3	N/A	N/A	N/A	4.4E-09	mg/m3	3.0E-03	mg/m3	1.5E-06
				Anthracene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-03	mg/m3	N/A
				C5-C8 Aliphatic	8E+01	ug/m3	1.6E-02	ug/m3	N/A	N/A	N/A	5.6E-04	mg/m3	2.0E-01	mg/m3	2.8E-03
				C9-C12 Aliphatic	6E+00	ug/m3	1.3E-03	ug/m3	N/A	N/A	N/A	4.6E-05	mg/m3	2.0E-01	mg/m3	2.3E-04
				C9-C10 Aromatic	2E+01	ug/m3	4.5E-03	ug/m3	N/A	N/A	N/A	1.6E-04	mg/m3	5.0E-02	mg/m3	3.1E-03
				C9-C18 Aliphatic	9E+01	ug/m3	1.9E-02	ug/m3	N/A	N/A	N/A	6.7E-04	mg/m3	2.0E-01	mg/m3	3.4E-03
				C11-C22 Aromatic	2E+00	ug/m3	4.0E-04	ug/m3	N/A	N/A	N/A	1.4E-05	mg/m3	5.0E-02	mg/m3	2.8E-04
			Exp. Route Total								2E-11					1E-02
		Exposure Point Total									2E-11					1E-02

TABLE 3-7.12.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Soil (Cont.)	Indoor Air (Cont.)	Whitney Property	Inhalation													
				1,2,4-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-03	mg/m3	N/A
				1,2-Dichloroethene (total)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				1,3,5-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-03	mg/m3	N/A
				n-Butylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Naphthalene	5E-02	ug/m3	9.8E-06	ug/m3	N/A	N/A	N/A	3.4E-07	mg/m3	3.0E-03	mg/m3	1.1E-04
				p-Isopropyltoluene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.0E-01	mg/m3	N/A
				Chloromethane	4E+00	ug/m3	7.4E-04	ug/m3	N/A	N/A	N/A	2.6E-05	mg/m3	9.0E-02	mg/m3	2.9E-04
				Vinyl chloride	7E+00	ug/m3	1.5E-03	ug/m3	8.8E-06	(ug/m3)-1	1.3E-08	5.2E-05	mg/m3	1.0E-01	mg/m3	5.2E-04
				Bromomethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-03	mg/m3	N/A
				Chloroethane	1E+00	ug/m3	2.6E-04	ug/m3	N/A	N/A	N/A	9.0E-06	mg/m3	1.0E+01	mg/m3	9.0E-07
				1,1-Dichloroethene	1E+00	ug/m3	2.5E-04	ug/m3	N/A	N/A	N/A	8.7E-06	mg/m3	2.0E-01	mg/m3	4.3E-05
				Acetone	1E-02	ug/m3	3.1E-06	ug/m3	N/A	N/A	N/A	1.1E-07	mg/m3	N/A	N/A	N/A
				Methylene chloride	2E+00	ug/m3	3.7E-04	ug/m3	4.7E-07	(ug/m3)-1	1.7E-10	1.3E-05	mg/m3	3.0E+00	mg/m3	4.3E-06
				trans-1,2-Dichloroethene	9E-01	ug/m3	1.9E-04	ug/m3	N/A	N/A	N/A	6.6E-06	mg/m3	2.0E-01	mg/m3	3.3E-05
				Methyl tert-butyl ether	5E-02	ug/m3	1.1E-05	ug/m3	N/A	N/A	N/A	3.7E-07	mg/m3	3.0E+00	mg/m3	1.2E-07
				1,1-Dichloroethane	2E+00	ug/m3	3.7E-04	ug/m3	N/A	N/A	N/A	1.3E-05	mg/m3	5.0E-01	mg/m3	2.6E-05
				cis-1,2-Dichloroethene	6E-01	ug/m3	1.3E-04	ug/m3	N/A	N/A	N/A	4.5E-06	mg/m3	2.0E-01	mg/m3	2.3E-05
				1,1,1-Trichloroethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.2E+00	mg/m3	N/A
				Benzene	3E-01	ug/m3	6.5E-05	ug/m3	7.8E-06	(ug/m3)-1	5.1E-10	2.3E-06	mg/m3	3.0E-02	mg/m3	7.6E-05
				Trichloroethene	1E+00	ug/m3	2.5E-04	ug/m3	1.1E-04	(ug/m3)-1	2.7E-08	8.7E-06	mg/m3	4.0E-02	mg/m3	2.2E-04
				Methyl cyclohexane	4E+01	ug/m3	7.7E-03	ug/m3	N/A	N/A	N/A	2.7E-04	mg/m3	3.0E+00	mg/m3	9.0E-05
				Toluene	1E+00	ug/m3	2.9E-04	ug/m3	N/A	N/A	N/A	1.0E-05	mg/m3	4.0E-01	mg/m3	2.6E-05
				Tetrachloroethene	1E+00	ug/m3	2.1E-04	ug/m3	5.9E-06	(ug/m3)-1	1.2E-09	7.4E-06	mg/m3	N/A	N/A	N/A
				Chlorobenzene	3E-01	ug/m3	7.3E-05	ug/m3	N/A	N/A	N/A	2.6E-06	mg/m3	6.0E-02	mg/m3	4.3E-05
				Ethylbenzene	3E-01	ug/m3	6.1E-05	ug/m3	N/A	N/A	N/A	2.2E-06	mg/m3	1.0E+00	mg/m3	2.2E-06
				1,3-Dichlorobenzene	3E-01	ug/m3	7.3E-05	ug/m3	N/A	N/A	N/A	2.5E-06	mg/m3	N/A	N/A	N/A
				1,4-Dichlorobenzene	7E-02	ug/m3	1.5E-05	ug/m3	N/A	N/A	N/A	5.3E-07	mg/m3	8.0E-01	mg/m3	6.7E-07
				1,2-Dichlorobenzene	4E-05	ug/m3	9.1E-09	ug/m3	N/A	N/A	N/A	3.2E-10	mg/m3	N/A	N/A	N/A
				2-Methylnaphthalene	1E-01	ug/m3	2.7E-05	ug/m3	N/A	N/A	N/A	9.6E-07	mg/m3	N/A	N/A	N/A
				Acenaphthylene	5E-03	ug/m3	9.8E-07	ug/m3	N/A	N/A	N/A	3.4E-08	mg/m3	3.0E-03	mg/m3	1.1E-05
				Dibenzofuran	2E-01	ug/m3	3.7E-05	ug/m3	N/A	N/A	N/A	1.3E-06	mg/m3	N/A	N/A	N/A
				Phenanthrene	7E-02	ug/m3	1.4E-05	ug/m3	N/A	N/A	N/A	5.0E-07	mg/m3	3.0E-03	mg/m3	1.7E-04
				Anthracene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-03	mg/m3	N/A
				C5-C8 Aliphatic	4E+03	ug/m3	8.8E-01	ug/m3	N/A	N/A	N/A	3.1E-02	mg/m3	2.0E-01	mg/m3	1.5E-01
				C9-C12 Aliphatic	7E+01	ug/m3	1.5E-02	ug/m3	N/A	N/A	N/A	5.4E-04	mg/m3	2.0E-01	mg/m3	2.7E-03
				C9-C10 Aromatic	2E+02	ug/m3	4.5E-02	ug/m3	N/A	N/A	N/A	1.6E-03	mg/m3	5.0E-02	mg/m3	3.1E-02
				C9-C18 Aliphatic	3E+02	ug/m3	5.5E-02	ug/m3	N/A	N/A	N/A	1.9E-03	mg/m3	2.0E-01	mg/m3	9.7E-03
				C11-C22 Aromatic	2E+01	ug/m3	3.2E-03	ug/m3	N/A	N/A	N/A	1.1E-04	mg/m3	5.0E-02	mg/m3	2.2E-03
			Exp. Route Total								4E-08					2E-01
		Exposure Point Total									4E-08					2E-01

TABLE 3-7.12.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Soil (Cont.)	Indoor Air (Cont.)	Murphy Property	Inhalation													
				1,2,4-Trimethylbenzene	8E-01	ug/m3	1.6E-04	ug/m3	N/A	N/A	N/A	5.7E-06	mg/m3	6.0E-03	mg/m3	9.5E-04
				1,2-Dichloroethene (total)	3E-01	ug/m3	6.8E-05	ug/m3	N/A	N/A	N/A	2.4E-06	mg/m3	N/A	N/A	N/A
				1,3,5-Trimethylbenzene	5E+00	ug/m3	1.0E-03	ug/m3	N/A	N/A	N/A	3.6E-05	mg/m3	6.0E-03	mg/m3	6.0E-03
				n-Butylbenzene	2E-01	ug/m3	4.7E-05	ug/m3	N/A	N/A	N/A	1.6E-06	mg/m3	N/A	N/A	N/A
				Naphthalene	7E-02	ug/m3	1.6E-05	ug/m3	N/A	N/A	N/A	5.4E-07	mg/m3	3.0E-03	mg/m3	1.8E-04
				p-Isopropyltoluene	2E+01	ug/m3	5.1E-03	ug/m3	N/A	N/A	N/A	1.8E-04	mg/m3	4.0E-01	mg/m3	4.5E-04
				Chloromethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9.0E-02	mg/m3	N/A
				Vinyl chloride	N/A	N/A	N/A	N/A	8.8E-06	(ug/m3)-1	N/A	N/A	N/A	1.0E-01	mg/m3	N/A
				Bromomethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-03	mg/m3	N/A
				Chloroethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E+01	mg/m3	N/A
				1,1-Dichloroethene	4E-02	ug/m3	8.6E-06	ug/m3	N/A	N/A	N/A	3.0E-07	mg/m3	2.0E-01	mg/m3	1.5E-06
				Acetone	8E-02	ug/m3	1.7E-05	ug/m3	N/A	N/A	N/A	6.0E-07	mg/m3	N/A	N/A	N/A
				Methylene chloride	7E+00	ug/m3	1.4E-03	ug/m3	4.7E-07	(ug/m3)-1	6.6E-10	4.9E-05	mg/m3	3.0E+00	mg/m3	1.6E-05
				trans-1,2-Dichloroethene	5E+00	ug/m3	1.0E-03	ug/m3	N/A	N/A	N/A	3.7E-05	mg/m3	2.0E-01	mg/m3	1.8E-04
				Methyl tert-butyl ether	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E+00	mg/m3	N/A
				1,1-Dichloroethane	2E+00	ug/m3	4.6E-04	ug/m3	N/A	N/A	N/A	1.6E-05	mg/m3	5.0E-01	mg/m3	3.3E-05
				cis-1,2-Dichloroethene	2E+00	ug/m3	3.8E-04	ug/m3	N/A	N/A	N/A	1.3E-05	mg/m3	2.0E-01	mg/m3	6.6E-05
				1,1,1-Trichloroethane	4E+00	ug/m3	9.5E-04	ug/m3	N/A	N/A	N/A	3.3E-05	mg/m3	2.2E+00	mg/m3	1.5E-05
				Benzene	1E+00	ug/m3	2.8E-04	ug/m3	7.8E-06	(ug/m3)-1	2.2E-09	9.7E-06	mg/m3	3.0E-02	mg/m3	3.2E-04
				Trichloroethene	1E+00	ug/m3	2.6E-04	ug/m3	1.1E-04	(ug/m3)-1	2.9E-08	9.2E-06	mg/m3	4.0E-02	mg/m3	2.3E-04
				Methyl cyclohexane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E+00	mg/m3	N/A
				Toluene	3E+00	ug/m3	5.9E-04	ug/m3	N/A	N/A	N/A	2.1E-05	mg/m3	4.0E-01	mg/m3	5.2E-05
				Tetrachloroethene	9E-01	ug/m3	1.9E-04	ug/m3	5.9E-06	(ug/m3)-1	1.1E-09	6.6E-06	mg/m3	N/A	N/A	N/A
				Chlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-02	mg/m3	N/A
				Ethylbenzene	1E+00	ug/m3	3.1E-04	ug/m3	N/A	N/A	N/A	1.1E-05	mg/m3	1.0E+00	mg/m3	1.1E-05
				1,3-Dichlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				1,4-Dichlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-01	mg/m3	N/A
				1,2-Dichlorobenzene	3E-03	ug/m3	5.5E-07	ug/m3	N/A	N/A	N/A	1.9E-08	mg/m3	N/A	N/A	N/A
				2-Methylnaphthalene	3E-02	ug/m3	5.9E-06	ug/m3	N/A	N/A	N/A	2.1E-07	mg/m3	N/A	N/A	N/A
				Acenaphthylene	2E-02	ug/m3	4.7E-06	ug/m3	N/A	N/A	N/A	1.6E-07	mg/m3	3.0E-03	mg/m3	5.5E-05
				Dibenzofuran	5E-03	ug/m3	1.0E-06	ug/m3	N/A	N/A	N/A	3.5E-08	mg/m3	N/A	N/A	N/A
				Phenanthrene	4E-03	ug/m3	9.3E-07	ug/m3	N/A	N/A	N/A	3.3E-08	mg/m3	3.0E-03	mg/m3	1.1E-05
				Anthracene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-03	mg/m3	N/A
				C5-C8 Aliphatic	6E+01	ug/m3	1.2E-02	ug/m3	N/A	N/A	N/A	4.3E-04	mg/m3	2.0E-01	mg/m3	2.1E-03
				C9-C12 Aliphatic	2E+00	ug/m3	3.5E-04	ug/m3	N/A	N/A	N/A	1.2E-05	mg/m3	2.0E-01	mg/m3	6.1E-05
				C9-C10 Aromatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/m3	N/A
				C9-C18 Aliphatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/m3	N/A
				C11-C22 Aromatic	1E+02	ug/m3	2.6E-02	ug/m3	N/A	N/A	N/A	9.1E-04	mg/m3	5.0E-02	mg/m3	1.8E-02
			Exp. Route Total								3E-08					3E-02
		Exposure Point Total									3E-08					3E-02
	Exposure Medium Total										N/A					N/A

TABLE 3-7.12.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Ground Water	Indoor Air	Aberjona Property	Inhalation													
				1,2,4-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-03	mg/m3	N/A
				1,2-Dichloroethene (total)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				1,3,5-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-03	mg/m3	N/A
				n-Butylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Naphthalene	2E-05	ug/m3	4.3E-09	ug/m3	N/A	N/A	N/A	1.5E-10	mg/m3	3.0E-03	mg/m3	5.0E-08
				p-Isopropyltoluene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.0E-01	mg/m3	N/A
				Chloromethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9.0E-02	mg/m3	N/A
				Vinyl chloride	4E-04	ug/m3	8.3E-08	ug/m3	8.8E-06	(ug/m3)-1	7.3E-13	2.9E-09	mg/m3	1.0E-01	mg/m3	2.9E-08
				Bromomethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-03	mg/m3	N/A
				Chloroethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E+01	mg/m3	N/A
				1,1-Dichloroethene	2E-04	ug/m3	3.4E-08	ug/m3	N/A	N/A	N/A	1.2E-09	mg/m3	2.0E-01	mg/m3	6.0E-09
				Acetone	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Methylene chloride	N/A	N/A	N/A	N/A	4.7E-07	(ug/m3)-1	N/A	N/A	N/A	3.0E+00	mg/m3	N/A
				trans-1,2-Dichloroethene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/m3	N/A
				Methyl tert-butyl ether	2E-04	ug/m3	4.8E-08	ug/m3	N/A	N/A	N/A	1.7E-09	mg/m3	3.0E+00	mg/m3	5.6E-10
				1,1-Dichloroethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-01	mg/m3	N/A
				cis-1,2-Dichloroethene	1E-03	ug/m3	3.0E-07	ug/m3	N/A	N/A	N/A	1.0E-08	mg/m3	2.0E-01	mg/m3	5.2E-08
				1,1,1-Trichloroethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.2E+00	mg/m3	N/A
				Benzene	7E-05	ug/m3	1.5E-08	ug/m3	7.8E-06	(ug/m3)-1	1.2E-13	5.4E-10	mg/m3	3.0E-02	mg/m3	1.8E-08
				Trichloroethene	4E-03	ug/m3	7.8E-07	ug/m3	1.1E-04	(ug/m3)-1	8.5E-11	2.7E-08	mg/m3	4.0E-02	mg/m3	6.8E-07
				Methyl cyclohexane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E+00	mg/m3	N/A
				Toluene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.0E-01	mg/m3	N/A
				Tetrachloroethene	3E-04	ug/m3	7.0E-08	ug/m3	5.9E-06	(ug/m3)-1	4.1E-13	2.4E-09	mg/m3	N/A	N/A	N/A
				Chlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-02	mg/m3	N/A
				Ethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E+00	mg/m3	N/A
				1,3-Dichlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				1,4-Dichlorobenzene	4E-05	ug/m3	8.9E-09	ug/m3	N/A	N/A	N/A	3.1E-10	mg/m3	8.0E-01	mg/m3	3.9E-10
				1,2-Dichlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				2-Methylnaphthalene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Acenaphthylene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-03	mg/m3	N/A
				Dibenzofuran	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Phenanthrene	2E-05	ug/m3	5.0E-09	ug/m3	N/A	N/A	N/A	1.7E-10	mg/m3	3.0E-03	mg/m3	5.8E-08
				Anthracene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-03	mg/m3	N/A
				C5-C8 Aliphatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/m3	N/A
				C9-C12 Aliphatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/m3	N/A
				C9-C10 Aromatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/m3	N/A
				C9-C18 Aliphatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/m3	N/A
				C11-C22 Aromatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/m3	N/A
			Exp. Route Total								9E-11					9E-07
		Exposure Point Total									9E-11					9E-07

TABLE 3-7.12.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Ground Water (Cont.)	Indoor Air (Cont.)	Whitney Property	Inhalation													
				1,2,4-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-03	mg/m3	N/A
				1,2-Dichloroethene (total)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				1,3,5-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-03	mg/m3	N/A
				n-Butylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Naphthalene	5E-04	ug/m3	1.1E-07	ug/m3	N/A	N/A	N/A	3.7E-09	mg/m3	3.0E-03	mg/m3	1.2E-06
				p-Isopropyltoluene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.0E-01	mg/m3	N/A
				Chloromethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9.0E-02	mg/m3	N/A
				Vinyl chloride	5E-01	ug/m3	1.1E-04	ug/m3	8.8E-06	(ug/m3)-1	1.0E-09	4.0E-06	mg/m3	1.0E-01	mg/m3	4.0E-05
				Bromomethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-03	mg/m3	N/A
				Chloroethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E+01	mg/m3	N/A
				1,1-Dichloroethene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/m3	N/A
				Acetone	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Methylene chloride	N/A	N/A	N/A	N/A	4.7E-07	(ug/m3)-1	N/A	N/A	N/A	3.0E+00	mg/m3	N/A
				trans-1,2-Dichloroethene	1E-02	ug/m3	2.5E-06	ug/m3	N/A	N/A	N/A	8.8E-08	mg/m3	2.0E-01	mg/m3	4.4E-07
				Methyl tert-butyl ether	2E-02	ug/m3	5.2E-06	ug/m3	N/A	N/A	N/A	1.8E-07	mg/m3	3.0E+00	mg/m3	6.0E-08
				1,1-Dichloroethane	2E-02	ug/m3	5.2E-06	ug/m3	N/A	N/A	N/A	1.8E-07	mg/m3	5.0E-01	mg/m3	3.7E-07
				cis-1,2-Dichloroethene	7E-02	ug/m3	1.4E-05	ug/m3	N/A	N/A	N/A	5.0E-07	mg/m3	2.0E-01	mg/m3	2.5E-06
				1,1,1-Trichloroethane	1E-02	ug/m3	2.8E-06	ug/m3	N/A	N/A	N/A	9.9E-08	mg/m3	2.2E+00	mg/m3	4.5E-08
				Benzene	2E-02	ug/m3	4.3E-06	ug/m3	7.8E-06	(ug/m3)-1	3.3E-11	1.5E-07	mg/m3	3.0E-02	mg/m3	5.0E-06
				Trichloroethene	3E-03	ug/m3	7.0E-07	ug/m3	1.1E-04	(ug/m3)-1	7.7E-11	2.4E-08	mg/m3	4.0E-02	mg/m3	6.1E-07
				Methyl cyclohexane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E+00	mg/m3	N/A
				Toluene	3E-01	ug/m3	5.3E-05	ug/m3	N/A	N/A	N/A	1.9E-06	mg/m3	4.0E-01	mg/m3	4.7E-06
				Tetrachloroethene	N/A	N/A	N/A	N/A	5.9E-06	(ug/m3)-1	N/A	N/A	N/A	N/A	N/A	N/A
				Chlorobenzene	3E-03	ug/m3	5.4E-07	ug/m3	N/A	N/A	N/A	1.9E-08	mg/m3	6.0E-02	mg/m3	3.2E-07
				Ethylbenzene	1E-02	ug/m3	2.3E-06	ug/m3	N/A	N/A	N/A	8.1E-08	mg/m3	1.0E+00	mg/m3	8.1E-08
				1,3-Dichlorobenzene	6E-03	ug/m3	1.2E-06	ug/m3	N/A	N/A	N/A	4.3E-08	mg/m3	N/A	N/A	N/A
				1,4-Dichlorobenzene	1E-02	ug/m3	2.6E-06	ug/m3	N/A	N/A	N/A	9.1E-08	mg/m3	8.0E-01	mg/m3	1.1E-07
				1,2-Dichlorobenzene	5E-06	ug/m3	1.0E-09	ug/m3	N/A	N/A	N/A	3.6E-11	mg/m3	N/A	N/A	N/A
				2-Methylnaphthalene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Acenaphthylene	2E-04	ug/m3	5.1E-08	ug/m3	N/A	N/A	N/A	1.8E-09	mg/m3	3.0E-03	mg/m3	6.0E-07
				Dibenzofuran	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Phenanthrene	1E-04	ug/m3	2.3E-08	ug/m3	N/A	N/A	N/A	8.2E-10	mg/m3	3.0E-03	mg/m3	2.7E-07
				Anthracene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-03	mg/m3	N/A
				C5-C8 Aliphatic	3E+01	ug/m3	7.1E-03	ug/m3	N/A	N/A	N/A	2.5E-04	mg/m3	2.0E-01	mg/m3	1.2E-03
				C9-C12 Aliphatic	7E+00	ug/m3	1.4E-03	ug/m3	N/A	N/A	N/A	4.9E-05	mg/m3	2.0E-01	mg/m3	2.4E-04
				C9-C10 Aromatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/m3	N/A
				C9-C18 Aliphatic	1E+01	ug/m3	2.7E-03	ug/m3	N/A	N/A	N/A	9.6E-05	mg/m3	2.0E-01	mg/m3	4.8E-04
				C11-C22 Aromatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/m3	N/A
			Exp. Route Total								1E-09					2E-03
		Exposure Point Total									1E-09					2E-03

TABLE 3-7.12.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Ground Water (Cont.)	Indoor Air (Cont.)	Murphy Property	Inhalation													
				1,2,4-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-03	mg/m3	N/A
				1,2-Dichloroethene (total)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				1,3,5-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-03	mg/m3	N/A
				n-Butylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Naphthalene	6E-04	ug/m3	1.3E-07	ug/m3	N/A	N/A	N/A	4.7E-09	mg/m3	3.0E-03	mg/m3	1.6E-06
				p-Isopropyltoluene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.0E-01	mg/m3	N/A
				Chloromethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9.0E-02	mg/m3	N/A
				Vinyl chloride	2E+00	ug/m3	3.4E-04	ug/m3	8.8E-06	(ug/m3)-1	3.0E-09	1.2E-05	mg/m3	1.0E-01	mg/m3	1.2E-04
				Bromomethane	2E-03	ug/m3	5.2E-07	ug/m3	N/A	N/A	N/A	1.8E-08	mg/m3	5.0E-03	mg/m3	3.7E-06
				Chloroethane	1E-01	ug/m3	2.6E-05	ug/m3	N/A	N/A	N/A	9.0E-07	mg/m3	1.0E+01	mg/m3	9.0E-08
				1,1-Dichloroethene	6E-02	ug/m3	1.3E-05	ug/m3	N/A	N/A	N/A	4.7E-07	mg/m3	2.0E-01	mg/m3	2.3E-06
				Acetone	3E-04	ug/m3	6.0E-08	ug/m3	N/A	N/A	N/A	2.1E-09	mg/m3	N/A	N/A	N/A
				Methylene chloride	9E-03	ug/m3	1.9E-06	ug/m3	4.7E-07	(ug/m3)-1	9.1E-13	6.8E-08	mg/m3	3.0E+00	mg/m3	2.3E-08
				trans-1,2-Dichloroethene	5E-02	ug/m3	9.9E-06	ug/m3	N/A	N/A	N/A	3.5E-07	mg/m3	2.0E-01	mg/m3	1.7E-06
				Methyl tert-butyl ether	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E+00	mg/m3	N/A
				1,1-Dichloroethane	9E-02	ug/m3	2.0E-05	ug/m3	N/A	N/A	N/A	7.0E-07	mg/m3	5.0E-01	mg/m3	1.4E-06
				cis-1,2-Dichloroethene	7E-01	ug/m3	1.5E-04	ug/m3	N/A	N/A	N/A	5.1E-06	mg/m3	2.0E-01	mg/m3	2.5E-05
				1,1,1-Trichloroethane	2E-01	ug/m3	4.3E-05	ug/m3	N/A	N/A	N/A	1.5E-06	mg/m3	2.2E+00	mg/m3	6.9E-07
				Benzene	8E-03	ug/m3	1.8E-06	ug/m3	7.8E-06	(ug/m3)-1	1.4E-11	6.2E-08	mg/m3	3.0E-02	mg/m3	2.1E-06
				Trichloroethene	7E-02	ug/m3	1.5E-05	ug/m3	1.1E-04	(ug/m3)-1	1.7E-09	5.4E-07	mg/m3	4.0E-02	mg/m3	1.4E-05
				Methyl cyclohexane	1E+00	ug/m3	2.7E-04	ug/m3	N/A	N/A	N/A	9.3E-06	mg/m3	3.0E+00	mg/m3	3.1E-06
				Toluene	2E-02	ug/m3	5.0E-06	ug/m3	N/A	N/A	N/A	1.8E-07	mg/m3	4.0E-01	mg/m3	4.4E-07
				Tetrachloroethene	2E-02	ug/m3	5.2E-06	ug/m3	5.9E-06	(ug/m3)-1	3.1E-11	1.8E-07	mg/m3	N/A	N/A	N/A
				Chlorobenzene	7E-04	ug/m3	1.5E-07	ug/m3	N/A	N/A	N/A	5.2E-09	mg/m3	6.0E-02	mg/m3	8.6E-08
				Ethylbenzene	1E-02	ug/m3	2.3E-06	ug/m3	N/A	N/A	N/A	8.1E-08	mg/m3	1.0E+00	mg/m3	8.1E-08
				1,3-Dichlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				1,4-Dichlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-01	mg/m3	N/A
				1,2-Dichlorobenzene	9E-07	ug/m3	1.9E-10	ug/m3	N/A	N/A	N/A	6.7E-12	mg/m3	N/A	N/A	N/A
				2-Methylnaphthalene	2E-03	ug/m3	4.4E-07	ug/m3	N/A	N/A	N/A	1.5E-08	mg/m3	N/A	N/A	N/A
				Acenaphthylene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-03	mg/m3	N/A
				Dibenzofuran	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Phenanthrene	3E-04	ug/m3	5.8E-08	ug/m3	N/A	N/A	N/A	2.0E-09	mg/m3	3.0E-03	mg/m3	6.7E-07
				Anthracene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-03	mg/m3	N/A
				C5-C8 Aliphatic	3E+01	ug/m3	6.7E-03	ug/m3	N/A	N/A	N/A	2.3E-04	mg/m3	2.0E-01	mg/m3	1.2E-03
				C9-C12 Aliphatic	1E+01	ug/m3	2.3E-03	ug/m3	N/A	N/A	N/A	8.0E-05	mg/m3	2.0E-01	mg/m3	4.0E-04
				C9-C10 Aromatic	1E-01	ug/m3	2.5E-05	ug/m3	N/A	N/A	N/A	8.9E-07	mg/m3	5.0E-02	mg/m3	1.8E-05
				C9-C18 Aliphatic	3E+02	ug/m3	7.0E-02	ug/m3	N/A	N/A	N/A	2.4E-03	mg/m3	2.0E-01	mg/m3	1.2E-02
				C11-C22 Aromatic	7E-02	ug/m3	1.4E-05	ug/m3	N/A	N/A	N/A	5.0E-07	mg/m3	5.0E-02	mg/m3	9.9E-06
			Exp. Route Total								5E-09					1E-02
		Exposure Point Total									5E-09					1E-02
	Exposure Medium Total										N/A					N/A
Medium Total											N/A					N/A

TABLE 3-7.12.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Water	Surface Water	Murphy Wetland	Dermal	Chromium	1.1E+01	ug/L	8.7E-09	mg/kg-day	N/A	N/A	N/A	3.1E-07	mg/kg-day	7.5E-05	mg/kg-day	4.1E-03
				Manganese	2.8E+02	ug/L	1.0E-07	mg/kg-day	N/A	N/A	N/A	3.6E-06	mg/kg-day	9.6E-04	mg/kg-day	3.8E-03
			Exp. Route Total								0E+00					8E-03
		Exposure Point Total									0E+00					8E-03
	Exposure Medium Total										N/A					N/A

TABLE 3-7.12.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Sediment	Sediment	Murphy Wetland	Ingestion													
				Naphthalene	5E+00	mg/kg	3.1E-08	mg/kg-day	N/A	N/A	N/A	1.1E-06	mg/kg-day	2.0E-02	mg/kg-day	5.4E-05
				Vinyl chloride	2E-01	mg/kg	1.2E-09	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	1.7E-09	4.0E-08	mg/kg-day	3.0E-03	mg/kg-day	1.3E-05
				Trichloroethene	9E-02	mg/kg	5.8E-10	mg/kg-day	4.0E-01	(mg/kg-day)$^{-1}$	2.3E-10	2.0E-08	mg/kg-day	3.0E-04	mg/kg-day	6.7E-05
				Ethylenedibromide	2E+00	mg/kg	1.1E-08	mg/kg-day	8.5E+01	(mg/kg-day)$^{-1}$	9.4E-07	3.9E-07	mg/kg-day	N/A	N/A	N/A
				Ethylbenzene	2E+00	mg/kg	1.5E-08	mg/kg-day	N/A	N/A	N/A	5.4E-07	mg/kg-day	1.0E-01	mg/kg-day	5.4E-06
				Xylenes (total)	1E+01	mg/kg	8.2E-08	mg/kg-day	N/A	N/A	N/A	2.9E-06	mg/kg-day	2.0E-01	mg/kg-day	1.4E-05
				Acetophenone	3E+00	mg/kg	2.2E-08	mg/kg-day	N/A	N/A	N/A	7.5E-07	mg/kg-day	1.0E-01	mg/kg-day	7.5E-06
				2-Methylnaphthalene	1E+01	mg/kg	8.3E-08	mg/kg-day	N/A	N/A	N/A	2.9E-06	mg/kg-day	4.0E-03	mg/kg-day	7.3E-04
				Benzo(a)Anthracene	2E+00	mg/kg	1.1E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	8.1E-09	3.9E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	2E+00	mg/kg	1.1E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	8.1E-09	3.9E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	2E+00	mg/kg	1.1E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	8.3E-08	4.0E-07	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	2E+00	mg/kg	1.2E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	8.4E-09	4.1E-07	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	1E+00	mg/kg	8.8E-09	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	6.4E-08	3.1E-07	mg/kg-day	N/A	N/A	N/A
				C11-C22 Aromatic	2E+04	mg/kg	1.4E-04	mg/kg-day	N/A	N/A	N/A	4.9E-03	mg/kg-day	3.0E-02	mg/kg-day	1.6E-01
				C19-C36 Aliphatic	9E+03	mg/kg	6.4E-05	mg/kg-day	N/A	N/A	N/A	2.2E-03	mg/kg-day	2.0E+00	mg/kg-day	1.1E-03
				C9-C18 Aliphatic	2E+03	mg/kg	1.1E-05	mg/kg-day	N/A	N/A	N/A	4.0E-04	mg/kg-day	1.0E-01	mg/kg-day	4.0E-03
				Chromium (VI)	5E+01	mg/kg	3.7E-07	mg/kg-day	N/A	N/A	N/A	1.3E-05	mg/kg-day	3.0E-03	mg/kg-day	4.3E-03
				Antimony	3E+01	mg/kg	1.7E-07	mg/kg-day	N/A	N/A	N/A	6.0E-06	mg/kg-day	4.0E-04	mg/kg-day	1.5E-02
				Arsenic	1E+01	mg/kg	7.6E-08	mg/kg-day	7.7E-01	(mg/kg-day)$^{-1}$	5.8E-08	2.7E-06	mg/kg-day	5.9E-04	mg/kg-day	4.5E-03
				Barium	1E+03	mg/kg	7.7E-06	mg/kg-day	N/A	N/A	N/A	2.7E-04	mg/kg-day	7.0E-02	mg/kg-day	3.8E-03
				Cadmium	3E+00	mg/kg	2.0E-08	mg/kg-day	N/A	N/A	N/A	7.1E-07	mg/kg-day	1.0E-03	mg/kg-day	7.1E-04
				Chromium	1E+04	mg/kg	8.6E-05	mg/kg-day	N/A	N/A	N/A	3.0E-03	mg/kg-day	3.0E-03	mg/kg-day	1.0E+00
				Lead	4E+03	mg/kg	2.7E-05	mg/kg-day	N/A	N/A	N/A	9.6E-04	mg/kg-day	N/A	N/A	N/A
				Manganese	3E+02	mg/kg	2.3E-06	mg/kg-day	N/A	N/A	N/A	8.0E-05	mg/kg-day	7.0E-02	mg/kg-day	1.1E-03
				Mercury	3E+00	mg/kg	2.1E-08	mg/kg-day	N/A	N/A	N/A	7.2E-07	mg/kg-day	1.0E-04	mg/kg-day	7.2E-03
				Vanadium	6E+01	mg/kg	3.8E-07	mg/kg-day	N/A	N/A	N/A	1.3E-05	mg/kg-day	1.0E-03	mg/kg-day	1.3E-02
				PCB TEQ*	2E-04	mg/kg	1.2E-12	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	1.9E-07	4.4E-11	mg/kg-day	N/A	N/A	N/A
				gamma-Chlordane	2E+00	mg/kg	1.2E-08	mg/kg-day	3.5E-01	(mg/kg-day)$^{-1}$	4.4E-09	4.4E-07	mg/kg-day	5.0E-04	mg/kg-day	8.7E-04
				Aroclor 1254	9E+01	mg/kg	6.0E-07	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	6.0E-07	2.1E-05	mg/kg-day	2.0E-05	mg/kg-day	1.0E+00
				Aroclor 1260	5E+01	mg/kg	3.1E-07	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	3.1E-07	1.1E-05	mg/kg-day	2.0E-05	mg/kg-day	5.5E-01
			Exp. Route Total								2E-06					3E+00

TABLE 3-7.12.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Sediment (Cont.)	Sediment (Cont.)	Murphy Wetland	Dermal													
				Naphthalene	5E+00	mg/kg	4.5E-08	mg/kg-day	N/A	N/A	N/A	1.6E-06	mg/kg-day	2.0E-02	mg/kg-day	7.8E-05
				Vinyl chloride	2E-01	mg/kg	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Trichloroethene	9E-02	mg/kg	N/A	N/A	4.0E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Ethylenedibromide	2E+00	mg/kg	N/A	N/A	8.5E+01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	N/A	N/A	N/A
				Ethylbenzene	2E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-01	mg/kg-day	N/A
				Xylenes (total)	1E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/kg-day	N/A
				Acetophenone	3E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-01	mg/kg-day	N/A
				2-Methylnaphthalene	1E+01	mg/kg	1.2E-07	mg/kg-day	N/A	N/A	N/A	4.2E-06	mg/kg-day	4.0E-03	mg/kg-day	1.1E-03
				Benzo(a)Anthracene	2E+00	mg/kg	1.6E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.2E-08	5.7E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	2E+00	mg/kg	1.6E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.2E-08	5.7E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	2E+00	mg/kg	1.7E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.2E-07	5.8E-07	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	2E+00	mg/kg	1.7E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.2E-08	5.9E-07	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	1E+00	mg/kg	1.3E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	9.4E-08	4.5E-07	mg/kg-day	N/A	N/A	N/A
				C11-C22 Aromatic	2E+04	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-02	mg/kg-day	N/A
				C19-C36 Aliphatic	9E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E+00	mg/kg-day	N/A
				C9-C18 Aliphatic	2E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-01	mg/kg-day	N/A
				Chromium (VI)	5E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	7.5E-05	mg/kg-day	N/A
				Antimony	3E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-05	mg/kg-day	N/A
				Arsenic	1E+01	mg/kg	2.5E-08	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	3.8E-08	8.9E-07	mg/kg-day	3.0E-04	mg/kg-day	3.0E-03
				Barium	1E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.9E-03	mg/kg-day	N/A
				Cadmium	3E+00	mg/kg	2.3E-10	mg/kg-day	N/A	N/A	N/A	7.9E-09	mg/kg-day	2.5E-05	mg/kg-day	3.2E-04
				Chromium	1E+04	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	7.5E-05	mg/kg-day	N/A
				Lead	4E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Manganese	3E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.8E-03	mg/kg-day	N/A
				Mercury	3E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A
				Vanadium	6E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.6E-05	mg/kg-day	N/A
				PCB TEQ*	2E-04	mg/kg	2.0E-12	mg/kg-day	1.50E+05	(mg/kg-day)$^{-1}$	2.9E-07	6.9E-11	mg/kg-day	N/A	N/A	N/A
				gamma-Chlordane	2E+00	mg/kg	5.6E-09	mg/kg-day	3.5E-01	(mg/kg-day)$^{-1}$	2.0E-09	2.0E-07	mg/kg-day	5.0E-04	mg/kg-day	3.9E-04
				Aroclor 1254	9E+01	mg/kg	9.4E-07	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	9.4E-07	3.3E-05	mg/kg-day	2.0E-05	mg/kg-day	1.6E+00
				Aroclor 1260	5E+01	mg/kg	4.9E-07	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	4.9E-07	1.7E-05	mg/kg-day	2.0E-05	mg/kg-day	8.6E-01
			Exp. Route Total								2E-06					3E+00
		Exposure Point Total									4E-06					5E+00
	Exposure Medium Total										N/A					N/A
Medium Total											N/A					N/A
											Total of Receptor Risks Across All Media					N/A
																Total of Receptor Hazards Across All Media

TABLE 3-7.13.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Aberjona Property	Ingestion													
				Vinyl chloride	N/A	N/A	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Trichloroethene	N/A	N/A	N/A	N/A	4.0E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Phenanthrene	7E-01	mg/kg	9.7E-09	mg/kg-day	N/A	N/A	N/A	6.8E-07	mg/kg-day	2.0E-01	mg/kg-day	3.4E-06
				Benzo(a)Anthracene	7E-01	mg/kg	9.9E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	7.2E-09	6.9E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	7E-01	mg/kg	1.0E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	7.5E-09	7.2E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	5E-01	mg/kg	7.2E-09	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	5.2E-10	5.0E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	5E-01	mg/kg	7.2E-09	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	5.3E-08	5.0E-07	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	5E-01	mg/kg	7.2E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	5.3E-09	5.1E-07	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	6E-03	mg/kg	8.7E-11	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	6.3E-10	6.1E-09	mg/kg-day	N/A	N/A	N/A
				Benzo(g,h,i)perylene	6E-01	mg/kg	8.3E-09	mg/kg-day	N/A	N/A	N/A	5.8E-07	mg/kg-day	2.0E-01	mg/kg-day	2.9E-06
				Antimony	2E+00	mg/kg	2.5E-08	mg/kg-day	N/A	N/A	N/A	1.8E-06	mg/kg-day	4.0E-04	mg/kg-day	4.4E-03
				Arsenic	6E+00	mg/kg	7.9E-08	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	1.2E-07	5.5E-06	mg/kg-day	3.0E-04	mg/kg-day	1.8E-02
				Cadmium	1E+01	mg/kg	1.4E-07	mg/kg-day	N/A	N/A	N/A	9.6E-06	mg/kg-day	1.0E-03	mg/kg-day	9.6E-03
				Copper	1E+02	mg/kg	1.4E-06	mg/kg-day	N/A	N/A	N/A	9.9E-05	mg/kg-day	3.0E-01	mg/kg-day	3.3E-04
				Lead	1E+03	mg/kg	1.6E-05	mg/kg-day	N/A	N/A	N/A	1.1E-03	mg/kg-day	NA	NA	N/A
				Manganese	3E+02	mg/kg	3.8E-06	mg/kg-day	N/A	N/A	N/A	2.7E-04	mg/kg-day	7.0E-02	mg/kg-day	3.8E-03
				Mercury	9E-02	mg/kg	1.3E-09	mg/kg-day	N/A	N/A	N/A	9.3E-08	mg/kg-day	1.0E-04	mg/kg-day	9.3E-04
				Nickel	6E+01	mg/kg	9.0E-07	mg/kg-day	N/A	N/A	N/A	6.3E-05	mg/kg-day	2.0E-02	mg/kg-day	3.2E-03
				Thallium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-04	mg/kg-day	N/A
				Aroclor 1242	1E-01	mg/kg	1.6E-09	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	3.1E-09	1.1E-07	mg/kg-day	2.0E-05	mg/kg-day	5.5E-03
				Aroclor 1248	N/A	N/A	N/A	N/A	2.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1254	2E-01	mg/kg	2.1E-09	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	4.3E-09	1.5E-07	mg/kg-day	2.0E-05	mg/kg-day	7.5E-03
				Aroclor 1260	8E-02	mg/kg	1.1E-09	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	2.2E-09	7.7E-08	mg/kg-day	2.0E-05	mg/kg-day	3.9E-03
				PCB TEQ*	2E-06	mg/kg	3.1E-14	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	4.6E-09	2.1E-12	mg/kg-day	NA	NA	N/A
				C11-C22 Aromatic	2E+01	mg/kg	2.5E-07	mg/kg-day	N/A	N/A	N/A	1.8E-05	mg/kg-day	3.0E-01	mg/kg-day	5.9E-05
			Exp. Route Total								2E-07					6E-02

TABLE 3-7.13.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil (Cont.)	Surface Soil (Cont.)	Aberjona Property	Dermal													
				Vinyl chloride	N/A	N/A	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Trichloroethene	N/A	N/A	N/A	N/A	4.0E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Phenanthrene	7E-01	mg/kg	4.2E-09	mg/kg-day	N/A	N/A	N/A	2.9E-07	mg/kg-day	2.0E-01	mg/kg-day	1.5E-06
				Benzo(a)Anthracene	7E-01	mg/kg	4.2E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	3.1E-09	3.0E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	7E-01	mg/kg	4.4E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	3.2E-09	3.1E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	5E-01	mg/kg	3.1E-09	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	2.2E-10	2.2E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	5E-01	mg/kg	3.1E-09	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	2.3E-08	2.2E-07	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	5E-01	mg/kg	3.1E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	2.3E-09	2.2E-07	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	6E-03	mg/kg	3.7E-11	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	2.7E-10	2.6E-09	mg/kg-day	N/A	N/A	N/A
				Benzo(g,h,i)perylene	6E-01	mg/kg	3.6E-09	mg/kg-day	N/A	N/A	N/A	2.5E-07	mg/kg-day	2.0E-01	mg/kg-day	1.2E-06
				Antimony	2E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-05	mg/kg-day	N/A
				Arsenic	6E+00	mg/kg	7.8E-09	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	1.2E-08	5.5E-07	mg/kg-day	3.0E-04	mg/kg-day	1.8E-03
				Cadmium	1E+01	mg/kg	4.5E-10	mg/kg-day	N/A	N/A	N/A	3.2E-08	mg/kg-day	2.5E-05	mg/kg-day	1.3E-03
				Copper	1E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-01	mg/kg-day	N/A
				Lead	1E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA	NA	N/A
				Manganese	3E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.8E-03	mg/kg-day	N/A
				Mercury	9E-02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A
				Nickel	6E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-04	mg/kg-day	N/A
				Thallium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-04	mg/kg-day	N/A
				Aroclor 1242	1E-01	mg/kg	7.3E-10	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	1.5E-09	5.1E-08	mg/kg-day	2.0E-05	mg/kg-day	2.5E-03
				Aroclor 1248	N/A	N/A	N/A	N/A	2.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1254	2E-01	mg/kg	9.9E-10	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	2.0E-09	6.9E-08	mg/kg-day	2.0E-05	mg/kg-day	3.5E-03
				Aroclor 1260	8E-02	mg/kg	5.1E-10	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	1.0E-09	3.6E-08	mg/kg-day	2.0E-05	mg/kg-day	1.8E-03
				PCB TEQ*	2E-06	mg/kg	1.4E-14	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	2.1E-09	9.9E-13	mg/kg-day	NA	NA	N/A
				C11-C22 Aromatic	2E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-01	mg/kg-day	N/A
			Exp. Route Total								5E-08					1E-02

TABLE 3-7.13.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil (Cont.)	Surface Soil (Cont.)	Aberjona Property	Inhalation													
				Vinyl chloride	N/A	N/A	N/A	N/A	8.8E-06	(ug/m3)-1	N/A	N/A	N/A	1.0E-01	mg/m3	N/A
				Trichloroethene	N/A	N/A	N/A	N/A	1.1E-04	(ug/m3)-1	N/A	N/A	N/A	4.0E-02	mg/m3	N/A
				Phenanthrene	7E-01	mg/kg	1.6E-09	ug/m3	N/A	N/A	N/A	1.1E-10	mg/m3	3.0E-03	mg/m3	3.8E-08
				Benzo(a)Anthracene	7E-01	mg/kg	1.7E-09	ug/m3	8.8E-05	(ug/m3)-1	1.5E-13	1.2E-10	mg/m3	N/A	N/A	N/A
				Benzo(b)Fluoranthene	7E-01	mg/kg	1.7E-09	ug/m3	8.8E-05	(ug/m3)-1	1.5E-13	1.2E-10	mg/m3	N/A	N/A	N/A
				Benzo(k)Fluoranthene	5E-01	mg/kg	1.2E-09	ug/m3	8.8E-06	(ug/m3)-1	1.1E-14	8.5E-11	mg/m3	N/A	N/A	N/A
				Benzo(a)Pyrene	5E-01	mg/kg	1.2E-09	ug/m3	8.8E-04	(ug/m3)-1	1.1E-12	8.5E-11	mg/m3	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	5E-01	mg/kg	1.2E-09	ug/m3	8.8E-05	(ug/m3)-1	1.1E-13	8.5E-11	mg/m3	N/A	N/A	N/A
				Dibenz(a,h) anthracene	6E-03	mg/kg	1.5E-11	ug/m3	8.8E-04	(ug/m3)-1	1.3E-14	1.0E-12	mg/m3	N/A	N/A	N/A
				Benzo(g,h,i)perylene	6E-01	mg/kg	1.4E-09	ug/m3	N/A	N/A	N/A	9.8E-11	mg/m3	3.0E-03	mg/m3	3.3E-08
				Antimony	2E+00	mg/kg	4.2E-09	ug/m3	N/A	N/A	N/A	3.0E-10	mg/m3	N/A	N/A	N/A
				Arsenic	6E+00	mg/kg	1.3E-08	ug/m3	4.3E-03	(ug/m3)-1	5.7E-11	9.3E-10	mg/m3	N/A	N/A	N/A
				Cadmium	1E+01	mg/kg	2.3E-08	ug/m3	1.8E-03	(ug/m3)-1	4.1E-11	1.6E-09	mg/m3	N/A	N/A	N/A
				Copper	1E+02	mg/kg	2.4E-07	ug/m3	N/A	N/A	N/A	1.7E-08	mg/m3	N/A	N/A	N/A
				Lead	1E+03	mg/kg	2.7E-06	ug/m3	N/A	N/A	N/A	1.9E-07	mg/m3	N/A	N/A	N/A
				Manganese	3E+02	mg/kg	6.4E-07	ug/m3	N/A	N/A	N/A	4.5E-08	mg/m3	5.0E-05	mg/m3	9.0E-04
				Mercury	9E-02	mg/kg	2.2E-10	ug/m3	N/A	N/A	N/A	1.6E-11	mg/m3	N/A	N/A	N/A
				Nickel	6E+01	mg/kg	1.5E-07	ug/m3	N/A	N/A	N/A	1.1E-08	mg/m3	N/A	N/A	N/A
				Thallium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Aroclor 1242	1E-01	mg/kg	2.6E-10	ug/m3	5.0E-04	(ug/m3)-1	1.3E-13	1.9E-11	mg/m3	N/A	N/A	N/A
				Aroclor 1248	N/A	N/A	N/A	N/A	5.0E-04	(ug/m3)-1	N/A	N/A	N/A	N/A	N/A	N/A
				Aroclor 1254	2E-01	mg/kg	3.6E-10	ug/m3	5.0E-04	(ug/m3)-1	1.8E-13	2.5E-11	mg/m3	N/A	N/A	N/A
				Aroclor 1260	8E-02	mg/kg	1.9E-10	ug/m3	5.0E-04	(ug/m3)-1	9.3E-14	1.3E-11	mg/m3	N/A	N/A	N/A
				PCB TEQ*	2E-06	mg/kg	5.2E-15	ug/m3	3.3E+01	(ug/m3)-1	1.7E-13	3.6E-16	mg/m3	N/A	N/A	N/A
				C11-C22 Aromatic	2E+01	mg/kg	4.2E-08	ug/m3	N/A	N/A	N/A	3.0E-09	mg/m3	5.0E-02	mg/m3	5.9E-08
			Exp. Route Total								1E-10					9E-04
		Exposure Point Total									3E-07					7E-02

TABLE 3-7.13.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil (Cont.)	Surface Soil (Cont.)	Whitney Property	Ingestion													
				Vinyl chloride	1E-01	mg/kg	1.5E-09	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	2.3E-09	1.1E-07	mg/kg-day	3.0E-03	mg/kg-day	3.5E-05
				Trichloroethene	1E-03	mg/kg	2.0E-11	mg/kg-day	4.0E-01	(mg/kg-day)$^{-1}$	7.8E-12	1.4E-09	mg/kg-day	3.0E-04	mg/kg-day	4.6E-06
				Phenanthrene	7E+01	mg/kg	9.5E-07	mg/kg-day	N/A	N/A	N/A	6.7E-05	mg/kg-day	2.0E-01	mg/kg-day	3.3E-04
				Benzo(a)Anthracene	4E+01	mg/kg	5.3E-07	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	3.9E-07	3.7E-05	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	4E+01	mg/kg	5.6E-07	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	4.1E-07	3.9E-05	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	2E+01	mg/kg	2.5E-07	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	1.8E-08	1.8E-05	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	3E+01	mg/kg	4.1E-07	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	3.0E-06	2.8E-05	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	1E+01	mg/kg	1.5E-07	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.1E-07	1.1E-05	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	3E+00	mg/kg	4.2E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	3.0E-07	2.9E-06	mg/kg-day	N/A	N/A	N/A
				Benzo(g,h,i)perylene	8E+00	mg/kg	1.1E-07	mg/kg-day	N/A	N/A	N/A	8.0E-06	mg/kg-day	2.0E-01	mg/kg-day	4.0E-05
				Antimony	3E+00	mg/kg	3.9E-08	mg/kg-day	N/A	N/A	N/A	2.8E-06	mg/kg-day	4.0E-04	mg/kg-day	6.9E-03
				Arsenic	6E+00	mg/kg	7.9E-08	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	1.2E-07	5.5E-06	mg/kg-day	3.0E-04	mg/kg-day	1.8E-02
				Cadmium	3E+00	mg/kg	4.0E-08	mg/kg-day	N/A	N/A	N/A	2.8E-06	mg/kg-day	1.0E-03	mg/kg-day	2.8E-03
				Copper	1E+02	mg/kg	1.8E-06	mg/kg-day	N/A	N/A	N/A	1.2E-04	mg/kg-day	3.0E-01	mg/kg-day	4.1E-04
				Lead	7E+02	mg/kg	1.0E-05	mg/kg-day	N/A	N/A	N/A	7.1E-04	mg/kg-day	NA	NA	N/A
				Manganese	3E+02	mg/kg	3.6E-06	mg/kg-day	N/A	N/A	N/A	2.6E-04	mg/kg-day	7.0E-02	mg/kg-day	3.6E-03
				Mercury	5E-01	mg/kg	7.7E-09	mg/kg-day	N/A	N/A	N/A	5.4E-07	mg/kg-day	1.0E-04	mg/kg-day	5.4E-03
				Nickel	3E+01	mg/kg	3.6E-07	mg/kg-day	N/A	N/A	N/A	2.5E-05	mg/kg-day	2.0E-02	mg/kg-day	1.3E-03
				Thallium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-04	mg/kg-day	N/A
				Aroclor 1242	4E-01	mg/kg	5.3E-09	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	1.1E-08	3.7E-07	mg/kg-day	2.0E-05	mg/kg-day	1.9E-02
				Aroclor 1248	9E-02	mg/kg	1.3E-09	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	2.7E-09	9.3E-08	mg/kg-day	2.0E-05	mg/kg-day	4.6E-03
				Aroclor 1254	4E+01	mg/kg	5.9E-07	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	1.2E-06	4.2E-05	mg/kg-day	2.0E-05	mg/kg-day	2.1E+00
				Aroclor 1260	1E+01	mg/kg	1.6E-07	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	3.3E-07	1.1E-05	mg/kg-day	2.0E-05	mg/kg-day	5.7E-01
				PCB TEQ*	2E-04	mg/kg	2.7E-12	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	4.1E-07	1.9E-10	mg/kg-day	NA	NA	N/A
				C11-C22 Aromatic	5E+02	mg/kg	6.4E-06	mg/kg-day	N/A	N/A	N/A	4.5E-04	mg/kg-day	3.0E-01	mg/kg-day	1.5E-03
			Exp. Route Total								6E-06					3E+00

TABLE 3-7.13.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil (Cont.)	Surface Soil (Cont.)	Whitney Property	Dermal													
				Vinyl chloride	1E-01	mg/kg	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Trichloroethene	1E-03	mg/kg	N/A	N/A	4.0E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Phenanthrene	7E+01	mg/kg	4.1E-07	mg/kg-day	N/A	N/A	N/A	2.9E-05	mg/kg-day	2.0E-01	mg/kg-day	1.4E-04
				Benzo(a)Anthracene	4E+01	mg/kg	2.3E-07	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.7E-07	1.6E-05	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	4E+01	mg/kg	2.4E-07	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.8E-07	1.7E-05	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	2E+01	mg/kg	1.1E-07	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	7.9E-09	7.6E-06	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	3E+01	mg/kg	1.7E-07	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.3E-06	1.2E-05	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	1E+01	mg/kg	6.6E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	4.8E-08	4.6E-06	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	3E+00	mg/kg	1.8E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.3E-07	1.3E-06	mg/kg-day	N/A	N/A	N/A
				Benzo(g,h,i)perylene	8E+00	mg/kg	4.9E-08	mg/kg-day	N/A	N/A	N/A	3.4E-06	mg/kg-day	2.0E-01	mg/kg-day	1.7E-05
				Antimony	3E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-05	mg/kg-day	N/A
				Arsenic	6E+00	mg/kg	7.8E-09	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	1.2E-08	5.5E-07	mg/kg-day	3.0E-04	mg/kg-day	1.8E-03
				Cadmium	3E+00	mg/kg	1.3E-10	mg/kg-day	N/A	N/A	N/A	9.2E-09	mg/kg-day	2.5E-05	mg/kg-day	3.7E-04
				Copper	1E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-01	mg/kg-day	N/A
				Lead	7E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA	NA	N/A
				Manganese	3E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.8E-03	mg/kg-day	N/A
				Mercury	5E-01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A
				Nickel	3E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-04	mg/kg-day	N/A
				Thallium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-04	mg/kg-day	N/A
				Aroclor 1242	4E-01	mg/kg	2.5E-09	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	4.9E-09	1.7E-07	mg/kg-day	2.0E-05	mg/kg-day	8.6E-03
				Aroclor 1248	9E-02	mg/kg	6.1E-10	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	1.2E-09	4.3E-08	mg/kg-day	2.0E-05	mg/kg-day	2.1E-03
				Aroclor 1254	4E+01	mg/kg	2.7E-07	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	5.5E-07	1.9E-05	mg/kg-day	2.0E-05	mg/kg-day	9.6E-01
				Aroclor 1260	1E+01	mg/kg	7.6E-08	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	1.5E-07	5.3E-06	mg/kg-day	2.0E-05	mg/kg-day	2.6E-01
				PCB TEQ*	2E-04	mg/kg	1.3E-12	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	1.9E-07	8.9E-11	mg/kg-day	NA	NA	N/A
				C11-C22 Aromatic	5E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-01	mg/kg-day	N/A
			Exp. Route Total								3E-06					1E+00

TABLE 3-7.13.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil (Cont.)	Surface Soil (Cont.)	Whitney Property	Inhalation													
				Vinyl chloride	1E-01	mg/kg	2.5E-10	ug/m3	8.8E-06	(ug/m3)-1	2.2E-15	1.8E-11	mg/m3	1.0E-01	mg/m3	1.8E-10
				Trichloroethene	1E-03	mg/kg	3.3E-12	ug/m3	1.1E-04	(ug/m3)-1	3.6E-16	2.3E-13	mg/m3	4.0E-02	mg/m3	5.8E-12
				Phenanthrene	7E+01	mg/kg	1.6E-07	ug/m3	N/A	N/A	N/A	1.1E-08	mg/m3	3.0E-03	mg/m3	3.7E-06
				Benzo(a)Anthracene	4E+01	mg/kg	8.9E-08	ug/m3	8.8E-05	(ug/m3)-1	7.9E-12	6.3E-09	mg/m3	N/A	N/A	N/A
				Benzo(b)Fluoranthene	4E+01	mg/kg	9.4E-08	ug/m3	8.8E-05	(ug/m3)-1	8.3E-12	6.6E-09	mg/m3	N/A	N/A	N/A
				Benzo(k)Fluoranthene	2E+01	mg/kg	4.2E-08	ug/m3	8.8E-06	(ug/m3)-1	3.7E-13	3.0E-09	mg/m3	N/A	N/A	N/A
				Benzo(a)Pyrene	3E+01	mg/kg	6.8E-08	ug/m3	8.8E-04	(ug/m3)-1	6.0E-11	4.8E-09	mg/m3	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	1E+01	mg/kg	2.6E-08	ug/m3	8.8E-05	(ug/m3)-1	2.3E-12	1.8E-09	mg/m3	N/A	N/A	N/A
				Dibenz(a,h) anthracene	3E+00	mg/kg	7.0E-09	ug/m3	8.8E-04	(ug/m3)-1	6.2E-12	4.9E-10	mg/m3	N/A	N/A	N/A
				Benzo(g,h,i)perylene	8E+00	mg/kg	1.9E-08	ug/m3	N/A	N/A	N/A	1.4E-09	mg/m3	3.0E-03	mg/m3	4.5E-07
				Antimony	3E+00	mg/kg	6.6E-09	ug/m3	N/A	N/A	N/A	4.7E-10	mg/m3	N/A	N/A	N/A
				Arsenic	6E+00	mg/kg	1.3E-08	ug/m3	4.3E-03	(ug/m3)-1	5.7E-11	9.3E-10	mg/m3	N/A	N/A	N/A
				Cadmium	3E+00	mg/kg	6.7E-09	ug/m3	1.8E-03	(ug/m3)-1	1.2E-11	4.7E-10	mg/m3	N/A	N/A	N/A
				Copper	1E+02	mg/kg	3.0E-07	ug/m3	N/A	N/A	N/A	2.1E-08	mg/m3	N/A	N/A	N/A
				Lead	7E+02	mg/kg	1.7E-06	ug/m3	N/A	N/A	N/A	1.2E-07	mg/m3	N/A	N/A	N/A
				Manganese	3E+02	mg/kg	6.1E-07	ug/m3	N/A	N/A	N/A	4.3E-08	mg/m3	5.0E-05	mg/m3	8.6E-04
				Mercury	5E-01	mg/kg	1.3E-09	ug/m3	N/A	N/A	N/A	9.0E-11	mg/m3	N/A	N/A	N/A
				Nickel	3E+01	mg/kg	6.1E-08	ug/m3	N/A	N/A	N/A	4.3E-09	mg/m3	N/A	N/A	N/A
				Thallium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Aroclor 1242	4E-01	mg/kg	9.0E-10	ug/m3	5.0E-04	(ug/m3)-1	4.5E-13	6.3E-11	mg/m3	N/A	N/A	N/A
				Aroclor 1248	9E-02	mg/kg	2.2E-10	ug/m3	5.0E-04	(ug/m3)-1	1.1E-13	1.6E-11	mg/m3	N/A	N/A	N/A
				Aroclor 1254	4E+01	mg/kg	1.0E-07	ug/m3	5.0E-04	(ug/m3)-1	5.0E-11	7.0E-09	mg/m3	N/A	N/A	N/A
				Aroclor 1260	1E+01	mg/kg	2.8E-08	ug/m3	5.0E-04	(ug/m3)-1	1.4E-11	1.9E-09	mg/m3	N/A	N/A	N/A
				PCB TEQ*	2E-04	mg/kg	4.6E-13	ug/m3	3.3E+01	(ug/m3)-1	1.5E-11	3.2E-14	mg/m3	N/A	N/A	N/A
				C11-C22 Aromatic	5E+02	mg/kg	1.1E-06	ug/m3	N/A	N/A	N/A	7.5E-08	mg/m3	5.0E-02	mg/m3	1.5E-06
			Exp. Route Total								2E-10					9E-04
		Exposure Point Total									9E-06					4E+00

