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APPENDIX A

REMEDIAL INVESTIGATION REPORT
RANDALL TEXTRON PLANT SITE
GRENADA, MISSISSIPPI

BASELINE RISK ASSESSMENT
ATTACHMENTS V - VIII

Prepared for:

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ATTACHMENT V

USEPA REGION IV GUIDANCE:

TOXICITY INFORMATION FOR TRICHLOROETHENE (TCE)

September 30,1992

SUBJECT: Toxicity and carcinogenicity of trichloroethylene CAS #79-01-6 (Cecil Field Naval Air Station Site/Jacksonville, Florida)

FROM: Joan S. Dollarhide
Associate Director
Superfund Health Risk Technical Support Center
Chemical Mixtures Assessment Branch

TO: Elmer Akin
U.S. EPA
Region IV

This memo is in response to a request from Michelle Silkowski of ABB Environmental Services for toxicity and carcinogenicity information on trichloroethylene (TCE).

The attached carcinogenicity information has been provided by the Office of Health and Environmental Assessment (OHEA). Any questions regarding this information should be directed to Jeanette Wiltse of OHEA at (202) 260-7315 or Charles Ris of the Human Health Assessment Group/OHEA at (202) 260-5898.

Also, please note that the provisional oral RfD for TCE provided in the attachment has not been through the Agency's review process and therefore does not represent an Agency verified risk assessment.

If you need further assistance please contact the Superfund Technical Support Center at (513) 569-7300.

cc: J. Dinan (OS-230)
B. Means (OS-230)
K. Poirier (ECAO-Cin)
M. Silkowski (ABB Env. Services)

Attachment I

Risk Assessment Issue Paper for: Carcinogenicity of Trichloroethylene (CAS #79-01-6)

The current phase of the carcinogenicity characterization for trichloroethylene started with a July 1985 Health Assessment Document for Trichloroethylene, EPA# 600/8-82/006F which classified trichloroethylene in Weight-of-Evidence Group "B2 - Probable Human Carcinogen". Inhalation and oral upper bound risk estimates were provided. This information was verified on IRIS from 3/87 through 7/89. A June 1987 Addendum to the Health Assessment Document for Trichloroethylene, EPA# 600/8-82/006FA proposed that the Weight-of-Evidence finding of "B2" was further supported by newly available animal bioassay data and offered a minor revision to the inhalation upper bound risk estimate. In 1988 the Agency's Science Advisory Board offered an opinion that the weight-of-evidence was on C-B2 continuum (C=Possible Human Carcinogen, B2=Probable Human Carcinogen). The Agency withdrew the IRIS carcinogenicity file in 7/89 and has not adopted a current position on the weight-of-evidence classification.

The quantitative risk estimates provided in the 1985 Health Assessment Document and 1987 Addendum have been reviewed by the IRIS-Crave Workgroup but are not verified as such pending resolution of the weight-of-evidence classification. The upper bound risk values in these documents are as follows:

ORAL: 1985 HAD; Unit Risk = 3.2E-7 per ug/L
Slope Factor = 1.1E-2 per mg/kg/day

INHALATION: 1987 Addendum; Unit Risk = 1.7E-6 per ug/cu.m.
Slope Factor = 6.0E-3 per mg/kg/day

When the Agency adopts a current position on weight-of-evidence classification, the trichloroethylene file will be reentered on IRIS.

ATTACHMENT VI

INTAKE CALCULATIONS

SOIL

INTAKE CALCULATION FOR DERMAL CONTACT WITH ON-SITE SURFICIAL SOILS (0.0 - 0.5 FEET)
(INTERIM ACTION AREA)
OCCUPATIONAL MAINTENANCE WORKER POPULATION
CURRENT AND FUTURE NO ACTION SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	CS (mg/kg)	CF (kg/mg)	SA (cm^2/day)	AF (mg/cm^2)	ABS (unitless)	EF (days/yr)	ED (yr)	BW (kg)	NC AT (days)	C AT (days)	C Chronic Daily Intake (Administered) (mg/kg-day)	NC Chronic Daily Intake (Administered) (mg/kg-day)
Acetone	20	1.0E-06	5,800	1.0	0.01	50	25	70	9,125	25,550	8.1E-07	2.3E-06
Chromium (III)	11,700	1.0E-06	5,800	1.0	0.001	50	25	70	9,125	25,550	4.7E-05	1.3E-04
Chromium (VI)	11,700	1.0E-06	5,800	1.0	0.001	50	25	70	9,125	25,550	4.7E-05	1.3E-04
Cyanide	1.3	1.0E-06	5,800	1.0	0.001	50	25	70	9,125	25,550	5.3E-09	1.5E-08
1,2-Dichloroethene (cis)	0.95	1.0E-06	5,800	1.0	0.01	50	25	70	9,125	25,550	3.9E-08	1.1E-07
1,2-Dichloroethene (trans)	0.95	1.0E-06	5,800	1.0	0.01	50	25	70	9,125	25,550	3.9E-08	1.1E-07
Ethyl benzene	8.7	1.0E-06	5,800	1.0	0.01	50	25	70	9,125	25,550	3.5E-07	9.9E-07
Lead	37.8	1.0E-06	5,800	1.0	0.001	50	25	70	9,125	25,550	1.5E-07	4.3E-07
2-Methylnaphthalene	6.5	1.0E-06	5,800	1.0	0.01	50	25	70	9,125	25,550	2.6E-07	7.4E-07
Naphthalene	3.6	1.0E-06	5,800	1.0	0.01	50	25	70	9,125	25,550	1.5E-07	4.1E-07
Nickel	3,610	1.0E-06	5,800	1.0	0.001	50	25	70	9,125	25,550	1.5E-05	4.1E-05
1,1,2,2-Tetrachloroethane	0.002	1.0E-06	5,800	1.0	0.01	50	25	70	9,125	25,550	8.1E-11	2.3E-10
Tetrachloroethene	0.051	1.0E-06	5,800	1.0	0.01	50	25	70	9,125	25,550	2.1E-09	5.8E-09
Toluene	1.7	1.0E-06	5,800	1.0	0.01	50	25	70	9,125	25,550	6.9E-08	1.9E-07
Trichloroethene	18	1.0E-06	5,800	1.0	0.01	50	25	70	9,125	25,550	7.3E-07	2.0E-06
Xylene (total)	93	1.0E-06	5,800	1.0	0.01	50	25	70	9,125	25,550	3.8E-06	1.1E-05
Zinc	67.3	1.0E-06	5,800	1.0	0.001	50	25	70	9,125	25,550	2.7E-07	7.6E-07

INTAKE CALCULATION FOR INCIDENTAL INGESTION OF SURFICIAL SOILS (0.0 - 0.5 FEET)
(INTERIM ACTION AREA)
OCCUPATIONAL MAINTENANCE WORKER POPULATION
CURRENT AND FUTURE NO ACTION SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	CS (mg/kg)	CF (kg/mg)	IR (mg/day)	IF (unitless)	EF (days/yr)	ED (yr)	BW (kg)	NC AT (days)	C AT (days)	C Chronic Daily Intake (mg/kg-day)	NC Chronic Daily Intake (mg/kg-day)
Acetone	20	1.0E-06	50	1.0	50	25	70	9,125	25,550	7.0E-07	2.0E-06
Chromium (III)	11,700	1.0E-06	50	1.0	50	25	70	9,125	25,550	4.1E-04	1.1E-03
Chromium (VI)	11,700	1.0E-06	50	1.0	50	25	70	9,125	25,550	4.1E-04	1.1E-03
Cyanide	1.3	1.0E-06	50	1.0	50	25	70	9,125	25,550	4.5E-08	1.3E-07
1,2-Dichloroethene (cis)	0.95	1.0E-06	50	1.0	50	25	70	9,125	25,550	3.3E-08	9.3E-08
1,2-Dichloroethene (trans)	0.95	1.0E-06	50	1.0	50	25	70	9,125	25,550	3.3E-08	9.3E-08
Ethyl benzene	8.7	1.0E-06	50	1.0	50	25	70	9,125	25,550	3.0E-07	8.5E-07
Lead	37.8	1.0E-06	50	1.0	50	25	70	9,125	25,550	1.3E-06	3.7E-06
2-Methylnaphthalene	6.5	1.0E-06	50	1.0	50	25	70	9,125	25,550	2.3E-07	6.4E-07
Naphthalene	3.6	1.0E-06	50	1.0	50	25	70	9,125	25,550	1.3E-07	3.5E-07
Nickel	3,610	1.0E-06	50	1.0	50	25	70	9,125	25,550	1.3E-04	3.5E-04
1,1,2,2-Tetrachloroethane	0.002	1.0E-06	50	1.0	50	25	70	9,125	25,550	7.0E-11	2.0E-10
Tetrachloroethene	0.051	1.0E-06	50	1.0	50	25	70	9,125	25,550	1.8E-09	5.0E-09
Toluene	1.7	1.0E-06	50	1.0	50	25	70	9,125	25,550	5.9E-08	1.7E-07
Trichloroethene	18	1.0E-06	50	1.0	50	25	70	9,125	25,550	6.3E-07	1.8E-06
Xylene (total)	93	1.0E-06	50	1.0	50	25	70	9,125	25,550	3.2E-06	9.1E-06
Zinc	67.3	1.0E-06	50	1.0	50	25	70	9,125	25,550	2.4E-06	6.6E-06

INTAKE CALCULATION FOR INHALATION OF VAPORS AND PARTICULATES FROM ON-SITE SURFICIAL SOILS (0.0 - 0.5 FEET)
(INTERIM ACTION AREA)
OCCUPATIONAL MAINTENANCE WORKER POPULATION
CURRENT AND FUTURE NO ACTION SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	CA (mg/m³)	IR (m³/hr)	ET (hr/day)	EF (days/yr)	ED (yr)	BW (kg)	NC AT (days)	C AT (days)	C Chronic Daily Intake (mg/kg-day)	NC Chronic Daily Intake (mg/kg-day)
Acetone	1.7E-01	0.83	4	50	25	70	9,125	25,550	3.9E-04	1.1E-03
Chromium (III)	0.0E+00	0.83	4	50	25	70	9,125	25,550	0.0E+00	0.0E+00
Chromium (VI)	0.0E+00	0.83	4	50	25	70	9,125	25,550	0.0E+00	0.0E+00
Cyanide	0.0E+00	0.83	4	50	25	70	9,125	25,550	0.0E+00	0.0E+00
1,2-Dichloroethene (cis)	7.9E-03	0.83	4	50	25	70	9,125	25,550	1.8E-05	5.1E-05
1,2-Dichloroethene (trans)	7.9E-03	0.83	4	50	25	70	9,125	25,550	1.8E-05	5.1E-05
Ethyl benzene	5.1E-02	0.83	4	50	25	70	9,125	25,550	1.2E-04	3.3E-04
Lead	0.0E+00	0.83	4	50	25	70	9,125	25,550	0.0E+00	0.0E+00
2-Methylnaphthalene	0.0E+00	0.83	4	50	25	70	9,125	25,550	0.0E+00	0.0E+00
Naphthalene	2.1E-03	0.83	4	50	25	70	9,125	25,550	4.9E-06	1.4E-05
Nickel	0.0E+00	0.83	4	50	25	70	9,125	25,550	0.0E+00	0.0E+00
1,1,2,2-Tetrachloroethane	4.2E-06	0.83	4	50	25	70	9,125	25,550	9.7E-09	2.7E-08
Tetrachloroethene	3.0E-04	0.83	4	50	25	70	9,125	25,550	7.0E-07	1.9E-06
Toluene	1.7E-02	0.83	4	50	25	70	9,125	25,550	3.9E-05	1.1E-04
Trichloroethene	1.6E-01	0.83	4	50	25	70	9,125	25,550	3.7E-04	1.0E-03
Xylene (total)	4.2E-01	0.83	4	50	25	70	9,125	25,550	9.7E-04	2.7E-03
Zinc	0.0E+00	0.83	4	50	25	70	9,125	25,550	0.0E+00	0.0E+00

INTAKE CALCULATION FOR DERMAL CONTACT WITH ON-SITE SHALLOW SOILS (0 - 8 FEET)
(SOILS UNDER PAVEMENT)
OCCUPATIONAL CONSTRUCTION WORKER POPULATION
FUTURE SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	CS (mg/kg)	CF (kg/mg)	SA (cm^2/day)	AF (mg/cm^2)	ABS (unitless)	EF (days/yr)	ED (yr)	BW (kg)	NC AT (days)	C AT (days)	C Chronic Daily Intake (Administered) (mg/kg-day)	NC Chronic Daily Intake (Administered) (mg/kg-day)
Acetone	3.0	1.0E-06	5,800	1.0	0.01	250	1	70	365	25,550	2.4E-08	1.7E-06
Arsenic	8.14	1.0E-06	5,800	1.0	0.001	250	1	70	365	25,550	6.6E-09	4.6E-07
Chromium (III)	18.2	1.0E-06	5,800	1.0	0.001	250	1	70	365	25,550	1.5E-08	1.0E-06
Chromium (VI)	18.2	1.0E-06	5,800	1.0	0.001	250	1	70	365	25,550	1.5E-08	1.0E-06
1,2-Dichloroethene (cis)	1.0	1.0E-06	5,800	1.0	0.01	250	1	70	365	25,550	8.1E-09	5.7E-07
1,2-Dichloroethene (trans)	1.0	1.0E-06	5,800	1.0	0.01	250	1	70	365	25,550	8.1E-09	5.7E-07
Lead	17.6	1.0E-06	5,800	1.0	0.001	250	1	70	365	25,550	1.4E-08	1.0E-06
Methylene chloride	0.078	1.0E-06	5,800	1.0	0.01	250	1	70	365	25,550	6.3E-10	4.4E-08
Toluene	1.3	1.0E-06	5,800	1.0	0.01	250	1	70	365	25,550	1.1E-08	7.4E-07
Trichloroethene	21	1.0E-06	5,800	1.0	0.01	250	1	70	365	25,550	1.7E-07	1.2E-05
Xylene (total)	0.0041	1.0E-06	5,800	1.0	0.01	250	1	70	365	25,550	3.3E-11	2.3E-09
Zinc	51.1	1.0E-06	5,800	1.0	0.001	250	1	70	365	25,550	4.1E-08	2.9E-06

INTAKE CALCULATION FOR INCIDENTAL INGESTION OF SHALLOW SOILS (0 - 8 FEET)
(SOILS UNDER PAVEMENT)
OCCUPATIONAL CONSTRUCTION WORKER POPULATION
FUTURE SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	CS (mg/kg)	CF (kg/mg)	IR (mg/day)	IF (unitless)	EF (days/yr)	ED (yr)	BW (kg)	NC AT (days)	C AT (days)	C Chronic Daily Intake (mg/kg-day)	NC Chronic Daily Intake (mg/kg-day)
Acetone	3.0	1.0E-06	480	1.0	250	1	70	365	25,550	2.0E-07	1.4E-05
Arsenic	8.14	1.0E-06	480	1.0	250	1	70	365	25,550	5.5E-07	3.8E-05
Chromium (III)	18.2	1.0E-06	480	1.0	250	1	70	365	25,550	1.2E-06	8.5E-05
Chromium (VI)	18.2	1.0E-06	480	1.0	250	1	70	365	25,550	1.2E-06	8.5E-05
1,2-Dichloroethene (cis)	1.0	1.0E-06	480	1.0	250	1	70	365	25,550	6.7E-08	4.7E-06
1,2-Dichloroethene (trans)	1.0	1.0E-06	480	1.0	250	1	70	365	25,550	6.7E-08	4.7E-06
Lead	17.6	1.0E-06	480	1.0	250	1	70	365	25,550	1.2E-06	8.3E-05
Methylene chloride	0.078	1.0E-06	480	1.0	250	1	70	365	25,550	5.2E-09	3.7E-07
Toluene	1.3	1.0E-06	480	1.0	250	1	70	365	25,550	8.7E-08	6.1E-06
Trichloroethene	21	1.0E-06	480	1.0	250	1	70	365	25,550	1.4E-06	9.9E-05
Xylene (total)	0.0041	1.0E-06	480	1.0	250	1	70	365	25,550	2.8E-10	1.9E-08
Zinc	51.1	1.0E-06	480	1.0	250	1	70	365	25,550	3.4E-06	2.4E-04

INTAKE CALCULATION FOR INHALATION OF VAPORS AND PARTICULATES FROM ON-SITE SHALLOW SOILS (0 - 8 FEET)
(SOILS UNDER PAVEMENT)
OCCUPATIONAL CONSTRUCTION WORKER POPULATION
FUTURE SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	CA (mg/m³)	IR (m³/hr)	ET (hr/day)	EF (days/yr)	ED (yr)	BW (kg)	NC AT (days)	C AT (days)	C Chronic Daily Intake (mg/kg-day)	NC Chronic Daily Intake (mg/kg-day)
Acetone	2.5E-02	0.83	8	250	1	70	365	25550	2.3E-05	1.6E-03
Arsenic	3.3E-09	0.83	8	250	1	70	365	25550	3.1E-12	2.1E-10
Chromium (III)	7.4E-09	0.83	8	250	1	70	365	25550	6.9E-12	4.8E-10
Chromium (VI)	7.4E-09	0.83	8	250	1	70	365	25550	6.9E-12	4.8E-10
1,2-Dichloroethene (cis)	8.3E-03	0.83	8	250	1	70	365	25550	7.7E-06	5.4E-04
1,2-Dichloroethene (trans)	8.3E-03	0.83	8	250	1	70	365	25550	7.7E-06	5.4E-04
Lead	7.2E-09	0.83	8	250	1	70	365	25550	6.7E-12	4.7E-10
Methylene chloride	1.0E-03	0.83	8	250	1	70	365	25550	9.3E-07	6.5E-05
Toluene	1.3E-02	0.83	8	250	1	70	365	25550	1.2E-05	8.4E-04
Trichloroethene	1.8E-01	0.83	8	250	1	70	365	25550	1.7E-04	1.2E-02
Xylene (total)	1.8E-05	0.83	8	250	1	70	365	25550	1.7E-08	1.2E-06
Zinc	2.1E-08	0.83	8	250	1	70	365	25550	1.9E-11	1.4E-09

INTAKE CALCULATION FOR DERMAL CONTACT WITH ON-SITE SURFICIAL SOILS (0.0 - 0.5 FEET)
(REMAINDER OF SITE)
OCCUPATIONAL MAINTENANCE WORKER POPULATION
CURRENT AND FUTURE NO ACTION SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	CS (mg/kg)	CF (kg/mg)	SA (cm^2/day)	AF (mg/cm^2)	ABS (unitless)	EF (days/yr)	ED (yr)	BW (kg)	NC AT (days)	C AT (days)	C Chronic Daily Intake (Administered) (mg/kg-day)	NC Chronic Daily Intake (Administered) (mg/kg-day)
Acetone	74	1.0E-06	5,800	1.0	0.01	50	25	70	9,125	25,550	3.0E-06	8.4E-06
Chromium (III)	153	1.0E-06	5,800	1.0	0.001	50	25	70	9,125	25,550	6.2E-07	1.7E-06
Chromium (VI)	153	1.0E-06	5,800	1.0	0.001	50	25	70	9,125	25,550	6.2E-07	1.7E-06
Methylene chloride	0.015	1.0E-06	5,800	1.0	0.01	50	25	70	9,125	25,550	6.1E-10	1.7E-09
Nickel	68.2	1.0E-06	5,800	1.0	0.001	50	25	70	9,125	25,550	2.8E-07	7.7E-07
Trichloroethene	0.022	1.0E-06	5,800	1.0	0.01	50	25	70	9,125	25,550	8.9E-10	2.5E-09
Zinc	147	1.0E-06	5,800	1.0	0.001	50	25	70	9,125	25,550	6.0E-07	1.7E-06

INTAKE CALCULATION FOR INCIDENTAL INGESTION OF SURFICIAL SOILS (0.0 - 0.5 FEET)
(REMAINDER OF SITE)
OCCUPATIONAL MAINTENANCE WORKER POPULATION
CURRENT AND FUTURE NO ACTION SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	CS (mg/kg)	CF (kg/mg)	IR (mg/day)	IF (unitless)	EF (days/yr)	ED (yr)	BW (kg)	NC AT (days)	C AT (days)	C Chronic Daily Intake (mg/kg-day)	NC Chronic Daily Intake (mg/kg-day)
Acetone	74	1.0E-06	50	1.0	50	25	70	9,125	25,550	2.6E-06	7.2E-06
Chromium (III)	153	1.0E-06	50	1.0	50	25	70	9,125	25,550	5.3E-06	1.5E-05
Chromium (VI)	153	1.0E-06	50	1.0	50	25	70	9,125	25,550	5.3E-06	1.5E-05
Methylene chloride	0.015	1.0E-06	50	1.0	50	25	70	9,125	25,550	5.2E-10	1.5E-09
Nickel	68.2	1.0E-06	50	1.0	50	25	70	9,125	25,550	2.4E-06	6.7E-06
Trichloroethene	0.022	1.0E-06	50	1.0	50	25	70	9,125	25,550	7.7E-10	2.2E-09
Zinc	147	1.0E-06	50	1.0	50	25	70	9,125	25,550	5.1E-06	1.4E-05

INTAKE CALCULATION FOR INHALATION OF VAPORS AND PARTICULATES FROM ON-SITE SURFICIAL SOILS (0.0 - 0.5 FEET)
(REMAINDER OF SITE)
OCCUPATIONAL MAINTENANCE WORKER POPULATION
CURRENT AND FUTURE NO ACTION SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	CA (mg/m³)	IR (m³/hr)	ET (hr/day)	EF (days/yr)	ED (yr)	BW (kg)	NC AT (days)	C AT (days)	C Chronic Daily Intake (mg/kg-day)	NC Chronic Daily Intake (mg/kg-day)
Acetone	1.5E+00	0.83	4	50	25	70	9,125	25,550	3.5E-03	9.7E-03
Chromium (III)	1.7E-07	0.83	4	50	25	70	9,125	25,550	3.9E-10	1.1E-09
Chromium (VI)	1.7E-07	0.83	4	50	25	70	9,125	25,550	3.9E-10	1.1E-09
Methylene chloride	4.7E-04	0.83	4	50	25	70	9,125	25,550	1.1E-06	3.1E-06
Nickel	7.5E-08	0.83	4	50	25	70	9,125	25,550	1.7E-10	4.9E-10
Trichloroethene	4.4E-04	0.83	4	50	25	70	9,125	25,550	1.0E-06	2.9E-06
Zinc	1.6E-07	0.83	4	50	25	70	9,125	25,550	3.7E-10	1.0E-09

INTAKE CALCULATION FOR DERMAL CONTACT WITH ON-SITE SURFICIAL SOILS (0.0 - 0.5 FEET)
(REMAINDER OF SITE)
RECREATIONAL/ TRESPASSER CHILD/ADULT POPULATION
FUTURE SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	CS (mg/kg)	CF (kg/mg)	AF (mg/cm²)	ABS (unitless)	DF (cm²/kg)	NC AT (days)	C AT (days)	C Chronic Daily Intake (Administered) (mg/kg-day)	NC Chronic Daily Intake (Administered) (mg/kg-day)
Acetone	74	1.0E-06	1.0	0.01	121,734	10,950	25,550	3.5E-06	8.2E-06
Chromium (III)	153	1.0E-06	1.0	0.001	121,734	10,950	25,550	7.3E-07	1.7E-06
Chromium (VI)	153	1.0E-06	1.0	0.001	121,734	10,950	25,550	7.3E-07	1.7E-06
Methylene chloride	0.015	1.0E-06	1.0	0.01	121,734	10,950	25,550	7.1E-10	1.7E-09
Nickel	68.2	1.0E-06	1.0	0.001	121,734	10,950	25,550	3.2E-07	7.6E-07
Trichloroethene	0.022	1.0E-06	1.0	0.01	121,734	10,950	25,550	1.0E-09	2.4E-09
Zinc	147	1.0E-06	1.0	0.001	121,734	10,950	25,550	7.0E-07	1.6E-06

INTAKE CALCULATION FOR INCIDENTAL INGESTION OF ON-SITE SURFICIAL SOILS (0.0 - 0.5 FEET)
(REMAINDER OF SITE)
RECREATIONAL/ TRESPASSER CHILD/ADULT POPULATION
FUTURE SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	CS (mg/kg)	CF (kg/mg)	IF (mg/kg)	FI (unitless)	NC AT (days)	C AT (days)	C Chronic Daily Intake (mg/kg-day)	NC Chronic Daily Intake (mg/kg-day)
Acetone	74	1.0E-06	2,681	1.0	10,950	25,550	7.8E-06	1.8E-05
Chromium (III)	153	1.0E-06	2,681	1.0	10,950	25,550	1.6E-05	3.7E-05
Chromium (VI)	153	1.0E-06	2,681	1.0	10,950	25,550	1.6E-05	3.7E-05
Methylene chloride	0.015	1.0E-06	2,681	1.0	10,950	25,550	1.6E-09	3.7E-09
Nickel	68.2	1.0E-06	2,681	1.0	10,950	25,550	7.2E-06	1.7E-05
Trichloroethene	0.022	1.0E-06	2,681	1.0	10,950	25,550	2.3E-09	5.4E-09
Zinc	147	1.0E-06	2,681	1.0	10,950	25,550	1.5E-05	3.6E-05

INTAKE CALCULATION FOR INHALATION OF VAPORS AND PARTICULATES FROM ON-SITE SURFICIAL SOILS (0.0 - 0.5 FEET)
(REMAINDER OF SITE)
RECREATIONAL/ TRESPASSER CHILD/ADULT POPULATION
FUTURE SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	CA (mg/m³)	IHF (m³-yr/hr-kg)	ET (hr/day)	EF (day/yr)	NC AT (days)	C AT (days)	C Chronic Daily Intake (mg/kg-day)	NC Chronic Daily Intake (mg/kg-day)
Acetone	1.9E+00	0.911	2	50	10,950	25,550	6.8E-03	1.6E-02
Chromium (III)	1.7E-07	0.911	2	50	10,950	25,550	6.1E-10	1.4E-09
Chromium (VI)	1.7E-07	0.911	2	50	10,950	25,550	6.1E-10	1.4E-09
Methylene chloride	6.3E-04	0.911	2	50	10,950	25,550	2.2E-06	5.2E-06
Nickel	7.5E-08	0.911	2	50	10,950	25,550	2.7E-10	6.2E-10
Trichloroethene	5.8E-04	0.911	2	50	10,950	25,550	2.1E-06	4.8E-06
Zinc	1.6E-07	0.911	2	50	10,950	25,550	5.7E-10	1.3E-09

