US EPA RECORDS CENTER REGION 5

1004371

APPENDIX E

Field Parameter and Groundwater Elevation Summary Tables

TABLE E-1

Summary of Groundwater Field Parameter Measurements (1st Monthly Event)

SAMPLE ID	pH	COND (uS)	TEMP (C)	D.O. (mg/L)	REDOX (mV)
RFIMW-24	8.26	1,680	20.6	NA	NA
RFIMW-25	7.65	11,300	24.0	NA	NA
RFIMW-26	7.92	16,300	22.4	NA	NA
RFIMW-27	7.52	86,700	13.2	NA	NA
RFIMW-28	6.63	23,800	15.9	NA	NA
RFIMW-29	7.12	4,120	17.1	2.4	32
RFIMW-30 (Dup of 29)	7.12	4,120	17.1	2.4	32
P-34-N	6.80	4,180	19.0	NA	NA
RFIMW-1	6.56	31,200	12.9	1.1	-91
RFIMW-2	6.33	45,900	14.4	5.7	-44
RFIMW-3	6.18	5,050	12.4	2.0	-94
RFIMW-4	6.41	4,860	17.8	3.0	-103
RFIMW-5	12.03	17,700	14.0	0.5	-97
RFIMW-6	11.90	4,580	14.7	1.8	-61
RFIMW-7	11.97	30,100	13.4	4.3	-49
RFIMW-8	6.18	5,650	12.9	0.6	-107
RFIMW-9	6.48	24,300	13.7	0.3	-117
RFIMW-10	6.68	1,937	13.8	NA	NA
RFIMW-11	7.55	1,611	16.2	NA	NA
RFIMW-12	12.82	32,200	14.6	NA	NA
RFIMW-22	9.45	15,100	16.1	0.0	-223
RFIMW-23 (MS/MSD)	6.64	4,290	15.5	1.6	-48
PM1NA	7.78	65,500	13.4	NA	NA
RFIMW-13	6.43	35,400	13.7	3.1	-72
RFIMW-14	6.09	81,300	13.5	3.3	-43
RFIMW-15	6.43	21,600	12.9	2.9	-52
RFIMW-16	8.50	12,700	12.1	0.0	-172
RFIMW-18 (MS/MSD)	6.69	10,110	15.9	5.7	-5
RFIMW-21	6.03	56,500	13.6	1.7	-63
TMW-1	6.45	981	19.3	0.8	-62
TMW-2	6.43	1,264	19.5	0.9	-75
TMW-2D	6.43	1,264	19.5	0.9	-75
PM1NB	7.36	17,600	12.8	1.4	-128
PM3NB	9.02	3,670	15.1	2.6	-4

TABLE E-2

Summary of Groundwater Field Parameter Measurements (2nd Monthly Event)

SAMPLE ID	pH	COND (uS)	TEMP (C)	D.O. (mg/L)	REDOX (mV)
RFIMW-24	7.95	1,457	17.5	1.89	207
RFIMW-25	7.28	6,820	18.3	2.25	67
RFIMW-26	8.14	1,312	17.5	7.10	-23
RFIMW-27	6.98	71,400	13.7	3.69	-73
RFIMW-28	6.76	24,200	14.4	4.01	-63
RFIMW-28D	6.76	24,200	14.4	4.01	-63
RFIMW-29	6.98	4,400	15.1	3.73	83
P-34-N	6.96	4,220	16.4	3.47	-44

TABLE E-3

Summary of Groundwater Field Parameter Measurements
(3rd Monthly Event)

SAMPLE ID	pH	COND (uS)	TEMP (C)	D.O. (mg/L)	REDOX (mV)
RFIMW-24	7.47	1,464	13.7	2.67	280
RFIMW-25	7.23	5,650	14.7	4.17	12
RFIMW-26	7.30	1,329	14.1	4.66	-5
RFIMW-27	7.02	71,900	12.4	2.78	-64
RFIMW-28	6.71	45,000	10.8	2.24	-52
RFIMW-29	7.32	3,300	11.3	3.50	28
RFIMW-29D	7.32	3,300	11.3	3.50	28
P-34-N	6.96	3,800	12.2	5.41	-36

TABLE E-4

Summary of Groundwater Field Parameter Measurements
(2nd Quarterly Event)

SAMPLE ID	pH	COND (uS)	TEMP (C)	D.O. (mg/L)	REDOX (mV)
RFIMW-24 (MS/MSD)	7.64	1,600	9.3	3.11	-79
RFIMW-25	7.14	8,500	8.4	3.64	-82
RFIMW-25D	7.14	8,500	8.4	3.64	-82
RFIMW-26	7.04	16,300	9.8	2.78	-82
RFIMW-27	6.72	87,100	11.0	2.49	-148
RFIMW-28	6.62	29,800	9.1	2.38	-76
RFIMW-29	7.32	1,900	7.2	3.73	-183
P-34-N	7.06	5,600	9.4	3.52	-129
RFIMW-1	7.31	40,900	10.7	2.02	-102
RFIMW-2	6.79	57,100	11.1	1.94	-85
RFIMW-3	6.94	6,400	11.3	2.27	-80
RFIMW-4	6.94	7,780	9.6	1.78	-123
RFIMW-5	13.87	25,700	10.4	2.52	-272
RFIMW-6	13.42	6,700	11.0	1.78	-264
RFIMW-7	13.64	32,200	10.7	2.39	-172
RFIMW-8	6.79	7,500	9.2	1.91	-112
RFIMW-9	7.04	29,800	9.1	2.21	-108
RFIMW-10D	6.98	2,400	8.6	1.78	-103
RFIMW-10 (MS/MSD)	6.98	2,400	8.6	1.78	-103
RFIMW-11	7.25	2,100	10.4	2.11	-83
RFIMW-12	12.68	25,100	11.0	0.91	-354
RFIMW-22	10.31	19,600	12.6	0.59	-252
RFIMW-23	7.35	6,000	10.5	2.11	-97
PM1NA	8.83	56,500	11.0	1.15	-374

TABLE E-5

Summary of Groundwater Field Parameter Measurements
(3rd Quarterly Event)

SAMPLE ID	pH	COND (uS)	TEMP (C)	D.O. (mg/L)	REDOX (mV)
RFIMW-24	7.38	3,500	7.9	2.05	-46.2
RFIMW-25	7.41	6,100	6.0	2.91	-37.3
RFIMW-26	7.29	37,500	6.6	2.51	-30.0
RFIMW-27	7.06	80,900	9.5	2.56	-27.5
RFIMW-28	6.59	28,700	5.8	3.35	0.4
RFIMW-29	7.95	1,630	5.8	1.63	-69.5
P-34-N	7.05	5,400	6.2	3.10	-23.0
RFIMW-1	7.15	39,000	8.5	3.11	-48.7
RFIMW-2	6.46	53,600	8.8	2.85	-0.4
RFIMW-3	6.62	6,000	9.0	2.96	-10.7
RFIMW-4	6.89	6,160	3.8	2.50	-20.1
RFIMW-5	13.81	24,900	9.1	1.79	-325.7
RFIMW-6	13.97	6,080	9.8	2.27	-327.4
RFIMW-7	13.79	23,900	12.0	2.91	-325.8
RFIMW-30 (Dup of 7)	13.79	23,900	12.0	2.91	-325.8
RFIMW-8 (MS/MSD)	6.71	7,100	8.3	2.36	-23.8
RFIMW-9 (MS/MSD)	7.00	27,800	9.8	18.6	-43.2
RFIMW-10	7.01	2,350	9.6	2.88	-21.7
RFIMW-11	7.33	1,920	9.8	2.90	-41.2
RFIMW-12	12.03	20,800	9.8	3.26	-243.9
RFIMW-22	10.91	18,220	9.9	2.08	-186.8
RFIMW-23	7.30	4,500	10.6	2.94	-38.5
PM1NA	9.17	51,100	11.4	2.20	-132.8

TABLE E-6

Summary of Groundwater Field Parameter Measurements
(4th Quarterly Event)

SAMPLE ID	pH	COND (uS)	TEMP (C)	D.O. (mg/L)	REDOX (mV)
RFIMW-24	7.79	1,000	13.0	2.04	-58.7
RFIMW-25 (MS/MSD)	7.16	6,150	14.8	1.90	-30.8
RFIMW-26	7.58	16,300	14.2	1.65	-52.2
RFIMW-27	7.19	68,900	11.1	1.89	-36.6
RFIMW-28	6.79	24,000	10.3	2.58	-10.5
RFIMW-29	7.57	1,510	11.3	2.16	-53.1
P-34-N	7.02	4,100	11.9	3.42	-25.7
RFIMW-1	7.14	NA	10.9	0.90	-27.8
RFIMW-2	6.54	NA	11.1	1.06	7.9
RFIMW-3	6.75	3,500	10.4	1.43	-12.5
RFIMW-4	7.15	6,900	10.5	1.04	262.1
RFIMW-5 (MS/MSD)	13.29	5,100	10.5	1.03	2.21
RFIMW-6	13.41	10,900	10.4	1.19	211.9
RFIMW-7	13.24	12,000	11.8	2.07	180.1
RFIMW-8	6.89	5,900	11.9	1.01	201.4
RFIMW-9	7.13	14,600	11.7	1.61	-32.7
RFIMW-10	7.12	1,250	11.4	1.66	-22.2
RFIMW-11	7.29	950	11.4	2.11	-31.3
RFIMW-12	11.83	13,930	11.6	0.19	252.1
RFIMW-22	10.54	NA	NA	0.47	-194.9
RFIMW-23	7.50	2,600	11.9	2.08	-44.8
PM1NA	9.00	34,300	11.5	0.14	-117.5

TABLE E-7

Summary of Groundwater Elevation Measurements (September 1996)

Well Location	Depth to Water (ft)	Groundwater Elevation (msl)
RFIMW24	4.35	578.02
RFIMW25	2.60	578.74
RFIMW26	3.95	578.01
RFIMW27	4.35	572.68
RFIMW28	4.34	573.07
RFIMW29	4.92	574.70
P34N	2.94	574.26
PM-1-NA	4.34	572.36
RFIMW1	2.86	573.81
RFIMW2	13.04	567.01
RFIMW3	5.53	575.53
RFIMW4	6.50	573.89
RFIMW5	8.22	573.99
RFIMW6	7.47	573.83
RFIMW7	14.83	574.56
RFIMW8	7.49	573.46
RFIMW9	5.84	573.25
RFIMW10	9.55	572.37
RFIMW11	4.28	573.50
RFIMW12	6.51	573.38
RFIMW22	3.52	573.63
RFIMW23	7.21	574.96
RFIMW13	3.13	574.65
RFIMW14	6.15	575.61
RFIMW15	8.40	576.11
RFIMW16	10.29	577.33
RFIMW18	4.13	574.91
RFIMW21	10.80	575.20
TMW-1	5.90	577.97
TMW-2	8.75	575.13
PM1NB	1.62	574.44
PM3NB	3.24	574.69

TABLE E-8

Summary of Groundwater Elevation Measurements (December 1996)

Well Location	Depth to Water (ft)	Groundwater Elevation (msl)
RFIMW24	3.05	579.32
RFIMW25	2.83	578.51
RFIMW26	3.84	578.12
RFIMW27	3.51	573.52
RFIMW28	3.32	574.09
RFIMW29	4.72	574.90
P34N	3.26	573.94
PM-1-NA	4.02	572.68
RFIMW1	3.05	573.62
RFIMW2	5.24	574.81
RFIMW3	6.04	575.02
RFIMW4	6.62	573.77
RFIMW5	7.59	574.62
RFIMW6	5.94	575.36
RFIMW7	13.60	575.79
RFIMW8	7.98	572.97
RFIMW9	6.29	572.80
RFIMW10	8.58	573.34
RFIMW11	4.25	573.53
RFIMW12	6.32	573.57
RFIMW22	3.12	574.03
RFIMW23	7.05	575.12

TABLE E-9

Summary of Groundwater Elevation Measurements (March 1997)

Well Location	Depth to Water (ft)	Groundwater Elevation (msl)
RFIMW24	2.72	579.65
RFIMW25	2.06	579.28
RFIMW26	3.62	578.34
RFIMW27	2.78	574.25
RFIMW28	3.20	574.21
RFIMW29	4.28	575.34
P34N	2.35	574.85
PM-1-NA	3.00	573.70
RFIMW1	2.46	574.21
RFIMW2	4.71	575.34
RFIMW3	5.36	575.70
RFIMW4	5.58	574.81
RFIMW5	7.28	574.93
RFIMW6	6.28	575.02
RFIMW7	12.83	576.56
RFIMW8	6.82	574.13
RFIMW9	5.30	573.79
RFIMW10	7.65	574.27
RFIMW11	3.53	574.25
RFIMW12	5.16	574.73
RFIMW22	2.54	574.61
RFIMW23	7.01	575.16

TABLE E-10

Summary of Groundwater Elevation Measurements (June 1997)

Well Location	Depth to Water (ft)	Groundwater Elevation (msl)
RFIMW24	2.95	579.42
RFIMW25	2.20	579.14
RFIMW26	3.55	578.41
RFIMW27	3.03	574.00
RFIMW28	3.39	574.02
RFIMW29	4.66	574.96
P34N	2.40	574.80
PM-1-NA	4.61	572.09
RFIMW1	1.83	574.84
RFIMW2	6.16	573.89
RFIMW3	5.18	575.88
RFIMW4	5.07	575.32
RFIMW5	6.76	575.45
RFIMW6	5.76	575.54
RFIMW7	12.79	576.60
RFIMW8	5.99	574.96
RFIMW9	4.53	574.56
RFIMW10	6.98	574.94
RFIMW11	3.35	574.43
RFIMW12	5.09	574.80
RFIMW22	2.20	574.95
RFIMW23	7.08	575.09

APPENDIX F

Exposure Assumptions for Chemical Intake Estimates

APPENDIX F
EXPOSURE ASSUMPTIONS FOR CHEMICAL INTAKE ESTIMATES

1.0 Introduction

This appendix provides the exposure scenarios, equations, and assumptions used to estimate chemical intakes in the risk assessment process for the BASF-Wyandotte facility (Facility). Chemical exposures were calculated for each complete pathway for each potential receptor using appropriate exposure formulas and factors presented in various U.S. Environmental Protection Agency (EPA) and Michigan Department of Natural Resources (MDNR) guidance documents, including:

- Risk Assessment Guidance for Superfund (RAGS), Human Health Evaluation Manual, Part A (EPA, 1989), Part B (EPA, 1991a), and Supplemental Guidance (EPA, 1991b);
- Dermal Exposure Assessment: Principles and Applications (EPA, 1992);
- EPA Soil Screening Guidance (1996);
- MDNR Environmental Response Division Operational Memorandum #14 (MDNR, 1995); and
- MDNR Generic Groundwater Contact Criteria: Technical Support Document (MDNR, 1997).

Where appropriate, exposure factors based on site-specific information were used in place of EPA or MDNR standard default values.

After determining daily exposures, the potential carcinogenic and non-carcinogenic risks associated with those exposures were calculated using appropriate cancer slope factors (CSFs) and risk reference doses (RfDs) available from various EPA sources, including the Integrated Risk Information System (IRIS, 1997), Health Effects Assessment Summary Tables (HEAST) (EPA, 1997), and the EPA-NCEA Superfund Health Risk Technical Support Center (values presented in EPA, 1996).

The following sections provide a list of the exposure scenarios (Section 2.0), exposure formulas (Section 3.0), and exposure factors (Section 4.0) used to calculate the chemical intakes for the Facility, as well as a list of references (Section 5.0).

2.0 Development of Exposure Scenarios

Due to the presence of numerous SWMUs/AOCs at the Facility, multiple exposure scenarios were developed to facilitate appropriate risk calculations. Exposure scenarios are unique for receptors, exposure pathways, and exposure parameters. Exposure scenarios, applicable SWMUs/AOCs for each scenario, and associated exposure pathways are presented in Table F-1.

Current Workers are expected to be exposed only at those sites with surface soil contamination or where vapors may be emitted from subsurface soils. SWMU G is the only area investigated that has surface soil contamination. Volatile constituents have been detected in subsurface soils at SWMU F,

TABLE F-1 Exposure Scenarios With Applicable Sites and Exposure Pathways

Scenario/Applicable Site	Soil Oral	Soil Dermal	Soil Dust	Soil Vapor	Groundwater Dermal	Surface Water Oral	Surface Water Dermal
Current Worker (Fac/Maint)							
SWMU F				X			
SWMU G	X	X	X				
SWMU H				X			
AOC 1				X			
AOC 4				X			
AOC 8				X			
Future Worker (Fac/Maint)							
SWMU F	X	X	X	X			
SWMU G	X	X	X				
SWMU H	X	X	X	X			
AOC 1	X	X	X	X			
AOC 2	X	X	X				
AOC 4	X	X		X			
AOC 5	X	X	X				
AOC 6	X	X	X				
AOC 7	X	X	X				
AOC 8	X	X	X	X			
Future Construction Worker							
SWMU F	X	X	X	X	X		
SWMU G	X	X	X		X		
SWMU H	X	X	X	X	X		
AOC 1	X	X	X	X	X		
AOC 2	X	X	X		X		
AOC 4	X	X		X	X		
AOC 5	X	X	X		X		
AOC 6	X	X	X		X		
AOC 7	X	X	X		X		
AOC 8	X	X	X	X	X		
Recreational							
Detroit River						X	X

SWMU H, and AOC 4. Exposures may occur through soil ingestion, dermal absorption of soil, as well as inhalation of dusts or vapors.

Future Workers (i.e., maintenance, facility, and construction/utility) may be exposed at any site based on the hypothetical assumption that subsurface soils may be excavated at some time in the future and may be left on the surface. Exposures may occur through soil ingestion, dermal absorption of soil, as well as inhalation of dusts or vapors. The generation of dusts at AOC 4 was not considered possible because the contaminated material consists of a tar-like substance. Consequently, the potential inhalation of dusts at AOC 4 was eliminated from consideration in this analysis.

Future construction/utility workers were also considered to be potentially exposed to groundwater through dermal contact during future excavation activities at each of the areas under investigation.

Recreational users may be exposed to constituents in groundwater discharging to the Detroit River. Exposures may occur through ingestion and dermal absorption of surface water.

3.0 Development of Exposure Formulas

The exposure formulas were based on the equations provided in EPA's Soil Screening Guidance (EPA, 1996), Region IX's PRG Guidance (1996), MDNR Environmental Response Division guidance (MDNR, 1995 and 1997) and in RAGS Part A (EPA, 1989) and Part B (EPA, 1991a). Qualifying subscripts were added to the basic exposure factor abbreviations to differentiate those factors that are used in multiple formulas. The following formulas were utilized to evaluate exposure at the Facility.

3.1 Soil, Oral Exposure

For worker exposures:

$$(mg/kg/day) = \frac{CSo * IRso * AEi * FCs * FIs * EFso *}{BW * AT} \quad (1)$$

Where:
- AEi = ingestion absorption efficiency (unitless)
- AT = averaging time (days).
- BW = body weight (kg).
- CSo = chemical concentration in soil (mg/kg).
- ED = exposure duration (years).
- EFso = exposure frequency for soil (days/year).
- FCs = conversion factor for soil (kg/mg).
- FIs = fraction of soil ingested from contaminated source (unitless).
- IRso = soil ingestion rate (mg/day).

3.2 Soil, Dermal Exposure

For worker exposures:

$$g/kg/day) = \frac{CSo * FCs * FIs * SAso * AF * ABS * EFs}{BW * AT} \quad (2)$$

Where:
- ABS = chemical-specific absorption factor (unitless).
- AF = soil-to-skin adherence factor (mg/cm^2).
- AT = period of time over which exposure is averaged (days).
- BW = body weight (kg).
- CSo = chemical concentration in soil (mg/kg).
- ED = exposure duration (years).
- EFso = exposure frequency for soil (events/year).
- FCs = conversion factor for soil (kg/mg).
- FIs = fraction of soil ingested from contaminated source (unitless).
- SAso = skin surface area available for soil contact (cm^2/event).

3.3 Soil, Inhalation Exposure (Dust)

For worker exposures:

$$Intake\,(mg/kg/day) = \frac{CSo * IRa * EFa * ED * (1/PEF)}{BW * AT} \quad (3)$$

Where:

AT = period of time over which exposure is averaged (days).
BW = body weight (kg).
CSo = chemical concentration in soil (mg/kg).
ED = exposure duration (years).
EFa = exposure frequency for ambient air (days/year).
IRa = intake rate for ambient air (m^3/day).
PEF = particulate emission factor (m^3/kg).

3.4 Soil, Inhalation Exposure (Vapors)

For worker exposures:

$$Intake\,(mg/kg/day) = \frac{CSo * IRa * EFa * ED * (1/VFs)}{BW * AT} \quad (4)$$

Where:

AT = period of time over which exposure is averaged (days).
BW = body weight (kg).
CSo = chemical concentration in soil (mg/kg).
ED = exposure duration (years).
EFa = exposure frequency for ambient air (days/year).
IRa = intake rate for ambient air (m^3/day).
VFs = volatilization factor for soil (m^3/kg).

3.5 Groundwater, Dermal Exposure

For construction/utility worker exposures:

$$ke\,(mg/kg/day) = \frac{CGw * FCw * SAgw * DA * EFgw * E}{BW * AT} \quad (5)$$

Where:

AT	=	period of time over which exposure is averaged (days).
BW	=	body weight (kg).
CGw	=	chemical concentration in groundwater (mg/L).
DA	=	dermal absorbed dose (cm, chemical specific)
ED	=	exposure duration (years).
EFgw	=	exposure frequency for groundwater (days/year).
FCw	=	volumetric conversion factor for water (L/cm^3).
SAgw	=	skin surface area available for contact with groundwater (cm^2).

3.6 Surface Water, Oral Exposure

For recreational exposures:

$$Intake\,(mg/kg/day) = \frac{CSw * IRsw * ETsw * EFsw * ED}{BW * AT} \quad (6)$$

Where:

AT	=	period of time over which exposure is averaged (days).
BW	=	body weight (kg).
CSw	=	chemical concentration in surface water (mg/L).
ED	=	exposure duration (years).
EFsw	=	exposure frequency for surface water (days/year).
ETsw	=	exposure time for surface water (hours/day).
IRsw	=	intake rate for surface water (L/hour).

3.7 Surface Water, Dermal Exposure

For recreational exposures:

$$ake\,(mg/kg/day) = \frac{CSw * FCw * SAsw * DA * EFsw * E}{BW * AT} \quad (7)$$

Where:
- AT = period of time over which exposure is averaged (days).
- BW = body weight (kg).
- CSw = chemical concentration in surface water (mg/L).
- DA = dermal absorbed dose (cm, chemical specific).
- ED = exposure duration (years).
- EFsw = exposure frequency for surface water (days/year).
- FCw = volumetric conversion factor for water (L/cm^3).
- SAsw = skin surface area available for contact with surface water (cm^2).

For lifetime exposure:

$$ntake\,(mg/kg/day) = \frac{CSw * FCw * SFW_{adj} * DA * EFsw}{AT} \quad (8)$$

Where:
- AT = period of time over which exposure is averaged (days).
- CSw = chemical concentration in surface water (mg/L).
- DA = dermal absorbed dose (cm, chemical specific)
- EFsw = exposure frequency for surface water (days/year).
- FCw = volumetric conversion factor for water (L/cm^3).
- SFW_{adj} = Age-adjusted skin contact factor for water ($cm^2 \cdot year/kg$).

$$SFW_{adj}\,(cm^2 \cdot year/kg) = \sum_{i=1}^{2} \frac{ED_i * SAsw_i}{BW_i} \quad (9)$$

Where:
- BW_i = body weight (kg; age-dependent).
- ED_i = exposure duration (years; age range for particular ingestion rate).
- $SAsw_i$ = skin surface area available for water contact (cm^2; age-dependent).

4.0 Exposure Factors for BASF-Wyandotte

Exposure factors are presented in the following sections. The source of information for each factor is also provided.

4.1 ABS (Chemical-specific absorption factor)

Acetone	0.05 %		USEPA, 1992
Benzene	0.05 %		USEPA, 1992
Ethylbenzene	3.0 %		USEPA, 1992
Phenol	100 %		USEPA, 1992
Styrene	3.0 %		USEPA, 1992
Toluene	3.0 %		USEPA, 1992
Xylenes	3.0 %		USEPA, 1992
Arsenic	0.1 %		USEPA, 1992
Cobalt	1.0 %		USEPA, 1992
Copper	0.1 %		USEPA, 1992
Nickel	0.05 %		USEPA, 1992
Other organic chemicals	1.0 %	Region IV Default value	USEPA, 1995
Other inorganic chemicals	0.1 %	Region IV Default value	USEPA, 1995

4.2 AEi (Ingestion absorption efficiency)

Volatile organic chemicals	0.80	Region IV Default value	USEPA, 1995
Nonvolatile organic chemicals	0.50	Region IV Default value	USEPA, 1995
Inorganic chemicals	0.20	Region IV Default value	USEPA, 1995

4.3 AF (Soil-to-skin adherence factor)

0.2 mg/cm^2	Default value	EPA, 1992

4.4 AT (Averaging time)

Carcinogenic effects	70 years x 365 days/year	EPA, 1989
Non-carcinogenic effects	ED (years) x 365 days/year	EPA, 1989

4.5 BW (Body weight)

Adult		
70 kg	Default value; average (male and female) of 50th percentile values for age = 18 to 75 years.	EPA, 1989

For lifetime exposure to potential carcinogens in surface water, see the time-weighted exposure factor SFW_{adj} in Section 4.22.

Child		
15 kg	Default value; average (male and female) of 50th percentile values for age = 1 to 6 years.	EPA, 1991b

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4.6 CSo / CGw / CSw (Chemical concentrations in various media)

The upper 95 percent confidence limit of the mean chemical concentration (UCL_{95}) was used to represent the Reasonable Maximum Exposure (RME) or high end exposure concentration. If the UCL_{95} exceeded the maximum detected chemical concentration, the maximum concentration was used to represent the RME.

The mean chemical concentration was used to represent the Reasonable Average Exposure (RAE) or central tendency exposure concentration. If the mean exceeded the maximum detected chemical concentration, the maximum concentration was used to represent the RAE.

To estimate the constituent concentrations in surface water for the Detroit River (CSw) immediately adjacent to the Facility, each constituent concentration in the Detroit River was assumed to be proportional to the loading rate of that constituent in the discharging groundwater.

As a result, surface water constituent concentration (CSw) was determined using:

$$CSw = \frac{L_r}{F_r} \qquad (10)$$

where: L_r = Loading rate of constituent discharging from groundwater (mg/day), and
F_r = Flow rate of Detroit River (L/day)

L_r was estimated by multipling the historic groundwater to surface water discharge rate (12 gpm or 6.54E+04 L/day) by the mean and UCL_{95} groundwater exposure concentrations (mg/L). The average flow rate of the Detroit River is 4.5E+11 L/day.

4.7 DA (Dermal absorbed dose)

Dermal absorbed dose was determined on a chemical-specific basis in accordance with EPA (1992) and MDNR (1997). The values of DA for each constituent of potential concern in groundwater and surface water are presented in Table F-2. DA for inorganics was calculated using:

$$DA_i = K_p * ET \quad (11)$$

where: DA_i = dermal absorbed dose for inorganics (cm, chemical specific)
K_p = permeability coefficient (cm/hr, chemical specific)
ET = exposure time (2 hours)

DA for organics was calculated based on Equation 12 or 13 in accordance with the following conditions:

If ET < t^*, then DA was calculated using:

$$DA_o = 2 * K_p * [(6 * \tau * ET)/\pi]^{1/2} \quad (12)$$

If ET > t^*, then DA was calculated using:

$$DA_o = K_p * [(ET/(1 + \beta)) + 2 * \tau * (1 + 3 * \beta)/(1 + \beta)] \quad (13)$$

where: DA_o = dermal absorbed dose for organics (cm, chemical specific)
K_p = permeability coefficient (cm/hr, chemical specific)
ET = exposure time (2 hours)
π = pi (3.141592654)
t^* = time required for dermal absorbtion to reach steady state (hours)
τ = lag time (hours)
β = dimensionless constant representing the octanol-water partitioning properties of a chemical

TABLE F-2 Values Of DA For Constituents Of Potential Concern In Groundwater And Surface Water

Constituent	ß	Kp	τ	t*	DA
Volatile Organics					
Benzene	1.3E-02	2.1E-02	2.6E-01	6.3E-01	5.27E-02
Chlorobenzene	6.9E-02	4.1E-02	4.3E-01	1.0E+00	1.17E-01
Vinyl Chloride	2.3E-03	7.3E-03	2.1E-01	5.1E-01	1.76E-02
Semi-Volatile Organics					
Acenaphthene	9.6E-01	1.5E-01	7.6E-01	6.3E+00	5.01E-01
Benzo(a)anthracene	4.6E+01	8.1E-01	2.2E+00	1.0E+01	4.70E+00
Benzo(a)pyrene	1.3E+02	1.2E+00	2.9E+00	1.4E+01	7.99E+00
Benzo(b)fluoranthene	1.3E+02	1.2E+00	3.0E+00	1.4E+01	8.12E+00
bis(2-Chloroethyl)ether	1.9E-03	2.1E-03	6.5E-01	1.6E+00	6.93E-03
bis(2-Chloroisopropyl)ether	1.2E-02	5.2E-03	9.6E-01	2.3E+00	1.98E-02
Chrysene	4.6E+01	8.1E-01	2.2E+00	1.0E+01	4.70E+00
2-Methylnaphthalene	7.2E-01	1.4E-01	6.4E-01	4.9E+00	4.49E-01
4-Methylphenol	8.7E-03	1.0E-02	4.0E-01	9.6E-01	2.79E-02
Naphthalene	2.0E-01	6.9E-02	5.3E-01	2.2E+00	1.96E-01
o-Toluidine	2.1E-03	3.7E-03	3.9E-01	9.4E-01	1.03E-02
Phenanthrene	2.9E+00	2.3E-01	1.1E+00	5.6E+00	9.43E-01
Pyridine	5.0E-04	2.0E-03	2.7E-01	6.4E-01	4.98E-03
Metals / Inorganics					
Arsenic	---	1.0E-03	---	---	2.0E-03
Barium	---	1.0E-03	---	---	2.0E-03
Cadmium	---	1.0E-03	---	---	2.0E-03
Copper	---	1.0E-03	---	---	2.0E-03
Cyanide	---	1.0E-03	---	---	2.0E-03
Lead	---	4.0E-06	---	---	8.0E-06
Mercury	---	1.0E-03	---	---	2.0E-03
Nickel	---	1.0E-04	---	---	2.0E-04
Selenium	---	1.0E-03	---	---	2.0E-03
Vanadium	---	1.0E-03	---	---	2.0E-03
Zinc	---	6.0E-04	---	---	1.2E-03

4.8 ED (Exposure duration)

Recreational; Adult (Current and Future)

30 years	Default value; national 90th percentile time at one residence.	EPA, 1989

For lifetime exposure to potential carcinogens in surface water, see the time-weighted exposure factor SFW_{adj} under Section 4.22.

Recreational; Child (Current and Future)

6 years	Assumes exposure for children age = 1 to 6 years, inclusive, in rural/residential areas.	EPA, 1991b

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Facility/Maintenance Worker; Adult (Current)

25 years	National 95th percentile time at one workplace.	EPA, 1991b

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Facility/Maintenance Worker; Adult (Future)

25 years	National 95th percentile time at one workplace.	EPA, 1991b

---

Construction/Utility Worker; Adult (Future)

1 year	Assumed value for a construction worker.

4.9 EFa / EFso / EFgw (Exposure frequency for various media)

Facility/Maintenance Worker; Adult (Current)

30 days/year	Amount of time spent cutting grass or other outdoor activity [1 day/week during the growing season (30 weeks/year)] based on known facility worker activity patterns.

Facility/Maintenance Worker; Adult (Future)

112 days/year	Default value; amount of time spent outdoors at work.	MDNR, 1995

-- --

Construction/Utility Worker; Adult (Future)

30 days/year Assumed value for a construction worker.

4.10 EFsw (Exposure frequency for surface water)

Recreational; Adult, Child, and Lifetime (Current and Future)

78 events/year 78 days/year	Assumes that persons may recreate adjacent to the Facility 3 days/week during the period from May through October (26 weeks/year).

4.11 ETsw (Exposure time for surface water)

Recreational; Adult, Child, and Lifetime (Future)

2.0 hours/day Assumed value for persons recreating in the Detroit River.

4.12 FCs (Conversion factor for soil)

1×10^{-6} kg/mg

4.13 FCw (Conversion factor for water)

0.001 L/cm^3

4.14 FIs (Fraction of soil ingested from contaminated source)

Facility Worker; Adult (Current)

1.0	Assumes that 100 percent of daily soil exposure is from inadvertent contact with soil at each source. (It is assumed that a Facility worker would be exposed to only one source area. Consequently, exposures received at multiple sources are not additive.)	MDNR, 1995

Maintenance Worker; Adult (Current)

0.10	Assumes that 10 percent of daily soil exposure is from inadvertent contact with soil at source. (It is assumed that a maintenance worker may be exposed to several areas of the facility on a yearly basis, such that each area represents only a fraction of the total exposure. Consequently, exposures received at multiple sources are considered to be additive.)

Facility Worker; Adult (Future)

1.0	Assumes that 100 percent of daily soil exposure is from inadvertent contact with soil at source. (It is assumed that a Facility worker would be exposed to only one source area. Consequently, exposures received at multiple sources are not additive.)	MDNR, 1995

Maintenance Worker; Adult (Future)

0.10	Assumes that 10 percent of daily soil exposure is from inadvertent contact with soil at source. (It is assumed that a maintenance worker may be exposed to several areas of the Facility on a yearly basis, such that each area represents only a fraction of the total exposure. Consequently, exposures received at multiple sources are considered to be additive.)

Construction Worker; Adult (Future)

1.0	Conservative assumption that 100 percent of daily soil exposure is from inadvertent contact with soil at source.	MDNR, 1995

4.15 IRa (Ingestion rate for air)

Maintenance Worker; Adult (Current and Future)

5.6 m^3/day	Assumed value for a maintenance worker; based on an adult heavy inhalation rate of 2.8 m^3/hour and an assumed exposure time of 2 hours/day.	EPA, 1995

Facility Worker; Adult (Current and Future)

20 m^3/day	Default value; reasonable upper-bound inhalation rate for an 8-hour workday.	EPA, 1991b

Construction/Utility Worker; Adult (Future)

22.4 m^3/day	Based on an adult heavy inhalation rate of 2.8 m^3/hour and an assumed exposure time of 8 hours/day.	EPA, 1995

4.16 IRso (Ingestion rate for soil)

Maintenance Worker; Adult (Current and Future)

50 mg/day	Typical adult workplace ingestion rate.	EPA, 1991b

Facility Worker; Adult (Current and Future)

50 mg/day	Default value; typical adult workplace ingestion rate.	EPA, 1991b

Construction/Utility Worker; Adult (Future)

480 mg/day	Soil ingestion rate for construction/utility work estimated by Hawley (1985).	EPA, 1991b

According to EPA (1991b), "For certain outdoor activities in the commercial/industrial setting (e.g., construction or utility work), a soil ingestion rate of 480 mg/day may be used; however, this type of work is usually short-term and is often dictated by the weather. Thus exposure frequency would generally be less than one year and exposure duration would vary according to site-specific

construction/utility plans." The soil ingestion rate of 480 mg/day is a very conservative estimate and is expected to overestimate the exposure to a typical construction/utility worker at the BASF-Wyandotte facility.

4.17 IRsw (Ingestion rate for surface water)

Recreational: Adult, Child, and Lifetime (Current and Future)

0.05 L/hour Default value; national average for swimming. EPA, 1989

4.18 PEF (Particulate emission factor)

1.32×10^9 m^3/kg Default value. EPA, 1996

Based on site-specific information regarding vegetative cover and local meterological conditions, the actual potential for dust emission is expected to be lower than would be predicted using the default value. However, to insure a conservative analysis, the USEPA default value was selected.

4.19 SAgw (Skin surface area available for contact with groundwater)

Construction/Utility Worker: Adult (Future)

1000 cm^2/day Adult Construction Worker skin surface area

Assumes typical adult construction/utility worker may be exposed to groundwater on a surface area only slightly greater than the hands because general work clothing is expected to protect face, arms, legs and feet.

4.20 SAsw (Skin surface area available for contact with surface water)

All surface area values are 50th percentile values from EPA, 1985. 50th percentile values were used because surface area is related to body weight, and average body weights over the ED were used in the exposure calculations. Adult values were based on average adult (male and female) body part surface areas (m^2) multiplied by a conversion factor of 10,000 cm^2/m^2 and rounded to three significant figures. Child values were calculated using the average (male and female) mean percentage of total body surface area by part (m^2) over the age range multiplied by the average (male and female) 50th percentile total body surface area over that age range. The final values were multiplied by a conversion factor of 10,000 cm^2/m^2 and rounded to three significant figures.

Note that SAsw does not represent the surface area of the entire body, but includes those body parts that may typically be in contact with surface water.

Recreational; Adult

hands	904.
arms	2,605.
feet	1,225.
legs	5,930.
	10,664. cm^2 ≈ **10,700 cm^2**

Recreational; Child

hands	391.
arms	915.
feet	479.
legs	1,735.
	3,520. cm^2

Lifetime:
For lifetime recreational exposure to potential carcinogens in surface water, see the time-weighted exposure factor SFW_{adj} in this documentation.

4.21 SAso (Skin surface area available for contact with soil)

Adult Worker; All Scenarios
1,430 cm^2/day

The default value for SAso is 2,570 cm^2/day (MDNR, 1995), and considers exposure to the forearms, face and hands. Since all site workers are required to wear long sleeved shirts, the default value was reduced by the estimated surface area of the forearms (1140 cm^2/day).

4.22 SFW_{adj} (Age-adjusted skin contact factor for surface water)

5,080 cm^2·year/kg Calculated using Equation 10 and the following exposure factors.

i	BW	ED	SAsw	Comment
1	15	6	3,520	Child, ages 1 to 6, inclusive
2	70	24	10,700	Non-child, ages 7 to 30, inclusive

4.23 VFs (Volatilization factor for soil)

VFs are chemical-specific values calculated using Equations 14 and 15 using a combination of site-specific and default factors from EPA, 1996. Table F-3 presents the chemical specific data for the volatile constituents of concern at SWMUs F and H as well as AOC 4. Table F-4 presents the site specific assumptions used in the calculation of VF, and Table F-5 presents the calculated chemical-specific VF values.

$$VF(m^3/kg) = \frac{Q}{C} \times \frac{(3.14 \times DA \times T)^{1/2}}{(2 \times \rho_b \times DA)} \times 10^{-4}\ m^2/cm^2 \qquad (14)$$

$$\frac{(\theta_a^{3.33} \times D_i \times H') + (\theta_w^{3.33} \times D_w)}{n^2} \times \frac{1}{(\rho_b \times K_d) + \theta_w + (\theta_a \times} \qquad (15)$$

Where:

Q/C = inverse of the mean concentration at the center of a source $(g/m^2\text{-}s)/(kg/m^3)$

T = exposure interval (s)
ρ_b = dry soil bulk density (g/cm^3)
θ_a = air filled soil porosity (L_{air}/L_{soil})
D_i = chemical-specific diffusivity in air (cm^2/s);
H' = chemical-specific dimensionless Henry's Law Constant
θ_w = water filled soil porosity (L_{water}/L_{soil})
D_w = chemical-specific diffusivity in water (cm^2/s)
n = total soil porosity (L_{pore}/L_{soil})
K_d = chemical-specific soil-water partition coefficient (cm^3/g);

TABLE F-3 Physical And Chemical Properties Of Volatile Organic Constituents Of Potential Concern
BASF-Wyandotte, Detroit, Michigan

CAS No.	Constituent	Molecular Weight (g/mole)	Solubility In Water (mg/L)	Diffusivity In Air (Di) (cm^2/s)	Vapor Pressure (mm Hg)	Dimensionless Henry's Law Constant (H')	Organic Carbon Partition Coefficient (Koc) (L/kg)	Octanol/Water Partition Coefficient (Log Kow)	Diffusion Coefficient In Water (cm^2/s)
67-64-1	Acetone	58	1.00E+06	1.24E-01	2.70E+02	1.59E-03	5.75E-01	-0.24	1.14E-05
71-43-2	Benzene	78	1.75E+03	8.80E-02	9.52E+01	2.28E-01	5.89E+01	2.13	9.80E-06
108-90-7	Chlorobenzene	113	4.72E+02	7.30E-02	1.17E+01	1.52E-01	2.19E+02	2.86	8.70E-06
95-50-1	1,2-Dichlorobenzene	147	1.56E+02	6.90E-02	1.00E+00	7.79E-02	6.17E+02	3.43	7.90E-06
78-87-5	1,2-Dichloropropane	113	2.80E+03	7.82E-02	4.20E+01	1.15E-01	4.37E+01	1.97	8.73E-06
100-41-4	Ethylbenzene	106	1.69E+02	7.50E-02	7.00E+00	3.23E-01	3.63E+02	3.14	7.80E-06
78-93-3	Methyl Ethyl Ketone	72	1.36E+05	9.49E-02	7.75E+01	2.40E-03	4.50E+00	0.26	1.00E-05
100-42-5	Styrene	104	3.10E+02	7.10E-02	5.00E+00	1.13E-01	7.76E+02	2.94	8.00E-06
108-88-3	Toluene	92	5.26E+02	8.70E-02	2.81E+01	2.72E-01	1.82E+02	2.75	8.60E-06
96-18-4	1,2,3-Trichloropropane	147	1.75E+03	6.40E-02	3.69E+00	1.41E-02	7.20E+01	2.27	7.28E-06
57-01-4	Vinyl Chloride	63	2.76E+03	1.06E-01	2.66E+02	1.11E+00	1.86E+01	1.5	1.23E-06
1330-20-7	Xylenes	106	1.86E+02	7.20E-02	1.00E+01	2.50E-01	2.60E+02	3.2	9.34E-06

Source: USEPA, 1996
HSDB, 1997
USEPA, 1986

TABLE F-4 Site-Specific Exposure Factors Used In The Volatilization Pathway
BASF-Wyandotte, Detroit, Michigan

Exposure Parameter	Value	Source
SWMUs F and H		
Q/C	76.08	USEPA, 1996 (Value for 2 acre site in Zone VII - Chicago)
T (maintenance/facility workers)	6.62E+08	Calculated Value Assuming Exposure Duration Of 21 Years
T (construction/utility workers)	7.78E+06	Calculated Value Assuming Exposure Duration Of 90 Days
Bulk density (pb)	1.5	Default Value (USEPA, 1996)
Air filled soil porosity (Theta a)	0.13	Calculated Value where Theta a = n - Theta w
Water filled soil porosity (Theta w)	0.3	Calculated Value based on measured soil moisture of 20%
Total soil porosity (n)	0.43	Calculated Value where n = 1 - (pb/ps), and where ps = 2.65
Fraction organic carbon	0.006	Default Value (USEPA, 1996)
AOC 1		
Q/C	76.08	USEPA, 1996 (Value for 2 acre site in Zone VII - Chicago)
T (maintenance/facility workers)	6.62E+08	Calculated Value Assuming Exposure Duration Of 21 Years
T (construction/utility workers)	7.78E+06	Calculated Value Assuming Exposure Duration Of 90 Days
Bulk density (pb)	2.0	Value for gravel (Thibodeaux, 1979)
Air filled soil porosity (Theta a)	0.05	Calculated Value where Theta a = n - Theta w
Water filled soil porosity (Theta w)	0.2	Calculated Value based on measured soil moisture of 10%
Total soil porosity (n)	0.25	Calculated Value where n = 1 - (pb/ps), and where ps = 2.65
Fraction organic carbon	0.006	Default Value (USEPA, 1996)
AOC 4		
Q/C	97.78	USEPA, 1996 (Value for 0.5 acre site in Zone VII - Chicago)
T (maintenance/facility workers)	6.62E+08	Calculated Value Assuming Exposure Duration Of 21 Years
T (construction/utility workers)	7.78E+06	Calculated Value Assuming Exposure Duration Of 90 Days
Bulk density (pb)	2.0	Value for gravel (Thibodeaux, 1979)
Air filled soil porosity (Theta a)	0.05	Calculated Value where Theta a = n - Theta w
Water filled soil porosity (Theta w)	0.2	Calculated Value based on measured soil moisture of 10%
Total soil porosity (n)	0.25	Calculated Value where n = 1 - (pb/ps), and where ps = 2.65
Fraction organic carbon	0.006	Default Value (USEPA, 1996)
AOC 8		
Q/C	56.16	USEPA, 1996 (Value for 5 acre site in Zone VII - Chicago)
T (maintenance/facility workers)	6.62E+08	Calculated Value Assuming Exposure Duration Of 21 Years
T (construction/utility workers)	7.78E+06	Calculated Value Assuming Exposure Duration Of 90 Days
Bulk density (pb)	2.0	Value for gravel (Thibodeaux, 1979)
Air filled soil porosity (Theta a)	0.05	Calculated Value where Theta a = n - Theta w
Water filled soil porosity (Theta w)	0.2	Calculated Value based on measured soil moisture of 10%
Total soil porosity (n)	0.25	Calculated Value where n = 1 - (pb/ps), and where ps = 2.65
Fraction organic carbon	0.006	Default Value (USEPA, 1996)

TABLE F-5 Chemical-Specific Volatilization Factors Used In The Vapor Inhalation Pathway
BASF-Wyandotte, Detroit, Michigan

Constituent	Calculated Volatilization Factors	
	Maintenance/Facility Scenario	Construction/Utility Scenario
SWMUs F and H		
Acetone	42000	4550
Benzene	9680	1050
Chlorobenzene	21200	2300
1,2-Dichlorobenzene	48500	5260
1,2-Dichloropropane	13100	1420
Ethylbenzene	18100	1960
Methyl Ethyl Ketone	43900	4760
Toluene	13500	1470
1,2,3-Trichloropropane	45300	4910
Xylenes	18000	1950
AOC 1		
Benzene	21000	865
Ethylbenzene	43000	4660
Styrene	104000	4150
Toluene	31400	1240
Xylenes	42200	1670
AOC 4		
Benzene	27000	1110
Styrene	134000	5330
Toluene	40400	1600
Xylenes	54200	2140
AOC 8		
Benzene	15500	640
Ethylbenzene	31700	3440
Styrene	77000	3060
Toluene	23200	920
Xylenes	31100	1230

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APPENDIX G

Exposure and Risk Calculations

APPENDIX G-1

SWMU F

BASF-WYANDOTTE

CURRENT MAINTENANCE WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL VAPOR INHALATION PATHWAY

SWMU F

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		VOLATILIZATION FACTOR (VF)	ESTIMATED DAILY INTAKE (mg/kg/day)		REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME		RAE	RME		RAE	RME
Benzene	1.04	2	9680	7.1E-07	1.4E-06	1.7E-03	4E-04	8E-04
1,2-Dichloropropane	9.6	70	13100	4.8E-06	3.5E-05	1.1E-03	4E-03	3E-02
Toluene	24.2	110	13500	1.2E-05	5.4E-05	1.1E-01	1E-04	5E-04
Xylenes (total)	0.0081	0.0081	18000	3.0E-09	3.0E-09	2.0E-01	1E-08	1E-08
TOTAL							5E-03	3E-02

BASF-WYANDOTTE

CURRENT MAINTENANCE WORKER SCENARIO
CARCINOGENIC RISKS
SOIL VAPOR INHALATION PATHWAY

SWMU F

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		VOLATILIZATION FACTOR (VF)	ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME		RAE	RME		RAE	RME
Benzene	1.04	2	9680	2.5E-07	4.9E-07	2.9E-02	7E-09	1E-08
1,2-Dichloropropane	9.6	70	13100	1.7E-06	1.3E-05	6.8E-02	1E-07	9E-07
TOTAL							1E-07	9E-07

BASF–WYANDOTTE

FUTURE MAINTENANCE WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL INGESTION PATHWAY

SWMU F

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ABSORPTION EFFICIENCY (AEi)	ESTIMATED DAILY INTAKE (mg/kg/day)		REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME		RAE	RME		RAE	RME
Benzene	1.04	2	0.8	1.8E−08	3.5E−08	1.7E−03	1E−05	2E−05
1,2−Dichloropropane	9.6	70	0.8	1.7E−07	1.2E−06	1.1E−03	2E−04	1E−03
Toluene	24.2	110	0.8	4.2E−07	1.9E−06	2.0E−01	2E−06	1E−05
Xylenes (total)	0.0081	0.0081	0.8	1.4E−10	1.4E−10	2.0E+00	7E−11	7E−11
Acenaphthene	0.44	0.44	0.5	4.8E−09	4.8E−09	6.0E−02	8E−08	8E−08
Benzo(a)anthracene	1.7	1.7	0.5	1.9E−08	1.9E−08	NA	0E+00	0E+00
Benzo(a)pyrene	1.6	1.6	0.5	1.8E−08	1.8E−08	NA	0E+00	0E+00
Benzo(b)fluoranthene	1.5	1.5	0.5	1.6E−08	1.6E−08	NA	0E+00	0E+00
Benzo(k)fluoranthene	0.89	0.89	0.5	9.8E−09	9.8E−09	NA	0E+00	0E+00
Benzo(g,h,i)perylene	0.85	0.85	0.5	9.3E−09	9.3E−09	3.0E−02	3E−07	3E−07
Benzyl alcohol	4.39	21	0.5	4.8E−08	2.3E−07	3.0E−01	2E−07	8E−07
bis(2−Chloroisopropyl) ether	5.78	28	0.5	6.3E−08	3.1E−07	4.0E−02	2E−06	8E−06
Chrysene	1.7	1.7	0.5	1.9E−08	1.9E−08	NA	0E+00	0E+00
2,4−Dimethylphenol	5.14	22	0.5	5.6E−08	2.4E−07	2.0E−02	3E−06	1E−05
Indeno(1,2,3−cd)pyrene	0.1	0.1	0.5	1.1E−09	1.1E−09	NA	0E+00	0E+00
2−Methylnaphthalene	0.73	0.73	0.5	8.0E−09	8.0E−09	3.0E−02	3E−07	3E−07
2−Methylphenol	3.35	4.1	0.5	3.7E−08	4.5E−08	5.0E−02	7E−07	9E−07
4−Methylphenol	4.97	20	0.5	5.4E−08	2.2E−07	5.0E−03	1E−05	4E−05
Naphthalene	0.45	0.45	0.5	4.9E−09	4.9E−09	4.0E−02	1E−07	1E−07
Pentachlorophenol	0.0116	0.025	0.5	1.3E−10	2.7E−10	3.0E−02	4E−09	9E−09
Phenanthrene	3.66	6	0.5	4.0E−08	6.6E−08	3.0E−02	1E−06	2E−06
Aroclor 1254	0.599	1.42	0.5	6.6E−09	1.6E−08	2.0E−05	3E−04	8E−04
4,4'−DDE	0.0078	0.0078	0.5	8.5E−11	8.5E−11	NA	0E+00	0E+00
Antimony	2.08	5	0.2	9.1E−09	2.2E−08	4.0E−04	2E−05	5E−05
Arsenic	23.2	63	0.2	1.0E−07	2.8E−07	3.0E−04	3E−04	9E−04
Chromium	23.8	48	0.2	1.0E−07	2.1E−07	5.0E−03	2E−05	4E−05
Cobalt	8.12	14	0.2	3.6E−08	6.1E−08	6.0E−02	6E−07	1E−06
Copper	793	7623	0.2	3.5E−06	3.3E−05	3.7E−02	9E−05	9E−04
Cyanide	2.2	5.1	0.2	9.6E−09	2.2E−08	2.0E−02	5E−07	1E−06
Lead	109	876	0.2	4.8E−07	3.8E−06	NA	0E+00	0E+00
Mercury	2.9	21.1	0.2	1.3E−08	9.2E−08	3.0E−04	4E−05	3E−04
Nickel	28.2	66	0.2	1.2E−07	2.9E−07	2.0E−02	6E−06	1E−05
Zinc	163	1000	0.2	7.1E−07	4.4E−06	3.0E−01	2E−06	1E−05
TOTAL							1E−03	4E−03