TABLE 3-7.13.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil (Cont.)	Surface Soil (Cont.)	Murphy Property	Ingestion													
				Vinyl chloride	N/A	N/A	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Trichloroethene	4E-01	mg/kg	5.3E-09	mg/kg-day	4.0E-01	(mg/kg-day)$^{-1}$	2.1E-09	3.7E-07	mg/kg-day	3.0E-04	mg/kg-day	1.2E-03
				Phenanthrene	6E+00	mg/kg	7.8E-08	mg/kg-day	N/A	N/A	N/A	5.5E-06	mg/kg-day	2.0E-01	mg/kg-day	2.7E-05
				Benzo(a)Anthracene	2E+00	mg/kg	3.4E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	2.5E-08	2.4E-06	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	2E+00	mg/kg	3.2E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	2.3E-08	2.3E-06	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	9E-01	mg/kg	1.3E-08	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	9.5E-10	9.1E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	2E+00	mg/kg	2.2E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.6E-07	1.5E-06	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	7E+00	mg/kg	9.1E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	6.6E-08	6.4E-06	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	2E-01	mg/kg	2.9E-09	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	2.1E-08	2.1E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(g,h,i)perylene	1E+00	mg/kg	1.9E-08	mg/kg-day	N/A	N/A	N/A	1.3E-06	mg/kg-day	2.0E-01	mg/kg-day	6.6E-06
				Antimony	4E+00	mg/kg	5.0E-08	mg/kg-day	N/A	N/A	N/A	3.5E-06	mg/kg-day	4.0E-04	mg/kg-day	8.8E-03
				Arsenic	8E+00	mg/kg	1.1E-07	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	1.7E-07	7.9E-06	mg/kg-day	3.0E-04	mg/kg-day	2.6E-02
				Cadmium	3E+00	mg/kg	4.1E-08	mg/kg-day	N/A	N/A	N/A	2.9E-06	mg/kg-day	1.0E-03	mg/kg-day	2.9E-03
				Copper	4E+01	mg/kg	5.0E-07	mg/kg-day	N/A	N/A	N/A	3.5E-05	mg/kg-day	3.0E-01	mg/kg-day	1.2E-04
				Lead	8E+02	mg/kg	1.2E-05	mg/kg-day	N/A	N/A	N/A	8.1E-04	mg/kg-day	NA	NA	N/A
				Manganese	4E+02	mg/kg	5.7E-06	mg/kg-day	N/A	N/A	N/A	4.0E-04	mg/kg-day	7.0E-02	mg/kg-day	5.7E-03
				Mercury	6E-01	mg/kg	8.0E-09	mg/kg-day	N/A	N/A	N/A	5.6E-07	mg/kg-day	1.0E-04	mg/kg-day	5.6E-03
				Nickel	2E+01	mg/kg	2.4E-07	mg/kg-day	N/A	N/A	N/A	1.6E-05	mg/kg-day	2.0E-02	mg/kg-day	8.2E-04
				Thallium	6E+00	mg/kg	8.0E-08	mg/kg-day	N/A	N/A	N/A	5.6E-06	mg/kg-day	8.0E-04	mg/kg-day	7.0E-03
				Aroclor 1242	N/A	N/A	N/A	N/A	2.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1248	N/A	N/A	N/A	N/A	2.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1254	2E+00	mg/kg	3.1E-08	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	6.2E-08	2.2E-06	mg/kg-day	2.0E-05	mg/kg-day	1.1E-01
				Aroclor 1260	5E-02	mg/kg	6.9E-10	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	1.4E-09	4.8E-08	mg/kg-day	2.0E-05	mg/kg-day	2.4E-03
				PCB TEQ*	6E-08	mg/kg	8.2E-16	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	1.2E-10	5.7E-14	mg/kg-day	NA	NA	N/A
				C11-C22 Aromatic	4E+03	mg/kg	5.2E-05	mg/kg-day	N/A	N/A	N/A	3.6E-03	mg/kg-day	3.0E-01	mg/kg-day	1.2E-02
			Exp. Route Total								5E-07					2E-01

TABLE 3-7.13.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil (Cont.)	Surface Soil (Cont.)	Murphy Property	Dermal													
				Vinyl chloride	N/A	N/A	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Trichloroethene	4E-01	mg/kg	N/A	N/A	4.0E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Phenanthrene	6E+00	mg/kg	3.4E-08	mg/kg-day	N/A	N/A	N/A	2.4E-06	mg/kg-day	2.0E-01	mg/kg-day	1.2E-05
				Benzo(a)Anthracene	2E+00	mg/kg	1.5E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.1E-08	1.0E-06	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	2E+00	mg/kg	1.4E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.0E-08	9.7E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	9E-01	mg/kg	5.6E-09	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	4.1E-10	3.9E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	2E+00	mg/kg	9.3E-09	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	6.8E-08	6.5E-07	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	7E+00	mg/kg	3.9E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	2.8E-08	2.7E-06	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	2E-01	mg/kg	1.3E-09	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	9.2E-09	8.8E-08	mg/kg-day	N/A	N/A	N/A
				Benzo(g,h,i)perylene	1E+00	mg/kg	8.1E-09	mg/kg-day	N/A	N/A	N/A	5.7E-07	mg/kg-day	2.0E-01	mg/kg-day	2.8E-06
				Antimony	4E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-05	mg/kg-day	N/A
				Arsenic	8E+00	mg/kg	1.1E-08	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	1.7E-08	7.9E-07	mg/kg-day	3.0E-04	mg/kg-day	2.6E-03
				Cadmium	3E+00	mg/kg	1.4E-10	mg/kg-day	N/A	N/A	N/A	9.6E-09	mg/kg-day	2.5E-05	mg/kg-day	3.8E-04
				Copper	4E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-01	mg/kg-day	N/A
				Lead	8E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA	NA	N/A
				Manganese	4E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.8E-03	mg/kg-day	N/A
				Mercury	6E-01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A
				Nickel	2E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-04	mg/kg-day	N/A
				Thallium	6E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-04	mg/kg-day	N/A
				Aroclor 1242	N/A	N/A	N/A	N/A	2.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1248	N/A	N/A	N/A	N/A	2.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1254	2E+00	mg/kg	1.4E-08	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	2.8E-08	9.9E-07	mg/kg-day	2.0E-05	mg/kg-day	5.0E-02
				Aroclor 1260	5E-02	mg/kg	3.2E-10	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	6.3E-10	2.2E-08	mg/kg-day	2.0E-05	mg/kg-day	1.1E-03
				PCB TEQ*	6E-08	mg/kg	3.8E-16	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	5.7E-11	2.6E-14	mg/kg-day	NA	NA	N/A
				C11-C22 Aromatic	4E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-01	mg/kg-day	N/A
			Exp. Route Total								2E-07					5E-02

TABLE 3-7.13.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil (Cont.)	Surface Soil (Cont.)	Murphy Property	Inhalation													
				Vinyl chloride	N/A	N/A	N/A	N/A	8.8E-06	(ug/m3)-1	N/A	N/A	N/A	1.0E-01	mg/m3	N/A
				Trichloroethene	4E-01	mg/kg	8.9E-10	ug/m3	1.1E-04	(ug/m3)-1	9.8E-14	6.2E-11	mg/m3	4.0E-02	mg/m3	1.6E-09
				Phenanthrene	6E+00	mg/kg	1.3E-08	ug/m3	N/A	N/A	N/A	9.2E-10	mg/m3	3.0E-03	mg/m3	3.1E-07
				Benzo(a)Anthracene	2E+00	mg/kg	5.8E-09	ug/m3	8.8E-05	(ug/m3)-1	5.1E-13	4.0E-10	mg/m3	N/A	N/A	N/A
				Benzo(b)Fluoranthene	2E+00	mg/kg	5.4E-09	ug/m3	8.8E-05	(ug/m3)-1	4.8E-13	3.8E-10	mg/m3	N/A	N/A	N/A
				Benzo(k)Fluoranthene	9E-01	mg/kg	2.2E-09	ug/m3	8.8E-06	(ug/m3)-1	1.9E-14	1.5E-10	mg/m3	N/A	N/A	N/A
				Benzo(a)Pyrene	2E+00	mg/kg	3.7E-09	ug/m3	8.8E-04	(ug/m3)-1	3.2E-12	2.6E-10	mg/m3	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	7E+00	mg/kg	1.5E-08	ug/m3	8.8E-05	(ug/m3)-1	1.3E-12	1.1E-09	mg/m3	N/A	N/A	N/A
				Dibenz(a,h) anthracene	2E-01	mg/kg	4.9E-10	ug/m3	8.8E-04	(ug/m3)-1	4.3E-13	3.5E-11	mg/m3	N/A	N/A	N/A
				Benzo(g,h,i)perylene	1E+00	mg/kg	3.2E-09	ug/m3	N/A	N/A	N/A	2.2E-10	mg/m3	3.0E-03	mg/m3	7.4E-08
				Antimony	4E+00	mg/kg	8.5E-09	ug/m3	N/A	N/A	N/A	5.9E-10	mg/m3	N/A	N/A	N/A
				Arsenic	8E+00	mg/kg	1.9E-08	ug/m3	4.3E-03	(ug/m3)-1	8.2E-11	1.3E-09	mg/m3	N/A	N/A	N/A
				Cadmium	3E+00	mg/kg	7.0E-09	ug/m3	1.8E-03	(ug/m3)-1	1.3E-11	4.9E-10	mg/m3	N/A	N/A	N/A
				Copper	4E+01	mg/kg	8.4E-08	ug/m3	N/A	N/A	N/A	5.8E-09	mg/m3	N/A	N/A	N/A
				Lead	8E+02	mg/kg	1.9E-06	ug/m3	N/A	N/A	N/A	1.4E-07	mg/m3	N/A	N/A	N/A
				Manganese	4E+02	mg/kg	9.7E-07	ug/m3	N/A	N/A	N/A	6.8E-08	mg/m3	5.0E-05	mg/m3	1.4E-03
				Mercury	6E-01	mg/kg	1.4E-09	ug/m3	N/A	N/A	N/A	9.5E-11	mg/m3	N/A	N/A	N/A
				Nickel	2E+01	mg/kg	4.0E-08	ug/m3	N/A	N/A	N/A	2.8E-09	mg/m3	N/A	N/A	N/A
				Thallium	6E+00	mg/kg	1.3E-08	ug/m3	N/A	N/A	N/A	9.4E-10	mg/m3	N/A	N/A	N/A
				Aroclor 1242	N/A	N/A	N/A	N/A	5.0E-04	(ug/m3)-1	N/A	N/A	N/A	N/A	N/A	N/A
				Aroclor 1248	N/A	N/A	N/A	N/A	5.0E-04	(ug/m3)-1	N/A	N/A	N/A	N/A	N/A	N/A
				Aroclor 1254	2E+00	mg/kg	5.2E-09	ug/m3	5.0E-04	(ug/m3)-1	2.6E-12	3.6E-10	mg/m3	N/A	N/A	N/A
				Aroclor 1260	5E-02	mg/kg	1.2E-10	ug/m3	5.0E-04	(ug/m3)-1	5.8E-14	8.1E-12	mg/m3	N/A	N/A	N/A
				PCB TEQ*	6E-08	mg/kg	1.4E-16	ug/m3	3.3E+01	(ug/m3)-1	4.5E-15	9.6E-18	mg/m3	N/A	N/A	N/A
				C11-C22 Aromatic	4E+03	mg/kg	8.8E-06	ug/m3	N/A	N/A	N/A	6.1E-07	mg/m3	5.0E-02	mg/m3	1.2E-05
			Exp. Route Total								1E-10					1E-03
		Exposure Point Total									7E-07					2E-01
	Exposure Medium Total										N/A					N/A
Medium Total											N/A					N/A

TABLE 3-7.13.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Subsurface Soil	Subsurface Soil	Aberjona Property	Ingestion													
				1,2,4-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-01	mg/kg-day	N/A
				1,3,5-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-01	mg/kg-day	N/A
				Naphthalene	1E+01	mg/kg	1.6E-07	mg/kg-day	N/A	N/A	N/A	1.2E-05	mg/kg-day	2.0E-01	mg/kg-day	5.8E-05
				Vinyl chloride	N/A	N/A	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Methylene chloride	N/A	N/A	N/A	N/A	7.5E-03	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	6.0E-02	mg/kg-day	N/A
				cis-1,2-Dichloroethene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-01	mg/kg-day	N/A
				Trichloroethene	N/A	N/A	N/A	N/A	4.0E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Xylenes (total)	3E+00	mg/kg	3.6E-08	mg/kg-day	N/A	N/A	N/A	2.5E-06	mg/kg-day	2.0E-01	mg/kg-day	1.3E-05
				2-Methylnaphthalene	1E+01	mg/kg	2.0E-07	mg/kg-day	N/A	N/A	N/A	1.4E-05	mg/kg-day	2.0E-01	mg/kg-day	7.2E-05
				2,4,6-Trichlorophenol	N/A	N/A	N/A	N/A	1.1E-02	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	1.0E-03	mg/kg-day	N/A
				Acenaphthylene	3E+00	mg/kg	4.6E-08	mg/kg-day	N/A	N/A	N/A	3.2E-06	mg/kg-day	2.0E-01	mg/kg-day	1.6E-05
				Phenanthrene	2E+00	mg/kg	3.4E-08	mg/kg-day	N/A	N/A	N/A	2.4E-06	mg/kg-day	2.0E-01	mg/kg-day	1.2E-05
				Benzo(a)Anthracene	3E-02	mg/kg	3.5E-10	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	2.6E-10	2.4E-08	mg/kg-day	N/A	N/A	N/A
				Bis(2-ethylhexyl) phthalate	N/A	N/A	N/A	N/A	1.4E-02	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-02	mg/kg-day	N/A
				Benzo(b)Fluoranthene	5E-02	mg/kg	7.1E-10	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	5.2E-10	5.0E-08	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	4E+00	mg/kg	5.1E-08	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	3.7E-09	3.6E-06	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	2E+00	mg/kg	2.5E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.8E-07	1.7E-06	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	2E+00	mg/kg	3.1E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	2.3E-08	2.2E-06	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	1E+00	mg/kg	1.9E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.4E-07	1.4E-06	mg/kg-day	N/A	N/A	N/A
				Antimony	4E+00	mg/kg	5.2E-08	mg/kg-day	N/A	N/A	N/A	3.7E-06	mg/kg-day	4.0E-04	mg/kg-day	9.1E-03
				Arsenic	2E+01	mg/kg	2.9E-07	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	4.4E-07	2.0E-05	mg/kg-day	3.0E-04	mg/kg-day	6.8E-02
				Barium	2E+02	mg/kg	2.2E-06	mg/kg-day	N/A	N/A	N/A	1.5E-04	mg/kg-day	7.0E-02	mg/kg-day	2.2E-03
				Cadmium	3E+00	mg/kg	4.6E-08	mg/kg-day	N/A	N/A	N/A	3.2E-06	mg/kg-day	1.0E-03	mg/kg-day	3.2E-03
				Lead	2E+02	mg/kg	2.6E-06	mg/kg-day	N/A	N/A	N/A	1.8E-04	mg/kg-day	NA	NA	N/A
				Manganese	3E+02	mg/kg	3.6E-06	mg/kg-day	N/A	N/A	N/A	2.5E-04	mg/kg-day	7.0E-02	mg/kg-day	3.6E-03
				Mercury	5E-01	mg/kg	6.8E-09	mg/kg-day	N/A	N/A	N/A	4.8E-07	mg/kg-day	1.0E-04	mg/kg-day	4.8E-03
				Thallium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-04	mg/kg-day	N/A
				alpha-Chlordane	4E-03	mg/kg	5.5E-11	mg/kg-day	3.5E-01	(mg/kg-day)$^{-1}$	1.9E-11	3.8E-09	mg/kg-day	5.0E-04	mg/kg-day	7.7E-06
				gamma-Chlordane	5E-03	mg/kg	6.5E-11	mg/kg-day	3.5E-01	(mg/kg-day)$^{-1}$	2.3E-11	4.6E-09	mg/kg-day	5.0E-04	mg/kg-day	9.1E-06
				4,4'-DDE	5E-03	mg/kg	7.0E-11	mg/kg-day	3.4E-01	(mg/kg-day)$^{-1}$	2.4E-11	4.9E-09	mg/kg-day	3.0E-03	mg/kg-day	1.6E-06
				4,4'-DDT	2E-02	mg/kg	2.3E-10	mg/kg-day	3.4E-01	(mg/kg-day)$^{-1}$	7.8E-11	1.6E-08	mg/kg-day	5.0E-04	mg/kg-day	3.2E-05
				Aroclor 1242	2E-01	mg/kg	2.3E-09	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	4.5E-09	1.6E-07	mg/kg-day	2.0E-05	mg/kg-day	7.9E-03
				Aroclor 1248	N/A	N/A	N/A	N/A	2.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1254	N/A	N/A	N/A	N/A	2.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1260	1E-01	mg/kg	1.9E-09	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	3.8E-09	1.3E-07	mg/kg-day	2.0E-05	mg/kg-day	6.7E-03
				PCB TEQ*	8E-06	mg/kg	1.1E-13	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	1.6E-08	7.5E-12	mg/kg-day	NA	NA	N/A
				C5-C8 Aliphatic	2E+01	mg/kg	2.7E-07	mg/kg-day	N/A	N/A	N/A	1.9E-05	mg/kg-day	4.0E-01	mg/kg-day	4.6E-05
				C9-C10 Aromatic	2E+02	mg/kg	2.5E-06	mg/kg-day	N/A	N/A	N/A	1.7E-04	mg/kg-day	3.0E-01	mg/kg-day	5.8E-04
				C9-C18 Aliphatic	2E+03	mg/kg	3.4E-05	mg/kg-day	N/A	N/A	N/A	2.4E-03	mg/kg-day	1.0E+00	mg/kg-day	2.4E-03
				C19-C36 Aliphatic	6E+02	mg/kg	8.9E-06	mg/kg-day	N/A	N/A	N/A	6.3E-04	mg/kg-day	6.0E+00	mg/kg-day	1.0E-04
				C11-C22 Aromatic	2E+03	mg/kg	2.4E-05	mg/kg-day	N/A	N/A	N/A	1.7E-03	mg/kg-day	3.0E-01	mg/kg-day	5.6E-03
			Exp. Route Total								8E-07					1E-01

TABLE 3-7.13.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Subsurface Soil (Cont.)	Subsurface Soil (Cont.)	Aberjona Property	Dermal													
				1,2,4-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-01	mg/kg-day	N/A
				1,3,5-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-01	mg/kg-day	N/A
				Naphthalene	1E+01	mg/kg	7.1E-08	mg/kg-day	N/A	N/A	N/A	4.9E-06	mg/kg-day	2.0E-01	mg/kg-day	2.5E-05
				Vinyl chloride	N/A	N/A	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Methylene chloride	N/A	N/A	N/A	N/A	7.5E-03	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	6.0E-02	mg/kg-day	N/A
				cis-1,2-Dichloroethene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-01	mg/kg-day	N/A
				Trichloroethene	N/A	N/A	N/A	N/A	4.0E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Xylenes (total)	3E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/kg-day	N/A
				2-Methylnaphthalene	1E+01	mg/kg	8.8E-08	mg/kg-day	N/A	N/A	N/A	6.2E-06	mg/kg-day	2.0E-01	mg/kg-day	3.1E-05
				2,4,6-Trichlorophenol	N/A	N/A	N/A	N/A	1.1E-02	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	1.0E-03	mg/kg-day	N/A
				Acenaphthylene	3E+00	mg/kg	2.0E-08	mg/kg-day	N/A	N/A	N/A	1.4E-06	mg/kg-day	2.0E-01	mg/kg-day	6.9E-06
				Phenanthrene	2E+00	mg/kg	1.4E-08	mg/kg-day	N/A	N/A	N/A	1.0E-06	mg/kg-day	2.0E-01	mg/kg-day	5.1E-06
				Benzo(a)Anthracene	3E-02	mg/kg	1.5E-10	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.1E-10	1.0E-08	mg/kg-day	N/A	N/A	N/A
				Bis(2-ethylhexyl) phthalate	N/A	N/A	N/A	N/A	1.4E-02	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-02	mg/kg-day	N/A
				Benzo(b)Fluoranthene	5E-02	mg/kg	3.1E-10	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	2.2E-10	2.1E-08	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	4E+00	mg/kg	2.2E-08	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	1.6E-09	1.5E-06	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	2E+00	mg/kg	1.1E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	7.8E-08	7.4E-07	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	2E+00	mg/kg	1.3E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	9.7E-09	9.3E-07	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	1E+00	mg/kg	8.3E-09	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	6.1E-08	5.8E-07	mg/kg-day	N/A	N/A	N/A
				Antimony	4E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-05	mg/kg-day	N/A
				Arsenic	2E+01	mg/kg	2.9E-08	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	4.3E-08	2.0E-06	mg/kg-day	3.0E-04	mg/kg-day	6.7E-03
				Barium	2E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.9E-03	mg/kg-day	N/A
				Cadmium	3E+00	mg/kg	1.5E-10	mg/kg-day	N/A	N/A	N/A	1.1E-08	mg/kg-day	2.5E-05	mg/kg-day	4.3E-04
				Lead	2E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA	NA	N/A
				Manganese	3E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.8E-03	mg/kg-day	N/A
				Mercury	5E-01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A
				Thallium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-04	mg/kg-day	N/A
				alpha-Chlordane	4E-03	mg/kg	7.2E-12	mg/kg-day	3.5E-01	(mg/kg-day)$^{-1}$	2.5E-12	5.1E-10	mg/kg-day	5.0E-04	mg/kg-day	1.0E-06
				gamma-Chlordane	5E-03	mg/kg	8.6E-12	mg/kg-day	3.5E-01	(mg/kg-day)$^{-1}$	3.0E-12	6.0E-10	mg/kg-day	5.0E-04	mg/kg-day	1.2E-06
				4,4'-DDE	5E-03	mg/kg	N/A	N/A	3.4E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				4,4'-DDT	2E-02	mg/kg	2.3E-11	mg/kg-day	3.4E-01	(mg/kg-day)$^{-1}$	7.7E-12	1.6E-09	mg/kg-day	5.0E-04	mg/kg-day	3.2E-06
				Aroclor 1242	2E-01	mg/kg	1.0E-09	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	2.1E-09	7.3E-08	mg/kg-day	2.0E-05	mg/kg-day	3.6E-03
				Aroclor 1248	N/A	N/A	N/A	N/A	2.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1254	N/A	N/A	N/A	N/A	2.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1260	1E-01	mg/kg	8.9E-10	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	1.8E-09	6.2E-08	mg/kg-day	2.0E-05	mg/kg-day	3.1E-03
				PCB TEQ*	8E-06	mg/kg	4.9E-14	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	7.4E-09	3.5E-12	mg/kg-day	NA	NA	N/A
				C5-C8 Aliphatic	2E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.0E-01	mg/kg-day	N/A
				C9-C10 Aromatic	2E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-01	mg/kg-day	N/A
				C9-C18 Aliphatic	2E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E+00	mg/kg-day	N/A
				C19-C36 Aliphatic	6E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E+00	mg/kg-day	N/A
				C11-C22 Aromatic	2E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-01	mg/kg-day	N/A
			Exp. Route Total								2E-07					1E-02

TABLE 3-7.13.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Subsurface Soil (Cont.)	Subsurface Soil (Cont.)	Aberjona Property	Inhalation													
				1,2,4-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-02	mg/m3	N/A
				1,3,5-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-02	mg/m3	N/A
				Naphthalene	1E+01	mg/kg	2.8E-08	ug/m3	N/A	N/A	N/A	1.9E-09	mg/m3	3.0E-03	mg/m3	6.5E-07
				Vinyl chloride	N/A	N/A	N/A	N/A	8.8E-06	(ug/m3)-1	N/A	N/A	N/A	1.0E-01	mg/m3	N/A
				Methylene chloride	N/A	N/A	N/A	N/A	4.7E-07	(ug/m3)-1	N/A	N/A	N/A	3.0E+00	mg/m3	N/A
				cis-1,2-Dichloroethene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/m3	N/A
				Trichloroethene	N/A	N/A	N/A	N/A	1.1E-04	(ug/m3)-1	N/A	N/A	N/A	4.0E-02	mg/m3	N/A
				Xylenes (total)	3E+00	mg/kg	6.1E-09	ug/m3	N/A	N/A	N/A	4.2E-10	mg/m3	1.0E+00	mg/m3	4.2E-10
				2-Methylnaphthalene	1E+01	mg/kg	3.4E-08	ug/m3	N/A	N/A	N/A	2.4E-09	mg/m3	3.0E-03	mg/m3	8.0E-07
				2,4,6-Trichlorophenol	N/A	N/A	N/A	N/A	3.1E-06	(ug/m3)-1	N/A	N/A	N/A	N/A	N/A	N/A
				Acenaphthylene	3E+00	mg/kg	7.7E-09	ug/m3	N/A	N/A	N/A	5.4E-10	mg/m3	3.0E-03	mg/m3	1.8E-07
				Phenanthrene	2E+00	mg/kg	5.7E-09	ug/m3	N/A	N/A	N/A	4.0E-10	mg/m3	3.0E-03	mg/m3	1.3E-07
				Benzo(a)Anthracene	3E-02	mg/kg	5.9E-11	ug/m3	8.8E-05	(ug/m3)-1	5.2E-15	4.1E-12	mg/m3	N/A	N/A	N/A
				Bis(2-ethylhexyl) phthalate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Benzo(b)Fluoranthene	5E-02	mg/kg	1.2E-10	ug/m3	8.8E-05	(ug/m3)-1	1.1E-14	8.4E-12	mg/m3	N/A	N/A	N/A
				Benzo(k)Fluoranthene	4E+00	mg/kg	8.6E-09	ug/m3	8.8E-06	(ug/m3)-1	7.6E-14	6.0E-10	mg/m3	N/A	N/A	N/A
				Benzo(a)Pyrene	2E+00	mg/kg	4.2E-09	ug/m3	8.8E-04	(ug/m3)-1	3.7E-12	2.9E-10	mg/m3	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	2E+00	mg/kg	5.2E-09	ug/m3	8.8E-05	(ug/m3)-1	4.6E-13	3.7E-10	mg/m3	N/A	N/A	N/A
				Dibenz(a,h) anthracene	1E+00	mg/kg	3.3E-09	ug/m3	8.8E-04	(ug/m3)-1	2.9E-12	2.3E-10	mg/m3	N/A	N/A	N/A
				Antimony	4E+00	mg/kg	8.8E-09	ug/m3	N/A	N/A	N/A	6.2E-10	mg/m3	N/A	N/A	N/A
				Arsenic	2E+01	mg/kg	4.9E-08	ug/m3	4.3E-03	(ug/m3)-1	2.1E-10	3.4E-09	mg/m3	N/A	N/A	N/A
				Barium	2E+02	mg/kg	3.7E-07	ug/m3	N/A	N/A	N/A	2.6E-08	mg/m3	N/A	N/A	N/A
				Cadmium	3E+00	mg/kg	7.8E-09	ug/m3	1.8E-03	(ug/m3)-1	1.4E-11	5.4E-10	mg/m3	N/A	N/A	N/A
				Lead	2E+02	mg/kg	4.3E-07	ug/m3	N/A	N/A	N/A	3.0E-08	mg/m3	N/A	N/A	N/A
				Manganese	3E+02	mg/kg	6.1E-07	ug/m3	N/A	N/A	N/A	4.3E-08	mg/m3	5.0E-05	mg/m3	8.6E-04
				Mercury	5E-01	mg/kg	1.1E-09	ug/m3	N/A	N/A	N/A	8.0E-11	mg/m3	N/A	N/A	N/A
				Thallium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				alpha-Chlordane	4E-03	mg/kg	9.2E-12	ug/m3	1.0E-04	(ug/m3)-1	9.2E-16	6.4E-13	mg/m3	7.0E-03	mg/m3	9.2E-11
				gamma-Chlordane	5E-03	mg/kg	1.1E-11	ug/m3	1.0E-04	(ug/m3)-1	1.1E-15	7.7E-13	mg/m3	7.0E-03	mg/m3	1.1E-10
				4,4'-DDE	5E-03	mg/kg	1.2E-11	ug/m3	N/A	N/A	N/A	8.3E-13	mg/m3	N/A	N/A	N/A
				4,4'-DDT	2E-02	mg/kg	3.9E-11	ug/m3	9.7E-05	(ug/m3)-1	3.8E-15	2.7E-12	mg/m3	N/A	N/A	N/A
				Aroclor 1242	2E-01	mg/kg	3.8E-10	ug/m3	5.0E-04	(ug/m3)-1	1.9E-13	2.7E-11	mg/m3	N/A	N/A	N/A
				Aroclor 1248	N/A	N/A	N/A	N/A	5.0E-04	(ug/m3)-1	N/A	N/A	N/A	N/A	N/A	N/A
				Aroclor 1254	N/A	N/A	N/A	N/A	5.0E-04	(ug/m3)-1	N/A	N/A	N/A	N/A	N/A	N/A
				Aroclor 1260	1E-01	mg/kg	3.2E-10	ug/m3	5.0E-04	(ug/m3)-1	1.6E-13	2.3E-11	mg/m3	N/A	N/A	N/A
				PCB TEQ*	8E-06	mg/kg	1.8E-14	ug/m3	3.3E+01	(ug/m3)-1	5.9E-13	1.3E-15	mg/m3	N/A	N/A	N/A
				C5-C8 Aliphatic	2E+01	mg/kg	4.5E-08	ug/m3	N/A	N/A	N/A	3.1E-09	mg/m3	2.0E-01	mg/m3	1.6E-08
				C9-C10 Aromatic	2E+02	mg/kg	4.2E-07	ug/m3	N/A	N/A	N/A	2.9E-08	mg/m3	5.0E-02	mg/m3	5.8E-07
				C9-C18 Aliphatic	2E+03	mg/kg	5.7E-06	ug/m3	N/A	N/A	N/A	4.0E-07	mg/m3	2.0E-01	mg/m3	2.0E-06
				C19-C36 Aliphatic	6E+02	mg/kg	1.5E-06	ug/m3	N/A	N/A	N/A	1.1E-07	mg/m3	N/A	mg/m3	N/A
				C11-C22 Aromatic	2E+03	mg/kg	4.0E-06	ug/m3	N/A	N/A	N/A	2.8E-07	mg/m3	5.0E-02	mg/m3	5.7E-06
			Exp. Route Total								2E-10					9E-04
		Exposure Point Total									1E-06					1E-01

TABLE 3-7.13.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Subsurface Soil (Cont.)	Subsurface Soil (Cont.)	Whitney Property	Ingestion													
				1,2,4-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-01	mg/kg-day	N/A
				1,3,5-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-01	mg/kg-day	N/A
				Naphthalene	1E+01	mg/kg	1.7E-07	mg/kg-day	N/A	N/A	N/A	1.2E-05	mg/kg-day	2.0E-01	mg/kg-day	5.9E-05
				Vinyl chloride	3E-01	mg/kg	4.7E-09	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	7.1E-09	3.3E-07	mg/kg-day	3.0E-03	mg/kg-day	1.1E-04
				Methylene chloride	3E+00	mg/kg	3.8E-08	mg/kg-day	7.5E-03	(mg/kg-day)$^{-1}$	2.8E-10	2.6E-06	mg/kg-day	6.0E-02	mg/kg-day	4.4E-05
				cis-1,2-Dichloroethene	4E-01	mg/kg	5.3E-09	mg/kg-day	N/A	N/A	N/A	3.7E-07	mg/kg-day	1.0E-01	mg/kg-day	3.7E-06
				Trichloroethene	5E-01	mg/kg	6.9E-09	mg/kg-day	4.0E-01	(mg/kg-day)$^{-1}$	2.8E-09	4.8E-07	mg/kg-day	3.0E-04	mg/kg-day	1.6E-03
				Xylenes (total)	3E+00	mg/kg	4.7E-08	mg/kg-day	N/A	N/A	N/A	3.3E-06	mg/kg-day	2.0E-01	mg/kg-day	1.6E-05
				2-Methylnaphthalene	2E+01	mg/kg	2.8E-07	mg/kg-day	N/A	N/A	N/A	2.0E-05	mg/kg-day	2.0E-01	mg/kg-day	9.8E-05
				2,4,6-Trichlorophenol	1E+00	mg/kg	2.0E-08	mg/kg-day	1.1E-02	(mg/kg-day)$^{-1}$	2.2E-10	1.4E-06	mg/kg-day	1.0E-03	mg/kg-day	1.4E-03
				Acenaphthylene	2E-02	mg/kg	2.7E-10	mg/kg-day	N/A	N/A	N/A	1.9E-08	mg/kg-day	2.0E-01	mg/kg-day	9.3E-08
				Phenanthrene	3E+00	mg/kg	4.1E-08	mg/kg-day	N/A	N/A	N/A	2.9E-06	mg/kg-day	2.0E-01	mg/kg-day	1.4E-05
				Benzo(a)Anthracene	1E+00	mg/kg	1.7E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.2E-08	1.2E-06	mg/kg-day	N/A	N/A	N/A
				Bis(2-ethylhexyl) phthalate	3E+02	mg/kg	4.1E-06	mg/kg-day	1.4E-02	(mg/kg-day)$^{-1}$	5.8E-08	2.9E-04	mg/kg-day	2.0E-02	mg/kg-day	1.4E-02
				Benzo(b)Fluoranthene	1E+00	mg/kg	2.1E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.5E-08	1.5E-06	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	1E+00	mg/kg	1.4E-08	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	1.0E-09	9.6E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	1E+00	mg/kg	1.7E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.3E-07	1.2E-06	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	9E-01	mg/kg	1.2E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	8.9E-09	8.5E-07	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	2E-01	mg/kg	3.2E-09	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	2.4E-08	2.3E-07	mg/kg-day	N/A	N/A	N/A
				Antimony	6E+00	mg/kg	9.1E-08	mg/kg-day	N/A	N/A	N/A	6.4E-06	mg/kg-day	4.0E-04	mg/kg-day	1.6E-02
				Arsenic	3E+01	mg/kg	3.9E-07	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	5.9E-07	2.7E-05	mg/kg-day	3.0E-04	mg/kg-day	9.1E-02
				Barium	2E+02	mg/kg	2.3E-06	mg/kg-day	N/A	N/A	N/A	1.6E-04	mg/kg-day	7.0E-02	mg/kg-day	2.3E-03
				Cadmium	6E+00	mg/kg	8.5E-08	mg/kg-day	N/A	N/A	N/A	5.9E-06	mg/kg-day	1.0E-03	mg/kg-day	5.9E-03
				Lead	6E+02	mg/kg	8.1E-06	mg/kg-day	N/A	N/A	N/A	5.6E-04	mg/kg-day	NA	NA	N/A
				Manganese	3E+02	mg/kg	3.5E-06	mg/kg-day	N/A	N/A	N/A	2.5E-04	mg/kg-day	7.0E-02	mg/kg-day	3.5E-03
				Mercury	1E+01	mg/kg	1.7E-07	mg/kg-day	N/A	N/A	N/A	1.2E-05	mg/kg-day	1.0E-04	mg/kg-day	1.2E-01
				Thallium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-04	mg/kg-day	N/A
				alpha-Chlordane	4E+02	mg/kg	5.8E-06	mg/kg-day	3.5E-01	(mg/kg-day)$^{-1}$	2.0E-06	4.1E-04	mg/kg-day	5.0E-04	mg/kg-day	8.2E-01
				gamma-Chlordane	3E+02	mg/kg	4.2E-06	mg/kg-day	3.5E-01	(mg/kg-day)$^{-1}$	1.5E-06	2.9E-04	mg/kg-day	5.0E-04	mg/kg-day	5.9E-01
				4,4'-DDE	1E+02	mg/kg	1.6E-06	mg/kg-day	3.4E-01	(mg/kg-day)$^{-1}$	5.6E-07	1.2E-04	mg/kg-day	3.0E-03	mg/kg-day	3.8E-02
				4,4'-DDT	3E+02	mg/kg	4.1E-06	mg/kg-day	3.4E-01	(mg/kg-day)$^{-1}$	1.4E-06	2.8E-04	mg/kg-day	5.0E-04	mg/kg-day	5.7E-01
				Aroclor 1242	N/A	N/A	N/A	N/A	2.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1248	7E+02	mg/kg	1.0E-05	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	2.1E-05	7.3E-04	mg/kg-day	2.0E-05	mg/kg-day	3.7E+01
				Aroclor 1254	4E+02	mg/kg	5.7E-06	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	1.1E-05	4.0E-04	mg/kg-day	2.0E-05	mg/kg-day	2.0E+01
				Aroclor 1260	2E+02	mg/kg	3.2E-06	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	6.3E-06	2.2E-04	mg/kg-day	2.0E-05	mg/kg-day	1.1E+01
				PCB TEQ*	4E-03	mg/kg	5.2E-11	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	7.8E-06	3.6E-09	mg/kg-day	NA	NA	N/A
				C5-C8 Aliphatic	1E+02	mg/kg	2.0E-06	mg/kg-day	N/A	N/A	N/A	1.4E-04	mg/kg-day	4.0E-01	mg/kg-day	3.5E-04
				C9-C10 Aromatic	5E+02	mg/kg	7.0E-06	mg/kg-day	N/A	N/A	N/A	4.9E-04	mg/kg-day	3.0E-01	mg/kg-day	1.6E-03
				C9-C18 Aliphatic	6E+03	mg/kg	8.4E-05	mg/kg-day	N/A	N/A	N/A	5.9E-03	mg/kg-day	1.0E+00	mg/kg-day	5.9E-03
				C19-C36 Aliphatic	4E+03	mg/kg	5.8E-05	mg/kg-day	N/A	N/A	N/A	4.0E-03	mg/kg-day	6.0E+00	mg/kg-day	6.7E-04
				C11-C22 Aromatic	4E+03	mg/kg	5.7E-05	mg/kg-day	N/A	N/A	N/A	4.0E-03	mg/kg-day	3.0E-01	mg/kg-day	1.3E-02
			Exp. Route Total								5E-05					7E+01

TABLE 3-7.13.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Subsurface Soil (Cont.)	Subsurface Soil (Cont.)	Whitney Property	Dermal													
				1,2,4-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-01	mg/kg-day	N/A
				1,3,5-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-01	mg/kg-day	N/A
				Naphthalene	1E+01	mg/kg	7.2E-08	mg/kg-day	N/A	N/A	N/A	5.0E-06	mg/kg-day	2.0E-01	mg/kg-day	2.5E-05
				Vinyl chloride	3E-01	mg/kg	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Methylene chloride	3E+00	mg/kg	N/A	N/A	7.5E-03	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	6.0E-02	mg/kg-day	N/A
				cis-1,2-Dichloroethene	4E-01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-01	mg/kg-day	N/A
				Trichloroethene	5E-01	mg/kg	N/A	N/A	4.0E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Xylenes (total)	3E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/kg-day	N/A
				2-Methylnaphthalene	2E+01	mg/kg	1.2E-07	mg/kg-day	N/A	N/A	N/A	8.4E-06	mg/kg-day	2.0E-01	mg/kg-day	4.2E-05
				2,4,6-Trichlorophenol	1E+00	mg/kg	N/A	N/A	1.1E-02	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	1.0E-03	mg/kg-day	N/A
				Acenaphthylene	2E-02	mg/kg	1.1E-10	mg/kg-day	N/A	N/A	N/A	8.0E-09	mg/kg-day	2.0E-01	mg/kg-day	4.0E-08
				Phenanthrene	3E+00	mg/kg	1.8E-08	mg/kg-day	N/A	N/A	N/A	1.2E-06	mg/kg-day	2.0E-01	mg/kg-day	6.1E-06
				Benzo(a)Anthracene	1E+00	mg/kg	7.3E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	5.3E-09	5.1E-07	mg/kg-day	N/A	N/A	N/A
				Bis(2-ethylhexyl) phthalate	3E+02	mg/kg	N/A	N/A	1.4E-02	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-02	mg/kg-day	N/A
				Benzo(b)Fluoranthene	1E+00	mg/kg	9.0E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	6.5E-09	6.3E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	1E+00	mg/kg	5.9E-09	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	4.3E-10	4.1E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	1E+00	mg/kg	7.4E-09	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	5.4E-08	5.2E-07	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	9E-01	mg/kg	5.2E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	3.8E-09	3.7E-07	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	2E-01	mg/kg	1.4E-09	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.0E-08	9.8E-08	mg/kg-day	N/A	N/A	N/A
				Antimony	6E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-05	mg/kg-day	N/A
				Arsenic	3E+01	mg/kg	3.9E-08	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	5.8E-08	2.7E-06	mg/kg-day	3.0E-04	mg/kg-day	9.1E-03
				Barium	2E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.9E-03	mg/kg-day	N/A
				Cadmium	6E+00	mg/kg	2.8E-10	mg/kg-day	N/A	N/A	N/A	2.0E-08	mg/kg-day	2.5E-05	mg/kg-day	7.8E-04
				Lead	6E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA	NA	N/A
				Manganese	3E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.8E-03	mg/kg-day	N/A
				Mercury	1E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A
				Thallium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-04	mg/kg-day	N/A
				alpha-Chlordane	4E+02	mg/kg	7.7E-07	mg/kg-day	3.5E-01	(mg/kg-day)$^{-1}$	2.7E-07	5.4E-05	mg/kg-day	5.0E-04	mg/kg-day	1.1E-01
				gamma-Chlordane	3E+02	mg/kg	5.5E-07	mg/kg-day	3.5E-01	(mg/kg-day)$^{-1}$	1.9E-07	3.9E-05	mg/kg-day	5.0E-04	mg/kg-day	7.7E-02
				4,4'-DDE	1E+02	mg/kg	N/A	N/A	3.4E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				4,4'-DDT	3E+02	mg/kg	4.0E-07	mg/kg-day	3.4E-01	(mg/kg-day)$^{-1}$	1.4E-07	2.8E-05	mg/kg-day	5.0E-04	mg/kg-day	5.6E-02
				Aroclor 1242	N/A	N/A	N/A	N/A	2.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1248	7E+02	mg/kg	4.8E-06	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	9.7E-06	3.4E-04	mg/kg-day	2.0E-05	mg/kg-day	1.7E+01
				Aroclor 1254	4E+02	mg/kg	2.6E-06	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	5.3E-06	1.9E-04	mg/kg-day	2.0E-05	mg/kg-day	9.3E+00
				Aroclor 1260	2E+02	mg/kg	1.5E-06	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	2.9E-06	1.0E-04	mg/kg-day	2.0E-05	mg/kg-day	5.1E+00
				PCB TEQ*	4E-03	mg/kg	2.4E-11	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	3.6E-06	1.7E-09	mg/kg-day	NA	NA	N/A
				C5-C8 Aliphatic	1E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.0E-01	mg/kg-day	N/A
				C9-C10 Aromatic	5E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-01	mg/kg-day	N/A
				C9-C18 Aliphatic	6E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E+00	mg/kg-day	N/A
				C19-C36 Aliphatic	4E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E+00	mg/kg-day	N/A
				C11-C22 Aromatic	4E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-01	mg/kg-day	N/A
			Exp. Route Total								2E-05					3E+01

TABLE 3-7.13.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Subsurface Soil (Cont.)	Subsurface Soil (Cont.)	Whitney Property	Inhalation													
				1,2,4-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-02	mg/m3	N/A
				1,3,5-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-02	mg/m3	N/A
				Naphthalene	1E+01	mg/kg	2.8E-08	ug/m3	N/A	N/A	N/A	2.0E-09	mg/m3	3.0E-03	mg/m3	6.6E-07
				Vinyl chloride	3E-01	mg/kg	8.0E-10	ug/m3	8.8E-06	(ug/m3)-1	7.0E-15	5.6E-11	mg/m3	1.0E-01	mg/m3	5.6E-10
				Methylene chloride	3E+00	mg/kg	6.3E-09	ug/m3	4.7E-07	(ug/m3)-1	3.0E-15	4.4E-10	mg/m3	3.0E+00	mg/m3	1.5E-10
				cis-1,2-Dichloroethene	4E-01	mg/kg	8.9E-10	ug/m3	N/A	N/A	N/A	6.3E-11	mg/m3	2.0E-01	mg/m3	3.1E-10
				Trichloroethene	5E-01	mg/kg	1.2E-09	ug/m3	1.1E-04	(ug/m3)-1	1.3E-13	8.1E-11	mg/m3	4.0E-02	mg/m3	2.0E-09
				Xylenes (total)	3E+00	mg/kg	7.8E-09	ug/m3	N/A	N/A	N/A	5.5E-10	mg/m3	1.0E+00	mg/m3	5.5E-10
				2-Methylnaphthalene	2E+01	mg/kg	4.7E-08	ug/m3	N/A	N/A	N/A	3.3E-09	mg/m3	3.0E-03	mg/m3	1.1E-06
				2,4,6-Trichlorophenol	1E+00	mg/kg	3.3E-09	ug/m3	3.1E-06	(ug/m3)-1	1.0E-14	2.3E-10	mg/m3	N/A	N/A	N/A
				Acenaphthylene	2E-02	mg/kg	4.5E-11	ug/m3	N/A	N/A	N/A	3.1E-12	mg/m3	3.0E-03	mg/m3	1.0E-09
				Phenanthrene	3E+00	mg/kg	6.9E-09	ug/m3	N/A	N/A	N/A	4.8E-10	mg/m3	3.0E-03	mg/m3	1.6E-07
				Benzo(a)Anthracene	1E+00	mg/kg	2.9E-09	ug/m3	8.8E-05	(ug/m3)-1	2.5E-13	2.0E-10	mg/m3	N/A	N/A	N/A
				Bis(2-ethylhexyl) phthalate	3E+02	mg/kg	6.9E-07	ug/m3	N/A	N/A	N/A	4.8E-08	mg/m3	N/A	N/A	N/A
				Benzo(b)Fluoranthene	1E+00	mg/kg	3.5E-09	ug/m3	8.8E-05	(ug/m3)-1	3.1E-13	2.5E-10	mg/m3	N/A	N/A	N/A
				Benzo(k)Fluoranthene	1E+00	mg/kg	2.3E-09	ug/m3	8.8E-06	(ug/m3)-1	2.0E-14	1.6E-10	mg/m3	N/A	N/A	N/A
				Benzo(a)Pyrene	1E+00	mg/kg	2.9E-09	ug/m3	8.8E-04	(ug/m3)-1	2.5E-12	2.0E-10	mg/m3	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	9E-01	mg/kg	2.0E-09	ug/m3	8.8E-05	(ug/m3)-1	1.8E-13	1.4E-10	mg/m3	N/A	N/A	N/A
				Dibenz(a,h) anthracene	2E-01	mg/kg	5.5E-10	ug/m3	8.8E-04	(ug/m3)-1	4.8E-13	3.8E-11	mg/m3	N/A	N/A	N/A
				Antimony	6E+00	mg/kg	1.5E-08	ug/m3	N/A	N/A	N/A	1.1E-09	mg/m3	N/A	N/A	N/A
				Arsenic	3E+01	mg/kg	6.6E-08	ug/m3	4.3E-03	(ug/m3)-1	2.8E-10	4.6E-09	mg/m3	N/A	N/A	N/A
				Barium	2E+02	mg/kg	3.9E-07	ug/m3	N/A	N/A	N/A	2.7E-08	mg/m3	N/A	N/A	N/A
				Cadmium	6E+00	mg/kg	1.4E-08	ug/m3	1.8E-03	(ug/m3)-1	2.6E-11	1.0E-09	mg/m3	N/A	N/A	N/A
				Lead	6E+02	mg/kg	1.4E-06	ug/m3	N/A	N/A	N/A	9.5E-08	mg/m3	N/A	N/A	N/A
				Manganese	3E+02	mg/kg	5.9E-07	ug/m3	N/A	N/A	N/A	4.1E-08	mg/m3	5.0E-05	mg/m3	8.3E-04
				Mercury	1E+01	mg/kg	2.8E-08	ug/m3	N/A	N/A	N/A	2.0E-09	mg/m3	N/A	N/A	N/A
				Thallium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				alpha-Chlordane	4E+02	mg/kg	9.8E-07	ug/m3	1.0E-04	(ug/m3)-1	9.8E-11	6.9E-08	mg/m3	7.0E-03	mg/m3	9.8E-06
				gamma-Chlordane	3E+02	mg/kg	7.0E-07	ug/m3	1.0E-04	(ug/m3)-1	7.0E-11	4.9E-08	mg/m3	7.0E-03	mg/m3	7.0E-06
				4,4'-DDE	1E+02	mg/kg	2.8E-07	ug/m3	N/A	N/A	N/A	1.9E-08	mg/m3	N/A	N/A	N/A
				4,4'-DDT	3E+02	mg/kg	6.8E-07	ug/m3	9.7E-05	(ug/m3)-1	6.6E-11	4.8E-08	mg/m3	N/A	N/A	N/A
				Aroclor 1242	N/A	N/A	N/A	N/A	5.0E-04	(ug/m3)-1	N/A	N/A	N/A	N/A	N/A	N/A
				Aroclor 1248	7E+02	mg/kg	1.8E-06	ug/m3	5.0E-04	(ug/m3)-1	8.8E-10	1.2E-07	mg/m3	N/A	N/A	N/A
				Aroclor 1254	4E+02	mg/kg	9.6E-07	ug/m3	5.0E-04	(ug/m3)-1	4.8E-10	6.7E-08	mg/m3	N/A	N/A	N/A
				Aroclor 1260	2E+02	mg/kg	5.3E-07	ug/m3	5.0E-04	(ug/m3)-1	2.7E-10	3.7E-08	mg/m3	N/A	N/A	N/A
				PCB TEQ*	4E-03	mg/kg	8.7E-12	ug/m3	3.3E+01	(ug/m3)-1	2.9E-10	6.1E-13	mg/m3	N/A	N/A	N/A
				C5-C8 Aliphatic	1E+02	mg/kg	3.4E-07	ug/m3	N/A	N/A	N/A	2.4E-08	mg/m3	2.0E-01	mg/m3	1.2E-07
				C9-C10 Aromatic	5E+02	mg/kg	1.2E-06	ug/m3	N/A	N/A	N/A	8.2E-08	mg/m3	5.0E-02	mg/m3	1.6E-06
				C9-C18 Aliphatic	6E+03	mg/kg	1.4E-05	ug/m3	N/A	N/A	N/A	9.9E-07	mg/m3	2.0E-01	mg/m3	5.0E-06
				C19-C36 Aliphatic	4E+03	mg/kg	9.7E-06	ug/m3	N/A	N/A	N/A	6.8E-07	mg/m3	N/A	mg/m3	N/A
				C11-C22 Aromatic	4E+03	mg/kg	9.6E-06	ug/m3	N/A	N/A	N/A	6.8E-07	mg/m3	5.0E-02	mg/m3	1.4E-05
			Exp. Route Total								2E-09					9E-04
		Exposure Point Total									7E-05					1E+02

TABLE 3-7.13.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Subsurface Soil (Cont.)	Subsurface Soil (Cont.)	Murphy Property	Ingestion													
				1,2,4-Trimethylbenzene	1E+01	mg/kg	1.5E-07	mg/kg-day	N/A	N/A	N/A	1.0E-05	mg/kg-day	5.0E-01	mg/kg-day	2.1E-05
				1,3,5-Trimethylbenzene	5E+00	mg/kg	6.3E-08	mg/kg-day	N/A	N/A	N/A	4.4E-06	mg/kg-day	5.0E-01	mg/kg-day	8.9E-06
				Naphthalene	4E+00	mg/kg	5.2E-08	mg/kg-day	N/A	N/A	N/A	3.6E-06	mg/kg-day	2.0E-01	mg/kg-day	1.8E-05
				Vinyl chloride	N/A	N/A	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Methylene chloride	3E+00	mg/kg	3.8E-08	mg/kg-day	7.5E-03	(mg/kg-day)$^{-1}$	2.9E-10	2.7E-06	mg/kg-day	6.0E-02	mg/kg-day	4.4E-05
				cis-1,2-Dichloroethene	2E+00	mg/kg	3.1E-08	mg/kg-day	N/A	N/A	N/A	2.2E-06	mg/kg-day	1.0E-01	mg/kg-day	2.2E-05
				Trichloroethene	3E-01	mg/kg	3.9E-09	mg/kg-day	4.0E-01	(mg/kg-day)$^{-1}$	1.6E-09	2.8E-07	mg/kg-day	3.0E-04	mg/kg-day	9.2E-04
				Xylenes (total)	4E+00	mg/kg	5.7E-08	mg/kg-day	N/A	N/A	N/A	4.0E-06	mg/kg-day	2.0E-01	mg/kg-day	2.0E-05
				2-Methylnaphthalene	1E+00	mg/kg	1.5E-08	mg/kg-day	N/A	N/A	N/A	1.1E-06	mg/kg-day	2.0E-01	mg/kg-day	5.3E-06
				2,4,6-Trichlorophenol	N/A	N/A	N/A	N/A	1.1E-02	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	1.0E-03	mg/kg-day	N/A
				Acenaphthylene	2E+00	mg/kg	2.2E-08	mg/kg-day	N/A	N/A	N/A	1.6E-06	mg/kg-day	2.0E-01	mg/kg-day	7.8E-06
				Phenanthrene	2E+00	mg/kg	2.5E-08	mg/kg-day	N/A	N/A	N/A	1.7E-06	mg/kg-day	2.0E-01	mg/kg-day	8.7E-06
				Benzo(a)Anthracene	1E+00	mg/kg	2.1E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.5E-08	1.4E-06	mg/kg-day	N/A	N/A	N/A
				Bis(2-ethylhexyl) phthalate	1E+01	mg/kg	1.6E-07	mg/kg-day	1.4E-02	(mg/kg-day)$^{-1}$	2.3E-09	1.1E-05	mg/kg-day	2.0E-02	mg/kg-day	5.7E-04
				Benzo(b)Fluoranthene	1E+00	mg/kg	2.1E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.5E-08	1.5E-06	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	2E+00	mg/kg	2.5E-08	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	1.9E-09	1.8E-06	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	2E+00	mg/kg	2.2E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.6E-07	1.5E-06	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	1E+00	mg/kg	2.1E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.5E-08	1.5E-06	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	4E-01	mg/kg	5.3E-09	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	3.9E-08	3.7E-07	mg/kg-day	N/A	N/A	N/A
				Antimony	3E+00	mg/kg	4.0E-08	mg/kg-day	N/A	N/A	N/A	2.8E-06	mg/kg-day	4.0E-04	mg/kg-day	7.0E-03
				Arsenic	4E+00	mg/kg	5.6E-08	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	8.3E-08	3.9E-06	mg/kg-day	3.0E-04	mg/kg-day	1.3E-02
				Barium	3E+02	mg/kg	4.7E-06	mg/kg-day	N/A	N/A	N/A	3.3E-04	mg/kg-day	7.0E-02	mg/kg-day	4.7E-03
				Cadmium	1E+00	mg/kg	1.8E-08	mg/kg-day	N/A	N/A	N/A	1.2E-06	mg/kg-day	1.0E-03	mg/kg-day	1.2E-03
				Lead	5E+02	mg/kg	7.0E-06	mg/kg-day	N/A	N/A	N/A	4.9E-04	mg/kg-day	NA	NA	N/A
				Manganese	2E+02	mg/kg	2.5E-06	mg/kg-day	N/A	N/A	N/A	1.8E-04	mg/kg-day	7.0E-02	mg/kg-day	2.5E-03
				Mercury	8E-02	mg/kg	1.1E-09	mg/kg-day	N/A	N/A	N/A	7.4E-08	mg/kg-day	1.0E-04	mg/kg-day	7.4E-04
				Thallium	9E+00	mg/kg	1.2E-07	mg/kg-day	N/A	N/A	N/A	8.7E-06	mg/kg-day	8.0E-04	mg/kg-day	1.1E-02
				alpha-Chlordane	1E-01	mg/kg	1.7E-09	mg/kg-day	3.5E-01	(mg/kg-day)$^{-1}$	5.9E-10	1.2E-07	mg/kg-day	5.0E-04	mg/kg-day	2.4E-04
				gamma-Chlordane	1E-01	mg/kg	1.7E-09	mg/kg-day	3.5E-01	(mg/kg-day)$^{-1}$	6.0E-10	1.2E-07	mg/kg-day	5.0E-04	mg/kg-day	2.4E-04
				4,4'-DDE	N/A	N/A	N/A	N/A	3.4E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				4,4'-DDT	N/A	N/A	N/A	N/A	3.4E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	5.0E-04	mg/kg-day	N/A
				Aroclor 1242	N/A	N/A	N/A	N/A	2.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1248	6E-01	mg/kg	8.7E-09	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	1.7E-08	6.1E-07	mg/kg-day	2.0E-05	mg/kg-day	3.0E-02
				Aroclor 1254	2E-01	mg/kg	2.7E-09	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	5.5E-09	1.9E-07	mg/kg-day	2.0E-05	mg/kg-day	9.6E-03
				Aroclor 1260	N/A	N/A	N/A	N/A	2.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				PCB TEQ*	N/A	N/A	N/A	N/A	1.5E+05	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	NA	NA	N/A
				C5-C8 Aliphatic	1E+00	mg/kg	1.4E-08	mg/kg-day	N/A	N/A	N/A	9.8E-07	mg/kg-day	4.0E-01	mg/kg-day	2.4E-06
				C9-C10 Aromatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-01	mg/kg-day	N/A
				C9-C18 Aliphatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E+00	mg/kg-day	N/A
				C19-C36 Aliphatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E+00	mg/kg-day	N/A
				C11-C22 Aromatic	7E+03	mg/kg	9.4E-05	mg/kg-day	N/A	N/A	N/A	6.6E-03	mg/kg-day	3.0E-01	mg/kg-day	2.2E-02
			Exp. Route Total								4E-07					1E-01

TABLE 3-7.13.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Subsurface Soil (Cont.)	Subsurface Soil (Cont.)	Murphy Property	Dermal													
				1,2,4-Trimethylbenzene	1E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-01	mg/kg-day	N/A
				1,3,5-Trimethylbenzene	5E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-01	mg/kg-day	N/A
				Naphthalene	4E+00	mg/kg	2.2E-08	mg/kg-day	N/A	N/A	N/A	1.5E-06	mg/kg-day	2.0E-01	mg/kg-day	7.7E-06
				Vinyl chloride	N/A	N/A	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Methylene chloride	3E+00	mg/kg	N/A	N/A	7.5E-03	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	6.0E-02	mg/kg-day	N/A
				cis-1,2-Dichloroethene	2E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-01	mg/kg-day	N/A
				Trichloroethene	3E-01	mg/kg	N/A	N/A	4.0E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Xylenes (total)	4E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/kg-day	N/A
				2-Methylnaphthalene	1E+00	mg/kg	6.4E-09	mg/kg-day	N/A	N/A	N/A	4.5E-07	mg/kg-day	2.0E-01	mg/kg-day	2.3E-06
				2,4,6-Trichlorophenol	N/A	N/A	N/A	N/A	1.1E-02	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	1.0E-03	mg/kg-day	N/A
				Acenaphthylene	2E+00	mg/kg	9.6E-09	mg/kg-day	N/A	N/A	N/A	6.7E-07	mg/kg-day	2.0E-01	mg/kg-day	3.4E-06
				Phenanthrene	2E+00	mg/kg	1.1E-08	mg/kg-day	N/A	N/A	N/A	7.4E-07	mg/kg-day	2.0E-01	mg/kg-day	3.7E-06
				Benzo(a)Anthracene	1E+00	mg/kg	8.9E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	6.5E-09	6.2E-07	mg/kg-day	N/A	N/A	N/A
				Bis(2-ethylhexyl) phthalate	1E+01	mg/kg	N/A	N/A	1.4E-02	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-02	mg/kg-day	N/A
				Benzo(b)Fluoranthene	1E+00	mg/kg	8.9E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	6.5E-09	6.2E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	2E+00	mg/kg	1.1E-08	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	8.0E-10	7.6E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	2E+00	mg/kg	9.5E-09	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	6.9E-08	6.6E-07	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	1E+00	mg/kg	8.9E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	6.5E-09	6.2E-07	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	4E-01	mg/kg	2.3E-09	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.7E-08	1.6E-07	mg/kg-day	N/A	N/A	N/A
				Antimony	3E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-05	mg/kg-day	N/A
				Arsenic	4E+00	mg/kg	5.5E-09	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	8.3E-09	3.9E-07	mg/kg-day	3.0E-04	mg/kg-day	1.3E-03
				Barium	3E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.9E-03	mg/kg-day	N/A
				Cadmium	1E+00	mg/kg	5.8E-11	mg/kg-day	N/A	N/A	N/A	4.1E-09	mg/kg-day	2.5E-05	mg/kg-day	1.6E-04
				Lead	5E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA	NA	N/A
				Manganese	2E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.8E-03	mg/kg-day	N/A
				Mercury	8E-02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A
				Thallium	9E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-04	mg/kg-day	N/A
				alpha-Chlordane	1E-01	mg/kg	2.2E-10	mg/kg-day	3.5E-01	(mg/kg-day)$^{-1}$	7.8E-11	1.6E-08	mg/kg-day	5.0E-04	mg/kg-day	3.1E-05
				gamma-Chlordane	1E-01	mg/kg	2.3E-10	mg/kg-day	3.5E-01	(mg/kg-day)$^{-1}$	7.9E-11	1.6E-08	mg/kg-day	5.0E-04	mg/kg-day	3.2E-05
				4,4'-DDE	N/A	N/A	N/A	N/A	3.4E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				4,4'-DDT	N/A	N/A	N/A	N/A	3.4E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	5.0E-04	mg/kg-day	N/A
				Aroclor 1242	N/A	N/A	N/A	N/A	2.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1248	6E-01	mg/kg	4.0E-09	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	8.0E-09	2.8E-07	mg/kg-day	2.0E-05	mg/kg-day	1.4E-02
				Aroclor 1254	2E-01	mg/kg	1.3E-09	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	2.5E-09	8.8E-08	mg/kg-day	2.0E-05	mg/kg-day	4.4E-03
				Aroclor 1260	N/A	N/A	N/A	N/A	2.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				PCB TEQ*	N/A	N/A	N/A	N/A	1.5E+05	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	NA	NA	N/A
				C5-C8 Aliphatic	1E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.0E-01	mg/kg-day	N/A
				C9-C10 Aromatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-01	mg/kg-day	N/A
				C9-C18 Aliphatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E+00	mg/kg-day	N/A
				C19-C36 Aliphatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E+00	mg/kg-day	N/A
				C11-C22 Aromatic	7E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-01	mg/kg-day	N/A
			Exp. Route Total								1E-07					2E-02

