

APPENDIX F

TARGET COMPOUND AND ANALYTE LISTS

TABLE F-1

CIRCUITRON CORPORATION SITE

ORGANIC TARGET COMPOUND LIST

A. VOLATILES

Chloromethane
Bromomethane
Vinyl Chloride
Chloroethane
Methylene Chloride

Acetone
Carbon Disulfide
1,1-Dichloroethene
1,1-Dichloroethane
1,2-Dichloroethene (total)

Chloroform
1,2-Dichloroethane
2-Butanone
1,1,1-Trichloroethane
Carbon Tetrachloride

Vinyl Acetate
Bromodichloromethane
1,2-Dichloropropane
cis-1,3-Dichloropropene
Trichloroethene

Dibromochloromethane
1,1,2-Trichloroethane
Benzene
trans-1,3- Dichloropropene
Bromoform

4-Methyl-2-pentanone
2-Hexanone
Tetrachloroethene
Toluene
1,1,2,2-Tetrachloroethane

Chlorobenzene
Ethyl Benzene
Styrene
Xylenes (total)

B. SEMI-VOLATILES

Phenol
bis(2-Chloroethyl)ether
2-Chlorophenol
1,3-Dichlorobenzene
1,4-Dichlorobenzene

TABLE F-1 (Cont'd)
CIRCUITRON CORPORATION SITE
ORGANIC TARGET COMPOUND LIST

B. SEMI-VOLATILES (Cont'd)

Benzyl alcohol
1,2-Dichlorobenzene
2-Methylphenol
bis-(2-Chloroisopropyl)ether
4-Methylphenol

N-Nitroso-di-n-dipropylamine
Hexachloroethane
Nitrobenzene
Isophorone
2-Nitrophenol

2,4-Dimethylphenol
Benzoic acid
bis(2-Chloroethoxy)methane
2,4-Dichlorophenol
1,2,4-Trichlorobenzene

Naphthalene
4-Chloroaniline
Hexachlorobutadiene
4-Chloro-3-methylphenol(para-chloro-meta-cresol)
2-Methylnaphthalene

Hexachlorocyclopentadiene
2,4,6-Trichlorophenol
2,4,5-Trichlorophenol
2-Chloronaphthalene
2-Nitroaniline

Dimethylphthalate
Acenaphthylene
2,6-Dinitrotoluene
3-Nitroaniline
Acenaphthene

2,4-Dinitrophenol
4-Nitrophenol
Dibenzofuran
2,4-Dinitrotoluene
Diethylphthalate

TABLE F-1 (Cont'd)

CIRCUITRON CORPORATION SITE

ORGANIC TARGET COMPOUND LIST

B. SEMI-VOLATILES (Cont'd)

4-Chlorophenyl-phenyl ether
Fluorene
4-Nitroaniline
4,6-Dinitro-2-methylphenol
N-nitrosodiphenylamine

4-Bromophenyl-phenylether
Hexachlorobenzene
Pentachlorophenol
Phenanthrene
Anthracene

Di-n-butylphthalate
Fluoranthene
Pyrene
Butylbenzylphthalate
3,3'-Dichlorobenzidine

Benzo(a)anthracene
Chrysene
bis(2-Ethylhexyl)phthalate
Di-n-octylphthalate
Benzo(b)fluoranthene

Benzo(k)fluoranthene
Benzo(a)pyrene
Indeno(1,2,3-cd)pyrene
Dibenz(a,h)anthracene
Benzo(g,h,i)perylene

C. PESTICIDE/PCBS

alpha-BHC
beta-BHC
delta-BHC
gamma-BHC (Lindane)
Heptachlor

Aldrin
Heptachlor epoxide
Endosulfan I
Dieldrin
4,4'-DDE

TABLE F-1 (Cont'd)
CIRCUITRON CORPORATION SITE
ORGANIC TARGET COMPOUND LIST

C. PESTICIDE/PCBS (Cont'd)

Endrin
Endosulfan II
4,4'-DDD
Endosulfan sulfate
4,4'-DDT

Methoxychlor
Endrin ketone
alpha-Chlordane
gamma-Chlordane
Toxaphene

Aroclor-1016
Aroclor-1221
Aroclor-1232
Aroclor-1242
Aroclor-1248

Aroclor-1254
Aroclor-1260

TABLE F-2

CIRCUITRON CORPORATION SITE
INORGANIC TARGET ANALYTE LIST

ANALYTES

Aluminum
Antimony
Arsenic
Barium
Beryllium
Cadmium
Calcium
Chromium
Cobalt
Copper
Iron
Lead
Magnesium
Manganese
Mercury
Nickel
Potassium
Selenium
Silver
Sodium
Thallium
Vanadium
Zinc
Cyanide

APPENDIX G

RISK ASSESSMENT SUPPORTING CALCULATIONS

TABLE G-1
 CIRCUITRON CORPORATION SITE
 RISK FACTORS OF INORGANIC ANALYTES

Analyte	SURFACE/SUBSURFACE SOILS ^{1/ 2/}			SEDIMENTS ^{2/}			GROUNDWATER ^{3/}			
	Risk Factor Carc.	% Total	Risk Factor Non-Carc.	Risk Factor Carc.	% Total	Risk Factor Non-Carc.	Risk Factor Carc.	% Total	Risk factor Non-Carc.	% Total
Arsenic	65.0	17.9	1300	270	76.3	5400	2750	2.26	2750	2.26
Barium	-	-	130	-	-	1300	1994	1.64	1994	1.64
Cadmium	3.05	0.84	1000	16.5	4.7	5400	-	-	-	-
Chromium (III)	-	-	4.9	-	-	62.3	86.0	0.07	86.0	0.07
Chromium (VI)	287	79.2	1400	-	-	-	3060	2.51	3060	2.51
Copper	-	-	71481	-	-	403459	3135	2.57	3135	2.57
Lead	-	-	-	-	-	-	106993	87.85	106993	87.85
Maganese	-	-	232	-	-	347.5	2438	2.00	2438	2.00
Mercury	-	-	333	-	-	17000	-	-	-	-
Nicke1	7.31	2.02	435	67.5	19.0	4015	1025	0.84	1025	0.84
Zinc	-	-	185	-	-	334	305	0.25	305	0.25
TOTAL	362		76502	354		437318	121786		121786	

NOTE:

1/ The upper 95% confidence limit on the means were used for these calculations.

2/ Concentration units are mg/kg.

3/ Concentration units are ug/l.

CIRCUITRON CORPORATION SITE
 HEXAVALENT CHROMIUM AND CYANIDE DETECTED
 DURING ROUND 2 OF GROUNDWATER SAMPLING

SAMPLE ID	DEPTH INTERVAL (FEET)	HEXAVALENT CHROMIUM (MG/L)	CYANIDE (UG/L)
CC-MW1D-GW02	90.0 - 100.0	20.000 R	ND
CC-MW1S-GW02	25.0 - 35.0	20.000 R	ND
CC-MW2D-GW02	90.0 - 100.0	20.000 R	ND
CC-MW2S-GW02	25.0 - 35.0	20.000 R	ND
CC-MW3D-GW02	90.0 - 100.0	20.000 R	ND
CC-MW3S-GW02	28.0 - 38.0	20.000 R	ND
CC-MW4D-GW02	90.0 - 100.0	20.000 R	ND
CC-MW4S-GW02	24.0 - 34.0	20.000 R	ND
CC-MW5D-GW02	90.0 - 100.0	20.000 R	ND
CC-MW5S-GW02	24.0 - 34.0	20.000 R	ND
CC-MW6D-GW02	90.0 - 100.0	20.000 R	ND
CC-MW6S-GW02	24.8 - 38.4	20.000 R	ND
CC-MW7D-GW02	90.0 - 100.0	20.000 R	ND
CC-MW7S-GW02	27.0 - 37.0	20.000 R	ND

NOTES: ND = NOT DETECTED
 R = REJECTED VALUE
 U = BELOW THE DETECTION LIMIT
 J = ESTIMATED VALUE

TABLE G-2
CIRCUITRON CORPORATION SITE
RISK FACTORS OF ORGANIC ANALYTES

Analyte	Surface/Subsurface Soils 1/ 2/			SEDIMENTS 2/			GROUNDWATER 3/		
	Risk Factor	%	Total	Risk Factor	%	Total	Risk Factor	%	Total
	Carc.	Non-Carc.		Carc.	Non-Carc.		Carc.	Non-Carc.	
Acetone			5.55						
1,1-Dichloroethene	3.60E0	3.05E+3	0.61				7.68E0	60.76	7.11E+2
1,1-Dichloroethane	2.82E-1	3.33E+2	0.06	4.56E0	5.01E+2	0.31	4.50E-1	3.56	4.95E+1
Chloroform	2.43E-1	3.10E+1	0.55	8.34E-1	1.03E+3	0.63	2.42E0	19.15	2.99E+3
1,1,1-Trichloroethane		4.98E+4	90.63		1.61E+5				7.67E+3
Trichloroethane	5.44E-2								
1,1,2-Trichloroethane	1.77E-1	7.75E+2	1.41	8.87E-1	12.99		1.82E0	14.40	
Tetrachloroethane	4.13E-1								
Toluene		3.07E+1	0.06						
Chlorobenzene		6.20E+2	1.13						
Total xylenes		1.13E+1	0.02	5.48E-1	8.02		2.70E-1	2.14	
Benzene				6.83E0	1.63E+5		1.26E+1	1.14E+4	
TOTAL	4.77E0	5.49E+4							
Di-n-butyl phthalate		2.53E+3	2.50		4.68E+3	0.33			5.30E+1
Butylbenzyl phthalate		6.43E+3	6.36						2.40E+1
Bis(2-ethylhexyl) phthalate	2.58E+1	9.22E+4	91.14	3.85E+2	100.0	99.66	2.70E-1	2.14	7.70E+1
TOTAL	2.58E+1	1.01E+5		3.85E+2	1.38E+6		1.26E+1	1.14E+4	
Heptachlor	2.48E+1	1.10E+4	0.91						
Aldrin	8.67E+1	1.70E+5	14.13		5.16E+5	10.00			
Endosulfan I									
44'-DDT	4.05E+2	2.38E+4	1.98		4.66E+6	90.10			
G-chlorodane	6.49E+1	9.98E+5	82.97						
Aroclor 1248	7.30E+2								
Aroclor 1254	7.91E+2								
Aroclor 1260	8.24E+2								
TOTAL	2.93E+3	1.20E+6			5.17E+6				

NOTE:
1/ The upper 95% confidence limit on the means were used for these calculations.
2/ Concentration units are ug/kg
3/ Concentration units are ug/l

7/19/90

J.S. : GWING1.XLS

TABLE G - 3
 CIRCUITRON CORPORATION SITE
 RESIDENTIAL USE OF GROUNDWATER - INGESTION PATHWAY
 ROUND 1 SAMPLES
 UPGRADIENT- SHALLOW- MW 1S

NONCARCINOGENS - AVERAGE GROUNDWATER INGESTION EXPOSURE: Adults

Chronic Daily Intake (mg/kg-day) = Water X Intake X Bioavail. X $\frac{1}{\text{Body Wt.}}$ X $\frac{\text{Days Exposed}}{\text{Days Year}}$
 Conc mg/l X 2 l/day X 1.0 X $\frac{1}{70 \text{ kg}}$ X $\frac{365 \text{ days}}{365 \text{ days}}$

Group	Compound	Water Conc(mg/l)	Intake (l/day)	Bioavail. Factor	Body Wt (kg)	Days Exposed	Days Year	CDI	Rfd	CDI\Rfd
Adults	1,1,1-TRICHLOROETHANE	7.60E-01	2	1.0	70.0	1.00E+00	1.00E+00	2.17E-02	9.00E-02	2.41E-01
	LEAD	1.20E-03	2	1.0	70.0	1.00E+00	1.00E+00	3.43E-05	1.43E-04	2.40E-01
	CHROMIUM	1.76E-02	2	1.0	70.0	1.00E+00	1.00E+00	5.03E-04	1.00E+00	5.03E-04
									HAZARD INDEX	4.82E-01

NONCARCINOGENS - AVERAGE GROUNDWATER INGESTION EXPOSURE (cont.): Children 0-17 YRS

Chronic Daily Intake (mg/kg-day) = Water X Intake X Bioavail. X $\frac{1}{\text{Body Wt.}}$ X $\frac{\text{Days Exposed}}{\text{Days Year}}$
 Conc mg/l X 2 l/day X 1.0 X $\frac{1}{35 \text{ kg}}$ X $\frac{365 \text{ days}}{365 \text{ days}}$

Group	Compound	Water Conc(mg/l)	Intake (l/day)	Bioavail. Factor	Body Wt (kg)	Days Exposed	Days Year	CDI	Rfd	CDI\Rfd
Children 0-17 years	1,1,1-TRICHLOROETHANE	7.60E-01	2	1.0	35.0	1.00E+00	1.00E+00	4.34E-02	9.00E-02	4.83E-01
	LEAD	1.20E-03	2	1.0	35.0	1.00E+00	1.00E+00	6.86E-05	1.43E-04	4.80E-01
	CHROMIUM	1.76E-02	2	1.0	35.0	1.00E+00	1.00E+00	1.01E-03	1.00E+00	1.01E-03
									HAZARD INDEX	9.63E-01

TABLE G - 4
CIRCUITRON CORPORATION SITE
RESIDENTIAL USE OF GROUNDWATER - INGESTION PATHWAY
ROUND 1 SAMPLES
UPGRADIENT - DEEP - MW1D

CARCINOGENS - AVERAGE GROUNDWATER INGESTION EXPOSURE

Group	Compound	Water Conc (mg/l)	Intake (l/day)	Bioavail. Factor	Body Wt. (kg)	Years Exposed	Days Exposed	CDI	SF	RISK (CDI*SF)
Adults	1,1-DICHLOROETHENE	3.00E-03	2	1.0	70.0	1.29E-01	1.00E+00	1.10E-05	6.00E-01	6.61E-06
	CHLOROFORM	2.40E-02	2	1.0	70.0	1.29E-01	1.00E+00	8.82E-05	6.10E-03	5.38E-07
	TRICHLOROETHENE	1.80E-02	2	1.0	70.0	1.29E-01	1.00E+00	6.61E-05	1.10E-02	7.27E-07
	TETRACHLOROETHENE	2.90E-02	2	1.0	70.0	1.29E-01	1.00E+00	1.07E-04	5.10E-02	5.43E-06
	1,1-DICHLOROETHANE	1.00E-03	2	1.0	70.0	1.29E-01	1.00E+00	3.67E-06	9.10E-02	3.34E-07
TOTAL RISK										1.36E-05

Chronic Daily Intake (mg/kg-day) = Water X Intake X Bioavail. X $\frac{1}{\text{Body Wt.}}$ X Years Exposed X Days Exposed
 Conc mg/l X 2 l/day X 1.0 X $\frac{1}{70 \text{ kg}}$ X 9 yrs X 365 days

CARCINOGENS - PLAUSIBLE MAXIMUM GROUNDWATER INGESTION EXPOSURE

Group	Compound	Water Conc (mg/l)	Intake (l/day)	Bioavail. Factor	Body Wt. (kg)	Years Exposed	Days Exposed	CDI	SF	RISK (CDI*SF)
Adults	1,1-DICHLOROETHENE	3.00E-03	2	1.0	70.0	4.29E-01	1.00E+00	3.67E-05	6.00E-01	2.20E-05
	CHLOROFORM	2.40E-02	2	1.0	70.0	4.29E-01	1.00E+00	2.94E-04	6.10E-03	1.79E-06
	TRICHLOROETHENE	1.80E-02	2	1.0	70.0	4.29E-01	1.00E+00	2.20E-04	1.10E-02	2.42E-06
	TETRACHLOROETHENE	2.90E-02	2	1.0	70.0	4.29E-01	1.00E+00	3.55E-04	5.10E-02	1.81E-05
	1,1-DICHLOROETHANE	1.00E-03	2	1.0	70.0	4.29E-01	1.00E+00	1.22E-05	9.10E-02	1.11E-06
TOTAL RISK										4.55E-05

Chronic Daily Intake (mg/kg-day) = Water X Intake X Bioavail. X $\frac{1}{\text{Body Wt.}}$ X Years Exposed X Days Exposed
 Conc mg/l X 2 l/day X 1.0 X $\frac{1}{70 \text{ kg}}$ X 30 yrs X 365 days

TABLE G - 4
CIRCUITRON CORPORATION SITE
RESIDENTIAL USE OF GROUNDWATER - INGESTION PATHWAY
ROUND 1 SAMPLES
UPGRADIENT - DEEP - MW1D

NONCARCINOGENS - AVERAGE GROUNDWATER INGESTION EXPOSURE: Adults

Group	Compound	Water Conc (mg/l)	Intake (L/day)	Bioavail. Factor	Body Wt (kg)	Chronic Daily Intake (mg/kg-day) =		Days Exposed	CDI	Rfd	CDI\Rfd
						Water Conc	Intake X Bioavail. X Body Wt.				
Adults	1,1-DICHLOROETHANE	1.00E-03	2	1.0	70.0	1.0	X	365 days	2.86E-05	1.00E-01	2.86E-04
	1,1-DICHLOROETHENE	3.00E-03	2	1.0	70.0	1.0	X	365 days	8.57E-05	9.00E-03	9.52E-03
	1,1,1-TRICHLOROETHANE	2.80E-02	2	1.0	70.0	1.0	X	365 days	8.00E-04	9.00E-02	8.89E-03
	CHLOROFORM	2.40E-02	2	1.0	70.0	1.0	X	365 days	6.86E-04	1.00E-02	6.86E-02
	COPPER	1.53E-02	2	1.0	70.0	1.0	X	365 days	4.37E-04	3.70E-02	1.18E-02

HAZARD INDEX 9.91E-02

NONCARCINOGENS - AVERAGE GROUNDWATER INGESTION EXPOSURE (cont.): Children 0-17 yrs

Group	Compound	Water Conc (mg/l)	Intake (L/day)	Bioavail. Factor	Body Wt (kg)	Chronic Daily Intake (mg/kg-day) =		Days Exposed	CDI	Rfd	CDI\Rfd
						Water Conc	Intake X Bioavail. X Body Wt.				
Child 0-17 years	1,1-DICHLOROETHANE	1.00E-03	2	1.0	35.0	1.0	X	365 days	5.71E-05	1.00E-01	5.71E-04
	1,1-DICHLOROETHENE	3.00E-03	2	1.0	35.0	1.0	X	365 days	1.71E-04	9.00E-03	1.90E-02
	1,1,1-TRICHLOROETHANE	2.80E-02	2	1.0	35.0	1.0	X	365 days	1.60E-03	9.00E-02	1.78E-02
	CHLOROFORM	2.40E-02	2	1.0	35.0	1.0	X	365 days	1.37E-03	1.00E-02	1.37E-01
	COPPER	1.53E-02	2	1.0	35.0	1.0	X	365 days	8.74E-04	3.70E-02	2.36E-02

HAZARD INDEX 1.98E-01

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J.S. : GWING3.XLS

TABLE G - 5
CIRCUITRON CORPORATION SITE
RESIDENTIAL USE OF GROUNDWATER - INGESTION PATHWAY
ROUND 1 SAMPLES
DOWNGRADE - SHALLOW - MW55, 6S, 7S

NONCARCINOGENS - AVERAGE GROUNDWATER INGESTION EXPOSURE: Adults

Chronic Daily Intake (mg/kg-day) = Water X Intake X Bioavail. X $\frac{1}{\text{Body Wt.}}$ X $\frac{\text{Days Exposed}}{\text{Days Year}}$

Chronic Daily Intake (mg/kg-day) = mg/l X 2 l/day X 1.0 X $\frac{1}{70 \text{ kg}}$ X $\frac{365 \text{ days}}{365 \text{ days}}$

Group	Compound	Water Conc (mg/l)	Intake (l/day)	Bioavail. Factor	Body Wt (kg)	Days Exposed	Days Year	CDI	Rfd	CDI\Rfd
Adults	1,1-DICHLOROETHANE	6.00E-03	2	1.0	70.0	1.00E+00	1.00E+00	1.71E-04	1.00E-01	1.71E-03
	1,1-DICHLOROETHENE	6.00E-04	2	1.0	70.0	1.00E+00	1.00E+00	1.71E-05	9.00E-03	1.90E-03
	1,1,1-TRICHLOROETHANE	9.50E-02	2	1.0	70.0	1.00E+00	1.00E+00	2.71E-03	9.00E-02	3.02E-02
	DI-n-BUTYL PHTHALATE	1.00E-03	2	1.0	70.0	1.00E+00	1.00E+00	2.86E-05	1.00E-01	2.86E-04
	COPPER	4.80E-02	2	1.0	70.0	1.00E+00	1.00E+00	1.37E-03	3.70E-02	3.71E-02
	CHROMIUM	1.00E-02	2	1.0	70.0	1.00E+00	1.00E+00	2.86E-04	1.00E+00	2.86E-04
	LEAD	2.60E-03	2	1.0	70.0	1.00E+00	1.00E+00	7.43E-05	1.43E-04	5.19E-01
	NICKEL	1.64E-02	2	1.0	70.0	1.00E+00	1.00E+00	4.69E-04	2.00E-02	2.34E-02
									HAZARD INDEX	

NONCARCINOGENS - AVERAGE GROUNDWATER INGESTION EXPOSURE (cont.): Children 0-17 yrs

Chronic Daily Intake (mg/kg-day) = Water X Intake X Bioavail. X $\frac{1}{\text{Body Wt.}}$ X $\frac{\text{Days Exposed}}{\text{Days Year}}$

Chronic Daily Intake (mg/kg-day) = mg/l X 2 l/day X 1.0 X $\frac{1}{35 \text{ kg}}$ X $\frac{365 \text{ days}}{365 \text{ days}}$

Group	Compound	Water Conc (mg/l)	Intake (l/day)	Bioavail. Factor	Body Wt (kg)	Days Exposed	Days Year	CDI	Rfd	CDI\Rfd
Child 0-17 years	1,1-DICHLOROETHANE	6.00E-03	2	1.0	35.0	1.00E+00	1.00E+00	3.43E-04	1.00E-01	3.43E-03
	1,1-DICHLOROETHENE	6.00E-04	2	1.0	35.0	1.00E+00	1.00E+00	3.43E-05	9.00E-03	3.81E-03
	1,1,1-TRICHLOROETHANE	9.50E-02	2	1.0	35.0	1.00E+00	1.00E+00	5.43E-03	9.00E-02	6.03E-02
	DI-n-BUTYL PHTHALATE	1.00E-03	2	1.0	35.0	1.00E+00	1.00E+00	5.71E-05	1.00E-01	5.71E-04
	COPPER	4.80E-02	2	1.0	35.0	1.00E+00	1.00E+00	2.74E-03	3.70E-02	7.41E-02
	CHROMIUM	1.00E-02	2	1.0	35.0	1.00E+00	1.00E+00	5.71E-04	1.00E+00	5.71E-04
	LEAD	2.60E-03	2	1.0	35.0	1.00E+00	1.00E+00	1.49E-04	1.43E-04	1.04E+00
	NICKEL	1.64E-02	2	1.0	35.0	1.00E+00	1.00E+00	9.37E-04	2.00E-02	4.69E-02
									HAZARD INDEX	

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J.S. : GWING3.XLS

TABLE G - 5
 CIRCUITRON CORPORATION SITE
 RESIDENTIAL USE OF GROUNDWATER - INGESTION PATHWAY
 ROUND 1 SAMPLES
 DOWNGRADEMENT - SHALLOW - MM55, 6S, 7S

CARCINOGENS - AVERAGE GROUNDWATER INGESTION EXPOSURE

Chronic Daily Intake (mg/kg-day) = Water X Intake X Bioavail. X $\frac{1}{\text{Body Wt.}}$ X Years Exposed X $\frac{\text{Days Exposed}}{\text{Days Year}}$

Chronic Daily Intake (mg/kg-day) = $\frac{\text{mg/l}}{\text{mg/l}} \times \frac{2 \text{ l/day}}{2 \text{ l/day}} \times 1.0 \times \frac{1}{70 \text{ kg}} \times \frac{9 \text{ yrs}}{70 \text{ yrs}} \times \frac{365 \text{ days}}{365 \text{ days}}$

Group	Compound	Water Conc(mg/L)	Intake (l/day)	Bioavail. Factor	Body Wt. (kg)	Years Exposed	Days Exposed	CDI	SF	RISK (CDI*SF)
Adults	1,1-DICHLOROETHENE	6.00E-04	2	1.0	70.0	1.29E-01	1.00E+00	2.20E-06	6.00E-01	1.32E-06
	TRICHLOROETHENE	1.00E-03	2	1.0	70.0	1.29E-01	1.00E+00	3.67E-06	1.10E-02	4.04E-08
	TETRACHLOROETHENE	1.10E-02	2	1.0	70.0	1.29E-01	1.00E+00	4.04E-05	5.10E-02	2.06E-06
	1,1-DICHLOROETHANE	6.00E-03	2	1.0	70.0	1.29E-01	1.00E+00	2.20E-05	9.10E-02	2.01E-06
TOTAL RISK										5.43E-06

CARCINOGENS - PLAUSIBLE MAXIMUM GROUNDWATER INGESTION EXPOSURE

Chronic Daily Intake (mg/kg-day) = Water X Intake X Bioavail. X $\frac{1}{\text{Body Wt.}}$ X Years Exposed X $\frac{\text{Days Exposed}}{\text{Days Year}}$

Chronic Daily Intake (mg/kg-day) = $\frac{\text{mg/l}}{\text{mg/l}} \times \frac{2 \text{ l/day}}{2 \text{ l/day}} \times 1.0 \times \frac{1}{70 \text{ kg}} \times \frac{30 \text{ yrs}}{70 \text{ yrs}} \times \frac{365 \text{ days}}{365 \text{ days}}$

Group	Compound	Water Conc(mg/L)	Intake (l/day)	Bioavail. Factor	Body Wt. (kg)	Years Exposed	Days Exposed	CDI	SF	RISK (CDI*SF)
Adults	1,1-DICHLOROETHENE	6.00E-04	2	1.0	70.0	4.29E-01	1.00E+00	7.35E-06	6.00E-01	4.41E-06
	TRICHLOROETHENE	1.00E-03	2	1.0	70.0	4.29E-01	1.00E+00	1.22E-05	1.10E-02	1.35E-07
	TETRACHLOROETHENE	1.10E-02	2	1.0	70.0	4.29E-01	1.00E+00	1.35E-04	5.10E-02	6.87E-06
	1,1-DICHLOROETHANE	6.00E-03	2	1.0	70.0	4.29E-01	1.00E+00	7.35E-05	9.10E-02	6.69E-06
TOTAL RISK										1.81E-05

7/20/90

J.S. : GWING4.XLS

TABLE G - 6
 CIRCUITRON CORPORATION SITE
 RESIDENTIAL USE OF GROUNDWATER - INGESTION PATHWAY
 ROUND 1 SAMPLES
 DOWNGRADIENT - DEEP - MW5D, 6D, 7D