BASF-WYANDOTTE

FUTURE MAINTENANCE WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL DERMAL ABSORPTION PATHWAY

SWMU F

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg) RAE	RME	DERMAL ABSORPTION FACTOR (ABS)	ESTIMATED DAILY INTAKE (mg/kg/day) RAE	RME	REFERENCE DOSE (mg/kg/day)	HAZARD INDEX RAE	RME
Benzene	1.04	2	0.0005	6.5E-11	1.3E-10	1.4E-03	5E-08	9E-08
1,2-Dichloropropane	9.6	70	0.01	1.2E-08	8.8E-08	8.8E-04	1E-05	1E-04
Toluene	24.2	110	0.03	9.1E-08	4.1E-07	1.6E-01	6E-07	3E-06
Xylenes (total)	0.0081	0.0081	0.03	3.0E-11	3.0E-11	1.6E+00	2E-11	2E-11
Acenaphthene	0.44	0.44	0.01	5.5E-10	5.5E-10	3.0E-02	2E-08	2E-08
Benzo(a)anthracene	1.7	1.7	0.01	2.1E-09	2.1E-09	NA	0E+00	0E+00
Benzo(a)pyrene	1.6	1.6	0.01	2.0E-09	2.0E-09	NA	0E+00	0E+00
Benzo(b)fluoranthene	1.5	1.5	0.01	1.9E-09	1.9E-09	NA	0E+00	0E+00
Benzo(k)fluoranthene	0.89	0.89	0.01	1.1E-09	1.1E-09	NA	0E+00	0E+00
Benzo(g,h,i)perylene	0.85	0.85	0.01	1.1E-09	1.1E-09	1.5E-02	7E-08	7E-08
Benzyl alcohol	4.39	21	0.01	5.5E-09	2.6E-08	1.5E-01	4E-08	2E-07
bis(2-Chloroisopropyl) ether	5.78	28	0.01	7.2E-09	3.5E-08	2.0E-02	4E-07	2E-06
Chrysene	1.7	1.7	0.01	2.1E-09	2.1E-09	NA	0E+00	0E+00
2,4-Dimethylphenol	5.14	22	0.01	6.4E-09	2.8E-08	1.0E-02	6E-07	3E-06
Indeno(1,2,3-cd)pyrene	0.1	0.1	0.01	1.3E-10	1.3E-10	NA	0E+00	0E+00
2-Methylnaphthalene	0.73	0.73	0.01	9.2E-10	9.2E-10	1.5E-02	6E-08	6E-08
2-Methylphenol	3.35	4.1	0.01	4.2E-09	5.1E-09	2.5E-02	2E-07	2E-07
4-Methylphenol	4.97	20	0.01	6.2E-09	2.5E-08	2.5E-03	2E-06	1E-05
Naphthalene	0.45	0.45	0.01	5.6E-10	5.6E-10	2.0E-02	3E-08	3E-08
Pentachlorophenol	0.0116	0.025	0.01	1.5E-11	3.1E-11	1.5E-02	1E-09	2E-09
Phenanthrene	3.66	6	0.01	4.6E-09	7.5E-09	1.5E-02	3E-07	5E-07
Aroclor 1254	0.599	1.42	0.01	7.5E-10	1.8E-09	1.0E-05	8E-05	2E-04
4,4'-DDE	0.0078	0.0078	0.01	9.8E-12	9.8E-12	NA	0E+00	0E+00
Antimony	2.08	5	0.001	2.6E-10	6.3E-10	8.0E-05	3E-06	8E-06
Arsenic	23.2	63	0.001	2.9E-09	7.9E-09	6.0E-05	5E-05	1E-04
Chromium	23.8	48	0.001	3.0E-09	6.0E-09	1.0E-03	3E-06	6E-06
Cobalt	8.12	14	0.01	1.0E-08	1.8E-08	1.2E-02	8E-07	1E-06
Copper	793	7623	0.001	9.9E-08	9.6E-07	7.4E-03	1E-05	1E-04
Cyanide	2.2	5.1	0.001	2.8E-10	6.4E-10	4.0E-03	7E-08	2E-07
Lead	109	876	0.001	1.4E-08	1.1E-07	NA	0E+00	0E+00
Mercury	2.9	21.1	0.001	3.6E-10	2.6E-09	6.0E-05	6E-06	4E-05
Nickel	28.2	66	0.0005	1.8E-09	4.1E-09	4.0E-03	4E-07	1E-06
Zinc	163	1000	0.001	2.0E-08	1.3E-07	6.0E-02	3E-07	2E-06
TOTAL							2E-04	6E-04

BASF-WYANDOTTE

FUTURE MAINTENANCE WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL DUST INHALATION PATHWAY

SWMU F

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ESTIMATED DAILY INTAKE (mg/kg/day)		REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME	RAE	RME		RAE	RME
Benzene	1.04	2	1.9E-11	3.7E-11	1.7E-03	1E-08	2E-08
1,2-Dichloropropane	9.6	70	1.8E-10	1.3E-09	1.1E-03	2E-07	1E-06
Toluene	24.2	110	4.5E-10	2.0E-09	1.1E-01	4E-09	2E-08
Xylenes (total)	0.0081	0.0081	1.5E-13	1.5E-13	2.0E-01	8E-13	8E-13
Acenaphthene	0.44	0.44	8.2E-12	8.2E-12	6.0E-02	1E-10	1E-10
Benzo(a)anthracene	1.7	1.7	3.2E-11	3.2E-11	NA	0E+00	0E+00
Benzo(a)pyrene	1.6	1.6	3.0E-11	3.0E-11	NA	0E+00	0E+00
Benzo(b)fluoranthene	1.5	1.5	2.8E-11	2.8E-11	NA	0E+00	0E+00
Benzo(k)fluoranthene	0.89	0.89	1.7E-11	1.7E-11	NA	0E+00	0E+00
Benzo(g,h,i)perylene	0.85	0.85	1.6E-11	1.6E-11	3.0E-02	5E-10	5E-10
Benzyl alcohol	4.39	21	8.2E-11	3.9E-10	3.0E-01	3E-10	1E-09
bis(2-Chloroisopropyl) ether	5.78	28	1.1E-10	5.2E-10	4.0E-02	3E-09	1E-08
Chrysene	1.7	1.7	3.2E-11	3.2E-11	NA	0E+00	0E+00
2,4-Dimethylphenol	5.14	22	9.6E-11	4.1E-10	2.0E-02	5E-09	2E-08
Indeno(1,2,3-cd)pyrene	0.1	0.1	1.9E-12	1.9E-12	NA	0E+00	0E+00
2-Methylnaphthalene	0.73	0.73	1.4E-11	1.4E-11	3.0E-02	5E-10	5E-10
2-Methylphenol	3.35	4.1	6.2E-11	7.6E-11	5.0E-02	1E-09	2E-09
4-Methylphenol	4.97	20	9.2E-11	3.7E-10	5.0E-03	2E-08	7E-08
Naphthalene	0.45	0.45	8.4E-12	8.4E-12	4.0E-02	2E-10	2E-10
Pentachlorophenol	0.0116	0.025	2.2E-13	4.6E-13	3.0E-02	7E-12	2E-11
Phenanthrene	3.66	6	6.8E-11	1.1E-10	3.0E-02	2E-09	4E-09
Aroclor 1254	0.599	1.42	1.1E-11	2.6E-11	2.0E-05	6E-07	1E-06
4,4'-DDE	0.0078	0.0078	1.5E-13	1.5E-13	NA	0E+00	0E+00
Antimony	2.08	5	3.9E-11	9.3E-11	NA	0E+00	0E+00
Arsenic	23.2	63	4.3E-10	1.2E-09	NA	0E+00	0E+00
Chromium	23.8	48	4.4E-10	8.9E-10	NA	0E+00	0E+00
Cobalt	8.12	14	1.5E-10	2.6E-10	2.9E-04	5E-07	9E-07
Copper	793	7623	1.5E-08	1.4E-07	NA	0E+00	0E+00
Cyanide	2.2	5.1	4.1E-11	9.5E-11	8.6E-04	5E-08	1E-07
Lead	109	876	2.0E-09	1.6E-08	NA	0E+00	0E+00
Mercury	2.9	21.1	5.4E-11	3.9E-10	8.6E-05	6E-07	5E-06
Nickel	28.2	66	5.2E-10	1.2E-09	NA	0E+00	0E+00
Zinc	163	1000	3.0E-09	1.9E-08	NA	0E+00	0E+00
TOTAL						2E-06	8E-06

BASF-WYANDOTTE

FUTURE MAINTENANCE WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL VAPOR INHALATION PATHWAY

SWMU F

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		VOLATILIZATION FACTOR (VF)	ESTIMATED DAILY INTAKE (mg/kg/day)		REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME		RAE	RME		RAE	RME
Benzene	1.04	2	9680	2.6E-06	5.1E-06	1.7E-03	2E-03	3E-03
1,2-Dichloropropane	9.6	70	13100	1.8E-05	1.3E-04	1.1E-03	2E-02	1E-01
Toluene	24.2	110	13500	4.4E-05	2.0E-04	1.1E-01	4E-04	2E-03
Xylenes (total)	0.0081	0.0081	18000	1.1E-08	1.1E-08	2.0E-01	6E-08	6E-08
TOTAL							2E-02	1E-01

BASF-WYANDOTTE

FUTURE MAINTENANCE WORKER SCENARIO
CARCINOGENIC RISKS
SOIL INGESTION PATHWAY

SWMU P

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ABSORPTION EFFICIENCY (AEi)	ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME		RAE	RME		RAE	RME
Benzene	1.04	2	0.8	6.5E-09	1.3E-08	2.9E-02	2E-10	4E-10
1,2-Dichloropropane	9.6	70	0.8	6.0E-08	4.4E-07	6.8E-02	4E-09	3E-08
Benzo(a)anthracene	1.7	1.7	0.5	6.7E-09	6.7E-09	7.3E-01	5E-09	5E-09
Benzo(a)pyrene	1.6	1.6	0.5	6.3E-09	6.3E-09	7.3E+00	5E-08	5E-08
Benzo(b)fluoranthene	1.5	1.5	0.5	5.9E-09	5.9E-09	7.3E-01	4E-09	4E-09
Benzo(k)fluoranthene	0.89	0.89	0.5	3.5E-09	3.5E-09	7.3E-02	3E-10	3E-10
bis(2-Chloroisopropyl) ether	5.78	28	0.5	2.3E-08	1.1E-07	7.0E-02	2E-09	8E-09
Chrysene	1.7	1.7	0.5	6.7E-09	6.7E-09	7.3E-03	5E-11	5E-11
Indeno(1,2,3-cd)pyrene	0.1	0.1	0.5	3.9E-10	3.9E-10	7.3E-01	3E-10	3E-10
Pentachlorophenol	0.0116	0.025	0.5	4.5E-11	9.8E-11	1.2E-01	5E-12	1E-11
Aroclor 1254	0.599	1.42	0.5	2.3E-09	5.6E-09	2.0E+00	5E-09	1E-08
4,4'-DDE	0.0078	0.0078	0.5	3.1E-11	3.1E-11	3.4E-01	1E-11	1E-11
Arsenic	23.2	63	0.2	3.6E-08	9.9E-08	1.5E+00	5E-08	1E-07
Lead	109	876	0.2	1.7E-07	1.4E-06	NA	0E+00	0E+00
TOTAL							1E-07	3E-07

BASF-WYANDOTTE

FUTURE MAINTENANCE WORKER SCENARIO
CARCINOGENIC RISKS
SOIL DERMAL ABSORPTION PATHWAY

SWMU F

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		DERMAL ABSORPTION FACTOR (ABS)	ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME		RAE	RME		RAE	RME
Benzene	1.04	2	0.0005	2.3E-11	4.5E-11	3.6E-02	8E-13	2E-12
1,2-Dichloropropane	9.6	70	0.01	4.3E-09	3.1E-08	8.5E-02	4E-10	3E-09
Benzo(a)anthracene	1.7	1.7	0.01	7.6E-10	7.6E-10	1.5E+00	1E-09	1E-09
Benzo(a)pyrene	1.6	1.6	0.01	7.2E-10	7.2E-10	1.5E+01	1E-08	1E-08
Benzo(b)fluoranthene	1.5	1.5	0.01	6.7E-10	6.7E-10	1.5E+00	1E-09	1E-09
Benzo(k)fluoranthene	0.89	0.89	0.01	4.0E-10	4.0E-10	1.5E-01	6E-11	6E-11
bis(2-Chloroisopropyl) ether	5.78	28	0.01	2.6E-09	1.3E-08	1.4E-01	4E-10	2E-09
Chrysene	1.7	1.7	0.01	7.6E-10	7.6E-10	1.5E-02	1E-11	1E-11
Indeno(1,2,3-cd)pyrene	0.1	0.1	0.01	4.5E-11	4.5E-11	1.5E+00	7E-11	7E-11
Pentachlorophenol	0.0116	0.025	0.01	5.2E-12	1.1E-11	2.4E-01	1E-12	3E-12
Aroclor 1254	0.599	1.42	0.01	2.7E-10	6.4E-10	4.0E+00	1E-09	3E-09
4,4'-DDE	0.0078	0.0078	0.01	3.5E-12	3.5E-12	6.8E-01	2E-12	2E-12
Arsenic	23.2	63	0.001	1.0E-09	2.8E-09	7.5E+00	8E-09	2E-08
Lead	109	876	0.001	4.9E-09	3.9E-08	NA	0E+00	0E+00
TOTAL							2E-08	4E-08

BASF-WYANDOTTE

FUTURE MAINTENANCE WORKER SCENARIO
CARCINOGENIC RISKS
SOIL DUST INHALATION PATHWAY

SWMU F

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME	RAE	RME		RAE	RME
Benzene	1.04	2	6.9E-12	1.3E-11	2.9E-02	2E-13	4E-13
1,2-Dichloropropane	9.6	70	6.4E-11	4.6E-10	6.8E-02	4E-12	3E-11
Benzo(a)anthracene	1.7	1.7	1.1E-11	1.1E-11	7.3E-01	8E-12	8E-12
Benzo(a)pyrene	1.6	1.6	1.1E-11	1.1E-11	7.3E+00	8E-11	8E-11
Benzo(b)fluoranthene	1.5	1.5	1.0E-11	1.0E-11	7.3E-01	7E-12	7E-12
Benzo(k)fluoranthene	0.89	0.89	5.9E-12	5.9E-12	7.3E-02	4E-13	4E-13
bis(2-Chloroisopropyl) ether	5.78	28	3.8E-11	1.9E-10	3.5E-02	1E-12	7E-12
Chrysene	1.7	1.7	1.1E-11	1.1E-11	7.3E-03	8E-14	8E-14
Indeno(1,2,3-cd)pyrene	0.1	0.1	6.6E-13	6.6E-13	7.3E-01	5E-13	5E-13
Pentachlorophenol	0.0116	0.025	7.7E-14	1.7E-13	1.2E-01	9E-15	2E-14
Aroclor 1254	0.599	1.42	4.0E-12	9.4E-12	2.0E+00	8E-12	2E-11
4,4'-DDE	0.0078	0.0078	5.2E-14	5.2E-14	3.4E-01	2E-14	2E-14
Arsenic	23.2	63	1.5E-10	4.2E-10	1.5E+01	2E-09	6E-09
Chromium	23.8	48	1.6E-10	3.2E-10	2.9E+02	5E-08	9E-08
Lead	109	876	7.2E-10	5.8E-09	NA	0E+00	0E+00
Nickel	28.2	66	1.9E-10	4.4E-10	8.4E-01	2E-10	4E-10
TOTAL						5E-08	1E-07

BASF–WYANDOTTE

FUTURE MAINTENANCE WORKER SCENARIO
CARCINOGENIC RISKS
SOIL VAPOR INHALATION PATHWAY

SWMU F

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		VOLATILIZATION FACTOR (VF)	ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME		RAE	RME		RAE	RME
Benzene	1.04	2	9680	9.4E–07	1.8E–06	2.9E–02	3E–08	5E–08
1,2–Dichloropropane	9.6	70	13100	6.4E–06	4.7E–05	6.8E–02	4E–07	3E–06
TOTAL							5E–07	3E–06

BASF-WYANDOTTE

FUTURE FACILITY WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL INGESTION PATHWAY

SWMU F

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ABSORPTION EFFICIENCY (AEi)	ESTIMATED DAILY INTAKE (mg/kg/day)		REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME		RAE	RME		RAE	RME
Benzene	1.04	2	0.8	1.8E-07	3.5E-07	1.7E-03	1E-04	2E-04
1,2-Dichloropropane	9.6	70	0.8	1.7E-06	1.2E-05	1.1E-03	2E-03	1E-02
Toluene	24.2	110	0.8	4.2E-06	1.9E-05	2.0E-01	2E-05	1E-04
Xylenes (total)	0.0081	0.0081	0.8	1.4E-09	1.4E-09	2.0E+00	7E-10	7E-10
Acenaphthene	0.44	0.44	0.5	4.8E-08	4.8E-08	6.0E-02	8E-07	8E-07
Benzo(a)anthracene	1.7	1.7	0.5	1.9E-07	1.9E-07	NA	0E+00	0E+00
Benzo(a)pyrene	1.6	1.6	0.5	1.8E-07	1.8E-07	NA	0E+00	0E+00
Benzo(b)fluoranthene	1.5	1.5	0.5	1.6E-07	1.6E-07	NA	0E+00	0E+00
Benzo(k)fluoranthene	0.89	0.89	0.5	9.8E-08	9.8E-08	NA	0E+00	0E+00
Benzo(g,h,i)perylene	0.85	0.85	0.5	9.3E-08	9.3E-08	3.0E-02	3E-06	3E-06
Benzyl alcohol	4.39	21	0.5	4.8E-07	2.3E-06	3.0E-01	2E-06	8E-06
bis(2-Chloroisopropyl) ether	5.78	28	0.5	6.3E-07	3.1E-06	4.0E-02	2E-05	8E-05
Chrysene	1.7	1.7	0.5	1.9E-07	1.9E-07	NA	0E+00	0E+00
2,4-Dimethylphenol	5.14	22	0.5	5.6E-07	2.4E-06	2.0E-02	3E-05	1E-04
Indeno(1,2,3-cd)pyrene	0.1	0.1	0.5	1.1E-08	1.1E-08	NA	0E+00	0E+00
2-Methylnaphthalene	0.73	0.73	0.5	8.0E-08	8.0E-08	3.0E-02	3E-06	3E-06
2-Methylphenol	3.35	4.1	0.5	3.7E-07	4.5E-07	5.0E-02	7E-06	9E-06
4-Methylphenol	4.97	20	0.5	5.4E-07	2.2E-06	5.0E-03	1E-04	4E-04
Naphthalene	0.45	0.45	0.5	4.9E-08	4.9E-08	4.0E-02	1E-06	1E-06
Pentachlorophenol	0.0116	0.025	0.5	1.3E-09	2.7E-09	3.0E-02	4E-08	9E-08
Phenanthrene	3.66	6	0.5	4.0E-07	6.6E-07	3.0E-02	1E-05	2E-05
Aroclor 1254	0.599	1.42	0.5	6.6E-08	1.6E-07	2.0E-05	3E-03	8E-03
4,4'-DDE	0.0078	0.0078	0.5	8.5E-10	8.5E-10	NA	0E+00	0E+00
Antimony	2.08	5	0.2	9.1E-08	2.2E-07	4.0E-04	2E-04	5E-04
Arsenic	23.2	63	0.2	1.0E-06	2.8E-06	3.0E-04	3E-03	9E-03
Chromium	23.8	48	0.2	1.0E-06	2.1E-06	5.0E-03	2E-04	4E-04
Cobalt	8.12	14	0.2	3.6E-07	6.1E-07	6.0E-02	6E-06	1E-05
Copper	793	7623	0.2	3.5E-05	3.3E-04	3.7E-02	9E-04	9E-03
Cyanide	2.2	5.1	0.2	9.6E-08	2.2E-07	2.0E-02	5E-06	1E-05
Lead	109	876	0.2	4.8E-06	3.8E-05	NA	0E+00	0E+00
Mercury	2.9	21.1	0.2	1.3E-07	9.2E-07	3.0E-04	4E-04	3E-03
Nickel	28.2	66	0.2	1.2E-06	2.9E-06	2.0E-02	6E-05	1E-04
Zinc	163	1000	0.2	7.1E-06	4.4E-05	3.0E-01	2E-05	1E-04
TOTAL							1E-02	4E-02

BASF-WYANDOTTE

FUTURE FACILITY WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL DERMAL ABSORPTION PATHWAY

SWMU F

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg) RAE	RME	DERMAL ABSORPTION FACTOR (ABS)	ESTIMATED DAILY INTAKE (mg/kg/day) RAE	RME	REFERENCE DOSE (mg/kg/day)	HAZARD INDEX RAE	RME
Benzene	1.04	2	0.0005	6.5E-10	1.3E-09	1.4E-03	5E-07	9E-07
1,2-Dichloropropane	9.6	70	0.01	1.2E-07	8.8E-07	8.8E-04	1E-04	1E-03
Toluene	24.2	110	0.03	9.1E-07	4.1E-06	1.6E-01	6E-06	3E-05
Xylenes (total)	0.0081	0.0081	0.03	3.0E-10	3.0E-10	1.6E+00	2E-10	2E-10
Acenaphthene	0.44	0.44	0.01	5.5E-09	5.5E-09	3.0E-02	2E-07	2E-07
Benzo(a)anthracene	1.7	1.7	0.01	2.1E-08	2.1E-08	NA	0E+00	0E+00
Benzo(a)pyrene	1.6	1.6	0.01	2.0E-08	2.0E-08	NA	0E+00	0E+00
Benzo(b)fluoranthene	1.5	1.5	0.01	1.9E-08	1.9E-08	NA	0E+00	0E+00
Benzo(k)fluoranthene	0.89	0.89	0.01	1.1E-08	1.1E-08	NA	0E+00	0E+00
Benzo(g,h,i)perylene	0.85	0.85	0.01	1.1E-08	1.1E-08	1.5E-02	7E-07	7E-07
Benzyl alcohol	4.39	21	0.01	5.5E-08	2.6E-07	1.5E-01	4E-07	2E-06
bis(2-Chloroisopropyl) ether	5.78	28	0.01	7.2E-08	3.5E-07	2.0E-02	4E-06	2E-05
Chrysene	1.7	1.7	0.01	2.1E-08	2.1E-08	NA	0E+00	0E+00
2,4-Dimethylphenol	5.14	22	0.01	6.4E-08	2.8E-07	1.0E-02	6E-06	3E-05
Indeno(1,2,3-cd)pyrene	0.1	0.1	0.01	1.3E-09	1.3E-09	NA	0E+00	0E+00
2-Methylnaphthalene	0.73	0.73	0.01	9.2E-09	9.2E-09	1.5E-02	6E-07	6E-07
2-Methylphenol	3.35	4.1	0.01	4.2E-08	5.1E-08	2.5E-02	2E-06	2E-06
4-Methylphenol	4.97	20	0.01	6.2E-08	2.5E-07	2.5E-03	2E-05	1E-04
Naphthalene	0.45	0.45	0.01	5.6E-09	5.6E-09	2.0E-02	3E-07	3E-07
Pentachlorophenol	0.0116	0.025	0.01	1.5E-10	3.1E-10	1.5E-02	1E-08	2E-08
Phenanthrene	3.66	6	0.01	4.6E-08	7.5E-08	1.5E-02	3E-06	5E-06
Aroclor 1254	0.599	1.42	0.01	7.5E-09	1.8E-08	1.0E-05	8E-04	2E-03
4,4'-DDE	0.0078	0.0078	0.01	9.8E-11	9.8E-11	NA	0E+00	0E+00
Antimony	2.08	5	0.001	2.6E-09	6.3E-09	8.0E-05	3E-05	8E-05
Arsenic	23.2	63	0.001	2.9E-08	7.9E-08	6.0E-05	5E-04	1E-03
Chromium	23.8	48	0.001	3.0E-08	6.0E-08	1.0E-03	3E-05	6E-05
Cobalt	8.12	14	0.01	1.0E-07	1.8E-07	1.2E-02	8E-06	1E-05
Copper	793	7623	0.001	9.9E-07	9.6E-06	7.4E-03	1E-04	1E-03
Cyanide	2.2	5.1	0.001	2.8E-09	6.4E-09	4.0E-03	7E-07	2E-06
Lead	109	876	0.001	1.4E-07	1.1E-06	NA	0E+00	0E+00
Mercury	2.9	21.1	0.001	3.6E-09	2.6E-08	6.0E-05	6E-05	4E-04
Nickel	28.2	66	0.0005	1.8E-08	4.1E-08	4.0E-03	4E-06	1E-05
Zinc	163	1000	0.001	2.0E-07	1.3E-06	6.0E-02	3E-06	2E-05
TOTAL							2E-03	6E-03

BASF-WYANDOTTE

FUTURE FACILITY WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL DUST INHALATION PATHWAY

SWMU F

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ESTIMATED DAILY INTAKE (mg/kg/day)		REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME	RAE	RME		RAE	RME
Benzene	1.04	2	6.9E-11	1.3E-10	1.7E-03	4E-08	8E-08
1,2-Dichloropropane	9.6	70	6.4E-10	4.6E-09	1.1E-03	6E-07	4E-06
Toluene	24.2	110	1.6E-09	7.3E-09	1.1E-01	1E-08	7E-08
Xylenes (total)	0.0081	0.0081	5.4E-13	5.4E-13	2.0E-01	3E-12	3E-12
Acenaphthene	0.44	0.44	2.9E-11	2.9E-11	6.0E-02	5E-10	5E-10
Benzo(a)anthracene	1.7	1.7	1.1E-10	1.1E-10	NA	0E+00	0E+00
Benzo(a)pyrene	1.6	1.6	1.1E-10	1.1E-10	NA	0E+00	0E+00
Benzo(b)fluoranthene	1.5	1.5	1.0E-10	1.0E-10	NA	0E+00	0E+00
Benzo(k)fluoranthene	0.89	0.89	5.9E-11	5.9E-11	NA	0E+00	0E+00
Benzo(g,h,i)perylene	0.85	0.85	5.6E-11	5.6E-11	3.0E-02	2E-09	2E-09
Benzyl alcohol	4.39	21	2.9E-10	1.4E-09	3.0E-01	1E-09	5E-09
bis(2-Chloroisopropyl) ether	5.78	28	3.8E-10	1.9E-09	4.0E-02	1E-08	5E-08
Chrysene	1.7	1.7	1.1E-10	1.1E-10	NA	0E+00	0E+00
2,4-Dimethylphenol	5.14	22	3.4E-10	1.5E-09	2.0E-02	2E-08	7E-08
Indeno(1,2,3-cd)pyrene	0.1	0.1	6.6E-12	6.6E-12	NA	0E+00	0E+00
2-Methylnaphthalene	0.73	0.73	4.8E-11	4.8E-11	3.0E-02	2E-09	2E-09
2-Methylphenol	3.35	4.1	2.2E-10	2.7E-10	5.0E-02	4E-09	5E-09
4-Methylphenol	4.97	20	3.3E-10	1.3E-09	5.0E-03	7E-08	3E-07
Naphthalene	0.45	0.45	3.0E-11	3.0E-11	4.0E-02	7E-10	7E-10
Pentachlorophenol	0.0116	0.025	7.7E-13	1.7E-12	3.0E-02	3E-11	6E-11
Phenanthrene	3.66	6	2.4E-10	4.0E-10	3.0E-02	8E-09	1E-08
Aroclor 1254	0.599	1.42	4.0E-11	9.4E-11	2.0E-05	2E-06	5E-06
4,4'-DDE	0.0078	0.0078	5.2E-13	5.2E-13	NA	0E+00	0E+00
Antimony	2.08	5	1.4E-10	3.3E-10	NA	0E+00	0E+00
Arsenic	23.2	63	1.5E-09	4.2E-09	NA	0E+00	0E+00
Chromium	23.8	48	1.6E-09	3.2E-09	NA	0E+00	0E+00
Cobalt	8.12	14	5.4E-10	9.3E-10	2.9E-04	2E-06	3E-06
Copper	793	7623	5.3E-08	5.1E-07	NA	0E+00	0E+00
Cyanide	2.2	5.1	1.5E-10	3.4E-10	8.6E-04	2E-07	4E-07
Lead	109	876	7.2E-09	5.8E-08	NA	0E+00	0E+00
Mercury	2.9	21.1	1.9E-10	1.4E-09	8.6E-05	2E-06	2E-05
Nickel	28.2	66	1.9E-09	4.4E-09	NA	0E+00	0E+00
Zinc	163	1000	1.1E-08	6.6E-08	NA	0E+00	0E+00
TOTAL						7E-06	3E-05

BASF–WYANDOTTE

FUTURE FACILITY WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL VAPOR INHALATION PATHWAY

SWMU F

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		VOLATILIZATION FACTOR (VF)	ESTIMATED DAILY INTAKE (mg/kg/day)		REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME		RAE	RME		RAE	RME
Benzene	1.04	2	9680	9.4E–06	1.8E–05	1.7E–03	6E–03	1E–02
1,2–Dichloropropane	9.6	70	13100	6.4E–05	4.7E–04	1.1E–03	6E–02	4E–01
Toluene	24.2	110	13500	1.6E–04	7.1E–04	1.1E–01	1E–03	6E–03
Xylenes (total)	0.0081	0.0081	18000	3.9E–08	3.9E–08	2.0E–01	2E–07	2E–07
TOTAL							7E–02	4E–01

BASF-WYANDOTTE

FUTURE FACILITY WORKER SCENARIO
CARCINOGENIC RISKS
SOIL INGESTION PATHWAY

SWMU F

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ABSORPTION EFFICIENCY (AEi)	ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME		RAE	RME		RAE	RME
Benzene	1.04	2	0.8	6.5E-08	1.3E-07	2.9E-02	2E-09	4E-09
1,2-Dichloropropane	9.6	70	0.8	6.0E-07	4.4E-06	6.8E-02	4E-08	3E-07
Benzo(a)anthracene	1.7	1.7	0.5	6.7E-08	6.7E-08	7.3E-01	5E-08	5E-08
Benzo(a)pyrene	1.6	1.6	0.5	6.3E-08	6.3E-08	7.3E+00	5E-07	5E-07
Benzo(b)fluoranthene	1.5	1.5	0.5	5.9E-08	5.9E-08	7.3E-01	4E-08	4E-08
Benzo(k)fluoranthene	0.89	0.89	0.5	3.5E-08	3.5E-08	7.3E-02	3E-09	3E-09
bis(2-Chloroisopropyl) ether	5.78	28	0.5	2.3E-07	1.1E-06	7.0E-02	2E-08	8E-08
Chrysene	1.7	1.7	0.5	6.7E-08	6.7E-08	7.3E-03	5E-10	5E-10
Indeno(1,2,3-cd)pyrene	0.1	0.1	0.5	3.9E-09	3.9E-09	7.3E-01	3E-09	3E-09
Pentachlorophenol	0.0116	0.025	0.5	4.5E-10	9.8E-10	1.2E-01	5E-11	1E-10
Aroclor 1254	0.599	1.42	0.5	2.3E-08	5.6E-08	2.0E+00	5E-08	1E-07
4,4'-DDE	0.0078	0.0078	0.5	3.1E-10	3.1E-10	3.4E-01	1E-10	1E-10
Arsenic	23.2	63	0.2	3.6E-07	9.9E-07	1.5E+00	5E-07	1E-06
Lead	109	876	0.2	1.7E-06	1.4E-05	NA	0E+00	0E+00
TOTAL							1E-06	3E-06

BASF-WYANDOTTE

FUTURE FACILITY WORKER SCENARIO
CARCINOGENIC RISKS
SOIL DERMAL ABSORPTION PATHWAY

SWMU F

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		DERMAL ABSORPTION FACTOR (ABS)	ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME		RAE	RME		RAE	RME
Benzene	1.04	2	0.0005	2.3E-10	4.5E-10	3.6E-02	8E-12	2E-11
1,2-Dichloropropane	9.6	70	0.01	4.3E-08	3.1E-07	8.5E-02	4E-09	3E-08
Benzo(a)anthracene	1.7	1.7	0.01	7.6E-09	7.6E-09	1.5E+00	1E-08	1E-08
Benzo(a)pyrene	1.6	1.6	0.01	7.2E-09	7.2E-09	1.5E+01	1E-07	1E-07
Benzo(b)fluoranthene	1.5	1.5	0.01	6.7E-09	6.7E-09	1.5E+00	1E-08	1E-08
Benzo(k)fluoranthene	0.89	0.89	0.01	4.0E-09	4.0E-09	1.5E-01	6E-10	6E-10
bis(2-Chloroisopropyl) ether	5.78	28	0.01	2.6E-08	1.3E-07	1.4E-01	4E-09	2E-08
Chrysene	1.7	1.7	0.01	7.6E-09	7.6E-09	1.5E-02	1E-10	1E-10
Indeno(1,2,3-cd)pyrene	0.1	0.1	0.01	4.5E-10	4.5E-10	1.5E+00	7E-10	7E-10
Pentachlorophenol	0.0116	0.025	0.01	5.2E-11	1.1E-10	2.4E-01	1E-11	3E-11
Aroclor 1254	0.599	1.42	0.01	2.7E-09	6.4E-09	4.0E+00	1E-08	3E-08
4,4'-DDE	0.0078	0.0078	0.01	3.5E-11	3.5E-11	6.8E-01	2E-11	2E-11
Arsenic	23.2	63	0.001	1.0E-08	2.8E-08	7.5E+00	8E-08	2E-07
Lead	109	876	0.001	4.9E-08	3.9E-07	NA	0E+00	0E+00
TOTAL							2E-07	4E-07

BASF-WYANDOTTE

FUTURE FACILITY WORKER SCENARIO
CARCINOGENIC RISKS
SOIL DUST INHALATION PATHWAY

SWMU F

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME	RAE	RME		RAE	RME
Benzene	1.04	2	2.5E-11	4.7E-11	2.9E-02	7E-13	1E-12
1,2-Dichloropropane	9.6	70	2.3E-10	1.7E-09	6.8E-02	2E-11	1E-10
Benzo(a)anthracene	1.7	1.7	4.0E-11	4.0E-11	7.3E-01	3E-11	3E-11
Benzo(a)pyrene	1.6	1.6	3.8E-11	3.8E-11	7.3E+00	3E-10	3E-10
Benzo(b)fluoranthene	1.5	1.5	3.6E-11	3.6E-11	7.3E-01	3E-11	3E-11
Benzo(k)fluoranthene	0.89	0.89	2.1E-11	2.1E-11	7.3E-02	2E-12	2E-12
bis(2-Chloroisopropyl) ether	5.78	28	1.4E-10	6.6E-10	3.5E-02	5E-12	2E-11
Chrysene	1.7	1.7	4.0E-11	4.0E-11	7.3E-03	3E-13	3E-13
Indeno(1,2,3-cd)pyrene	0.1	0.1	2.4E-12	2.4E-12	7.3E-01	2E-12	2E-12
Pentachlorophenol	0.0116	0.025	2.8E-13	5.9E-13	1.2E-01	3E-14	7E-14
Aroclor 1254	0.599	1.42	1.4E-11	3.4E-11	2.0E+00	3E-11	7E-11
4,4'-DDE	0.0078	0.0078	1.9E-13	1.9E-13	3.4E-01	6E-14	6E-14
Arsenic	23.2	63	5.5E-10	1.5E-09	1.5E+01	8E-09	2E-08
Chromium	23.8	48	5.6E-10	1.1E-09	2.9E+02	2E-07	3E-07
Lead	109	876	2.6E-09	2.1E-08	NA	0E+00	0E+00
Nickel	28.2	66	6.7E-10	1.6E-09	8.4E-01	6E-10	1E-09
TOTAL						2E-07	4E-07

BASF-WYANDOTTE

FUTURE FACILITY WORKER SCENARIO
CARCINOGENIC RISKS
SOIL VAPOR INHALATION PATHWAY

SWMU F

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		VOLATILIZATION FACTOR (VF)	ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME		RAE	RME		RAE	RME
Benzene	1.04	2	9680	3.4E-06	6.5E-06	2.9E-02	1E-07	2E-07
1,2-Dichloropropane	9.6	70	13100	2.3E-05	1.7E-04	6.8E-02	2E-06	1E-05
TOTAL							2E-06	1E-05

BASF-WYANDOTTE

FUTURE CONSTRUCTION/UTILITY WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL INGESTION PATHWAY

SWMU F

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg) RAE	RME	ABSORPTION EFFICIENCY (AEi)	ESTIMATED DAILY INTAKE (mg/kg/day) RAE	RME	SUBCHRONIC REFERENCE DOSE (mg/kg/day)	HAZARD INDEX RAE	RME
Benzene	1.04	2	0.8	4.7E-07	9.0E-07	1.7E-03	3E-04	5E-04
1,2-Dichloropropane	9.6	70	0.8	4.3E-06	3.2E-05	3.7E-03	1E-03	9E-03
Toluene	24.2	110	0.8	1.1E-05	5.0E-05	2.0E+00	5E-06	2E-05
Xylenes (total)	0.0081	0.0081	0.8	3.7E-09	3.7E-09	2.0E+00	2E-09	2E-09
Acenaphthene	0.44	0.44	0.5	1.2E-07	1.2E-07	6.0E-01	2E-07	2E-07
Benzo(a)anthracene	1.7	1.7	0.5	4.8E-07	4.8E-07	NA	0E+00	0E+00
Benzo(a)pyrene	1.6	1.6	0.5	4.5E-07	4.5E-07	NA	0E+00	0E+00
Benzo(b)fluoranthene	1.5	1.5	0.5	4.2E-07	4.2E-07	NA	0E+00	0E+00
Benzo(k)fluoranthene	0.89	0.89	0.5	2.5E-07	2.5E-07	NA	0E+00	0E+00
Benzo(g,h,i)perylene	0.85	0.85	0.5	2.4E-07	2.4E-07	3.0E-01	8E-07	8E-07
Benzyl alcohol	4.39	21	0.5	1.2E-06	5.9E-06	1.0E+00	1E-06	6E-06
bis(2-Chloroisopropyl) ether	5.78	28	0.5	1.6E-06	7.9E-06	4.0E-02	4E-05	2E-04
Chrysene	1.7	1.7	0.5	4.8E-07	4.8E-07	NA	0E+00	0E+00
2,4-Dimethylphenol	5.14	22	0.5	1.4E-06	6.2E-06	2.0E-01	7E-06	3E-05
Indeno(1,2,3-cd)pyrene	0.1	0.1	0.5	2.8E-08	2.8E-08	NA	0E+00	0E+00
2-Methylnaphthalene	0.73	0.73	0.5	2.1E-07	2.1E-07	3.0E-01	7E-07	7E-07
2-Methylphenol	3.35	4.1	0.5	9.4E-07	1.2E-06	5.0E-01	2E-06	2E-06
4-Methylphenol	4.97	20	0.5	1.4E-06	5.6E-06	5.0E-03	3E-04	1E-03
Naphthalene	0.45	0.45	0.5	1.3E-07	1.3E-07	4.0E-02	3E-06	3E-06
Pentachlorophenol	0.0116	0.025	0.5	3.3E-09	7.0E-09	3.0E-02	1E-07	2E-07
Phenanthrene	3.66	6	0.5	1.0E-06	1.7E-06	3.0E-01	3E-06	6E-06
Aroclor 1254	0.599	1.42	0.5	1.7E-07	4.0E-07	5.0E-05	3E-03	8E-03
4,4'-DDE	0.0078	0.0078	0.5	2.2E-09	2.2E-09	NA	0E+00	0E+00
Antimony	2.08	5	0.2	2.3E-07	5.6E-07	4.0E-04	6E-04	1E-03
Arsenic	23.2	63	0.2	2.6E-06	7.1E-06	3.0E-04	9E-03	2E-02
Chromium	23.8	48	0.2	2.7E-06	5.4E-06	2.0E-02	1E-04	3E-04
Cobalt	8.12	14	0.2	9.2E-07	1.6E-06	6.0E-02	2E-05	3E-05
Copper	793	7623	0.2	8.9E-05	8.6E-04	3.7E-02	2E-03	2E-02
Cyanide	2.2	5.1	0.2	2.5E-07	5.7E-07	2.0E-02	1E-05	3E-05
Lead	109	876	0.2	1.2E-05	9.9E-05	NA	0E+00	0E+00
Mercury	2.9	21.1	0.2	3.3E-07	2.4E-06	3.0E-04	1E-03	8E-03
Nickel	28.2	66	0.2	3.2E-06	7.4E-06	2.0E-02	2E-04	4E-04
Zinc	163	1000	0.2	1.8E-05	1.1E-04	3.0E-01	6E-05	4E-04
TOTAL							2E-02	8E-02

BASF-WYANDOTTE

FUTURE CONSTRUCTION/UTILITY WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL DERMAL ABSORPTION PATHWAY

SWMU F

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		DERMAL ABSORPTION FACTOR (ABS)	ESTIMATED DAILY INTAKE (mg/kg/day)		SUBCHRONIC REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME		RAE	RME		RAE	RME
Benzene	1.04	2	0.0005	1.7E-10	3.4E-10	1.4E-03	1E-07	2E-07
1,2-Dichloropropane	9.6	70	0.01	3.2E-08	2.4E-07	3.0E-03	1E-05	8E-05
Toluene	24.2	110	0.03	2.4E-07	1.1E-06	1.6E+00	2E-07	7E-07
Xylenes (total)	0.0081	0.0081	0.03	8.2E-11	8.2E-11	1.6E+00	5E-11	5E-11
Acenaphthene	0.44	0.44	0.01	1.5E-09	1.5E-09	3.0E-01	5E-09	5E-09
Benzo(a)anthracene	1.7	1.7	0.01	5.7E-09	5.7E-09	NA	0E+00	0E+00
Benzo(a)pyrene	1.6	1.6	0.01	5.4E-09	5.4E-09	NA	0E+00	0E+00
Benzo(b)fluoranthene	1.5	1.5	0.01	5.0E-09	5.0E-09	NA	0E+00	0E+00
Benzo(k)fluoranthene	0.89	0.89	0.01	3.0E-09	3.0E-09	NA	0E+00	0E+00
Benzo(g,h,i)perylene	0.85	0.85	0.01	2.9E-09	2.9E-09	1.5E-01	2E-08	2E-08
Benzyl alcohol	4.39	21	0.01	1.5E-08	7.1E-08	5.0E-01	3E-08	1E-07
bis(2-Chloroisopropyl) ether	5.78	28	0.01	1.9E-08	9.4E-08	2.0E-02	1E-06	5E-06
Chrysene	1.7	1.7	0.01	5.7E-09	5.7E-09	NA	0E+00	0E+00
2,4-Dimethylphenol	5.14	22	0.01	1.7E-08	7.4E-08	1.0E-01	2E-07	7E-07
Indeno(1,2,3-cd)pyrene	0.1	0.1	0.01	3.4E-10	3.4E-10	NA	0E+00	0E+00
2-Methylnaphthalene	0.73	0.73	0.01	2.5E-09	2.5E-09	1.5E-01	2E-08	2E-08
2-Methylphenol	3.35	4.1	0.01	1.1E-08	1.4E-08	2.5E-01	4E-08	6E-08
4-Methylphenol	4.97	20	0.01	1.7E-08	6.7E-08	2.5E-03	7E-06	3E-05
Naphthalene	0.45	0.45	0.01	1.5E-09	1.5E-09	2.0E-02	8E-08	8E-08
Pentachlorophenol	0.0116	0.025	0.01	3.9E-11	8.4E-11	1.5E-02	3E-09	6E-09
Phenanthrene	3.66	6	0.01	1.2E-08	2.0E-08	1.5E-01	8E-08	1E-07
Aroclor 1254	0.599	1.42	0.01	2.0E-09	4.8E-09	2.5E-05	8E-05	2E-04
4,4'-DDE	0.0078	0.0078	0.01	2.6E-11	2.6E-11	NA	0E+00	0E+00
Antimony	2.08	5	0.001	7.0E-10	1.7E-09	8.0E-05	9E-06	2E-05
Arsenic	23.2	63	0.001	7.8E-09	2.1E-08	6.0E-05	1E-04	4E-04
Chromium	23.8	48	0.001	8.0E-09	1.6E-08	4.0E-03	2E-06	4E-06
Cobalt	8.12	14	0.01	2.7E-08	4.7E-08	1.2E-02	2E-06	4E-06
Copper	793	7623	0.001	2.7E-07	2.6E-06	7.4E-03	4E-05	3E-04
Cyanide	2.2	5.1	0.001	7.4E-10	1.7E-09	4.0E-03	2E-07	4E-07
Lead	109	876	0.001	3.7E-08	2.9E-07	NA	0E+00	0E+00
Mercury	2.9	21.1	0.001	9.7E-10	7.1E-09	6.0E-05	2E-05	1E-04
Nickel	28.2	66	0.0005	4.7E-09	1.1E-08	4.0E-03	1E-06	3E-06
Zinc	163	1000	0.001	5.5E-08	3.4E-07	6.0E-02	9E-07	6E-06
TOTAL							3E-04	1E-03

BASF-WYANDOTTE

FUTURE CONSTRUCTION/UTILITY WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL DUST INHALATION PATHWAY

SWMU F

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ESTIMATED DAILY INTAKE (mg/kg/day)		SUBCHRONIC REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME	RAE	RME		RAE	RME
Benzene	1.04	2	2.1E-11	4.0E-11	1.7E-03	1E-08	2E-08
1,2-Dichloropropane	9.6	70	1.9E-10	1.4E-09	3.7E-03	5E-08	4E-07
Toluene	24.2	110	4.8E-10	2.2E-09	1.1E-01	4E-09	2E-08
Xylenes (total)	0.0081	0.0081	1.6E-13	1.6E-13	2.0E-01	8E-13	8E-13
Acenaphthene	0.44	0.44	8.8E-12	8.8E-12	6.0E-01	1E-11	1E-11
Benzo(a)anthracene	1.7	1.7	3.4E-11	3.4E-11	NA	0E+00	0E+00
Benzo(a)pyrene	1.6	1.6	3.2E-11	3.2E-11	NA	0E+00	0E+00
Benzo(b)fluoranthene	1.5	1.5	3.0E-11	3.0E-11	NA	0E+00	0E+00
Benzo(k)fluoranthene	0.89	0.89	1.8E-11	1.8E-11	NA	0E+00	0E+00
Benzo(g,h,i)perylene	0.85	0.85	1.7E-11	1.7E-11	3.0E-01	6E-11	6E-11
Benzyl alcohol	4.39	21	8.7E-11	4.2E-10	1.0E+00	9E-11	4E-10
bis(2-Chloroisopropyl) ether	5.78	28	1.2E-10	5.6E-10	4.0E-02	3E-09	1E-08
Chrysene	1.7	1.7	3.4E-11	3.4E-11	NA	0E+00	0E+00
2,4-Dimethylphenol	5.14	22	1.0E-10	4.4E-10	2.0E-01	5E-10	2E-09
Indeno(1,2,3-cd)pyrene	0.1	0.1	2.0E-12	2.0E-12	NA	0E+00	0E+00
2-Methylnaphthalene	0.73	0.73	1.5E-11	1.5E-11	3.0E-01	5E-11	5E-11
2-Methylphenol	3.35	4.1	6.7E-11	8.2E-11	5.0E-01	1E-10	2E-10
4-Methylphenol	4.97	20	9.9E-11	4.0E-10	5.0E-03	2E-08	8E-08
Naphthalene	0.45	0.45	9.0E-12	9.0E-12	4.0E-02	2E-10	2E-10
Pentachlorophenol	0.0116	0.025	2.3E-13	5.0E-13	3.0E-02	8E-12	2E-11
Phenanthrene	3.66	6	7.3E-11	1.2E-10	3.0E-01	2E-10	4E-10
Aroclor 1254	0.599	1.42	1.2E-11	2.8E-11	5.0E-05	2E-07	6E-07
4,4'-DDE	0.0078	0.0078	1.6E-13	1.6E-13	NA	0E+00	0E+00
Antimony	2.08	5	4.1E-11	1.0E-10	NA	0E+00	0E+00
Arsenic	23.2	63	4.6E-10	1.3E-09	NA	0E+00	0E+00
Chromium	23.8	48	4.7E-10	9.6E-10	NA	0E+00	0E+00
Cobalt	8.12	14	1.6E-10	2.8E-10	2.9E-04	6E-07	1E-06
Copper	793	7623	1.6E-08	1.5E-07	NA	0E+00	0E+00
Cyanide	2.2	5.1	4.4E-11	1.0E-10	8.6E-04	5E-08	1E-07
Lead	109	876	2.2E-09	1.7E-08	NA	0E+00	0E+00
Mercury	2.9	21.1	5.8E-11	4.2E-10	8.6E-05	7E-07	5E-06
Nickel	28.2	66	5.6E-10	1.3E-09	NA	0E+00	0E+00
Zinc	163	1000	3.2E-09	2.0E-08	NA	0E+00	0E+00
TOTAL						2E-06	7E-06

BASF-WYANDOTTE

FUTURE CONSTRUCTION WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL VAPOR INHALATION PATHWAY

SWMU F

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		VOLATILIZATION FACTOR (VF)	ESTIMATED DAILY INTAKE (mg/kg/day)		SUBCHRONIC REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME		RAE	RME		RAE	RME
Benzene	1.04	2	1050	2.6E-05	5.0E-05	1.7E-03	2E-02	3E-02
1,2-Dichloropropane	9.6	70	1420	1.8E-04	1.3E-03	3.7E-03	5E-02	4E-01
Toluene	24.2	110	1470	4.3E-04	2.0E-03	1.1E-01	4E-03	2E-02
Xylenes (total)	0.0081	0.0081	1950	1.1E-07	1.1E-07	2.0E-01	5E-07	5E-07
TOTAL							7E-02	4E-01

BASF-WYANDOTTE

FUTURE CONSTRUCTION/UTILITY WORKER SCENARIO
CARCINOGENIC RISKS
SOIL INGESTION PATHWAY

SWMU F

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ABSORPTION EFFICIENCY (AEi)	ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME		RAE	RME		RAE	RME
Benzene	1.04	2	0.8	6.7E-09	1.3E-08	2.9E-02	2E-10	4E-10
1,2-Dichloropropane	9.6	70	0.8	6.2E-08	4.5E-07	6.8E-02	4E-09	3E-08
Benzo(a)anthracene	1.7	1.7	0.5	6.8E-09	6.8E-09	7.3E-01	5E-09	5E-09
Benzo(a)pyrene	1.6	1.6	0.5	6.4E-09	6.4E-09	7.3E+00	5E-08	5E-08
Benzo(b)fluoranthene	1.5	1.5	0.5	6.0E-09	6.0E-09	7.3E-01	4E-09	4E-09
Benzo(k)fluoranthene	0.89	0.89	0.5	3.6E-09	3.6E-09	7.3E-02	3E-10	3E-10
bis(2-Chloroisopropyl) ether	5.78	28	0.5	2.3E-08	1.1E-07	7.0E-02	2E-09	8E-09
Chrysene	1.7	1.7	0.5	6.8E-09	6.8E-09	7.3E-03	5E-11	5E-11
Indeno(1,2,3-cd)pyrene	0.1	0.1	0.5	4.0E-10	4.0E-10	7.3E-01	3E-10	3E-10
Pentachlorophenol	0.0116	0.025	0.5	4.7E-11	1.0E-10	1.2E-01	6E-12	1E-11
Aroclor 1254	0.599	1.42	0.5	2.4E-09	5.7E-09	2.0E+00	5E-09	1E-08
4,4'-DDE	0.0078	0.0078	0.5	3.1E-11	3.1E-11	3.4E-01	1E-11	1E-11
Arsenic	23.2	63	0.2	3.7E-08	1.0E-07	1.5E+00	6E-08	2E-07
Lead	109	876	0.2	1.8E-07	1.4E-06	NA	0E+00	0E+00
TOTAL							1E-07	3E-07

BASF-WYANDOTTE

FUTURE CONSTRUCTION/UTILITY WORKER SCENARIO
CARCINOGENIC RISKS
SOIL DERMAL ABSORPTION PATHWAY

SWMU F

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		DERMAL ABSORPTION FACTOR (ABS)	ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME		RAE	RME		RAE	RME
Benzene	1.04	2	0.0005	2.5E-12	4.8E-12	3.6E-02	9E-14	2E-13
1,2-Dichloropropane	9.6	70	0.01	4.6E-10	3.4E-09	8.5E-02	4E-11	3E-10
Benzo(a)anthracene	1.7	1.7	0.01	8.2E-11	8.2E-11	1.5E+00	1E-10	1E-10
Benzo(a)pyrene	1.6	1.6	0.01	7.7E-11	7.7E-11	1.5E+01	1E-09	1E-09
Benzo(b)fluoranthene	1.5	1.5	0.01	7.2E-11	7.2E-11	1.5E+00	1E-10	1E-10
Benzo(k)fluoranthene	0.89	0.89	0.01	4.3E-11	4.3E-11	1.5E-01	6E-12	6E-12
bis(2-Chloroisopropyl) ether	5.78	28	0.01	2.8E-10	1.3E-09	1.4E-01	4E-11	2E-10
Chrysene	1.7	1.7	0.01	8.2E-11	8.2E-11	1.5E-02	1E-12	1E-12
Indeno(1,2,3-cd)pyrene	0.1	0.1	0.01	4.8E-12	4.8E-12	1.5E+00	7E-12	7E-12
Pentachlorophenol	0.0116	0.025	0.01	5.6E-13	1.2E-12	2.4E-01	1E-13	3E-13
Aroclor 1254	0.599	1.42	0.01	2.9E-11	6.8E-11	4.0E+00	1E-10	3E-10
4,4'-DDE	0.0078	0.0078	0.01	3.7E-13	3.7E-13	6.8E-01	3E-13	3E-13
Arsenic	23.2	63	0.001	1.1E-10	3.0E-10	7.5E+00	8E-10	2E-09
Lead	109	876	0.001	5.2E-10	4.2E-09	NA	0E+00	0E+00
TOTAL							2E-09	4E-09

BASF-WYANDOTTE

FUTURE CONSTRUCTION/UTILITY WORKER SCENARIO
CARCINOGENIC RISKS
SOIL DUST INHALATION PATHWAY

SWMU F

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME	RAE	RME		RAE	RME
Benzene	1.04	2	3.0E-13	5.7E-13	2.9E-02	9E-15	2E-14
1,2-Dichloropropane	9.6	70	2.7E-12	2.0E-11	6.8E-02	2E-13	1E-12
Benzo(a)anthracene	1.7	1.7	4.8E-13	4.8E-13	7.3E-01	4E-13	4E-13
Benzo(a)pyrene	1.6	1.6	4.6E-13	4.6E-13	7.3E+00	3E-12	3E-12
Benzo(b)fluoranthene	1.5	1.5	4.3E-13	4.3E-13	7.3E-01	3E-13	3E-13
Benzo(k)fluoranthene	0.89	0.89	2.5E-13	2.5E-13	7.3E-02	2E-14	2E-14
bis(2-Chloroisopropyl) ether	5.78	28	1.6E-12	8.0E-12	3.5E-02	6E-14	3E-13
Chrysene	1.7	1.7	4.8E-13	4.8E-13	7.3E-03	4E-15	4E-15
Indeno(1,2,3-cd)pyrene	0.1	0.1	2.8E-14	2.8E-14	7.3E-01	2E-14	2E-14
Pentachlorophenol	0.0116	0.025	3.3E-15	7.1E-15	1.2E-01	4E-16	9E-16
Aroclor 1254	0.599	1.42	1.7E-13	4.0E-13	2.0E+00	3E-13	8E-13
4,4'-DDE	0.0078	0.0078	2.2E-15	2.2E-15	3.4E-01	8E-16	8E-16
Arsenic	23.2	63	6.6E-12	1.8E-11	1.5E+01	1E-10	3E-10
Chromium	23.8	48	6.8E-12	1.4E-11	2.9E+02	2E-09	4E-09
Lead	109	876	3.1E-11	2.5E-10	NA	0E+00	0E+00
Nickel	28.2	66	8.0E-12	1.9E-11	8.4E-01	7E-12	2E-11
TOTAL						2E-09	4E-09