INTAKE CALCULATION FOR DERMAL CONTACT WITH ON-SITE SHALLOW SOILS (0 - 8 FEET)
(REMAINDER OF SITE)
OCCUPATIONAL CONSTRUCTION WORKER POPULATION
FUTURE SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	CS (mg/kg)	CF (kg/mg)	SA (cm^2/day)	AF (mg/cm^2)	ABS (unitless)	EF (days/yr)	ED (yr)	BW (kg)	NC AT (days)	C AT (days)	C Chronic Daily Intake (Administered) (mg/kg-day)	NC Chronic Daily Intake (Administered) (mg/kg-day)
Acetone	74	1.0E-06	5,800	1.0	0.01	250	1	70	365	25,550	6.0E-07	4.2E-05
Chromium (III)	36.9	1.0E-06	5,800	1.0	0.001	250	1	70	365	25,550	3.0E-08	2.1E-06
Chromium (VI)	36.9	1.0E-06	5,800	1.0	0.001	250	1	70	365	25,550	3.0E-08	2.1E-06
Methylene chloride	0.015	1.0E-06	5,800	1.0	0.01	250	1	70	365	25,550	1.2E-10	8.5E-09
Nickel	48.0	1.0E-06	5,800	1.0	0.001	250	1	70	365	25,550	3.9E-08	2.7E-06
Trichloroethene	0.022	1.0E-06	5,800	1.0	0.01	250	1	70	365	25,550	1.8E-10	1.2E-08
Zinc	94.1	1.0E-06	5,800	1.0	0.001	250	1	70	365	25,550	7.6E-08	5.3E-06

INTAKE CALCULATION FOR INCIDENTAL INGESTION OF SHALLOW SOILS (0 - 8 FEET)
(REMAINDER OF SITE)
OCCUPATIONAL CONSTRUCTION WORKER POPULATION
FUTURE SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	CS (mg/kg)	CF (kg/mg)	IR (mg/day)	IF (unitless)	EF (days/yr)	ED (yr)	BW (kg)	NC AT (days)	C AT (days)	C Chronic Daily Intake (mg/kg-day)	NC Chronic Daily Intake (mg/kg-day)
Acetone	74	1.0E-06	480	1.0	250	1	70	365	25,550	5.0E-06	3.5E-04
Chromium (III)	36.9	1.0E-06	480	1.0	250	1	70	365	25,550	2.5E-06	1.7E-04
Chromium (VI)	36.9	1.0E-06	480	1.0	250	1	70	365	25,550	2.5E-06	1.7E-04
Methylene chloride	0.015	1.0E-06	480	1.0	250	1	70	365	25,550	1.0E-09	7.0E-08
Nickel	48.0	1.0E-06	480	1.0	250	1	70	365	25,550	3.2E-06	2.3E-04
Trichloroethene	0.022	1.0E-06	480	1.0	250	1	70	365	25,550	1.5E-09	1.0E-07
Zinc	94.1	1.0E-06	480	1.0	250	1	70	365	25,550	6.3E-06	4.4E-04

INTAKE CALCULATION FOR INHALATION OF VAPORS AND PARTICULATES FROM ON-SITE SHALLOW SOILS (0 - 8 FEET)
(REMAINDER OF SITE)
OCCUPATIONAL CONSTRUCTION WORKER POPULATION
FUTURE SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	CA (mg/m³)	IR (m³/hr)	ET (hr/day)	EF (days/yr)	ED (yr)	BW (kg)	NC AT (days)	C AT (days)	C Chronic Daily Intake (mg/kg-day)	NC Chronic Daily Intake (mg/kg-day)
Acetone	2.3E+00	0.83	8	250	1	70	365	25,550	2.1E-03	1.5E-01
Chromium (III)	4.1E-08	0.83	8	250	1	70	365	25,550	3.8E-11	2.7E-09
Chromium (VI)	4.1E-08	0.83	8	250	1	70	365	25,550	3.8E-11	2.7E-09
Methylene chloride	7.5E-04	0.83	8	250	1	70	365	25,550	7.0E-07	4.9E-05
Nickel	5.3E-08	0.83	8	250	1	70	365	25,550	4.9E-11	3.4E-09
Trichloroethene	7.1E-04	0.83	8	250	1	70	365	25,550	6.6E-07	4.6E-05
Zinc	1.0E-07	0.83	8	250	1	70	365	25,550	9.3E-11	6.5E-09

INTAKE CALCULATION FOR DERMAL CONTACT WITH ON-SITE SURFICIAL SOILS (0.0 - 0.5 FEET)
(REMAINDER OF SITE)
RESIDENTIAL CHILD/ADULT POPULATION
FUTURE SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	CS (mg/kg)	CF (kg/mg)	AF (mg/cm²)	ABS (unitless)	DF (cm²/kg)	NC AT (days)	C AT (days)	C Chronic Daily Intake (Administered) (mg/kg-day)	NC Chronic Daily Intake (Administered) (mg/kg-day)
Acetone	74	1.0E-06	1.0	0.01	948,000	10,950	25,550	2.7E-05	6.4E-05
Chromium (III)	153	1.0E-06	1.0	0.001	948,000	10,950	25,550	5.7E-06	1.3E-05
Chromium (VI)	153	1.0E-06	1.0	0.001	948,000	10,950	25,550	5.7E-06	1.3E-05
Methylene chloride	0.015	1.0E-06	1.0	0.01	948,000	10,950	25,550	5.6E-09	1.3E-08
Nickel	68.2	1.0E-06	1.0	0.001	948,000	10,950	25,550	2.5E-06	5.9E-06
Trichloroethene	0.022	1.0E-06	1.0	0.01	948,000	10,950	25,550	8.2E-09	1.9E-08
Zinc	147	1.0E-06	1.0	0.001	948,000	10,950	25,550	5.5E-06	1.3E-05

INTAKE CALCULATION FOR INCIDENTAL INGESTION OF ON-SITE SURFICIAL SOILS (0.0 - 0.5 FEET)
(REMAINDER OF SITE)
RESIDENTIAL CHILD/ADULT POPULATION
FUTURE SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	CS (mg/kg)	CF (kg/mg)	IF (mg/kg)	FI (unitless)	NC AT (days)	C AT (days)	C Chronic Daily Intake (mg/kg-day)	NC Chronic Daily Intake (mg/kg-day)
Acetone	74	1.0E-06	40,000	1.0	10,950	25,550	1.2E-04	2.7E-04
Chromium (III)	153	1.0E-06	40,000	1.0	10,950	25,550	2.4E-04	5.6E-04
Chromium (VI)	153	1.0E-06	40,000	1.0	10,950	25,550	2.4E-04	5.6E-04
Methylene chloride	0.015	1.0E-06	40,000	1.0	10,950	25,550	2.3E-08	5.5E-08
Nickel	68.2	1.0E-06	40,000	1.0	10,950	25,550	1.1E-04	2.5E-04
Trichloroethene	0.022	1.0E-06	40,000	1.0	10,950	25,550	3.4E-08	8.0E-08
Zinc	147	1.0E-06	40,000	1.0	10,950	25,550	2.3E-04	5.4E-04

INTAKE CALCULATION FOR INHALATION OF VAPORS AND PARTICULATES FROM ON-SITE SURFICIAL SOILS (0.0 - 0.5 FEET)
(REMAINDER OF SITE)
RESIDENTIAL CHILD/ADULT POPULATION
FUTURE SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	CA (mg/m³)	IHF (m³-yr/hr-kg)	ET (hr/day)	EF (days/yr)	NC AT (days)	C AT (days)	C Chronic Daily Intake (mg/kg-day)	NC Chronic Daily Intake (mg/kg-day)
Acetone	6.7E-01	1.00	2	350	10,950	25550	1.8E-02	4.3E-02
Chromium (III)	1.7E-07	1.00	2	350	10,950	25550	4.7E-09	1.1E-08
Chromium (VI)	1.7E-07	1.00	2	350	10,950	25550	4.7E-09	1.1E-08
Methylene chloride	2.3E-04	1.00	2	350	10,950	25550	6.3E-06	1.5E-05
Nickel	7.5E-08	1.00	2	350	10,950	25550	2.1E-09	4.8E-09
Trichloroethene	2.2E-04	1.00	2	350	10,950	25550	6.0E-06	1.4E-05
Zinc	1.6E-07	1.00	2	350	10,950	25550	4.4E-09	1.0E-08

GROUNDWATER

INTAKE CALCULATION FOR DERMAL CONTACT WITH SITE GROUNDWATER
UPPERMOST AQUIFER
RESIDENTIAL CHILD/ADULT POPULATION
FUTURE SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	CW (mg/L)	PC (cm/hr)	ET (hr/day)	EF (day/yr)	DF (cm^2-yr/kg)	CF (L/cm^3)	NC AT (days)	C AT (days)	C Chronic Daily Intake (Administered) (mg/kg-day)	NC Chronic Daily Intake (Administered) (mg/kg-day)
Acetone	0.44	0.00058	0.25	350	11,300	0.001	10,950	25,550	9.9E-06	2.3E-05
Arsenic	0.00777	0.001	0.25	350	11,300	0.001	10,950	25,550	3.0E-07	7.0E-07
Benzene	0.58	0.021	0.25	350	11,300	0.001	10,950	25,550	4.7E-04	1.1E-03
Bis(2-ethylhexyl)phthalate	0.0062	0.033	0.25	350	11,300	0.001	10,950	25,550	7.9E-06	1.8E-05
Chromium (III)	1.6377	0.001	0.25	350	11,300	0.001	10,950	25,550	6.3E-05	1.5E-04
Chromium (VI)	1.4523	0.001	0.25	350	11,300	0.001	10,950	25,550	5.6E-05	1.3E-04
4,4'-DDE	0.00046	0.24	0.25	350	11,300	0.001	10,950	25,550	4.3E-06	1.0E-05
1,4-Dichlorobenzene	0.00066	0.062	0.25	350	11,300	0.001	10,950	25,550	1.6E-06	3.7E-06
1,2-Dichloroethane	0.0034	0.0053	0.25	350	11,300	0.001	10,950	25,550	7.0E-07	1.6E-06
1,1-Dichloroethene	1.9	0.016	0.25	350	11,300	0.001	10,950	25,550	1.2E-03	2.7E-03
1,2-Dichloroethene (cis)	160	0.01	0.25	350	11,300	0.001	10,950	25,550	6.2E-02	1.4E-01
1,2-Dichloroethene (trans)	160	0.01	0.25	350	11,300	0.001	10,950	25,550	6.2E-02	1.4E-01
Ethyl benzene	2.3	0.074	0.25	350	11,300	0.001	10,950	25,550	6.6E-03	1.5E-02
Fluorene	0.001	0.24	0.25	350	11,300	0.001	10,950	25,550	9.3E-06	2.2E-05
2-Methylnaphthalene	0.069	0.21	0.25	350	11,300	0.001	10,950	25,550	5.6E-04	1.3E-03
4-Methyl-2-pentanone	0.020	0.0033	0.25	350	11,300	0.001	10,950	25,550	2.6E-06	6.0E-06
Naphthalene	0.023	0.069	0.25	350	11,300	0.001	10,950	25,550	6.1E-05	1.4E-04
Nickel	0.00945	0.001	0.25	350	11,300	0.001	10,950	25,550	3.7E-07	8.5E-07
Phenanthrene	0.0007	0.27	0.25	350	11,300	0.001	10,950	25,550	7.3E-06	1.7E-05
Phenol	0.0036	0.0055	0.25	350	11,300	0.001	10,950	25,550	7.7E-07	1.8E-06
Tetrachloroethene	0.36	0.048	0.25	350	11,300	0.001	10,950	25,550	6.7E-04	1.6E-03
Toluene	71	0.045	0.25	350	11,300	0.001	10,950	25,550	1.2E-01	2.9E-01
1,2,4-Trichlorobenzene	0.0014	0.1	0.25	350	11,300	0.001	10,950	25,550	5.4E-06	1.3E-05
1,1,1-Trichloroethane	0.0041	0.017	0.25	350	11,300	0.001	10,950	25,550	2.7E-06	6.3E-06
1,1,2-Trichloroethane	0.092	0.0084	0.25	350	11,300	0.001	10,950	25,550	3.0E-05	7.0E-05
Trichloroethene	690	0.016	0.25	350	11,300	0.001	10,950	25,550	4.3E-01	1.0E+00

INTAKE CALCULATION FOR DERMAL CONTACT WITH SITE GROUNDWATER
UPPERMOST AQUIFER
RESIDENTIAL CHILD/ADULT POPULATION
FUTURE SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	CW (mg/L)	PC (cm/hr)	ET (hr/day)	EF (day/yr)	DF (cm^2-yr/kg)	CF (L/cm^3)	NC AT (days)	C AT (days)	C Chronic Daily Intake (Administered) (mg/kg-day)	NC Chronic Daily Intake (Administered) (mg/kg-day)
Vinyl chloride	62	0.0073	0.25	350	11,300	0.001	10,950	25,550	1.8E-02	4.1E-02
Xylene (total)	1.6	0.08	0.25	350	11,300	0.001	10,950	25,550	5.0E-03	1.2E-02

INTAKE CALCULATION FOR INGESTION OF SITE GROUNDWATER
UPPERMOST AQUIFER
RESIDENTIAL CHILD/ADULT POPULATION
FUTURE SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	CW (mg/L)	IF (L-yr/day-kg)	EF (day/yr)	NC AT (days)	C AT (days)	C Chronic Daily Intake (mg/kg-day)	NC Chronic Daily Intake (mg/kg-day)
Acetone	0.44	1.09	350	10,950	25,550	6.6E-03	1.5E-02
Arsenic	0.00777	1.09	350	10,950	25,550	1.2E-04	2.7E-04
Benzene	0.58	1.09	350	10,950	25,550	8.7E-03	2.0E-02
Bis(2-ethylhexyl)phthalate	0.0062	1.09	350	10,950	25,550	9.3E-05	2.2E-04
Chromium (III)	1.6377	1.09	350	10,950	25,550	2.4E-02	5.7E-02
Chromium (VI)	1.4523	1.09	350	10,950	25,550	2.2E-02	5.1E-02
4,4'-DDE	0.00046	1.09	350	10,950	25,550	6.9E-06	1.6E-05
1,4-Dichlorobenzene	0.00066	1.09	350	10,950	25,550	9.9E-06	2.3E-05
1,2-Dichloroethane	0.0034	1.09	350	10,950	25,550	5.1E-05	1.2E-04
1,1-Dichloroethene	1.9	1.09	350	10,950	25,550	2.8E-02	6.6E-02
1,2-Dichloroethene (cis)	160	1.09	350	10,950	25,550	2.4E+00	5.6E+00
1,2-Dichloroethene (trans)	160	1.09	350	10,950	25,550	2.4E+00	5.6E+00
Ethyl benzene	2.3	1.09	350	10,950	25,550	3.4E-02	8.0E-02
Fluorene	0.001	1.09	350	10,950	25,550	1.5E-05	3.5E-05
2-Methylnaphthalene	0.069	1.09	350	10,950	25,550	1.0E-03	2.4E-03
4-Methyl-2-pentanone	0.020	1.09	350	10,950	25,550	3.0E-04	7.0E-04
Naphthalene	0.023	1.09	350	10,950	25,550	3.4E-04	8.0E-04
Nickel	0.00945	1.09	350	10,950	25,550	1.4E-04	3.3E-04
Phenanthrene	0.0007	1.09	350	10,950	25,550	1.0E-05	2.4E-05
Phenol	0.0036	1.09	350	10,950	25,550	5.4E-05	1.3E-04
Tetrachloroethene	0.36	1.09	350	10,950	25,550	5.4E-03	1.3E-02
Toluene	71	1.09	350	10,950	25,550	1.1E+00	2.5E+00
1,2,4-Trichlorobenzene	0.0014	1.09	350	10,950	25,550	2.1E-05	4.9E-05
1,1,1-Trichloroethane	0.0041	1.09	350	10,950	25,550	6.1E-05	1.4E-04
1,1,2-Trichloroethane	0.092	1.09	350	10,950	25,550	1.4E-03	3.2E-03
Trichloroethene	690	1.09	350	10,950	25,550	1.0E+01	2.4E+01

INTAKE CALCULATION FOR INGESTION OF SITE GROUNDWATER
UPPERMOST AQUIFER
RESIDENTIAL CHILD/ADULT POPULATION
FUTURE SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	CW (mg/L)	IF (L-yr/day-kg)	EF (day/yr)	NC AT (days)	C AT (days)	C Chronic Daily Intake (mg/kg-day)	NC Chronic Daily Intake (mg/kg-day)
Vinyl chloride	62	1.09	350	10,950	25,550	9.3E-01	2.2E+00
Xylene (total)	1.6	1.09	350	10,950	25,550	2.4E-02	5.6E-02

INTAKE CALCULATION FOR INHALATION OF VAPORS FROM SITE GROUNDWATER
UPPERMOST AQUIFER
RESIDENTIAL CHILD/ADULT POPULATION
FUTURE SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	CW (mg/L)	K (L/m³)	IR (m³/day)	ET (hr/day)	EF (day/yr)	DW (yr/kg)	NC AT (days)	C AT (days)	C Chronic Daily Intake (mg/kg-day)	NC Chronic Daily Intake (mg/kg-day)
Acetone	0.44	0.5	0.625	0.25	350	0.74	10,950	25,550	3.5E-04	8.1E-04
Arsenic	--	0.5	0.625	0.25	350	0.74	10,950	25,550	--	--
Benzene	0.58	0.5	0.625	0.25	350	0.74	10,950	25,550	4.6E-04	1.1E-03
Bis(2-ethylhexyl)phthalate	0.0062	0.5	0.625	0.25	350	0.74	10,950	25,550	4.9E-06	1.1E-05
Chromium (III)	--	0.5	0.625	0.25	350	0.74	10,950	25,550	--	--
Chromium (VI)	--	0.5	0.625	0.25	350	0.74	10,950	25,550	--	--
4,4'-DDE	0.00046	0.5	0.625	0.25	350	0.74	10,950	25,550	3.6E-07	8.5E-07
1,4-Dichlorobenzene	0.00066	0.5	0.625	0.25	350	0.74	10,950	25,550	5.2E-07	1.2E-06
1,2-Dichloroethane	0.0034	0.5	0.625	0.25	350	0.74	10,950	25,550	2.7E-06	6.3E-06
1,1-Dichloroethene	1.9	0.5	0.625	0.25	350	0.74	10,950	25,550	1.5E-03	3.5E-03
1,2-Dichloroethene (cis)	160	0.5	0.625	0.25	350	0.74	10,950	25,550	1.3E-01	3.0E-01
1,2-Dichloroethene (trans)	160	0.5	0.625	0.25	350	0.74	10,950	25,550	1.3E-01	3.0E-01
Ethyl benzene	2.3	0.5	0.625	0.25	350	0.74	10,950	25,550	1.8E-03	4.3E-03
Fluorene	0.001	0.5	0.625	0.25	350	0.74	10,950	25,550	7.9E-07	1.8E-06
2-Methylnaphthalene	0.069	0.5	0.625	0.25	350	0.74	10,950	25,550	5.5E-05	1.3E-04
4-Methyl-2-pentanone	0.020	0.5	0.625	0.25	350	0.74	10,950	25,550	1.6E-05	3.7E-05
Naphthalene	0.023	0.5	0.625	0.25	350	0.74	10,950	25,550	1.8E-05	4.3E-05
Nickel	--	0.5	0.625	0.25	350	0.74	10,950	25,550	--	--
Phenanthrene	0.0007	0.5	0.625	0.25	350	0.74	10,950	25,550	5.5E-07	1.3E-06
Phenol	0.0036	0.5	0.625	0.25	350	0.74	10,950	25,550	2.9E-06	6.7E-06
Tetrachloroethene	0.36	0.5	0.625	0.25	350	0.74	10,950	25,550	2.9E-04	6.7E-04
Toluene	71	0.5	0.625	0.25	350	0.74	10,950	25,550	5.6E-02	1.3E-01
1,2,4-Trichlorobenzene	0.0014	0.5	0.625	0.25	350	0.74	10,950	25,550	1.1E-06	2.6E-06
1,1,1-Trichloroethane	0.0041	0.5	0.625	0.25	350	0.74	10,950	25,550	3.2E-06	7.6E-06
1,1,2-Trichloroethane	0.092	0.5	0.625	0.25	350	0.74	10,950	25,550	7.3E-05	1.7E-04
Trichloroethene	690	0.5	0.625	0.25	350	0.74	10,950	25,550	5.5E-01	1.3E+00

INTAKE CALCULATION FOR INHALATION OF VAPORS FROM SITE GROUNDWATER
UPPERMOST AQUIFER
RESIDENTIAL CHILD/ADULT POPULATION
FUTURE SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	CW (mg/L)	K (L/m³)	IR (m³/day)	ET (hr/day)	EF (day/yr)	DW (yr/kg)	NC AT (days)	C AT (days)	C Chronic Daily Intake (mg/kg-day)	NC Chronic Daily Intake (mg/kg-day)
Vinyl chloride	62	0.5	0.625	0.25	350	0.74	10,950	25,550	4.9E-02	1.1E-01
Xylene (total)	1.6	0.5	0.625	0.25	350	0.74	10,950	25,550	1.3E-03	3.0E-03

SURFACE WATER

AND

SEDIMENT

INTAKE CALCULATION FOR DERMAL CONTACT WITH SURFACE WATER
(DOWNSTREAM RIVERDALE CREEK)
RECREATIONAL/ TRESPASSER CHILD/ADULT POPULATION
CURRENT AND FUTURE NO ACTION SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	CSW (mg/L)	PC (cm/hr)	ET (hr/day)	DF (cm^2/kg)	CF (L/cm^3)	NC AT (days)	C AT (days)	C Chronic Daily Intake (Administered) (mg/kg-day)	NC Chronic Daily Intake (Administered) (mg/kg-day)
Acetone	0.0035	0.00058	2	121,734	0.001	10,950	25,550	1.9E-08	4.5E-08
Aluminum	2.80	0.001	2	121,734	0.001	10,950	25,550	2.7E-05	6.2E-05
Arsenic	0.00336	0.001	2	121,734	0.001	10,950	25,550	3.2E-08	7.5E-08
Barium	0.055	0.001	2	121,734	0.001	10,950	25,550	5.2E-07	1.2E-06
Bis(2-ethylhexyl)phthalate	0.0078	0.033	2	121,734	0.001	10,950	25,550	2.5E-06	5.7E-06
Butyl benzyl phthalate	0.0005	0.072	2	121,734	0.001	10,950	25,550	3.4E-07	8.0E-07
2-Chlorophenol	0.0004	0.011	2	121,734	0.001	10,950	25,550	4.2E-08	9.8E-08
Chromium (III)	0.17908	0.001	2	121,734	0.001	10,950	25,550	1.7E-06	4.0E-06
Chromium (VI)	0.22792	0.001	2	121,734	0.001	10,950	25,550	2.2E-06	5.1E-06
Copper	0.0085	0.001	2	121,734	0.001	10,950	25,550	8.1E-08	1.9E-07
1,2-Dichloroethene (cis)	0.094	0.01	2	121,734	0.001	10,950	25,550	9.0E-06	2.1E-05
1,2-Dichloroethene (trans)	0.094	0.01	2	121,734	0.001	10,950	25,550	9.0E-06	2.1E-05
Dietyl phthalate	0.0001	0.0048	2	121,734	0.001	10,950	25,550	4.6E-09	1.1E-08
Iron	6.72	0.001	2	121,734	0.001	10,950	25,550	6.4E-05	1.5E-04
Lead	0.00496	0.001	2	121,734	0.001	10,950	25,550	4.7E-08	1.1E-07
Manganese	0.264	0.001	2	121,734	0.001	10,950	25,550	2.5E-06	5.9E-06
Methylene chloride	0.0018	0.0045	2	121,734	0.001	10,950	25,550	7.7E-08	1.8E-07
Nickel	0.00781	0.001	2	121,734	0.001	10,950	25,550	7.4E-08	1.7E-07
n-Nitrosodiphenylamine	0.0004	0.036	2	121,734	0.001	10,950	25,550	1.4E-07	3.2E-07
Pentachlorophenol	0.0005	0.65	2	121,734	0.001	10,950	25,550	3.1E-06	7.2E-06
Toluene	0.00062	0.045	2	121,734	0.001	10,950	25,550	2.7E-07	6.2E-07
Trichloroethene	0.34	0.016	2	121,734	0.001	10,950	25,550	5.2E-05	1.2E-04
Vinyl chloride	0.0054	0.0073	2	121,734	0.001	10,950	25,550	3.8E-07	8.8E-07