CARCINOGENS - AVERAGE GROUNDWATER INGESTION EXPOSURE

Group	Compound	Water Conc (mg/L)	Intake (l/day)	Bioavail. Factor	Body Wt. (kg)	Years Exposed	Days Exposed	Chronic Daily Intake (mg/kg-day) =		RISK (CDI*SF)
								Water Conc (mg/L)	Intake (l/day)	
Adults	1,1-DICHLOROETHENE	7.50E-03	2	1.0	70.0	1.29E-01	1.00E+00	2.76E-05	6.00E-01	1.65E-05
	TRICHLOROETHENE	1.80E-02	2	1.0	70.0	1.29E-01	1.00E+00	6.61E-05	1.10E-02	7.27E-07
	TETRACHLOROETHENE	3.20E-02	2	1.0	70.0	1.29E-01	1.00E+00	1.18E-04	5.10E-02	6.00E-06
	CHLOROFORM	3.35E-02	2	1.0	70.0	1.29E-01	1.00E+00	1.23E-04	6.10E-03	7.51E-07
	1,1-DICHLOROETHANE	1.50E-03	2	1.0	70.0	1.29E-01	1.00E+00	5.51E-06	9.10E-02	5.01E-07
								TOTAL RISK		2.45E-05

CARCINOGENS - PLAUSIBLE MAXIMUM GROUNDWATER INGESTION EXPOSURE

Group	Compound	Water Conc (mg/L)	Intake (l/day)	Bioavail. Factor	Body Wt. (kg)	Years Exposed	Days Exposed	Chronic Daily Intake (mg/kg-day) =		RISK (CDI*SF)
								Water Conc (mg/L)	Intake (l/day)	
Adults	1,1-DICHLOROETHENE	7.50E-03	2	1.0	70.0	4.29E-01	1.00E+00	9.18E-05	6.00E-01	5.51E-05
	TRICHLOROETHENE	1.80E-02	2	1.0	70.0	4.29E-01	1.00E+00	2.20E-04	1.10E-02	2.42E-06
	TETRACHLOROETHENE	3.20E-02	2	1.0	70.0	4.29E-01	1.00E+00	3.92E-04	5.10E-02	2.00E-05
	CHLOROFORM	3.35E-02	2	1.0	70.0	4.29E-01	1.00E+00	4.10E-04	6.10E-03	2.50E-06
	1,1-DICHLOROETHANE	1.50E-03	2	1.0	70.0	4.29E-01	1.00E+00	1.84E-05	9.10E-02	1.67E-06
								TOTAL RISK		8.17E-05

TABLE G - 6
CIRCUITRON CORPORATION SITE
RESIDENTIAL USE OF GROUNDWATER - INGESTION PATHWAY
ROUND 1 SAMPLES
DOMGRADIENT - DEEP - MW5D, 6D, 7D

NONCARCINOGENS - AVERAGE GROUNDWATER INGESTION EXPOSURE: Adults

Chronic Daily Intake (mg/kg-day) = $\frac{\text{Water Conc} \times \text{Intake} \times \text{Bioavail.} \times \text{Factor} \times \text{Days Exposed}}{\text{Body Wt.}}$

Chronic Daily Intake (mg/kg-day) = $\frac{\text{mg/l} \times 2 \text{ l/day} \times 1.0 \times 1 \times 365 \text{ days}}{70 \text{ kg}}$

Group	Compound	Water Conc (mg/l)	Intake (l/day)	Bioavail. Factor	Body Wt (kg)	Days Exposed	CDI	Rfd	CDI\Rfd
Adults	1,1-DICHLOROETHANE	1.50E-03	2	1.0	70.0	1.00E+00	4.29E-05	1.00E-01	4.29E-04
	1,1-DICHLOROETHENE	7.50E-03	2	1.0	70.0	1.00E+00	2.14E-04	9.00E-03	2.38E-02
	1,1,1-TRICHLOROETHANE	3.80E-02	2	1.0	70.0	1.00E+00	1.09E-03	9.00E-02	1.21E-02
	CHLOROFORM	3.35E-02	2	1.0	70.0	1.00E+00	9.57E-04	1.00E-02	9.57E-02
	COPPER	3.32E-01	2	1.0	70.0	1.00E+00	9.49E-03	3.70E-02	2.56E-01
	CHROMIUM	2.27E-02	2	1.0	70.0	1.00E+00	6.49E-04	1.00E+00	6.49E-04
	LEAD	2.66E-02	2	1.0	70.0	1.00E+00	7.60E-04	1.43E-04	5.31E+00
	NICKEL	2.45E-02	2	1.0	70.0	1.00E+00	7.00E-04	2.00E-02	3.50E-02
									HAZARD INDEX

NONCARCINOGENS - AVERAGE GROUNDWATER INGESTION EXPOSURE (cont.): Children 0-17 yrs

Chronic Daily Intake (mg/kg-day) = $\frac{\text{Water Conc} \times \text{Intake} \times \text{Bioavail.} \times \text{Factor} \times \text{Days Exposed}}{\text{Body Wt.}}$

Chronic Daily Intake (mg/kg-day) = $\frac{\text{mg/l} \times 2 \text{ l/day} \times 1.0 \times 1 \times 365 \text{ days}}{35 \text{ kg}}$

Group	Compound	Water Conc (mg/l)	Intake (l/day)	Bioavail. Factor	Body Wt (kg)	Days Exposed	CDI	Rfd	CDI\Rfd
Child 0-17 years	1,1-DICHLOROETHANE	1.50E-03	2	1.0	35.0	1.00E+00	8.57E-05	1.00E-01	8.57E-04
	1,1-DICHLOROETHENE	7.50E-03	2	1.0	35.0	1.00E+00	4.29E-04	9.00E-03	4.76E-02
	1,1,1-TRICHLOROETHANE	3.80E-02	2	1.0	35.0	1.00E+00	2.17E-03	9.00E-02	2.41E-02
	CHLOROFORM	3.35E-02	2	1.0	35.0	1.00E+00	1.91E-03	1.00E-02	1.91E-01
	COPPER	3.32E-01	2	1.0	35.0	1.00E+00	1.90E-02	3.70E-02	5.13E-01
	CHROMIUM	2.27E-02	2	1.0	35.0	1.00E+00	1.30E-03	1.00E+00	1.30E-03
	LEAD	2.66E-02	2	1.0	35.0	1.00E+00	1.52E-03	1.43E-04	1.06E+01
	NICKEL	2.45E-02	2	1.0	35.0	1.00E+00	1.40E-03	2.00E-02	7.00E-02
									HAZARD INDEX

7/20/90

J.S. : GWINGS.XLS

TABLE G - 7
 CIRCUITRON CORPORATION SITE
 RESIDENTIAL USE OF GROUNDWATER - INGESTION PATHWAY
 ROUND 1 SAMPLES
 ON-SITE SHALLOW - MW2S, 3S, 4S, 8, 9, 10, 11, 12

CARCINOGENS - AVERAGE GROUNDWATER INGESTION EXPOSURE

Chronic Daily Intake (mg/kg-day) = $\frac{\text{Water Conc} \times \text{Intake} \times \text{Bioavail.} \times \text{Factor} \times \text{Body Wt.} \times \text{Years Exposed}}{\text{Days Exposed}}$

Chronic Daily Intake (mg/kg-day) = $\frac{\text{mg/l} \times 2 \text{ l/day} \times 1.0 \times 1.0 \times 70 \text{ kg} \times 9 \text{ yrs}}{365 \text{ days}}$

Group	Compound	Water Conc(mg/l)	Intake (l/day)	Bioavail. Factor	Body Wt (kg)	Years Exposed	Years Lifetime	Days Exposed	Days Year	CDI	SF	RISK (CDI*SF)
Adults	1,1 DICHLOROETHENE	2.30E-02	2	1.0	70.0	1.29E-01	1.00E+00	1.00E+00	1.00E+00	8.45E-05	6.00E-01	5.07E-05
	TRICHLOROETHENE	1.40E-02	2	1.0	70.0	1.29E-01	1.00E+00	1.00E+00	1.00E+00	5.14E-05	1.10E-02	5.66E-07
	TETRACHLOROETHENE	1.10E-01	2	1.0	70.0	1.29E-01	1.00E+00	1.00E+00	1.00E+00	4.04E-04	5.10E-02	2.06E-05
	1,1-DICHLOROETHANE	1.70E-02	2	1.0	70.0	1.29E-01	1.00E+00	1.00E+00	1.00E+00	6.24E-05	9.10E-02	5.68E-06
	BENZENE	3.00E-03	2	1.0	70.0	1.29E-01	1.00E+00	1.00E+00	1.00E+00	1.10E-05	2.90E-02	3.20E-07
	1,1,2 TRICHLOROETHANE	4.00E-03	2	1.0	70.0	1.29E-01	1.00E+00	1.00E+00	1.00E+00	1.47E-05	5.70E-02	8.38E-07
										TOTAL RISK		7.87E-05

CARCINOGENS - PLAUSIBLE MAXIMUM GROUNDWATER INGESTION EXPOSURE

Chronic Daily Intake (mg/kg-day) = $\frac{\text{Water Conc} \times \text{Intake} \times \text{Bioavail.} \times \text{Factor} \times \text{Body Wt.} \times \text{Years Exposed}}{\text{Days Exposed}}$

Chronic Daily Intake (mg/kg-day) = $\frac{\text{mg/l} \times 2 \text{ l/day} \times 1.0 \times 1.0 \times 70 \text{ kg} \times 30 \text{ yrs}}{365 \text{ days}}$

Group	Compound	Water Conc(mg/l)	Intake (l/day)	Bioavail. Factor	Body Wt (kg)	Years Exposed	Years Lifetime	Days Exposed	Days Year	CDI	SF	RISK (CDI*SF)
Adults	1,1 DICHLOROETHENE	2.30E-02	2	1.0	70.0	4.29E-01	1.00E+00	1.00E+00	1.00E+00	2.82E-04	6.00E-01	1.69E-04
	TRICHLOROETHENE	1.40E-02	2	1.0	70.0	4.29E-01	1.00E+00	1.00E+00	1.00E+00	1.71E-04	1.10E-02	1.89E-06
	TETRACHLOROETHENE	1.10E-01	2	1.0	70.0	4.29E-01	1.00E+00	1.00E+00	1.00E+00	1.35E-03	5.10E-02	6.87E-05
	1,1-DICHLOROETHANE	1.70E-02	2	1.0	70.0	4.29E-01	1.00E+00	1.00E+00	1.00E+00	2.08E-04	9.10E-02	1.89E-05
	BENZENE	3.00E-03	2	1.0	70.0	4.29E-01	1.00E+00	1.00E+00	1.00E+00	3.67E-05	2.90E-02	1.07E-06
	1,1,2 TRICHLOROETHANE	4.00E-03	2	1.0	70.0	4.29E-01	1.00E+00	1.00E+00	1.00E+00	4.90E-05	5.70E-02	2.79E-06
										TOTAL RISK		2.62E-04

7/20/90

J.S. : GWJNG5.XLS

TABLE G - 7
CIRCUITRON CORPORATION SITE
RESIDENTIAL USE OF GROUNDWATER - INGESTION PATHWAY
ROUND 1 SAMPLES
ON-SITE SHALLOW - MW2S, 3S, 4S, 8, 9, 10, 11, 12

NONCARCINOGENS - AVERAGE GROUNDWATER INGESTION EXPOSURE: Adults

Group	Compound	Water Conc (mg/l)	Intake (l/day)	Bioavail. Factor	Body Wt. (kg)	Days Exposed	CDI	Rfd	CDI\Rfd
Adults	1,1-DICHLOROETHANE	1.70E-02	2	1.0	70.0	1.00E+00	4.86E-04	1.00E-01	4.86E-03
	1,1-DICHLOROETHENE	2.30E-02	2	1.0	70.0	1.00E+00	6.57E-04	9.00E-03	7.30E-02
	1,1,1-TRICHLOROETHANE	4.60E+00	2	1.0	70.0	1.00E+00	1.31E-01	9.00E-02	1.46E+00
	COPPER	1.24E-01	2	1.0	70.0	1.00E+00	3.54E-03	3.70E-02	9.58E-02
	CHROMIUM	7.12E-02	2	1.0	70.0	1.00E+00	2.03E-03	1.00E+00	2.03E-03
	HEXAVALENT CHROMIUM	1.53E-02	2	1.0	70.0	1.00E+00	4.37E-04	5.00E-03	8.74E-02
	LEAD	6.14E-02	2	1.0	70.0	1.00E+00	1.75E-03	1.43E-04	1.23E+01
	NICKEL	7.02E-02	2	1.0	70.0	1.00E+00	2.01E-03	2.00E-02	1.00E-01
									HAZARD INDEX
									1.41E+01

NONCARCINOGENS - AVERAGE GROUNDWATER INGESTION EXPOSURE (cont.): Children 0-17 yrs

Group	Compound	Water Conc (mg/l)	Intake (l/day)	Bioavail. Factor	Body Wt. (kg)	Days Exposed	CDI	Rfd	CDI\Rfd
Child	1,1-DICHLOROETHANE	1.70E-02	2	1.0	35.0	1.00E+00	9.71E-04	1.00E-01	9.71E-03
0-17 years	1,1-DICHLOROETHENE	2.30E-02	2	1.0	35.0	1.00E+00	1.31E-03	9.00E-03	1.46E-01
	1,1,1-TRICHLOROETHANE	4.60E+00	2	1.0	35.0	1.00E+00	2.63E-01	9.00E-02	2.92E+00
	COPPER	1.24E-01	2	1.0	35.0	1.00E+00	7.09E-03	3.70E-02	1.92E-01
	CHROMIUM	7.12E-02	2	1.0	35.0	1.00E+00	4.07E-03	1.00E+00	4.07E-03
	HEXAVALENT CHROMIUM	1.53E-02	2	1.0	35.0	1.00E+00	8.74E-04	5.00E-03	1.75E-01
	LEAD	6.14E-02	2	1.0	35.0	1.00E+00	3.51E-03	1.43E-04	2.45E+01
	NICKEL	7.02E-02	2	1.0	35.0	1.00E+00	4.01E-03	2.00E-02	2.01E-01
									HAZARD INDEX
									2.82E+01

7/19/90

J.T. : GWING6.XLS

TABLE G - 8
 CIRCUITRON CORPORATION SITE
 RESIDENTIAL USE OF GROUNDWATER - INGESTION PATHWAY
 ROUND 1 SAMPLES
 ON-SITE DEEP - MW 2D, 3D, 4D

CARCINOGENS - AVERAGE GROUNDWATER INGESTION EXPOSURE

Chronic Daily Intake (mg/kg-day) = $\frac{\text{Water Conc} \times \text{Intake} \times \text{Bioavail.} \times \text{Factor} \times \text{Years Exposed}}{\text{Body Wt.} \times \text{Days Exposed}}$

Chronic Daily Intake (mg/kg-day) = $\frac{\text{mg/l} \times 2 \text{ l/day} \times 1.0 \times 1 \times 9 \text{ yrs}}{70 \text{ kg} \times 365 \text{ days}}$

Group	Compound	Water Conc (mg/l)	Intake (l/day)	Bioavail. Factor	Body Wt (kg)	Years Exposed	Days Exposed	CDI	SF	RISK (CDI*SF)
Adults	1,1-DICHLOROETHENE	6.00E-03	2	1.0	70.0	1.29E-01	1.00E+00	2.20E-05	6.00E-01	1.32E-05
	TRICHLOROETHENE	1.80E-02	2	1.0	70.0	1.29E-01	1.00E+00	6.61E-05	1.10E-02	7.27E-07
	TETRACHLOROETHENE	2.90E-02	2	1.0	70.0	1.29E-01	1.00E+00	1.07E-04	5.10E-02	5.43E-06
	1,1-DICHLOROETHANE	2.00E-03	2	1.0	70.0	1.29E-01	1.00E+00	7.35E-06	9.10E-02	6.69E-07
	CHLOROFORM	2.40E-02	2	1.0	70.0	1.29E-01	1.00E+00	8.82E-05	6.10E-03	5.38E-07
TOTAL RISK										2.06E-05

CARCINOGENS - PLAUSIBLE MAXIMUM GROUNDWATER INGESTION EXPOSURE

Chronic Daily Intake (mg/kg-day) = $\frac{\text{Water Conc} \times \text{Intake} \times \text{Bioavail.} \times \text{Factor} \times \text{Years Exposed}}{\text{Body Wt.} \times \text{Days Exposed}}$

Chronic Daily Intake (mg/kg-day) = $\frac{\text{mg/l} \times 2 \text{ l/day} \times 1.0 \times 1 \times 30 \text{ yrs}}{70 \text{ kg} \times 365 \text{ days}}$

Group	Compound	Water Conc (mg/l)	Intake (l/day)	Bioavail. Factor	Body Wt (kg)	Years Exposed	Days Exposed	CDI	SF	RISK (CDI*SF)
Adults	1,1-DICHLOROETHENE	6.00E-03	2	1.0	70.0	4.29E-01	1.00E+00	7.35E-05	6.00E-01	4.41E-05
	TRICHLOROETHENE	1.80E-02	2	1.0	70.0	4.29E-01	1.00E+00	2.20E-04	1.10E-02	2.42E-06
	TETRACHLOROETHENE	2.90E-02	2	1.0	70.0	4.29E-01	1.00E+00	3.55E-04	5.10E-02	1.81E-05
	1,1-DICHLOROETHANE	2.00E-03	2	1.0	70.0	4.29E-01	1.00E+00	2.45E-05	9.10E-02	2.23E-06
	CHLOROFORM	2.40E-02	2	1.0	70.0	4.29E-01	1.00E+00	2.94E-04	6.10E-03	1.79E-06
TOTAL RISK										6.86E-05

7/19/90

J.T. : GWING6.XLS

TABLE G - 8
 CIRCUITRON CORPORATION SITE
 RESIDENTIAL USE OF GROUNDWATER - INGESTION PATHWAY
 ROUND 1 SAMPLES
 ON-SITE DEEP - MW 2D, 3D, 4D

NONCARCINOGENS - AVERAGE GROUNDWATER INGESTION EXPOSURE: Adults

Chronic Daily Intake (mg/kg-day) = $\frac{\text{Water Conc} \times \text{Intake} \times \text{Bioavail.} \times \text{Factor}}{\text{Body Wt.}}$ X $\frac{\text{Days Exposed}}{\text{Days Year}}$

Chronic Daily Intake (mg/kg-day) = $\frac{\text{mg/l} \times 2 \text{ l/day} \times 1.0 \times 1}{70 \text{ kg}}$ X $\frac{365 \text{ days}}{365 \text{ days}}$

Group	Compound	Water Conc (mg/l)	Intake (l/day)	Bioavail. Factor	Body Wt. (kg)	Days Exposed	Days Year	CDI	Rfd	CDI\Rfd
Adults	1,1-DICHLOROETHANE	2.00E-03	2	1.0	70.0	1.00E+00	1.00E+00	5.71E-05	1.00E-01	5.71E-04
	1,1-DICHLOROETHENE	6.00E-03	2	1.0	70.0	1.00E+00	1.00E+00	1.71E-04	9.00E-03	1.90E-02
	1,1,1-TRICHLOROETHANE	3.80E-02	2	1.0	70.0	1.00E+00	1.00E+00	1.09E-03	9.00E-02	1.21E-02
	COPPER	1.07E-02	2	1.0	70.0	1.00E+00	1.00E+00	3.06E-04	3.70E-02	8.26E-03
	CHROMIUM	1.44E-02	2	1.0	70.0	1.00E+00	1.00E+00	4.11E-04	1.00E+00	4.11E-04
	LEAD	6.80E-03	2	1.0	70.0	1.00E+00	1.00E+00	1.94E-04	1.43E-04	1.36E+00
									HAZARD INDEX	1.40E+00

NONCARCINOGENS - AVERAGE GROUNDWATER INGESTION EXPOSURE (cont.): Children

Chronic Daily Intake (mg/kg-day) = $\frac{\text{Water Conc} \times \text{Intake} \times \text{Bioavail.} \times \text{Factor}}{\text{Body Wt.}}$ X $\frac{\text{Days Exposed}}{\text{Days Year}}$

Chronic Daily Intake (mg/kg-day) = $\frac{\text{mg/l} \times 2 \text{ l/day} \times 1.0 \times 1}{35 \text{ kg}}$ X $\frac{365 \text{ days}}{365 \text{ days}}$

Group	Compound	Water Conc (mg/l)	Intake (l/day)	Bioavail. Factor	Body Wt. (kg)	Days Exposed	Days Year	CDI	Rfd	CDI\Rfd
Child	1,1-DICHLOROETHANE	2.00E-03	2	1.0	35.0	1.00E+00	1.00E+00	1.14E-04	1.00E-01	1.14E-03
0-17 years	1,1-DICHLOROETHENE	6.00E-03	2	1.0	35.0	1.00E+00	1.00E+00	3.43E-04	9.00E-03	3.81E-02
	1,1,1-TRICHLOROETHANE	3.80E-02	2	1.0	35.0	1.00E+00	1.00E+00	2.17E-03	9.00E-02	2.41E-02
	COPPER	1.07E-02	2	1.0	35.0	1.00E+00	1.00E+00	6.11E-04	3.70E-02	1.65E-02
	CHROMIUM	1.44E-02	2	1.0	35.0	1.00E+00	1.00E+00	8.23E-04	1.00E+00	8.23E-04
	LEAD	6.80E-03	2	1.0	35.0	1.00E+00	1.00E+00	3.89E-04	1.43E-04	2.72E+00
									HAZARD INDEX	2.80E+00

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J.S. : GWING7.XLS

TABLE G - 9
 CIRCUITRON CORPORATION SITE
 RESIDENTIAL USE OF GROUNDWATER - INGESTION PATHWAY
 ROUND 11 SAMPLES
 UPGRAJIENT- SHALLOW- MW 1S

CARCINOGENS - AVERAGE GROUNDWATER INGESTION EXPOSURE

Chronic Daily Intake (mg/kg-day) = $\frac{\text{Water Conc} \times \text{Intake} \times \text{Bioavail. Factor} \times \text{Body Wt.}}{\text{Days Exposed}}$

Chronic Daily Intake (mg/kg-day) = $\frac{8.10E-03 \text{ mg/l} \times 2 \text{ l/day} \times 1.0 \times 70 \text{ kg}}{365 \text{ days}} = 3.95E-06 \text{ mg/kg-day}$

Chronic Daily Intake (mg/kg-day) = $\frac{6.60E-03 \text{ mg/l} \times 2 \text{ l/day} \times 1.0 \times 70 \text{ kg}}{365 \text{ days}} = 3.12E-06 \text{ mg/kg-day}$

Group	Compound	Water Conc (mg/l)	Intake (l/day)	Bioavail. Factor	Body Wt (kg)	Years Exposed	Days Exposed	CDI	SF	RISK (CDI*SF)	
Adults	1,1-DICHLOROETHENE	8.10E-03	2	1.0	70.0	1.29E-01	1.00E+00	2.98E-05	6.00E-01	1.79E-05	
	1,1-DICHLOROETHANE	6.60E-03	2	1.0	70.0	1.29E-01	1.00E+00	2.42E-05	9.10E-02	2.21E-06	
TOTAL RISK											2.01E-05

CARCINOGENS - PLAUSIBLE MAXIMUM GROUNDWATER INGESTION EXPOSURE

Chronic Daily Intake (mg/kg-day) = $\frac{\text{Water Conc} \times \text{Intake} \times \text{Bioavail. Factor} \times \text{Body Wt.}}{\text{Days Exposed}}$

Chronic Daily Intake (mg/kg-day) = $\frac{8.10E-03 \text{ mg/l} \times 2 \text{ l/day} \times 1.0 \times 70 \text{ kg}}{30 \text{ yrs} \times 365 \text{ days}} = 1.32E-05 \text{ mg/kg-day}$

Chronic Daily Intake (mg/kg-day) = $\frac{6.60E-03 \text{ mg/l} \times 2 \text{ l/day} \times 1.0 \times 70 \text{ kg}}{30 \text{ yrs} \times 365 \text{ days}} = 1.06E-05 \text{ mg/kg-day}$

Group	Compound	Water Conc (mg/l)	Intake (l/day)	Bioavail. Factor	Body Wt (kg)	Years Exposed	Days Exposed	CDI	SF	RISK (CDI*SF)	
Adults	1,1-DICHLOROETHENE	8.10E-03	2	1.0	70.0	4.29E-01	1.00E+00	9.92E-05	6.00E-01	5.95E-05	
	1,1-DICHLOROETHANE	6.60E-03	2	1.0	70.0	4.29E-01	1.00E+00	8.08E-05	9.10E-02	7.35E-06	
TOTAL RISK											6.69E-05

7/20/90

J.S. : GWING7.XLS

TABLE G - 9
 CIRCUITRON CORPORATION SITE
 RESIDENTIAL USE OF GROUNDWATER - INGESTION PATHWAY
 ROUND II SAMPLES
 UPGRADE/IENT- SHALLON- MW 1S

NONCARCINOGENS - AVERAGE GROUNDWATER INGESTION EXPOSURE: Adults

Group	Compound	Water Conc	Intake (l/day)	Bioavail. Factor	Body Wt. (kg)	Days Exposed	CDI	Rfd	CDI\Rfd
Adults	1,1,1-TRICHLOROETHANE	1.18E+00	2	1.0	70.0	1.00E+00	3.37E-02	9.00E-02	3.75E-01
									HAZARD INDEX
									3.75E-01

NONCARCINOGENS - AVERAGE GROUNDWATER INGESTION EXPOSURE (cont.): Children 0-17 yrs

Group	Compound	Water Conc	Intake (l/day)	Bioavail. Factor	Body Wt. (kg)	Days Exposed	CDI	Rfd	CDI\Rfd
Children	1,1,1-TRICHLOROETHANE	1.18E+00	2	1.0	35.0	1.00E+00	6.75E-02	9.00E-02	7.50E-01
									HAZARD INDEX
									7.50E-01

TABLE G - 10
CIRCUITRON CORPORATION SITE
RESIDENTIAL USE OF GROUNDWATER - INGESTION PATHWAY
ROUND II SAMPLES
UPGRADIENT - DEEP - MW1D

CARCINOGENS - AVERAGE GROUNDWATER INGESTION EXPOSURE

Chronic Daily Intake (mg/kg-day) = Water X Intake X Bioavail. X $\frac{1}{\text{Body Wt.}}$ X Years Exposed X Days Exposed
 Conc mg/l X 2 l/day X 1.0 X $\frac{1}{70 \text{ kg}}$ X $\frac{9 \text{ yrs}}{70 \text{ yrs}}$ X $\frac{365 \text{ days}}{365 \text{ days}}$

Group	Compound	Water Conc (mg/l)	Intake (l/day)	Bioavail. Factor	Body Wt. (kg)	Years Exposed	Days Exposed	CDI	SF	RISK (CDI*SF)
Adults	1,1-DICHLOROETHENE	3.70E-03	2	1.0	70.0	1.29E-01	1.00E+00	1.36E-05	6.00E-01	8.16E-06
	TRICHLOROETHENE	1.00E-02	2	1.0	70.0	1.29E-01	1.00E+00	3.67E-05	1.10E-02	4.04E-07
	TETRACHLOROETHENE	2.00E-02	2	1.0	70.0	1.29E-01	1.00E+00	7.35E-05	5.10E-02	3.75E-06
	1,1-DICHLOROETHANE	1.00E-03	2	1.0	70.0	1.29E-01	1.00E+00	3.67E-06	9.10E-02	3.34E-07
								TOTAL RISK		1.26E-05

CARCINOGENS - PLAUSIBLE MAXIMUM GROUNDWATER INGESTION EXPOSURE

Chronic Daily Intake (mg/kg-day) = Water X Intake X Bioavail. X $\frac{1}{\text{Body Wt.}}$ X Years Exposed X Days Exposed
 Conc mg/l X 2 l/day X 1.0 X $\frac{1}{70 \text{ kg}}$ X $\frac{30 \text{ yrs}}{70 \text{ yrs}}$ X $\frac{365 \text{ days}}{365 \text{ days}}$