BASF-WYANDOTTE

FUTURE CONSTRUCTION/UTILITY WORKER SCENARIO
CARCINOGENIC RISKS
SOIL VAPOR INHALATION PATHWAY

SWMU F

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		VOLATILIZATION FACTOR (VF)	ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME		RAE	RME		RAE	RME
Benzene	1.04	2	1050	3.7E-07	7.2E-07	2.9E-02	1E-08	2E-08
1,2-Dichloropropane	9.6	70	1420	2.5E-06	1.9E-05	6.8E-02	2E-07	1E-06
TOTAL							2E-07	1E-06

APPENDIX G-2

SWMU G

BASF-WYANDOTTE

CURRENT MAINTENANCE WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL INGESTION PATHWAY

SWMU G

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ABSORPTION EFFICIENCY (AEi)	ESTIMATED DAILY INTAKE (mg/kg/day)		REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME		RAE	RME		RAE	RME
Acenaphthene	0.043	0.043	0.5	1.3E-10	1.3E-10	6.0E-02	2E-09	2E-09
Benzo(a)anthracene	0.804	1.41	0.5	2.4E-09	4.1E-09	NA	0E+00	0E+00
Benzo(a)pyrene	0.801	1.5	0.5	2.4E-09	4.4E-09	NA	0E+00	0E+00
Benzo(b)fluoranthene	1.2	2.41	0.5	3.5E-09	7.1E-09	NA	0E+00	0E+00
Chrysene	0.835	1.61	0.5	2.5E-09	4.7E-09	NA	0E+00	0E+00
Indeno(1,2,3-cd)pyrene	0.541	1.27	0.5	1.6E-09	3.7E-09	NA	0E+00	0E+00
Pentachlorophenol	0.118	0.62	0.5	3.5E-10	1.8E-09	3.0E-02	1E-08	6E-08
Phenanthrene	0.782	1.9	0.5	2.3E-09	5.6E-09	3.0E-02	8E-08	2E-07
Aroclor 1260	0.387	1.06	0.5	1.1E-09	3.1E-09	NA	0E+00	0E+00
Arsenic	26.6	74.8	0.2	3.1E-08	8.8E-08	3.0E-04	1E-04	3E-04
Cyanide	0.189	0.3	0.2	2.2E-10	3.5E-10	2.0E-02	1E-08	2E-08
Lead	73.1	186	0.2	8.6E-08	2.2E-07	NA	0E+00	0E+00
Mercury	0.771	3.6	0.2	9.1E-10	4.2E-09	3.0E-04	3E-06	1E-05
TOTAL							1E-04	3E-04

BASF-WYANDOTTE

CURRENT MAINTENANCE WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL DERMAL ABSORPTION PATHWAY

SWMU G

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg) RAE	RME	DERMAL ABSORPTION FACTOR (ABS)	ESTIMATED DAILY INTAKE (mg/kg/day) RAE	RME	REFERENCE DOSE (mg/kg/day)	HAZARD INDEX RAE	RME
Acenaphthene	0.043	0.043	0.01	1.4E-11	1.4E-11	3.0E-02	5E-10	5E-10
Benzo(a)anthracene	0.804	1.41	0.01	2.7E-10	4.7E-10	NA	0E+00	0E+00
Benzo(a)pyrene	0.801	1.5	0.01	2.7E-10	5.0E-10	NA	0E+00	0E+00
Benzo(b)fluoranthene	1.2	2.41	0.01	4.0E-10	8.1E-10	NA	0E+00	0E+00
Chrysene	0.835	1.61	0.01	2.8E-10	5.4E-10	NA	0E+00	0E+00
Indeno(1,2,3-cd)pyrene	0.541	1.27	0.01	1.8E-10	4.3E-10	NA	0E+00	0E+00
Pentachlorophenol	0.118	0.62	0.01	4.0E-11	2.1E-10	1.5E-02	3E-09	1E-08
Phenanthrene	0.782	1.9	0.01	2.6E-10	6.4E-10	1.5E-02	2E-08	4E-08
Aroclor 1260	0.387	1.06	0.01	1.3E-10	3.6E-10	NA	0E+00	0E+00
Arsenic	26.6	74.8	0.001	8.9E-10	2.5E-09	6.0E-05	1E-05	4E-05
Cyanide	0.189	0.3	0.001	6.3E-12	1.0E-11	4.0E-03	2E-09	3E-09
Lead	73.1	186	0.001	2.5E-09	6.2E-09	NA	0E+00	0E+00
Mercury	0.771	3.6	0.001	2.6E-11	1.2E-10	6.0E-05	4E-07	2E-06
TOTAL							2E-05	4E-05

BASF-WYANDOTTE

CURRENT MAINTENANCE WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL DUST INHALATION PATHWAY

SWMU G

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ESTIMATED DAILY INTAKE (mg/kg/day)		REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME	RAE	RME		RAE	RME
Acenaphthene	0.043	0.043	2.1E-13	2.1E-13	6.0E-02	4E-12	4E-12
Benzo(a)anthracene	0.804	1.41	4.0E-12	7.0E-12	NA	0E+00	0E+00
Benzo(a)pyrene	0.801	1.5	4.0E-12	7.5E-12	NA	0E+00	0E+00
Benzo(b)fluoranthene	1.2	2.41	6.0E-12	1.2E-11	NA	0E+00	0E+00
Chrysene	0.835	1.61	4.2E-12	8.0E-12	NA	0E+00	0E+00
Indeno(1,2,3-cd)pyrene	0.541	1.27	2.7E-12	6.3E-12	NA	0E+00	0E+00
Pentachlorophenol	0.118	0.62	5.9E-13	3.1E-12	3.0E-02	2E-11	1E-10
Phenanthrene	0.782	1.9	3.9E-12	9.5E-12	3.0E-02	1E-10	3E-10
Aroclor 1260	0.387	1.06	1.9E-12	5.3E-12	NA	0E+00	0E+00
Arsenic	26.6	74.8	1.3E-10	3.7E-10	NA	0E+00	0E+00
Cyanide	0.189	0.3	9.4E-13	1.5E-12	8.6E-04	1E-09	2E-09
Lead	73.1	186	3.6E-10	9.3E-10	NA	0E+00	0E+00
Mercury	0.771	3.6	3.8E-12	1.8E-11	8.6E-05	4E-08	2E-07
TOTAL						5E-08	2E-07

BASF–WYANDOTTE

CURRENT MAINTENANCE WORKER SCENARIO
CARCINOGENIC RISKS
SOIL INGESTION PATHWAY

SWMU G

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ABSORPTION EFFICIENCY (AEi)	ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME		RAE	RME		RAE	RME
Benzo(a)anthracene	0.804	1.41	0.5	8.4E−10	1.5E−09	7.3E−01	6E−10	1E−09
Benzo(a)pyrene	0.801	1.5	0.5	8.4E−10	1.6E−09	7.3E+00	6E−09	1E−08
Benzo(b)fluoranthene	1.2	2.41	0.5	1.3E−09	2.5E−09	7.3E−01	9E−10	2E−09
Chrysene	0.835	1.61	0.5	8.8E−10	1.7E−09	7.3E−03	6E−12	1E−11
Indeno(1,2,3−cd)pyrene	0.541	1.27	0.5	5.7E−10	1.3E−09	7.3E−01	4E−10	1E−09
Pentachlorophenol	0.118	0.62	0.5	1.2E−10	6.5E−10	1.2E−01	1E−11	8E−11
Aroclor 1260	0.387	1.06	0.5	4.1E−10	1.1E−09	2.0E+00	8E−10	2E−09
Arsenic	26.6	74.8	0.2	1.1E−08	3.1E−08	1.5E+00	2E−08	5E−08
Lead	73.1	186	0.2	3.1E−08	7.8E−08	NA	0E+00	0E+00
TOTAL							3E−08	6E−08

BASF-WYANDOTTE

CURRENT MAINTENANCE WORKER SCENARIO
CARCINOGENIC RISKS
SOIL DERMAL ABSORPTION PATHWAY

SWMU G

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		DERMAL ABSORPTION FACTOR (ABS)	ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME		RAE	RME		RAE	RME
Benzo(a)anthracene	0.804	1.41	0.01	9.6E-11	1.7E-10	1.5E+00	1E-10	2E-10
Benzo(a)pyrene	0.801	1.5	0.01	9.6E-11	1.8E-10	1.5E+01	1E-09	3E-09
Benzo(b)fluoranthene	1.2	2.41	0.01	1.4E-10	2.9E-10	1.5E+00	2E-10	4E-10
Chrysene	0.835	1.61	0.01	1.0E-10	1.9E-10	1.5E-02	1E-12	3E-12
Indeno(1,2,3-cd)pyrene	0.541	1.27	0.01	6.5E-11	1.5E-10	1.5E+00	9E-11	2E-10
Pentachlorophenol	0.118	0.62	0.01	1.4E-11	7.4E-11	2.4E-01	3E-12	2E-11
Aroclor 1260	0.387	1.06	0.01	4.6E-11	1.3E-10	4.0E+00	2E-10	5E-10
Arsenic	26.6	74.8	0.001	3.2E-10	9.0E-10	7.5E+00	2E-09	7E-09
Lead	73.1	186	0.001	8.8E-10	2.2E-09	NA	0E+00	0E+00
TOTAL							4E-09	1E-08

BASF-WYANDOTTE

CURRENT MAINTENANCE WORKER SCENARIO
CARCINOGENIC RISKS
SOIL DUST INHALATION PATHWAY

SWMU G

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME	RAE	RME		RAE	RME
Benzo(a)anthracene	0.804	1.41	1.4E-12	2.5E-12	7.3E-01	1E-12	2E-12
Benzo(a)pyrene	0.801	1.5	1.4E-12	2.7E-12	7.3E+00	1E-11	2E-11
Benzo(b)fluoranthene	1.2	2.41	2.1E-12	4.3E-12	7.3E-01	2E-12	3E-12
Chrysene	0.835	1.61	1.5E-12	2.9E-12	7.3E-03	1E-14	2E-14
Indeno(1,2,3-cd)pyrene	0.541	1.27	9.6E-13	2.3E-12	7.3E-01	7E-13	2E-12
Pentachlorophenol	0.118	0.62	2.1E-13	1.1E-12	1.2E-01	3E-14	1E-13
Aroclor 1260	0.387	1.06	6.9E-13	1.9E-12	2.0E+00	1E-12	4E-12
Arsenic	26.6	74.8	4.7E-11	1.3E-10	1.5E+01	7E-10	2E-09
Lead	73.1	186	1.3E-10	3.3E-10	NA	0E+00	0E+00
TOTAL						7E-10	2E-09

BASF-WYANDOTTE

FUTURE MAINTENANCE WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL INGESTION PATHWAY

SWMU G

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ABSORPTION EFFICIENCY (AEi)	ESTIMATED DAILY INTAKE (mg/kg/day)		REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME		RAE	RME		RAE	RME
Acenaphthene	0.043	0.043	0.5	4.7E-10	4.7E-10	6.0E-02	8E-09	8E-09
Benzo(a)anthracene	0.804	1.41	0.5	8.8E-09	1.5E-08	NA	0E+00	0E+00
Benzo(a)pyrene	0.801	1.5	0.5	8.8E-09	1.6E-08	NA	0E+00	0E+00
Benzo(b)fluoranthene	1.2	2.41	0.5	1.3E-08	2.6E-08	NA	0E+00	0E+00
Chrysene	0.835	1.61	0.5	9.2E-09	1.8E-08	NA	0E+00	0E+00
Indeno(1,2,3-cd)pyrene	0.541	1.27	0.5	5.9E-09	1.4E-08	NA	0E+00	0E+00
Pentachlorophenol	0.118	0.62	0.5	1.3E-09	6.8E-09	3.0E-02	4E-08	2E-07
Phenanthrene	0.782	1.9	0.5	8.6E-09	2.1E-08	3.0E-02	3E-07	7E-07
Aroclor 1260	0.387	1.06	0.5	4.2E-09	1.2E-08	NA	0E+00	0E+00
Arsenic	26.6	74.8	0.2	1.2E-07	3.3E-07	3.0E-04	4E-04	1E-03
Cyanide	0.189	0.3	0.2	8.3E-10	1.3E-09	2.0E-02	4E-08	7E-08
Lead	73.1	186	0.2	3.2E-07	8.2E-07	NA	0E+00	0E+00
Mercury	0.771	3.6	0.2	3.4E-09	1.6E-08	3.0E-04	1E-05	5E-05
TOTAL							4E-04	1E-03

BASF-WYANDOTTE

FUTURE MAINTENANCE WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL DERMAL ABSORPTION PATHWAY

SWMU G

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		DERMAL ABSORPTION FACTOR (ABS)	ESTIMATED DAILY INTAKE (mg/kg/day)		REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME		RAE	RME		RAE	RME
Acenaphthene	0.043	0.043	0.01	5.4E-11	5.4E-11	3.0E-02	2E-09	2E-09
Benzo(a)anthracene	0.804	1.41	0.01	1.0E-09	1.8E-09	NA	0E+00	0E+00
Benzo(a)pyrene	0.801	1.5	0.01	1.0E-09	1.9E-09	NA	0E+00	0E+00
Benzo(b)fluoranthene	1.2	2.41	0.01	1.5E-09	3.0E-09	NA	0E+00	0E+00
Chrysene	0.835	1.61	0.01	1.0E-09	2.0E-09	NA	0E+00	0E+00
Indeno(1,2,3-cd)pyrene	0.541	1.27	0.01	6.8E-10	1.6E-09	NA	0E+00	0E+00
Pentachlorophenol	0.118	0.62	0.01	1.5E-10	7.8E-10	1.5E-02	1E-08	5E-08
Phenanthrene	0.782	1.9	0.01	9.8E-10	2.4E-09	1.5E-02	7E-08	2E-07
Aroclor 1260	0.387	1.06	0.01	4.9E-10	1.3E-09	NA	0E+00	0E+00
Arsenic	26.6	74.8	0.001	3.3E-09	9.4E-09	6.0E-05	6E-05	2E-04
Cyanide	0.189	0.3	0.001	2.4E-11	3.8E-11	4.0E-03	6E-09	9E-09
Lead	73.1	186	0.001	9.2E-09	2.3E-08	NA	0E+00	0E+00
Mercury	0.771	3.6	0.001	9.7E-11	4.5E-10	6.0E-05	2E-06	8E-06
TOTAL							6E-05	2E-04

BASF-WYANDOTTE

FUTURE MAINTENANCE WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL DUST INHALATION PATHWAY

SWMU G

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ESTIMATED DAILY INTAKE (mg/kg/day)		REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME	RAE	RME		RAE	RME
Acenaphthene	0.043	0.043	8.0E-13	8.0E-13	6.0E-02	1E-11	1E-11
Benzo(a)anthracene	0.804	1.41	1.5E-11	2.6E-11	NA	0E+00	0E+00
Benzo(a)pyrene	0.801	1.5	1.5E-11	2.8E-11	NA	0E+00	0E+00
Benzo(b)fluoranthene	1.2	2.41	2.2E-11	4.5E-11	NA	0E+00	0E+00
Chrysene	0.835	1.61	1.6E-11	3.0E-11	NA	0E+00	0E+00
Indeno(1,2,3-cd)pyrene	0.541	1.27	1.0E-11	2.4E-11	NA	0E+00	0E+00
Pentachlorophenol	0.118	0.62	2.2E-12	1.2E-11	3.0E-02	7E-11	4E-10
Phenanthrene	0.782	1.9	1.5E-11	3.5E-11	3.0E-02	5E-10	1E-09
Aroclor 1260	0.387	1.06	7.2E-12	2.0E-11	NA	0E+00	0E+00
Arsenic	26.6	74.8	4.9E-10	1.4E-09	NA	0E+00	0E+00
Cyanide	0.189	0.3	3.5E-12	5.6E-12	8.6E-04	4E-09	6E-09
Lead	73.1	186	1.4E-09	3.5E-09	NA	0E+00	0E+00
Mercury	0.771	3.6	1.4E-11	6.7E-11	8.6E-05	2E-07	8E-07
TOTAL						2E-07	8E-07

BASF-WYANDOTTE

FUTURE MAINTENANCE WORKER SCENARIO
CARCINOGENIC RISKS
SOIL INGESTION PATHWAY

SWMU G

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ABSORPTION EFFICIENCY (AEi)	ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME		RAE	RME		RAE	RME
Benzo(a)anthracene	0.804	1.41	0.5	3.1E-09	5.5E-09	7.3E-01	2E-09	4E-09
Benzo(a)pyrene	0.801	1.5	0.5	3.1E-09	5.9E-09	7.3E+00	2E-08	4E-08
Benzo(b)fluoranthene	1.2	2.41	0.5	4.7E-09	9.4E-09	7.3E-01	3E-09	7E-09
Chrysene	0.835	1.61	0.5	3.3E-09	6.3E-09	7.3E-03	2E-11	5E-11
Indeno(1,2,3-cd)pyrene	0.541	1.27	0.5	2.1E-09	5.0E-09	7.3E-01	2E-09	4E-09
Pentachlorophenol	0.118	0.62	0.5	4.6E-10	2.4E-09	1.2E-01	6E-11	3E-10
Aroclor 1260	0.387	1.06	0.5	1.5E-09	4.1E-09	2.0E+00	3E-09	8E-09
Arsenic	26.6	74.8	0.2	4.2E-08	1.2E-07	1.5E+00	6E-08	2E-07
Lead	73.1	186	0.2	1.1E-07	2.9E-07	NA	0E+00	0E+00
TOTAL							1E-07	2E-07

BASF–WYANDOTTE

FUTURE MAINTENANCE WORKER SCENARIO
CARCINOGENIC RISKS
SOIL DERMAL ABSORPTION PATHWAY

SWMU G

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		DERMAL ABSORPTION FACTOR (ABS)	ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME		RAE	RME		RAE	RME
Benzo(a)anthracene	0.804	1.41	0.01	3.6E−10	6.3E−10	1.5E+00	5E−10	9E−10
Benzo(a)pyrene	0.801	1.5	0.01	3.6E−10	6.7E−10	1.5E+01	5E−09	1E−08
Benzo(b)fluoranthene	1.2	2.41	0.01	5.4E−10	1.1E−09	1.5E+00	8E−10	2E−09
Chrysene	0.835	1.61	0.01	3.7E−10	7.2E−10	1.5E−02	5E−12	1E−11
Indeno(1,2,3−cd)pyrene	0.541	1.27	0.01	2.4E−10	5.7E−10	1.5E+00	4E−10	8E−10
Pentachlorophenol	0.118	0.62	0.01	5.3E−11	2.8E−10	2.4E−01	1E−11	7E−11
Aroclor 1260	0.387	1.06	0.01	1.7E−10	4.7E−10	4.0E+00	7E−10	2E−09
Arsenic	26.6	74.8	0.001	1.2E−09	3.3E−09	7.5E+00	9E−09	3E−08
Lead	73.1	186	0.001	3.3E−09	8.3E−09	NA	0E+00	0E+00
TOTAL							2E−08	4E−08

BASF-WYANDOTTE

FUTURE MAINTENANCE WORKER SCENARIO
CARCINOGENIC RISKS
SOIL DUST INHALATION PATHWAY

SWMU G

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME	RAE	RME		RAE	RME
Benzo(a)anthracene	0.804	1.41	5.3E-12	9.4E-12	7.3E-01	4E-12	7E-12
Benzo(a)pyrene	0.801	1.5	5.3E-12	1.0E-11	7.3E+00	4E-11	7E-11
Benzo(b)fluoranthene	1.2	2.41	8.0E-12	1.6E-11	7.3E-01	6E-12	1E-11
Chrysene	0.835	1.61	5.5E-12	1.1E-11	7.3E-03	4E-14	8E-14
Indeno(1,2,3-cd)pyrene	0.541	1.27	3:6E-12	8.4E-12	7.3E-01	3E-12	6E-12
Pentachlorophenol	0.118	0.62	7.8E-13	4.1E-12	1.2E-01	9E-14	5E-13
Aroclor 1260	0.387	1.06	2.6E-12	7.0E-12	2.0E+00	5E-12	1E-11
Arsenic	26.6	74.8	1.8E-10	5.0E-10	1.5E+01	3E-09	7E-09
Lead	73.1	186	4.9E-10	1.2E-09	NA	0E+00	0E+00
TOTAL						3E-09	8E-09

BASF-WYANDOTTE

FUTURE FACILITY WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL INGESTION PATHWAY

SWMU G

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ABSORPTION EFFICIENCY (AEi)	ESTIMATED DAILY INTAKE (mg/kg/day)		REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME		RAE	RME		RAE	RME
Acenaphthene	0.043	0.043	0.5	4.7E-09	4.7E-09	6.0E-02	8E-08	8E-08
Benzo(a)anthracene	0.804	1.41	0.5	8.8E-08	1.5E-07	NA	0E+00	0E+00
Benzo(a)pyrene	0.801	1.5	0.5	8.8E-08	1.6E-07	NA	0E+00	0E+00
Benzo(b)fluoranthene	1.2	2.41	0.5	1.3E-07	2.6E-07	NA	0E+00	0E+00
Chrysene	0.835	1.61	0.5	9.2E-08	1.8E-07	NA	0E+00	0E+00
Indeno(1,2,3-cd)pyrene	0.541	1.27	0.5	5.9E-08	1.4E-07	NA	0E+00	0E+00
Pentachlorophenol	0.118	0.62	0.5	1.3E-08	6.8E-08	3.0E-02	4E-07	2E-06
Phenanthrene	0.782	1.9	0.5	8.6E-08	2.1E-07	3.0E-02	3E-06	7E-06
Aroclor 1260	0.387	1.06	0.5	4.2E-08	1.2E-07	NA	0E+00	0E+00
Arsenic	26.6	74.8	0.2	1.2E-06	3.3E-06	3.0E-04	4E-03	1E-02
Cyanide	0.189	0.3	0.2	8.3E-09	1.3E-08	2.0E-02	4E-07	7E-07
Lead	73.1	186	0.2	3.2E-06	8.2E-06	NA	0E+00	0E+00
Mercury	0.771	3.6	0.2	3.4E-08	1.6E-07	3.0E-04	1E-04	5E-04
TOTAL							4E-03	1E-02

BASF-WYANDOTTE

FUTURE FACILITY WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL DERMAL ABSORPTION PATHWAY

SWMU G

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		DERMAL ABSORPTION FACTOR (ABS)	ESTIMATED DAILY INTAKE (mg/kg/day)		REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME		RAE	RME		RAE	RME
Acenaphthene	0.043	0.043	0.01	5.4E-10	5.4E-10	3.0E-02	2E-08	2E-08
Benzo(a)anthracene	0.804	1.41	0.01	1.0E-08	1.8E-08	NA	0E+00	0E+00
Benzo(a)pyrene	0.801	1.5	0.01	1.0E-08	1.9E-08	NA	0E+00	0E+00
Benzo(b)fluoranthene	1.2	2.41	0.01	1.5E-08	3.0E-08	NA	0E+00	0E+00
Chrysene	0.835	1.61	0.01	1.0E-08	2.0E-08	NA	0E+00	0E+00
Indeno(1,2,3-cd)pyrene	0.541	1.27	0.01	6.8E-09	1.6E-08	NA	0E+00	0E+00
Pentachlorophenol	0.118	0.62	0.01	1.5E-09	7.8E-09	1.5E-02	1E-07	5E-07
Phenanthrene	0.782	1.9	0.01	9.8E-09	2.4E-08	1.5E-02	7E-07	2E-06
Aroclor 1260	0.387	1.06	0.01	4.9E-09	1.3E-08	NA	0E+00	0E+00
Arsenic	26.6	74.8	0.001	3.3E-08	9.4E-08	6.0E-05	6E-04	2E-03
Cyanide	0.189	0.3	0.001	2.4E-10	3.8E-10	4.0E-03	6E-08	9E-08
Lead	73.1	186	0.001	9.2E-08	2.3E-07	NA	0E+00	0E+00
Mercury	0.771	3.6	0.001	9.7E-10	4.5E-09	6.0E-05	2E-05	8E-05
TOTAL							6E-04	2E-03

BASF-WYANDOTTE

FUTURE FACILITY WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL DUST INHALATION PATHWAY

SWMU G

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ESTIMATED DAILY INTAKE (mg/kg/day)		REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME	RAE	RME		RAE	RME
Acenaphthene	0.043	0.043	2.9E-12	2.9E-12	6.0E-02	5E-11	5E-11
Benzo(a)anthracene	0.804	1.41	5.3E-11	9.4E-11	NA	0E+00	0E+00
Benzo(a)pyrene	0.801	1.5	5.3E-11	1.0E-10	NA	0E+00	0E+00
Benzo(b)fluoranthene	1.2	2.41	8.0E-11	1.6E-10	NA	0E+00	0E+00
Chrysene	0.835	1.61	5.5E-11	1.1E-10	NA	0E+00	0E+00
Indeno(1,2,3-cd)pyrene	0.541	1.27	3.6E-11	8.4E-11	NA	0E+00	0E+00
Pentachlorophenol	0.118	0.62	7.8E-12	4.1E-11	3.0E-02	3E-10	1E-09
Phenanthrene	0.782	1.9	5.2E-11	1.3E-10	3.0E-02	2E-09	4E-09
Aroclor 1260	0.387	1.06	2.6E-11	7.0E-11	NA	0E+00	0E+00
Arsenic	26.6	74.8	1.8E-09	5.0E-09	NA	0E+00	0E+00
Cyanide	0.189	0.3	1.3E-11	2.0E-11	8.6E-04	1E-08	2E-08
Lead	73.1	186	4.9E-09	1.2E-08	NA	0E+00	0E+00
Mercury	0.771	3.6	5.1E-11	2.4E-10	8.6E-05	6E-07	3E-06
TOTAL						6E-07	3E-06

BASF-WYANDOTTE

FUTURE FACILITY WORKER SCENARIO
CARCINOGENIC RISKS
SOIL INGESTION PATHWAY

SWMU G

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ABSORPTION EFFICIENCY (AEi)	ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME		RAE	RME		RAE	RME
Benzo(a)anthracene	0.804	1.41	0.5	3.1E-08	5.5E-08	7.3E-01	2E-08	4E-08
Benzo(a)pyrene	0.801	1.5	0.5	3.1E-08	5.9E-08	7.3E+00	2E-07	4E-07
Benzo(b)fluoranthene	1.2	2.41	0.5	4.7E-08	9.4E-08	7.3E-01	3E-08	7E-08
Chrysene	0.835	1.61	0.5	3.3E-08	6.3E-08	7.3E-03	2E-10	5E-10
Indeno(1,2,3-cd)pyrene	0.541	1.27	0.5	2.1E-08	5.0E-08	7.3E-01	2E-08	4E-08
Pentachlorophenol	0.118	0.62	0.5	4.6E-09	2.4E-08	1.2E-01	6E-10	3E-09
Aroclor 1260	0.387	1.06	0.5	1.5E-08	4.1E-08	2.0E+00	3E-08	8E-08
Arsenic	26.6	74.8	0.2	4.2E-07	1.2E-06	1.5E+00	6E-07	2E-06
Lead	73.1	186	0.2	1.1E-06	2.9E-06	NA	0E+00	0E+00
TOTAL							1E-06	2E-06

BASF-WYANDOTTE

FUTURE FACILITY WORKER SCENARIO
CARCINOGENIC RISKS
SOIL DERMAL ABSORPTION PATHWAY

SWMU G

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		DERMAL ABSORPTION FACTOR (ABS)	ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME		RAE	RME		RAE	RME
Benzo(a)anthracene	0.804	1.41	0.01	3.6E-09	6.3E-09	1.5E+00	5E-09	9E-09
Benzo(a)pyrene	0.801	1.5	0.01	3.6E-09	6.7E-09	1.5E+01	5E-08	1E-07
Benzo(b)fluoranthene	1.2	2.41	0.01	5.4E-09	1.1E-08	1.5E+00	8E-09	2E-08
Chrysene	0.835	1.61	0.01	3.7E-09	7.2E-09	1.5E-02	5E-11	1E-10
Indeno(1,2,3-cd)pyrene	0.541	1.27	0.01	2.4E-09	5.7E-09	1.5E+00	4E-09	8E-09
Pentachlorophenol	0.118	0.62	0.01	5.3E-10	2.8E-09	2.4E-01	1E-10	7E-10
Aroclor 1260	0.387	1.06	0.01	1.7E-09	4.7E-09	4.0E+00	7E-09	2E-08
Arsenic	26.6	74.8	0.001	1.2E-08	3.3E-08	7.5E+00	9E-08	3E-07
Lead	73.1	186	0.001	3.3E-08	8.3E-08	NA	0E+00	0E+00
TOTAL							2E-07	4E-07

BASF-WYANDOTTE

FUTURE FACILITY WORKER SCENARIO
CARCINOGENIC RISKS
SOIL DUST INHALATION PATHWAY

SWMU G

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME	RAE	RME		RAE	RME
Benzo(a)anthracene	0.804	1.41	1.9E-11	3.3E-11	7.3E-01	1E-11	2E-11
Benzo(a)pyrene	0.801	1.5	1.9E-11	3.6E-11	7.3E+00	1E-10	3E-10
Benzo(b)fluoranthene	1.2	2.41	2.8E-11	5.7E-11	7.3E-01	2E-11	4E-11
Chrysene	0.835	1.61	2.0E-11	3.8E-11	7.3E-03	1E-13	3E-13
Indeno(1,2,3-cd)pyrene	0.541	1.27	1.3E-11	3.0E-11	7.3E-01	9E-12	2E-11
Pentachlorophenol	0.118	0.62	2.8E-12	1.5E-11	1.2E-01	3E-13	2E-12
Aroclor 1260	0.387	1.06	9.2E-12	2.5E-11	2.0E+00	2E-11	5E-11
Arsenic	26.6	74.8	6.3E-10	1.8E-09	1.5E+01	9E-09	3E-08
Lead	73.1	186	1.7E-09	4.4E-09	NA	0E+00	0E+00
TOTAL						1E-08	3E-08

BASF-WYANDOTTE

FUTURE CONSTRUCTION/UTILITY WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL INGESTION PATHWAY

SWMU G

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ABSORPTION EFFICIENCY (AEi)	ESTIMATED DAILY INTAKE (mg/kg/day)		SUBCHRONIC REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME		RAE	RME		RAE	RME
Acenaphthene	0.043	0.043	0.5	1.2E-08	1.2E-08	6.0E-01	2E-08	2E-08
Benzo(a)anthracene	0.804	1.41	0.5	2.3E-07	4.0E-07	NA	0E+00	0E+00
Benzo(a)pyrene	0.801	1.5	0.5	2.3E-07	4.2E-07	NA	0E+00	0E+00
Benzo(b)fluoranthene	1.2	2.41	0.5	3.4E-07	6.8E-07	NA	0E+00	0E+00
Chrysene	0.835	1.61	0.5	2.4E-07	4.5E-07	NA	0E+00	0E+00
Indeno(1,2,3-cd)pyrene	0.541	1.27	0.5	1.5E-07	3.6E-07	NA	0E+00	0E+00
Pentachlorophenol	0.118	0.62	0.5	3.3E-08	1.7E-07	3.0E-02	1E-06	6E-06
Phenanthrene	0.782	1.9	0.5	2.2E-07	5.4E-07	3.0E-01	7E-07	2E-06
Aroclor 1260	0.387	1.06	0.5	1.1E-07	3.0E-07	NA	0E+00	0E+00
Arsenic	26.6	74.8	0.2	3.0E-06	8.4E-06	3.0E-04	1E-02	3E-02
Cyanide	0.189	0.3	0.2	2.1E-08	3.4E-08	2.0E-02	1E-06	2E-06
Lead	73.1	186	0.2	8.2E-06	2.1E-05	NA	0E+00	0E+00
Mercury	0.771	3.6	0.2	8.7E-08	4.1E-07	3.0E-04	3E-04	1E-03
TOTAL							1E-02	3E-02

BASF-WYANDOTTE

FUTURE CONSTRUCTION/UTILITY WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL DERMAL ABSORPTION PATHWAY

SWMU G

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg) RAE	RME	DERMAL ABSORPTION FACTOR (ABS)	ESTIMATED DAILY INTAKE (mg/kg/day) RAE	RME	SUBCHRONIC REFERENCE DOSE (mg/kg/day)	HAZARD INDEX RAE	RME
Acenaphthene	0.043	0.043	0.01	1.4E-10	1.4E-10	3.0E-01	5E-10	5E-10
Benzo(a)anthracene	0.804	1.41	0.01	2.7E-09	4.7E-09	NA	0E+00	0E+00
Benzo(a)pyrene	0.801	1.5	0.01	2.7E-09	5.0E-09	NA	0E+00	0E+00
Benzo(b)fluoranthene	1.2	2.41	0.01	4.0E-09	8.1E-09	NA	0E+00	0E+00
Chrysene	0.835	1.61	0.01	2.8E-09	5.4E-09	NA	0E+00	0E+00
Indeno(1,2,3-cd)pyrene	0.541	1.27	0.01	1.8E-09	4.3E-09	NA	0E+00	0E+00
Pentachlorophenol	0.118	0.62	0.01	4.0E-10	2.1E-09	1.5E-02	3E-08	1E-07
Phenanthrene	0.782	1.9	0.01	2.6E-09	6.4E-09	1.5E-01	2E-08	4E-08
Aroclor 1260	0.387	1.06	0.01	1.3E-09	3.6E-09	NA	0E+00	0E+00
Arsenic	26.6	74.8	0.001	8.9E-09	2.5E-08	6.0E-05	1E-04	4E-04
Cyanide	0.189	0.3	0.001	6.3E-11	1.0E-10	4.0E-03	2E-08	3E-08
Lead	73.1	186	0.001	2.5E-08	6.2E-08	NA	0E+00	0E+00
Mercury	0.771	3.6	0.001	2.6E-10	1.2E-09	6.0E-05	4E-06	2E-05
TOTAL							2E-04	4E-04

BASF-WYANDOTTE

FUTURE CONSTRUCTION/UTILITY WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL DUST INHALATION PATHWAY

SWMU G

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ESTIMATED DAILY INTAKE (mg/kg/day)		SUBCHRONIC REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME	RAE	RME		RAE	RME
Acenaphthene	0.043	0.043	8.6E-13	8.6E-13	6.0E-01	1E-12	1E-12
Benzo(a)anthracene	0.804	1.41	1.6E-11	2.8E-11	NA	0E+00	0E+00
Benzo(a)pyrene	0.801	1.5	1.6E-11	3.0E-11	NA	0E+00	0E+00
Benzo(b)fluoranthene	1.2	2.41	2.4E-11	4.8E-11	NA	0E+00	0E+00
Chrysene	0.835	1.61	1.7E-11	3.2E-11	NA	0E+00	0E+00
Indeno(1,2,3-cd)pyrene	0.541	1.27	1.1E-11	2.5E-11	NA	0E+00	0E+00
Pentachlorophenol	0.118	0.62	2.4E-12	1.2E-11	3.0E-02	8E-11	4E-10
Phenanthrene	0.782	1.9	1.6E-11	3.8E-11	3.0E-01	5E-11	1E-10
Aroclor 1260	0.387	1.06	7.7E-12	2.1E-11	NA	0E+00	0E+00
Arsenic	26.6	74.8	5.3E-10	1.5E-09	NA	0E+00	0E+00
Cyanide	0.189	0.3	3.8E-12	6.0E-12	8.6E-04	4E-09	7E-09
Lead	73.1	186	1.5E-09	3.7E-09	NA	0E+00	0E+00
Mercury	0.771	3.6	1.5E-11	7.2E-11	8.6E-05	2E-07	8E-07
TOTAL						2E-07	8E-07

BASF-WYANDOTTE

FUTURE CONSTRUCTION/UTILITY WORKER SCENARIO
CARCINOGENIC RISKS
SOIL INGESTION PATHWAY

SWMU G

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ABSORPTION EFFICIENCY (AEi)	ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME		RAE	RME		RAE	RME
Benzo(a)anthracene	0.804	1.41	0.5	3.2E-09	5.7E-09	7.3E-01	2E-09	4E-09
Benzo(a)pyrene	0.801	1.5	0.5	3.2E-09	6.0E-09	7.3E+00	2E-08	4E-08
Benzo(b)fluoranthene	1.2	2.41	0.5	4.8E-09	9.7E-09	7.3E-01	4E-09	7E-09
Chrysene	0.835	1.61	0.5	3.4E-09	6.5E-09	7.3E-03	2E-11	5E-11
Indeno(1,2,3-cd)pyrene	0.541	1.27	0.5	2.2E-09	5.1E-09	7.3E-01	2E-09	4E-09
Pentachlorophenol	0.118	0.62	0.5	4.8E-10	2.5E-09	1.2E-01	6E-11	3E-10
Aroclor 1260	0.387	1.06	0.5	1.6E-09	4.3E-09	2.0E+00	3E-09	9E-09
Arsenic	26.6	74.8	0.2	4.3E-08	1.2E-07	1.5E+00	6E-08	2E-07
Lead	73.1	186	0.2	1.2E-07	3.0E-07	NA	0E+00	0E+00
TOTAL							1E-07	2E-07

BASF-WYANDOTTE

FUTURE CONSTRUCTION/UTILITY WORKER SCENARIO
CARCINOGENIC RISKS
SOIL DERMAL ABSORPTION PATHWAY

SWMU G

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		DERMAL ABSORPTION FACTOR (ABS)	ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME		RAE	RME		RAE	RME
Benzo(a)anthracene	0.804	1.41	0.01	3.9E-11	6.8E-11	1.5E+00	6E-11	1E-10
Benzo(a)pyrene	0.801	1.5	0.01	3.8E-11	7.2E-11	1.5E+01	6E-10	1E-09
Benzo(b)fluoranthene	1.2	2.41	0.01	5.8E-11	1.2E-10	1.5E+00	8E-11	2E-10
Chrysene	0.835	1.61	0.01	4.0E-11	7.7E-11	1.5E-02	6E-13	1E-12
Indeno(1,2,3-cd)pyrene	0.541	1.27	0.01	2.6E-11	6.1E-11	1.5E+00	4E-11	9E-11
Pentachlorophenol	0.118	0.62	0.01	5.7E-12	3.0E-11	2.4E-01	1E-12	7E-12
Aroclor 1260	0.387	1.06	0.01	1.9E-11	5.1E-11	4.0E+00	7E-11	2E-10
Arsenic	26.6	74.8	0.001	1.3E-10	3.6E-10	7.5E+00	1E-09	3E-09
Lead	73.1	186	0.001	3.5E-10	8.9E-10	NA	0E+00	0E+00
TOTAL							2E-09	4E-09

BASF-WYANDOTTE

FUTURE CONSTRUCTION/UTILITY WORKER SCENARIO
CARCINOGENIC RISKS
SOIL DUST INHALATION PATHWAY

SWMU G

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME	RAE	RME		RAE	RME
Benzo(a)anthracene	0.804	1.41	2.3E-13	4.0E-13	7.3E-01	2E-13	3E-13
Benzo(a)pyrene	0.801	1.5	2.3E-13	4.3E-13	7.3E+00	2E-12	3E-12
Benzo(b)fluoranthene	1.2	2.41	3.4E-13	6.9E-13	7.3E-01	2E-13	5E-13
Chrysene	0.835	1.61	2.4E-13	4.6E-13	7.3E-03	2E-15	3E-15
Indeno(1,2,3-cd)pyrene	0.541	1.27	1.5E-13	3.6E-13	7.3E-01	1E-13	3E-13
Pentachlorophenol	0.118	0.62	3.4E-14	1.8E-13	1.2E-01	4E-15	2E-14
Aroclor 1260	0.387	1.06	1.1E-13	3.0E-13	2.0E+00	2E-13	6E-13
Arsenic	26.6	74.8	7.6E-12	2.1E-11	1.5E+01	1E-10	3E-10
Lead	73.1	186	2.1E-11	5.3E-11	NA	0E+00	0E+00
TOTAL						1E-10	3E-10

APPENDIX G-3

SWMU H

BASF-WYANDOTTE

CURRENT MAINTENANCE WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL VAPOR INHALATION PATHWAY

SWMU H

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		VOLATILIZATION FACTOR (VF)	ESTIMATED DAILY INTAKE (mg/kg/day)		REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME		RAE	RME		RAE	RME
Acetone	1.6	1.6	42000	2.5E-07	2.5E-07	1.0E-01	3E-06	3E-06
Benzene	0.78	0.78	9680	5.3E-07	5.3E-07	1.7E-03	3E-04	3E-04
Chlorobenzene	0.83	0.83	21200	2.6E-07	2.6E-07	5.7E-03	5E-05	5E-05
1,2-Dichlorobenzene	0.68	0.68	48500	9.2E-08	9.2E-08	5.7E-02	2E-06	2E-06
1,2-Dichloropropane	5030	50000	13100	2.5E-03	2.5E-02	1.1E-03	2E+00	2E+01
Ethylbenzene	0.47	0.47	18100	1.7E-07	1.7E-07	2.9E-01	6E-07	6E-07
Methyl Ethyl Ketone	0.031	0.031	43900	4.6E-09	4.6E-09	2.9E-01	2E-08	2E-08
Toluene	5.8	5.8	13500	2.8E-06	2.8E-06	1.1E-01	3E-05	3E-05
1,2,3-Trichloropropane	17	17	45300	2.5E-06	2.5E-06	5.0E-03	5E-04	5E-04
Xylenes (total)	2.07	2.07	18000	7.6E-07	7.6E-07	2.0E-01	4E-06	4E-06
TOTAL							2E+00	2E+01

BASF-WYANDOTTE

CURRENT MAINTENANCE WORKER SCENARIO
CARCINOGENIC RISKS
SOIL VAPOR INHALATION PATHWAY

SWMU H

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		VOLATILIZATION FACTOR (VF)	ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME		RAE	RME		RAE	RME
Benzene	0.78	0.78	9680	1.9E-07	1.9E-07	2.9E-02	5E-09	5E-09
1,2-Dichloropropane	5030	50000	13100	9.0E-04	9.0E-03	6.8E-02	6E-05	6E-04
1,2,3-Trichloropropane	17	17	45300	8.8E-07	8.8E-07	7.0E+00	6E-06	6E-06
TOTAL							7E-05	6E-04

BASF-WYANDOTTE

FUTURE MAINTENANCE WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL INGESTION PATHWAY

SWMU H

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ABSORPTION EFFICIENCY (AE i)	ESTIMATED DAILY INTAKE (mg/kg/day)		REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME		RAE	RME		RAE	RME
Acetone	1.6	1.6	0.8	2.8E-08	2.8E-08	1.0E-01	3E-07	3E-07
Benzene	0.78	0.78	0.8	1.4E-08	1.4E-08	1.7E-03	8E-06	8E-06
Chlorobenzene	0.83	0.83	0.8	1.5E-08	1.5E-08	2.0E-02	7E-07	7E-07
1,2-Dichlorobenzene	0.68	0.68	0.8	1.2E-08	1.2E-08	9.0E-02	1E-07	1E-07
1,2-Dichloropropane	5030	50000	0.8	8.8E-05	8.8E-04	1.1E-03	8E-02	8E-01
Ethylbenzene	0.47	0.47	0.8	8.2E-09	8.2E-09	1.0E-01	8E-08	8E-08
Methyl Ethyl Ketone	0.031	0.031	0.8	5.4E-10	5.4E-10	6.0E-01	9E-10	9E-10
Toluene	5.8	5.8	0.8	1.0E-07	1.0E-07	2.0E-01	5E-07	5E-07
1,2,3-Trichloropropane	17	17	0.8	3.0E-07	3.0E-07	6.0E-03	5E-05	5E-05
Xylenes (total)	2.07	2.07	0.8	3.6E-08	3.6E-08	2.0E+00	2E-08	2E-08
Acenaphthene	6.7	6.7	0.5	7.3E-08	7.3E-08	6.0E-02	1E-06	1E-06
Benzo(a)anthracene	4.5	4.5	0.5	4.9E-08	4.9E-08	NA	0E+00	0E+00
Benzo(a)pyrene	3.1	3.1	0.5	3.4E-08	3.4E-08	NA	0E+00	0E+00
Benzo(b)fluoranthene	4.2	4.2	0.5	4.6E-08	4.6E-08	NA	0E+00	0E+00
Benzo(k)fluoranthene	0.13	0.13	0.5	1.4E-09	1.4E-09	NA	0E+00	0E+00
Benzo(g,h,i)perylene	0.18	0.18	0.5	2.0E-09	2.0E-09	3.0E-02	7E-08	7E-08
bis(2-Chloroethyl) ether	12	12	0.5	1.3E-07	1.3E-07	NA	0E+00	0E+00
bis(2-Chloroisopropyl) ether	156	1400	0.5	1.7E-06	1.5E-05	4.0E-02	4E-05	4E-04
bis(2-Ethylhexyl) phthalate	10	10	0.5	1.1E-07	1.1E-07	2.0E-02	5E-06	5E-06
4-Chloro-3-methylphenol	3.2	3.2	0.5	3.5E-08	3.5E-08	NA	0E+00	0E+00
2-Chlorophenol	3	3	0.5	3.3E-08	3.3E-08	5.0E-03	7E-06	7E-06
Chrysene	4.8	4.8	0.5	5.3E-08	5.3E-08	NA	0E+00	0E+00
2,4-Dimethylphenol	8.3	8.3	0.5	9.1E-08	9.1E-08	2.0E-02	5E-06	5E-06
2,4-Dinitrotoluene	2.4	2.4	0.5	2.6E-08	2.6E-08	2.0E-03	1E-05	1E-05
Fluoranthene	11	11	0.5	1.2E-07	1.2E-07	4.0E-02	3E-06	3E-06
Indeno(1,2,3-cd)pyrene	0.15	0.15	0.5	1.6E-09	1.6E-09	NA	0E+00	0E+00
2-Methylnaphthalene	6.4	6.4	0.5	7.0E-08	7.0E-08	3.0E-02	2E-06	2E-06
4-Methylphenol	4.9	4.9	0.5	5.4E-08	5.4E-08	5.0E-03	1E-05	1E-05
Naphthalene	12.5	16	0.5	1.4E-07	1.8E-07	4.0E-02	3E-06	4E-06
4-Nitrophenol	4.5	4.5	0.5	4.9E-08	4.9E-08	NA	0E+00	0E+00
N-Nitrosodi-n-propylamine	1.9	1.9	0.5	2.1E-08	2.1E-08	NA	0E+00	0E+00
Pentachlorophenol	0.0573	0.3	0.5	6.3E-10	3.3E-09	3.0E-02	2E-08	1E-07
Phenanthrene	13	20	0.5	1.4E-07	2.2E-07	3.0E-02	5E-06	7E-06
1,2,4-Trichlorobenzene	1.9	1.9	0.5	2.1E-08	2.1E-08	1.0E-02	2E-06	2E-06
alpha-Chlordane	0.00666	0.024	0.5	7.3E-11	2.6E-10	6.0E-05	1E-06	4E-06
Aroclor 1248	0.29	1.48	0.5	3.2E-09	1.6E-08	NA	0E+00	0E+00
Aroclor 1254	0.263	1.1	0.5	2.9E-09	1.2E-08	2.0E-05	1E-04	6E-04
Antimony	11.6	52.2	0.2	5.1E-08	2.3E-07	4.0E-04	1E-04	6E-04
Arsenic	80.6	331	0.2	3.5E-07	1.5E-06	3.0E-04	1E-03	5E-03
Beryllium	1.84	7.6	0.2	8.1E-09	3.3E-08	5.0E-03	2E-06	7E-06
Cadmium	2.34	8.4	0.2	1.0E-08	3.7E-08	5.0E-04	2E-05	7E-05
Chromium	47.1	108	0.2	2.1E-07	4.7E-07	5.0E-03	4E-05	9E-05
Cobalt	22	68	0.2	9.6E-08	3.0E-07	6.0E-02	2E-06	5E-06
Copper	50.2	211	0.2	2.2E-07	9.2E-07	3.7E-02	6E-06	2E-05
Cyanide	2.54	16	0.2	1.1E-08	7.0E-08	2.0E-02	6E-07	4E-06
Lead	74.1	433	0.2	3.2E-07	1.9E-06	NA	0E+00	0E+00
Mercury	5.69	52.9	0.2	2.5E-08	2.3E-07	3.0E-04	8E-05	8E-04
Nickel	44.9	103	0.2	2.0E-07	4.5E-07	2.0E-02	1E-05	2E-05
Selenium	58.1	295	0.2	2.5E-07	1.3E-06	5.0E-03	5E-05	3E-04
Silver	4.26	21.7	0.2	1.9E-08	9.5E-08	5.0E-03	4E-06	2E-05
Thallium	55.4	282	0.2	2.4E-07	1.2E-06	8.0E-05	3E-03	2E-02
Vanadium	42.3	77	0.2	1.9E-07	3.4E-07	7.0E-03	3E-05	5E-05
TOTAL							9E-02	8E-01

BASF-WYANDOTTE

FUTURE MAINTENANCE WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL DERMAL ABSORPTION PATHWAY

SWMU H

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg) RAE	RME	DERMAL ABSORPTION FACTOR (ABS)	ESTIMATED DAILY INTAKE (mg/kg/day) RAE	RME	REFERENCE DOSE (mg/kg/day)	HAZARD INDEX RAE	RME
Acetone	1.6	1.6	0.0005	1.0E-10	1.0E-10	8.0E-02	1E-09	1E-09
Benzene	0.78	0.78	0.0005	4.9E-11	4.9E-11	1.4E-03	4E-08	4E-08
Chlorobenzene	0.83	0.83	0.01	1.0E-09	1.0E-09	1.6E-02	7E-08	7E-08
1,2-Dichlorobenzene	0.68	0.68	0.01	8.5E-10	8.5E-10	7.2E-02	1E-08	1E-08
1,2-Dichloropropane	5030	50000	0.01	6.3E-06	6.3E-05	8.8E-04	7E-03	7E-02
Ethylbenzene	0.47	0.47	0.03	1.8E-09	1.8E-09	8.0E-02	2E-08	2E-08
Methyl Ethyl Ketone	0.031	0.031	0.01	3.9E-11	3.9E-11	4.8E-01	8E-11	8E-11
Toluene	5.8	5.8	0.03	2.2E-08	2.2E-08	1.6E-01	1E-07	1E-07
1,2,3-Trichloropropane	17	17	0.01	2.1E-08	2.1E-08	4.8E-03	4E-06	4E-06
Xylenes (total)	2.07	2.07	0.03	7.8E-09	7.8E-09	1.6E+00	5E-09	5E-09
Acenaphthene	6.7	6.7	0.01	8.4E-09	8.4E-09	3.0E-02	3E-07	3E-07
Benzo(a)anthracene	4.5	4.5	0.01	5.6E-09	5.6E-09	NA	0E+00	0E+00
Benzo(a)pyrene	3.1	3.1	0.01	3.9E-09	3.9E-09	NA	0E+00	0E+00
Benzo(b)fluoranthene	4.2	4.2	0.01	5.3E-09	5.3E-09	NA	0E+00	0E+00
Benzo(k)fluoranthene	0.13	0.13	0.01	1.6E-10	1.6E-10	NA	0E+00	0E+00
Benzo(g,h,i)perylene	0.18	0.18	0.01	2.3E-10	2.3E-10	1.5E-02	2E-08	2E-08
bis(2-Chloroethyl) ether	12	12	0.01	1.5E-08	1.5E-08	NA	0E+00	0E+00
bis(2-Chloroisopropyl) ether	156	1400	0.01	2.0E-07	1.8E-06	2.0E-02	1E-05	9E-05
bis(2-Ethylhexyl) phthalate	10	10	0.01	1.3E-08	1.3E-08	1.0E-02	1E-06	1E-06
4-Chloro-3-methylphenol	3.2	3.2	0.01	4.0E-09	4.0E-09	NA	0E+00	0E+00
2-Chlorophenol	3	3	0.01	3.8E-09	3.8E-09	2.5E-03	2E-06	2E-06
Chrysene	4.8	4.8	0.01	6.0E-09	6.0E-09	NA	0E+00	0E+00
2,4-Dimethylphenol	8.3	8.3	0.01	1.0E-08	1.0E-08	1.0E-02	1E-06	1E-06
2,4-Dinitrotoluene	2.4	2.4	0.01	3.0E-09	3.0E-09	1.0E-03	3E-06	3E-06
Fluoranthene	11	11	0.01	1.4E-08	1.4E-08	2.0E-02	7E-07	7E-07
Indeno(1,2,3-cd)pyrene	0.15	0.15	0.01	1.9E-10	1.9E-10	NA	0E+00	0E+00
2-Methylnaphthalene	6.4	6.4	0.01	8.0E-09	8.0E-09	1.5E-02	5E-07	5E-07
4-Methylphenol	4.9	4.9	0.01	6.1E-09	6.1E-09	2.5E-03	2E-06	2E-06
Naphthalene	12.5	16	0.01	1.6E-08	2.0E-08	2.0E-02	8E-07	1E-06
4-Nitrophenol	4.5	4.5	0.01	5.6E-09	5.6E-09	NA	0E+00	0E+00
N-Nitrosodi-n-propylamine	1.9	1.9	0.01	2.4E-09	2.4E-09	NA	0E+00	0E+00
Pentachlorophenol	0.0573	0.3	0.01	7.2E-11	3.8E-10	1.5E-02	5E-09	3E-08
Phenanthrene	13	20	0.01	1.6E-08	2.5E-08	1.5E-02	1E-06	2E-06
1,2,4-Trichlorobenzene	1.9	1.9	0.01	2.4E-09	2.4E-09	5.0E-03	5E-07	5E-07
alpha-Chlordane	0.00566	0.024	0.01	8.3E-12	3.0E-11	3.0E-05	3E-07	1E-06
Aroclor 1248	0.29	1.48	0.01	3.6E-10	1.9E-09	NA	0E+00	0E+00
Aroclor 1254	0.263	1.1	0.01	3.3E-10	1.4E-09	1.0E-05	3E-05	1E-04
Antimony	11.6	52.2	0.001	1.5E-09	6.5E-09	8.0E-05	2E-05	8E-05
Arsenic	80.6	331	0.001	1.0E-08	4.1E-08	6.0E-05	2E-04	7E-04
Beryllium	1.84	7.6	0.001	2.3E-10	9.5E-10	1.0E-03	2E-07	1E-06
Cadmium	2.34	8.4	0.001	2.9E-10	1.1E-09	1.0E-04	3E-06	1E-05
Chromium	47.1	108	0.001	5.9E-09	1.4E-08	1.0E-03	6E-06	1E-05
Cobalt	22	68	0.01	2.8E-08	8.5E-08	1.2E-02	2E-06	7E-06
Copper	50.2	211	0.001	6.3E-09	2.6E-08	7.4E-03	9E-07	4E-06
Cyanide	2.54	16	0.001	3.2E-10	2.0E-09	4.0E-03	8E-08	5E-07
Lead	74.1	433	0.001	9.3E-09	5.4E-08	NA	0E+00	0E+00
Mercury	5.69	52.9	0.001	7.1E-10	6.6E-09	6.0E-05	1E-05	1E-04
Nickel	44.9	103	0.0005	2.8E-09	6.5E-09	4.0E-03	7E-07	2E-06
Selenium	58.1	295	0.001	7.3E-09	3.7E-08	1.0E-03	7E-06	4E-05
Silver	4.26	21.7	0.001	5.3E-10	2.7E-09	1.0E-03	5E-07	3E-06
Thallium	55.4	282	0.001	6.9E-09	3.5E-08	1.6E-05	4E-04	2E-03
Vanadium	42.3	77	0.001	5.3E-09	9.7E-09	1.4E-03	4E-06	7E-06
TOTAL							8E-03	7E-02