INTAKE CALCULATION FOR INCIDENTAL INGESTION OF SURFACE WATER
(DOWNSTREAM RIVERDALE CREEK)
RECREATIONAL/ TRESPASSER CHILD/ADULT POPULATION
CURRENT AND FUTURE NO ACTION SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	CSW (mg/L)	IF (L-day/hr-kg)	ET (hr/day)	NC AT (days)	C AT (days)	C Chronic Daily Intake (mg/kg-day)	NC Chronic Daily Intake (mg/kg-day)
Acetone	0.0035	1.34	2	10,950	25,550	3.7E-07	8.6E-07
Aluminum	2.80	1.34	2	10,950	25,550	2.9E-04	6.9E-04
Arsenic	0.00336	1.34	2	10,950	25,550	3.5E-07	8.2E-07
Barium	0.055	1.34	2	10,950	25,550	5.8E-06	1.3E-05
Bis(2-ethylhexyl)phthalate	0.0078	1.34	2	10,950	25,550	8.2E-07	1.9E-06
Butyl benzyl phthalate	0.0005	1.34	2	10,950	25,550	5.2E-08	1.2E-07
2-Chlorophenol	0.0004	1.34	2	10,950	25,550	4.2E-08	9.8E-08
Chromium (III)	0.17908	1.34	2	10,950	25,550	1.9E-05	4.4E-05
Chromium (VI)	0.22792	1.34	2	10,950	25,550	2.4E-05	5.6E-05
Copper	0.0085	1.34	2	10,950	25,550	8.9E-07	2.1E-06
1,2-Dichloroethene (cis)	0.094	1.34	2	10,950	25,550	9.9E-06	2.3E-05
1,2-Dichloroethene (trans)	0.094	1.34	2	10,950	25,550	9.9E-06	2.3E-05
Dietyl phthalate	0.0001	1.34	2	10,950	25,550	1.0E-08	2.4E-08
Iron	6.72	1.34	2	10,950	25,550	7.0E-04	1.6E-03
Lead	0.00496	1.34	2	10,950	25,550	5.2E-07	1.2E-06
Manganese	0.264	1.34	2	10,950	25,550	2.8E-05	6.5E-05
Methylene chloride	0.0018	1.34	2	10,950	25,550	1.9E-07	4.4E-07
Nickel	0.00781	1.34	2	10,950	25,550	8.2E-07	1.9E-06
n-Nitrosodiphenylamine	0.0004	1.34	2	10,950	25,550	4.2E-08	9.8E-08
Pentachlorophenol	0.0005	1.34	2	10,950	25,550	5.2E-08	1.2E-07
Toluene	0.00062	1.34	2	10,950	25,550	6.5E-08	1.5E-07
Trichloroethene	0.34	1.34	2	10,950	25,550	3.6E-05	8.3E-05
Vinyl chloride	0.0054	1.34	2	10,950	25,550	5.7E-07	1.3E-06

INTAKE CALCULATION FOR INHALATION OF VAPORS FROM SURFACE WATER
(DOWNSTREAM RIVERDALE CREEK)
RECREATIONAL/ TRESPASSER CHILD/ADULT POPULATION
CURRENT AND FUTURE NO ACTION SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	CSW (mg/L)	K (L/m³)	IHF (m³-yr/hr-day)	ET (hr/day)	EF (day/yr)	NC AT (days)	C AT (days)	C Chronic Daily Intake (mg/kg-day)	NC Chronic Daily Intake (mg/kg-day)
Acetone	0.0035	0.5	0.911	2	50	10,950	25,550	6.2E-06	1.5E-05
Aluminum	--	0.5	0.911	2	50	10,950	25,550	--	--
Arsenic	--	0.5	0.911	2	50	10,950	25,550	--	--
Barium	--	0.5	0.911	2	50	10,950	25,550	--	--
Bis(2-ethylhexyl)phthalate	0.0078	0.5	0.911	2	50	10,950	25,550	1.4E-05	3.2E-05
Butyl benzyl phthalate	0.0005	0.5	0.911	2	50	10,950	25,550	8.9E-07	2.1E-06
2-Chlorophenol	0.0004	0.5	0.911	2	50	10,950	25,550	7.1E-07	1.7E-06
Chromium (III)	--	0.5	0.911	2	50	10,950	25,550	--	--
Chromium (VI)	--	0.5	0.911	2	50	10,950	25,550	--	--
Copper	--	0.5	0.911	2	50	10,950	25,550	--	--
1,2-Dichloroethene (cis)	0.094	0.5	0.911	2	50	10,950	25,550	1.7E-04	3.9E-04
1,2-Dichloroethene (trans)	0.094	0.5	0.911	2	50	10,950	25,550	1.7E-04	3.9E-04
Dietyl phthalate	0.0001	0.5	0.911	2	50	10,950	25,550	1.8E-07	4.2E-07
Iron	--	0.5	0.911	2	50	10,950	25,550	--	--
Lead	--	0.5	0.911	2	50	10,950	25,550	--	--
Manganese	--	0.5	0.911	2	50	10,950	25,550	--	--
Methylene chloride	0.0018	0.5	0.911	2	50	10,950	25,550	3.2E-06	7.5E-06
Nickel	--	0.5	0.911	2	50	10,950	25,550	--	--
n-Nitrosodiphenylamine	0.0004	0.5	0.911	2	50	10,950	25,550	7.1E-07	1.7E-06
Pentachlorophenol	0.0005	0.5	0.911	2	50	10,950	25,550	8.9E-07	2.1E-06
Toluene	0.00062	0.5	0.911	2	50	10,950	25,550	1.1E-06	2.6E-06
Trichloroethene	0.34	0.5	0.911	2	50	10,950	25,550	6.1E-04	1.4E-03
Vinyl chloride	0.0054	0.5	0.911	2	50	10,950	25,550	9.6E-06	2.2E-05

INTAKE CALCULATION FOR DERMAL CONTACT WITH SEDIMENT
(DOWNSTREAM RIVERDALE CREEK)
RECREATIONAL/ TRESPASSER CHILD/ADULT POPULATION
CURRENT AND FUTURE NO ACTION SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	CS (mg/kg)	CF (kg/mg)	AF (mg/cm²)	ABS (unitless)	DF (cm²/kg)	NC AT (days)	C AT (days)	C Chronic Daily Intake (Administered) (mg/kg-day)	NC Chronic Daily Intake (Administered) (mg/kg-day)
Bis(2-ethylhexyl)phthalate	0.05	1.0E-06	1.0	0.01	121,734	10,950	25,550	2.4E-09	5.6E-09
Chromium (III)	31	1.0E-06	1.0	0.001	121,734	10,950	25,550	1.5E-07	3.4E-07
Chromium (VI)	31	1.0E-06	1.0	0.001	121,734	10,950	25,550	1.5E-07	3.4E-07
1,2-Dichloroethene (cis)	0.055	1.0E-06	1.0	0.01	121,734	10,950	25,550	2.6E-09	6.1E-09
1,2-Dichloroethene (trans)	0.055	1.0E-06	1.0	0.01	121,734	10,950	25,550	2.6E-09	6.1E-09
Lead	11	1.0E-06	1.0	0.001	121,734	10,950	25,550	5.2E-08	1.2E-07
Methylene chloride	0.0034	1.0E-06	1.0	0.01	121,734	10,950	25,550	1.6E-10	3.8E-10
Nickel	13	1.0E-06	1.0	0.001	121,734	10,950	25,550	6.2E-08	1.4E-07
Trichloroethene	0.13	1.0E-06	1.0	0.01	121,734	10,950	25,550	6.2E-09	1.4E-08
Zinc	42	1.0E-06	1.0	0.001	121,734	10,950	25,550	2.0E-07	4.7E-07

INTAKE CALCULATION FOR DERMAL CONTACT WITH RESTRICTED ON-SITE SURFACE WATER
(SLUDGE LAGOON AND OUTFALL DITCH)
RECREATIONAL/ TRESPASSER CHILD/ADULT POPULATION
FUTURE SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	CSW (mg/L)	PC (cm/hr)	ET (hr/day)	DF (cm^2/kg)	CF (L/cm^3)	NC AT (days)	C AT (days)	C Chronic Daily Intake (Administered) (mg/kg-day)	NC Chronic Daily Intake (Administered) (mg/kg-day)
Barium	0.092	0.001	2	121,734	0.001	10,950	25,550	8.8E-07	2.0E-06
Chromium (III)	0.45627	0.001	2	121,734	0.001	10,950	25,550	4.3E-06	1.0E-05
Chromium (VI)	0.22473	0.001	2	121,734	0.001	10,950	25,550	2.1E-06	5.0E-06
Copper	0.009	0.001	2	121,734	0.001	10,950	25,550	8.6E-08	2.0E-07
1,2-Dichloroethene (cis)	0.098	0.01	2	121,734	0.001	10,950	25,550	9.3E-06	2.2E-05
1,2-Dichloroethene (trans)	0.098	0.01	2	121,734	0.001	10,950	25,550	9.3E-06	2.2E-05
Di-n-octyl phthalate	0.0003	27	2	121,734	0.001	10,950	25,550	7.7E-05	1.8E-04
Iron	0.539	0.001	2	121,734	0.001	10,950	25,550	5.1E-06	1.2E-05
Lead	0.188	0.001	2	121,734	0.001	10,950	25,550	1.8E-06	4.2E-06
Manganese	0.027	0.001	2	121,734	0.001	10,950	25,550	2.6E-07	6.0E-07
Nickel	0.0148	0.001	2	121,734	0.001	10,950	25,550	1.4E-07	3.3E-07
Toluene	0.002	0.045	2	121,734	0.001	10,950	25,550	8.6E-07	2.0E-06
1,1,1-Trichloroethane	0.00068	0.017	2	121,734	0.001	10,950	25,550	1.1E-07	2.6E-07
Trichloroethene	0.13	0.016	2	121,734	0.001	10,950	25,550	2.0E-05	4.6E-05
Vinyl chloride	0.0029	0.0073	2	121,734	0.001	10,950	25,550	2.0E-07	4.7E-07
Xylene (total)	0.0014	0.080	2	121,734	0.001	10,950	25,550	1.1E-06	2.5E-06
Zinc	0.0138	0.001	2	121,734	0.001	10,950	25,550	1.3E-07	3.1E-07

INTAKE CALCULATION FOR INCIDENTAL INGESTION OF RESTRICTED ON-SITE SURFACE WATER
(SLUDGE LAGOON AND OUTFALL DITCH)
RECREATIONAL/ TRESPASSER CHILD/ADULT POPULATION
FUTURE SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	CSW (mg/L)	IF (L-day/hr-kg)	ET (hr/day)	NC AT (days)	C AT (days)	C Chronic Daily Intake (mg/kg-day)	NC Chronic Daily Intake (mg/kg-day)
Barium	0.092	1.34	2	10,950	25,550	9.7E-06	2.3E-05
Chromium (III)	0.45627	1.34	2	10,950	25,550	4.8E-05	1.1E-04
Chromium (VI)	0.22473	1.34	2	10,950	25,550	2.4E-05	5.5E-05
Copper	0.009	1.34	2	10,950	25,550	9.4E-07	2.2E-06
1,2-Dichloroethene (cis)	0.098	1.34	2	10,950	25,550	1.0E-05	2.4E-05
1,2-Dichloroethene (trans)	0.098	1.34	2	10,950	25,550	1.0E-05	2.4E-05
Di-n-octyl phthalate	0.0003	1.34	2	10,950	25,550	3.1E-08	7.3E-08
Iron	0.539	1.34	2	10,950	25,550	5.7E-05	1.3E-04
Lead	0.188	1.34	2	10,950	25,550	2.0E-05	4.6E-05
Manganese	0.027	1.34	2	10,950	25,550	2.8E-06	6.6E-06
Nickel	0.0148	1.34	2	10,950	25,550	1.6E-06	3.6E-06
Toluene	0.002	1.34	2	10,950	25,550	2.1E-07	4.9E-07
1,1,1-Trichloroethane	0.00068	1.34	2	10,950	25,550	7.1E-08	1.7E-07
Trichloroethene	0.13	1.34	2	10,950	25,550	1.4E-05	3.2E-05
Vinyl chloride	0.0029	1.34	2	10,950	25,550	3.0E-07	7.1E-07
Xylene (total)	0.0014	1.34	2	10,950	25,550	1.5E-07	3.4E-07
Zinc	0.0138	1.34	2	10,950	25,550	1.4E-06	3.4E-06

INTAKE CALCULATION FOR INHALATION OF VAPORS FROM RESTRICTED ON-SITE SURFACE WATER
(SLUDGE LAGOON AND OUTFALL DITCH)
RECREATIONAL/ TRESPASSER CHILD/ADULT POPULATION
FUTURE SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	CSW (mg/L)	K (L/m³)	IHF (m³-yr/hr-day)	ET (hr/day)	EF (day/yr)	NC AT (days)	C AT (days)	C Chronic Daily Intake (mg/kg-day)	NC Chronic Daily Intake (mg/kg-day)
Barium	--	0.5	0.911	2	50	10,950	25,550	--	--
Chromium (III)	--	0.5	0.911	2	50	10,950	25,550	--	--
Chromium (VI)	--	0.5	0.911	2	50	10,950	25,550	--	--
Copper	--	0.5	0.911	2	50	10,950	25,550	--	--
1,2-Dichloroethene (cis)	0.098	0.5	0.911	2	50	10,950	25,550	1.7E-04	4.1E-04
1,2-Dichloroethene (trans)	0.098	0.5	0.911	2	50	10,950	25,550	1.7E-04	4.1E-04
Di-n-octyl phthalate	0.0003	0.5	0.911	2	50	10,950	25,550	5.3E-07	1.2E-06
Iron	--	0.5	0.911	2	50	10,950	25,550	--	--
Lead	--	0.5	0.911	2	50	10,950	25,550	--	--
Manganese	--	0.5	0.911	2	50	10,950	25,550	--	--
Nickel	--	0.5	0.911	2	50	10,950	25,550	--	--
Toluene	0.002	0.5	0.911	2	50	10,950	25,550	3.6E-06	8.3E-06
1,1,1-Trichloroethane	0.00068	0.5	0.911	2	50	10,950	25,550	1.2E-06	2.8E-06
Trichloroethene	0.13	0.5	0.911	2	50	10,950	25,550	2.3E-04	5.4E-04
Vinyl chloride	0.0029	0.5	0.911	2	50	10,950	25,550	5.2E-06	1.2E-05
Xylene (total)	0.0014	0.5	0.911	2	50	10,950	25,550	2.5E-06	5.8E-06
Zinc	--	0.5	0.911	2	50	10,950	25,550	--	--

INTAKE CALCULATION FOR DERMAL CONTACT WITH RESTRICTED ON-SITE SEDIMENT
(SLUDGE LAGOON AND OUTFALL DITCH)
RECREATIONAL/ TRESPASSER CHILD/ADULT POPULATION
FUTURE SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	CS (mg/kg)	CF (kg/mg)	AF (mg/cm²)	ABS (unitless)	DF (cm²/kg)	NC AT (days)	C AT (days)	C Chronic Daily Intake (Administered) (mg/kg-day)	NC Chronic Daily Intake (Administered) (mg/kg-day)
Acetone	0.036	1.0E-06	1.0	0.01	121,734	10,950	25,550	1.7E-09	4.0E-09
Antimony	41	1.0E-06	1.0	0.001	121,734	10,950	25,550	2.0E-07	4.6E-07
Barium	1,730	1.0E-06	1.0	0.001	121,734	10,950	25,550	8.2E-06	1.9E-05
Bis(2-ethylhexyl)phthalate	120	1.0E-06	1.0	0.01	121,734	10,950	25,550	5.7E-06	1.3E-05
Chromium (III)	132,000	1.0E-06	1.0	0.001	121,734	10,950	25,550	6.3E-04	1.5E-03
Chromium (VI)	132,000	1.0E-06	1.0	0.001	121,734	10,950	25,550	6.3E-04	1.5E-03
Copper	888	1.0E-06	1.0	0.001	121,734	10,950	25,550	4.2E-06	9.9E-06
1,2-Dichloroethene (cis)	1.0	1.0E-06	1.0	0.01	121,734	10,950	25,550	4.8E-08	1.1E-07
1,2-Dichloroethene (trans)	1.0	1.0E-06	1.0	0.01	121,734	10,950	25,550	4.8E-08	1.1E-07
Fluoranthene	4.4	1.0E-06	1.0	0.01	121,734	10,950	25,550	2.1E-07	4.9E-07
Isophorone	2.4	1.0E-06	1.0	0.01	121,734	10,950	25,550	1.1E-07	2.7E-07
Lead	1,350	1.0E-06	1.0	0.001	121,734	10,950	25,550	6.4E-06	1.5E-05
Nickel	581	1.0E-06	1.0	0.001	121,734	10,950	25,550	2.8E-06	6.5E-06
Phenanthrene	3.0	1.0E-06	1.0	0.01	121,734	10,950	25,550	1.4E-07	3.3E-07
Tetrachloroethene	1.1	1.0E-06	1.0	0.01	121,734	10,950	25,550	5.2E-08	1.2E-07
Trichloroethene	1.9	1.0E-06	1.0	0.01	121,734	10,950	25,550	9.1E-08	2.1E-07
Xylene (total)	2.2	1.0E-06	1.0	0.01	121,734	10,950	25,550	1.0E-07	2.4E-07
Zinc	524	1.0E-06	1.0	0.001	121,734	10,950	25,550	2.5E-06	5.8E-06

INTAKE CALCULATION FOR DERMAL CONTACT WITH RESTRICTED ON-SITE SURFACE WATER
(SLUDGE LAGOON AND OUTFALL DITCH)
OCCUPATIONAL MAINTENANCE WORKER POPULATION
CURRENT AND FUTURE NO ACTION SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	CSW (mg/L)	SA (cm^2/day)	PC (cm/hr)	ET (hr/day)	EF (days/yr)	ED (yr)	CF (L/cm^3)	BW (kg)	NC AT (days)	C AT (days)	C Chronic Daily Intake (Administered) (mg/kg-day)	NC Chronic Daily Intake (Administered) (mg/kg-day)
Barium	0.092	5,800	0.001	4	50	25	0.001	70	9,125	25,550	1.5E-06	4.2E-06
Chromium (III)	0.45627	5,800	0.001	4	50	25	0.001	70	9,125	25,550	7.4E-06	2.1E-05
Chromium (VI)	0.22473	5,800	0.001	4	50	25	0.001	70	9,125	25,550	3.6E-06	1.0E-05
Copper	0.009	5,800	0.001	4	50	25	0.001	70	9,125	25,550	1.5E-07	4.1E-07
1,2-Dichloroethene (cis)	0.098	5,800	0.01	4	50	25	0.001	70	9,125	25,550	1.6E-05	4.4E-05
1,2-Dichloroethene (trans)	0.098	5,800	0.01	4	50	25	0.001	70	9,125	25,550	1.6E-05	4.4E-05
Di-n-octyl phthalate	0.0003	5,800	27	4	50	25	0.001	70	9,125	25,550	1.3E-04	3.7E-04
Iron	0.539	5,800	0.001	4	50	25	0.001	70	9,125	25,550	8.7E-06	2.4E-05
Lead	0.188	5,800	0.001	4	50	25	0.001	70	9,125	25,550	3.0E-06	8.5E-06
Manganese	0.027	5,800	0.001	4	50	25	0.001	70	9,125	25,550	4.4E-07	1.2E-06
Nickel	0.0148	5,800	0.001	4	50	25	0.001	70	9,125	25,550	2.4E-07	6.7E-07
Toluene	0.002	5,800	0.045	4	50	25	0.001	70	9,125	25,550	1.5E-06	4.1E-06
1,1,1-Trichloroethane	0.00068	5,800	0.017	4	50	25	0.001	70	9,125	25,550	1.9E-07	5.2E-07
Trichloroethene	0.13	5,800	0.016	4	50	25	0.001	70	9,125	25,550	3.4E-05	9.4E-05
Vinyl chloride	0.0029	5,800	0.0073	4	50	25	0.001	70	9,125	25,550	3.4E-07	9.6E-07
Xylene (total)	0.0014	5,800	0.080	4	50	25	0.001	70	9,125	25,550	1.8E-06	5.1E-06
Zinc	0.0138	5,800	0.001	4	50	25	0.001	70	9,125	25,550	2.2E-07	6.3E-07

INTAKE CALCULATION FOR INHALATION OF VAPORS FROM RESTRICTED ON-SITE SURFACE WATER
(SLUDGE LAGOON AND OUTFALL DITCH)
OCCUPATIONAL MAINTENANCE WORKER POPULATION
CURRENT AND FUTURE NO ACTION SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	CSW (mg/L)	K (L/m³)	IR (m³/hr)	ET (hr/day)	EF (day/yr)	ED (yr)	BW (kg)	NC AT (days)	C AT (days)	C Chronic Daily Intake (mg/kg-day)	NC Chronic Daily Intake (mg/kg-day)
Barium	--	0.5	0.83	4	50	25	70	9,125	25,550	--	--
Chromium (III)	--	0.5	0.83	4	50	25	70	9,125	25,550	--	--
Chromium (VI)	--	0.5	0.83	4	50	25	70	9,125	25,550	--	--
Copper	--	0.5	0.83	4	50	25	70	9,125	25,550	--	--
1,2-Dichloroethene (cis)	0.098	0.5	0.83	4	50	25	70	9,125	25,550	1.1E-04	3.2E-04
1,2-Dichloroethene (trans)	0.098	0.5	0.83	4	50	25	70	9,125	25,550	1.1E-04	3.2E-04
Di-n-octyl phthalate	0.0003	0.5	0.83	4	50	25	70	9,125	25,550	3.5E-07	9.7E-07
Iron	--	0.5	0.83	4	50	25	70	9,125	25,550	--	--
Lead	--	0.5	0.83	4	50	25	70	9,125	25,550	--	--
Manganese	--	0.5	0.83	4	50	25	70	9,125	25,550	--	--
Nickel	--	0.5	0.83	4	50	25	70	9,125	25,550	--	--
Toluene	0.002	0.5	0.83	4	50	25	70	9,125	25,550	2.3E-06	6.5E-06
1,1,1-Trichloroethane	0.00068	0.5	0.83	4	50	25	70	9,125	25,550	7.9E-07	2.2E-06
Trichloroethene	0.13	0.5	0.83	4	50	25	70	9,125	25,550	1.5E-04	4.2E-04
Vinyl chloride	0.0029	0.5	0.83	4	50	25	70	9,125	25,550	3.4E-06	9.4E-06
Xylene (total)	0.0014	0.5	0.83	4	50	25	70	9,125	25,550	1.6E-06	4.5E-06
Zinc	--	0.5	0.83	4	50	25	70	9,125	25,550	--	--

INTAKE CALCULATION FOR DERMAL CONTACT WITH RESTRICTED ON-SITE SEDIMENT
(SLUDGE LAGOON AND OUTFALL DITCH)
OCCUPATIONAL MAINTENANCE WORKER POPULATION
CURRENT AND FUTURE NO ACTION SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	CS (mg/kg)	CF (kg/mg)	SA (cm^2/day)	AF (mg/cm^2)	ABS (unitless)	EF (days/yr)	ED (yr)	BW (kg)	NC AT (days)	C AT (days)	C Chronic Daily Intake (Administered) (mg/kg-day)	NC Chronic Daily Intake (Administered) (mg/kg-day)
Acetone	0.036	1.0E-06	5,800	1.0	0.01	50	25	70	9,125	25,550	1.5E-09	4.1E-09
Antimony	41	1.0E-06	5,800	1.0	0.001	50	25	70	9,125	25,550	1.7E-07	4.7E-07
Barium	1,730	1.0E-06	5,800	1.0	0.001	50	25	70	9,125	25,550	7.0E-06	2.0E-05
Bis(2-ethylhexyl)phthalate	120	1.0E-06	5,800	1.0	0.01	50	25	70	9,125	25,550	4.9E-06	1.4E-05
Chromium (III)	132,000	1.0E-06	5,800	1.0	0.001	50	25	70	9,125	25,550	5.4E-04	1.5E-03
Chromium (VI)	132,000	1.0E-06	5,800	1.0	0.001	50	25	70	9,125	25,550	5.4E-04	1.5E-03
Copper	888	1.0E-06	5,800	1.0	0.001	50	25	70	9,125	25,550	3.6E-06	1.0E-05
1,2-Dichloroethene (cis)	1.0	1.0E-06	5,800	1.0	0.01	50	25	70	9,125	25,550	4.1E-08	1.1E-07
1,2-Dichloroethene (trans)	1.0	1.0E-06	5,800	1.0	0.01	50	25	70	9,125	25,550	4.1E-08	1.1E-07
Fluoranthene	4.4	1.0E-06	5,800	1.0	0.01	50	25	70	9,125	25,550	1.8E-07	5.0E-07
Isophorone	2.4	1.0E-06	5,800	1.0	0.01	50	25	70	9,125	25,550	9.7E-08	2.7E-07
Lead	1,350	1.0E-06	5,800	1.0	0.001	50	25	70	9,125	25,550	5.5E-06	1.5E-05
Nickel	581	1.0E-06	5,800	1.0	0.001	50	25	70	9,125	25,550	2.4E-06	6.6E-06
Phenanthrene	3.0	1.0E-06	5,800	1.0	0.01	50	25	70	9,125	25,550	1.2E-07	3.4E-07
Tetrachloroethene	1.1	1.0E-06	5,800	1.0	0.01	50	25	70	9,125	25,550	4.5E-08	1.2E-07
Trichloroethene	1.9	1.0E-06	5,800	1.0	0.01	50	25	70	9,125	25,550	7.7E-08	2.2E-07
Xylene (total)	2.2	1.0E-06	5,800	1.0	0.01	50	25	70	9,125	25,550	8.9E-08	2.5E-07
Zinc	524	1.0E-06	5,800	1.0	0.001	50	25	70	9,125	25,550	2.1E-06	5.9E-06