Group	Compound	Water Conc (mg/l)	Intake (l/day)	Bioavail. Factor	Body Wt. (kg)	Years Exposed	Days Exposed	CDI	SF	RISK (CDI*SF)
Adults	1,1-DICHLOROETHENE	3.70E-03	2	1.0	70.0	4.29E-01	1.00E+00	4.53E-05	6.00E-01	2.72E-05
	TRICHLOROETHENE	1.00E-02	2	1.0	70.0	4.29E-01	1.00E+00	1.22E-04	1.10E-02	1.35E-06
	TETRACHLOROETHENE	2.00E-02	2	1.0	70.0	4.29E-01	1.00E+00	2.45E-04	5.10E-02	1.25E-05
	1,1-DICHLOROETHANE	1.00E-03	2	1.0	70.0	4.29E-01	1.00E+00	1.22E-05	9.10E-02	1.11E-06
								TOTAL RISK		4.21E-05

TABLE G - 10
CIRCUITRON CORPORATION SITE
RESIDENTIAL USE OF GROUNDWATER - INGESTION PATHWAY
ROUND 11 SAMPLES
UPGRADIENT - DEEP - MW1D

NONCARCINOGENS - AVERAGE GROUNDWATER INGESTION EXPOSURE: Adults

Chronic Daily Intake (mg/kg-day) = $\frac{\text{Water Conc} \times \text{Intake} \times \text{Bioavail.} \times \text{Factor}}{\text{Body Wt.}}$ X $\frac{\text{Days Exposed}}{\text{Days Year}}$

Chronic Daily Intake (mg/kg-day) = $\frac{\text{mg/l} \times 2 \text{ l/day} \times 1.0 \times 1.0}{70 \text{ kg}}$ X $\frac{365 \text{ days}}{365 \text{ days}}$

Group	Compound	Water Conc (mg/l)	Intake (l/day)	Bioavail. Factor	Body Wt. (kg)	Days Exposed	Days Year	CDI	Rfd	CDI\Rfd
Adults	1,1-DICHLOROETHANE	1.00E-03	2	1.0	70.0	1.00E+00	1.00E+00	2.86E-05	1.00E-01	2.86E-04
	1,1-DICHLOROETHENE	3.70E-03	2	1.0	70.0	1.00E+00	1.00E+00	1.06E-04	9.00E-03	1.17E-02
	1,1,1-TRICHLOROETHANE	2.30E-02	2	1.0	70.0	1.00E+00	1.00E+00	6.57E-04	9.00E-02	7.30E-03
	COPPER	1.53E-02	2	1.0	70.0	1.00E+00	1.00E+00	4.37E-04	3.70E-02	1.18E-02
	LEAD	1.11E-02	2	1.0	70.0	1.00E+00	1.00E+00	3.17E-04	1.43E-04	2.22E+00
									HAZARD INDEX	2.25E+00

NONCARCINOGENS - AVERAGE GROUNDWATER INGESTION EXPOSURE (cont.): Children 0-17 Yrs

Chronic Daily Intake (mg/kg-day) = $\frac{\text{Water Conc} \times \text{Intake} \times \text{Bioavail.} \times \text{Factor}}{\text{Body Wt.}}$ X $\frac{\text{Days Exposed}}{\text{Days Year}}$

Chronic Daily Intake (mg/kg-day) = $\frac{\text{mg/l} \times 2 \text{ l/day} \times 1.0 \times 1.0}{35 \text{ kg}}$ X $\frac{365 \text{ days}}{365 \text{ days}}$

Group	Compound	Water Conc (mg/l)	Intake (l/day)	Bioavail. Factor	Body Wt. (kg)	Days Exposed	Days Year	CDI	Rfd	CDI\Rfd
Child	1,1-DICHLOROETHANE	1.00E-03	2	1.0	35.0	1.00E+00	1.00E+00	5.71E-05	1.00E-01	5.71E-04
0-17 years	1,1-DICHLOROETHENE	3.70E-03	2	1.0	35.0	1.00E+00	1.00E+00	2.11E-04	9.00E-03	2.35E-02
	1,1,1-TRICHLOROETHANE	2.30E-02	2	1.0	35.0	1.00E+00	1.00E+00	1.31E-03	9.00E-02	1.46E-02
	COPPER	1.53E-02	2	1.0	35.0	1.00E+00	1.00E+00	8.74E-04	3.70E-02	2.36E-02
	LEAD	1.11E-02	2	1.0	35.0	1.00E+00	1.00E+00	6.34E-04	1.43E-04	4.44E+00
									HAZARD INDEX	4.50E+00

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J.S. : GWING9.XLS

TABLE G - 11
 CIRCUITRON CORPORATION SITE
 RESIDENTIAL USE OF GROUNDWATER - INGESTION PATHWAY
 ROUND II SAMPLES
 DOWNGRADIENT - SHALLOW - MW5S, 6S, 7S

CARCINOGENS - AVERAGE GROUNDWATER INGESTION EXPOSURE

Group	Compound	Water Conc (mg/l)	Intake (l/day)	Bioavail. Factor	Body Wt. (kg)	Years Exposed	Days Exposed	Water Conc (mg/l)	Intake (l/day)	Bioavail. Factor	Body Wt. (kg)	Years Exposed	Days Exposed	CDI	SF	RISK (CDI*SF)
Adults	1,1-DICHLOROETHENE	1.20E-03	2	1.0	70.0	1.29E-01	1.00E+00	1.20E-03	2	1.0	70.0	1.29E-01	1.00E+00	4.41E-06	6.00E-01	2.64E-06
	TRICHLOROETHENE	1.00E-03	2	1.0	70.0	1.29E-01	1.00E+00	1.00E-03	2	1.0	70.0	1.29E-01	1.00E+00	3.67E-06	1.10E-02	4.04E-08
	TETRACHLOROETHENE	9.45E-03	2	1.0	70.0	1.29E-01	1.00E+00	9.45E-03	2	1.0	70.0	1.29E-01	1.00E+00	3.47E-05	5.10E-02	1.77E-06
	1,1-DICHLOROETHANE	4.55E-03	2	1.0	70.0	1.29E-01	1.00E+00	4.55E-03	2	1.0	70.0	1.29E-01	1.00E+00	1.67E-05	9.10E-02	1.52E-06
														TOTAL RISK		5.98E-06

CARCINOGENS - PLAUSIBLE MAXIMUM GROUNDWATER INGESTION EXPOSURE

Group	Compound	Water Conc (mg/l)	Intake (l/day)	Bioavail. Factor	Body Wt. (kg)	Years Exposed	Days Exposed	Water Conc (mg/l)	Intake (l/day)	Bioavail. Factor	Body Wt. (kg)	Years Exposed	Days Exposed	CDI	SF	RISK (CDI*SF)
Adults	1,1-DICHLOROETHENE	1.20E-03	2	1.0	70.0	4.29E-01	1.00E+00	1.20E-03	2	1.0	70.0	4.29E-01	1.00E+00	1.47E-05	6.00E-01	8.82E-06
	TRICHLOROETHENE	1.00E-03	2	1.0	70.0	4.29E-01	1.00E+00	1.00E-03	2	1.0	70.0	4.29E-01	1.00E+00	1.22E-05	1.10E-02	1.35E-07
	TETRACHLOROETHENE	9.45E-03	2	1.0	70.0	4.29E-01	1.00E+00	9.45E-03	2	1.0	70.0	4.29E-01	1.00E+00	1.16E-04	5.10E-02	5.90E-06
	1,1-DICHLOROETHANE	4.55E-03	2	1.0	70.0	4.29E-01	1.00E+00	4.55E-03	2	1.0	70.0	4.29E-01	1.00E+00	5.57E-05	9.10E-02	5.07E-06
														TOTAL RISK		1.99E-05

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J.S. : GWJMG9.XLS

TABLE G - 11

CIRCUITRON CORPORATION SITE
RESIDENTIAL USE OF GROUNDWATER - INGESTION PATHWAY
ROUND II SAMPLES
DOWNGRAIENT - SHALLOW - MW55, 6S, 7S

NONCARCINOGENS - AVERAGE GROUNDWATER INGESTION EXPOSURE: Adults

Chronic Daily Intake (mg/kg-day) = $\frac{\text{Water Conc} \times \text{Intake} \times \text{Bioavail. Factor} \times \text{Body Wt.}}{\text{Days Exposed}}$

Chronic Daily Intake (mg/kg-day) = $\frac{\text{mg/l} \times 2 \text{ l/day} \times 1.0 \times 70 \text{ kg}}{365 \text{ days}}$

Group	Compound	Water Conc (mg/l)	Intake (l/day)	Bioavail. Factor	Body Wt (kg)	Days Exposed	CDI	Rfd	CDI\Rfd	
Adults	1,1-DICHLOROETHANE	4.55E-03	2	1.0	70.0	1.00E+00	1.30E-04	1.00E-01	1.30E-03	
	1,1-DICHLOROETHENE	1.20E-03	2	1.0	70.0	1.00E+00	3.43E-05	9.00E-03	3.81E-03	
	1,1,1-TRICHLOROETHANE	1.25E-01	2	1.0	70.0	1.00E+00	3.56E-03	9.00E-02	3.95E-02	
	COPPER	4.80E-02	2	1.0	70.0	1.00E+00	1.37E-03	3.70E-02	3.71E-02	
	CHROMIUM	1.45E-02	2	1.0	70.0	1.00E+00	4.14E-04	1.00E+00	4.14E-04	
	NICKEL	3.67E-02	2	1.0	70.0	1.00E+00	1.05E-03	2.00E-02	5.24E-02	
									HAZARD INDEX	1.35E-01

NONCARCINOGENS - AVERAGE GROUNDWATER INGESTION EXPOSURE (cont.): Children 0-17 yrs

Chronic Daily Intake (mg/kg-day) = $\frac{\text{Water Conc} \times \text{Intake} \times \text{Bioavail. Factor} \times \text{Body Wt.}}{\text{Days Exposed}}$

Chronic Daily Intake (mg/kg-day) = $\frac{\text{mg/l} \times 2 \text{ l/day} \times 1.0 \times 35 \text{ kg}}{365 \text{ days}}$

Group	Compound	Water Conc (mg/l)	Intake (l/day)	Bioavail. Factor	Body Wt (kg)	Days Exposed	CDI	Rfd	CDI\Rfd	
Child 0-17 years	1,1-DICHLOROETHANE	4.55E-03	2	1.0	35.0	1.00E+00	2.60E-04	1.00E-01	2.60E-03	
	1,1-DICHLOROETHENE	1.20E-03	2	1.0	35.0	1.00E+00	6.86E-05	9.00E-03	7.62E-03	
	1,1,1-TRICHLOROETHANE	1.25E-01	2	1.0	35.0	1.00E+00	7.11E-03	9.00E-02	7.90E-02	
	COPPER	4.80E-02	2	1.0	35.0	1.00E+00	2.74E-03	3.70E-02	7.41E-02	
	CHROMIUM	1.45E-02	2	1.0	35.0	1.00E+00	8.29E-04	1.00E+00	8.29E-04	
	NICKEL	3.67E-02	2	1.0	35.0	1.00E+00	2.10E-03	2.00E-02	1.05E-01	
									HAZARD INDEX	2.69E-01

TABLE G - 12
CIRCUITRON CORPORATION SITE
RESIDENTIAL USE OF GROUNDWATER - INGESTION PATHWAY
ROUND 11 SAMPLES
DOWNGRADIENT - DEEP - MW5D, 6D, 7D

CARCINOGENS - AVERAGE GROUNDWATER INGESTION EXPOSURE

Chronic Daily Intake (mg/kg-day) = $\frac{\text{Water Conc} \times \text{Intake} \times \text{Bioavail. Factor} \times \text{Body Wt.} \times \text{Years Exposed}}{\text{Days Exposed}}$

Chronic Daily Intake (mg/kg-day) = $\frac{\text{mg/l} \times 2 \text{ l/day} \times 1.0 \times 1 \times 9 \text{ yrs}}{365 \text{ days}}$

Group	Compound	Water Conc (mg/l)	Intake (l/day)	Bioavail. Factor	Body Wt (kg)	Years Exposed	Days Exposed	CDI	SF	RISK (CDI*SF)	
Adults	1,1-DICHLOROETHENE	5.80E-03	2	1.0	70.0	1.29E-01	1.00E+00	2.13E-05	6.00E-01	1.28E-05	
	TRICHLOROETHENE	2.70E-02	2	1.0	70.0	1.29E-01	1.00E+00	9.92E-05	1.10E-02	1.09E-06	
	TETRACHLOROETHENE	3.80E-02	2	1.0	70.0	1.29E-01	1.00E+00	1.40E-04	5.10E-02	7.12E-06	
	1,1-DICHLOROETHANE	1.60E-03	2	1.0	70.0	1.29E-01	1.00E+00	5.88E-06	9.10E-02	5.35E-07	
TOTAL RISK										2.15E-05	

CARCINOGENS - PLAUSIBLE MAXIMUM GROUNDWATER INGESTION EXPOSURE

Chronic Daily Intake (mg/kg-day) = $\frac{\text{Water Conc} \times \text{Intake} \times \text{Bioavail. Factor} \times \text{Body Wt.} \times \text{Years Exposed}}{\text{Days Exposed}}$

Chronic Daily Intake (mg/kg-day) = $\frac{\text{mg/l} \times 2 \text{ l/day} \times 1.0 \times 1 \times 30 \text{ yrs}}{365 \text{ days}}$

Group	Compound	Water Conc (mg/l)	Intake (l/day)	Bioavail. Factor	Body Wt (kg)	Years Exposed	Days Exposed	CDI	SF	RISK (CDI*SF)	
Adults	1,1-DICHLOROETHENE	5.80E-03	2	1.0	70.0	4.29E-01	1.00E+00	7.10E-05	6.00E-01	4.26E-05	
	TRICHLOROETHENE	2.70E-02	2	1.0	70.0	4.29E-01	1.00E+00	3.31E-04	1.10E-02	3.64E-06	
	TETRACHLOROETHENE	3.80E-02	2	1.0	70.0	4.29E-01	1.00E+00	4.65E-04	5.10E-02	2.37E-05	
	1,1-DICHLOROETHANE	1.60E-03	2	1.0	70.0	4.29E-01	1.00E+00	1.96E-05	9.10E-02	1.78E-06	
TOTAL RISK										7.18E-05	

TABLE G - 12
CIRCUITRON CORPORATION SITE
RESIDENTIAL USE OF GROUNDWATER - INGESTION PATHWAY
ROUND 11 SAMPLES
DOWNGRADEMENT - DEEP - MW5D, 6D, 7D

NONCARCINOGENS - AVERAGE GROUNDWATER INGESTION EXPOSURE: Adults

Chronic Daily Intake (mg/kg-day) = $\frac{\text{Water Conc} \times \text{Intake} \times \text{Bioavail.} \times \text{Factor}}{\text{Body Wt.}}$ X $\frac{\text{Days Exposed}}{\text{Days Year}}$
 Chronic Daily Intake (mg/kg-day) = $\frac{\text{mg/l} \times 2 \text{ l/day} \times 1.0 \times 1.0}{70 \text{ kg}}$ X $\frac{365 \text{ days}}{365 \text{ days}}$

Group	Compound	Water Conc (mg/l)	Intake (l/day)	Bioavail. Factor	Body Wt (kg)	Days Exposed Days Year	CDI	Rfd	CDI\Rfd
Adults	1,1-DICHLOROETHANE	1.60E-03	2	1.0	70.0	1.00E+00	4.57E-05	1.00E-01	4.57E-04
	1,1-DICHLOROETHENE	5.80E-03	2	1.0	70.0	1.00E+00	1.66E-04	9.00E-03	1.84E-02
	1,1,1-TRICHLOROETHANE	1.90E-02	2	1.0	70.0	1.00E+00	5.43E-04	9.00E-02	6.03E-03
	COPPER	2.87E-01	2	1.0	70.0	1.00E+00	8.20E-03	3.70E-02	2.22E-01
	CHROMIUM	6.70E-03	2	1.0	70.0	1.00E+00	1.91E-04	1.00E+00	1.91E-04
	LEAD	1.46E-02	2	1.0	70.0	1.00E+00	4.17E-04	1.43E-04	2.92E+00
	NICKEL	1.87E-02	2	1.0	70.0	1.00E+00	5.34E-04	2.00E-02	2.67E-02
								HAZARD INDEX	3.19E+00

NONCARCINOGENS - AVERAGE GROUNDWATER INGESTION EXPOSURE (cont.): Children 0-17 Yrs

Chronic Daily Intake (mg/kg-day) = $\frac{\text{Water Conc} \times \text{Intake} \times \text{Bioavail.} \times \text{Factor}}{\text{Body Wt.}}$ X $\frac{\text{Days Exposed}}{\text{Days Year}}$
 Chronic Daily Intake (mg/kg-day) = $\frac{\text{mg/l} \times 2 \text{ l/day} \times 1.0 \times 1.0}{35 \text{ kg}}$ X $\frac{365 \text{ days}}{365 \text{ days}}$

Group	Compound	Water Conc (mg/l)	Intake (l/day)	Bioavail. Factor	Body Wt (kg)	Days Exposed Days Year	CDI	Rfd	CDI\Rfd
Child 0-17 years	1,1-DICHLOROETHANE	1.60E-03	2	1.0	35.0	1.00E+00	9.14E-05	1.00E-01	9.14E-04
	1,1-DICHLOROETHENE	5.80E-03	2	1.0	35.0	1.00E+00	3.31E-04	9.00E-03	3.68E-02
	1,1,1-TRICHLOROETHANE	1.90E-02	2	1.0	35.0	1.00E+00	1.09E-03	9.00E-02	1.21E-02
	COPPER	2.87E-01	2	1.0	35.0	1.00E+00	1.64E-02	3.70E-02	4.43E-01
	CHROMIUM	6.70E-03	2	1.0	35.0	1.00E+00	3.83E-04	1.00E+00	3.83E-04
	LEAD	1.46E-02	2	1.0	35.0	1.00E+00	8.34E-04	1.43E-04	5.83E+00
	NICKEL	1.87E-02	2	1.0	35.0	1.00E+00	1.07E-03	2.00E-02	5.34E-02
								HAZARD INDEX	6.38E+00

TABLE G - 13
CIRCUITRON CORPORATION SITE
RESIDENTIAL USE OF GROUNDWATER - INGESTION PATHWAY
ROUND 11 SAMPLES
ON-SITE SHALLOW - M2S, 3S, 4S, 8, 9, 10, 11, 12

CARCINOGENS - AVERAGE GROUNDWATER INGESTION EXPOSURE

Chronic Daily Intake (mg/kg-day) = $\frac{\text{Water Conc} \times \text{Intake} \times \text{Bioavail.} \times \text{Factor} \times \text{Years Exposed}}{\text{Body Wt.} \times \text{Days Exposed}}$

Chronic Daily Intake (mg/kg-day) = $\frac{\text{mg/l} \times 2 \text{ l/day} \times 1.0 \times 1 \times 9 \text{ yrs}}{70 \text{ kg} \times 365 \text{ days}}$

Group	Compound	Water Conc (mg/l)	Intake (l/day)	Bioavail. Factor	Body Wt (kg)	Years Exposed	Days Exposed	CDI	SF	RISK (CDI*SF)
Adults	1,1-DICHLOROETHENE	2.30E-02	2	1.0	70.0	1.29E-01	1.00E+00	8.45E-05	6.00E-01	5.07E-05
	TRICHLOROETHENE	7.40E-03	2	1.0	70.0	1.29E-01	1.00E+00	2.72E-05	1.10E-02	2.99E-07
	TETRACHLOROETHENE	8.70E-02	2	1.0	70.0	1.29E-01	1.00E+00	3.20E-04	5.10E-02	1.63E-05
	1,1-DICHLOROETHANE	1.00E-02	2	1.0	70.0	1.29E-01	1.00E+00	3.67E-05	9.10E-02	3.34E-06
										TOTAL RISK 7.06E-05

CARCINOGENS - PLAUSIBLE MAXIMUM GROUNDWATER INGESTION EXPOSURE

Chronic Daily Intake (mg/kg-day) = $\frac{\text{Water Conc} \times \text{Intake} \times \text{Bioavail.} \times \text{Factor} \times \text{Years Exposed}}{\text{Body Wt.} \times \text{Days Exposed}}$

Chronic Daily Intake (mg/kg-day) = $\frac{\text{mg/l} \times 2 \text{ l/day} \times 1.0 \times 1 \times 30 \text{ yrs}}{70 \text{ kg} \times 365 \text{ days}}$

Group	Compound	Water Conc (mg/l)	Intake (l/day)	Bioavail. Factor	Body Wt (kg)	Years Exposed	Days Exposed	CDI	SF	RISK (CDI*SF)
Adults	1,1-DICHLOROETHENE	2.30E-02	2	1.0	70.0	4.29E-01	1.00E+00	2.82E-04	6.00E-01	1.69E-04
	TRICHLOROETHENE	7.40E-03	2	1.0	70.0	4.29E-01	1.00E+00	9.06E-05	1.10E-02	9.97E-07
	TETRACHLOROETHENE	8.70E-02	2	1.0	70.0	4.29E-01	1.00E+00	1.07E-03	5.10E-02	5.43E-05
	1,1-DICHLOROETHANE	1.00E-02	2	1.0	70.0	4.29E-01	1.00E+00	1.22E-04	9.10E-02	1.11E-05
										TOTAL RISK 2.35E-04

CIRCUITRON CORPORATION SITE
RESIDENTIAL USE OF GROUNDWATER - INGESTION PATHWAY
ROUND II SAMPLES
ON-SITE SHALLOW - MW2S, 3S, 4S, 8, 9, 10, 11, 12

NONCARCINOGENS - AVERAGE GROUNDWATER INGESTION EXPOSURE: Adults

Chronic Daily Intake (mg/kg-day) = $\frac{\text{Water Conc} \times \text{Intake} \times \text{Bioavail.} \times \text{Factor}}{\text{Body Wt.}}$ X $\frac{\text{Days Exposed}}{\text{Days Year}}$
 Chronic Daily Intake (mg/kg-day) = $\frac{1.00 \text{ mg/l} \times 2 \text{ l/day} \times 1.0 \times 1.0}{70 \text{ kg}}$ X $\frac{365 \text{ days}}{365 \text{ days}}$

Group	Compound	Water Conc (mg/l)	Intake (l/day)	Bioavail. Factor	Body Wt (kg)	Days Exposed	Days Year	CDI	Rfd	CDI\Rfd
Adults	1,1-DICHLOROETHANE	1.00E-02	2	1.0	70.0	1.00E+00	1.00E+00	2.86E-04	1.00E-01	2.86E-03
	1,1-DICHLOROETHENE	2.30E-02	2	1.0	70.0	1.00E+00	1.00E+00	6.57E-04	9.00E-03	7.30E-02
	1,1,1-TRICHLOROETHANE	3.80E-01	2	1.0	70.0	1.00E+00	1.00E+00	1.09E-02	9.00E-02	1.21E-01
	COPPER	6.41E-02	2	1.0	70.0	1.00E+00	1.00E+00	1.83E-03	3.70E-02	4.95E-02
	CHROMIUM	1.02E-02	2	1.0	70.0	1.00E+00	1.00E+00	2.91E-04	1.00E+00	2.91E-04
	LEAD	3.40E-03	2	1.0	70.0	1.00E+00	1.00E+00	9.71E-05	1.43E-04	6.79E-01
	NICKEL	1.72E-02	2	1.0	70.0	1.00E+00	1.00E+00	4.91E-04	2.00E-02	2.46E-02

HAZARD INDEX

NONCARCINOGENS - AVERAGE GROUNDWATER INGESTION EXPOSURE (cont.): Children 0-17 yrs

Chronic Daily Intake (mg/kg-day) = $\frac{\text{Water Conc} \times \text{Intake} \times \text{Bioavail.} \times \text{Factor}}{\text{Body Wt.}}$ X $\frac{\text{Days Exposed}}{\text{Days Year}}$
 Chronic Daily Intake (mg/kg-day) = $\frac{1.00 \text{ mg/l} \times 2 \text{ l/day} \times 1.0 \times 1.0}{35 \text{ kg}}$ X $\frac{365 \text{ days}}{365 \text{ days}}$

Group	Compound	Water Conc (mg/l)	Intake (l/day)	Bioavail. Factor	Body Wt (kg)	Days Exposed	Days Year	CDI	Rfd	CDI\Rfd
Child 0-17 years	1,1-DICHLOROETHANE	1.00E-02	2	1.0	35.0	1.00E+00	1.00E+00	5.71E-04	1.00E-01	5.71E-03
	1,1-DICHLOROETHENE	2.30E-02	2	1.0	35.0	1.00E+00	1.00E+00	1.31E-03	9.00E-03	1.46E-01
	1,1,1-TRICHLOROETHANE	3.80E-01	2	1.0	35.0	1.00E+00	1.00E+00	2.17E-02	9.00E-02	2.41E-01
	COPPER	6.41E-02	2	1.0	35.0	1.00E+00	1.00E+00	3.66E-03	3.70E-02	9.90E-02
	CHROMIUM	1.02E-02	2	1.0	35.0	1.00E+00	1.00E+00	5.83E-04	1.00E+00	5.83E-04
	LEAD	6.14E-02	2	1.0	35.0	1.00E+00	1.00E+00	3.51E-03	1.43E-04	2.45E+01
	NICKEL	7.02E-02	2	1.0	35.0	1.00E+00	1.00E+00	4.01E-03	2.00E-02	2.01E-01

HAZARD INDEX

TABLE G- 14
CIRCUITRON CORPORATION SITE
RESIDENTIAL USE OF GROUNDWATER - INGESTION PATHWAY
ROUND II SAMPLES
ON-SITE DEEP - MW 2D, 3D, 4D

CARCINOGENS - AVERAGE GROUNDWATER INGESTION EXPOSURE

Chronic Daily Intake (mg/kg-day) = Water X Intake X Bioavail. X $\frac{1}{\text{Body Wt.}}$ X Years Exposed X Days Exposed
Conc mg/l X 2 l/day X 1.0 X $\frac{1}{70 \text{ kg}}$ X 9 yrs X 365 days

Chronic Daily Intake (mg/kg-day) = Water X Intake X Bioavail. X $\frac{1}{\text{Body Wt.}}$ X Years Exposed X Days Exposed
Conc mg/l X 2 l/day X 1.0 X $\frac{1}{70 \text{ kg}}$ X 70 yrs X 365 days

Group	Compound	Water Conc(mg/l)	Intake (l/day)	Bioavail. Factor	Body Wt. (kg)	Years Exposed	Days Exposed	CDI	SF	RISK (CDI*SF)
Adults	1,1-DICHLOROETHENE	1.10E-02	2	1.0	70.0	1.29E-01	1.00E+00	4.04E-05	6.00E-01	2.42E-05
	TRICHLOROETHENE	2.70E-02	2	1.0	70.0	1.29E-01	1.00E+00	9.92E-05	1.10E-02	1.09E-06
	TETRACHLOROETHENE	2.80E-02	2	1.0	70.0	1.29E-01	1.00E+00	1.03E-04	5.10E-02	5.25E-06
	1,1-DICHLOROETHANE	2.00E-03	2	1.0	70.0	1.29E-01	1.00E+00	7.35E-06	9.10E-02	6.69E-07
									TOTAL RISK	3.15E-05