TABLE 3-7.13.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Subsurface Soil (Cont.)	Subsurface Soil (Cont.)	Murphy Property	Inhalation													
				1,2,4-Trimethylbenzene	1E+01	mg/kg	2.5E-08	ug/m3	N/A	N/A	N/A	1.7E-09	mg/m3	6.0E-02	mg/m3	2.9E-08
				1,3,5-Trimethylbenzene	5E+00	mg/kg	1.1E-08	ug/m3	N/A	N/A	N/A	7.4E-10	mg/m3	6.0E-02	mg/m3	1.2E-08
				Naphthalene	4E+00	mg/kg	8.7E-09	ug/m3	N/A	N/A	N/A	6.1E-10	mg/m3	3.0E-03	mg/m3	2.0E-07
				Vinyl chloride	N/A	N/A	N/A	N/A	8.8E-06	(ug/m3)-1	N/A	N/A	N/A	1.0E-01	mg/m3	N/A
				Methylene chloride	3E+00	mg/kg	6.4E-09	ug/m3	4.7E-07	(ug/m3)-1	3.0E-15	4.5E-10	mg/m3	3.0E+00	mg/m3	1.5E-10
				cis-1,2-Dichloroethene	2E+00	mg/kg	5.3E-09	ug/m3	N/A	N/A	N/A	3.7E-10	mg/m3	2.0E-01	mg/m3	1.9E-09
				Trichloroethene	3E-01	mg/kg	6.6E-10	ug/m3	1.1E-04	(ug/m3)-1	7.3E-14	4.6E-11	mg/m3	4.0E-02	mg/m3	1.2E-09
				Xylenes (total)	4E+00	mg/kg	9.7E-09	ug/m3	N/A	N/A	N/A	6.8E-10	mg/m3	1.0E+00	mg/m3	6.8E-10
				2-Methylnaphthalene	1E+00	mg/kg	2.5E-09	ug/m3	N/A	N/A	N/A	1.8E-10	mg/m3	3.0E-03	mg/m3	5.9E-08
				2,4,6-Trichlorophenol	N/A	N/A	N/A	N/A	3.1E-06	(ug/m3)-1	N/A	N/A	N/A	N/A	N/A	N/A
				Acenaphthylene	2E+00	mg/kg	3.8E-09	ug/m3	N/A	N/A	N/A	2.6E-10	mg/m3	3.0E-03	mg/m3	8.8E-08
				Phenanthrene	2E+00	mg/kg	4.2E-09	ug/m3	N/A	N/A	N/A	2.9E-10	mg/m3	3.0E-03	mg/m3	9.7E-08
				Benzo(a)Anthracene	1E+00	mg/kg	3.5E-09	ug/m3	8.8E-05	(ug/m3)-1	3.1E-13	2.4E-10	mg/m3	N/A	N/A	N/A
				Bis(2-ethylhexyl) phthalate	1E+01	mg/kg	2.8E-08	ug/m3	N/A	N/A	N/A	1.9E-09	mg/m3	N/A	N/A	N/A
				Benzo(b)Fluoranthene	1E+00	mg/kg	3.5E-09	ug/m3	8.8E-05	(ug/m3)-1	3.1E-13	2.4E-10	mg/m3	N/A	N/A	N/A
				Benzo(k)Fluoranthene	2E+00	mg/kg	4.3E-09	ug/m3	8.8E-06	(ug/m3)-1	3.8E-14	3.0E-10	mg/m3	N/A	N/A	N/A
				Benzo(a)Pyrene	2E+00	mg/kg	3.7E-09	ug/m3	8.8E-04	(ug/m3)-1	3.3E-12	2.6E-10	mg/m3	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	1E+00	mg/kg	3.5E-09	ug/m3	8.8E-05	(ug/m3)-1	3.1E-13	2.4E-10	mg/m3	N/A	N/A	N/A
				Dibenz(a,h) anthracene	4E-01	mg/kg	8.9E-10	ug/m3	8.8E-04	(ug/m3)-1	7.9E-13	6.3E-11	mg/m3	N/A	N/A	N/A
				Antimony	3E+00	mg/kg	6.7E-09	ug/m3	N/A	N/A	N/A	4.7E-10	mg/m3	N/A	N/A	N/A
				Arsenic	4E+00	mg/kg	9.4E-09	ug/m3	4.3E-03	(ug/m3)-1	4.0E-11	6.6E-10	mg/m3	N/A	N/A	N/A
				Barium	3E+02	mg/kg	7.9E-07	ug/m3	N/A	N/A	N/A	5.5E-08	mg/m3	N/A	N/A	N/A
				Cadmium	1E+00	mg/kg	3.0E-09	ug/m3	1.8E-03	(ug/m3)-1	5.3E-12	2.1E-10	mg/m3	N/A	N/A	N/A
				Lead	5E+02	mg/kg	1.2E-06	ug/m3	N/A	N/A	N/A	8.3E-08	mg/m3	N/A	N/A	N/A
				Manganese	2E+02	mg/kg	4.3E-07	ug/m3	N/A	N/A	N/A	3.0E-08	mg/m3	5.0E-05	mg/m3	6.0E-04
				Mercury	8E-02	mg/kg	1.8E-10	ug/m3	N/A	N/A	N/A	1.2E-11	mg/m3	N/A	N/A	N/A
				Thallium	9E+00	mg/kg	2.1E-08	ug/m3	N/A	N/A	N/A	1.5E-09	mg/m3	N/A	N/A	N/A
				alpha-Chlordane	1E-01	mg/kg	2.8E-10	ug/m3	1.0E-04	(ug/m3)-1	2.8E-14	2.0E-11	mg/m3	7.0E-03	mg/m3	2.8E-09
				gamma-Chlordane	1E-01	mg/kg	2.9E-10	ug/m3	1.0E-04	(ug/m3)-1	2.9E-14	2.0E-11	mg/m3	7.0E-03	mg/m3	2.9E-09
				4,4'-DDE	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				4,4'-DDT	N/A	N/A	N/A	N/A	9.7E-05	(ug/m3)-1	N/A	N/A	N/A	N/A	N/A	N/A
				Aroclor 1242	N/A	N/A	N/A	N/A	5.0E-04	(ug/m3)-1	N/A	N/A	N/A	N/A	N/A	N/A
				Aroclor 1248	6E-01	mg/kg	1.5E-09	ug/m3	5.0E-04	(ug/m3)-1	7.3E-13	1.0E-10	mg/m3	N/A	N/A	N/A
				Aroclor 1254	2E-01	mg/kg	4.6E-10	ug/m3	5.0E-04	(ug/m3)-1	2.3E-13	3.2E-11	mg/m3	N/A	N/A	N/A
				Aroclor 1260	N/A	N/A	N/A	N/A	5.0E-04	(ug/m3)-1	N/A	N/A	N/A	N/A	N/A	N/A
				PCB TEQ*	N/A	N/A	N/A	N/A	3.3E+01	(ug/m3)-1	N/A	N/A	N/A	N/A	N/A	N/A
				C5-C8 Aliphatic	1E+00	mg/kg	2.4E-09	ug/m3	N/A	N/A	N/A	1.6E-10	mg/m3	2.0E-01	mg/m3	8.2E-10
				C9-C10 Aromatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/m3	N/A
				C9-C18 Aliphatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/m3	N/A
				C19-C36 Aliphatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	mg/m3	N/A
				C11-C22 Aromatic	7E+03	mg/kg	1.6E-05	ug/m3	N/A	N/A	N/A	1.1E-06	mg/m3	5.0E-02	mg/m3	2.2E-05
			Exp. Route Total								5E-11					6E-04
		Exposure Point Total									5E-07					1E-01
	Exposure Medium Total										N/A					N/A
Medium Total											N/A					N/A

TABLE 3-7.13.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Outdoor Air	Aberjona Property	Inhalation													
				C5-C8 Aliphatic	5E-02	ug/m3	8.1E-05	ug/m3	N/A	N/A	N/A	5.7E-06	mg/m3	2.0E-01	mg/m3	2.8E-05
				C9-C12 Aliphatic	2E-03	ug/m3	3.0E-06	ug/m3	N/A	N/A	N/A	2.1E-07	mg/m3	2.0E-01	mg/m3	1.1E-06
				C9-C10 Aromatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/m3	N/A
				C9-C18 Aliphatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/m3	N/A
				C11-C22 Aromatic	5E-04	ug/m3	7.5E-07	ug/m3	N/A	N/A	N/A	5.3E-08	mg/m3	5.0E-02	mg/m3	1.1E-06
			Exp. Route Total								0E+00					3E-05
		Exposure Point Total									0E+00					3E-05

TABLE 3-7.13.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil (Cont.)	Outdoor Air (Cont.)	Whitney Property	Inhalation													
				C5-C8 Aliphatic	4E-01	ug/m3	7.3E-04	ug/m3	N/A	N/A	N/A	5.1E-05	mg/m3	2.0E-01	mg/m3	2.5E-04
				C9-C12 Aliphatic	2E-02	ug/m3	3.6E-05	ug/m3	N/A	N/A	N/A	2.6E-06	mg/m3	2.0E-01	mg/m3	1.3E-05
				C9-C10 Aromatic	4E-03	ug/m3	6.2E-06	ug/m3	N/A	N/A	N/A	4.4E-07	mg/m3	5.0E-02	mg/m3	8.7E-06
				C9-C18 Aliphatic	4E-02	ug/m3	6.1E-05	ug/m3	N/A	N/A	N/A	4.3E-06	mg/m3	2.0E-01	mg/m3	2.1E-05
				C11-C22 Aromatic	1E-02	ug/m3	2.4E-05	ug/m3	N/A	N/A	N/A	1.7E-06	mg/m3	5.0E-02	mg/m3	3.4E-05
			Exp. Route Total								0E+00					3E-04
		Exposure Point Total									0E+00					3E-04

TABLE 3-7.13.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil (Cont.)	Outdoor Air (Cont.)	Murphy Property	Inhalation													
				C5-C8 Aliphatic	5E-02	ug/m3	8.1E-05	ug/m3	N/A	N/A	N/A	5.7E-06	mg/m3	2.0E-01	mg/m3	2.8E-05
				C9-C12 Aliphatic	2E-03	ug/m3	3.0E-06	ug/m3	N/A	N/A	N/A	2.1E-07	mg/m3	2.0E-01	mg/m3	1.1E-06
				C9-C10 Aromatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/m3	N/A
				C9-C18 Aliphatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/m3	N/A
				C11-C22 Aromatic	1E-01	ug/m3	2.0E-04	ug/m3	N/A	N/A	N/A	1.4E-05	mg/m3	5.0E-02	mg/m3	2.8E-04
			Exp. Route Total								0E+00					3E-04
		Exposure Point Total									0E+00					3E-04
	Exposure Medium Total										N/A					N/A

TABLE 3-7.13.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Subsurface Soil	Outdoor Air	Aberjona Property	Inhalation													
				C5-C8 Aliphatic	9E-01	ug/m3	1.5E-03	ug/m3	N/A	N/A	N/A	1.1E-04	mg/m3	2.0E-01	mg/m3	5.4E-04
				C9-C12 Aliphatic	1E-01	ug/m3	1.9E-04	ug/m3	N/A	N/A	N/A	1.3E-05	mg/m3	2.0E-01	mg/m3	6.5E-05
				C9-C10 Aromatic	1E-01	ug/m3	2.2E-04	ug/m3	N/A	N/A	N/A	1.5E-05	mg/m3	5.0E-02	mg/m3	3.1E-04
				C9-C18 Aliphatic	1E+00	ug/m3	1.8E-03	ug/m3	N/A	N/A	N/A	1.2E-04	mg/m3	2.0E-01	mg/m3	6.1E-04
				C11-C22 Aromatic	4E-02	ug/m3	7.2E-05	ug/m3	N/A	N/A	N/A	5.0E-06	mg/m3	5.0E-02	mg/m3	1.0E-04
			Exp. Route Total								0E+00					2E-03
		Exposure Point Total									0E+00					2E-03

TABLE 3-7.13.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Subsurface Soil (Cont.)	Outdoor Air (Cont.)	Whitney Property	Inhalation													
				C5-C8 Aliphatic	7E+00	ug/m3	1.2E-02	ug/m3	N/A	N/A	N/A	8.1E-04	mg/m3	2.0E-01	mg/m3	4.1E-03
				C9-C12 Aliphatic	3E-01	ug/m3	4.4E-04	ug/m3	N/A	N/A	N/A	3.1E-05	mg/m3	2.0E-01	mg/m3	1.6E-04
				C9-C10 Aromatic	4E-01	ug/m3	6.2E-04	ug/m3	N/A	N/A	N/A	4.3E-05	mg/m3	5.0E-02	mg/m3	8.7E-04
				C9-C18 Aliphatic	3E+00	ug/m3	4.4E-03	ug/m3	N/A	N/A	N/A	3.0E-04	mg/m3	2.0E-01	mg/m3	1.5E-03
				C11-C22 Aromatic	1E-01	ug/m3	1.7E-04	ug/m3	N/A	N/A	N/A	1.2E-05	mg/m3	5.0E-02	mg/m3	2.4E-04
			Exp. Route Total								0E+00					7E-03
		Exposure Point Total									0E+00					7E-03

TABLE 3-7.13.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Subsurface Soil (Cont.)	Outdoor Air (Cont.)	Murphy Property	Inhalation													
				C5-C8 Aliphatic	5E-02	ug/m3	8.1E-05	ug/m3	N/A	N/A	N/A	5.7E-06	mg/m3	2.0E-01	mg/m3	2.8E-05
				C9-C12 Aliphatic	2E-03	ug/m3	3.0E-06	ug/m3	N/A	N/A	N/A	2.1E-07	mg/m3	2.0E-01	mg/m3	1.1E-06
				C9-C10 Aromatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/m3	N/A
				C9-C18 Aliphatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/m3	N/A
				C11-C22 Aromatic	2E+00	ug/m3	3.0E-03	ug/m3	N/A	N/A	N/A	2.1E-04	mg/m3	5.0E-02	mg/m3	4.2E-03
			Exp. Route Total								0E+00					4E-03
		Exposure Point Total									0E+00					4E-03
	Exposure Medium Total										N/A					N/A

TABLE 3-7.13.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Ground Water	Shallow Ground Water	Aberjona Property	Ingestion													
				1,1,2-Trichloroethane	N/A	N/A	N/A	N/A	5.7E-02	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	4.0E-02	mg/kg-day	N/A
				1,1-Dichloroethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E+00	mg/kg-day	N/A
				1,1-Dichloroethene	1E-01	ug/L	3.7E-10	mg/kg-day	N/A	N/A	N/A	2.6E-08	mg/kg-day	5.0E-02	mg/kg-day	5.2E-07
				1,2,4-Trichlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-01	mg/kg-day	N/A
				1,3-Dichlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9.0E-03	mg/kg-day	N/A
				1,4-Dichlorobenzene	5E-01	ug/L	1.6E-09	mg/kg-day	N/A	N/A	N/A	1.1E-07	mg/kg-day	3.0E-01	mg/kg-day	3.8E-07
				Benzene	3E-01	ug/L	9.1E-10	mg/kg-day	5.5E-02	(mg/kg-day)$^{-1}$	5.0E-11	6.4E-08	mg/kg-day	1.2E-02	mg/kg-day	5.3E-06
				Bromomethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.4E-02	mg/kg-day	N/A
				Chlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/kg-day	N/A
				Chlorodibromomethane	9E-01	ug/L	3.2E-09	mg/kg-day	8.4E-02	(mg/kg-day)$^{-1}$	2.7E-10	2.2E-07	mg/kg-day	2.0E-01	mg/kg-day	1.1E-06
				Chloroethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.0E-01	mg/kg-day	N/A
				cis-1,2-Dichloroethene	3E+01	ug/L	1.0E-07	mg/kg-day	N/A	N/A	N/A	7.1E-06	mg/kg-day	1.0E-01	mg/kg-day	7.1E-05
				Ethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E+00	mg/kg-day	N/A
				Methyl tert-butyl ether	1E+01	ug/L	4.9E-08	mg/kg-day	3.3E-03	(mg/kg-day)$^{-1}$	1.6E-10	3.4E-06	mg/kg-day	N/A	mg/kg-day	N/A
				Methylene chloride	N/A	N/A	N/A	N/A	7.5E-03	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	6.0E-02	mg/kg-day	N/A
				Tetrachloroethene	4E-01	ug/L	1.5E-09	mg/kg-day	2.1E-02	(mg/kg-day)$^{-1}$	3.1E-11	1.0E-07	mg/kg-day	1.0E-01	mg/kg-day	1.0E-06
				Toluene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E+00	mg/kg-day	N/A
				trans-1,2-Dichloroethene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-02	mg/kg-day	N/A
				Trichloroethene	3E+01	ug/L	8.7E-08	mg/kg-day	4.0E-01	(mg/kg-day)$^{-1}$	3.5E-08	6.1E-06	mg/kg-day	3.0E-04	mg/kg-day	2.0E-02
				Vinyl chloride	2E-01	ug/L	7.6E-10	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	1.1E-09	5.3E-08	mg/kg-day	3.0E-03	mg/kg-day	1.8E-05
				Xylenes (total)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/kg-day	N/A
				Acetophenone	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-01	mg/kg-day	N/A
				4-Methylphenol	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-03	mg/kg-day	N/A
				Naphthalene	3E+00	ug/L	9.4E-09	mg/kg-day	N/A	N/A	N/A	6.6E-07	mg/kg-day	2.0E-01	mg/kg-day	3.3E-06
				2-Methylnaphthalene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/kg-day	N/A
				Acenaphthylene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/kg-day	N/A
				Phenanthrene	2E+00	ug/L	7.3E-09	mg/kg-day	N/A	N/A	N/A	5.1E-07	mg/kg-day	2.0E-01	mg/kg-day	2.6E-06
				Benzo(a)Pyrene	1E-02	ug/L	3.8E-11	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	2.8E-10	2.7E-09	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	1E-02	ug/L	4.5E-11	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	3.3E-10	3.2E-09	mg/kg-day	N/A	N/A	N/A
				C9-C18 Aliphatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E+00	mg/kg-day	N/A
				C11-C22 Aromatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-01	mg/kg-day	N/A
				C19-C36 Aliphatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E+00	mg/kg-day	N/A
				C5-C8 Aliphatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.0E-01	mg/kg-day	N/A
				Arsenic	2E+00	ug/L	6.6E-09	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	9.9E-09	4.6E-07	mg/kg-day	3.0E-04	mg/kg-day	1.5E-03
				Chromium	1E+01	ug/L	4.4E-08	mg/kg-day	N/A	N/A	N/A	3.1E-06	mg/kg-day	1.5E+00	mg/kg-day	2.0E-06
				Lead	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA	NA	N/A
				Manganese	6E+02	ug/L	2.1E-06	mg/kg-day	N/A	N/A	N/A	1.5E-04	mg/kg-day	2.4E-02	mg/kg-day	6.1E-03
				PCB TEQ*	N/A	N/A	N/A	N/A	1.5E+05	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	NA	NA	N/A
				Dieldrin	1E-02	ug/L	4.9E-11	mg/kg-day	1.6E+01	(mg/kg-day)$^{-1}$	7.8E-10	3.4E-09	mg/kg-day	5.0E-05	mg/kg-day	6.8E-05
				4,4'-DDD	N/A	N/A	N/A	N/A	2.4E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-02	mg/kg-day	N/A
			Exp. Route Total								5E-08					3E-02

TABLE 3-7.13.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Ground Water (Cont.)	Shallow Ground Water (Cont.)	Aberjona Property	Dermal													
				1,1,2-Trichloroethane	N/A	N/A	N/A	N/A	5.7E-02	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	4.0E-02	mg/kg-day	N/A
				1,1-Dichloroethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E+00	mg/kg-day	N/A
				1,1-Dichloroethene	1E-01	ug/L	4.4E-09	mg/kg-day	N/A	N/A	N/A	3.1E-07	mg/kg-day	5.0E-02	mg/kg-day	6.2E-06
				1,2,4-Trichlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-01	mg/kg-day	N/A
				1,3-Dichlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9.0E-03	mg/kg-day	N/A
				1,4-Dichlorobenzene	5E-01	ug/L	3.9E-08	mg/kg-day	N/A	N/A	N/A	2.7E-06	mg/kg-day	3.0E-01	mg/kg-day	9.2E-06
				Benzene	3E-01	ug/L	9.0E-09	mg/kg-day	5.5E-02	(mg/kg-day)$^{-1}$	5.0E-10	6.3E-07	mg/kg-day	1.2E-02	mg/kg-day	5.3E-05
				Bromomethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.4E-02	mg/kg-day	N/A
				Chlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/kg-day	N/A
				Chlorodibromomethane	9E-01	ug/L	8.5E-09	mg/kg-day	8.4E-02	(mg/kg-day)$^{-1}$	7.1E-10	5.9E-07	mg/kg-day	2.0E-01	mg/kg-day	3.0E-06
				Chloroethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.0E-01	mg/kg-day	N/A
				cis-1,2-Dichloroethene	3E+01	ug/L	6.2E-07	mg/kg-day	N/A	N/A	N/A	4.3E-05	mg/kg-day	1.0E-01	mg/kg-day	4.3E-04
				Ethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E+00	mg/kg-day	N/A
				Methyl tert-butyl ether	1E+01	ug/L	5.9E-08	mg/kg-day	3.3E-03	(mg/kg-day)$^{-1}$	1.9E-10	4.1E-06	mg/kg-day	N/A	mg/kg-day	N/A
				Methylene chloride	N/A	N/A	N/A	N/A	7.5E-03	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	6.0E-02	mg/kg-day	N/A
				Tetrachloroethene	4E-01	ug/L	2.9E-08	mg/kg-day	2.1E-02	(mg/kg-day)$^{-1}$	6.1E-10	2.0E-06	mg/kg-day	1.0E-01	mg/kg-day	2.0E-05
				Toluene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E+00	mg/kg-day	N/A
				trans-1,2-Dichloroethene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-02	mg/kg-day	N/A
				Trichloroethene	3E+01	ug/L	5.9E-07	mg/kg-day	4.0E-01	(mg/kg-day)$^{-1}$	2.4E-07	4.1E-05	mg/kg-day	3.0E-04	mg/kg-day	1.4E-01
				Vinyl chloride	2E-01	ug/L	2.6E-09	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	3.9E-09	1.8E-07	mg/kg-day	3.0E-03	mg/kg-day	6.0E-05
				Xylenes (total)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/kg-day	N/A
				Acetophenone	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-01	mg/kg-day	N/A
				4-Methylphenol	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-03	mg/kg-day	N/A
				Naphthalene	3E+00	ug/L	2.3E-07	mg/kg-day	N/A	N/A	N/A	1.6E-05	mg/kg-day	2.0E-01	mg/kg-day	8.1E-05
				2-Methylnaphthalene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/kg-day	N/A
				Acenaphthylene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/kg-day	N/A
				Phenanthrene	2E+00	ug/L	5.6E-07	mg/kg-day	N/A	N/A	N/A	3.9E-05	mg/kg-day	2.0E-01	mg/kg-day	2.0E-04
				Benzo(a)Pyrene	1E-02	ug/L	2.3E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.7E-07	1.6E-06	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	1E-02	ug/L	4.2E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	3.1E-07	2.9E-06	mg/kg-day	N/A	N/A	N/A
				C9-C18 Aliphatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E+00	mg/kg-day	N/A
				C11-C22 Aromatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-01	mg/kg-day	N/A
				C19-C36 Aliphatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E+00	mg/kg-day	N/A
				C5-C8 Aliphatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.0E-01	mg/kg-day	N/A
				Arsenic	2E+00	ug/L	4.6E-09	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	6.9E-09	3.2E-07	mg/kg-day	3.0E-04	mg/kg-day	1.1E-03
				Chromium	1E+01	ug/L	2.4E-08	mg/kg-day	N/A	N/A	N/A	1.7E-06	mg/kg-day	2.0E-02	mg/kg-day	8.6E-05
				Lead	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA	NA	N/A
				Manganese	6E+02	ug/L	1.5E-06	mg/kg-day	N/A	N/A	N/A	1.1E-04	mg/kg-day	9.6E-04	mg/kg-day	1.1E-01
				PCB TEQ*	N/A	N/A	N/A	N/A	1.5E+05	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	NA	NA	N/A
				Dieldrin	1E-02	ug/L	9.4E-10	mg/kg-day	1.6E+01	(mg/kg-day)$^{-1}$	1.5E-08	6.6E-08	mg/kg-day	5.0E-05	mg/kg-day	1.3E-03
				4,4'-DDD	N/A	N/A	N/A	N/A	2.4E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-02	mg/kg-day	N/A
			Exp. Route Total								7E-07					3E-01
		Exposure Point Total									8E-07					3E-01

TABLE 3-7.13.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Ground Water (Cont.)	Shallow Ground Water (Cont.)	Whitney Property	Ingestion													
				1,1,2-Trichloroethane	N/A	N/A	N/A	N/A	5.7E-02	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	4.0E-02	mg/kg-day	N/A
				1,1-Dichloroethane	1E+02	ug/L	4.2E-07	mg/kg-day	N/A	N/A	N/A	2.9E-05	mg/kg-day	1.0E+00	mg/kg-day	2.9E-05
				1,1-Dichloroethene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/kg-day	N/A
				1,2,4-Trichlorobenzene	2E+01	ug/L	8.0E-08	mg/kg-day	N/A	N/A	N/A	5.6E-06	mg/kg-day	1.0E-01	mg/kg-day	5.6E-05
				1,3-Dichlorobenzene	2E+01	ug/L	6.6E-08	mg/kg-day	N/A	N/A	N/A	4.6E-06	mg/kg-day	9.0E-03	mg/kg-day	5.2E-04
				1,4-Dichlorobenzene	2E+02	ug/L	6.9E-07	mg/kg-day	N/A	N/A	N/A	4.8E-05	mg/kg-day	3.0E-01	mg/kg-day	1.6E-04
				Benzene	9E+01	ug/L	3.0E-07	mg/kg-day	5.5E-02	(mg/kg-day)$^{-1}$	1.7E-08	2.1E-05	mg/kg-day	1.2E-02	mg/kg-day	1.8E-03
				Bromomethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.4E-02	mg/kg-day	N/A
				Chlorobenzene	2E+01	ug/L	6.3E-08	mg/kg-day	N/A	N/A	N/A	4.4E-06	mg/kg-day	2.0E-01	mg/kg-day	2.2E-05
				Chlorodibromomethane	1E+00	ug/L	3.7E-09	mg/kg-day	8.4E-02	(mg/kg-day)$^{-1}$	3.1E-10	2.6E-07	mg/kg-day	2.0E-01	mg/kg-day	1.3E-06
				Chloroethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.0E-01	mg/kg-day	N/A
				cis-1,2-Dichloroethene	5E+02	ug/L	1.7E-06	mg/kg-day	N/A	N/A	N/A	1.2E-04	mg/kg-day	1.0E-01	mg/kg-day	1.2E-03
				Ethylbenzene	4E+01	ug/L	1.4E-07	mg/kg-day	N/A	N/A	N/A	9.8E-06	mg/kg-day	1.0E+00	mg/kg-day	9.8E-06
				Methyl tert-butyl ether	5E+02	ug/L	1.9E-06	mg/kg-day	3.3E-03	(mg/kg-day)$^{-1}$	6.2E-09	1.3E-04	mg/kg-day	N/A	mg/kg-day	N/A
				Methylene chloride	N/A	N/A	N/A	N/A	7.5E-03	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	6.0E-02	mg/kg-day	N/A
				Tetrachloroethene	N/A	N/A	N/A	N/A	2.1E-02	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	1.0E-01	mg/kg-day	N/A
				Toluene	1E+03	ug/L	4.2E-06	mg/kg-day	N/A	N/A	N/A	2.9E-04	mg/kg-day	2.0E+00	mg/kg-day	1.5E-04
				trans-1,2-Dichloroethene	2E+01	ug/L	5.2E-08	mg/kg-day	N/A	N/A	N/A	3.7E-06	mg/kg-day	2.0E-02	mg/kg-day	1.8E-04
				Trichloroethene	2E+00	ug/L	7.0E-09	mg/kg-day	4.0E-01	(mg/kg-day)$^{-1}$	2.8E-09	4.9E-07	mg/kg-day	3.0E-04	mg/kg-day	1.6E-03
				Vinyl chloride	4E+02	ug/L	1.5E-06	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	2.2E-06	1.0E-04	mg/kg-day	3.0E-03	mg/kg-day	3.4E-02
				Xylenes (total)	3E+01	ug/L	1.0E-07	mg/kg-day	N/A	N/A	N/A	7.1E-06	mg/kg-day	2.0E-01	mg/kg-day	3.6E-05
				Acetophenone	1E+00	ug/L	4.2E-09	mg/kg-day	N/A	N/A	N/A	2.9E-07	mg/kg-day	1.0E-01	mg/kg-day	2.9E-06
				4-Methylphenol	2E+00	ug/L	6.3E-09	mg/kg-day	N/A	N/A	N/A	4.4E-07	mg/kg-day	5.0E-03	mg/kg-day	8.8E-05
				Naphthalene	1E+01	ug/L	3.4E-08	mg/kg-day	N/A	N/A	N/A	2.3E-06	mg/kg-day	2.0E-01	mg/kg-day	1.2E-05
				2-Methylnaphthalene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/kg-day	N/A
				Acenaphthylene	3E+00	ug/L	1.1E-08	mg/kg-day	N/A	N/A	N/A	7.8E-07	mg/kg-day	2.0E-01	mg/kg-day	3.9E-06
				Phenanthrene	3E+00	ug/L	1.1E-08	mg/kg-day	N/A	N/A	N/A	7.6E-07	mg/kg-day	2.0E-01	mg/kg-day	3.8E-06
				Benzo(a)Pyrene	1E-02	ug/L	5.2E-11	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	3.8E-10	3.7E-09	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	6E-03	ug/L	2.0E-11	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.5E-10	1.4E-09	mg/kg-day	N/A	N/A	N/A
				C9-C18 Aliphatic	6E+01	ug/L	2.1E-07	mg/kg-day	N/A	N/A	N/A	1.4E-05	mg/kg-day	1.0E+00	mg/kg-day	1.4E-05
				C11-C22 Aromatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-01	mg/kg-day	N/A
				C19-C36 Aliphatic	2E+02	ug/L	5.2E-07	mg/kg-day	N/A	N/A	N/A	3.7E-05	mg/kg-day	6.0E+00	mg/kg-day	6.1E-06
				C5-C8 Aliphatic	4E+02	ug/L	1.6E-06	mg/kg-day	N/A	N/A	N/A	1.1E-04	mg/kg-day	4.0E-01	mg/kg-day	2.7E-04
				Arsenic	3E+00	ug/L	8.9E-09	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	1.3E-08	6.2E-07	mg/kg-day	3.0E-04	mg/kg-day	2.1E-03
				Chromium	2E+01	ug/L	7.3E-08	mg/kg-day	N/A	N/A	N/A	5.1E-06	mg/kg-day	1.5E+00	mg/kg-day	3.4E-06
				Lead	2E+00	ug/L	5.7E-09	mg/kg-day	N/A	N/A	N/A	4.0E-07	mg/kg-day	NA	NA	N/A
				Manganese	2E+03	ug/L	5.9E-06	mg/kg-day	N/A	N/A	N/A	4.1E-04	mg/kg-day	2.4E-02	mg/kg-day	1.7E-02
				PCB TEQ*	1E-06	ug/L	4.9E-15	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	7.4E-10	3.4E-13	mg/kg-day	NA	NA	N/A
				Dieldrin	N/A	N/A	N/A	N/A	1.6E+01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	5.0E-05	mg/kg-day	N/A
				4,4'-DDD	6E-01	ug/L	1.9E-09	mg/kg-day	2.4E-01	(mg/kg-day)$^{-1}$	4.7E-10	1.4E-07	mg/kg-day	2.0E-02	mg/kg-day	6.8E-06
			Exp. Route Total								2E-06					6E-02

TABLE 3-7.13.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Ground Water (Cont.)	Shallow Ground Water (Cont.)	Whitney Property	Dermal													
				1,1,2-Trichloroethane	N/A	N/A	N/A	N/A	5.7E-02	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	4.0E-02	mg/kg-day	N/A
				1,1-Dichloroethane	1E+02	ug/L	1.6E-06	mg/kg-day	N/A	N/A	N/A	1.1E-04	mg/kg-day	1.0E+00	mg/kg-day	1.1E-04
				1,1-Dichloroethene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/kg-day	N/A
				1,2,4-Trichlorobenzene	2E+01	ug/L	3.1E-06	mg/kg-day	N/A	N/A	N/A	2.2E-04	mg/kg-day	1.0E-01	mg/kg-day	2.2E-03
				1,3-Dichlorobenzene	2E+01	ug/L	2.1E-06	mg/kg-day	N/A	N/A	N/A	1.4E-04	mg/kg-day	9.0E-03	mg/kg-day	1.6E-02
				1,4-Dichlorobenzene	2E+02	ug/L	1.6E-05	mg/kg-day	N/A	N/A	N/A	1.1E-03	mg/kg-day	3.0E-01	mg/kg-day	3.7E-03
				Benzene	9E+01	ug/L	2.4E-06	mg/kg-day	5.5E-02	(mg/kg-day)$^{-1}$	1.3E-07	1.7E-04	mg/kg-day	1.2E-02	mg/kg-day	1.4E-02
				Bromomethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.4E-02	mg/kg-day	N/A
				Chlorobenzene	2E+01	ug/L	9.6E-07	mg/kg-day	N/A	N/A	N/A	6.7E-05	mg/kg-day	2.0E-01	mg/kg-day	3.4E-04
				Chlorodibromomethane	1E+00	ug/L	8.6E-09	mg/kg-day	8.4E-02	(mg/kg-day)$^{-1}$	7.2E-10	6.0E-07	mg/kg-day	2.0E-01	mg/kg-day	3.0E-06
				Chloroethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.0E-01	mg/kg-day	N/A
				cis-1,2-Dichloroethene	5E+02	ug/L	1.0E-05	mg/kg-day	N/A	N/A	N/A	7.2E-04	mg/kg-day	1.0E-01	mg/kg-day	7.2E-03
				Ethylbenzene	4E+01	ug/L	3.5E-06	mg/kg-day	N/A	N/A	N/A	2.4E-04	mg/kg-day	1.0E+00	mg/kg-day	2.4E-04
				Methyl tert-butyl ether	5E+02	ug/L	2.3E-06	mg/kg-day	3.3E-03	(mg/kg-day)$^{-1}$	7.5E-09	1.6E-04	mg/kg-day	N/A	mg/kg-day	N/A
				Methylene chloride	N/A	N/A	N/A	N/A	7.5E-03	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	6.0E-02	mg/kg-day	N/A
				Tetrachloroethene	N/A	N/A	N/A	N/A	2.1E-02	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	1.0E-01	mg/kg-day	N/A
				Toluene	1E+03	ug/L	6.8E-05	mg/kg-day	N/A	N/A	N/A	4.8E-03	mg/kg-day	2.0E+00	mg/kg-day	2.4E-03
				trans-1,2-Dichloroethene	2E+01	ug/L	3.2E-07	mg/kg-day	N/A	N/A	N/A	2.2E-05	mg/kg-day	2.0E-02	mg/kg-day	1.1E-03
				Trichloroethene	2E+00	ug/L	4.7E-08	mg/kg-day	4.0E-01	(mg/kg-day)$^{-1}$	1.9E-08	3.3E-06	mg/kg-day	3.0E-04	mg/kg-day	1.1E-02
				Vinyl chloride	4E+02	ug/L	4.5E-06	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	6.8E-06	3.2E-04	mg/kg-day	3.0E-03	mg/kg-day	1.1E-01
				Xylenes (total)	3E+01	ug/L	3.6E-06	mg/kg-day	N/A	N/A	N/A	2.5E-04	mg/kg-day	2.0E-01	mg/kg-day	1.2E-03
				Acetophenone	1E+00	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-01	mg/kg-day	N/A
				4-Methylphenol	2E+00	ug/L	2.7E-08	mg/kg-day	N/A	N/A	N/A	1.9E-06	mg/kg-day	5.0E-03	mg/kg-day	3.8E-04
				Naphthalene	1E+01	ug/L	1.2E-06	mg/kg-day	N/A	N/A	N/A	8.2E-05	mg/kg-day	2.0E-01	mg/kg-day	4.1E-04
				2-Methylnaphthalene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/kg-day	N/A
				Acenaphthylene	3E+00	ug/L	5.2E-07	mg/kg-day	N/A	N/A	N/A	3.6E-05	mg/kg-day	2.0E-01	mg/kg-day	1.8E-04
				Phenanthrene	3E+00	ug/L	8.3E-07	mg/kg-day	N/A	N/A	N/A	5.8E-05	mg/kg-day	2.0E-01	mg/kg-day	2.9E-04
				Benzo(a)Pyrene	1E-02	ug/L	3.1E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	2.3E-07	2.2E-06	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	6E-03	ug/L	1.9E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.4E-07	1.3E-06	mg/kg-day	N/A	N/A	N/A
				C9-C18 Aliphatic	6E+01	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E+00	mg/kg-day	N/A
				C11-C22 Aromatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-01	mg/kg-day	N/A
				C19-C36 Aliphatic	2E+02	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E+00	mg/kg-day	N/A
				C5-C8 Aliphatic	4E+02	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.0E-01	mg/kg-day	N/A
				Arsenic	3E+00	ug/L	6.5E-09	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	9.7E-09	4.5E-07	mg/kg-day	3.0E-04	mg/kg-day	1.5E-03
				Chromium	2E+01	ug/L	4.2E-08	mg/kg-day	N/A	N/A	N/A	3.0E-06	mg/kg-day	2.0E-02	mg/kg-day	1.5E-04
				Lead	2E+00	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA	NA	N/A
				Manganese	2E+03	ug/L	4.9E-06	mg/kg-day	N/A	N/A	N/A	3.4E-04	mg/kg-day	9.6E-04	mg/kg-day	3.5E-01
				PCB TEQ*	1E-06	ug/L	2.7E-12	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	4.0E-07	1.9E-10	mg/kg-day	NA	NA	N/A
				Dieldrin	N/A	N/A	N/A	N/A	1.6E+01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	5.0E-05	mg/kg-day	N/A
				4,4'-DDD	6E-01	ug/L	3.7E-07	mg/kg-day	2.4E-01	(mg/kg-day)$^{-1}$	8.9E-08	2.6E-05	mg/kg-day	2.0E-02	mg/kg-day	1.3E-03
			Exp. Route Total								8E-06					5E-01
		Exposure Point Total									1E-05					6E-01

TABLE 3-7.13.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Ground Water (Cont.)	Shallow Ground Water (Cont.)	Murphy Property	Ingestion													
				1,1,2-Trichloroethane	4E-01	ug/L	1.4E-09	mg/kg-day	5.7E-02	(mg/kg-day)$^{-1}$	8.0E-11	9.8E-08	mg/kg-day	4.0E-02	mg/kg-day	2.4E-06
				1,1-Dichloroethane	7E+01	ug/L	2.5E-07	mg/kg-day	N/A	N/A	N/A	1.8E-05	mg/kg-day	1.0E+00	mg/kg-day	1.8E-05
				1,1-Dichloroethene	9E+00	ug/L	3.1E-08	mg/kg-day	N/A	N/A	N/A	2.2E-06	mg/kg-day	5.0E-02	mg/kg-day	4.4E-05
				1,2,4-Trichlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-01	mg/kg-day	N/A
				1,3-Dichlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9.0E-03	mg/kg-day	N/A
				1,4-Dichlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-01	mg/kg-day	N/A
				Benzene	7E+00	ug/L	2.3E-08	mg/kg-day	5.5E-02	(mg/kg-day)$^{-1}$	1.3E-09	1.6E-06	mg/kg-day	1.2E-02	mg/kg-day	1.3E-04
				Bromomethane	1E+00	ug/L	3.5E-09	mg/kg-day	N/A	N/A	N/A	2.4E-07	mg/kg-day	1.4E-02	mg/kg-day	1.7E-05
				Chlorobenzene	1E+00	ug/L	3.5E-09	mg/kg-day	N/A	N/A	N/A	2.4E-07	mg/kg-day	2.0E-01	mg/kg-day	1.2E-06
				Chlorodibromomethane	N/A	N/A	N/A	N/A	8.4E-02	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-01	mg/kg-day	N/A
				Chloroethane	3E+01	ug/L	1.1E-07	mg/kg-day	N/A	N/A	N/A	7.5E-06	mg/kg-day	4.0E-01	mg/kg-day	1.9E-05
				cis-1,2-Dichloroethene	7E+02	ug/L	2.6E-06	mg/kg-day	N/A	N/A	N/A	1.8E-04	mg/kg-day	1.0E-01	mg/kg-day	1.8E-03
				Ethylbenzene	8E+00	ug/L	2.7E-08	mg/kg-day	N/A	N/A	N/A	1.9E-06	mg/kg-day	1.0E+00	mg/kg-day	1.9E-06
				Methyl tert-butyl ether	N/A	N/A	N/A	N/A	3.3E-03	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	N/A	mg/kg-day	N/A
				Methylene chloride	2E+01	ug/L	5.5E-08	mg/kg-day	7.5E-03	(mg/kg-day)$^{-1}$	4.2E-10	3.9E-06	mg/kg-day	6.0E-02	mg/kg-day	6.5E-05
				Tetrachloroethene	7E+00	ug/L	2.4E-08	mg/kg-day	2.1E-02	(mg/kg-day)$^{-1}$	5.1E-10	1.7E-06	mg/kg-day	1.0E-01	mg/kg-day	1.7E-05
				Toluene	2E+01	ug/L	6.0E-08	mg/kg-day	N/A	N/A	N/A	4.2E-06	mg/kg-day	2.0E+00	mg/kg-day	2.1E-06
				trans-1,2-Dichloroethene	1E+01	ug/L	4.5E-08	mg/kg-day	N/A	N/A	N/A	3.1E-06	mg/kg-day	2.0E-02	mg/kg-day	1.6E-04
				Trichloroethene	3E+01	ug/L	1.2E-07	mg/kg-day	4.0E-01	(mg/kg-day)$^{-1}$	4.6E-08	8.1E-06	mg/kg-day	3.0E-04	mg/kg-day	2.7E-02
				Vinyl chloride	2E+02	ug/L	6.5E-07	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	9.7E-07	4.5E-05	mg/kg-day	3.0E-03	mg/kg-day	1.5E-02
				Xylenes (total)	3E+01	ug/L	1.1E-07	mg/kg-day	N/A	N/A	N/A	7.8E-06	mg/kg-day	2.0E-01	mg/kg-day	3.9E-05
				Acetophenone	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-01	mg/kg-day	N/A
				4-Methylphenol	1E+01	ug/L	3.7E-08	mg/kg-day	N/A	N/A	N/A	2.6E-06	mg/kg-day	5.0E-03	mg/kg-day	5.2E-04
				Naphthalene	9E+00	ug/L	3.2E-08	mg/kg-day	N/A	N/A	N/A	2.2E-06	mg/kg-day	2.0E-01	mg/kg-day	1.1E-05
				2-Methylnaphthalene	6E+00	ug/L	2.1E-08	mg/kg-day	N/A	N/A	N/A	1.4E-06	mg/kg-day	2.0E-01	mg/kg-day	7.2E-06
				Acenaphthylene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/kg-day	N/A
				Phenanthrene	6E+00	ug/L	2.0E-08	mg/kg-day	N/A	N/A	N/A	1.4E-06	mg/kg-day	2.0E-01	mg/kg-day	7.0E-06
				Benzo(a)Pyrene	N/A	N/A	N/A	N/A	7.3E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	N/A	N/A	N/A
				Dibenz(a,h) anthracene	N/A	N/A	N/A	N/A	7.3E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	N/A	N/A	N/A
				C9-C18 Aliphatic	1E+03	ug/L	3.3E-06	mg/kg-day	N/A	N/A	N/A	2.3E-04	mg/kg-day	1.0E+00	mg/kg-day	2.3E-04
				C11-C22 Aromatic	4E+02	ug/L	1.5E-06	mg/kg-day	N/A	N/A	N/A	1.0E-04	mg/kg-day	3.0E-01	mg/kg-day	3.4E-04
				C19-C36 Aliphatic	8E+03	ug/L	2.7E-05	mg/kg-day	N/A	N/A	N/A	1.9E-03	mg/kg-day	6.0E+00	mg/kg-day	3.1E-04
				C5-C8 Aliphatic	1E+02	ug/L	4.0E-07	mg/kg-day	N/A	N/A	N/A	2.8E-05	mg/kg-day	4.0E-01	mg/kg-day	7.1E-05
				Arsenic	5E+01	ug/L	1.9E-07	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	2.8E-07	1.3E-05	mg/kg-day	3.0E-04	mg/kg-day	4.3E-02
				Chromium	4E+01	ug/L	1.3E-07	mg/kg-day	N/A	N/A	N/A	9.4E-06	mg/kg-day	1.5E+00	mg/kg-day	6.3E-06
				Lead	5E+01	ug/L	1.8E-07	mg/kg-day	N/A	N/A	N/A	1.3E-05	mg/kg-day	NA	NA	N/A
				Manganese	5E+02	ug/L	1.6E-06	mg/kg-day	N/A	N/A	N/A	1.1E-04	mg/kg-day	2.4E-02	mg/kg-day	4.8E-03
				PCB TEQ*	1E-06	ug/L	4.2E-15	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	6.3E-10	2.9E-13	mg/kg-day	NA	NA	N/A
				Dieldrin	N/A	N/A	N/A	N/A	1.6E+01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	5.0E-05	mg/kg-day	N/A
				4,4'-DDD	N/A	N/A	N/A	N/A	2.4E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-02	mg/kg-day	N/A
			Exp. Route Total								1E-06					9E-02

TABLE 3-7.13.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Ground Water (Cont.)	Shallow Ground Water (Cont.)	Murphy Property	Dermal													
				1,1,2-Trichloroethane	4E-01	ug/L	5.3E-09	mg/kg-day	5.7E-02	(mg/kg-day)$^{-1}$	3.0E-10	3.7E-07	mg/kg-day	4.0E-02	mg/kg-day	9.4E-06
				1,1-Dichloroethane	7E+01	ug/L	2.9E-06	mg/kg-day	N/A	N/A	N/A	2.1E-04	mg/kg-day	1.0E+00	mg/kg-day	2.1E-04
				1,1-Dichloroethene	9E+00	ug/L	2.0E-07	mg/kg-day	N/A	N/A	N/A	1.4E-05	mg/kg-day	5.0E-02	mg/kg-day	2.9E-04
				1,2,4-Trichlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-01	mg/kg-day	N/A
				1,3-Dichlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9.0E-03	mg/kg-day	N/A
				1,4-Dichlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-01	mg/kg-day	N/A
				Benzene	7E+00	ug/L	4.5E-07	mg/kg-day	5.5E-02	(mg/kg-day)$^{-1}$	2.5E-08	3.2E-05	mg/kg-day	1.2E-02	mg/kg-day	2.6E-03
				Bromomethane	1E+00	ug/L	5.7E-09	mg/kg-day	N/A	N/A	N/A	4.0E-07	mg/kg-day	1.4E-02	mg/kg-day	2.8E-05
				Chlorobenzene	1E+00	ug/L	5.3E-08	mg/kg-day	N/A	N/A	N/A	3.7E-06	mg/kg-day	2.0E-01	mg/kg-day	1.9E-05
				Chlorodibromomethane	N/A	N/A	N/A	N/A	8.4E-02	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-01	mg/kg-day	N/A
				Chloroethane	3E+01	ug/L	5.8E-07	mg/kg-day	N/A	N/A	N/A	4.1E-05	mg/kg-day	4.0E-01	mg/kg-day	1.0E-04
				cis-1,2-Dichloroethene	7E+02	ug/L	4.1E-05	mg/kg-day	N/A	N/A	N/A	2.8E-03	mg/kg-day	1.0E-01	mg/kg-day	2.8E-02
				Ethylbenzene	8E+00	ug/L	2.0E-06	mg/kg-day	N/A	N/A	N/A	1.4E-04	mg/kg-day	1.0E+00	mg/kg-day	1.4E-04
				Methyl tert-butyl ether	N/A	N/A	N/A	N/A	3.3E-03	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	N/A	mg/kg-day	N/A
				Methylene chloride	2E+01	ug/L	6.3E-07	mg/kg-day	7.5E-03	(mg/kg-day)$^{-1}$	4.7E-09	4.4E-05	mg/kg-day	6.0E-02	mg/kg-day	7.3E-04
				Tetrachloroethene	7E+00	ug/L	4.8E-07	mg/kg-day	2.1E-02	(mg/kg-day)$^{-1}$	1.0E-08	3.4E-05	mg/kg-day	1.0E-01	mg/kg-day	3.4E-04
				Toluene	2E+01	ug/L	3.0E-06	mg/kg-day	N/A	N/A	N/A	2.1E-04	mg/kg-day	2.0E+00	mg/kg-day	1.0E-04
				trans-1,2-Dichloroethene	1E+01	ug/L	6.0E-07	mg/kg-day	N/A	N/A	N/A	4.2E-05	mg/kg-day	2.0E-02	mg/kg-day	2.1E-03
				Trichloroethene	3E+01	ug/L	1.0E-06	mg/kg-day	4.0E-01	(mg/kg-day)$^{-1}$	4.0E-07	7.0E-05	mg/kg-day	3.0E-04	mg/kg-day	2.3E-01
				Vinyl chloride	2E+02	ug/L	6.5E-06	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	9.7E-06	4.5E-04	mg/kg-day	3.0E-03	mg/kg-day	1.5E-01
				Xylenes (total)	3E+01	ug/L	9.2E-06	mg/kg-day	N/A	N/A	N/A	6.5E-04	mg/kg-day	2.0E-01	mg/kg-day	3.2E-03
				Acetophenone	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-01	mg/kg-day	N/A
				4-Methylphenol	1E+01	ug/L	3.8E-07	mg/kg-day	N/A	N/A	N/A	2.7E-05	mg/kg-day	5.0E-03	mg/kg-day	5.3E-03
				Naphthalene	9E+00	ug/L	2.1E-06	mg/kg-day	N/A	N/A	N/A	1.5E-04	mg/kg-day	2.0E-01	mg/kg-day	7.5E-04
				2-Methylnaphthalene	6E+00	ug/L	1.7E-06	mg/kg-day	N/A	N/A	N/A	1.2E-04	mg/kg-day	2.0E-01	mg/kg-day	6.1E-04
				Acenaphthylene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/kg-day	N/A
				Phenanthrene	6E+00	ug/L	2.7E-06	mg/kg-day	N/A	N/A	N/A	1.9E-04	mg/kg-day	2.0E-01	mg/kg-day	9.3E-04
				Benzo(a)Pyrene	N/A	N/A	N/A	N/A	7.3E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	N/A	N/A	N/A
				Dibenz(a,h) anthracene	N/A	N/A	N/A	N/A	7.3E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	N/A	N/A	N/A
				C9-C18 Aliphatic	1E+03	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E+00	mg/kg-day	N/A
				C11-C22 Aromatic	4E+02	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-01	mg/kg-day	N/A
				C19-C36 Aliphatic	8E+03	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E+00	mg/kg-day	N/A
				C5-C8 Aliphatic	1E+02	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.0E-01	mg/kg-day	N/A
				Arsenic	5E+01	ug/L	3.2E-07	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	4.8E-07	2.3E-05	mg/kg-day	3.0E-04	mg/kg-day	7.5E-02
				Chromium	4E+01	ug/L	2.1E-07	mg/kg-day	N/A	N/A	N/A	1.5E-05	mg/kg-day	2.0E-02	mg/kg-day	7.5E-04
				Lead	5E+01	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA	NA	N/A
				Manganese	5E+02	ug/L	8.7E-07	mg/kg-day	N/A	N/A	N/A	6.1E-05	mg/kg-day	9.6E-04	mg/kg-day	6.3E-02
				PCB TEQ*	1E-06	ug/L	2.3E-12	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	3.4E-07	1.6E-10	mg/kg-day	NA	NA	N/A
				Dieldrin	N/A	N/A	N/A	N/A	1.6E+01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	5.0E-05	mg/kg-day	N/A
				4,4'-DDD	N/A	N/A	N/A	N/A	2.4E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-02	mg/kg-day	N/A
			Exp. Route Total								1E-05					6E-01
		Exposure Point Total									1E-05					7E-01
	Exposure Medium Total										N/A					N/A

TABLE 3-7.13.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Ground Water	Outdoor Air	Aberjona Property	Inhalation													
				C9-C18 Aliphatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/m3	N/A
				C11-C22 Aromatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/m3	N/A
				C5-C8 Aliphatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/m3	N/A
				C9-C10 Aromatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/m3	N/A
				C9-C12 Aliphatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/m3	N/A
			Exp. Route Total								0E+00					0E+00
		Exposure Point Total									0E+00					0E+00

TABLE 3-7.13.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Ground Water (Cont.)	Outdoor Air (Cont.)	Whitney Property	Inhalation													
				C9-C18 Aliphatic	9E-02	ug/m3	1.4E-04	ug/m3	N/A	N/A	N/A	2.0E-06	mg/m3	2.0E-01	mg/m3	9.9E-06
				C11-C22 Aromatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/m3	N/A
				C5-C8 Aliphatic	5E-01	ug/m3	8.6E-04	ug/m3	N/A	N/A	N/A	1.2E-05	mg/m3	2.0E-01	mg/m3	5.9E-05
				C9-C10 Aromatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/m3	N/A
				C9-C12 Aliphatic	2E-01	ug/m3	3.7E-04	ug/m3	N/A	N/A	N/A	5.0E-06	mg/m3	2.0E-01	mg/m3	2.5E-05
			Exp. Route Total								0E+00					9E-05
		Exposure Point Total									0E+00					9E-05

TABLE 3-7.13.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Ground Water (Cont.)	Outdoor Air (Cont.)	Murphy Property	Inhalation													
				C9-C18 Aliphatic	5E+00	ug/m3	7.6E-03	ug/m3	N/A	N/A	N/A	1.0E-04	mg/m3	2.0E-01	mg/m3	5.2E-04
				C11-C22 Aromatic	8E-04	ug/m3	1.3E-06	ug/m3	N/A	N/A	N/A	1.7E-08	mg/m3	5.0E-02	mg/m3	3.5E-07
				C5-C8 Aliphatic	3E-01	ug/m3	5.0E-04	ug/m3	N/A	N/A	N/A	6.8E-06	mg/m3	2.0E-01	mg/m3	3.4E-05
				C9-C10 Aromatic	1E-03	ug/m3	2.4E-06	ug/m3	N/A	N/A	N/A	3.2E-08	mg/m3	5.0E-02	mg/m3	6.4E-07
				C9-C12 Aliphatic	1E-01	ug/m3	2.2E-04	ug/m3	N/A	N/A	N/A	3.0E-06	mg/m3	2.0E-01	mg/m3	1.5E-05
			Exp. Route Total								0E+00					6E-04
		Exposure Point Total									0E+00					6E-04
	Exposure Medium Total										N/A					N/A
Medium Total											N/A					N/A
											Total of Receptor Risks Across All Media					Total of Receptor Risks Across All Media
											N/A					N/A

TABLE 3-7.13.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Aberjona Property	Ingestion													
				Vinyl chloride	N/A	N/A	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Trichloroethene	N/A	N/A	N/A	N/A	4.0E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Phenanthrene	7E-01	mg/kg	3.1E-09	mg/kg-day	N/A	N/A	N/A	2.2E-07	mg/kg-day	2.0E-01	mg/kg-day	1.1E-06
				Benzo(a)Anthracene	7E-01	mg/kg	3.2E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	2.3E-09	2.2E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	7E-01	mg/kg	3.3E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	2.4E-09	2.3E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	5E-01	mg/kg	2.3E-09	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	1.7E-10	1.6E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	5E-01	mg/kg	2.3E-09	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.7E-08	1.6E-07	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	5E-01	mg/kg	2.3E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.7E-09	1.6E-07	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	6E-03	mg/kg	2.8E-11	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	2.0E-10	1.9E-09	mg/kg-day	N/A	N/A	N/A
				Benzo(g,h,i)perylene	6E-01	mg/kg	2.7E-09	mg/kg-day	N/A	N/A	N/A	1.9E-07	mg/kg-day	2.0E-01	mg/kg-day	9.3E-07
				Antimony	2E+00	mg/kg	8.1E-09	mg/kg-day	N/A	N/A	N/A	5.6E-07	mg/kg-day	4.0E-04	mg/kg-day	1.4E-03
				Arsenic	6E+00	mg/kg	2.5E-08	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	3.8E-08	1.8E-06	mg/kg-day	3.0E-04	mg/kg-day	5.9E-03
				Cadmium	1E+01	mg/kg	4.4E-08	mg/kg-day	N/A	N/A	N/A	3.1E-06	mg/kg-day	1.0E-03	mg/kg-day	3.1E-03
				Copper	1E+02	mg/kg	4.5E-07	mg/kg-day	N/A	N/A	N/A	3.2E-05	mg/kg-day	3.0E-01	mg/kg-day	1.1E-04
				Lead	1E+03	mg/kg	5.1E-06	mg/kg-day	N/A	N/A	N/A	3.6E-04	mg/kg-day	NA	NA	N/A
				Manganese	3E+02	mg/kg	1.2E-06	mg/kg-day	N/A	N/A	N/A	8.6E-05	mg/kg-day	7.0E-02	mg/kg-day	1.2E-03
				Mercury	9E-02	mg/kg	4.2E-10	mg/kg-day	N/A	N/A	N/A	3.0E-08	mg/kg-day	1.0E-04	mg/kg-day	3.0E-04
				Nickel	6E+01	mg/kg	2.9E-07	mg/kg-day	N/A	N/A	N/A	2.0E-05	mg/kg-day	2.0E-02	mg/kg-day	1.0E-03
				Thallium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-04	mg/kg-day	N/A
				Aroclor 1242	1E-01	mg/kg	5.0E-10	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	5.0E-10	3.5E-08	mg/kg-day	2.0E-05	mg/kg-day	1.8E-03
				Aroclor 1248	N/A	N/A	N/A	N/A	1.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1254	5E-02	mg/kg	2.4E-10	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	2.4E-10	1.7E-08	mg/kg-day	2.0E-05	mg/kg-day	8.4E-04
				Aroclor 1260	8E-02	mg/kg	3.5E-10	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	3.5E-10	2.5E-08	mg/kg-day	2.0E-05	mg/kg-day	1.2E-03
				PCB TEQ*	1E-06	mg/kg	5.0E-15	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	7.5E-10	3.5E-13	mg/kg-day	NA	NA	N/A
				C11-C22 Aromatic	1E+01	mg/kg	6.5E-08	mg/kg-day	N/A	N/A	N/A	4.5E-06	mg/kg-day	3.0E-01	mg/kg-day	1.5E-05
			Exp. Route Total								6E-08					2E-02

TABLE 3-7.13.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil (Cont.)	Surface Soil (Cont.)	Aberjona Property	Dermal													
				Vinyl chloride	N/A	N/A	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Trichloroethene	N/A	N/A	N/A	N/A	4.0E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Phenanthrene	7E-01	mg/kg	1.3E-09	mg/kg-day	N/A	N/A	N/A	9.3E-08	mg/kg-day	2.0E-01	mg/kg-day	4.7E-07
				Benzo(a)Anthracene	7E-01	mg/kg	1.4E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	9.9E-10	9.5E-08	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	7E-01	mg/kg	1.4E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.0E-09	9.9E-08	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	5E-01	mg/kg	9.9E-10	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	7.2E-11	6.9E-08	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	5E-01	mg/kg	9.9E-10	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	7.2E-09	6.9E-08	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	5E-01	mg/kg	9.9E-10	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	7.2E-10	6.9E-08	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	6E-03	mg/kg	1.2E-11	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	8.7E-11	8.3E-10	mg/kg-day	N/A	N/A	N/A
				Benzo(g,h,i)perylene	6E-01	mg/kg	1.1E-09	mg/kg-day	N/A	N/A	N/A	8.0E-08	mg/kg-day	2.0E-01	mg/kg-day	4.0E-07
				Antimony	2E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-05	mg/kg-day	N/A
				Arsenic	6E+00	mg/kg	2.5E-09	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	3.8E-09	1.8E-07	mg/kg-day	3.0E-04	mg/kg-day	5.9E-04
				Cadmium	1E+01	mg/kg	1.4E-10	mg/kg-day	N/A	N/A	N/A	1.0E-08	mg/kg-day	2.5E-05	mg/kg-day	4.0E-04
				Copper	1E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-01	mg/kg-day	N/A
				Lead	1E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA	NA	N/A
				Manganese	3E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.8E-03	mg/kg-day	N/A
				Mercury	9E-02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A
				Nickel	6E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-04	mg/kg-day	N/A
				Thallium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-04	mg/kg-day	N/A
				Aroclor 1242	1E-01	mg/kg	2.3E-10	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	2.3E-10	1.6E-08	mg/kg-day	2.0E-05	mg/kg-day	8.1E-04
				Aroclor 1248	N/A	N/A	N/A	N/A	1.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1254	5E-02	mg/kg	1.1E-10	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	1.1E-10	7.8E-09	mg/kg-day	2.0E-05	mg/kg-day	3.9E-04
				Aroclor 1260	8E-02	mg/kg	1.6E-10	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	1.6E-10	1.1E-08	mg/kg-day	2.0E-05	mg/kg-day	5.7E-04
				PCB TEQ*	1E-06	mg/kg	2.3E-15	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	3.5E-10	1.6E-13	mg/kg-day	NA	NA	N/A
				C11-C22 Aromatic	1E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-01	mg/kg-day	N/A
			Exp. Route Total								1E-08					3E-03