INTAKE CALCULATION FOR INHALATION OF VAPORS FROM RESTRICTED ON-SITE SEDIMENT
(SLUDGE LAGOON AND OUTFALL DITCH)
OCCUPATIONAL MAINTENANCE WORKER POPULATION
CURRENT AND FUTURE NO ACTION SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	CA (mg/m³)	IR (m³/hr)	ET (hr/day)	EF (days/yr)	ED (yr)	BW (kg)	NC AT (days)	C AT (days)	C Chronic Daily Intake (mg/kg-day)	NC Chronic Daily Intake (mg/kg-day)
Acetone	1.7E-04	0.83	4	50	25	70	9,125	25,550	3.9E-07	1.1E-06
Antimony	0.0E+00	0.83	4	50	25	70	9,125	25,550	0.0E+00	0.0E+00
Barium	0.0E+00	0.83	4	50	25	70	9,125	25,550	0.0E+00	0.0E+00
Bis(2-ethylhexyl)phthalate	0.0E+00	0.83	4	50	25	70	9,125	25,550	0.0E+00	0.0E+00
Chromium (III)	0.0E+00	0.83	4	50	25	70	9,125	25,550	0.0E+00	0.0E+00
Chromium (VI)	0.0E+00	0.83	4	50	25	70	9,125	25,550	0.0E+00	0.0E+00
Copper	0.0E+00	0.83	4	50	25	70	9,125	25,550	0.0E+00	0.0E+00
1,2-Dichloroethene (cis)	4.5E-03	0.83	4	50	25	70	9,125	25,550	1.0E-05	2.9E-05
1,2-Dichloroethene (trans)	4.5E-03	0.83	4	50	25	70	9,125	25,550	1.0E-05	2.9E-05
Fluoranthene	0.0E+00	0.83	4	50	25	70	9,125	25,550	0.0E+00	0.0E+00
Isophorone	0.0E+00	0.83	4	50	25	70	9,125	25,550	0.0E+00	0.0E+00
Lead	0.0E+00	0.83	4	50	25	70	9,125	25,550	0.0E+00	0.0E+00
Nickel	0.0E+00	0.83	4	50	25	70	9,125	25,550	0.0E+00	0.0E+00
Phenanthrene	9.1E-05	0.83	4	50	25	70	9,125	25,550	2.1E-07	5.9E-07
Tetrachloroethene	3.7E-03	0.83	4	50	25	70	9,125	25,550	8.6E-06	2.4E-05
Trichloroethene	9.5E-03	0.83	4	50	25	70	9,125	25,550	2.2E-05	6.2E-05
Xylene (total)	5.4E-03	0.83	4	50	25	70	9,125	25,550	1.3E-05	3.5E-05
Zinc	0.0E+00	0.83	4	50	25	70	9,125	25,550	0.0E+00	0.0E+00

INTAKE CALCULATION FOR DERMAL CONTACT WITH ON-SITE SURFACE WATER
(SITE DITCHES AND SWAMP)
RECREATIONAL/ TRESPASSER CHILD/ADULT POPULATION
FUTURE SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	CSW (mg/L)	PC (cm/hr)	ET (hr/day)	DF (cm^2/kg)	CF (L/cm^3)	NC AT (days)	C AT (days)	C Chronic Daily Intake (Administered) (mg/kg-day)	NC Chronic Daily Intake (Administered) (mg/kg-day)
Acetone	0.013	0.00058	2	121,734	0.001	10,950	25,550	7.2E-08	1.7E-07
Carbon tetrachloride	0.0035	0.022	2	121,734	0.001	10,950	25,550	7.3E-07	1.7E-06
Chromium (III)	0.002278	0.001	2	121,734	0.001	10,950	25,550	2.2E-08	5.1E-08
Chromium (VI)	0.001122	0.001	2	121,734	0.001	10,950	25,550	1.1E-08	2.5E-08
1,2-Dichloroethene (cis)	0.0014	0.01	2	121,734	0.001	10,950	25,550	1.3E-07	3.1E-07
1,2-Dichloroethene (trans)	0.0014	0.01	2	121,734	0.001	10,950	25,550	1.3E-07	3.1E-07
Iron	8.94	0.001	2	121,734	0.001	10,950	25,550	8.5E-05	2.0E-04
Lead	0.012	0.001	2	121,734	0.001	10,950	25,550	1.1E-07	2.7E-07
Nickel	0.0157	0.001	2	121,734	0.001	10,950	25,550	1.5E-07	3.5E-07
1,1,1-Trichloroethane	0.0017	0.017	2	121,734	0.001	10,950	25,550	2.8E-07	6.4E-07
Trichloroethene	0.0013	0.016	2	121,734	0.001	10,950	25,550	2.0E-07	4.6E-07
Trichlorofluoromethane	0.0090	0.017	2	121,734	0.001	10,950	25,550	1.5E-06	3.4E-06
Zinc	0.0791	0.001	2	121,734	0.001	10,950	25,550	7.5E-07	1.8E-06

INTAKE CALCULATION FOR INCIDENTAL INGESTION OF ON-SITE SURFACE WATER
(SITE DITCHES AND SWAMP)
RECREATIONAL/ TRESPASSER CHILD/ADULT POPULATION
FUTURE SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	CSW (mg/L)	IF (L-day/hr-kg)	ET (hr/day)	NC AT (days)	C AT (days)	C Chronic Daily Intake (mg/kg-day)	NC Chronic Daily Intake (mg/kg-day)
Acetone	0.013	1.34	2	10,950	25,550	1.4E-06	3.2E-06
Carbon tetrachloride	0.0035	1.34	2	10,950	25,550	3.7E-07	8.6E-07
Chromium (III)	0.002278	1.34	2	10,950	25,550	2.4E-07	5.6E-07
Chromium (VI)	0.001122	1.34	2	10,950	25,550	1.2E-07	2.7E-07
1,2-Dichloroethene (cis)	0.0014	1.34	2	10,950	25,550	1.5E-07	3.4E-07
1,2-Dichloroethene (trans)	0.0014	1.34	2	10,950	25,550	1.5E-07	3.4E-07
Iron	8.94	1.34	2	10,950	25,550	9.4E-04	2.2E-03
Lead	0.012	1.34	2	10,950	25,550	1.3E-06	2.9E-06
Nickel	0.0157	1.34	2	10,950	25,550	1.6E-06	3.8E-06
1,1,1-Trichloroethane	0.0017	1.34	2	10,950	25,550	1.8E-07	4.2E-07
Trichloroethene	0.0013	1.34	2	10,950	25,550	1.4E-07	3.2E-07
Trichlorofluoromethane	0.0090	1.34	2	10,950	25,550	9.4E-07	2.2E-06
Zinc	0.0791	1.34	2	10,950	25,550	8.3E-06	1.9E-05

INTAKE CALCULATION FOR INHALATION OF VAPORS FROM ON-SITE SURFACE WATER
(SITE DITCHES AND SWAMP)
RECREATIONAL/ TRESPASSER CHILD/ADULT POPULATION
FUTURE SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	CSW (mg/L)	K (L/m³)	IHF (m³-yr/hr-day)	ET (hr/day)	EF (day/yr)	NC AT (days)	C AT (days)	C Chronic Daily Intake (mg/kg-day)	NC Chronic Daily Intake (mg/kg-day)
Acetone	0.013	0.5	0.911	2	50	10,950	25,550	2.3E-05	5.4E-05
Carbon tetrachloride	0.0035	0.5	0.911	2	50	10,950	25,550	6.2E-06	1.5E-05
Chromium (III)	--	0.5	0.911	2	50	10,950	25,550	--	--
Chromium (VI)	--	0.5	0.911	2	50	10,950	25,550	--	--
1,2-Dichloroethene (cis)	0.0014	0.5	0.911	2	50	10,950	25,550	2.5E-06	5.8E-06
1,2-Dichloroethene (trans)	0.0014	0.5	0.911	2	50	10,950	25,550	2.5E-06	5.8E-06
Iron	--	0.5	0.911	2	50	10,950	25,550	--	--
Lead	--	0.5	0.911	2	50	10,950	25,550	--	--
Nickel	--	0.5	0.911	2	50	10,950	25,550	--	--
1,1,1-Trichloroethane	0.0017	0.5	0.911	2	50	10,950	25,550	3.0E-06	7.1E-06
Trichloroethene	0.0013	0.5	0.911	2	50	10,950	25,550	2.3E-06	5.4E-06
Trichlorofluoromethane	0.0090	0.5	0.911	2	50	10,950	25,550	1.6E-05	3.7E-05
Zinc	--	0.5	0.911	2	50	10,950	25,550	--	--

INTAKE CALCULATION FOR DERMAL CONTACT WITH ON-SITE SEDIMENT
(SITE DITCHES AND SWAMP)
RECREATIONAL/ TRESPASSER CHILD/ADULT POPULATION
FUTURE SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	CS (mg/kg)	CF (kg/mg)	AF (mg/cm²)	ABS (unitless)	DF (cm²/kg)	NC AT (days)	C AT (days)	C Chronic Daily Intake (Administered) (mg/kg-day)	NC Chronic Daily Intake (Administered) (mg/kg-day)
Acetone	0.068	1.0E-06	1.0	0.01	121,734	10,950	25,550	3.2E-09	7.6E-09
Chromium (III)	362	1.0E-06	1.0	0.001	121,734	10,950	25,550	1.7E-06	4.0E-06
Chromium (VI)	362	1.0E-06	1.0	0.001	121,734	10,950	25,550	1.7E-06	4.0E-06
Lead	100	1.0E-06	1.0	0.001	121,734	10,950	25,550	4.8E-07	1.1E-06
Zinc	221	1.0E-06	1.0	0.001	121,734	10,950	25,550	1.1E-06	2.5E-06

INTAKE CALCULATION FOR DERMAL CONTACT WITH ON-SITE SURFACE WATER
(SITE DITCHES AND SWAMP)
OCCUPATIONAL MAINTENANCE WORKER POPULATION
CURRENT AND FUTURE NO ACTION SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	CSW (mg/L)	SA (cm^2/day)	PC (cm/hr)	ET (hr/day)	EF (days/yr)	ED (yr)	CF (L/cm^3)	BW (kg)	NC AT (days)	C AT (days)	C Chronic Daily Intake (Administered) (mg/kg-day)	NC Chronic Daily Intake (Administered) (mg/kg-day)
Acetone	0.013	5,800	0.00058	4	50	25	0.001	70	9,125	25,550	1.2E-07	3.4E-07
Carbon tetrachloride	0.0035	5,800	0.022	4	50	25	0.001	70	9,125	25,550	1.2E-06	3.5E-06
Chromium (III)	0.002278	5,800	0.001	4	50	25	0.001	70	9,125	25,550	3.7E-08	1.0E-07
Chromium (VI)	0.001122	5,800	0.001	4	50	25	0.001	70	9,125	25,550	1.8E-08	5.1E-08
1,2-Dichloroethene (cis)	0.0014	5,800	0.01	4	50	25	0.001	70	9,125	25,550	2.3E-07	6.4E-07
1,2-Dichloroethene (trans)	0.0014	5,800	0.01	4	50	25	0.001	70	9,125	25,550	2.3E-07	6.4E-07
Iron	8.94	5,800	0.001	4	50	25	0.001	70	9,125	25,550	1.4E-04	4.1E-04
Lead	0.012	5,800	0.001	4	50	25	0.001	70	9,125	25,550	1.9E-07	5.4E-07
Nickel	0.0157	5,800	0.001	4	50	25	0.001	70	9,125	25,550	2.5E-07	7.1E-07
1,1,1-Trichloroethane	0.0017	5,800	0.017	4	50	25	0.001	70	9,125	25,550	4.7E-07	1.3E-06
Trichloroethene	0.0013	5,800	0.016	4	50	25	0.001	70	9,125	25,550	3.4E-07	9.4E-07
Trichlorofluoromethane	0.0090	5,800	0.017	4	50	25	0.001	70	9,125	25,550	2.5E-06	6.9E-06
Zinc	0.0791	5,800	0.001	4	50	25	0.001	70	9,125	25,550	1.3E-06	3.6E-06

INTAKE CALCULATION FOR INHALATION OF VAPORS FROM ON-SITE SURFACE WATER
(SITE DITCHES AND SWAMP)
OCCUPATIONAL MAINTENANCE WORKER POPULATION
CURRENT AND FUTURE NO ACTION SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	CSW (mg/L)	K (L/m³)	IR (m³/hr)	ET (hr/day)	EF (day/yr)	ED (yr)	BW (kg)	NC AT (days)	C AT (days)	C Chronic Daily Intake (mg/kg-day)	NC Chronic Daily Intake (mg/kg-day)
Acetone	0.013	0.5	0.83	4	50	25	70	9,125	25,550	1.5E-05	4.2E-05
Carbon tetrachloride	0.0035	0.5	0.83	4	50	25	70	9,125	25,550	4.1E-06	1.1E-05
Chromium (III)	--	0.5	0.83	4	50	25	70	9,125	25,550	--	--
Chromium (VI)	--	0.5	0.83	4	50	25	70	9,125	25,550	--	--
1,2-Dichloroethene (cis)	0.0014	0.5	0.83	4	50	25	70	9,125	25,550	1.6E-06	4.5E-06
1,2-Dichloroethene (trans)	0.0014	0.5	0.83	4	50	25	70	9,125	25,550	1.6E-06	4.5E-06
Iron	--	0.5	0.83	4	50	25	70	9,125	25,550	--	--
Lead	--	0.5	0.83	4	50	25	70	9,125	25,550	--	--
Nickel	--	0.5	0.83	4	50	25	70	9,125	25,550	--	--
1,1,1-Trichloroethane	0.0017	0.5	0.83	4	50	25	70	9,125	25,550	2.0E-06	5.5E-06
Trichloroethene	0.0013	0.5	0.83	4	50	25	70	9,125	25,550	1.5E-06	4.2E-06
Trichlorofluoromethane	0.0090	0.5	0.83	4	50	25	70	9,125	25,550	1.0E-05	2.9E-05
Zinc	--	0.5	0.83	4	50	25	70	9,125	25,550	--	--

INTAKE CALCULATION FOR DERMAL CONTACT WITH ON-SITE SEDIMENT
(SITE DITCHES AND SWAMP)
OCCUPATIONAL MAINTENANCE WORKER POPULATION
CURRENT AND FUTURE NO ACTION SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	CS (mg/kg)	CF (kg/mg)	SA (cm^2/day)	AF (mg/cm^2)	ABS (unitless)	EF (days/yr)	ED (yr)	BW (kg)	NC AT (days)	C AT (days)	C Chronic Daily Intake (Administered) (mg/kg-day)	NC Chronic Daily Intake (Administered) (mg/kg-day)
Acetone	0.068	1.0E-06	5,800	1.0	0.01	50	25	70	9,125	25,550	2.8E-09	7.7E-09
Chromium (III)	362	1.0E-06	5,800	1.0	0.001	50	25	70	9,125	25,550	1.5E-06	4.1E-06
Chromium (VI)	362	1.0E-06	5,800	1.0	0.001	50	25	70	9,125	25,550	1.5E-06	4.1E-06
Lead	100	1.0E-06	5,800	1.0	0.001	50	25	70	9,125	25,550	4.1E-07	1.1E-06
Zinc	221	1.0E-06	5,800	1.0	0.001	50	25	70	9,125	25,550	9.0E-07	2.5E-06

INTAKE CALCULATION FOR INHALATION OF VAPORS FROM ON-SITE SEDIMENT
(SITE DITCHES AND SWAMP)
OCCUPATIONAL MAINTENANCE WORKER POPULATION
CURRENT AND FUTURE NO ACTION SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	CA (mg/m^3)	IR (m^3/hr)	ET (hr/day)	EF (days/yr)	ED (yr)	BW (kg)	NC AT (days)	C AT (days)	C Chronic Daily Intake (mg/kg-day)	NC Chronic Daily Intake (mg/kg-day)
Acetone	7.1E-04	0.83	4	50	25	70	9,125	25,550	1.6E-06	4.6E-06
Chromium (III)	0.0E+00	0.83	4	50	25	70	9,125	25,550	0.0E+00	0.0E+00
Chromium (VI)	0.0E+00	0.83	4	50	25	70	9,125	25,550	0.0E+00	0.0E+00
Lead	0.0E+00	0.83	4	50	25	70	9,125	25,550	0.0E+00	0.0E+00
Zinc	0.0E+00	0.83	4	50	25	70	9,125	25,550	0.0E+00	0.0E+00

ATTACHMENT VII

RISK CALCULATIONS

SOIL

RISK CALCULATION FOR DERMAL CONTACT WITH ON-SITE SURFICIAL SOILS (0.0 - 0.5 FEET)
(INTERIM ACTION AREA)
OCCUPATIONAL MAINTENANCE WORKER POPULATION
CURRENT AND FUTURE NO ACTION SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	Potential Carcinogens, Chronic Daily Intake (Adminstered) (mg/kg-day)	Noncarcinogens, Chronic Daily Intake (Adminstered) (mg/kg-day)	Oral Slope Factor (SF) 1/(mg/kg-day)	Oral Reference Dose (RfD) (mg/kg-day)	Dermal Chemical-Specific Carcinogenic Risk	Dermal Chemical-Specific Noncarcinogenic Hazard Quotient	% Carcinogenic Risk	% Noncarcinogenic Risk
Acetone	8.1E-07	2.3E-06	--	0.1	--	2.3E-05	--	1.0E+00
Chromium (III)	4.7E-05	1.3E-04	--	1	--	1.3E-04	--	5.7E+00
Chromium (VI)	4.7E-05	1.3E-04	--	0.005	--	2.6E-02	--	9.3E+01
Cyanide	5.3E-09	1.5E-08	--	0.02	--	7.5E-07	--	3.3E-02
1,2-Dichloroethene (cis)	3.9E-08	1.1E-07	--	0.01	--	1.1E-05	--	3.9E-02
1,2-Dichloroethene (trans)	3.9E-08	1.1E-07	--	0.02	--	5.5E-06	--	2.4E-01
Ethyl benzene	3.5E-07	9.9E-07	--	0.1	--	9.9E-06	--	4.3E-01
Lead	1.5E-07	4.3E-07	--	--	--	--	--	--
2-Methylnaphthalene	2.6E-07	7.4E-07	--	--	--	--	--	--
Naphthalene	1.5E-07	4.1E-07	--	--	--	--	--	--
Nickel	1.5E-05	4.1E-05	--	0.02	--	2.1E-03	--	9.1E+01
1,1,2,2-Tetrachloroethane	8.1E-11	2.3E-10	0.2	--	1.6E-11	--	2.0E-01	--
Tetrachloroethene	2.1E-09	5.8E-09	--	0.01	--	5.8E-07	--	2.5E-02
Toluene	6.9E-08	1.9E-07	--	0.2	--	9.5E-07	--	4.1E-02
Trichloroethene	7.3E-07	2.0E-06	0.011	--	8.0E-09	--	1.0E+02	--
Xylene (total)	3.8E-06	1.1E-05	--	2	--	5.5E-06	--	2.4E-01
Zinc	2.7E-07	7.6E-07	--	0.3	--	2.5E-06	--	1.1E-01
					TOTAL PATHWAY RISK:	8.0E-09	HAZARD INDEX:	2.8E-02
								2.3E-03

RISK CALCULATION FOR INCIDENTAL INGESTION OF SURFICIAL SOILS (0.0 - 0.5 FEET)
(INTERIM ACTION AREA)
OCCUPATIONAL MAINTENANCE WORKER POPULATION
CURRENT AND FUTURE NO ACTION SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	Potential Carcinogens, Chronic Daily Intake (mg/kg-day)	Noncarcinogens, Chronic Daily Intake (mg/kg-day)	Oral Slope Factor (SF) 1/(mg/kg-day)	Oral Reference Dose (RfD) (mg/kg-day)	Oral Chemical-Specific Carcinogenic Risk	Oral Chemical-Specific Noncarcinogenic Hazard Quotient	% Carcinogenic Risk	% Noncarcinogenic Risk
Acetone	7.0E-07	2.0E-06	--	0.1	--	2.0E-05	--	1.1E-01
Chromium (III)	4.1E-04	1.1E-03	--	1	--	1.1E-03	--	5.8E+00
Chromium (VI)	4.1E-04	1.1E-03	--	0.005	--	2.2E-01	--	9.2E+01
Cyanide	4.5E-08	1.3E-07	--	0.02	--	6.5E-06	--	3.4E-02
1,2-Dichloroethene (cis)	3.3E-08	9.3E-08	--	0.01	--	9.3E-06	--	3.9E-03
1,2-Dichloroethene (trans)	3.3E-08	9.3E-08	--	0.02	--	4.7E-06	--	2.5E-02
Ethyl benzene	3.0E-07	8.5E-07	--	0.1	--	8.5E-06	--	4.5E-02
Lead	1.3E-06	3.7E-06	--	--	--	--	--	--
2-Methylnaphthalene	2.3E-07	6.4E-07	--	--	--	--	--	--
Naphthalene	1.3E-07	3.5E-07	--	--	--	--	--	--
Nickel	1.3E-04	3.5E-04	--	0.02	--	1.8E-02	--	9.5E+01
1,1,2,2-Tetrachloroethane	7.0E-11	2.0E-10	0.2	--	1.4E-11	--	2.0E-01	--
Tetrachloroethene	1.8E-09	5.0E-09	--	0.01	--	5.0E-07	--	2.6E-03
Toluene	5.9E-08	1.7E-07	--	0.2	--	8.5E-07	--	4.5E-03
Trichloroethene	6.3E-07	1.8E-06	0.011	--	6.9E-09	--	1.0E+02	--
Xylene (total)	3.2E-06	9.1E-06	--	2	--	4.6E-06	--	2.4E-02
Zinc	2.4E-06	6.6E-06	--	0.3	--	2.2E-05	--	1.2E-01
					TOTAL PATHWAY RISK:	6.9E-09	HAZARD INDEX:	2.4E-01
								1.9E-02

RISK CALCULATION FOR INHALATION OF VAPORS AND PARTICULATES FROM ON-SITE SURFICIAL SOILS (0.0 - 0.5 FEET)
(INTERIM ACTION AREA)
OCCUPATIONAL MAINTENANCE WORKER POPULATION
CURRENT AND FUTURE NO ACTION SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	Potential Carcinogens, Chronic Daily Intake (mg/kg-day)	Noncarcinogens, Chronic Daily Intake (mg/kg-day)	Inhalation Slope Factor (SF) 1/(mg/kg-day)	Inhalation Reference Dose (RfD) (mg/kg-day)	Inhalation Chemical-Specific Carcinogenic Risk	Inhalation Chemical-Specific Noncarcinogenic Hazard Quotient	% Carcinogenic Risk	% Noncarcinogenic Risk
Acetone	3.9E-04	1.1E-03	--	--	--	--	--	--
Chromium (III)	0.0E+00	0.0E+00	--	--	--	--	--	--
Chromium (VI)	0.0E+00	0.0E+00	41	--	0.0E+00	--	0.0E+00	--
Cyanide	0.0E+00	0.0E+00	--	--	--	--	--	--
1,2-Dichloroethene (cis)	1.8E-05	5.1E-05	--	--	--	--	--	--
1,2-Dichloroethene (trans)	1.8E-05	5.1E-05	--	--	--	--	--	--
Ethyl benzene	1.2E-04	3.3E-04	--	0.29	--	1.1E-03	--	5.2E+01
Lead	0.0E+00	0.0E+00	--	--	--	--	--	--
2-Methylnaphthalene	0.0E+00	0.0E+00	--	--	--	--	--	--
Naphthalene	4.9E-06	1.4E-05	--	--	--	--	--	--
Nickel	0.0E+00	0.0E+00	--	--	--	--	--	--
1,1,2,2-Tetrachloroethane	9.7E-09	2.7E-08	0.2	--	1.9E-09	--	8.6E-02	--
Tetrachloroethene	7.0E-07	1.9E-06	--	--	--	--	--	--
Toluene	3.9E-05	1.1E-04	--	0.11	--	1.0E-03	--	4.8E+01
Trichloroethene	3.7E-04	1.0E-03	0.006	--	2.2E-06	--	1.0E+02	--
Xylene (total)	9.7E-04	2.7E-03	--	--	--	--	--	--
Zinc	0.0E+00	0.0E+00	--	--	--	--	--	--
					TOTAL PATHWAY RISK :	2.2E-06	HAZARD INDEX :	2.1E-03

RISK CALCULATION FOR DERMAL CONTACT WITH ON-SITE SHALLOW SOILS (0 - 8 FEET)
(SOILS UNDER PAVEMENT)
OCCUPATIONAL CONSTRUCTION WORKER POPULATION
FUTURE SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	Potential Carcinogens, Chronic Daily Intake (Adminstered) (mg/kg-day)	Noncarcinogens, Chronic Daily Intake (Adminstered) (mg/kg-day)	Oral Slope Factor (SF) 1/(mg/kg-day)	Oral Reference Dose (RfD) (mg/kg-day)	Dermal Chemical-Specific Carcinogenic Risk	Dermal Chemical-Specific Noncarcinogenic Hazard Quotient	% Carcinogenic Risk	% Noncarcinogenic Risk
Acetone	2.4E-08	1.7E-06	--	0.1	--	1.7E-05	--	1.1E+00
Arsenic	6.6E-09	4.6E-07	1.8	0.0003	1.2E-08	1.5E-03	8.6E+01	9.4E+01
Chromium (III)	1.5E-08	1.0E-06	--	1	--	1.0E-06	--	6.3E-02
Chromium (VI)	1.5E-08	1.0E-06	--	0.005	--	2.0E-04	--	1.1E+01
1,2-Dichloroethene (cis)	8.1E-09	5.7E-07	--	0.01	--	5.7E-05	--	3.2E+00
1,2-Dichloroethene (trans)	8.1E-09	5.7E-07	--	0.02	--	2.9E-05	--	1.8E+00
Lead	1.4E-08	1.0E-06	--	--	--	--	--	--
Methylene chloride	6.3E-10	4.4E-08	0.0075	0.06	4.7E-12	7.3E-07	3.4E-02	4.6E-02
Toluene	1.1E-08	7.4E-07	--	0.2	--	3.7E-06	--	2.3E-01
Trichloroethene	1.7E-07	1.2E-05	0.011	--	1.9E-09	--	1.4E+01	--
Xylene (total)	3.3E-11	2.3E-09	--	2	--	1.2E-09	--	7.5E-05
Zinc	4.1E-08	2.9E-06	--	0.3	--	9.7E-06	--	6.1E-01
					TOTAL PATHWAY RISK :	1.4E-08	HAZARD INDEX :	1.8E-03
								1.6E-03