CARCINOGENS - PLAUSIBLE MAXIMUM GROUNDWATER INGESTION EXPOSURE

Chronic Daily Intake (mg/kg-day) = Water X Intake X Bioavail. X $\frac{1}{\text{Body Wt.}}$ X Years Exposed X Days Exposed
Conc mg/l X 2 l/day X 1.0 X $\frac{1}{70 \text{ kg}}$ X 30 yrs X 365 days

Chronic Daily Intake (mg/kg-day) = Water X Intake X Bioavail. X $\frac{1}{\text{Body Wt.}}$ X Years Exposed X Days Exposed
Conc mg/l X 2 l/day X 1.0 X $\frac{1}{70 \text{ kg}}$ X 70 yrs X 365 days

Group	Compound	Water Conc(mg/l)	Intake (l/day)	Bioavail. Factor	Body Wt. (kg)	Years Exposed	Days Exposed	CDI	SF	RISK (CDI*SF)
Adults	1,1-DICHLOROETHENE	1.10E-02	2	1.0	70.0	4.29E-01	1.00E+00	1.35E-04	6.00E-01	8.08E-05
	TRICHLOROETHENE	2.70E-02	2	1.0	70.0	4.29E-01	1.00E+00	3.31E-04	1.10E-02	3.64E-06
	TETRACHLOROETHENE	2.80E-02	2	1.0	70.0	4.29E-01	1.00E+00	3.43E-04	5.10E-02	1.75E-05
	1,1-DICHLOROETHANE	2.00E-03	2	1.0	70.0	4.29E-01	1.00E+00	2.45E-05	9.10E-02	2.23E-06
									TOTAL RISK	1.04E-04

TABLE G- 14
CIRCUITRON CORPORATION SITE
RESIDENTIAL USE OF GROUNDWATER - INGESTION PATHWAY
ROUND II SAMPLES

ON-SITE DEEP - MW 2D, 3D, 4D

NONCARCINOGENS - AVERAGE GROUNDWATER INGESTION EXPOSURE: Adults

Group	Compound	Water Conc (mg/l)	Intake (l/day)	Bioavail. Factor	Body Wt. (kg)	Days Exposed Days Year	CDI	Rfd	CDI\Rfd
Adults	1,1-DICHLOROETHANE	2.00E-03	2	1.0	70.0	1.00E+00	5.71E-05	1.00E-01	5.71E-04
	1,1-DICHLOROETHENE	1.10E-02	2	1.0	70.0	1.00E+00	3.14E-04	9.00E-03	3.49E-02
	1,1,1-TRICHLOROETHANE	6.10E-02	2	1.0	70.0	1.00E+00	1.74E-03	9.00E-02	1.94E-02
	COPPER	8.60E-03	2	1.0	70.0	1.00E+00	2.46E-04	3.70E-02	6.64E-03
	CHROMIUM	2.10E-02	2	1.0	70.0	1.00E+00	6.00E-04	1.00E+00	6.00E-04
	LEAD	1.44E-02	2	1.0	70.0	1.00E+00	4.11E-04	1.43E-04	2.88E+00
									HAZARD INDEX
									2.94E+00

Chronic Daily Intake (mg/kg-day) = $\frac{\text{Water Conc} \times \text{Intake} \times \text{Bioavail.} \times \text{Body Wt.}}{\text{Days Exposed}}$

Chronic Daily Intake (mg/kg-day) = $\frac{\text{mg/l} \times 2 \text{ l/day} \times 1.0 \times 70 \text{ kg}}{365 \text{ days}}$

NONCARCINOGENS - AVERAGE GROUNDWATER INGESTION EXPOSURE (cont.): Children 0-17 yrs

Group	Compound	Water Conc (mg/l)	Intake (l/day)	Bioavail. Factor	Body Wt. (kg)	Days Exposed Days Year	CDI	Rfd	CDI\Rfd
Child	1,1-DICHLOROETHANE	2.00E-03	2	1.0	35.0	1.00E+00	1.14E-04	1.00E-01	1.14E-03
0-17 years	1,1-DICHLOROETHENE	1.10E-02	2	1.0	35.0	1.00E+00	6.29E-04	9.00E-03	6.98E-02
	1,1,1-TRICHLOROETHANE	6.10E-02	2	1.0	35.0	1.00E+00	3.49E-03	9.00E-02	3.87E-02
	COPPER	8.60E-03	2	1.0	35.0	1.00E+00	4.91E-04	3.70E-02	1.33E-02
	CHROMIUM	2.10E-02	2	1.0	35.0	1.00E+00	1.20E-03	1.00E+00	1.20E-03
	LEAD	1.44E-02	2	1.0	35.0	1.00E+00	8.23E-04	1.43E-04	5.75E+00
									HAZARD INDEX
									5.88E+00

Chronic Daily Intake (mg/kg-day) = $\frac{\text{Water Conc} \times \text{Intake} \times \text{Bioavail.} \times \text{Body Wt.}}{\text{Days Exposed}}$

Chronic Daily Intake (mg/kg-day) = $\frac{\text{mg/l} \times 2 \text{ l/day} \times 1.0 \times 35 \text{ kg}}{365 \text{ days}}$

7/20/90

JS : CASHOW1.XLS

TABLE G - 15

CIRCUITRON CORPORATION SITE
 INHALATION OF VOLATILE CONTAMINANTS WHILE SHOWERING
UPGRADIENT - SHALLOW - MW1S

* These parameters were used to calculate the contaminant intake in mg/day based on a model of volatile inhalation exposure while showering by Foster and Chrostowski, 1987.

NON-CARCINOGENS - GROUNDWATER INHALATION EXPOSURE WHILE SHOWERING: Adults

Scenario Parameters:

Shower Frequency = 1/day
 Shower Room Vol.* (m³) = 6.0
 Droplet Diam.* (mm) = 1.0
 Shower Water Flow Rate* (l/min) = 10.0
 Bathroom Air Exchange Rate* (exch/hr) = 1.0
 Inhalation Rate* (m³/hr) = 1.4
 Shower Water Temp* (C) = 45.0
 Droplet Drop Time* (sec) = 2.000
 Shower Duration* (min) = 15.0
 Time in Room After Shower* (min) = 10.0
 Viscosity of Shower Water* (cp) = 0.601

Chronic Daily Intake (mg/kg-day) = Contaminant X $\frac{1}{\text{Body Wt.}}$ X Bioavail. X $\frac{\text{Days Exposed}}{\text{Days/Yr}}$

Chronic Daily Intake (mg/kg-day) = mg/day X $\frac{1}{70 \text{ kg}}$ X 1.0 X $\frac{365 \text{ days}}{365 \text{ days}}$

Compound	Water Conc (mg/L)	Henry Law Coeff* (atm-m ³ /mol-K)	Mass Transfer Coeff* (cm/hr)	Contaminant Intake (mg/day)	Body Wt (kg)	Fraction Absorbed	Days Exposed Days/Yr	CDI	Rfd	CDI/Rfd
Adults										
1,1,1-TRICHLOROETHANE	7.60E-04	1.44E-03	15.36903	2.68E-03	70	1.0	1.00E+00	3.82E-05	1.00E-01	3.82E-04
				HAZARD INDEX						3.82E-04

7/20/90

JS : CCSHOW1.XLS

TABLE G - 15

CIRCUITRON CORPORATION SITE
INHALATION OF VOLATILE CONTAMINANTS WHILE SHOWERING
UPGRADIENT - SHALLOW - MW1S

* These parameters were used to calculate the contaminant intake in mg/day based on a model of volatile inhalation exposure while showering by Foster and Chrostowski, 1987.

NON-CARCINOGENS - GROUNDWATER INHALATION EXPOSURE WHILE SHOWERING: Children 0-17 yrs

Scenario Parameters:

Shower Frequency = 1/day
Shower Room Vol.* (m³) = 6.0
Droplet Diam.* (mm) = 1.0
Shower Water Flow Rate* (l/min) = 10.0
Bathroom Air Exchange Rate* (exch/hr) = 1.0
Inhalation Rate* (m³/hr) = 1.4
Shower Water Temp* (C) = 45.0
Droplet Drop Time* (sec) = 2.000
Shower Duration* (min) = 15.0
Time in Room After Shower* (min) = 10.0
Viscosity of Shower Water* (cp) = 0.601

Chronic Daily Intake (mg/kg-day) = Contaminant X $\frac{1}{35 \text{ kg}}$ X Bioavail. X $\frac{\text{Days Exposed}}{\text{Days/Yr}}$

Chronic Daily Intake (mg/kg-day) = mg/day X $\frac{1}{35 \text{ kg}}$ X 1.0 X $\frac{365 \text{ days}}{365 \text{ days}}$

Water Conc (mg/L)	Henry Law Coeff* (atm-m ³ /mol-K)	Mass Transfer Coeff* (cm/hr)	Contaminant Intake (mg/day)	Body Wt (kg)	Fraction Absorbed	Days Exposed Days/Yr	CDI	Rfd	CDI/Rfd
7.60E-04	1.44E-03	15.36903	2.68E-03	35	1.0	1.00E+00	7.65E-05	1.00E-01	7.65E-04
							HAZARD INDEX		7.65E-04

Children: 0-17 years
1,1,1-TRICHLOROETHANE

7/27/90

JS : CESHOM2.XLS

TABLE G - 16

CIRCUITRON CORPORATION SITE
 INHALATION OF VOLATILE CONTAMINANTS WHILE SHOWERING
 UPGRADEMENT - DEEP - MW1D

* These parameters were used to calculate the contaminant intake in mg/day based on a model of volatile inhalation exposure while showering by Foster and Chrostowski, 1987.

CARCINOGENS - GROUNDWATER INHALATION EXPOSURE WHILE SHOWERING

Scenario Parameters:

Shower Frequency = 1/day
 Shower Room Vol.* (m³) = 6.0 Shower Water Temp* (C) = 45.0
 Droplet Diam.* (mm) = 1.0 Droplet Drop Time* (sec) = 2.000
 Shower Water Flow Rate* (l/min) = 10.0 Shower Duration* (min) = 15.0
 Bathroom Air Exchange Rate* (exch/hr) = 1.0 Time in Room After Shower* (min) = 10.0
 Inhalation Rate* (m³/hr) = 1.4 Viscosity of Shower Water* (cp) = 0.601

Chronic Daily Intake (mg/kg-day) = Contaminant X $\frac{1}{70 \text{ kg}}$ X Bioavail. X $\frac{\text{Days Exposed}}{\text{Days/Yr}}$ X $\frac{\text{Years Exposed}}{\text{Years Lifetime}}$
 Intake mg/day X 1 X 1.0 X $\frac{365 \text{ days}}{365 \text{ days}}$ X $\frac{9 \text{ yrs}}{70 \text{ yrs}}$

Compound	Water Conc* (mg/l)	Henry Law Coeff* (atm-m ³ /mol-K)	Mass Transfer Coeff* (cm/hr)	Contaminant Intake (mg/day)	Body Wt (kg)	Bio-availability Factor	Days Exposed Days/Yr	Years Exposed Years Lifetime	CDI	SF	RISK SF*CDI
Adults - Ave case											
1,1-DICHLOROETHENE	3.00E-03	3.40E-02	1.82E+01	1.20E-02	70	1.0	1.00E+00	1.29E-01	2.20E-05	1.20E+00	2.64E-05
CHLOROFORM	2.40E-02	2.87E-03	1.52E+01	8.38E-02	70	1.0	1.00E+00	1.29E-01	1.54E-04	8.10E-02	1.25E-05
TRICHLOROETHENE	1.80E-02	9.10E-03	1.53E+01	6.33E-02	70	1.0	1.00E+00	1.29E-01	1.16E-04	1.70E-02	1.98E-06
TETRACHLOROETHENE	2.90E-02	2.59E-02	1.39E+01	9.43E-02	70	1.0	1.00E+00	1.29E-01	1.73E-04	3.30E-02	5.71E-06
										TOTAL RISK	4.66E-05

Compound	Water Conc* (mg/l)	Henry Law Coeff* (atm-m ³ /mol-K)	Mass Transfer Coeff* (cm/hr)	Contaminant Intake (mg/day)	Body Wt (kg)	Bio-availability Factor	Days Exposed Days/Yr	Years Exposed Years Lifetime	CDI	SF	RISK SF*CDI
Adults - Max case											
1,1-DICHLOROETHENE	3.00E-03	3.40E-02	1.82E+01	1.20E-02	70	1.0	1.00E+00	4.29E-01	7.34E-05	1.20E+00	8.81E-05
CHLOROFORM	2.40E-02	2.87E-03	1.52E+01	8.38E-02	70	1.0	1.00E+00	4.29E-01	5.14E-04	8.10E-02	4.16E-05
TRICHLOROETHENE	1.80E-02	9.10E-03	1.53E+01	6.33E-02	70	1.0	1.00E+00	4.29E-01	3.88E-04	1.70E-02	6.59E-06
TETRACHLOROETHENE	2.90E-02	2.59E-02	1.39E+01	9.43E-02	70	1.0	1.00E+00	4.29E-01	5.78E-04	3.30E-02	1.91E-05
										TOTAL RISK	1.55E-04

7/27/90

JS : CCSHOW2.XLS

TABLE G - 16

CIRCUITRON CORPORATION SITE
 INHALATION OF VOLATILE CONTAMINANTS WHILE SHOWERING
UPGRADIENT - DEEP - MW1D

* These parameters were used to calculate the contaminant intake in mg/day based on a model of volatile inhalation exposure while showering by Foster and Chrostowski, 1987.

NON-CARCINOGENS - GROUNDWATER INHALATION EXPOSURE WHILE SHOWERING: Adults

Scenario Parameters:

Shower Frequency = 1/day
 Shower Room Vol.* (m³) = 6.0
 Droplet Diam.* (mm) = 1.0
 Shower Water Flow Rate* (l/min) = 10.0
 Bathroom Air Exchange Rate* (exch/hr) = 1.0
 Inhalation Rate* (m³/hr) = 1.4
 Shower Water Temp* (C) = 45.0
 Droplet Drop Time* (sec) = 2.000
 Shower Duration* (min) = 15.0
 Time in Room After Shower* (min) = 10.0
 Viscosity of Shower Water* (cp) = 0.601

Chronic Daily Intake (mg/kg-day) = Contaminant X $\frac{1}{\text{Body Wt.}}$ X Bioavail. X $\frac{\text{Days Exposed}}{\text{Days/Yr}}$

Chronic Daily Intake (mg/kg-day) = $\frac{\text{mg/day}}{70 \text{ kg}}$ X $\frac{1}{1.0}$ X $\frac{365 \text{ days}}{365 \text{ days}}$

Compound	Water Conc (mg/l)	Henry Law Coeff* (atm-m ³ /mol-K)	Mass Transfer Coeff* (cm/hr)	Contaminant Intake (mg/day)	Body Wt (kg)	Fraction Absorbed	Days Exposed	Days/Yr	CDI	Rfd	CDI/Rfd
									CDI	Rfd	CDI/Rfd
Adults											
CHLOROFORM	2.40E-02	2.87E-03	1.52E+01	8.38E-02	70	1.0	1.00E+00	1.00E+00	1.20E-03	1.00E-01	1.20E-02
1,1-DICHLOROETHANE	1.00E-01	4.31E-03	1.71E+01	3.82E-03	70	1.0	1.00E+00	1.00E+00	5.46E-05	9.00E-02	6.07E-04
1,1,1-TRICHLOROETHANE	2.80E-02	1.44E-03	1.54E+01	9.86E-02	70	1.0	1.00E+00	1.00E+00	1.41E-03	1.00E-01	1.41E-02
									HAZARD INDEX		2.67E-02

TABLE G - 16
CIRCUITRON CORPORATION SITE
INHALATION OF VOLATILE CONTAMINANTS WHILE SHOWERING
UPGRADIENT - DEEP - MW1D

* These parameters were used to calculate the contaminant intake in mg/day based on a model of volatile inhalation exposure while showering by Foster and Chrostowski, 1987.

NON-CARCINOGENS - GROUNDWATER INHALATION EXPOSURE WHILE SHOWERING: Children 0-17 yrs

Scenario Parameters:

Shower Frequency = 1/day
 Shower Room Vol.* (m³) = 6.0
 Droplet Diam.* (mm) = 1.0
 Shower Water Flow Rate* (l/min) = 10.0
 Bathroom Air Exchange Rate* (exch/hr) = 1.0
 Inhalation Rate* (m³/hr) = 1.4
 Shower Water Temp* (C) = 45.0
 Droplet Drop Time* (sec) = 2.000
 Shower Duration* (min) = 15.0
 Time in Room After Shower* (min) = 10.0
 Viscosity of Shower Water* (cp) = 0.601

Chronic Daily Intake (mg/kg-day) = Contaminant X $\frac{1}{\text{Body Wt.}}$ X Bioavail. X $\frac{\text{Days Exposed}}{\text{Days/Yr}}$

Chronic Daily Intake (mg/kg-day) = mg/day X $\frac{1}{35 \text{ kg}}$ X 1.0 X $\frac{365 \text{ days}}{365 \text{ days}}$

Water Conc (mg/l)	Henry Law Coeff* (atm-m ³ /mol-K)	Mass Transfer Coeff* (cm/hr)	Contaminant Intake (mg/day)	Body Wt (kg)	Fraction Absorbed	Days Exposed Days/Yr	CDI	Rfd	CDI/Rfd
							2.40E-02	1.00E-01	2.40E-03
2.40E-02	2.87E-03	1.52E+01	8.38E-02	35	1.0	1.00E+00	2.40E-03	1.00E-01	2.40E-02
1.00E-01	4.31E-03	1.71E+01	3.82E-03	35	1.0	1.00E+00	1.09E-04	9.00E-02	1.21E-03
2.80E-02	1.44E-03	1.54E+01	9.86E-02	35	1.0	1.00E+00	2.82E-03	1.00E-01	2.82E-02

HAZARD INDEX

Children: 0-17 years

CHLOROFORM

1,1-DICHLOROETHANE

1,1,1-TRICHLOROETHANE

7/27/90

JS : CESH043.XLS

TABLE G - 17

CIRCUITRON CORPORATION SITE
 INHALATION OF VOLATILE CONTAMINANTS WHILE SHOWERING
 DOWNGRADIENT - SHALLOW - MW55, 6S, 7S

* These parameters were used to calculate the contaminant intake in mg/day based on a model of volatile inhalation exposure while showering by Foster and Chrostowski, 1987.

CARCINOGENS - GROUNDWATER INHALATION EXPOSURE WHILE SHOWERING

Scenario Parameters:

Shower Frequency = 1/day
 Shower Room Vol.* (m³) = 6.0 Shower Water Temp* (C) = 45.0
 Droplet Diam.* (mm) = 1.0 Droplet Drop Time* (sec) = 2.000
 Shower Water Flow Rate* (l/min) = 10.0 Shower Duration* (min) = 15.0
 Bathroom Air Exchange Rate* (exch/hr) = 1.0 Time in Room After Shower* (min) = 10.0
 Inhalation Rate* (m³/hr) = 1.4 Viscosity of Shower Water* (cp) = 0.601

Chronic Daily Intake (mg/kg-day) = Contaminant X $\frac{1}{\text{Body Wt.}}$ X Bioavail. X $\frac{\text{Days Exposed}}{\text{Days/Yr}}$ X $\frac{\text{Years Exposed}}{\text{Years Lifetime}}$

Chronic Daily Intake (mg/kg-day) = mg/day X $\frac{1}{70 \text{ kg}}$ X 1.0 X $\frac{365 \text{ days}}{365 \text{ days}}$ X $\frac{9 \text{ yrs}}{70 \text{ yrs}}$

Compound	Water Conc* (mg/L)	Henry Law Coeff* (atm-m ³ /mol-K)	Mass Transfer Coeff* (cm/hr)	Contaminant Intake (mg/day)	Body Wt (kg)	Bio-availability Factor	Days Exposed Days/Yr	Years Exposed Years Lifetime	TOTAL RISK			
									CDI	SF	RISK SF*CDI	
Adults - Ave case												
1,1-DICHLOROETHENE	6.00E-04	3.40E-02	1.82E+01	2.40E-03	70	1.0	1.00E+00	1.29E-01	4.40E-06	1.20E+00	5.28E-06	
TRICHLOROETHENE	1.00E-03	9.10E-03	1.53E+01	3.52E-03	70	1.0	1.00E+00	1.29E-01	6.46E-06	1.70E-02	1.10E-07	
TETRACHLOROETHENE	1.10E-01	2.59E-03	1.28E+01	3.35E-02	70	1.0	1.00E+00	1.29E-01	6.15E-05	3.30E-02	2.03E-06	
												7.42E-06
Adults - Max case												
1,1-DICHLOROETHENE	6.00E-04	3.40E-02	1.82E+01	2.40E-03	70	1.0	1.00E+00	4.29E-01	1.47E-05	1.20E+00	1.76E-05	
TRICHLOROETHENE	1.00E-03	9.10E-03	1.53E+01	3.52E-03	70	1.0	1.00E+00	4.29E-01	2.15E-05	1.70E-02	3.66E-07	
TETRACHLOROETHENE	1.10E-01	2.59E-03	1.28E+01	3.35E-02	70	1.0	1.00E+00	4.29E-01	2.05E-04	3.30E-02	6.77E-06	
												2.48E-05

7/27/90

JS : CESH03.XLS

TABLE G - 17

CIRCUITRON CORPORATION SITE
 INHALATION OF VOLATILE CONTAMINANTS WHILE SHOWERING
 DOWNGRADIANT - SHALLOW - MW5S, 6S, 7S

* These parameters were used to calculate the contaminant intake in mg/day based on a model of volatile inhalation exposure while showering by Foster and Chrostowski, 1987.

NON-CARCINOGENS - GROUNDWATER INHALATION EXPOSURE WHILE SHOWERING: Adults

Scenario Parameters:

Shower Frequency = 1/day
 Shower Room Vol.* (m³) = 6.0
 Droplet Diam.* (mm) = 1.0
 Shower Water Flow Rate* (l/min) = 10.0
 Bathroom Air Exchange Rate* (exch/hr) = 1.0
 Inhalation Rate* (m³/hr) = 1.4
 Shower Water Temp* (C) = 45.0
 Droplet Drop Time* (sec) = 2.000
 Shower Duration* (min) = 15.0
 Time in Room After Shower* (min) = 10.0
 Viscosity of Shower Water* (cp) = 0.601

Chronic Daily Intake (mg/kg-day) = Contaminant X $\frac{1}{70}$ X Bioavail. X $\frac{Days\ Exposed}{Days/Yr}$

Chronic Daily Intake (mg/kg-day) = mg/day X $\frac{1}{70}$ X 1.0 X $\frac{365\ days}{365\ days}$

Compound	Water Conc (mg/L)	Henry Law Coeff* (atm-m ³ /mol-K)	Mass Transfer Coeff* (cm/hr)	Contaminant Intake (mg/day)	Body Wt (kg)	Fraction Absorbed	Days Exposed	CDI	Rfd	CDI/Rfd
Adults										
1,1-DICHLOROETHANE	6.00E-03	4.31E-03	1.71E+01	2.29E-02	70	1.0	1.00E+00	3.28E-04	9.00E-02	3.64E-03
1,1,1-TRICHLOROETHANE	6.22E-02	1.44E-02	1.54E+01	2.19E-01	70	1.0	1.00E+00	3.13E-03	1.00E-01	3.13E-02
								HAZARD INDEX		
										3.49E-02

7/27/90

JS : CCSHOW3.XLS

TABLE G - 17
 CIRCUITRON CORPORATION SITE
 INHALATION OF VOLATILE CONTAMINANTS WHILE SHOWERING
 DOWNGRADIENT - SHALLOW - MW55, 6S, 7S

* These parameters were used to calculate the contaminant intake in mg/day based on a model of volatile inhalation exposure while showering by Foster and Chrostowski, 1987.

NON-CARCINOGENS - GROUNDWATER INHALATION EXPOSURE WHILE SHOWERING: Children 0-17 yrs

Scenario Parameters:

Shower frequency = 1/day
 Shower Room Vol.* (m³) = 6.0 Shower Water Temp* (C) = 45.0
 Droplet Diam.* (mm) = 1.0 Droplet Drop Time* (sec) = 2.000
 Shower Water Flow Rate* (l/min) = 10.0 Shower Duration* (min) = 15.0
 Bathroom Air Exchange Rate* (exch/hr) = 1.0 Time in Room After Shower* (min) = 10.0
 Inhalation Rate* (m³/hr) = 1.4 Viscosity of Shower Water* (cp) = 0.601

Chronic Daily Intake (mg/kg-day) = Contaminant X $\frac{1}{35}$ X Bioavail. X $\frac{\text{Days Exposed}}{\text{Days/Yr}}$

Chronic Daily Intake (mg/kg-day) = mg/day X $\frac{1}{35}$ X 1.0 X $\frac{365 \text{ days}}{365 \text{ days}}$

Children: 0-17 years	Water Conc (mg/l) (atm-m ³ /mol-K)	Henry Law Coeff*	Mass Transfer Coeff* (cm/hr)	Contaminant Intake (mg/day)	Body Wt (kg)	Fraction Absorbed	Days Exposed Days/Yr	CDI		
								CDI	Rfd	CDI/Rfd
1,1-DICHLOROETHANE	6.00E-03	4.31E-03	1.71E+01	2.29E-02	35	1.0	1.00E+00	6.55E-04	9.00E-02	7.28E-03
1,1,1-TRICHLOROETHANE	6.22E-02	1.44E-02	1.54E+01	2.19E-01	35	1.0	1.00E+00	6.26E-03	1.00E-01	6.26E-02
								HAZARD INDEX		
										6.99E-02

TABLE G - 18

CIRCUITRON CORPORATION SITE
 INHALATION OF VOLATILE CONTAMINANTS WHILE SHOWERING
 DOMINGRAIENT - DEEP - MW5D, 6D, 7D

* These parameters were used to calculate the contaminant intake in mg/day based on a model of volatile inhalation exposure while showering by Foster and Chrostowski, 1987.

