

APPENDIX K

FUGITIVE EMISSIONS RISK ASSESSMENT: ACUTE INHALATION RISK RESULTS

ACUTE INHALATION RISK RESULTS
FUGITIVE AIR EMISSIONS DURING UNLOADING AT OUTDOOR HOPPER

COMPOUND	ACUTE INHALATION HAZARD QUOTIENT (a)
A_1 maximum impact point (stack emissions)	
Benzene	2.1E-04
Chloroform (Trichloromethane)	8.8E-05
Acrylonitrile	4.3E-05
1,3-Butadiene	7.9E-06
Tetrachloroethylene (Perchloroethylene)	7.9E-06
Cyclohexane	5.0E-06
Styrene	4.1E-06
Toluene	3.4E-06
1-Hexane (n-hexane)	2.6E-06
Arsenic	1.0E-06
Vinyl Chloride	8.2E-07
Nickel	1.7E-07
Ethylbenzene	1.6E-07
Trichloroethylene	1.3E-07
Dichlorobenzene,1,4-	6.1E-08
Copper	3.2E-08
Ethylene Glycol	1.9E-08
Ethylene Dibromide	8.8E-09
Naphthalene	5.1E-09
Beryllium	3.2E-09
Cadmium	2.9E-09
Cobalt	1.0E-10
Total (b)	3.7E-04
A_2 closest business	
Benzene	4.6E-04
Chloroform (Trichloromethane)	1.9E-04
Acrylonitrile	9.5E-05
1,3-Butadiene	1.7E-05
Tetrachloroethylene (Perchloroethylene)	1.7E-05
Cyclohexane	1.1E-05
Styrene	9.2E-06
Toluene	7.5E-06
1-Hexane (n-hexane)	5.7E-06
Arsenic	2.2E-06
Vinyl Chloride	1.8E-06
Nickel	3.8E-07
Ethylbenzene	3.5E-07
Trichloroethylene	2.9E-07
Dichlorobenzene,1,4-	1.4E-07
Copper	7.0E-08
Ethylene Glycol	4.1E-08
Ethylene Dibromide	1.9E-08
Naphthalene	1.1E-08
Beryllium	7.0E-09
Cadmium	6.5E-09
Cobalt	2.3E-10
Total (b)	8.2E-04
A_3 maximum impact point (hopper fugitive emissions)	
Benzene	1.1E-02
Chloroform (Trichloromethane)	4.8E-03
Acrylonitrile	2.4E-03
1,3-Butadiene	4.3E-04
Tetrachloroethylene (Perchloroethylene)	4.3E-04
Cyclohexane	2.7E-04
Styrene	2.3E-04
Toluene	1.9E-04
1-Hexane (n-hexane)	1.4E-04
Arsenic	5.5E-05

ACUTE INHALATION RISK RESULTS
FUGITIVE AIR EMISSIONS DURING UNLOADING AT OUTDOOR HOPPER

COMPOUND	ACUTE INHALATION HAZARD QUOTIENT (a)
Vinyl Chloride	4.5E-05
Nickel	9.5E-06
Ethylbenzene	8.6E-06
Trichloroethylene	7.3E-06
Dichlorobenzene,1,4-	3.4E-06
Copper	1.7E-06
Ethylene Glycol	1.0E-06
Ethylene Dibromide	4.8E-07
Naphthalene	2.8E-07
Beryllium	1.7E-07
Cadmium	1.6E-07
Cobalt	5.6E-09
Total (b)	2.0E-02
R_1 resident	
Benzene	2.8E-05
Chloroform (Trichloromethane)	1.2E-05
Acrylonitrile	5.8E-06
1,3-Butadiene	1.1E-06
Tetrachloroethylene (Perchloroethylene)	1.1E-06
Cyclohexane	6.8E-07
Styrene	5.7E-07
Toluene	4.6E-07
1-Hexane (n-hexane)	3.5E-07
Arsenic	1.4E-07
Vinyl Chloride	1.1E-07
Nickel	2.4E-08
Ethylbenzene	2.1E-08
Trichloroethylene	1.8E-08
Dichlorobenzene,1,4-	8.4E-09
Copper	4.3E-09
Ethylene Glycol	2.5E-09
Ethylene Dibromide	1.2E-09
Naphthalene	7.0E-10
Beryllium	4.3E-10
Cadmium	4.0E-10
Cobalt	1.4E-11
Total (b)	5.1E-05
R_2 resident	
Benzene	2.6E-05
Chloroform (Trichloromethane)	1.1E-05
Acrylonitrile	5.4E-06
1,3-Butadiene	9.9E-07
Tetrachloroethylene (Perchloroethylene)	9.9E-07
Cyclohexane	6.3E-07
Styrene	5.2E-07
Toluene	4.3E-07
1-Hexane (n-hexane)	3.2E-07
Arsenic	1.3E-07
Vinyl Chloride	1.0E-07
Nickel	2.2E-08
Ethylbenzene	2.0E-08
Trichloroethylene	1.7E-08
Dichlorobenzene,1,4-	7.7E-09
Copper	4.0E-09
Ethylene Glycol	2.3E-09
Ethylene Dibromide	1.1E-09
Naphthalene	6.5E-10
Beryllium	4.0E-10
Cadmium	3.7E-10
Cobalt	1.3E-11