RISK CALCULATION FOR INCIDENTAL INGESTION OF SHALLOW SOILS (0 - 8 FEET)
(SOILS UNDER PAVEMENT)
OCCUPATIONAL CONSTRUCTION WORKER POPULATION
FUTURE SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	Potential Carcinogens, Chronic Daily Intake (mg/kg-day)	Noncarcinogens, Chronic Daily Intake (mg/kg-day)	Oral Slope Factor (SF) 1/(mg/kg-day)	Oral Reference Dose (RfD) (mg/kg-day)	Oral Chemical-Specific Carcinogenic Risk	Oral Chemical-Specific Noncarcinogenic Hazard Quotient	% Carcinogenic Risk	% Noncarcinogenic Risk
Acetone	2.0E-07	1.4E-05	--	0.1	--	1.4E-04	--	1.1E-01
Arsenic	5.5E-07	3.8E-05	1.8	0.0003	9.9E-07	1.3E-01	9.9E+01	1.0E+02
Chromium (III)	1.2E-06	8.5E-05	--	1	--	8.5E-05	--	6.5E-02
Chromium (VI)	1.2E-06	8.5E-05	--	0.005	--	1.7E-02	--	1.1E+01
1,2-Dichloroethene (cis)	6.7E-08	4.7E-06	--	0.01	--	4.7E-04	--	3.1E-01
1,2-Dichloroethene (trans)	6.7E-08	4.7E-06	--	0.02	--	2.4E-04	--	1.8E-01
Lead	1.2E-06	8.3E-05	--	--	--	--	--	--
Methylene chloride	5.2E-09	3.7E-07	0.0075	0.06	3.9E-11	6.2E-06	3.9E-03	4.8E-03
Toluene	8.7E-08	6.1E-06	--	0.2	--	3.1E-05	--	2.4E-02
Trichloroethene	1.4E-06	9.9E-05	0.011	--	1.5E-08	--	1.5E+00	--
Xylene (total)	2.8E-10	1.9E-08	--	2	--	9.5E-09	--	7.3E-06
Zinc	3.4E-06	2.4E-04	--	0.3	--	8.0E-04	--	6.2E-01
					TOTAL PATHWAY RISK : 1.0E-06	HAZARD INDEX : 1.5E-01		
						1.3E-01		

RISK CALCULATION FOR INHALATION OF VAPORS AND PARTICULATES FROM ON-SITE SHALLOW SOILS (0 - 8 FEET)
(SOILS UNDER PAVEMENT)
OCCUPATIONAL CONSTRUCTION WORKER POPULATION
FUTURE SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	Potential Carcinogens, Chronic Daily Intake (mg/kg-day)	Noncarcinogens, Chronic Daily Intake (mg/kg-day)	Inhalation Slope Factor (SF) 1/(mg/kg-day)	Inhalation Reference Dose (RfD) (mg/kg-day)	Inhalation Chemical-Specific Carcinogenic Risk	Inhalation Chemical-Specific Noncarcinogenic Hazard Quotient	% Carcinogenic Risk	% Noncarcinogenic Risk
Acetone	2.3E-05	1.6E-03	--	--	--	--	--	--
Arsenic	3.1E-12	2.1E-10	50	--	1.6E-10	--	1.6E-02	--
Chromium (III)	6.9E-12	4.8E-10	--	--	--	--	--	--
Chromium (VI)	6.9E-12	4.8E-10	41	--	2.8E-10	--	2.8E-02	--
1,2-Dichloroethene (cis)	7.7E-06	5.4E-04	--	--	--	--	--	--
1,2-Dichloroethene (trans)	7.7E-06	5.4E-04	--	--	--	--	--	--
Lead	6.7E-12	4.7E-10	--	--	--	--	--	--
Methylene chloride	9.3E-07	6.5E-05	0.0016	0.86	1.5E-09	7.6E-05	1.5E-01	9.9E-01
Toluene	1.2E-05	8.4E-04	--	0.11	--	7.6E-03	--	9.9E+01
Trichloroethene	1.7E-04	1.2E-02	0.006	--	1.0E-06	--	1.0E+02	--
Xylene (total)	1.7E-08	1.2E-06	--	--	--	--	--	--
Zinc	1.9E-11	1.4E-09	--	--	--	--	--	--
					TOTAL PATHWAY RISK : 1.0E-06	HAZARD INDEX : 7.7E-03		

RISK CALCULATION FOR DERMAL CONTACT WITH ON-SITE SURFICIAL SOILS (0.0 - 0.5 FEET)
(REMAINDER OF SITE)
OCCUPATIONAL MAINTENANCE WORKER POPULATION
CURRENT AND FUTURE NO ACTION SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	Potential Carcinogens, Chronic Daily Intake (Adminstered) (mg/kg-day)	Noncarcinogens, Chronic Daily Intake (Adminstered) (mg/kg-day)	Oral Slope Factor (SF) 1/(mg/kg-day)	Oral Reference Dose (RfD) (mg/kg-day)	Dermal Chemical-Specific Carcinogenic Risk	Dermal Chemical-Specific Noncarcinogenic Hazard Quotient	% Carcinogenic Risk	% Noncarcino-genic Risk
Acetone	3.0E-06	8.4E-06	--	0.1	--	8.4E-05	--	6.5E+01
Chromium (III)	6.2E-07	1.7E-06	--	1	--	1.7E-06	--	1.3E+00
Chromium (VI)	6.2E-07	1.7E-06	--	0.005	--	3.4E-04	--	7.2E+01
Methylene chloride	6.1E-10	1.7E-09	0.0075	0.06	4.6E-12	2.8E-08	3.3E+01	2.2E-02
Nickel	2.8E-07	7.7E-07	--	0.02	--	3.9E-05	--	3.0E+01
Trichloroethene	8.9E-10	2.5E-09	0.011	--	9.8E-12	--	7.0E+01	--
Zinc	6.0E-07	1.7E-06	--	0.3	--	5.7E-06	--	4.4E+00
					TOTAL PATHWAY RISK : 1.4E-11	HAZARD INDEX : 4.7E-04		
						1.3E-04		

RISK CALCULATION FOR INCIDENTAL INGESTION OF SURFICIAL SOILS (0.0 - 0.5 FEET)
(REMAINDER OF SITE)
OCCUPATIONAL MAINTENANCE WORKER POPULATION
CURRENT AND FUTURE NO ACTION SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	Potential Carcinogens, Chronic Daily Intake (mg/kg-day)	Noncarcinogens, Chronic Daily Intake (mg/kg-day)	Oral Slope Factor (SF) 1/(mg/kg-day)	Oral Reference Dose (RfD) (mg/kg-day)	Oral Chemical-Specific Carcinogenic Risk	Oral Chemical-Specific Noncarcinogenic Hazard Quotient	% Carcinogenic Risk	% Noncarcinogenic Risk
Acetone	2.6E-06	7.2E-06	--	0.1	--	7.2E-05	--	1.5E+01
Chromium (III)	5.3E-06	1.5E-05	--	1	--	1.5E-05	--	3.2E+00
Chromium (VI)	5.3E-06	1.5E-05	--	0.005	--	3.0E-03	--	8.6E+01
Methylene chloride	5.2E-10	1.5E-09	0.0075	0.06	3.9E-12	2.5E-08	3.3E+01	5.3E-03
Nickel	2.4E-06	6.7E-06	--	0.02	--	3.4E-04	--	7.2E+01
Trichloroethene	7.7E-10	2.2E-09	0.011	--	8.5E-12	--	7.1E+01	--
Zinc	5.1E-06	1.4E-05	--	0.3	--	4.7E-05	--	1.0E+01
					TOTAL PATHWAY RISK: 1.2E-11	HAZARD INDEX: 3.5E-03		
						4.7E-04		

RISK CALCULATION FOR INHALATION OF VAPORS AND PARTICULATES FROM ON-SITE SURFICIAL SOILS (0.0 - 0.5 FEET)
(REMAINDER OF SITE)
OCCUPATIONAL MAINTENANCE WORKER POPULATION
CURRENT AND FUTURE NO ACTION SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	Potential Carcinogens, Chronic Daily Intake (mg/kg-day)	Noncarcinogens, Chronic Daily Intake (mg/kg-day)	Inhalation Slope Factor (SF) 1/(mg/kg-day)	Inhalation Reference Dose (RfD) (mg/kg-day)	Inhalation Chemical-Specific Carcinogenic Risk	Inhalation Chemical-Specific Noncarcinogenic Hazard Quotient	% Carcinogenic Risk	% Noncarcinogenic Risk
Acetone	3.5E-03	9.7E-03	--	--	--	--	--	--
Chromium (III)	3.9E-10	1.1E-09	--	--	--	--	--	--
Chromium (VI)	3.9E-10	1.1E-09	41	--	1.6E-08	--	6.7E+01	--
Methylene chloride	1.1E-06	3.1E-06	0.0016	0.86	1.8E-09	3.6E-06	7.5E+00	1.0E+02
Nickel	1.7E-10	4.9E-10	--	--	--	--	--	--
Trichloroethene	1.0E-06	2.9E-06	0.006	--	6.0E-09	--	2.5E+01	--
Zinc	3.7E-10	1.0E-09	--	--	--	--	--	--
					TOTAL PATHWAY RISK :	2.4E-08	HAZARD INDEX :	3.6E-06

RISK CALCULATION FOR DERMAL CONTACT WITH ON-SITE SURFICIAL SOILS (0.0 - 0.5 FEET)
(REMAINDER OF SITE)
RECREATIONAL/ TRESPASSER CHILD/ADULT POPULATION
FUTURE SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	Potential Carcinogens, Chronic Daily Intake (Adminstered) (mg/kg-day)	Noncarcinogens, Chronic Daily Intake (Adminstered) (mg/kg-day)	Oral Slope Factor (SF) 1/(mg/kg-day)	Oral Reference Dose (RfD) (mg/kg-day)	Dermal Chemical-Specific Carcinogenic Risk	Dermal Chemical-Specific Noncarcinogenic Hazard Quotient	% Carcinogenic Risk	% Noncarcino-genic Risk
Acetone	3.5E-06	8.2E-06	--	0.1	--	8.2E-05	--	6.3E+01
Chromium (III)	7.3E-07	1.7E-06	--	1	--	1.7E-06	--	1.3E+00
Chromium (VI)	7.3E-07	1.7E-06	--	0.005	--	3.4E-04	--	7.2E+01
Methylene chloride	7.1E-10	1.7E-09	0.0075	0.06	5.3E-12	2.8E-08	3.3E+01	2.2E-02
Nickel	3.2E-07	7.6E-07	--	0.02	--	3.8E-05	--	2.9E+01
Trichloroethene	1.0E-09	2.4E-09	0.011	--	1.1E-11	--	6.9E+01	--
Zinc	7.0E-07	1.6E-06	--	0.3	--	5.3E-06	--	4.1E+00
					TOTAL PATHWAY RISK :	1.6E-11	HAZARD INDEX :	4.7E-04
								1.3E-04

RISK CALCULATION FOR INCIDENTAL INGESTION OF ON-SITE SURFICIAL SOILS (0.0 - 0.5 FEET)
(REMAINDER OF SITE)
RECREATIONAL/ TRESPASSER CHILD/ADULT POPULATION
FUTURE SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	Potential Carcinogens, Chronic Daily Intake (mg/kg-day)	Noncarcinogens, Chronic Daily Intake (mg/kg-day)	Oral Slope Factor (SF) 1/(mg/kg-day)	Oral Reference Dose (RfD) (mg/kg-day)	Oral Chemical-Specific Carcinogenic Risk	Oral Chemical-Specific Noncarcinogenic Hazard Quotient	% Carcinogenic Risk	% Noncarcino-genic Risk
Acetone	7.8E-06	1.8E-05	--	0.1	--	1.8E-04	--	1.5E+01
Chromium (III)	1.6E-05	3.7E-05	--	1	--	3.7E-05	--	3.1E+00
Chromium (VI)	1.6E-05	3.7E-05	--	0.005	--	7.4E-03	--	8.6E+01
Methylene chloride	1.6E-09	3.7E-09	0.0075	0.06	1.2E-11	6.2E-08	3.2E+01	5.2E-03
Nickel	7.2E-06	1.7E-05	--	0.02	--	8.5E-04	--	7.1E+01
Trichloroethene	2.3E-09	5.4E-09	0.011	--	2.5E-11	--	6.8E+01	--
Zinc	1.5E-05	3.6E-05	--	0.3	--	1.2E-04	--	1.0E+01
					TOTAL PATHWAY RISK :	3.7E-11	HAZARD INDEX :	8.6E-03
								1.2E-03

RISK CALCULATION FOR INHALATION OF VAPORS AND PARTICULATES FROM ON-SITE SURFICIAL SOILS (0.0 - 0.5 FEET)
(REMAINDER OF SITE)
RECREATIONAL/ TRESPASSER CHILD/ADULT POPULATION
FUTURE SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	Potential Carcinogens, Chronic Daily Intake (mg/kg-day)	Noncarcinogens, Chronic Daily Intake (mg/kg-day)	Inhalation Slope Factor (SF) 1/(mg/kg-day)	Inhalation Reference Dose (RfD) (mg/kg-day)	Inhalation Chemical-Specific Carcinogenic Risk	Inhalation Chemical-Specific Noncarcinogenic Hazard Quotient	% Carcinogenic Risk	% Noncarcino-genic Risk
Acetone	6.8E-03	1.6E-02	--	--	--	--	--	--
Chromium (III)	6.1E-10	1.4E-09	--	--	--	--	--	--
Chromium (VI)	6.1E-10	1.4E-09	41	--	2.5E-08	--	6.0E+01	--
Methylene chloride	2.2E-06	5.2E-06	0.0016	0.86	3.5E-09	6.0E-06	8.3E+00	1.0E+02
Nickel	2.7E-10	6.2E-10	--	--	--	--	--	--
Trichloroethene	2.1E-06	4.8E-06	0.006	--	1.3E-08	--	3.1E+01	--
Zinc	5.7E-10	1.3E-09	--	--	--	--	--	--
					TOTAL PATHWAY RISK :	4.2E-08	HAZARD INDEX :	6.0E-06

RISK CALCULATION FOR DERMAL CONTACT WITH ON-SITE SHALLOW SOILS (0 - 8 FEET)
(REMAINDER OF SITE)
OCCUPATIONAL CONSTRUCTION WORKER POPULATION
FUTURE SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	Potential Carcinogens, Chronic Daily Intake (Adminstered) (mg/kg-day)	Noncarcinogens, Chronic Daily Intake (Adminstered) (mg/kg-day)	Oral Slope Factor (SF) 1/(mg/kg-day)	Oral Reference Dose (RfD) (mg/kg-day)	Dermal Chemical-Specific Carcinogenic Risk	Dermal Chemical-Specific Noncarcinogenic Hazard Quotient	% Carcinogenic Risk	% Noncarcino-genic Risk
Acetone	6.0E-07	4.2E-05	--	0.1	--	4.2E-04	--	7.2E+01
Chromium (III)	3.0E-08	2.1E-06	--	1	--	2.1E-06	--	3.6E-01
Chromium (VI)	3.0E-08	2.1E-06	--	0.005	--	4.2E-04	--	4.2E+01
Methylene chloride	1.2E-10	8.5E-09	0.0075	0.06	9.0E-13	1.4E-07	3.1E+01	2.4E-02
Nickel	3.9E-08	2.7E-06	--	0.02	--	1.4E-04	--	2.4E+01
Trichloroethene	1.8E-10	1.2E-08	0.011	--	2.0E-12	--	6.9E+01	--
Zinc	7.6E-08	5.3E-06	--	0.3	--	1.8E-05	--	3.1E+00
					TOTAL PATHWAY RISK : 2.9E-12	HAZARD INDEX : 1.0E-03		
						5.8E-04		

RISK CALCULATION FOR INCIDENTAL INGESTION OF SHALLOW SOILS (0 - 8 FEET)
(REMAINDER OF SITE)
OCCUPATIONAL CONSTRUCTION WORKER POPULATION
FUTURE SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	Potential Carcinogens, Chronic Daily Intake (mg/kg-day)	Noncarcinogens, Chronic Daily Intake (mg/kg-day)	Oral Slope Factor (SF) 1/(mg/kg-day)	Oral Reference Dose (RfD) (mg/kg-day)	Oral Chemical-Specific Carcinogenic Risk	Oral Chemical-Specific Noncarcinogenic Hazard Quotient	% Carcinogenic Risk	% Noncarcino-genic Risk
Acetone	5.0E-06	3.5E-04	--	0.1	--	3.5E-03	--	2.1E+01
Chromium (III)	2.5E-06	1.7E-04	--	1	--	1.7E-04	--	1.0E+00
Chromium (VI)	2.5E-06	1.7E-04	--	0.005	--	3.4E-02	--	6.7E+01
Methylene chloride	1.0E-09	7.0E-08	0.0075	0.06	7.5E-12	1.2E-06	3.0E+01	7.1E-03
Nickel	3.2E-06	2.3E-04	--	0.02	--	1.2E-02	--	7.1E+01
Trichloroethene	1.5E-09	1.0E-07	0.011	--	1.7E-11	--	6.8E+01	--
Zinc	6.3E-06	4.4E-04	--	0.3	--	1.5E-03	--	8.8E+00
					TOTAL PATHWAY RISK :	2.5E-11	HAZARD INDEX :	5.1E-02
								1.7E-02

RISK CALCULATION FOR INHALATION OF VAPORS AND PARTICULATES FROM ON-SITE SHALLOW SOILS (0 - 8 FEET)
(REMAINDER OF SITE)
OCCUPATIONAL CONSTRUCTION WORKER POPULATION
FUTURE SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	Potential Carcinogens, Chronic Daily Intake (mg/kg-day)	Noncarcinogens, Chronic Daily Intake (mg/kg-day)	Inhalation Slope Factor (SF) 1/(mg/kg-day)	Inhalation Reference Dose (RfD) (mg/kg-day)	Inhalation Chemical-Specific Carcinogenic Risk	Inhalation Chemical-Specific Noncarcinogenic Hazard Quotient	% Carcinogenic Risk	% Noncarcino-genic Risk
Acetone	2.1E-03	1.5E-01	--	--	--	--	--	--
Chromium (III)	3.8E-11	2.7E-09	--	--	--	--	--	--
Chromium (VI)	3.8E-11	2.7E-09	41	--	1.6E-09	--	2.4E+01	--
Methylene chloride	7.0E-07	4.9E-05	0.0016	0.86	1.1E-09	5.7E-05	1.6E+01	1.0E+02
Nickel	4.9E-11	3.4E-09	--	--	--	--	--	--
Trichloroethene	6.6E-07	4.6E-05	0.006	--	4.0E-09	--	6.0E+01	--
Zinc	9.3E-11	6.5E-09	--	--	--	--	--	--
					TOTAL PATHWAY RISK : 6.7E-09	HAZARD INDEX : 5.7E-05		

RISK CALCULATION FOR DERMAL CONTACT WITH ON-SITE SURFICIAL SOILS (0.0 - 0.5 FEET)
(REMAINDER OF SITE)
RESIDENTIAL CHILD/ADULT POPULATION
FUTURE SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	Potential Carcinogens, Chronic Daily Intake (Adminstered) (mg/kg-day)	Noncarcinogens, Chronic Daily Intake (Adminstered) (mg/kg-day)	Oral Slope Factor (SF) 1/(mg/kg-day)	Oral Reference Dose (RfD) (mg/kg-day)	Dermal Chemical-Specific Carcinogenic Risk	Dermal Chemical-Specific Noncarcinogenic Hazard Quotient	% Carcinogenic Risk	% Noncarcinogenic Risk
Acetone	2.7E-05	6.4E-05	--	0.1	--	6.4E-04	--	6.4E+01
Chromium (III)	5.7E-06	1.3E-05	--	1	--	1.3E-05	--	1.3E+00
Chromium (VI)	5.7E-06	1.3E-05	--	0.005	--	2.6E-03	--	7.2E+01
Methylene chloride	5.6E-09	1.3E-08	0.0075	0.06	4.2E-11	2.2E-07	3.2E+01	2.2E-02
Nickel	2.5E-06	5.9E-06	--	0.02	--	3.0E-04	--	3.0E+01
Trichloroethene	8.2E-09	1.9E-08	0.011	--	9.0E-11	--	6.9E+01	--
Zinc	5.5E-06	1.3E-05	--	0.3	--	4.3E-05	--	4.3E+00
					TOTAL PATHWAY RISK : 1.3E-10	HAZARD INDEX : 3.6E-03		
						1.0E-03		

RISK CALCULATION FOR INCIDENTAL INGESTION OF ON-SITE SURFICIAL SOILS (0.0 - 0.5 FEET)
(REMAINDER OF SITE)
RESIDENTIAL CHILD/ADULT POPULATION
FUTURE SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	Potential Carcinogens, Chronic Daily Intake (mg/kg-day)	Noncarcinogens, Chronic Daily Intake (mg/kg-day)	Oral Slope Factor (SF) 1/(mg/kg-day)	Oral Reference Dose (RfD) (mg/kg-day)	Oral Chemical-Specific Carcinogenic Risk	Oral Chemical-Specific Noncarcinogenic Hazard Quotient	% Carcinogenic Risk	% Noncarcinogenic Risk
Acetone	1.2E-04	2.7E-04	--	0.1	--	2.7E-03	--	1.5E+01
Chromium (III)	2.4E-04	5.6E-04	--	1	--	5.6E-04	--	3.1E+00
Chromium (VI)	2.4E-04	5.6E-04	--	0.005	--	1.1E-01	--	8.5E+01
Methylene chloride	2.3E-08	5.5E-08	0.0075	0.06	1.7E-10	9.2E-07	3.1E+01	5.1E-03
Nickel	1.1E-04	2.5E-04	--	0.02	--	1.3E-02	--	7.2E+01
Trichloroethene	3.4E-08	8.0E-08	0.011	--	3.7E-10	--	6.9E+01	--
Zinc	2.3E-04	5.4E-04	--	0.3	--	1.8E-03	--	1.0E+01
				TOTAL PATHWAY RISK :	5.4E-10	HAZARD INDEX : 1.3E-01		
						1.8E-02		

RISK CALCULATION FOR INHALATION OF VAPORS AND PARTICULATES FROM ON-SITE SURFICIAL SOILS (0.0 - 0.5 FEET)
(REMAINDER OF SITE)
RESIDENTIAL CHILD/ADULT POPULATION
FUTURE SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	Potential Carcinogens, Chronic Daily Intake (mg/kg-day)	Noncarcinogens, Chronic Daily Intake (mg/kg-day)	Inhalation Slope Factor (SF) 1/(mg/kg-day)	Inhalation Reference Dose (RfD) (mg/kg-day)	Inhalation Chemical-Specific Carcinogenic Risk	Inhalation Chemical-Specific Noncarcinogenic Hazard Quotient	% Carcinogenic Risk	% Noncarcino-genic Risk
Acetone	1.8E-02	4.3E-02	--	--	--	--	--	--
Chromium (III)	4.7E-09	1.1E-08	--	--	--	--	--	--
Chromium (VI)	4.7E-09	1.1E-08	41	--	1.9E-07	--	7.9E+01	--
Methylene chloride	6.3E-06	1.5E-05	0.0016	0.86	1.0E-08	1.7E-05	4.2E+00	1.0E+02
Nickel	2.1E-09	4.8E-09	--	--	--	--	--	--
Trichloroethene	6.0E-06	1.4E-05	0.006	--	3.6E-08	--	1.5E+01	--
Zinc	4.4E-09	1.0E-08	--	--	--	--	--	--
					TOTAL PATHWAY RISK : 2.4E-07	HAZARD INDEX : 1.7E-05		

GROUNDWATER

RISK CALCULATION FOR DERMAL CONTACT WITH SITE GROUNDWATER
UPPERMOST AQUIFER
RESIDENTIAL CHILD/ADULT POPULATION
FUTURE SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	Potential Carcinogens, Chronic Daily Intake (Adminstered) (mg/kg-day)	Noncarcinogens, Chronic Daily Intake (Adminstered) (mg/kg-day)	Oral Slope Factor (SF) 1/(mg/kg-day)	Oral Reference Dose (RfD) (mg/kg-day)	Dermal Chemical-Specific Carcinogenic Risk	Dermal Chemical-Specific Noncarcinogenic Hazard Quotient	% Carcinogenic Risk	% Noncarcinogenic Risk
Acetone	9.9E-06	2.3E-05	--	0.1	--	2.3E-04	--	2.5E-03
Arsenic	3.0E-07	7.0E-07	1.8	0.0003	5.4E-07	2.3E-03	1.4E-03	2.5E-02
Benzene	4.7E-04	1.1E-03	0.029	--	1.4E-05	--	3.6E-02	--
Bis(2-ethylhexyl)phthalate	7.9E-06	1.8E-05	0.014	0.02	1.1E-07	9.0E-04	2.8E-04	9.8E-03
Chromium (III)	6.3E-05	1.5E-04	--	1	--	1.5E-04	--	1.6E-03
Chromium (VI)	5.6E-05	1.3E-04	--	0.005	--	2.6E-02	--	2.8E-01
4,4'-DDE	4.3E-06	1.0E-05	0.34	--	1.5E-06	--	3.8E-03	--
1,4-Dichlorobenzene	1.6E-06	3.7E-06	0.024	--	3.8E-08	--	9.7E-05	--
1,2-Dichloroethane	7.0E-07	1.6E-06	0.091	--	6.4E-08	--	1.6E-04	--
1,1-Dichloroethene	1.2E-03	2.7E-03	0.6	0.009	7.2E-04	3.0E-01	1.8E+00	3.3E+00
1,2-Dichloroethene (cis)	6.2E-02	1.4E-01	--	0.01	--	1.4E+01	--	8.8E+01
1,2-Dichloroethene (trans)	6.2E-02	1.4E-01	--	0.02	--	7.0E+00	--	7.6E+01
Ethyl benzene	6.6E-03	1.5E-02	--	0.1	--	1.5E-01	--	1.6E+00
Fluorene	9.3E-06	2.2E-05	--	0.04	--	5.5E-04	--	6.0E-03
2-Methylnaphthalene	5.6E-04	1.3E-03	--	--	--	--	--	--
4-Methyl-2-pentanone	2.6E-06	6.0E-06	--	0.05	--	1.2E-04	--	1.3E-03
Naphthalene	6.1E-05	1.4E-04	--	--	--	--	--	--
Nickel	3.7E-07	8.5E-07	--	0.02	--	4.3E-05	--	4.7E-04
Phenanthrene	7.3E-06	1.7E-05	--	--	--	--	--	--
Phenol	7.7E-07	1.8E-06	--	0.6	--	3.0E-06	--	3.3E-05
Tetrachloroethene	6.7E-04	1.6E-03	--	0.01	--	1.6E-01	--	1.7E+00
Toluene	1.2E-01	2.9E-01	--	0.2	--	1.5E+00	--	1.6E+01
1,2,4-Trichlorobenzene	5.4E-06	1.3E-05	--	0.01	--	1.3E-03	--	1.4E-02
1,1,1-Trichloroethane	2.7E-06	6.3E-06	--	--	--	--	--	--
1,1,2-Trichloroethane	3.0E-05	7.0E-05	0.057	0.004	1.7E-06	1.8E-02	4.4E-03	2.0E-01
Trichloroethene	4.3E-01	1.0E+00	0.011	--	4.7E-03	--	1.2E+01	--