TABLE 3-7.13.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil (Cont.)	Surface Soil (Cont.)	Aberjona Property	Inhalation													
				Vinyl chloride	N/A	N/A	N/A	N/A	8.8E-06	(ug/m3)-1	N/A	N/A	N/A	1.0E-01	mg/m3	N/A
				Trichloroethene	N/A	N/A	N/A	N/A	1.1E-04	(ug/m3)-1	N/A	N/A	N/A	4.0E-02	mg/m3	N/A
				Phenanthrene	7E-01	mg/kg	7.8E-11	ug/m3	N/A	N/A	N/A	5.5E-12	mg/m3	3.0E-03	mg/m3	1.8E-09
				Benzo(a)Anthracene	7E-01	mg/kg	8.0E-11	ug/m3	8.8E-05	(ug/m3)-1	7.0E-15	5.6E-12	mg/m3	N/A	N/A	N/A
				Benzo(b)Fluoranthene	7E-01	mg/kg	8.3E-11	ug/m3	8.8E-05	(ug/m3)-1	7.3E-15	5.8E-12	mg/m3	N/A	N/A	N/A
				Benzo(k)Fluoranthene	5E-01	mg/kg	5.8E-11	ug/m3	8.8E-06	(ug/m3)-1	5.1E-16	4.1E-12	mg/m3	N/A	N/A	N/A
				Benzo(a)Pyrene	5E-01	mg/kg	5.8E-11	ug/m3	8.8E-04	(ug/m3)-1	5.1E-14	4.1E-12	mg/m3	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	5E-01	mg/kg	5.8E-11	ug/m3	8.8E-05	(ug/m3)-1	5.1E-15	4.1E-12	mg/m3	N/A	N/A	N/A
				Dibenz(a,h) anthracene	6E-03	mg/kg	7.0E-13	ug/m3	8.8E-04	(ug/m3)-1	6.1E-16	4.9E-14	mg/m3	N/A	N/A	N/A
				Benzo(g,h,i)perylene	6E-01	mg/kg	6.7E-11	ug/m3	N/A	N/A	N/A	4.7E-12	mg/m3	3.0E-03	mg/m3	1.6E-09
				Antimony	2E+00	mg/kg	2.0E-10	ug/m3	N/A	N/A	N/A	1.4E-11	mg/m3	N/A	N/A	N/A
				Arsenic	6E+00	mg/kg	6.4E-10	ug/m3	4.3E-03	(ug/m3)-1	2.7E-12	4.5E-11	mg/m3	N/A	N/A	N/A
				Cadmium	1E+01	mg/kg	1.1E-09	ug/m3	1.8E-03	(ug/m3)-1	2.0E-12	7.7E-11	mg/m3	N/A	N/A	N/A
				Copper	1E+02	mg/kg	1.1E-08	ug/m3	N/A	N/A	N/A	8.0E-10	mg/m3	N/A	N/A	N/A
				Lead	1E+03	mg/kg	1.3E-07	ug/m3	N/A	N/A	N/A	9.0E-09	mg/m3	N/A	N/A	N/A
				Manganese	3E+02	mg/kg	3.1E-08	ug/m3	N/A	N/A	N/A	2.2E-09	mg/m3	5.0E-05	mg/m3	4.3E-05
				Mercury	9E-02	mg/kg	1.1E-11	ug/m3	N/A	N/A	N/A	7.5E-13	mg/m3	N/A	N/A	N/A
				Nickel	6E+01	mg/kg	7.3E-09	ug/m3	N/A	N/A	N/A	5.1E-10	mg/m3	N/A	N/A	N/A
				Thallium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Aroclor 1242	1E-01	mg/kg	1.3E-11	ug/m3	5.0E-04	(ug/m3)-1	6.3E-15	8.9E-13	mg/m3	N/A	N/A	N/A
				Aroclor 1248	N/A	N/A	N/A	N/A	5.0E-04	(ug/m3)-1	N/A	N/A	N/A	N/A	N/A	N/A
				Aroclor 1254	5E-02	mg/kg	6.1E-12	ug/m3	5.0E-04	(ug/m3)-1	3.0E-15	4.2E-13	mg/m3	N/A	N/A	N/A
				Aroclor 1260	8E-02	mg/kg	8.9E-12	ug/m3	5.0E-04	(ug/m3)-1	4.4E-15	6.2E-13	mg/m3	N/A	N/A	N/A
				PCB TEQ*	1E-06	mg/kg	1.3E-16	ug/m3	3.3E+01	(ug/m3)-1	4.2E-15	8.8E-18	mg/m3	N/A	N/A	N/A
				C11-C22 Aromatic	1E+01	mg/kg	1.6E-09	ug/m3	N/A	N/A	N/A	1.1E-10	mg/m3	5.0E-02	mg/m3	2.3E-09
			Exp. Route Total								5E-12					4E-05
		Exposure Point Total									8E-08					2E-02

TABLE 3-7.13.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil (Cont.)	Surface Soil (Cont.)	Whitney Property	Ingestion													
				Vinyl chloride	1E-01	mg/kg	4.8E-10	mg/kg-day	1.5E+00	(mg/kg-day) $^{-1}$	7.2E-10	3.4E-08	mg/kg-day	3.0E-03	mg/kg-day	1.1E-05
				Trichloroethene	1E-03	mg/kg	6.3E-12	mg/kg-day	4.0E-01	(mg/kg-day) $^{-1}$	2.5E-12	4.4E-10	mg/kg-day	3.0E-04	mg/kg-day	1.5E-06
				Phenanthrene	1E+01	mg/kg	5.8E-08	mg/kg-day	N/A	N/A	N/A	4.0E-06	mg/kg-day	2.0E-01	mg/kg-day	2.0E-05
				Benzo(a)Anthracene	8E+00	mg/kg	3.4E-08	mg/kg-day	7.3E-01	(mg/kg-day) $^{-1}$	2.5E-08	2.4E-06	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	8E+00	mg/kg	3.4E-08	mg/kg-day	7.3E-01	(mg/kg-day) $^{-1}$	2.4E-08	2.3E-06	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	4E+00	mg/kg	1.8E-08	mg/kg-day	7.3E-02	(mg/kg-day) $^{-1}$	1.3E-09	1.2E-06	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	6E+00	mg/kg	2.9E-08	mg/kg-day	7.3E+00	(mg/kg-day) $^{-1}$	2.1E-07	2.0E-06	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	1E+01	mg/kg	4.9E-08	mg/kg-day	7.3E-01	(mg/kg-day) $^{-1}$	3.6E-08	3.4E-06	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	3E+00	mg/kg	1.3E-08	mg/kg-day	7.3E+00	(mg/kg-day) $^{-1}$	9.7E-08	9.3E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(g,h,i)perylene	8E+00	mg/kg	3.7E-08	mg/kg-day	N/A	N/A	N/A	2.6E-06	mg/kg-day	2.0E-01	mg/kg-day	1.3E-05
				Antimony	3E+00	mg/kg	1.3E-08	mg/kg-day	N/A	N/A	N/A	8.8E-07	mg/kg-day	4.0E-04	mg/kg-day	2.2E-03
				Arsenic	6E+00	mg/kg	2.5E-08	mg/kg-day	1.5E+00	(mg/kg-day) $^{-1}$	3.8E-08	1.8E-06	mg/kg-day	3.0E-04	mg/kg-day	5.9E-03
				Cadmium	3E+00	mg/kg	1.3E-08	mg/kg-day	N/A	N/A	N/A	8.9E-07	mg/kg-day	1.0E-03	mg/kg-day	8.9E-04
				Copper	1E+02	mg/kg	5.6E-07	mg/kg-day	N/A	N/A	N/A	3.9E-05	mg/kg-day	3.0E-01	mg/kg-day	1.3E-04
				Lead	7E+02	mg/kg	3.3E-06	mg/kg-day	N/A	N/A	N/A	2.3E-04	mg/kg-day	NA	NA	N/A
				Manganese	3E+02	mg/kg	1.2E-06	mg/kg-day	N/A	N/A	N/A	8.2E-05	mg/kg-day	7.0E-02	mg/kg-day	1.2E-03
				Mercury	5E-01	mg/kg	2.5E-09	mg/kg-day	N/A	N/A	N/A	1.7E-07	mg/kg-day	1.0E-04	mg/kg-day	1.7E-03
				Nickel	3E+01	mg/kg	1.2E-07	mg/kg-day	N/A	N/A	N/A	8.1E-06	mg/kg-day	2.0E-02	mg/kg-day	4.1E-04
				Thallium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-04	mg/kg-day	N/A
				Aroclor 1242	4E-01	mg/kg	1.7E-09	mg/kg-day	1.0E+00	(mg/kg-day) $^{-1}$	1.7E-09	1.2E-07	mg/kg-day	2.0E-05	mg/kg-day	6.0E-03
				Aroclor 1248	9E-02	mg/kg	4.2E-10	mg/kg-day	1.0E+00	(mg/kg-day) $^{-1}$	4.2E-10	3.0E-08	mg/kg-day	2.0E-05	mg/kg-day	1.5E-03
				Aroclor 1254	4E+00	mg/kg	1.8E-08	mg/kg-day	1.0E+00	(mg/kg-day) $^{-1}$	1.8E-08	1.2E-06	mg/kg-day	2.0E-05	mg/kg-day	6.2E-02
				Aroclor 1260	2E+00	mg/kg	9.0E-09	mg/kg-day	1.0E+00	(mg/kg-day) $^{-1}$	9.0E-09	6.3E-07	mg/kg-day	2.0E-05	mg/kg-day	3.1E-02
				PCB TEQ*	5E-05	mg/kg	2.1E-13	mg/kg-day	1.5E+05	(mg/kg-day) $^{-1}$	3.2E-08	1.5E-11	mg/kg-day	NA	NA	N/A
				C11-C22 Aromatic	5E+02	mg/kg	2.0E-06	mg/kg-day	N/A	N/A	N/A	1.4E-04	mg/kg-day	3.0E-01	mg/kg-day	4.8E-04
			Exp. Route Total								5E-07					1E-01

TABLE 3-7.13.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil (Cont.)	Surface Soil (Cont.)	Whitney Property	Dermal													
				Vinyl chloride	1E-01	mg/kg	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Trichloroethene	1E-03	mg/kg	N/A	N/A	4.0E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Phenanthrene	1E+01	mg/kg	2.5E-08	mg/kg-day	N/A	N/A	N/A	1.7E-06	mg/kg-day	2.0E-01	mg/kg-day	8.7E-06
				Benzo(a)Anthracene	8E+00	mg/kg	1.5E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.1E-08	1.0E-06	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	8E+00	mg/kg	1.4E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.1E-08	1.0E-06	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	4E+00	mg/kg	7.5E-09	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	5.5E-10	5.3E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	6E+00	mg/kg	1.2E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	9.1E-08	8.7E-07	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	1E+01	mg/kg	2.1E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.5E-08	1.5E-06	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	3E+00	mg/kg	5.7E-09	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	4.2E-08	4.0E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(g,h,i)perylene	8E+00	mg/kg	1.6E-08	mg/kg-day	N/A	N/A	N/A	1.1E-06	mg/kg-day	2.0E-01	mg/kg-day	5.5E-06
				Antimony	3E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-05	mg/kg-day	N/A
				Arsenic	6E+00	mg/kg	2.5E-09	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	3.8E-09	1.8E-07	mg/kg-day	3.0E-04	mg/kg-day	5.8E-04
				Cadmium	3E+00	mg/kg	4.2E-11	mg/kg-day	N/A	N/A	N/A	2.9E-09	mg/kg-day	2.5E-05	mg/kg-day	1.2E-04
				Copper	1E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-01	mg/kg-day	N/A
				Lead	7E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA	NA	N/A
				Manganese	3E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.8E-03	mg/kg-day	N/A
				Mercury	5E-01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A
				Nickel	3E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-04	mg/kg-day	N/A
				Thallium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-04	mg/kg-day	N/A
				Aroclor 1242	4E-01	mg/kg	7.9E-10	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	7.9E-10	5.5E-08	mg/kg-day	2.0E-05	mg/kg-day	2.8E-03
				Aroclor 1248	9E-02	mg/kg	2.0E-10	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	2.0E-10	1.4E-08	mg/kg-day	2.0E-05	mg/kg-day	6.9E-04
				Aroclor 1254	4E+00	mg/kg	8.2E-09	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	8.2E-09	5.7E-07	mg/kg-day	2.0E-05	mg/kg-day	2.9E-02
				Aroclor 1260	2E+00	mg/kg	4.2E-09	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	4.2E-09	2.9E-07	mg/kg-day	2.0E-05	mg/kg-day	1.5E-02
				PCB TEQ*	5E-05	mg/kg	9.8E-14	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	1.5E-08	6.9E-12	mg/kg-day	NA	NA	N/A
				C11-C22 Aromatic	5E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-01	mg/kg-day	N/A
			Exp. Route Total								2E-07					5E-02

TABLE 3-7.13.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil (Cont.)	Surface Soil (Cont.)	Whitney Property	Inhalation													
				Vinyl chloride	1E-01	mg/kg	1.2E-11	ug/m3	8.8E-06	(ug/m3)-1	1.1E-16	8.5E-13	mg/m3	1.0E-01	mg/m3	8.5E-12
				Trichloroethene	1E-03	mg/kg	1.6E-13	ug/m3	1.1E-04	(ug/m3)-1	1.7E-17	1.1E-14	mg/m3	4.0E-02	mg/m3	2.8E-13
				Phenanthrene	1E+01	mg/kg	1.5E-09	ug/m3	N/A	N/A	N/A	1.0E-10	mg/m3	3.0E-03	mg/m3	3.4E-08
				Benzo(a)Anthracene	8E+00	mg/kg	8.6E-10	ug/m3	8.8E-05	(ug/m3)-1	7.6E-14	6.0E-11	mg/m3	N/A	N/A	N/A
				Benzo(b)Fluoranthene	8E+00	mg/kg	8.5E-10	ug/m3	8.8E-05	(ug/m3)-1	7.4E-14	5.9E-11	mg/m3	N/A	N/A	N/A
				Benzo(k)Fluoranthene	4E+00	mg/kg	4.4E-10	ug/m3	8.8E-06	(ug/m3)-1	3.9E-15	3.1E-11	mg/m3	N/A	N/A	N/A
				Benzo(a)Pyrene	6E+00	mg/kg	7.3E-10	ug/m3	8.8E-04	(ug/m3)-1	6.4E-13	5.1E-11	mg/m3	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	1E+01	mg/kg	1.2E-09	ug/m3	8.8E-05	(ug/m3)-1	1.1E-13	8.7E-11	mg/m3	N/A	N/A	N/A
				Dibenz(a,h) anthracene	3E+00	mg/kg	3.4E-10	ug/m3	8.8E-04	(ug/m3)-1	3.0E-13	2.4E-11	mg/m3	N/A	N/A	N/A
				Benzo(g,h,i)perylene	8E+00	mg/kg	9.2E-10	ug/m3	N/A	N/A	N/A	6.5E-11	mg/m3	3.0E-03	mg/m3	2.2E-08
				Antimony	3E+00	mg/kg	3.2E-10	ug/m3	N/A	N/A	N/A	2.2E-11	mg/m3	N/A	N/A	N/A
				Arsenic	6E+00	mg/kg	6.4E-10	ug/m3	4.3E-03	(ug/m3)-1	2.7E-12	4.5E-11	mg/m3	N/A	N/A	N/A
				Cadmium	3E+00	mg/kg	3.2E-10	ug/m3	1.8E-03	(ug/m3)-1	5.8E-13	2.2E-11	mg/m3	N/A	N/A	N/A
				Copper	1E+02	mg/kg	1.4E-08	ug/m3	N/A	N/A	N/A	9.9E-10	mg/m3	N/A	N/A	N/A
				Lead	7E+02	mg/kg	8.2E-08	ug/m3	N/A	N/A	N/A	5.7E-09	mg/m3	N/A	N/A	N/A
				Manganese	3E+02	mg/kg	2.9E-08	ug/m3	N/A	N/A	N/A	2.1E-09	mg/m3	5.0E-05	mg/m3	4.1E-05
				Mercury	5E-01	mg/kg	6.2E-11	ug/m3	N/A	N/A	N/A	4.3E-12	mg/m3	N/A	N/A	N/A
				Nickel	3E+01	mg/kg	2.9E-09	ug/m3	N/A	N/A	N/A	2.0E-10	mg/m3	N/A	N/A	N/A
				Thallium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Aroclor 1242	4E-01	mg/kg	4.3E-11	ug/m3	5.0E-04	(ug/m3)-1	2.1E-14	3.0E-12	mg/m3	N/A	N/A	N/A
				Aroclor 1248	9E-02	mg/kg	1.1E-11	ug/m3	5.0E-04	(ug/m3)-1	5.3E-15	7.5E-13	mg/m3	N/A	N/A	N/A
				Aroclor 1254	4E+00	mg/kg	4.5E-10	ug/m3	5.0E-04	(ug/m3)-1	2.2E-13	3.1E-11	mg/m3	N/A	N/A	N/A
				Aroclor 1260	2E+00	mg/kg	2.3E-10	ug/m3	5.0E-04	(ug/m3)-1	1.1E-13	1.6E-11	mg/m3	N/A	N/A	N/A
				PCB TEQ*	5E-05	mg/kg	5.3E-15	ug/m3	3.3E+01	(ug/m3)-1	1.8E-13	3.7E-16	mg/m3	N/A	N/A	N/A
				C11-C22 Aromatic	5E+02	mg/kg	5.1E-08	ug/m3	N/A	N/A	N/A	3.6E-09	mg/m3	5.0E-02	mg/m3	7.2E-08
			Exp. Route Total								5E-12					4E-05
		Exposure Point Total									7E-07					2E-01

TABLE 3-7.13.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil (Cont.)	Surface Soil (Cont.)	Murphy Property	Ingestion													
				Vinyl chloride	N/A	N/A	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Trichloroethene	4E-01	mg/kg	1.7E-09	mg/kg-day	4.0E-01	(mg/kg-day)$^{-1}$	6.8E-10	1.2E-07	mg/kg-day	3.0E-04	mg/kg-day	4.0E-04
				Phenanthrene	2E+00	mg/kg	7.0E-09	mg/kg-day	N/A	N/A	N/A	4.9E-07	mg/kg-day	2.0E-01	mg/kg-day	2.4E-06
				Benzo(a)Anthracene	2E+00	mg/kg	1.1E-08	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	8.0E-09	7.7E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	9E-01	mg/kg	4.2E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	3.0E-09	2.9E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	9E-01	mg/kg	4.1E-09	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	3.0E-10	2.9E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	2E+00	mg/kg	6.9E-09	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	5.1E-08	4.9E-07	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	1E+00	mg/kg	5.7E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	4.1E-09	4.0E-07	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	2E-01	mg/kg	9.4E-10	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	6.9E-09	6.6E-08	mg/kg-day	N/A	N/A	N/A
				Benzo(g,h,i)perylene	1E+00	mg/kg	6.1E-09	mg/kg-day	N/A	N/A	N/A	4.2E-07	mg/kg-day	2.0E-01	mg/kg-day	2.1E-06
				Antimony	4E+00	mg/kg	1.6E-08	mg/kg-day	N/A	N/A	N/A	1.1E-06	mg/kg-day	4.0E-04	mg/kg-day	2.8E-03
				Arsenic	8E+00	mg/kg	3.6E-08	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	5.4E-08	2.5E-06	mg/kg-day	3.0E-04	mg/kg-day	8.5E-03
				Cadmium	3E+00	mg/kg	1.3E-08	mg/kg-day	N/A	N/A	N/A	9.3E-07	mg/kg-day	1.0E-03	mg/kg-day	9.3E-04
				Copper	4E+01	mg/kg	1.6E-07	mg/kg-day	N/A	N/A	N/A	1.1E-05	mg/kg-day	3.0E-01	mg/kg-day	3.7E-05
				Lead	8E+02	mg/kg	3.7E-06	mg/kg-day	N/A	N/A	N/A	2.6E-04	mg/kg-day	NA	NA	N/A
				Manganese	4E+02	mg/kg	1.8E-06	mg/kg-day	N/A	N/A	N/A	1.3E-04	mg/kg-day	7.0E-02	mg/kg-day	1.8E-03
				Mercury	6E-01	mg/kg	2.6E-09	mg/kg-day	N/A	N/A	N/A	1.8E-07	mg/kg-day	1.0E-04	mg/kg-day	1.8E-03
				Nickel	2E+01	mg/kg	7.5E-08	mg/kg-day	N/A	N/A	N/A	5.3E-06	mg/kg-day	2.0E-02	mg/kg-day	2.6E-04
				Thallium	6E+00	mg/kg	2.6E-08	mg/kg-day	N/A	N/A	N/A	1.8E-06	mg/kg-day	8.0E-04	mg/kg-day	2.2E-03
				Aroclor 1242	N/A	N/A	N/A	N/A	1.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1248	N/A	N/A	N/A	N/A	1.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1254	5E-01	mg/kg	2.0E-09	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	2.0E-09	1.4E-07	mg/kg-day	2.0E-05	mg/kg-day	7.1E-03
				Aroclor 1260	5E-02	mg/kg	2.2E-10	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	2.2E-10	1.5E-08	mg/kg-day	2.0E-05	mg/kg-day	7.7E-04
				PCB TEQ*	6E-08	mg/kg	2.6E-16	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	3.9E-11	1.8E-14	mg/kg-day	NA	NA	N/A
				C11-C22 Aromatic	4E+03	mg/kg	1.7E-05	mg/kg-day	N/A	N/A	N/A	1.2E-03	mg/kg-day	3.0E-01	mg/kg-day	3.9E-03
			Exp. Route Total								1E-07					3E-02

TABLE 3-7.13.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil (Cont.)	Surface Soil (Cont.)	Murphy Property	Dermal													
				Vinyl chloride	N/A	N/A	N/A	N/A	1.5E+00	(mg/kg-day) $^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Trichloroethene	4E-01	mg/kg	N/A	N/A	4.0E-01	(mg/kg-day) $^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Phenanthrene	2E+00	mg/kg	3.0E-09	mg/kg-day	N/A	N/A	N/A	2.1E-07	mg/kg-day	2.0E-01	mg/kg-day	1.0E-06
				Benzo(a)Anthracene	2E+00	mg/kg	4.7E-09	mg/kg-day	7.3E-01	(mg/kg-day) $^{-1}$	3.4E-09	3.3E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	9E-01	mg/kg	1.8E-09	mg/kg-day	7.3E-01	(mg/kg-day) $^{-1}$	1.3E-09	1.3E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	9E-01	mg/kg	1.8E-09	mg/kg-day	7.3E-02	(mg/kg-day) $^{-1}$	1.3E-10	1.2E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	2E+00	mg/kg	3.0E-09	mg/kg-day	7.3E+00	(mg/kg-day) $^{-1}$	2.2E-08	2.1E-07	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	1E+00	mg/kg	2.4E-09	mg/kg-day	7.3E-01	(mg/kg-day) $^{-1}$	1.8E-09	1.7E-07	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	2E-01	mg/kg	4.0E-10	mg/kg-day	7.3E+00	(mg/kg-day) $^{-1}$	2.9E-09	2.8E-08	mg/kg-day	N/A	N/A	N/A
				Benzo(g,h,i)perylene	1E+00	mg/kg	2.6E-09	mg/kg-day	N/A	N/A	N/A	1.8E-07	mg/kg-day	2.0E-01	mg/kg-day	9.1E-07
				Antimony	4E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-05	mg/kg-day	N/A
				Arsenic	8E+00	mg/kg	3.6E-09	mg/kg-day	1.5E+00	(mg/kg-day) $^{-1}$	5.4E-09	2.5E-07	mg/kg-day	3.0E-04	mg/kg-day	8.4E-04
				Cadmium	3E+00	mg/kg	4.4E-11	mg/kg-day	N/A	N/A	N/A	3.1E-09	mg/kg-day	2.5E-05	mg/kg-day	1.2E-04
				Copper	4E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-01	mg/kg-day	N/A
				Lead	8E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA	NA	N/A
				Manganese	4E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.8E-03	mg/kg-day	N/A
				Mercury	6E-01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A
				Nickel	2E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-04	mg/kg-day	N/A
				Thallium	6E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-04	mg/kg-day	N/A
				Aroclor 1242	N/A	N/A	N/A	N/A	1.0E+00	(mg/kg-day) $^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1248	N/A	N/A	N/A	N/A	1.0E+00	(mg/kg-day) $^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1254	5E-01	mg/kg	9.3E-10	mg/kg-day	1.0E+00	(mg/kg-day) $^{-1}$	9.3E-10	6.5E-08	mg/kg-day	2.0E-05	mg/kg-day	3.3E-03
				Aroclor 1260	5E-02	mg/kg	1.0E-10	mg/kg-day	1.0E+00	(mg/kg-day) $^{-1}$	1.0E-10	7.1E-09	mg/kg-day	2.0E-05	mg/kg-day	3.6E-04
				PCB TEQ*	6E-08	mg/kg	1.2E-16	mg/kg-day	1.5E+05	(mg/kg-day) $^{-1}$	1.8E-11	8.4E-15	mg/kg-day	NA	NA	N/A
				C11-C22 Aromatic	4E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-01	mg/kg-day	N/A
			Exp. Route Total								4E-08					5E-03

TABLE 3-7.13.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil (Cont.)	Surface Soil (Cont.)	Murphy Property	Inhalation													
				Vinyl chloride	N/A	N/A	N/A	N/A	8.8E-06	(ug/m3)-1	N/A	N/A	N/A	1.0E-01	mg/m3	N/A
				Trichloroethene	4E-01	mg/kg	4.3E-11	ug/m3	1.1E-04	(ug/m3)-1	4.7E-15	3.0E-12	mg/m3	4.0E-02	mg/m3	7.5E-11
				Phenanthrene	2E+00	mg/kg	1.8E-10	ug/m3	N/A	N/A	N/A	1.2E-11	mg/m3	3.0E-03	mg/m3	4.1E-09
				Benzo(a)Anthracene	2E+00	mg/kg	2.8E-10	ug/m3	8.8E-05	(ug/m3)-1	2.4E-14	1.9E-11	mg/m3	N/A	N/A	N/A
				Benzo(b)Fluoranthene	9E-01	mg/kg	1.0E-10	ug/m3	8.8E-05	(ug/m3)-1	9.2E-15	7.3E-12	mg/m3	N/A	N/A	N/A
				Benzo(k)Fluoranthene	9E-01	mg/kg	1.0E-10	ug/m3	8.8E-06	(ug/m3)-1	9.2E-16	7.3E-12	mg/m3	N/A	N/A	N/A
				Benzo(a)Pyrene	2E+00	mg/kg	1.8E-10	ug/m3	8.8E-04	(ug/m3)-1	1.5E-13	1.2E-11	mg/m3	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	1E+00	mg/kg	1.4E-10	ug/m3	8.8E-05	(ug/m3)-1	1.3E-14	1.0E-11	mg/m3	N/A	N/A	N/A
				Dibenz(a,h) anthracene	2E-01	mg/kg	2.4E-11	ug/m3	8.8E-04	(ug/m3)-1	2.1E-14	1.7E-12	mg/m3	N/A	N/A	N/A
				Benzo(g,h,i)perylene	1E+00	mg/kg	1.5E-10	ug/m3	N/A	N/A	N/A	1.1E-11	mg/m3	3.0E-03	mg/m3	3.6E-09
				Antimony	4E+00	mg/kg	4.1E-10	ug/m3	N/A	N/A	N/A	2.8E-11	mg/m3	N/A	N/A	N/A
				Arsenic	8E+00	mg/kg	9.1E-10	ug/m3	4.3E-03	(ug/m3)-1	3.9E-12	6.4E-11	mg/m3	N/A	N/A	N/A
				Cadmium	3E+00	mg/kg	3.3E-10	ug/m3	1.8E-03	(ug/m3)-1	6.0E-13	2.3E-11	mg/m3	N/A	N/A	N/A
				Copper	4E+01	mg/kg	4.0E-09	ug/m3	N/A	N/A	N/A	2.8E-10	mg/m3	N/A	N/A	N/A
				Lead	8E+02	mg/kg	9.3E-08	ug/m3	N/A	N/A	N/A	6.5E-09	mg/m3	N/A	N/A	N/A
				Manganese	4E+02	mg/kg	4.6E-08	ug/m3	N/A	N/A	N/A	3.2E-09	mg/m3	5.0E-05	mg/m3	6.5E-05
				Mercury	6E-01	mg/kg	6.5E-11	ug/m3	N/A	N/A	N/A	4.5E-12	mg/m3	N/A	N/A	N/A
				Nickel	2E+01	mg/kg	1.9E-09	ug/m3	N/A	N/A	N/A	1.3E-10	mg/m3	N/A	N/A	N/A
				Thallium	6E+00	mg/kg	6.4E-10	ug/m3	N/A	N/A	N/A	4.5E-11	mg/m3	N/A	N/A	N/A
				Aroclor 1242	N/A	N/A	N/A	N/A	5.0E-04	(ug/m3)-1	N/A	N/A	N/A	N/A	N/A	N/A
				Aroclor 1248	N/A	N/A	N/A	N/A	5.0E-04	(ug/m3)-1	N/A	N/A	N/A	N/A	N/A	N/A
				Aroclor 1254	5E-01	mg/kg	5.1E-11	ug/m3	5.0E-04	(ug/m3)-1	2.5E-14	3.6E-12	mg/m3	N/A	N/A	N/A
				Aroclor 1260	5E-02	mg/kg	5.5E-12	ug/m3	5.0E-04	(ug/m3)-1	2.8E-15	3.9E-13	mg/m3	N/A	N/A	N/A
				PCB TEQ*	6E-08	mg/kg	6.6E-18	ug/m3	3.3E+01	(ug/m3)-1	2.2E-16	4.6E-19	mg/m3	N/A	N/A	N/A
				C11-C22 Aromatic	4E+03	mg/kg	4.2E-07	ug/m3	N/A	N/A	N/A	2.9E-08	mg/m3	5.0E-02	mg/m3	5.9E-07
			Exp. Route Total								5E-12					7E-05
		Exposure Point Total									2E-07					4E-02
	Exposure Medium Total										N/A					N/A
Medium Total											N/A					N/A

TABLE 3-7.13.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Subsurface Soil	Subsurface Soil	Aberjona Property	Ingestion													
				1,2,4-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-01	mg/kg-day	N/A
				1,3,5-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-01	mg/kg-day	N/A
				Naphthalene	1E+01	mg/kg	5.3E-08	mg/kg-day	N/A	N/A	N/A	3.7E-06	mg/kg-day	2.0E-01	mg/kg-day	1.8E-05
				Vinyl chloride	N/A	N/A	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Methylene chloride	N/A	N/A	N/A	N/A	7.5E-03	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	6.0E-02	mg/kg-day	N/A
				cis-1,2-Dichloroethene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-01	mg/kg-day	N/A
				Trichloroethene	N/A	N/A	N/A	N/A	4.0E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Xylenes (total)	3E+00	mg/kg	1.2E-08	mg/kg-day	N/A	N/A	N/A	8.1E-07	mg/kg-day	2.0E-01	mg/kg-day	4.0E-06
				2-Methylnaphthalene	1E+01	mg/kg	6.6E-08	mg/kg-day	N/A	N/A	N/A	4.6E-06	mg/kg-day	2.0E-01	mg/kg-day	2.3E-05
				2,4,6-Trichlorophenol	N/A	N/A	N/A	N/A	1.1E-02	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	1.0E-03	mg/kg-day	N/A
				Acenaphthylene	3E+00	mg/kg	1.5E-08	mg/kg-day	N/A	N/A	N/A	1.0E-06	mg/kg-day	2.0E-01	mg/kg-day	5.1E-06
				Phenanthrene	2E+00	mg/kg	1.1E-08	mg/kg-day	N/A	N/A	N/A	7.6E-07	mg/kg-day	2.0E-01	mg/kg-day	3.8E-06
				Benzo(a)Anthracene	3E-02	mg/kg	1.1E-10	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	8.2E-11	7.8E-09	mg/kg-day	N/A	N/A	N/A
				Bis(2-ethylhexyl) phthalate	N/A	N/A	N/A	N/A	1.4E-02	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-02	mg/kg-day	N/A
				Benzo(b)Fluoranthene	5E-02	mg/kg	2.3E-10	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.7E-10	1.6E-08	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	4E+00	mg/kg	1.6E-08	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	1.2E-09	1.1E-06	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	2E+00	mg/kg	7.9E-09	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	5.8E-08	5.6E-07	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	2E+00	mg/kg	9.9E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	7.2E-09	6.9E-07	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	1E+00	mg/kg	6.2E-09	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	4.5E-08	4.3E-07	mg/kg-day	N/A	N/A	N/A
				Antimony	4E+00	mg/kg	1.7E-08	mg/kg-day	N/A	N/A	N/A	1.2E-06	mg/kg-day	4.0E-04	mg/kg-day	2.9E-03
				Arsenic	2E+01	mg/kg	9.3E-08	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	1.4E-07	6.5E-06	mg/kg-day	3.0E-04	mg/kg-day	2.2E-02
				Barium	2E+02	mg/kg	6.9E-07	mg/kg-day	N/A	N/A	N/A	4.9E-05	mg/kg-day	7.0E-02	mg/kg-day	6.9E-04
				Cadmium	3E+00	mg/kg	1.5E-08	mg/kg-day	N/A	N/A	N/A	1.0E-06	mg/kg-day	1.0E-03	mg/kg-day	1.0E-03
				Lead	2E+02	mg/kg	8.3E-07	mg/kg-day	N/A	N/A	N/A	5.8E-05	mg/kg-day	NA	NA	N/A
				Manganese	3E+02	mg/kg	1.2E-06	mg/kg-day	N/A	N/A	N/A	8.1E-05	mg/kg-day	7.0E-02	mg/kg-day	1.2E-03
				Mercury	5E-01	mg/kg	2.2E-09	mg/kg-day	N/A	N/A	N/A	1.5E-07	mg/kg-day	1.0E-04	mg/kg-day	1.5E-03
				Thallium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-04	mg/kg-day	N/A
				alpha-Chlordane	4E-03	mg/kg	1.7E-11	mg/kg-day	3.5E-01	(mg/kg-day)$^{-1}$	6.1E-12	1.2E-09	mg/kg-day	5.0E-04	mg/kg-day	2.4E-06
				gamma-Chlordane	5E-03	mg/kg	2.1E-11	mg/kg-day	3.5E-01	(mg/kg-day)$^{-1}$	7.3E-12	1.5E-09	mg/kg-day	5.0E-04	mg/kg-day	2.9E-06
				4,4'-DDE	5E-03	mg/kg	2.3E-11	mg/kg-day	3.4E-01	(mg/kg-day)$^{-1}$	7.7E-12	1.6E-09	mg/kg-day	3.0E-03	mg/kg-day	5.3E-07
				4,4'-DDT	2E-02	mg/kg	7.3E-11	mg/kg-day	3.4E-01	(mg/kg-day)$^{-1}$	2.5E-11	5.1E-09	mg/kg-day	5.0E-04	mg/kg-day	1.0E-05
				Aroclor 1242	2E-01	mg/kg	7.2E-10	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	7.2E-10	5.0E-08	mg/kg-day	2.0E-05	mg/kg-day	2.5E-03
				Aroclor 1248	N/A	N/A	N/A	N/A	1.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1254	N/A	N/A	N/A	N/A	1.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1260	1E-01	mg/kg	6.1E-10	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	6.1E-10	4.3E-08	mg/kg-day	2.0E-05	mg/kg-day	2.1E-03
				PCB TEQ*	5E-06	mg/kg	2.0E-14	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	3.0E-09	1.4E-12	mg/kg-day	NA	NA	N/A
				C5-C8 Aliphatic	1E+01	mg/kg	4.7E-08	mg/kg-day	N/A	N/A	N/A	3.3E-06	mg/kg-day	4.0E-01	mg/kg-day	8.2E-06
				C9-C10 Aromatic	2E+02	mg/kg	7.9E-07	mg/kg-day	N/A	N/A	N/A	5.5E-05	mg/kg-day	3.0E-01	mg/kg-day	1.8E-04
				C9-C18 Aliphatic	1E+03	mg/kg	5.4E-06	mg/kg-day	N/A	N/A	N/A	3.8E-04	mg/kg-day	1.0E+00	mg/kg-day	3.8E-04
				C19-C36 Aliphatic	3E+02	mg/kg	1.5E-06	mg/kg-day	N/A	N/A	N/A	1.1E-04	mg/kg-day	6.0E+00	mg/kg-day	1.8E-05
				C11-C22 Aromatic	9E+02	mg/kg	4.1E-06	mg/kg-day	N/A	N/A	N/A	2.9E-04	mg/kg-day	3.0E-01	mg/kg-day	9.6E-04
			Exp. Route Total								3E-07					4E-02

TABLE 3-7.13.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Subsurface Soil (Cont.)	Subsurface Soil (Cont.)	Aberjona Property	Dermal													
				1,2,4-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-01	mg/kg-day	N/A
				1,3,5-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-01	mg/kg-day	N/A
				Naphthalene	1E+01	mg/kg	2.3E-08	mg/kg-day	N/A	N/A	N/A	1.6E-06	mg/kg-day	2.0E-01	mg/kg-day	7.9E-06
				Vinyl chloride	N/A	N/A	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Methylene chloride	N/A	N/A	N/A	N/A	7.5E-03	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	6.0E-02	mg/kg-day	N/A
				cis-1,2-Dichloroethene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-01	mg/kg-day	N/A
				Trichloroethene	N/A	N/A	N/A	N/A	4.0E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Xylenes (total)	3E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/kg-day	N/A
				2-Methylnaphthalene	1E+01	mg/kg	2.8E-08	mg/kg-day	N/A	N/A	N/A	2.0E-06	mg/kg-day	2.0E-01	mg/kg-day	9.8E-06
				2,4,6-Trichlorophenol	N/A	N/A	N/A	N/A	1.1E-02	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	1.0E-03	mg/kg-day	N/A
				Acenaphthylene	3E+00	mg/kg	6.3E-09	mg/kg-day	N/A	N/A	N/A	4.4E-07	mg/kg-day	2.0E-01	mg/kg-day	2.2E-06
				Phenanthrene	2E+00	mg/kg	4.6E-09	mg/kg-day	N/A	N/A	N/A	3.2E-07	mg/kg-day	2.0E-01	mg/kg-day	1.6E-06
				Benzo(a)Anthracene	3E-02	mg/kg	4.8E-11	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	3.5E-11	3.4E-09	mg/kg-day	N/A	N/A	N/A
				Bis(2-ethylhexyl) phthalate	N/A	N/A	N/A	N/A	1.4E-02	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-02	mg/kg-day	N/A
				Benzo(b)Fluoranthene	5E-02	mg/kg	9.8E-11	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	7.1E-11	6.9E-09	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	4E+00	mg/kg	7.0E-09	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	5.1E-10	4.9E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	2E+00	mg/kg	3.4E-09	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	2.5E-08	2.4E-07	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	2E+00	mg/kg	4.3E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	3.1E-09	3.0E-07	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	1E+00	mg/kg	2.7E-09	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.9E-08	1.9E-07	mg/kg-day	N/A	N/A	N/A
				Antimony	4E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-05	mg/kg-day	N/A
				Arsenic	2E+01	mg/kg	9.2E-09	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	1.4E-08	6.5E-07	mg/kg-day	3.0E-04	mg/kg-day	2.2E-03
				Barium	2E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.9E-03	mg/kg-day	N/A
				Cadmium	3E+00	mg/kg	4.9E-11	mg/kg-day	N/A	N/A	N/A	3.4E-09	mg/kg-day	2.5E-05	mg/kg-day	1.4E-04
				Lead	2E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA	NA	N/A
				Manganese	3E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.8E-03	mg/kg-day	N/A
				Mercury	5E-01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A
				Thallium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-04	mg/kg-day	N/A
				alpha-Chlordane	4E-03	mg/kg	2.3E-12	mg/kg-day	3.5E-01	(mg/kg-day)$^{-1}$	8.1E-13	1.6E-10	mg/kg-day	5.0E-04	mg/kg-day	3.2E-07
				gamma-Chlordane	5E-03	mg/kg	2.7E-12	mg/kg-day	3.5E-01	(mg/kg-day)$^{-1}$	9.6E-13	1.9E-10	mg/kg-day	5.0E-04	mg/kg-day	3.8E-07
				4,4'-DDE	5E-03	mg/kg	N/A	N/A	3.4E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				4,4'-DDT	2E-02	mg/kg	7.3E-12	mg/kg-day	3.4E-01	(mg/kg-day)$^{-1}$	2.5E-12	5.1E-10	mg/kg-day	5.0E-04	mg/kg-day	1.0E-06
				Aroclor 1242	2E-01	mg/kg	3.3E-10	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	3.3E-10	2.3E-08	mg/kg-day	2.0E-05	mg/kg-day	1.2E-03
				Aroclor 1248	N/A	N/A	N/A	N/A	1.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1254	N/A	N/A	N/A	N/A	1.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1260	1E-01	mg/kg	2.8E-10	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	2.8E-10	2.0E-08	mg/kg-day	2.0E-05	mg/kg-day	9.9E-04
				PCB TEQ*	5E-06	mg/kg	9.3E-15	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	1.4E-09	6.5E-13	mg/kg-day	NA	NA	N/A
				C5-C8 Aliphatic	1E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.0E-01	mg/kg-day	N/A
				C9-C10 Aromatic	2E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-01	mg/kg-day	N/A
				C9-C18 Aliphatic	1E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E+00	mg/kg-day	N/A
				C19-C36 Aliphatic	3E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E+00	mg/kg-day	N/A
				C11-C22 Aromatic	9E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-01	mg/kg-day	N/A
			Exp. Route Total								6E-08					4E-03

TABLE 3-7.13.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Subsurface Soil (Cont.)	Subsurface Soil (Cont.)	Aberjona Property	Inhalation													
				1,2,4-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-02	mg/m3	N/A
				1,3,5-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-02	mg/m3	N/A
				Naphthalene	1E+01	mg/kg	1.3E-09	ug/m3	N/A	N/A	N/A	9.3E-11	mg/m3	3.0E-03	mg/m3	3.1E-08
				Vinyl chloride	N/A	N/A	N/A	N/A	8.8E-06	(ug/m3)-1	N/A	N/A	N/A	1.0E-01	mg/m3	N/A
				Methylene chloride	N/A	N/A	N/A	N/A	4.7E-07	(ug/m3)-1	N/A	N/A	N/A	3.0E+00	mg/m3	N/A
				cis-1,2-Dichloroethene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/m3	N/A
				Trichloroethene	N/A	N/A	N/A	N/A	1.1E-04	(ug/m3)-1	N/A	N/A	N/A	4.0E-02	mg/m3	N/A
				Xylenes (total)	3E+00	mg/kg	2.9E-10	ug/m3	N/A	N/A	N/A	2.0E-11	mg/m3	1.0E+00	mg/m3	2.0E-11
				2-Methylnaphthalene	1E+01	mg/kg	1.7E-09	ug/m3	N/A	N/A	N/A	1.2E-10	mg/m3	3.0E-03	mg/m3	3.9E-08
				2,4,6-Trichlorophenol	N/A	N/A	N/A	N/A	3.1E-06	(ug/m3)-1	N/A	N/A	N/A	N/A	N/A	N/A
				Acenaphthylene	3E+00	mg/kg	3.7E-10	ug/m3	N/A	N/A	N/A	2.6E-11	mg/m3	3.0E-03	mg/m3	8.6E-09
				Phenanthrene	2E+00	mg/kg	2.7E-10	ug/m3	N/A	N/A	N/A	1.9E-11	mg/m3	3.0E-03	mg/m3	6.3E-09
				Benzo(a)Anthracene	3E-02	mg/kg	2.8E-12	ug/m3	8.8E-05	(ug/m3)-1	2.5E-16	2.0E-13	mg/m3	N/A	N/A	N/A
				Bis(2-ethylhexyl) phthalate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Benzo(b)Fluoranthene	5E-02	mg/kg	5.7E-12	ug/m3	8.8E-05	(ug/m3)-1	5.1E-16	4.0E-13	mg/m3	N/A	N/A	N/A
				Benzo(k)Fluoranthene	4E+00	mg/kg	4.1E-10	ug/m3	8.8E-06	(ug/m3)-1	3.6E-15	2.9E-11	mg/m3	N/A	N/A	N/A
				Benzo(a)Pyrene	2E+00	mg/kg	2.0E-10	ug/m3	8.8E-04	(ug/m3)-1	1.8E-13	1.4E-11	mg/m3	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	2E+00	mg/kg	2.5E-10	ug/m3	8.8E-05	(ug/m3)-1	2.2E-14	1.8E-11	mg/m3	N/A	N/A	N/A
				Dibenz(a,h) anthracene	1E+00	mg/kg	1.6E-10	ug/m3	8.8E-04	(ug/m3)-1	1.4E-13	1.1E-11	mg/m3	N/A	N/A	N/A
				Antimony	4E+00	mg/kg	4.2E-10	ug/m3	N/A	N/A	N/A	3.0E-11	mg/m3	N/A	N/A	N/A
				Arsenic	2E+01	mg/kg	2.4E-09	ug/m3	4.3E-03	(ug/m3)-1	1.0E-11	1.6E-10	mg/m3	N/A	N/A	N/A
				Barium	2E+02	mg/kg	1.7E-08	ug/m3	N/A	N/A	N/A	1.2E-09	mg/m3	N/A	N/A	N/A
				Cadmium	3E+00	mg/kg	3.7E-10	ug/m3	1.8E-03	(ug/m3)-1	6.7E-13	2.6E-11	mg/m3	N/A	N/A	N/A
				Lead	2E+02	mg/kg	2.1E-08	ug/m3	N/A	N/A	N/A	1.5E-09	mg/m3	N/A	N/A	N/A
				Manganese	3E+02	mg/kg	2.9E-08	ug/m3	N/A	N/A	N/A	2.1E-09	mg/m3	5.0E-05	mg/m3	4.1E-05
				Mercury	5E-01	mg/kg	5.5E-11	ug/m3	N/A	N/A	N/A	3.8E-12	mg/m3	N/A	N/A	N/A
				Thallium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				alpha-Chlordane	4E-03	mg/kg	4.4E-13	ug/m3	1.0E-04	(ug/m3)-1	4.4E-17	3.1E-14	mg/m3	7.0E-03	mg/m3	4.4E-12
				gamma-Chlordane	5E-03	mg/kg	5.2E-13	ug/m3	1.0E-04	(ug/m3)-1	5.2E-17	3.7E-14	mg/m3	7.0E-03	mg/m3	5.2E-12
				4,4'-DDE	5E-03	mg/kg	5.7E-13	ug/m3	N/A	N/A	N/A	4.0E-14	mg/m3	N/A	N/A	N/A
				4,4'-DDT	2E-02	mg/kg	1.9E-12	ug/m3	9.7E-05	(ug/m3)-1	1.8E-16	1.3E-13	mg/m3	N/A	N/A	N/A
				Aroclor 1242	2E-01	mg/kg	1.8E-11	ug/m3	5.0E-04	(ug/m3)-1	9.1E-15	1.3E-12	mg/m3	N/A	N/A	N/A
				Aroclor 1248	N/A	N/A	N/A	N/A	5.0E-04	(ug/m3)-1	N/A	N/A	N/A	N/A	N/A	N/A
				Aroclor 1254	N/A	N/A	N/A	N/A	5.0E-04	(ug/m3)-1	N/A	N/A	N/A	N/A	N/A	N/A
				Aroclor 1260	1E-01	mg/kg	1.5E-11	ug/m3	5.0E-04	(ug/m3)-1	7.7E-15	1.1E-12	mg/m3	N/A	N/A	N/A
				PCB TEQ*	5E-06	mg/kg	5.1E-16	ug/m3	3.3E+01	(ug/m3)-1	1.7E-14	3.6E-17	mg/m3	N/A	N/A	N/A
				C5-C8 Aliphatic	1E+01	mg/kg	1.2E-09	ug/m3	N/A	N/A	N/A	8.3E-11	mg/m3	2.0E-01	mg/m3	4.1E-10
				C9-C10 Aromatic	2E+02	mg/kg	2.0E-08	ug/m3	N/A	N/A	N/A	1.4E-09	mg/m3	5.0E-02	mg/m3	2.8E-08
				C9-C18 Aliphatic	1E+03	mg/kg	1.4E-07	ug/m3	N/A	N/A	N/A	9.6E-09	mg/m3	2.0E-01	mg/m3	4.8E-08
				C19-C36 Aliphatic	3E+02	mg/kg	3.9E-08	ug/m3	N/A	N/A	N/A	2.7E-09	mg/m3	N/A	mg/m3	N/A
				C11-C22 Aromatic	9E+02	mg/kg	1.0E-07	ug/m3	N/A	N/A	N/A	7.3E-09	mg/m3	5.0E-02	mg/m3	1.5E-07
			Exp. Route Total								1E-11					4E-05
		Exposure Point Total									3E-07					4E-02

TABLE 3-7.13.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Subsurface Soil (Cont.)	Subsurface Soil (Cont.)	Whitney Property	Ingestion													
				1,2,4-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-01	mg/kg-day	N/A
				1,3,5-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-01	mg/kg-day	N/A
				Naphthalene	2E+00	mg/kg	1.1E-08	mg/kg-day	N/A	N/A	N/A	7.6E-07	mg/kg-day	2.0E-01	mg/kg-day	3.8E-06
				Vinyl chloride	3E-01	mg/kg	1.5E-09	mg/kg-day	1.5E+00	$(mg/kg-day)^{-1}$	2.3E-09	1.1E-07	mg/kg-day	3.0E-03	mg/kg-day	3.5E-05
				Methylene chloride	4E-01	mg/kg	1.7E-09	mg/kg-day	7.5E-03	$(mg/kg-day)^{-1}$	1.3E-11	1.2E-07	mg/kg-day	6.0E-02	mg/kg-day	2.0E-06
				cis-1,2-Dichloroethene	1E-01	mg/kg	5.5E-10	mg/kg-day	N/A	N/A	N/A	3.8E-08	mg/kg-day	1.0E-01	mg/kg-day	3.8E-07
				Trichloroethene	5E-01	mg/kg	2.2E-09	mg/kg-day	4.0E-01	$(mg/kg-day)^{-1}$	8.8E-10	1.5E-07	mg/kg-day	3.0E-04	mg/kg-day	5.1E-04
				Xylenes (total)	6E-01	mg/kg	2.9E-09	mg/kg-day	N/A	N/A	N/A	2.0E-07	mg/kg-day	2.0E-01	mg/kg-day	1.0E-06
				2-Methylnaphthalene	4E+00	mg/kg	2.0E-08	mg/kg-day	N/A	N/A	N/A	1.4E-06	mg/kg-day	2.0E-01	mg/kg-day	6.9E-06
				2,4,6-Trichlorophenol	7E-01	mg/kg	3.1E-09	mg/kg-day	1.1E-02	$(mg/kg-day)^{-1}$	3.5E-11	2.2E-07	mg/kg-day	1.0E-03	mg/kg-day	2.2E-04
				Acenaphthylene	2E-02	mg/kg	8.5E-11	mg/kg-day	N/A	N/A	N/A	5.9E-09	mg/kg-day	2.0E-01	mg/kg-day	3.0E-08
				Phenanthrene	3E+00	mg/kg	1.3E-08	mg/kg-day	N/A	N/A	N/A	9.2E-07	mg/kg-day	2.0E-01	mg/kg-day	4.6E-06
				Benzo(a)Anthracene	1E+00	mg/kg	5.4E-09	mg/kg-day	7.3E-01	$(mg/kg-day)^{-1}$	4.0E-09	3.8E-07	mg/kg-day	N/A	N/A	N/A
				Bis(2-ethylhexyl) phthalate	3E+02	mg/kg	1.3E-06	mg/kg-day	1.4E-02	$(mg/kg-day)^{-1}$	1.8E-08	9.2E-05	mg/kg-day	2.0E-02	mg/kg-day	4.6E-03
				Benzo(b)Fluoranthene	1E+00	mg/kg	6.7E-09	mg/kg-day	7.3E-01	$(mg/kg-day)^{-1}$	4.9E-09	4.7E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	1E+00	mg/kg	4.4E-09	mg/kg-day	7.3E-02	$(mg/kg-day)^{-1}$	3.2E-10	3.1E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	1E+00	mg/kg	5.5E-09	mg/kg-day	7.3E+00	$(mg/kg-day)^{-1}$	4.0E-08	3.9E-07	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	9E-01	mg/kg	3.9E-09	mg/kg-day	7.3E-01	$(mg/kg-day)^{-1}$	2.8E-09	2.7E-07	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	2E-01	mg/kg	1.0E-09	mg/kg-day	7.3E+00	$(mg/kg-day)^{-1}$	7.6E-09	7.3E-08	mg/kg-day	N/A	N/A	N/A
				Antimony	6E+00	mg/kg	2.9E-08	mg/kg-day	N/A	N/A	N/A	2.0E-06	mg/kg-day	4.0E-04	mg/kg-day	5.1E-03
				Arsenic	3E+01	mg/kg	1.3E-07	mg/kg-day	1.5E+00	$(mg/kg-day)^{-1}$	1.9E-07	8.8E-06	mg/kg-day	3.0E-04	mg/kg-day	2.9E-02
				Barium	2E+02	mg/kg	7.4E-07	mg/kg-day	N/A	N/A	N/A	5.2E-05	mg/kg-day	7.0E-02	mg/kg-day	7.4E-04
				Cadmium	6E+00	mg/kg	2.7E-08	mg/kg-day	N/A	N/A	N/A	1.9E-06	mg/kg-day	1.0E-03	mg/kg-day	1.9E-03
				Lead	6E+02	mg/kg	2.6E-06	mg/kg-day	N/A	N/A	N/A	1.8E-04	mg/kg-day	NA	NA	N/A
				Manganese	3E+02	mg/kg	1.1E-06	mg/kg-day	N/A	N/A	N/A	7.9E-05	mg/kg-day	7.0E-02	mg/kg-day	1.1E-03
				Mercury	2E+00	mg/kg	1.1E-08	mg/kg-day	N/A	N/A	N/A	7.6E-07	mg/kg-day	1.0E-04	mg/kg-day	7.6E-03
				Thallium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-04	mg/kg-day	N/A
				alpha-Chlordane	6E+01	mg/kg	2.8E-07	mg/kg-day	3.5E-01	$(mg/kg-day)^{-1}$	9.7E-08	1.9E-05	mg/kg-day	5.0E-04	mg/kg-day	3.9E-02
				gamma-Chlordane	6E-03	mg/kg	2.7E-11	mg/kg-day	3.5E-01	$(mg/kg-day)^{-1}$	9.6E-12	1.9E-09	mg/kg-day	5.0E-04	mg/kg-day	3.8E-06
				4,4'-DDE	2E+01	mg/kg	8.0E-08	mg/kg-day	3.4E-01	$(mg/kg-day)^{-1}$	2.7E-08	5.6E-06	mg/kg-day	3.0E-03	mg/kg-day	1.9E-03
				4,4'-DDT	5E-03	mg/kg	2.4E-11	mg/kg-day	3.4E-01	$(mg/kg-day)^{-1}$	8.1E-12	1.7E-09	mg/kg-day	5.0E-04	mg/kg-day	3.3E-06
				Aroclor 1242	N/A	N/A	N/A	N/A	1.0E+00	$(mg/kg-day)^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1248	7E+02	mg/kg	3.3E-06	mg/kg-day	1.0E+00	$(mg/kg-day)^{-1}$	3.3E-06	2.3E-04	mg/kg-day	2.0E-05	mg/kg-day	1.2E+01
				Aroclor 1254	4E+02	mg/kg	1.8E-06	mg/kg-day	1.0E+00	$(mg/kg-day)^{-1}$	1.8E-06	1.3E-04	mg/kg-day	2.0E-05	mg/kg-day	6.4E+00
				Aroclor 1260	2E+02	mg/kg	1.0E-06	mg/kg-day	1.0E+00	$(mg/kg-day)^{-1}$	1.0E-06	7.1E-05	mg/kg-day	2.0E-05	mg/kg-day	3.5E+00
				PCB TEQ*	1E-03	mg/kg	6.2E-12	mg/kg-day	1.5E+05	$(mg/kg-day)^{-1}$	9.4E-07	4.4E-10	mg/kg-day	NA	NA	N/A
				C5-C8 Aliphatic	5E+01	mg/kg	2.3E-07	mg/kg-day	N/A	N/A	N/A	1.6E-05	mg/kg-day	4.0E-01	mg/kg-day	4.1E-05
				C9-C10 Aromatic	5E+02	mg/kg	2.2E-06	mg/kg-day	N/A	N/A	N/A	1.6E-04	mg/kg-day	3.0E-01	mg/kg-day	5.2E-04
				C9-C18 Aliphatic	3E+03	mg/kg	1.2E-05	mg/kg-day	N/A	N/A	N/A	8.5E-04	mg/kg-day	1.0E+00	mg/kg-day	8.5E-04
				C19-C36 Aliphatic	2E+03	mg/kg	7.2E-06	mg/kg-day	N/A	N/A	N/A	5.0E-04	mg/kg-day	6.0E+00	mg/kg-day	8.4E-05
				C11-C22 Aromatic	2E+03	mg/kg	1.0E-05	mg/kg-day	N/A	N/A	N/A	7.0E-04	mg/kg-day	3.0E-01	mg/kg-day	2.3E-03
			Exp. Route Total								8E-06					2E+01

TABLE 3-7.13.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Subsurface Soil (Cont.)	Subsurface Soil (Cont.)	Whitney Property	Dermal													
				1,2,4-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-01	mg/kg-day	N/A
				1,3,5-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-01	mg/kg-day	N/A
				Naphthalene	2E+00	mg/kg	4.7E-09	mg/kg-day	N/A	N/A	N/A	3.3E-07	mg/kg-day	2.0E-01	mg/kg-day	1.6E-06
				Vinyl chloride	3E-01	mg/kg	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Methylene chloride	4E-01	mg/kg	N/A	N/A	7.5E-03	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	6.0E-02	mg/kg-day	N/A
				cis-1,2-Dichloroethene	1E-01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-01	mg/kg-day	N/A
				Trichloroethene	5E-01	mg/kg	N/A	N/A	4.0E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Xylenes (total)	6E-01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/kg-day	N/A
				2-Methylnaphthalene	4E+00	mg/kg	8.5E-09	mg/kg-day	N/A	N/A	N/A	5.9E-07	mg/kg-day	2.0E-01	mg/kg-day	3.0E-06
				2,4,6-Trichlorophenol	7E-01	mg/kg	N/A	N/A	1.1E-02	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	1.0E-03	mg/kg-day	N/A
				Acenaphthylene	2E-02	mg/kg	3.6E-11	mg/kg-day	N/A	N/A	N/A	2.6E-09	mg/kg-day	2.0E-01	mg/kg-day	1.3E-08
				Phenanthrene	3E+00	mg/kg	5.6E-09	mg/kg-day	N/A	N/A	N/A	3.9E-07	mg/kg-day	2.0E-01	mg/kg-day	2.0E-06
				Benzo(a)Anthracene	1E+00	mg/kg	2.3E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.7E-09	1.6E-07	mg/kg-day	N/A	N/A	N/A
				Bis(2-ethylhexyl) phthalate	3E+02	mg/kg	N/A	N/A	1.4E-02	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-02	mg/kg-day	N/A
				Benzo(b)Fluoranthene	1E+00	mg/kg	2.9E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	2.1E-09	2.0E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	1E+00	mg/kg	1.9E-09	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	1.4E-10	1.3E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	1E+00	mg/kg	2.4E-09	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.7E-08	1.7E-07	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	9E-01	mg/kg	1.7E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	1.2E-09	1.2E-07	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	2E-01	mg/kg	4.5E-10	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	3.3E-09	3.1E-08	mg/kg-day	N/A	N/A	N/A
				Antimony	6E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-05	mg/kg-day	N/A
				Arsenic	3E+01	mg/kg	1.2E-08	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	1.9E-08	8.7E-07	mg/kg-day	3.0E-04	mg/kg-day	2.9E-03
				Barium	2E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.9E-03	mg/kg-day	N/A
				Cadmium	6E+00	mg/kg	8.9E-11	mg/kg-day	N/A	N/A	N/A	6.3E-09	mg/kg-day	2.5E-05	mg/kg-day	2.5E-04
				Lead	6E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA	NA	N/A
				Manganese	3E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.8E-03	mg/kg-day	N/A
				Mercury	2E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A
				Thallium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-04	mg/kg-day	N/A
				alpha-Chlordane	6E+01	mg/kg	3.7E-08	mg/kg-day	3.5E-01	(mg/kg-day)$^{-1}$	1.3E-08	2.6E-06	mg/kg-day	5.0E-04	mg/kg-day	5.1E-03
				gamma-Chlordane	6E-03	mg/kg	3.6E-12	mg/kg-day	3.5E-01	(mg/kg-day)$^{-1}$	1.3E-12	2.5E-10	mg/kg-day	5.0E-04	mg/kg-day	5.1E-07
				4,4'-DDE	2E+01	mg/kg	N/A	N/A	3.4E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				4,4'-DDT	5E-03	mg/kg	2.3E-12	mg/kg-day	3.4E-01	(mg/kg-day)$^{-1}$	8.0E-13	1.6E-10	mg/kg-day	5.0E-04	mg/kg-day	3.3E-07
				Aroclor 1242	N/A	N/A	N/A	N/A	1.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1248	7E+02	mg/kg	1.5E-06	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	1.5E-06	1.1E-04	mg/kg-day	2.0E-05	mg/kg-day	5.4E+00
				Aroclor 1254	4E+02	mg/kg	8.5E-07	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	8.5E-07	5.9E-05	mg/kg-day	2.0E-05	mg/kg-day	3.0E+00
				Aroclor 1260	2E+02	mg/kg	4.7E-07	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	4.7E-07	3.3E-05	mg/kg-day	2.0E-05	mg/kg-day	1.6E+00
				PCB TEQ*	1E-03	mg/kg	2.9E-12	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	4.3E-07	2.0E-10	mg/kg-day	NA	NA	N/A
				C5-C8 Aliphatic	5E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.0E-01	mg/kg-day	N/A
				C9-C10 Aromatic	5E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-01	mg/kg-day	N/A
				C9-C18 Aliphatic	3E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E+00	mg/kg-day	N/A
				C19-C36 Aliphatic	2E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E+00	mg/kg-day	N/A
				C11-C22 Aromatic	2E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-01	mg/kg-day	N/A
			Exp. Route Total								3E-06					1E+01