CARCINOGENS - GROUNDWATER INHALATION EXPOSURE WHILE SHOWERING

Scenario Parameters:

Shower Frequency = 1/day

Shower Room Vol.* (m³) = 6.0

Droplet Diam.* (mm) = 1.0

Shower Water Flow Rate* (l/min) = 10.0

Bathroom Air Exchange Rate* (exch/hr) = 1.0

Inhalation Rate* (m³/hr) = 1.4

Shower Water Temp* (C) = 45.0

Droplet Drop Time* (sec) = 2.000

Shower Duration* (min) = 15.0

Time in Room After Shower* (min) = 10.0

Viscosity of Shower Water* (cp) = 0.601

Chronic Daily Intake (mg/kg-day) = Contaminant X $\frac{1}{70 \text{ kg}}$ X Bioavail. X $\frac{\text{Days Exposed}}{\text{Days/Yr}}$ X $\frac{\text{Years Exposed}}{\text{Years Lifetime}}$

Chronic Daily Intake (mg/kg-day) = mg/day X $\frac{1}{70 \text{ kg}}$ X 1.0 X 1.0 X $\frac{365 \text{ days}}{365 \text{ days}}$ X $\frac{9 \text{ YRS}}{70 \text{ yrs}}$

Chronic Daily Intake (mg/kg-day) = mg/day X $\frac{1}{70 \text{ kg}}$ X 1.0 X 1.0 X $\frac{365 \text{ days}}{365 \text{ days}}$ X $\frac{9 \text{ YRS}}{70 \text{ yrs}}$

Compound	Water Conc* (mg/l)	Henry Law Coeff* (atm-m ³ /mol-K)	Mass Transfer Coeff* (cm/hr)	Contaminant Intake (mg/day)	Body Wt (kg)	Bio-availability Factor	Days Exposed Days/Yr	Years Exposed Years Lifetime	CDI	SF	RISK SF*CDI
Adults - Ave case											
1,1-DICHLOROETHENE	7.50E-03	3.40E-02	1.82E+01	2.99E-02	70	1.0	1.00E+00	1.29E-01	5.50E-05	1.20E+00	6.60E-05
TRICHLOROETHENE	1.80E-02	9.10E-03	1.53E+01	6.33E-02	70	1.0	1.00E+00	1.29E-01	1.16E-04	1.70E-02	1.98E-06
TETRACHLOROETHENE	3.20E-02	2.59E-02	1.28E+01	9.74E-02	70	1.0	1.00E+00	1.29E-01	1.79E-04	3.30E-02	5.90E-06
CHLOROFORM	3.35E-02	2.87E-03	1.52E+01	1.17E-01	70	1.0	1.00E+00	1.29E-01	2.15E-04	8.10E-02	1.74E-05
										TOTAL RISK	9.13E-05

Compound	Water Conc* (mg/l)	Henry Law Coeff* (atm-m ³ /mol-K)	Mass Transfer Coeff* (cm/hr)	Contaminant Intake (mg/day)	Body Wt (kg)	Bio-availability Factor	Days Exposed Days/Yr	Years Exposed Years Lifetime	CDI	SF	RISK SF*CDI
Adults - Max case											
1,1-DICHLOROETHENE	7.50E-03	3.40E-02	1.82E+01	2.99E-02	70	1.0	1.00E+00	4.29E-01	1.84E-04	1.20E+00	2.20E-04
TRICHLOROETHENE	1.80E-02	9.10E-03	1.53E+01	6.33E-02	70	1.0	1.00E+00	4.29E-01	3.88E-04	1.70E-02	6.59E-06
TETRACHLOROETHENE	3.20E-02	2.59E-02	1.28E+01	9.74E-02	70	1.0	1.00E+00	4.29E-01	5.97E-04	3.30E-02	1.97E-05
CHLOROFORM	3.35E-02	2.87E-03	1.52E+01	1.17E-01	70	1.0	1.00E+00	4.29E-01	7.17E-04	8.10E-02	5.81E-05
										TOTAL RISK	3.05E-04

TABLE G - 18

CIRCUITRON CORPORATION SITE
 INHALATION OF VOLATILE CONTAMINANTS WHILE SHOWERING
 DOWNGRADIANT - DEEP - MW5D, 6D, 7D

* These parameters were used to calculate the contaminant intake in mg/day based on a model of volatile inhalation exposure while showering by Foster and Chrostowski, 1987.

NON-CARCINOGENS - GROUNDWATER INHALATION EXPOSURE WHILE SHOWERING: Adults

Scenario Parameters:

Shower Frequency = 1/day
 Shower Room Vol.* (m³) = 6.0 Shower Water Temp* (C) = 45.0
 Droplet Diam.* (mm) = 1.0 Droplet Drop Time* (sec) = 2.000
 Shower Water Flow Rate* (l/min) = 10.0 Shower Duration* (min) = 15.0
 Bathroom Air Exchange Rate* (exch/hr) = 1.0 Time in Room After Shower* (min) = 10.0
 Inhalation Rate* (m³/hr) = 1.4 Viscosity of Shower Water* (cp) = 0.601

Chronic Daily Intake (mg/kg-day) = Contaminant X $\frac{1}{70}$ X Bioavail. X $\frac{\text{Days Exposed}}{\text{Days/Yr}}$

Chronic Daily Intake (mg/kg-day) = mg/day X $\frac{1}{70}$ X 1.0 X $\frac{365 \text{ days}}{365 \text{ days}}$

Compound	Water Conc (mg/l)	Henry Law Coeff* (atm-m ³ /mol-K)	Mass Transfer Coeff* (cm/hr)	Contaminant Intake (mg/day)	Body Wt (kg)	Fraction Absorbed	Days Exposed	RfD	CDI	CDI/RfD
Adults										
CHLOROFORM	3.35E-02	2.87E-03	1.52E+01	1.17E-01	70	1.0	1.00E+00	1.00E-02	1.67E-03	1.67E-01
1,1-DICHLOROETHANE	1.50E-03	4.31E-03	1.71E+01	5.73E-03	70	1.0	1.00E+00	1.00E-01	8.19E-05	8.19E-04
1,1,1-TRICHLOROETHANE	1.69E-02	1.44E-02	1.54E+01	5.95E-02	70	1.0	1.00E+00	3.00E-01	8.50E-04	2.83E-03
									HAZARD INDEX	1.71E-01

7/27/90

JS : CCSHOW4.XLS

TABLE G - 18

CIRCUITRON CORPORATION SITE
 INHALATION OF VOLATILE CONTAMINANTS WHILE SHOWERING
 DOWNGRAIENT - DEEP - MW5D, 6D, 7D

* These parameters were used to calculate the contaminant intake in mg/day based on a model of volatile inhalation exposure while showering by Foster and Chrostowski, 1987.

NON-CARCINOGENS - GROUNDWATER INHALATION EXPOSURE WHILE SHOWERING: Children 0-17 yrs

Scenario Parameters:

Shower Frequency = 1/day
 Shower Room Vol.* (m³) = 6.0
 Droplet Diam.* (mm) = 1.0
 Shower Water Flow Rate* (l/min) = 10.0
 Bathroom Air Exchange Rate* (exch/hr) = 1.0
 Inhalation Rate* (m³/hr) = 1.4
 Shower Water Temp* (C) = 45.0
 Droplet Drop Time* (sec) = 2.000
 Shower Duration* (min) = 15.0
 Time in Room After Shower* (min) = 10.0
 Viscosity of Shower Water* (cp) = 0.601

Chronic Daily Intake (mg/kg-day) = Contaminant X $\frac{1}{35}$ X Bioavail. X $\frac{\text{Days Exposed}}{\text{Days/Yr}}$

Chronic Daily Intake (mg/kg-day) = mg/day X $\frac{1}{35}$ X 1.0 X 365 days

Water Conc (mg/l)	Henry Law Coeff*	Mass Transfer Coeff* (cm/hr)	Contaminant Intake (mg/day)	Body Wt (kg)	Fraction Absorbed	Days Exposed	CDI	Rfd	CDI/Rfd
3.35E-02	2.87E-03	1.52E+01	1.17E-01	35	1.0	1.00E+00	3.34E-03	1.00E-02	3.34E-01
1.50E-03	4.31E-03	1.71E+01	5.73E-03	35	1.0	1.00E+00	1.64E-04	1.00E-01	1.64E-03
1.69E-02	1.44E-02	1.54E+01	5.95E-02	35	1.0	1.00E+00	1.70E-03	3.00E-01	5.67E-03

HAZARD INDEX

Children: 0-17 years

CHLOROFORM
 1,1-DICHLOROETHANE
 1,1,1-TRICHLOROETHANE

TABLE G - 19
CIRCUITRON CORPORATION SITE
INHALATION OF VOLATILE CONTAMINANTS WHILE SHOWERING
ON-SITE - SHALLOW- MW2S, 3S, 4S, 8, 9, 10, 11, 12

* These parameters were used to calculate the contaminant intake in mg/day based on a model of volatile inhalation exposure while showering by Foster and Chrostowski, 1987.

CARCINOGENS - GROUNDWATER INHALATION EXPOSURE WHILE SHOWERING

Scenario Parameters:

Shower Frequency = 1/day
Shower Room Vol.* (m³) = 6.0
Droplet Diam.* (mm) = 1.0
Shower Water Flow Rate* (l/min) = 10.0
Bathroom Air Exchange Rate* (exch/hr) = 1.0
Inhalation Rate* (m³/hr) = 1.4
Shower Water Temp* (C) = 45.0
Droplet Drop Time* (sec) = 2.000
Shower Duration* (min) = 15.0
Time in Room After Shower* (min) = 10.0
Viscosity of Shower Water* (cp) = 0.601

Chronic Daily Intake (mg/kg-day) = Contaminant X $\frac{1}{70 \text{ kg}}$ X Bioavail. X Days Exposed X Years Exposed
Chronic Daily Intake (mg/kg-day) = mg/day X $\frac{1}{70 \text{ kg}}$ X 1.0 X $\frac{365 \text{ days}}{365 \text{ days}}$ X $\frac{9 \text{ yrs}}{70 \text{ yrs}}$

Compound	Water Conc* (mg/L)	Henry Law Coeff* (atm-m ³ /mol-K)	Mass Transfer Coeff* (cm/hr)	Contaminant Intake (mg/day)	Body Wt (kg)	Bio-availability Factor	Days Exposed Days/Yr	Years Exposed Years Lifetime	RISK SF	RISK SF*CDI	
											Water Conc* (mg/L)
Adults - Ave case											
1,1-DICHLOROETHENE	1.39E-02	3.40E-02	1.82E+01	5.55E-02	70	1.0	1.00E+00	1.29E-01	1.02E-04	1.20E+00	1.22E-04
TRICHLOROETHENE	6.88E-03	9.10E-03	1.53E+01	2.42E-02	70	1.0	1.00E+00	1.29E-01	4.44E-05	1.70E-02	7.55E-07
TETRACHLOROETHENE	5.30E-02	2.59E-02	1.28E+01	1.61E-01	70	1.0	1.00E+00	1.29E-01	2.96E-04	3.30E-02	9.78E-06
BENZENE	3.00E-03	5.59E-03	1.95E+01	1.26E-02	70	1.0	1.00E+00	1.29E-01	2.32E-05	2.90E-02	6.72E-07
1,1,2-TRICHLOROETHANE	4.00E-03	1.17E-03	1.29E+01	1.23E-02	70	1.0	1.00E+00	1.29E-01	2.25E-05	4.00E-03	9.01E-08
									TOTAL RISK		1.34E-04
Adults - Max case											
1,1-DICHLOROETHENE	1.39E-02	3.40E-02	1.82E+01	5.55E-02	70	1.0	1.00E+00	4.29E-01	3.40E-04	1.20E+00	4.08E-04
TRICHLOROETHENE	6.88E-03	9.10E-03	1.53E+01	2.42E-02	70	1.0	1.00E+00	4.29E-01	1.48E-04	1.70E-02	2.52E-06
TETRACHLOROETHENE	5.30E-02	2.59E-02	1.28E+01	1.61E-01	70	1.0	1.00E+00	4.29E-01	9.89E-04	3.30E-02	3.26E-05
BENZENE	3.00E-03	5.59E-03	1.95E+01	1.26E-02	70	1.0	1.00E+00	4.29E-01	7.73E-05	2.90E-02	2.24E-06
1,1,2-TRICHLOROETHANE	4.00E-03	1.17E-03	1.29E+01	1.23E-02	70	1.0	1.00E+00	4.29E-01	7.52E-05	4.00E-03	3.01E-07
									TOTAL RISK		4.46E-04

TABLE G - 19

CIRCUITRON CORPORATION SITE
 INHALATION OF VOLATILE CONTAMINANTS WHILE SHOWERING
 ON-SITE - SHALLOW- MW2S, 3S, 4S, 8, 9, 10, 11, 12

* These parameters were used to calculate the contaminant intake in mg/day based on a model of volatile inhalation exposure while showering by Foster and Chrostowski, 1987.

NON-CARCINOGENS - GROUNDWATER INHALATION EXPOSURE WHILE SHOWERING: Adults

Scenario Parameters:

Shower Frequency = 1/day
 Shower Room Vol.* (m³) = 6.0
 Droplet Diam.* (mm) = 1.0
 Shower Water Flow Rate* (l/min) = 10.0
 Bathroom Air Exchange Rate* (exch/hr) = 1.0
 Inhalation Rate* (m³/hr) = 1.4
 Shower Water Temp* (C) = 45.0
 Droplet Drop Time* (sec) = 2.000
 Shower Duration* (min) = 15.0
 Time in Room After Shower* (min) = 10.0
 Viscosity of Shower Water* (cp) = 0.601

Chronic Daily Intake (mg/kg-day) = Contaminant X $\frac{1}{\text{Body Wt.}}$ X Bioavail. X $\frac{\text{Days Exposed}}{\text{Days/Yr}}$

Chronic Daily Intake (mg/kg-day) = mg/day X $\frac{1}{70 \text{ kg}}$ X 1.0 X 365 days

Compound	Water Conc (mg/l)	Henry Law Coeff* (atm-m ³ /mol-K)	Mass Transfer Coeff* (cm/hr)	Contaminant Intake (mg/day)	Body Wt (kg)	Fraction Absorbed	Days Exposed	RfD	CDI/RfD
1,1-DICHLOROETHANE	5.05E-03	4.31E-03	1.71E+01	4.01E-02	70	1.0	1.00E+00	1.00E-01	5.73E-04
1,1,1-TRICHLOROETHANE	6.46E-01	1.44E-02	1.54E+01	6.87E+00	70	1.0	1.00E+00	3.00E-01	9.81E-02
									HAZARD INDEX
									3.33E-01

7/27/90

JS : CASHOW5.XLS

TABLE G - 19
 CIRCUITRON CORPORATION SITE
 INHALATION OF VOLATILE CONTAMINANTS WHILE SHOWERING
 ON-SITE - SHALLOW- MW2S, 3S, 4S, 8, 9, 10, 11, 12

* These parameters were used to calculate the contaminant intake in mg/day based on a model of volatile inhalation exposure while showering by Foster and Chrostowski, 1987.

NON-CARCINOGENS - GROUNDWATER INHALATION EXPOSURE WHILE SHOWERING: Children 0-17 yrs

Scenario Parameters:

Shower Frequency = 1/day
 Shower Room Vol.* (m³) = 6.0
 Droplet Diam.* (mm) = 1.0
 Shower Water Flow Rate* (l/min) = 10.0
 Bathroom Air Exchange Rate* (exch/hr) = 1.0
 Inhalation Rate* (m³/hr) = 1.4
 Shower Water Temp* (C) = 45.0
 Droplet Drop Time* (sec) = 2.000
 Shower Duration* (min) = 15.0
 Time in Room After Shower* (min) = 10.0
 Viscosity of Shower Water* (cp) = 0.601

Chronic Daily Intake (mg/kg-day) = Contaminant X $\frac{1}{\text{Body Wt.}}$ X Bioavail. X $\frac{\text{Days Exposed}}{\text{Days/Yr}}$

Chronic Daily Intake (mg/kg-day) = mg/day X $\frac{1}{35 \text{ kg}}$ X 1.0 X $\frac{365 \text{ days}}{365 \text{ days}}$

Water Conc (mg/L)	Henry Law Coeff* (atm-m ³ /mol-K)	Mass Transfer Coeff* (cm/hr)	Contaminant Intake (mg/day)	Body Wt (kg)	Fraction Absorbed	Days Exposed Days/Yr	CDI	RfD	CDI/RfD
5.05E-03	4.31E-03	1.71E+01	4.01E-02	35	1.0	1.00E+00	1.15E-03	1.00E-01	1.15E-02
6.46E-01	1.44E-02	1.54E+01	6.87E+00	35	1.0	1.00E+00	1.96E-01	3.00E-01	6.54E-01
HAZARD INDEX									

Children: 0-17 years
 1,1-DICHLOROETHANE
 1,1,1-TRICHLOROETHANE

CIRCUITRON CORPORATION SITE
 INHALATION OF VOLATILE CONTAMINANTS WHILE SHOWERING
 ON-SITE - DEEP- MW20, 3D, 4D

* These parameters were used to calculate the contaminant intake in mg/day based on a model of volatile inhalation exposure while showering by Foster and Chrostowski, 1987.

CARCINOGENS - GROUNDWATER INHALATION EXPOSURE WHILE SHOWERING

Scenario Parameters:

Shower Frequency = 1/day
 Shower Room Vol.* (m³) = 6.0
 Droplet Diam.* (mm) = 1.0
 Shower Water Flow Rate* (l/min) = 10.0
 Bathroom Air Exchange Rate* (exch/hr) = 1.0
 Inhalation Rate* (m³/hr) = 1.4

Shower Water Temp* (C) = 45.0
 Droplet Drop Time* (sec) = 2.000
 Shower Duration* (min) = 15.0
 Time in Room After Shower* (min) = 10.0
 Viscosity of Shower Water* (cp) = 0.601

Chronic Daily Intake (mg/kg-day) = Contaminant X $\frac{1}{\text{Body Wt.}}$ X $\frac{\text{Days Exposed}}{\text{Days/Yr}}$ X $\frac{\text{Years Exposed}}{\text{Years Lifetime}}$
 Intake mg/day X $\frac{1}{70 \text{ kg}}$ X 1.0 X $\frac{365 \text{ days}}{365 \text{ days}}$ X $\frac{9 \text{ YRS}}{70 \text{ yrs}}$

Compound	Water Conc* (mg/l)	Henry Law Coeff* (atm-m ³ /mol-K)	Mass Transfer Coeff* (cm/hr)	Contaminant Intake (mg/day)	Body Wt (kg)	Bio-availability Factor	Days Exposed Days/Yr	Years Exposed Years Lifetime	CDI	SF	RISK SF*CDI
Adults - Ave case											
1,1-DICHLOROETHENE	6.00E-03	3.40E-02	1.82E+01	2.40E-02	70	1.0	1.00E+00	1.29E-01	4.40E-05	1.20E+00	5.28E-05
TRICHLOROETHENE	1.80E-02	9.10E-03	1.53E+01	6.33E-02	70	1.0	1.00E+00	1.29E-01	1.16E-04	1.70E-02	1.98E-06
TETRACHLOROETHENE	2.90E-02	2.59E-02	1.28E+01	8.83E-02	70	1.0	1.00E+00	1.29E-01	1.62E-04	3.30E-02	5.35E-06
CHLOROFORM	2.40E-02	2.87E-03	1.52E+01	8.38E-02	70	1.0	1.00E+00	1.29E-01	1.54E-04	8.10E-02	1.25E-05
										TOTAL RISK	7.26E-05

Compound	Water Conc* (mg/l)	Henry Law Coeff* (atm-m ³ /mol-K)	Mass Transfer Coeff* (cm/hr)	Contaminant Intake (mg/day)	Body Wt (kg)	Bio-availability Factor	Days Exposed Days/Yr	Years Exposed Years Lifetime	CDI	SF	RISK SF*CDI
Adults - Max case											
1,1-DICHLOROETHENE	6.00E-03	3.40E-02	1.82E+01	2.40E-02	70	1.0	1.00E+00	4.29E-01	1.47E-04	1.20E+00	1.76E-04
TRICHLOROETHENE	1.80E-02	9.10E-03	1.53E+01	6.33E-02	70	1.0	1.00E+00	4.29E-01	3.88E-04	1.70E-02	6.59E-06
TETRACHLOROETHENE	2.90E-02	2.59E-02	1.28E+01	8.83E-02	70	1.0	1.00E+00	4.29E-01	5.41E-04	3.30E-02	1.79E-05
CHLOROFORM	2.40E-02	2.87E-03	1.52E+01	8.38E-02	70	1.0	1.00E+00	4.29E-01	5.14E-04	8.10E-02	4.16E-05
										TOTAL RISK	2.42E-04

TABLE G - 20
CIRCUITRON CORPORATION SITE
INHALATION OF VOLATILE CONTAMINANTS WHILE SHOWERING
ON-SITE - DEEP- MW2D, 3D, 4D

* These parameters were used to calculate the contaminant intake in mg/day based on a model of volatile inhalation exposure while showering by Foster and Chrostowski, 1987.

NON-CARCINOGENS - GROUNDWATER INHALATION EXPOSURE WHILE SHOWERING: Adults

Scenario Parameters:

Shower Frequency = 1/day
Shower Room Vol.* (m³) = 6.0
Droplet Diam.* (mm) = 1.0
Shower Water Flow Rate* (L/min) = 10.0
Bathroom Air Exchange Rate* (exch/hr) = 1.0
Inhalation Rate* (m³/hr) = 1.4
Shower Water Temp* (C) = 45.0
Droplet Drop Time* (sec) = 2.000
Shower Duration* (min) = 15.0
Time in Room After Shower* (min) = 10.0
Viscosity of Shower Water* (cp) = 0.601

Chronic Daily Intake (mg/kg-day) = Contaminant X $\frac{1}{70 \text{ kg}}$ X Bioavail. X $\frac{\text{Days Exposed}}{365 \text{ days}}$

Chronic Daily Intake (mg/kg-day) = mg/day X $\frac{1}{70 \text{ kg}}$ X 1.0 X $\frac{365 \text{ days}}{365 \text{ days}}$

Compound	Water Conc (mg/L)	Henry Law Coeff** (atm-m ³ /mol-K)	Mass Transfer Coeff* (cm/hr)	Contaminant Intake (mg/day)	Body Wt (kg)	Fraction Absorbed	Days Exposed	CDI	Rfd	CDI/Rfd
1,1-DICHLOROETHANE	2.00E-03	4.31E-03	1.71E+01	7.64E-03	70	1.0	1.00E+00	1.09E-04	1.00E-01	1.09E-03
1,1,1-TRICHLOROETHANE	2.47E-02	1.44E-02	1.54E+01	8.70E-02	70	1.0	1.00E+00	1.24E-03	3.00E-01	4.14E-03
CHLOROFORM	2.40E-02	2.87E-03	1.52E+01	8.38E-02	70	1.0	1.00E+00	1.20E-03	1.00E-02	1.20E-01
								HAZARD INDEX		1.25E-01

CIRCUITRON CORPORATION SITE
 INHALATION OF VOLATILE CONTAMINANTS WHILE SHOWERING
 ON-SITE - DEEP- MW2D, 3D, 4D

* These parameters were used to calculate the contaminant intake in mg/day based on a model of volatile inhalation exposure while showering by Foster and Chrostowski, 1987.

NON-CARCINOGENS - GROUNDWATER INHALATION EXPOSURE WHILE SHOWERING: Children 0-17 yrs

Scenario Parameters:

Shower Frequency = 1/day
 Shower Room Vol.* (m³) = 6.0
 Droplet Diam.* (mm) = 1.0
 Shower Water Flow Rate* (l/min) = 10.0
 Bathroom Air Exchange Rate* (exch/hr) = 1.0
 Inhalation Rate* (m³/hr) = 1.4
 Shower Water Temp* (C) = 45.0
 Droplet Drop Time* (sec) = 2.000
 Shower Duration* (min) = 15.0
 Time in Room After Shower* (min) = 10.0
 Viscosity of Shower Water* (cp) = 0.601

Chronic Daily Intake (mg/kg-day) = Contaminant X $\frac{1}{35 \text{ kg}}$ X Bioavail. X Days Exposed
 Intake Body Wt. Factor Days/Yr

Chronic Daily Intake (mg/kg-day) = mg/day X $\frac{1}{35 \text{ kg}}$ X 1.0 X 365 days
 Intake Body Wt. Factor Days/Yr

Water Conc (mg/l)	Henry Law Coeff*	Mass Transfer Coeff* (cm/hr)	Contaminant Intake (mg/day)	Body Wt (kg)	Fraction Absorbed	Days Exposed	CDI	Rfd	CDI/Rfd
2.00E-03	4.31E-03	1.71E+01	7.64E-03	35	1.0	1.00E+00	2.18E-04	1.00E-01	2.18E-03
2.47E-02	1.44E-02	1.54E+01	8.70E-02	35	1.0	1.00E+00	2.49E-03	3.00E-01	8.29E-03
2.40E-02	2.87E-03	1.52E+01	8.38E-02	35	1.0	1.00E+00	2.40E-03	1.00E-02	2.40E-01

HAZARD INDEX

Children: 0-17 years

1,1-DICHLOROETHANE

1,1,1-TRICHLOROETHANE

CHLOROFORM

7/27/90

JS : SOOC1.XLS

TABLE G - 21
CIRCUITRON CORPORATION SITE
SEDIMENT - SITE WORKER DIRECT CONTACT PATHWAY MODELS

CARCINOGENS - AVERAGE SEDIMENT DIRECT CONTACT EXPOSURE

Compound	Sediment X		Skin Surface Area (cm ²)	Bio-availability Factor	Skin Deposition (mg/cm ²)	Body Weight (kg)	Days Exposed		Years Exposed		CDI	SF	RISK CDI*SF
	Conc (mg/kg)	Conc (mg/kg)					Days/Year	Days/Year	Years Lifetime	Years Lifetime			
Chronic Daily Intake= (mg/kg-day)													
Chronic Daily Intake= (mg/kg-day)	5.01E-02	2.00E+03	2000 cm ²	3.00E-01	0.5	70	1.37E-02	365 days	9 yrs	70 yrs	1 kg		
	3.00E-03	2.00E+03		3.00E-01	0.5	70	1.37E-02				10 ⁻⁶ mg		
	1.74E-02	2.00E+03		3.00E-01	0.5	70	1.37E-02				1 kg		
	8.00E-03	2.00E+03		3.00E-01	0.5	70	1.37E-02				1 kg		
	2.33E-01	2.00E+03		3.00E-01	0.5	70	1.37E-02				10 ⁻⁶ mg		
	2.75E+01	2.00E+03		3.00E-01	0.5	70	1.37E-02						
Adults													
1,1-DICHLOROETHANE	5.01E-02	2.00E+03		3.00E-01	0.5	70	1.37E-02				3.78E-10	9.10E-02	3.44E-11
CHLOROFORM	3.00E-03	2.00E+03		3.00E-01	0.5	70	1.37E-02				2.26E-11	6.10E-03	1.38E-13
TETRACHLOROETHENE	1.74E-02	2.00E+03		3.00E-01	0.5	70	1.37E-02				1.31E-10	5.10E-02	6.70E-12
BENZENE	8.00E-03	2.00E+03		3.00E-01	0.5	70	1.37E-02				6.04E-11	2.90E-02	1.75E-12
GAMMA-CHLORDANE	2.33E-01	2.00E+03		3.00E-01	0.5	70	1.37E-02				1.76E-09	1.30E+00	2.29E-09
BIS(2-ETHYLHEXYL) PHTHALATE	2.75E+01	2.00E+03		3.00E-01	0.5	70	1.37E-02				2.08E-07	1.40E-02	2.91E-09
TOTAL RISK 5.24E-09													

CARCINOGENS - MAXIMUM SEDIMENT DIRECT CONTACT EXPOSURE

Compound	Sediment X		Skin Surface Area (cm ²)	Bio-availability Factor	Skin Deposition (mg/cm ²)	Body Weight (kg)	Days Exposed		Years Exposed		CDI	SF	RISK CDI*SF
	Conc (mg/kg)	Conc (mg/kg)					Days/Year	Days/Year	Years Lifetime	Years Lifetime			
Chronic Daily Intake= (mg/kg-day)													
Chronic Daily Intake= (mg/kg-day)	5.01E-02	5300 cm ²	5300 cm ²	3.00E-01	1.0	70	10 days	365 days	30 yrs	70 yrs	1 kg		
	3.00E-03	5300 cm ²		3.00E-01	1.0	70	10 days				10 ⁻⁶ mg		
	1.74E-02	5300 cm ²		3.00E-01	1.0	70	10 days				1 kg		
	8.00E-03	5300 cm ²		3.00E-01	1.0	70	10 days				1 kg		
	2.33E-01	5300 cm ²		3.00E-01	1.0	70	10 days				10 ⁻⁶ mg		
	2.75E+01	5300 cm ²		3.00E-01	1.0	70	10 days						
Adults													
1,1-DICHLOROETHANE	5.01E-02	5300 cm ²		3.00E-01	1.0	70	2.74E-02				1.34E-08	9.10E-02	1.22E-09
CHLOROFORM	3.00E-03	5300 cm ²		3.00E-01	1.0	70	2.74E-02				8.00E-10	6.10E-03	4.88E-12
TETRACHLOROETHENE	1.74E-02	5300 cm ²		3.00E-01	1.0	70	2.74E-02				4.64E-09	5.10E-02	2.37E-10
BENZENE	8.00E-03	5300 cm ²		3.00E-01	1.0	70	2.74E-02				2.13E-09	2.90E-02	6.19E-11
GAMMA-CHLORDANE	2.33E-01	5300 cm ²		3.00E-01	1.0	70	2.74E-02				6.21E-08	1.30E+00	8.08E-08
BIS(2-ETHYLHEXYL) PHTHALATE	2.75E+01	5300 cm ²		3.00E-01	1.0	70	2.74E-02				7.33E-06	1.40E-02	1.03E-07
TOTAL RISK 1.85E-07													

7/27/90

FM : SHOW1.XLS

TABLE G - 27

CIRCUITRON CORPORATION SITE
 INHALATION OF VOLATILE CONTAMINANTS WHILE SHOWERING
 ROUND II UPGRADE - SHALLOW- MW 1S

* These parameters were used to calculate the contaminant intake in mg/day based on a model of volatile inhalation exposure while showering by Foster and Chrostowski, 1987.