RISK CALCULATION FOR DERMAL CONTACT WITH SITE GROUNDWATER
UPPERMOST AQUIFER
RESIDENTIAL CHILD/ADULT POPULATION
FUTURE SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	Potential Carcinogens, Chronic Daily Intake (Adminstered) (mg/kg-day)	Noncarcinogens, Chronic Daily Intake (Adminstered) (mg/kg-day)	Oral Slope Factor (SF) 1/(mg/kg-day)	Oral Reference Dose (RfD) (mg/kg-day)	Dermal Chemical-Specific Carcinogenic Risk	Dermal Chemical-Specific Noncarcinogenic Hazard Quotient	% Carcinogenic Risk	% Noncarcinogenic Risk
Vinyl chloride	1.8E-02	4.1E-02	1.9	--	3.4E-02	--	8.7E+01	--
Xylene (total)	5.0E-03	1.2E-02	--	2	--	6.0E-03	--	6.5E-02
					TOTAL PATHWAY RISK :	3.9E-02	HAZARD INDEX :	1.6E+01
								9.2E+00

RISK CALCULATION FOR INGESTION OF SITE GROUNDWATER
UPPERMOST AQUIFER
RESIDENTIAL CHILD/ADULT POPULATION
FUTURE SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	Potential Carcinogens, Chronic Daily Intake (mg/kg-day)	Noncarcinogens, Chronic Daily Intake (mg/kg-day)	Oral Slope Factor (SF) 1/(mg/kg-day)	Oral Reference Dose (RfD) (mg/kg-day)	Oral Chemical-Specific Carcinogenic Risk	Oral Chemical-Specific Noncarcinogenic Hazard Quotient	% Carcinogenic Risk	% Noncarcinogenic Risk
Acetone	6.6E-03	1.5E-02	--	0.1	--	1.5E-01	--	4.8E-02
Arsenic	1.2E-04	2.7E-04	1.8	0.0003	2.2E-04	9.0E-01	1.2E-02	2.9E-01
Benzene	8.7E-03	2.0E-02	0.029	--	2.5E-04	--	1.3E-02	--
Bis(2-ethylhexyl)phthalate	9.3E-05	2.2E-04	0.014	0.02	1.3E-06	1.1E-02	6.8E-05	3.5E-03
Chromium (III)	2.4E-02	5.7E-02	--	1	--	5.7E-02	--	1.8E-02
Chromium (VI)	2.2E-02	5.1E-02	--	0.005	--	1.0E+01	--	3.2E+00
4,4'-DDE	6.9E-06	1.6E-05	0.34	--	2.3E-06	--	1.2E-04	--
1,4-Dichlorobenzene	9.9E-06	2.3E-05	0.024	--	2.4E-07	--	1.3E-05	--
1,2-Dichloroethane	5.1E-05	1.2E-04	0.091	--	4.6E-06	--	2.4E-04	--
1,1-Dichloroethene	2.8E-02	6.6E-02	0.6	0.009	1.7E-02	7.3E+00	8.9E-01	2.4E+00
1,2-Dichloroethene (cis)	2.4E+00	5.6E+00	--	0.01	--	5.6E+02	--	9.5E+01
1,2-Dichloroethene (trans)	2.4E+00	5.6E+00	--	0.02	--	2.8E+02	--	9.0E+01
Ethyl benzene	3.4E-02	8.0E-02	--	0.1	--	8.0E-01	--	2.6E-01
Fluorene	1.5E-05	3.5E-05	--	0.04	--	8.8E-04	--	2.8E-04
2-Methylnaphthalene	1.0E-03	2.4E-03	--	--	--	--	--	--
4-Methyl-2-pentanone	3.0E-04	7.0E-04	--	0.05	--	1.4E-02	--	4.5E-03
Naphthalene	3.4E-04	8.0E-04	--	--	--	--	--	--
Nickel	1.4E-04	3.3E-04	--	0.02	--	1.7E-02	--	5.5E-03
Phenanthrene	1.0E-05	2.4E-05	--	--	--	--	--	--
Phenol	5.4E-05	1.3E-04	--	0.6	--	2.2E-04	--	7.1E-05
Tetrachloroethene	5.4E-03	1.3E-02	--	0.01	--	1.3E+00	--	4.2E-01
Toluene	1.1E+00	2.5E+00	--	0.2	--	1.3E+01	--	4.2E+00
1,2,4-Trichlorobenzene	2.1E-05	4.9E-05	--	0.01	--	4.9E-03	--	1.6E-03
1,1,1-Trichloroethane	6.1E-05	1.4E-04	--	--	--	--	--	--
1,1,2-Trichloroethane	1.4E-03	3.2E-03	0.057	0.004	8.0E-05	8.0E-01	4.2E-03	2.6E-01
Trichloroethene	1.0E+01	2.4E+01	0.011	--	1.1E-01	--	5.8E+00	--

RISK CALCULATION FOR INGESTION OF SITE GROUNDWATER
UPPERMOST AQUIFER
RESIDENTIAL CHILD/ADULT POPULATION
FUTURE SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	Potential Carcinogens, Chronic Daily Intake (mg/kg-day)	Noncarcinogens, Chronic Daily Intake (mg/kg-day)	Oral Slope Factor (SF) 1/(mg/kg-day)	Oral Reference Dose (RfD) (mg/kg-day)	Oral Chemical-Specific Carcinogenic Risk	Oral Chemical-Specific Noncarcinogenic Hazard Quotient	% Carcinogenic Risk	% Noncarcinogenic Risk
Vinyl chloride	9.3E-01	2.2E+00	1.9	--	1.8E+00	--	9.5E+01	--
Xylene (total)	2.4E-02	5.6E-02	--	2	--	2.8E-02	--	9.0E-03
				TOTAL PATHWAY RISK :	1.9E+00	HAZARD INDEX :	5.9E+02	
							3.1E+02	

RISK CALCULATION FOR INHALATION OF VAPORS FROM SITE GROUNDWATER
UPPERMOST AQUIFER
RESIDENTIAL CHILD/ADULT POPULATION
FUTURE SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	Potential Carcinogens, Chronic Daily Intake (mg/kg-day)	Noncarcinogens, Chronic Daily Intake (mg/kg-day)	Inhalation Slope Factor (SF) 1/(mg/kg-day)	Inhalation Reference Dose (RfD) (mg/kg-day)	Inhalation Chemical-Specific Carcinogenic Risk	Inhalation Chemical-Specific Noncarcinogenic Hazard Quotient	% Carcinogenic Risk	% Noncarcinogenic Risk
Acetone	3.5E-04	8.1E-04	--	--	--	--	--	--
Arsenic	--	--	50	--	--	--	--	--
Benzene	4.6E-04	1.1E-03	0.029	--	1.3E-05	--	6.5E-02	--
Bis(2-ethylhexyl)phthalate	4.9E-06	1.1E-05	--	--	--	--	--	--
Chromium (III)	--	--	--	--	--	--	--	--
Chromium (VI)	--	--	41	--	--	--	--	--
4,4'-DDE	3.6E-07	8.5E-07	--	--	--	--	--	--
1,4-Dichlorobenzene	5.2E-07	1.2E-06	--	0.2	--	6.0E-06	--	5.0E-04
1,2-Dichloroethane	2.7E-06	6.3E-06	0.091	--	2.5E-07	--	1.3E-03	--
1,1-Dichloroethene	1.5E-03	3.5E-03	1.2	--	1.8E-03	--	9.0E+00	--
1,2-Dichloroethene (cis)	1.3E-01	3.0E-01	--	--	--	--	--	--
1,2-Dichloroethene (trans)	1.3E-01	3.0E-01	--	--	--	--	--	--
Ethyl benzene	1.8E-03	4.3E-03	--	0.29	--	1.5E-02	--	1.3E+00
Fluorene	7.9E-07	1.8E-06	--	--	--	--	--	--
2-Methylnaphthalene	5.5E-05	1.3E-04	--	--	--	--	--	--
4-Methyl-2-pentanone	1.6E-05	3.7E-05	--	0.02	--	1.9E-03	--	1.6E-01
Naphthalene	1.8E-05	4.3E-05	--	--	--	--	--	--
Nickel	--	--	--	--	--	--	--	--
Phenanthrene	5.5E-07	1.3E-06	--	--	--	--	--	--
Phenol	2.9E-06	6.7E-06	--	--	--	--	--	--
Tetrachloroethene	2.9E-04	6.7E-04	--	--	--	--	--	--
Toluene	5.6E-02	1.3E-01	--	0.11	--	1.2E+00	--	1.0E+02
1,2,4-Trichlorobenzene	1.1E-06	2.6E-06	--	0.003	--	8.7E-04	--	7.3E-02
1,1,1-Trichloroethane	3.2E-06	7.6E-06	--	--	--	--	--	--
1,1,2-Trichloroethane	7.3E-05	1.7E-04	0.057	--	4.2E-06	--	2.1E-02	--
Trichloroethene	5.5E-01	1.3E+00	0.006	--	3.3E-03	--	1.7E+01	--

RISK CALCULATION FOR INHALATION OF VAPORS FROM SITE GROUNDWATER
UPPERMOST AQUIFER
RESIDENTIAL CHILD/ADULT POPULATION
FUTURE SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	Potential Carcinogens, Chronic Daily Intake (mg/kg-day)	Noncarcinogens, Chronic Daily Intake (mg/kg-day)	Inhalation Slope Factor (SF) 1/(mg/kg-day)	Inhalation Reference Dose (RfD) (mg/kg-day)	Inhalation Chemical-Specific Carcinogenic Risk	Inhalation Chemical-Specific Noncarcinogenic Hazard Quotient	% Carcinogenic Risk	% Noncarcino-genic Risk
Vinyl chloride	4.9E-02	1.1E-01	0.3	–	1.5E-02	–	7.5E+01	–
Xylene (total)	1.3E-03	3.0E-03	–	–	–	–	–	–

TOTAL PATHWAY RISK : 2.0E-02 HAZARD INDEX : 1.2E+00

1/24/94

RISK21.XLS

SURFACE WATER

AND

SEDIMENT

RISK CALCULATION FOR DERMAL CONTACT WITH SURFACE WATER
(DOWNSTREAM RIVERDALE CREEK)
RECREATIONAL/ TRESPASSER CHILD/ADULT POPULATION
CURRENT AND FUTURE NO ACTION SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	Potential Carcinogens, Chronic Daily Intake (Adminstered) (mg/kg-day)	Noncarcinogens, Chronic Daily Intake (Adminstered) (mg/kg-day)	Oral Slope Factor (SF) 1/(mg/kg-day)	Oral Reference Dose (RfD) (mg/kg-day)	Dermal Chemical-Specific Carcinogenic Risk	Dermal Chemical-Specific Noncarcinogenic Hazard Quotient	% Carcinogenic Risk	% Noncarcino-genic Risk
Acetone	1.9E-08	4.5E-08	--	0.1	--	4.5E-07	--	1.1E-02
Aluminum	2.7E-05	6.2E-05	--	--	--	--	--	--
Arsenic	3.2E-08	7.5E-08	1.8	0.0003	5.8E-08	2.5E-04	3.2E+00	6.1E+00
Barium	5.2E-07	1.2E-06	--	0.07	--	1.7E-05	--	4.1E-01
Bis(2-ethylhexyl)phthalate	2.5E-06	5.7E-06	0.014	0.02	3.5E-08	2.9E-04	1.9E+00	7.1E+00
Butyl benzyl phthalate	3.4E-07	8.0E-07	--	0.2	--	4.0E-06	--	9.8E-02
2-Chlorophenol	4.2E-08	9.8E-08	--	0.005	--	2.0E-05	--	4.9E-01
Chromium (III)	1.7E-06	4.0E-06	--	1	--	4.0E-06	--	9.8E-02
Chromium (VI)	2.2E-06	5.1E-06	--	0.005	--	1.0E-03	--	2.4E+01
Copper	8.1E-08	1.9E-07	--	0.037	--	5.1E-06	--	1.2E-01
1,2-Dichloroethene (cis)	9.0E-06	2.1E-05	--	0.01	--	2.1E-03	--	4.1E+01
1,2-Dichloroethene (trans)	9.0E-06	2.1E-05	--	0.02	--	1.1E-03	--	2.7E+01
Dietyl phthalate	4.6E-09	1.1E-08	--	0.8	--	1.4E-08	--	3.4E-04
Iron	6.4E-05	1.5E-04	--	--	--	--	--	--
Lead	4.7E-08	1.1E-07	--	--	--	--	--	--
Manganese	2.5E-06	5.9E-06	--	0.005	--	1.2E-03	--	2.9E+01
Methylene chloride	7.7E-08	1.8E-07	0.0075	0.06	5.8E-10	3.0E-06	3.2E-02	7.3E-02
Nickel	7.4E-08	1.7E-07	--	0.02	--	8.5E-06	--	2.1E-01
n-Nitrosodiphenylamine	1.4E-07	3.2E-07	0.0049	--	6.9E-10	--	3.8E-02	--
Pentachlorophenol	3.1E-06	7.2E-06	0.12	0.03	3.7E-07	2.4E-04	2.1E+01	5.9E+00
Toluene	2.7E-07	6.2E-07	--	0.2	--	3.1E-06	--	7.6E-02
Trichloroethene	5.2E-05	1.2E-04	0.011	--	5.7E-07	--	3.2E+01	--
Vinyl chloride	3.8E-07	8.8E-07	1.9	--	7.2E-07	--	4.0E+01	--
				TOTAL PATHWAY RISK :	1.8E-06	HAZARD INDEX : 5.1E-03		
						4.1E-03		

RISK CALCULATION FOR INCIDENTAL INGESTION OF SURFACE WATER
(DOWNSTREAM RIVERDALE CREEK)
RECREATIONAL/ TRESPASSER CHILD/ADULT POPULATION
CURRENT AND FUTURE NO ACTION SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	Potential Carcinogens, Chronic Daily Intake (mg/kg-day)	Noncarcinogens, Chronic Daily Intake (mg/kg-day)	Oral Slope Factor (SF) 1/(mg/kg-day)	Oral Reference Dose (RfD) (mg/kg-day)	Oral Chemical-Specific Carcinogenic Risk	Oral Chemical-Specific Noncarcinogenic Hazard Quotient	% Carcinogenic Risk	% Noncarcinogenic Risk
Acetone	3.7E-07	8.6E-07	--	0.1	--	8.6E-06	--	3.1E-02
Aluminum	2.9E-04	6.9E-04	--	--	--	--	--	--
Arsenic	3.5E-07	8.2E-07	1.8	0.0003	6.3E-07	2.7E-03	3.0E+01	9.6E+00
Barium	5.8E-06	1.3E-05	--	0.07	--	1.9E-04	--	6.8E-01
Bis(2-ethylhexyl)phthalate	8.2E-07	1.9E-06	0.014	0.02	1.1E-08	9.5E-05	5.2E-01	3.4E-01
Butyl benzyl phthalate	5.2E-08	1.2E-07	--	0.2	--	6.0E-07	--	2.1E-03
2-Chlorophenol	4.2E-08	9.8E-08	--	0.005	--	2.0E-05	--	7.1E-02
Chromium (III)	1.9E-05	4.4E-05	--	1	--	4.4E-05	--	1.6E-01
Chromium (VI)	2.4E-05	5.6E-05	--	0.005	--	1.1E-02	--	3.9E+01
Copper	8.9E-07	2.1E-06	--	0.037	--	5.7E-05	--	2.0E-01
1,2-Dichloroethene (cis)	9.9E-06	2.3E-05	--	0.01	--	2.3E-03	--	7.7E+00
1,2-Dichloroethene (trans)	9.9E-06	2.3E-05	--	0.02	--	1.2E-03	--	4.3E+00
Dietyl phthalate	1.0E-08	2.4E-08	--	0.8	--	3.0E-08	--	1.1E-04
Iron	7.0E-04	1.6E-03	--	--	--	--	--	--
Lead	5.2E-07	1.2E-06	--	--	--	--	--	--
Manganese	2.8E-05	6.5E-05	--	0.005	--	1.3E-02	--	4.6E+01
Methylene chloride	1.9E-07	4.4E-07	0.0075	0.06	1.4E-09	7.3E-06	6.7E-02	2.6E-02
Nickel	8.2E-07	1.9E-06	--	0.02	--	9.5E-05	--	3.4E-01
n-Nitrosodiphenylamine	4.2E-08	9.8E-08	0.0049	--	2.1E-10	--	1.0E-02	--
Pentachlorophenol	5.2E-08	1.2E-07	0.12	0.03	6.2E-09	4.0E-06	3.0E-01	1.4E-02
Toluene	6.5E-08	1.5E-07	--	0.2	--	7.5E-07	--	2.7E-03
Trichloroethene	3.6E-05	8.3E-05	0.011	--	4.0E-07	--	1.9E+01	--
Vinyl chloride	5.7E-07	1.3E-06	1.9	--	1.1E-06	--	5.2E+01	--
				TOTAL PATHWAY RISK :	2.1E-06	HAZARD INDEX : 3.0E-02		
						2.8E-02		

1/24/94

RISK23.XLS

RISK CALCULATION FOR INHALATION OF VAPORS FROM SURFACE WATER
(DOWNSTREAM RIVERDALE CREEK)
RECREATIONAL/ TRESPASSER CHILD/ADULT POPULATION
CURRENT AND FUTURE NO ACTION SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	Potential Carcinogens, Chronic Daily Intake (mg/kg-day)	Noncarcinogens, Chronic Daily Intake (mg/kg-day)	Inhalation Slope Factor (SF) 1/(mg/kg-day)	Inhalation Reference Dose (RfD) (mg/kg-day)	Inhalation Chemical-Specific Carcinogenic Risk	Inhalation Chemical-Specific Noncarcinogenic Hazard Quotient	% Carcinogenic Risk	% Noncarcino-genic Risk
Acetone	6.2E-06	1.5E-05	--	--	--	--	--	--
Aluminum	--	--	--	--	--	--	--	--
Arsenic	--	--	50	--	--	--	--	--
Barium	--	--	--	0.0001	--	--	--	--
Bis(2-ethylhexyl)phthalate	1.4E-05	3.2E-05	--	--	--	--	--	--
Butyl benzyl phthalate	8.9E-07	2.1E-06	--	--	--	--	--	--
2-Chlorophenol	7.1E-07	1.7E-06	--	--	--	--	--	--
Chromium (III)	--	--	--	--	--	--	--	--
Chromium (VI)	--	--	41	--	--	--	--	--
Copper	--	--	--	--	--	--	--	--
1,2-Dichloroethene (cis)	1.7E-04	3.9E-04	--	--	--	--	--	--
1,2-Dichloroethene (trans)	1.7E-04	3.9E-04	--	--	--	--	--	--
Dietyl phthalate	1.8E-07	4.2E-07	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--
Lead	--	--	--	--	--	--	--	--
Manganese	--	--	--	0.000014	--	--	--	--
Methylene chloride	3.2E-06	7.5E-06	0.0016	0.86	5.1E-09	8.7E-06	7.7E-02	2.6E+01
Nickel	--	--	--	--	--	--	--	--
n-Nitrosodiphenylamine	7.1E-07	1.7E-06	--	--	--	--	--	--
Pentachlorophenol	8.9E-07	2.1E-06	--	--	--	--	--	--
Toluene	1.1E-06	2.6E-06	--	0.11	--	2.4E-05	--	7.3E+01
Trichloroethene	6.1E-04	1.4E-03	0.006	--	3.7E-06	--	5.6E+01	--
Vinyl chloride	9.6E-06	2.2E-05	0.3	--	2.9E-06	--	4.4E+01	--
				TOTAL PATHWAY RISK :	6.6E-06	HAZARD INDEX :	3.3E-05	

RISK CALCULATION FOR DERMAL CONTACT WITH SEDIMENT
(DOWNSTREAM RIVERDALE CREEK)
RECREATIONAL/ TRESPASSER CHILD/ADULT POPULATION
CURRENT AND FUTURE NO ACTION SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	Potential Carcinogens, Chronic Daily Intake (Adminstered) (mg/kg-day)	Noncarcinogens, Chronic Daily Intake (Adminstered) (mg/kg-day)	Oral Slope Factor (SF) 1/(mg/kg-day)	Oral Reference Dose (RfD) (mg/kg-day)	Dermal Chemical-Specific Carcinogenic Risk	Dermal Chemical-Specific Noncarcinogenic Hazard Quotient	% Carcinogenic Risk	% Noncarcino-genic Risk
Bis(2-ethylhexyl)phthalate	2.4E-09	5.6E-09	0.014	0.02	3.4E-11	2.8E-07	3.4E+01	2.9E+00
Chromium (III)	1.5E-07	3.4E-07	--	1	--	3.4E-07	--	3.6E+00
Chromium (VI)	1.5E-07	3.4E-07	--	0.005	--	6.8E-05	--	8.8E+01
1,2-Dichloroethene (cis)	2.6E-09	6.1E-09	--	0.01	--	6.1E-07	--	7.9E-01
1,2-Dichloroethene (trans)	2.6E-09	6.1E-09	--	0.02	--	3.1E-07	--	3.3E+00
Lead	5.2E-08	1.2E-07	--	--	--	--	--	--
Methylene chloride	1.6E-10	3.8E-10	0.0075	0.06	1.2E-12	6.3E-09	1.2E+00	6.6E-02
Nickel	6.2E-08	1.4E-07	--	0.02	--	7.0E-06	--	7.4E+01
Trichloroethene	6.2E-09	1.4E-08	0.011	--	6.8E-11	--	6.8E+01	--
Zinc	2.0E-07	4.7E-07	--	0.3	--	1.6E-06	--	1.7E+01
				TOTAL PATHWAY RISK :	1.0E-10	HAZARD INDEX : 7.7E-05		
						9.5E-06		

RISK CALCULATION FOR DERMAL CONTACT WITH RESTRICTED ON-SITE SURFACE WATER
(SLUDGE LAGOON AND OUTFALL DITCH)
RECREATIONAL/ TRESPASSER CHILD/ADULT POPULATION
FUTURE SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	Potential Carcinogens, Chronic Daily Intake (Adminstered) (mg/kg-day)	Noncarcinogens, Chronic Daily Intake (Adminstered) (mg/kg-day)	Oral Slope Factor (SF) 1/(mg/kg-day)	Oral Reference Dose (RfD) (mg/kg-day)	Dermal Chemical-Specific Carcinogenic Risk	Dermal Chemical-Specific Noncarcinogenic Hazard Quotient	% Carcinogenic Risk	% Noncarcinogenic Risk
Barium	8.8E-07	2.0E-06	--	0.07	--	2.9E-05	--	2.6E-01
Chromium (III)	4.3E-06	1.0E-05	--	1	--	1.0E-05	--	9.1E-02
Chromium (VI)	2.1E-06	5.0E-06	--	0.005	--	1.0E-03	--	9.1E+00
Copper	8.6E-08	2.0E-07	--	0.037	--	5.4E-06	--	4.9E-02
1,2-Dichloroethene (cis)	9.3E-06	2.2E-05	--	0.01	--	2.2E-03	--	1.8E+01
1,2-Dichloroethene (trans)	9.3E-06	2.2E-05	--	0.02	--	1.1E-03	--	1.0E+01
Di-n-octyl phthalate	7.7E-05	1.8E-04	--	0.02	--	9.0E-03	--	8.2E+01
Iron	5.1E-06	1.2E-05	--	--	--	--	--	--
Lead	1.8E-06	4.2E-06	--	--	--	--	--	--
Manganese	2.6E-07	6.0E-07	--	0.005	--	1.2E-04	--	1.1E+00
Nickel	1.4E-07	3.3E-07	--	0.02	--	1.7E-05	--	1.5E-01
Toluene	8.6E-07	2.0E-06	--	0.2	--	1.0E-05	--	9.1E-02
1,1,1-Trichloroethane	1.1E-07	2.6E-07	--	--	--	--	--	--
Trichloroethene	2.0E-05	4.6E-05	0.011	--	2.2E-07	--	3.7E+01	--
Vinyl chloride	2.0E-07	4.7E-07	1.9	--	3.8E-07	--	6.3E+01	--
Xylene (total)	1.1E-06	2.5E-06	--	2	--	1.3E-06	--	1.2E-02
Zinc	1.3E-07	3.1E-07	--	0.3	--	1.0E-06	--	9.1E-03
					TOTAL PATHWAY RISK :	6.0E-07	HAZARD INDEX :	1.2E-02
								1.1E-02

RISK CALCULATION FOR INCIDENTAL INGESTION OF RESTRICTED ON-SITE SURFACE WATER
(SLUDGE LAGOON AND OUTFALL DITCH)
RECREATIONAL/ TRESPASSER CHILD/ADULT POPULATION
FUTURE SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	Potential Carcinogens, Chronic Daily Intake (mg/kg-day)	Noncarcinogens, Chronic Daily Intake (mg/kg-day)	Oral Slope Factor (SF) 1/(mg/kg-day)	Oral Reference Dose (RfD) (mg/kg-day)	Oral Chemical-Specific Carcinogenic Risk	Oral Chemical-Specific Noncarcinogenic Hazard Quotient	% Carcinogenic Risk	% Noncarcinogenic Risk
Barium	9.7E-06	2.3E-05	--	0.07	--	3.3E-04	--	2.4E+00
Chromium (III)	4.8E-05	1.1E-04	--	1	--	1.1E-04	--	7.9E-01
Chromium (VI)	2.4E-05	5.5E-05	--	0.005	--	1.1E-02	--	7.9E+01
Copper	9.4E-07	2.2E-06	--	0.037	--	5.9E-05	--	4.2E-01
1,2-Dichloroethene (cis)	1.0E-05	2.4E-05	--	0.01	--	2.4E-03	--	1.6E+01
1,2-Dichloroethene (trans)	1.0E-05	2.4E-05	--	0.02	--	1.2E-03	--	8.6E+00
Di-n-octyl phthalate	3.1E-08	7.3E-08	--	0.02	--	3.7E-06	--	2.6E-02
Iron	5.7E-05	1.3E-04	--	--	--	--	--	--
Lead	2.0E-05	4.6E-05	--	--	--	--	--	--
Manganese	2.8E-06	6.6E-06	--	0.005	--	1.3E-03	--	9.3E+00
Nickel	1.6E-06	3.6E-06	--	0.02	--	1.8E-04	--	1.3E+00
Toluene	2.1E-07	4.9E-07	--	0.2	--	2.5E-06	--	1.8E-02
1,1,1-Trichloroethane	7.1E-08	1.7E-07	--	--	--	--	--	--
Trichloroethene	1.4E-05	3.2E-05	0.011	--	1.5E-07	--	2.1E+01	--
Vinyl chloride	3.0E-07	7.1E-07	1.9	--	5.7E-07	--	7.9E+01	--
Xylene (total)	1.5E-07	3.4E-07	--	2	--	1.7E-07	--	1.2E-03
Zinc	1.4E-06	3.4E-06	--	0.3	--	1.1E-05	--	7.9E-02
					TOTAL PATHWAY RISK :	7.2E-07	HAZARD INDEX :	1.5E-02
								1.4E-02