BASF-WYANDOTTE

FUTURE MAINTENANCE WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL DUST INHALATION PATHWAY

SWMU H

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ESTIMATED DAILY INTAKE (mg/kg/day)		REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME	RAE	RME		RAE	RME
Acetone	1.6	1.6	3.0E-11	3.0E-11	1.0E-01	3E-10	3E-10
Benzene	0.78	0.78	1.5E-11	1.5E-11	1.7E-03	9E-09	9E-09
Chlorobenzene	0.83	0.83	1.5E-11	1.5E-11	5.7E-03	3E-09	3E-09
1,2-Dichlorobenzene	0.68	0.68	1.3E-11	1.3E-11	5.7E-02	2E-10	2E-10
1,2-Dichloropropane	5030	50000	9.4E-08	9.3E-07	1.1E-03	9E-05	8E-04
Ethylbenzene	0.47	0.47	8.7E-12	8.7E-12	2.9E-01	3E-11	3E-11
Methyl Ethyl Ketone	0.031	0.031	5.8E-13	5.8E-13	2.9E-01	2E-12	2E-12
Toluene	5.8	5.8	1.1E-10	1.1E-10	1.1E-01	1E-09	1E-09
1,2,3-Trichloropropane	17	17	3.2E-10	3.2E-10	5.0E-03	6E-08	6E-08
Xylenes (total)	2.07	2.07	3.8E-11	3.8E-11	2.0E-01	2E-10	2E-10
Acenaphthene	6.7	6.7	1.2E-10	1.2E-10	6.0E-02	2E-09	2E-09
Benzo(a)anthracene	4.5	4.5	8.4E-11	8.4E-11	NA	0E+00	0E+00
Benzo(a)pyrene	3.1	3.1	5.8E-11	5.8E-11	NA	0E+00	0E+00
Benzo(b)fluoranthene	4.2	4.2	7.8E-11	7.8E-11	NA	0E+00	0E+00
Benzo(k)fluoranthene	0.13	0.13	2.4E-12	2.4E-12	NA	0E+00	0E+00
Benzo(g,h,i)perylene	0.18	0.18	3.3E-12	3.3E-12	3.0E-02	1E-10	1E-10
bis(2-Chloroethyl) ether	12	12	2.2E-10	2.2E-10	NA	0E+00	0E+00
bis(2-Chloroisopropyl) ether	156	1400	2.9E-09	2.6E-08	4.0E-02	7E-08	7E-07
bis(2-Ethylhexyl) phthalate	10	10	1.9E-10	1.9E-10	2.2E-02	8E-09	8E-09
4-Chloro-3-methylphenol	3.2	3.2	6.0E-11	6.0E-11	NA	0E+00	0E+00
2-Chlorophenol	3	3	5.6E-11	5.6E-11	5.0E-03	1E-08	1E-08
Chrysene	4.8	4.8	8.9E-11	8.9E-11	NA	0E+00	0E+00
2,4-Dimethylphenol	8.3	8.3	1.5E-10	1.5E-10	2.0E-02	8E-09	8E-09
2,4-Dinitrotoluene	2.4	2.4	4.5E-11	4.5E-11	2.0E-03	2E-08	2E-08
Fluoranthene	11	11	2.0E-10	2.0E-10	4.0E-02	5E-09	5E-09
Indeno(1,2,3-cd)pyrene	0.15	0.15	2.8E-12	2.8E-12	NA	0E+00	0E+00
2-Methylnaphthalene	6.4	6.4	1.2E-10	1.2E-10	3.0E-02	4E-09	4E-09
4-Methylphenol	4.9	4.9	9.1E-11	9.1E-11	5.0E-03	2E-08	2E-08
Naphthalene	12.5	16	2.3E-10	3.0E-10	4.0E-02	6E-09	7E-09
4-Nitrophenol	4.5	4.5	8.4E-11	8.4E-11	NA	0E+00	0E+00
N-Nitrosodi-n-propylamine	1.9	1.9	3.5E-11	3.5E-11	NA	0E+00	0E+00
Pentachlorophenol	0.0573	0.3	1.1E-12	5.6E-12	3.0E-02	4E-11	2E-10
Phenanthrene	13	20	2.4E-10	3.7E-10	3.0E-02	8E-09	1E-08
1,2,4-Trichlorobenzene	1.9	1.9	3.5E-11	3.5E-11	5.7E-02	6E-10	6E-10
alpha-Chlordane	0.00666	0.024	1.2E-13	4.5E-13	6.0E-05	2E-09	7E-09
Aroclor 1248	0.29	1.48	5.4E-12	2.8E-11	NA	0E+00	0E+00
Aroclor 1254	0.263	1.1	4.9E-12	2.0E-11	2.0E-05	2E-07	1E-06
Antimony	11.6	52.2	2.2E-10	9.7E-10	NA	0E+00	0E+00
Arsenic	80.6	331	1.5E-09	6.2E-09	NA	0E+00	0E+00
Beryllium	1.84	7.6	3.4E-11	1.4E-10	NA	0E+00	0E+00
Cadmium	2.34	8.4	4.4E-11	1.6E-10	5.7E-05	8E-07	3E-06
Chromium	47.1	108	8.8E-10	2.0E-09	NA	0E+00	0E+00
Cobalt	22	68	4.1E-10	1.3E-09	2.9E-04	1E-06	4E-06
Copper	50.2	211	9.3E-10	3.9E-09	NA	0E+00	0E+00
Cyanide	2.54	16	4.7E-11	3.0E-10	8.6E-04	5E-08	3E-07
Lead	74.1	433	1.4E-09	8.1E-09	NA	0E+00	0E+00
Mercury	5.69	52.9	1.1E-10	9.8E-10	8.6E-05	1E-06	1E-05
Nickel	44.9	103	8.4E-10	1.9E-09	NA	0E+00	0E+00
Selenium	58.1	295	1.1E-09	5.5E-09	NA	0E+00	0E+00
Silver	4.26	21.7	7.9E-11	4.0E-10	NA	0E+00	0E+00
Thallium	55.4	282	1.0E-09	5.2E-09	NA	0E+00	0E+00
Vanadium	42.3	77	7.9E-10	1.4E-09	NA	0E+00	0E+00
TOTAL						9E-05	9E-04

BASF-WYANDOTTE

FUTURE MAINTENANCE WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL VAPOR INHALATION PATHWAY

SWMU H

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		VOLATILIZATION FACTOR (VF)	ESTIMATED DAILY INTAKE (mg/kg/day)		REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME		RAE	RME		RAE	RME
Acetone	1.6	1.6	42000	9.4E-07	9.4E-07	1.0E-01	9E-06	9E-06
Benzene	0.78	0.78	9680	2.0E-06	2.0E-06	1.7E-03	1E-03	1E-03
Chlorobenzene	0.83	0.83	21200	9.6E-07	9.6E-07	5.7E-03	2E-04	2E-04
1,2-Dichlorobenzene	0.68	0.68	48500	3.4E-07	3.4E-07	5.7E-02	6E-06	6E-06
1,2-Dichloropropane	5030	50000	13100	9.4E-03	9.4E-02	1.1E-03	9E+00	9E+01
Ethylbenzene	0.47	0.47	18100	6.4E-07	6.4E-07	2.9E-01	2E-06	2E-06
Methyl Ethyl Ketone	0.031	0.031	43900	1.7E-08	1.7E-08	2.9E-01	6E-08	6E-08
Toluene	5.8	5.8	13500	1.1E-05	1.1E-05	1.1E-01	1E-04	1E-04
1,2,3-Trichloropropane	17	17	45300	9.2E-06	9.2E-06	5.0E-03	2E-03	2E-03
Xylenes (total)	2.07	2.07	18000	2.8E-06	2.8E-06	2.0E-01	1E-05	1E-05
TOTAL							9E+00	9E+01

BASF-WYANDOTTE

FUTURE MAINTENANCE WORKER SCENARIO
CARCINOGENIC RISKS
SOIL INGESTION PATHWAY

SWMU H

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ABSORPTION EFFICIENCY (AEi)	ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME		RAE	RME		RAE	RME
Benzene	0.78	0.78	0.8	4.9E-09	4.9E-09	2.9E-02	1E-10	1E-10
1,2-Dichloropropane	5030	50000	0.8	3.1E-05	3.1E-04	6.8E-02	2E-06	2E-05
1,2,3-Trichloropropane	17	17	0.8	1.1E-07	1.1E-07	7.0E+00	7E-07	7E-07
Benzo(a)anthracene	4.5	4.5	0.5	1.8E-08	1.8E-08	7.3E-01	1E-08	1E-08
Benzo(a)pyrene	3.1	3.1	0.5	1.2E-08	1.2E-08	7.3E+00	9E-08	9E-08
Benzo(b)fluoranthene	4.2	4.2	0.5	1.6E-08	1.6E-08	7.3E-01	1E-08	1E-08
Benzo(k)fluoranthene	0.13	0.13	0.5	5.1E-10	5.1E-10	7.3E-02	4E-11	4E-11
bis(2-Chloroethyl) ether	12	12	0.5	4.7E-08	4.7E-08	1.1E+00	5E-08	5E-08
bis(2-Chloroisopropyl) ether	156	1400	0.5	6.1E-07	5.5E-06	7.0E-02	4E-08	4E-07
bis(2-Ethylhexyl) phthalate	10	10	0.5	3.9E-08	3.9E-08	1.4E-02	5E-10	5E-10
Chrysene	4.8	4.8	0.5	1.9E-08	1.9E-08	7.3E-03	1E-10	1E-10
2,4-Dinitrotoluene	2.4	2.4	0.5	9.4E-09	9.4E-09	6.8E-01	6E-09	6E-09
Indeno(1,2,3-cd)pyrene	0.15	0.15	0.5	5.9E-10	5.9E-10	7.3E-01	4E-10	4E-10
N-Nitrosodi-n-propylamine	1.9	1.9	0.5	7.4E-09	7.4E-09	7.0E+00	5E-08	5E-08
Pentachlorophenol	0.0573	0.3	0.5	2.2E-10	1.2E-09	1.2E-01	3E-11	1E-10
alpha-Chlordane	0.00666	0.024	0.5	2.6E-11	9.4E-11	1.3E+00	3E-11	1E-10
Aroclor 1248	0.29	1.48	0.5	1.1E-09	5.8E-09	2.0E+00	2E-09	1E-08
Aroclor 1254	0.263	1.1	0.5	1.0E-09	4.3E-09	2.0E+00	2E-09	9E-09
Arsenic	80.6	331	0.2	1.3E-07	5.2E-07	1.5E+00	2E-07	8E-07
Beryllium	1.84	7.6	0.2	2.9E-09	1.2E-08	4.3E+00	1E-08	5E-08
Lead	74.1	433	0.2	1.2E-07	6.8E-07	NA	0E+00	0E+00
TOTAL							3E-06	2E-05

BASF-WYANDOTTE

FUTURE MAINTENANCE WORKER SCENARIO
CARCINOGENIC RISKS
SOIL DERMAL ABSORPTION PATHWAY

SWMU H

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		DERMAL ABSORPTION FACTOR (ABS)	ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME		RAE	RME		RAE	RME
Benzene	0.78	0.78	0.0005	1.7E-11	1.7E-11	3.6E-02	6E-13	6E-13
1,2-Dichloropropane	5030	50000	0.01	2.3E-06	2.2E-05	8.5E-02	2E-07	2E-06
1,2,3-Trichloropropane	17	17	0.01	7.6E-09	7.6E-09	8.8E+00	7E-08	7E-08
Benzo(a)anthracene	4.5	4.5	0.01	2.0E-09	2.0E-09	1.5E+00	3E-09	3E-09
Benzo(a)pyrene	3.1	3.1	0.01	1.4E-09	1.4E-09	1.5E+01	2E-08	2E-08
Benzo(b)fluoranthene	4.2	4.2	0.01	1.9E-09	1.9E-09	1.5E+00	3E-09	3E-09
Benzo(k)fluoranthene	0.13	0.13	0.01	5.8E-11	5.8E-11	1.5E-01	8E-12	8E-12
bis(2-Chloroethyl) ether	12	12	0.01	5.4E-09	5.4E-09	2.2E+00	1E-08	1E-08
bis(2-Chloroisopropyl) ether	156	1400	0.01	7.0E-08	6.3E-07	1.4E-01	1E-08	9E-08
bis(2-Ethylhexyl) phthalate	10	10	0.01	4.5E-09	4.5E-09	2.8E-02	1E-10	1E-10
Chrysene	4.8	4.8	0.01	2.1E-09	2.1E-09	1.5E-02	3E-11	3E-11
2,4-Dinitrotoluene	2.4	2.4	0.01	1.1E-09	1.1E-09	1.4E+00	1E-09	1E-09
Indeno(1,2,3-cd)pyrene	0.15	0.15	0.01	6.7E-11	6.7E-11	1.5E+00	1E-10	1E-10
N-Nitrosodi-n-propylamine	1.9	1.9	0.01	8.5E-10	8.5E-10	1.4E+01	1E-08	1E-08
Pentachlorophenol	0.0573	0.3	0.01	2.6E-11	1.3E-10	2.4E-01	6E-12	3E-11
alpha-Chlordane	0.00666	0.024	0.01	3.0E-12	1.1E-11	2.6E+00	8E-12	3E-11
Aroclor 1248	0.29	1.48	0.01	1.3E-10	6.6E-10	4.0E+00	5E-10	3E-09
Aroclor 1254	0.263	1.1	0.01	1.2E-10	4.9E-10	4.0E+00	5E-10	2E-09
Arsenic	80.6	331	0.001	3.6E-09	1.5E-08	7.5E+00	3E-08	1E-07
Beryllium	1.84	7.6	0.001	8.2E-11	3.4E-10	2.2E+01	2E-09	7E-09
Lead	74.1	433	0.001	3.3E-09	1.9E-08	NA	0E+00	0E+00
TOTAL							3E-07	2E-06

BASF-WYANDOTTE

FUTURE MAINTENANCE WORKER SCENARIO
CARCINOGENIC RISKS
SOIL DUST INHALATION PATHWAY

SWMU H

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME	RAE	RME		RAE	RME
Benzene	0.78	0.78	5.2E-12	5.2E-12	2.9E-02	2E-13	2E-13
1,2-Dichloropropane	5030	50000	3.3E-08	3.3E-07	6.8E-02	2E-09	2E-08
1,2,3-Trichloropropane	17	17	1.1E-10	1.1E-10	7.0E+00	8E-10	8E-10
Benzo(a)anthracene	4.5	4.5	3.0E-11	3.0E-11	7.3E-01	2E-11	2E-11
Benzo(a)pyrene	3.1	3.1	2.1E-11	2.1E-11	7.3E+00	2E-10	2E-10
Benzo(b)fluoranthene	4.2	4.2	2.8E-11	2.8E-11	7.3E-01	2E-11	2E-11
Benzo(k)fluoranthene	0.13	0.13	8.6E-13	8.6E-13	7.3E-02	6E-14	6E-14
bis(2-Chloroethyl) ether	12	12	8.0E-11	8.0E-11	1.2E+00	1E-10	1E-10
bis(2-Chloroisopropyl) ether	156	1400	1.0E-09	9.3E-09	3.5E-02	4E-11	3E-10
bis(2-Ethylhexyl) phthalate	10	10	6.6E-11	6.6E-11	1.4E-02	9E-13	9E-13
Chrysene	4.8	4.8	3.2E-11	3.2E-11	7.3E-03	2E-13	2E-13
2,4-Dinitrotoluene	2.4	2.4	1.6E-11	1.6E-11	6.8E-01	1E-11	1E-11
Indeno(1,2,3-cd)pyrene	0.15	0.15	1.0E-12	1.0E-12	7.3E-01	7E-13	7E-13
N-Nitrosodi-n-propylamine	1.9	1.9	1.3E-11	1.3E-11	7.0E+00	9E-11	9E-11
Pentachlorophenol	0.0573	0.3	3.8E-13	2.0E-12	1.2E-01	5E-14	2E-13
alpha-Chlordane	0.00666	0.024	4.4E-14	1.6E-13	1.3E+00	6E-14	2E-13
Aroclor 1248	0.29	1.48	1.9E-12	9.8E-12	2.0E+00	4E-12	2E-11
Aroclor 1254	0.263	1.1	1.7E-12	7.3E-12	2.0E+00	3E-12	1E-11
Arsenic	80.6	331	5.4E-10	2.2E-09	1.5E+01	8E-09	3E-08
Beryllium	1.84	7.6	1.2E-11	5.0E-11	8.4E+00	1E-10	4E-10
Cadmium	2.34	8.4	1.6E-11	5.6E-11	6.3E+00	1E-10	4E-10
Chromium	47.1	108	3.1E-10	7.2E-10	2.9E+02	9E-08	2E-07
Lead	74.1	433	4.9E-10	2.9E-09	NA	0E+00	0E+00
Nickel	44.9	103	3.0E-10	6.8E-10	8.4E-01	3E-10	6E-10
TOTAL						1E-07	3E-07

BASF-WYANDOTTE

FUTURE MAINTENANCE WORKER SCENARIO
CARCINOGENIC RISKS
SOIL VAPOR INHALATION PATHWAY

SWMU H

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		VOLATILIZATION FACTOR (VF)	ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME		RAE	RME		RAE	RME
Benzene	0.78	0.78	9680	7.1E-07	7.1E-07	2.9E-02	2E-08	2E-08
1,2-Dichloropropane	5030	50000	13100	3.4E-03	3.3E-02	6.8E-02	2E-04	2E-03
1,2,3-Trichloropropane	17	17	45300	3.3E-06	3.3E-06	7.0E+00	2E-05	2E-05
TOTAL							3E-04	2E-03

BASF-WYANDOTTE

FUTURE FACILITY WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL INGESTION PATHWAY

SWMU H

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ABSORPTION EFFICIENCY (AEi)	ESTIMATED DAILY INTAKE (mg/kg/day)		REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME		RAE	RME		RAE	RME
Acetone	1.6	1.6	0.8	2.8E-07	2.8E-07	1.0E-01	3E-06	3E-06
Benzene	0.78	0.78	0.8	1.4E-07	1.4E-07	1.7E-03	8E-05	8E-05
Chlorobenzene	0.83	0.83	0.8	1.5E-07	1.5E-07	2.0E-02	7E-06	7E-06
1,2-Dichlorobenzene	0.68	0.68	0.8	1.2E-07	1.2E-07	9.0E-02	1E-06	1E-06
1,2-Dichloropropane	5030	50000	0.8	8.8E-04	8.8E-03	1.1E-03	8E-01	8E+00
Ethylbenzene	0.47	0.47	0.8	8.2E-08	8.2E-08	1.0E-01	8E-07	8E-07
Methyl Ethyl Ketone	0.031	0.031	0.8	5.4E-09	5.4E-09	6.0E-01	9E-09	9E-09
Toluene	5.8	5.8	0.8	1.0E-06	1.0E-06	2.0E-01	5E-06	5E-06
1,2,3-Trichloropropane	17	17	0.8	3.0E-06	3.0E-06	6.0E-03	5E-04	5E-04
Xylenes (total)	2.07	2.07	0.8	3.6E-07	3.6E-07	2.0E+00	2E-07	2E-07
Acenaphthene	6.7	6.7	0.5	7.3E-07	7.3E-07	6.0E-02	1E-05	1E-05
Benzo(a)anthracene	4.5	4.5	0.5	4.9E-07	4.9E-07	NA	0E+00	0E+00
Benzo(a)pyrene	3.1	3.1	0.5	3.4E-07	3.4E-07	NA	0E+00	0E+00
Benzo(b)fluoranthene	4.2	4.2	0.5	4.6E-07	4.6E-07	NA	0E+00	0E+00
Benzo(k)fluoranthene	0.13	0.13	0.5	1.4E-08	1.4E-08	NA	0E+00	0E+00
Benzo(g,h,i)perylene	0.18	0.18	0.5	2.0E-08	2.0E-08	3.0E-02	7E-07	7E-07
bis(2-Chloroethyl) ether	12	12	0.5	1.3E-06	1.3E-06	NA	0E+00	0E+00
bis(2-Chloroisopropyl) ether	156	1400	0.5	1.7E-05	1.5E-04	4.0E-02	4E-04	4E-03
bis(2-Ethylhexyl) phthalate	10	10	0.5	1.1E-06	1.1E-06	2.0E-02	5E-05	5E-05
4-Chloro-3-methylphenol	3.2	3.2	0.5	3.5E-07	3.5E-07	NA	0E+00	0E+00
2-Chlorophenol	3	3	0.5	3.3E-07	3.3E-07	5.0E-03	7E-05	7E-05
Chrysene	4.8	4.8	0.5	5.3E-07	5.3E-07	NA	0E+00	0E+00
2,4-Dimethylphenol	8.3	8.3	0.5	9.1E-07	9.1E-07	2.0E-02	5E-05	5E-05
2,4-Dinitrotoluene	2.4	2.4	0.5	2.6E-07	2.6E-07	2.0E-03	1E-04	1E-04
Fluoranthene	11	11	0.5	1.2E-06	1.2E-06	4.0E-02	3E-05	3E-05
Indeno(1,2,3-cd)pyrene	0.15	0.15	0.5	1.6E-08	1.6E-08	NA	0E+00	0E+00
2-Methylnaphthalene	6.4	6.4	0.5	7.0E-07	7.0E-07	3.0E-02	2E-05	2E-05
4-Methylphenol	4.9	4.9	0.5	5.4E-07	5.4E-07	5.0E-03	1E-04	1E-04
Naphthalene	12.5	16	0.5	1.4E-06	1.8E-06	4.0E-02	3E-05	4E-05
4-Nitrophenol	4.5	4.5	0.5	4.9E-07	4.9E-07	NA	0E+00	0E+00
N-Nitrosodi-n-propylamine	1.9	1.9	0.5	2.1E-07	2.1E-07	NA	0E+00	0E+00
Pentachlorophenol	0.0573	0.3	0.5	6.3E-09	3.3E-08	3.0E-02	2E-07	1E-06
Phenanthrene	13	20	0.5	1.4E-06	2.2E-06	3.0E-02	5E-05	7E-05
1,2,4-Trichlorobenzene	1.9	1.9	0.5	2.1E-07	2.1E-07	1.0E-02	2E-05	2E-05
alpha-Chlordane	0.00666	0.024	0.5	7.3E-10	2.6E-09	6.0E-05	1E-05	4E-05
Aroclor 1248	0.29	1.48	0.5	3.2E-08	1.6E-07	NA	0E+00	0E+00
Aroclor 1254	0.263	1.1	0.5	2.9E-08	1.2E-07	2.0E-05	1E-03	6E-03
Antimony	11.6	52.2	0.2	5.1E-07	2.3E-06	4.0E-04	1E-03	6E-03
Arsenic	80.6	331	0.2	3.5E-06	1.5E-05	3.0E-04	1E-02	5E-02
Beryllium	1.84	7.6	0.2	8.1E-08	3.3E-07	5.0E-03	2E-05	7E-05
Cadmium	2.34	8.4	0.2	1.0E-07	3.7E-07	5.0E-04	2E-04	7E-04
Chromium	47.1	108	0.2	2.1E-06	4.7E-06	5.0E-03	4E-04	9E-04
Cobalt	22	68	0.2	9.6E-07	3.0E-06	6.0E-02	2E-05	5E-05
Copper	50.2	211	0.2	2.2E-06	9.2E-06	3.7E-02	6E-05	2E-04
Cyanide	2.54	16	0.2	1.1E-07	7.0E-07	2.0E-02	6E-06	4E-05
Lead	74.1	433	0.2	3.2E-06	1.9E-05	NA	0E+00	0E+00
Mercury	5.69	52.9	0.2	2.5E-07	2.3E-06	3.0E-04	8E-04	8E-03
Nickel	44.9	103	0.2	2.0E-06	4.5E-06	2.0E-02	1E-04	2E-04
Selenium	58.1	295	0.2	2.5E-06	1.3E-05	5.0E-03	5E-04	3E-03
Silver	4.26	21.7	0.2	1.9E-07	9.5E-07	5.0E-03	4E-05	2E-04
Thallium	55.4	282	0.2	2.4E-06	1.2E-05	8.0E-05	3E-02	2E-01
Vanadium	42.3	77	0.2	1.9E-06	3.4E-06	7.0E-03	3E-04	5E-04
TOTAL							9E-01	8E+00

BASF-WYANDOTTE

FUTURE FACILITY WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL DERMAL ABSORPTION PATHWAY

SWMU H

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg) RAE	RME	DERMAL ABSORPTION FACTOR (ABS)	ESTIMATED DAILY INTAKE (mg/kg/day) RAE	RME	REFERENCE DOSE (mg/kg/day)	HAZARD INDEX RAE	RME
Acetone	1.6	1.6	0.0005	1.0E-09	1.0E-09	8.0E-02	1E-08	1E-08
Benzene	0.78	0.78	0.0005	4.9E-10	4.9E-10	1.4E-03	4E-07	4E-07
Chlorobenzene	0.83	0.83	0.01	1.0E-08	1.0E-08	1.6E-02	7E-07	7E-07
1,2-Dichlorobenzene	0.68	0.68	0.01	8.5E-09	8.5E-09	7.2E-02	1E-07	1E-07
1,2-Dichloropropane	5030	50000	0.01	6.3E-05	6.3E-04	8.8E-04	7E-02	7E-01
Ethylbenzene	0.47	0.47	0.03	1.8E-08	1.8E-08	8.0E-02	2E-07	2E-07
Methyl Ethyl Ketone	0.031	0.031	0.01	3.9E-10	3.9E-10	4.8E-01	8E-10	8E-10
Toluene	5.8	5.8	0.03	2.2E-07	2.2E-07	1.6E-01	1E-06	1E-06
1,2,3-Trichloropropane	17	17	0.01	2.1E-07	2.1E-07	4.8E-03	4E-05	4E-05
Xylenes (total)	2.07	2.07	0.03	7.8E-08	7.8E-08	1.6E+00	5E-08	5E-08
Acenaphthene	6.7	6.7	0.01	8.4E-08	8.4E-08	3.0E-02	3E-06	3E-06
Benzo(a)anthracene	4.5	4.5	0.01	5.6E-08	5.6E-08	NA	0E+00	0E+00
Benzo(a)pyrene	3.1	3.1	0.01	3.9E-08	3.9E-08	NA	0E+00	0E+00
Benzo(b)fluoranthene	4.2	4.2	0.01	5.3E-08	5.3E-08	NA	0E+00	0E+00
Benzo(k)fluoranthene	0.13	0.13	0.01	1.6E-09	1.6E-09	NA	0E+00	0E+00
Benzo(g,h,i)perylene	0.18	0.18	0.01	2.3E-09	2.3E-09	1.5E-02	2E-07	2E-07
bis(2-Chloroethyl) ether	12	12	0.01	1.5E-07	1.5E-07	NA	0E+00	0E+00
bis(2-Chloroisopropyl) ether	156	1400	0.01	2.0E-06	1.8E-05	2.0E-02	1E-04	9E-04
bis(2-Ethylhexyl) phthalate	10	10	0.01	1.3E-07	1.3E-07	1.0E-02	1E-05	1E-05
4-Chloro-3-methylphenol	3.2	3.2	0.01	4.0E-08	4.0E-08	NA	0E+00	0E+00
2-Chlorophenol	3	3	0.01	3.8E-08	3.8E-08	2.5E-03	2E-05	2E-05
Chrysene	4.8	4.8	0.01	6.0E-08	6.0E-08	NA	0E+00	0E+00
2,4-Dimethylphenol	8.3	8.3	0.01	1.0E-07	1.0E-07	1.0E-02	1E-05	1E-05
2,4-Dinitrotoluene	2.4	2.4	0.01	3.0E-08	3.0E-08	1.0E-03	3E-05	3E-05
Fluoranthene	11	11	0.01	1.4E-07	1.4E-07	2.0E-02	7E-06	7E-06
Indeno(1,2,3-cd)pyrene	0.15	0.15	0.01	1.9E-09	1.9E-09	NA	0E+00	0E+00
2-Methylnaphthalene	6.4	6.4	0.01	8.0E-08	8.0E-08	1.5E-02	5E-06	5E-06
4-Methylphenol	4.9	4.9	0.01	6.1E-08	6.1E-08	2.5E-03	2E-05	2E-05
Naphthalene	12.5	16	0.01	1.6E-07	2.0E-07	2.0E-02	8E-06	1E-05
4-Nitrophenol	4.5	4.5	0.01	5.6E-08	5.6E-08	NA	0E+00	0E+00
N-Nitrosodi-n-propylamine	1.9	1.9	0.01	2.4E-08	2.4E-08	NA	0E+00	0E+00
Pentachlorophenol	0.0573	0.3	0.01	7.2E-10	3.8E-09	1.5E-02	5E-08	3E-07
Phenanthrene	13	20	0.01	1.6E-07	2.5E-07	1.5E-02	1E-05	2E-05
1,2,4-Trichlorobenzene	1.9	1.9	0.01	2.4E-08	2.4E-08	5.0E-03	5E-06	5E-06
alpha-Chlordane	0.00566	0.024	0.01	8.3E-11	3.0E-10	3.0E-05	3E-06	1E-05
Aroclor 1248	0.29	1.48	0.01	3.6E-09	1.9E-08	NA	0E+00	0E+00
Aroclor 1254	0.263	1.1	0.01	3.3E-09	1.4E-08	1.0E-05	3E-04	1E-03
Antimony	11.6	52.2	0.001	1.5E-08	6.5E-08	8.0E-05	2E-04	8E-04
Arsenic	80.6	331	0.001	1.0E-07	4.1E-07	6.0E-05	2E-03	7E-03
Beryllium	1.84	7.6	0.001	2.3E-09	9.5E-09	1.0E-03	2E-06	1E-05
Cadmium	2.34	8.4	0.001	2.9E-09	1.1E-08	1.0E-04	3E-05	1E-04
Chromium	47.1	108	0.001	5.9E-08	1.4E-07	1.0E-03	6E-05	1E-04
Cobalt	22	68	0.01	2.8E-07	8.5E-07	1.2E-02	2E-05	7E-05
Copper	50.2	211	0.001	6.3E-08	2.6E-07	7.4E-03	9E-06	4E-05
Cyanide	2.54	16	0.001	3.2E-09	2.0E-08	4.0E-03	8E-07	5E-06
Lead	74.1	433	0.001	9.3E-08	5.4E-07	NA	0E+00	0E+00
Mercury	5.69	52.9	0.001	7.1E-09	6.6E-08	6.0E-05	1E-04	1E-03
Nickel	44.9	103	0.0005	2.8E-08	6.5E-08	4.0E-03	7E-06	2E-05
Selenium	58.1	295	0.001	7.3E-08	3.7E-07	1.0E-03	7E-05	4E-04
Silver	4.26	21.7	0.001	5.3E-09	2.7E-08	1.0E-03	5E-06	3E-05
Thallium	55.4	282	0.001	6.9E-08	3.5E-07	1.6E-05	4E-03	2E-02
Vanadium	42.3	77	0.001	5.3E-08	9.7E-08	1.4E-03	4E-05	7E-05
TOTAL							8E-02	7E-01

BASF-WYANDOTTE

FUTURE FACILITY WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL DUST INHALATION PATHWAY

SWMU H

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ESTIMATED DAILY INTAKE (mg/kg/day)		REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME	RAE	RME		RAE	RME
Acetone	1.6	1.6	1.1E-10	1.1E-10	1.0E-01	1E-09	1E-09
Benzene	0.78	0.78	5.2E-11	5.2E-11	1.7E-03	3E-08	3E-08
Chlorobenzene	0.83	0.83	5.5E-11	5.5E-11	5.7E-03	1E-08	1E-08
1,2-Dichlorobenzene	0.68	0.68	4.5E-11	4.5E-11	5.7E-02	8E-10	8E-10
1,2-Dichloropropane	5030	50000	3.3E-07	3.3E-06	1.1E-03	3E-04	3E-03
Ethylbenzene	0.47	0.47	3.1E-11	3.1E-11	2.9E-01	1E-10	1E-10
Methyl Ethyl Ketone	0.031	0.031	2.1E-12	2.1E-12	2.9E-01	7E-12	7E-12
Toluene	5.8	5.8	3.9E-10	3.9E-10	1.1E-01	4E-09	4E-09
1,2,3-Trichloropropane	17	17	1.1E-09	1.1E-09	5.0E-03	2E-07	2E-07
Xylenes (total)	2.07	2.07	1.4E-10	1.4E-10	2.0E-01	7E-10	7E-10
Acenaphthene	6.7	6.7	4.4E-10	4.4E-10	6.0E-02	7E-09	7E-09
Benzo(a)anthracene	4.5	4.5	3.0E-10	3.0E-10	NA	0E+00	0E+00
Benzo(a)pyrene	3.1	3.1	2.1E-10	2.1E-10	NA	0E+00	0E+00
Benzo(b)fluoranthene	4.2	4.2	2.8E-10	2.8E-10	NA	0E+00	0E+00
Benzo(k)fluoranthene	0.13	0.13	8.6E-12	8.6E-12	NA	0E+00	0E+00
Benzo(g,h,i)perylene	0.18	0.18	1.2E-11	1.2E-11	3.0E-02	4E-10	4E-10
bis(2-Chloroethyl) ether	12	12	8.0E-10	8.0E-10	NA	0E+00	0E+00
bis(2-Chloroisopropyl) ether	156	1400	1.0E-08	9.3E-08	4.0E-02	3E-07	2E-06
bis(2-Ethylhexyl) phthalate	10	10	6.6E-10	6.6E-10	2.2E-02	3E-08	3E-08
4-Chloro-3-methylphenol	3.2	3.2	2.1E-10	2.1E-10	NA	0E+00	0E+00
2-Chlorophenol	3	3	2.0E-10	2.0E-10	5.0E-03	4E-08	4E-08
Chrysene	4.8	4.8	3.2E-10	3.2E-10	NA	0E+00	0E+00
2,4-Dimethylphenol	8.3	8.3	5.5E-10	5.5E-10	2.0E-02	3E-08	3E-08
2,4-Dinitrotoluene	2.4	2.4	1.6E-10	1.6E-10	2.0E-03	8E-08	8E-08
Fluoranthene	11	11	7.3E-10	7.3E-10	4.0E-02	2E-08	2E-08
Indeno(1,2,3-cd)pyrene	0.15	0.15	1.0E-11	1.0E-11	NA	0E+00	0E+00
2-Methylnaphthalene	6.4	6.4	4.3E-10	4.3E-10	3.0E-02	1E-08	1E-08
4-Methylphenol	4.9	4.9	3.3E-10	3.3E-10	5.0E-03	7E-08	7E-08
Naphthalene	12.5	16	8.3E-10	1.1E-09	4.0E-02	2E-08	3E-08
4-Nitrophenol	4.5	4.5	3.0E-10	3.0E-10	NA	0E+00	0E+00
N-Nitrosodi-n-propylamine	1.9	1.9	1.3E-10	1.3E-10	NA	0E+00	0E+00
Pentachlorophenol	0.0573	0.3	3.8E-12	2.0E-11	3.0E-02	1E-10	7E-10
Phenanthrene	13	20	8.6E-10	1.3E-09	3.0E-02	3E-08	4E-08
1,2,4-Trichlorobenzene	1.9	1.9	1.3E-10	1.3E-10	5.7E-02	2E-09	2E-09
alpha-Chlordane	0.00666	0.024	4.4E-13	1.6E-12	6.0E-05	7E-09	3E-08
Aroclor 1248	0.29	1.48	1.9E-11	9.8E-11	NA	0E+00	0E+00
Aroclor 1254	0.263	1.1	1.7E-11	7.3E-11	2.0E-05	9E-07	4E-06
Antimony	11.6	52.2	7.7E-10	3.5E-09	NA	0E+00	0E+00
Arsenic	80.6	331	5.4E-09	2.2E-08	NA	0E+00	0E+00
Beryllium	1.84	7.6	1.2E-10	5.0E-10	NA	0E+00	0E+00
Cadmium	2.34	8.4	1.6E-10	5.6E-10	5.7E-05	3E-06	1E-05
Chromium	47.1	108	3.1E-09	7.2E-09	NA	0E+00	0E+00
Cobalt	22	68	1.5E-09	4.5E-09	2.9E-04	5E-06	2E-05
Copper	50.2	211	3.3E-09	1.4E-08	NA	0E+00	0E+00
Cyanide	2.54	16	1.7E-10	1.1E-09	8.6E-04	2E-07	1E-06
Lead	74.1	433	4.9E-09	2.9E-08	NA	0E+00	0E+00
Mercury	5.69	52.9	3.8E-10	3.5E-09	8.6E-05	4E-06	4E-05
Nickel	44.9	103	3.0E-09	6.8E-09	NA	0E+00	0E+00
Selenium	58.1	295	3.9E-09	2.0E-08	NA	0E+00	0E+00
Silver	4.26	21.7	2.8E-10	1.4E-09	NA	0E+00	0E+00
Thallium	55.4	282	3.7E-09	1.9E-08	NA	0E+00	0E+00
Vanadium	42.3	77	2.8E-09	5.1E-09	NA	0E+00	0E+00
TOTAL						3E-04	3E-03

BASF-WYANDOTTE

FUTURE FACILITY WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL VAPOR INHALATION PATHWAY

SWMU H

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		VOLATILIZATION FACTOR (VF)	ESTIMATED DAILY INTAKE (mg/kg/day)		REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME		RAE	RME		RAE	RME
Acetone	1.6	1.6	42000	3.3E-06	3.3E-06	1.0E-01	3E-05	3E-05
Benzene	0.78	0.78	9680	7.1E-06	7.1E-06	1.7E-03	4E-03	4E-03
Chlorobenzene	0.83	0.83	21200	3.4E-06	3.4E-06	5.7E-03	6E-04	6E-04
1,2-Dichlorobenzene	0.68	0.68	48500	1.2E-06	1.2E-06	5.7E-02	2E-05	2E-05
1,2-Dichloropropane	5030	50000	13100	3.4E-02	3.3E-01	1.1E-03	3E+01	3E+02
Ethylbenzene	0.47	0.47	18100	2.3E-06	2.3E-06	2.9E-01	8E-06	8E-06
Methyl Ethyl Ketone	0.031	0.031	43900	6.2E-08	6.2E-08	2.9E-01	2E-07	2E-07
Toluene	5.8	5.8	13500	3.8E-05	3.8E-05	1.1E-01	3E-04	3E-04
1,2,3-Trichloropropane	17	17	45300	3.3E-05	3.3E-05	5.0E-03	7E-03	7E-03
Xylenes (total)	2.07	2.07	18000	1.0E-05	1.0E-05	2.0E-01	5E-05	5E-05
TOTAL							3E+01	3E+02

BASF-WYANDOTTE

FUTURE FACILITY WORKER SCENARIO
CARCINOGENIC RISKS
SOIL INGESTION PATHWAY

SWMU H

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ABSORPTION EFFICIENCY (AEi)	ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME		RAE	RME		RAE	RME
Benzene	0.78	0.78	0.8	4.9E-08	4.9E-08	2.9E-02	1E-09	1E-09
1,2-Dichloropropane	5030	50000	0.8	3.1E-04	3.1E-03	6.8E-02	2E-05	2E-04
1,2,3-Trichloropropane	17	17	0.8	1.1E-06	1.1E-06	7.0E+00	7E-06	7E-06
Benzo(a)anthracene	4.5	4.5	0.5	1.8E-07	1.8E-07	7.3E-01	1E-07	1E-07
Benzo(a)pyrene	3.1	3.1	0.5	1.2E-07	1.2E-07	7.3E+00	9E-07	9E-07
Benzo(b)fluoranthene	4.2	4.2	0.5	1.6E-07	1.6E-07	7.3E-01	1E-07	1E-07
Benzo(k)fluoranthene	0.13	0.13	0.5	5.1E-09	5.1E-09	7.3E-02	4E-10	4E-10
bis(2-Chloroethyl) ether	12	12	0.5	4.7E-07	4.7E-07	1.1E+00	5E-07	5E-07
bis(2-Chloroisopropyl) ether	156	1400	0.5	6.1E-06	5.5E-05	7.0E-02	4E-07	4E-06
bis(2-Ethylhexyl) phthalate	10	10	0.5	3.9E-07	3.9E-07	1.4E-02	5E-09	5E-09
Chrysene	4.8	4.8	0.5	1.9E-07	1.9E-07	7.3E-03	1E-09	1E-09
2,4-Dinitrotoluene	2.4	2.4	0.5	9.4E-08	9.4E-08	6.8E-01	6E-08	6E-08
Indeno(1,2,3-cd)pyrene	0.15	0.15	0.5	5.9E-09	5.9E-09	7.3E-01	4E-09	4E-09
N-Nitrosodi-n-propylamine	1.9	1.9	0.5	7.4E-08	7.4E-08	7.0E+00	5E-07	5E-07
Pentachlorophenol	0.0573	0.3	0.5	2.2E-09	1.2E-08	1.2E-01	3E-10	1E-09
alpha-Chlordane	0.00666	0.024	0.5	2.6E-10	9.4E-10	1.3E+00	3E-10	1E-09
Aroclor 1248	0.29	1.48	0.5	1.1E-08	5.8E-08	2.0E+00	2E-08	1E-07
Aroclor 1254	0.263	1.1	0.5	1.0E-08	4.3E-08	2.0E+00	2E-08	9E-08
Arsenic	80.6	331	0.2	1.3E-06	5.2E-06	1.5E+00	2E-06	8E-06
Beryllium	1.84	7.6	0.2	2.9E-08	1.2E-07	4.3E+00	1E-07	5E-07
Lead	74.1	433	0.2	1.2E-06	6.8E-06	NA	0E+00	0E+00
TOTAL							3E-05	2E-04

BASF-WYANDOTTE

FUTURE FACILITY WORKER SCENARIO
CARCINOGENIC RISKS
SOIL DERMAL ABSORPTION PATHWAY

SWMU H

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		DERMAL ABSORPTION FACTOR (ABS)	ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME		RAE	RME		RAE	RME
Benzene	0.78	0.78	0.0005	1.7E-10	1.7E-10	3.6E-02	6E-12	6E-12
1,2-Dichloropropane	5030	50000	0.01	2.3E-05	2.2E-04	8.5E-02	2E-06	2E-05
1,2,3-Trichloropropane	17	17	0.01	7.6E-08	7.6E-08	8.8E+00	7E-07	7E-07
Benzo(a)anthracene	4.5	4.5	0.01	2.0E-08	2.0E-08	1.5E+00	3E-08	3E-08
Benzo(a)pyrene	3.1	3.1	0.01	1.4E-08	1.4E-08	1.5E+01	2E-07	2E-07
Benzo(b)fluoranthene	4.2	4.2	0.01	1.9E-08	1.9E-08	1.5E+00	3E-08	3E-08
Benzo(k)fluoranthene	0.13	0.13	0.01	5.8E-10	5.8E-10	1.5E-01	8E-11	8E-11
bis(2-Chloroethyl) ether	12	12	0.01	5.4E-08	5.4E-08	2.2E+00	1E-07	1E-07
bis(2-Chloroisopropyl) ether	156	1400	0.01	7.0E-07	6.3E-06	1.4E-01	1E-07	9E-07
bis(2-Ethylhexyl) phthalate	10	10	0.01	4.5E-08	4.5E-08	2.8E-02	1E-09	1E-09
Chrysene	4.8	4.8	0.01	2.1E-08	2.1E-08	1.5E-02	3E-10	3E-10
2,4-Dinitrotoluene	2.4	2.4	0.01	1.1E-08	1.1E-08	1.4E+00	1E-08	1E-08
Indeno(1,2,3-cd)pyrene	0.15	0.15	0.01	6.7E-10	6.7E-10	1.5E+00	1E-09	1E-09
N-Nitrosodi-n-propylamine	1.9	1.9	0.01	8.5E-09	8.5E-09	1.4E+01	1E-07	1E-07
Pentachlorophenol	0.0573	0.3	0.01	2.6E-10	1.3E-09	2.4E-01	6E-11	3E-10
alpha-Chlordane	0.00666	0.024	0.01	3.0E-11	1.1E-10	2.6E+00	8E-11	3E-10
Aroclor 1248	0.29	1.48	0.01	1.3E-09	6.6E-09	4.0E+00	5E-09	3E-08
Aroclor 1254	0.263	1.1	0.01	1.2E-09	4.9E-09	4.0E+00	5E-09	2E-08
Arsenic	80.6	331	0.001	3.6E-08	1.5E-07	7.5E+00	3E-07	1E-06
Beryllium	1.84	7.6	0.001	8.2E-10	3.4E-09	2.2E+01	2E-08	7E-08
Lead	74.1	433	0.001	3.3E-08	1.9E-07	NA	0E+00	0E+00
TOTAL							3E-06	2E-05

BASF-WYANDOTTE

FUTURE FACILITY WORKER SCENARIO
CARCINOGENIC RISKS
SOIL DUST INHALATION PATHWAY

SWMU H

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME	RAE	RME		RAE	RME
Benzene	0.78	0.78	1.9E-11	1.9E-11	2.9E-02	5E-13	5E-13
1,2-Dichloropropane	5030	50000	1.2E-07	1.2E-06	6.8E-02	8E-09	8E-08
1,2,3-Trichloropropane	17	17	4.0E-10	4.0E-10	7.0E+00	3E-09	3E-09
Benzo(a)anthracene	4.5	4.5	1.1E-10	1.1E-10	7.3E-01	8E-11	8E-11
Benzo(a)pyrene	3.1	3.1	7.4E-11	7.4E-11	7.3E+00	5E-10	5E-10
Benzo(b)fluoranthene	4.2	4.2	1.0E-10	1.0E-10	7.3E-01	7E-11	7E-11
Benzo(k)fluoranthene	0.13	0.13	3.1E-12	3.1E-12	7.3E-02	2E-13	2E-13
bis(2-Chloroethyl) ether	12	12	2.8E-10	2.8E-10	1.2E+00	3E-10	3E-10
bis(2-Chloroisopropyl) ether	156	1400	3.7E-09	3.3E-08	3.5E-02	1E-10	1E-09
bis(2-Ethylhexyl) phthalate	10	10	2.4E-10	2.4E-10	1.4E-02	3E-12	3E-12
Chrysene	4.8	4.8	1.1E-10	1.1E-10	7.3E-03	8E-13	8E-13
2,4-Dinitrotoluene	2.4	2.4	5.7E-11	5.7E-11	6.8E-01	4E-11	4E-11
Indeno(1,2,3-cd)pyrene	0.15	0.15	3.6E-12	3.6E-12	7.3E-01	3E-12	3E-12
N-Nitrosodi-n-propylamine	1.9	1.9	4.5E-11	4.5E-11	7.0E+00	3E-10	3E-10
Pentachlorophenol	0.0573	0.3	1.4E-12	7.1E-12	1.2E-01	2E-13	9E-13
alpha-Chlordane	0.00666	0.024	1.6E-13	5.7E-13	1.3E+00	2E-13	7E-13
Aroclor 1248	0.29	1.48	6.9E-12	3.5E-11	2.0E+00	1E-11	7E-11
Aroclor 1254	0.263	1.1	6.2E-12	2.6E-11	2.0E+00	1E-11	5E-11
Arsenic	80.6	331	1.9E-09	7.9E-09	1.5E+01	3E-08	1E-07
Beryllium	1.84	7.6	4.4E-11	1.8E-10	8.4E+00	4E-10	2E-09
Cadmium	2.34	8.4	5.6E-11	2.0E-10	6.3E+00	3E-10	1E-09
Chromium	47.1	108	1.1E-09	2.6E-09	2.9E+02	3E-07	7E-07
Lead	74.1	433	1.8E-09	1.0E-08	NA	0E+00	0E+00
Nickel	44.9	103	1.1E-09	2.4E-09	8.4E-01	9E-10	2E-09
TOTAL						4E-07	1E-06

BASF-WYANDOTTE

FUTURE FACILITY WORKER SCENARIO
CARCINOGENIC RISKS
SOIL VAPOR INHALATION PATHWAY

SWMU H

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		VOLATILIZATION FACTOR (VF)	ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME		RAE	RME		RAE	RME
Benzene	0.78	0.78	9680	2.5E-06	2.5E-06	2.9E-02	7E-08	7E-08
1,2-Dichloropropane	5030	50000	13100	1.2E-02	1.2E-01	6.8E-02	8E-04	8E-03
1,2,3-Trichloropropane	17	17	45300	1.2E-05	1.2E-05	7.0E+00	8E-05	8E-05
TOTAL							9E-04	8E-03