CARCINOGENS - GROUNDWATER INHALATION EXPOSURE WHILE SHOWERING

Scenario Parameters:

Shower Frequency = 1/day
 Shower Room Vol.* (m³) = 6.0 Shower Water Temp* (C) = 45.0
 Droplet Diam.* (mm) = 1.0 Droplet Drop Time* (sec) = 2.000
 Shower Water Flow Rate* (l/min) = 10.0 Shower Duration* (min) = 15.0
 Bathroom Air Exchange Rate* (exch/hr) = 1.0 Time in Room After Shower* (min) = 10.0
 Inhalation Rate* (m³/hr) = 1.4 Viscosity of Shower Water* (cp) = 0.601

Chronic Daily Intake (mg/kg-day) = Contaminant X $\frac{1}{\text{Body Wt.}}$ X Bioavail. X $\frac{\text{Days Exposed}}{\text{Days/Yr}}$ X $\frac{\text{Years Exposed}}{\text{Years Lifetime}}$

Chronic Daily Intake (mg/kg-day) = mg/day X $\frac{1}{70 \text{ kg}}$ X 1.0 X $\frac{365 \text{ days}}{365 \text{ days}}$ X $\frac{9 \text{ yrs}}{70 \text{ yrs}}$

Compound	Water Conc* (mg/L)	Henry Law Coeff* (atm-m ³ /mol-K)	Mass Transfer Coeff* (cm/hr)	Contaminant Intake (mg/day)	Body Wt (kg)	Bio-availablilty Factor	Days Exposed Days/Yr	Years Exposed Years Lifetime	CDI	SF	RISK
Adults - Ave case	8.10E-03	3.40E-02	1.82E+01	3.23E-02	70	1.0	1.00E+00	1.29E-01	5.94E-05	1.20E+00	7.13E-05
1,1-DICHLOROETHENE										TOTAL RISK	7.13E-05

7/27/90

JS : SODC1.XLS

TABLE G - 21
CIRCUITRON CORPORATION SITE
SEDIMENT - SITE WORKER DIRECT CONTACT PATHWAY MODELS

NONCARCINOGENS - AVERAGE SEDIMENT DIRECT CONTACT EXPOSURE: Adults

Compound	Sediment Conc (mg/kg)		Skin Surface Area (cm ²)	Bio-availability Factor	Skin Deposition (mg/cm ²)	Body Weight (kg)	Days Exposed		CDI	Rfd	CDI/Rfd					
	X	X					Days/Year	Days/Year								
Chronic Daily Intake= (mg/kg-day)	mg/kg	X	2000 cm ²	X	3.00E-01	X	0.5 mg/cm ²	X	1 kg	X	1 kg	X	10 ⁻⁶ mg			
Chronic Daily Intake= (mg/kg-day)	mg/kg	X	2000 cm ²	X	3.00E-01	X	0.5 mg/cm ²	X	1 kg	X	1 kg	X	10 ⁻⁶ mg			
								365 days								
Adults																
CHLOROFORM	3.00E-03		2.00E+03		3.00E-01		0.5		70		1.37E-02		1.76E-10	1.00E-02	1.76E-08	
1,1-DICHLOROETHANE	5.01E-02		2.00E+03		3.00E-01		0.5		70		1.37E-02		2.94E-09	1.00E+00	2.94E-09	
1,1,1-TRICHLOROETHANE	1.45E+01		2.00E+03		3.00E-01		0.5		70		1.37E-02		8.51E-07	9.00E-01	9.46E-07	
ENDOSULPHAN I	1.10E-02		2.00E+03		3.00E-01		0.5		70		1.37E-02		6.46E-10	2.00E-04	3.23E-06	
GAMMA-CHLORDANE	2.33E-01		2.00E+03		3.00E-01		0.5		70		1.37E-02		1.37E-08	5.00E-05	2.74E-04	
MERCURY	5.13E+00		2.00E+03		3.00E-01		0.5		70		1.37E-02		3.01E-07	3.00E-04	1.00E-03	

HAZARD INDEX 1.28E-03

NONCARCINOGENS - MAXIMUM SEDIMENT DIRECT CONTACT EXPOSURE: Adults

Compound	Sediment Conc (mg/kg)		Skin Surface Area (cm ²)	Bio-availability Factor	Skin Deposition (mg/cm ²)	Body Weight (kg)	Days Exposed		CDI	Rfd	CDI/Rfd					
	X	X					Days/Year	Days/Year								
Chronic Daily Intake= (mg/kg-day)	mg/kg	X	5300 cm ²	X	3.00E-01	X	1.0 mg/cm ²	X	1 kg	X	1 kg	X	10 ⁻⁶ mg			
Chronic Daily Intake= (mg/kg-day)	mg/kg	X	5300 cm ²	X	3.00E-01	X	1.0 mg/cm ²	X	1 kg	X	1 kg	X	10 ⁻⁶ mg			
								365 days								
Adults																
CHLOROFORM	3.00E-03		5.30E+03		3.00E-01		1.0		70		1.37E-02		9.33E-10	1.00E-02	9.33E-08	
1,1-DICHLOROETHANE	5.01E-02		5.30E+03		3.00E-01		1.0		70		1.37E-02		1.56E-08	1.00E+00	1.56E-08	
1,1,1-TRICHLOROETHANE	1.45E+01		5.30E+03		3.00E-01		1.0		70		1.37E-02		4.51E-06	9.00E-01	5.01E-06	
ENDOSULPHAN I	1.10E-02		5.30E+03		3.00E-01		1.0		70		1.37E-02		3.42E-09	2.00E-04	1.71E-05	
GAMMA-CHLORDANE	2.33E-01		5.30E+03		3.00E-01		1.0		70		1.37E-02		7.25E-08	5.00E-05	1.45E-03	
MERCURY	5.13E+00		5.30E+03		3.00E-01		1.0		70		1.37E-02		1.60E-06	3.00E-04	5.32E-03	

HAZARD INDEX 6.79E-03

TABLE G - 22
CIRCUITRON CORPORATION SITE
STORM DRAIN WATERS - DIRECT CONTACT PATHWAY

NONCARCINOGENIC COMPOUNDS IN STORMWATER- AVERAGE DERMAL EXPOSURES: Adults

Chronic Daily Intake (mg/kg-day) = Water X Dermal X Hours X Skin X $\frac{1 \text{ L}}{1000 \text{ cm}^3}$
 Conc Permeability Exposed/Day Surface Area Body Wt
 Chronic Daily Intake (mg/kg-day) = mg/l X cm/hr X 4.00 hr/day X 2.00E+03 cm² X $\frac{1 \text{ L}}{70 \text{ kg}}$ X $\frac{1 \text{ L}}{1000 \text{ cm}^3}$

COMPOUND	Water Conc (mg/l)	Dermal Permeability (cm/hr)	Hours Exposed	Skin Surface Area (cm ²)	Body Wt (kg)	CDI	Rfd	CDI/Rfd
1,1,1-TRICHLOROETHANE	1.58E-02	1.46E-04	4.00	2.00E+03	70.0	2.63E-07	9.00E-02	2.92E-06
								2.92E-06

NONCARCINOGENIC COMPOUNDS IN STORMWATER- MAXIMUM DERMAL EXPOSURES: Adults

Chronic Daily Intake (mg/kg-day) = Water X Dermal X Hours X Skin X $\frac{1 \text{ L}}{1000 \text{ cm}^3}$
 Conc Permeability Exposed/Day Surface Area Body Wt
 Chronic Daily Intake (mg/kg-day) = mg/l X cm/hr X 8.00 hr/day X 5.30E+03 cm² X $\frac{1 \text{ L}}{70 \text{ kg}}$ X $\frac{1 \text{ L}}{1000 \text{ cm}^3}$

COMPOUND	Water Conc (mg/l)	Dermal Permeability (cm/hr)	Hours Exposed	Skin Surface Area (cm ²)	Body Wt (kg)	CDI	Rfd	CDI/Rfd
1,1,1-TRICHLOROETHANE	1.58E-02	1.46E-04	8.00	5.30E+03	70.0	1.39E-06	9.00E-02	1.55E-05
								1.55E-05

7/27/90

J.T. : GWING13.XLS

TABLE G - 23
CIRCUITRON CORPORATION SITE
SITE WORKER USE OF GROUNDWATER - INGESTION PATHWAY
ROUND 1 SAMPLES
ON-SITE SHALLOW - MW2S, 3S, 4S, 8, 9, 10, 11, 12

CARCINOGENS - AVERAGE GROUNDWATER INGESTION EXPOSURE

Chronic Daily Intake (mg/kg-day) = $\frac{\text{Water Conc} \times \text{Intake} \times \text{Bioavail.} \times \text{Factor} \times \text{Body Wt.} \times \text{Years Exposed}}{\text{Days Exposed}}$

Chronic Daily Intake (mg/kg-day) = $\frac{2.30 \text{ mg/l} \times 1 \text{ l/day} \times 1.0 \times 1.0 \times 70 \text{ kg} \times 9 \text{ yrs}}{250 \text{ days}}$

Group	Compound	Water Conc(mg/l)	Intake (l/day)	Bioavail. Factor	Body Wt (kg)	Years Exposed	Days Exposed	CDI	SF	RISK (CDI*SF)
Adults	1,1-DICHLOROETHENE	2.30E-02	1	1.0	70.0	1.29E-01	6.85E-01	2.89E-05	6.00E-01	1.74E-05
	TRICHLOROETHENE	1.40E-02	1	1.0	70.0	1.29E-01	6.85E-01	1.76E-05	1.10E-02	1.94E-07
	TETRACHLOROETHENE	1.10E-01	1	1.0	70.0	1.29E-01	6.85E-01	1.38E-04	5.10E-02	7.06E-06
	1,1-DICHLOROETHANE	1.70E-02	1	1.0	70.0	1.29E-01	6.85E-01	2.14E-05	9.10E-02	1.95E-06
	BENZENE	3.00E-03	1	1.0	70.0	1.29E-01	6.85E-01	3.77E-06	2.90E-02	1.09E-07
	1,1,2 TRICHLOROETHANE	4.00E-03	1	1.0	70.0	1.29E-01	6.85E-01	5.03E-06	5.70E-02	2.87E-07
									TOTAL RISK	2.70E-05

CARCINOGENS - PLAUSIBLE MAXIMUM GROUNDWATER INGESTION EXPOSURE

Chronic Daily Intake (mg/kg-day) = $\frac{\text{Water Conc} \times \text{Intake} \times \text{Bioavail.} \times \text{Factor} \times \text{Body Wt.} \times \text{Years Exposed}}{\text{Days Exposed}}$

Chronic Daily Intake (mg/kg-day) = $\frac{2.30 \text{ mg/l} \times 1 \text{ l/day} \times 1.0 \times 1.0 \times 70 \text{ kg} \times 30 \text{ yrs}}{250 \text{ days}}$

Group	Compound	Water Conc(mg/l)	Intake (l/day)	Bioavail. Factor	Body Wt (kg)	Years Exposed	Days Exposed	CDI	SF	RISK (CDI*SF)
Adults	1,1-DICHLOROETHENE	2.30E-02	1	1.0	70.0	4.29E-01	6.85E-01	9.64E-05	6.00E-01	5.79E-05
	TRICHLOROETHENE	1.40E-02	1	1.0	70.0	4.29E-01	6.85E-01	5.87E-05	1.10E-02	6.46E-07
	TETRACHLOROETHENE	1.10E-01	1	1.0	70.0	4.29E-01	6.85E-01	4.61E-04	5.10E-02	2.35E-05
	1,1-DICHLOROETHANE	1.70E-02	1	1.0	70.0	4.29E-01	6.85E-01	7.13E-05	9.10E-02	6.49E-06
	BENZENE	3.00E-03	1	1.0	70.0	4.29E-01	6.85E-01	1.26E-05	2.90E-02	3.65E-07
	1,1,2 TRICHLOROETHANE	4.00E-03	1	1.0	70.0	4.29E-01	6.85E-01	1.68E-05	5.70E-02	9.56E-07
									TOTAL RISK	8.98E-05

TABLE G - 23
CIRCUITRON CORPORATION SITE
SITE WORKER USE OF GROUNDWATER - INGESTION PATHWAY
ROUND 1 SAMPLES
ON-SITE SHALLOW - MW2S, 3S, 4S, 8, 9, 10, 11, 12

NONCARCINOGENS - AVERAGE GROUNDWATER INGESTION EXPOSURE: Adults

Chronic Daily Intake (mg/kg-day) = $\frac{\text{Water Conc} \times \text{Intake} \times \text{Bioavail. Factor} \times \text{Body Wt.}}{\text{Days Exposed}}$
 Chronic Daily Intake (mg/kg-day) = $\frac{\text{mg/l} \times 1 \text{ l/day} \times 1.0 \times 70 \text{ kg}}{250 \text{ days}}$
 Chronic Daily Intake (mg/kg-day) = $\frac{\text{mg/l} \times 1 \text{ l/day} \times 1.0 \times 70 \text{ kg}}{365 \text{ days}}$

Group	Compound	Water Conc(mg/l)	Intake (l/day)	Bioavail. Factor	Body Wt (kg)	Days Exposed	CDI	Rfd	CDI\Rfd
Adults	1,1-DICHLOROETHANE	1.70E-02	1	1.0	70.0	6.85E-01	1.66E-04	1.00E-01	1.66E-03
	1,1-DICHLOROETHENE	2.30E-02	1	1.0	70.0	6.85E-01	2.25E-04	9.00E-03	2.50E-02
	1,1,1-TRICHLOROETHANE	4.60E+00	1	1.0	70.0	6.85E-01	4.50E-02	9.00E-02	5.00E-01
	COPPER	1.24E-01	1	1.0	70.0	6.85E-01	1.21E-03	3.70E-02	3.28E-02
	CHROMIUM	7.12E-02	1	1.0	70.0	6.85E-01	6.97E-04	1.00E+00	6.97E-04
	HEXAVALENT CHROMIUM	1.53E-02	1	1.0	70.0	6.85E-01	1.50E-04	5.00E-03	2.99E-02
	LEAD	6.14E-02	1	1.0	70.0	6.85E-01	6.01E-04	1.43E-04	4.20E+00
	NICKEL	7.02E-02	1	1.0	70.0	6.85E-01	6.87E-04	2.00E-02	3.43E-02
								HAZARD INDEX	4.83E+00

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J.T. : GWING14.XLS

TABLE G - 24
 CIRCUITRON CORPORATION SITE
 SITE WORKER USE OF GROUNDWATER - INGESTION PATHWAY
 ROUND 1 SAMPLES
 ON-SITE DEEP - MW 2D, 3D, 4D

CARCINOGENS - AVERAGE GROUNDWATER INGESTION EXPOSURE

Group	Compound	Water Conc(mg/l)	Intake (l/day)	Bioavail. Factor	Body Wt. (kg)	Years Exposed	Years Lifetime	Days Exposed	Days Year	RISK (CDI*SF)
Adults	1,1 DICHLOROETHENE	6.00E-03	2	1.0	70.0	1.29E-01	1.29E-01	6.85E-01	6.00E-01	9.06E-06
	TRICHLOROETHENE	1.80E-02	2	1.0	70.0	1.29E-01	1.29E-01	6.85E-01	1.10E-02	4.98E-07
	TETRACHLOROETHENE	2.90E-02	2	1.0	70.0	1.29E-01	1.29E-01	6.85E-01	5.10E-02	3.72E-06
	1,1-DICHLOROETHANE	2.00E-03	2	1.0	70.0	1.29E-01	1.29E-01	6.85E-01	9.10E-02	4.58E-07
	CHLOROFORM	2.40E-02	2	1.0	70.0	1.29E-01	1.29E-01	6.85E-01	6.10E-03	3.68E-07
									TOTAL RISK	1.41E-05

CARCINOGENS - PLAUSIBLE MAXIMUM GROUNDWATER INGESTION EXPOSURE

Group	Compound	Water Conc(mg/l)	Intake (l/day)	Bioavail. Factor	Body Wt. (kg)	Years Exposed	Years Lifetime	Days Exposed	Days Year	RISK (CDI*SF)
Adults	1,1 DICHLOROETHENE	6.00E-03	2	1.0	70.0	4.29E-01	4.29E-01	6.85E-01	6.00E-01	3.02E-05
	TRICHLOROETHENE	1.80E-02	2	1.0	70.0	4.29E-01	4.29E-01	6.85E-01	1.10E-02	1.66E-06
	TETRACHLOROETHENE	2.90E-02	2	1.0	70.0	4.29E-01	4.29E-01	6.85E-01	5.10E-02	1.24E-05
	1,1-DICHLOROETHANE	2.00E-03	2	1.0	70.0	4.29E-01	4.29E-01	6.85E-01	9.10E-02	1.53E-06
	CHLOROFORM	2.40E-02	2	1.0	70.0	4.29E-01	4.29E-01	6.85E-01	6.10E-03	1.23E-06
									TOTAL RISK	4.70E-05

TABLE G - 24
CIRCUITRON CORPORATION SITE
SITE WORKER USE OF GROUNDWATER - INGESTION PATHWAY
ROUND 1 SAMPLES
ON-SITE DEEP - MW 20, 30, 40

NONCARCINOGENS - AVERAGE GROUNDWATER INGESTION EXPOSURE: Adults

Chronic Daily Intake (mg/kg-day) = $\frac{\text{Water Conc} \times \text{Intake} \times \text{Bioavail. Factor} \times \text{Body Wt.}}{\text{Days Exposed}}$

Chronic Daily Intake (mg/kg-day) = $\frac{\text{mg/l} \times \text{X} \times 2 \text{ l/day} \times \text{X} \times 1.0 \times \text{X} \times 70 \text{ kg}}{250 \text{ days}}$

Chronic Daily Intake (mg/kg-day) = $\frac{\text{mg/l} \times \text{X} \times 2 \text{ l/day} \times \text{X} \times 1.0 \times \text{X} \times 70 \text{ kg}}{365 \text{ days}}$

Group	Compound	Water Conc (mg/l)	Intake (l/day)	Bioavail. Factor	Body Wt (kg)	Days Exposed	CDI	RfD	CDI/RfD
Adults	1,1-DICHLOROETHANE	2.00E-03	2	1.0	70.0	6.85E-01	3.91E-05	1.00E-01	3.91E-04
	1,1-DICHLOROETHENE	6.00E-03	2	1.0	70.0	6.85E-01	1.17E-04	9.00E-03	1.30E-02
	1,1,1-TRICHLOROETHANE	3.80E-02	2	1.0	70.0	6.85E-01	7.44E-04	9.00E-02	8.26E-03
	COPPER	1.07E-02	2	1.0	70.0	6.85E-01	2.09E-04	3.70E-02	5.66E-03
	CHROMIUM	1.44E-02	2	1.0	70.0	6.85E-01	2.82E-04	1.00E+00	2.82E-04
	LEAD	6.80E-03	2	1.0	70.0	6.85E-01	1.33E-04	1.43E-04	9.31E-01

HAZARD INDEX

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 J.T. : GWING16.XLS

TABLE G - 26
 CIRCUITRON CORPORATION SITE
 SITE WORKER USE OF GROUNDWATER - INGESTION PATHWAY
 ROUND II SAMPLES
 ON-SITE DEEP - MW 2D, 3D, 4D

NONCARCINOGENS - AVERAGE GROUNDWATER INGESTION EXPOSURE: Adults

Chronic Daily Intake (mg/kg-day) = $\frac{\text{Water Conc} \times \text{Intake} \times \text{Bioavail. Factor} \times \text{Body Wt.}}{\text{Days Exposed}}$
 Chronic Daily Intake (mg/kg-day) = $\frac{\text{mg/l} \times 2 \text{ l/day} \times 1.0 \times 70 \text{ kg}}{250 \text{ days}}$ or $\frac{\text{mg/l} \times 2 \text{ l/day} \times 1.0 \times 70 \text{ kg}}{365 \text{ days}}$

Group	Compound	Water Conc (mg/l)	Intake (l/day)	Bioavail. Factor	Body Wt (kg)	Days Exposed	CDI	Rfd	CDI \ Rfd	
Adults	1,1-DICHLOROETHANE	2.00E-03	2	1.0	70.0	6.85E-01	3.91E-05	1.00E-01	3.91E-04	
	1,1-DICHLOROETHENE	1.10E-02	2	1.0	70.0	6.85E-01	2.15E-04	9.00E-03	2.39E-02	
	1,1,1-TRICHLOROETHANE	6.10E-02	2	1.0	70.0	6.85E-01	1.19E-03	9.00E-02	1.33E-02	
	COPPER	8.60E-03	2	1.0	70.0	6.85E-01	1.68E-04	3.70E-02	4.55E-03	
	CHROMIUM	2.10E-02	2	1.0	70.0	6.85E-01	4.11E-04	1.00E+00	4.11E-04	
	LEAD	1.44E-02	2	1.0	70.0	6.85E-01	2.82E-04	1.43E-04	1.97E+00	
									HAZARD INDEX	2.01E+00

TABLE G - 25
CIRCUITRON CORPORATION SITE
SITE WORKER USE OF GROUNDWATER - INGESTION PATHWAY
ROUND II SAMPLES
ON-SITE SHALLOW - MW2S, 3S, 4S, 8, 9, 10, 11, 12

CARCINOGENS - AVERAGE GROUNDWATER INGESTION EXPOSURE

Group	Compound	Water Conc (mg/l)	Intake (l/day)	Bioavail. Factor	Body Wt. (kg)	Years Exposed	Days Exposed	RISK (CDI*SF)
Adults	1,1-DICHLOROETHENE	2.30E-02	2	1.0	70.0	1.29E-01	6.85E-01	3.47E-05
	TRICHLOROETHENE	7.40E-03	2	1.0	70.0	1.29E-01	6.85E-01	2.05E-07
	TETRACHLOROETHENE	8.70E-02	2	1.0	70.0	1.29E-01	6.85E-01	1.12E-05
	1,1-DICHLOROETHANE	1.00E-02	2	1.0	70.0	1.29E-01	6.85E-01	2.29E-06
TOTAL RISK								4.84E-05

CARCINOGENS - PLAUSIBLE MAXIMUM GROUNDWATER INGESTION EXPOSURE

Group	Compound	Water Conc (mg/l)	Intake (l/day)	Bioavail. Factor	Body Wt. (kg)	Years Exposed	Days Exposed	RISK (CDI*SF)
Adults	1,1-DICHLOROETHENE	2.30E-02	2	1.0	70.0	4.29E-01	6.85E-01	1.16E-04
	TRICHLOROETHENE	7.40E-03	2	1.0	70.0	4.29E-01	6.85E-01	6.83E-07
	TETRACHLOROETHENE	8.70E-02	2	1.0	70.0	4.29E-01	6.85E-01	3.72E-05
	1,1-DICHLOROETHANE	1.00E-02	2	1.0	70.0	4.29E-01	6.85E-01	7.63E-06
TOTAL RISK								1.61E-04

TABLE G - 25
 CIRCUITRON CORPORATION SITE
 SITE WORKER USE OF GROUNDWATER - INGESTION PATHWAY
 ROUND II SAMPLES
 ON-SITE SHALLOW - MW2S, 3S, 4S, 8, 9, 10, 11, 12

NONCARCINOGENS - AVERAGE GROUNDWATER INGESTION EXPOSURE: Adults

Group	Compound	Water Conc (mg/l)	Intake (l/day)	Bioavail. Factor	Body Wt. (kg)	Days Exposed	Days Year	CDI	Rfd	CDI\Rfd
Adults	1,1-DICHLOROETHANE	1.00E-02	2	1.0	70.0	6.85E-01	6.85E-01	1.96E-04	1.00E-01	1.96E-03
	1,1-DICHLOROETHENE	2.30E-02	2	1.0	70.0	6.85E-01	6.85E-01	4.50E-04	9.00E-03	5.00E-02
	1,1,1-TRICHLOROETHANE	3.80E-01	2	1.0	70.0	6.85E-01	6.85E-01	7.44E-03	9.00E-02	8.26E-02
	COPPER	6.41E-02	2	1.0	70.0	6.85E-01	6.85E-01	1.25E-03	3.70E-02	3.39E-02
	CHROMIUM	1.02E-02	2	1.0	70.0	6.85E-01	6.85E-01	2.00E-04	1.00E+00	2.00E-04
	LEAD	3.40E-03	2	1.0	70.0	6.85E-01	6.85E-01	6.65E-05	1.43E-04	4.65E-01
	NICKEL	1.72E-02	2	1.0	70.0	6.85E-01	6.85E-01	3.37E-04	2.00E-02	1.68E-02
									HAZARD INDEX	6.51E-01

TABLE G - 26
CIRCUITRON CORPORATION SITE
SITE WORKER USE OF GROUNDWATER - INGESTION PATHWAY
ROUND II SAMPLES
ON-SITE DEEP - MW 2D, 3D, 4D

CARCINOGENS - AVERAGE GROUNDWATER INGESTION EXPOSURE

Chronic Daily Intake (mg/kg-day) = Water X Intake X Bioavail. X 1 X Years Exposed X Days Exposed
 Conc Body Wt. Days Year
 Chronic Daily Intake (mg/kg-day) = mg/l X 2 l/day X 1.0 X 1 X 9 yrs X 250 days
 70 kg 70 yrs 365 days

Group	Compound	Water Conc(mg/l)	Intake (l/day)	Bioavail. Factor	Body Wt (kg)	Years Exposed	Days Exposed	CDI	SF	RISK (CDI*SF)
Adults	1,1-DICHLOROETHENE	1.10E-02	2	1.0	70.0	1.29E-01	6.85E-01	2.77E-05	6.00E-01	1.66E-05
	TRICHLOROETHENE	2.70E-02	2	1.0	70.0	1.29E-01	6.85E-01	6.79E-05	1.10E-02	7.47E-07
	TETRACHLOROETHENE	2.80E-02	2	1.0	70.0	1.29E-01	6.85E-01	7.05E-05	5.10E-02	3.59E-06
	1,1-DICHLOROETHANE	2.00E-03	2	1.0	70.0	1.29E-01	6.85E-01	5.03E-06	9.10E-02	4.58E-07
									TOTAL RISK	2.14E-05

CARCINOGENS - PLAUSIBLE MAXIMUM GROUNDWATER INGESTION EXPOSURE

Chronic Daily Intake (mg/kg-day) = Water X Intake X Bioavail. X 1 X Years Exposed X Days Exposed
 Conc Body Wt. Days Year
 Chronic Daily Intake (mg/kg-day) = mg/l X 2 l/day X 1.0 X 1 X 30 yrs X 250 days
 70 kg 70 yrs 365 days

Group	Compound	Water Conc(mg/l)	Intake (l/day)	Bioavail. Factor	Body Wt (kg)	Years Exposed	Days Exposed	CDI	SF	RISK (CDI*SF)
Adults	1,1-DICHLOROETHENE	1.10E-02	2	1.0	70.0	4.29E-01	6.85E-01	9.23E-05	6.00E-01	5.54E-05
	TRICHLOROETHENE	2.70E-02	2	1.0	70.0	4.29E-01	6.85E-01	2.26E-04	1.10E-02	2.49E-06
	TETRACHLOROETHENE	2.80E-02	2	1.0	70.0	4.29E-01	6.85E-01	2.35E-04	5.10E-02	1.20E-05
	1,1-DICHLOROETHANE	2.00E-03	2	1.0	70.0	4.29E-01	6.85E-01	1.68E-05	9.10E-02	1.53E-06
									TOTAL RISK	7.13E-05

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FM : SHOW2.XLS

TABLE G - 28

CIRCUITRON CORPORATION SITE
 INHALATION OF VOLATILE CONTAMINANTS WHILE SHOWERING
 ROUND II UPGRADE - DEEP - MW 1D

* These parameters were used to calculate the contaminant intake in mg/day based on a model of volatile inhalation exposure while showering by Foster and Chrostowski, 1987.