TABLE 3-7.13.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Subsurface Soil (Cont.)	Subsurface Soil (Cont.)	Whitney Property	Inhalation													
				1,2,4-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-02	mg/m3	N/A
				1,3,5-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-02	mg/m3	N/A
				Naphthalene	2E+00	mg/kg	2.8E-10	ug/m3	N/A	N/A	N/A	1.9E-11	mg/m3	3.0E-03	mg/m3	6.4E-09
				Vinyl chloride	3E-01	mg/kg	3.8E-11	ug/m3	8.8E-06	(ug/m3)-1	3.4E-16	2.7E-12	mg/m3	1.0E-01	mg/m3	2.7E-11
				Methylene chloride	4E-01	mg/kg	4.3E-11	ug/m3	4.7E-07	(ug/m3)-1	2.0E-17	3.0E-12	mg/m3	3.0E+00	mg/m3	1.0E-12
				cis-1,2-Dichloroethene	1E-01	mg/kg	1.4E-11	ug/m3	N/A	N/A	N/A	9.7E-13	mg/m3	2.0E-01	mg/m3	4.8E-12
				Trichloroethene	5E-01	mg/kg	5.5E-11	ug/m3	1.1E-04	(ug/m3)-1	6.1E-15	3.9E-12	mg/m3	4.0E-02	mg/m3	9.7E-11
				Xylenes (total)	6E-01	mg/kg	7.2E-11	ug/m3	N/A	N/A	N/A	5.0E-12	mg/m3	1.0E+00	mg/m3	5.0E-12
				2-Methylnaphthalene	4E+00	mg/kg	5.0E-10	ug/m3	N/A	N/A	N/A	3.5E-11	mg/m3	3.0E-03	mg/m3	1.2E-08
				2,4,6-Trichlorophenol	7E-01	mg/kg	7.9E-11	ug/m3	3.1E-06	(ug/m3)-1	2.5E-16	5.5E-12	mg/m3	N/A	N/A	N/A
				Acenaphthylene	2E-02	mg/kg	2.1E-12	ug/m3	N/A	N/A	N/A	1.5E-13	mg/m3	3.0E-03	mg/m3	5.0E-11
				Phenanthrene	3E+00	mg/kg	3.3E-10	ug/m3	N/A	N/A	N/A	2.3E-11	mg/m3	3.0E-03	mg/m3	7.7E-09
				Benzo(a)Anthracene	1E+00	mg/kg	1.4E-10	ug/m3	8.8E-05	(ug/m3)-1	1.2E-14	9.6E-12	mg/m3	N/A	N/A	N/A
				Bis(2-ethylhexyl) phthalate	3E+02	mg/kg	3.3E-08	ug/m3	N/A	N/A	N/A	2.3E-09	mg/m3	N/A	N/A	N/A
				Benzo(b)Fluoranthene	1E+00	mg/kg	1.7E-10	ug/m3	8.8E-05	(ug/m3)-1	1.5E-14	1.2E-11	mg/m3	N/A	N/A	N/A
				Benzo(k)Fluoranthene	1E+00	mg/kg	1.1E-10	ug/m3	8.8E-06	(ug/m3)-1	9.8E-16	7.8E-12	mg/m3	N/A	N/A	N/A
				Benzo(a)Pyrene	1E+00	mg/kg	1.4E-10	ug/m3	8.8E-04	(ug/m3)-1	1.2E-13	9.7E-12	mg/m3	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	9E-01	mg/kg	9.8E-11	ug/m3	8.8E-05	(ug/m3)-1	8.6E-15	6.9E-12	mg/m3	N/A	N/A	N/A
				Dibenz(a,h) anthracene	2E-01	mg/kg	2.6E-11	ug/m3	8.8E-04	(ug/m3)-1	2.3E-14	1.8E-12	mg/m3	N/A	N/A	N/A
				Antimony	6E+00	mg/kg	7.3E-10	ug/m3	N/A	N/A	N/A	5.1E-11	mg/m3	N/A	N/A	N/A
				Arsenic	3E+01	mg/kg	3.2E-09	ug/m3	4.3E-03	(ug/m3)-1	1.4E-11	2.2E-10	mg/m3	N/A	N/A	N/A
				Barium	2E+02	mg/kg	1.9E-08	ug/m3	N/A	N/A	N/A	1.3E-09	mg/m3	N/A	N/A	N/A
				Cadmium	6E+00	mg/kg	6.8E-10	ug/m3	1.8E-03	(ug/m3)-1	1.2E-12	4.8E-11	mg/m3	N/A	N/A	N/A
				Lead	6E+02	mg/kg	6.5E-08	ug/m3	N/A	N/A	N/A	4.5E-09	mg/m3	N/A	N/A	N/A
				Manganese	3E+02	mg/kg	2.8E-08	ug/m3	N/A	N/A	N/A	2.0E-09	mg/m3	5.0E-05	mg/m3	4.0E-05
				Mercury	2E+00	mg/kg	2.7E-10	ug/m3	N/A	N/A	N/A	1.9E-11	mg/m3	N/A	N/A	N/A
				Thallium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				alpha-Chlordane	6E+01	mg/kg	7.0E-09	ug/m3	1.0E-04	(ug/m3)-1	7.0E-13	4.9E-10	mg/m3	7.0E-03	mg/m3	7.0E-08
				gamma-Chlordane	6E-03	mg/kg	6.9E-13	ug/m3	1.0E-04	(ug/m3)-1	6.9E-17	4.8E-14	mg/m3	7.0E-03	mg/m3	6.9E-12
				4,4'-DDE	2E+01	mg/kg	2.0E-09	ug/m3	N/A	N/A	N/A	1.4E-10	mg/m3	N/A	N/A	N/A
				4,4'-DDT	5E-03	mg/kg	6.0E-13	ug/m3	9.7E-05	(ug/m3)-1	5.8E-17	4.2E-14	mg/m3	N/A	N/A	N/A
				Aroclor 1242	N/A	N/A	N/A	N/A	5.0E-04	(ug/m3)-1	N/A	N/A	N/A	N/A	N/A	N/A
				Aroclor 1248	7E+02	mg/kg	8.4E-08	ug/m3	5.0E-04	(ug/m3)-1	4.2E-11	5.9E-09	mg/m3	N/A	N/A	N/A
				Aroclor 1254	4E+02	mg/kg	4.6E-08	ug/m3	5.0E-04	(ug/m3)-1	2.3E-11	3.2E-09	mg/m3	N/A	N/A	N/A
				Aroclor 1260	2E+02	mg/kg	2.5E-08	ug/m3	5.0E-04	(ug/m3)-1	1.3E-11	1.8E-09	mg/m3	N/A	N/A	N/A
				PCB TEQ*	1E-03	mg/kg	1.6E-13	ug/m3	3.3E+01	(ug/m3)-1	5.2E-12	1.1E-14	mg/m3	N/A	N/A	N/A
				C5-C8 Aliphatic	5E+01	mg/kg	5.9E-09	ug/m3	N/A	N/A	N/A	4.1E-10	mg/m3	2.0E-01	mg/m3	2.1E-09
				C9-C10 Aromatic	5E+02	mg/kg	5.6E-08	ug/m3	N/A	N/A	N/A	3.9E-09	mg/m3	5.0E-02	mg/m3	7.9E-08
				C9-C18 Aliphatic	3E+03	mg/kg	3.1E-07	ug/m3	N/A	N/A	N/A	2.2E-08	mg/m3	2.0E-01	mg/m3	1.1E-07
				C19-C36 Aliphatic	2E+03	mg/kg	1.8E-07	ug/m3	N/A	N/A	N/A	1.3E-08	mg/m3	N/A	mg/m3	N/A
				C11-C22 Aromatic	2E+03	mg/kg	2.5E-07	ug/m3	N/A	N/A	N/A	1.8E-08	mg/m3	5.0E-02	mg/m3	3.5E-07
			Exp. Route Total								1E-10					4E-05
		Exposure Point Total									1E-05					3E+01

TABLE 3-7.13.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Subsurface Soil (Cont.)	Subsurface Soil (Cont.)	Murphy Property	Ingestion													
				1,2,4-Trimethylbenzene	1E+01	mg/kg	4.7E-08	mg/kg-day	N/A	N/A	N/A	3.3E-06	mg/kg-day	5.0E-01	mg/kg-day	6.6E-06
				1,3,5-Trimethylbenzene	5E+00	mg/kg	2.0E-08	mg/kg-day	N/A	N/A	N/A	1.4E-06	mg/kg-day	5.0E-01	mg/kg-day	2.8E-06
				Naphthalene	4E+00	mg/kg	1.7E-08	mg/kg-day	N/A	N/A	N/A	1.2E-06	mg/kg-day	2.0E-01	mg/kg-day	5.8E-06
				Vinyl chloride	N/A	N/A	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Methylene chloride	3E+00	mg/kg	1.2E-08	mg/kg-day	7.5E-03	(mg/kg-day)$^{-1}$	9.1E-11	8.5E-07	mg/kg-day	6.0E-02	mg/kg-day	1.4E-05
				cis-1,2-Dichloroethene	2E+00	mg/kg	1.0E-08	mg/kg-day	N/A	N/A	N/A	7.0E-07	mg/kg-day	1.0E-01	mg/kg-day	7.0E-06
				Trichloroethene	3E-01	mg/kg	1.3E-09	mg/kg-day	4.0E-01	(mg/kg-day)$^{-1}$	5.0E-10	8.8E-08	mg/kg-day	3.0E-04	mg/kg-day	2.9E-04
				Xylenes (total)	4E+00	mg/kg	1.8E-08	mg/kg-day	N/A	N/A	N/A	1.3E-06	mg/kg-day	2.0E-01	mg/kg-day	6.4E-06
				2-Methylnaphthalene	1E+00	mg/kg	4.8E-09	mg/kg-day	N/A	N/A	N/A	3.4E-07	mg/kg-day	2.0E-01	mg/kg-day	1.7E-06
				2,4,6-Trichlorophenol	N/A	N/A	N/A	N/A	1.1E-02	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	1.0E-03	mg/kg-day	N/A
				Acenaphthylene	2E+00	mg/kg	7.1E-09	mg/kg-day	N/A	N/A	N/A	5.0E-07	mg/kg-day	2.0E-01	mg/kg-day	2.5E-06
				Phenanthrene	2E+00	mg/kg	7.9E-09	mg/kg-day	N/A	N/A	N/A	5.6E-07	mg/kg-day	2.0E-01	mg/kg-day	2.8E-06
				Benzo(a)Anthracene	1E+00	mg/kg	6.6E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	4.8E-09	4.6E-07	mg/kg-day	N/A	N/A	N/A
				Bis(2-ethylhexyl) phthalate	1E+01	mg/kg	5.2E-08	mg/kg-day	1.4E-02	(mg/kg-day)$^{-1}$	7.3E-10	3.7E-06	mg/kg-day	2.0E-02	mg/kg-day	1.8E-04
				Benzo(b)Fluoranthene	1E+00	mg/kg	6.6E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	4.9E-09	4.7E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	2E+00	mg/kg	8.1E-09	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	5.9E-10	5.7E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	2E+00	mg/kg	7.1E-09	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	5.2E-08	5.0E-07	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	1E+00	mg/kg	6.6E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	4.9E-09	4.7E-07	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	4E-01	mg/kg	1.7E-09	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.2E-08	1.2E-07	mg/kg-day	N/A	N/A	N/A
				Antimony	3E+00	mg/kg	1.3E-08	mg/kg-day	N/A	N/A	N/A	8.9E-07	mg/kg-day	4.0E-04	mg/kg-day	2.2E-03
				Arsenic	4E+00	mg/kg	1.8E-08	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	2.7E-08	1.2E-06	mg/kg-day	3.0E-04	mg/kg-day	4.2E-03
				Barium	3E+02	mg/kg	1.5E-06	mg/kg-day	N/A	N/A	N/A	1.1E-04	mg/kg-day	7.0E-02	mg/kg-day	1.5E-03
				Cadmium	1E+00	mg/kg	5.6E-09	mg/kg-day	N/A	N/A	N/A	3.9E-07	mg/kg-day	1.0E-03	mg/kg-day	3.9E-04
				Lead	5E+02	mg/kg	2.2E-06	mg/kg-day	N/A	N/A	N/A	1.6E-04	mg/kg-day	NA	NA	N/A
				Manganese	1E+02	mg/kg	5.4E-07	mg/kg-day	N/A	N/A	N/A	3.8E-05	mg/kg-day	7.0E-02	mg/kg-day	5.4E-04
				Mercury	8E-02	mg/kg	3.4E-10	mg/kg-day	N/A	N/A	N/A	2.4E-08	mg/kg-day	1.0E-04	mg/kg-day	2.4E-04
				Thallium	9E+00	mg/kg	4.0E-08	mg/kg-day	N/A	N/A	N/A	2.8E-06	mg/kg-day	8.0E-04	mg/kg-day	3.5E-03
				alpha-Chlordane	1E-01	mg/kg	5.4E-10	mg/kg-day	3.5E-01	(mg/kg-day)$^{-1}$	1.9E-10	3.8E-08	mg/kg-day	5.0E-04	mg/kg-day	7.6E-05
				gamma-Chlordane	1E-01	mg/kg	5.5E-10	mg/kg-day	3.5E-01	(mg/kg-day)$^{-1}$	1.9E-10	3.8E-08	mg/kg-day	5.0E-04	mg/kg-day	7.7E-05
				4,4'-DDE	N/A	N/A	N/A	N/A	3.4E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				4,4'-DDT	N/A	N/A	N/A	N/A	3.4E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	5.0E-04	mg/kg-day	N/A
				Aroclor 1242	N/A	N/A	N/A	N/A	1.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1248	6E-01	mg/kg	2.8E-09	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	2.8E-09	1.9E-07	mg/kg-day	2.0E-05	mg/kg-day	9.7E-03
				Aroclor 1254	2E-01	mg/kg	8.7E-10	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	8.7E-10	6.1E-08	mg/kg-day	2.0E-05	mg/kg-day	3.1E-03
				Aroclor 1260	N/A	N/A	N/A	N/A	1.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				PCB TEQ*	N/A	N/A	N/A	N/A	1.5E+05	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	NA	NA	N/A
				C5-C8 Aliphatic	1E+00	mg/kg	4.5E-09	mg/kg-day	N/A	N/A	N/A	3.1E-07	mg/kg-day	4.0E-01	mg/kg-day	7.8E-07
				C9-C10 Aromatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-01	mg/kg-day	N/A
				C9-C18 Aliphatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E+00	mg/kg-day	N/A
				C19-C36 Aliphatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E+00	mg/kg-day	N/A
				C11-C22 Aromatic	7E+03	mg/kg	3.0E-05	mg/kg-day	N/A	N/A	N/A	2.1E-03	mg/kg-day	3.0E-01	mg/kg-day	7.0E-03
			Exp. Route Total								1E-07					3E-02

TABLE 3-7.13.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Subsurface Soil (Cont.)	Subsurface Soil (Cont.)	Murphy Property	Dermal													
				1,2,4-Trimethylbenzene	1E+01	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-01	mg/kg-day	N/A
				1,3,5-Trimethylbenzene	5E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-01	mg/kg-day	N/A
				Naphthalene	4E+00	mg/kg	7.1E-09	mg/kg-day	N/A	N/A	N/A	5.0E-07	mg/kg-day	2.0E-01	mg/kg-day	2.5E-06
				Vinyl chloride	N/A	N/A	N/A	N/A	1.5E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				Methylene chloride	3E+00	mg/kg	N/A	N/A	7.5E-03	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	6.0E-02	mg/kg-day	N/A
				cis-1,2-Dichloroethene	2E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-01	mg/kg-day	N/A
				Trichloroethene	3E-01	mg/kg	N/A	N/A	4.0E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-04	mg/kg-day	N/A
				Xylenes (total)	4E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/kg-day	N/A
				2-Methylnaphthalene	1E+00	mg/kg	2.1E-09	mg/kg-day	N/A	N/A	N/A	1.4E-07	mg/kg-day	2.0E-01	mg/kg-day	7.2E-07
				2,4,6-Trichlorophenol	N/A	N/A	N/A	N/A	1.1E-02	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	1.0E-03	mg/kg-day	N/A
				Acenaphthylene	2E+00	mg/kg	3.1E-09	mg/kg-day	N/A	N/A	N/A	2.1E-07	mg/kg-day	2.0E-01	mg/kg-day	1.1E-06
				Phenanthrene	2E+00	mg/kg	3.4E-09	mg/kg-day	N/A	N/A	N/A	2.4E-07	mg/kg-day	2.0E-01	mg/kg-day	1.2E-06
				Benzo(a)Anthracene	1E+00	mg/kg	2.8E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	2.1E-09	2.0E-07	mg/kg-day	N/A	N/A	N/A
				Bis(2-ethylhexyl) phthalate	1E+01	mg/kg	N/A	N/A	1.4E-02	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-02	mg/kg-day	N/A
				Benzo(b)Fluoranthene	1E+00	mg/kg	2.9E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	2.1E-09	2.0E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	2E+00	mg/kg	3.5E-09	mg/kg-day	7.3E-02	(mg/kg-day)$^{-1}$	2.6E-10	2.4E-07	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	2E+00	mg/kg	3.0E-09	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	2.2E-08	2.1E-07	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	1E+00	mg/kg	2.9E-09	mg/kg-day	7.3E-01	(mg/kg-day)$^{-1}$	2.1E-09	2.0E-07	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	4E-01	mg/kg	7.3E-10	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	5.3E-09	5.1E-08	mg/kg-day	N/A	N/A	N/A
				Antimony	3E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E-05	mg/kg-day	N/A
				Arsenic	4E+00	mg/kg	1.8E-09	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	2.6E-09	1.2E-07	mg/kg-day	3.0E-04	mg/kg-day	4.1E-04
				Barium	3E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.9E-03	mg/kg-day	N/A
				Cadmium	1E+00	mg/kg	1.9E-11	mg/kg-day	N/A	N/A	N/A	1.3E-09	mg/kg-day	2.5E-05	mg/kg-day	5.2E-05
				Lead	5E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA	NA	N/A
				Manganese	1E+02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.8E-03	mg/kg-day	N/A
				Mercury	8E-02	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-04	mg/kg-day	N/A
				Thallium	9E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.0E-04	mg/kg-day	N/A
				alpha-Chlordane	1E-01	mg/kg	7.1E-11	mg/kg-day	3.5E-01	(mg/kg-day)$^{-1}$	2.5E-11	5.0E-09	mg/kg-day	5.0E-04	mg/kg-day	1.0E-05
				gamma-Chlordane	1E-01	mg/kg	7.2E-11	mg/kg-day	3.5E-01	(mg/kg-day)$^{-1}$	2.5E-11	5.1E-09	mg/kg-day	5.0E-04	mg/kg-day	1.0E-05
				4,4'-DDE	N/A	N/A	N/A	N/A	3.4E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	3.0E-03	mg/kg-day	N/A
				4,4'-DDT	N/A	N/A	N/A	N/A	3.4E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	5.0E-04	mg/kg-day	N/A
				Aroclor 1242	N/A	N/A	N/A	N/A	1.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				Aroclor 1248	6E-01	mg/kg	1.3E-09	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	1.3E-09	9.0E-08	mg/kg-day	2.0E-05	mg/kg-day	4.5E-03
				Aroclor 1254	2E-01	mg/kg	4.0E-10	mg/kg-day	1.0E+00	(mg/kg-day)$^{-1}$	4.0E-10	2.8E-08	mg/kg-day	2.0E-05	mg/kg-day	1.4E-03
				Aroclor 1260	N/A	N/A	N/A	N/A	1.0E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-05	mg/kg-day	N/A
				PCB TEQ*	N/A	N/A	N/A	N/A	1.5E+05	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	NA	NA	N/A
				C5-C8 Aliphatic	1E+00	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.0E-01	mg/kg-day	N/A
				C9-C10 Aromatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-01	mg/kg-day	N/A
				C9-C18 Aliphatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E+00	mg/kg-day	N/A
				C19-C36 Aliphatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E+00	mg/kg-day	N/A
				C11-C22 Aromatic	7E+03	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-01	mg/kg-day	N/A
			Exp. Route Total								4E-08					6E-03

TABLE 3-7.13.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Subsurface Soil (Cont.)	Subsurface Soil (Cont.)	Murphy Property	Inhalation													
				1,2,4-Trimethylbenzene	1E+01	mg/kg	1.2E-09	ug/m3	N/A	N/A	N/A	8.4E-11	mg/kg-day	6.0E-02	mg/m3	1.4E-09
				1,3,5-Trimethylbenzene	5E+00	mg/kg	5.1E-10	ug/m3	N/A	N/A	N/A	3.6E-11	mg/kg-day	6.0E-02	mg/m3	5.9E-10
				Naphthalene	4E+00	mg/kg	4.2E-10	ug/m3	N/A	N/A	N/A	2.9E-11	mg/kg-day	3.0E-03	mg/m3	9.7E-09
				Vinyl chloride	N/A	N/A	N/A	N/A	8.8E-06	(ug/m3)-1	N/A	N/A	N/A	1.0E-01	mg/m3	N/A
				Methylene chloride	3E+00	mg/kg	3.1E-10	ug/m3	4.7E-07	(ug/m3)-1	1.4E-16	2.1E-11	mg/kg-day	3.0E+00	mg/m3	7.2E-12
				cis-1,2-Dichloroethene	2E+00	mg/kg	2.5E-10	ug/m3	N/A	N/A	N/A	1.8E-11	mg/kg-day	2.0E-01	mg/m3	8.9E-11
				Trichloroethene	3E-01	mg/kg	3.2E-11	ug/m3	1.1E-04	(ug/m3)-1	3.5E-15	2.2E-12	mg/kg-day	4.0E-02	mg/m3	5.6E-11
				Xylenes (total)	4E+00	mg/kg	4.6E-10	ug/m3	N/A	N/A	N/A	3.2E-11	mg/kg-day	1.0E+00	mg/m3	3.2E-11
				2-Methylnaphthalene	1E+00	mg/kg	1.2E-10	ug/m3	N/A	N/A	N/A	8.5E-12	mg/kg-day	3.0E-03	mg/m3	2.8E-09
				2,4,6-Trichlorophenol	N/A	N/A	N/A	N/A	3.1E-06	(ug/m3)-1	N/A	N/A	N/A	N/A	N/A	N/A
				Acenaphthylene	2E+00	mg/kg	1.8E-10	ug/m3	N/A	N/A	N/A	1.3E-11	mg/kg-day	3.0E-03	mg/m3	4.2E-09
				Phenanthrene	2E+00	mg/kg	2.0E-10	ug/m3	N/A	N/A	N/A	1.4E-11	mg/kg-day	3.0E-03	mg/m3	4.7E-09
				Benzo(a)Anthracene	1E+00	mg/kg	1.7E-10	ug/m3	8.8E-05	(ug/m3)-1	1.5E-14	1.2E-11	mg/kg-day	N/A	N/A	N/A
				Bis(2-ethylhexyl) phthalate	1E+01	mg/kg	1.3E-09	ug/m3	N/A	N/A	N/A	9.2E-11	mg/kg-day	N/A	N/A	N/A
				Benzo(b)Fluoranthene	1E+00	mg/kg	1.7E-10	ug/m3	8.8E-05	(ug/m3)-1	1.5E-14	1.2E-11	mg/kg-day	N/A	N/A	N/A
				Benzo(k)Fluoranthene	2E+00	mg/kg	2.1E-10	ug/m3	8.8E-06	(ug/m3)-1	1.8E-15	1.4E-11	mg/kg-day	N/A	N/A	N/A
				Benzo(a)Pyrene	2E+00	mg/kg	1.8E-10	ug/m3	8.8E-04	(ug/m3)-1	1.6E-13	1.2E-11	mg/kg-day	N/A	N/A	N/A
				Indeno(1,2,3-cd)pyrene	1E+00	mg/kg	1.7E-10	ug/m3	8.8E-05	(ug/m3)-1	1.5E-14	1.2E-11	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	4E-01	mg/kg	4.3E-11	ug/m3	8.8E-04	(ug/m3)-1	3.8E-14	3.0E-12	mg/kg-day	N/A	N/A	N/A
				Antimony	3E+00	mg/kg	3.2E-10	ug/m3	N/A	N/A	N/A	2.2E-11	mg/kg-day	N/A	N/A	N/A
				Arsenic	4E+00	mg/kg	4.5E-10	ug/m3	4.3E-03	(ug/m3)-1	1.9E-12	3.1E-11	mg/kg-day	N/A	N/A	N/A
				Barium	3E+02	mg/kg	3.8E-08	ug/m3	N/A	N/A	N/A	2.7E-09	mg/kg-day	N/A	N/A	N/A
				Cadmium	1E+00	mg/kg	1.4E-10	ug/m3	1.8E-03	(ug/m3)-1	2.6E-13	9.9E-12	mg/kg-day	N/A	N/A	N/A
				Lead	5E+02	mg/kg	5.7E-08	ug/m3	N/A	N/A	N/A	4.0E-09	mg/kg-day	N/A	N/A	N/A
				Manganese	1E+02	mg/kg	1.4E-08	ug/m3	N/A	N/A	N/A	9.5E-10	mg/kg-day	5.0E-05	mg/m3	1.9E-05
				Mercury	8E-02	mg/kg	8.5E-12	ug/m3	N/A	N/A	N/A	6.0E-13	mg/kg-day	N/A	N/A	N/A
				Thallium	9E+00	mg/kg	1.0E-09	ug/m3	N/A	N/A	N/A	7.0E-11	mg/kg-day	N/A	N/A	N/A
				alpha-Chlordane	1E-01	mg/kg	1.4E-11	ug/m3	1.0E-04	(ug/m3)-1	1.4E-15	9.6E-13	mg/kg-day	7.0E-03	mg/m3	1.4E-10
				gamma-Chlordane	1E-01	mg/kg	1.4E-11	ug/m3	1.0E-04	(ug/m3)-1	1.4E-15	9.7E-13	mg/kg-day	7.0E-03	mg/m3	1.4E-10
				4,4'-DDE	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				4,4'-DDT	N/A	N/A	N/A	N/A	9.7E-05	(ug/m3)-1	N/A	N/A	N/A	N/A	N/A	N/A
				Aroclor 1242	N/A	N/A	N/A	N/A	5.0E-04	(ug/m3)-1	N/A	N/A	N/A	N/A	N/A	N/A
				Aroclor 1248	6E-01	mg/kg	7.0E-11	ug/m3	5.0E-04	(ug/m3)-1	3.5E-14	4.9E-12	mg/kg-day	N/A	N/A	N/A
				Aroclor 1254	2E-01	mg/kg	2.2E-11	ug/m3	5.0E-04	(ug/m3)-1	1.1E-14	1.5E-12	mg/kg-day	N/A	N/A	N/A
				Aroclor 1260	N/A	N/A	N/A	N/A	5.0E-04	(ug/m3)-1	N/A	N/A	N/A	N/A	N/A	N/A
				PCB TEQ*	N/A	N/A	N/A	N/A	3.3E+01	(ug/m3)-1	N/A	N/A	N/A	N/A	N/A	N/A
				C5-C8 Aliphatic	1E+00	mg/kg	1.1E-10	ug/m3	N/A	N/A	N/A	7.9E-12	mg/kg-day	2.0E-01	mg/m3	3.9E-11
				C9-C10 Aromatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/m3	N/A
				C9-C18 Aliphatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/m3	N/A
				C19-C36 Aliphatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	mg/m3	N/A
				C11-C22 Aromatic	7E+03	mg/kg	7.6E-07	ug/m3	N/A	N/A	N/A	5.3E-08	mg/kg-day	5.0E-02	mg/m3	1.1E-06
			Exp. Route Total								2E-12					2E-05
		Exposure Point Total									1E-07					4E-02
	Exposure Medium Total										N/A					N/A
Medium Total											N/A					N/A

TABLE 3-7.13.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Outdoor Air	Aberjona Property	Inhalation													
				C5-C8 Aliphatic	5E-02	ug/m3	2.6E-05	ug/m3	N/A	N/A	N/A	1.8E-06	mg/m3	2.0E-01	mg/m3	9.1E-06
				C9-C12 Aliphatic	2E-03	ug/m3	9.7E-07	ug/m3	N/A	N/A	N/A	6.8E-08	mg/m3	2.0E-01	mg/m3	3.4E-07
				C9-C10 Aromatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/m3	N/A
				C9-C18 Aliphatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/m3	N/A
				C11-C22 Aromatic	5E-04	ug/m3	2.4E-07	ug/m3	N/A	N/A	N/A	1.7E-08	mg/m3	5.0E-02	mg/m3	3.4E-07
			Exp. Route Total								0E+00					1E-05
		Exposure Point Total									0E+00					1E-05

TABLE 3-7.13.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil (Cont.)	Outdoor Air (Cont.)	Whitney Property	Inhalation													
				C5-C8 Aliphatic	4E-01	ug/m3	2.3E-04	ug/m3	N/A	N/A	N/A	1.6E-05	mg/m3	2.0E-01	mg/m3	8.1E-05
				C9-C12 Aliphatic	2E-02	ug/m3	1.2E-05	ug/m3	N/A	N/A	N/A	8.2E-07	mg/m3	2.0E-01	mg/m3	4.1E-06
				C9-C10 Aromatic	4E-03	ug/m3	2.0E-06	ug/m3	N/A	N/A	N/A	1.4E-07	mg/m3	5.0E-02	mg/m3	2.8E-06
				C9-C18 Aliphatic	4E-02	ug/m3	2.0E-05	ug/m3	N/A	N/A	N/A	1.4E-06	mg/m3	2.0E-01	mg/m3	6.9E-06
				C11-C22 Aromatic	1E-02	ug/m3	7.8E-06	ug/m3	N/A	N/A	N/A	5.4E-07	mg/m3	5.0E-02	mg/m3	1.1E-05
			Exp. Route Total								0E+00					1E-04
		Exposure Point Total									0E+00					1E-04

TABLE 3-7.13.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil (Cont.)	Outdoor Air (Cont.)	Murphy Property	Inhalation													
				C5-C8 Aliphatic	5E-02	ug/m3	2.6E-05	ug/m3	N/A	N/A	N/A	1.8E-06	mg/m3	2.0E-01	mg/m3	9.1E-06
				C9-C12 Aliphatic	2E-03	ug/m3	9.7E-07	ug/m3	N/A	N/A	N/A	6.8E-08	mg/m3	2.0E-01	mg/m3	3.4E-07
				C9-C10 Aromatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/m3	N/A
				C9-C18 Aliphatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/m3	N/A
				C11-C22 Aromatic	1E-01	ug/m3	6.3E-05	ug/m3	N/A	N/A	N/A	4.4E-06	mg/m3	5.0E-02	mg/m3	8.8E-05
			Exp. Route Total								0E+00					1E-04
		Exposure Point Total									0E+00					1E-04
	Exposure Medium Total										N/A					N/A

TABLE 3-7.13.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Subsurface Soil	Outdoor Air	Aberjona Property	Inhalation													
				C5-C8 Aliphatic	9E-01	ug/m3	4.9E-04	ug/m3	N/A	N/A	N/A	3.4E-05	mg/m3	2.0E-01	mg/m3	1.7E-04
				C9-C12 Aliphatic	1E-01	ug/m3	5.9E-05	ug/m3	N/A	N/A	N/A	4.2E-06	mg/m3	2.0E-01	mg/m3	2.1E-05
				C9-C10 Aromatic	1E-01	ug/m3	7.1E-05	ug/m3	N/A	N/A	N/A	4.9E-06	mg/m3	5.0E-02	mg/m3	9.9E-05
				C9-C18 Aliphatic	1E+00	ug/m3	5.6E-04	ug/m3	N/A	N/A	N/A	3.9E-05	mg/m3	2.0E-01	mg/m3	2.0E-04
				C11-C22 Aromatic	4E-02	ug/m3	2.3E-05	ug/m3	N/A	N/A	N/A	1.6E-06	mg/m3	5.0E-02	mg/m3	3.2E-05
			Exp. Route Total								0E+00					5E-04
		Exposure Point Total									0E+00					5E-04

TABLE 3-7.13.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Subsurface Soil (Cont.)	Outdoor Air (Cont.)	Whitney Property	Inhalation													
				C5-C8 Aliphatic	7E+00	ug/m3	3.7E-03	ug/m3	N/A	N/A	N/A	2.6E-04	mg/m3	2.0E-01	mg/m3	1.3E-03
				C9-C12 Aliphatic	3E-01	ug/m3	1.4E-04	ug/m3	N/A	N/A	N/A	9.9E-06	mg/m3	2.0E-01	mg/m3	5.0E-05
				C9-C10 Aromatic	4E-01	ug/m3	2.0E-04	ug/m3	N/A	N/A	N/A	1.4E-05	mg/m3	5.0E-02	mg/m3	2.8E-04
				C9-C18 Aliphatic	3E+00	ug/m3	1.4E-03	ug/m3	N/A	N/A	N/A	9.7E-05	mg/m3	2.0E-01	mg/m3	4.9E-04
				C11-C22 Aromatic	1E-01	ug/m3	5.5E-05	ug/m3	N/A	N/A	N/A	3.8E-06	mg/m3	5.0E-02	mg/m3	7.7E-05
			Exp. Route Total								0E+00					2E-03
		Exposure Point Total									0E+00					2E-03

TABLE 3-7.13.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Subsurface Soil (Cont.)	Outdoor Air (Cont.)	Murphy Property	Inhalation													
				C5-C8 Aliphatic	5E-02	ug/m3	2.6E-05	ug/m3	N/A	N/A	N/A	1.8E-06	mg/m3	2.0E-01	mg/m3	9.1E-06
				C9-C12 Aliphatic	2E-03	ug/m3	9.7E-07	ug/m3	N/A	N/A	N/A	6.8E-08	mg/m3	2.0E-01	mg/m3	3.4E-07
				C9-C10 Aromatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/m3	N/A
				C9-C18 Aliphatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/m3	N/A
				C11-C22 Aromatic	2E+00	ug/m3	9.7E-04	ug/m3	N/A	N/A	N/A	6.8E-05	mg/m3	5.0E-02	mg/m3	1.4E-03
			Exp. Route Total								0E+00					1E-03
		Exposure Point Total									0E+00					1E-03
	Exposure Medium Total										N/A					N/A

TABLE 3-7.13.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Ground Water	Shallow Ground Water	Aberjona Property	Ingestion													
				1,1,2-Trichloroethane	N/A	N/A	N/A	N/A	5.7E-02	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	4.0E-02	mg/kg-day	N/A
				1,1-Dichloroethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E+00	mg/kg-day	N/A
				1,1-Dichloroethene	1E-01	ug/L	1.2E-10	mg/kg-day	N/A	N/A	N/A	8.3E-09	mg/kg-day	5.0E-02	mg/kg-day	1.7E-07
				1,2,4-Trichlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-01	mg/kg-day	N/A
				1,3-Dichlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9.0E-03	mg/kg-day	N/A
				1,4-Dichlorobenzene	5E-01	ug/L	5.2E-10	mg/kg-day	N/A	N/A	N/A	3.7E-08	mg/kg-day	3.0E-01	mg/kg-day	1.2E-07
				Benzene	3E-01	ug/L	2.9E-10	mg/kg-day	5.5E-02	(mg/kg-day)$^{-1}$	1.6E-11	2.0E-08	mg/kg-day	1.2E-02	mg/kg-day	1.7E-06
				Bromomethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.4E-02	mg/kg-day	N/A
				Chlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/kg-day	N/A
				Chlorodibromomethane	9E-01	ug/L	1.0E-09	mg/kg-day	8.4E-02	(mg/kg-day)$^{-1}$	8.6E-11	7.2E-08	mg/kg-day	2.0E-01	mg/kg-day	3.6E-07
				Chloroethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.0E-01	mg/kg-day	N/A
				cis-1,2-Dichloroethene	7E+00	ug/L	7.6E-09	mg/kg-day	N/A	N/A	N/A	5.3E-07	mg/kg-day	1.0E-01	mg/kg-day	5.3E-06
				Ethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E+00	mg/kg-day	N/A
				Methyl tert-butyl ether	4E+00	ug/L	4.7E-09	mg/kg-day	3.3E-03	(mg/kg-day)$^{-1}$	1.6E-11	3.3E-07	mg/kg-day	N/A	mg/kg-day	N/A
				Methylene chloride	N/A	N/A	N/A	N/A	7.5E-03	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	6.0E-02	mg/kg-day	N/A
				Tetrachloroethene	4E-01	ug/L	4.7E-10	mg/kg-day	2.1E-02	(mg/kg-day)$^{-1}$	9.8E-12	3.3E-08	mg/kg-day	1.0E-01	mg/kg-day	3.3E-07
				Toluene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E+00	mg/kg-day	N/A
				trans-1,2-Dichloroethene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-02	mg/kg-day	N/A
				Trichloroethene	8E+00	ug/L	8.4E-09	mg/kg-day	4.0E-01	(mg/kg-day)$^{-1}$	3.4E-09	5.9E-07	mg/kg-day	3.0E-04	mg/kg-day	2.0E-03
				Vinyl chloride	2E-01	ug/L	2.4E-10	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	3.6E-10	1.7E-08	mg/kg-day	3.0E-03	mg/kg-day	5.7E-06
				Xylenes (total)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/kg-day	N/A
				Acetophenone	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-01	mg/kg-day	N/A
				4-Methylphenol	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-03	mg/kg-day	N/A
				Naphthalene	1E+00	ug/L	1.5E-09	mg/kg-day	N/A	N/A	N/A	1.0E-07	mg/kg-day	2.0E-01	mg/kg-day	5.2E-07
				2-Methylnaphthalene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/kg-day	N/A
				Acenaphthylene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/kg-day	N/A
				Phenanthrene	2E+00	ug/L	2.3E-09	mg/kg-day	N/A	N/A	N/A	1.6E-07	mg/kg-day	2.0E-01	mg/kg-day	8.2E-07
				Benzo(a)Pyrene	1E-02	ug/L	1.2E-11	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	9.0E-11	8.6E-10	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	1E-02	ug/L	1.5E-11	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.1E-10	1.0E-09	mg/kg-day	N/A	N/A	N/A
				C9-C18 Aliphatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E+00	mg/kg-day	N/A
				C11-C22 Aromatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-01	mg/kg-day	N/A
				C19-C36 Aliphatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E+00	mg/kg-day	N/A
				C5-C8 Aliphatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.0E-01	mg/kg-day	N/A
				Arsenic	2E+00	ug/L	2.1E-09	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	3.2E-09	1.5E-07	mg/kg-day	3.0E-04	mg/kg-day	4.9E-04
				Chromium	1E+01	ug/L	1.4E-08	mg/kg-day	N/A	N/A	N/A	9.8E-07	mg/kg-day	1.5E+00	mg/kg-day	6.5E-07
				Lead	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA	NA	N/A
				Manganese	6E+02	ug/L	6.7E-07	mg/kg-day	N/A	N/A	N/A	4.7E-05	mg/kg-day	2.4E-02	mg/kg-day	1.9E-03
				PCB TEQ*	N/A	N/A	N/A	N/A	1.5E+05	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	NA	NA	N/A
				Dieldrin	1E-02	ug/L	1.6E-11	mg/kg-day	1.6E+01	(mg/kg-day)$^{-1}$	2.5E-10	1.1E-09	mg/kg-day	5.0E-05	mg/kg-day	2.2E-05
				4,4'-DDD	N/A	N/A	N/A	N/A	2.4E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-02	mg/kg-day	N/A
			Exp. Route Total								7E-09					4E-03

TABLE 3-7.13.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Ground Water (Cont.)	Shallow Ground Water (Cont.)	Aberjona Property	Dermal													
				1,1,2-Trichloroethane	N/A	N/A	N/A	N/A	5.7E-02	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	4.0E-02	mg/kg-day	N/A
				1,1-Dichloroethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E+00	mg/kg-day	N/A
				1,1-Dichloroethene	1E-01	ug/L	1.4E-09	mg/kg-day	N/A	N/A	N/A	9.9E-08	mg/kg-day	5.0E-02	mg/kg-day	2.0E-06
				1,2,4-Trichlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-01	mg/kg-day	N/A
				1,3-Dichlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9.0E-03	mg/kg-day	N/A
				1,4-Dichlorobenzene	5E-01	ug/L	1.3E-08	mg/kg-day	N/A	N/A	N/A	8.8E-07	mg/kg-day	3.0E-01	mg/kg-day	2.9E-06
				Benzene	3E-01	ug/L	2.9E-09	mg/kg-day	5.5E-02	(mg/kg-day)$^{-1}$	1.6E-10	2.0E-07	mg/kg-day	1.2E-02	mg/kg-day	1.7E-05
				Bromomethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.4E-02	mg/kg-day	N/A
				Chlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/kg-day	N/A
				Chlorodibromomethane	9E-01	ug/L	2.7E-09	mg/kg-day	8.4E-02	(mg/kg-day)$^{-1}$	2.3E-10	1.9E-07	mg/kg-day	2.0E-01	mg/kg-day	9.5E-07
				Chloroethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.0E-01	mg/kg-day	N/A
				cis-1,2-Dichloroethene	7E+00	ug/L	2.0E-07	mg/kg-day	N/A	N/A	N/A	1.4E-05	mg/kg-day	1.0E-01	mg/kg-day	1.4E-04
				Ethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E+00	mg/kg-day	N/A
				Methyl tert-butyl ether	4E+00	ug/L	1.9E-08	mg/kg-day	3.3E-03	(mg/kg-day)$^{-1}$	6.2E-11	1.3E-06	mg/kg-day	N/A	mg/kg-day	N/A
				Methylene chloride	N/A	N/A	N/A	N/A	7.5E-03	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	6.0E-02	mg/kg-day	N/A
				Tetrachloroethene	4E-01	ug/L	9.3E-09	mg/kg-day	2.1E-02	(mg/kg-day)$^{-1}$	1.9E-10	6.5E-07	mg/kg-day	1.0E-01	mg/kg-day	6.5E-06
				Toluene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E+00	mg/kg-day	N/A
				trans-1,2-Dichloroethene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-02	mg/kg-day	N/A
				Trichloroethene	8E+00	ug/L	1.9E-07	mg/kg-day	4.0E-01	(mg/kg-day)$^{-1}$	7.6E-08	1.3E-05	mg/kg-day	3.0E-04	mg/kg-day	4.4E-02
				Vinyl chloride	2E-01	ug/L	8.3E-10	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	1.2E-09	5.8E-08	mg/kg-day	3.0E-03	mg/kg-day	1.9E-05
				Xylenes (total)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/kg-day	N/A
				Acetophenone	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-01	mg/kg-day	N/A
				4-Methylphenol	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-03	mg/kg-day	N/A
				Naphthalene	1E+00	ug/L	7.4E-08	mg/kg-day	N/A	N/A	N/A	5.2E-06	mg/kg-day	2.0E-01	mg/kg-day	2.6E-05
				2-Methylnaphthalene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/kg-day	N/A
				Acenaphthylene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/kg-day	N/A
				Phenanthrene	2E+00	ug/L	1.8E-07	mg/kg-day	N/A	N/A	N/A	1.3E-05	mg/kg-day	2.0E-01	mg/kg-day	6.3E-05
				Benzo(a)Pyrene	1E-02	ug/L	7.3E-09	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	5.3E-08	5.1E-07	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	1E-02	ug/L	1.3E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	9.8E-08	9.4E-07	mg/kg-day	N/A	N/A	N/A
				C9-C18 Aliphatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E+00	mg/kg-day	N/A
				C11-C22 Aromatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-01	mg/kg-day	N/A
				C19-C36 Aliphatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E+00	mg/kg-day	N/A
				C5-C8 Aliphatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.0E-01	mg/kg-day	N/A
				Arsenic	2E+00	ug/L	1.5E-09	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	2.2E-09	1.0E-07	mg/kg-day	3.0E-04	mg/kg-day	3.4E-04
				Chromium	1E+01	ug/L	7.7E-09	mg/kg-day	N/A	N/A	N/A	5.4E-07	mg/kg-day	2.0E-02	mg/kg-day	2.8E-05
				Lead	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA	NA	N/A
				Manganese	6E+02	ug/L	4.9E-07	mg/kg-day	N/A	N/A	N/A	3.4E-05	mg/kg-day	9.6E-04	mg/kg-day	3.5E-02
				PCB TEQ*	N/A	N/A	N/A	N/A	1.5E+05	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	NA	NA	N/A
				Dieldrin	1E-02	ug/L	3.0E-10	mg/kg-day	1.6E+01	(mg/kg-day)$^{-1}$	4.8E-09	2.1E-08	mg/kg-day	5.0E-05	mg/kg-day	4.2E-04
				4,4'-DDD	N/A	N/A	N/A	N/A	2.4E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-02	mg/kg-day	N/A
			Exp. Route Total								2E-07					8E-02
		Exposure Point Total									2E-07					9E-02

TABLE 3-7.13.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Ground Water (Cont.)	Shallow Ground Water (Cont.)	Whitney Property	Ingestion													
				1,1,2-Trichloroethane	N/A	N/A	N/A	N/A	5.7E-02	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	4.0E-02	mg/kg-day	N/A
				1,1-Dichloroethane	3E+01	ug/L	2.8E-08	mg/kg-day	N/A	N/A	N/A	2.0E-06	mg/kg-day	1.0E+00	mg/kg-day	2.0E-06
				1,1-Dichloroethene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/kg-day	N/A
				1,2,4-Trichlorobenzene	6E+00	ug/L	6.6E-09	mg/kg-day	N/A	N/A	N/A	4.6E-07	mg/kg-day	1.0E-01	mg/kg-day	4.6E-06
				1,3-Dichlorobenzene	5E+00	ug/L	5.7E-09	mg/kg-day	N/A	N/A	N/A	4.0E-07	mg/kg-day	9.0E-03	mg/kg-day	4.4E-05
				1,4-Dichlorobenzene	4E+01	ug/L	4.6E-08	mg/kg-day	N/A	N/A	N/A	3.2E-06	mg/kg-day	3.0E-01	mg/kg-day	1.1E-05
				Benzene	2E+01	ug/L	2.4E-08	mg/kg-day	5.5E-02	(mg/kg-day)$^{-1}$	1.3E-09	1.7E-06	mg/kg-day	1.2E-02	mg/kg-day	1.4E-04
				Bromomethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.4E-02	mg/kg-day	N/A
				Chlorobenzene	5E+00	ug/L	5.5E-09	mg/kg-day	N/A	N/A	N/A	3.8E-07	mg/kg-day	2.0E-01	mg/kg-day	1.9E-06
				Chlorodibromomethane	1E+00	ug/L	1.2E-09	mg/kg-day	8.4E-02	(mg/kg-day)$^{-1}$	9.9E-11	8.2E-08	mg/kg-day	2.0E-01	mg/kg-day	4.1E-07
				Chloroethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.0E-01	mg/kg-day	N/A
				cis-1,2-Dichloroethene	1E+02	ug/L	1.1E-07	mg/kg-day	N/A	N/A	N/A	7.6E-06	mg/kg-day	1.0E-01	mg/kg-day	7.6E-05
				Ethylbenzene	1E+01	ug/L	1.1E-08	mg/kg-day	N/A	N/A	N/A	7.9E-07	mg/kg-day	1.0E+00	mg/kg-day	7.9E-07
				Methyl tert-butyl ether	1E+02	ug/L	1.4E-07	mg/kg-day	3.3E-03	(mg/kg-day)$^{-1}$	4.7E-10	1.0E-05	mg/kg-day	N/A	mg/kg-day	N/A
				Methylene chloride	N/A	N/A	N/A	N/A	7.5E-03	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	6.0E-02	mg/kg-day	N/A
				Tetrachloroethene	N/A	N/A	N/A	N/A	2.1E-02	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	1.0E-01	mg/kg-day	N/A
				Toluene	2E+02	ug/L	2.7E-07	mg/kg-day	N/A	N/A	N/A	1.9E-05	mg/kg-day	2.0E+00	mg/kg-day	9.6E-06
				trans-1,2-Dichloroethene	4E+00	ug/L	4.8E-09	mg/kg-day	N/A	N/A	N/A	3.4E-07	mg/kg-day	2.0E-02	mg/kg-day	1.7E-05
				Trichloroethene	2E+00	ug/L	2.2E-09	mg/kg-day	4.0E-01	(mg/kg-day)$^{-1}$	8.9E-10	1.6E-07	mg/kg-day	3.0E-04	mg/kg-day	5.2E-04
				Vinyl chloride	9E+01	ug/L	9.5E-08	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	1.4E-07	6.7E-06	mg/kg-day	3.0E-03	mg/kg-day	2.2E-03
				Xylenes (total)	3E+01	ug/L	3.3E-08	mg/kg-day	N/A	N/A	N/A	2.3E-06	mg/kg-day	2.0E-01	mg/kg-day	1.1E-05
				Acetophenone	1E+00	ug/L	1.3E-09	mg/kg-day	N/A	N/A	N/A	9.4E-08	mg/kg-day	1.0E-01	mg/kg-day	9.4E-07
				4-Methylphenol	2E+00	ug/L	2.0E-09	mg/kg-day	N/A	N/A	N/A	1.4E-07	mg/kg-day	5.0E-03	mg/kg-day	2.8E-05
				Naphthalene	1E+01	ug/L	1.1E-08	mg/kg-day	N/A	N/A	N/A	7.5E-07	mg/kg-day	2.0E-01	mg/kg-day	3.8E-06
				2-Methylnaphthalene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/kg-day	N/A
				Acenaphthylene	3E+00	ug/L	3.6E-09	mg/kg-day	N/A	N/A	N/A	2.5E-07	mg/kg-day	2.0E-01	mg/kg-day	1.3E-06
				Phenanthrene	3E+00	ug/L	3.5E-09	mg/kg-day	N/A	N/A	N/A	2.4E-07	mg/kg-day	2.0E-01	mg/kg-day	1.2E-06
				Benzo(a)Pyrene	1E-02	ug/L	1.7E-11	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.2E-10	1.2E-09	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	6E-03	ug/L	6.5E-12	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	4.7E-11	4.5E-10	mg/kg-day	N/A	N/A	N/A
				C9-C18 Aliphatic	5E+01	ug/L	5.5E-08	mg/kg-day	N/A	N/A	N/A	3.9E-06	mg/kg-day	1.0E+00	mg/kg-day	3.9E-06
				C11-C22 Aromatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-01	mg/kg-day	N/A
				C19-C36 Aliphatic	8E+01	ug/L	8.8E-08	mg/kg-day	N/A	N/A	N/A	6.2E-06	mg/kg-day	6.0E+00	mg/kg-day	1.0E-06
				C5-C8 Aliphatic	2E+02	ug/L	1.8E-07	mg/kg-day	N/A	N/A	N/A	1.3E-05	mg/kg-day	4.0E-01	mg/kg-day	3.2E-05
				Arsenic	3E+00	ug/L	2.8E-09	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	4.3E-09	2.0E-07	mg/kg-day	3.0E-04	mg/kg-day	6.6E-04
				Chromium	2E+01	ug/L	2.3E-08	mg/kg-day	N/A	N/A	N/A	1.6E-06	mg/kg-day	1.5E+00	mg/kg-day	1.1E-06
				Lead	2E+00	ug/L	1.8E-09	mg/kg-day	N/A	N/A	N/A	1.3E-07	mg/kg-day	NA	NA	N/A
				Manganese	2E+03	ug/L	1.9E-06	mg/kg-day	N/A	N/A	N/A	1.3E-04	mg/kg-day	2.4E-02	mg/kg-day	5.5E-03
				PCB TEQ*	9E-07	ug/L	1.0E-15	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	1.5E-10	7.0E-14	mg/kg-day	NA	NA	N/A
				Dieldrin	N/A	N/A	N/A	N/A	1.6E+01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	5.0E-05	mg/kg-day	N/A
				4,4'-DDD	3E-01	ug/L	3.1E-10	mg/kg-day	2.4E-01	(mg/kg-day)$^{-1}$	7.6E-11	2.2E-08	mg/kg-day	2.0E-02	mg/kg-day	1.1E-06
			Exp. Route Total								2E-07					9E-03

TABLE 3-7.13.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Ground Water (Cont.)	Shallow Ground Water (Cont.)	Whitney Property	Dermal													
				1,1,2-Trichloroethane	N/A	N/A	N/A	N/A	5.7E-02	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	4.0E-02	mg/kg-day	N/A
				1,1-Dichloroethane	3E+01	ug/L	5.1E-07	mg/kg-day	N/A	N/A	N/A	3.6E-05	mg/kg-day	1.0E+00	mg/kg-day	3.6E-05
				1,1-Dichloroethene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/kg-day	N/A
				1,2,4-Trichlorobenzene	6E+00	ug/L	1.0E-06	mg/kg-day	N/A	N/A	N/A	7.0E-05	mg/kg-day	1.0E-01	mg/kg-day	7.0E-04
				1,3-Dichlorobenzene	5E+00	ug/L	6.6E-07	mg/kg-day	N/A	N/A	N/A	4.6E-05	mg/kg-day	9.0E-03	mg/kg-day	5.1E-03
				1,4-Dichlorobenzene	4E+01	ug/L	5.1E-06	mg/kg-day	N/A	N/A	N/A	3.6E-04	mg/kg-day	3.0E-01	mg/kg-day	1.2E-03
				Benzene	2E+01	ug/L	7.8E-07	mg/kg-day	5.5E-02	(mg/kg-day)$^{-1}$	4.3E-08	5.4E-05	mg/kg-day	1.2E-02	mg/kg-day	4.5E-03
				Bromomethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.4E-02	mg/kg-day	N/A
				Chlorobenzene	5E+00	ug/L	3.1E-07	mg/kg-day	N/A	N/A	N/A	2.1E-05	mg/kg-day	2.0E-01	mg/kg-day	1.1E-04
				Chlorodibromomethane	1E+00	ug/L	2.8E-09	mg/kg-day	8.4E-02	(mg/kg-day)$^{-1}$	2.3E-10	1.9E-07	mg/kg-day	2.0E-01	mg/kg-day	9.7E-07
				Chloroethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.0E-01	mg/kg-day	N/A
				cis-1,2-Dichloroethene	1E+02	ug/L	3.3E-06	mg/kg-day	N/A	N/A	N/A	2.3E-04	mg/kg-day	1.0E-01	mg/kg-day	2.3E-03
				Ethylbenzene	1E+01	ug/L	1.1E-06	mg/kg-day	N/A	N/A	N/A	7.8E-05	mg/kg-day	1.0E+00	mg/kg-day	7.8E-05
				Methyl tert-butyl ether	1E+02	ug/L	7.3E-07	mg/kg-day	3.3E-03	(mg/kg-day)$^{-1}$	2.4E-09	5.1E-05	mg/kg-day	N/A	mg/kg-day	N/A
				Methylene chloride	N/A	N/A	N/A	N/A	7.5E-03	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	6.0E-02	mg/kg-day	N/A
				Tetrachloroethene	N/A	N/A	N/A	N/A	2.1E-02	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	1.0E-01	mg/kg-day	N/A
				Toluene	2E+02	ug/L	2.2E-05	mg/kg-day	N/A	N/A	N/A	1.5E-03	mg/kg-day	2.0E+00	mg/kg-day	7.7E-04
				trans-1,2-Dichloroethene	4E+00	ug/L	1.0E-07	mg/kg-day	N/A	N/A	N/A	7.2E-06	mg/kg-day	2.0E-02	mg/kg-day	3.6E-04
				Trichloroethene	2E+00	ug/L	1.5E-08	mg/kg-day	4.0E-01	(mg/kg-day)$^{-1}$	6.1E-09	1.1E-06	mg/kg-day	3.0E-04	mg/kg-day	3.5E-03
				Vinyl chloride	9E+01	ug/L	1.4E-06	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	2.2E-06	1.0E-04	mg/kg-day	3.0E-03	mg/kg-day	3.4E-02
				Xylenes (total)	3E+01	ug/L	1.1E-06	mg/kg-day	N/A	N/A	N/A	8.0E-05	mg/kg-day	2.0E-01	mg/kg-day	4.0E-04
				Acetophenone	1E+00	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-01	mg/kg-day	N/A
				4-Methylphenol	2E+00	ug/L	8.8E-09	mg/kg-day	N/A	N/A	N/A	6.2E-07	mg/kg-day	5.0E-03	mg/kg-day	1.2E-04
				Naphthalene	1E+01	ug/L	3.7E-07	mg/kg-day	N/A	N/A	N/A	2.6E-05	mg/kg-day	2.0E-01	mg/kg-day	1.3E-04
				2-Methylnaphthalene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/kg-day	N/A
				Acenaphthylene	3E+00	ug/L	1.7E-07	mg/kg-day	N/A	N/A	N/A	1.2E-05	mg/kg-day	2.0E-01	mg/kg-day	5.8E-05
				Phenanthrene	3E+00	ug/L	2.6E-07	mg/kg-day	N/A	N/A	N/A	1.9E-05	mg/kg-day	2.0E-01	mg/kg-day	9.3E-05
				Benzo(a)Pyrene	1E-02	ug/L	1.0E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	7.3E-08	7.0E-07	mg/kg-day	N/A	N/A	N/A
				Dibenz(a,h) anthracene	6E-03	ug/L	6.0E-09	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	4.4E-08	4.2E-07	mg/kg-day	N/A	N/A	N/A
				C9-C18 Aliphatic	5E+01	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E+00	mg/kg-day	N/A
				C11-C22 Aromatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-01	mg/kg-day	N/A
				C19-C36 Aliphatic	8E+01	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E+00	mg/kg-day	N/A
				C5-C8 Aliphatic	2E+02	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.0E-01	mg/kg-day	N/A
				Arsenic	3E+00	ug/L	2.1E-09	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	3.1E-09	1.4E-07	mg/kg-day	3.0E-04	mg/kg-day	4.8E-04
				Chromium	2E+01	ug/L	1.4E-08	mg/kg-day	N/A	N/A	N/A	9.5E-07	mg/kg-day	2.0E-02	mg/kg-day	4.9E-05
				Lead	2E+00	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA	NA	N/A
				Manganese	2E+03	ug/L	1.6E-06	mg/kg-day	N/A	N/A	N/A	1.1E-04	mg/kg-day	9.6E-04	mg/kg-day	1.1E-01
				PCB TEQ*	9E-07	ug/L	8.5E-13	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	1.3E-07	6.0E-11	mg/kg-day	NA	NA	N/A
				Dieldrin	N/A	N/A	N/A	N/A	1.6E+01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	5.0E-05	mg/kg-day	N/A
				4,4'-DDD	3E-01	ug/L	1.2E-07	mg/kg-day	2.4E-01	(mg/kg-day)$^{-1}$	2.9E-08	8.3E-06	mg/kg-day	2.0E-02	mg/kg-day	4.2E-04
			Exp. Route Total								3E-06					2E-01
		Exposure Point Total									3E-06					2E-01