RISK CALCULATION FOR INHALATION OF VAPORS FROM RESTRICTED ON-SITE SURFACE WATER
(SLUDGE LAGOON AND OUTFALL DITCH)
RECREATIONAL/ TRESPASSER CHILD/ADULT POPULATION
FUTURE SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	Potential Carcinogens, Chronic Daily Intake (mg/kg-day)	Noncarcinogens, Chronic Daily Intake (mg/kg-day)	Inhalation Slope Factor (SF) 1/(mg/kg-day)	Inhalation Reference Dose (RfD) (mg/kg-day)	Inhalation Chemical-Specific Carcinogenic Risk	Inhalation Chemical-Specific Noncarcinogenic Hazard Quotient	% Carcinogenic Risk	% Noncarcino-genic Risk
Barium	--	--	--	0.0001	--	--	--	--
Chromium (III)	--	--	--	--	--	--	--	--
Chromium (VI)	--	--	41	--	--	--	--	--
Copper	--	--	--	--	--	--	--	--
1,2-Dichloroethene (cis)	1.7E-04	4.1E-04	--	--	--	--	--	--
1,2-Dichloroethene (trans)	1.7E-04	4.1E-04	--	--	--	--	--	--
Di-n-octyl phthalate	5.3E-07	1.2E-06	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--
Lead	--	--	--	--	--	--	--	--
Manganese	--	--	--	0.000014	--	--	--	--
Nickel	--	--	--	--	--	--	--	--
Toluene	3.6E-06	8.3E-06	--	0.11	--	7.5E-05	--	1.0E+02
1,1,1-Trichloroethane	1.2E-06	2.8E-06	--	--	--	--	--	--
Trichloroethene	2.3E-04	5.4E-04	0.006	--	1.4E-06	--	4.7E+01	--
Vinyl chloride	5.2E-06	1.2E-05	0.3	--	1.6E-06	--	5.3E+01	--
Xylene (total)	2.5E-06	5.8E-06	--	--	--	--	--	--
Zinc	--	--	--	--	--	--	--	--
					TOTAL PATHWAY RISK :	3.0E-06	HAZARD INDEX :	7.5E-05

RISK CALCULATION FOR DERMAL CONTACT WITH RESTRICTED ON-SITE SEDIMENT
(SLUDGE LAGOON AND OUTFALL DITCH)
RECREATIONAL/ TRESPASSER CHILD/ADULT POPULATION
FUTURE SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	Potential Carcinogens, Chronic Daily Intake (Adminstered) (mg/kg-day)	Noncarcinogens, Chronic Daily Intake (Adminstered) (mg/kg-day)	Oral Slope Factor (SF) 1/(mg/kg-day)	Oral Reference Dose (RfD) (mg/kg-day)	Dermal Chemical-Specific Carcinogenic Risk	Dermal Chemical-Specific Noncarcinogenic Hazard Quotient	% Carcinogenic Risk	% Noncarcinogenic Risk
Acetone	1.7E-09	4.0E-09	--	0.1	--	4.0E-08	--	9.3E-04
Antimony	2.0E-07	4.6E-07	--	0.0004	--	1.2E-03	--	2.8E+01
Barium	8.2E-06	1.9E-05	--	0.07	--	2.7E-04	--	6.3E+00
Bis(2-ethylhexyl)phthalate	5.7E-06	1.3E-05	0.014	0.02	8.0E-08	6.5E-04	9.9E+01	1.5E+01
Chromium (III)	6.3E-04	1.5E-03	--	1	--	1.5E-03	--	3.5E+01
Chromium (VI)	6.3E-04	1.5E-03	--	0.005	--	3.0E-01	--	1.0E+02
Copper	4.2E-06	9.9E-06	--	0.037	--	2.7E-04	--	6.3E+00
1,2-Dichloroethene (cis)	4.8E-08	1.1E-07	--	0.01	--	1.1E-05	--	3.7E-03
1,2-Dichloroethene (trans)	4.8E-08	1.1E-07	--	0.02	--	5.5E-06	--	1.3E-01
Fluoranthene	2.1E-07	4.9E-07	--	0.04	--	1.2E-05	--	2.8E-01
Isophorone	1.1E-07	2.7E-07	0.00095	0.2	1.0E-10	1.4E-06	1.2E-01	3.3E-02
Lead	6.4E-06	1.5E-05	--	--	--	--	--	--
Nickel	2.8E-06	6.5E-06	--	0.02	--	3.3E-04	--	7.7E+00
Phenanthrene	1.4E-07	3.3E-07	--	--	--	--	--	--
Tetrachloroethene	5.2E-08	1.2E-07	--	0.01	--	1.2E-05	--	2.8E-01
Trichloroethene	9.1E-08	2.1E-07	0.011	--	1.0E-09	--	1.2E+00	--
Xylene (total)	1.0E-07	2.4E-07	--	2	--	1.2E-07	--	2.8E-03
Zinc	2.5E-06	5.8E-06	--	0.3	--	1.9E-05	--	4.4E-01
					TOTAL PATHWAY RISK : 8.1E-08	HAZARD INDEX : 3.0E-01		
						4.3E-03		

RISK CALCULATION FOR DERMAL CONTACT WITH RESTRICTED ON-SITE SURFACE WATER
(SLUDGE LAGOON AND OUTFALL DITCH)
OCCUPATIONAL MAINTENANCE WORKER POPULATION
CURRENT AND FUTURE NO ACTION SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	Potential Carcinogens, Chronic Daily Intake (Adminstered) (mg/kg-day)	Noncarcinogens, Chronic Daily Intake (Adminstered) (mg/kg-day)	Oral Slope Factor (SF) 1/(mg/kg-day)	Oral Reference Dose (RfD) (mg/kg-day)	Dermal Chemical-Specific Carcinogenic Risk	Dermal Chemical-Specific Noncarcinogenic Hazard Quotient	% Carcinogenic Risk	% Noncarcinogenic Risk
Barium	1.5E-06	4.2E-06	--	0.07	--	6.0E-05	--	2.5E-01
Chromium (III)	7.4E-06	2.1E-05	--	1	--	2.1E-05	--	8.8E-02
Chromium (VI)	3.6E-06	1.0E-05	--	0.005	--	2.0E-03	--	8.3E+00
Copper	1.5E-07	4.1E-07	--	0.037	--	1.1E-05	--	4.6E-02
1,2-Dichloroethene (cis)	1.6E-05	4.4E-05	--	0.01	--	4.4E-03	--	1.7E+01
1,2-Dichloroethene (trans)	1.6E-05	4.4E-05	--	0.02	--	2.2E-03	--	9.2E+00
Di-n-octyl phthalate	1.3E-04	3.7E-04	--	0.02	--	1.9E-02	--	7.9E+01
Iron	8.7E-06	2.4E-05	--	--	--	--	--	--
Lead	3.0E-06	8.5E-06	--	--	--	--	--	--
Manganese	4.4E-07	1.2E-06	--	0.005	--	2.4E-04	--	1.0E+00
Nickel	2.4E-07	6.7E-07	--	0.02	--	3.4E-05	--	1.4E-01
Toluene	1.5E-06	4.1E-06	--	0.2	--	2.1E-05	--	8.8E-02
1,1,1-Trichloroethane	1.9E-07	5.2E-07	--	--	--	--	--	--
Trichloroethene	3.4E-05	9.4E-05	0.011	--	3.7E-07	--	3.7E+01	--
Vinyl chloride	3.4E-07	9.6E-07	1.9	--	6.5E-07	--	6.5E+01	--
Xylene (total)	1.8E-06	5.1E-06	--	2	--	2.6E-06	--	1.1E-02
Zinc	2.2E-07	6.3E-07	--	0.3	--	2.1E-06	--	8.8E-03
					TOTAL PATHWAY RISK :	1.0E-06	HAZARD INDEX :	2.6E-02
								2.4E-02

RISK CALCULATION FOR INHALATION OF VAPORS FROM RESTRICTED ON-SITE SURFACE WATER
(SLUDGE LAGOON AND OUTFALL DITCH)
OCCUPATIONAL MAINTENANCE WORKER POPULATION
CURRENT AND FUTURE NO ACTION SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	Potential Carcinogens, Chronic Daily Intake (mg/kg-day)	Noncarcinogens, Chronic Daily Intake (mg/kg-day)	Inhalation Slope Factor (SF) 1/(mg/kg-day)	Inhalation Reference Dose (RfD) (mg/kg-day)	Inhalation Chemical-Specific Carcinogenic Risk	Inhalation Chemical-Specific Noncarcinogenic Hazard Quotient	% Carcinogenic Risk	% Noncarcinogenic Risk
Barium	--	--	--	0.0001	--	--	--	--
Chromium (III)	--	--	--	--	--	--	--	--
Chromium (VI)	--	--	41	--	--	--	--	--
Copper	--	--	--	--	--	--	--	--
1,2-Dichloroethene (cis)	1.1E-04	3.2E-04	--	--	--	--	--	--
1,2-Dichloroethene (trans)	1.1E-04	3.2E-04	--	--	--	--	--	--
Di-n-octyl phthalate	3.5E-07	9.7E-07	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--
Lead	--	--	--	--	--	--	--	--
Manganese	--	--	--	0.000014	--	--	--	--
Nickel	--	--	--	--	--	--	--	--
Toluene	2.3E-06	6.5E-06	--	0.11	--	5.9E-05	--	1.0E+02
1,1,1-Trichloroethane	7.9E-07	2.2E-06	--	--	--	--	--	--
Trichloroethene	1.5E-04	4.2E-04	0.006	--	9.0E-07	--	4.7E+01	--
Vinyl chloride	3.4E-06	9.4E-06	0.3	--	1.0E-06	--	5.3E+01	--
Xylene (total)	1.6E-06	4.5E-06	--	--	--	--	--	--
Zinc	--	--	--	--	--	--	--	--
					TOTAL PATHWAY RISK :	1.9E-06	HAZARD INDEX :	5.9E-05

RISK CALCULATION FOR DERMAL CONTACT WITH RESTRICTED ON-SITE SEDIMENT
(SLUDGE LAGOON AND OUTFALL DITCH)
OCCUPATIONAL MAINTENANCE WORKER POPULATION
CURRENT AND FUTURE NO ACTION SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	Potential Carcinogens, Chronic Daily Intake (Adminstered) (mg/kg-day)	Noncarcinogens, Chronic Daily Intake (Adminstered) (mg/kg-day)	Oral Slope Factor (SF) 1/(mg/kg-day)	Oral Reference Dose (RfD) (mg/kg-day)	Dermal Chemical-Specific Carcinogenic Risk	Dermal Chemical-Specific Noncarcinogenic Hazard Quotient	% Carcinogenic Risk	% Noncarcinogenic Risk
Acetone	1.5E-09	4.1E-09	--	0.1	--	4.1E-08	--	9.5E-04
Antimony	1.7E-07	4.7E-07	--	0.0004	--	1.2E-03	--	2.8E+01
Barium	7.0E-06	2.0E-05	--	0.07	--	2.9E-04	--	6.7E+00
Bis(2-ethylhexyl)phthalate	4.9E-06	1.4E-05	0.014	0.02	6.9E-08	7.0E-04	9.9E+01	1.6E+01
Chromium (III)	5.4E-04	1.5E-03	--	1	--	1.5E-03	--	3.5E+01
Chromium (VI)	5.4E-04	1.5E-03	--	0.005	--	3.0E-01	--	1.0E+02
Copper	3.6E-06	1.0E-05	--	0.037	--	2.7E-04	--	6.3E+00
1,2-Dichloroethene (cis)	4.1E-08	1.1E-07	--	0.01	--	1.1E-05	--	3.7E-03
1,2-Dichloroethene (trans)	4.1E-08	1.1E-07	--	0.02	--	5.5E-06	--	1.3E-01
Fluoranthene	1.8E-07	5.0E-07	--	0.04	--	1.3E-05	--	3.0E-01
Isophorone	9.7E-08	2.7E-07	0.00095	0.2	9.2E-11	1.4E-06	1.3E-01	3.3E-02
Lead	5.5E-06	1.5E-05	--	--	--	--	--	--
Nickel	2.4E-06	6.6E-06	--	0.02	--	3.3E-04	--	7.7E+00
Phenanthrene	1.2E-07	3.4E-07	--	--	--	--	--	--
Tetrachloroethene	4.5E-08	1.2E-07	--	0.01	--	1.2E-05	--	2.8E-01
Trichloroethene	7.7E-08	2.2E-07	0.011	--	8.5E-10	--	1.2E+00	--
Xylene (total)	8.9E-08	2.5E-07	--	2	--	1.3E-07	--	3.0E-03
Zinc	2.1E-06	5.9E-06	--	0.3	--	2.0E-05	--	4.7E-01
					TOTAL PATHWAY RISK :	7.0E-08	HAZARD INDEX :	3.0E-01
								4.3E-03

RISK CALCULATION FOR INHALATION OF VAPORS FROM RESTRICTED ON-SITE SEDIMENT
(SLUDGE LAGOON AND OUTFALL DITCH)
OCCUPATIONAL MAINTENANCE WORKER POPULATION
CURRENT AND FUTURE NO ACTION SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	Potential Carcinogens, Chronic Daily Intake (mg/kg-day)	Noncarcinogens, Chronic Daily Intake (mg/kg-day)	Inhalation Slope Factor (SF) 1/(mg/kg-day)	Inhalation Reference Dose (RfD) (mg/kg-day)	Inhalation Chemical-Specific Carcinogenic Risk	Inhalation Chemical-Specific Noncarcinogenic Hazard Quotient	% Carcinogenic Risk	% Noncarcinogenic Risk
Acetone	3.9E-07	1.1E-06	--	--	--	--	--	--
Antimony	0.0E+00	0.0E+00	--	--	--	--	--	--
Barium	0.0E+00	0.0E+00	--	0.0001	--	--	--	--
Bis(2-ethylhexyl)phthalate	0.0E+00	0.0E+00	--	--	--	--	--	--
Chromium (III)	0.0E+00	0.0E+00	--	--	--	--	--	--
Chromium (VI)	0.0E+00	0.0E+00	41	--	--	--	--	--
Copper	0.0E+00	0.0E+00	--	--	--	--	--	--
1,2-Dichloroethene (cis)	1.0E-05	2.9E-05	--	--	--	--	--	--
1,2-Dichloroethene (trans)	1.0E-05	2.9E-05	--	--	--	--	--	--
Fluoranthene	0.0E+00	0.0E+00	--	--	--	--	--	--
Isophorone	0.0E+00	0.0E+00	--	--	--	--	--	--
Lead	0.0E+00	0.0E+00	--	--	--	--	--	--
Nickel	0.0E+00	0.0E+00	--	--	--	--	--	--
Phenanthrene	2.1E-07	5.9E-07	--	--	--	--	--	--
Tetrachloroethene	8.6E-06	2.4E-05	--	--	--	--	--	--
Trichloroethene	2.2E-05	6.2E-05	0.006	--	1.3E-07	--	1.0E+02	--
Xylene (total)	1.3E-05	3.5E-05	--	--	--	--	--	--
Zinc	0.0E+00	0.0E+00	--	--	--	--	--	--
					TOTAL PATHWAY RISK :	1.3E-07	HAZARD INDEX :	0.0E+00

RISK CALCULATION FOR DERMAL CONTACT WITH ON-SITE SURFACE WATER
(SITE DITCHES AND SWAMP)
RECREATIONAL/ TRESPASSER CHILD/ADULT POPULATION
FUTURE SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	Potential Carcinogens, Chronic Daily Intake (Adminstered) (mg/kg-day)	Noncarcinogens, Chronic Daily Intake (Adminstered) (mg/kg-day)	Oral Slope Factor (SF) 1/(mg/kg-day)	Oral Reference Dose (RfD) (mg/kg-day)	Dermal Chemical-Specific Carcinogenic Risk	Dermal Chemical-Specific Noncarcinogenic Hazard Quotient	% Carcinogenic Risk	% Noncarcino-genic Risk
Acetone	7.2E-08	1.7E-07	--	0.1	--	1.7E-06	--	6.8E-02
Carbon tetrachloride	7.3E-07	1.7E-06	0.13	0.0007	9.5E-08	2.4E-03	9.8E+01	9.6E+01
Chromium (III)	2.2E-08	5.1E-08	--	1	--	5.1E-08	--	2.0E-03
Chromium (VI)	1.1E-08	2.5E-08	--	0.005	--	5.0E-06	--	2.0E-01
1,2-Dichloroethene (cis)	1.3E-07	3.1E-07	--	0.01	--	3.1E-05	--	1.2E+00
1,2-Dichloroethene (trans)	1.3E-07	3.1E-07	--	0.02	--	1.6E-05	--	6.4E-01
Iron	8.5E-05	2.0E-04	--	--	--	--	--	--
Lead	1.1E-07	2.7E-07	--	--	--	--	--	--
Nickel	1.5E-07	3.5E-07	--	0.02	--	1.8E-05	--	7.2E-01
1,1,1-Trichloroethane	2.8E-07	6.4E-07	--	--	--	--	--	--
Trichloroethene	2.0E-07	4.6E-07	0.011	--	2.2E-09	--	2.3E+00	--
Trichlorofluoromethane	1.5E-06	3.4E-06	--	0.3	--	1.1E-05	--	4.4E-01
Zinc	7.5E-07	1.8E-06	--	0.3	--	6.0E-06	--	2.4E-01
					TOTAL PATHWAY RISK :	9.7E-08	HAZARD INDEX : 2.5E-03	
							2.5E-03	

RISK CALCULATION FOR INCIDENTAL INGESTION OF ON-SITE SURFACE WATER
(SITE DITCHES AND SWAMP)
RECREATIONAL/ TRESPASSER CHILD/ADULT POPULATION
FUTURE SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	Potential Carcinogens, Chronic Daily Intake (mg/kg-day)	Noncarcinogens, Chronic Daily Intake (mg/kg-day)	Oral Slope Factor (SF) 1/(mg/kg-day)	Oral Reference Dose (RfD) (mg/kg-day)	Oral Chemical-Specific Carcinogenic Risk	Oral Chemical-Specific Noncarcinogenic Hazard Quotient	% Carcinogenic Risk	% Noncarcinogenic Risk
Acetone	1.4E-06	3.2E-06	--	0.1	--	3.2E-05	--	2.0E+00
Carbon tetrachloride	3.7E-07	8.6E-07	0.13	0.0007	4.8E-08	1.2E-03	9.6E+01	7.5E+01
Chromium (III)	2.4E-07	5.6E-07	--	1	--	5.6E-07	--	3.5E-02
Chromium (VI)	1.2E-07	2.7E-07	--	0.005	--	5.4E-05	--	3.4E+00
1,2-Dichloroethene (cis)	1.5E-07	3.4E-07	--	0.01	--	3.4E-05	--	2.1E+00
1,2-Dichloroethene (trans)	1.5E-07	3.4E-07	--	0.02	--	1.7E-05	--	1.1E+00
Iron	9.4E-04	2.2E-03	--	--	--	--	--	--
Lead	1.3E-06	2.9E-06	--	--	--	--	--	--
Nickel	1.6E-06	3.8E-06	--	0.02	--	1.9E-04	--	1.2E+01
1,1,1-Trichloroethane	1.8E-07	4.2E-07	--	--	--	--	--	--
Trichloroethene	1.4E-07	3.2E-07	0.011	--	1.5E-09	--	3.0E+00	--
Trichlorofluoromethane	9.4E-07	2.2E-06	--	0.3	--	7.3E-06	--	4.6E-01
Zinc	8.3E-06	1.9E-05	--	0.3	--	6.3E-05	--	3.9E+00
					TOTAL PATHWAY RISK :	5.0E-08	HAZARD INDEX :	1.6E-03
								1.6E-03

RISK CALCULATION FOR INHALATION OF VAPORS FROM ON-SITE SURFACE WATER
(SITE DITCHES AND SWAMP)
RECREATIONAL/ TRESPASSER CHILD/ADULT POPULATION
FUTURE SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	Potential Carcinogens, Chronic Daily Intake (mg/kg-day)	Noncarcinogens, Chronic Daily Intake (mg/kg-day)	Inhalation Slope Factor (SF) 1/(mg/kg-day)	Inhalation Reference Dose (RfD) (mg/kg-day)	Inhalation Chemical-Specific Carcinogenic Risk	Inhalation Chemical-Specific Noncarcinogenic Hazard Quotient	% Carcinogenic Risk	% Noncarcino-genic Risk
Acetone	2.3E-05	5.4E-05	--	--	--	--	--	--
Carbon tetrachloride	6.2E-06	1.5E-05	0.053	--	3.3E-07	--	9.7E+01	--
Chromium (III)	--	--	--	--	--	--	--	--
Chromium (VI)	--	--	41	--	--	--	--	--
1,2-Dichloroethene (cis)	2.5E-06	5.8E-06	--	--	--	--	--	--
1,2-Dichloroethene (trans)	2.5E-06	5.8E-06	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--
Lead	--	--	--	--	--	--	--	--
Nickel	--	--	--	--	--	--	--	--
1,1,1-Trichloroethane	3.0E-06	7.1E-06	--	--	--	--	--	--
Trichloroethene	2.3E-06	5.4E-06	0.006	--	1.4E-08	--	4.1E+00	--
Trichlorofluoromethane	1.6E-05	3.7E-05	--	0.2	--	1.9E-04	--	1.0E+02
Zinc	--	--	--	--	--	--	--	--
					TOTAL PATHWAY RISK :	3.4E-07	HAZARD INDEX :	1.9E-04

RISK CALCULATION FOR DERMAL CONTACT WITH ON-SITE SEDIMENT
(SITE DITCHES AND SWAMP)
RECREATIONAL/ TRESPASSER CHILD/ADULT POPULATION
FUTURE SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	Potential Carcinogens, Chronic Daily Intake (Adminstered) (mg/kg-day)	Noncarcinogens, Chronic Daily Intake (Adminstered) (mg/kg-day)	Oral Slope Factor (SF) 1/(mg/kg-day)	Oral Reference Dose (RfD) (mg/kg-day)	Dermal Chemical-Specific Carcinogenic Risk	Dermal Chemical-Specific Noncarcinogenic Hazard Quotient	% Carcinogenic Risk	% Noncarcino-genic Risk
Acetone	3.2E-09	7.6E-09	--	0.1	--	7.6E-08	--	6.3E-01
Chromium (III)	1.7E-06	4.0E-06	--	1	--	4.0E-06	--	3.3E+01
Chromium (VI)	1.7E-06	4.0E-06	--	0.005	--	8.0E-04	--	9.9E+01
Lead	4.8E-07	1.1E-06	--	--	--	--	--	--
Zinc	1.1E-06	2.5E-06	--	0.3	--	8.3E-06	--	6.9E+01
				TOTAL PATHWAY RISK :	0.0E+00	HAZARD INDEX :	8.1E-04	
							1.2E-05	

RISK CALCULATION FOR DERMAL CONTACT WITH ON-SITE SURFACE WATER
(SITE DITCHES AND SWAMP)
OCCUPATIONAL MAINTENANCE WORKER POPULATION
CURRENT AND FUTURE NO ACTION SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	Potential Carcinogens, Chronic Daily Intake (Adminstered) (mg/kg-day)	Noncarcinogens, Chronic Daily Intake (Adminstered) (mg/kg-day)	Oral Slope Factor (SF) 1/(mg/kg-day)	Oral Reference Dose (RfD) (mg/kg-day)	Dermal Chemical-Specific Carcinogenic Risk	Dermal Chemical-Specific Noncarcinogenic Hazard Quotient	% Carcinogenic Risk	% Noncarcino-genic Risk
Acetone	1.2E-07	3.4E-07	--	0.1	--	3.4E-06	--	6.7E-02
Carbon tetrachloride	1.2E-06	3.5E-06	0.13	0.0007	1.6E-07	5.0E-03	1.0E+02	9.8E+01
Chromium (III)	3.7E-08	1.0E-07	--	1	--	1.0E-07	--	2.0E-03
Chromium (VI)	1.8E-08	5.1E-08	--	0.005	--	1.0E-05	--	2.0E-01
1,2-Dichloroethene (cis)	2.3E-07	6.4E-07	--	0.01	--	6.4E-05	--	1.3E+00
1,2-Dichloroethene (trans)	2.3E-07	6.4E-07	--	0.02	--	3.2E-05	--	6.3E-01
Iron	1.4E-04	4.1E-04	--	--	--	--	--	--
Lead	1.9E-07	5.4E-07	--	--	--	--	--	--
Nickel	2.5E-07	7.1E-07	--	0.02	--	3.6E-05	--	7.1E-01
1,1,1-Trichloroethane	4.7E-07	1.3E-06	--	--	--	--	--	--
Trichloroethene	3.4E-07	9.4E-07	0.011	--	3.7E-09	--	2.3E+00	--
Trichlorofluoromethane	2.5E-06	6.9E-06	--	0.3	--	2.3E-05	--	4.5E-01
Zinc	1.3E-06	3.6E-06	--	0.3	--	1.2E-05	--	2.4E-01
					TOTAL PATHWAY RISK :	1.6E-07	HAZARD INDEX :	5.1E-03
								5.1E-03