CARCINOGENS - GROUNDWATER INHALATION EXPOSURE WHILE SHOWERING

Scenario Parameters:

Shower Frequency = 1/day
 Shower Room Vol.* (m³) = 6.0
 Droplet Diam.* (mm) = 1.0
 Shower Water Flow Rate* (l/min) = 10.0
 Bathroom Air Exchange Rate* (exch/hr) = 1.0
 Inhalation Rate* (m³/hr) = 1.4
 Shower Water Temp* (C) = 45.0
 Droplet Drop Time* (sec) = 2.000
 Shower Duration* (min) = 15.0
 Time in Room After Shower* (min) = 10.0
 Viscosity of Shower Water* (cp) = 0.601

Chronic Daily Intake (mg/kg-day) = Contaminant X $\frac{1}{70 \text{ kg}}$ X Bioavail. X $\frac{\text{Days Exposed}}{\text{Days/Yr}}$ X $\frac{\text{Years Exposed}}{\text{Years Lifetime}}$
 Intake mg/day X $\frac{1}{70 \text{ kg}}$ X 1.0 X $\frac{365 \text{ days}}{365 \text{ days}}$ X $\frac{9 \text{ Yrs}}{70 \text{ yrs}}$

Compound	Water Conc* (mg/L)	Henry Law Coeff* (atm-m ³ /mol-K)	Mass Transfer Coeff* (cm/hr)	Contaminant Intake (mg/day)	Body Wt (kg)	Bio-availability Factor	Days Exposed Days/Yr	Years Exposed Years Lifetime	CDI	SF	RISK SF*CDI
Adults - Ave case											
TRICHLOROETHENE	1.00E-02	9.10E-03	1.53E+01	3.51E-02	70	1.0	1.00E+00	1.29E-01	6.45E-05	1.70E-02	1.10E-06
TETRACHLOROETHENE	2.00E-02	2.59E-02	1.39E+01	6.50E-02	70	1.0	1.00E+00	1.29E-01	1.19E-04	3.30E-03	3.94E-07
1,1-DICHLOROETHENE	8.10E-03	3.40E-02	1.82E+01	1.48E-02	70	1.0	1.00E+00	1.29E-01	2.71E-05	1.20E+00	3.26E-05
										TOTAL RISK	3.41E-05

7/27/90

FM : SHOW1.XLS

TABLE G - 27

CIRCUITRON CORPORATION SITE
 INHALATION OF VOLATILE CONTAMINANTS WHILE SHOWERING
 ROUND II UPGRADE - SHALLOW - MW 1S

* These parameters were used to calculate the contaminant intake in mg/day based on a model of volatile inhalation exposure while showering by Foster and Chrostowski, 1987.

Scenario Parameters:

Shower Frequency = 1/day
 Shower Room Vol.* (m³) = 6.0
 Droplet Diam.* (mm) = 1.0
 Shower Water Flow Rate* (l/min) = 10.0
 Bathroom Air Exchange Rate* (exch/hr) = 1.0
 Inhalation Rate* (m³/hr) = 1.4
 Shower Water Temp* (C) = 45.0
 Droplet Drop Time* (sec) = 2.000
 Shower Duration* (min) = 15.0
 Time in Room After Shower* (min) = 10.0
 Viscosity of Shower Water* (cp) = 0.601

Chronic Daily Intake (mg/kg-day) = Contaminant X $\frac{1}{70 \text{ kg}}$ X Bioavail. X $\frac{\text{Days Exposed}}{\text{Days/Yr}}$ X $\frac{\text{Years Exposed}}{\text{Years Lifetime}}$
 Chronic Daily Intake (mg/kg-day) = mg/day X $\frac{1}{70 \text{ kg}}$ X 1.0 X $\frac{365 \text{ days}}{365 \text{ days}}$ X $\frac{30 \text{ Yrs}}{70 \text{ Yrs}}$

Compound	Water Conc* (mg/L)	Henry Law Coeff* (atm-m ³ /mol-k)	Mass Transfer Coeff* (cm/hr)	Contaminant Intake (mg/day)	Body Wt. (kg)	Bio availability Factor	Days Exposed Days/Yr	Years Exposed Years Lifetime	CDI	SF	RISK SF*CDI
Adults - Max case	8.10E-03	3.40E-02	1.82E+01	3.23E-02	70	1.0	1.00E+00	4.29E-01	1.98E-04	1.20E+00	2.38E-04
1,1-DICHLOROETHENE										TOTAL RISK	2.38E-04

7/27/90

FM : SHOW1.XLS

TABLE G - 27

CIRCUITRON CORPORATION SITE
 INHALATION OF VOLATILE CONTAMINANTS WHILE SHOWERING
 ROUND II UPGRADIENT - SHALLOW- MW 1S

* These parameters were used to calculate the contaminant intake in mg/day based on a model of volatile inhalation exposure while showering by Foster and Chrostowski, 1987.

NON-CARCINOGENS - GROUNDWATER INHALATION EXPOSURE WHILE SHOWERING: Adults

Scenario Parameters:

Shower Frequency = 1/day
 Shower Room Vol.* (m³) = 6.0
 Droplet Diam.* (mm) = 1.0
 Shower Water Flow Rate* (l/min) = 10.0
 Bathroom Air Exchange Rate* (exch/hr) = 1.0
 Inhalation Rate* (m³/hr) = 1.4
 Shower Water Temp* (C) = 45.0
 Droplet Drop Time* (sec) = 2.000
 Shower Duration* (min) = 15.0
 Time in Room After Shower* (min) = 10.0
 Viscosity of Shower Water* (cp) = 0.601

Chronic Daily Intake (mg/kg-day) = Contaminant X $\frac{1}{70 \text{ kg}}$ X Bioavail. X $\frac{\text{Days Exposed}}{\text{Days/Yr}}$

Chronic Daily Intake (mg/kg-day) = mg/day X $\frac{1}{70 \text{ kg}}$ X 1.0 X $\frac{365 \text{ days}}{365 \text{ days}}$

Compound	Water Conc (mg/L)	Henry Law Coeff* (atm-m ³ /mol-K)	Mass Transfer Coeff* (cm/hr)	Contaminant Intake (mg/day)	Body Wt (kg)	Fraction Absorbed	Days Exposed Days/Yr	CDI	RfD	CDI/RfD
1,1-DICHLOROETHANE	6.60E-03	4.31E-03	1.71E+01	2.52E-02	70	1.0	1.00E+00	3.60E-04	1.00E-01	3.60E-03
1,1,1-TRICHLOROETHANE	1.18E+00	1.44E-02	1.53E+01	4.15E+00	70	1.0	1.00E+00	5.93E-02	3.00E-01	1.98E-01
								HAZARD INDEX		2.01E-01

7/27/90

FM : SHOW1.XLS

TABLE G - 27

CIRCUITRON CORPORATION SITE
 INHALATION OF VOLATILE CONTAMINANTS WHILE SHOWERING
 ROUND II UPGRADIENT - SHALLOW- MW 1S

* These parameters were used to calculate the contaminant intake in mg/day based on a model of volatile inhalation exposure while showering by Foster and Chrostowski, 1987.

NON-CARCINOGENS - GROUNDWATER INHALATION EXPOSURE WHILE SHOWERING: Children 0-17 yrs

Scenario Parameters:

Shower Frequency = 1/day
 Shower Room Vol.* (m³) = 6.0
 Droplet Diam.* (mm) = 1.0
 Shower Water Flow Rate* (l/min) = 10.0
 Bathroom Air Exchange Rate* (exch/hr) = 1.0
 Inhalation Rate* (m³/hr) = 1.4
 Shower Water Temp* (C) = 45.0
 Droplet Drop Time* (sec) = 2.000
 Shower Duration* (min) = 15.0
 Time in Room After Shower* (min) = 10.0
 Viscosity of Shower Water* (cp) = 0.601

Chronic Daily Intake (mg/kg-day) = Contaminant X $\frac{1}{\text{Body Wt.}}$ X Bioavail. X $\frac{\text{Days Exposed}}{\text{Days/Yr}}$

Chronic Daily Intake (mg/kg-day) = mg/day X $\frac{1}{35 \text{ kg}}$ X 1.0 X 365 days / 365 days

Water Conc (mg/l)	Henry Law Coeff* (atm-m ³ /mol-k)	Mass Transfer Coeff* (cm/hr)	Contaminant Intake (mg/day)	Body Wt (kg)	Fraction Absorbed	Days Exposed	Rfd	CDI/Rfd
6.60E-03	4.31E-03	1.71E+01	2.52E-02	35	1.0	1.00E+00	1.00E-01	7.21E-04
1.18E+00	1.44E-02	1.53E+01	4.15E+00	35	1.0	1.00E+00	3.00E-01	1.19E-01
								HAZARD INDEX
								4.03E-01

Children: 0-17 years

1,1-DICHLOROETHANE

1,1,1-TRICHLOROETHANE

TABLE G - 28
CIRCUITRON CORPORATION SITE
INHALATION OF VOLATILE CONTAMINANTS WHILE SHOWERING
ROUND II UPGRADE - DEEP - MW 1D

* These parameters were used to calculate the contaminant intake in mg/day based on a model of volatile inhalation exposure while showering by Foster and Chrostowski, 1987.

Scenario Parameters:

Shower Frequency = 1/day
 Shower Room Vol.* (m³) = 6.0
 Droplet Diam.* (mm) = 1.0
 Shower Water Flow Rate* (l/min) = 10.0
 Bathroom Air Exchange Rate* (exch/hr) = 1.0
 Inhalation Rate* (m³/hr) = 1.4
 Shower Water Temp* (C) = 45.0
 Droplet Drop Time* (sec) = 2.000
 Shower Duration* (min) = 15.0
 Time in Room After Shower* (min) = 10.0
 Viscosity of Shower Water* (cp) = 0.601

Chronic Daily Intake (mg/kg-day) = Contaminant X $\frac{1}{70 \text{ kg}}$ X Bioavail. X $\frac{\text{Days Exposed}}{\text{Days/Yr}}$ X $\frac{\text{Years Exposed}}{\text{Years Lifetime}}$
 Chronic Daily Intake (mg/kg-day) = mg/day X $\frac{1}{70 \text{ kg}}$ X 1.0 X $\frac{365 \text{ days}}{365 \text{ days}}$ X $\frac{30 \text{ yrs}}{70 \text{ yrs}}$

Compound	Water Conc* (mg/l)	Henry Law Coeff** (atm-m ³ /mol-K)	Mass Transfer Coeff* (cm/hr)	Contaminant Intake (mg/day)	Body Wt (kg)	Bio-availibility Factor	Days Exposed Days/Yr	Years Exposed Years Lifetime	CDI	SF	RISK
Adults - Max case											
TRICHLOROETHENE	1.00E-02	9.10E-03	1.53E+01	3.51E-02	70	1.0	1.00E+00	4.29E-01	2.15E-04	1.70E-02	3.66E-06
TETRACHLOROETHENE	2.00E-02	2.59E-02	1.39E+01	6.50E-02	70	1.0	1.00E+00	4.29E-01	3.98E-04	3.30E-03	1.31E-06
1,1-DICHLOROETHENE	8.10E-03	3.40E-02	1.82E+01	1.48E-02	70	1.0	1.00E+00	4.29E-01	9.05E-05	1.20E+00	1.09E-04
TOTAL RISK											1.14E-04

7/27/90

FM : SHOW2.XLS

TABLE G - 28
 CIRCUITRON CORPORATION SITE
 INHALATION OF VOLATILE CONTAMINANTS WHILE SHOWERING
 ROUND II UPGRADIENT - DEEP - MW 1D

* These parameters were used to calculate the contaminant intake in mg/day based on a model of volatile inhalation exposure while showering by Foster and Chrostowski, 1987.

NON-CARCINOGENS - GROUNDWATER INHALATION EXPOSURE WHILE SHOWERING: Adults

Scenario Parameters:

Shower Frequency = 1/day
 Shower Room Vol.* (m³) = 6.0
 Droplet Diam.* (mm) = 1.0
 Shower Water Flow Rate* (l/min) = 10.0
 Bathroom Air Exchange Rate* (exch/hr) = 1.0
 Inhalation Rate* (m³/hr) = 1.4
 Shower Water Temp* (C) = 45.0
 Droplet Drop Time* (sec) = 2.000
 Shower Duration* (min) = 15.0
 Time in Room After Shower* (min) = 10.0
 Viscosity of Shower Water* (cp) = 0.601

Chronic Daily Intake (mg/kg-day) = Contaminant X $\frac{1}{70 \text{ kg}}$ X Bioavail. X $\frac{\text{Days Exposed}}{365 \text{ days}}$

Chronic Daily Intake (mg/kg-day) = mg/day X $\frac{1}{70 \text{ kg}}$ X 1.0 X $\frac{365 \text{ days}}{365 \text{ days}}$

Compound	Water Conc. (mg/l)	Henry Law Coeff** (atm-m ³ /mol-k)	Mass Transfer Coeff* (cm/hr)	Contaminant Intake (mg/day)	Body Wt (kg)	Fraction Absorbed	Days Exposed Days/Yr	CDI	RfD	CDI/RfD
								5.46E-05	1.00E-01	5.46E-04
1,1-DICHLOROETHANE	1.00E-03	4.31E-03	1.71E+01	3.82E-03	70	1.0	1.00E+00	5.46E-05	1.00E-01	5.46E-04
1,1,1-TRICHLOROETHANE	2.30E-02	1.44E-02	1.53E+01	8.09E-02	70	1.0	1.00E+00	1.16E-03	3.00E-01	3.85E-03
								HAZARD INDEX		
										4.40E-03

TABLE G - 28
 CIRCUITRON CORPORATION SITE
 INHALATION OF VOLATILE CONTAMINANTS WHILE SHOWERING
 ROUND II UPGRADEMENT - DEEP - MW 1D

* These parameters were used to calculate the contaminant intake in mg/day based on a model of volatile inhalation exposure while showering by Foster and Chrostowski, 1987.

NON-CARCINOGENS - GROUNDWATER INHALATION EXPOSURE WHILE SHOWERING: Children 0-17 yrs

Scenario Parameters:

Shower Frequency = 1/day
 Shower Room Vol.* (m³) = 6.0
 Droplet Diam.* (mm) = 1.0
 Shower Water Flow Rate* (l/min) = 10.0
 Bathroom Air Exchange Rate* (exch/hr) = 1.0
 Inhalation Rate* (m³/hr) = 1.4
 Shower Water Temp* (C) = 45.0
 Droplet Drop Time* (sec) = 2.000
 Shower Duration* (min) = 15.0
 Time in Room After Shower* (min) = 10.0
 Viscosity of Shower Water* (cp) = 0.601

Chronic Daily Intake (mg/kg-day) = Contaminant X $\frac{1}{35}$ X Bioavail. X Days Exposed

Intake Body Wt. Factor Days/Yr
 mg/day X $\frac{1}{35}$ Kg 1.0 X 365 days

Chronic Daily Intake (mg/kg-day) = mg/day X $\frac{1}{35}$ Kg 1.0 X 365 days

Water Conc (mg/L)	Henry Law Coeff* (atm-m ³ /mol-K)	Mass Transfer Coeff* (cm/hr)	Contaminant Intake (mg/day)	Body Wt (kg)	Fraction Absorbed	Days Exposed Days/Yr	CDI	Rfd	CDI/Rfd
1.00E-03	4.31E-03	1.71E+01	3.82E-03	35	1.0	1.00E+00	1.09E-04	1.00E-01	1.09E-03
2.30E-02	1.44E-02	1.53E+01	8.09E-02	35	1.0	1.00E+00	2.31E-03	3.00E-01	7.71E-03

HAZARD INDEX

Children: 0-17 years
 1,1-DICHLOROETHANE
 1,1,1-TRICHLOROETHANE

TABLE G - 29

CIRCUITRON CORPORATION SITE
 INHALATION OF VOLATILE CONTAMINANTS WHILE SHOWERING
 ROUND II - DOWNGRADIENT - SHALLOW - MFS, 6S, 7S

* These parameters were used to calculate the contaminant intake in mg/day based on a model of volatile inhalation exposure while showering by Foster and Chrostowski, 1987.

CARCINOGENS - GROUNDWATER INHALATION EXPOSURE WHILE SHOWERING

Scenario Parameters:

Shower Frequency = 1/day
 Shower Room Vol.* (m³) = 6.0
 Droplet Diam.* (mm) = 1.0
 Shower Water Flow Rate* (l/min) = 10.0
 Bathroom Air Exchange Rate* (exch/hr) = 1.0
 Inhalation Rate* (m³/hr) = 1.4
 Shower Water Temp* (C) = 45.0
 Droplet Drop Time* (sec) = 2.000
 Shower Duration* (min) = 15.0
 Time in Room After Shower* (min) = 10.0
 Viscosity of Shower Water* (cp) = 0.601
 Chronic Daily Intake (mg/kg-day) = Contaminant X $\frac{1}{70 \text{ kg}}$ X Bioavail. X Days Exposed X Years Exposed
 Intake Body Wt. Factor Days/Yr Years Lifetime
 Chronic Daily Intake (mg/kg-day) = mg/day X $\frac{1}{70 \text{ kg}}$ X 1.0 X 365 days X 9 yrs
 Intake Body Wt. Factor Days/Yr Years Lifetime

Compound	Water Conc* (mg/L)	Henry Law Coeff* (atm-m ³ /mol-k)	Mass Transfer Coeff* (cm/hr)	Contaminant Intake (mg/day)	Bio-availability Factor	Days Exposed Days/Yr	Years Exposed Years Lifetime	CDI	SF	RISK SF*CDI
Adults - Ave case										
1,1-DICHLOROETHENE	1.20E-03	3.40E-02	1.82E+01	4.79E-03	1.0	1.00E+00	1.29E-01	8.80E-06	1.20E+00	1.06E-05
TRICHLOROETHENE	1.00E-03	9.10E-03	1.53E+01	3.51E-03	1.0	1.00E+00	1.29E-01	6.45E-06	1.70E-02	1.10E-07
TETRACHLOROETHENE	9.45E-03	2.59E-02	1.39E+01	3.07E-02	1.0	1.00E+00	1.29E-01	5.65E-05	3.30E-03	1.86E-07
									TOTAL RISK	1.09E-05

TABLE G - 29

CIRCUITRON CORPORATION SITE
 INHALATION OF VOLATILE CONTAMINANTS WHILE SHOWERING
 ROUND II - DOWNGRADIENT - SHALLOW - MW5S, 6S, 7S

* These parameters were used to calculate the contaminant intake in mg/day based on a model of volatile inhalation exposure while showering by Foster and Chrostowski, 1987.

Scenario Parameters:

Shower Frequency = 1/day
 Shower Room Vol.* (m³) = 6.0
 Droplet Diam.* (nm) = 1.0
 Shower Water Flow Rate* (l/min) = 10.0
 Bathroom Air Exchange Rate* (exch/hr) = 1.0
 Inhalation Rate* (m³/hr) = 1.4
 Shower Water Temp* (C) = 45.0
 Droplet Drop Time* (sec) = 2.000
 Shower Duration* (min) = 15.0
 Time in Room After Shower* (min) = 10.0
 Viscosity of Shower Water* (cp) = 0.601
 Chronic Daily Intake (mg/kg-day) = Contaminant X $\frac{1}{70 \text{ kg}}$ X Bioavail. X Days Exposed X Years Exposed
 Intake Body Wt. Factor Days/Yr Years Lifetime
 Chronic Daily Intake (mg/kg-day) = mg/day X $\frac{1}{70 \text{ kg}}$ X 1.0 X 365 days X 30 yrs
 365 days 70 yrs

Compound	Water Conc* (mg/l)	Henry Law Coeff* (atm-m ³ /mol-K)	Mass Transfer Coeff* (cm/hr)	Contaminant Intake (mg/day)	Body Wt (kg)	Bio-availability Factor	Days Exposed Days/Yr	Years Exposed Years Lifetime	CDI	SF	RISK SF*CDI
1,1-DICHLOROETHENE	1.20E-03	3.40E-02	1.82E+01	4.79E-03	70	1.0	1.00E+00	4.29E-01	2.93E-05	1.20E+00	3.52E-05
TRICHLOROETHENE	1.00E-03	9.10E-03	1.53E+01	3.51E-03	70	1.0	1.00E+00	4.29E-01	2.15E-05	1.70E-02	3.66E-07
TETRACHLOROETHENE	9.45E-03	2.59E-02	1.39E+01	3.07E-02	70	1.0	1.00E+00	4.29E-01	1.88E-04	3.30E-03	6.21E-07
TOTAL RISK											3.62E-05

7/27/90

FM : SHOW3.XLS

TABLE G - 29
 CIRCUITRON CORPORATION SITE
 INHALATION OF VOLATILE CONTAMINANTS WHILE SHOWERING
 ROUND II - DOWNGRADIENT - SHALLOW - MW55, 6S, 7S

* These parameters were used to calculate the contaminant intake in mg/day based on a model of volatile inhalation exposure while showering by Foster and Chrostowski, 1987.

NON-CARCINOGENS - GROUNDWATER INHALATION EXPOSURE WHILE SHOWERING: Adults

Scenario Parameters:

Shower Frequency = 1/day
 Shower Room Vol.* (m³) = 6.0
 Droplet Diam.* (mm) = 1.0
 Shower Water Flow Rate* (l/min) = 10.0
 Bathroom Air Exchange Rate* (exch/hr) = 1.0
 Inhalation Rate* (m³/hr) = 1.4
 Shower Water Temp* (C) = 45.0
 Droplet Drop Time* (sec) = 2.000
 Shower Duration* (min) = 15.0
 Time in Room After Shower* (min) = 10.0
 Viscosity of Shower Water* (cp) = 0.601

Chronic Daily Intake (mg/kg-day) = Contaminant X $\frac{1}{70}$ X Bioavail. X Days Exposed
 Intake Body Wt. Factor Days/Yr

Chronic Daily Intake (mg/kg-day) = mg/day X $\frac{1}{70}$ X 1.0 X 365 days
 365 days

Compound	Water Conc (mg/L)	Henry Law Coeff* (atm-m ³ /mol-K)	Mass Transfer Coeff* (cm/hr)	Contaminant Intake (mg/day)	Body Wt (kg)	Fraction Absorbed	Days Exposed Days/Yr	CDI	RfD	CDI/RfD
1,1-DICHLOROETHANE	4.55E-03	4.31E-03	1.71E+01	1.74E-02	70	1.0	1.00E+00	2.48E-04	1.00E-01	2.48E-03
1,1,1-TRICHLOROETHANE	1.25E-01	1.44E-02	1.53E+01	4.40E-01	70	1.0	1.00E+00	6.28E-03	3.00E-01	2.09E-02
								HAZARD INDEX		2.34E-02

7/27/90

FM : SHOW3.XLS

TABLE G - 29
 CIRCUITRON CORPORATION SITE
 INHALATION OF VOLATILE CONTAMINANTS WHILE SHOWERING
 ROUND II - DOWNGRADIENT - SHALLOW - MW55, 6S, 7S

* These parameters were used to calculate the contaminant intake in mg/day based on a model of volatile inhalation exposure while showering by Foster and Chrostowski, 1987.

NON-CARCINOGENS - GROUNDWATER INHALATION EXPOSURE WHILE SHOWERING: Children 0-17 yrs

Scenario Parameters:

Shower Frequency = 1/day

Shower Room Vol.* (m³) = 6.0

Droplet Diam.* (mm) = 1.0

Shower Water Flow Rate* (l/min) = 10.0

Bathroom Air Exchange Rate* (exch/hr) = 1.0

Inhalation Rate* (m³/hr) = 1.4

Shower Water Temp* (C) = 45.0

Droplet Drop Time* (sec) = 2.000

Shower Duration* (min) = 15.0

Time in Room After Shower* (min) = 10.0

Viscosity of Shower Water* (cp) = 0.601

Chronic Daily Intake (mg/kg-day) = Contaminant X $\frac{1}{35 \text{ kg}}$ X Bioavail. X $\frac{\text{Days Exposed}}{\text{Days/Yr}}$

Chronic Daily Intake (mg/kg-day) = mg/day X $\frac{1}{35 \text{ kg}}$ X 1.0 X $\frac{365 \text{ days}}{365 \text{ days}}$

Water Conc (mg/L)	Henry Law Coeff* (atm-m ³ /mol-K)	Mass Transfer Coeff* (cm/hr)	Contaminant Intake (mg/day)	Body Wt (kg)	Fraction Absorbed	Days Exposed Days/Yr	CDI	Rfd	CDI/Rfd
4.55E-03	4.31E-03	1.71E+01	1.74E-02	35	1.0	1.00E+00	4.97E-04	1.00E-01	4.97E-03
1.25E-01	1.44E-02	1.53E+01	4.40E-01	35	1.0	1.00E+00	1.26E-02	3.00E-01	4.19E-02
HAZARD INDEX									

Children: 0-17 years

1,1-DICHLOROETHANE

1,1,1-TRICHLOROETHANE

7/27/90

FM : SHOW6.XLS

TABLE G - 30
 CIRCUITRON CORPORATION SITE
 INHALATION OF VOLATILE CONTAMINANTS WHILE SHOWERING
 ROUND II DOWNGRADEMENT - DEEP - MW5D, 6D, 7D

* These parameters were used to calculate the contaminant intake in mg/day based on a model of volatile inhalation exposure while showering by Foster and Chrostowski, 1987.