TABLE 3-7.13.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Ground Water (Cont.)	Shallow Ground Water (Cont.)	Murphy Property	Ingestion													
				1,1,2-Trichloroethane	4E-01	ug/L	4.5E-10	mg/kg-day	5.7E-02	(mg/kg-day)$^{-1}$	2.5E-11	3.1E-08	mg/kg-day	4.0E-02	mg/kg-day	7.8E-07
				1,1-Dichloroethane	7E+01	ug/L	8.1E-08	mg/kg-day	N/A	N/A	N/A	5.7E-06	mg/kg-day	1.0E+00	mg/kg-day	5.7E-06
				1,1-Dichloroethene	9E+00	ug/L	1.0E-08	mg/kg-day	N/A	N/A	N/A	7.0E-07	mg/kg-day	5.0E-02	mg/kg-day	1.4E-05
				1,2,4-Trichlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-01	mg/kg-day	N/A
				1,3-Dichlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9.0E-03	mg/kg-day	N/A
				1,4-Dichlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-01	mg/kg-day	N/A
				Benzene	7E+00	ug/L	7.3E-09	mg/kg-day	5.5E-02	(mg/kg-day)$^{-1}$	4.0E-10	5.1E-07	mg/kg-day	1.2E-02	mg/kg-day	4.3E-05
				Bromomethane	1E+00	ug/L	1.1E-09	mg/kg-day	N/A	N/A	N/A	7.8E-08	mg/kg-day	1.4E-02	mg/kg-day	5.6E-06
				Chlorobenzene	1E+00	ug/L	1.1E-09	mg/kg-day	N/A	N/A	N/A	7.8E-08	mg/kg-day	2.0E-01	mg/kg-day	3.9E-07
				Chlorodibromomethane	N/A	N/A	N/A	N/A	8.4E-02	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-01	mg/kg-day	N/A
				Chloroethane	3E+01	ug/L	3.4E-08	mg/kg-day	N/A	N/A	N/A	2.4E-06	mg/kg-day	4.0E-01	mg/kg-day	6.0E-06
				cis-1,2-Dichloroethene	7E+02	ug/L	8.3E-07	mg/kg-day	N/A	N/A	N/A	5.8E-05	mg/kg-day	1.0E-01	mg/kg-day	5.8E-04
				Ethylbenzene	8E+00	ug/L	8.5E-09	mg/kg-day	N/A	N/A	N/A	6.0E-07	mg/kg-day	1.0E+00	mg/kg-day	6.0E-07
				Methyl tert-butyl ether	N/A	N/A	N/A	N/A	3.3E-03	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	N/A	mg/kg-day	N/A
				Methylene chloride	2E+01	ug/L	1.8E-08	mg/kg-day	7.5E-03	(mg/kg-day)$^{-1}$	1.3E-10	1.2E-06	mg/kg-day	6.0E-02	mg/kg-day	2.1E-05
				Tetrachloroethene	7E+00	ug/L	7.8E-09	mg/kg-day	2.1E-02	(mg/kg-day)$^{-1}$	1.6E-10	5.5E-07	mg/kg-day	1.0E-01	mg/kg-day	5.5E-06
				Toluene	2E+01	ug/L	1.9E-08	mg/kg-day	N/A	N/A	N/A	1.3E-06	mg/kg-day	2.0E+00	mg/kg-day	6.7E-07
				trans-1,2-Dichloroethene	1E+01	ug/L	1.4E-08	mg/kg-day	N/A	N/A	N/A	1.0E-06	mg/kg-day	2.0E-02	mg/kg-day	5.0E-05
				Trichloroethene	3E+01	ug/L	3.7E-08	mg/kg-day	4.0E-01	(mg/kg-day)$^{-1}$	1.5E-08	2.6E-06	mg/kg-day	3.0E-04	mg/kg-day	8.6E-03
				Vinyl chloride	2E+02	ug/L	2.1E-07	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	3.1E-07	1.4E-05	mg/kg-day	3.0E-03	mg/kg-day	4.8E-03
				Xylenes (total)	3E+01	ug/L	3.5E-08	mg/kg-day	N/A	N/A	N/A	2.5E-06	mg/kg-day	2.0E-01	mg/kg-day	1.2E-05
				Acetophenone	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-01	mg/kg-day	N/A
				4-Methylphenol	1E+01	ug/L	1.2E-08	mg/kg-day	N/A	N/A	N/A	8.4E-07	mg/kg-day	5.0E-03	mg/kg-day	1.7E-04
				Naphthalene	9E+00	ug/L	1.0E-08	mg/kg-day	N/A	N/A	N/A	7.1E-07	mg/kg-day	2.0E-01	mg/kg-day	3.6E-06
				2-Methylnaphthalene	6E+00	ug/L	6.6E-09	mg/kg-day	N/A	N/A	N/A	4.6E-07	mg/kg-day	2.0E-01	mg/kg-day	2.3E-06
				Acenaphthylene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/kg-day	N/A
				Phenanthrene	6E+00	ug/L	6.4E-09	mg/kg-day	N/A	N/A	N/A	4.5E-07	mg/kg-day	2.0E-01	mg/kg-day	2.2E-06
				Benzo(a)Pyrene	N/A	N/A	N/A	N/A	7.3E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	N/A	N/A	N/A
				Dibenz(a,h) anthracene	N/A	N/A	N/A	N/A	7.3E+00	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	N/A	N/A	N/A
				C9-C18 Aliphatic	1E+03	ug/L	1.1E-06	mg/kg-day	N/A	N/A	N/A	7.4E-05	mg/kg-day	1.0E+00	mg/kg-day	7.4E-05
				C11-C22 Aromatic	4E+02	ug/L	4.7E-07	mg/kg-day	N/A	N/A	N/A	3.3E-05	mg/kg-day	3.0E-01	mg/kg-day	1.1E-04
				C19-C36 Aliphatic	8E+03	ug/L	8.6E-06	mg/kg-day	N/A	N/A	N/A	6.0E-04	mg/kg-day	6.0E+00	mg/kg-day	1.0E-04
				C5-C8 Aliphatic	1E+02	ug/L	1.3E-07	mg/kg-day	N/A	N/A	N/A	9.0E-06	mg/kg-day	4.0E-01	mg/kg-day	2.3E-05
				Arsenic	5E+01	ug/L	5.9E-08	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	8.9E-08	4.2E-06	mg/kg-day	3.0E-04	mg/kg-day	1.4E-02
				Chromium	4E+01	ug/L	4.3E-08	mg/kg-day	N/A	N/A	N/A	3.0E-06	mg/kg-day	1.5E+00	mg/kg-day	2.0E-06
				Lead	5E+01	ug/L	5.8E-08	mg/kg-day	N/A	N/A	N/A	4.1E-06	mg/kg-day	NA	NA	N/A
				Manganese	3E+02	ug/L	3.3E-07	mg/kg-day	N/A	N/A	N/A	2.3E-05	mg/kg-day	2.4E-02	mg/kg-day	9.6E-04
				PCB TEQ*	1E-06	ug/L	1.3E-15	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	2.0E-10	9.4E-14	mg/kg-day	NA	NA	N/A
				Dieldrin	N/A	N/A	N/A	N/A	1.6E+01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	5.0E-05	mg/kg-day	N/A
				4,4'-DDD	N/A	N/A	N/A	N/A	2.4E-01	(mg/kg-day)$^{-1}$	N/A	N/A	N/A	2.0E-02	mg/kg-day	N/A
			Exp. Route Total								4E-07					3E-02

TABLE 3-7.13.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Ground Water (Cont.)	Shallow Ground Water (Cont.)	Murphy Property	Dermal													
				1,1,2-Trichloroethane	4E-01	ug/L	1.7E-09	mg/kg-day	5.7E-02	(mg/kg-day) $^{-1}$	9.8E-11	1.2E-07	mg/kg-day	4.0E-02	mg/kg-day	3.0E-06
				1,1-Dichloroethane	7E+01	ug/L	9.4E-07	mg/kg-day	N/A	N/A	N/A	6.6E-05	mg/kg-day	1.0E+00	mg/kg-day	6.6E-05
				1,1-Dichloroethene	9E+00	ug/L	6.5E-08	mg/kg-day	N/A	N/A	N/A	4.6E-06	mg/kg-day	5.0E-02	mg/kg-day	9.2E-05
				1,2,4-Trichlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-01	mg/kg-day	N/A
				1,3-Dichlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9.0E-03	mg/kg-day	N/A
				1,4-Dichlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-01	mg/kg-day	N/A
				Benzene	7E+00	ug/L	1.4E-07	mg/kg-day	5.5E-02	(mg/kg-day) $^{-1}$	7.9E-09	1.0E-05	mg/kg-day	1.2E-02	mg/kg-day	8.4E-04
				Bromomethane	1E+00	ug/L	1.8E-09	mg/kg-day	N/A	N/A	N/A	1.3E-07	mg/kg-day	1.4E-02	mg/kg-day	9.1E-06
				Chlorobenzene	1E+00	ug/L	1.7E-08	mg/kg-day	N/A	N/A	N/A	1.2E-06	mg/kg-day	2.0E-01	mg/kg-day	6.0E-06
				Chlorodibromomethane	N/A	N/A	N/A	N/A	8.4E-02	(mg/kg-day) $^{-1}$	N/A	N/A	N/A	2.0E-01	mg/kg-day	N/A
				Chloroethane	3E+01	ug/L	1.9E-07	mg/kg-day	N/A	N/A	N/A	1.3E-05	mg/kg-day	4.0E-01	mg/kg-day	3.3E-05
				cis-1,2-Dichloroethene	7E+02	ug/L	1.3E-05	mg/kg-day	N/A	N/A	N/A	9.1E-04	mg/kg-day	1.0E-01	mg/kg-day	9.1E-03
				Ethylbenzene	8E+00	ug/L	6.4E-07	mg/kg-day	N/A	N/A	N/A	4.5E-05	mg/kg-day	1.0E+00	mg/kg-day	4.5E-05
				Methyl tert-butyl ether	N/A	N/A	N/A	N/A	3.3E-03	(mg/kg-day) $^{-1}$	N/A	N/A	N/A	N/A	mg/kg-day	N/A
				Methylene chloride	2E+01	ug/L	2.0E-07	mg/kg-day	7.5E-03	(mg/kg-day) $^{-1}$	1.5E-09	1.4E-05	mg/kg-day	6.0E-02	mg/kg-day	2.3E-04
				Tetrachloroethene	7E+00	ug/L	1.5E-07	mg/kg-day	2.1E-02	(mg/kg-day) $^{-1}$	3.3E-09	1.1E-05	mg/kg-day	1.0E-01	mg/kg-day	1.1E-04
				Toluene	2E+01	ug/L	9.5E-07	mg/kg-day	N/A	N/A	N/A	6.6E-05	mg/kg-day	2.0E+00	mg/kg-day	3.3E-05
				trans-1,2-Dichloroethene	1E+01	ug/L	1.9E-07	mg/kg-day	N/A	N/A	N/A	1.3E-05	mg/kg-day	2.0E-02	mg/kg-day	6.7E-04
				Trichloroethene	3E+01	ug/L	3.2E-07	mg/kg-day	4.0E-01	(mg/kg-day) $^{-1}$	1.3E-07	2.2E-05	mg/kg-day	3.0E-04	mg/kg-day	7.4E-02
				Vinyl chloride	2E+02	ug/L	2.1E-06	mg/kg-day	1.5E+00	(mg/kg-day) $^{-1}$	3.1E-06	1.4E-04	mg/kg-day	3.0E-03	mg/kg-day	4.8E-02
				Xylenes (total)	3E+01	ug/L	3.0E-06	mg/kg-day	N/A	N/A	N/A	2.1E-04	mg/kg-day	2.0E-01	mg/kg-day	1.0E-03
				Acetophenone	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E-01	mg/kg-day	N/A
				4-Methylphenol	1E+01	ug/L	1.2E-07	mg/kg-day	N/A	N/A	N/A	8.6E-06	mg/kg-day	5.0E-03	mg/kg-day	1.7E-03
				Naphthalene	9E+00	ug/L	6.9E-07	mg/kg-day	N/A	N/A	N/A	4.8E-05	mg/kg-day	2.0E-01	mg/kg-day	2.4E-04
				2-Methylnaphthalene	6E+00	ug/L	5.6E-07	mg/kg-day	N/A	N/A	N/A	3.9E-05	mg/kg-day	2.0E-01	mg/kg-day	1.9E-04
				Acenaphthylene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/kg-day	N/A
				Phenanthrene	6E+00	ug/L	8.5E-07	mg/kg-day	N/A	N/A	N/A	6.0E-05	mg/kg-day	2.0E-01	mg/kg-day	3.0E-04
				Benzo(a)Pyrene	N/A	N/A	N/A	N/A	7.3E+00	(mg/kg-day) $^{-1}$	N/A	N/A	N/A	N/A	N/A	N/A
				Dibenz(a,h) anthracene	N/A	N/A	N/A	N/A	7.3E+00	(mg/kg-day) $^{-1}$	N/A	N/A	N/A	N/A	N/A	N/A
				C9-C18 Aliphatic	1E+03	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0E+00	mg/kg-day	N/A
				C11-C22 Aromatic	4E+02	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.0E-01	mg/kg-day	N/A
				C19-C36 Aliphatic	8E+03	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.0E+00	mg/kg-day	N/A
				C5-C8 Aliphatic	1E+02	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.0E-01	mg/kg-day	N/A
				Arsenic	5E+01	ug/L	1.0E-07	mg/kg-day	1.5E+00	(mg/kg-day) $^{-1}$	1.5E-07	7.2E-06	mg/kg-day	3.0E-04	mg/kg-day	2.4E-02
				Chromium	4E+01	ug/L	6.7E-08	mg/kg-day	N/A	N/A	N/A	4.7E-06	mg/kg-day	2.0E-02	mg/kg-day	2.4E-04
				Lead	5E+01	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA	NA	N/A
				Manganese	3E+02	ug/L	2.8E-07	mg/kg-day	N/A	N/A	N/A	1.9E-05	mg/kg-day	9.6E-04	mg/kg-day	2.0E-02
				PCB TEQ*	1E-06	ug/L	7.3E-13	mg/kg-day	1.5E+05	(mg/kg-day) $^{-1}$	1.1E-07	5.1E-11	mg/kg-day	NA	NA	N/A
				Dieldrin	N/A	N/A	N/A	N/A	1.6E+01	(mg/kg-day) $^{-1}$	N/A	N/A	N/A	5.0E-05	mg/kg-day	N/A
				4,4'-DDD	N/A	N/A	N/A	N/A	2.4E-01	(mg/kg-day) $^{-1}$	N/A	N/A	N/A	2.0E-02	mg/kg-day	N/A
			Exp. Route Total								4E-06					2E-01
		Exposure Point Total									4E-06					2E-01
	Exposure Medium Total										N/A					N/A

TABLE 3-7.13.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Ground Water	Outdoor Air	Aberjona Property	Inhalation													
				C9-C18 Aliphatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/m3	N/A
				C11-C22 Aromatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/m3	N/A
				C5-C8 Aliphatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/m3	N/A
				C9-C10 Aromatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/m3	N/A
				C9-C12 Aliphatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0E-01	mg/m3	N/A
			Exp. Route Total								0E+00					0E+00
		Exposure Point Total									0E+00					0E+00

TABLE 3-7.13.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Ground Water (Cont.)	Outdoor Air (Cont.)	Whitney Property	Inhalation													
				C9-C18 Aliphatic	9E-02	ug/m3	4.6E-05	ug/m3	N/A	N/A	N/A	3.2E-06	mg/m3	2.0E-01	mg/m3	1.6E-05
				C11-C22 Aromatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/m3	N/A
				C5-C8 Aliphatic	5E-01	ug/m3	2.8E-04	ug/m3	N/A	N/A	N/A	1.9E-05	mg/m3	2.0E-01	mg/m3	9.7E-05
				C9-C10 Aromatic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0E-02	mg/m3	N/A
				C9-C12 Aliphatic	2E-01	ug/m3	1.2E-04	ug/m3	N/A	N/A	N/A	8.2E-06	mg/m3	2.0E-01	mg/m3	4.1E-05
			Exp. Route Total								0E+00					2E-04
		Exposure Point Total									0E+00					2E-04

TABLE 3-7.13.CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Ground Water (Cont.)	Outdoor Air (Cont.)	Murphy Property	Inhalation													
				C9-C18 Aliphatic	5E+00	ug/m3	2.4E-03	ug/m3	N/A	N/A	N/A	1.7E-04	mg/m3	2.0E-01	mg/m3	8.5E-04
				C11-C22 Aromatic	8E-04	ug/m3	4.1E-07	ug/m3	N/A	N/A	N/A	2.9E-08	mg/m3	5.0E-02	mg/m3	5.7E-07
				C5-C8 Aliphatic	3E-01	ug/m3	1.6E-04	ug/m3	N/A	N/A	N/A	1.1E-05	mg/m3	2.0E-01	mg/m3	5.6E-05
				C9-C10 Aromatic	1E-03	ug/m3	7.5E-07	ug/m3	N/A	N/A	N/A	5.3E-08	mg/m3	5.0E-02	mg/m3	1.1E-06
				C9-C12 Aliphatic	1E-01	ug/m3	7.1E-05	ug/m3	N/A	N/A	N/A	5.0E-06	mg/m3	2.0E-01	mg/m3	2.5E-05
			Exp. Route Total								0E+00					9E-04
		Exposure Point Total									0E+00					9E-04
	Exposure Medium Total										N/A					N/A
Medium Total											N/A					N/A
											Total of Receptor Risks Across All Media					Total of Receptor Risks Across All Media
											N/A					N/A

TABLE 3-8.1.RME

CALCULATION OF RADIATION CANCER RISKS

Reasonable Maximum Exposure

WELLS G&H SUPERFUND SITE OU3

Scenario Timeframe:
Receptor Population:
Receptor Age:

Medium	Exposure Medium	Exposure Point	Exposure Route	Radionuclide of Potential Concern	EPC		Risk Calculation Approach	Cancer Risk Calculations				
					Value	Units		Intake/Activity		CSF		Cancer Risk
								Value	Units	Value	Units	
			Exp. Route Total									
				NOT APPLICABLE								
			Exp. Route Total									
		Exposure Point Total										
	Exposure Medium Total											
			Exp. Route Total									
		Exposure Point Total										
	Exposure Medium Total											
Medium Total												
			Exp. Route Total									
			Exp. Route Total									
		Exposure Point Total										
	Exposure Medium Total											
Medium Total												

Total of Receptor Risks Across All Media

TABLE 3-8.1.CT

CALCULATION OF RADIATION CANCER RISKS

Central Tendency

WELLS G&H SUPERFUND SITE OU3

Scenario Timeframe:	
Receptor Population:	
Receptor Age:	

Medium	Exposure Medium	Exposure Point	Exposure Route	Radionuclide of Potential Concern	EPC		Risk Calculation Approach	Cancer Risk Calculations				
					Value	Units		Intake/Activity		CSF		Cancer Risk
								Value	Units	Value	Units	
			Exp. Route Total									
				NOT APPLICABLE								
			Exp. Route Total									
		Exposure Point Total										
	Exposure Medium Total											
			Exp. Route Total									
		Exposure Point Total										
	Exposure Medium Total											
Medium Total												
			Exp. Route Total									
			Exp. Route Total									
		Exposure Point Total										
	Exposure Medium Total											
Medium Total												

Total of Receptor Risks Across All Media

TABLE 3-10.1.RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Current
Receptor Population: Commercial Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk Commercial Worker					Non-Carcinogenic Hazard Quotient Commercial Worker				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Whitney											
			Aroclor 1242	--	--	--	--	--	Immune System	5E-03	--	9E-03	1E-02
			Aroclor 1248	--	--	--	--	--	Immune System	1E-03	--	2E-03	3E-03
			Aroclor 1254	--	--	--	--	--	Immune System	5E-01	--	1E+00	1E+00
			Aroclor 1260	--	--	--	--	--	Immune System	1E-01	--	3E-01	4E-01
			Chemical Total	--	--	--	--	--		7E-01	--	1E+00	2E+00
			Radionuclide Total										
		Exposure Point Total						N/A					2E+00
	Exposure Medium Total							N/A					2E+00
Medium Total								N/A					2E+00
Receptor Total								N/A					2E+00

-- = Not Evaluated

N/A = Not Applicable

Total Risk Across All Media: N/A

Total Hazard Across All Media: 2E+00

Total Immune System HI = 2E+00

TABLE 3-10.2.RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Commercial Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk Commercial Worker					Non-Carcinogenic Hazard Quotient Commercial Worker				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Whitney											
			Aroclor 1242	--	--	--	--	--	Immune System	5E-03	--	9E-03	1E-02
			Aroclor 1248	--	--	--	--	--	Immune System	1E-03	--	2E-03	3E-03
			Aroclor 1254	--	--	--	--	--	Immune System	5E-01	--	1E+00	1E+00
			Aroclor 1260	--	--	--	--	--	Immune System	1E-01	--	3E-01	4E-01
			Chemical Total	--	--	--	--	--		7E-01	--	1E+00	2E+00
			Radionuclide Total										
		Exposure Point Total						--					2E+00
	Exposure Medium Total							--					2E+00
Medium Total								--					2E+00
Soil (0-15 ft)	Indoor Air	Whitney											
			C5-C8 Aliphatic	--	--	--	--	--	Kidney	--	5E+00	--	5E+00
			C9-C18 Aliphatic	--	--	--	--	--	Kidney	--	2E+00	--	2E+00
			Chemical Total	--	--	--	--	--		--	7E+00	--	7E+00
			Radionuclide Total										
		Exposure Point Total						NA					7E+00
	Exposure Medium Total							NA					7E+00
Medium Total								NA					7E+00
Receptor Total								NA					9E+00

-- = Not Evaluated

N/A = Not Applicable

Total Risk Across All Media: NA

Total Hazard Across All Media: 9E+00

Total Immune System HI = 2E+00

Total Kidney HI = 7E+00

TABLE 3-10.2.CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Commercial Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk Commercial Worker					Non-Carcinogenic Hazard Quotient Commercial Worker				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Soil (0-15 ft)	Indoor Air	Whitney	C5-C8 Aliphatic	--	--	--	--	--	Kidney	--	4E+00	--	4E+00
			Chemical Total	--	--	--	--	--		--	4E+00	--	4E+00
			Radionuclide Total										
		Exposure Point Total						NA					4E+00
	Exposure Medium Total							NA					4E+00
Medium Total								NA					4E+00
Receptor Total								NA					4E+00

-- = Not Evaluated

N/A = Not Applicable

Total Risk Across All Media: NA

Total Hazard Across All Media: 4E+00

Total Kidney HI = 4E+00

TABLE 3-10.3.RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Young Child/Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk Young Child + Adult					Non-Carcinogenic Hazard Quotient Young Child				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Whitney											
			Aroclor 1242	--	--	--	--	--	Immune System	3E-02	--	2E-02	5E-02
			Aroclor 1248	--	--	--	--	--	Immune System	7E-03	--	5E-03	1E-02
			Aroclor 1254	--	--	--	--	--	Immune System	3E+00	--	2E+00	5E+00
			Aroclor 1260	--	--	--	--	--	Immune System	8E-01	--	7E-01	1E+00
			Chemical Total	--	--	--	--	--		4E+00	--	3E+00	7E+00
			Radionuclide Total										
		Exposure Point Total						NA					7E+00
	Exposure Medium Total							NA					7E+00
Medium Total								NA					7E+00
Receptor Total								NA					7E+00

-- = Not Evaluated

N/A = Not Applicable

Total Risk Across All Media: NA

Total Hazard Across All Media: 7E+00

Total Immune System HI = 7E+00

TABLE 3-10.4.RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Young Child/Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk Young Child + Adult					Non-Carcinogenic Hazard Quotient Young Child				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Subsurface Soil	Subsurface Soil	Whitney	Benzo(a)Pyrene	2E-06	--	1E-06	--	3E-06	N/A	--	--	--	--
			Arsenic	7E-06	--	1E-06	--	9E-06	Skin	--	--	--	--
			alpha-Chlordane	3E-05	--	6E-06	--	3E-05	Liver	1E+00	--	3E-01	1E+00
			gamma-Chlordane	2E-05	--	5E-06	--	2E-05	Liver	9E-01	--	2E-01	1E+00
			4,4'-DDE	7E-06	--	N/A	--	7E-06	Developmental	--	--	--	--
			4,4'-DDT	2E-05	--	3E-06	--	2E-05	Liver	--	--	--	--
			Aroclor 1248	3E-04	--	2E-04	--	5E-04	Immune System	5E+01	--	4E+01	1E+02
			Aroclor 1254	1E-04	--	1E-04	--	3E-04	Immune System	3E+01	--	2E+01	5E+01
			Aroclor 1260	8E-05	--	7E-05	--	1E-04	Immune System	2E+01	--	1E+01	3E+01
			PCB TEQ*	1E-04	--	9E-05	--	2E-04	N/A	--	--	--	--
			Chemical Total	7E-04	--	5E-04	--	1E-03		1E+02	--	8E+01	2E+02
			Radionuclide Total										
		Exposure Point Total						1E-03					2E+02
	Exposure Medium Total							1E-03					2E+02
Medium Total								1E-03					2E+02
Receptor Total								1E-03					2E+02

-- = Not Evaluated
N/A = Not Applicable

Total Risk Across All Media: 1E-03

Should the dioxin slope factor be revised as proposed, the risk for this receptor would increase to: 2E-03

Total Hazard Across All Media: 2E+02

Total Immune System HI = 2E+02
Total Liver HI = 2E+00

TABLE 3-10.4.CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Young Child/Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk Young Child + Adult					Non-Carcinogenic Hazard Quotient Young Child				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Subsurface Soil	Subsurface Soil	Whitney	Aroclor 1248	--	--	--	--	--	Immune System	9E+00	--	1E+01	2E+01
			Aroclor 1254	--	--	--	--	--	Immune System	5E+00	--	8E+00	1E+01
			Aroclor 1260	--	--	--	--	--	Immune System	3E+00	--	4E+00	7E+00
			Chemical Total	--	--	--	--	--		2E+01	--	3E+01	4E+01
			Radionuclide Total										
		Exposure Point Total						NA					4E+01
	Exposure Medium Total							NA					4E+01
Medium Total								NA					4E+01
Receptor Total								NA					4E+01

-- = Not Evaluated

N/A = Not Applicable

Total Risk Across All Media: NA

Total Hazard Across All Media: 4E+01

Total Immune System HI = 4E+01

TABLE 3-10.5.RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk Adult					Non-Carcinogenic Hazard Quotient Adult				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Whitney											
			Aroclor 1242	--	--	--	--	--	Immune System	2E-02	N/A	9E-03	3E-02
			Aroclor 1248	--	--	--	--	--	Immune System	5E-03	N/A	2E-03	7E-03
			Aroclor 1254	--	--	--	--	--	Immune System	2E+00	N/A	1E+00	3E+00
			Aroclor 1260	--	--	--	--	--	Immune System	6E-01	N/A	3E-01	8E-01
			Chemical Total	--	--	--	--	--		3E+00	--	1E+00	4E+00
			Radionuclide Total										
		Exposure Point Total						NA					4E+00
	Exposure Medium Total							NA					4E+00
Medium Total								NA					4E+00
Receptor Total								NA					4E+00

-- = Not Evaluated

N/A = Not Applicable

Total Risk Across All Media: NA

Total Hazard Across All Media: 4E+00

Total Immune System HI = 4E+00

TABLE 3-10.6.RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk Adult					Non-Carcinogenic Hazard Quotient Adult				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Subsurface Soil	Subsurface Soil	Whitney											
			alpha-Chlordane	--	--	--	--	--	Liver	8E-01	1E-05	1E-01	9E-01
			gamma-Chlordane	--	--	--	--	--	Liver	6E-01	7E-06	8E-02	7E-01
			Aroclor 1248	--	--	--	--	--	Immune System	4E+01	N/A	2E+01	5E+01
			Aroclor 1254	--	--	--	--	--	Immune System	2E+01	N/A	9E+00	3E+01
			Aroclor 1260	--	--	--	--	--	Immune System	1E+01	N/A	5E+00	2E+01
			Chemical Total	--	--	--	--	--		7E+01	--	3E+01	1E+02
			Radionuclide Total										
		Exposure Point Total						NA					1E+02
	Exposure Medium Total							NA					1E+02
Medium Total								NA					1E+02
Receptor Total								NA					1E+02

-- = Not Evaluated

N/A = Not Applicable

Total Risk Across All Media: NA

Total Hazard Across All Media: 1E+02

Total Immune System HI = 1E+02

Total Liver HI = 2E+00

TABLE 3-10.6.CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk Adult					Non-Carcinogenic Hazard Quotient Adult				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Subsurface Soil	Subsurface Soil	Whitney											
			Aroclor 1248	--	--	--	--	--	Immune System	1E+01	N/A	5E+00	2E+01
			Aroclor 1254	--	--	--	--	--	Immune System	6E+00	N/A	3E+00	9E+00
			Aroclor 1260	--	--	--	--	--	Immune System	4E+00	N/A	2E+00	5E+00
			Chemical Total	--	--	--	--	--		2E+01	--	1E+01	3E+01
			Radionuclide Total										
		Exposure Point Total						NA					3E+01
	Exposure Medium Total							NA					3E+01
Medium Total								NA					3E+01
Receptor Total								NA					3E+01

-- = Not Evaluated

N/A = Not Applicable

Total Risk Across All Media: NA

Total Hazard Across All Media: 3E+01

Total Immune System HI = 3E+01

TABLE 3-10.7.RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Wobum, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Young Child/Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk Young Child + Adult					Non-Carcinogenic Hazard Quotient Young Child				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Sediment	Sediment	Murphy Wetland											
			Ethylenedibromide	1E-04	--	N/A	--	1E-04	N/A	--	--	--	--
			Benzo(a)Pyrene	4E-06	--	3E-06	--	8E-06	N/A	--	--	--	--
			Dibenz(a,h) anthracene	2E-06	--	1E-06	--	3E-06	N/A	--	--	--	--
			Arsenic	2E-06	--	6E-07	--	2E-06	Skin	--	--	--	--
			Chromium	--	--	--	--	--	GI System	6E+00	--	N/A	6E+00
			PCB TEQ*	5E-06	--	4E-06	--	9E-06	N/A	--	--	--	--
			Aroclor 1254	3E-05	--	3E-05	--	6E-05	Immune System	6E+00	--	5E+00	1E+01
			Aroclor 1260	2E-05	--	1E-05	--	3E-05	Immune System	3E+00	--	3E+00	6E+00
			Chemical Total	2E-04	--	5E-05	--	3E-04		2E+01	--	8E+00	2E+01
			Radionuclide Total										
		Exposure Point Total						3E-04					2E+01
	Exposure Medium Total							3E-04					2E+01
Medium Total								3E-04					2E+01
Receptor Total								3E-04					2E+01

-- = Not Evaluated
N/A = Not Applicable

Total Risk Across All Media: 3E-04

Total Hazard Across All Media: 2E+01

Should the dioxin slope factor be revised as proposed, the risk for this receptor would increase to: 3E-04

Total Immune System HI = 2E+01
Total GI System HI = 6E+00

TABLE 3-10.7.CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Recreational User
Receptor Age: Young Child/Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk Young Child + Adult					Non-Carcinogenic Hazard Quotient Young Child				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Sediment	Sediment	Murphy Wetland	Aroclor 1254	--	--	--	--	--	Immune System	1E+00	--	2E+00	3E+00
			Aroclor 1260	--	--	--	--	--	Immune System	5E-01	--	9E-01	1E+00
			Chemical Total	--	--	--	--	--		2E+00	--	3E+00	4E+00
			Radionuclide Total										
		Exposure Point Total						NA					4E+00
	Exposure Medium Total							NA					4E+00
Medium Total								NA					4E+00
Receptor Total								NA					4E+00

-- = Not Evaluated

N/A = Not Applicable

Total Risk Across All Media: NA

Total Hazard Across All Media: 4E+00

Total Immune System HI = 4E+00

TABLE 3-10.8.RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Trespasser
Receptor Age: Older Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk Trespasser (Older Child)					Non-Carcinogenic Hazard Quotient Trespasser (Older Child)				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Sediment	Sediment	Murphy Wetland	Aroclor 1254	--	--	--	--	--	Immune System	.6E-01	--	1E+00	2E+00
			Aroclor 1260	--	--	--	--	--	Immune System	3E-01	--	7E-01	1E+00
			Chemical Total	--	--	--	--	--		8E-01	--	2E+00	3E+00
			Radionuclide Total										
		Exposure Point Total						NA					3E+00
	Exposure Medium Total							NA					3E+00
Medium Total								NA					3E+00
Receptor Total								NA					3E+00

-- = Not Evaluated

N/A = Not Applicable

Total Risk Across All Media: NA

Total Hazard Across All Media: 3E+00

Total Immune System HI = 3E+00

Conservation/Recreation

- **Areas of Critical Environmental Concern** - Updated December 2003
- **Protected and Recreational Open Space** - Updated January 2004
- **Public Access Board Sites**
- **Canoe Trips and Access Points**
- **Tracks and Trails**
- **Bicycle Trails**
- **Long Distance Trails**
- **Scenic Landscapes**
- **State Register of Historic Places**
- **Landmarks**
- **NHESP Priority Habitats of Rare Species**
- **NHESP Estimated Habitats of Rare Wildlife**
- **NHESP Certified Vernal Pools**
- **NHESP Potential Vernal Pools**
- **NHESP BioMap Core Habitat**
- **NHESP BioMap Supporting Natural Landscape**
- **NHESP Living Waters Core Habitats** NEW! 12/2/2003
- **NHESP Living Waters Critical Supporting Watersheds** NEW! 12/2/2003

Regulated Areas

TABLE 3-10.9.RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Off-site Resident
Receptor Age: Young Child/Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk Young Child + Adult					Non-Carcinogenic Hazard Quotient Young Child				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Ground Water	Ground Water	Tap water/Shower head Off-site											
			1,3-Dichlorobenzene	--	--	--	--	--	Endocrine	2E+00	--	1E+00	3E+00
			Benzene	8E-05	--	1E-05	--	9E-05	Immune System	2E+00	--	2E-01	2E+00
			Chlorodibromomethane	2E-06	--	N/A	--	2E-06	Liver	--	--	--	--
			cis-1,2-Dichloroethene	--	--	--	--	--	Blood	2E+01	--	N/A	2E+01
			Methyl tert-butyl ether	3E-05	--	N/A	--	3E-05	N/A	--	--	--	--
			Methylene chloride	1E-05	--	N/A	--	1E-05	Liver	--	--	--	--
			Tetrachloroethene	1E-05	--	7E-06	--	2E-05	Liver	--	--	--	--
			Trichloroethene	1E-03	--	2E-04	--	1E-03	Liver	5E+01	--	6E+00	6E+01
			Vinyl chloride	2E-02	--	N/A	--	2E-02	Liver	2E+01	--	N/A	2E+01
			Benzo(a)Pyrene	2E-06	--	4E-05	--	4E-05	N/A	--	--	--	--
			Dibenz(a,h) anthracene	2E-06	--	5E-05	--	5E-05	N/A	--	--	--	--
			C9-C18 Allphatic	--	--	--	--	--	Liver and Blood	3E+00	--	N/A	3E+00
			C11-C22 Aromatic	--	--	--	--	--	Kidney	4E+00	--	N/A	4E+00
			Arsenic	5E-03	--	N/A	--	5E-03	Skin	6E+01	--	N/A	6E+01
			Manganese	--	--	--	--	--	Nervous System	1E+01	--	N/A	1E+01
			PCB TEQ*	8E-06	--	1E-04	--	1E-04	N/A	--	--	--	--
			Dieldrin	4E-06	--	2E-06	--	6E-06	Liver	--	--	--	--
			4,4'-DDD	2E-06	--	N/A	--	2E-06	Immune System	--	--	--	--
			Chemical Total	2E-02	--	4E-04	--	2E-02		2E+02	--	7E+00	2E+02
			Radionuclide Total										
		Exposure Point Total						2E-02					2E+02
	Exposure Medium Total							2E-02					2E+02
Medium Total								2E-02					2E+02

TABLE 3-10.9.RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Off-site Resident
Receptor Age: Young Child/Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk Young Child + Adult					Non-Carcinogenic Hazard Quotient Young Child				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Ground Water	Indoor Air	Tap water/Shower head Off-site											
			1,1,2-Trichloroethane	--	4E-04	--	--	4E-04	Nervous system	--	--	--	--
			Benzene	--	1E-05	--	--	1E-05	Immune System	--	--	--	--
			Tetrachloroethene	--	4E-06	--	--	4E-06	N/A	--	--	--	--
			Trichloroethene	--	3E-04	--	--	3E-04	Nervous System/Liver	--	--	--	--
			Vinyl chloride	--	1E-04	--	--	1E-04	Liver	--	--	--	--
			Chemical Total	--	9E-04	--	--	9E-04		--	--	--	--
			Radionuclide Total										
		Exposure Point Total						9E-04					NA
	Exposure Medium Total							9E-04					NA
Medium Total								9E-04					NA
Receptor Total								2E-02					NA

-- = Not Evaluated

N/A = Not Applicable

Total Risk Across All Media	2E-02
Total Hazard Across All Media	2E+02
Should the dioxin slope factor be revised as proposed, the risk for this receptor would increase to	2E-02
Total risk assuming low-end of range from EPA's 2001 TCE Health Risk Assesment	2E-02
Total risk assuming California EPA TCE factors	2E-02
Total risk assuming HEAST TCE factors	2E-02
Total Skin HI =	6E+01
Total Immune System HI =	2E+00
Total Kidney HI =	4E+00
Total Blood HI =	2E+01
Total Nervous System HI =	1E+01
Total Liver HI =	8E+01
Total Endocrine HI =	3E+00

TABLE 3-10.9.CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Off-site Resident
Receptor Age: Young Child/Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk Young Child + Adult					Non-Carcinogenic Hazard Quotient Young Child				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Ground Water	Ground Water	Tap water/Shower head Off-site											
			Trichloroethene	2E-05	--	2E-06	--	2E-05	Liver	2E+00	--	2E-01	2E+00
			Vinyl chloride	2E-04	--	N/A	--	2E-04	Liver	--	--	--	--
			Benzo(a)Pyrene	4E-07	--	7E-06	--	7E-06	N/A	--	--	--	--
			Dibenz(a,h) anthracene	3E-07	--	9E-06	--	9E-06	N/A	--	--	--	--
			Arsenic	4E-05	--	N/A	--	4E-05	Skin	--	--	--	--
			PCB TEQ*	7E-07	--	1E-05	--	1E-05	N/A	--	--	--	--
			Chemical Total	2E-04	--	3E-05	--	3E-04		2E+00	--	2E-01	2E+00
			Radionuclide Total										
		Exposure Point Total						3E-04					2E+00
	Exposure Medium Total							3E-04					2E+00
Medium Total								3E-04					2E+00

TABLE 3-10.9.CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

Southwest Properties, Wells G & H Superfund Site Operable Unit 2, Woburn, Massachusetts

Scenario Timeframe: Future
Receptor Population: Off-site Resident
Receptor Age: Young Child/Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk Young Child + Adult					Non-Carcinogenic Hazard Quotient Young Child				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Ground Water	Indoor Air	Tap water/Shower head Off-site											
			1,1,2-Trichloroethane	--	1E-04	--	--	1E-04	Nervous system	--	--	--	--
			Trichloroethene	--	7E-06	--	--	7E-06	Nervous System/Liver	--	--	--	--
			Vinyl chloride	--	2E-06	--	--	2E-06	Liver	--	--	--	--
			Chemical Total	--	2E-04	--	--	2E-04		--	--	--	--
			Radionuclide Total										
		Exposure Point Total						2E-04					--
	Exposure Medium Total							2E-04					--
Medium Total								2E-04					--
Receptor Total								4E-04					--

-- = Not Evaluated

N/A = Not Applicable

Total Risk Across All Media: 4E-04

Total Hazard Across All Media: 2E+00

Should the dioxin slope factor be revised as proposed, the risk for this receptor would increase to: 5E-04

Total risk assuming low-end of range from EPA's 2001 TCE Health Risk Assesment: 4E-04

Total risk assuming California EPA TCE factors: 4E-04

Total risk assuming HEAST TCE factors: 4E-04

Total Liver HI = 2E+00

TABLE 4-1
POTENTIAL ECOLOGICAL RECEPTORS
SOUTHWEST PROPERTIES SUPERFUND SITE OU-2

Family	Common Name	Scientific Name	Guild[1]	Forage method	Breeding Substrate	Forested/Shrub[2]	Seasonally Ponded[2]
Amphibians							
Bufonidae	Eastern American Toad	*Bufo a. americanus*	I	Ground Ambusher	Water	X	X
	Fowler's Toad	*Bufo woodhousei fowleri*	I	Ground Ambusher	Water	X	X
Hylidae	Gray Treefrog	*Hyla versicolor*	I	Bark Ambusher	Water	X	X
	Northern Spring Peeper	*Pseudacris c. crucifer*	I	Riparian Ambusher	Water	X	X
Ranidae	Bullfrog	*Rana catesbeiana*	C	Water Ambusher	Water		X
	Green Frog	*Rana clamitans melanota*	I	Riparian Ambusher	Water	X	X
	Northern Leopard Frog	*Rana pipiens*	I	Riparian Ambusher	Water		X
Salamandridae	Red-spotted Newt	*Notophthalmus viridescens*	I	Water Gleaner	Water	X	X
Birds							
Anatidae	*Mallard	*Anas platyrhynchos*	G	Water Forager	Riparian Ground		X
	Wood Duck	*Aix sponsa*	G	Water Forager	Riparian Tree Cavity		X
Bombycillidae	Cedar Waxwing	*Bombycilla cedrorum*	F	Upper Canopy Gleaner	Tree-Twig	X	
Corvidae	American Crow	*Corvus brachyrhynchos*	O	Ground Gleaner	Tree-Branch	X	
	*Blue Jay	*Cyanocitta cristata*	O	Ground Gleaner	Tree-Branch	X	
Fringillidae	American Goldfinch	*Carduelis tristis*	O	Ground Gleaner	Shrub	X	
	American Tree Sparrow	*Spizella arborea*	O	Ground Gleaner	N/A		X
	*Northern Cardinal	*Cardinalis cardinalis*	O	Ground Gleaner	Shrub	X	
	*Song Sparrow	*Melospiza melodia*	O	Ground Gleaner	Ground-Herb	X	X
	Swamp Sparrow	*Melospiza georgiana*	I	Ground Gleaner	Riparian Ground	X	
Hirundinidae	Tree Swallow	*Tachycineata bicolor*	I	Air Screener	Tree Cavity-Crevice	X	X
Icteridae	*Common Grackle	*Quiscalus quiscula*	O	Ground Gleaner	Tree-Branch		X
	Red-winged Blackbird	*Agelaius phoeniceus*	O	Ground Gleaner	Shrub		X
Mimidae	Gray Catbird	*Dumetella carolinensis*	O	Ground Gleaner	Shrub	X	X
Paridae	*Black-capped Chickadee	*Parus atricapillus*	I	Lower Canopy Gleaner	Tree Cavity-Crevice	X	
Parulidae	Blue-winged Warbler	*Vermivora pinus*	I	Lower Canopy Gleaner	Ground-Herb	X	
	Common Yellowthroat	*Geothlypis trichas*	I	Lower Canopy Gleaner	Ground-Herb	X	X
	Yellow Warbler	*Dendroica petechia*	I	Lower Canopy Gleaner	Shrub	X	X
Picidae	Downy Woodpecker	*Picoides pubescens*	I	Bark Gleaner	Tree Cavity-Crevice	X	
Strigidae	Eastern Screech-Owl	*Otus asio*	C	Ground Pouncer	Tree Cavity-Crevice	X	
Sturnidae	*European Starling	*Sturnus vulgaris*	O	Ground Gleaner	Buildings	X	
Sylviidae	Blue-gray Gnatcatcher	*Polioptila caerulea*	I	Upper Canopy Gleaner	Tree-Branch	X	
Troglodytidae	Marsh Wren	*Cistothorus palustris*	I	Ground Gleaner	Riparian Ground		X
Turdidae	*American Robin	*Turdus migratorius*	O	Ground Gleaner	Tree-Branch	X	
Tyrannidae	Eastern Phoebe	*Sayornis phoebe*	I	Air Sallier	Buildings		X
Mammals							
	Red Fox	*Vulpes vulpes*	O	Ground Forager	Terrestrial Subsurface	X	X
Cervidae	*White-tailed Deer	*Odocoileus virginianus*	H	Ground Grazer	Ground-Herb	X	X
Cricetidae	Meadow Vole	*Microtus pennsylvanicus*	H	Ground Grazer	Terrestrial Subsurface		X
	Muskrat	*Onodatra zibethicus*	H	Water Grazer	Riparian Subsurface		X

TABLE 4-1
POTENTIAL ECOLOGICAL RECEPTORS
SOUTHWEST PROPERTIES SUPERFUND SITE OU-2

Family	Common Name	Scientific Name	Guild[1]	Forage method	Breeding Substrate	Forested/Shrub[2]	Seasonally Ponded[2]
	S. Red-backed Vole	*Clethrionomys gapperi*	H	Ground Grazer	Terrestrial Subsurface	X	
	White-footed Mouse	*Peromyscus leucopus*	O	Ground Forager	Terrestrial Subsurface	X	X
Didelphidae	Virginia Opossum	*Didelphis virginiana*	O	Ground Forager	Tree Cavity-Crevice	X	X
Leporidae	Eastern Cottontail	*Sylvilagus floridanus*	H	Ground Grazer	Ground-Herb	X	X
	Striped Skunk	*Mephitis mephitis*	O	Ground Forager	Terrestrial Subsurface	X	
Procyonidae	Raccoon	*Procyon lotor*	O	Ground Forager	Tree Cavity-Crevice	X	X
Soridae	Short-tailed Shrew	*Blarina brevicauda*	I	Ground Gleaner	Terrestrial Subsurface	X	X
Talpidae	Star-nosed Mole	*Condylura cristata*	I	Water Gleaner	Riparian Subsurface	X	X
Vespertilionidae	Big Brown Bat	*Eptesicus fuscus*	I	Air Hawker	Buildings	X	X
	Little Brown Bat	*Myotis lucifugus*	I	Air Hawker	Buildings	X	X
Zapodidae	Meadow Jumping Mouse	*Zapus hudsonius*	O	Ground Forager	Ground-Herb	X	X
Reptiles							
Chelydridae	Snapping Turtle	*Chelydra serpentina*	O	Bottom Forager	Riparian Subsurface		X
Colubridae	E. Smooth Green Snake	*Opheodrys v. vernalis*	I	Ground Ambusher	Terrestrial Subsurface	X	
	Eastern Garter Snake	*Thamnophis s. sirtalis*	C	Ground Ambusher	Terrestrial Subsurface	X	
	Eastern Ribbon Snake	*Thamnophis s. sauritus*	C	Water Ambusher	Riparian Subsurface		X
	Northern Brown Snake	*Storeria d. dekayi*	I	Ground Ambusher	Terrestrial Subsurface	X	
	Northern Redbelly Snake	*Storeria o. occipitomaculata*	I	Ground Ambusher	Terrestrial Subsurface	X	
	Northern Water Snake	*Nerodia s. sipedon*	C	Water Ambusher	Riparian Subsurface	X	X
Emydidae	Eastern Painted Turtle	*Chrysemys p. picta*	O	Bottom Forager	Terrestrial Subsurface		X

* Species (or sign) noted during site inspections of Site by TRC ecologists

[1] Guilds include: C: Carnivore G: Granivore I: Insectivore
F: Frugivore H: Herbivore O: Omnivore

[2] X indicates that the species potentially could use the habitat based on scientific literature and professional opinion

TABLE 4-2
SURFACE WATER SAMPLES

MURPHY WETLAND – SOUTHWEST PROPERTIES
WELLS G&H SUPERFUND SITE OU-2

Sample Name	Analyses	Source Reference, Notes
MW-12SW	Metals (Total and Dissolved)	RETEC 2003
MW-13SW	Metals (Total and Dissolved)	RETEC 2003
BW-4SW	Metals (Total and Dissolved)	RETEC 2003

TABLE 4-3
SEDIMENT SAMPLES
MURPHY WETLAND – SOUTHWEST PROPERTIES
WELLS G&H SUPERFUND SITE OU-2

Sample Name	Depth (feet)	Habitat Location	Source Reference, Notes
P-1	0-2 ft.	Forested/Scrub-Shrub	Clean Harbors, 1998, 1995 Data
P-2	0-2 ft.	Forested/Scrub-Shrub	Clean Harbors, 1998, 1995 Data
P-3	0-2 ft.	Seasonally Ponded	Clean Harbors, 1998, 1995 Data
P-4	0-2 ft.	Forested/Scrub-Shrub	Clean Harbors, 1998, 1995 Data
P-5	0-2 ft.	Seasonally Ponded	Clean Harbors, 1998, 1995 Data
P-6	0-2 ft.	Seasonally Ponded	Clean Harbors, 1998, 1995 Data
P-7	0-2 ft.	Seasonally Ponded	Clean Harbors, 1998, 1995 Data
P-9	0-2 ft.	Seasonally Ponded	Clean Harbors, 1998, 1995 Data
P-10	0-2 ft.	Seasonally Ponded	Clean Harbors, 1998, 1995 Data
P-11	0-2 ft.	Seasonally Ponded	Clean Harbors, 1998, 1995 Data
P-12	0-2 ft.	Seasonally Ponded	Clean Harbors, 1998, 1995 Data
P-13	0-2 ft.	Seasonally Ponded	Clean Harbors, 1998, 1995 Data
P-14	0-2 ft.	Seasonally Ponded	Clean Harbors, 1998, 1995 Data
P-15	0-2 ft.	Seasonally Ponded	Clean Harbors, 1998, 1995 Data
P-17	0-2 ft.	Seasonally Ponded	Clean Harbors, 1998, 1995 Data
P-18	0-2 ft.	Seasonally Ponded	Clean Harbors, 1998, 1995 Data
P-19	0-2 ft.	Forested/Scrub-Shrub	Clean Harbors, 1998, 1995 Data
P-20	0-2 ft.	Seasonally Ponded	Clean Harbors, 1998, 1995 Data
P-21	0-2 ft.	Seasonally Ponded	Clean Harbors, 1998, 1995 Data
P-22	0-2 ft.	Forested/Scrub-Shrub	Clean Harbors, 1998, 1995 Data
P-23	0-2 ft.	Seasonally Ponded	Clean Harbors, 1998, 1995 Data
P-24	0-2 ft.	Forested/Scrub-Shrub	Clean Harbors, 1998, 1997 Data
P-24A	0-2 ft.	Forested/Scrub-Shrub	Clean Harbors, 1998, 1995 Data
P-25	0-2 ft.	Seasonally Ponded	Clean Harbors, 1998, 1995 Data
P-26	0-2 ft.	Seasonally Ponded	Clean Harbors, 1998, 1995 Data
P-27	0-2 ft.	Seasonally Ponded	Clean Harbors, 1998, 1995 Data
P-28	0-2 ft.	Seasonally Ponded	Clean Harbors, 1998, 1995 Data
P-29	0-2 ft.	Seasonally Ponded	Clean Harbors, 1998, 1995 Data
P-30	0-2 ft.	Seasonally Ponded	Clean Harbors, 1998, 1995 Data
P-31	0-2 ft.	Seasonally Ponded	Clean Harbors, 1998, 1997 Data

TABLE 4-3
SEDIMENT SAMPLES
MURPHY WETLAND – SOUTHWEST PROPERTIES
WELLS G&H SUPERFUND SITE OU-2

Sample Name	Depth (feet)	Habitat Location	Source Reference, Notes
P-32	0-2 ft.	Seasonally Ponded	Clean Harbors, 1998, 1997 Data
P-33	0-2 ft.	Forested/Scrub-Shrub	Clean Harbors, 1998, 1997 Data
P-34	0-2 ft.	Forested/Scrub-Shrub	Clean Harbors, 1998, 1997 Data
P-35	0-2 ft.	Forested/Scrub-Shrub	Clean Harbors, 1998, 1997 Data
P-36	0-2 ft.	Forested/Scrub-Shrub	Clean Harbors, 1998, 1997 Data
P-37	0-2 ft.	Seasonally Ponded	Clean Harbors, 1998, 1997 Data
P-38	0-2 ft.	Seasonally Ponded	Clean Harbors, 1998, 1997 Data
P-39	0-2 ft.	Seasonally Ponded	Clean Harbors, 1998, 1997 Data
P-40	0-2 ft.	Seasonally Ponded	Clean Harbors, 1998, 1997 Data
P-41	0-2 ft.	Seasonally Ponded	Clean Harbors, 1998, 1997 Data
P-42	0-2 ft.	Seasonally Ponded	Clean Harbors, 1998, 1997 Data
P-43	0-2 ft.	Seasonally Ponded	Clean Harbors, 1998, 1997 Data
P-44	0-2 ft.	Seasonally Ponded	Clean Harbors, 1998, 1997 Data
P-45	0-2 ft.	Forested/Scrub-Shrub	Clean Harbors, 1998, 1997 Data
P-46	0-2 ft.	Seasonally Ponded	Clean Harbors, 1998, 1997 Data
P-47	0-2 ft.	Seasonally Ponded	Clean Harbors, 1998, 1997 Data
MW-19	0-2 ft.	Forested/Scrub-Shrub	Clean Harbors, 1998, 1997 Data
SW-1	0-2 ft.	Seasonally Ponded	Clean Harbors, 1998, 1997 Data
SW-2	0-2 ft.	Seasonally Ponded	Clean Harbors, 1998, 1997 Data
SW-3	0-2 ft.	Seasonally Ponded	Clean Harbors, 1998, 1997 Data
SW-4	0-2 ft.	Forested/Scrub-Shrub	Clean Harbors, 1998, 1997 Data
MR-11SS	0-0.5 ft.	Seasonally Ponded	RETEC 2003
MR-11	0-0.5 ft.	Seasonally Ponded	TRC 2004, Split Sample
MR-12SS	0-0.5 ft.	Seasonally Ponded	RETEC 2003
MR-12	0-0.5 ft.	Seasonally Ponded	TRC 2004, Split Sample
MR-13SST1	0-0.5 ft.	Seasonally Ponded	RETEC 2004 Composite Sample
MR-13SST2	0-0.5 ft.	Seasonally Ponded	RETEC 2004 Composite Sample
MR-14SS	0-0.5 ft.	Seasonally Ponded	RETEC 2003
MR-15SS	0-0.5 ft.	Seasonally Ponded	RETEC 2003
MR-16SS	0-0.5 ft.	Seasonally Ponded	RETEC 2003

TABLE 4-3
SEDIMENT SAMPLES
MURPHY WETLAND – SOUTHWEST PROPERTIES
WELLS G&H SUPERFUND SITE OU-2

Sample Name	Depth (feet)	Habitat Location	Source Reference, Notes
MR-17SS	0-0.5 ft.	Seasonally Ponded	RETEC 2003
MR-18SS	0-0.5 ft.	Seasonally Ponded	RETEC 2003
WB-9SS	0-0.5 ft.	Forested/Scrub-Shrub	RETEC 2003
WB-9	0-0.5 ft.	Forested/Scrub-Shrub	TRC 2004, Split Sample

TABLE 4-4
SEDIMENT SAMPLE ANALYSES
MURPHY WETLAND – SOUTHWEST PROPERTIES
WELLS G&H SUPERFUND SITE OU-2

Sample Name	Analyses	Notes
P-1	PCB Aroclors, Chromium, Lead	Only detected Aroclor data used
P-2	PCB Aroclors, Chromium, Lead	Only detected Aroclor data used
P-3	PCB Aroclors, Chromium, Lead	Only detected Aroclor data used
P-4	PCB Aroclors, Chromium, Lead	Only detected Aroclor data used
P-5	PCB Aroclors, Chromium, Lead	Only detected Aroclor data used
P-6	PCB Aroclors, Chromium, Lead	Only detected Aroclor data used
P-7	PCB Aroclors, Chromium, Lead	Only detected Aroclor data used
P-9	PCB Aroclors, Chromium, Lead	Only detected Aroclor data used
P-10	PCB Aroclors, Chromium, Lead	Only detected Aroclor data used
P-11	PCB Aroclors, Chromium, Lead	Only detected Aroclor data used
P-12	PCB Aroclors, Arsenic, Cadmium, Chromium, Lead	VOC/SVOC/Pesticide data all with elevated reporting limits, Only detected Aroclor data used
P-13	PCB Aroclors, Chromium, Lead	Only detected Aroclor data used
P-14	PCB Aroclors, Chromium, Lead	Only detected Aroclor data used
P-15	PCB Aroclors, Chromium, Lead	Only detected Aroclor data used
P-17	PCB Aroclors, Chromium, Lead	Only detected Aroclor data used
P-18	PCB Aroclors, Chromium, Lead	Only detected Aroclor data used
P-19	PCB Aroclors, Chromium, Lead	Only detected Aroclor data used
P-20	PCB Aroclors, Chromium, Lead	
P-21	PCB Aroclors, Chromium, Lead	Only detected Aroclor data used
P-22	PCB Aroclors, Chromium, Lead	
P-23	PCB Aroclors, Chromium, Lead	Only detected Aroclor data used
P-24	VOCs, SVOCs, PCB Aroclors, Cadmium, Chromium, Lead	VOCs – toluene/xylenes only SVOCs – fluorene/fluoranthene/ pyrene only Only detected Aroclor data used
P-24A	PCB Aroclors, Chromium, Lead	Only detected Aroclor data used
P-25	PCB Aroclors, Chromium, Lead	Only detected Aroclor data used

TABLE 4-4
SEDIMENT SAMPLE ANALYSES
MURPHY WETLAND – SOUTHWEST PROPERTIES
WELLS G&H SUPERFUND SITE OU-2

Sample Name	Analyses	Notes
P-26	VOCs, SVOCs, PCB Aroclors, Cadmium, Chromium, Lead	VOCs – toluene/xylenes only SVOCs - fluoranthene/pyrene Only detected Aroclor data used
P-27	PCB Aroclors, Chromium, Lead	Only detected Aroclor data used
P-28	PCB Aroclors, Chromium, Lead	Only detected Aroclor data used
P-29	PCB Aroclors, Chromium, Lead	Only detected Aroclor data used
P-30	PCB Aroclors, Chromium, Lead	Only detected Aroclor data used
P-31	Chromium	
P-32	Chromium	
P-33	PCB Aroclors, Chromium, Lead	Only detected Aroclor data used
P-34	PCB Aroclors, Chromium, Lead	
P-35	PCB Aroclors, Chromium, Lead	Only detected Aroclor data used
P-36	PCB Aroclors, Chromium, Lead	
P-37	PCB Aroclors, Chromium, Lead	Only Aroclor 1254 data used
P-38	PCB Aroclors, Chromium, Lead	Only detected Aroclor data used
P-39	PCB Aroclors, Chromium, Lead	Only detected Aroclor data used
P-40	PCB Aroclors, Chromium, Lead	Only detected Aroclor data used
P-41	PCB Aroclors, Chromium, Lead	Only detected Aroclor data used
P-42	PCB Aroclors, Chromium, Lead	Only detected Aroclor data used
P-43	PCB Aroclors, Chromium, Lead	Only detected Aroclor data used
P-44	SVOCs, Chromium, Lead	SVOCs – fluorine/fluoranthene only
P-45	Chromium	SVOC data all with elevated reporting limits
P-46	PCB Aroclors	Only detected Aroclor data used
P-47	PCB Aroclors	Only detected Aroclor data used
MW-19	PCB Aroclors	
SW-1	Chromium, Lead	
SW-2	PCB Aroclors, Chromium, Lead	SVOC data all with elevated reporting limits, only detected Aroclor data used

TABLE 4-4
SEDIMENT SAMPLE ANALYSES
MURPHY WETLAND – SOUTHWEST PROPERTIES
WELLS G&H SUPERFUND SITE OU-2

Sample Name	Analyses	Notes
SW-3	PCB Aroclors, Chromium, Lead	Only detected Aroclor data used
SW-4	PCB Aroclors, Chromium, Lead	Only detected Aroclor data used
MR-11SS	VOCs, SVOCs, Pesticides, PCB Aroclors/Congeners, Metals, CN	VOCs – acetone and carbon disulfide with elevated reporting limits
MR-11	SVOCs, PCB Aroclors/Congeners, Metals, CN	SVOCs – all except 2-methylnaphthalene and anthacene
MR-12SS	SVOCs, Pesticides, PCB Aroclors & PCB Congeners, Metals, CN	SVOCs – all except 2-methylphenol
MR-12	VOCs, SVOCs, PCB Aroclors/Congeners, Metals, CN	SVOCs – all except 2-methylnaphthalene
MR-13SST1	Chromium, Lead	Composite sample
MR-13SST2	Chromium, Lead	Composite sample
MR-14SS	PAHs, Chromium, Lead	PAH data from EPH analysis
MR-15SS	VOCs, PAHs, Pesticides, PCB Aroclors/Congeners, Metals, CN	VOCs – all except acetone and carbon disulfide; SVOCs – all except 2-methylphenol
MR-16SS	PAHs, Chromium, Lead	PAH data from EPH analysis; all except phenanthrene
MR-17SS	PAHs, Chromium, Lead	PAH data from EPH analysis; all except phenanthrene
MR-18SS	PAHs, Chromium, Lead	PAH data from EPH analysis; all except dibenzo(a,h)anthracene and phenanthrene
WB-9SS	Chromium	
WB-9	Metals, CN	

TABLE 4-5
SURFACE WATER COPC SELECTION
MURPHY WETLAND - SOUTHWEST PROPERTIES WELLS G+H SUPERFUND SITE OU-2

Analyte	Ecological Benchmark (ug/L)		Maximum Concentration (ug/L)	Sample Type	COPC?
Inorganics					
Aluminum	87	a	244	Total	Yes
Barium	3.9	b	85	Total	Yes
Chromium	39	a*	5.5	Dissolved	No
Cobalt	3	b	2.6	Total	No
Cyanide	5.2	a	9	Total	Yes
Iron	1000	a	2770	Total	Yes
Manganese	80	b	545	Total	Yes
Nickel	27	a*	3.8	Dissolved	No
Vanadium	19	b	2.0	Total	No

Notes:
Maximum concentrations (total or dissolved) are presented for each constituent depending on the type of its ecological benchmark (total or dissolved)
* Benchmark based on dissolved metal concentration and water hardness value of 46 mg/L
Dissolved metal concentration = filtered surface water sample
Total recoverable metal concentration = unfiltered surface water sample

Benchmark Sources:
a: USEPA, 2002
b: USEPA, 1996

TABLE 4-6
SEDIMENT COPC SELECTION
MURPHY WETLAND - SOUTHWEST PROPERTIES
WELLS G+H SUPERFUND SITE OU-2

Analyte	Ecological Benchmark		Maximum Concentration	COPC?
VOC (ug/kg)				
2-Butanone (MEK)	270*	c	145	No
Acetone	8.7*	c	485	Yes
Carbon disulfide	0.85*	c	17	Yes
Methyl tert-butyl ether	NBA		115	Yes
Toluene	670*	a	140	No
Xylenes (Total)	160*	c	7	No
SVOC (ug/kg)				
2-Methylnaphthalene	130**	c	42.5	No
2-Methylphenol	12*	c	150	Yes
Acenaphthene	620*	a	270	No
Acenaphthylene	NBA		25	Yes
Acetophenone	NBA		4950	Yes
Anthracene	220	b	520	Yes
Benzaldehyde	NBA		1560	Yes
Benzo(a)anthracene	320	b	3100	Yes
Benzo(a)pyrene	430	a	3300	Yes
Benzo(b)fluoranthene	NBA		2900	Yes
Benzo(g,h,i)perylene	170	b	4600	Yes
Benzo(k)fluoranthene	240	b	3300	Yes
Bis(2-ethylhexyl)phthalate	890000*	c	640	No
Carbazole	NBA		230	Yes
Chrysene	340	b	3600	Yes
Dibenz(a,h)anthracene	60	b	1300	Yes
Fluoranthene	2900*	a	5400	Yes
Fluorene	540*	a	1800	Yes
Indeno(1,2,3-cd)pyrene	200	b	3200	Yes
Naphthalene	480*	a	74.5	No
Pentachlorophenol	NBA		800	Yes
Phenanthrene	850*	a	1850	Yes
Phenol	31*	c	10100	Yes
Pyrene	660	a	5700	Yes

TABLE 4-6
SEDIMENT COPC SELECTION
MURPHY WETLAND - SOUTHWEST PROPERTIES
WELLS G+H SUPERFUND SITE OU-2

Analyte	Ecological Benchmark		Maximum Concentration	COPC?
PCB / Pesticides (ug/kg)				
PCB 105	NBA		244.5	Yes
PCB 114	NBA		10.48	Yes
PCB 118	NBA		563	Yes
PCB 123	NBA		79.28	Yes
PCB 126	NBA		1.51	Yes
PCB 156/157	NBA		74.4	Yes
PCB 167	NBA		24.49	Yes
PCB 170	NBA		35.60	Yes
PCB 189	NBA		3.14	Yes
PCB 193/180	NBA		64.10	Yes
PCB 77	NBA		7.99	Yes
PCB 81	NBA		1.86	Yes
4,4'-DDE	5	b	7.65	Yes
4,4'-DDD	8	b	46.20	Yes
4,4'-DDT	1.6	a	92.40	Yes
alpha-Chlordane	7	b	35.90	Yes
gamma-Chlordane	7	b	52.31	Yes
Aroclor 1254	60	b	220000	Yes
Aroclor 1260	5	b	450000	Yes
Inorganics (mg/kg)				
Aluminum	25500	d	23500	No
Antimony	2	e	117	Yes
Arsenic	8.2	a	17	Yes
Barium	NBA		500	Yes
Beryllium	NBA		1	Yes
Cadmium	1.2	a	4.5	Yes
Calcium	NBA		23000	No
Chromium	81	a	66500	Yes
Chromium (VI)	NBA		366	Yes
Cobalt	NBA		12	Yes
Copper	34	a	160	Yes
Cyanide	NBA		2.28	Yes
Iron	20000	b	28300	Yes

TABLE 4-6
SEDIMENT COPC SELECTION
MURPHY WETLAND - SOUTHWEST PROPERTIES
WELLS G+H SUPERFUND SITE OU-2

Analyte	Ecological Benchmark		Maximum Concentration	COPC?
Lead	47	a	35100	Yes
Magnesium	NBA		7050	No
Manganese	460	b	380	No
Mercury	0.15	a	1.13	Yes
Nickel	21	a	41.5	Yes
Potassium	NBA		6400	No
Selenium	NBA		0.99	Yes
Silver	1	a	0.32	No
Sodium	NBA		880	No
Thallium	NBA		0.19	Yes
Vanadium	NBA		67.5	Yes
Zinc	150	a	925	Yes

NBA: No Benchmark Available

a: USEPA, 1996
b: Persaud et al., 1993
c: Jones et al., 1997
d: Buchman, 1999
e: Long and Morgan, 1990

* Based on total organic carbon content of 1%
** Benchmark for 1-methylnaphthalene used

TABLE 4-7
ASSESSMENT ENDPOINTS AND MEASUREMENT ENDPOINTS

MURPHY WETLAND - SOUTHWEST PROPERTIES WELLS G&H SUPERFUND SITE OU-2

Assessment Endpoints	Measurement Endpoints	Area(s)
Aquatic System		
Water Column Invertebrate Community Survival/Reproduction	Comparison of surface water COPC concentrations with acute and chronic ambient water quality criteria and lowest acute and chronic adverse effect levels reported in scientific literature.	Seasonally Ponded Area
Macrobenthic Community Diversity and Abundance	Comparison of bulk sediment COPC concentrations with sediment guidelines associated with adverse effects to benthic biota.	Seasonally Ponded Area
Mammalian Herbivore Survival/Reproduction/Growth	Comparison of estimated COPC exposure doses received by muskrat to chronic NOAEL/LOAEL survival, reproductive, or growth effects reported in scientific literature.	Seasonally Ponded Area
Avian Omnivore Survival/Reproduction/Growth	Comparison of estimated contaminant exposure dose received by mallard to survival, reproductive, or growth effect concentrations reported in literature.	Seasonally Ponded Area
Terrestrial System		
Mammalian Insectivore Survival/Reproduction/Growth	Comparison of estimated contaminant exposure dose received by short-tailed shrew to survival, reproductive, or growth effect concentrations reported in literature.	Seasonally Ponded Area Forested/Shrub Area

TABLE 4-8
EXPOSURE FACTORS FOR MUSKRAT
MURPHY WETLAND - SOUTHWEST PROPERTIES
WELLS G&H SUPERFUND SITE OU-2

Character	Value	Source	Comment
BODY WEIGHT	0.837 kg	Reeves and Williams (1956) *cited in* USEPA (1993d)	Adult female
FOOD CONSUMPTION RATE	0.071 kg food (dry) / kg body weight (wet) - day	Nagy (1987) *in* Sample *et al.* (1997)	Assuming 0.837 kg body weight
WATER CONSUMPTION RATE	0.101 L / kg body weight (wet) - day	Calder and Braun (1983) *cited in* Sample *et al.* (1997)	Assuming 0.837 kg body weight
SEDIMENT INGESTION	equivalent to 3.3% of diet	Beyer *et al.* (1994)	Value for mallard
COMPOSITION OF DIET	90% plant, 10% aquatic invertebrates*	Martin *et al.* (1951) and USEPA (1993d)	A portion of the muskrat diet may be animal matter. Ten percent was selected as a conservative value for the Murphy Wetland seasonally ponded area.
% MOISTURE IN DIET	aquatic invertebrates = 84% plants = 87.3%	Sample and Suter (1994) Aberjona River BERA (M&E, 2003)	Average % moistures
AREAL SITE USE FACTOR	1	USEPA (1993d)	Home range smaller than study area
TEMPORAL SITE USE FACTOR	1		No migration

Notes: * Exposure to aquatic invertebrates was estimated based on COPC concentrations modeled to earthworms (i.e., based on soil:earthworm uptake factors)

TABLE 4-9
EXPOSURE FACTORS FOR MALLARD
MURPHY WETLAND - SOUTHWEST PROPERTIES WELLS G&H SUPERFUND SITE OU-2

Character	Value	Source	Comment
BODY WEIGHT	1.043 kg (wet)	Nelson and Martin (1953) *cited in* USEPA (1993d)	Adult female
FOOD CONSUMPTION RATE	0.057 kg (dry) / kg body weight (wet) - day	Nagy (1987) *cited in* Sample *et al.* (1997)	Assuming 1.043 kg body weight
WATER CONSUMPTION RATE	0.058 L / kg body weight (wet)	Calder and Braun (1983) *cited in* Sample *et al* . (1997)	Assuming 1.043 kg body weight
SEDIMENT INGESTION	equivalent to 3.3% of diet	Beyer *et al.* (1994)	
COMPOSITION OF DIET	67% invertebrates*, 33% plants	Swanson *et al.* (1985) *cited in* USEPA (1993d)	
% MOISTURE IN DIET	aquatic invertebrates = 84% plants = 87.3%	Sample and Suter (1994) Aberjona River BERA (M&E, 2003)	Average % moistures
AREAL SITE USE FACTOR	0.05	USEPA (1993d)	Home range assumed to be 40 acres which is considerably larger than 0.8 acre seasonally ponded area. Conservatively estimated to provide 5% of home range.
TEMPORAL SITE USE FACTOR	0.5	USEPA (1993d)	Migrates, present on-site approximately six months per year.