RISK CALCULATION FOR INHALATION OF VAPORS FROM ON-SITE SURFACE WATER
(SITE DITCHES AND SWAMP)
OCCUPATIONAL MAINTENANCE WORKER POPULATION
CURRENT AND FUTURE NO ACTION SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	Potential Carcinogens, Chronic Daily Intake (mg/kg-day)	Noncarcinogens, Chronic Daily Intake (mg/kg-day)	Inhalation Slope Factor (SF) 1/(mg/kg-day)	Inhalation Reference Dose (RfD) (mg/kg-day)	Inhalation Chemical-Specific Carcinogenic Risk	Inhalation Chemical-Specific Noncarcinogenic Hazard Quotient	% Carcinogenic Risk	% Noncarcinogenic Risk
Acetone	1.5E-05	4.2E-05	--	--	--	--	--	--
Carbon tetrachloride	4.1E-06	1.1E-05	0.053	--	2.2E-07	--	9.6E+01	--
Chromium (III)	--	--	--	--	--	--	--	--
Chromium (VI)	--	--	41	--	--	--	--	--
1,2-Dichloroethene (cis)	1.6E-06	4.5E-06	--	--	--	--	--	--
1,2-Dichloroethene (trans)	1.6E-06	4.5E-06	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--
Lead	--	--	--	--	--	--	--	--
Nickel	--	--	--	--	--	--	--	--
1,1,1-Trichloroethane	2.0E-06	5.5E-06	--	--	--	--	--	--
Trichloroethene	1.5E-06	4.2E-06	0.006	--	9.0E-09	--	3.9E+00	--
Trichlorofluoromethane	1.0E-05	2.9E-05	--	0.2	--	1.5E-04	--	1.0E+02
Zinc	--	--	--	--	--	--	--	--
					TOTAL PATHWAY RISK :	2.3E-07	HAZARD INDEX :	1.5E-04

RISK CALCULATION FOR DERMAL CONTACT WITH ON-SITE SEDIMENT
(SITE DITCHES AND SWAMP)
OCCUPATIONAL MAINTENANCE WORKER POPULATION
CURRENT AND FUTURE NO ACTION SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	Potential Carcinogens, Chronic Daily Intake (Adminstered) (mg/kg-day)	Noncarcinogens, Chronic Daily Intake (Adminstered) (mg/kg-day)	Oral Slope Factor (SF) 1/(mg/kg-day)	Oral Reference Dose (RfD) (mg/kg-day)	Dermal Chemical-Specific Carcinogenic Risk	Dermal Chemical-Specific Noncarcinogenic Hazard Quotient	% Carcinogenic Risk	% Noncarcinogenic Risk
Acetone	2.8E-09	7.7E-09	--	0.1	--	7.7E-08	--	6.4E-01
Chromium (III)	1.5E-06	4.1E-06	--	1	--	4.1E-06	--	3.4E+01
Chromium (VI)	1.5E-06	4.1E-06	--	0.005	--	8.2E-04	--	9.9E+01
Lead	4.1E-07	1.1E-06	--	--	--	--	--	--
Zinc	9.0E-07	2.5E-06	--	0.3	--	8.3E-06	--	6.9E+01
					TOTAL PATHWAY RISK :	0.0E+00	HAZARD INDEX :	8.3E-04
								1.2E-05

RISK CALCULATION FOR INHALATION OF VAPORS FROM ON-SITE SEDIMENT
(SITE DITCHES AND SWAMP)
OCCUPATIONAL MAINTENANCE WORKER POPULATION
CURRENT AND FUTURE NO ACTION SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	Potential Carcinogens, Chronic Daily Intake (mg/kg-day)	Noncarcinogens, Chronic Daily Intake (mg/kg-day)	Inhalation Slope Factor (SF) 1/(mg/kg-day)	Inhalation Reference Dose (RfD) (mg/kg-day)	Inhalation Chemical-Specific Carcinogenic Risk	Inhalation Chemical-Specific Noncarcinogenic Hazard Quotient	% Carcinogenic Risk	% Noncarcino-genic Risk
Acetone	1.6E-06	4.6E-06	--	--	--	--	--	--
Chromium (III)	0.0E+00	0.0E+00	--	--	--	--	--	--
Chromium (VI)	0.0E+00	0.0E+00	41	--	0.0E+00	--	--	--
Lead	0.0E+00	0.0E+00	--	--	--	--	--	--
Zinc	0.0E+00	0.0E+00	--	--	--	--	--	--
					TOTAL PATHWAY RISK : 0.0E+00	HAZARD INDEX : 0.0E+00		

ATTACHMENT VIII

RISK-BASED ACTION LEVELS

RISK-BASED ACTION LEVELS FOR GROUNDWATER FROM UPPERMOST AQUIFER
RESIDENTIAL CHILD/ADULT POPULATION
FUTURE SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	C Action Level (mg/L)	NC Action Level (mg/L)	IF (L-yr/day-kg)	EF (day/yr)	NC AT (days)	C AT (days)	Oral Slope Factor (SF) 1/(mg/kg-day)	Oral Reference Dose (RfD) (mg/kg-day)	Target Risk (TR)	Target Hazard Index (THI)
Acetone	--	2.9E+00	1.09	350	10,950	25,550	--	0.1	1.0E-05	1.0
Arsenic*	3.7E-05	8.6E-03	1.09	350	10,950	25,550	1.8	0.0003	1.0E-06	1.0
Benzene*	2.3E-03	--	1.09	350	10,950	25,550	0.029	--	1.0E-06	1.0
Bis(2-ethylhexyl)phthalate*	4.8E-03	5.7E-01	1.09	350	10,950	25,550	0.014	0.02	1.0E-06	1.0
Chromium (III)	--	2.9E+01	1.09	350	10,950	25,550	--	1	1.0E-06	1.0
Chromium (VI)*	--	1.4E-01	1.09	350	10,950	25,550	--	0.005	1.0E-06	1.0
4,4'-DDE*	2.0E-04	--	1.09	350	10,950	25,550	0.34	--	1.0E-06	1.0
1,4-Dichlorobenzene	2.8E-03	--	1.09	350	10,950	25,550	0.024	--	1.0E-06	1.0
1,2-Dichloroethane*	7.4E-04	--	1.09	350	10,950	25,550	0.091	--	1.0E-06	1.0
1,1-Dichloroethene*	1.1E-03	2.6E-01	1.09	350	10,950	25,550	0.6	0.009	1.0E-05	1.0
1,2-Dichloroethene (cis)*	--	2.9E-01	1.09	350	10,950	25,550	--	0.01	1.0E-05	1.0
1,2-Dichloroethene (trans)*	--	5.7E-01	1.09	350	10,950	25,550	--	0.02	1.0E-05	1.0
Ethyl benzene	--	2.9E+00	1.09	350	10,950	25,550	--	0.1	1.0E-05	1.0
Fluorene	--	1.1E+00	1.09	350	10,950	25,550	--	0.04	1.0E-05	1.0
2-Methylnaphthalene	--	--	1.09	350	10,950	25,550	--	--	1.0E-05	1.0
4-Methyl-2-pentanone	--	1.4E+00	1.09	350	10,950	25,550	--	0.05	1.0E-05	1.0
Naphthalene	--	--	1.09	350	10,950	25,550	--	--	1.0E-05	1.0
Nickel	--	5.7E-01	1.09	350	10,950	25,550	--	0.02	1.0E-05	1.0
Phenanthrene	--	--	1.09	350	10,950	25,550	--	--	1.0E-05	1.0
Phenol	--	1.7E+01	1.09	350	10,950	25,550	--	0.6	1.0E-05	1.0
Tetrachloroethene*	--	2.9E-01	1.09	350	10,950	25,550	--	0.01	1.0E-05	1.0
Toluene*	--	5.7E+00	1.09	350	10,950	25,550	--	0.2	1.0E-05	1.0
1,2,4-Trichlorobenzene	--	2.9E-01	1.09	350	10,950	25,550	--	0.01	1.0E-05	1.0
1,1,1-Trichloroethane	--	--	1.09	350	10,950	25,550	--	--	1.0E-05	1.0
1,1,2-Trichloroethane*	1.2E-02	1.1E-01	1.09	350	10,950	25,550	0.057	0.004	1.0E-05	1.0
Trichloroethene*	6.1E-03	--	1.09	350	10,950	25,550	0.011	--	1.0E-06	1.0

RISK-BASED ACTION LEVELS FOR GROUNDWATER FROM UPPERMOST AQUIFER
RESIDENTIAL CHILD/ADULT POPULATION
FUTURE SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	C Action Level (mg/L)	NC Action Level (mg/L)	IF (L-yr/day-kg)	EF (day/yr)	NC AT (days)	C AT (days)	Oral Slope Factor (SF) 1/(mg/kg-day)	Oral Reference Dose (RfD) (mg/kg-day)	Target Risk (TR)	Target Hazard Index (THI)
Vinyl chloride*	3.5E-05	--	1.09	350	10,950	25,550	1.9	--	1.0E-06	1.0
Xylene (total)	--	5.7E+01	1.09	350	10,950	25,550	--	2	1.0E-05	1.0

An asterisk (*) indicates a constituent selected through the risk-based action level selection process presented in Section A7.0.

Note: These risk-based action levels are based on the ingestion exposure route.

RISK-BASED ACTION LEVELS FOR ON-SITE SURFICIAL SOILS (0.0 - 0.5 FEET)
(INTERIM ACTION AREA)
OCCUPATIONAL MAINTENANCE WORKER POPULATION
CURRENT AND FUTURE NO ACTION SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	C Action Level (mg/kg)	NC Action Level (mg/kg)	EF (days/yr)	ED (yr)	BW (kg)	NC AT (days)	C AT (days)	PEF (m^3/kg)	VF (m^3/kg)	IR (m^3/hr)	ET (hr/day)	Inhalation Slope Factor (SF) 1/(mg/kg-day)	Inhalation Reference Dose (RfD) (mg/kg-day)	Target Risk (TR)	Target Hazard Index (THI)
Acetone	--	--	50	25	70	9,125	25,550	0.00E+00	1.20E+02	0.83	4	--	--	1.0E-05	1.0
Chromium (III)	--	--	50	25	70	9,125	25,550	0.00E+00	NA	0.83	4	--	--	1.0E-05	1.0
Chromium (VI)	--	--	50	25	70	9,125	25,550	0.00E+00	NA	0.83	4	41	--	1.0E-06	1.0
Cyanide	--	--	50	25	70	9,125	25,550	0.00E+00	NA	0.83	4	--	--	1.0E-05	1.0
1,2-Dichloroethene (cis)	--	--	50	25	70	9,125	25,550	0.00E+00	1.20E+02	0.83	4	--	--	1.0E-05	1.0
1,2-Dichloroethene (trans)	--	--	50	25	70	9,125	25,550	0.00E+00	1.20E+02	0.83	4	--	--	1.0E-05	1.0
Ethyl benzene	--	7.6E+03	50	25	70	9,125	25,550	0.00E+00	1.70E+02	0.83	4	--	0.29	1.0E-05	1.0
Lead	--	--	50	25	70	9,125	25,550	0.00E+00	NA	0.83	4	--	--	1.0E-06	1.0
2-Methylnaphthalene	--	--	50	25	70	9,125	25,550	0.00E+00	NA	0.83	4	--	--	1.0E-05	1.0
Naphthalene	--	--	50	25	70	9,125	25,550	0.00E+00	1.70E+03	0.83	4	--	--	1.0E-05	1.0
Nickel	--	--	50	25	70	9,125	25,550	0.00E+00	NA	0.83	4	--	--	1.0E-05	1.0
1,1,2,2-Tetrachloroethane	1.0E+01	--	50	25	70	9,125	25,550	0.00E+00	4.80E+02	0.83	4	0.2	--	1.0E-05	1.0
Tetrachloroethene	--	--	50	25	70	9,125	25,550	0.00E+00	1.70E+02	0.83	4	--	--	1.0E-05	1.0
Toluene	--	1.7E+03	50	25	70	9,125	25,550	0.00E+00	9.80E+01	0.83	4	--	0.11	1.0E-05	1.0
Trichloroethene*	7.9E+00	--	50	25	70	9,125	25,550	0.00E+00	1.10E+02	0.83	4	0.006	--	1.0E-06	1.0
Xylene (total)	--	--	50	25	70	9,125	25,550	0.00E+00	2.20E+02	0.83	4	--	--	1.0E-05	1.0
Zinc	--	--	50	25	70	9,125	25,550	0.00E+00	NA	0.83	4	--	--	1.0E-05	1.0

An asterisk (*) indicates a constituent selected through the risk-based action level selection process presented in Section A7.0.

Note: These risk-based action levels are based on the inhalation exposure route.

RISK-BASED ACTION LEVELS FOR ON-SITE SHALLOW SOILS (0 - 8 FEET)
(SOILS UNDER PAVEMENT)
OCCUPATIONAL CONSTRUCTION WORKER POPULATION
FUTURE SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	C Action Level (mg/kg)	NC Action Level (mg/kg)	EF (days/yr)	ED (yr)	BW (kg)	NC AT (days)	C AT (days)	PEF (m^3/kg)	VF (m^3/kg)	IR (m^3/hr)	ET (hr/day)	Inhalation Slope Factor (SF) 1/(mg/kg-day)	Inhalation Reference Dose (RfD) (mg/kg-day)	CF (kg/mg)	IR (mg/day)	IF (unitless)	Oral Slope Factor (SF) 1/(mg/kg-day)	Oral Reference Dose (RfD) (mg/kg-day)	Target Risk (TR)	Target Hazard Index (THI)
Acetone	–	2.1E+04	250	1	70	365	25550	2.46E+09	1.20E+02	0.83	8	–	–	1.0E-06	480	1.0	–	0.1	1.0E-05	1.0
Arsenic*	8.3E+00	6.4E+01	250	1	70	365	25550	2.46E+09	NA	0.83	8	50	–	1.0E-06	480	1.0	1.8	0.0003	1.0E-06	1.0
Chromium (III)	–	2.1E+05	250	1	70	365	25550	2.46E+09	NA	0.83	8	–	–	1.0E-06	480	1.0	–	1	1.0E-05	1.0
Chromium (VI)	6.5E+04	1.1E+03	250	1	70	365	25550	2.46E+09	NA	0.83	8	41	–	1.0E-06	480	1.0	–	0.005	1.0E-06	1.0
1,2-Dichloroethene (cis)	–	2.1E+03	250	1	70	365	25550	2.46E+09	1.20E+02	0.83	8	–	–	1.0E-06	480	1.0	–	0.01	1.0E-05	1.0
1,2-Dichloroethene (trans)	–	4.3E+03	250	1	70	365	25550	2.46E+09	1.20E+02	0.83	8	–	–	1.0E-06	480	1.0	–	0.02	1.0E-05	1.0
Lead	–	–	250	1	70	365	25550	2.46E+09	NA	0.83	8	–	–	1.0E-06	480	1.0	–	–	1.0E-06	1.0
Methylene chloride	5.0E+01	9.3E+02	250	1	70	365	25550	2.46E+09	7.60E+01	0.83	8	0.0016	0.86	1.0E-06	480	1.0	0.0075	0.06	1.0E-06	1.0
Toluene	–	1.7E+02	250	1	70	365	25550	2.46E+09	1.00E+02	0.83	8	–	0.11	1.0E-06	480	1.0	–	0.2	1.0E-05	1.0
Trichloroethene*	2.1E+01	–	250	1	70	365	25550	2.46E+09	1.20E+02	0.83	8	0.006	–	1.0E-06	480	1.0	0.011	–	1.0E-06	1.0
Xylene (total)	–	4.3E+05	250	1	70	365	25550	2.46E+09	2.30E+02	0.83	8	–	–	1.0E-06	480	1.0	–	2	1.0E-05	1.0
Zinc	–	6.4E+04	250	1	70	365	25550	2.46E+09	NA	0.83	8	–	–	1.0E-06	480	1.0	–	0.3	1.0E-05	1.0

An asterisk (*) indicates a constituent selected through the risk-based action level selection process presented in Section A7.0.

Note: These risk-based action levels are based on the incidental ingestion and inhalation exposure routes.

RISK-BASED ACTION LEVELS FOR SURFACE WATER
(DOWNSTREAM RIVERDALE CREEK)
RECREATIONAL/ TRESPASSER CHILD/ADULT POPULATION
CURRENT AND FUTURE NO ACTION SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	C Action Level (mg/L)	NC Action Level (mg/L)	PC (cm/hr)	ET (hr/day)	DF (cm²/kg)	CF (L/cm³)	NC AT (days)	C AT (days)	IF (L-day/hr-kg)	BT (hr/day)	Oral Slope Factor (SF) 1/(mg/kg-day)	Oral Reference Dose (RfD) (mg/kg-day)	K (L/m³)	IHF (m³-yr/hr-day)	ET (hr/day)	EF (day/yr)	Inhalation Slope Factor (SF) 1/(mg/kg-day)	Inhalation Reference Dose (RfD) (mg/kg-day)	Target Risk (TR)	Target Hazard Index (THI)
Acetone	–	3.9E+02	0.00058	2	121,734	0.001	10,950	25,550	1.34	2	–	0.1	0.5	0.911	2	50	–	–	1.0E-05	1.0
Aluminum	–	–	0.001	2	121,734	0.001	10,950	25,550	1.34	2	–	–	0.5	0.911	2	50	–	–	1.0E-05	1.0
Arsenic*	1.1E-05	1.1E+00	0.001	2	121,734	0.001	10,950	25,550	1.34	2	1.8	0.0003	0.5	0.911	2	50	50	–	1.0E-06	1.0
Barium	–	2.4E-02	0.001	2	121,734	0.001	10,950	25,550	1.34	2	–	0.07	0.5	0.911	2	50	–	0.0001	1.0E-05	1.0
Bis(2-ethylhexyl)phthalate	1.7E-01	2.0E+01	0.033	2	121,734	0.001	10,950	25,550	1.34	2	0.014	0.02	0.5	0.911	2	50	–	–	1.0E-06	1.0
Butyl benzyl phthalate	–	1.1E+02	0.072	2	121,734	0.001	10,950	25,550	1.34	2	–	0.2	0.5	0.911	2	50	–	–	1.0E-05	1.0
2-Chlorophenol	–	1.0E+01	0.011	2	121,734	0.001	10,950	25,550	1.34	2	–	0.005	0.5	0.911	2	50	–	–	1.0E-05	1.0
Chromium (III)	–	3.7E+03	0.001	2	121,734	0.001	10,950	25,550	1.34	2	–	1	0.5	0.911	2	50	–	–	1.0E-05	1.0
Chromium (VI)	–	1.9E+01	0.001	2	121,734	0.001	10,950	25,550	1.34	2	–	0.005	0.5	0.911	2	50	41	–	1.0E-06	1.0
Copper	–	1.4E+02	0.001	2	121,734	0.001	10,950	25,550	1.34	2	–	0.037	0.5	0.911	2	50	–	–	1.0E-05	1.0
1,2-Dichloroethene (cis)	–	2.1E+01	0.01	2	121,734	0.001	10,950	25,550	1.34	2	–	0.01	0.5	0.911	2	50	–	–	1.0E-05	1.0
1,2-Dichloroethene (trans)	–	4.3E+01	0.01	2	121,734	0.001	10,950	25,550	1.34	2	–	0.02	0.5	0.911	2	50	–	–	1.0E-05	1.0
Dietyl phthalate	–	2.3E+03	0.0048	2	121,734	0.001	10,950	25,550	1.34	2	–	0.8	0.5	0.911	2	50	–	–	1.0E-05	1.0
Iron	–	–	0.001	2	121,734	0.001	10,950	25,550	1.34	2	–	–	0.5	0.911	2	50	–	–	1.0E-05	1.0
Lead	–	–	0.001	2	121,734	0.001	10,950	25,550	1.34	2	–	–	0.5	0.911	2	50	–	–	1.0E-06	1.0
Manganese	–	3.4E-03	0.001	2	121,734	0.001	10,950	25,550	1.34	2	–	0.005	0.5	0.911	2	50	–	0.000014	1.0E-05	1.0
Methylene chloride	2.5E-01	9.4E+01	0.0045	2	121,734	0.001	10,950	25,550	1.34	2	0.0075	0.06	0.5	0.911	2	50	0.0016	0.86	1.0E-06	1.0
Nickel	–	7.5E+01	0.001	2	121,734	0.001	10,950	25,550	1.34	2	–	0.02	0.5	0.911	2	50	–	–	1.0E-05	1.0
n-Nitrosodiphenylamine	4.6E-01	–	0.036	2	121,734	0.001	10,950	25,550	1.34	2	0.0049	–	0.5	0.911	2	50	–	–	1.0E-06	1.0
Pentachlorophenol*	1.3E-03	2.0E+00	0.65	2	121,734	0.001	10,950	25,550	1.34	2	0.12	0.03	0.5	0.911	2	50	–	–	1.0E-06	1.0
Toluene	–	2.3E+01	0.045	2	121,734	0.001	10,950	25,550	1.34	2	–	0.2	0.5	0.911	2	50	–	0.11	1.0E-05	1.0
Trichloroethene*	7.4E-02	–	0.016	2	121,734	0.001	10,950	25,550	1.34	2	0.011	–	0.5	0.911	2	50	0.006	–	1.0E-06	1.0
Vinyl chloride*	1.2E-03	–	0.0073	2	121,734	0.001	10,950	25,550	1.34	2	1.9	–	0.5	0.911	2	50	0.3	–	1.0E-06	1.0

An asterisk (*) indicates a constituent selected through the risk-based action level selection process presented in Section A7.0.

Note: These risk-based action levels are based on the dermal contact, incidental ingestion, and inhalation exposure routes.

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RISK-BASED ACTION LEVELS FOR RESTRICTED ON-SITE SURFACE WATER
(SLUDGE LAGOON AND OUTFALL DITCH)
RECREATIONAL/ TRESPASSER CHILD/ADULT POPULATION
FUTURE SCENARIO

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

Constituent	C Action Level (mg/L)	NC Action Level (mg/L)	PC (cm/hr)	ET (hr/day)	DF (cm²/kg)	CF (L/cm³)	NC AT (days)	C AT (days)	IF (L-day/hr-kg)	ET (hr/day)	Oral Slope Factor (SF) 1/(mg/kg-day)	Oral Reference Dose (RfD) (mg/kg-day)	K (L/m³)	IHF (m³-yr/hr-day)	ET (hr/day)	EF (day/yr)	Inhalation Slope Factor (SF) 1/(mg/kg-day)	Inhalation Reference Dose (RfD) (mg/kg-day)	Target Risk (TR)	Target Hazard Index (THI)
Barium	--	2.4E-02	0.001	2	121,734	0.001	10,950	25,550	1.34	2	--	0.07	0.5	0.911	2	50	--	0.0001	1.0E-05	1.0
Chromium (III)	--	3.7E+03	0.001	2	121,734	0.001	10,950	25,550	1.34	2	--	1	0.5	0.911	2	50	--	--	1.0E-05	1.0
Chromium (VI)	--	1.9E+01	0.001	2	121,734	0.001	10,950	25,550	1.34	2	--	0.005	0.5	0.911	2	50	41	--	1.0E-06	1.0
Copper	--	1.4E+02	0.001	2	121,734	0.001	10,950	25,550	1.34	2	--	0.037	0.5	0.911	2	50	--	--	1.0E-05	1.0
1,2-Dichloroethene (cis)	--	2.1E+01	0.01	2	121,734	0.001	10,950	25,550	1.34	2	--	0.01	0.5	0.911	2	50	--	--	1.0E-06	1.0
1,2-Dichloroethene (trans)	--	4.3E+01	0.01	2	121,734	0.001	10,950	25,550	1.34	2	--	0.02	0.5	0.911	2	50	--	--	1.0E-05	1.0
Di-n-octyl phthalate	--	3.3E-02	27	2	121,734	0.001	10,950	25,550	1.34	2	--	0.02	0.5	0.911	2	50	--	--	1.0E-05	1.0
Iron	--	--	0.001	2	121,734	0.001	10,950	25,550	1.34	2	--	--	0.5	0.911	2	50	--	--	1.0E-05	1.0
Lead	--	--	0.001	2	121,734	0.001	10,950	25,550	1.34	2	--	--	0.5	0.911	2	50	--	--	1.0E-06	1.0
Manganese	--	3.4E-03	0.001	2	121,734	0.001	10,950	25,550	1.34	2	--	0.005	0.5	0.911	2	50	--	0.000014	1.0E-05	1.0
Nickel	--	7.5E+01	0.001	2	121,734	0.001	10,950	25,550	1.34	2	--	0.02	0.5	0.911	2	50	--	--	1.0E-05	1.0
Toluene	--	2.3E+01	0.045	2	121,734	0.001	10,950	25,550	1.34	2	--	0.2	0.5	0.911	2	50	--	0.11	1.0E-05	1.0
1,1,1-Trichloroethane	--	--	0.017	2	121,734	0.001	10,950	25,550	1.34	2	--	--	0.5	0.911	2	50	--	--	1.0E-05	1.0
Trichloroethene*	7.4E-02	--	0.016	2	121,734	0.001	10,950	25,550	1.34	2	0.011	--	0.5	0.911	2	50	0.006	--	1.0E-06	1.0
Vinyl chloride*	1.2E-03	--	0.0073	2	121,734	0.001	10,950	25,550	1.34	2	1.9	--	0.5	0.911	2	50	0.3	--	1.0E-06	1.0
Xylene (total)	--	9.9E+02	0.080	2	121,734	0.001	10,950	25,550	1.34	2	--	2	0.5	0.911	2	50	--	--	1.0E-05	1.0
Zinc	--	1.1E+03	0.001	2	121,734	0.001	10,950	25,550	1.34	2	--	0.3	0.5	0.911	2	50	--	--	1.0E-06	1.0

An asterisk (*) indicates a constituent selected through the risk-based action level selection process presented in Section A7.0.

Note: These risk-based action levels are based on the dermal contact, incidental ingestion, and inhalation exposure routes.