CARCINOGENS - GROUNDWATER INHALATION EXPOSURE WHILE SHOWERING

Scenario Parameters:

Shower Frequency = 1/day
 Shower Room Vol.* (m³) = 6.0
 Droplet Diam.* (mm) = 1.0
 Shower Water Flow Rate* (l/min) = 10.0
 Bathroom Air Exchange Rate* (exch/hr) = 1.0
 Inhalation Rate* (m³/hr) = 1.4
 Shower Water Temp* (C) = 45.0
 Droplet Drop Time* (sec) = 2.000
 Shower Duration* (min) = 15.0
 Time in Room After Shower* (min) = 10.0
 Viscosity of Shower Water* (cp) = 0.601
 Chronic Daily Intake (mg/kg-day) = Contaminant X $\frac{1}{70 \text{ kg}}$ X Bioavail. X $\frac{\text{Days Exposed}}{\text{Days/Yr}}$ X $\frac{\text{Years Exposed}}{\text{Years Lifetime}}$
 Intake Body Wt. Factor
 Chronic Daily Intake (mg/kg-day) = mg/day X $\frac{1}{70 \text{ kg}}$ X 1.0 X 365 days X $\frac{9 \text{ yrs}}{70 \text{ yrs}}$
 Intake Body Wt. Factor

Compound	Water Conc* (mg/l)	Henry Law Coeff* (atm-m ³ /mol-K)	Mass Transfer Coeff* (cm/hr)	Contaminant Intake (mg/day)	Body Wt (kg)	Bio-availability Factor	Days Exposed Days/Yr	Years Exposed Years Lifetime	CDI	SF	RISK SF*CDI
Adults - Ave case											
1,1-DICHLOROETHENE	5.80E-03	3.40E-02	1.82E+01	2.32E-02	70	1.0	1.00E+00	1.29E-01	4.25E-05	1.20E+00	5.10E-05
TRICHLOROETHENE	2.70E-02	9.10E-03	1.53E+01	9.48E-02	70	1.0	1.00E+00	1.29E-01	1.74E-04	1.70E-02	2.96E-06
TETRACHLOROETHENE	3.80E-02	2.59E-02	1.39E+01	1.24E-01	70	1.0	1.00E+00	1.29E-01	2.27E-04	3.30E-03	7.49E-07
										TOTAL RISK	5.48E-05

TABLE G - 30
 CIRCUITRON CORPORATION SITE
 INHALATION OF VOLATILE CONTAMINANTS WHILE SHOWERING
 ROUND II DOWNGRADE - DEEP - MW5D, 6D, 7D

* These parameters were used to calculate the contaminant intake in mg/day based on a model of volatile inhalation exposure while showering by Foster and Chrostowski, 1987.

Scenario Parameters:

Shower Frequency = 1/day
 Shower Room Vol.* (m³) = 6.0
 Droplet Diam.* (mm) = 1.0
 Shower Water Flow Rate* (l/min) = 10.0
 Bathroom Air Exchange Rate* (exch/hr) = 1.0
 Inhalation Rate* (m³/hr) = 1.4
 Shower Water Temp* (C) = 45.0
 Droplet Drop Time* (sec) = 2.000
 Shower Duration* (min) = 15.0
 Time in Room After Shower* (min) = 10.0
 Viscosity of Shower Water* (cp) = 0.601

Chronic Daily Intake (mg/kg-day) = Contaminant X $\frac{1}{70 \text{ kg}}$ X Bioavail. X Days Exposed X Years Exposed

Chronic Daily Intake (mg/kg-day) = mg/day X $\frac{1}{70 \text{ kg}}$ X 1.0 X 365 days X 30 yrs

Compound	Water Conc* (mg/l)	Henry Law Coeff* (atm-m ³ /mol-K)	Mass Transfer Coeff* (cm/hr)	Contaminant Intake (mg/day)	Body Wt (kg)	Bio-availibility Factor	Days Exposed Days/Yr	Years Exposed	CDI	SF	RISK SF*CDI
Adults - Max case											
1,1-DICHLOROETHENE	5.80E-03	3.40E-02	1.82E+01	2.32E-02	70	1.0	1.00E+00	4.29E-01	1.42E-04	1.20E+00	1.70E-04
TRICHLOROETHENE	2.70E-02	9.10E-03	1.53E+01	9.48E-02	70	1.0	1.00E+00	4.29E-01	5.81E-04	1.70E-02	9.87E-06
TETRACHLOROETHENE	3.80E-02	2.59E-02	1.39E+01	1.24E-01	70	1.0	1.00E+00	4.29E-01	7.57E-04	3.30E-03	2.50E-06
										TOTAL RISK	1.83E-04

7/27/90

FM : SHOW4.XLS

TABLE G - 30
 CIRCUITRON CORPORATION SITE
 INHALATION OF VOLATILE CONTAMINANTS WHILE SHOWERING
 ROUND II DOWNGRADEMENT - DEEP - MM5D, 6D, 7D

* These parameters were used to calculate the contaminant intake in mg/day based on a model of volatile inhalation exposure while showering by Foster and Chrostowski, 1987.

NON-CARCINOGENS - GROUNDWATER INHALATION EXPOSURE WHILE SHOWERING: Adults

Scenario Parameters:

Shower Frequency = 1/day
 Shower Room Vol.* (m³) = 6.0
 Droplet Diam.* (mm) = 1.0
 Shower Water Flow Rate* (l/min) = 10.0
 Bathroom Air Exchange Rate* (exch/hr) = 1.0
 Inhalation Rate* (m³/hr) = 1.4
 Shower Water Temp* (C) = 45.0
 Droplet Drop Time* (sec) = 2.000
 Shower Duration* (min) = 15.0
 Time in Room After Shower* (min) = 10.0
 Viscosity of Shower Water* (cp) = 0.601

Chronic Daily Intake (mg/kg-day) = Contaminant X $\frac{1}{70}$ X Bioavail. X Days Exposed

Intake Body Wt. Factor

Chronic Daily Intake (mg/kg-day) = mg/day X $\frac{1}{70}$ X 1.0 X $\frac{365 \text{ days}}{365 \text{ days}}$

Compound	Water Conc* (mg/l)	Henry Law Coeff* (atm-m ³ /mol-K)	Mass Transfer Coeff* (cm/hr)	Contaminant Intake (mg/day)	Body Wt (kg)	Fraction Absorbed	Days Exposed	CDI	RfD	CDI/RfD
1,1-DICHLOROETHANE	1.60E-03	4.31E-03	1.71E+01	6.12E-03	70	1.0	1.00E+00	8.74E-05	1.00E-01	8.74E-04
1,1,1-TRICHLOROETHANE	1.90E-02	1.44E-02	1.53E+01	6.68E-02	70	1.0	1.00E+00	9.55E-04	3.00E-01	3.18E-03
								HAZARD INDEX		4.06E-03

7/27/90

FM : SHOWA.XLS

TABLE G - 30
 CIRCUTRON CORPORATION SITE
 INHALATION OF VOLATILE CONTAMINANTS WHILE SHOWERING
 ROUND II DOWNGRADIANT - DEEP - MW5D, 6D, 7D

* These parameters were used to calculate the contaminant intake in mg/day based on a model of volatile inhalation exposure while showering by Foster and Chrostowski, 1987.

NON-CARCINOGENS - GROUNDWATER INHALATION EXPOSURE WHILE SHOWERING: Children 0-17 Yrs

Scenario Parameters:

Shower Frequency = 1/day
 Shower Room Vol.* (m³) = 6.0
 Droplet Diam.* (mm) = 1.0
 Shower Water Flow Rate* (l/min) = 10.0
 Bathroom Air Exchange Rate* (exch/hr) = 1.0
 Inhalation Rate* (m³/hr) = 1.4
 Shower Water Temp* (C) = 45.0
 Droplet Drop Time* (sec) = 2.000
 Shower Duration* (min) = 15.0
 Time in Room After Shower* (min) = 10.0
 Viscosity of Shower Water* (cp) = 0.601

Chronic Daily Intake (mg/kg-day) = Contaminant X $\frac{1}{\text{Body Wt.}}$ X Bioavail. X $\frac{\text{Days Exposed}}{\text{Days/Yr}}$

Chronic Daily Intake (mg/kg-day) = mg/day X $\frac{1}{35 \text{ kg}}$ X 1.0 X 365 days

Water Conc* (mg/l)	Henry Law Coeff* (atm-m ³ /mol-K)	Mass Transfer Coeff* (cm/hr)	Contaminant Intake (mg/day)	Body Wt (kg)	Fraction Absorbed	Days Exposed Days/Yr	CDI	RfD	CDI/RfD
1.60E-03	4.31E-03	1.71E+01	6.12E-03	35	1.0	1.00E+00	1.75E-04	1.00E-01	1.75E-03
1.90E-02	1.44E-02	1.53E+01	6.68E-02	35	1.0	1.00E+00	1.91E-03	3.00E-01	6.37E-03
HAZARD INDEX									
8.11E-03									

Children: 0-17 years

1,1-DICHLOROETHANE
 1,1,1-TRICHLOROETHANE

TABLE G - 31

CIRCUITRON CORPORATION SITE
 INHALATION OF VOLATILE CONTAMINANTS WHILE SHOWERING
 ROUND 11 ON-SITE - SHALLOW - MW2S, 3S, 4S, 8, 9, 10, 11, 12

* These parameters were used to calculate the contaminant intake in mg/day based on a model of volatile inhalation exposure while showering by Foster and Chrostowski, 1987.

CARCINOGENS - GROUNDWATER INHALATION EXPOSURE WHILE SHOWERING

Scenario Parameters:

Shower Frequency = 1/day
 Shower Room Vol.* (m³) = 6.0
 Droplet Diam.* (mm) = 1.0
 Shower Water Flow Rate* (l/min) = 10.0
 Bathroom Air Exchange Rate* (exch/hr) = 1.0
 Inhalation Rate* (m³/hr) = 1.4
 Shower Water Temp* (C) = 45.0
 Droplet Drop Time* (sec) = 2.000
 Shower Duration* (min) = 15.0
 Time in Room After Shower* (min) = 10.0
 Viscosity of Shower Water* (cp) = 0.601

Chronic Daily Intake (mg/kg-day) = Contaminant X 1 X Bioavail. X Days Exposed X Years Exposed
 Intake Body Wt. Factor Days/Yr Years Lifetime
 Chronic Daily Intake (mg/kg-day) = mg/day X 1 X 1.0 X 365 days X 9 Yrs
 70 kg 365 days 70 yrs

Compound	Water Conc* (mg/l)	Henry Law Coeff* (atm-m ³ /mol-K)	Mass Transfer Coeff* (cm/hr)	Contaminant Intake (mg/day)	Body Wt (kg)	Bio-availability Factor	Days Exposed Days/Yr	Years Exposed Years Lifetime	CDI	SF	RISK SF*CDI
Adults - Ave case											
1,1-DICHLOROETHENE	2.30E-02	3.40E-02	1.82E+01	9.20E-02	70	1.0	1.00E+00	1.29E-01	1.69E-04	1.20E+00	2.03E-04
TRICHLOROETHENE	7.40E-03	9.10E-03	1.53E+01	2.60E-02	70	1.0	1.00E+00	1.29E-01	4.77E-05	1.70E-02	8.11E-07
TETRACHLOROETHENE	8.70E-02	2.59E-02	1.39E+01	2.83E-01	70	1.0	1.00E+00	1.29E-01	5.20E-04	3.30E-03	1.72E-06
										TOTAL RISK	2.05E-04

TABLE G - 31

CIRCUITRON CORPORATION SITE
 INHALATION OF VOLATILE CONTAMINANTS WHILE SHOWERING
 ROUND II ON-SITE - SHALLOW - MW2S, 3S, 4S, 8, 9, 10, 11, 12

* These parameters were used to calculate the contaminant intake in mg/day based on a model of volatile inhalation exposure while showering by Foster and Chrostowski, 1987.

Scenario Parameters:

Shower Frequency = 1/day
 Shower Room Vol.* (m³) = 6.0
 Droplet Diam.* (mm) = 1.0
 Shower Water Flow Rate* (l/min) = 10.0
 Bathroom Air Exchange Rate* (exch/hr) = 1.0
 Inhalation Rate* (m³/hr) = 1.4
 Shower Water Temp* (C) = 45.0
 Droplet Drop Time* (sec) = 2.000
 Shower Duration* (min) = 15.0
 Time in Room After Shower* (min) = 10.0
 Viscosity of Shower Water* (cp) = 0.601

Chronic Daily Intake (mg/kg-day) = Contaminant X $\frac{1}{70 \text{ kg}}$ X Bioavail. X $\frac{\text{Days Exposed}}{\text{Days/Yr}}$ X $\frac{\text{Years Exposed}}{\text{Years Lifetime}}$

Chronic Daily Intake (mg/kg-day) = mg/day X $\frac{1}{70 \text{ kg}}$ X 1.0 X 365 days X 30 yrs
 365 days 70 yrs

Compound	Water Conc* (mg/l)	Henry Law Coeff* (atm-m ³ /mol-K)	Mass Transfer Coeff* (cm/hr)	Contaminant Intake (mg/day)	Body Wt. (kg)	Bio-availability Factor	Days Exposed Days/Yr	Years Exposed Years Lifetime	CDI	SF	RISK SF*CDI
Adults - Max case											
1,1,1-DICHLOROETHENE	2.30E-02	3.40E-02	1.82E+01	9.20E-02	70	1.0	1.00E+00	4.29E-01	5.63E-04	1.20E+00	6.76E-04
TRICHLOROETHENE	7.40E-03	9.10E-03	1.53E+01	2.60E-02	70	1.0	1.00E+00	4.29E-01	1.59E-04	1.70E-02	2.70E-06
TETRACHLOROETHENE	8.70E-02	2.59E-02	1.39E+01	2.83E-01	70	1.0	1.00E+00	4.29E-01	1.73E-03	3.30E-03	5.72E-06
										TOTAL RISK	6.84E-04

7/27/90

FM : SHOW5.XLS

TABLE G - 31
 CIRCUITRON CORPORATION SITE
 INHALATION OF VOLATILE CONTAMINANTS WHILE SHOWERING
 ROUND II ON-SITE - SHALLOW - MW2S, 3S, 4S, 8, 9, 10, 11, 12

* These parameters were used to calculate the contaminant intake in mg/day based on a model of volatile inhalation exposure while showering by Foster and Chrostowski, 1987.

NON-CARCINOGENS - GROUNDWATER INHALATION EXPOSURE WHILE SHOWERING: Adults

Scenario Parameters:

Shower Frequency = 1/day
 Shower Room Vol.* (m³) = 6.0
 Shower Water Temp* (C) = 45.0
 Droplet Diam.* (mm) = 1.0
 Droplet Drop Time* (sec) = 2.000
 Shower Water Flow Rate* (l/min) = 10.0
 Shower Duration* (min) = 15.0
 Bathroom Air Exchange Rate* (exch/hr) = 1.0
 Time in Room After Shower* (min) = 10.0
 Inhalation Rate* (m³/hr) = 1.4
 Viscosity of Shower Water* (cp) = 0.601

Chronic Daily Intake (mg/kg-day) = Contaminant X 1 X Bioavail. X Days Exposed
 Intake Body Wt. Factor Days/Yr

Chronic Daily Intake (mg/kg-day) = mg/day X 1 X 1.0 X 365 days
 70 kg 365 days

Compound	Water Conc* (mg/l)	Henry Law Coeff* (atm-m ³ /mol-K)	Mass Transfer Coeff* (cm/hr)	Contaminant Intake (mg/day)	Body Wt (kg)	Fraction Absorbed	Days Exposed Days/Yr	Rfd	CDI	CDI/Rfd
1,1-DICHLOROETHANE	1.00E-02	4.31E-03	1.71E+01	3.82E-02	70	1.0	1.00E+00	1.00E-01	5.46E-04	5.46E-03
1,1,1-TRICHLOROETHANE	3.80E-01	1.44E-02	1.53E+01	1.34E+00	70	1.0	1.00E+00	3.00E-01	1.91E-02	6.37E-02
									HAZARD INDEX	6.91E-02

TABLE G - 31

CIRCUITRON CORPORATION SITE
 INHALATION OF VOLATILE CONTAMINANTS WHILE SHOWERING
 ROUND II ON-SITE - SHALLOW - MW2S, 3S, 4S, 8, 9, 10, 11, 12

* These parameters were used to calculate the contaminant intake in mg/day based on a model of volatile inhalation exposure while showering by Foster and Chrostowski, 1987.

NON-CARCINOGENS - GROUNDWATER INHALATION EXPOSURE WHILE SHOWERING: Children 0-17 yrs

Scenario Parameters:

Shower Frequency = 1/day
 Shower Room Vol.* (m³) = 6.0
 Droplet Diam.* (mm) = 1.0
 Shower Water Flow Rate* (l/min) = 10.0
 Bathroom Air Exchange Rate* (exch/hr) = 1.0
 Inhalation Rate* (m³/hr) = 1.4
 Shower Water Temp* (C) = 45.0
 Droplet Drop Time* (sec) = 2.000
 Shower Duration* (min) = 15.0
 Time in Room After Shower* (min) = 10.0
 Viscosity of Shower Water* (cp) = 0.601

Chronic Daily Intake (mg/kg-day) = Contaminant X $\frac{1}{\text{Body Wt.}}$ X Bioavail. X $\frac{\text{Days Exposed}}{\text{Days/Yr}}$

Chronic Daily Intake (mg/kg-day) = mg/day X $\frac{1}{35 \text{ kg}}$ X 1.0 X 365 days

Water Conc* (mg/l)	Henry Law Coeff* (atm-m ³ /mol-K)	Mass Transfer Coeff* (cm/hr)	Contaminant Intake (mg/day)	Body Wt (kg)	Fraction Absorbed	Days Exposed	Rfd	CDI	CDI/Rfd
1.00E-02	4.31E-03	1.71E+01	3.82E-02	35	1.0	1.00E+00	1.00E-01	1.09E-03	1.09E-02
3.80E-01	1.44E-02	1.53E+01	1.34E+00	35	1.0	1.00E+00	3.00E-01	3.82E-02	1.27E-01
HAZARD INDEX									1.38E-01

Children: 0-17 years

1,1-DICHLOROETHANE
 1,1,1-TRICHLOROETHANE

TABLE G - 32 (cont'd)
 CIRCUITRON CORPORATION SITE
 INHALATION OF VOLATILE CONTAMINANTS WHILE SHOWERING
 ROUND II ON-SITE - DEEP - MW2D, 3D, 4D

* These parameters were used to calculate the contaminant intake in mg/day based on a model of volatile inhalation exposure while showering by Foster and Chrostowski, 1987.

CARCINOGENS - GROUNDWATER INHALATION EXPOSURE WHILE SHOWERING

Scenario Parameters:

Shower Frequency = 1/day
 Shower Room Vol.* (m³) = 6.0
 Droplet Diam.* (mm) = 1.0
 Shower Water Flow Rate* (l/min) = 10.0
 Bathroom Air Exchange Rate* (exch/hr) = 1.0
 Inhalation Rate* (m³/hr) = 1.4
 Shower Water Temp* (C) = 45.0
 Droplet Drop Time* (sec) = 2.000
 Shower Duration* (min) = 15.0
 Time in Room After Shower* (min) = 10.0
 Viscosity of Shower Water* (cp) = 0.601

Chronic Daily Intake (mg/kg-day) = Contaminant X $\frac{1}{70 \text{ kg}}$ X Bioavail. X $\frac{\text{Days Exposed}}{\text{Days/Yr}}$ X $\frac{\text{Years Exposed}}{\text{Years Lifetime}}$
 Intake mg/day X $\frac{1}{70 \text{ kg}}$ X 1.0 X $\frac{365 \text{ days}}{365 \text{ days}}$ X $\frac{9 \text{ YRS}}{70 \text{ YRS}}$

Compound	Water Conc* (mg/l)	Henry Law Coeff* (atm-m ³ /mol-K)	Mass Transfer Coeff* (cm/hr)	Contaminant Intake (mg/day)	Body Wt. (kg)	Bio-availability Factor	Days Exposed Days/Yr	Years Exposed Years Lifetime	CDI	SF	RISK SF*CDI
Adults - Ave case											
1,1-DICHLOROETHENE	1.10E-02	3.40E-02	1.82E+01	4.39E-02	70	1.0	1.00E+00	1.29E-01	8.07E-05	1.20E+00	9.68E-05
TRICHLOROETHENE	2.70E-02	9.10E-03	1.53E+01	9.48E-02	70	1.0	1.00E+00	1.29E-01	1.74E-04	1.70E-02	2.96E-06
TETRACHLOROETHENE	2.80E-02	2.59E-02	1.39E+01	9.11E-02	70	1.0	1.00E+00	1.29E-01	1.67E-04	3.30E-03	5.52E-07
										TOTAL RISK	1.00E-04

TABLE G - 32 (cont'd)
 CIRCUITRON CORPORATION SITE
 INHALATION OF VOLATILE CONTAMINANTS WHILE SHOWERING
 ROUND 11 ON-SITE - DEEP - MW2D, 3D, 4D

* These parameters were used to calculate the contaminant intake in mg/day based on a model of volatile inhalation exposure while showering by Foster and Chrostowski, 1987.

Scenario Parameters:

Shower Frequency = 1/day
 Shower Room Vol.* (m³) = 6.0
 Droplet Diam.* (mm) = 1.0
 Shower Water Flow Rate* (l/min) = 10.0
 Bathroom Air Exchange Rate* (exch/hr) = 1.0
 Inhalation Rate* (m³/hr) = 1.4
 Shower Water Temp* (C) = 45.0
 Droplet Drop Time* (sec) = 2.000
 Shower Duration* (min) = 15.0
 Time in Room After Shower* (min) = 10.0
 Viscosity of Shower Water* (cp) = 0.601

Chronic Daily Intake (mg/kg-day) = Contaminant X $\frac{1}{\text{Body Wt.}}$ X Bioavail. X $\frac{\text{Days Exposed}}{\text{Days/Yr}}$ X $\frac{\text{Years Exposed}}{\text{Years Lifetime}}$

Chronic Daily Intake (mg/kg-day) = mg/day X $\frac{1}{70 \text{ kg}}$ X 1.0 X 1.0 X $\frac{365 \text{ days}}{365 \text{ days}}$ X $\frac{30 \text{ yrs}}{70 \text{ yrs}}$

Compound	Water Conc* (mg/l)	Henry Law Coeff* (atm-m ³ /mol.-K)	Mass Transfer Coeff* (cm/hr)	Contaminant Intake (mg/day)	Body Wt (kg)	Bio-availability Factor	Days Exposed Days/Yr	Years Exposed Years Lifetime	CDI	SF	RISK SF*CDI
Adults - Max case											
1,1-DICHLOROETHENE	1.10E-02	3.40E-02	1.82E+01	4.39E-02	70	1.0	1.00E+00	4.29E-01	2.69E-04	1.20E+00	3.23E-04
TRICHLOROETHENE	2.70E-02	9.10E-03	1.53E+01	9.48E-02	70	1.0	1.00E+00	4.29E-01	5.81E-04	1.70E-02	9.87E-06
TETRACHLOROETHENE	2.80E-02	2.59E-02	1.39E+01	9.11E-02	70	1.0	1.00E+00	4.29E-01	5.58E-04	3.30E-03	1.84E-06
										TOTAL RISK	3.34E-04

TABLE G - 32 (cont'd)
 CIRCUITRON CORPORATION SITE
 INHALATION OF VOLATILE CONTAMINANTS WHILE SHOWERING
 ROUND II ON-SITE - DEEP - MW2D, 3D, 4D

* These parameters were used to calculate the contaminant intake in mg/day based on a model of volatile inhalation exposure while showering by Foster and Chrostowski, 1987.

NON-CARCINOGENS - GROUNDWATER INHALATION EXPOSURE WHILE SHOWERING: Adults

Scenario Parameters:

Shower Frequency = 1/day
 Shower Room Vol.* (m³) = 6.0
 Droplet Diam.* (mm) = 1.0
 Shower Water Flow Rate* (l/min) = 10.0
 Bathroom Air Exchange Rate* (exch/hr) = 1.0
 Inhalation Rate* (m³/hr) = 1.4
 Shower Water Temp* (C) = 45.0
 Droplet Drop Time* (sec) = 2.000
 Shower Duration* (min) = 15.0
 Time in Room After Shower* (min) = 10.0
 Viscosity of Shower Water* (cp) = 0.601

Chronic Daily Intake (mg/kg-day) = Contaminant X $\frac{1}{70}$ X Bioavail. X $\frac{365 \text{ days}}{365 \text{ days}}$
 Intake Body Wt. Factor Days Exposed Days/Yr

Chronic Daily Intake (mg/kg-day) = mg/day X $\frac{1}{70}$ X 1.0 X $\frac{365 \text{ days}}{365 \text{ days}}$

Compound	Water Conc* (mg/l)	Henry Law Coeff* (atm-m ³ /mol-K)	Mass Transfer Coeff* (cm/hr)	Contaminant Intake (mg/day)	Body Wt (kg)	Fraction Absorbed	Days Exposed Days/Yr	Rfd	CDI	CDI/Rfd
1,1-DICHLOROETHANE	2.00E-03	4.31E-03	1.71E+01	7.65E-03	70	1.0	1.00E+00	1.00E-01	1.09E-04	1.09E-03
1,1,1-TRICHLOROETHANE	6.10E-02	1.44E-02	1.53E+01	2.15E-01	70	1.0	1.00E+00	3.00E-01	3.07E-03	1.02E-02
									HAZARD INDEX	1.13E-02

TABLE G - 32 (cont'd)
 CIRCUITRON CORPORATION SITE
 INHALATION OF VOLATILE CONTAMINANTS WHILE SHOWERING
 ROUND 11 ON-SITE - DEEP - MW2D, 3D, 4D

* These parameters were used to calculate the contaminant intake in mg/day based on a model of volatile inhalation exposure while showering by Foster and Chrostowski, 1987.

NON-CARCINOGENS - GROUNDWATER INHALATION EXPOSURE WHILE SHOWERING: Children 0-17 yrs

Scenario Parameters:

- Shower Frequency = 1/day
- Shower Room Vol.* (m³) = 6.0
- Shower Water Temp* (C) = 45.0
- Droplet Diam.* (mm) = 1.0
- Droplet Drop Time* (sec) = 2.000
- Shower Water Flow Rate* (l/min) = 10.0
- Shower Duration* (min) = 15.0
- Bathroom Air Exchange Rate* (exch/hr) = 1.0
- Time in Room After Shower* (min) = 10.0
- Inhalation Rate* (m³/hr) = 1.4
- Viscosity of Shower Water* (cp) = 0.601

Chronic Daily Intake (mg/kg-day) = Contaminant X $\frac{1}{\text{Body Wt.}}$ X Bioavail. X $\frac{\text{Days Exposed}}{\text{Days/Yr}}$

Chronic Daily Intake (mg/kg-day) = mg/day X $\frac{1}{35 \text{ kg}}$ X 1.0 X $\frac{365 \text{ days}}{365 \text{ days}}$

Water Conc* (mg/l)	Henry Law Coeff* (atm-m ³ /mol-K)	Mass Transfer Coeff* (cm/hr)	Contaminant Intake (mg/day)	Body Wt (kg)	Fraction Absorbed	Days Exposed Days/Yr	CDI	Rfd	CDI/Rfd
2.00E-03	4.31E-03	1.71E+01	7.65E-03	35	1.0	1.00E+00	2.18E-04	1.00E-01	2.18E-03
6.10E-02	1.44E-02	1.53E+01	2.15E-01	35	1.0	1.00E+00	6.13E-03	3.00E-01	2.04E-02
HAZARD INDEX									
2.26E-02									

Children: 0-17 years
 1,1-DICHLOROETHANE
 1,1-TRICHLOROETHANE