Notes: * Exposure to aquatic invertebrates was estimated based on COPC concentrations modeled to earthworms (i.e., based on soil:earthworm uptake factors)

TABLE 4-10
EXPOSURE FACTORS FOR SHREW
MURPHY WETLAND - SOUTHWEST PROPERTIES WELLS G&H SUPERFUND SITE OU-2

Character	Value	Source	Comment
BODY WEIGHT	0.015 kg (wet)	Schlessinger and Potter (1994) *cited in* Sample and Suter (1994)	Adult
FOOD CONSUMPTION RATE	0.6 kg food (wet) / kg body weight (wet) - day	Sample and Suter (1994)	Assuming 0.015 kg body weight
WATER CONSUMPTION RATE	0.22 L / kg body weight (wet) - day	Chew (1951) *cited in* Sample and Suter (1994)	Assuming 0.015 kg body weight
SEDIMENT INGESTION	equivalent to 13% of diet	Talmage and Walton (1993) *cited in* Sample and Suter (1994)	
COMPOSITION OF DIET	31.4% earthworms	Whitaker and Ferraro (1963) *cited in* Sample and Suter (1994)	Remainder of diet assumed to contain significantly lower COPC burdens (M&E, 2003)
% MOISTURE IN DIET	84% (water content of earthworms)	Sample and Suter (1994)	
AREAL SITE USE FACTOR	1	USEPA (1993d)	Home range smaller than study area
TEMPORAL SITE USE FACTOR	1 and 0.67		No migration for forested/scrub-shrub area while seasonally ponded area is accessible to shrews for an estimated 8 months.

TABLE 4-11
COPCs IN PLANT TISSUE
MURPHY WETLAND - SEASONALLY PONDED AREA
WELLS G&H SUPERFUND SITE OU-2

Detected COPCs	Mean Sediment Concentration (mg/kg)	95% UCL Sediment Concentration (mg/kg)	Plant Uptake Factor	Mean Plant Concentration (mg/kg)	95% UCL Plant Concentration (mg/kg)
Volitile Organic Compounds					
Acetone	0.49	0.49	53.30	25.85	25.85
Carbon Disulfide	0.02	0.02	2.93	0.06	0.06
Methyl tert-butyl ether	0.06	0.74	11.08	0.68	8.25
Semivolatile Organics					
2-Methylphenol	0.07	0.15	0.00	0.00	0.00
Acenaphthylene	0.34	0.67	0.00	0.00	0.00
Acetophenone	1.63	4.58	0.00	0.00	0.00
Anthracene	0.43	0.57	0.00	0.00	0.00
Benzaldehyde	0.46	1.36	0.00	0.00	0.00
Benzo(a)anthracene	1.23	1.97	0.00	0.00	0.00
Benzo(a)pyrene	1.31	2.12	1.24	1.63	2.64
Benzo(b)fluoranthene	1.17	1.92	0.58	0.68	1.11
Benzo(g,h,i)perylene	1.63	3.98	0.00	0.00	0.00
Benzo(k)fluoranthene	1.52	1.98	1.68	2.55	3.32
Carbazole	0.20	0.40	0.00	0.00	0.00
Chrysene	1.36	3.60	0.89	1.21	3.22
Dibenz(a,h)anthracene	0.43	1.30	0.00	0.00	0.00
Fluoranthene	1.75	2.71	0.37	0.66	1.02
Fluorene	0.49	1.80	0.00	0.00	0.00
Indeno(1,2,3-cd)pyrene	1.37	3.20	3.20	4.38	10.23
Pentachlorophenol	0.23	0.80	0.00	0.00	0.00
Phenanthrene	0.73	1.07	2.18	1.60	2.33
Phenol	2.13	10.10	0.00	0.00	0.00
Pyrene	1.86	3.02	0.49	0.91	1.48
Pesticides/PCBs					
4,4'-DDD	0.026	0.05	0.41	0.010	0.019
4,4'-DDE	0.005	0.01	0.34	0.002	0.003
4,4'-DDT	0.056	0.09	1.29	0.072	0.119
alpha -Chlordane	0.021	0.04	0.79	0.017	0.028
gamma -Chlordane	0.039	0.05	0.75	0.029	0.039
PCB 105	0.0626	0.25	0.0038	0.000238	0.000931
PCB 114	0.0027	0.01	0.0037	0.000010	0.000035
PCB 118	0.1507	0.56	0.0030	0.000452	0.001689
PCB 123	0.0173	0.08	0.0038	0.000066	0.000300
PCB 126	0.0006	0.00	0.0037	0.000002	0.000004
PCB 156/157	0.0215	0.07	0.0016	0.000034	0.000118
PCB 167	0.0076	0.02	0.0018	0.000014	0.000030
PCB 170	0.0263	0.04	0.0010	0.000026	0.000036
PCB 189	0.0011	0.00	0.0009	0.000001	0.000002
PCB 193/180	0.0486	0.06	0.0010	0.000049	0.000064
PCB 77	0.0031	0.01	0.0057	0.000018	0.000029
PCB 81	0.0005	0.00	0.0074	0.000003	0.000012
Aroclor 1254	23.04	51.90	0.017	0.39	0.88
Aroclor 1260	36.53	185.81	0.50	18.25	92.84
Inorganics					
Antimony	24.6	117	0.00	0.00	0.00
Arsenic	9.47	13.8	0.42	3.95	5.75
Barium	319	464	0.76	242	351
Beryllium	0.57	0.84	0.00	0.00	0.00
Cadmium	2.26	3.32	0.83	1.9	2.8
Chromium	5744	18243	0.15	851	2702
Chromium (VI)	29.0	58	0.15	4.3	8.6
Cobalt	9.6	11.2	0.69	6.6	7.7
Copper	81	127	0.39	31.7	49.9
Cyanide	1.04	1.94	0.00	0.00	0.00
Iron	21960	27466	0.64	14163	17714
Lead	2774	6035	0.70	1952	4247
Mercury	0.38	1.13	0.28	0.10	0.31
Nickel	30.4	37.0	0.20	6.1	7.5
Selenium	0.48	0.64	0.65	0.31	0.42
Thallium	0.15	0.19	0.00	0.00	0.00
Vanadium	44.6	60.6	0.27	12.1	16.5
Zinc	577	795	2.54	1464	2018

NOTES:
Plant Uptake Factors from Aberjona River BERA (M&E, 2003) except VOCs, Aroclor 1254 and PCB congeners.
Plant Uptake Factor of 0.00 indicates COPC was not detected in plant tissue samples indicating no uptake (M&E, 2003).
Plant Uptake Factors for VOCs and PCB congeners from equation provided in Travis and Arms, 1988 relating uptake to Kow.
Kow values for VOCs and PCB congeners presented in Table 4-12. Aroclor 1254 uptake factor taken directly from Travis and Arms (1988).
Plant concentrations are on a dry weight basis.

TABLE 4-12
ESTIMATION OF COPC MEAN CONCENTRATIONS IN EARTHWORM TISSUE
MURPHY WETLAND - SEASONALLY PONDED AREA
SOUTHWEST PROPERTIES WELLS G&H SUPERFUND SITE OU-2

Chemical of Potential Concern	C_s (mg/kg)	$\log_{10}(K_{ow})$	Source	$\log_{10}(K_{oc})$	K_d [b]	C_w [c]	K_{bw} [d]	C_v [e] (mg/kg)
Volatile Organics (VOCs)								
Acetone	0.30	-0.24	USEPA, 1995	-0.24	0.1	4.53E+00	1.45E-01	0.66
Carbon disulfide	0.02	1.94	ORNL, 2003	1.91	9.0	2.10E-03	2.19E+01	0.05
Methyl tert-butyl ether	0.06	0.94	ORNL, 2003	0.92	0.9	6.54E-02	2.19E+00	0.14
Semivolatile Organics (SVOCs)								
2-Methylphenol	0.07	3.86	USEPA, 1992	3.79	698	1.03E-04	1.82E+03	0.19
Acenaphthylene	0.34	4.07	USEPA, 1992	4.00	1123	3.04E-04	2.95E+03	0.90
Acetophenone	1.63	1.58	ORNL, 2003	1.55	4	4.07E-01	9.55E+00	3.89
Anthracene	0.43	4.45	USEPA, 1992	4.37	2654	1.62E-04	7.08E+03	1.15
Benzaldehyde	0.46	1.48	ORNL, 2003	1.46	3	1.44E-01	7.59E+00	1.09
Benzo(a)anthracene	1.23	5.61	USEPA, 1992	5.51	36655	3.36E-05	1.02E+05	3.44
Benzo(a)pyrene	1.31	5.98	USEPA, 1992	5.88	84691	1.55E-05	2.40E+05	3.71
Benzo(b)fluoranthene	1.17	6.57	USEPA, 1992	6.46	321965	3.62E-06	9.33E+05	3.38
Benzo(g,h,i)perylene	1.63	7.23	USEPA, 1992	7.11	1434128	1.14E-06	4.27E+06	4.86
Benzo(k)fluoranthene	1.52	6.84	USEPA, 1992	6.72	593223	2.56E-06	1.74E+06	4.45
Carbazole	0.20	3.72	ORNL, 2003	3.66	508	3.93E-04	1.32E+03	0.52
Chrysene	1.36	5.61	USEPA, 1992	5.51	36655	3.70E-05	1.02E+05	3.79
Dibenz(a,h)anthracene	0.43	5.97	USEPA, 1992	5.87	82796	5.21E-06	2.34E+05	1.22
Fluoranthene	1.75	5.33	USEPA, 1992	5.24	19449	9.02E-05	5.37E+04	4.84
Fluorene	0.49	4.18	USEPA, 1992	4.11	1440	3.41E-04	3.80E+03	1.30
Indeno(1,2,3-cd)pyrene	1.37	7.66	USEPA, 1992	7.53	3795579	3.61E-07	1.15E+07	4.14
Pentachlorophenol	0.23	5.12	ORNL, 2003	5.03	12091	1.89E-05	3.31E+04	0.63
Phenanthrene	0.73	4.46	USEPA, 1992	4.38	2714	2.70E-04	7.24E+03	1.96
Phenol	2.13	1.46	ORNL, 2003	1.44	3	6.98E-01	7.24E+00	5.06
Pyrene	1.86	5.18	USEPA, 1992	5.09	13850	1.34E-04	3.80E+04	5.10
Pesticides/PCBs								
4,4'-DDD	0.026	5.99	USEPA, 1992	5.89	86630	2.98E-07	2.45E+05	0.073
4,4'-DDE	0.005	5.69	USEPA, 1992	5.59	43931	1.23E-07	1.23E+05	0.015
4,4'-DDT	0.056	6.19	USEPA, 1992	6.09	136229	4.12E-07	3.89E+05	0.160
alpha-Chlordane[f]	0.021	6.32	USEPA, 1992	6.21	182834	1.16E-07	5.25E+05	0.061
gamma-Chlordane[f]	0.039	6.32	USEPA, 1995	6.21	182834	2.11E-07	5.25E+05	0.111
PCB 105	0.0626	6.94	Oberg, 2001	6.82	743906	8.42E-08	2.19E+06	0.1842
PCB 114	0.0027	6.95	Oberg, 2001	6.83	760936	3.52E-09	2.24E+06	0.0079
PCB 118	0.1507	7.12	Oberg, 2001	7.00	1118042	1.35E-07	3.31E+06	0.4463
PCB 123	0.0173	6.93	Oberg, 2001	6.81	727257	2.38E-08	2.14E+06	0.0508
PCB 126	0.0006	6.95	Oberg, 2001	6.83	760936	7.67E-10	2.24E+06	0.0017
PCB 156/157	0.0215	7.60	Oberg, 2001	7.47	3313584	6.48E-09	1.00E+07	0.0648
PCB 167	0.0076	7.50	Oberg, 2001	7.37	2642397	2.87E-09	7.94E+06	0.0228
PCB 170	0.0263	7.94	Oberg, 2001	7.81	7153491	3.68E-09	2.19E+07	0.0804
PCB 189	0.0011	8.00	Oberg, 2001	7.86	8194039	1.37E-10	2.51E+07	0.0035
PCB 193/180	0.0486	7.92	Oberg, 2001	7.79	6836881	7.11E-09	2.09E+07	0.1485
PCB 77	0.0031	6.63	Oberg, 2001	6.52	368798	8.39E-09	1.07E+06	0.0090
PCB 81	0.0005	6.43	Oberg, 2001	6.32	234524	2.01E-09	6.76E+05	0.0014
Aroclor 1254	23.04	6.50	ATSDR, 2000	6.39	274788	8.38E-05	7.94E+05	66.60
Aroclor 1260	36.53	6.80	ATSDR, 2000	6.68	541874	6.74E-05	1.58E+06	106.84
Inorganics								
Antimony	24.6	-	-	-	-	-	-	1.95
Arsenic	9.47	-	-	-	-	-	-	0.19
Barium	319	-	-	-	-	-	-	18.2
Beryllium	0.57	-	-	-	-	-	-	0.05
Cadmium	2.26	-	-	-	-	-	-	2.51
Chromium	5744	-	-	-	-	-	-	1.06
Chromium (VI)	29.0	-	-	-	-	-	-	2.30
Cobalt	9.63	-	-	-	-	-	-	0.16
Copper	80.5	-	-	-	-	-	-	6.39
Cyanide	1.04	-	-	-	-	-	-	0.06
Iron	21960	-	-	-	-	-	-	0.16
Lead	2774	-	-	-	-	-	-	76.7
Mercury	0.38	-	-	-	-	-	-	0.07

TABLE 4-12
ESTIMATION OF COPC MEAN CONCENTRATIONS IN EARTHWORM TISSUE
MURPHY WETLAND - SEASONALLY PONDED AREA
SOUTHWEST PROPERTIES WELLS G&H SUPERFUND SITE OU-2

Chemical of Potential Concern	C_s (mg/kg)	$\log_{10}(K_{ow})$	Source	$\log_{10}(K_{oc})$	K_d [b]	C_w [c]	K_{bw} [d]	C_v [e] (mg/kg)
Nickel	30.4	-	-	-	-	-	-	2.58
Selenium	0.48	-	-	-	-	-	-	0.09
Thallium	0.15	-	-	-	-	-	-	0.01
Vanadium	44.6	-	-	-	-	-	-	3.54
Zinc	577	-	-	-	-	-	-	109

Notes:

[a] $\log_{10}(K_{oc}) = 0.983 \log_{10}(K_{ow}) + 0.00028$ (equations in footnotes a-e from Sample *et al*., 1997)

[b] $K_d = f_{oc} \times K_{oc;}$ average $f_{oc} = 0.112$

[c] $C_w = C_s/K_d$

[d] $\log_{10} K_{bw} = \log_{10} K_{ow} - 0.6$

[e] $C_v = K_{bw} \times C_w$ (organic only)
Values for As, Cd, Cr, Cu, Pb, Hg, Ni, Se, and Zn based on regression analyses on literature derived soil-biota uptake data provided in Sample *et al*. (1998). Concentration factors for Ba and Fe taken from Beyer and Stafford (1993). An uptake factor of 0.5 was conservatively assumed for Sb, Be, Co, Tl, and V. Cr (VI) factor based on Cr soil-biota uptake data.

[f] $\log_{10}(K_{ow})$ Value is for Chlordane

C_s - Mean COPC concentration in sediment (mg/kg)
COPC - Chemical of Potential Concern
K_{ow} - Octanol/Water Partitioning Coefficient (Unitless)
K_{oc} - Water/Soil Organic Carbon Partitioning Coefficient (L/kg)
f_{oc} - Fraction of Organic Carbon in Soil (Unitless)
K_d - Soil/Water Partitioning Coefficient (L/kg Sediment)
C_w - Water Concentration (mg/L)
K_{bw} - Biota/Water Partitioning Coefficient (L/kg Organism)
C_v - Concentration in Worms (mg/kg - body weight wet)

TABLE 4-13
ESTIMATION OF COPC MAXIMUM CONCENTRATIONS IN EARTHWORM TISSUE
MURPHY WETLAND - SEASONALLY PONDED AREA
SOUTHWEST PROPERTIES WELLS G&H SUPERFUND SITE OU-2

Chemical of Potential Concern	C_s (mg/kg)	$\log_{10}(K_{ow})$	Source	$\log_{10}(K_{oc})$	K_d [b]	C_w [c]	K_{bw} [d]	C_v [e] (mg/kg)
Volatile Organics (VOCs)								
Acetone	0.49	-0.24	USEPA, 1995	-0.24	0.1	7.45E+00	1.45E-01	1.08
Carbon disulfide	0.02	1.94	ORNL, 2003	1.91	9.0	2.43E-03	2.19E+01	0.05
Methyl tert-butyl ether	0.12	0.94	ORNL, 2003	0.92	0.9	1.22E-01	2.19E+00	0.27
Semivolatile Organics (SVOCs)								
2-Methylphenol	0.15	3.86	USEPA, 1992	3.79	698	2.15E-04	1.82E+03	0.39
Acenaphthylene	0.67	4.07	USEPA, 1992	4.00	1123	5.97E-04	2.95E+03	1.76
Acetophenone	4.58	1.58	ORNL, 2003	1.55	4	1.14E+00	9.55E+00	10.92
Anthracene	0.57	4.45	USEPA, 1992	4.37	2654	2.14E-04	7.08E+03	1.52
Benzaldehyde	1.36	1.48	ORNL, 2003	1.46	3	4.24E-01	7.59E+00	3.22
Benzo(a)anthracene	1.97	5.61	USEPA, 1992	5.51	36655	5.37E-05	1.02E+05	5.49
Benzo(a)pyrene	2.12	5.98	USEPA, 1992	5.88	84691	2.51E-05	2.40E+05	6.02
Benzo(b)fluoranthene	1.92	6.57	USEPA, 1992	6.46	321965	5.96E-06	9.33E+05	5.56
Benzo(g,h,i)perylene	3.98	7.23	USEPA, 1992	7.11	1434128	2.77E-06	4.27E+06	11.84
Benzo(k)fluoranthene	1.98	6.84	USEPA, 1992	6.72	593223	3.33E-06	1.74E+06	5.79
Carbazole	0.40	3.72	ORNL, 2003	3.66	508	7.87E-04	1.32E+03	1.04
Chrysene	2.86	5.61	USEPA, 1992	5.51	36655	7.81E-05	1.02E+05	7.99
Dibenz(a,h)anthracene	1.30	5.97	USEPA, 1992	5.87	82796	1.57E-05	2.34E+05	3.68
Fluoranthene	2.71	5.33	USEPA, 1992	5.24	19449	1.39E-04	5.37E+04	7.49
Fluorene	1.80	4.18	USEPA, 1992	4.11	1440	1.25E-03	3.80E+03	4.75
Indeno(1,2,3-cd)pyrene	3.20	7.66	USEPA, 1992	7.53	3795579	8.43E-07	1.15E+07	9.68
Pentachlorophenol	0.80	5.12	ORNL, 2003	5.03	12091	6.62E-05	3.31E+04	2.19
Phenanthrene	1.07	4.46	USEPA, 1992	4.38	2714	3.93E-04	7.24E+03	2.85
Phenol	10.10	1.46	ORNL, 2003	1.44	3	3.31E+00	7.24E+00	23.97
Pyrene	3.02	5.18	USEPA, 1992	5.09	13850	2.18E-04	3.80E+04	8.30
Pesticides/PCBs								
4,4'-DDD	0.046	5.99	USEPA, 1992	5.89	86630	5.33E-07	2.45E+05	0.131
4,4'-DDE	0.008	5.69	USEPA, 1992	5.59	43931	1.74E-07	1.23E+05	0.021
4,4'-DDT	0.092	6.19	USEPA, 1992	6.09	136229	6.78E-07	3.89E+05	0.264
alpha-Chlordane	0.036	6.32	USEPA, 1992	6.21	182834	1.96E-07	5.25E+05	0.103
gamma-Chlordane	0.052	6.32	USEPA, 1995	6.21	182834	2.86E-07	5.25E+05	0.150
PCB 105	0.2450	6.94	Oberg, 2001	6.82	743906	3.29E-07	2.19E+06	0.7205
PCB 114	0.0096	6.95	Oberg, 2001	6.83	760936	1.26E-08	2.24E+06	0.0282
PCB 118	0.5630	7.12	Oberg, 2001	7.00	1118042	5.04E-07	3.31E+06	1.6674
PCB 123	0.0790	6.93	Oberg, 2001	6.81	727257	1.09E-07	2.14E+06	0.2322
PCB 126	0.0015	6.95	Oberg, 2001	6.83	760936	1.99E-09	2.24E+06	0.0045
PCB 156/157	0.0740	7.60	Oberg, 2001	7.47	3313584	2.23E-08	1.00E+07	0.2233
PCB 167	0.0167	7.50	Oberg, 2001	7.37	2642397	6.30E-09	7.94E+06	0.0501
PCB 170	0.0356	7.94	Oberg, 2001	7.81	7153491	4.98E-09	2.19E+07	0.1089
PCB 189	0.0019	8.00	Oberg, 2001	7.86	8194039	2.33E-10	2.51E+07	0.0058
PCB 193/180	0.0641	7.92	Oberg, 2001	7.79	6836881	9.38E-09	2.09E+07	0.1959
PCB 77	0.0061	6.63	Oberg, 2001	6.52	368798	1.65E-08	1.07E+06	0.0177
PCB 81	0.0019	6.43	Oberg, 2001	6.32	234524	7.91E-09	6.76E+05	0.0053
Aroclor 1254	51.90	6.50	ATSDR, 2000	6.39	274788	1.89E-04	7.94E+05	150
Aroclor 1260	185.81	6.80	ATSDR, 2000	6.68	541874	3.43E-04	1.58E+06	543
Inorganics								
Antimony	117	-	-	-	-	-	-	9.29
Arsenic	13.8	-	-	-	-	-	-	0.24
Barium	464	-	-	-	-	-	-	26.5
Beryllium	0.84	-	-	-	-	-	-	0.07
Cadmium	3.32	-	-	-	-	-	-	3.42
Chromium	18243	-	-	-	-	-	-	0.98
Chromium (VI)	57.5	-	-	-	-	-	-	4.57
Cobalt	11.2	-	-	-	-	-	-	0.16
Copper	127	-	-	-	-	-	-	10.1
Cyanide	1.94	-	-	-	-	-	-	0.12
Iron	27466	-	-	-	-	-	-	0.16
Lead	6035	-	-	-	-	-	-	143.6

TABLE 4-13
ESTIMATION OF COPC MAXIMUM CONCENTRATIONS IN EARTHWORM TISSUE
MURPHY WETLAND - SEASONALLY PONDED AREA
SOUTHWEST PROPERTIES WELLS G&H SUPERFUND SITE OU-2

Chemical of Potential Concern	C_s (mg/kg)	$\log_{10}(K_{ow})$	Source	$\log_{10}(K_{oc})$	K_d [b]	C_w [c]	K_{bw} [d]	C_v [e] (mg/kg)
Mercury	1.13	-	-	-	-	-	-	0.08
Nickel	37.0	-	-	-	-	-	-	2.45
Selenium	0.64	-	-	-	-	-	-	0.11
Thallium	0.19	-	-	-	-	-	-	0.01
Vanadium	60.6	-	-	-	-	-	-	4.81
Zinc	795	-	-	-	-	-	-	121

Notes:

[a] $\log_{10}(K_{oc}) = 0.983 \log_{10}(K_{ow}) + 0.00028$ (equations in footnotes a-e from Sample *et al* ., 1997)

[b] $K_d = f_{oc} \times K_{oc;}$ average $f_{oc} = 0.112$

[c] $C_w = C_s/K_d$

[d] $\log_{10} K_{bw} = \log_{10} K_{ow} - 0.6$

[e] $C_v = K_{bw} \times C_w$ (organic only)
Values for As, Cd, Cr, Cu, Pb, Hg, Ni, Se, and Zn based on regression analyses on literature derived soil-biota uptake data provided in Sample *et al* . (1998). Concentration factors for Ba and Fe taken from Beyer and Stafford (1993). An uptake factor of 0.5 was conservatively assumed for Sb, Be, Co, Tl, and V. Cr (VI) factor based on Cr soil-biota uptake data.

[f] $\log_{10}(K_{ow})$ Value is for Chlordane

C_s - Maximum or 95% UCL COPC concentration in sediment (mg/kg)
COPC - Chemical of Potential Concern
K_{ow} - Octanol/Water Partitioning Coefficient (Unitless)
K_{oc} - Water/Soil Organic Carbon Partitioning Coefficient (L/kg)
f_{oc} - Fraction of Organic Carbon in Soil (Unitless)
K_d - Soil/Water Partitioning Coefficient (L/kg Sediment)
C_w - Water Concentration (mg/L)
K_{bw} - Biota/Water Partitioning Coefficient (L/kg Organism)
C_v - Concentration in Worms (mg/kg - body weight wet)

TABLE 4-14
ESTIMATION OF COPC MEAN CONCENTRATIONS IN EARTHWORM TISSUE
MURPHY WETLAND - FORESTED/SCRUB-SHRUB AREA
SOUTHWEST PROPERTIES WELLS G&H SUPERFUND SITE OU-2

Chemical of Potential Concern	C_s (mg/kg)	$\log_{10}(K_{ow})$	Source	$\log_{10}(K_{oc})$ [a]	K_d [b]	C_w [c]	K_{bw} [d]	C_v [e] (mg/kg)
Pesticides/PCBs								
Aroclor 1254	2.45	6.5	ATSDR, 2000	6.39	90778.2	2.70E-05	7.94E+05	21.5
Aroclor 1260	1.24	6.8	ATSDR, 2000	6.68	179011.8	6.93E-06	1.58E+06	11.0
Inorganics								
Arsenic	12.0	-	-	-	-	-	-	0.22
Barium	46.0	-	-	-	-	-	-	2.63
Beryllium	0.24	-	-	-	-	-	-	0.02
Cadmium	0.70	-	-	-	-	-	-	0.99
Chromium	4983	-	-	-	-	-	-	1.07
Chromium (VI)	29.0	-	-	-	-	-	-	2.30
Cobalt	2.40	-	-	-	-	-	-	0.16
Copper	19.0	-	-	-	-	-	-	1.51
Cyanide	0.31	-	-	-	-	-	-	0.02
Iron	15000	-	-	-	-	-	-	0.16
Lead	741	-	-	-	-	-	-	26.4
Mercury	0.20	-	-	-	-	-	-	0.07
Nickel	8.4	-	-	-	-	-	-	3.61
Selenium	0.99	-	-	-	-	-	-	0.15
Thallium	0.07	-	-	-	-	-	-	0.01
Vanadium	11.0	-	-	-	-	-	-	0.87
Zinc	140	-	-	-	-	-	-	68.7

Notes:

[a] $\log_{10}(K_{oc}) = 0.983 \log_{10}(K_{ow}) + 0.00028$ (equations in footnotes a-e from Sample *et al* ., 1997)

[b] $K_d = f_{oc} \times K_{oc;}$ average $f_{oc} = 0.037$

[c] $C_w = C_s/K_d$

[d] $\log_{10} K_{bw} = \log_{10} K_{ow} - 0.6$

[e] $C_v = K_{bw} \times C_w$ (organics only)
Values for As, Cd, Cr, Cu, Pb, Hg, Ni, Se, and Zn based on regression analyses on literature derived soil-biota uptake data provided in Sample *et al* . (1998). Concentration factors for Ba and Fe taken from Beyer and Stafford (1993). An uptake factor of 0.5 was conservatively assumed for Sb, Be, Co, Tl, and V. Cr (VI) factor based on Cr soil-biota uptake data.

C_s - Mean COPC concentration in sediment (mg/kg)
COPC - Chemical of Potential Concern
K_{ow} - Octanol/Water Partitioning Coefficient (Unitless)
K_{oc} - Water/Soil Organic Carbon Partitioning Coefficient (L/kg)
f_{oc} - Fraction of Organic Carbon in Soil (Unitless)
K_d - Soil/Water Partitioning Coefficient (L/kg Sediment)
C_w - Water Concentration (mg/L)
K_{bw} - Biota/Water Partitioning Coefficient (L/kg Organism)
C_v - Concentration in Worms (mg/kg - body weight wet)

TABLE 4-15
ESTIMATION OF COPC MAXIMUM CONCENTRATIONS IN EARTHWORM TISSUE
MURPHY WETLAND - FORESTED/SCRUB-SHRUB AREA
SOUTHWEST PROPERTIES WELLS G&H SUPERFUND SITE OU-2

Chemical of Potential Concern	C_s (mg/kg)	$\log_{10}(K_{ow})$	Source	$\log_{10}(K_{oc})$ [a]	K_d [b]	C_w [c]	K_{bw} [d]	C_v [e] (mg/kg)
Pesticides/PCBs								
Aroclor 1254	15.00	6.5	ATSDR, 2000	6.39	9.08E+04	1.65E-04	7.94E+05	131.3
Aroclor 1260	7.90	6.8	ATSDR, 2000	6.68	1.79E+05	4.41E-05	1.58E+06	69.9
Inorganics								
Arsenic	12.0	-	-	-	-	-	-	0.22
Barium	46.0	-	-	-	-	-	-	2.63
Beryllium	0.24	-	-	-	-	-	-	0.02
Cadmium	0.70	-	-	-	-	-	-	0.99
Chromium	62500	-	-	-	-	-	-	0.91
Chromium (VI)	344	-	-	-	-	-	-	27.28
Cobalt	2.40	-	-	-	-	-	-	0.16
Copper	19.0	-	-	-	-	-	-	1.51
Cyanide	0.31	-	-	-	-	-	-	0.02
Iron	15000	-	-	-	-	-	-	0.16
Lead	3300	-	-	-	-	-	-	88.2
Mercury	0.20	-	-	-	-	-	-	0.07
Nickel	8.40	-	-	-	-	-	-	3.61
Selenium	0.99	-	-	-	-	-	-	0.15
Thallium	0.07	-	-	-	-	-	-	0.01
Vanadium	11.0	-	-	-	-	-	-	0.87
Zinc	140	-	-	-	-	-	-	68.7

Notes:

[a] $\log_{10}(K_{oc}) = 0.983 \log_{10}(K_{ow}) + 0.00028$ (equations in footnotes a-e from Sample *et al* ., 1997)

[b] $K_d = f_{oc} \times K_{oc;}$ average $f_{oc} = 0.037$

[c] $C_w = C_s/K_d$

[d] $\log_{10} K_{bw} = \log_{10} K_{ow} - 0.6$

[e] $C_v = K_{bw} \times C_w$ (organics only)

Values for As, Cd, Cr, Cu, Pb, Hg, Ni, Se, and Zn based on regression analyses on literature derived soil-biota uptake data provided in Sample *et al* . (1998). Concentration factors for Ba and Fe taken from Beyer and Stafford (1993). An uptake factor of 0.5 was conservatively assumed for Sb, Be, Co, Tl, and V. Cr (VI) factor based on Cr soil-biota uptake data.

C_s - Maximum or 95% UCL COPC concentration in sediment (mg/kg)
COPC - Chemical of Potential Concern
K_{ow} - Octanol/Water Partitioning Coefficient (Unitless)
K_{oc} - Water/Soil Organic Carbon Partitioning Coefficient (L/kg)
f_{oc} - Fraction of Organic Carbon in Soil (Unitless)
K_d - Soil/Water Partitioning Coefficient (L/kg Sediment)
C_w - Water Concentration (mg/L)
K_{bw} - Biota/Water Partitioning Coefficient (L/kg Organism)
C_v - Concentration in Worms (mg/kg - body weight wet)

TABLE 4-16
TRVS FOR SURFACE WATER COPCS – SEASONALLY PONDED AREA

MURPHY WETLAND – SOUTHWEST PROPERTIES
WELLS G&H SUPERFUND SITE OU-2

COC	Chronic TRV (ug/L)	Duration & Endpoint	Acute TRV (ug/L)	Duration & Endpoint	Reference
Aluminum	87	AWQC (CCC)	750	AWQC (CMC)	USEPA, 2002
Barium	4	Tier II SCV	110	Tier II SAV	Suter and Tsao, 1996
Cyanide	5.2	AWQC (CCC)	22	AWQC (CMC)	USEPA, 2002
Iron	1000	AWQC (CCC)	-	-	USEPA, 1996
Manganese	120	Tier II SCV	2,300	Tier II SAV	Suter and Tsao, 1996

Notes:

SCV - Secondary Chronic Value
SAV - Secondary Acute Value

CCC - Criteria Continuous Concentration represents highest concentration aquatic life can be exposed for extended time (4 days) without adverse effects.

CMC - Criteria Maximum Concentration represents highest concentration aquatic life can be exposed for short time (1 hour average) without adverse effects.

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TABLE 4-17
TRVs FOR SEDIMENT COPCs – SEASONALLY PONDED AREA

MURPHY WETLAND - SOUTHWEST PROPERTIES
WELLS G&H SUPERFUND SITE OU-2

COPC	SQC/SQB/ER-L LEL/TEL/SCV	ER-M/SEL/ PEL	Reference
VOCs (ug/kg)			
Acetone	38* (SCV)	-	Jones *et al*., 1997
Carbon Disulfide	3.7* (SCV)	-	Jones *et al*., 1997
Methyl tert-butyl Ether	-	-	-
SVOCs (ug/kg)			
2-Methylphenol	52.7* (SCV)	-	Jones *et al*., 1997
Acenaphthylene	-	-	-
Acetophenone	-	-	-
Anthracene	220 (LEL)	16,240* (SEL)	Persaud *et al*., 1993
Benzaldehyde	-	-	-
Benzo(a)anthracene	320 (LEL)	64,970* (SEL)	Persaud *et al*., 1993
Benzo(a)pyrene	430 (ER-L)	63,220* (SEL)	USEPA, 1996;Persaud *et al*., 1993
Benzo(b)fluoranthene	-	-	-
Benzo(g,h,i)perylene	170 (LEL)	14,050* (SEL)	Persaud *et al*., 1993
Benzo(k)fluroanthene	240 (LEL)	58,830* (SEL)	Persaud *et al*., 1993
Carbazole	-	-	-
Chrysene	340 (LEL)	20,190* (SEL)	Persaud *et al*., 1993
Dibenzo(a,h)anthracene	60 (LEL)	5,710* (SEL)	Persaud *et al*., 1993
Fluoranthene	12,731* (SQC)	-	USEPA, 1996
Fluorene	2,371* (SQB)	7,020* (SEL)	USEPA, 1996; Persaud *et al*., 1993
Indeno(1,2,3-cd)pyrene	200 (LEL)	14,050* (SEL)	Persaud *et al*., 1993
Pentachlorophenol	-	-	-
Phenanthrene	373* (SQC)	-	USEPA, 1996
Phenol	136* (SCV)	-	Jones *et al*., 1997
Pyrene	660 (ER-L)	37,310* (SEL)	USEPA, 1996; Persaud *et al*., 1993
Pesticides/PCBs (ug/kg)			
4,4-DDD	8 (LEL)	263* (SEL)	Persaud *et al*., 1993
4,4-DDE	5 (LEL)	834* (SEL)	Persaud *et al*., 1993
4,4-DDT	1.6 (ER-L)	3,117* (SEL)	USEPA, 1996; Persaud et al., 1993
alpha-Chlordane	7 (LEL)	263* (SEL)	Persaud *et al*., 1993
gamma-Chlordane	7 (LEL)	263* (SEL)	Persaud *et al*., 1993
Aroclor 1254	60 (LEL)	1,493* (SEL)	Persaud *et al*., 1993
Aroclor 1260	5 (LEL)	1,054* (SEL)	Persaud *et al*., 1993
Total PCBs	23 (ER-L)	-	USEPA, 1996
Inorganics (mg/kg)			
Antimony	-	-	-
Arsenic	8.2 (ER-L)	70 (ER-M)	USEPA, 1996; Long *et al*., 1995
Barium	-	-	-
Beryllium	-	-	-
Cadmium	1.2 (ER-L)	9.6 (ER-M)	USEPA, 1996; Long *et al*., 1995

TABLE 4-17
TRVs FOR SEDIMENT COPCs – SEASONALLY PONDED AREA

MURPHY WETLAND - SOUTHWEST PROPERTIES
WELLS G&H SUPERFUND SITE OU-2

COPC	SQC/SQB/ER-L LEL/TEL/SCV	ER-M/SEL/ PEL	Reference
Chromium	81 (ER-L)	370 (ER-M)	USEPA, 1996; Long *et al*., 1995
Chromium(Hexavalent)	-	-	-
Cobalt	-	-	-
Copper	34 (ER-L)	270 (ER-M)	USEPA, 1996; Long *et al*., 1995
Cyanide	-	-	-
Iron	20,000 (LEL)	40,000 (SEL)	Persaud et al., 1993
Lead	47 (ER-L)	218 (ER-M)	USEPA, 1996; Long *et al*., 1995
Mercury	0.15 (ER-L)	0.71 (ER-M)	USEPA, 1996; Long *et al*., 1995
Nickel	21 (ER-L)	51.6 (ER-M)	USEPA, 1996; Long *et al*., 1995
Selenium	-	-	-
Thallim	-	-	-
Vanadium	-	-	-
Zinc	150 (ER-L)	410 (ER-M)	USEPA, 1996; Long *et al*., 1995

* Benchmark calculated via equilibrium partitioning approach based on 4.39% total organic carbon (lowest concentration within sediment for seasonally ponded area of Murphy Wetland).

TABLE 4-18
TOXICITY REFERENCE VALUES FOR MUSKRAT AND SHREW
MURPHY WETLAND - SOUTHWEST PROPERTIES WELLS G&H SUPERFUND SITE OU-2

Constituent of Potential Concern [1]	Test Species	Body Weight (kg) [2]	Exposure Route and Duration Class	Duration	System	Test TRV mg/kg - d [5]	Test TRV Type	NOAEL [6]	Source [7]	Muskrat TRV (mg/kg-d) [8]	Shrew TRV (mg/kg-d) [8]
Volatile Organics											
Acetone	rat	0.35	oral in water (intermediate)	13 wk	reproductive	1700	NOAEL	1700	ATSDR, 1994a	1367	3736
Carbon Disulfide	rat	0.35	oral gavage (intermediate)	4 wk	body weight loss	88.2	NOAEL	88.2	ATSDR, 1996a	70.9	193.8
Methyl tert-butyl Ether (MTBE)	rat	0.35	oral in food (intermediate)	90 days	reproductive	1200	NOAEL	1200	ATSDR, 1996b	965	2640
Semivolatile Organics											
2-Methylphenol	-	-	-	-	-	-	-	-	-	-	-
Acenaphthylene [4]	mouse	0.03	oral in food (intermediate)	19-29 days	reproductive	133.3	NOAEL	133.3	ATSDR, 1995a	58.0	158.5
Acetophenone	-	-	-	-	-	-	-	-	-	-	-
Anthracene	mouse	0.03	oral gavage (intermediate)	13 wk	reproductive	1000	NOAEL	1000	ATSDR, 1995a	435	1189
Benzaldehyde	-	-	-	-	-	-	-	-	-	-	-
Benzo(a)anthracene [3]	mouse	0.03	oral in food (intermediate)	30-197 days	cancer	1.30	NOAEL	1.30	ATSDR, 1995a	0.57	1.5
Benzo(a)pyrene	mouse	0.03	oral in food (intermediate)	30-197 days	cancer	1.30	NOAEL	1.30	ATSDR, 1995a	0.57	1.5
Benzo(b)fluoranthene [3]	mouse	0.03	oral in food (intermediate)	30-197 days	cancer	1.30	NOAEL	1.30	ATSDR, 1995a	0.57	1.5
Benzo(g,h,i)perylene [4]	mouse	0.03	oral in food (intermediate)	19-29 days	reproductive	133.3	NOAEL	133.3	ATSDR, 1995a	58.0	158.5
Benzo(k)fluoranthene [3]	mouse	0.03	oral in food (intermediate)	30-197 days	cancer	1.30	NOAEL	1.30	ATSDR, 1995a	0.57	1.5
Carbazole [4]	mouse	0.03	oral in food (intermediate)	19-29 days	reproductive	133.3	NOAEL	133.3	ATSDR, 1995a	58.0	158.5
Chrysene [3]	mouse	0.03	oral in food (intermediate)	30-197 days	cancer	1.30	NOAEL	1.30	ATSDR, 1995a	0.57	1.5
Dibenz(a,h)anthracene [3]	mouse	0.03	oral in food (intermediate)	30-197 days	cancer	1.30	NOAEL	1.30	ATSDR, 1995a	0.57	1.5
Fluoranthene	mouse	0.03	oral gavage (intermediate)	13 wk	hepatic	125	NOAEL	125	ATSDR, 1995a	54.4	148.7
Fluorene	mouse	0.03	oral gavage (intermediate)	13 wk	hematological	125	NOAEL	125	ATSDR, 1995a	54.4	148.7
Indeno(1,2,3-cd)pyrene [3]	mouse	0.03	oral in food (intermediate)	30-197 days	cancer	1.30	NOAEL	1.30	ATSDR, 1995a	0.57	1.5
Pentachlorophenol	rat	0.35	oral in diet (chronic)	gestation, lactation	reproductive	0.24	NOAEL	0.24	Sample et al., 1996	0.19	0.53
Phenanthrene [4]	mouse	0.03	oral in food (intermediate)	19-29 days	reproductive	133.3	NOAEL	133.3	ATSDR, 1995a	58.0	158.5
Phenol	rat	0.35	oral in water (intermediate)	13 wk	reproductive	1694	NOAEL	1694	ATSDR, 1998	1360	3720
Pyrene [4]	mouse	0.03	oral in food (intermediate)	19-29 days	reproductive	133.3	NOAEL	133.3	ATSDR, 1995a	58.0	158.5
Pesticides/PCBs											
4,4'-DDD	rat	0.35	oral in food (chronic)	78 wk	cancer	85	LOAEL	9	ATSDR, 1994b	6.8	18.7
4,4'-DDE	mouse	0.03	oral in food (chronic)	78 wk	cancer	19	LOAEL	1.9	ATSDR, 1994b	0.83	2.3
4,4'-DDT	rat	0.35	oral in diet (chronic)	2 year	reproductive	0.80	NOAEL	0.80	Sample et al., 1996	0.64	1.8
alpha-Chlordane	mouse	0.03	oral in diet (chronic)	6 gen	reproductive	4.58	NOAEL	4.58	Sample et al., 1996	2.0	5.4
gamma-Chlordane	mouse	0.03	oral in diet (chronic)	6 gen	reproductive	4.58	NOAEL	4.58	Sample et al., 1996	2.0	5.4
Aroclor 1254	mouse	0.03	oral in diet (chronic)	12 months	reproductive	0.7	LOAEL	0.1	Sample et al., 1996	0.03	0.08
Aroclor-1260	rat	0.35	oral in food (chronic)	24 months	cancer	3.45	LOAEL	0.35	ATSDR, 2000a	0.28	0.76
Dioxin (PCB TEFs)	rat	0.35	oral in food (chronic)	3 gen	reproductive	0.000001	NOAEL	0.000001	Sample et al., 1996	0.0000008	0.0000022

TABLE 4-18
TOXICITY REFERENCE VALUES FOR MUSKRAT AND SHREW
MURPHY WETLAND - SOUTHWEST PROPERTIES WELLS G&H SUPERFUND SITE OU-2

Constituent of Potential Concern [1]	Test Species	Body Weight (kg) [2]	Exposure Route and Duration Class	Duration	System	Test TRV mg/kg - d [5]	Test TRV Type	NOAEL [6]	Source [7]	Muskrat TRV (mg/kg-d) [8]	Shrew TRV (mg/kg-d) [8]
Inorganics											
Antimony (Antimony potassium)	mouse	0.03	oral in water (chronic)	lifetime, >1 year	lifespan	1.25	LOAEL	0.125	Sample et al., 1996	0.05	0.15
Arsenic (Arsenite)	mouse	0.03	oral in water (chronic)	3 gen	reproductive	1.26	LOAEL	0.126	Sample et al., 1996	0.05	0.15
Barium (Barium chloride)	rat	0.435	oral in water (chronic)	16 months	growth	5.1	NOAEL	5.1	Sample et al., 1996	4.3	11.8
Beryllium (Beryllium sulfate)	rat	0.35	oral in water (chronic)	lifetime, >1 year	longevity	0.66	NOAEL	0.66	Sample et al., 1996	0.53	1.5
Cadmium (Cadmium chloride)	rat	0.30	oral gavage (chronic)	6 weeks	reproductive	1.0	NOAEL	1.0	Sample et al., 1996	0.78	2.1
Chromium (Chromium Chloride)	rat	0.35	oral in food (subchronic)	20 weeks	systemic	9	NOAEL	9	ATSDR, 2000b	7.2	19.8
Chromium VI (potassium dichromate)	rat	0.35	oral in water (chronic)	1 yr	growth	3.28	NOAEL	3.28	Sample, 1996	2.6	7.2
Cobalt	rat	0.35	oral in food (intermediate)	69 d	reproductive	5	NOAEL	5	ATSDR, 1992c	4.0	11.0
Copper (Copper sulfate)	mink	1.0	oral in diet (chronic)	357 d	reproductive	11.7	NOAEL	11.7	Sample et al., 1996	12.2	33.4
Cyanide (Potassim cyanide)	rat	0.3	oral in diet (chronic)	gestation, lactation	reproductive	68.7	NOAEL	68.7	Sample et al., 1996	51.9	141.9
Iron (Ferrous sulfate)	rat	0.35	oral (acute)	1 time	mortality	319	LD50	3.19	USEPA, 1984	2.6	7.0
Lead (Lead acetate)	rat	0.35	oral in diet (chronic)	3 gen	reproductive	8.0	NOAEL	8.0	Sample et al., 1996	6.4	17.6
Mercury (Mercuric sulfide)	mouse	0.03	oral in diet (chronic)	20 months	mortality, liver, kidney	13.2	NOAEL	13.2	Sample et al., 1996	5.7	15.7
Nickel (Nickel sulfate hexahydrate)	rat	0.35	oral in diet (chronic)	3 gen	reproductive	40	NOAEL	40	Sample et al., 1996	32.2	87.9
Selenium (Selanate)	rat	0.35	oral in water (chronic)	1 year	reproductive	0.2	NOAEL	0.2	Sample et al., 1996	0.16	0.44
Thallium (Thallium sulfate)	rat	0.37	oral in water (subchronic)	60 d	reproductive	0.74	LOAEL	0.074	Sample et al., 1996	0.06	0.16
Vanadium (Sodium metavanadate)	rat	0.26	oral intubation (chronic)	60 d +	reproductive	2.1	LOAEL	0.21	Sample et al., 1996	0.16	0.43
Zinc (Zinc oxide)	rat	0.35	oral in diet (chronic)	d 1-16 of gestation	reproductive	160	NOAEL	160	Sample et al., 1996	128.7	351.7

Notes:

d - day

wk - week

gen - generations

UF - Uncertainty Factor

COPC - Chemical of Potential Concern

TRV - Toxicity Reference Value

NOAEL - No Observed Adverse Effect Level

LOAEL - Lowest Observed Adverse Effect Level

1 COPC or COPC and analyte/compound used in toxicological testing

2 Body weight for mouse and rat based on USEPA (1985b *cited in* Sample *et al* ., 1996), other body weights are actual body weights of animals used in test

3 Lowest carcinogenic LOAEL from PAH toxicological data summarized in ATSDR, 1995b; test used benzo(a)pyrene. USEPA has classified benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, dibenz(a,h)anthracene, chrysene, and indeno(1,2,3-cd)pyrene as carcinogens (ATSDR, 1995b).

4 Lowest non-carcinogenic NOAEL from PAH toxicological data summarized in ATSDR (1995b); test used benzo(a)pyrene. USEPA has indicated that acenaphthylene, anthracene, benzo(g,h,i)perylene, fluoranthene, fluorene, phenanthrene and pyrene are not classifiable as carcinogens (ATSDR, 1995b). Carbazole was included in this group for the development of HQs.

5 TRVs for studies in which dose was administered five times per week were multiplied for a factor of 0.7.

6 LOAELs were divided by a UF of 10 to obtain NOAELs. The LD_{50} for iron was divided by 100 to obtain a NOAEL (10 for the LD_{50} to LOAEL conversion and 10 for the LOAEL to NOAEL conversion)

7 Documents cited are review documents (i.e., secondary sources). Citations for primary sources may be obtained from these documents.

8 Test NOAELs were adjusted for wildlife species body weight using the following equation: $NOAEL_{wildlife} = NOAEL_{test} * (BW_{test}/BW_{wildlife})^{0.25}$ (Sample *et al.* , 1996)

TABLE 4-19
TOXICITY REFERENCE VALUES FOR MALLARD
MURPHY WETLAND - SOUTHWEST PROPERTIES WELLS G&H SUPERFUND SITE OU-2

Constituent of Potential Concern [1]	Test Species	Exposure Route and Duration Class	Duration	System	Test TRV mg/kg - d 2	Test TRV Type	NOAEL [3]	Source 4	Wildlife TRV (mg/kg-d) 5
Volatile Organics									
Acetone	Japanese quail	oral in food (acute)	5 days	mortality	5200	LOAEL	52	Hill & Camardese,1986	52.0
Carbon Disulfide	-	-	-	-	-	-	-	-	-
Methyl tert-butyl Ether (MTBE)	-	-	-	-	-	-	-	-	-
Semivolatile Organics									
2-Methylphenol	-	-	-	-	-	-	-	-	-
Acenaphthylene	see LMW PAHs								
Acetophenone	-	-	-	-	-	-	-	-	-
Anthracene	see LMW PAHs								
Benzaldehyde	-	-	-	-	-	-	-	-	-
Benzo(a)anthracene	-	-	-	-	-	-	-	-	-
Benzo(a)pyrene	-	-	-	-	-	-	-	-	-
Benzo(b)fluoranthene	-	-	-	-	-	-	-	-	-
Benzo(g,h,i)perylene	-	-	-	-	-	-	-	-	-
Benzo(k)fluoranthene	-	-	-	-	-	-	-	-	-
Carbazole	-	-	-	-	-	-	-	-	-
Chrysene	-	-	-	-	-	-	-	-	-
Dibenz(a,h)anthracene	-	-	-	-	-	-	-	-	-
Fluoranthene	-	-	-	-	-	-	-	-	-
Fluorene	see LMW PAHs	-	-	-	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	-	-	-	-	-	-	-	-	-
Pentachlorophenol	Japanese quail	oral in food (acute)	5 days	mortality	403	LOAEL	4.03	Hill & Camardese,1986	4.0
Phenanthrene	see LMW PAHs	-	-	-	-	-	-	-	-
Pyrene	-	-	-	-	-	-	-	-	-
Low Molecular Weight PAHs	mallard	oral	7 months	hepatic function	400.0	LOAEL	40.0	Patton & Dieter, 1980	40.0
Pesticides/PCBs									
4,4'-DDD	-	-	-	-	-	-	-	-	-
4,4'-DDE	Japanese quail	oral in food (acute)	5 days	mortality	85	LOAEL	0.85	ATSDR, 1994b	0.85
4,4'-DDT	brown pelican	oral in diet (chronic)	5 yr	reproductive	0.03	LOAEL	0.003	Sample et al., 1996	0.003
alpha-Chlordane (Chlordane)	red-winged blackbird	oral in diet (chronic)	84 d	mortality	2.14	NOAEL	2.14	Sample et al., 1996	2.1
gamma-Chlordane (Chlordane)	red-winged blackbird	oral in diet (chronic)	84 d	mortality	2.14	NOAEL	2.14	Sample et al., 1996	2.1
Aroclor-1254	mallard	oral in diet(chronic)	68 d	reproductive	1.5	NOAEL	1.5	NRC, 2001	1.5
Aroclor-1260	Japanese quail	oral in food (acute)	5 days	mortality	216	LOAEL	2.16	Hill & Camardese,1986	2.2
Dioxins (PCB TEFs)	ring-necked pheasant	oral in diet (chronic)	10 wk	reproductive	0.000014	NOAEL	0.000014	Sample et al., 1996	0.000014

TABLE 4-19
TOXICITY REFERENCE VALUES FOR MALLARD
MURPHY WETLAND - SOUTHWEST PROPERTIES WELLS G&H SUPERFUND SITE OU-2

Constituent of Potential Concern [1]	Test Species	Exposure Route and Duration Class	Duration	System	Test TRV mg/kg - d 2	Test TRV Type	NOAEL [3]	Source 4	Wildlife TRV (mg/kg-d) 5
Inorganics									
Antimony	-	-	-	-	-	-	-	-	-
Arsenic (Sodium arsenite)	mallard	oral in diet (chronic)	128 d	mortality	5.14	NOAEL	5.14	Sample et al., 1996	5.1
Barium (Barium hydroxide)	1-day old chickens	oral in diet (subchronic)	4 wk	mortality	208	NOAEL	208	Sample et al., 1996	208
Beryllium (Beryllium sulfate)	-	-	-	-	-	-	-	-	-
Cadmium (Cadmium chloride)	mallard	oral in diet (chronic)	90 d	reproductive	1.5	NOAEL	1.5	Sample et al., 1996	1.5
Chromium (3+ as Chromic potassium sulfate)	black duck	oral in diet (chronic)	10 months	reproductive	1.0	NOAEL	1.0	Sample et al., 1996	1.0
Chromium VI (form unknown)	chickens	oral in diet (subchronic)	32 d	growth	7.1	NOAEL	7.1	Eisler, 2000	7.1
Cobalt	-	-	-	-	-	-	-	-	-
Copper (Copper oxide)	1-day old chickens	oral in diet (chronic)	10 wk	mortality	47.0	NOAEL	47.0	Sample et al., 1996	47.0
Cyanide (Sodium cyanide)	American kestrel	oral in diet (acute)	1 time	mortality	4.0	LD50	0.04	Sample et al., 1996	0.04
Iron (Ferrous sulfate)	-	-	-	-	-	-	-	-	-
Lead (Lead acetate)	Japanese quail	oral in diet (chronic)	12 wk	reproductive	1.1	NOAEL	1.1	Sample et al., 1996	1.1
Mercury (Mercuric chloride)	Japanese quail	oral in diet (chronic)	1 year	reproductive	0.45	NOAEL	0.45	Sample et al., 1996	0.45
Nickel (Nickel sulfate)	mallard	oral in diet (chronic)	90 d	mortality	77.4	NOAEL	77.4	Sample et al., 1996	77.4
Selenium (Selanomethionine)	mallard	oral in diet (chronic)	100 d	reproductive	0.4	NOAEL	0.4	Sample et al., 1996	0.40
Thallium	starling	oral in diet (acute)	1 time	mortality	35	LD50	0.35	Sample et al., 1996	0.35
Vanadium (Vanadyl sulfate)	mallard	oral in diet (chronic)	12 wk	mortality	11.4	NOAEL	11.4	Sample et al., 1996	11.4
Zinc (Zinc sulfate)	white leg-horn	oral in diet (chronic)	44 wk	reproductive	15	NOAEL	15	Sample et al., 1996	14.5

Notes

d - day
wk - week
gen - generations
UF - Uncertainty Factor
COPC - Chemical of Potential Concern
TRV - Toxicity Reference Value
NOAEL - No Observed Adverse Effect Level
LOAEL - Lowest Observed Adverse Effect Level

1 COPC or COPC and analyte/compound used in toxicological testing

2 TRVs for studies in which dose was administered five times per week were multiplied for a factor of 0.7.

3 LOAELs were divided by a UF of 10 to obtain NOAELs. LD_{50} and acute LOAEL study TRVs were divided by 100 to obtain a NOAEL (10 for the LD_{50} to LOAEL conversion or acute to chronic conversion and 10 for the LOAEL to NOAEL conversion)

4 Documents cited are generally review documents (i.e., secondary sources). Citations for primary sources may be obtained from these documents.