BASF-WYANDOTTE

FUTURE CONSTRUCTION/UTILITY WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL INGESTION PATHWAY

SWMU H

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg) RAE	RME	ABSORPTION EFFICIENCY (AEi)	ESTIMATED DAILY INTAKE (mg/kg/day) RAE	RME	SUBCHRONIC REFERENCE DOSE (mg/kg/day)	HAZARD INDEX RAE	RME
Acetone	1.6	1.6	0.8	7.2E-07	7.2E-07	1.0E+00	7E-07	7E-07
Benzene	0.78	0.78	0.8	3.5E-07	3.5E-07	1.7E-03	2E-04	2E-04
Chlorobenzene	0.83	0.83	0.8	3.7E-07	3.7E-07	2.0E-02	2E-05	2E-05
1,2-Dichlorobenzene	0.68	0.68	0.8	3.1E-07	3.1E-07	5.7E-01	5E-07	5E-07
1,2-Dichloropropane	5030	50000	0.8	2.3E-03	2.3E-02	3.7E-03	6E-01	6E+00
Ethylbenzene	0.47	0.47	0.8	2.1E-07	2.1E-07	1.0E-01	2E-06	2E-06
Methyl Ethyl Ketone	0.031	0.031	0.8	1.4E-08	1.4E-08	2.0E+00	7E-09	7E-09
Toluene	5.8	5.8	0.8	2.6E-06	2.6E-06	2.0E+00	1E-06	1E-06
1,2,3-Trichloropropane	17	17	0.8	7.7E-06	7.7E-06	6.0E-02	1E-04	1E-04
Xylenes (total)	2.07	2.07	0.8	9.3E-07	9.3E-07	2.0E+00	5E-07	5E-07
Acenaphthene	6.7	6.7	0.5	1.9E-06	1.9E-06	6.0E-01	3E-06	3E-06
Benzo(a)anthracene	4.5	4.5	0.5	1.3E-06	1.3E-06	NA	0E+00	0E+00
Benzo(a)pyrene	3.1	3.1	0.5	8.7E-07	8.7E-07	NA	0E+00	0E+00
Benzo(b)fluoranthene	4.2	4.2	0.5	1.2E-06	1.2E-06	NA	0E+00	0E+00
Benzo(k)fluoranthene	0.13	0.13	0.5	3.7E-08	3.7E-08	NA	0E+00	0E+00
Benzo(g,h,i)perylene	0.18	0.18	0.5	5.1E-08	5.1E-08	3.0E-01	2E-07	2E-07
bis(2-Chloroethyl) ether	12	12	0.5	3.4E-06	3.4E-06	NA	0E+00	0E+00
bis(2-Chloroisopropyl) ether	156	1400	0.5	4.4E-05	3.9E-04	4.0E-02	1E-03	1E-02
bis(2-Ethylhexyl) phthalate	10	10	0.5	2.8E-06	2.8E-06	2.0E-02	1E-04	1E-04
4-Chloro-3-methylphenol	3.2	3.2	0.5	9.0E-07	9.0E-07	NA	0E+00	0E+00
2-Chlorophenol	3	3	0.5	8.5E-07	8.5E-07	5.0E-02	2E-05	2E-05
Chrysene	4.8	4.8	0.5	1.4E-06	1.4E-06	NA	0E+00	0E+00
2,4-Dimethylphenol	8.3	8.3	0.5	2.3E-06	2.3E-06	2.0E-01	1E-05	1E-05
2,4-Dinitrotoluene	2.4	2.4	0.5	6.8E-07	6.8E-07	2.0E-03	3E-04	3E-04
Fluoranthene	11	11	0.5	3.1E-06	3.1E-06	4.0E-01	8E-06	8E-06
Indeno(1,2,3-cd)pyrene	0.15	0.15	0.5	4.2E-08	4.2E-08	NA	0E+00	0E+00
2-Methylnaphthalene	6.4	6.4	0.5	1.8E-06	1.8E-06	3.0E-01	6E-06	6E-06
4-Methylphenol	4.9	4.9	0.5	1.4E-06	1.4E-06	5.0E-03	3E-04	3E-04
Naphthalene	12.5	16	0.5	3.5E-06	4.5E-06	4.0E-02	9E-05	1E-04
4-Nitrophenol	4.5	4.5	0.5	1.3E-06	1.3E-06	NA	0E+00	0E+00
N-Nitrosodi-n-propylamine	1.9	1.9	0.5	5.4E-07	5.4E-07	NA	0E+00	0E+00
Pentachlorophenol	0.0573	0.3	0.5	1.6E-08	8.5E-08	3.0E-02	5E-07	3E-06
Phenanthrene	13	20	0.5	3.7E-06	5.6E-06	3.0E-01	1E-05	2E-05
1,2,4-Trichlorobenzene	1.9	1.9	0.5	5.4E-07	5.4E-07	1.0E-02	5E-05	5E-05
alpha-Chlordane	0.00666	0.024	0.5	1.9E-09	6.8E-09	6.0E-05	3E-05	1E-04
Aroclor 1248	0.29	1.48	0.5	8.2E-08	4.2E-07	NA	0E+00	0E+00
Aroclor 1254	0.263	1.1	0.5	7.4E-08	3.1E-07	5.0E-05	1E-03	6E-03
Antimony	11.6	52.2	0.2	1.3E-06	5.9E-06	4.0E-04	3E-03	1E-02
Arsenic	80.6	331	0.2	9.1E-06	3.7E-05	3.0E-04	3E-02	1E-01
Beryllium	1.84	7.6	0.2	2.1E-07	8.6E-07	5.0E-03	4E-05	2E-04
Cadmium	2.34	8.4	0.2	2.6E-07	9.5E-07	5.0E-04	5E-04	2E-03
Chromium	47.1	108	0.2	5.3E-06	1.2E-05	2.0E-02	3E-04	6E-04
Cobalt	22	68	0.2	2.5E-06	7.7E-06	6.0E-02	4E-05	1E-04
Copper	50.2	211	0.2	5.7E-06	2.4E-05	3.7E-02	2E-04	6E-04
Cyanide	2.54	16	0.2	2.9E-07	1.8E-06	2.0E-02	1E-05	9E-05
Lead	74.1	433	0.2	8.4E-06	4.9E-05	NA	0E+00	0E+00
Mercury	5.69	52.9	0.2	6.4E-07	6.0E-06	3.0E-04	2E-03	2E-02
Nickel	44.9	103	0.2	5.1E-06	1.2E-05	2.0E-02	3E-04	6E-04
Selenium	58.1	295	0.2	6.5E-06	3.3E-05	5.0E-03	1E-03	7E-03
Silver	4.26	21.7	0.2	4.8E-07	2.4E-06	5.0E-03	1E-04	5E-04
Thallium	55.4	282	0.2	6.2E-06	3.2E-05	8.0E-04	8E-03	4E-02
Vanadium	42.3	77	0.2	4.8E-06	8.7E-06	7.0E-03	7E-04	1E-03
TOTAL							7E-01	6E+00

BASF-WYANDOTTE

FUTURE CONSTRUCTION/UTILITY WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL DERMAL ABSORPTION PATHWAY

SWMU H

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg) RAE	RME	DERMAL ABSORPTION FACTOR (ABS)	ESTIMATED DAILY INTAKE (mg/kg/day) RAE	RME	SUBCHRONIC REFERENCE DOSE (mg/kg/day)	HAZARD INDEX RAE	RME
Acetone	1.6	1.6	0.0005	2.7E-10	2.7E-10	8.0E-01	3E-10	3E-10
Benzene	0.78	0.78	0.0005	1.3E-10	1.3E-10	1.4E-03	1E-07	1E-07
Chlorobenzene	0.83	0.83	0.01	2.8E-09	2.8E-09	1.6E-02	2E-07	2E-07
1,2-Dichlorobenzene	0.68	0.68	0.01	2.3E-09	2.3E-09	4.6E-01	5E-09	5E-09
1,2-Dichloropropane	5030	50000	0.01	1.7E-05	1.7E-04	3.0E-03	6E-03	6E-02
Ethylbenzene	0.47	0.47	0.03	4.7E-09	4.7E-09	8.0E-02	6E-08	6E-08
Methyl Ethyl Ketone	0.031	0.031	0.01	1.0E-10	1.0E-10	1.6E+00	7E-11	7E-11
Toluene	5.8	5.8	0.03	5.8E-08	5.8E-08	1.6E+00	4E-08	4E-08
1,2,3-Trichloropropane	17	17	0.01	5.7E-08	5.7E-08	4.8E-02	1E-06	1E-06
Xylenes (total)	2.07	2.07	0.03	2.1E-08	2.1E-08	1.6E+00	1E-08	1E-08
Acenaphthene	6.7	6.7	0.01	2.2E-08	2.2E-08	3.0E-01	7E-08	7E-08
Benzo(a)anthracene	4.5	4.5	0.01	1.5E-08	1.5E-08	NA	0E+00	0E+00
Benzo(a)pyrene	3.1	3.1	0.01	1.0E-08	1.0E-08	NA	0E+00	0E+00
Benzo(b)fluoranthene	4.2	4.2	0.01	1.4E-08	1.4E-08	NA	0E+00	0E+00
Benzo(k)fluoranthene	0.13	0.13	0.01	4.4E-10	4.4E-10	NA	0E+00	0E+00
Benzo(g,h,i)perylene	0.18	0.18	0.01	6.0E-10	6.0E-10	1.5E-01	4E-09	4E-09
bis(2-Chloroethyl) ether	12	12	0.01	4.0E-08	4.0E-08	NA	0E+00	0E+00
bis(2-Chloroisopropyl) ether	156	1400	0.01	5.2E-07	4.7E-06	2.0E-02	3E-05	2E-04
bis(2-Ethylhexyl) phthalate	10	10	0.01	3.4E-08	3.4E-08	1.0E-02	3E-06	3E-06
4-Chloro-3-methylphenol	3.2	3.2	0.01	1.1E-08	1.1E-08	NA	0E+00	0E+00
2-Chlorophenol	3	3	0.01	1.0E-08	1.0E-08	2.5E-02	4E-07	4E-07
Chrysene	4.8	4.8	0.01	1.6E-08	1.6E-08	NA	0E+00	0E+00
2,4-Dimethylphenol	8.3	8.3	0.01	2.8E-08	2.8E-08	1.0E-01	3E-07	3E-07
2,4-Dinitrotoluene	2.4	2.4	0.01	8.1E-09	8.1E-09	1.0E-03	8E-06	8E-06
Fluoranthene	11	11	0.01	3.7E-08	3.7E-08	2.0E-01	2E-07	2E-07
Indeno(1,2,3-cd)pyrene	0.15	0.15	0.01	5.0E-10	5.0E-10	NA	0E+00	0E+00
2-Methylnaphthalene	6.4	6.4	0.01	2.1E-08	2.1E-08	1.5E-01	1E-07	1E-07
4-Methylphenol	4.9	4.9	0.01	1.6E-08	1.6E-08	2.5E-03	7E-06	7E-06
Naphthalene	12.5	16	0.01	4.2E-08	5.4E-08	2.0E-02	2E-06	3E-06
4-Nitrophenol	4.5	4.5	0.01	1.5E-08	1.5E-08	NA	0E+00	0E+00
N-Nitrosodi-n-propylamine	1.9	1.9	0.01	6.4E-09	6.4E-09	NA	0E+00	0E+00
Pentachlorophenol	0.0573	0.3	0.01	1.9E-10	1.0E-09	1.5E-02	1E-08	7E-08
Phenanthrene	13	20	0.01	4.4E-08	6.7E-08	1.5E-01	3E-07	4E-07
1,2,4-Trichlorobenzene	1.9	1.9	0.01	6.4E-09	6.4E-09	5.0E-03	1E-06	1E-06
alpha-Chlordane	0.00566	0.024	0.01	2.2E-11	8.1E-11	3.0E-05	7E-07	3E-06
Aroclor 1248	0.29	1.48	0.01	9.7E-10	5.0E-09	NA	0E+00	0E+00
Aroclor 1254	0.263	1.1	0.01	8.8E-10	3.7E-09	2.5E-05	4E-05	1E-04
Antimony	11.6	52.2	0.001	3.9E-09	1.8E-08	8.0E-05	5E-05	2E-04
Arsenic	80.6	331	0.001	2.7E-08	1.1E-07	6.0E-05	5E-04	2E-03
Beryllium	1.84	7.6	0.001	6.2E-10	2.6E-09	1.0E-03	6E-07	3E-06
Cadmium	2.34	8.4	0.001	7.9E-10	2.8E-09	1.0E-04	8E-06	3E-05
Chromium	47.1	108	0.001	1.6E-08	3.6E-08	4.0E-03	4E-06	9E-06
Cobalt	22	68	0.01	7.4E-08	2.3E-07	1.2E-02	6E-06	2E-05
Copper	50.2	211	0.001	1.7E-08	7.1E-08	7.4E-03	2E-06	1E-05
Cyanide	2.54	16	0.001	8.5E-10	5.4E-09	4.0E-03	2E-07	1E-06
Lead	74.1	433	0.001	2.5E-08	1.5E-07	NA	0E+00	0E+00
Mercury	5.69	52.9	0.001	1.9E-09	1.8E-08	6.0E-05	3E-05	3E-04
Nickel	44.9	103	0.0005	7.5E-09	1.7E-08	4.0E-03	2E-06	4E-06
Selenium	58.1	295	0.001	2.0E-08	9.9E-08	1.0E-03	2E-05	1E-04
Silver	4.26	21.7	0.001	1.4E-09	7.3E-09	1.0E-03	1E-06	7E-06
Thallium	55.4	282	0.001	1.9E-08	9.5E-08	1.6E-04	1E-04	6E-04
Vanadium	42.3	77	0.001	1.4E-08	2.6E-08	1.4E-03	1E-05	2E-05
TOTAL							6E-03	6E-02

BASF-WYANDOTTE

FUTURE CONSTRUCTION/UTILITY WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL DUST INHALATION PATHWAY

SWMU H

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ESTIMATED DAILY INTAKE (mg/kg/day)		SUBCHRONIC REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME	RAE	RME		RAE	RME
Acetone	1.6	1.6	3.2E-11	3.2E-11	1.0E+00	3E-11	3E-11
Benzene	0.78	0.78	1.6E-11	1.6E-11	1.7E-03	9E-09	9E-09
Chlorobenzene	0.83	0.83	1.7E-11	1.7E-11	5.7E-03	3E-09	3E-09
1,2-Dichlorobenzene	0.68	0.68	1.4E-11	1.4E-11	5.7E-01	2E-11	2E-11
1,2-Dichloropropane	5030	50000	1.0E-07	1.0E-06	3.7E-03	3E-05	3E-04
Ethylbenzene	0.47	0.47	9.4E-12	9.4E-12	2.9E-01	3E-11	3E-11
Methyl Ethyl Ketone	0.031	0.031	6.2E-13	6.2E-13	2.9E-01	2E-12	2E-12
Toluene	5.8	5.8	1.2E-10	1.2E-10	1.1E-01	1E-09	1E-09
1,2,3-Trichloropropane	17	17	3.4E-10	3.4E-10	5.0E-02	7E-09	7E-09
Xylenes (total)	2.07	2.07	4.1E-11	4.1E-11	2.0E-01	2E-10	2E-10
Acenaphthene	6.7	6.7	1.3E-10	1.3E-10	6.0E-01	2E-10	2E-10
Benzo(a)anthracene	4.5	4.5	9.0E-11	9.0E-11	NA	0E+00	0E+00
Benzo(a)pyrene	3.1	3.1	6.2E-11	6.2E-11	NA	0E+00	0E+00
Benzo(b)fluoranthene	4.2	4.2	8.4E-11	8.4E-11	NA	0E+00	0E+00
Benzo(k)fluoranthene	0.13	0.13	2.6E-12	2.6E-12	NA	0E+00	0E+00
Benzo(g,h,i)perylene	0.18	0.18	3.6E-12	3.6E-12	3.0E-01	1E-11	1E-11
bis(2-Chloroethyl) ether	12	12	2.4E-10	2.4E-10	NA	0E+00	0E+00
bis(2-Chloroisopropyl) ether	156	1400	3.1E-09	2.8E-08	4.0E-02	8E-08	7E-07
bis(2-Ethylhexyl) phthalate	10	10	2.0E-10	2.0E-10	2.2E-02	9E-09	9E-09
4-Chloro-3-methylphenol	3.2	3.2	6.4E-11	6.4E-11	NA	0E+00	0E+00
2-Chlorophenol	3	3	6.0E-11	6.0E-11	5.0E-02	1E-09	1E-09
Chrysene	4.8	4.8	9.6E-11	9.6E-11	NA	0E+00	0E+00
2,4-Dimethylphenol	8.3	8.3	1.7E-10	1.7E-10	2.0E-01	8E-10	8E-10
2,4-Dinitrotoluene	2.4	2.4	4.8E-11	4.8E-11	2.0E-03	2E-08	2E-08
Fluoranthene	11	11	2.2E-10	2.2E-10	4.0E-01	5E-10	5E-10
Indeno(1,2,3-cd)pyrene	0.15	0.15	3.0E-12	3.0E-12	NA	0E+00	0E+00
2-Methylnaphthalene	6.4	6.4	1.3E-10	1.3E-10	3.0E-01	4E-10	4E-10
4-Methylphenol	4.9	4.9	9.8E-11	9.8E-11	5.0E-03	2E-08	2E-08
Naphthalene	12.5	16	2.5E-10	3.2E-10	4.0E-02	6E-09	8E-09
4-Nitrophenol	4.5	4.5	9.0E-11	9.0E-11	NA	0E+00	0E+00
N-Nitrosodi-n-propylamine	1.9	1.9	3.8E-11	3.8E-11	NA	0E+00	0E+00
Pentachlorophenol	0.0573	0.3	1.1E-12	6.0E-12	3.0E-02	4E-11	2E-10
Phenanthrene	13	20	2.6E-10	4.0E-10	3.0E-01	9E-10	1E-09
1,2,4-Trichlorobenzene	1.9	1.9	3.8E-11	3.8E-11	5.7E-02	7E-10	7E-10
alpha-Chlordane	0.00666	0.024	1.3E-13	4.8E-13	6.0E-05	2E-09	8E-09
Aroclor 1248	0.29	1.48	5.8E-12	2.9E-11	NA	0E+00	0E+00
Aroclor 1254	0.263	1.1	5.2E-12	2.2E-11	5.0E-05	1E-07	4E-07
Antimony	11.6	52.2	2.3E-10	1.0E-09	NA	0E+00	0E+00
Arsenic	80.6	331	1.6E-09	6.6E-09	NA	0E+00	0E+00
Beryllium	1.84	7.6	3.7E-11	1.5E-10	NA	0E+00	0E+00
Cadmium	2.34	8.4	4.7E-11	1.7E-10	5.7E-05	8E-07	3E-06
Chromium	47.1	108	9.4E-10	2.2E-09	NA	0E+00	0E+00
Cobalt	22	68	4.4E-10	1.4E-09	2.9E-04	2E-06	5E-06
Copper	50.2	211	1.0E-09	4.2E-09	NA	0E+00	0E+00
Cyanide	2.54	16	5.1E-11	3.2E-10	8.6E-04	6E-08	4E-07
Lead	74.1	433	1.5E-09	8.6E-09	NA	0E+00	0E+00
Mercury	5.69	52.9	1.1E-10	1.1E-09	8.6E-05	1E-06	1E-05
Nickel	44.9	103	8.9E-10	2.1E-09	NA	0E+00	0E+00
Selenium	58.1	295	1.2E-09	5.9E-09	NA	0E+00	0E+00
Silver	4.26	21.7	8.5E-11	4.3E-10	NA	0E+00	0E+00
Thallium	55.4	282	1.1E-09	5.6E-09	NA	0E+00	0E+00
Vanadium	42.3	77	8.4E-10	1.5E-09	NA	0E+00	0E+00
TOTAL						3E-05	3E-04

BASF-WYANDOTTE

FUTURE CONSTRUCTION/UTILITY WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL VAPOR INHALATION PATHWAY

SWMU H

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		VOLATILIZATION FACTOR (VF)	ESTIMATED DAILY INTAKE (mg/kg/day)		SUBCHRONIC REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME		RAE	RME		RAE	RME
Acetone	1.6	1.6	4550	9.2E-06	9.2E-06	1.0E+00	9E-06	9E-06
Benzene	0.78	0.78	1050	2.0E-05	2.0E-05	1.7E-03	1E-02	1E-02
Chlorobenzene	0.83	0.83	2300	9.5E-06	9.5E-06	5.7E-03	2E-03	2E-03
1,2-Dichlorobenzene	0.68	0.68	5260	3.4E-06	3.4E-06	5.7E-01	6E-06	6E-06
1,2-Dichloropropane	5030	50000	1420	9.3E-02	9.3E-01	3.7E-03	3E+01	3E+02
Ethylbenzene	0.47	0.47	1960	6.3E-06	6.3E-06	2.9E-01	2E-05	2E-05
Methyl Ethyl Ketone	0.031	0.031	4760	1.7E-07	1.7E-07	2.9E-01	6E-07	6E-07
Toluene	5.8	5.8	1470	1.0E-04	1.0E-04	1.1E-01	9E-04	9E-04
1,2,3-Trichloropropane	17	17	4910	9.1E-05	9.1E-05	5.0E-02	2E-03	2E-03
Xylenes (total)	2.07	2.07	1950	2.8E-05	2.8E-05	2.0E-01	1E-04	1E-04
TOTAL							3E+01	3E+02

BASF-WYANDOTTE

FUTURE CONSTRUCTION/UTILITY WORKER SCENARIO
CARCINOGENIC RISKS
SOIL INGESTION PATHWAY

SWMU H

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ABSORPTION EFFICIENCY (AEi)	ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME		RAE	RME		RAE	RME
Benzene	0.78	0.78	0.8	5.0E-09	5.0E-09	2.9E-02	1E-10	1E-10
1,2-Dichloropropane	5030	50000	0.8	3.2E-05	3.2E-04	6.8E-02	2E-06	2E-05
1,2,3-Trichloropropane	17	17	0.8	1.1E-07	1.1E-07	7.0E+00	8E-07	8E-07
Benzo(a)anthracene	4.5	4.5	0.5	1.8E-08	1.8E-08	7.3E-01	1E-08	1E-08
Benzo(a)pyrene	3.1	3.1	0.5	1.2E-08	1.2E-08	7.3E+00	9E-08	9E-08
Benzo(b)fluoranthene	4.2	4.2	0.5	1.7E-08	1.7E-08	7.3E-01	1E-08	1E-08
Benzo(k)fluoranthene	0.13	0.13	0.5	5.2E-10	5.2E-10	7.3E-02	4E-11	4E-11
bis(2-Chloroethyl) ether	12	12	0.5	4.8E-08	4.8E-08	1.1E+00	5E-08	5E-08
bis(2-Chloroisopropyl) ether	156	1400	0.5	6.3E-07	5.6E-06	7.0E-02	4E-08	4E-07
bis(2-Ethylhexyl) phthalate	10	10	0.5	4.0E-08	4.0E-08	1.4E-02	6E-10	6E-10
Chrysene	4.8	4.8	0.5	1.9E-08	1.9E-08	7.3E-03	1E-10	1E-10
2,4-Dinitrotoluene	2.4	2.4	0.5	9.7E-09	9.7E-09	6.8E-01	7E-09	7E-09
Indeno(1,2,3-cd)pyrene	0.15	0.15	0.5	6.0E-10	6.0E-10	7.3E-01	4E-10	4E-10
N-Nitrosodi-n-propylamine	1.9	1.9	0.5	7.6E-09	7.6E-09	7.0E+00	5E-08	5E-08
Pentachlorophenol	0.0573	0.3	0.5	2.3E-10	1.2E-09	1.2E-01	3E-11	1E-10
alpha-Chlordane	0.00666	0.024	0.5	2.7E-11	9.7E-11	1.3E+00	3E-11	1E-10
Aroclor 1248	0.29	1.48	0.5	1.2E-09	6.0E-09	2.0E+00	2E-09	1E-08
Aroclor 1254	0.263	1.1	0.5	1.1E-09	4.4E-09	2.0E+00	2E-09	9E-09
Arsenic	80.6	331	0.2	1.3E-07	5.3E-07	1.5E+00	2E-07	8E-07
Beryllium	1.84	7.6	0.2	3.0E-09	1.2E-08	4.3E+00	1E-08	5E-08
Lead	74.1	433	0.2	1.2E-07	7.0E-07	NA	0E+00	0E+00
TOTAL							3E-06	2E-05

BASF-WYANDOTTE

FUTURE CONSTRUCTION/UTILITY WORKER SCENARIO
CARCINOGENIC RISKS
SOIL DERMAL ABSORPTION PATHWAY

SWMU H

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		DERMAL ABSORPTION FACTOR (ABS)	ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME		RAE	RME		RAE	RME
Benzene	0.78	0.78	0.0005	1.9E-12	1.9E-12	3.6E-02	7E-14	7E-14
1,2-Dichloropropane	5030	50000	0.01	2.4E-07	2.4E-06	8.5E-02	2E-08	2E-07
1,2,3-Trichloropropane	17	17	0.01	8.2E-10	8.2E-10	8.8E+00	7E-09	7E-09
Benzo(a)anthracene	4.5	4.5	0.01	2.2E-10	2.2E-10	1.5E+00	3E-10	3E-10
Benzo(a)pyrene	3.1	3.1	0.01	1.5E-10	1.5E-10	1.5E+01	2E-09	2E-09
Benzo(b)fluoranthene	4.2	4.2	0.01	2.0E-10	2.0E-10	1.5E+00	3E-10	3E-10
Benzo(k)fluoranthene	0.13	0.13	0.01	6.2E-12	6.2E-12	1.5E-01	9E-13	9E-13
bis(2-Chloroethyl) ether	12	12	0.01	5.8E-10	5.8E-10	2.2E+00	1E-09	1E-09
bis(2-Chloroisopropyl) ether	156	1400	0.01	7.5E-09	6.7E-08	1.4E-01	1E-09	9E-09
bis(2-Ethylhexyl) phthalate	10	10	0.01	4.8E-10	4.8E-10	2.8E-02	1E-11	1E-11
Chrysene	4.8	4.8	0.01	2.3E-10	2.3E-10	1.5E-02	3E-12	3E-12
2,4-Dinitrotoluene	2.4	2.4	0.01	1.2E-10	1.2E-10	1.4E+00	2E-10	2E-10
Indeno(1,2,3-cd)pyrene	0.15	0.15	0.01	7.2E-12	7.2E-12	1.5E+00	1E-11	1E-11
N-Nitrosodi-n-propylamine	1.9	1.9	0.01	9.1E-11	9.1E-11	1.4E+01	1E-09	1E-09
Pentachlorophenol	0.0573	0.3	0.01	2.7E-12	1.4E-11	2.4E-01	7E-13	3E-12
alpha-Chlordane	0.00666	0.024	0.01	3.2E-13	1.2E-12	2.6E+00	8E-13	3E-12
Aroclor 1248	0.29	1.48	0.01	1.4E-11	7.1E-11	4.0E+00	6E-11	3E-10
Aroclor 1254	0.263	1.1	0.01	1.3E-11	5.3E-11	4.0E+00	5E-11	2E-10
Arsenic	80.6	331	0.001	3.9E-10	1.6E-09	7.5E+00	3E-09	1E-08
Beryllium	1.84	7.6	0.001	8.8E-12	3.6E-11	2.2E+01	2E-10	8E-10
Lead	74.1	433	0.001	3.6E-10	2.1E-09	NA	0E+00	0E+00
TOTAL							4E-08	2E-07

BASF-WYANDOTTE

FUTURE CONSTRUCTION/UTILITY WORKER SCENARIO
CARCINOGENIC RISKS
SOIL DUST INHALATION PATHWAY

SWMU H

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME	RAE	RME		RAE	RME
Benzene	0.78	0.78	2.2E-13	2.2E-13	2.9E-02	6E-15	6E-15
1,2-Dichloropropane	5030	50000	1.4E-09	1.4E-08	6.8E-02	1E-10	1E-09
1,2,3-Trichloropropane	17	17	4.8E-12	4.8E-12	7.0E+00	3E-11	3E-11
Benzo(a)anthracene	4.5	4.5	1.3E-12	1.3E-12	7.3E-01	9E-13	9E-13
Benzo(a)pyrene	3.1	3.1	8.8E-13	8.8E-13	7.3E+00	6E-12	6E-12
Benzo(b)fluoranthene	4.2	4.2	1.2E-12	1.2E-12	7.3E-01	9E-13	9E-13
Benzo(k)fluoranthene	0.13	0.13	3.7E-14	3.7E-14	7.3E-02	3E-15	3E-15
bis(2-Chloroethyl) ether	12	12	3.4E-12	3.4E-12	1.2E+00	4E-12	4E-12
bis(2-Chloroisopropyl) ether	156	1400	4.4E-11	4.0E-10	3.5E-02	2E-12	1E-11
bis(2-Ethylhexyl) phthalate	10	10	2.8E-12	2.8E-12	1.4E-02	4E-14	4E-14
Chrysene	4.8	4.8	1.4E-12	1.4E-12	7.3E-03	1E-14	1E-14
2,4-Dinitrotoluene	2.4	2.4	6.8E-13	6.8E-13	6.8E-01	5E-13	5E-13
Indeno(1,2,3-cd)pyrene	0.15	0.15	4.3E-14	4.3E-14	7.3E-01	3E-14	3E-14
N-Nitrosodi-n-propylamine	1.9	1.9	5.4E-13	5.4E-13	7.0E+00	4E-12	4E-12
Pentachlorophenol	0.0573	0.3	1.6E-14	8.5E-14	1.2E-01	2E-15	1E-14
alpha-Chlordane	0.00666	0.024	1.9E-15	6.8E-15	1.3E+00	2E-15	9E-15
Aroclor 1248	0.29	1.48	8.3E-14	4.2E-13	2.0E+00	2E-13	8E-13
Aroclor 1254	0.263	1.1	7.5E-14	3.1E-13	2.0E+00	1E-13	6E-13
Arsenic	80.6	331	2.3E-11	9.4E-11	1.5E+01	3E-10	1E-09
Beryllium	1.84	7.6	5.2E-13	2.2E-12	8.4E+00	4E-12	2E-11
Cadmium	2.34	8.4	6.7E-13	2.4E-12	6.3E+00	4E-12	2E-11
Chromium	47.1	108	1.3E-11	3.1E-11	2.9E+02	4E-09	9E-09
Lead	74.1	433	2.1E-11	1.2E-10	NA	0E+00	0E+00
Nickel	44.9	103	1.3E-11	2.9E-11	8.4E-01	1E-11	2E-11
TOTAL						4E-09	1E-08

BASF-WYANDOTTE

FUTURE CONSTRUCTION/UTILITY WORKER SCENARIO
CARCINOGENIC RISKS
SOIL VAPOR INHALATION PATHWAY

SWMU H

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		VOLATILIZATION FACTOR (VF)	ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME		RAE	RME		RAE	RME
Benzene	0.78	0.78	1050	2.8E-07	2.8E-07	2.9E-02	8E-09	8E-09
1,2-Dichloropropane	5030	50000	1420	1.3E-03	1.3E-02	6.8E-02	9E-05	9E-04
1,2,3-Trichloropropane	17	17	4910	1.3E-06	1.3E-06	7.0E+00	9E-06	9E-06
TOTAL							1E-04	9E-04

APPENDIX G-4

AOC 1

BASF-WYANDOTTE

CURRENT FACILITY WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL VAPOR INHALATION PATHWAY

AOC 1

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		VOLATILIZATION FACTOR (VF)	ESTIMATED DAILY INTAKE (mg/kg/day)		REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME		RAE	RME		RAE	RME
Benzene	28.6	28.6	21000	3.2E-05	3.2E-05	1.7E-03	2E-02	2E-02
Ethylbenzene	16	86.4	43000	8.7E-06	4.7E-05	2.9E-01	3E-05	2E-04
Styrene	8.55	121	104000	1.9E-06	2.7E-05	2.9E-01	7E-06	9E-05
Toluene	39.5	493	31400	3.0E-05	3.7E-04	1.1E-01	3E-04	3E-03
Xylenes (total)	3.9	3.9	42200	2.2E-06	2.2E-06	2.0E-01	1E-05	1E-05
TOTAL							2E-02	2E-02

BASF-WYANDOTTE

CURRENT FACILITY WORKER SCENARIO
CARCINOGENIC RISKS
SOIL VAPOR INHALATION PATHWAY

AOC 1

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		VOLATILIZATION FACTOR (VF)	ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME		RAE	RME		RAE	RME
Benzene	28.6	28.6	21000	1.1E-05	1.1E-05	2.9E-02	3E-07	3E-07
TOTAL							3E-07	3E-07

BASF-WYANDOTTE

FUTURE MAINTENANCE WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL INGESTION PATHWAY

AOC 1

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ABSORPTION EFFICIENCY (AEi)	ESTIMATED DAILY INTAKE (mg/kg/day)		REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME		RAE	RME		RAE	RME
Benzene	28.6	28.6	0.8	5.0E-07	5.0E-07	1.7E-03	3E-04	3E-04
Ethylbenzene	16	86.4	0.8	2.8E-07	1.5E-06	1.0E-01	3E-06	2E-05
Styrene	8.55	121	0.8	1.5E-07	2.1E-06	2.0E-01	7E-07	1E-05
Toluene	39.5	493	0.8	6.9E-07	8.6E-06	2.0E-01	3E-06	4E-05
Xylenes (total)	3.9	3.9	0.8	6.8E-08	6.8E-08	2.0E+00	3E-08	3E-08
TOTAL							3E-04	4E-04

BASF-WYANDOTTE

FUTURE MAINTENANCE WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL DERMAL ABSORPTION PATHWAY

AOC 1

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg) RAE	RME	DERMAL ABSORPTION FACTOR (ABS)	ESTIMATED DAILY INTAKE (mg/kg/day) RAE	RME	REFERENCE DOSE (mg/kg/day)	HAZARD INDEX RAE	RME
Benzene	28.6	28.6	0.0005	1.8E-09	1.8E-09	1.4E-03	1E-06	1E-06
Ethylbenzene	16	86.4	0.03	6.0E-08	3.2E-07	8.0E-02	8E-07	4E-06
Styrene	8.55	121	0.03	3.2E-08	4.6E-07	1.6E-01	2E-07	3E-06
Toluene	39.5	493	0.03	1.5E-07	1.9E-06	1.6E-01	9E-07	1E-05
Xylenes (total)	3.9	3.9	0.03	1.5E-08	1.5E-08	1.6E+00	9E-09	9E-09
TOTAL							3E-06	2E-05

BASF-WYANDOTTE

FUTURE MAINTENANCE WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL DUST INHALATION PATHWAY

AOC 1

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ESTIMATED DAILY INTAKE (mg/kg/day)		REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME	RAE	RME		RAE	RME
Benzene	28.6	28.6	5.3E-10	5.3E-10	1.7E-03	3E-07	3E-07
Ethylbenzene	16	86.4	3.0E-10	1.6E-09	2.9E-01	1E-09	6E-09
Styrene	8.55	121	1.6E-10	2.3E-09	2.9E-01	5E-10	8E-09
Toluene	39.5	493	7.3E-10	9.2E-09	1.1E-01	7E-09	8E-08
Xylenes (total)	3.9	3.9	7.3E-11	7.3E-11	2.0E-01	4E-10	4E-10
TOTAL						3E-07	4E-07

BASF-WYANDOTTE

FUTURE MAINTENANCE WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL VAPOR INHALATION PATHWAY

AOC 1

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		VOLATILIZATION FACTOR (VF)	ESTIMATED DAILY INTAKE (mg/kg/day)		REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME		RAE	RME		RAE	RME
Benzene	28.6	28.6	21000	3.3E-05	3.3E-05	1.7E-03	2E-02	2E-02
Ethylbenzene	16	86.4	43000	9.1E-06	4.9E-05	2.9E-01	3E-05	2E-04
Styrene	8.55	121	104000	2.0E-06	2.9E-05	2.9E-01	7E-06	1E-04
Toluene	39.5	493	31400	3.1E-05	3.9E-04	1.1E-01	3E-04	4E-03
Xylenes (total)	3.9	3.9	42200	2.3E-06	2.3E-06	2.0E-01	1E-05	1E-05
TOTAL							2E-02	2E-02

BASF-WYANDOTTE

FUTURE MAINTENANCE WORKER SCENARIO
CARCINOGENIC RISKS
SOIL INGESTION PATHWAY

AOC 1

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ABSORPTION EFFICIENCY (AEi)	ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME		RAE	RME		RAE	RME
Benzene	28.6	28.6	0.8	1.8E-07	1.8E-07	2.9E-02	5E-09	5E-09
TOTAL							5E-09	5E-09

BASF-WYANDOTTE

FUTURE MAINTENANCE WORKER SCENARIO
CARCINOGENIC RISKS
SOIL DERMAL ABSORPTION PATHWAY

AOC 1

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		DERMAL ABSORPTION FACTOR (ABS)	ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME		RAE	RME		RAE	RME
Benzene	28.6	28.6	0.0005	6.4E-10	6.4E-10	3.6E-02	2E-11	2E-11
TOTAL							2E-11	2E-11

BASF-WYANDOTTE

FUTURE MAINTENANCE WORKER SCENARIO
CARCINOGENIC RISKS
SOIL DUST INHALATION PATHWAY

AOC 1

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME	RAE	RME		RAE	RME
Benzene	28.6	28.6	1.9E-10	1.9E-10	2.9E-02	6E-12	6E-12
TOTAL						6E-12	6E-12

BASF-WYANDOTTE

FUTURE MAINTENANCE WORKER SCENARIO
CARCINOGENIC RISKS
SOIL VAPOR INHALATION PATHWAY

AOC 1

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		VOLATILIZATION FACTOR (VF)	ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME		RAE	RME		RAE	RME
Benzene	28.6	28.6	21000	1.2E-05	1.2E-05	2.9E-02	3E-07	3E-07
TOTAL							3E-07	3E-07

BASF-WYANDOTTE

FUTURE FACILITY WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL INGESTION PATHWAY

AOC 1

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ABSORPTION EFFICIENCY (AEi)	ESTIMATED DAILY INTAKE (mg/kg/day)		REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME		RAE	RME		RAE	RME
Benzene	28.6	28.6	0.8	5.0E-06	5.0E-06	1.7E-03	3E-03	3E-03
Ethylbenzene	16	86.4	0.8	2.8E-06	1.5E-05	1.0E-01	3E-05	2E-04
Styrene	8.55	121	0.8	1.5E-06	2.1E-05	2.0E-01	7E-06	1E-04
Toluene	39.5	493	0.8	6.9E-06	8.6E-05	2.0E-01	3E-05	4E-04
Xylenes (total)	3.9	3.9	0.8	6.8E-07	6.8E-07	2.0E+00	3E-07	3E-07
TOTAL							3E-03	4E-03

BASF-WYANDOTTE

FUTURE FACILITY WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL DERMAL ABSORPTION PATHWAY

AOC 1

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		DERMAL ABSORPTION FACTOR (ABS)	ESTIMATED DAILY INTAKE (mg/kg/day)		REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME		RAE	RME		RAE	RME
Benzene	28.6	28.6	0.0005	1.8E-08	1.8E-08	1.4E-03	1E-05	1E-05
Ethylbenzene	16	86.4	0.03	6.0E-07	3.2E-06	8.0E-02	8E-06	4E-05
Styrene	8.55	121	0.03	3.2E-07	4.6E-06	1.6E-01	2E-06	3E-05
Toluene	39.5	493	0.03	1.5E-06	1.9E-05	1.6E-01	9E-06	1E-04
Xylenes (total)	3.9	3.9	0.03	1.5E-07	1.5E-07	1.6E+00	9E-08	9E-08
TOTAL							3E-05	2E-04

BASF-WYANDOTTE

FUTURE FACILITY WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL DUST INHALATION PATHWAY

AOC 1

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ESTIMATED DAILY INTAKE (mg/kg/day)		REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME	RAE	RME		RAE	RME
Benzene	28.6	28.6	1.9E-09	1.9E-09	1.7E-03	1E-06	1E-06
Ethylbenzene	16	86.4	1.1E-09	5.7E-09	2.9E-01	4E-09	2E-08
Styrene	8.55	121	5.7E-10	8.0E-09	2.9E-01	2E-09	3E-08
Toluene	39.5	493	2.6E-09	3.3E-08	1.1E-01	2E-08	3E-07
Xylenes (total)	3.9	3.9	2.6E-10	2.6E-10	2.0E-01	1E-09	1E-09
TOTAL						1E-06	1E-06

BASF-WYANDOTTE

FUTURE FACILITY WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL VAPOR INHALATION PATHWAY

AOC 1

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		VOLATILIZATION FACTOR (VF)	ESTIMATED DAILY INTAKE (mg/kg/day)		REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME		RAE	RME		RAE	RME
Benzene	28.6	28.6	21000	1.2E-04	1.2E-04	1.7E-03	7E-02	7E-02
Ethylbenzene	16	86.4	43000	3.3E-05	1.8E-04	2.9E-01	1E-04	6E-04
Styrene	8.55	121	104000	7.2E-06	1.0E-04	2.9E-01	2E-05	4E-04
Toluene	39.5	493	31400	1.1E-04	1.4E-03	1.1E-01	1E-03	1E-02
Xylenes (total)	3.9	3.9	42200	8.1E-06	8.1E-06	2.0E-01	4E-05	4E-05
TOTAL							7E-02	8E-02

BASF-WYANDOTTE

FUTURE FACILITY WORKER SCENARIO
CARCINOGENIC RISKS
SOIL INGESTION PATHWAY

AOC 1

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ABSORPTION EFFICIENCY (AEi)	ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME		RAE	RME		RAE	RME
Benzene	28.6	28.6	0.8	1.8E-06	1.8E-06	2.9E-02	5E-08	5E-08
TOTAL							5E-08	5E-08

BASF-WYANDOTTE

FUTURE FACILITY WORKER SCENARIO
CARCINOGENIC RISKS
SOIL DERMAL ABSORPTION PATHWAY

AOC 1

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		DERMAL ABSORPTION FACTOR (ABS)	ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME		RAE	RME		RAE	RME
Benzene	28.6	28.6	0.0005	6.4E-09	6.4E-09	3.6E-02	2E-10	2E-10
TOTAL							2E-10	2E-10

BASF-WYANDOTTE

FUTURE FACILITY WORKER SCENARIO
CARCINOGENIC RISKS
SOIL DUST INHALATION PATHWAY

AOC 1

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME	RAE	RME		RAE	RME
Benzene	28.6	28.6	6.8E-10	6.8E-10	2.9E-02	2E-11	2E-11
TOTAL						2E-11	2E-11

BASF-WYANDOTTE

FUTURE FACILITY WORKER SCENARIO
CARCINOGENIC RISKS
SOIL VAPOR INHALATION PATHWAY

AOC 1

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		VOLATILIZATION FACTOR (VF)	ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME		RAE	RME		RAE	RME
Benzene	28.6	28.6	21000	4.3E-05	4.3E-05	2.9E-02	1E-06	1E-06
TOTAL							1E-06	1E-06

BASF-WYANDOTTE

FUTURE CONSTRUCTION/UTILITY WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL INGESTION PATHWAY

AOC 1

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ABSORPTION EFFICIENCY (AEi)	ESTIMATED DAILY INTAKE (mg/kg/day)		SUBCHRONIC REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME		RAE	RME		RAE	RME
Benzene	28.6	28.6	0.8	1.3E-05	1.3E-05	1.7E-03	8E-03	8E-03
Ethylbenzene	16	86.4	0.8	7.2E-06	3.9E-05	1.0E-01	7E-05	4E-04
Styrene	8.55	121	0.8	3.9E-06	5.5E-05	2.0E-01	2E-05	3E-04
Toluene	39.5	493	0.8	1.8E-05	2.2E-04	2.0E+00	9E-06	1E-04
Xylenes (total)	3.9	3.9	0.8	1.8E-06	1.8E-06	2.0E+00	9E-07	9E-07
TOTAL							8E-03	8E-03

BASF-WYANDOTTE

FUTURE CONSTRUCTION/UTILITY WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL DERMAL ABSORPTION PATHWAY

AOC 1

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		DERMAL ABSORPTION FACTOR (ABS)	ESTIMATED DAILY INTAKE (mg/kg/day)		SUBCHRONIC REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME		RAE	RME		RAE	RME
Benzene	28.6	28.6	0.0005	4.8E-09	4.8E-09	1.4E-03	4E-06	4E-06
Ethylbenzene	16	86.4	0.03	1.6E-07	8.7E-07	8.0E-02	2E-06	1E-05
Styrene	8.55	121	0.03	8.6E-08	1.2E-06	1.6E-01	5E-07	8E-06
Toluene	39.5	493	0.03	4.0E-07	5.0E-06	1.6E+00	2E-07	3E-06
Xylenes (total)	3.9	3.9	0.03	3.9E-08	3.9E-08	1.6E+00	2E-08	2E-08
TOTAL							6E-06	3E-05

BASF-WYANDOTTE

FUTURE CONSTRUCTION/UTILITY WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL DUST INHALATION PATHWAY

AOC 1

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ESTIMATED DAILY INTAKE (mg/kg/day)		SUBCHRONIC REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME	RAE	RME		RAE	RME
Benzene	28.6	28.6	5.7E-10	5.7E-10	1.7E-03	3E-07	3E-07
Ethylbenzene	16	86.4	3.2E-10	1.7E-09	2.9E-01	1E-09	6E-09
Styrene	8.55	121	1.7E-10	2.4E-09	8.6E-01	2E-10	3E-09
Toluene	39.5	493	7.9E-10	9.8E-09	1.1E-01	7E-09	9E-08
Xylenes (total)	3.9	3.9	7.8E-11	7.8E-11	2.0E-01	4E-10	4E-10
TOTAL						3E-07	4E-07

BASF-WYANDOTTE

FUTURE CONSTRUCTION/UTILITY WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL VAPOR INHALATION PATHWAY

AOC 1

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		VOLATILIZATION FACTOR (VF)	ESTIMATED DAILY INTAKE (mg/kg/day)		SUBCHRONIC REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME		RAE	RME		RAE	RME
Benzene	28.6	28.6	865	8.7E-04	8.7E-04	1.7E-03	5E-01	5E-01
Ethylbenzene	16	86.4	4660	9.0E-05	4.9E-04	2.9E-01	3E-04	2E-03
Styrene	8.55	121	4150	5.4E-05	7.7E-04	8.6E-01	6E-05	9E-04
Toluene	39.5	493	1240	8.4E-04	1.0E-02	1.1E-01	8E-03	1E-01
Xylenes (total)	3.9	3.9	1670	6.1E-05	6.1E-05	2.0E-01	3E-04	3E-04
TOTAL							5E-01	6E-01

BASF-WYANDOTTE

FUTURE CONSTRUCTION/UTILITY WORKER SCENARIO
NONCARCINOGENIC RISKS
GROUNDWATER DERMAL ABSORPTION PATHWAY

CONSTITUENT	GROUNDWATER EXPOSURE CONCENTRATION (mg/L)		DERMAL ABSORBED DOSE (DA)	ESTIMATED DAILY INTAKE (mg/kg/day)		SUBCHRONIC REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME		RAE	RME		RAE	RME
Benzene	0.0216	0.0216	5.27E-02	1.3E-06	1.3E-06	1.4E-03	1E-03	1E-03
Chlorobenzene	0.0023	0.0023	1.17E-01	3.2E-07	3.2E-07	1.6E-02	2E-05	2E-05
Vinyl chloride	0.0049	0.0049	1.76E-02	1.0E-07	1.0E-07	NA	0E+00	0E+00
Acenaphthene	0.0028	0.0028	5.01E-01	1.6E-06	1.6E-06	3.0E-01	5E-06	5E-06
Benzo(a)anthracene	0.0129	0.0139	4.70E+00	7.1E-05	7.7E-05	NA	0E+00	0E+00
Benzo(a)pyrene	0.01	0.01	7.99E+00	9.4E-05	9.4E-05	NA	0E+00	0E+00
Benzo(b)fluoranthene	0.012	0.012	8.12E+00	1.1E-04	1.1E-04	NA	0E+00	0E+00
bis(2-Chloroethyl) ether	0.0152	0.02	6.93E-03	1.2E-07	1.6E-07	NA	0E+00	0E+00
bis(2-Chloroisopropyl) ether	0.0254	0.0288	1.98E-02	5.9E-07	6.7E-07	2.0E-02	3E-05	3E-05
Chrysene	0.01	0.01	4.70E+00	5.5E-05	5.5E-05	NA	0E+00	0E+00
2-Methylnaphthalene	0.0179	0.0226	4.49E-01	9.4E-06	1.2E-05	1.5E-01	6E-05	8E-05
4-Methylphenol	0.0338	0.0464	2.79E-02	1.1E-06	1.5E-06	2.5E-03	4E-04	6E-04
Naphthalene	0.0154	0.0187	1.96E-01	3.5E-06	4.3E-06	2.0E-02	2E-04	2E-04
o-Toluidine	0.0263	0.0285	1.03E-02	3.2E-07	3.4E-07	NA	0E+00	0E+00
Phenanthrene	0.00305	0.00305	9.43E-01	3.4E-06	3.4E-06	1.5E-01	2E-05	2E-05
Pyridine	0.0251	0.0267	4.98E-03	1.5E-07	1.6E-07	5.0E-03	3E-05	3E-05
Arsenic	0.106	0.27	2.00E-03	2.5E-07	6.3E-07	6.0E-05	4E-03	1E-02
Barium	0.383	0.505	2.00E-03	9.0E-07	1.2E-06	1.4E-02	6E-05	8E-05
Cadmium	0.001	0.001	2.00E-03	2.3E-09	2.3E-09	1.0E-04	2E-05	2E-05
Copper	0.039	0.047	2.00E-03	9.2E-08	1.1E-07	7.4E-03	1E-05	1E-05
Cyanide	3.1	8.62	2.00E-03	7.3E-06	2.0E-05	4.0E-03	2E-03	5E-03
Lead	0.019	0.021	8.00E-06	1.8E-10	2.0E-10	NA	0E+00	0E+00
Mercury	0.0006	0.0006	2.00E-03	1.4E-09	1.4E-09	6.0E-05	2E-05	2E-05
Nickel	0.056	0.065	2.00E-04	1.3E-08	1.5E-08	4.0E-03	3E-06	4E-06
Selenium	0.005	0.005	2.00E-03	1.2E-08	1.2E-08	1.0E-03	1E-05	1E-05
Vanadium	0.105	0.116	2.00E-03	2.5E-07	2.7E-07	1.4E-03	2E-04	2E-04
Zinc	0.094	0.126	1.20E-03	1.3E-07	1.8E-07	6.0E-02	2E-06	3E-06
TOTAL							8E-03	2E-02

BASF-WYANDOTTE

FUTURE CONSTRUCTION/UTILITY WORKER SCENARIO
CARCINOGENIC RISKS
SOIL INGESTION PATHWAY

AOC I

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ABSORPTION EFFICIENCY (AEi)	ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME		RAE	RME		RAE	RME
Benzene	28.6	28.6	0.8	1.8E-07	1.8E-07	2.9E-02	5E-09	5E-09
TOTAL							5E-09	5E-09

BASF-WYANDOTTE

FUTURE CONSTRUCTION/UTILITY WORKER SCENARIO
CARCINOGENIC RISKS
SOIL DERMAL ABSORPTION PATHWAY

AOC 1

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		DERMAL ABSORPTION FACTOR (ABS)	ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME		RAE	RME		RAE	RME
Benzene	28.6	28.6	0.0005	6.9E-11	6.9E-11	3.6E-02	2E-12	2E-12
TOTAL							2E-12	2E-12

BASF-WYANDOTTE

FUTURE CONSTRUCTION/UTILITY WORKER SCENARIO
CARCINOGENIC RISKS
SOIL DUST INHALATION PATHWAY

AOC 1

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME	RAE	RME		RAE	RME
Benzene	28.6	28.6	8.1E-12	8.1E-12	2.9E-02	2E-13	2E-13
TOTAL						2E-13	2E-13

BASF-WYANDOTTE

FUTURE CONSTRUCTION/UTILITY WORKER SCENARIO
CARCINOGENIC RISKS
SOIL VAPOR INHALATION PATHWAY

AOC 1

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		VOLATILIZATION FACTOR (VF)	ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME		RAE	RME		RAE	RME
Benzene	28.6	28.6	860	1.2E-05	1.2E-05	2.9E-02	4E-07	4E-07
TOTAL							4E-07	4E-07

APPENDIX G-5

AOC 2

BASF-WYANDOTTE

FUTURE MAINTENANCE WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL INGESTION PATHWAY

AOC 2

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ABSORPTION EFFICIENCY (AEi)	ESTIMATED DAILY INTAKE (mg/kg/day)		REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME		RAE	RME		RAE	RME
2-Methylnaphthalene	0.703	2.45	0.5	7.7E-09	2.7E-08	3.0E-02	3E-07	9E-07
Naphthalene	0.695	2.47	0.5	7.6E-09	2.7E-08	4.0E-02	2E-07	7E-07
Phenanthrene	0.515	1.2	0.5	5.6E-09	1.3E-08	3.0E-02	2E-07	4E-07
Arsenic	18.1	41	0.2	7.9E-08	1.8E-07	3.0E-04	3E-04	6E-04
Chromium	24.9	101	0.2	1.1E-07	4.4E-07	5.0E-03	2E-05	9E-05
Cyanide	10.4	46	0.2	4.6E-08	2.0E-07	2.0E-02	2E-06	1E-05
Mercury	2.4	17.1	0.2	1.1E-08	7.5E-08	3.0E-04	4E-05	2E-04
Zinc	177	966	0.2	7.8E-07	4.2E-06	3.0E-01	3E-06	1E-05
TOTAL							3E-04	1E-03

BASF-WYANDOTTE

FUTURE MAINTENANCE WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL DERMAL ABSORPTION PATHWAY

AOC 2

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		DERMAL ABSORPTION FACTOR (ABS)	ESTIMATED DAILY INTAKE (mg/kg/day)		REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME		RAE	RME		RAE	RME
2-Methylnaphthalene	0.703	2.45	0.01	8.8E-10	3.1E-09	1.5E-02	6E-08	2E-07
Naphthalene	0.695	2.47	0.01	8.7E-10	3.1E-09	2.0E-02	4E-08	2E-07
Phenanthrene	0.515	1.2	0.01	6.5E-10	1.5E-09	1.5E-02	4E-08	1E-07
Arsenic	18.1	41	0.001	2.3E-09	5.1E-09	6.0E-05	4E-05	9E-05
Chromium	24.9	101	0.001	3.1E-09	1.3E-08	1.0E-03	3E-06	1E-05
Cyanide	10.4	46	0.001	1.3E-09	5.8E-09	4.0E-03	3E-07	1E-06
Mercury	2.4	17.1	0.001	3.0E-10	2.1E-09	6.0E-05	5E-06	4E-05
Zinc	177	966	0.001	2.2E-08	1.2E-07	6.0E-02	4E-07	2E-06
TOTAL							5E-05	1E-04

BASF-WYANDOTTE

FUTURE MAINTENANCE WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL DUST INHALATION PATHWAY

AOC 2

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ESTIMATED DAILY INTAKE (mg/kg/day)		REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME	RAE	RME		RAE	RME
2-Methylnaphthalene	0.703	2.45	1.3E-11	4.6E-11	3.0E-02	4E-10	2E-09
Naphthalene	0.695	2.47	1.3E-11	4.6E-11	4.0E-02	3E-10	1E-09
Phenanthrene	0.515	1.2	9.6E-12	2.2E-11	3.0E-02	3E-10	7E-10
Arsenic	18.1	41	3.4E-10	7.6E-10	NA	0E+00	0E+00
Chromium	24.9	101	4.6E-10	1.9E-09	NA	0E+00	0E+00
Cyanide	10.4	46	1.9E-10	8.6E-10	8.6E-04	2E-07	1E-06
Mercury	2.4	17.1	4.5E-11	3.2E-10	8.6E-05	5E-07	4E-06
Zinc	177	966	3.3E-09	1.8E-08	NA	0E+00	0E+00
TOTAL						7E-07	5E-06

BASF-WYANDOTTE

FUTURE MAINTENANCE WORKER SCENARIO
CARCINOGENIC RISKS
SOIL INGESTION PATHWAY

AOC 2

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ABSORPTION EFFICIENCY (AEi)	ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME		RAE	RME		RAE	RME
Arsenic	18.1	41	0.2	2.8E-08	6.4E-08	1.5E+00	4E-08	1E-07
TOTAL							4E-08	1E-07