ACUTE INHALATION RISK RESULTS
FUGITIVE AIR EMISSIONS DURING UNLOADING AT OUTDOOR HOPPER

COMPOUND	ACUTE INHALATION HAZARD QUOTIENT (a)
Total (b)	4.7E-05
R_3 resident farmer	
Benzene	2.1E-05
Chloroform (Trichloromethane)	8.9E-06
Acrylonitrile	4.4E-06
1,3-Butadiene	8.0E-07
Tetrachloroethylene (Perchloroethylene)	8.0E-07
Cyclohexane	5.1E-07
Styrene	4.2E-07
Toluene	3.5E-07
1-Hexane (n-hexane)	2.6E-07
Arsenic	1.0E-07
Vinyl Chloride	8.4E-08
Nickel	1.8E-08
Ethylbenzene	1.6E-08
Trichloroethylene	1.4E-08
Dichlorobenzene,1,4-	6.3E-09
Copper	3.2E-09
Ethylene Glycol	1.9E-09
Ethylene Dibromide	9.0E-10
Naphthalene	5.2E-10
Beryllium	3.2E-10
Cadmium	3.0E-10
Cobalt	1.0E-11
Total (b)	3.8E-05
R_4 resident farmer	
Benzene	2.7E-05
Chloroform (Trichloromethane)	1.2E-05
Acrylonitrile	5.6E-06
1,3-Butadiene	1.0E-06
Tetrachloroethylene (Perchloroethylene)	1.0E-06
Cyclohexane	6.6E-07
Styrene	5.4E-07
Toluene	4.5E-07
1-Hexane (n-hexane)	3.4E-07
Arsenic	1.3E-07
Vinyl Chloride	1.1E-07
Nickel	2.3E-08
Ethylbenzene	2.1E-08
Trichloroethylene	1.7E-08
Dichlorobenzene,1,4-	8.1E-09
Copper	4.2E-09
Ethylene Glycol	2.4E-09
Ethylene Dibromide	1.2E-09
Naphthalene	6.7E-10
Beryllium	4.2E-10
Cadmium	3.9E-10
Cobalt	1.3E-11
Total (b)	4.9E-05
R_5 resident	
Benzene	3.4E-05
Chloroform (Trichloromethane)	1.4E-05
Acrylonitrile	7.0E-06
1,3-Butadiene	1.3E-06
Tetrachloroethylene (Perchloroethylene)	1.3E-06
Cyclohexane	8.2E-07
Styrene	6.8E-07
Toluene	5.6E-07
1-Hexane (n-hexane)	4.2E-07

ACUTE INHALATION RISK RESULTS
FUGITIVE AIR EMISSIONS DURING UNLOADING AT OUTDOOR HOPPER

COMPOUND	ACUTE INHALATION HAZARD QUOTIENT (a)
Arsenic	1.6E-07
Vinyl Chloride	1.4E-07
Nickel	2.8E-08
Ethylbenzene	2.6E-08
Trichloroethylene	2.2E-08
Dichlorobenzene,1,4-	1.0E-08
Copper	5.2E-09
Ethylene Glycol	3.1E-09
Ethylene Dibromide	1.4E-09
Naphthalene	8.4E-10
Beryllium	5.2E-10
Cadmium	4.8E-10
Cobalt	1.7E-11
Total (b)	6.1E-05
R_6 resident	
Benzene	1.5E-05
Chloroform (Trichloromethane)	6.5E-06
Acrylonitrile	3.2E-06
1,3-Butadiene	5.8E-07
Tetrachloroethylene (Perchloroethylene)	5.8E-07
Cyclohexane	3.7E-07
Styrene	3.1E-07
Toluene	2.5E-07
1-Hexane (n-hexane)	1.9E-07
Arsenic	7.4E-08
Vinyl Chloride	6.1E-08
Nickel	1.3E-08
Ethylbenzene	1.2E-08
Trichloroethylene	9.8E-09
Dichlorobenzene,1,4-	4.5E-09
Copper	2.3E-09
Ethylene Glycol	1.4E-09
Ethylene Dibromide	6.5E-10
Naphthalene	3.8E-10
Beryllium	2.3E-10
Cadmium	2.2E-10
Cobalt	7.5E-12
Total (b)	2.7E-05

(a) Acute hazard quotients were calculated for all compounds with fugitive air emission rates and acute inhalation toxicity criteria.

(b) The total is based on the sum of all chemical-specific hazard quotients regardless of the type of health effects of the summed compounds. A total value summed across all compounds is used as a screening tool only, to determine if additional evaluation for specific types of health effects is warranted (i.e., if the total value is greater than 1).