5 Test NOAELs from test species were not adjusted for body weight of mallard (Sample *et al* ., 1996).

TABLE 4-20
TOXICITY EQUIVALENCY FACTORS (TEFs) FOR PCB CONGENERS

MURPHY WETLAND - SOUTHWEST PROPERTIES
WELLS G&H SUPERFUND SITE OU-2

PCB Congener	Mammal TEF	Bird TEF
PCB 77	0.0001	0.05
PCB 81	0.0001	0.1
PCB 105	0.0001	0.0001
PCB 114	0.0005	0.0001
PCB 118	0.0001	0.00001
PCB 123	0.0001	0.00001
PCB 126	0.1	0.1
PCB 156/157	0.0005	0.0001
PCB 167	0.00001	0.00001
PCB 170	-	-
PCB 189	0.0001	0.00001
PCB 193/180	-	-

Note:

Mammal and Bird TEFs from Van den Berg, et al., 1998

TABLE 4-21
SURFACE WATER COPC RISK SUMMARY

MURPHY WETLAND - SEASONALLY PONDED AREA
SOUTHWEST PROPERTIES WELLS G+H SUPERFUND SITE OU-2

COPC	Ecological Benchmarks (ug/L)		Reference Wetland Concentration (ug/L)		Murphy Wetland Concentrations (b)		Reference Wetland Chronic HQs		Reference Wetland Acute HQs		Murphy Wetland Chronic HQs		Murphy Wetland Acute HQs	
	Chronic (a)	Acute (a)	Mean	Maximum	Mean	Maximum	Mean	Maximum	Mean	Maximum	Mean	Maximum	Mean	Maximum
Aluminum	87	750	567	3809	125	244	7.E+00	4.4E+01	8.E-01	5.E+00	1.E+00	3.E+00	2.E-01	3.E-01
Barium	3.9	110	32	50	60	85	8.E+00	1.3E+01	3.E-01	5.E-01	1.5E+01	2.2E+01	5.E-01	8.E-01
Cyanide	5.2	22	ND	ND	5.3	9	0.E+00	0.E+00	0.E+00	0.E+00	1.E+00	2.E+00	2.E-01	4.E-01
Iron	1000	-	3940	11772	1416	2770	4.E+00	1.2E+01	-	-	1.E+00	3.E+00	-	-
Manganese	80	2300	650	1396	275	545	8.E+00	1.7E+01	3.E-01	6.E-01	3.E+00	7.E+00	1.E-01	2.E-01
Hazard Index							2.7E+01	8.6E+01	1.E+00	6.E+00	2.3E+01	3.6E+01	1.E+00	2.E+00

Notes: a: Ecological benchmarks from Table 4-16.
b: Concentrations of inorganic COPCs represent total recoverable concentrations detected in unfiltered samples.

Highlighted HQ values represent HQs of 1.0 or greater.

TABLE 4-22
SEDIMENT COPC RISK SUMMARY

MURPHY WETLAND - SEASONALLY PONDED AREA
SOUTHWEST PROPERTIES WELLS G+H SUPERFUND SITE OU-2

COPC	Ecological Benchmarks (mg/kg)		Reference Wetland Concentration (mg/kg)		Murphy Wetland Detected Concentration (mg/kg)		Reference Wetland Hazard Quotients for SQC/ER-L/LEL		Murphy Wetland Hazard Quotients for SQC/ER-L/LEL		% Samples >	Reference Wetland Hazard Quotients for ER-M/SEL		Murphy Wetland Hazard Quotients for ER-M/SEL		% Samples >
	SQC/ER-L/LEL	ER-M/SEL	Mean	Max./95% UCL	Mean	Max./95% UCL	Mean	Max./95% UCL	Mean	Max./95% UCL	SQC/ER-L/LEL	Mean	Max./95% UCL	Mean	Max./95% UCL	ER-M/SEL
VOCs																
Acetone	0.038*	-	ND	ND	0.485	0.485	0.E+00	0.E+00	1.3E+01	1.3E+01	1/1 = 100%	0.E+00	0.E+00	-	-	-
Carbon Disulfide	0.0037*	-	ND	ND	0.017	0.017	0.E+00	0.E+00	5.E+00	5.E+00	1/1 = 100%	0.E+00	0.E+00	-	-	-
Methyl tert-butyl ether	-	-	ND	ND	0.062	0.115	0.E+00	0.E+00	-	-	-	0.E+00	0.E+00	-	-	-
Hazard Index							0.E+00	0.E+00	1.7E+01	1.7E+01		0.E+00	0.E+00	-	-	
SVOCs																
2-Methylphenol	0.057*	-	ND	ND	0.07	0.15	0.E+00	0.E+00	1.E+00	3.E+00	1/3 = 33%	-	-	-	-	-
Acenaphthylene	-	-	0.24	0.66	0.34	0.67	-	-	-	-	-	-	-	-	-	-
Acetophenone	-	-	ND	ND	1.63	4.58	-	-	-	-	-	-	-	-	-	-
Anthracene	0.22	16.2*	0.44	1.15	0.43	0.57	2.E+00	5.E+00	2.E+00	3.E+00	7/8 = 88%	9.E+00	3.E+00	3.E-02	7.E-02	0/8 = 0%
Benzaldehyde	-	-	ND	ND	0.46	1.36	-	-	-	-	-	-	-	-	-	-
Benzo(a)anthracene	0.32	65*	1.36	3.81	1.23	1.97	4.E+00	1.2E+01	4.E+00	6.E+00	9/9 = 100%	2.E-02	6.E-02	2.E-02	3.E-02	0/9 = 0%
Benzo(a)pyrene	0.43	63.2*	1.23	3.18	1.31	2.12	3.E+00	7.E+00	3.E+00	5.E+00	7/9 = 78%	2.E-02	5.E-02	2.E-02	3.E-02	0/9 = 0%
Benzo(b)fluoranthene	-	-	2.19	6.04	1.17	1.92	-	-	-	-	-	-	-	-	-	-
Benzo(g,h,i)perylene	0.17	14*	0.38	0.63	1.63	3.98	2.E+00	4.E+00	9.6E+00	2.3E+01	8/9 = 89%	3.E-02	5.E-02	1.E-01	3.E-01	0/9 = 0%
Benzo(k)fluoranthene	0.24	58.8*	2.02	9.6	1.52	1.98	8.E+00	4.0E+01	6.E+00	8.E+00	8/9 = 89%	3.E-02	2.E-01	3.E-02	3.E-02	0/9 = 0%
Carbazole	-	-	0.32	0.35	0.20	0.40	-	-	-	-	-	-	-	-	-	-
Chrysene	0.34	20.2*	1.61	4.3	1.36	2.86	5.E+00	1.3E+01	4.E+00	8.E+00	9/9 = 100%	8.E-02	2.E-01	7.E-02	1.E-01	0/9 = 0%
Dibenz(a,h)anthracene	0.06	5.7*	0.23	0.35	0.43	1.30	4.E+00	6.E+00	7.E+00	2.2E+01	7/8 = 88%	4.E-02	6.E-02	8.E-02	2.E-01	0/8 = 0%
Fluoranthene	12.73*	-	3.29	15	1.75	2.71	3.E-01	1.E+00	1.E-01	2.E-01	0/12 = 0%	-	-	-	-	-
Fluorene	2.37*	7.0*	0.57	1.36	0.49	1.80	2.E-01	6.E-01	2.E-01	8.E-01	0/11 = 0%	8.E-02	2.E-01	7.E-02	3.E-01	0/11 = 0%
Indeno(1,2,3-cd)pyrene	0.20	14*	0.52	1.7	1.37	3.20	3.E+00	9.E+00	7.E+00	1.6E+01	8/9 = 89%	4.E-02	1.E-01	1.E-01	2.E-01	0/9 = 0%
Pentachlorophenol	-	-	ND	ND	0.23	0.80	-	-	-	-	-	-	-	-	-	-
Phenanthrene	0.37*	-	2.41	11.7	0.73	1.07	7.E+00	3.2E+01	2.E+00	3.E+00	4/5 = 80%	-	-	-	-	-
Phenol	0.14*	-	ND	ND	2.13	10.10	0.E+00	0.E+00	1.5E+01	7.2E+01	4/5 = 80%	-	-	-	-	-
Pyrene	0.66	37.3*	2.58	7.54	1.86	3.02	4.E+00	1.1E+01	3.E+00	5.E+00	8/11 = 73%	7.E-02	2.E-01	5.E-02	8.E-02	0/11 = 0%
Hazard Index							4.2E+01	1.4E+02	6.4E+01	1.7E+02		1.E+01	5.E+00	6.E-01	1.E+00	
Pesticides/PCBs																
4,4'-DDD	0.008	0.26*	0.095	0.39	0.026	0.046	1.2E+01	4.9E+01	3.E+00	6.E+00	2/3 = 67%	4.E-01	2.E+00	1.E-01	2.E-01	0/3 = 0%
4,4'-DDE	0.005	0.83*	0.013	0.023	0.005	0.008	3.E+00	5.E+00	1.E+00	2.E+00	1/3 = 33%	2.E-02	3.E-02	7.E-03	9.E-03	0/3 = 0%
4,4'-DDT	0.002	3.12*	0.034	0.13	0.056	0.092	2.1E+01	8.1E+01	3.5E+01	5.8E+01	3/3 = 100%	1.E-02	4.E-02	2.E-02	3.E-02	0/3 = 0%
alpha-Chlordane	0.007	0.26*	0.0018	0.0053	0.021	0.036	3.E-01	8.E-01	3.E+00	5.E+00	3/3 = 100%	7.E-03	2.E-02	8.E-02	1.E-01	0/3 = 0%
gamma-Chlordane	0.007	0.26*	0.0021	0.0036	0.039	0.052	3.E-01	5.E-01	6.E+00	7.E+00	3/3 = 100%	8.E-03	1.E-02	1.E-01	2.E-01	0/3 = 0%
Aroclor 1254	0.06	1.49*	ND	ND	23.0	51.9	0.E+00	0.E+00	3.8E+02	8.7E+02	25/29 = 86%	0.E+00	0.E+00	1.5E+01	3.5E+01	22/29 = 76%
Aroclor 1260	0.005	1.05*	0.049	0.181	36.5	185.8	1.E+01	3.6E+01	7.3E+03	3.7E+04	15/15 = 100%	5.E-02	2.E-01	3.5E+01	1.8E+02	8/15 = 53%
Hazard Index							4.6E+01	1.7E+02	7.7E+03	3.8E+04		5.E-01	2.E+00	5.1E+01	2.1E+02	
Inorganics																
Antimony	2	25	0.75	1.05	24.6	117	4.E-01	5.E-01	1.2E+01	5.9E+01	2/5 = 40%	3.E-02	4.E-02	1.E+00	5.E+00	1/5 = 20%
Arsenic	8.2	70	21	33	9.5	13.8	3.E+00	4.E+00	1.E+00	2.E+00	2/6 = 33%	3.E-01	5.E-01	1.E-01	2.E-01	0/6 = 0%
Barium	-	-	48	72	319	464	-	-	-	-	-	-	-	-	-	-
Beryllium	-	-	0.66	1.03	0.57	0.84	-	-	-	-	-	-	-	-	-	-
Cadmium	1.2	9.6	1.3	2.2	2.3	3.3	1.E+00	2.E+00	2.E+00	3.E+00	4/7 = 57%	1.E-01	2.E-01	2.E-01	3.E-01	0/7 = 0%
Chromium	81	370	129	410	5744	18243	2.E+00	5.E+00	7.1E+01	2.3E+02	44/46 = 96%	3.E-01	1.E+00	1.6E+01	4.9E+01	33/46 = 72%
Chromium (VI)	-	-	-	-	29	58	-	-	-	-	-	-	-	-	-	-
Cobalt	-	-	8.4	12.5	9.6	11.2	-	-	-	-	-	-	-	-	-	-
Copper	34	270	57	93	81	127	2.E+00	3.E+00	2.E+00	4.E+00	5/5 = 100%	2.E-01	3.E-01	3.E-01	5.E-01	0/5 = 0%
Cyanide	-	-	ND	ND	1.04	1.94	-	-	-	-	-	-	-	-	-	-
Iron	20000	40000	15518	22525	21960	27466	8.E-01	1.E+00	1.E+00	1.E+00	3/5 = 60%	4.E-01	6.E-01	5.E-01	7.E-01	0/5 = 0%
Lead	47	218	332	524	2774	6035	7.E+00	1.1E+01	5.9E+01	1.3E+02	44/44 = 100%	2.E+00	2.E+00	1.3E+01	2.8E+01	34/44 = 77%
Mercury	0.15	0.7	0.28	0.71	0.38	1.13	2.E+00	5.E+00	3.E+00	8.E+00	3/5 = 60%	4.E-01	1.E+00	5.E-01	2.E+00	1/5 = 20%
Nickel	21	52	19	27	30	37	9.E-01	1.E+00	1.E+00	2.E+00	5/5 = 100%	4.E-01	5.E-01	6.E-01	7.E-01	0/5 = 0%
Selenium	-	-	0.76	2.1	0.48	0.64	-	-	-	-	-	-	-	-	-	-
Thallium	-	-	ND	ND	0.15	0.19	-	-	-	-	-	-	-	-	-	-
Vanadium	-	-	56	99	45	61	-	-	-	-	-	-	-	-	-	-
Zinc	150	410	155	232	577	795	1.E+00	2.E+00	4.E+00	5.E+00	5/5 = 100%	4.E-01	6.E-01	1.E+00	2.E+00	4/5 = 80%
Hazard Index							1.9E+01	3.4E+01	1.6E+02	4.4E+02		4.E+00	7.E+00	3.3E+01	8.8E+01	

Notes: * Benchmark presented is based on 4.39% total organic carbon in sediment (lowest concentration within seasonally ponded area of Murphy Wetland). Benchmark adjusted for sediment samples with higher detected total organic carbon (only for MR-12SS).

Highlighted HQ values represent HQs of 1.0 or greater.

TABLE 4-23
MUSKRAT RISK
MURPHY WETLAND - SEASONALLY PONDED AREA
SOUTHWEST PROPERTIES WELLS G+H SUPERFUND SITE OU-2

COPC	NOAEL TRV (mg/kg-BW/day)	Reference Wetland Mean Total Dose (mg/kg-BW/day)	Reference Wetland Maximum Total Dose (mg/kg-BW/day)	Murphy Wetland Mean Total Dose (mg/kg-BW/day)	Murphy Wetland Maximum Total Dose (mg/kg-BW/day)	Reference Wetland Mean NOAEL HQ	Reference Wetland Maximum NOAEL HQ	Murphy Wetland Mean NOAEL HQ	Murphy Wetland Maximum NOAEL HQ
VOCs									
Acetone	1367	3.32E-04	-	1.68E+00	1.70E+00	2.E-07	-	1.E-03	1.E-03
Carbon disulfide	70.9	0.00E+00	-	5.66E-03	6.55E-03	0.E+00	-	8.E-05	9.E-05
Methyl tert-butyl ether	965	0.00E+00	-	5.01E-02	5.29E-01	0.E+00	-	5.E-05	5.E-04
Hazard Index						2.E-07	-	1.E-03	2.E-03
SVOCs									
2-Methylphenol	-	0.00E+00	-	8.56E-03	1.78E-02	-	-	-	-
Acenaphthylene	58.0	8.21E-04	-	4.09E-02	8.03E-02	1.E-05	-	7.E-04	1.E-03
Acetophenone	-	0.00E+00	-	1.78E-01	4.99E-01	-	-	-	-
Anthracene	435	1.28E-03	-	5.24E-02	6.92E-02	3.E-06	-	1.E-04	2.E-04
Benzaldehyde	-	0.00E+00	-	5.01E-02	1.47E-01	-	-	-	-
Benzo(a)anthracene	0.57	3.44E-03	-	1.57E-01	2.50E-01	6.E-03	-	3.E-01	4.E-01
Benzo(a)pyrene	0.57	1.02E-01	-	2.73E-01	4.43E-01	2.E-01	-	5.E-01	8.E-01
Benzo(b)fluoranthene	0.57	8.92E-02	-	1.97E-01	3.25E-01	2.E-01	-	3.E-01	6.E-01
Benzo(g,h,i)perylene	58.0	1.13E-03	-	2.21E-01	5.39E-01	2.E-05	-	4.E-03	9.E-03
Benzo(k)fluoranthene	0.57	2.08E-01	-	3.66E-01	4.76E-01	4.E-01	-	6.E-01	8.E-01
Carbazole	58.0	7.56E-04	-	2.37E-02	4.73E-02	1.E-05	-	4.E-04	8.E-04
Chrysene	0.57	9.85E-02	-	2.50E-01	5.70E-01	2.E-01	-	4.E-01	1.E+00
Dibenz(a,h)anthracene	0.57	8.01E-04	-	5.56E-02	1.68E-01	1.E-03	-	1.E-01	3.E-01
Fluoranthene	54.4	8.63E-02	-	2.63E-01	4.06E-01	2.E-03	-	5.E-03	7.E-03
Fluorene	54.4	1.58E-03	-	5.91E-02	2.17E-01	3.E-05	-	1.E-03	4.E-03
Indeno(1,2,3-cd)pyrene	0.57	1.11E-01	-	4.68E-01	1.09E+00	2.E-01	-	8.E-01	2.E+00
Pentachlorophenol	0.19	0.00E+00	-	2.86E-02	9.99E-02	0.E+00	-	2.E-01	5.E-01
Phenanthrene	58.0	3.32E-01	-	1.92E-01	2.79E-01	6.E-03	-	3.E-03	5.E-03
Phenol	1360	0.00E+00	-	2.31E-01	1.10E+00	0.E+00	-	2.E-04	8.E-04
Pyrene	58.0	8.57E-02	-	2.91E-01	4.73E-01	1.E-03	-	5.E-03	8.E-03
Hazard Index						1.E+00	-	3.E+00	6.E+00
Pesticides/PCBs									
4,4'-DDD	6.8	2.71E-03	-	4.00E-03	7.16E-03	4.E-04	-	6.E-04	1.E-03
4,4'-DDE	0.8	4.48E-04	-	8.08E-04	1.14E-03	5.E-04	-	1.E-03	1.E-03
4,4'-DDT	0.6	2.86E-03	-	1.19E-02	1.96E-02	4.E-03	-	2.E-02	3.E-02
alpha-Chlordanef	2.0	1.08E-04	-	3.86E-03	6.51E-03	5.E-05	-	2.E-03	3.E-03
gamma-Chlordanef	2.0	1.16E-04	-	6.88E-03	9.35E-03	6.E-05	-	3.E-03	5.E-03
PCB 105	0.00010	-	-	8.40E-07	3.29E-06	-	-	-	-
PCB 114	0.00050	-	-	1.80E-07	6.43E-07	-	-	-	-
PCB 118	0.00010	-	-	2.03E-06	7.60E-06	-	-	-	-
PCB 123	0.00010	-	-	2.32E-07	1.06E-06	-	-	-	-
PCB 126	0.10000	-	-	7.83E-06	2.03E-05	-	-	-	-
PCB 156/157	0.00050	-	-	1.48E-06	5.09E-06	-	-	-	-
PCB 167	0.00001	-	-	1.04E-08	2.28E-08	-	-	-	-
PCB 170	-	-	-	-	-	-	-	-	-
PCB 189	0.00010	-	-	1.57E-08	2.66E-08	-	-	-	-
PCB 193/180	-	-	-	-	-	-	-	-	-
PCB 77	0.00010	-	-	4.10E-08	8.08E-08	-	-	-	-
PCB 81	0.00010	-	-	6.20E-09	2.44E-08	-	-	-	-

TABLE 4-23
MUSKRAT RISK
MURPHY WETLAND - SEASONALLY PONDED AREA
SOUTHWEST PROPERTIES WELLS G+H SUPERFUND SITE OU-2

COPC	NOAEL TRV (mg/kg-BW/day)	Reference Wetland Mean Total Dose (mg/kg-BW/day)	Reference Wetland Maximum Total Dose (mg/kg-BW/day)	Murphy Wetland Mean Total Dose (mg/kg-BW/day)	Murphy Wetland Maximum Total Dose (mg/kg-BW/day)	Reference Wetland Mean NOAEL HQ	Reference Wetland Maximum NOAEL HQ	Murphy Wetland Mean NOAEL HQ	Murphy Wetland Maximum NOAEL HQ
Total TEFs for PCBs	0.0000008	-	-	1.27E-05	3.81E-05	-	-	1.6E+01	4.8E+01
Aroclor 1254	0.03	1.62E-04	-	3.06E+00	6.89E+00	5.E-03	-	1.0E+02	2.3E+02
Aroclor 1260	0.28	1.85E-03	-	6.03E+00	3.07E+01	7.E-03	-	2.2E+01	1.1E+02
Hazard Index						2.E-02	-	1.4E+02	3.9E+02
Inorganics									
Antimony	0.05	3.25E-03	-	1.45E-01	6.89E-01	7.E-02	-	3.E+00	1.4E+01
Arsenic	0.05	5.76E-01	9.08E-01	2.72E-01	3.95E-01	1.2E+01	1.8E+01	5.E+00	8.E+00
Barium	4.30	2.93E+00	-	1.70E+01	2.47E+01	7.E-01	-	4.E+00	6.E+00
Beryllium	0.5	1.67E-03	-	3.43E-03	4.97E-03	3.E-03	-	6.E-03	9.E-03
Cadmium	0.78	7.57E-02	-	2.38E-01	3.37E-01	1.E-01	-	3.E-01	4.E-01
Chromium	7.20	1.52E+00	4.82E+00	6.79E+01	2.15E+02	2.E-01	7.E-01	9.E+00	3.0E+01
Chromium (VI)	2.6	-	-	4.48E-01	8.91E-01	-	-	2.E-01	3.E-01
Cobalt	4.0	4.06E-01	-	4.53E-01	5.24E-01	1.E-01	-	1.E-01	1.E-01
Copper	12.2	2.18E+00	3.23E+00	2.50E+00	3.93E+00	2.E-01	3.E-01	2.E-01	3.E-01
Cyanide	51.9	7.76E-03	-	5.80E-03	1.07E-02	1.E-04	-	1.E-04	2.E-04
Iron	2.6	6.85E+02	-	9.57E+02	1.20E+03	2.6E+02	-	3.7E+02	4.6E+02
Lead	6.4	1.60E+01	2.52E+01	1.35E+02	2.92E+02	3.E+00	4.E+00	2.1E+01	4.6E+01
Mercury	5.7	5.75E-03	1.42E-02	1.07E-02	2.62E-02	1.E-03	2.E-03	2.E-03	5.E-03
Nickel	32.2	2.95E-01	-	5.79E-01	6.75E-01	9.E-03	-	2.E-02	2.E-02
Selenium	0.16	3.94E-02	-	2.52E-02	3.28E-02	2.E-01	-	2.E-01	2.E-01
Thallium	0.06	3.11E-03	-	1.00E-03	1.09E-03	5.E-02	-	2.E-02	2.E-02
Vanadium	0.16	1.11E+00	-	1.04E+00	1.41E+00	7.E+00	-	6.E+00	9.E+00
Zinc	129	3.92E+00	-	9.98E+01	1.36E+02	3.E-02	-	8.E-01	1.E+00
Hazard Index						2.9E+02	2.3E+01	4.2E+02	5.7E+02

NOTES:
NOAEL: No Observable Adverse Effect Level
TRV: Toxicity Reference Value
HQ: Hazard Quotient - Highlighted HQ values represent HQs of 1.0 or greater

PCB congeners TRV represents TEF (Table 4-20)
PCB congeners mean and maximum exposure doses adjusted by multiplying by TEF

TABLE 4-24
MALLARD RISK
MURPHY WETLAND - SEASONALLY PONDED AREA
SOUTHWEST PROPERTIES WELLS G+H SUPERFUND SITE OU-2

Contaminant of Concern	NOAEL TRV (mg/kg-BW/day)	Reference Wetland Mean Total Dose (mg/kg-BW/day)	Reference Wetland Maximum Total Dose (mg/kg-BW/day)	Murphy Wetland Mean Total Dose (mg/kg-BW/day)	Murphy Wetland Maximum Total Dose (mg/kg-BW/day)	Reference Wetland Mean NOAEL HQ	Reference Wetland Maximum NOAEL HQ	Murphy Wetland Mean NOAEL HQ	Murphy Wetland Maximum NOAEL HQ
VOCs									
Acetone	52	2.36E-04	3.84E-04	1.62E-02	1.87E-02	5.E-06	7.E-06	3.E-04	4.E-04
Carbon disulfide	-	0.00E+00	0.00E+00	3.02E-04	3.51E-04	-	-	-	-
Methyl tert-butyl ether	-	0.00E+00	0.00E+00	1.18E-03	4.14E-03	-	-	-	-
Hazard Index						5.E-06	7.E-06	2.E-04	3.E-04
SVOCs									
2-Methylphenol	-	0.00E+00	0.00E+00	1.13E-03	2.36E-03	-	-	-	-
Acenaphthylene	see LMW PAHs	3.56E-04	5.86E-04	5.39E-03	1.06E-02	-	-	-	-
Acetophenone	-	0.00E+00	0.00E+00	2.34E-02	6.59E-02	-	-	-	-
Anthracene	see LMW PAHs	4.58E-04	6.28E-04	6.90E-03	9.16E-03	-	-	-	-
Benzaldehyde	-	0.00E+00	0.00E+00	6.58E-03	1.94E-02	-	-	-	-
Benzo(a)anthracene	-	1.15E-03	2.20E-03	2.06E-02	3.31E-02	-	-	-	-
Benzo(a)pyrene	-	1.37E-02	2.53E-02	2.31E-02	3.75E-02	-	-	-	-
Benzo(b)fluoranthene	-	9.66E-03	1.95E-02	2.06E-02	3.41E-02	-	-	-	-
Benzo(g,h,i)perylene	-	5.16E-04	8.09E-04	2.91E-02	7.14E-02	-	-	-	-
Benzo(k)fluoranthene	-	2.21E-02	4.24E-02	2.79E-02	3.65E-02	-	-	-	-
Carbazole	-	3.77E-04	5.11E-04	3.11E-03	6.26E-03	-	-	-	-
Chrysene	-	1.27E-02	2.52E-02	2.33E-02	4.97E-02	-	-	-	-
Dibenz(a,h)anthracene	-	3.36E-04	4.73E-04	7.33E-03	2.22E-02	-	-	-	
Fluoranthene	-	1.12E-02	3.01E-02	2.94E-02	4.56E-02	-	-	-	-
Fluorene	see LMW PAHs	4.39E-04	9.39E-04	7.78E-03	2.87E-02	-	-	-	-
Indeno(1,2,3-cd)pyrene	-	2.06E-02	3.91E-02	2.69E-02	6.32E-02	-	-	-	-
Pentachlorophenol	4.0	0.00E+00	0.00E+00	3.76E-03	1.32E-02	0.E+00	0.E+00	9.E-04	3.E-03
Phenanthrene	see LMW PAHs	3.19E-02	6.23E-02	1.25E-02	1.83E-02	-	-	-	-
Phenol	-	0.00E+00	0.00E+00	3.04E-02	1.45E-01	-	-	-	-
Pyrene	-	1.10E-02	2.67E-02	3.11E-02	5.08E-02	-	-	-	-
Low Molecular Wt. PAHs	40	3.32E-02	6.45E-02	3.26E-02	6.67E-02	8.E-04	2.E-03	8.E-04	2.E-03
Hazard Index						8.E-04	2.E-03	2.E-03	5.E-03
Pesticides/PCBs									
4,4'-DDD	-	2.94E-04	6.02E-04	4.44E-04	7.99E-04	-	-	-	-
4,4'-DDE	0.85	5.07E-04	6.64E-04	9.17E-05	1.31E-04	6.E-04	8.E-04	1.E-04	2.E-04
4,4'-DDT	0.003	3.35E-04	8.29E-04	9.96E-04	1.65E-03	1.E-01	3.E-01	4.E-01	6.E-01
alpha-Chlordanef	2.1	5.72E-05	8.04E-05	3.75E-04	6.35E-04	3.E-05	4.E-05	2.E-04	3.E-04
gamma-Chlordanef	2.1	4.58E-05	3.45E-05	6.77E-04	9.24E-04	2.E-05	2.E-05	3.E-04	4.E-04
PCB 105	0.0001	-	-	1.11E-07	4.35E-07	-	-	-	-
PCB 114	0.0001	-	-	4.73E-09	1.70E-08	-	-	-	-
PCB 118	0.00001	-	-	2.68E-08	1.01E-07	-	-	-	-
PCB 123	0.00001	-	-	3.05E-09	1.40E-08	-	-	-	-
PCB 126	0.1	-	-	1.03E-06	2.69E-06	-	-	-	-
PCB 156/157	0.0001	-	-	3.89E-08	1.35E-07	-	-	-	-
PCB 167	0.00001	-	-	1.37E-09	3.02E-09	-	-	-	-
PCB 170	-	-	-	4.83E-04	6.57E-04	-	-	-	-
PCB 189	0.00001	-	-	2.07E-10	3.53E-10	-	-	-	-

TABLE 4-24
MALLARD RISK
MURPHY WETLAND - SEASONALLY PONDED AREA
SOUTHWEST PROPERTIES WELLS G+H SUPERFUND SITE OU-2

Contaminant of Concern	NOAEL TRV (mg/kg-BW/day)	Reference Wetland Mean Total Dose (mg/kg-BW/day)	Reference Wetland Maximum Total Dose (mg/kg-BW/day)	Murphy Wetland Mean Total Dose (mg/kg-BW/day)	Murphy Wetland Maximum Total Dose (mg/kg-BW/day)	Reference Wetland Mean NOAEL HQ	Reference Wetland Maximum NOAEL HQ	Murphy Wetland Mean NOAEL HQ	Murphy Wetland Maximum NOAEL HQ
PCB 193/180	-	-	-	8.91E-04	1.18E-03	-	-	-	-
PCB 77	0.05	-	-	2.70E-06	5.34E-06	-	-	-	-
PCB 81	0.1	-	-	8.15E-07	3.23E-06	-	-	-	-
Total TEFs for PCBs	0.000014	-	-	4.73E-06	1.20E-05	-	-	3.E-01	9.E-01
Aroclor 1254	1.5	2.64E-04	8.61E-05	4.00E-01	9.05E-01	2.E-04	6.E-05	3.E-01	6.E-01
Aroclor 1260	2.2	7.95E-04	9.39E-04	6.50E-01	3.32E+00	4.E-04	4.E-04	3.E-01	2.E+00
Hazard Index						1.E-01	3.E-01	1.E+00	4.E+00
Inorganics									
Antimony	-	4.97E-03	1.48E-03	1.29E-02	6.17E-02	-	-	-	-
Arsenic	5.1	9.30E-02	1.22E-01	3.47E-03	4.86E-03	2.E-02	2.E-02	7.E-04	9.E-04
Barium	208	1.68E+00	2.13E+00	2.40E-01	3.48E-01	8.E-03	1.E-02	1.E-03	2.E-03
Beryllium	-	8.41E-04	5.92E-04	3.01E-04	4.44E-04	-	-	-	-
Cadmium	1.5	1.70E-02	5.00E-02	1.61E-02	2.20E-02	1.E-02	3.E-02	1.E-02	2.E-02
Chromium	1.0	2.27E-01	3.93E-01	6.98E-01	2.19E+00	2.E-01	4.E-01	7.E-01	2.E+00
Chromium (VI)	7.1	-	-	1.73E-02	3.44E-02	-	-	2.E-03	5.E-03
Cobalt	-	9.43E-02	1.27E-01	4.58E-03	5.13E-03	-	-	-	-
Copper	47	1.92E+00	2.32E+00	5.73E-02	9.03E-02	4.E-02	5.E-02	1.E-03	2.E-03
Cyanide	0.04	1.82E-02	4.25E-04	4.37E-04	8.15E-04	5.E-01	1.E-02	1.E-02	2.E-02
Iron	-	1.17E+02	1.67E+02	7.83E+00	9.71E+00	-	-	-	-
Lead	1.1	1.49E+00	4.67E+00	1.52E+00	3.16E+00	1.E+00	4.E+00	1.E+00	3.E+00
Mercury	0.45	1.13E-03	2.51E-03	4.95E-04	6.92E-04	3.E-03	6.E-03	1.E-03	2.E-03
Nickel	77.4	5.33E-02	4.90E-02	1.99E-02	2.01E-02	7.E-04	6.E-04	3.E-04	3.E-04
Selenium	0.4	1.91E-02	2.85E-02	6.92E-04	8.64E-04	5.E-02	7.E-02	2.E-03	2.E-03
Thallium	0.35	5.79E-03	7.27E-04	8.18E-05	9.79E-05	2.E-02	2.E-03	2.E-04	3.E-04
Vanadium	11.4	1.18E-01	1.86E-01	2.92E-02	3.97E-02	1.E-02	2.E-02	3.E-03	3.E-03
Zinc	14.5	2.12E+00	2.80E+00	1.38E+00	1.72E+00	1.E-01	2.E-01	1.E-01	1.E-01
Hazard Index						2.E+00	5.E+00	2.E+00	5.E+00

NOTES:
NOAEL: No Observable Adverse Effect Level
TRV: Toxicity Reference Value
HQ: Hazard Quotient - Highlighted HQ values represent HQs of 1.0 or greater

PCB congeners TRV represents TEF (Table 4-20)
PCB congeners mean and maximum exposure doses adjusted by multiplying by TEF

Reference Wetland Doses from M&E, 2003

TABLE 4-25
SHREW RISK
MURPHY WETLAND - SEASONALLY PONDED AREA
SOUTHWEST PROPERTIES WELLS G+H SUPERFUND SITE OU-2

COPC	NOAEL TRV (mg/kg-BW/day)	Reference Wetland Mean Total Dose (mg/kg-BW/day)	Reference Wetland Maximum Total Dose (mg/kg-BW/day)	Murphy Wetland Mean Total Dose (mg/kg-BW/day)	Murphy Wetland Maximum Total Dose (mg/kg-BW/day)	Reference Wetland Mean NOAEL HQ	Reference Wetland Maximum NOAEL HQ	Murphy Wetland Mean NOAEL HQ	Murphy Wetland Maximum NOAEL HQ
VOCs									
Acetone	3736	7.89E-03	1.58E-02	8.67E-02	1.40E-01	2.E-06	4.E-06	2.E-05	4.E-05
Carbon disulfide	193.8	0.00E+00	0.00E+00	5.96E-03	6.90E-03	0.E+00	0.E+00	3.E-05	4.E-05
Methyl tert-butyl ether	2640	0.00E+00	0.00E+00	1.86E-02	3.50E-02	0.E+00	0.E+00	7.E-06	1.E-05
Hazard Index						2.E-06	4.E-06	6.E-05	9.E-05
SVOCs									
2-Methylphenol	-	0.00E+00	0.00E+00	2.43E-02	5.06E-02	-	-	-	-
Acenaphthylene	159	6.18E-02	1.68E-01	1.16E-01	2.28E-01	4.E-04	1.E-03	7.E-04	1.E-03
Acetophenone	-	0.00E+00	0.00E+00	5.05E-01	1.42E+00	-	-	-	-
Anthracene	1189	1.13E-01	2.96E-01	1.49E-01	1.96E-01	1.E-04	2.E-04	1.E-04	2.E-04
Benzaldehyde	-	0.00E+00	0.00E+00	1.42E-01	4.18E-01	-	-	-	-
Benzo(a)anthracene	1.5	3.64E-01	1.02E+00	4.44E-01	7.10E-01	2.E-01	7.E-01	3.E-01	5.E-01
Benzo(a)pyrene	1.5	3.35E-01	8.64E-01	4.80E-01	7.77E-01	2.E-01	6.E-01	3.E-01	5.E-01
Benzo(b)fluoranthene	1.5	6.07E-01	1.67E+00	4.37E-01	7.18E-01	4.E-01	1.E+00	3.E-01	5.E-01
Benzo(g,h,i)perylene	159	1.07E-01	1.79E-01	6.26E-01	1.53E+00	7.E-04	1.E-03	4.E-03	1.E-02
Benzo(k)fluoranthene	1.5	5.67E-01	2.69E+00	5.75E-01	7.47E-01	4.E-01	2.E+00	4.E-01	5.E-01
Carbazole	159	3.98E-03	1.17E-02	6.71E-02	1.34E-01	3.E-05	7.E-05	4.E-04	8.E-04
Chrysene	1.5	4.31E-01	1.15E+00	4.90E-01	1.03E+00	3.E-01	7.E-01	3.E-01	7.E-01
Dibenz(a,h)anthracene	1.5	6.40E-02	9.53E-02	1.58E-01	4.75E-01	4.E-02	6.E-02	1.E-01	3.E-01
Fluoranthene	149	8.72E-01	3.97E+00	6.26E-01	9.68E-01	6.E-03	3.E-02	4.E-03	7.E-03
Fluorene	149	1.45E-01	3.48E-01	1.68E-01	6.03E-01	1.E-03	2.E-03	1.E-03	4.E-03
Indeno(1,2,3-cd)pyrene	1.5	1.50E-01	4.91E-01	5.34E-01	1.25E+00	1.E-01	3.E-01	3.E-01	8.E-01
Pentachlorophenol	0.53	0.00E+00	0.00E+00	8.10E-02	2.83E-01	0.E+00	0.E+00	2.E-01	5.E-01
Phenanthrene	159	6.17E-01	3.00E+00	2.53E-01	3.68E-01	4.E-03	2.E-02	2.E-03	2.E-03
Phenol	3720	0.00E+00	0.00E+00	6.56E-01	3.11E+00	0.E+00	0.E+00	2.E-04	8.E-04
Pyrene	159	6.78E-01	1.99E+00	6.60E-01	1.07E+00	4.E-03	1.E-02	4.E-03	7.E-03
Hazard Index						2.E+00	5.E+00	2.E+00	4.E+00
Pesticides/PCBs									
4,4'-DDD	18.7	2.57E-02	1.06E-01	9.44E-03	1.69E-02	1.E-03	6.E-03	5.E-04	9.E-04
4,4'-DDE	2.3	3.39E-03	6.28E-03	1.95E-03	2.77E-03	1.E-03	3.E-03	8.E-04	1.E-03
4,4'-DDT	1.8	9.35E-03	3.55E-02	2.07E-02	3.41E-02	5.E-03	2.E-02	1.E-02	2.E-02
alpha-Chlordanef	5.4	5.07E-04	1.46E-03	7.89E-03	1.33E-02	9.E-05	3.E-04	1.E-03	2.E-03
gamma-Chlordanef	5.4	5.89E-04	9.99E-04	1.43E-02	1.94E-02	1.E-04	2.E-04	3.E-03	4.E-03
PCB 105	0.00010	-	-	2.38E-06	9.30E-06	-	-	-	-
PCB 114	0.00050	-	-	5.09E-07	1.82E-06	-	-	-	-
PCB 118	0.00010	-	-	5.76E-06	2.15E-05	-	-	-	-
PCB 123	0.00010	-	-	6.56E-07	2.97E-06	-	-	-	-
PCB 126	0.10000	-	-	2.22E-05	5.71E-05	-	-	-	-
PCB 156/157	0.00050	-	-	4.18E-06	1.44E-05	-	-	-	-
PCB 167	0.00001	-	-	2.94E-08	6.46E-08	-	-	-	-
PCB 170	-	-	-	-	-	-	-	-	-
PCB 189	0.00010	-	-	4.45E-08	7.54E-08	-	-	-	-

TABLE 4-25
SHREW RISK
MURPHY WETLAND - SEASONALLY PONDED AREA
SOUTHWEST PROPERTIES WELLS G+H SUPERFUND SITE OU-2

COPC	NOAEL TRV (mg/kg-BW/day)	Reference Wetland Mean Total Dose (mg/kg-BW/day)	Reference Wetland Maximum Total Dose (mg/kg-BW/day)	Murphy Wetland Mean Total Dose (mg/kg-BW/day)	Murphy Wetland Maximum Total Dose (mg/kg-BW/day)	Reference Wetland Mean NOAEL HQ	Reference Wetland Maximum NOAEL HQ	Murphy Wetland Mean NOAEL HQ	Murphy Wetland Maximum NOAEL HQ
PCB 193/180	-	-	-	-	-	-	-	-	-
PCB 77	0.00010	-	-	1.16E-07	2.28E-07	-	-	-	-
PCB 81	0.00010	-	-	1.75E-08	6.89E-08	-	-	-	-
Total TEFs for PCBs	0.0000022	-	-	3.59E-05	1.08E-04	-	-	1.6E+01	4.9E+01
Aroclor 1254	0.08	4.47E-03	6.44E-03	8.60E+00	2.08E+01	6.E-02	8.E-02	1.1E+02	2.6E+02
Aroclor 1260	0.76	1.38E-02	5.07E-02	1.38E+01	7.08E+01	2.E-02	7.E-02	1.8E+01	9.3E+01
Hazard Index						8.E-02	2.E-01	1.4E+02	4.0E+02
Inorganics									
Antimony	0.15	2.06E-02	3.09E-02	4.52E-01	1.79E+00	1.E-01	2.E-01	3.E+00	1.2E+01
Arsenic	0.15	1.91E-01	2.94E-01	6.42E-02	8.95E-02	1.E+00	2.E+00	4.E-01	6.E-01
Barium	11.8	1.12E+00	1.68E+00	4.98E+00	7.23E+00	9.E-02	1.E-01	4.E-01	6.E-01
Beryllium	1.5	1.79E-02	2.82E-02	1.06E-02	1.55E-02	1.E-02	2.E-02	7.E-03	1.E-02
Cadmium	2.1	3.22E-01	4.85E-01	3.36E-01	4.65E-01	2.E-01	2.E-01	2.E-01	2.E-01
Chromium	19.8	1.85E+00	5.30E+00	4.82E+01	1.59E+02	9.E-02	3.E-01	2.E+00	8.E+00
Chromium (VI)	7.2	-	-	5.32E-01	1.01E+00	-	-	7.E-02	1.E-01
Cobalt	11.0	2.28E-01	3.43E-01	1.01E-01	1.14E-01	2.E-02	3.E-02	9.E-03	1.E-02
Copper	33.4	1.17E+00	1.69E+00	1.48E+00	2.33E+00	4.E-02	5.E-02	4.E-02	7.E-02
Cyanide	142	1.24E-02	0.00E+00	1.75E-02	3.24E-02	9.E-05	0.E+00	1.E-04	2.E-04
Iron	7.0	3.69E+02	5.37E+02	1.84E+02	2.30E+02	5.3E+01	7.7E+01	2.6E+01	3.3E+01
Lead	17.6	6.70E+00	1.02E+01	3.29E+01	8.21E+01	4.E-01	6.E-01	2.E+00	5.E+00
Mercury	15.7	1.65E-02	2.33E-02	1.22E-02	1.97E-02	1.E-03	1.E-03	8.E-04	1.E-03
Nickel	87.9	7.84E-01	8.39E-01	5.81E-01	6.20E-01	9.E-03	1.E-02	7.E-03	7.E-03
Thallium	0.16	1.29E-02	2.01E-02	2.96E-03	3.41E-03	8.E-02	1.E-01	2.E-02	2.E-02
Vanadium	0.43	1.52E+00	2.70E+00	8.20E-01	1.11E+00	4.E+00	6.E+00	2.E+00	3.E+00
Zinc	352	1.53E+01	1.82E+01	1.86E+01	2.20E+01	4.E-02	5.E-02	5.E-02	6.E-02
Hazard Index						5.9E+01	8.7E+01	3.7E+01	6.2E+01

NOTES: NOAEL: No Observable Adverse Effect Level
TRV: Toxicity Reference Value
HQ: Hazard Quotient - Highlighted HQ values represent HQs of 1.0 or greater

PCB congeners TRV represents TEF (Table 4-20)
PCB congeners mean and maximum exposure doses adjusted by multiplying by TEF

Reference Wetland Doses from M&E, 2003

TABLE 4-26
SHREW RISK
MURPHY WETLAND - FORESTED AREA
SOUTHWEST PROPERTIES WELLS G+H SUPERFUND SITE OU-2

Contaminant of Concern	NOAEL TRV (mg/kg-BW/day)	Reference Wetland Mean Total Dose (mg/kg-BW/day)	Reference Wetland Maximum Total Dose (mg/kg-BW/day)	Murphy Wetland Mean Total Dose (mg/kg-BW/day)	Murphy Wetland Maximum Total Dose (mg/kg-BW/day)	Reference Wetland Mean NOAEL HQ	Reference Wetland Maximum NOAEL HQ	Murphy Wetland Mean NOAEL HQ	Murphy Wetland Maximum NOAEL HQ
Pesticides/PCBs									
Aroclor 1254	0.08	4.47E-03	6.44E-03	4.08E+00	1.33E+01	6.E-02	8.E-02	5.1E+01	1.7E+02
Aroclor 1260	0.76	1.38E-02	5.07E-02	2.08E+00	3.91E+01	2.E-02	7.E-02	3.E+00	5.1E+01
Hazard Index						7.E-02	1.E-01	5.4E+01	2.2E+02
Inorganics									
Arsenic	0.15	1.91E-01	2.94E-01	1.18E-01	1.07E+00	1.E+00	2.E+00	8.E-01	7.E+00
Barium	11.8	1.12E+00	1.68E+00	1.08E+00	6.58E-03	9.E-02	1.E-01	9.2E-02	5.6E-04
Beryllium	1.5	1.79E-02	2.82E-02	6.73E-03	1.95E-01	1.E-02	2.E-02	4.E-03	1.E-01
Cadmium	2.1	3.22E-01	4.85E-01	1.95E-01	7.80E+02	2.E-01	2.E-01	9.E-02	4.E+02
Chromium	19.8	1.85E+00	5.30E+00	6.24E+01	9.43E+00	9.E-02	3.E-01	3.E+00	4.8E-01
Chromium (VI)	7.2	-	-	2.69E+00	3.20E+01	-	-	4.E-01	4.E+00
Cobalt	11.0	2.28E-01	3.43E-01	6.02E-02	5.21E-01	2.E-02	3.E-02	5.E-03	5.E-02
Copper	33.4	1.17E+00	1.69E+00	5.22E-01	9.37E-03	4.E-02	5.E-02	2.E-02	3.E-04
Cyanide	142	1.24E-02	0.00E+00	8.56E-03	1.88E+02	9.E-05	0.E+00	6.E-05	1.E+00
Iron	7.0	3.69E+02	5.37E+02	1.88E+02	5.78E+01	5.3E+01	7.7E+01	2.7E+01	8.3E+00
Lead	17.6	6.70E+00	1.02E+01	1.42E+01	1.50E-02	4.E-01	6.E-01	8.E-01	9.E-04
Mercury	15.7	1.65E-02	2.33E-02	1.50E-02	7.85E-01	1.E-03	1.E-03	1.E-03	5.E-02
Nickel	87.9	7.84E-01	8.39E-01	7.85E-01	3.99E-02	9.E-03	1.E-02	9.E-03	5.E-04
Selenium	0.44	3.22E-02	7.40E-02	4.02E-02	4.39E-03	7.E-02	2.E-01	9.E-02	1.E-02
Thallium	0.16	1.29E-02	2.01E-02	2.20E-03	3.02E-01	8.E-02	1.E-01	1.E-02	2.E+00
Vanadium	0.43	1.52E+00	2.70E+00	3.02E-01	1.47E+01	4.E+00	6.E+00	7.E-01	3.E+01
Zinc	352	1.53E+01	1.82E+01	1.47E+01	0.00E+00	4.E-02	5.E-02	4.E-02	0.E+00
Hazard Index						5.9E+01	8.7E+01	3.3E+01	4.3E+02

NOTES: NOAEL: No Observable Adverse Effect Level
TRV: Toxicity Reference Value
HQ: Hazard Quotient - Highlighted HQ values represent HQs of 1.0 or greater

Reference Wetland Doses from M&E, 2003

TABLE 4-27

COMPARISON OF TOXICITY REFERENCE VALUES FOR MUSKRAT AND SHREW

MURPHY WETLAND

WELLS G&H SUPERFUND SITE OU2

Chemical of Potential Concern [1]	Test Species	Body Weight (kg) [2]	Exposure Route and Duration Class	Duration	System	Test TRV mg/kg - d [3]	Test TRV Type	Source [4]	Muskrat TRV (mg/kg-d) [5,6]	Shrew TRV (mg/kg-d) [5,6]
Aroclor 1254										
Aroclor 1254	mouse	0.014	oral in food (chronic)	1 yr	reproductive	0.68	LOAEL	Sample et al., 1996	**0.24**	**0.67**
Aroclor 1254	mink	1.00	oral in food (subchronic)	8 months	reproductive	0.068	NOAEL	Wren et al., 1987	0.07	0.19
Aroclor 1254	mink	1.00	oral in food (subchronic)	8 months	reproductive	0.137	LOAEL	Wren et al., 1987	0.14	0.39
Aroclor 1260										
Aroclor 1260	rat	0.35	oral in food (chronic)	24 months	cancer	3.45	LOAEL	ATSDR, 2000a	**2.77**	**7.58**
PCBs (Dioxin-like Toxicity)										
2,3,7,8-TCDD	rat	0.35	oral in food (chronic)	3 generations	reproductive	0.00001	LOAEL	Sample et al., 1996	**0.000008**	**0.000022**
Antimony										
Antimony potassium tartrate	mouse	0.03	oral in water (chronic)	lifetime, >1 year	lifespan	1.25	LOAEL	Sample et al., 1996	**0.54**	**1.49**
Chromium										
Chromium oxide (Cr III)	rat	0.35	oral in food (subchronic)	90 d and 2 yr	reproductive	2737.00	NOAEL	Sample, 1996	2200.95	6015.46
Chromium Chloride (Cr III)	rat	0.35	oral in food (subchronic)	20 weeks	systemic	9.00	NOAEL	ATSDR, 2000b	7.24	19.78
Chromium Chloride (Cr III)	rat	0.35	oral in water (subchronic)	12 weeks	reproductive	40.00	LOAEL	ATSDR, 2000b	**32.17**	**87.91**
Chromium Chloride (Cr III)	mouse	0.03	oral in water (subchronic)	12 weeks	reproductive	5.00	LOAEL	ATSDR, 2000b	2.18	5.95
Chromium sulfate (Cr III)	mouse	0.03	oral in food (subchronic)	7 wk	reproductive	9.10	LOAEL	ATSDR, 2000b	3.96	10.82
Lead										
Lead acetate	rat	0.35	oral in diet (chronic)	3 gen	reproductive	8.0	NOAEL	Sample et al., 1996	6.43	17.58
Lead acetate	rat	0.35	oral in diet (chronic)	3 gen	reproductive	80.0	LOAEL	Sample et al., 1996	**64.33**	**175.83**
Lead (form unknown)	rat	0.35	oral in water (subchronic)	6-7 wk	reproductive	0.3	LOAEL	Eisler, 2000	0.27	0.73
Lead (form unknown)	rat	0.35	oral in diet (subchronic)	3 wk	mortality	200.0	LOAEL	Eisler, 2000	160.83	439.57
Lead (form unknown)	rat	0.35	oral in water (chronic)	life time	mortality	0.1	LOAEL	Eisler, 2000	0.06	0.15
Lead (form unknown)	rat	0.35	oral in diet (subchronic)	130 d	reproductive	52.6	LOAEL	Eisler, 2000	42.30	115.61
Lead acetate	rat	0.35	oral in water (subchronic)	14 - 50 d	reproductive	502.0	LOAEL	ATSDR, 1999	403.68	1103.31
Lead acetate	rat	0.35	oral in water (subchronic)	60 d	reproductive	90.0	LOAEL	ATSDR, 1999	72.37	197.80
Lead acetate	rat	0.35	oral in diet (subchronic)	30 d	reproductive	0.3	LOAEL	ATSDR, 1999	0.24	0.66
Lead acetate	mouse	0.03	oral in water (subchronic)	11 wk	reproductive	10.5	LOAEL	Eisler, 2000	4.57	12.49
Lead (form unknown)	mouse	0.03	oral in water (subchronic)	9 months	reproductive	13.1	NOAEL	Eisler, 2000	5.70	15.58
Lead acetate	mouse	0.03	oral in water (chronic)	multi-gen	mortality	605.0	NOAEL	ATSDR, 1999	263.24	719.47
Lead acetate	mouse	0.03	oral in water (subchronic)	12 wk	reproductive	141.0	NOAEL	ATSDR, 1999	61.35	167.68
Lead acetate	cotton rat	1.20	oral in water (subchronic)	7-13 wk	immune, systemic	0.1	LOAEL	Eisler, 2000	0.14	0.39

d - day

wk - week

gen - generations

UF - Uncertainty Factor

COPC - Constituent of Potential Concern

TRV - Toxicity Reference Value

NOAEL - No Observable Adverse Effect Level

LOAEL - Lowest Observable Adverse Effect Level

1 COPC or COPC and analyte/compound used in toxicological testing

2 Body weight for mouse and rat based on USEPA (1985b *cited in* Sample *et al* ., 1996), other body weights are actual body weights of animals used in test

3 TRV s for studies in which dose was administered five times per week were multiplied for a factor of 0.7.

4 Documents cited are review documents (i.e., secondary sources). Citations for primary sources may be obtained from these documents.

5 The bold values were selected for use in calculating LOAEL HQ's

6 Test NOAELs and LOAELs were adjusted for wildlife species body weight using the following equation: $NOAEL_{wildlife} = NOAEL_{test} * (BW_{test}/BW_{wildlife}) ^ 0.25$ (Sample *et al.* , 19

a An LD_{50} was divided by 10 to obtain a LOAEL

TABLE 4-28

COMPARISON OF TOXICITY REFERENCE VALUES FOR MALLARD

MURPHY WETLAND

WELLS G&H SUPERFUND SITE OU2

Chemical of Potential Concern [1]	Test Species	Body Weight (kg) [2]	Exposure Route and Duration Class	Duration	System	Test TRV mg/kg - d [3]	Test TRV Type	Source [4]	Mallard TRV (mg/kg-d) [5]
Lead									
Lead acetate	Japanese quail	0.15	oral in diet (chronic)	12 wk	reproductive	1.1	NOAEL	Sample et al., 1996	1.13
Lead acetate	Japanese quail	0.15	oral in diet (chronic)	12 wk	reproductive	11.3	LOAEL	Sample et al., 1996	**11.30**
metallic	American kestrel	0.13	oral in diet (chronic)	7 months	reproductive	3.9	NOAEL	Sample et al., 1996	3.85
Lead nitrate	mallard	1.00	oral in diet (chronic)	12 wk	systemic, mortality	2.5	NOAEL	Eisler, 2000	2.50
Total lead, sediment	mallard	1.00	oral in diet (chronic)	15 wk	mortality	960.0	LOAEL	Eisler, 2000	960

wk - week

gen - generations

UF - Uncertainty Factor

COPC - Constituent of Potential Concern

TRV - Toxicity Reference Value

NOAEL - No Observable Adverse Effect Level

LOAEL - Lowest Observable Adverse Effect Level

1 COPC or COPC and analyte/compound used in toxicological testing

2 Body weights are actual body weights of animals used in test

3 TRV s for studies in which dose was administered five times per week were multiplied for a factor of 0.7.

4 Documents cited are review documents (i.e., secondary sources). Citations for primary sources may be obtained from these documents.

5 Test NOAELs from test species were not adjusted for body weight of mallard (Sample et al., 1996).

TABLE 4-29
MUSKRAT LOAEL RISK
MURPHY WETLAND - SEASONALLY PONDED AREA
SOUTHWEST PROPERTIES WELLS G+H SUPERFUND SITE OU-2

COPC	LOAEL TRV (mg/kg-BW/day)	Mean Total Dose (mg/kg-BW/day)	Maximum Total Dose (mg/kg-BW/day)	Mean LOAEL HQ	Maximum LOAEL HQ
Pesticides/PCBs					
PCB Congeners (Dioxin)	0.000008	9.16E-06	2.76E-05	1.E+00	3.E+00
Aroclor 1254	0.24	3.06E+00	6.89E+00	1.3E+01	2.9E+01
Aroclor 1260	2.77	6.03E+00	3.07E+01	2.E+00	1.1E+01
Hazard Index				1.6E+01	4.3E+01
Inorganics					
Antimony	0.54	1.45E-01	6.89E-01	3.E-01	1.E+00
Chromium	32.2	6.79E+01	2.15E+02	2.E+00	7.E+00
Lead	64.3	1.35E+02	2.92E+02	2.E+00	5.E+00
Hazard Index				4.E+00	1.3E+01

NOTES: LOAEL: Lowest Observable Adverse Effect Level - LOAEL TRVs from Table 4-27
TRV: Toxicity Reference Value
HQ: Hazard Quotient - Highlighted HQ values represent HQs of 1.0 or greater

PCB congeners TRV represents TEF (Table 4-20)
PCB congeners mean and maximum exposure doses adjusted by multiplying by TEF

TABLE 4-30
MALLARD LOAEL RISK
MURPHY WETLAND - SEASONALLY PONDED AREA
SOUTHWEST PROPERTIES WELLS G+H SUPERFUND SITE OU-2

Contaminant of Concern	LOAEL TRV (mg/kg-BW/day)	Mean Total Dose (mg/kg-BW/day)	Maximum Total Dose (mg/kg-BW/day)	Mean LOAEL HQ	Maximum LOAEL HQ
Inorganics					
Lead	11.3	1.52E+00	3.16E+00	1.E-01	3.E-01

NOTES: LOAEL: Lowest Observable Adverse Effect Level - LOAEL TRV from Table 4-27
TRV: Toxicity Reference Value
HQ: Hazard Quotient - Highlighted HQ values represent HQs of 1.0 or greater

TABLE 4-31
SHREW LOAEL RISK
MURPHY WETLAND - SEASONALLY PONDED AND FORESTED/SCRUB-SHRUB AREAS
SOUTHWEST PROPERTIES WELLS G+H SUPERFUND SITE OU-2

COPC	LOAEL TRV (mg/k-BW/day)	Mean Total Dose (mg/kg-BW/day)	Maximum Total Dose (mg/kg-BW/day)	Mean LOAEL HQ	Maximum LOAEL HQ
Seasonally Ponded Area					
Pesticides/PCBs					
PCB Congeners	0.000022	3.01E-05	8.76E-05	1.E+00	4.E+00
Aroclor 1254	0.67	8.60E+00	2.08E+01	1.3E+01	3.1E+01
Aroclor 1260	7.58	1.38E+01	7.08E+01	2.E+00	9.E+00
Hazard Index				1.6E+01	4.4E+01
Inorganics					
Antimony	1.5	4.52E-01	1.79E+00	3.E-01	1.E+00
Chromium	87.9	4.82E+01	1.59E+02	5.E-01	2.E+00
Lead	175.8	3.29E+01	8.21E+01	2.E-01	5.E-01
Hazard Index				1.E+00	3.E+00
Forested/Scrub-Shrub Area					
Pesticides/PCBs					
Aroclor 1254	0.67	4.08E+00	2.49E+01	6.E+00	3.7E+01
Aroclor 1260	7.58	2.08E+00	1.33E+01	3.E-01	2.E+00
Hazard Index				6.E+00	3.9E+01
Inorganics					
Chromium	87.8	6.24E+01	7.80E+02	7.E-01	9.E+00
Lead	175.8	1.42E+01	5.78E+01	8.E-02	3.E-01
Hazard Index				8.E-01	9.E+00

NOTES: LOAEL: Lowest Observable Adverse Effect Level - LOAEL TRVs from Table 4-27
TRV: Toxicity Reference Value
HQ: Hazard Quotient - Highlighted HQ values represent HQs of 1.0 or greater

PCB congeners TRV represents TEF (Table 4-20)
PCB congeners mean and maximum exposure doses adjusted by multiplying by TEF