BASF-WYANDOTTE

FUTURE MAINTENANCE WORKER SCENARIO
CARCINOGENIC RISKS
SOIL DERMAL ABSORPTION PATHWAY

AOC 2

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		DERMAL ABSORPTION FACTOR (ABS)	ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME		RAE	RME		RAE	RME
Arsenic	18.1	41	0.001	8.1E-10	1.8E-09	7.5E+00	6E-09	1E-08
TOTAL							6E-09	1E-08

BASF-WYANDOTTE

FUTURE MAINTENANCE WORKER SCENARIO
CARCINOGENIC RISKS
SOIL DUST INHALATION PATHWAY

AOC 2

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME	RAE	RME		RAE	RME
Arsenic	18.1	41	1.2E-10	2.7E-10	1.5E+01	2E-09	4E-09
Chromium	24.9	101	1.7E-10	6.7E-10	2.9E+02	5E-08	2E-07
TOTAL						5E-08	2E-07

BASF-WYANDOTTE

FUTURE FACILITY WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL INGESTION PATHWAY

AOC 2

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ABSORPTION EFFICIENCY (AEi)	ESTIMATED DAILY INTAKE (mg/kg/day)		REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME		RAE	RME		RAE	RME
2-Methylnaphthalene	0.703	2.45	0.5	7.7E-08	2.7E-07	3.0E-02	3E-06	9E-06
Naphthalene	0.695	2.47	0.5	7.6E-08	2.7E-07	4.0E-02	2E-06	7E-06
Phenanthrene	0.515	1.2	0.5	5.6E-08	1.3E-07	3.0E-02	2E-06	4E-06
Arsenic	18.1	41	0.2	7.9E-07	1.8E-06	3.0E-04	3E-03	6E-03
Chromium	24.9	101	0.2	1.1E-06	4.4E-06	5.0E-03	2E-04	9E-04
Cyanide	10.4	46	0.2	4.6E-07	2.0E-06	2.0E-02	2E-05	1E-04
Mercury	2.4	17.1	0.2	1.1E-07	7.5E-07	3.0E-04	4E-04	2E-03
Zinc	177	966	0.2	7.8E-06	4.2E-05	3.0E-01	3E-05	1E-04
TOTAL							3E-03	1E-02

BASF-WYANDOTTE

FUTURE FACILITY WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL DERMAL ABSORPTION PATHWAY

AOC 2

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		DERMAL ABSORPTION FACTOR (ABS)	ESTIMATED DAILY INTAKE (mg/kg/day)		REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME		RAE	RME		RAE	RME
2-Methylnaphthalene	0.703	2.45	0.01	8.8E-09	3.1E-08	1.5E-02	6E-07	2E-06
Naphthalene	0.695	2.47	0.01	8.7E-09	3.1E-08	2.0E-02	4E-07	2E-06
Phenanthrene	0.515	1.2	0.01	6.5E-09	1.5E-08	1.5E-02	4E-07	1E-06
Arsenic	18.1	41	0.001	2.3E-08	5.1E-08	6.0E-05	4E-04	9E-04
Chromium	24.9	101	0.001	3.1E-08	1.3E-07	1.0E-03	3E-05	1E-04
Cyanide	10.4	46	0.001	1.3E-08	5.8E-08	4.0E-03	3E-06	1E-05
Mercury	2.4	17.1	0.001	3.0E-09	2.1E-08	6.0E-05	5E-05	4E-04
Zinc	177	966	0.001	2.2E-07	1.2E-06	6.0E-02	4E-06	2E-05
TOTAL							5E-04	1E-03

BASF-WYANDOTTE

FUTURE FACILITY WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL DUST INHALATION PATHWAY

AOC 2

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ESTIMATED DAILY INTAKE (mg/kg/day)		REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME	RAE	RME		RAE	RME
2-Methylnaphthalene	0.703	2.45	4.7E-11	1.6E-10	3.0E-02	2E-09	5E-09
Naphthalene	0.695	2.47	4.6E-11	1.6E-10	4.0E-02	1E-09	4E-09
Phenanthrene	0.515	1.2	3.4E-11	8.0E-11	3.0E-02	1E-09	3E-09
Arsenic	18.1	41	1.2E-09	2.7E-09	NA	0E+00	0E+00
Chromium	24.9	101	1.7E-09	6.7E-09	NA	0E+00	0E+00
Cyanide	10.4	46	6.9E-10	3.1E-09	8.6E-04	8E-07	4E-06
Mercury	2.4	17.1	1.6E-10	1.1E-09	8.6E-05	2E-06	1E-05
Zinc	177	966	1.2E-08	6.4E-08	NA	0E+00	0E+00
TOTAL						3E-06	2E-05

BASF-WYANDOTTE

FUTURE FACILITY WORKER SCENARIO
CARCINOGENIC RISKS
SOIL INGESTION PATHWAY

AOC 2

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ABSORPTION EFFICIENCY (AEi)	ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME		RAE	RME		RAE	RME
Arsenic	18.1	41	0.2	2.8E-07	6.4E-07	1.5E+00	4E-07	1E-06
TOTAL							4E-07	1E-06

BASF-WYANDOTTE

FUTURE FACILITY WORKER SCENARIO
CARCINOGENIC RISKS
SOIL DERMAL ABSORPTION PATHWAY

AOC 2

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		DERMAL ABSORPTION FACTOR (ABS)	ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME		RAE	RME		RAE	RME
Arsenic	18.1	41	0.001	8.1E-09	1.8E-08	7.5E+00	6E-08	1E-07
TOTAL							6E-08	1E-07

BASF-WYANDOTTE

FUTURE FACILITY WORKER SCENARIO
CARCINOGENIC RISKS
SOIL DUST INHALATION PATHWAY

AOC 2

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME	RAE	RME		RAE	RME
Arsenic	18.1	41	4.3E-10	9.7E-10	1.5E+01	6E-09	1E-08
Chromium	24.9	101	5.9E-10	2.4E-09	2.9E+02	2E-07	7E-07
TOTAL						2E-07	7E-07

BASF-WYANDOTTE

FUTURE CONSTRUCTION/UTILITY WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL INGESTION PATHWAY

AOC 2

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ABSORPTION EFFICIENCY (AEi)	ESTIMATED DAILY INTAKE (mg/kg/day)		SUBCHRONIC REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME		RAE	RME		RAE	RME
2-Methylnaphthalene	0.703	2.45	0.5	2.0E-07	6.9E-07	3.0E-01	7E-07	2E-06
Naphthalene	0.695	2.47	0.5	2.0E-07	7.0E-07	4.0E-02	5E-06	2E-05
Phenanthrene	0.515	1.2	0.5	1.5E-07	3.4E-07	3.0E-01	5E-07	1E-06
Arsenic	18.1	41	0.2	2.0E-06	4.6E-06	3.0E-04	7E-03	2E-02
Chromium	24.9	101	0.2	2.8E-06	1.1E-05	2.0E-02	1E-04	6E-04
Cyanide	10.4	46	0.2	1.2E-06	5.2E-06	2.0E-02	6E-05	3E-04
Mercury	2.4	17.1	0.2	2.7E-07	1.9E-06	3.0E-04	9E-04	6E-03
Zinc	177	966	0.2	2.0E-05	1.1E-04	3.0E-01	7E-05	4E-04
TOTAL							8E-03	2E-02

BASF-WYANDOTTE

FUTURE CONSTRUCTION/UTILITY WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL DERMAL ABSORPTION PATHWAY

AOC 2

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		DERMAL ABSORPTION FACTOR (ABS)	ESTIMATED DAILY INTAKE (mg/kg/day)		SUBCHRONIC REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME		RAE	RME		RAE	RME
2-Methylnaphthalene	0.703	2.45	0.01	2.4E-09	8.2E-09	1.5E-01	2E-08	5E-08
Naphthalene	0.695	2.47	0.01	2.3E-09	8.3E-09	2.0E-02	1E-07	4E-07
Phenanthrene	0.515	1.2	0.01	1.7E-09	4.0E-09	1.5E-01	1E-08	3E-08
Arsenic	18.1	41	0.001	6.1E-09	1.4E-08	6.0E-05	1E-04	2E-04
Chromium	24.9	101	0.001	8.4E-09	3.4E-08	4.0E-03	2E-06	8E-06
Cyanide	10.4	46	0.001	3.5E-09	1.5E-08	4.0E-03	9E-07	4E-06
Mercury	2.4	17.1	0.001	8.1E-10	5.7E-09	6.0E-05	1E-05	1E-04
Zinc	177	966	0.001	5.9E-08	3.2E-07	6.0E-02	1E-06	5E-06
TOTAL							1E-04	3E-04

BASF-WYANDOTTE

FUTURE CONSTRUCTION/UTILITY WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL DUST INHALATION PATHWAY

AOC 2

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ESTIMATED DAILY INTAKE (mg/kg/day)		SUBCHRONIC REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME	RAE	RME		RAE	RME
2-Methylnaphthalene	0.703	2.45	1.4E-11	4.9E-11	3.0E-01	5E-11	2E-10
Naphthalene	0.695	2.47	1.4E-11	4.9E-11	4.0E-02	3E-10	1E-09
Phenanthrene	0.515	1.2	1.0E-11	2.4E-11	3.0E-01	3E-11	8E-11
Arsenic	18.1	41	3.6E-10	8.2E-10	NA	0E+00	0E+00
Chromium	24.9	101	5.0E-10	2.0E-09	NA	0E+00	0E+00
Cyanide	10.4	46	2.1E-10	9.2E-10	8.6E-04	2E-07	1E-06
Mercury	2.4	17.1	4.8E-11	3.4E-10	8.6E-05	6E-07	4E-06
Zinc	177	966	3.5E-09	1.9E-08	NA	0E+00	0E+00
TOTAL						8E-07	5E-06

BASF-WYANDOTTE

FUTURE CONSTRUCTION/UTILITY WORKER SCENARIO
CARCINOGENIC RISKS
SOIL INGESTION PATHWAY

AOC 2

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ABSORPTION EFFICIENCY (AEi)	ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME		RAE	RME		RAE	RME
Arsenic	18.1	41	0.2	2.9E-08	6.6E-08	1.5E+00	4E-08	1E-07
TOTAL							4E-08	1E-07

BASF-WYANDOTTE

FUTURE CONSTRUCTION/UTILITY WORKER SCENARIO
CARCINOGENIC RISKS
SOIL DERMAL ABSORPTION PATHWAY

AOC 2

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		DERMAL ABSORPTION FACTOR (ABS)	ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME		RAE	RME		RAE	RME
Arsenic	18.1	41	0.001	8.7E-11	2.0E-10	7.5E+00	7E-10	1E-09
TOTAL							7E-10	1E-09

BASF-WYANDOTTE

FUTURE CONSTRUCTION/UTILITY WORKER SCENARIO
CARCINOGENIC RISKS
SOIL DUST INHALATION PATHWAY

AOC 2

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME	RAE	RME		RAE	RME
Arsenic	18.1	41	5.2E-12	1.2E-11	1.5E+01	8E-11	2E-10
Chromium	24.9	101	7.1E-12	2.9E-11	2.9E+02	2E-09	8E-09
TOTAL						2E-09	9E-09

APPENDIX G-6

AOC 4

BASF-WYANDOTTE

CURRENT FACILITY WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL VAPOR INHALATION PATHWAY

AOC 4

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		VOLATILIZATION FACTOR (VF)	ESTIMATED DAILY INTAKE (mg/kg/day)		REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME		RAE	RME		RAE	RME
Benzene	465	680	27000	4.0E-04	5.9E-04	1.7E-03	2E-01	3E-01
Styrene	168	240	134000	2.9E-05	4.2E-05	2.9E-01	1E-04	1E-04
Toluene	390	590	40400	2.3E-04	3.4E-04	1.1E-01	2E-03	3E-03
Xylenes (total)	618	980	54200	2.7E-04	4.2E-04	2.0E-01	1E-03	2E-03
TOTAL							2E-01	4E-01

BASF-WYANDOTTE

CURRENT FACILITY WORKER SCENARIO
CARCINOGENIC RISKS
SOIL VAPOR INHALATION PATHWAY

AOC 4

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		VOLATILIZATION FACTOR (VF)	ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME		RAE	RME		RAE	RME
Benzene	465	680	27000	1.4E-04	2.1E-04	2.9E-02	4E-06	6E-06
TOTAL							4E-06	6E-06

BASF-WYANDOTTE

FUTURE MAINTENANCE WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL INGESTION PATHWAY

AOC 4

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ABSORPTION EFFICIENCY (AEi)	ESTIMATED DAILY INTAKE (mg/kg/day)		REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME		RAE	RME		RAE	RME
Benzene	465	680	0.8	8.2E-06	1.2E-05	1.7E-03	5E-03	7E-03
Styrene	168	240	0.8	2.9E-06	4.2E-06	2.0E-01	1E-05	2E-05
Toluene	390	590	0.8	6.8E-06	1.0E-05	2.0E-01	3E-05	5E-05
Xylenes (total)	618	980	0.8	1.1E-05	1.7E-05	2.0E+00	5E-06	9E-06
Acenaphthylene	5150	9300	0.5	5.6E-05	1.0E-04	3.0E-02	2E-03	3E-03
Anthracene	3990	7100	0.5	4.4E-05	7.8E-05	3.0E-01	1E-04	3E-04
Benzo(a)anthracene	2700	4900	0.5	3.0E-05	5.4E-05	NA	0E+00	0E+00
Benzo(a)pyrene	2220	4100	0.5	2.4E-05	4.5E-05	NA	0E+00	0E+00
Benzo(b)fluoranthene	2410	4400	0.5	2.6E-05	4.8E-05	NA	0E+00	0E+00
Benzo(k)fluoranthene	1350	2500	0.5	1.5E-05	2.7E-05	NA	0E+00	0E+00
Benzo(g,h,i)perylene	1030	1500	0.5	1.1E-05	1.6E-05	3.0E-02	4E-04	5E-04
Chrysene	2840	5200	0.5	3.1E-05	5.7E-05	NA	0E+00	0E+00
Dibenzofuran	3320	5900	0.5	3.6E-05	6.5E-05	4.0E-03	9E-03	2E-02
Fluoranthene	7800	14000	0.5	8.5E-05	1.5E-04	4.0E-02	2E-03	4E-03
Fluorene	5350	9500	0.5	5.9E-05	1.0E-04	4.0E-02	1E-03	3E-03
Indeno(1,2,3-cd)pyrene	860	1600	0.5	9.4E-06	1.8E-05	NA	0E+00	0E+00
2-Methylnaphthalene	4970	9000	0.5	5.4E-05	9.9E-05	3.0E-02	2E-03	3E-03
3-Methylphenol	1470	2700	0.5	1.6E-05	3.0E-05	5.0E-02	3E-04	6E-04
4-Methylphenol	1470	2700	0.5	1.6E-05	3.0E-05	5.0E-03	3E-03	6E-03
Naphthalene	27000	48000	0.5	3.0E-04	5.3E-04	4.0E-02	7E-03	1E-02
Phenanthrene	12900	23000	0.5	1.4E-04	2.5E-04	3.0E-02	5E-03	8E-03
Phenol	1430	2300	0.5	1.6E-05	2.5E-05	6.0E-01	3E-05	4E-05
Pyrene	5500	9900	0.5	6.0E-05	1.1E-04	3.0E-02	2E-03	4E-03
Arsenic	18	20.5	0.2	7.9E-08	9.0E-08	3.0E-04	3E-04	3E-04
Cyanide	15	19	0.2	6.6E-08	8.3E-08	2.0E-02	3E-06	4E-06
Lead	66	82.8	0.2	2.9E-07	3.6E-07	NA	0E+00	0E+00
Selenium	3	3.6	0.2	1.3E-08	1.6E-08	5.0E-03	3E-06	3E-06
Thallium	11	14	0.2	4.8E-08	6.1E-08	8.0E-05	6E-04	8E-04
TOTAL							4E-02	7E-02

BASF-WYANDOTTE

FUTURE MAINTENANCE WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL DERMAL ABSORPTION PATHWAY

AOC 4

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		DERMAL ABSORPTION FACTOR (ABS)	ESTIMATED DAILY INTAKE (mg/kg/day)		REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME		RAE	RME		RAE	RME
Benzene	465	680	0.0005	2.9E-08	4.3E-08	1.4E-03	2E-05	3E-05
Styrene	168	240	0.03	6.3E-07	9.0E-07	1.6E-01	4E-06	6E-06
Toluene	390	590	0.03	1.5E-06	2.2E-06	1.6E-01	9E-06	1E-05
Xylenes (total)	618	980	0.03	2.3E-06	3.7E-06	1.6E+00	1E-06	2E-06
Acenaphthylene	5150	9300	0.01	6.5E-06	1.2E-05	1.5E-02	4E-04	8E-04
Anthracene	3990	7100	0.01	5.0E-06	8.9E-06	1.5E-01	3E-05	6E-05
Benzo(a)anthracene	2700	4900	0.01	3.4E-06	6.1E-06	NA	0E+00	0E+00
Benzo(a)pyrene	2220	4100	0.01	2.8E-06	5.1E-06	NA	0E+00	0E+00
Benzo(b)fluoranthene	2410	4400	0.01	3.0E-06	5.5E-06	NA	0E+00	0E+00
Benzo(k)fluoranthene	1350	2500	0.01	1.7E-06	3.1E-06	NA	0E+00	0E+00
Benzo(g,h,i)perylene	1030	1500	0.01	1.3E-06	1.9E-06	1.5E-02	9E-05	1E-04
Chrysene	2840	5200	0.01	3.6E-06	6.5E-06	NA	0E+00	0E+00
Dibenzofuran	3320	5900	0.01	4.2E-06	7.4E-06	2.0E-03	2E-03	4E-03
Fluoranthene	7800	14000	0.01	9.8E-06	1.8E-05	2.0E-02	5E-04	9E-04
Fluorene	5350	9500	0.01	6.7E-06	1.2E-05	2.0E-02	3E-04	6E-04
Indeno(1,2,3-cd)pyrene	860	1600	0.01	1.1E-06	2.0E-06	NA	0E+00	0E+00
2-Methylnaphthalene	4970	9000	0.01	6.2E-06	1.1E-05	1.5E-02	4E-04	8E-04
3-Methylphenol	1470	2700	0.01	1.8E-06	3.4E-06	2.5E-02	7E-05	1E-04
4-Methylphenol	1470	2700	0.01	1.8E-06	3.4E-06	2.5E-03	7E-04	1E-03
Naphthalene	27000	48000	0.01	3.4E-05	6.0E-05	2.0E-02	2E-03	3E-03
Phenanthrene	12900	23000	0.01	1.6E-05	2.9E-05	1.5E-02	1E-03	2E-03
Phenol	1430	2300	1.0	1.8E-04	2.9E-04	3.0E-01	6E-04	1E-03
Pyrene	5500	9900	0.01	6.9E-06	1.2E-05	1.5E-02	5E-04	8E-04
Arsenic	18	20.5	0.001	2.3E-09	2.6E-09	6.0E-05	4E-05	4E-05
Cyanide	15	19	0.001	1.9E-09	2.4E-09	4.0E-03	5E-07	6E-07
Lead	66	82.8	0.001	8.3E-09	1.0E-08	NA	0E+00	0E+00
Selenium	3	3.6	0.001	3.8E-10	4.5E-10	1.0E-03	4E-07	5E-07
Thallium	11	14	0.001	1.4E-09	1.8E-09	1.6E-05	9E-05	1E-04
TOTAL							9E-03	2E-02

BASF-WYANDOTTE

FUTURE MAINTENANCE WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL VAPOR INHALATION PATHWAY

AOC 4

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		VOLATILIZATION FACTOR (VF)	ESTIMATED DAILY INTAKE (mg/kg/day)		REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME		RAE	RME		RAE	RME
Benzene	465	680	27000	4.2E-04	6.2E-04	1.7E-03	2E-01	4E-01
Styrene	168	240	134000	3.1E-05	4.4E-05	2.9E-01	1E-04	2E-04
Toluene	390	590	40400	2.4E-04	3.6E-04	1.1E-01	2E-03	3E-03
Xylenes (total)	618	980	54200	2.8E-04	4.4E-04	2.0E-01	1E-03	2E-03
TOTAL							3E-01	4E-01

BASF-WYANDOTTE

FUTURE MAINTENANCE WORKER SCENARIO
CARCINOGENIC RISKS
SOIL INGESTION PATHWAY

AOC 4

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ABSORPTION EFFICIENCY (AEi)	ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME		RAE	RME		RAE	RME
Benzene	465	680	0.8	2.9E-06	4.3E-06	2.9E-02	8E-08	1E-07
Benzo(a)anthracene	2700	4900	0.5	1.1E-05	1.9E-05	7.3E-01	8E-06	1E-05
Benzo(a)pyrene	2220	4100	0.5	8.7E-06	1.6E-05	7.3E+00	6E-05	1E-04
Benzo(b)fluoranthene	2410	4400	0.5	9.4E-06	1.7E-05	7.3E-01	7E-06	1E-05
Benzo(k)fluoranthene	1350	2500	0.5	5.3E-06	9.8E-06	7.3E-02	4E-07	7E-07
Chrysene	2840	5200	0.5	1.1E-05	2.0E-05	7.3E-03	8E-08	1E-07
Indeno(1,2,3-cd)pyrene	860	1600	0.5	3.4E-06	6.3E-06	7.3E-01	2E-06	5E-06
Arsenic	18	20.5	0.2	2.8E-08	3.2E-08	1.5E+00	4E-08	5E-08
Lead	66	82.8	0.2	1.0E-07	1.3E-07	NA	0E+00	0E+00
TOTAL							8E-05	1E-04

BASF-WYANDOTTE

FUTURE MAINTENANCE WORKER SCENARIO
CARCINOGENIC RISKS
SOIL DERMAL ABSORPTION PATHWAY

AOC 4

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		DERMAL ABSORPTION FACTOR (ABS)	ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME		RAE	RME		RAE	RME
Benzene	465	680	0.0005	1.0E-08	1.5E-08	3.6E-02	4E-10	6E-10
Benzo(a)anthracene	2700	4900	0.01	1.2E-06	2.2E-06	1.5E+00	2E-06	3E-06
Benzo(a)pyrene	2220	4100	0.01	9.9E-07	1.8E-06	1.5E+01	1E-05	3E-05
Benzo(b)fluoranthene	2410	4400	0.01	1.1E-06	2.0E-06	1.5E+00	2E-06	3E-06
Benzo(k)fluoranthene	1350	2500	0.01	6.0E-07	1.1E-06	1.5E-01	9E-08	2E-07
Chrysene	2840	5200	0.01	1.3E-06	2.3E-06	1.5E-02	2E-08	3E-08
Indeno(1,2,3-cd)pyrene	860	1600	0.01	3.9E-07	7.2E-07	1.5E+00	6E-07	1E-06
Arsenic	18	20.5	0.001	8.1E-10	9.2E-10	7.5E+00	6E-09	7E-09
Lead	66	82.8	0.001	3.0E-09	3.7E-09	NA	0E+00	0E+00
TOTAL							2E-05	3E-05

BASF-WYANDOTTE

FUTURE MAINTENANCE WORKER SCENARIO
CARCINOGENIC RISKS
SOIL VAPOR INHALATION PATHWAY

AOC 4

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		VOLATILIZATION FACTOR (VF)	ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME		RAE	RME		RAE	RME
Benzene	465	680	27000	1.5E-04	2.2E-04	2.9E-02	4E-06	6E-06
TOTAL							4E-06	6E-06

BASF-WYANDOTTE

FUTURE FACILITY WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL INGESTION PATHWAY

AOC 4

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ABSORPTION EFFICIENCY (AEi)	ESTIMATED DAILY INTAKE (mg/kg/day)		REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME		RAE	RME		RAE	RME
Benzene	465	680	0.8	8.2E-05	1.2E-04	1.7E-03	5E-02	7E-02
Styrene	168	240	0.8	2.9E-05	4.2E-05	2.0E-01	1E-04	2E-04
Toluene	390	590	0.8	6.8E-05	1.0E-04	2.0E-01	3E-04	5E-04
Xylenes (total)	618	980	0.8	1.1E-04	1.7E-04	2.0E+00	5E-05	9E-05
Acenaphthylene	5150	9300	0.5	5.6E-04	1.0E-03	3.0E-02	2E-02	3E-02
Anthracene	3990	7100	0.5	4.4E-04	7.8E-04	3.0E-01	1E-03	3E-03
Benzo(a)anthracene	2700	4900	0.5	3.0E-04	5.4E-04	NA	0E+00	0E+00
Benzo(a)pyrene	2220	4100	0.5	2.4E-04	4.5E-04	NA	0E+00	0E+00
Benzo(b)fluoranthene	2410	4400	0.5	2.6E-04	4.8E-04	NA	0E+00	0E+00
Benzo(k)fluoranthene	1350	2500	0.5	1.5E-04	2.7E-04	NA	0E+00	0E+00
Benzo(g,h,i)perylene	1030	1500	0.5	1.1E-04	1.6E-04	3.0E-02	4E-03	5E-03
Chrysene	2840	5200	0.5	3.1E-04	5.7E-04	NA	0E+00	0E+00
Dibenzofuran	3320	5900	0.5	3.6E-04	6.5E-04	4.0E-03	9E-02	2E-01
Fluoranthene	7800	14000	0.5	8.5E-04	1.5E-03	4.0E-02	2E-02	4E-02
Fluorene	5350	9500	0.5	5.9E-04	1.0E-03	4.0E-02	1E-02	3E-02
Indeno(1,2,3-cd)pyrene	860	1600	0.5	9.4E-05	1.8E-04	NA	0E+00	0E+00
2-Methylnaphthalene	4970	9000	0.5	5.4E-04	9.9E-04	3.0E-02	2E-02	3E-02
3-Methylphenol	1470	2700	0.5	1.6E-04	3.0E-04	5.0E-02	3E-03	6E-03
4-Methylphenol	1470	2700	0.5	1.6E-04	3.0E-04	5.0E-03	3E-02	6E-02
Naphthalene	27000	48000	0.5	3.0E-03	5.3E-03	4.0E-02	7E-02	1E-01
Phenanthrene	12900	23000	0.5	1.4E-03	2.5E-03	3.0E-02	5E-02	8E-02
Phenol	1430	2300	0.5	1.6E-04	2.5E-04	6.0E-01	3E-04	4E-04
Pyrene	5500	9900	0.5	6.0E-04	1.1E-03	3.0E-02	2E-02	4E-02
Arsenic	18	20.5	0.2	7.9E-07	9.0E-07	3.0E-04	3E-03	3E-03
Cyanide	15	19	0.2	6.6E-07	8.3E-07	2.0E-02	3E-05	4E-05
Lead	66	82.8	0.2	2.9E-06	3.6E-06	NA	0E+00	0E+00
Selenium	3	3.6	0.2	1.3E-07	1.6E-07	5.0E-03	3E-05	3E-05
Thallium	11	14	0.2	4.8E-07	6.1E-07	8.0E-05	6E-03	8E-03
TOTAL							4E-01	7E-01

BASF-WYANDOTTE

FUTURE FACILITY WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL DERMAL ABSORPTION PATHWAY

AOC 4

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		DERMAL ABSORPTION FACTOR (ABS)	ESTIMATED DAILY INTAKE (mg/kg/day)		REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME		RAE	RME		RAE	RME
Benzene	465	680	0.0005	2.9E-07	4.3E-07	1.4E-03	2E-04	3E-04
Styrene	168	240	0.03	6.3E-06	9.0E-06	1.6E-01	4E-05	6E-05
Toluene	390	590	0.03	1.5E-05	2.2E-05	1.6E-01	9E-05	1E-04
Xylenes (total)	618	980	0.03	2.3E-05	3.7E-05	1.6E+00	1E-05	2E-05
Acenaphthylene	5150	9300	0.01	6.5E-05	1.2E-04	1.5E-02	4E-03	8E-03
Anthracene	3990	7100	0.01	5.0E-05	8.9E-05	1.5E-01	3E-04	6E-04
Benzo(a)anthracene	2700	4900	0.01	3.4E-05	6.1E-05	NA	0E+00	0E+00
Benzo(a)pyrene	2220	4100	0.01	2.8E-05	5.1E-05	NA	0E+00	0E+00
Benzo(b)fluoranthene	2410	4400	0.01	3.0E-05	5.5E-05	NA	0E+00	0E+00
Benzo(k)fluoranthene	1350	2500	0.01	1.7E-05	3.1E-05	NA	0E+00	0E+00
Benzo(g,h,i)perylene	1030	1500	0.01	1.3E-05	1.9E-05	1.5E-02	9E-04	1E-03
Chrysene	2840	5200	0.01	3.6E-05	6.5E-05	NA	0E+00	0E+00
Dibenzofuran	3320	5900	0.01	4.2E-05	7.4E-05	2.0E-03	2E-02	4E-02
Fluoranthene	7800	14000	0.01	9.8E-05	1.8E-04	2.0E-02	5E-03	9E-03
Fluorene	5350	9500	0.01	6.7E-05	1.2E-04	2.0E-02	3E-03	6E-03
Indeno(1,2,3-cd)pyrene	860	1600	0.01	1.1E-05	2.0E-05	NA	0E+00	0E+00
2-Methylnaphthalene	4970	9000	0.01	6.2E-05	1.1E-04	1.5E-02	4E-03	8E-03
3-Methylphenol	1470	2700	0.01	1.8E-05	3.4E-05	2.5E-02	7E-04	1E-03
4-Methylphenol	1470	2700	0.01	1.8E-05	3.4E-05	2.5E-03	7E-03	1E-02
Naphthalene	27000	48000	0.01	3.4E-04	6.0E-04	2.0E-02	2E-02	3E-02
Phenanthrene	12900	23000	0.01	1.6E-04	2.9E-04	1.5E-02	1E-02	2E-02
Phenol	1430	2300	1.0	1.8E-03	2.9E-03	3.0E-01	6E-03	1E-02
Pyrene	5500	9900	0.01	6.9E-05	1.2E-04	1.5E-02	5E-03	8E-03
Arsenic	18	20.5	0.001	2.3E-08	2.6E-08	6.0E-05	4E-04	4E-04
Cyanide	15	19	0.001	1.9E-08	2.4E-08	4.0E-03	5E-06	6E-06
Lead	66	82.8	0.001	8.3E-08	1.0E-07	NA	0E+00	0E+00
Selenium	3	3.6	0.001	3.8E-09	4.5E-09	1.0E-03	4E-06	5E-06
Thallium	11	14	0.001	1.4E-08	1.8E-08	1.6E-05	9E-04	1E-03
TOTAL							9E-02	2E-01

BASF-WYANDOTTE

FUTURE FACILITY WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL VAPOR INHALATION PATHWAY

AOC 4

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		VOLATILIZATION FACTOR (VF)	ESTIMATED DAILY INTAKE (mg/kg/day)		REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME		RAE	RME		RAE	RME
Benzene	465	680	27000	1.5E-03	2.2E-03	1.7E-03	9E-01	1E+00
Styrene	168	240	134000	1.1E-04	1.6E-04	2.9E-01	4E-04	5E-04
Toluene	390	590	40400	8.5E-04	1.3E-03	1.1E-01	8E-03	1E-02
Xylenes (total)	618	980	54200	1.0E-03	1.6E-03	2.0E-01	5E-03	8E-03
TOTAL							9E-01	1E+00

BASF-WYANDOTTE

FUTURE FACILITY WORKER SCENARIO
CARCINOGENIC RISKS
SOIL INGESTION PATHWAY

AOC 4

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ABSORPTION EFFICIENCY (AEi)	ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME		RAE	RME		RAE	RME
Benzene	465	680	0.8	2.9E-05	4.3E-05	2.9E-02	8E-07	1E-06
Benzo(a)anthracene	2700	4900	0.5	1.1E-04	1.9E-04	7.3E-01	8E-05	1E-04
Benzo(a)pyrene	2220	4100	0.5	8.7E-05	1.6E-04	7.3E+00	6E-04	1E-03
Benzo(b)fluoranthene	2410	4400	0.5	9.4E-05	1.7E-04	7.3E-01	7E-05	1E-04
Benzo(k)fluoranthene	1350	2500	0.5	5.3E-05	9.8E-05	7.3E-02	4E-06	7E-06
Chrysene	2840	5200	0.5	1.1E-04	2.0E-04	7.3E-03	8E-07	1E-06
Indeno(1,2,3-cd)pyrene	860	1600	0.5	3.4E-05	6.3E-05	7.3E-01	2E-05	5E-05
Arsenic	18	20.5	0.2	2.8E-07	3.2E-07	1.5E+00	4E-07	5E-07
Lead	66	82.8	0.2	1.0E-06	1.3E-06	NA	0E+00	0E+00
TOTAL							8E-04	1E-03

BASF-WYANDOTTE

FUTURE FACILITY WORKER SCENARIO
CARCINOGENIC RISKS
SOIL DERMAL ABSORPTION PATHWAY

AOC 4

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		DERMAL ABSORPTION FACTOR (ABS)	ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME		RAE	RME		RAE	RME
Benzene	465	680	0.0005	1.0E-07	1.5E-07	3.6E-02	4E-09	6E-09
Benzo(a)anthracene	2700	4900	0.01	1.2E-05	2.2E-05	1.5E+00	2E-05	3E-05
Benzo(a)pyrene	2220	4100	0.01	9.9E-06	1.8E-05	1.5E+01	1E-04	3E-04
Benzo(b)fluoranthene	2410	4400	0.01	1.1E-05	2.0E-05	1.5E+00	2E-05	3E-05
Benzo(k)fluoranthene	1350	2500	0.01	6.0E-06	1.1E-05	1.5E-01	9E-07	2E-06
Chrysene	2840	5200	0.01	1.3E-05	2.3E-05	1.5E-02	2E-07	3E-07
Indeno(1,2,3-cd)pyrene	860	1600	0.01	3.9E-06	7.2E-06	1.5E+00	6E-06	1E-05
Arsenic	18	20.5	0.001	8.1E-09	9.2E-09	7.5E+00	6E-08	7E-08
Lead	66	82.8	0.001	3.0E-08	3.7E-08	NA	0E+00	0E+00
TOTAL							2E-04	3E-04

BASF-WYANDOTTE

FUTURE FACILITY WORKER SCENARIO
CARCINOGENIC RISKS
SOIL VAPOR INHALATION PATHWAY

AOC 4

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		VOLATILIZATION FACTOR (VF)	ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME		RAE	RME		RAE	RME
Benzene	465	680	27000	5.4E-04	7.9E-04	2.9E-02	2E-05	2E-05
TOTAL							2E-05	2E-05

BASF-WYANDOTTE

FUTURE CONSTRUCTION/UTILITY WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL INGESTION PATHWAY

AOC 4

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg) RAE	RME	ABSORPTION EFFICIENCY (AEi)	ESTIMATED DAILY INTAKE (mg/kg/day) RAE	RME	SUBCHRONIC REFERENCE DOSE (mg/kg/day)	HAZARD INDEX RAE	RME
Benzene	465	680	0.8	2.1E-04	3.1E-04	1.7E-03	1E-01	2E-01
Styrene	168	240	0.8	7.6E-05	1.1E-04	2.0E-01	4E-04	5E-04
Toluene	390	590	0.8	1.8E-04	2.7E-04	2.0E+00	9E-05	1E-04
Xylenes (total)	618	980	0.8	2.8E-04	4.4E-04	2.0E+00	1E-04	2E-04
Acenaphthylene	5150	9300	0.5	1.5E-03	2.6E-03	3.0E-01	5E-03	9E-03
Anthracene	3990	7100	0.5	1.1E-03	2.0E-03	3.0E+00	4E-04	7E-04
Benzo(a)anthracene	2700	4900	0.5	7.6E-04	1.4E-03	NA	0E+00	0E+00
Benzo(a)pyrene	2220	4100	0.5	6.3E-04	1.2E-03	NA	0E+00	0E+00
Benzo(b)fluoranthene	2410	4400	0.5	6.8E-04	1.2E-03	NA	0E+00	0E+00
Benzo(k)fluoranthene	1350	2500	0.5	3.8E-04	7.0E-04	NA	0E+00	0E+00
Benzo(g,h,i)perylene	1030	1500	0.5	2.9E-04	4.2E-04	3.0E-01	1E-03	1E-03
Chrysene	2840	5200	0.5	8.0E-04	1.5E-03	NA	0E+00	0E+00
Dibenzofuran	3320	5900	0.5	9.4E-04	1.7E-03	4.0E-03	2E-01	4E-01
Fluoranthene	7800	14000	0.5	2.2E-03	3.9E-03	4.0E-01	5E-03	1E-02
Fluorene	5350	9500	0.5	1.5E-03	2.7E-03	4.0E-01	4E-03	7E-03
Indeno(1,2,3-cd)pyrene	860	1600	0.5	2.4E-04	4.5E-04	NA	0E+00	0E+00
2-Methylnaphthalene	4970	9000	0.5	1.4E-03	2.5E-03	3.0E-01	5E-03	8E-03
3-Methylphenol	1470	2700	0.5	4.1E-04	7.6E-04	5.0E-01	8E-04	2E-03
4-Methylphenol	1470	2700	0.5	4.1E-04	7.6E-04	5.0E-03	8E-02	2E-01
Naphthalene	27000	48000	0.5	7.6E-03	1.4E-02	4.0E-02	2E-01	3E-01
Phenanthrene	12900	23000	0.5	3.6E-03	6.5E-03	3.0E-01	1E-02	2E-02
Phenol	1430	2300	0.5	4.0E-04	6.5E-04	6.0E-01	7E-04	1E-03
Pyrene	5500	9900	0.5	1.5E-03	2.8E-03	3.0E-01	5E-03	9E-03
Arsenic	18	20.5	0.2	2.0E-06	2.3E-06	3.0E-04	7E-03	8E-03
Cyanide	15	19	0.2	1.7E-06	2.1E-06	2.0E-02	8E-05	1E-04
Lead	66	82.8	0.2	7.4E-06	9.3E-06	NA	0E+00	0E+00
Selenium	3	3.6	0.2	3.4E-07	4.1E-07	5.0E-03	7E-05	8E-05
Thallium	11	14	0.2	1.2E-06	1.6E-06	8.0E-04	2E-03	2E-03
TOTAL							7E-01	1E+00

BASF-WYANDOTTE

FUTURE CONSTRUCTION/UTILITY WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL DERMAL ABSORPTION PATHWAY

AOC 4

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		DERMAL ABSORPTION FACTOR (ABS)	ESTIMATED DAILY INTAKE (mg/kg/day)		SUBCHRONIC REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME		RAE	RME		RAE	RME
Benzene	465	680	0.0005	7.8E-08	1.1E-07	1.4E-03	6E-05	8E-05
Styrene	168	240	0.03	1.7E-06	2.4E-06	1.6E-01	1E-05	2E-05
Toluene	390	590	0.03	3.9E-06	5.9E-06	1.6E+00	2E-06	4E-06
Xylenes (total)	618	980	0.03	6.2E-06	9.9E-06	1.6E+00	4E-06	6E-06
Acenaphthylene	5150	9300	0.01	1.7E-05	3.1E-05	1.5E-01	1E-04	2E-04
Anthracene	3990	7100	0.01	1.3E-05	2.4E-05	1.5E+00	9E-06	2E-05
Benzo(a)anthracene	2700	4900	0.01	9.1E-06	1.6E-05	NA	0E+00	0E+00
Benzo(a)pyrene	2220	4100	0.01	7.5E-06	1.4E-05	NA	0E+00	0E+00
Benzo(b)fluoranthene	2410	4400	0.01	8.1E-06	1.5E-05	NA	0E+00	0E+00
Benzo(k)fluoranthene	1350	2500	0.01	4.5E-06	8.4E-06	NA	0E+00	0E+00
Benzo(g,h,i)perylene	1030	1500	0.01	3.5E-06	5.0E-06	1.5E-01	2E-05	3E-05
Chrysene	2840	5200	0.01	9.5E-06	1.7E-05	NA	0E+00	0E+00
Dibenzofuran	3320	5900	0.01	1.1E-05	2.0E-05	2.0E-03	6E-03	1E-02
Fluoranthene	7800	14000	0.01	2.6E-05	4.7E-05	2.0E-01	1E-04	2E-04
Fluorene	5350	9500	0.01	1.8E-05	3.2E-05	2.0E-01	9E-05	2E-04
Indeno(1,2,3-cd)pyrene	860	1600	0.01	2.9E-06	5.4E-06	NA	0E+00	0E+00
2-Methylnaphthalene	4970	9000	0.01	1.7E-05	3.0E-05	1.5E-01	1E-04	2E-04
3-Methylphenol	1470	2700	0.01	4.9E-06	9.1E-06	2.5E-01	2E-05	4E-05
4-Methylphenol	1470	2700	0.01	4.9E-06	9.1E-06	2.5E-03	2E-03	4E-03
Naphthalene	27000	48000	0.01	9.1E-05	1.6E-04	2.0E-02	5E-03	8E-03
Phenanthrene	12900	23000	0.01	4.3E-05	7.7E-05	1.5E-01	3E-04	5E-04
Phenol	1430	2300	1.0	4.8E-04	7.7E-04	3.0E-01	2E-03	3E-03
Pyrene	5500	9900	0.01	1.8E-05	3.3E-05	1.5E-01	1E-04	2E-04
Arsenic	18	20.5	0.001	6.0E-09	6.9E-09	6.0E-05	1E-04	1E-04
Cyanide	15	19	0.001	5.0E-09	6.4E-09	4.0E-03	1E-06	2E-06
Lead	66	82.8	0.001	2.2E-08	2.8E-08	NA	0E+00	0E+00
Selenium	3	3.6	0.001	1.0E-09	1.2E-09	1.0E-03	1E-06	1E-06
Thallium	11	14	0.001	3.7E-09	4.7E-09	1.6E-04	2E-05	3E-05
TOTAL							1E-02	3E-02

BASF-WYANDOTTE

FUTURE CONSTRUCTION/UTILITY WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL VAPOR INHALATION PATHWAY

AOC 4

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		VOLATILIZATION FACTOR (VF)	ESTIMATED DAILY INTAKE (mg/kg/day)		SUBCHRONIC REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME		RAE	RME		RAE	RME
Benzene	465	680	1110	1.1E-02	1.6E-02	1.7E-03	6E+00	9E+00
Styrene	168	240	5330	8.3E-04	1.2E-03	8.6E-01	1E-03	1E-03
Toluene	390	590	1600	6.4E-03	9.7E-03	1.1E-01	6E-02	9E-02
Xylenes (total)	618	980	2140	7.6E-03	1.2E-02	2.0E-01	4E-02	6E-02
TOTAL							7E+00	1E+01

BASF–WYANDOTTE

FUTURE CONSTRUCTION/UTILITY WORKER SCENARIO
CARCINOGENIC RISKS
SOIL INGESTION PATHWAY

AOC 4

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ABSORPTION EFFICIENCY (AEi)	ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME		RAE	RME		RAE	RME
Benzene	465	680	0.8	3.0E−06	4.4E−06	2.9E−02	9E−08	1E−07
Benzo(a)anthracene	2700	4900	0.5	1.1E−05	2.0E−05	7.3E−01	8E−06	1E−05
Benzo(a)pyrene	2220	4100	0.5	8.9E−06	1.7E−05	7.3E+00	7E−05	1E−04
Benzo(b)fluoranthene	2410	4400	0.5	9.7E−06	1.8E−05	7.3E−01	7E−06	1E−05
Benzo(k)fluoranthene	1350	2500	0.5	5.4E−06	1.0E−05	7.3E−02	4E−07	7E−07
Chrysene	2840	5200	0.5	1.1E−05	2.1E−05	7.3E−03	8E−08	2E−07
Indeno(1,2,3−cd)pyrene	860	1600	0.5	3.5E−06	6.4E−06	7.3E−01	3E−06	5E−06
Arsenic	18	20.5	0.2	2.9E−08	3.3E−08	1.5E+00	4E−08	5E−08
Lead	66	82.8	0.2	1.1E−07	1.3E−07	NA	0E+00	0E+00
TOTAL							8E−05	2E−04

BASF-WYANDOTTE

FUTURE CONSTRUCTION/UTILITY WORKER SCENARIO
CARCINOGENIC RISKS
SOIL DERMAL ABSORPTION PATHWAY

AOC 4

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		DERMAL ABSORPTION FACTOR (ABS)	ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME		RAE	RME		RAE	RME
Benzene	465	680	0.0005	1.1E-09	1.6E-09	3.6E-02	4E-11	6E-11
Benzo(a)anthracene	2700	4900	0.01	1.3E-07	2.4E-07	1.5E+00	2E-07	3E-07
Benzo(a)pyrene	2220	4100	0.01	1.1E-07	2.0E-07	1.5E+01	2E-06	3E-06
Benzo(b)fluoranthene	2410	4400	0.01	1.2E-07	2.1E-07	1.5E+00	2E-07	3E-07
Benzo(k)fluoranthene	1350	2500	0.01	6.5E-08	1.2E-07	1.5E-01	9E-09	2E-08
Chrysene	2840	5200	0.01	1.4E-07	2.5E-07	1.5E-02	2E-09	4E-09
Indeno(1,2,3-cd)pyrene	860	1600	0.01	4.1E-08	7.7E-08	1.5E+00	6E-08	1E-07
Arsenic	18	20.5	0.001	8.6E-11	9.8E-11	7.5E+00	6E-10	7E-10
Lead	66	82.8	0.001	3.2E-10	4.0E-10	NA	0E+00	0E+00
TOTAL							2E-06	4E-06

BASF-WYANDOTTE

FUTURE CONSTRUCTION/UTILITY WORKER SCENARIO
CARCINOGENIC RISKS
SOIL VAPOR INHALATION PATHWAY

AOC 4

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		VOLATILIZATION FACTOR (VF)	ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME		RAE	RME		RAE	RME
Benzene	465	680	1110	1.6E-04	2.3E-04	2.9E-02	5E-06	7E-06
TOTAL							5E-06	7E-06

APPENDIX G-7

AOC 5

BASF-WYANDOTTE

FUTURE MAINTENANCE WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL INGESTION PATHWAY

AOC 5

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ABSORPTION EFFICIENCY (AEi)	ESTIMATED DAILY INTAKE (mg/kg/day)		REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME		RAE	RME		RAE	RME
2-Methylnaphthalene	0.654	0.89	0.5	7.2E-09	9.8E-09	3.0E-02	2E-07	3E-07
4-Methylphenol	0.47	0.676	0.5	5.2E-09	7.4E-09	5.0E-03	1E-06	1E-06
TOTAL							1E-06	2E-06

BASF-WYANDOTTE

FUTURE MAINTENANCE WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL DERMAL ABSORPTION PATHWAY

AOC 5

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		DERMAL ABSORPTION FACTOR (ABS)	ESTIMATED DAILY INTAKE (mg/kg/day)		REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME		RAE	RME		RAE	RME
2-Methylnaphthalene	0.654	0.89	0.01	8.2E-10	1.1E-09	1.5E-02	5E-08	7E-08
4-Methylphenol	0.47	0.676	0.01	5.9E-10	8.5E-10	2.5E-03	2E-07	3E-07
TOTAL							3E-07	4E-07

BASF-WYANDOTTE

FUTURE MAINTENANCE WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL DUST INHALATION PATHWAY

AOC 5

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ESTIMATED DAILY INTAKE (mg/kg/day)		REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME	RAE	RME		RAE	RME
2-Methylnaphthalene	0.654	0.89	1.2E-11	1.7E-11	3.0E-02	4E-10	6E-10
4-Methylphenol	0.47	0.676	8.7E-12	1.3E-11	5.0E-03	2E-09	3E-09
TOTAL						2E-09	3E-09

BASF-WYANDOTTE

FUTURE MAINTENANCE WORKER SCENARIO
CARCINOGENIC RISKS
SOIL INGESTION PATHWAY

AOC 5

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ABSORPTION EFFICIENCY (AEi)	ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME		RAE	RME		RAE	RME
NO CARCINOGENIC CONSTITUENTS OF CONCERN								
TOTAL							0E+00	0E+00

BASF-WYANDOTTE

FUTURE MAINTENANCE WORKER SCENARIO
CARCINOGENIC RISKS
SOIL DERMAL ABSORPTION PATHWAY

AOC 5

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		DERMAL ABSORPTION FACTOR (ABS)	ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME		RAE	RME		RAE	RME
NO CARCINOGENIC CONSTITUENTS OF CONCERN								
TOTAL							0E+00	0E+00

BASF–WYANDOTTE

FUTURE MAINTENANCE WORKER SCENARIO
CARCINOGENIC RISKS
SOIL DUST INHALATION PATHWAY

AOC 5

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME	RAE	RME		RAE	RME
NO CARCINOGENIC CONSTITUENTS OF CONCERN							
TOTAL						0E+00	0E+00

BASF–WYANDOTTE

FUTURE FACILITY WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL INGESTION PATHWAY

AOC 5

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ABSORPTION EFFICIENCY (AEi)	ESTIMATED DAILY INTAKE (mg/kg/day)		REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME		RAE	RME		RAE	RME
2–Methylnaphthalene	0.654	0.89	0.5	7.2E–08	9.8E–08	3.0E–02	2E–06	3E–06
4–Methylphenol	0.47	0.676	0.5	5.2E–08	7.4E–08	5.0E–03	1E–05	1E–05
TOTAL							1E–05	2E–05

BASF-WYANDOTTE

FUTURE FACILITY WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL DERMAL ABSORPTION PATHWAY

AOC 5

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		DERMAL ABSORPTION FACTOR (ABS)	ESTIMATED DAILY INTAKE (mg/kg/day)		REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME		RAE	RME		RAE	RME
2-Methylnaphthalene	0.654	0.89	0.01	8.2E-09	1.1E-08	1.5E-02	5E-07	7E-07
4-Methylphenol	0.47	0.676	0.01	5.9E-09	8.5E-09	2.5E-03	2E-06	3E-06
TOTAL							3E-06	4E-06

BASF-WYANDOTTE

FUTURE FACILITY WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL DUST INHALATION PATHWAY

AOC 5

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ESTIMATED DAILY INTAKE (mg/kg/day)		REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME	RAE	RME		RAE	RME
2-Methylnaphthalene	0.654	0.89	4.3E-11	5.9E-11	3.0E-02	1E-09	2E-09
4-Methylphenol	0.47	0.676	3.1E-11	4.5E-11	5.0E-03	6E-09	9E-09
TOTAL						8E-09	1E-08

BASF-WYANDOTTE

FUTURE FACILITY WORKER SCENARIO
CARCINOGENIC RISKS
SOIL INGESTION PATHWAY

AOC 5

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ABSORPTION EFFICIENCY (AEi)	ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME		RAE	RME		RAE	RME
NO CARCINOGENIC CONSTITUENTS OF CONCERN								
TOTAL							0E+00	0E+00

BASF-WYANDOTTE

FUTURE FACILITY WORKER SCENARIO
CARCINOGENIC RISKS
SOIL DERMAL ABSORPTION PATHWAY

AOC 5

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg) RAE	RME	DERMAL ABSORPTION FACTOR (ABS)	ESTIMATED DAILY INTAKE (mg/kg/day) RAE	RME	CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK RAE	RME
NO CARCINOGENIC CONSTITUENTS OF CONCERN								
TOTAL							0E+00	0E+00

BASF-WYANDOTTE

FUTURE FACILITY WORKER SCENARIO
CARCINOGENIC RISKS
SOIL DUST INHALATION PATHWAY

AOC 5

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME	RAE	RME		RAE	RME
NO CARCINOGENIC CONSTITUENTS OF CONCERN							
TOTAL						0E+00	0E+00

BASF-WYANDOTTE

FUTURE CONSTRUCTION/UTILITY WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL INGESTION PATHWAY

AOC 5

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ABSORPTION EFFICIENCY (AEi)	ESTIMATED DAILY INTAKE (mg/kg/day)		SUBCHRONIC REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME		RAE	RME		RAE	RME
2-Methylnaphthalene	0.654	0.89	0.5	1.8E-07	2.5E-07	3.0E-01	6E-07	8E-07
4-Methylphenol	0.47	0.676	0.5	1.3E-07	1.9E-07	5.0E-03	3E-05	4E-05
TOTAL							3E-05	4E-05

BASF-WYANDOTTE

FUTURE CONSTRUCTION/UTILITY WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL DERMAL ABSORPTION PATHWAY

AOC 5

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		DERMAL ABSORPTION FACTOR (ABS)	ESTIMATED DAILY INTAKE (mg/kg/day)		SUBCHRONIC REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME		RAE	RME		RAE	RME
2-Methylnaphthalene	0.654	0.89	0.01	2.2E-09	3.0E-09	1.5E-01	1E-08	2E-08
4-Methylphenol	0.47	0.676	0.01	1.6E-09	2.3E-09	2.5E-03	6E-07	9E-07
TOTAL							6E-07	9E-07

BASF-WYANDOTTE

FUTURE CONSTRUCTION/UTILITY WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL DUST INHALATION PATHWAY

AOC 5

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ESTIMATED DAILY INTAKE (mg/kg/day)		SUBCHRONIC REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME	RAE	RME		RAE	RME
2-Methylnaphthalene	0.654	0.89	1.3E-11	1.8E-11	3.0E-01	4E-11	6E-11
4-Methylphenol	0.47	0.676	9.4E-12	1.3E-11	5.0E-03	2E-09	3E-09
TOTAL						2E-09	3E-09

BASF-WYANDOTTE

FUTURE CONSTRUCTION/UTILITY WORKER SCENARIO
CARCINOGENIC RISKS
SOIL INGESTION PATHWAY

AOC 5

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ABSORPTION EFFICIENCY (AEi)	ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME		RAE	RME		RAE	RME
NO CARCINOGENIC CONSTITUENTS OF CONCERN								
TOTAL							0E+00	0E+00

BASF-WYANDOTTE

FUTURE CONSTRUCTION/UTILITY WORKER SCENARIO
CARCINOGENIC RISKS
SOIL DERMAL ABSORPTION PATHWAY

AOC 5

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		DERMAL ABSORPTION FACTOR (ABS)	ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME		RAE	RME		RAE	RME
NO CARCINOGENIC CONSTITUENTS OF CONCERN								
TOTAL							0E+00	0E+00

BASF-WYANDOTTE

FUTURE CONSTRUCTION/UTILITY WORKER SCENARIO
CARCINOGENIC RISKS
SOIL DUST INHALATION PATHWAY

AOC 5

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME	RAE	RME		RAE	RME
NO CARCINOGENIC CONSTITUENTS OF CONCERN							
TOTAL						0E+00	0E+00

APPENDIX G-8

AOC 6

BASF-WYANDOTTE

FUTURE MAINTENANCE WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL INGESTION PATHWAY

AOC 6

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ABSORPTION EFFICIENCY (AEi)	ESTIMATED DAILY INTAKE (mg/kg/day)		REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME		RAE	RME		RAE	RME
Acenaphthene	0.51	0.51	0.5	5.6E-09	5.6E-09	6.0E-02	9E-08	9E-08
Acenaphthylene	1.03	5.8	0.5	1.1E-08	6.4E-08	3.0E-02	4E-07	2E-06
Benzo(a)anthracene	4.87	26	0.5	5.3E-08	2.8E-07	NA	0E+00	0E+00
Benzo(a)pyrene	4.77	21	0.5	5.2E-08	2.3E-07	NA	0E+00	0E+00
Benzo(b)fluoranthene	7.03	28	0.5	7.7E-08	3.1E-07	NA	0E+00	0E+00
Benzo(k)fluoranthene	2.47	10	0.5	2.7E-08	1.1E-07	NA	0E+00	0E+00
Benzo(g,h,i)perylene	2.87	11	0.5	3.1E-08	1.2E-07	3.0E-02	1E-06	4E-06
Chrysene	4.67	22	0.5	5.1E-08	2.4E-07	NA	0E+00	0E+00
Dibenzo(a,h)anthracene	1.12	4.6	0.5	1.2E-08	5.0E-08	NA	0E+00	0E+00
2,4-Dimethylphenol	0.17	0.17	0.5	1.9E-09	1.9E-09	2.0E-02	9E-08	9E-08
Fluoranthene	8.44	50	0.5	9.2E-08	5.5E-07	4.0E-02	2E-06	1E-05
Indeno(1,2,3-cd)pyrene	2.99	12	0.5	3.3E-08	1.3E-07	NA	0E+00	0E+00
2-Methylnaphthalene	0.8	0.8	0.5	8.8E-09	8.8E-09	3.0E-02	3E-07	3E-07
2-Methylphenol	0.14	0.14	0.5	1.5E-09	1.5E-09	5.0E-02	3E-08	3E-08
Naphthalene	1.16	4.1	0.5	1.3E-08	4.5E-08	4.0E-02	3E-07	1E-06
Phenanthrene	7.32	45	0.5	8.0E-08	4.9E-07	3.0E-02	3E-06	2E-05
Arsenic	21	44.9	0.2	9.2E-08	2.0E-07	3.0E-04	3E-04	7E-04
Chromium	16.6	53.2	0.2	7.3E-08	2.3E-07	5.0E-03	1E-05	5E-05
Cyanide	0.83	2.4	0.2	3.6E-09	1.1E-08	2.0E-02	2E-07	5E-07
Lead	71.3	308	0.2	3.1E-07	1.4E-06	NA	0E+00	0E+00
Mercury	0.59	3.3	0.2	2.6E-09	1.4E-08	3.0E-04	9E-06	5E-05
Nickel	15	33.9	0.2	6.6E-08	1.5E-07	2.0E-02	3E-06	7E-06
TOTAL							3E-04	8E-04

BASF-WYANDOTTE

FUTURE MAINTENANCE WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL DERMAL ABSORPTION PATHWAY

AOC 6

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		DERMAL ABSORPTION FACTOR (ABS)	ESTIMATED DAILY INTAKE (mg/kg/day)		REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME		RAE	RME		RAE	RME
Acenaphthene	0.51	0.51	0.01	6.4E-10	6.4E-10	3.0E-02	2E-08	2E-08
Acenaphthylene	1.03	5.8	0.01	1.3E-09	7.3E-09	1.5E-02	9E-08	5E-07
Benzo(a)anthracene	4.87	26	0.01	6.1E-09	3.3E-08	NA	0E+00	0E+00
Benzo(a)pyrene	4.77	21	0.01	6.0E-09	2.6E-08	NA	0E+00	0E+00
Benzo(b)fluoranthene	7.03	28	0.01	8.8E-09	3.5E-08	NA	0E+00	0E+00
Benzo(k)fluoranthene	2.47	10	0.01	3.1E-09	1.3E-08	NA	0E+00	0E+00
Benzo(g,h,i)perylene	2.87	11	0.01	3.6E-09	1.4E-08	1.5E-02	2E-07	9E-07
Chrysene	4.67	22	0.01	5.9E-09	2.8E-08	NA	0E+00	0E+00
Dibenzo(a,h)anthracene	1.12	4.6	0.01	1.4E-09	5.8E-09	NA	0E+00	0E+00
2,4-Dimethylphenol	0.17	0.17	0.01	2.1E-10	2.1E-10	1.0E-02	2E-08	2E-08
Fluoranthene	8.44	50	0.01	1.1E-08	6.3E-08	2.0E-02	5E-07	3E-06
Indeno(1,2,3-cd)pyrene	2.99	12	0.01	3.7E-09	1.5E-08	NA	0E+00	0E+00
2-Methylnaphthalene	0.8	0.8	0.01	1.0E-09	1.0E-09	1.5E-02	7E-08	7E-08
2-Methylphenol	0.14	0.14	0.01	1.8E-10	1.8E-10	2.5E-02	7E-09	7E-09
Naphthalene	1.16	4.1	0.01	1.5E-09	5.1E-09	2.0E-02	7E-08	3E-07
Phenanthrene	7.32	45	0.01	9.2E-09	5.6E-08	1.5E-02	6E-07	4E-06
Arsenic	21	44.9	0.001	2.6E-09	5.6E-09	6.0E-05	4E-05	9E-05
Chromium	16.6	53.2	0.001	2.1E-09	6.7E-09	1.0E-03	2E-06	7E-06
Cyanide	0.83	2.4	0.001	1.0E-10	3.0E-10	4.0E-03	3E-08	8E-08
Lead	71.3	308	0.001	8.9E-09	3.9E-08	NA	0E+00	0E+00
Mercury	0.59	3.3	0.001	7.4E-11	4.1E-10	6.0E-05	1E-06	7E-06
Nickel	15	33.9	0.0005	9.4E-10	2.1E-09	4.0E-03	2E-07	5E-07
TOTAL							5E-05	1E-04

BASF-WYANDOTTE

FUTURE MAINTENANCE WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL DUST INHALATION PATHWAY

AOC 6

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ESTIMATED DAILY INTAKE (mg/kg/day)		REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME	RAE	RME		RAE	RME
Acenaphthene	0.51	0.51	9.5E-12	9.5E-12	6.0E-02	2E-10	2E-10
Acenaphthylene	1.03	5.8	1.9E-11	1.1E-10	3.0E-02	6E-10	4E-09
Benzo(a)anthracene	4.87	26	9.1E-11	4.8E-10	NA	0E+00	0E+00
Benzo(a)pyrene	4.77	21	8.9E-11	3.9E-10	NA	0E+00	0E+00
Benzo(b)fluoranthene	7.03	28	1.3E-10	5.2E-10	NA	0E+00	0E+00
Benzo(k)fluoranthene	2.47	10	4.6E-11	1.9E-10	NA	0E+00	0E+00
Benzo(g,h,i)perylene	2.87	11	5.3E-11	2.0E-10	3.0E-02	2E-09	7E-09
Chrysene	4.67	22	8.7E-11	4.1E-10	NA	0E+00	0E+00
Dibenzo(a,h)anthracene	1.12	4.6	2.1E-11	8.6E-11	NA	0E+00	0E+00
2,4-Dimethylphenol	0.17	0.17	3.2E-12	3.2E-12	2.0E-02	2E-10	2E-10
Fluoranthene	8.44	50	1.6E-10	9.3E-10	4.0E-02	4E-09	2E-08
Indeno(1,2,3-cd)pyrene	2.99	12	5.6E-11	2.2E-10	NA	0E+00	0E+00
2-Methylnaphthalene	0.8	0.8	1.5E-11	1.5E-11	3.0E-02	5E-10	5E-10
2-Methylphenol	0.14	0.14	2.6E-12	2.6E-12	5.0E-02	5E-11	5E-11
Naphthalene	1.16	4.1	2.2E-11	7.6E-11	4.0E-02	5E-10	2E-09
Phenanthrene	7.32	45	1.4E-10	8.4E-10	3.0E-02	5E-09	3E-08
Arsenic	21	44.9	3.9E-10	8.4E-10	NA	0E+00	0E+00
Chromium	16.6	53.2	3.1E-10	9.9E-10	NA	0E+00	0E+00
Cyanide	0.83	2.4	1.5E-11	4.5E-11	8.6E-04	2E-08	5E-08
Lead	71.3	308	1.3E-09	5.7E-09	NA	0E+00	0E+00
Mercury	0.59	3.3	1.1E-11	6.1E-11	8.6E-05	1E-07	7E-07
Nickel	15	33.9	2.8E-10	6.3E-10	NA	0E+00	0E+00
TOTAL						2E-07	8E-07

BASF-WYANDOTTE

FUTURE MAINTENANCE WORKER SCENARIO
CARCINOGENIC RISKS
SOIL INGESTION PATHWAY

AOC 6

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ABSORPTION EFFICIENCY (AEi)	ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME		RAE	RME		RAE	RME
Benzo(a)anthracene	4.87	26	0.5	1.9E-08	1.0E-07	7.3E-01	1E-08	7E-08
Benzo(a)pyrene	4.77	21	0.5	1.9E-08	8.2E-08	7.3E+00	1E-07	6E-07
Benzo(b)fluoranthene	7.03	28	0.5	2.8E-08	1.1E-07	7.3E-01	2E-08	8E-08
Benzo(k)fluoranthene	2.47	10	0.5	9.7E-09	3.9E-08	7.3E-02	7E-10	3E-09
Chrysene	4.67	22	0.5	1.8E-08	8.6E-08	7.3E-03	1E-10	6E-10
Dibenzo(a,h)anthracene	1.12	4.6	0.5	4.4E-09	1.8E-08	7.3E+00	3E-08	1E-07
Indeno(1,2,3-cd)pyrene	2.99	12	0.5	1.2E-08	4.7E-08	7.3E-01	9E-09	3E-08
Arsenic	21	44.9	0.2	3.3E-08	7.0E-08	1.5E+00	5E-08	1E-07
Lead	71.3	308	0.2	1.1E-07	4.8E-07	NA	0E+00	0E+00
TOTAL							3E-07	1E-06

BASF-WYANDOTTE

FUTURE MAINTENANCE WORKER SCENARIO
CARCINOGENIC RISKS
SOIL DERMAL ABSORPTION PATHWAY

AOC 6

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		DERMAL ABSORPTION FACTOR (ABS)	ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME		RAE	RME		RAE	RME
Benzo(a)anthracene	4.87	26	0.01	2.2E-09	1.2E-08	1.5E+00	3E-09	2E-08
Benzo(a)pyrene	4.77	21	0.01	2.1E-09	9.4E-09	1.5E+01	3E-08	1E-07
Benzo(b)fluoranthene	7.03	28	0.01	3.1E-09	1.3E-08	1.5E+00	5E-09	2E-08
Benzo(k)fluoranthene	2.47	10	0.01	1.1E-09	4.5E-09	1.5E-01	2E-10	7E-10
Chrysene	4.67	22	0.01	2.1E-09	9.9E-09	1.5E-02	3E-11	1E-10
Dibenzo(a,h)anthracene	1.12	4.6	0.01	5.0E-10	2.1E-09	1.5E+01	7E-09	3E-08
Indeno(1,2,3-cd)pyrene	2.99	12	0.01	1.3E-09	5.4E-09	1.5E+00	2E-09	8E-09
Arsenic	21	44.9	0.001	9.4E-10	2.0E-09	7.5E+00	7E-09	2E-08
Lead	71.3	308	0.001	3.2E-09	1.4E-08	NA	0E+00	0E+00
TOTAL							6E-08	2E-07

BASF–WYANDOTTE

FUTURE MAINTENANCE WORKER SCENARIO
CARCINOGENIC RISKS
SOIL DUST INHALATION PATHWAY

AOC 6

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME	RAE	RME		RAE	RME
Benzo(a)anthracene	4.87	26	3.2E−11	1.7E−10	7.3E−01	2E−11	1E−10
Benzo(a)pyrene	4.77	21	3.2E−11	1.4E−10	7.3E+00	2E−10	1E−09
Benzo(b)fluoranthene	7.03	28	4.7E−11	1.9E−10	7.3E−01	3E−11	1E−10
Benzo(k)fluoranthene	2.47	10	1.6E−11	6.6E−11	7.3E−02	1E−12	5E−12
Chrysene	4.67	22	3.1E−11	1.5E−10	7.3E−03	2E−13	1E−12
Dibenzo(a,h)anthracene	1.12	4.6	7.4E−12	3.1E−11	7.3E+00	5E−11	2E−10
Indeno(1,2,3−cd)pyrene	2.99	12	2.0E−11	8.0E−11	7.3E−01	1E−11	6E−11
Arsenic	21	44.9	1.4E−10	3.0E−10	1.5E+01	2E−09	4E−09
Chromium	16.6	53.2	1.1E−10	3.5E−10	2.9E+02	3E−08	1E−07
Lead	71.3	308	4.7E−10	2.0E−09	NA	0E+00	0E+00
Nickel	15	33.9	1.0E−10	2.3E−10	8.4E−01	8E−11	2E−10
TOTAL						3E−08	1E−07

BASF-WYANDOTTE

FUTURE FACILITY WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL INGESTION PATHWAY

AOC 6

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ABSORPTION EFFICIENCY (AEi)	ESTIMATED DAILY INTAKE (mg/kg/day)		REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME		RAE	RME		RAE	RME
Acenaphthene	0.51	0.51	0.5	5.6E-08	5.6E-08	6.0E-02	9E-07	9E-07
Acenaphthylene	1.03	5.8	0.5	1.1E-07	6.4E-07	3.0E-02	4E-06	2E-05
Benzo(a)anthracene	4.87	26	0.5	5.3E-07	2.8E-06	NA	0E+00	0E+00
Benzo(a)pyrene	4.77	21	0.5	5.2E-07	2.3E-06	NA	0E+00	0E+00
Benzo(b)fluoranthene	7.03	28	0.5	7.7E-07	3.1E-06	NA	0E+00	0E+00
Benzo(k)fluoranthene	2.47	10	0.5	2.7E-07	1.1E-06	NA	0E+00	0E+00
Benzo(g,h,i)perylene	2.87	11	0.5	3.1E-07	1.2E-06	3.0E-02	1E-05	4E-05
Chrysene	4.67	22	0.5	5.1E-07	2.4E-06	NA	0E+00	0E+00
Dibenzo(a,h)anthracene	1.12	4.6	0.5	1.2E-07	5.0E-07	NA	0E+00	0E+00
2,4-Dimethylphenol	0.17	0.17	0.5	1.9E-08	1.9E-08	2.0E-02	9E-07	9E-07
Fluoranthene	8.44	50	0.5	9.2E-07	5.5E-06	4.0E-02	2E-05	1E-04
Indeno(1,2,3-cd)pyrene	2.99	12	0.5	3.3E-07	1.3E-06	NA	0E+00	0E+00
2-Methylnaphthalene	0.8	0.8	0.5	8.8E-08	8.8E-08	3.0E-02	3E-06	3E-06
2-Methylphenol	0.14	0.14	0.5	1.5E-08	1.5E-08	5.0E-02	3E-07	3E-07
Naphthalene	1.16	4.1	0.5	1.3E-07	4.5E-07	4.0E-02	3E-06	1E-05
Phenanthrene	7.32	45	0.5	8.0E-07	4.9E-06	3.0E-02	3E-05	2E-04
Arsenic	21	44.9	0.2	9.2E-07	2.0E-06	3.0E-04	3E-03	7E-03
Chromium	16.6	53.2	0.2	7.3E-07	2.3E-06	5.0E-03	1E-04	5E-04
Cyanide	0.83	2.4	0.2	3.6E-08	1.1E-07	2.0E-02	2E-06	5E-06
Lead	71.3	308	0.2	3.1E-06	1.4E-05	NA	0E+00	0E+00
Mercury	0.59	3.3	0.2	2.6E-08	1.4E-07	3.0E-04	9E-05	5E-04
Nickel	15	33.9	0.2	6.6E-07	1.5E-06	2.0E-02	3E-05	7E-05
TOTAL							3E-03	8E-03

BASF-WYANDOTTE

FUTURE FACILITY WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL DERMAL ABSORPTION PATHWAY

AOC 6

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg) RAE	RME	DERMAL ABSORPTION FACTOR (ABS)	ESTIMATED DAILY INTAKE (mg/kg/day) RAE	RME	REFERENCE DOSE (mg/kg/day)	HAZARD INDEX RAE	RME
Acenaphthene	0.51	0.51	0.01	6.4E-09	6.4E-09	3.0E-02	2E-07	2E-07
Acenaphthylene	1.03	5.8	0.01	1.3E-08	7.3E-08	1.5E-02	9E-07	5E-06
Benzo(a)anthracene	4.87	26	0.01	6.1E-08	3.3E-07	NA	0E+00	0E+00
Benzo(a)pyrene	4.77	21	0.01	6.0E-08	2.6E-07	NA	0E+00	0E+00
Benzo(b)fluoranthene	7.03	28	0.01	8.8E-08	3.5E-07	NA	0E+00	0E+00
Benzo(k)fluoranthene	2.47	10	0.01	3.1E-08	1.3E-07	NA	0E+00	0E+00
Benzo(g,h,i)perylene	2.87	11	0.01	3.6E-08	1.4E-07	1.5E-02	2E-06	9E-06
Chrysene	4.67	22	0.01	5.9E-08	2.8E-07	NA	0E+00	0E+00
Dibenzo(a,h)anthracene	1.12	4.6	0.01	1.4E-08	5.8E-08	NA	0E+00	0E+00
2,4-Dimethylphenol	0.17	0.17	0.01	2.1E-09	2.1E-09	1.0E-02	2E-07	2E-07
Fluoranthene	8.44	50	0.01	1.1E-07	6.3E-07	2.0E-02	5E-06	3E-05
Indeno(1,2,3-cd)pyrene	2.99	12	0.01	3.7E-08	1.5E-07	NA	0E+00	0E+00
2-Methylnaphthalene	0.8	0.8	0.01	1.0E-08	1.0E-08	1.5E-02	7E-07	7E-07
2-Methylphenol	0.14	0.14	0.01	1.8E-09	1.8E-09	2.5E-02	7E-08	7E-08
Naphthalene	1.16	4.1	0.01	1.5E-08	5.1E-08	2.0E-02	7E-07	3E-06
Phenanthrene	7.32	45	0.01	9.2E-08	5.6E-07	1.5E-02	6E-06	4E-05
Arsenic	21	44.9	0.001	2.6E-08	5.6E-08	6.0E-05	4E-04	9E-04
Chromium	16.6	53.2	0.001	2.1E-08	6.7E-08	1.0E-03	2E-05	7E-05
Cyanide	0.83	2.4	0.001	1.0E-09	3.0E-09	4.0E-03	3E-07	8E-07
Lead	71.3	308	0.001	8.9E-08	3.9E-07	NA	0E+00	0E+00
Mercury	0.59	3.3	0.001	7.4E-10	4.1E-09	6.0E-05	1E-05	7E-05
Nickel	15	33.9	0.0005	9.4E-09	2.1E-08	4.0E-03	2E-06	5E-06
TOTAL							5E-04	1E-03

BASF-WYANDOTTE

FUTURE FACILITY WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL DUST INHALATION PATHWAY

AOC 6

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ESTIMATED DAILY INTAKE (mg/kg/day)		REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME	RAE	RME		RAE	RME
Acenaphthene	0.51	0.51	3.4E-11	3.4E-11	6.0E-02	6E-10	6E-10
Acenaphthylene	1.03	5.8	6.8E-11	3.9E-10	3.0E-02	2E-09	1E-08
Benzo(a)anthracene	4.87	26	3.2E-10	1.7E-09	NA	0E+00	0E+00
Benzo(a)pyrene	4.77	21	3.2E-10	1.4E-09	NA	0E+00	0E+00
Benzo(b)fluoranthene	7.03	28	4.7E-10	1.9E-09	NA	0E+00	0E+00
Benzo(k)fluoranthene	2.47	10	1.6E-10	6.6E-10	NA	0E+00	0E+00
Benzo(g,h,i)perylene	2.87	11	1.9E-10	7.3E-10	3.0E-02	6E-09	2E-08
Chrysene	4.67	22	3.1E-10	1.5E-09	NA	0E+00	0E+00
Dibenzo(a,h)anthracene	1.12	4.6	7.4E-11	3.1E-10	NA	0E+00	0E+00
2,4-Dimethylphenol	0.17	0.17	1.1E-11	1.1E-11	2.0E-02	6E-10	6E-10
Fluoranthene	8.44	50	5.6E-10	3.3E-09	4.0E-02	1E-08	8E-08
Indeno(1,2,3-cd)pyrene	2.99	12	2.0E-10	8.0E-10	NA	0E+00	0E+00
2-Methylnaphthalene	0.8	0.8	5.3E-11	5.3E-11	3.0E-02	2E-09	2E-09
2-Methylphenol	0.14	0.14	9.3E-12	9.3E-12	5.0E-02	2E-10	2E-10
Naphthalene	1.16	4.1	7.7E-11	2.7E-10	4.0E-02	2E-09	7E-09
Phenanthrene	7.32	45	4.9E-10	3.0E-09	3.0E-02	2E-08	1E-07
Arsenic	21	44.9	1.4E-09	3.0E-09	NA	0E+00	0E+00
Chromium	16.6	53.2	1.1E-09	3.5E-09	NA	0E+00	0E+00
Cyanide	0.83	2.4	5.5E-11	1.6E-10	8.6E-04	6E-08	2E-07
Lead	71.3	308	4.7E-09	2.0E-08	NA	0E+00	0E+00
Mercury	0.59	3.3	3.9E-11	2.2E-10	8.6E-05	5E-07	3E-06
Nickel	15	33.9	1.0E-09	2.3E-09	NA	0E+00	0E+00
TOTAL						6E-07	3E-06

BASF-WYANDOTTE

FUTURE FACILITY WORKER SCENARIO
CARCINOGENIC RISKS
SOIL INGESTION PATHWAY

AOC 6

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ABSORPTION EFFICIENCY (AEi)	ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME		RAE	RME		RAE	RME
Benzo(a)anthracene	4.87	26	0.5	1.9E-07	1.0E-06	7.3E-01	1E-07	7E-07
Benzo(a)pyrene	4.77	21	0.5	1.9E-07	8.2E-07	7.3E+00	1E-06	6E-06
Benzo(b)fluoranthene	7.03	28	0.5	2.8E-07	1.1E-06	7.3E-01	2E-07	8E-07
Benzo(k)fluoranthene	2.47	10	0.5	9.7E-08	3.9E-07	7.3E-02	7E-09	3E-08
Chrysene	4.67	22	0.5	1.8E-07	8.6E-07	7.3E-03	1E-09	6E-09
Dibenzo(a,h)anthracene	1.12	4.6	0.5	4.4E-08	1.8E-07	7.3E+00	3E-07	1E-06
Indeno(1,2,3-cd)pyrene	2.99	12	0.5	1.2E-07	4.7E-07	7.3E-01	9E-08	3E-07
Arsenic	21	44.9	0.2	3.3E-07	7.0E-07	1.5E+00	5E-07	1E-06
Lead	71.3	308	0.2	1.1E-06	4.8E-06	NA	0E+00	0E+00
TOTAL							3E-06	1E-05

BASF-WYANDOTTE

FUTURE FACILITY WORKER SCENARIO
CARCINOGENIC RISKS
SOIL DERMAL ABSORPTION PATHWAY

AOC 6

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		DERMAL ABSORPTION FACTOR (ABS)	ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME		RAE	RME		RAE	RME
Benzo(a)anthracene	4.87	26	0.01	2.2E-08	1.2E-07	1.5E+00	3E-08	2E-07
Benzo(a)pyrene	4.77	21	0.01	2.1E-08	9.4E-08	1.5E+01	3E-07	1E-06
Benzo(b)fluoranthene	7.03	28	0.01	3.1E-08	1.3E-07	1.5E+00	5E-08	2E-07
Benzo(k)fluoranthene	2.47	10	0.01	1.1E-08	4.5E-08	1.5E-01	2E-09	7E-09
Chrysene	4.67	22	0.01	2.1E-08	9.9E-08	1.5E-02	3E-10	1E-09
Dibenzo(a,h)anthracene	1.12	4.6	0.01	5.0E-09	2.1E-08	1.5E+01	7E-08	3E-07
Indeno(1,2,3-cd)pyrene	2.99	12	0.01	1.3E-08	5.4E-08	1.5E+00	2E-08	8E-08
Arsenic	21	44.9	0.001	9.4E-09	2.0E-08	7.5E+00	7E-08	2E-07
Lead	71.3	308	0.001	3.2E-08	1.4E-07	NA	0E+00	0E+00
TOTAL							6E-07	2E-06

BASF-WYANDOTTE

FUTURE FACILITY WORKER SCENARIO
CARCINOGENIC RISKS
SOIL DUST INHALATION PATHWAY

AOC 6

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME	RAE	RME		RAE	RME
Benzo(a)anthracene	4.87	26	1.2E-10	6.2E-10	7.3E-01	8E-11	5E-10
Benzo(a)pyrene	4.77	21	1.1E-10	5.0E-10	7.3E+00	8E-10	4E-09
Benzo(b)fluoranthene	7.03	28	1.7E-10	6.6E-10	7.3E-01	1E-10	5E-10
Benzo(k)fluoranthene	2.47	10	5.9E-11	2.4E-10	7.3E-02	4E-12	2E-11
Chrysene	4.67	22	1.1E-10	5.2E-10	7.3E-03	8E-13	4E-12
Dibenzo(a,h)anthracene	1.12	4.6	2.7E-11	1.1E-10	7.3E+00	2E-10	8E-10
Indeno(1,2,3-cd)pyrene	2.99	12	7.1E-11	2.8E-10	7.3E-01	5E-11	2E-10
Arsenic	21	44.9	5.0E-10	1.1E-09	1.5E+01	7E-09	2E-08
Chromium	16.6	53.2	3.9E-10	1.3E-09	2.9E+02	1E-07	4E-07
Lead	71.3	308	1.7E-09	7.3E-09	NA	0E+00	0E+00
Nickel	15	33.9	3.6E-10	8.0E-10	8.4E-01	3E-10	7E-10
TOTAL						1E-07	4E-07

BASF-WYANDOTTE

FUTURE CONSTRUCTION/UTILITY WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL INGESTION PATHWAY

AOC 6

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg) RAE	RME	ABSORPTION EFFICIENCY (AEi)	ESTIMATED DAILY INTAKE (mg/kg/day) RAE	RME	SUBCHRONIC REFERENCE DOSE (mg/kg/day)	HAZARD INDEX RAE	RME
Acenaphthene	0.51	0.51	0.5	1.4E-07	1.4E-07	6.0E-01	2E-07	2E-07
Acenaphthylene	1.03	5.8	0.5	2.9E-07	1.6E-06	3.0E-01	1E-06	5E-06
Benzo(a)anthracene	4.87	26	0.5	1.4E-06	7.3E-06	NA	0E+00	0E+00
Benzo(a)pyrene	4.77	21	0.5	1.3E-06	5.9E-06	NA	0E+00	0E+00
Benzo(b)fluoranthene	7.03	28	0.5	2.0E-06	7.9E-06	NA	0E+00	0E+00
Benzo(k)fluoranthene	2.47	10	0.5	7.0E-07	2.8E-06	NA	0E+00	0E+00
Benzo(g,h,i)perylene	2.87	11	0.5	8.1E-07	3.1E-06	3.0E-01	3E-06	1E-05
Chrysene	4.67	22	0.5	1.3E-06	6.2E-06	NA	0E+00	0E+00
Dibenzo(a,h)anthracene	1.12	4.6	0.5	3.2E-07	1.3E-06	NA	0E+00	0E+00
2,4-Dimethylphenol	0.17	0.17	0.5	4.8E-08	4.8E-08	2.0E-01	2E-07	2E-07
Fluoranthene	8.44	50	0.5	2.4E-06	1.4E-05	4.0E-01	6E-06	4E-05
Indeno(1,2,3-cd)pyrene	2.99	12	0.5	8.4E-07	3.4E-06	NA	0E+00	0E+00
2-Methylnaphthalene	0.8	0.8	0.5	2.3E-07	2.3E-07	3.0E-01	8E-07	8E-07
2-Methylphenol	0.14	0.14	0.5	3.9E-08	3.9E-08	5.0E-01	8E-08	8E-08
Naphthalene	1.16	4.1	0.5	3.3E-07	1.2E-06	4.0E-02	8E-06	3E-05
Phenanthrene	7.32	45	0.5	2.1E-06	1.3E-05	3.0E-01	7E-06	4E-05
Arsenic	21	44.9	0.2	2.4E-06	5.1E-06	3.0E-04	8E-03	2E-02
Chromium	16.6	53.2	0.2	1.9E-06	6.0E-06	2.0E-02	9E-05	3E-04
Cyanide	0.83	2.4	0.2	9.4E-08	2.7E-07	2.0E-02	5E-06	1E-05
Lead	71.3	308	0.2	8.0E-06	3.5E-05	NA	0E+00	0E+00
Mercury	0.59	3.3	0.2	6.7E-08	3.7E-07	3.0E-04	2E-04	1E-03
Nickel	15	33.9	0.2	1.7E-06	3.8E-06	2.0E-02	8E-05	2E-04
TOTAL							8E-03	2E-02

BASF-WYANDOTTE

FUTURE CONSTRUCTION/UTILITY WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL DERMAL ABSORPTION PATHWAY

AOC 6

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		DERMAL ABSORPTION FACTOR (ABS)	ESTIMATED DAILY INTAKE (mg/kg/day)		SUBCHRONIC REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME		RAE	RME		RAE	RME
Acenaphthene	0.51	0.51	0.01	1.7E-09	1.7E-09	3.0E-01	6E-09	6E-09
Acenaphthylene	1.03	5.8	0.01	3.5E-09	1.9E-08	1.5E-01	2E-08	1E-07
Benzo(a)anthracene	4.87	26	0.01	1.6E-08	8.7E-08	NA	0E+00	0E+00
Benzo(a)pyrene	4.77	21	0.01	1.6E-08	7.1E-08	NA	0E+00	0E+00
Benzo(b)fluoranthene	7.03	28	0.01	2.4E-08	9.4E-08	NA	0E+00	0E+00
Benzo(k)fluoranthene	2.47	10	0.01	8.3E-09	3.4E-08	NA	0E+00	0E+00
Benzo(g,h,i)perylene	2.87	11	0.01	9.6E-09	3.7E-08	1.5E-01	6E-08	2E-07
Chrysene	4.67	22	0.01	1.6E-08	7.4E-08	NA	0E+00	0E+00
Dibenzo(a,h)anthracene	1.12	4.6	0.01	3.8E-09	1.5E-08	NA	0E+00	0E+00
2,4-Dimethylphenol	0.17	0.17	0.01	5.7E-10	5.7E-10	1.0E-01	6E-09	6E-09
Fluoranthene	8.44	50	0.01	2.8E-08	1.7E-07	2.0E-01	1E-07	8E-07
Indeno(1,2,3-cd)pyrene	2.99	12	0.01	1.0E-08	4.0E-08	NA	0E+00	0E+00
2-Methylnaphthalene	0.8	0.8	0.01	2.7E-09	2.7E-09	1.5E-01	2E-08	2E-08
2-Methylphenol	0.14	0.14	0.01	4.7E-10	4.7E-10	2.5E-01	2E-09	2E-09
Naphthalene	1.16	4.1	0.01	3.9E-09	1.4E-08	2.0E-02	2E-07	7E-07
Phenanthrene	7.32	45	0.01	2.5E-08	1.5E-07	1.5E-01	2E-07	1E-06
Arsenic	21	44.9	0.001	7.1E-09	1.5E-08	6.0E-05	1E-04	3E-04
Chromium	16.6	53.2	0.001	5.6E-09	1.8E-08	4.0E-03	1E-06	4E-06
Cyanide	0.83	2.4	0.001	2.8E-10	8.1E-10	4.0E-03	7E-08	2E-07
Lead	71.3	308	0.001	2.4E-08	1.0E-07	NA	0E+00	0E+00
Mercury	0.59	3.3	0.001	2.0E-10	1.1E-09	6.0E-05	3E-06	2E-05
Nickel	15	33.9	0.0005	2.5E-09	5.7E-09	4.0E-03	6E-07	1E-06
TOTAL							1E-04	3E-04

BASF-WYANDOTTE

FUTURE CONSTRUCTION/UTILITY WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL DUST INHALATION PATHWAY

AOC 6

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ESTIMATED DAILY INTAKE (mg/kg/day)		SUBCHRONIC REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME	RAE	RME		RAE	RME
Acenaphthene	0.51	0.51	1.0E-11	1.0E-11	6.0E-01	2E-11	2E-11
Acenaphthylene	1.03	5.8	2.1E-11	1.2E-10	3.0E-01	7E-11	4E-10
Benzo(a)anthracene	4.87	26	9.7E-11	5.2E-10	NA	0E+00	0E+00
Benzo(a)pyrene	4.77	21	9.5E-11	4.2E-10	NA	0E+00	0E+00
Benzo(b)fluoranthene	7.03	28	1.4E-10	5.6E-10	NA	0E+00	0E+00
Benzo(k)fluoranthene	2.47	10	4.9E-11	2.0E-10	NA	0E+00	0E+00
Benzo(g,h,i)perylene	2.87	11	5.7E-11	2.2E-10	3.0E-01	2E-10	7E-10
Chrysene	4.67	22	9.3E-11	4.4E-10	NA	0E+00	0E+00
Dibenzo(a,h)anthracene	1.12	4.6	2.2E-11	9.2E-11	NA	0E+00	0E+00
2,4-Dimethylphenol	0.17	0.17	3.4E-12	3.4E-12	2.0E-01	2E-11	2E-11
Fluoranthene	8.44	50	1.7E-10	1.0E-09	4.0E-01	4E-10	2E-09
Indeno(1,2,3-cd)pyrene	2.99	12	6.0E-11	2.4E-10	NA	0E+00	0E+00
2-Methylnaphthalene	0.8	0.8	1.6E-11	1.6E-11	3.0E-01	5E-11	5E-11
2-Methylphenol	0.14	0.14	2.8E-12	2.8E-12	5.0E-01	6E-12	6E-12
Naphthalene	1.16	4.1	2.3E-11	8.2E-11	4.0E-02	6E-10	2E-09
Phenanthrene	7.32	45	1.5E-10	9.0E-10	3.0E-01	5E-10	3E-09
Arsenic	21	44.9	4.2E-10	8.9E-10	NA	0E+00	0E+00
Chromium	16.6	53.2	3.3E-10	1.1E-09	NA	0E+00	0E+00
Cyanide	0.83	2.4	1.7E-11	4.8E-11	8.6E-04	2E-08	6E-08
Lead	71.3	308	1.4E-09	6.1E-09	NA	0E+00	0E+00
Mercury	0.59	3.3	1.2E-11	6.6E-11	8.6E-05	1E-07	8E-07
Nickel	15	33.9	3.0E-10	6.8E-10	NA	0E+00	0E+00
TOTAL						2E-07	8E-07

BASF-WYANDOTTE

FUTURE CONSTRUCTION/UTILITY WORKER SCENARIO
CARCINOGENIC RISKS
SOIL INGESTION PATHWAY

AOC 6

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ABSORPTION EFFICIENCY (AEi)	ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME		RAE	RME		RAE	RME
Benzo(a)anthracene	4.87	26	0.5	2.0E-08	1.0E-07	7.3E-01	1E-08	8E-08
Benzo(a)pyrene	4.77	21	0.5	1.9E-08	8.5E-08	7.3E+00	1E-07	6E-07
Benzo(b)fluoranthene	7.03	28	0.5	2.8E-08	1.1E-07	7.3E-01	2E-08	8E-08
Benzo(k)fluoranthene	2.47	10	0.5	9.9E-09	4.0E-08	7.3E-02	7E-10	3E-09
Chrysene	4.67	22	0.5	1.9E-08	8.9E-08	7.3E-03	1E-10	6E-10
Dibenzo(a,h)anthracene	1.12	4.6	0.5	4.5E-09	1.9E-08	7.3E+00	3E-08	1E-07
Indeno(1,2,3-cd)pyrene	2.99	12	0.5	1.2E-08	4.8E-08	7.3E-01	9E-09	4E-08
Arsenic	21	44.9	0.2	3.4E-08	7.2E-08	1.5E+00	5E-08	1E-07
Lead	71.3	308	0.2	1.1E-07	5.0E-07	NA	0E+00	0E+00
TOTAL							3E-07	1E-06

BASF-WYANDOTTE

FUTURE CONSTRUCTION/UTILITY WORKER SCENARIO
CARCINOGENIC RISKS
SOIL DERMAL ABSORPTION PATHWAY

AOC 6

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		DERMAL ABSORPTION FACTOR (ABS)	ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME		RAE	RME		RAE	RME
Benzo(a)anthracene	4.87	26	0.01	2.3E-10	1.2E-09	1.5E+00	3E-10	2E-09
Benzo(a)pyrene	4.77	21	0.01	2.3E-10	1.0E-09	1.5E+01	3E-09	1E-08
Benzo(b)fluoranthene	7.03	28	0.01	3.4E-10	1.3E-09	1.5E+00	5E-10	2E-09
Benzo(k)fluoranthene	2.47	10	0.01	1.2E-10	4.8E-10	1.5E-01	2E-11	7E-11
Chrysene	4.67	22	0.01	2.2E-10	1.1E-09	1.5E-02	3E-12	2E-11
Dibenzo(a,h)anthracene	1.12	4.6	0.01	5.4E-11	2.2E-10	1.5E+01	8E-10	3E-09
Indeno(1,2,3-cd)pyrene	2.99	12	0.01	1.4E-10	5.8E-10	1.5E+00	2E-10	8E-10
Arsenic	21	44.9	0.001	1.0E-10	2.2E-10	7.5E+00	8E-10	2E-09
Lead	71.3	308	0.001	3.4E-10	1.5E-09	NA	0E+00	0E+00
TOTAL							6E-09	2E-08

BASF-WYANDOTTE

FUTURE CONSTRUCTION/UTILITY WORKER SCENARIO
CARCINOGENIC RISKS
SOIL DUST INHALATION PATHWAY

AOC 6

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME	RAE	RME		RAE	RME
Benzo(a)anthracene	4.87	26	1.4E-12	7.4E-12	7.3E-01	1E-12	5E-12
Benzo(a)pyrene	4.77	21	1.4E-12	6.0E-12	7.3E+00	1E-11	4E-11
Benzo(b)fluoranthene	7.03	28	2.0E-12	8.0E-12	7.3E-01	1E-12	6E-12
Benzo(k)fluoranthene	2.47	10	7.0E-13	2.8E-12	7.3E-02	5E-14	2E-13
Chrysene	4.67	22	1.3E-12	6.3E-12	7.3E-03	1E-14	5E-14
Dibenzo(a,h)anthracene	1.12	4.6	3.2E-13	1.3E-12	7.3E+00	2E-12	1E-11
Indeno(1,2,3-cd)pyrene	2.99	12	8.5E-13	3.4E-12	7.3E-01	6E-13	2E-12
Arsenic	21	44.9	6.0E-12	1.3E-11	1.5E+01	9E-11	2E-10
Chromium	16.6	53.2	4.7E-12	1.5E-11	2.9E+02	1E-09	4E-09
Lead	71.3	308	2.0E-11	8.8E-11	NA	0E+00	0E+00
Nickel	15	33.9	4.3E-12	9.6E-12	8.4E-01	4E-12	8E-12
TOTAL						1E-09	5E-09

APPENDIX G-9

AOC 7

BASF-WYANDOTTE

FUTURE MAINTENANCE WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL INGESTION PATHWAY

AOC 7

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ABSORPTION EFFICIENCY (AEi)	ESTIMATED DAILY INTAKE (mg/kg/day)		REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME		RAE	RME		RAE	RME
Arsenic	16.8	29.3	0.2	7.4E-08	1.3E-07	3.0E-04	2E-04	4E-04
Chromium	14	18	0.2	6.1E-08	7.9E-08	5.0E-03	1E-05	2E-05
Cyanide	1.21	2.80	0.2	5.3E-09	1.2E-08	2.0E-02	3E-07	6E-07
Lead	51.7	112	0.2	2.3E-07	4.9E-07	NA	0E+00	0E+00
Mercury	0.92	3.20	0.2	4.0E-09	1.4E-08	3.0E-04	1E-05	5E-05
Nickel	16.9	22	0.2	7.4E-08	9.6E-08	2.0E-02	4E-06	5E-06
Silver	1.49	1.40	0.2	6.5E-09	6.1E-09	5.0E-03	1E-06	1E-06
Zinc	83.7	138	0.2	3.7E-07	6.0E-07	3.0E-01	1E-06	2E-06
TOTAL							3E-04	5E-04

BASF-WYANDOTTE

FUTURE MAINTENANCE WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL DERMAL ABSORPTION PATHWAY

AOC 7

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		DERMAL ABSORPTION FACTOR (ABS)	ESTIMATED DAILY INTAKE (mg/kg/day)		REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME		RAE	RME		RAE	RME
Arsenic	16.8	29.3	0.001	2.1E-09	3.7E-09	6.0E-05	4E-05	6E-05
Chromium	14	18	0.001	1.8E-09	2.3E-09	1.0E-03	2E-06	2E-06
Cyanide	1.21	2.80	0.001	1.5E-10	3.5E-10	4.0E-03	4E-08	9E-08
Lead	51.7	112	0.001	6.5E-09	1.4E-08	NA	0E+00	0E+00
Mercury	0.92	3.20	0.001	1.2E-10	4.0E-10	6.0E-05	2E-06	7E-06
Nickel	16.9	22	0.0005	1.1E-09	1.4E-09	4.0E-03	3E-07	3E-07
Silver	1.49	1.40	0.001	1.9E-10	1.8E-10	1.0E-03	2E-07	2E-07
Zinc	83.7	138	0.001	1.0E-08	1.7E-08	6.0E-02	2E-07	3E-07
TOTAL							4E-05	7E-05

BASF-WYANDOTTE

FUTURE MAINTENANCE WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL DUST INHALATION PATHWAY

AOC 7

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ESTIMATED DAILY INTAKE (mg/kg/day)		REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME	RAE	RME		RAE	RME
Arsenic	16.8	29.3	3.1E-10	5.4E-10	NA	0E+00	0E+00
Chromium	14	18	2.6E-10	3.3E-10	NA	0E+00	0E+00
Cyanide	1.21	2.80	2.3E-11	5.2E-11	8.6E-04	3E-08	6E-08
Lead	51.7	112	9.6E-10	2.1E-09	NA	0E+00	0E+00
Mercury	0.92	3.20	1.7E-11	6.0E-11	8.6E-05	2E-07	7E-07
Nickel	16.9	22	3.1E-10	4.1E-10	NA	0E+00	0E+00
Silver	1.49	1.40	2.8E-11	2.6E-11	NA	0E+00	0E+00
Zinc	83.7	138	1.6E-09	2.6E-09	NA	0E+00	0E+00
TOTAL						2E-07	8E-07

BASF-WYANDOTTE

FUTURE MAINTENANCE WORKER SCENARIO
CARCINOGENIC RISKS
SOIL INGESTION PATHWAY

AOC 7

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ABSORPTION EFFICIENCY (AEi)	ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME		RAE	RME		RAE	RME
Arsenic	16.8	29.3	0.2	2.6E-08	4.6E-08	1.5E+00	4E-08	7E-08
Lead	51.7	112	0.2	8.1E-08	1.8E-07	NA	0E+00	0E+00
TOTAL							4E-08	7E-08

BASF-WYANDOTTE

FUTURE MAINTENANCE WORKER SCENARIO
CARCINOGENIC RISKS
SOIL DERMAL ABSORPTION PATHWAY

AOC 7

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		DERMAL ABSORPTION FACTOR (ABS)	ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME		RAE	RME		RAE	RME
Arsenic	16.8	29.3	0.001	7.5E-10	1.3E-09	7.5E+00	6E-09	1E-08
Lead	51.7	112	0.001	2.3E-09	5.0E-09	NA	0E+00	0E+00
TOTAL							6E-09	1E-08

BASF-WYANDOTTE

FUTURE MAINTENANCE WORKER SCENARIO
CARCINOGENIC RISKS
SOIL DUST INHALATION PATHWAY

AOC 7

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME	RAE	RME		RAE	RME
Arsenic	16.8	29.3	1.1E-10	1.9E-10	1.5E+01	2E-09	3E-09
Chromium	14	18	9.3E-11	1.2E-10	2.9E+02	3E-08	3E-08
Lead	51.7	112	3.4E-10	7.4E-10	NA	0E+00	0E+00
Nickel	16.9	22	1.1E-10	1.5E-10	8.4E-01	9E-11	1E-10
TOTAL						3E-08	4E-08

BASF-WYANDOTTE

FUTURE FACILITY WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL INGESTION PATHWAY

AOC 7

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ABSORPTION EFFICIENCY (AEi)	ESTIMATED DAILY INTAKE (mg/kg/day)		REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME		RAE	RME		RAE	RME
Arsenic	16.8	29.3	0.2	7.4E-07	1.3E-06	3.0E-04	2E-03	4E-03
Chromium	14	18	0.2	6.1E-07	7.9E-07	5.0E-03	1E-04	2E-04
Cyanide	1.21	2.80	0.2	5.3E-08	1.2E-07	2.0E-02	3E-06	6E-06
Lead	51.7	112	0.2	2.3E-06	4.9E-06	NA	0E+00	0E+00
Mercury	0.92	3.20	0.2	4.0E-08	1.4E-07	3.0E-04	1E-04	5E-04
Nickel	16.9	22	0.2	7.4E-07	9.6E-07	2.0E-02	4E-05	5E-05
Silver	1.49	1.40	0.2	6.5E-08	6.1E-08	5.0E-03	1E-05	1E-05
Zinc	83.7	138	0.2	3.7E-06	6.0E-06	3.0E-01	1E-05	2E-05
TOTAL							3E-03	5E-03

BASF-WYANDOTTE

FUTURE FACILITY WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL DERMAL ABSORPTION PATHWAY

AOC 7

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		DERMAL ABSORPTION FACTOR (ABS)	ESTIMATED DAILY INTAKE (mg/kg/day)		REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME		RAE	RME		RAE	RME
Arsenic	16.8	29.3	0.001	2.1E-08	3.7E-08	6.0E-05	4E-04	6E-04
Chromium	14	18	0.001	1.8E-08	2.3E-08	1.0E-03	2E-05	2E-05
Cyanide	1.21	2.80	0.001	1.5E-09	3.5E-09	4.0E-03	4E-07	9E-07
Lead	51.7	112	0.001	6.5E-08	1.4E-07	NA	0E+00	0E+00
Mercury	0.92	3.20	0.001	1.2E-09	4.0E-09	6.0E-05	2E-05	7E-05
Nickel	16.9	22	0.0005	1.1E-08	1.4E-08	4.0E-03	3E-06	3E-06
Silver	1.49	1.40	0.001	1.9E-09	1.8E-09	1.0E-03	2E-06	2E-06
Zinc	83.7	138	0.001	1.0E-07	1.7E-07	6.0E-02	2E-06	3E-06
TOTAL							4E-04	7E-04

BASF-WYANDOTTE

FUTURE FACILITY WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL DUST INHALATION PATHWAY

AOC 7

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ESTIMATED DAILY INTAKE (mg/kg/day)		REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME	RAE	RME		RAE	RME
Arsenic	16.8	29.3	1.1E-09	1.9E-09	NA	0E+00	0E+00
Chromium	14	18	9.3E-10	1.2E-09	NA	0E+00	0E+00
Cyanide	1.21	2.80	8.0E-11	1.9E-10	8.6E-04	9E-08	2E-07
Lead	51.7	112	3.4E-09	7.4E-09	NA	0E+00	0E+00
Mercury	0.92	3.20	6.1E-11	2.1E-10	8.6E-05	7E-07	2E-06
Nickel	16.9	22	1.1E-09	1.5E-09	NA	0E+00	0E+00
Silver	1.49	1.40	9.9E-11	9.3E-11	NA	0E+00	0E+00
Zinc	83.7	138	5.6E-09	9.2E-09	NA	0E+00	0E+00
TOTAL						8E-07	3E-06

BASF-WYANDOTTE

FUTURE FACILITY WORKER SCENARIO
CARCINOGENIC RISKS
SOIL INGESTION PATHWAY

AOC 7

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ABSORPTION EFFICIENCY (AEi)	ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME		RAE	RME		RAE	RME
Arsenic	16.8	29.3	0.2	2.6E-07	4.6E-07	1.5E+00	4E-07	7E-07
Lead	51.7	112	0.2	8.1E-07	1.8E-06	NA	0E+00	0E+00
TOTAL							4E-07	7E-07

BASF-WYANDOTTE

FUTURE FACILITY WORKER SCENARIO
CARCINOGENIC RISKS
SOIL DERMAL ABSORPTION PATHWAY

AOC 7

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		DERMAL ABSORPTION FACTOR (ABS)	ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME		RAE	RME		RAE	RME
Arsenic	16.8	29.3	0.001	7.5E-09	1.3E-08	7.5E+00	6E-08	1E-07
Lead	51.7	112	0.001	2.3E-08	5.0E-08	NA	0E+00	0E+00
TOTAL							6E-08	1E-07

BASF-WYANDOTTE

FUTURE FACILITY WORKER SCENARIO
CARCINOGENIC RISKS
SOIL DUST INHALATION PATHWAY

AOC 7

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME	RAE	RME		RAE	RME
Arsenic	16.8	29.3	4.0E-10	7.0E-10	1.5E+01	6E-09	1E-08
Chromium	14	18	3.3E-10	4.3E-10	2.9E+02	1E-07	1E-07
Lead	51.7	112	1.2E-09	2.7E-09	NA	0E+00	0E+00
Nickel	16.9	22	4.0E-10	5.2E-10	8.4E-01	3E-10	4E-10
TOTAL						1E-07	1E-07

BASF-WYANDOTTE

FUTURE CONSTRUCTION/UTILITY WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL INGESTION PATHWAY

AOC 7

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ABSORPTION EFFICIENCY (AEi)	ESTIMATED DAILY INTAKE (mg/kg/day)		SUBCHRONIC REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME		RAE	RME		RAE	RME
Arsenic	16.8	29.3	0.2	1.9E-06	3.3E-06	3.0E-04	6E-03	1E-02
Chromium	14	18	0.2	1.6E-06	2.0E-06	2.0E-02	8E-05	1E-04
Cyanide	1.21	2.80	0.2	1.4E-07	3.2E-07	2.0E-02	7E-06	2E-05
Lead	51.7	112	0.2	5.8E-06	1.3E-05	NA	0E+00	0E+00
Mercury	0.92	3.20	0.2	1.0E-07	3.6E-07	3.0E-04	3E-04	1E-03
Nickel	16.9	22	0.2	1.9E-06	2.5E-06	2.0E-02	1E-04	1E-04
Silver	1.49	1.40	0.2	1.7E-07	1.6E-07	5.0E-03	3E-05	3E-05
Zinc	83.7	138	0.2	9.4E-06	1.6E-05	3.0E-01	3E-05	5E-05
TOTAL							7E-03	1E-02

BASF-WYANDOTTE

FUTURE CONSTRUCTION/UTILITY WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL DERMAL ABSORPTION PATHWAY

AOC 7

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		DERMAL ABSORPTION FACTOR (ABS)	ESTIMATED DAILY INTAKE (mg/kg/day)		SUBCHRONIC REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME		RAE	RME		RAE	RME
Arsenic	16.8	29.3	0.001	5.6E-09	9.8E-09	6.0E-05	9E-05	2E-04
Chromium	14	18	0.001	4.7E-09	6.0E-09	4.0E-03	1E-06	2E-06
Cyanide	1.21	2.80	0.001	4.1E-10	9.4E-10	4.0E-03	1E-07	2E-07
Lead	51.7	112	0.001	1.7E-08	3.8E-08	NA	0E+00	0E+00
Mercury	0.92	3.20	0.001	3.1E-10	1.1E-09	6.0E-05	5E-06	2E-05
Nickel	16.9	22	0.0005	2.8E-09	3.7E-09	4.0E-03	7E-07	9E-07
Silver	1.49	1.40	0.001	5.0E-10	4.7E-10	1.0E-03	5E-07	5E-07
Zinc	83.7	138	0.001	2.8E-08	4.6E-08	6.0E-02	5E-07	8E-07
TOTAL							1E-04	2E-04

BASF-WYANDOTTE

FUTURE CONSTRUCTION/UTILITY WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL DUST INHALATION PATHWAY

AOC 7

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ESTIMATED DAILY INTAKE (mg/kg/day)		SUBCHRONIC REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME	RAE	RME		RAE	RME
Arsenic	16.8	29.3	3.3E-10	5.8E-10	NA	0E+00	0E+00
Chromium	14	18	2.8E-10	3.6E-10	NA	0E+00	0E+00
Cyanide	1.21	2.80	2.4E-11	5.6E-11	8.6E-04	3E-08	6E-08
Lead	51.7	112	1.0E-09	2.2E-09	NA	0E+00	0E+00
Mercury	0.92	3.20	1.8E-11	6.4E-11	8.6E-05	2E-07	7E-07
Nickel	16.9	22	3.4E-10	4.4E-10	NA	0E+00	0E+00
Silver	1.49	1.40	3.0E-11	2.8E-11	NA	0E+00	0E+00
Zinc	83.7	138	1.7E-09	2.7E-09	NA	0E+00	0E+00
TOTAL						2E-07	8E-07

BASF-WYANDOTTE

FUTURE CONSTRUCTION/UTILITY WORKER SCENARIO
CARCINOGENIC RISKS
SOIL INGESTION PATHWAY

AOC 7

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ABSORPTION EFFICIENCY (AEi)	ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME		RAE	RME		RAE	RME
Arsenic	16.8	29.3	0.2	2.7E-08	4.7E-08	1.5E+00	4E-08	7E-08
Lead	51.7	112	0.2	8.3E-08	1.8E-07	NA	0E+00	0E+00
TOTAL							4E-08	7E-08

BASF-WYANDOTTE

FUTURE CONSTRUCTION/UTILITY WORKER SCENARIO
CARCINOGENIC RISKS
SOIL DERMAL ABSORPTION PATHWAY

AOC 7

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		DERMAL ABSORPTION FACTOR (ABS)	ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME		RAE	RME		RAE	RME
Arsenic	16.8	29.3	0.001	8.1E-11	1.4E-10	7.5E+00	6E-10	1E-09
Lead	51.7	112	0.001	2.5E-10	5.4E-10	NA	0E+00	0E+00
TOTAL							6E-10	1E-09

BASF-WYANDOTTE

FUTURE CONSTRUCTION/UTILITY WORKER SCENARIO
CARCINOGENIC RISKS
SOIL DUST INHALATION PATHWAY

AOC 7

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME	RAE	RME		RAE	RME
Arsenic	16.8	29.3	4.8E-12	8.3E-12	1.5E+01	7E-11	1E-10
Chromium	14	18	4.0E-12	5.1E-12	2.9E+02	1E-09	1E-09
Lead	51.7	112	1.5E-11	3.2E-11	NA	0E+00	0E+00
Nickel	16.9	22	4.8E-12	6.3E-12	8.4E-01	4E-12	5E-12
TOTAL						1E-09	2E-09

APPENDIX G-10

AOC 8

BASF-WYANDOTTE

CURRENT FACILITY WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL VAPOR INHALATION PATHWAY

AOC 8

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		VOLATILIZATION FACTOR (VF)	ESTIMATED DAILY INTAKE (mg/kg/day)		REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME		RAE	RME		RAE	RME
Benzene	13	13	15500	2.0E-05	2.0E-05	1.7E-03	1E-02	1E-02
Ethylbenzene	12.9	64.2	31700	9.6E-06	4.8E-05	2.9E-01	3E-05	2E-04
Styrene	6.88	121	77000	2.1E-06	3.7E-05	2.9E-01	7E-06	1E-04
Toluene	35.5	493	23200	3.6E-05	5.0E-04	1.1E-01	3E-04	5E-03
Xylenes (total)	3.04	3.04	31100	2.3E-06	2.3E-06	2.0E-01	1E-05	1E-05
TOTAL							1E-02	2E-02

BASF-WYANDOTTE

CURRENT FACILITY WORKER SCENARIO
CARCINOGENIC RISKS
SOIL VAPOR INHALATION PATHWAY

AOC 8

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		VOLATILIZATION FACTOR (VF)	ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME		RAE	RME		RAE	RME
Benzene	13	13	15500	7.0E-06	7.0E-06	2.9E-02	2E-07	2E-07
TOTAL							2E-07	2E-07

BASF-WYANDOTTE

FUTURE MAINTENANCE WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL INGESTION PATHWAY

AOC 8

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ABSORPTION EFFICIENCY (AEi)	ESTIMATED DAILY INTAKE (mg/kg/day)		REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME		RAE	RME		RAE	RME
Benzene	13	13	0.8	2.3E-07	2.3E-07	1.7E-03	1E-04	1E-04
Ethylbenzene	12.9	64.2	0.8	2.3E-07	1.1E-06	1.0E-01	2E-06	1E-05
Styrene	6.88	121	0.8	1.2E-07	2.1E-06	2.0E-01	6E-07	1E-05
Toluene	35.5	493	0.8	6.2E-07	8.6E-06	2.0E-01	3E-06	4E-05
Xylenes (total)	3.04	3.04	0.8	5.3E-08	5.3E-08	2.0E+00	3E-08	3E-08
TOTAL							1E-04	2E-04

BASF-WYANDOTTE

FUTURE MAINTENANCE WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL DERMAL ABSORPTION PATHWAY

AOC 8

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		DERMAL ABSORPTION FACTOR (ABS)	ESTIMATED DAILY INTAKE (mg/kg/day)		REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME		RAE	RME		RAE	RME
Benzene	13	13	0.0005	8.1E-10	8.1E-10	1.4E-03	6E-07	6E-07
Ethylbenzene	12.9	64.2	0.03	4.9E-08	2.4E-07	8.0E-02	6E-07	3E-06
Styrene	6.88	121	0.03	2.6E-08	4.6E-07	1.6E-01	2E-07	3E-06
Toluene	35.5	493	0.03	1.3E-07	1.9E-06	1.6E-01	8E-07	1E-05
Xylenes (total)	3.04	3.04	0.03	1.1E-08	1.1E-08	1.6E+00	7E-09	7E-09
TOTAL							2E-06	2E-05

BASF-WYANDOTTE

FUTURE MAINTENANCE WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL DUST INHALATION PATHWAY

AOC 8

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ESTIMATED DAILY INTAKE (mg/kg/day)		REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME	RAE	RME		RAE	RME
Benzene	13	13	2.4E-10	2.4E-10	1.7E-03	1E-07	1E-07
Ethylbenzene	12.9	64.2	2.4E-10	1.2E-09	2.9E-01	8E-10	4E-09
Styrene	6.88	121	1.3E-10	2.3E-09	2.9E-01	4E-10	8E-09
Toluene	35.5	493	6.6E-10	9.2E-09	1.1E-01	6E-09	8E-08
Xylenes (total)	3.04	3.04	5.7E-11	5.7E-11	2.0E-01	3E-10	3E-10
TOTAL						1E-07	2E-07

BASF-WYANDOTTE

FUTURE MAINTENANCE WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL VAPOR INHALATION PATHWAY

AOC 8

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		VOLATILIZATION FACTOR (VF)	ESTIMATED DAILY INTAKE (mg/kg/day)		REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME		RAE	RME		RAE	RME
Benzene	13	13	15500	2.1E-05	2.1E-05	1.7E-03	1E-02	1E-02
Ethylbenzene	12.9	64.2	31700	1.0E-05	5.0E-05	2.9E-01	3E-05	2E-04
Styrene	6.88	121	77000	2.2E-06	3.9E-05	2.9E-01	8E-06	1E-04
Toluene	35.5	493	23200	3.8E-05	5.2E-04	1.1E-01	3E-04	5E-03
Xylenes (total)	3.04	3.04	31100	2.4E-06	2.4E-06	2.0E-01	1E-05	1E-05
TOTAL							1E-02	2E-02

BASF-WYANDOTTE

FUTURE MAINTENANCE WORKER SCENARIO
CARCINOGENIC RISKS
SOIL INGESTION PATHWAY

AOC 8

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ABSORPTION EFFICIENCY (AEi)	ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME		RAE	RME		RAE	RME
Benzene	13	13	0.8	8.1E-08	8.1E-08	2.9E-02	2E-09	2E-09
TOTAL							2E-09	2E-09

BASF-WYANDOTTE

FUTURE MAINTENANCE WORKER SCENARIO
CARCINOGENIC RISKS
SOIL DERMAL ABSORPTION PATHWAY

AOC 8

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		DERMAL ABSORPTION FACTOR (ABS)	ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME		RAE	RME		RAE	RME
Benzene	13	13	0.0005	2.9E-10	2.9E-10	3.6E-02	1E-11	1E-11
TOTAL							1E-11	1E-11

BASF-WYANDOTTE

FUTURE MAINTENANCE WORKER SCENARIO
CARCINOGENIC RISKS
SOIL DUST INHALATION PATHWAY

AOC 8

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME	RAE	RME		RAE	RME
Benzene	13	13	8.6E-11	8.6E-11	2.9E-02	3E-12	3E-12
TOTAL						3E-12	3E-12

BASF-WYANDOTTE

FUTURE MAINTENANCE WORKER SCENARIO
CARCINOGENIC RISKS
SOIL VAPOR INHALATION PATHWAY

AOC 8

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		VOLATILIZATION FACTOR (VF)	ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME		RAE	RME		RAE	RME
Benzene	13	13	15500	7.4E-06	7.4E-06	2.9E-02	2E-07	2E-07
TOTAL							2E-07	2E-07

BASF-WYANDOTTE

FUTURE FACILITY WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL INGESTION PATHWAY

AOC 8

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ABSORPTION EFFICIENCY (AEi)	ESTIMATED DAILY INTAKE (mg/kg/day)		REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME		RAE	RME		RAE	RME
Benzene	13	13	0.8	2.3E-06	2.3E-06	1.7E-03	1E-03	1E-03
Ethylbenzene	12.9	64.2	0.8	2.3E-06	1.1E-05	1.0E-01	2E-05	1E-04
Styrene	6.88	121	0.8	1.2E-06	2.1E-05	2.0E-01	6E-06	1E-04
Toluene	35.5	493	0.8	6.2E-06	8.6E-05	2.0E-01	3E-05	4E-04
Xylenes (total)	3.04	3.04	0.8	5.3E-07	5.3E-07	2.0E+00	3E-07	3E-07
TOTAL							1E-03	2E-03

BASF-WYANDOTTE

FUTURE FACILITY WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL DERMAL ABSORPTION PATHWAY

AOC 8

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		DERMAL ABSORPTION FACTOR (ABS)	ESTIMATED DAILY INTAKE (mg/kg/day)		REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME		RAE	RME		RAE	RME
Benzene	13	13	0.0005	8.1E-09	8.1E-09	1.4E-03	6E-06	6E-06
Ethylbenzene	12.9	64.2	0.03	4.9E-07	2.4E-06	8.0E-02	6E-06	3E-05
Styrene	6.88	121	0.03	2.6E-07	4.6E-06	1.6E-01	2E-06	3E-05
Toluene	35.5	493	0.03	1.3E-06	1.9E-05	1.6E-01	8E-06	1E-04
Xylenes (total)	3.04	3.04	0.03	1.1E-07	1.1E-07	1.6E+00	7E-08	7E-08
TOTAL							2E-05	2E-04

BASF-WYANDOTTE

FUTURE FACILITY WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL DUST INHALATION PATHWAY

AOC 8

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ESTIMATED DAILY INTAKE (mg/kg/day)		REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME	RAE	RME		RAE	RME
Benzene	13	13	8.6E-10	8.6E-10	1.7E-03	5E-07	5E-07
Ethylbenzene	12.9	64.2	8.6E-10	4.3E-09	2.9E-01	3E-09	1E-08
Styrene	6.88	121	4.6E-10	8.0E-09	2.9E-01	2E-09	3E-08
Toluene	35.5	493	2.4E-09	3.3E-08	1.1E-01	2E-08	3E-07
Xylenes (total)	3.04	3.04	2.0E-10	2.0E-10	2.0E-01	1E-09	1E-09
TOTAL						5E-07	8E-07

BASF-WYANDOTTE

FUTURE FACILITY WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL VAPOR INHALATION PATHWAY

AOC 8

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		VOLATILIZATION FACTOR (VF)	ESTIMATED DAILY INTAKE (mg/kg/day)		REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME		RAE	RME		RAE	RME
Benzene	13	13	15500	7.4E-05	7.4E-05	1.7E-03	4E-02	4E-02
Ethylbenzene	12.9	64.2	31700	3.6E-05	1.8E-04	2.9E-01	1E-04	6E-04
Styrene	6.88	121	77000	7.8E-06	1.4E-04	2.9E-01	3E-05	5E-04
Toluene	35.5	493	23200	1.3E-04	1.9E-03	1.1E-01	1E-03	2E-02
Xylenes (total)	3.04	3.04	31100	8.6E-06	8.6E-06	2.0E-01	4E-05	4E-05
TOTAL							4E-02	6E-02

BASF-WYANDOTTE

FUTURE FACILITY WORKER SCENARIO
CARCINOGENIC RISKS
SOIL INGESTION PATHWAY

AOC 8

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ABSORPTION EFFICIENCY (AEi)	ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME		RAE	RME		RAE	RME
Benzene	13	13	0.8	8.1E-07	8.1E-07	2.9E-02	2E-08	2E-08
TOTAL							2E-08	2E-08

BASF-WYANDOTTE

FUTURE FACILITY WORKER SCENARIO
CARCINOGENIC RISKS
SOIL DERMAL ABSORPTION PATHWAY

AOC 8

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		DERMAL ABSORPTION FACTOR (ABS)	ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME		RAE	RME		RAE	RME
Benzene	13	13	0.0005	2.9E-09	2.9E-09	3.6E-02	1E-10	1E-10
TOTAL							1E-10	1E-10

BASF-WYANDOTTE

FUTURE FACILITY WORKER SCENARIO
CARCINOGENIC RISKS
SOIL DUST INHALATION PATHWAY

AOC 8

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME	RAE	RME		RAE	RME
Benzene	13	13	3.1E-10	3.1E-10	2.9E-02	9E-12	9E-12
TOTAL						9E-12	9E-12

BASF-WYANDOTTE

FUTURE FACILITY WORKER SCENARIO
CARCINOGENIC RISKS
SOIL VAPOR INHALATION PATHWAY

AOC 8

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		VOLATILIZATION FACTOR (VF)	ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME		RAE	RME		RAE	RME
Benzene	13	13	15500	2.6E-05	2.6E-05	2.9E-02	8E-07	8E-07
TOTAL							8E-07	8E-07

BASF-WYANDOTTE

FUTURE CONSTRUCTION/UTILITY WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL INGESTION PATHWAY

AOC 8

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ABSORPTION EFFICIENCY (AEi)	ESTIMATED DAILY INTAKE (mg/kg/day)		SUBCHRONIC REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME		RAE	RME		RAE	RME
Benzene	13	13	0.8	5.9E-06	5.9E-06	1.7E-03	3E-03	3E-03
Ethylbenzene	12.9	64.2	0.8	5.8E-06	2.9E-05	1.0E-01	6E-05	3E-04
Styrene	6.88	121	0.8	3.1E-06	5.5E-05	2.0E-01	2E-05	3E-04
Toluene	35.5	493	0.8	1.6E-05	2.2E-04	2.0E+00	8E-06	1E-04
Xylenes (total)	3.04	3.04	0.8	1.4E-06	1.4E-06	2.0E+00	7E-07	7E-07
TOTAL							4E-03	4E-03

BASF-WYANDOTTE

FUTURE CONSTRUCTION/UTILITY WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL DERMAL ABSORPTION PATHWAY

AOC 8

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		DERMAL ABSORPTION FACTOR (ABS)	ESTIMATED DAILY INTAKE (mg/kg/day)		SUBCHRONIC REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME		RAE	RME		RAE	RME
Benzene	13	13	0.0005	2.2E-09	2.2E-09	1.4E-03	2E-06	2E-06
Ethylbenzene	12.9	64.2	0.03	1.3E-07	6.5E-07	8.0E-02	2E-06	8E-06
Styrene	6.88	121	0.03	6.9E-08	1.2E-06	1.6E-01	4E-07	8E-06
Toluene	35.5	493	0.03	3.6E-07	5.0E-06	1.6E+00	2E-07	3E-06
Xylenes (total)	3.04	3.04	0.03	3.1E-08	3.1E-08	1.6E+00	2E-08	2E-08
TOTAL							4E-06	2E-05

BASF-WYANDOTTE

FUTURE CONSTRUCTION/UTILITY WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL DUST INHALATION PATHWAY

AOC 8

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ESTIMATED DAILY INTAKE (mg/kg/day)		SUBCHRONIC REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME	RAE	RME		RAE	RME
Benzene	13	13	2.6E-10	2.6E-10	1.7E-03	2E-07	2E-07
Ethylbenzene	12.9	64.2	2.6E-10	1.3E-09	2.9E-01	9E-10	4E-09
Styrene	6.88	121	1.4E-10	2.4E-09	8.6E-01	2E-10	3E-09
Toluene	35.5	493	7.1E-10	9.8E-09	1.1E-01	6E-09	9E-08
Xylenes (total)	3.04	3.04	6.1E-11	6.1E-11	2.0E-01	3E-10	3E-10
TOTAL						2E-07	2E-07

BASF-WYANDOTTE

FUTURE CONSTRUCTION/UTILITY WORKER SCENARIO
NONCARCINOGENIC RISKS
SOIL VAPOR INHALATION PATHWAY

AOC 8

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		VOLATILIZATION FACTOR (VF)	ESTIMATED DAILY INTAKE (mg/kg/day)		SUBCHRONIC REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME		RAE	RME		RAE	RME
Benzene	13	13	640	5.3E-04	5.3E-04	1.7E-03	3E-01	3E-01
Ethylbenzene	12.9	64.2	3440	9.9E-05	4.9E-04	2.9E-01	3E-04	2E-03
Styrene	6.88	121	3060	5.9E-05	1.0E-03	8.6E-01	7E-05	1E-03
Toluene	35.5	493	920	1.0E-03	1.4E-02	1.1E-01	9E-03	1E-01
Xylenes (total)	3.04	3.04	1230	6.5E-05	6.5E-05	2.0E-01	3E-04	3E-04
TOTAL							3E-01	4E-01

BASF-WYANDOTTE

FUTURE CONSTRUCTION/UTILITY WORKER SCENARIO
NONCARCINOGENIC RISKS
GROUNDWATER DERMAL ABSORPTION PATHWAY

CONSTITUENT	GROUNDWATER EXPOSURE CONCENTRATION (mg/L)		DERMAL ABSORBED DOSE (DA)	ESTIMATED DAILY INTAKE (mg/kg/day)		SUBCHRONIC REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME		RAE	RME		RAE	RME
Benzene	0.0216	0.0216	5.27E-02	1.3E-06	1.3E-06	1.4E-03	1E-03	1E-03
Chlorobenzene	0.0023	0.0023	1.17E-01	3.2E-07	3.2E-07	1.6E-02	2E-05	2E-05
Vinyl chloride	0.0049	0.0049	1.76E-02	1.0E-07	1.0E-07	NA	0E+00	0E+00
Acenaphthene	0.0028	0.0028	5.01E-01	1.6E-06	1.6E-06	3.0E-01	5E-06	5E-06
Benzo(a)anthracene	0.0129	0.0139	4.70E+00	7.1E-05	7.7E-05	NA	0E+00	0E+00
Benzo(a)pyrene	0.01	0.01	7.99E+00	9.4E-05	9.4E-05	NA	0E+00	0E+00
Benzo(b)fluoranthene	0.012	0.012	8.12E+00	1.1E-04	1.1E-04	NA	0E+00	0E+00
bis(2-Chloroethyl) ether	0.0152	0.02	6.93E-03	1.2E-07	1.6E-07	NA	0E+00	0E+00
bis(2-Chloroisopropyl) ether	0.0254	0.0288	1.98E-02	5.9E-07	6.7E-07	2.0E-02	3E-05	3E-05
Chrysene	0.01	0.01	4.70E+00	5.5E-05	5.5E-05	NA	0E+00	0E+00
2-Methylnaphthalene	0.0179	0.0226	4.49E-01	9.4E-06	1.2E-05	1.5E-01	6E-05	8E-05
4-Methylphenol	0.0338	0.0464	2.79E-02	1.1E-06	1.5E-06	2.5E-03	4E-04	6E-04
Naphthalene	0.0154	0.0187	1.96E-01	3.5E-06	4.3E-06	2.0E-02	2E-04	2E-04
o-Toluidine	0.0263	0.0285	1.03E-02	3.2E-07	3.4E-07	NA	0E+00	0E+00
Phenanthrene	0.00305	0.00305	9.43E-01	3.4E-06	3.4E-06	1.5E-01	2E-05	2E-05
Pyridine	0.0251	0.0267	4.98E-03	1.5E-07	1.6E-07	5.0E-03	3E-05	3E-05
Arsenic	0.106	0.27	2.00E-03	2.5E-07	6.3E-07	6.0E-05	4E-03	1E-02
Barium	0.383	0.505	2.00E-03	9.0E-07	1.2E-06	1.4E-02	6E-05	8E-05
Cadmium	0.001	0.001	2.00E-03	2.3E-09	2.3E-09	1.0E-04	2E-05	2E-05
Copper	0.039	0.047	2.00E-03	9.2E-08	1.1E-07	7.4E-03	1E-05	1E-05
Cyanide	3.1	8.62	2.00E-03	7.3E-06	2.0E-05	4.0E-03	2E-03	5E-03
Lead	0.019	0.021	8.00E-06	1.8E-10	2.0E-10	NA	0E+00	0E+00
Mercury	0.0006	0.0006	2.00E-03	1.4E-09	1.4E-09	6.0E-05	2E-05	2E-05
Nickel	0.056	0.065	2.00E-04	1.3E-08	1.5E-08	4.0E-03	3E-06	4E-06
Selenium	0.005	0.005	2.00E-03	1.2E-08	1.2E-08	1.0E-03	1E-05	1E-05
Vanadium	0.105	0.116	2.00E-03	2.5E-07	2.7E-07	1.4E-03	2E-04	2E-04
Zinc	0.094	0.126	1.20E-03	1.3E-07	1.8E-07	6.0E-02	2E-06	3E-06
TOTAL							8E-03	2E-02

BASF-WYANDOTTE

FUTURE CONSTRUCTION/UTILITY WORKER SCENARIO
CARCINOGENIC RISKS
SOIL INGESTION PATHWAY

AOC 8

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ABSORPTION EFFICIENCY (AEi)	ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME		RAE	RME		RAE	RME
Benzene	13	13	0.8	8.4E-08	8.4E-08	2.9E-02	2E-09	2E-09
TOTAL							2E-09	2E-09

BASF-WYANDOTTE

FUTURE CONSTRUCTION/UTILITY WORKER SCENARIO
CARCINOGENIC RISKS
SOIL DERMAL ABSORPTION PATHWAY

AOC 8

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		DERMAL ABSORPTION FACTOR (ABS)	ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME		RAE	RME		RAE	RME
Benzene	13	13	0.0005	3.1E-11	3.1E-11	3.6E-02	1E-12	1E-12
TOTAL							1E-12	1E-12

BASF-WYANDOTTE

FUTURE CONSTRUCTION/UTILITY WORKER SCENARIO
CARCINOGENIC RISKS
SOIL DUST INHALATION PATHWAY

AOC 8

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME	RAE	RME		RAE	RME
Benzene	13	13	3.7E-12	3.7E-12	2.9E-02	1E-13	1E-13
TOTAL						1E-13	1E-13

BASF-WYANDOTTE

FUTURE CONSTRUCTION/UTILITY WORKER SCENARIO
CARCINOGENIC RISKS
SOIL VAPOR INHALATION PATHWAY

AOC 8

CONSTITUENT	SOIL EXPOSURE CONCENTRATION (mg/kg)		VOLATILIZATION FACTOR (VF)	ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME		RAE	RME		RAE	RME
Benzene	13	13	640	7.6E-06	7.6E-06	2.9E-02	2E-07	2E-07
TOTAL							2E-07	2E-07

APPENDIX G-11

Groundwater Dermal Absorption Exposure and Risk Calculations

BASF-WYANDOTTE

FUTURE CONSTRUCTION/UTILITY WORKER SCENARIO
NONCARCINOGENIC RISKS
GROUNDWATER DERMAL ABSORPTION PATHWAY

CONSTITUENT	GROUNDWATER EXPOSURE CONCENTRATION (mg/L)		DERMAL ABSORBED DOSE (DA)	ESTIMATED DAILY INTAKE (mg/kg/day)		SUBCHRONIC REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME		RAE	RME		RAE	RME
Benzene	0.0216	0.0216	5.27E-02	1.3E-06	1.3E-06	1.4E-03	1E-03	1E-03
Chlorobenzene	0.0023	0.0023	1.17E-01	3.2E-07	3.2E-07	1.6E-02	2E-05	2E-05
Vinyl chloride	0.0049	0.0049	1.76E-02	1.0E-07	1.0E-07	NA	0E+00	0E+00
Acenaphthene	0.0028	0.0028	5.01E-01	1.6E-06	1.6E-06	3.0E-01	5E-06	5E-06
Benzo(a)anthracene	0.0129	0.0139	4.70E+00	7.1E-05	7.7E-05	NA	0E+00	0E+00
Benzo(a)pyrene	0.01	0.01	7.99E+00	9.4E-05	9.4E-05	NA	0E+00	0E+00
Benzo(b)fluoranthene	0.012	0.012	8.12E+00	1.1E-04	1.1E-04	NA	0E+00	0E+00
bis(2-Chloroethyl) ether	0.0152	0.02	6.93E-03	1.2E-07	1.6E-07	NA	0E+00	0E+00
bis(2-Chloroisopropyl) ether	0.0254	0.0288	1.98E-02	5.9E-07	6.7E-07	2.0E-02	3E-05	3E-05
Chrysene	0.01	0.01	4.70E+00	5.5E-05	5.5E-05	NA	0E+00	0E+00
2-Methylnaphthalene	0.0179	0.0226	4.49E-01	9.4E-06	1.2E-05	1.5E-01	6E-05	8E-05
4-Methylphenol	0.0338	0.0464	2.79E-02	1.1E-06	1.5E-06	2.5E-03	4E-04	6E-04
Naphthalene	0.0154	0.0187	1.96E-01	3.5E-06	4.3E-06	2.0E-02	2E-04	2E-04
o-Toluidine	0.0263	0.0285	1.03E-02	3.2E-07	3.4E-07	NA	0E+00	0E+00
Phenanthrene	0.00305	0.00305	9.43E-01	3.4E-06	3.4E-06	1.5E-01	2E-05	2E-05
Pyridine	0.0251	0.0267	4.98E-03	1.5E-07	1.6E-07	5.0E-03	3E-05	3E-05
Arsenic	0.106	0.27	2.00E-03	2.5E-07	6.3E-07	6.0E-05	4E-03	1E-02
Barium	0.383	0.505	2.00E-03	9.0E-07	1.2E-06	1.4E-02	6E-05	8E-05
Cadmium	0.001	0.001	2.00E-03	2.3E-09	2.3E-09	1.0E-04	2E-05	2E-05
Copper	0.039	0.047	2.00E-03	9.2E-08	1.1E-07	7.4E-03	1E-05	1E-05
Cyanide	3.1	8.62	2.00E-03	7.3E-06	2.0E-05	4.0E-03	2E-03	5E-03
Lead	0.019	0.021	8.00E-06	1.8E-10	2.0E-10	NA	0E+00	0E+00
Mercury	0.0006	0.0006	2.00E-03	1.4E-09	1.4E-09	6.0E-05	2E-05	2E-05
Nickel	0.056	0.065	2.00E-04	1.3E-08	1.5E-08	4.0E-03	3E-06	4E-06
Selenium	0.005	0.005	2.00E-03	1.2E-08	1.2E-08	1.0E-03	1E-05	1E-05
Vanadium	0.105	0.116	2.00E-03	2.5E-07	2.7E-07	1.4E-03	2E-04	2E-04
Zinc	0.094	0.126	1.20E-03	1.3E-07	1.8E-07	6.0E-02	2E-06	3E-06
TOTAL							8E-03	2E-02

BASF-WYANDOTTE

FUTURE CONSTRUCTION/UTILITY WORKER SCENARIO
CARCINOGENIC RISKS
GROUNDWATER DERMAL ABSORPTION PATHWAY

CONSTITUENT	GROUNDWATER EXPOSURE CONCENTRATION (mg/L)		DERMAL ABSORBED DOSE (DA)	ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME		RAE	RME		RAE	RME
Benzene	0.0216	0.0216	5.27E-02	1.9E-08	1.9E-08	3.6E-02	7E-10	7E-10
Vinyl chloride	0.0049	0.0049	1.76E-02	1.4E-09	1.4E-09	2.4E+00	3E-09	3E-09
Benzo(a)anthracene	0.0129	0.0139	4.70E+00	1.0E-06	1.1E-06	1.5E+00	1E-06	2E-06
Benzo(a)pyrene	0.01	0.01	7.99E+00	1.3E-06	1.3E-06	1.5E+01	2E-05	2E-05
Benzo(b)fluoranthene	0.012	0.012	8.12E+00	1.6E-06	1.6E-06	1.5E+00	2E-06	2E-06
bis(2-Chloroethyl) ether	0.0152	0.02	6.93E-03	1.8E-09	2.3E-09	2.2E+00	4E-09	5E-09
bis(2-Chloroisopropyl) ether	0.0254	0.0288	1.98E-02	8.4E-09	9.6E-09	1.4E-01	1E-09	1E-09
Chrysene	0.01	0.01	4.70E+00	7.9E-07	7.9E-07	1.5E-02	1E-08	1E-08
o-Toluidine	0.0263	0.0285	1.03E-02	4.5E-09	4.9E-09	1.8E+01	8E-08	9E-08
Arsenic	0.106	0.27	2.00E-03	3.6E-09	9.1E-09	7.5E+00	3E-08	7E-08
Lead	0.019	0.021	8.00E-06	2.5E-12	2.8E-12	NA	0E+00	0E+00
TOTAL							2E-05	2E-05

APPENDIX G-12

Detroit River Recreational User Exposure and Risk Calculations

BASF-WYANDOTTE

RECREATIONAL SCENARIO - ADULT
NONCARCINOGENIC RISKS
SURFACE WATER INGESTION PATHWAY

DETROIT RIVER

CONSTITUENT	SURFACE WATER EXPOSURE CONCENTRATION (mg/L)		ESTIMATED DAILY INTAKE (mg/kg/day)		REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME	RAE	RME		RAE	RME
Benzene	3.1E-09	3.1E-09	9.6E-13	9.6E-13	1.7E-03	6E-10	6E-10
Chlorobenzene	3.3E-10	3.3E-10	1.0E-13	1.0E-13	2.0E-02	5E-12	5E-12
Vinyl chloride	7.1E-10	7.1E-10	2.2E-13	2.2E-13	NA	0E+00	0E+00
Acenaphthene	4.1E-10	4.1E-10	1.2E-13	1.2E-13	6.0E-02	2E-12	2E-12
Benzo(a)anthracene	1.9E-09	2.0E-09	5.7E-13	6.2E-13	NA	0E+00	0E+00
Benzo(a)pyrene	1.5E-09	1.5E-09	4.4E-13	4.4E-13	NA	0E+00	0E+00
Benzo(b)fluoranthene	1.7E-09	1.7E-09	5.3E-13	5.3E-13	NA	0E+00	0E+00
bis(2-Chloroethyl) ether	2.2E-09	2.9E-09	6.7E-13	8.9E-13	NA	0E+00	0E+00
bis(2-Chloroisopropyl) ether	3.7E-09	4.2E-09	1.1E-12	1.3E-12	4.0E-02	3E-11	3E-11
Chrysene	1.5E-09	1.5E-09	4.4E-13	4.4E-13	NA	0E+00	0E+00
2-Methylnaphthalene	2.6E-09	3.3E-09	7.9E-13	1.0E-12	3.0E-02	3E-11	3E-11
4-Methylphenol	4.9E-09	6.7E-09	1.5E-12	2.1E-12	5.0E-03	3E-10	4E-10
Naphthalene	2.2E-09	2.7E-09	6.8E-13	8.3E-13	4.0E-02	2E-11	2E-11
o-Toluidine	3.8E-09	4.1E-09	1.2E-12	1.3E-12	NA	0E+00	0E+00
Phenanthrene	4.4E-10	4.4E-10	1.4E-13	1.4E-13	3.0E-02	5E-12	5E-12
Pyridine	3.6E-09	3.9E-09	1.1E-12	1.2E-12	1.0E-03	1E-09	1E-09
Arsenic	1.5E-08	3.9E-08	4.7E-12	1.2E-11	3.0E-04	2E-08	4E-08
Barium	5.6E-08	7.3E-08	1.7E-11	2.2E-11	7.0E-02	2E-10	3E-10
Cadmium	1.5E-10	1.5E-10	4.4E-14	4.4E-14	5.0E-04	9E-11	9E-11
Copper	5.7E-09	6.8E-09	1.7E-12	2.1E-12	3.7E-02	5E-11	6E-11
Cyanide	4.5E-07	1.3E-06	1.4E-10	3.8E-10	2.0E-02	7E-09	2E-08
Lead	2.8E-09	3.1E-09	8.4E-13	9.3E-13	NA	0E+00	0E+00
Mercury	8.7E-11	8.7E-11	2.7E-14	2.7E-14	3.0E-04	9E-11	9E-11
Nickel	8.1E-09	9.4E-09	2.5E-12	2.9E-12	2.0E-02	1E-10	1E-10
Selenium	7.3E-10	7.3E-10	2.2E-13	2.2E-13	5.0E-03	4E-11	4E-11
Vanadium	1.5E-08	1.7E-08	4.7E-12	5.1E-12	7.0E-03	7E-10	7E-10
Zinc	1.4E-08	1.8E-08	4.2E-12	5.6E-12	3.0E-01	1E-11	2E-11
TOTAL						3E-08	6E-08

BASF-WYANDOTTE

RECREATIONAL SCENARIO - ADULT
NONCARCINOGENIC RISKS
SURFACE WATER DERMAL ABSORPTION PATHWAY

DETROIT RIVER

CONSTITUENT	SURFACE WATER EXPOSURE CONCENTRATION (mg/L)		DERMAL ABSORBED DOSE (DA)	ESTIMATED DAILY INTAKE (mg/kg/day)		REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME		RAE	RME		RAE	RME
Benzene	3.1E-09	3.1E-09	5.27E-02	5.4E-12	5.4E-12	1.4E-03	4E-09	4E-09
Chlorobenzene	3.3E-10	3.3E-10	1.17E-01	1.3E-12	1.3E-12	1.6E-02	8E-11	8E-11
Vinyl chloride	7.1E-10	7.1E-10	1.76E-02	4.1E-13	4.1E-13	NA	0E+00	0E+00
Acenaphthene	4.1E-10	4.1E-10	5.01E-01	6.7E-12	6.7E-12	3.0E-02	2E-10	2E-10
Benzo(a)anthracene	1.9E-09	2.0E-09	4.70E+00	2.9E-10	3.1E-10	NA	0E+00	0E+00
Benzo(a)pyrene	1.5E-09	1.5E-09	7.99E+00	3.8E-10	3.8E-10	NA	0E+00	0E+00
Benzo(b)fluoranthene	1.7E-09	1.7E-09	8.12E+00	4.6E-10	4.6E-10	NA	0E+00	0E+00
bis(2-Chloroethyl) ether	2.2E-09	2.9E-09	6.93E-03	5.0E-13	6.6E-13	NA	0E+00	0E+00
bis(2-Chloroisopropyl) ether	3.7E-09	4.2E-09	1.98E-02	2.4E-12	2.7E-12	2.0E-02	1E-10	1E-10
Chrysene	1.5E-09	1.5E-09	4.70E+00	2.2E-10	2.2E-10	NA	0E+00	0E+00
2-Methylnaphthalene	2.6E-09	3.3E-09	4.49E-01	3.8E-11	4.8E-11	1.5E-02	3E-09	3E-09
4-Methylphenol	4.9E-09	6.7E-09	2.79E-02	4.5E-12	6.1E-12	2.5E-03	2E-09	2E-09
Naphthalene	2.2E-09	2.7E-09	1.96E-01	1.4E-11	1.7E-11	2.0E-02	7E-10	9E-10
o-Toluidine	3.8E-09	4.1E-09	1.03E-02	1.3E-12	1.4E-12	NA	0E+00	0E+00
Phenanthrene	4.4E-10	4.4E-10	9.43E-01	1.4E-11	1.4E-11	1.5E-02	9E-10	9E-10
Pyridine	3.6E-09	3.9E-09	4.98E-03	5.9E-13	6.3E-13	5.0E-04	1E-09	1E-09
Arsenic	1.5E-08	3.9E-08	2.00E-03	1.0E-12	2.6E-12	6.0E-05	2E-08	4E-08
Barium	5.6E-08	7.3E-08	2.00E-03	3.6E-12	4.8E-12	1.4E-02	3E-10	3E-10
Cadmium	1.5E-10	1.5E-10	2.00E-03	9.5E-15	9.5E-15	1.0E-04	9E-11	9E-11
Copper	5.7E-09	6.8E-09	2.00E-03	3.7E-13	4.5E-13	7.4E-03	5E-11	6E-11
Cyanide	4.5E-07	1.3E-06	2.00E-03	2.9E-11	8.2E-11	4.0E-03	7E-09	2E-08
Lead	2.8E-09	3.1E-09	8.00E-06	7.2E-16	8.0E-16	NA	0E+00	0E+00
Mercury	8.7E-11	8.7E-11	2.00E-03	5.7E-15	5.7E-15	6.0E-05	9E-11	9E-11
Nickel	8.1E-09	9.4E-09	2.00E-04	5.3E-14	6.2E-14	4.0E-03	1E-11	2E-11
Selenium	7.3E-10	7.3E-10	2.00E-03	4.7E-14	4.7E-14	1.0E-03	5E-11	5E-11
Vanadium	1.5E-08	1.7E-08	2.00E-03	1.0E-12	1.1E-12	1.4E-03	7E-10	8E-10
Zinc	1.4E-08	1.8E-08	1.20E-03	5.4E-13	7.2E-13	6.0E-02	9E-12	1E-11
TOTAL							4E-08	8E-08

BASF-WYANDOTTE

RECREATIONAL SCENARIO - CHILD
NONCARCINOGENIC RISKS
SURFACE WATER INGESTION PATHWAY

DETROIT RIVER

CONSTITUENT	SURFACE WATER EXPOSURE CONCENTRATION (mg/L)		ESTIMATED DAILY INTAKE (mg/kg/day)		REFERENCE DOSE (mg/kg/day)	HAZARD INDEX	
	RAE	RME	RAE	RME		RAE	RME
Benzene	3.1E-09	3.1E-09	4.5E-12	4.5E-12	1.7E-03	3E-09	3E-09
Chlorobenzene	3.3E-10	3.3E-10	4.8E-13	4.8E-13	2.0E-02	2E-11	2E-11
Vinyl chloride	7.1E-10	7.1E-10	1.0E-12	1.0E-12	NA	0E+00	0E+00
Acenaphthene	4.1E-10	4.1E-10	5.8E-13	5.8E-13	6.0E-02	1E-11	1E-11
Benzo(a)anthracene	1.9E-09	2.0E-09	2.7E-12	2.9E-12	NA	0E+00	0E+00
Benzo(a)pyrene	1.5E-09	1.5E-09	2.1E-12	2.1E-12	NA	0E+00	0E+00
Benzo(b)fluoranthene	1.7E-09	1.7E-09	2.5E-12	2.5E-12	NA	0E+00	0E+00
bis(2-Chloroethyl) ether	2.2E-09	2.9E-09	3.1E-12	4.1E-12	NA	0E+00	0E+00
bis(2-Chloroisopropyl) ether	3.7E-09	4.2E-09	5.3E-12	6.0E-12	4.0E-02	1E-10	1E-10
Chrysene	1.5E-09	1.5E-09	2.1E-12	2.1E-12	NA	0E+00	0E+00
2-Methylnaphthalene	2.6E-09	3.3E-09	3.7E-12	4.7E-12	3.0E-02	1E-10	2E-10
4-Methylphenol	4.9E-09	6.7E-09	7.0E-12	9.6E-12	5.0E-03	1E-09	2E-09
Naphthalene	2.2E-09	2.7E-09	3.2E-12	3.9E-12	4.0E-02	8E-11	1E-10
o-Toluidine	3.8E-09	4.1E-09	5.4E-12	5.9E-12	NA	0E+00	0E+00
Phenanthrene	4.4E-10	4.4E-10	6.3E-13	6.3E-13	3.0E-02	2E-11	2E-11
Pyridine	3.6E-09	3.9E-09	5.2E-12	5.5E-12	1.0E-03	5E-09	6E-09
Arsenic	1.5E-08	3.9E-08	2.2E-11	5.6E-11	3.0E-04	7E-08	2E-07
Barium	5.6E-08	7.3E-08	7.9E-11	1.0E-10	7.0E-02	1E-09	1E-09
Cadmium	1.5E-10	1.5E-10	2.1E-13	2.1E-13	5.0E-04	4E-10	4E-10
Copper	5.7E-09	6.8E-09	8.1E-12	9.7E-12	3.7E-02	2E-10	3E-10
Cyanide	4.5E-07	1.3E-06	6.4E-10	1.8E-09	2.0E-02	3E-08	9E-08
Lead	2.8E-09	3.1E-09	3.9E-12	4.3E-12	NA	0E+00	0E+00
Mercury	8.7E-11	8.7E-11	1.2E-13	1.2E-13	3.0E-04	4E-10	4E-10
Nickel	8.1E-09	9.4E-09	1.2E-11	1.3E-11	2.0E-02	6E-10	7E-10
Selenium	7.3E-10	7.3E-10	1.0E-12	1.0E-12	5.0E-03	2E-10	2E-10
Vanadium	1.5E-08	1.7E-08	2.2E-11	2.4E-11	7.0E-03	3E-09	3E-09
Zinc	1.4E-08	1.8E-08	1.9E-11	2.6E-11	3.0E-01	6E-11	9E-11
TOTAL						1E-07	3E-07

BASF-WYANDOTTE

RECREATIONAL SCENARIO - CHILD
NONCARCINOGENIC RISKS
SURFACE WATER DERMAL ABSORPTION PATHWAY

DETROIT RIVER

CONSTITUENT	SURFACE WATER EXPOSURE CONCENTRATION (mg/L) RAE	RME	DERMAL ABSORBED DOSE (DA)	ESTIMATED DAILY INTAKE (mg/kg/day) RAE	RME	REFERENCE DOSE (mg/kg/day)	HAZARD INDEX RAE	RME
Benzene	3.1E-09	3.1E-09	5.27E-02	8.3E-12	8.3E-12	1.4E-03	6E-09	6E-09
Chlorobenzene	3.3E-10	3.3E-10	1.17E-01	2.0E-12	2.0E-12	1.6E-02	1E-10	1E-10
Vinyl chloride	7.1E-10	7.1E-10	1.76E-02	6.3E-13	6.3E-13	NA	0E+00	0E+00
Acenaphthene	4.1E-10	4.1E-10	5.01E-01	1.0E-11	1.0E-11	3.0E-02	3E-10	3E-10
Benzo(a)anthracene	1.9E-09	2.0E-09	4.70E+00	4.4E-10	4.8E-10	NA	0E+00	0E+00
Benzo(a)pyrene	1.5E-09	1.5E-09	7.99E+00	5.8E-10	5.8E-10	NA	0E+00	0E+00
Benzo(b)fluoranthene	1.7E-09	1.7E-09	8.12E+00	7.1E-10	7.1E-10	NA	0E+00	0E+00
bis(2-Chloroethyl) ether	2.2E-09	2.9E-09	6.93E-03	7.7E-13	1.0E-12	NA	0E+00	0E+00
bis(2-Chloroisopropyl) ether	3.7E-09	4.2E-09	1.98E-02	3.7E-12	4.2E-12	2.0E-02	2E-10	2E-10
Chrysene	1.5E-09	1.5E-09	4.70E+00	3.4E-10	3.4E-10	NA	0E+00	0E+00
2-Methylnaphthalene	2.6E-09	3.3E-09	4.49E-01	5.9E-11	7.4E-11	1.5E-02	4E-09	5E-09
4-Methylphenol	4.9E-09	6.7E-09	2.79E-02	6.9E-12	9.4E-12	2.5E-03	3E-09	4E-09
Naphthalene	2.2E-09	2.7E-09	1.96E-01	2.2E-11	2.7E-11	2.0E-02	1E-09	1E-09
o-Toluidine	3.8E-09	4.1E-09	1.03E-02	2.0E-12	2.1E-12	NA	0E+00	0E+00
Phenanthrene	4.4E-10	4.4E-10	9.43E-01	2.1E-11	2.1E-11	1.5E-02	1E-09	1E-09
Pyridine	3.6E-09	3.9E-09	4.98E-03	9.1E-13	9.7E-13	5.0E-04	2E-09	2E-09
Arsenic	1.5E-08	3.9E-08	2.00E-03	1.5E-12	3.9E-12	6.0E-05	3E-08	7E-08
Barium	5.6E-08	7.3E-08	2.00E-03	5.6E-12	7.4E-12	1.4E-02	4E-10	5E-10
Cadmium	1.5E-10	1.5E-10	2.00E-03	1.5E-14	1.5E-14	1.0E-04	1E-10	1E-10
Copper	5.7E-09	6.8E-09	2.00E-03	5.7E-13	6.9E-13	7.4E-03	8E-11	9E-11
Cyanide	4.5E-07	1.3E-06	2.00E-03	4.5E-11	1.3E-10	4.0E-03	1E-08	3E-08
Lead	2.8E-09	3.1E-09	8.00E-06	1.1E-15	1.2E-15	NA	0E+00	0E+00
Mercury	8.7E-11	8.7E-11	2.00E-03	8.7E-15	8.7E-15	6.0E-05	1E-10	1E-10
Nickel	8.1E-09	9.4E-09	2.00E-04	8.2E-14	9.5E-14	4.0E-03	2E-11	2E-11
Selenium	7.3E-10	7.3E-10	2.00E-03	7.3E-14	7.3E-14	1.0E-03	7E-11	7E-11
Vanadium	1.5E-08	1.7E-08	2.00E-03	1.5E-12	1.7E-12	1.4E-03	1E-09	1E-09
Zinc	1.4E-08	1.8E-08	1.20E-03	8.2E-13	1.1E-12	6.0E-02	1E-11	2E-11
TOTAL							6E-08	1E-07

BASF-WYANDOTTE

RECREATIONAL SCENARIO - LIFETIME
CARCINOGENIC RISKS
SURFACE WATER INGESTION PATHWAY

DETROIT RIVER

CONSTITUENT	SURFACE WATER EXPOSURE CONCENTRATION (mg/L)		ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME	RAE	RME		RAE	RME
Benzene	3.1E-09	3.1E-09	4.1E-13	4.1E-13	2.9E-02	1E-14	1E-14
Vinyl chloride	7.1E-10	7.1E-10	9.3E-14	9.3E-14	1.9E+00	2E-13	2E-13
Benzo(a)anthracene	1.9E-09	2.0E-09	2.5E-13	2.6E-13	7.3E-01	2E-13	2E-13
Benzo(a)pyrene	1.5E-09	1.5E-09	1.9E-13	1.9E-13	7.3E+00	1E-12	1E-12
Benzo(b)fluoranthene	1.7E-09	1.7E-09	2.3E-13	2.3E-13	7.3E-01	2E-13	2E-13
bis(2-Chloroethyl) ether	2.2E-09	2.9E-09	2.9E-13	3.8E-13	1.1E+00	3E-13	4E-13
bis(2-Chloroisopropyl) ether	3.7E-09	4.2E-09	4.8E-13	5.5E-13	7.0E-02	3E-14	4E-14
Chrysene	1.5E-09	1.5E-09	1.9E-13	1.9E-13	7.3E-03	1E-15	1E-15
o-Toluidine	3.8E-09	4.1E-09	5.0E-13	5.4E-13	9.2E+00	5E-12	5E-12
Arsenic	1.5E-08	3.9E-08	2.0E-12	5.1E-12	1.5E+00	3E-12	8E-12
Lead	2.8E-09	3.1E-09	3.6E-13	4.0E-13	NA	0E+00	0E+00
TOTAL						1E-11	2E-11

BASF-WYANDOTTE

RECREATIONAL SCENARIO - LIFETIME
CARCINOGENIC RISKS
SURFACE WATER DERMAL ABSORPTION PATHWAY

DETROIT RIVER

CONSTITUENT	SURFACE WATER EXPOSURE CONCENTRATION (mg/L)		DERMAL ABSORBED DOSE (DA)	ESTIMATED DAILY INTAKE (mg/kg/day)		CANCER SLOPE FACTOR $(mg/kg/day)^{-1}$	EXCESS LIFETIME CANCER RISK	
	RAE	RME		RAE	RME		RAE	RME
Benzene	3.1E-09	3.1E-09	5.27E-02	2.6E-12	2.6E-12	3.6E-02	9E-14	9E-14
Vinyl chloride	7.1E-10	7.1E-10	1.76E-02	1.9E-13	1.9E-13	2.4E+00	5E-13	5E-13
Benzo(a)anthracene	1.9E-09	2.0E-09	4.70E+00	1.4E-10	1.5E-10	1.5E+00	2E-10	2E-10
Benzo(a)pyrene	1.5E-09	1.5E-09	7.99E+00	1.8E-10	1.8E-10	1.5E+01	3E-09	3E-09
Benzo(b)fluoranthene	1.7E-09	1.7E-09	8.12E+00	2.2E-10	2.2E-10	1.5E+00	3E-10	3E-10
bis(2-Chloroethyl) ether	2.2E-09	2.9E-09	6.93E-03	2.4E-13	3.1E-13	2.2E+00	5E-13	7E-13
bis(2-Chloroisopropyl) ether	3.7E-09	4.2E-09	1.98E-02	1.1E-12	1.3E-12	1.4E-01	2E-13	2E-13
Chrysene	1.5E-09	1.5E-09	4.70E+00	1.1E-10	1.1E-10	1.5E-02	2E-12	2E-12
o-Toluidine	3.8E-09	4.1E-09	1.03E-02	6.1E-13	6.6E-13	1.8E+01	1E-11	1E-11
Arsenic	1.5E-08	3.9E-08	2.00E-03	4.8E-13	1.2E-12	7.5E+00	4E-12	9E-12
Lead	2.8E-09	3.1E-09	8.00E-06	3.4E-16	3.8E-16	NA	0E+00	0E+00
TOTAL							3E-09	3E-09

APPENDIX G-13

Aquatic Ecological Exposure and Risk Calculations

BASF–WYANDOTTE

ECOLOGICAL RISK CHARACTERIZATION

SURFACE WATER PATHWAY

DETROIT RIVER

CONSTITUENT	SURFACE WATER EXPOSURE CONCENTRATION (mg/L)		ECOLOGICAL TOXICITY BENCHMARK (mg/L)	ECOTOXICITY QUOTIENT	
	RAE	RME		RAE	RME
Benzene	3.1E–09	3.1E–09	1.2E–03	3E–06	3E–06
Chlorobenzene	3.3E–10	3.3E–10	2.6E–02	1E–08	1E–08
Vinyl chloride	7.1E–10	7.1E–10	2.0E–03	4E–07	4E–07
Acenaphthene	4.1E–10	4.1E–10	3.8E–03	1E–07	1E–07
Benzo(a)anthracene	1.9E–09	2.0E–09	2.8E–06	7E–04	7E–04
Benzo(a)pyrene	1.5E–09	1.5E–09	2.8E–06	5E–04	5E–04
Benzo(b)fluoranthene	1.7E–09	1.7E–09	2.8E–06	6E–04	6E–04
bis(2–Chloroethyl) ether	2.2E–09	2.9E–09	3.1E–05	7E–05	9E–05
bis(2–Chloroisopropyl) ether	3.7E–09	4.2E–09	1.4E+00	3E–09	3E–09
Chrysene	1.5E–09	1.5E–09	2.8E–06	5E–04	5E–04
2–Methylnaphthalene	2.6E–09	3.3E–09	NA	0E+00	0E+00
4–Methylphenol	4.9E–09	6.7E–09	6.2E–03	8E–07	1E–06
Naphthalene	2.2E–09	2.7E–09	2.4E–02	9E–08	1E–07
o–Toluidine	3.8E–09	4.1E–09	NA	0E+00	0E+00
Phenanthrene	4.4E–10	4.4E–10	6.3E–03	7E–08	7E–08
Pyridine	3.6E–09	3.9E–09	2.0E–02	2E–07	2E–07
Arsenic	1.5E–08	3.9E–08	1.8E–05	9E–04	2E–03
Barium	5.6E–08	7.3E–08	3.8E–03	1E–05	2E–05
Cadmium	1.5E–10	1.5E–10	3.7E–04	4E–07	4E–07
Copper	5.7E–09	6.8E–09	1.0E–02	6E–07	7E–07
Cyanide	4.5E–07	1.3E–06	5.2E–03	9E–05	2E–04
Lead	2.8E–09	3.1E–09	2.3E–03	1E–06	1E–06
Mercury	8.7E–11	8.7E–11	1.3E–06	7E–05	7E–05
Nickel	8.1E–09	9.4E–09	3.3E–02	2E–07	3E–07
Selenium	7.3E–10	7.3E–10	5.0E–03	1E–07	1E–07
Vanadium	1.5E–08	1.7E–08	8.0E–03	2E–06	2E–06
Zinc	1.4E–08	1.8E–08	5.0E–02	3E–07	4E–07
TOTAL				3E–03	5E–03

APPENDIX H

GTI Toluene Remediation Investigation Report (TRIP)

(under separate cover)

Note: Revisions to this report were not necessary.
Please refer to the TRIP report copy provided in the Draft RFI Report dated 12/4/97.